FORM NO. 3311-499 Rev. A

TORO®

MODEL NO. 30900 – 000001
THRU 100001 & UP

DELUXE MODEL NO. 30910 – 000001
THRU 100001 & UP

OPERATOR'S MANUAL

TORO 21cc (1.29 cu. in.) TRIMMER

(COMMERCIAL)

To assure maximum safety, 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 the engine is started. Pay particular attention to the instructions highlighted by the safety alert symbol. Failure to comply with the safety instructions may result in personal injury.

FOREWORD

The Toro 21cc (1.29 cu. in.) Trimmers are lightweight, high performance, gasoline powered trimmers. The Tap-N-Trim cutter head (Model 30900) is an automatic head that feeds new line with just a tap on the ground. The unique cutting system on the Model 30910 uses super thick precut lengths of line which provide high production trimming. Either one or two lines can be used. Optional brush cutter blades make the toughest cutting tasks quick and easy. The anti-vibration control grips and precision balance, along with Toro's quality engineering, make these Trimmers a must for big trimming jobs.

We know, since you have purchased this industry leader in trimming excellence, that future performance and dependability are of prime importance. TORO also is concerned about future use of the machine and of safety to the user. Therefore, this manual should be read by you and those involved with the Trimmer to assure that safety, proper set-up, operation and maintenance procedures are followed at all times. The major sections of the manual are:

1. Safety Instructions
2. General Assembly Instructions
3. Before Operating
4. Operating Instructions
5. Maintenance
6. Trouble Shooting

Safety, mechanical and some general information in this manual is emphasized. DANGER, WARNING and CAUTION identify safety messages. Whenever the triangular safety alert symbol appears, it is followed by a safety message that must be read and understood. For more details concerning safety, read the safety instructions on page 3. IMPORTANT identifies special mechanical information and NOTE identifies general information worthy of special attention.

OPTIONAL SPARK ARRESTER

In some areas there are local, state or federal regulations requiring that a spark arrester be used on the engine of this Trimmer. If a spark arrester is required, order the following parts from your local TORO Distributor:

1 41-9310 Spark Arrester Assembly

These parts are approved by the United States Department of Agriculture and the United States Forest Service.

CAUTION

When Trimmer is used or operated on any California forest, brush or grass covered land, a working order spark arrester must be attached to muffler. If not, the operator is violating state law, Section 4442 Public Resources Code.

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The Toro Company — 1980, Rev. 1981
MINNEAPOLIS, MN 55420 — U.S.A.

SAFETY INSTRUCTIONS

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. The following articles of apparel are strongly recommended and are required by some local safety and insurance regulations:

   A. Safety goggles
   B. Safety shoes
   C. Long pants
   D. A long sleeved shirt
   E. A helmet

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. For proper balance and ease of operation, ALWAYS USE THE SHOULDER HARNESS. Do not attempt to start engine while wearing harness with Trimmer attached. Disconnect Trimmer before starting engine.

7. Never operate Trimmer when you are fatigued.

8. 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.

9. Gasoline is highly flammable; handle it carefully. Fill fuel tank with mixture of gasoline and oil before trying to start the engine.

   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.

WHILE OPERATING

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

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

12. The Trimmer is intended to be used as a means of trimming grassy, weedy and brushy areas only. DO NOT use the Trimmer for such things as tree pruning or hedge trimming.

13. Do not put hands or feet near or under rotating parts. Keep clear at all times.

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

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

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

17. Shut off engine, be certain all moving parts have completely stopped rotating and Trimmer has been removed from harness before performing any adjustment or maintenance procedures.

MAINTENANCE

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

19. Make sure entire machine is in good condition. Keep all nuts, bolts and screws properly tightened.

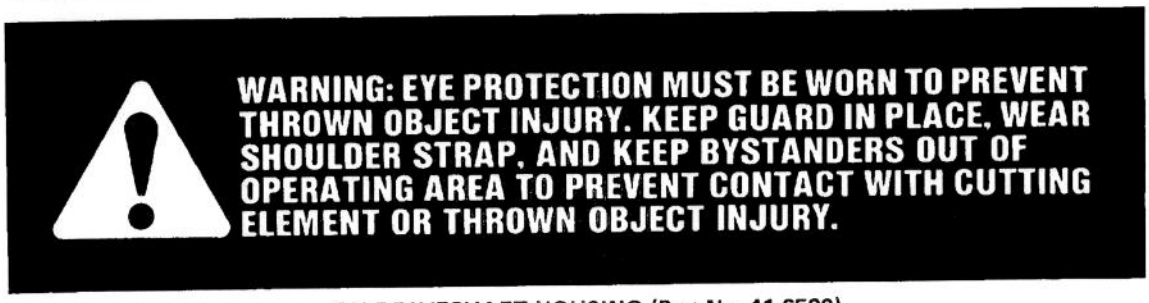
20. If major repairs are ever needed or if assistance is desired, contact an Authorized Toro Distributor. Ask about Mobile Service Maintenance.

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

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

SAFETY INSTRUCTION DECALS

The following safety and instruction decals are installed on the unit. If any become damaged or illegible, replace them. Decal part number is listed below and in your Parts Catalog. Order replacements from your Authorized Toro Distributor.



ON DRIVESHAFT HOUSING (Part No. 41-6590)

SPECIFICATIONS

Engine: Air-cooled, 2-cycle, single cylinder engine with 1.29 cu. in. (21.2 cc) displacement and 16.9 oz (0.5 l) capacity gas tank, NGK BM-6A spark plug (alternate Champion CJ-8) with recommended gap of 0.023-0.028 in. (0.6-0.7 mm).

Drive Shaft: Outer tube (1.1 in. O.D. x 1.0 in. I.D. x 59.1 in. L) [28 x 25.4 mm x 1.5 m]). Inner shaft 0.3 in. (8 mm) Dia. w/5 lateral bearing mountings.

Gear Box: 1:1.18 reduction w/spiral bevel gears.

Trimmer Head: Semi-automatic feed of single 0.095 in. (2.4 mm) Dia. monofilament line (model 30900). Manual cast head for 0.130 in. Dia. x 14 in. L (3.3 mm x 35.6 cm) – 2 strands – of monofilament line (model 30910).

Control: Drive shaft mounted upper hand grip with trigger type throttle. Adjustable plastic "D" type lower hand grip (model 30900). U-handle, individually adjustable, with vibration reducing "fin" grips and trigger type throttle for right hand (model 30910).

Shield: Drive shaft mounted steel debris guard.

Support: Adjustable shoulder strap with quick release (model 30900). Deluxe adjustable shoulder harness with quick release (model 30910).

Dimensions:

	(Model 30900)	(Model 30910)
Length:	68.9 in. (175 cm)	68.9 in. (175 cm)
Width:	7.7 in (19.6 cm)	23.6 in. (59.9 cm)
Height:	9.2 in. (23.4 cm)	13.7 in. (34.8 cm)

Weight:

30900-11.9 lb (52.9 N) w/o strap and trimmer head.
30910-13.2 lb (58.7 N) w/o strap and trimmer head.

Accessories:

Model 30900
- Manual cast head for 0.130 in. Dia. x 14 in. L (3.3 mm x 35.6 cm) – 2 strands – of monofilament line.
- Blade Adapter Kit.
- 10 in. (25.4 cm) Dia. 8-tooth Weed blade.
- 10 in. (25.4 cm) Dia. Saw-tooth Brush blade.
- Deluxe shoulder harness with quick release.
- Spark Arrester Kit; refer to page 2.

Model 30910
- Semi-automatic feed head of single 0.095 in. (2.4 mm) Dia. monofilament line.
- Blade Adapter Kit.
- 10 in. (25.4 cm) Dia. 8-tooth Weed Blade.
- 10 in. (25.4 cm) Dia. Saw-tooth Brush Blade.
- Spark Arrester Kit; refer to page 2.

KNOW YOUR TRIMMER

Model 30900 Model 30910

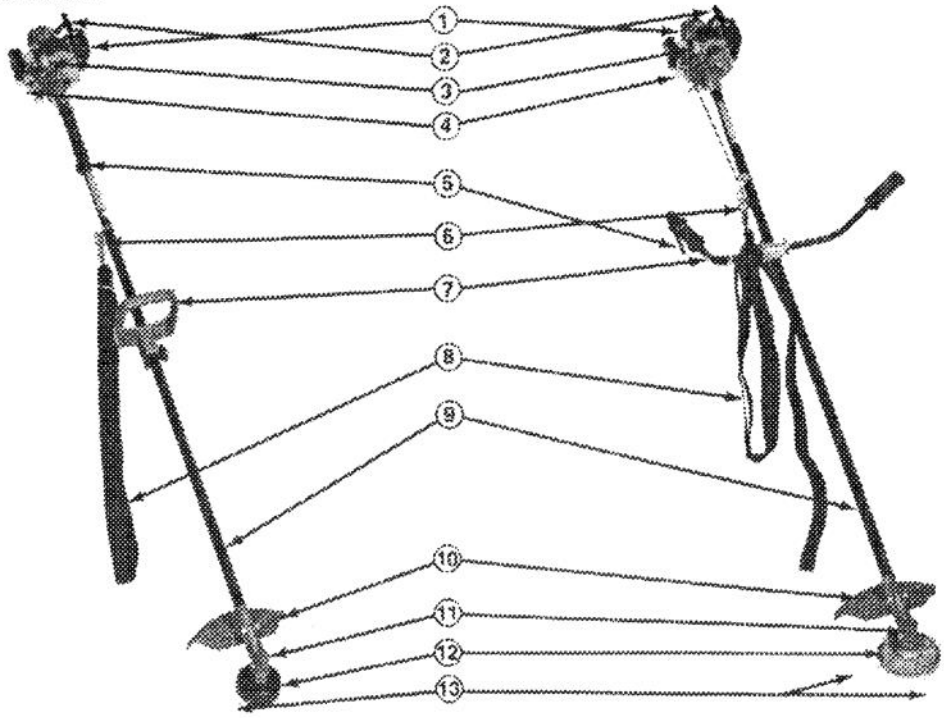


Figure 1

1. Engine
2. Recoil starter
3. Engine stop switch
4. Fuel tank
5. Throttle lever
6. Hanging ring
7. Handle
8. Shoulder strap
9. Drive shaft assembly
10. Head shield
11. Gear case
12. Cutter head
13. Monofilament line

LOOSE PARTS CHARTS

Loose Parts	Qty.	Where Used
Engine Assembly	1	
Driveshaft Assembly	1	Assemble to engine.
Head Shield	1	Assemble to driveshaft.
Screw	4	Head Shield Fasteners.
Spring Washer	4	
Nut	4	
Tap-N-Trim Head Assembly (30900 only)	1	Install on gear box shaft.
Cutter Head (30910 only)	1	Install on gear box shaft.
Flat Washer	1	Use to mount cutter head – Use extra cotter pins as replacements.
Nut	1	To secure cutter head (Model 30910).
Cotter pin 1/16 x 1 in. (1.6 x 25 mm)	10	To secure nut. (Extras for replacement).
Monofilament line 0.130 x 14 in. (3.3 mm x 35.6 cm) (30910 only)	24	Use two in cutter head – Use extra line for replacement purposes.
U-Handle, L.H. & R.H. (30910 only)	1 ea.	Install in handle bracket.
Throttle Trigger Assembly (30910 only)	1	Install on R.H. Handle.
Throttle Cable (30910 only)	1	Connect to throttle trigger and carb linkage.
Shoulder Strap	1	Connect to hanging ring.
Operator's Manual	1	
Parts Catalog	1	
Registration Card	1	

SET-UP INSTRUCTIONS

Note: Pictures and instructions listed apply to both model units unless otherwise noted.

INSTALL DRIVESHAFT ASSEMBLY

1. Rest engine on workbench on bracket and loosen bolt at open end of fan cover (Fig. 2).

Note: All fasteners are metric.

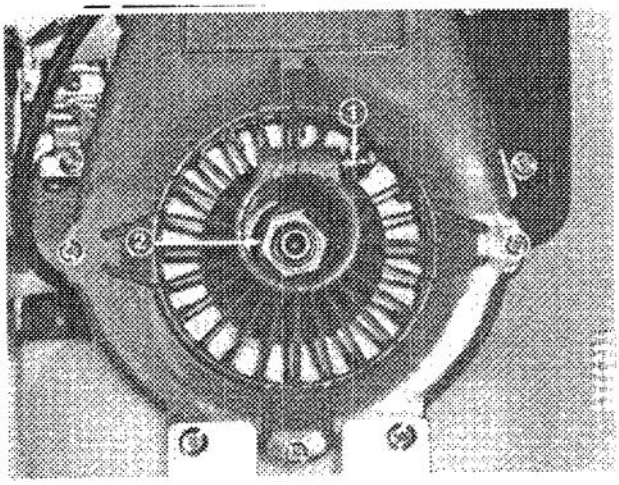


Figure 2

1. Bolt 2. Hex

2. Insert end of driveshaft assembly opposite gear case into fan housing hole (Fig. 3). Insert shaft until it is all the way up to the edge of the painted area on the shaft tube (Fig. 3). If shaft will not go all the way into the engine, rotate the gear case shaft so that hex end of drive shaft will mate with hex in crankshaft (Fig. 2, 3).

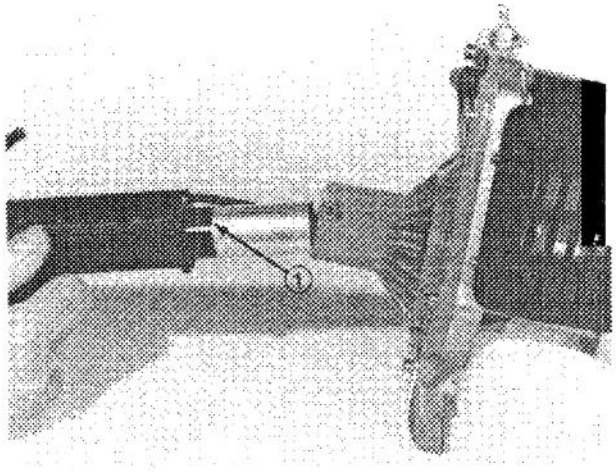


Figure 3

1. Painted edge

3. Check to make sure output shaft in gear case is in line with center of engine (Fig. 4) and pointing in opposite direction of engine spark plug (Fig. 5). Tighten bolt to secure assembly (Fig. 5).

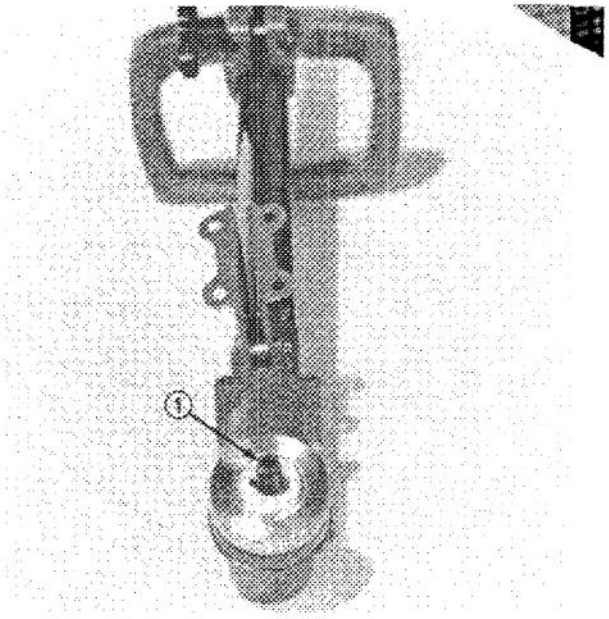


Figure 4

1. Gear case output shaft (Shown in upside down position)

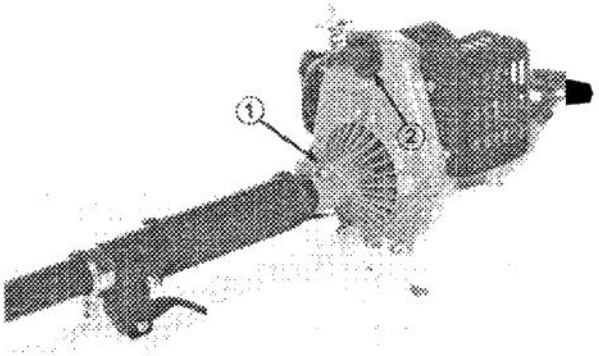


Figure 5

1. Bolt
2. Spark plug

INSTALL U-HANDLE (Model 30910)

1. Remove four bolts securing upper handle bracket and remove bracket (Fig. 7).

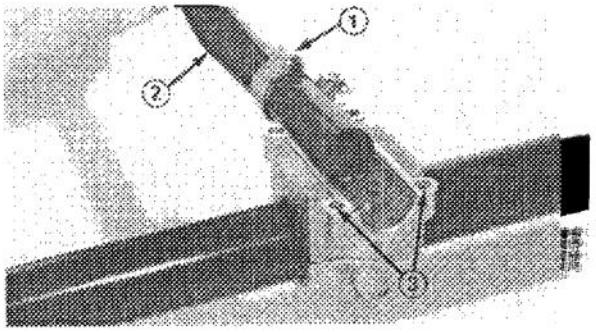


Figure 6

1. Band 3. Spacers
2. R.H. handle

SET-UP INSTRUCTIONS

2. Slide band onto R.H. handle (Fig. 6), instal' R.H. and L.H. handles into lower bracket, mak sure spacers are aligned (Fig. 6) and install uppe bracket (Fig. 7). Insert and tighten bolts to secur handles (Fig. 7).

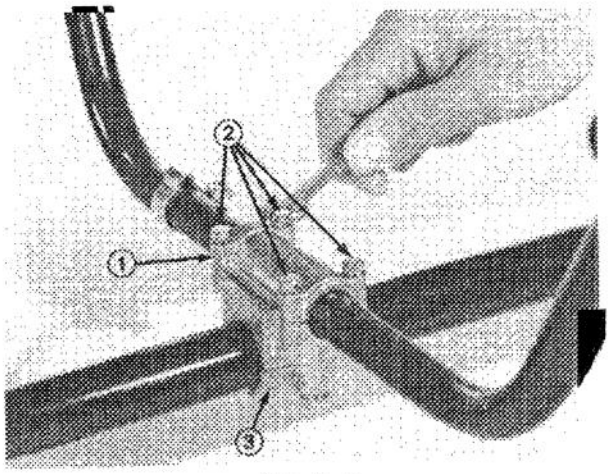


Figure 7

1. Upper bracket
2. Bolts
3. Lower bracket

Note: Right hand handle should be installed o carburetor side of engine, left hand handle o muffler side.

ASSEMBLE THROTTLE CABLE TO TRIGGER AND DRIVE SHAFT (Model 30910)

1. Loosen band and insert unthreaded end c throttle cable through band (Fig. 8).

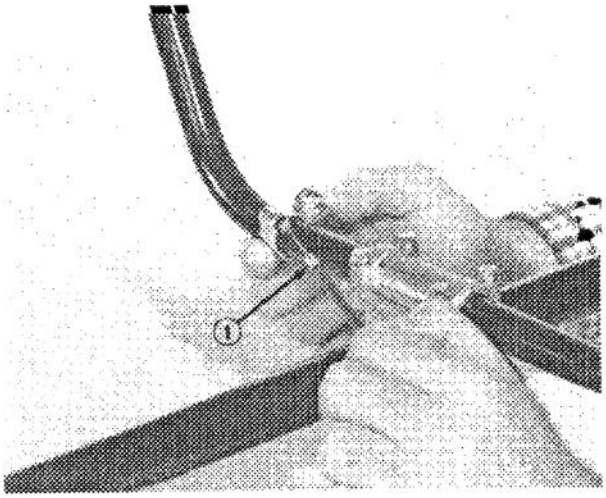


Figure 8

1. Throttle cable

2. Insert cable into hole in handle and up through top of handle (Fig. 9).

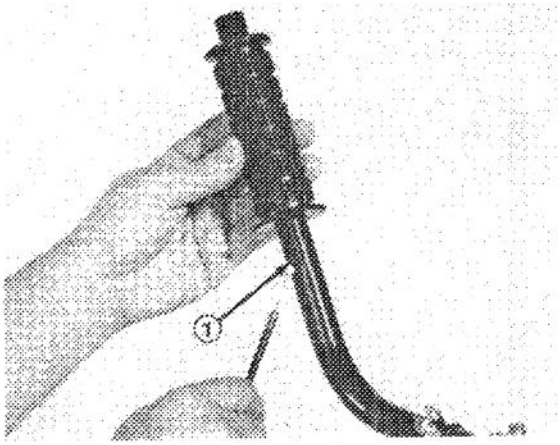


Figure 9

1. Handle hole

3. Lift the trigger in the bracket so anchor slot in trigger is exposed and slip the cable end into the anchor slot (Fig. 10).

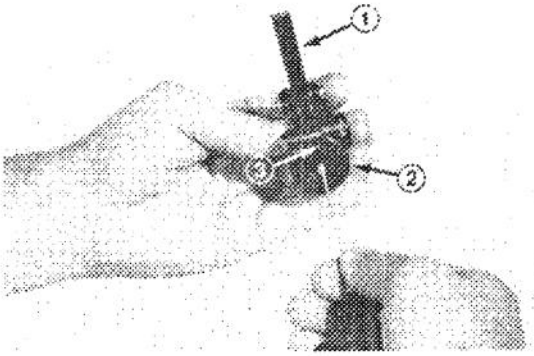


Figure 10

1. Trigger
2. Bracket
3. Anchor slot

4. Hold the trigger down against the bracket, grasp the cable below the hole in the handle and lower the trigger down onto the handle while pulling the cable with the other hand to remove the slack (Fig. 11).

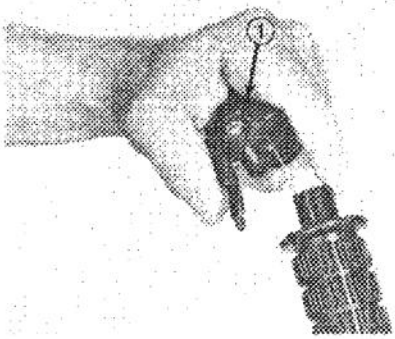


Figure 11

1. Trigger assembly

SET-UP INSTRUCTIONS

5. Position the trigger on opposite side of handle from engine and tighten screw and nut to secure trigger assembly to handle (Fig. 12).

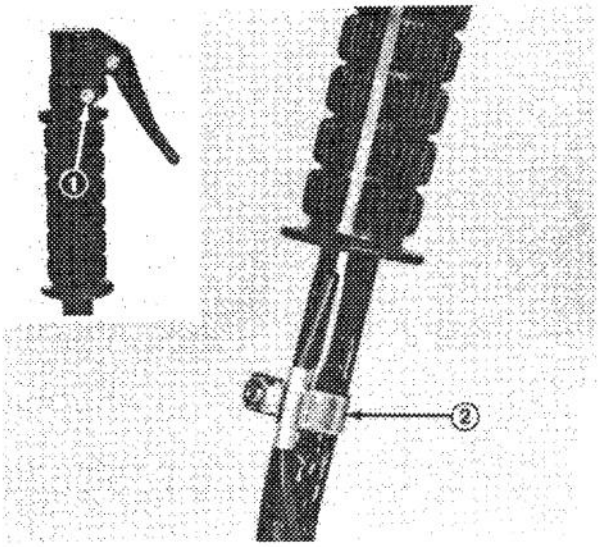


Figure 12

1. Bracket screw and nut 2. Band

6. Remove all slack from cable and tighten band (Fig. 12). Check trigger operation to make sure cable is attached and functioning correctly.

7. Loosen bolt securing hanger holder, slide flat portion of cable clamp under raised portion of holder and tighten bolt (Fig. 13).

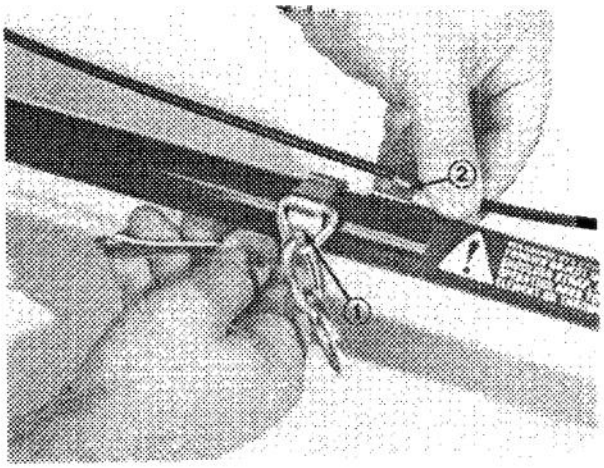


Figure 13

1. Hanger holder 2. Cable clamp

ASSEMBLE THROTTLE CABLE TO CARBURETOR

1. Position swivel on carburetor so slot is toward bracket and hole is on opposite side (Fig. 14).

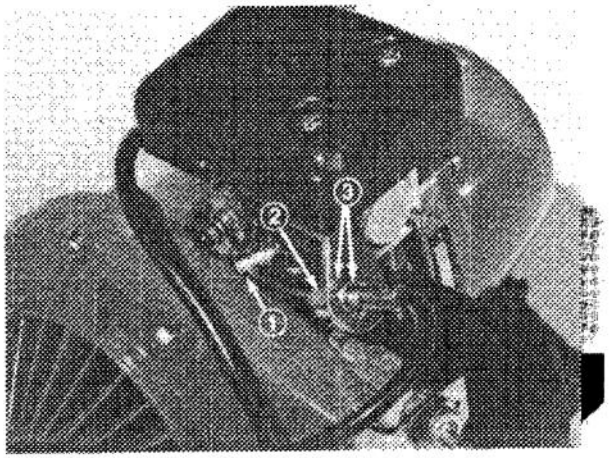


Figure 14

1. Swivel slot 3. Nut and flatwasher
2. Locknut

2. Hook ball end of cable into hole in swivel, slip the flats on locknut into slot in bracket, hold locknut into bracket and tighten nut so locknut is held securely in bracket by nut and flatwasher (Fig. 14).

3. Check operation of cable. Press trigger on handle against handle and check carburetor throttle shaft. Throttle shaft should be in fully open position. If throttle is not fully open, loosen nut on bracket, remove locknut from bracket and thread locknut further down toward end of cable. Reinstall cable and check adjustment. Repeat procedure, if necessary.

INSTALL HEAD GUARD

1. Make sure head guard bracket is aligned with the gear case shaft (Fig. 15). If not, loosen mounting fasteners and correct as necessary. Tighten fasteners to secure adjustment.

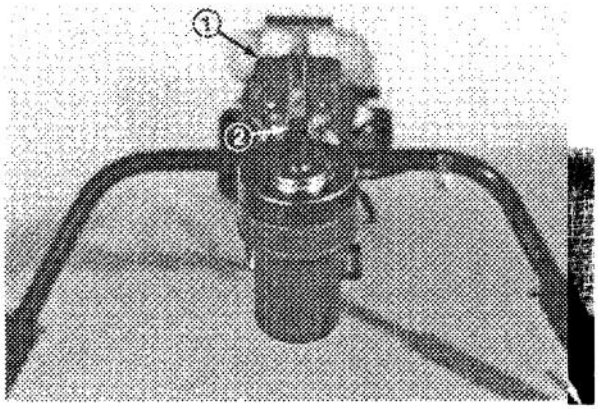


Figure 15

1. Head guard bracket
2. Gear case shaft

SET-UP INSTRUCTIONS

2. Align holes in head guard with bracket holes, insert screws and secure with spring washers and nuts (Fig. 16).

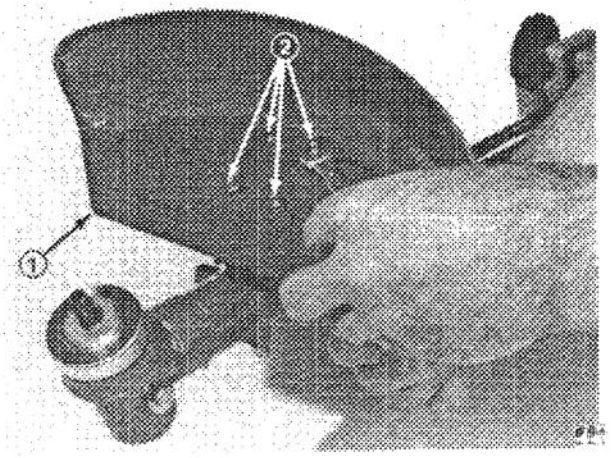


Figure 16

1. Head guard 2. Mounting screws, washers and nuts

INSTALL TAP-N-TRIM HEAD ASSEMBLY (Model 30900 – Optional for 30910)

1. Rotate gear case shaft and blade fixing plate until a locking tool can be inserted through the holes in the plate and the gear case casting to lock the shaft (Fig. 17).

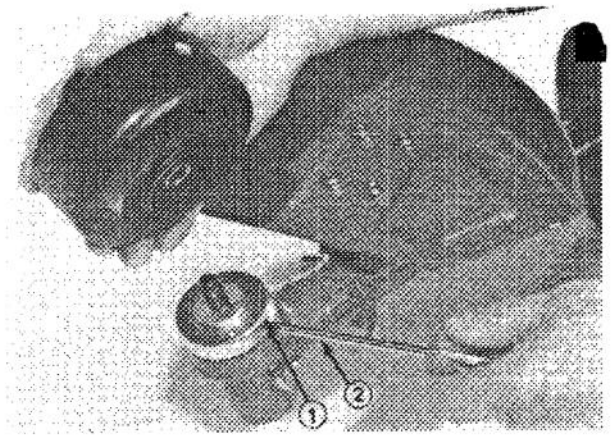


Figure 17

1. Blade fixing plate 2. Align holes and insert locking tool

2. Set Tap-N-Trim head onto shaft, rotate in a counterclockwise direction (left hand thread) and tighten firmly by hand (Fig. 18).

3. Remove tape securing line and check to be sure at least 2 in. (51 mm) of line extends beyond the eyelet so that there will be proper function of the automatic line indexing function. If line extends less than 2 in. (51 mm), push center of head assembly inward and pull line out to desired length. Release center to lock line in position.

Note: Do not allow line to extend more than 6 in. (15.2 cm) from eyelet.

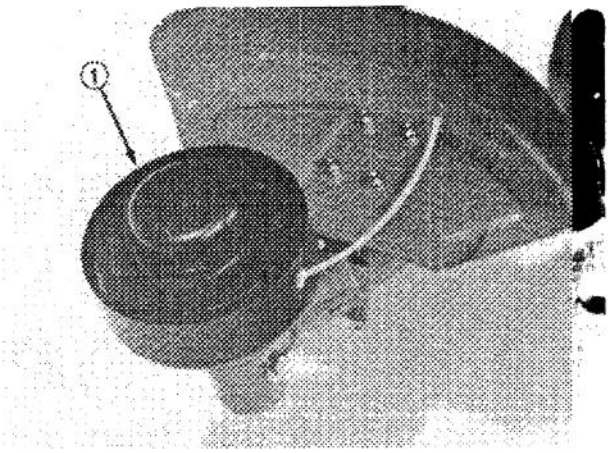


Figure 18

1. Tap-N-Trim head

INSTALL CUTTER HEAD ASSEMBLY (Model 30910 – Optional for 30900)

1. Remove cotter pin, nut and plate from gear case shaft. (Left hand thread.)

2. Install cutter head, plate and nut onto shaft (Fig. 19). Insert a locking tool into hole in blade fixing plate, rotate shaft until tool can be inserted through a hole in the gear case casting (Fig. 19).

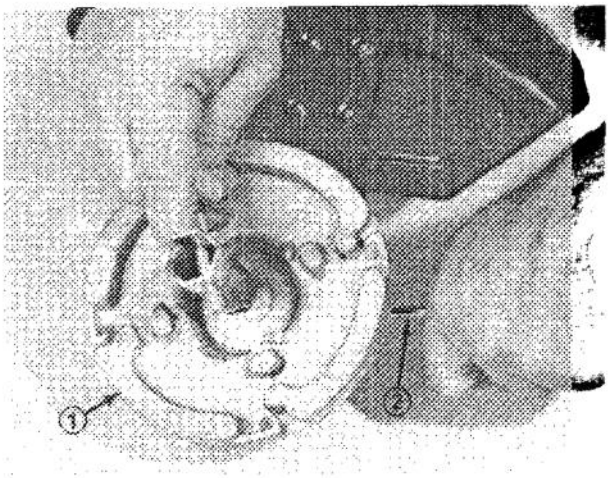


Figure 19

1. Cutter head
2. Locking tool

3. Keep shaft from rotating with locking tool and tighten nut with wrench (Fig. 19). (Left hand thread.)

4. Insert cotter pin through hole in shaft and wrap ends around shaft (Fig. 20).

SET-UP INSTRUCTIONS

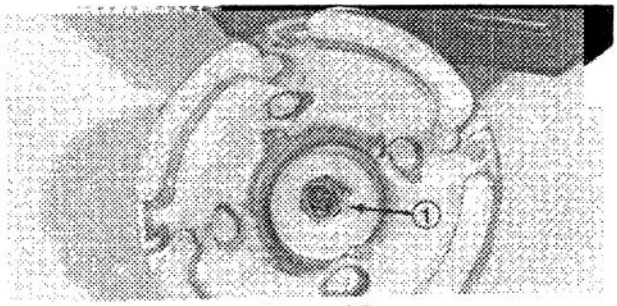


Figure 20
1. Cotter pin

5. Align black spot in center of a monofilament line with the gear case shaft and install line in outboard projections of cutter head (Fig. 21).

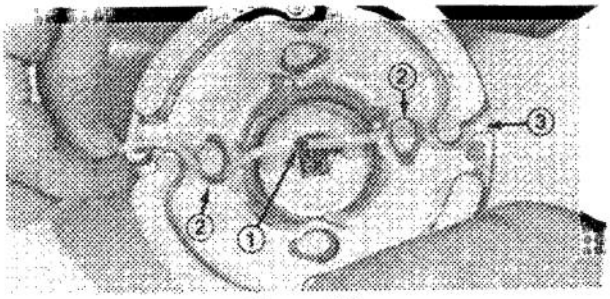


Figure 21
1. Black spot in line
2. Outer projections
3. Position in slot

6. Center another line at right angles to the first line and install it into the remaining projections (Fig. 22).

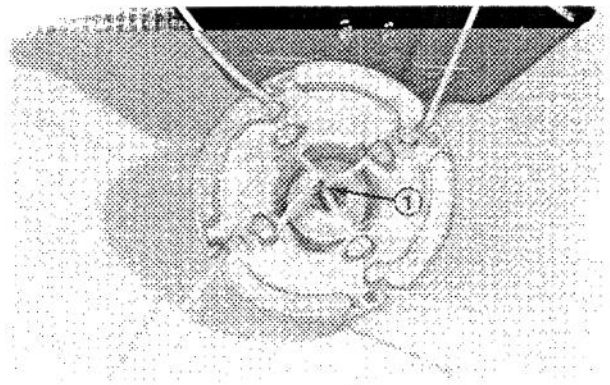


Figure 22
1. Second line over first

ATTACH HARNESS

1. Stand on left side of unit, hang belt over left shoulder with snap hook assembly located by right hip. Fasten waist belt around mid-section – Model 30910 only (Fig. 24, 25). Fit shoulder harness and belt so that both are snug. Shoulder harness should lie diagonally across chest and join with belt at right hip.

2. Pull slide up on belt hook assembly, slip harness hook through ring in hanger ring, rotate up to closed position and release slide to lock harness hook (Fig. 23).

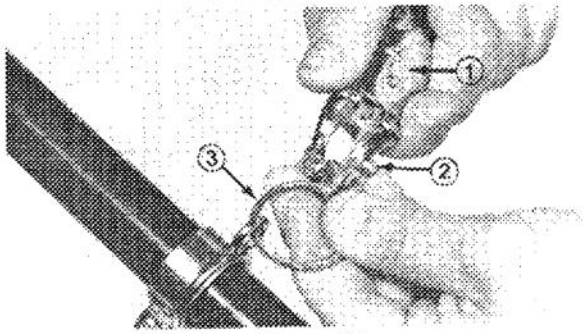


Figure 23
1. Slide
2. Harness hook
3. Ring

3. Check the "hang" of the unit to be sure it's properly balanced to allow easy handling and to make sure that all controls are within easy reach (Fig. 24, 25). Move the hanging ring if balance is incorrect (Fig. 24, 25). Make any other necessary adjustments.

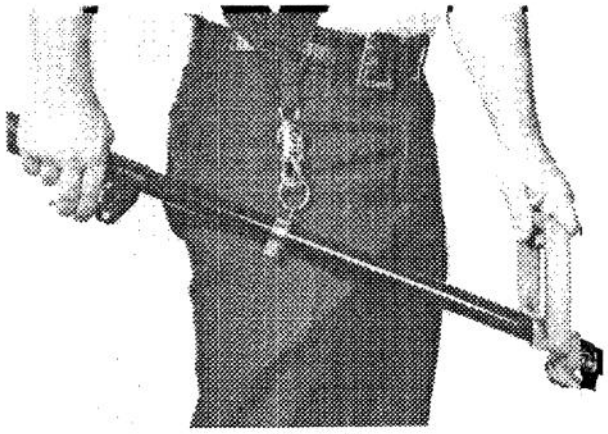


Figure 24

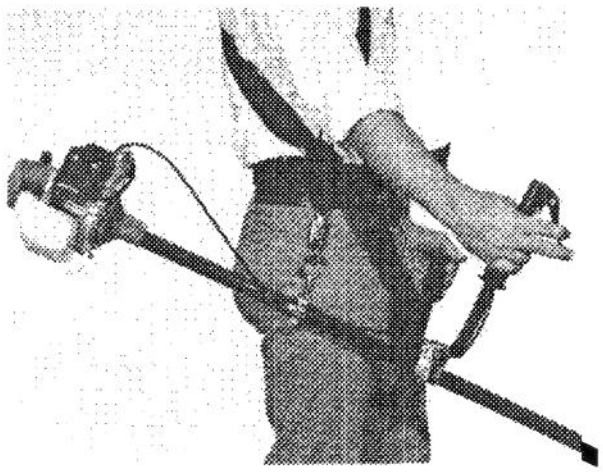


Figure 25

PREPARATION BEFORE OPERATION

DANGER

Gasoline is flammable and caution must be used when handling or storing it. Do not fill fuel tank while Trimmer is running, hot, or when Trimmer is in an enclosed area. Vapors may build up and be ignited by a spark or flame source many feet away. DO NOT SMOKE while mixing fuel or filling the fuel tank to prevent the possibility of an explosion. Fill fuel tank to within 1/4 – 1/2 inch (6.3 – 12.7 mm) from top of tank to provide space for expansion of fuel. Never fill fuel tank to top of filler neck. Always fill fuel tank outdoors and use a funnel or spout to prevent spilling. Make sure to wipe up any spilled fuel before starting the engine.

Store gasoline in a clean, approved container, and keep the cap in place on the container. Keep gasoline in a cool, well ventilated place; never in the house. Never buy more than a 30 day supply of gasoline to assure volatility. Gasoline is intended to be used as a fuel for internal combustion engines; therefore, do not use gasoline for any other purpose. Since many children like the smell of gasoline, keep it out of their reach because the fumes are dangerous to inhale, as well as being explosive.

MIX GASOLINE AND OIL

Tools Required: Gas Can, Funnel, and Clean Rag

The two cycle engine used in the Trimmer requires a mixture of GASOLINE and OIL for lubrication of bearings and other moving parts. The correct fuel mixture ratio is 32:1 which is 4 oz. (118 ml) of oil mixed with one gallon of gasoline.

Note: Oil other than TORO oil must be mixed at 20:1 which is 6.4 oz. (189 ml) mixed with one gallon of gasoline.

Note: Gasoline and oil must be premixed in a clean gasoline container. Never mix gasoline and oil indoors or in the Trimmer fuel tank. Always use fresh gasoline. TORO Two Cycle Engine Oil can be obtained at your local TORO Distributor. Store the oil indoors, so it will be at room temperature (above 50° [10°C]) and will more readily mix with the gasoline.

CAUTION

Do not store the oil near open flame or in an extremely warm environment as the oil is flammable.

1. Add 1 U.S. quart of leaded REGULAR gasoline to a gallon container (Fig. 26).

2. Pour 1/2 cup – 4 oz (118 ml) – of two cycle engine oil into the gasoline container (Fig. 26). DO NOT use multi-viscosity oils.

3. Shake the gasoline container vigorously so oil mixes with gasoline (Fig. 26). Remember to install cap on gasoline container before shaking.

4. Add an additional 3 U.S. quarts (2.84 l) of gasoline to the premixed gasoline (Fig. 26). Fuel mixture is now ready to use.

FILL FUEL TANK

Tools Required: Funnel and Clean Rag

IMPORTANT: Do not fill fuel tank with gasoline that does not have oil mixed in it. Do not use gasoline additives because the engine could be damaged.

1. Mix gasoline and oil: refer to Mix Gasoline and Oil, page 11.

2. Clean area around Trimmer fuel tank cap so foreign matter does not get into fuel tank. Remove cap from fuel tank.

Figure 26

PREPARATION BEFORE OPERATING

3. Shake fuel mixture in gasoline container; then fill Trimmer fuel tank to within 1/4 - 1/2 inch (6.3 - 12.7 mm) from the top of the tank, not the filler neck.

Note: When filling fuel tank with gasoline/oil mixture that has been setting for some time, shake the mixture first because the oil may have settled.

4. Install cap securely on Trimmer fuel tank.

SHOULDER HARNESS

1. The shoulder harness has a quick disconnect feature allowing you to disconnect yourself from the Trimmer by lifting up the moveable slide housing on the hook with just one hand. Try this once or twice before using the Trimmer so you are familiar with this important feature.

2. The belt portion of the Model 30910 shoulder harness has a pocket designed to hold extra 14 inch (35 cm) sections of the monofilament cutting line.

OPERATION

STARTING AND STOPPING INSTRUCTIONS

To Start Engine:

1. Lay Trimmer on flat surface with engine in upright position (Fig. 27).

2. Move ignition switch to "ON" position (Fig. 27).

3. Move choke lever to "CLOSED" position.

4. Squeeze throttle trigger to hold throttle in fully open position (Fig. 27).

5. Pull recoil starter handle out slowly until starter ratchets are engaged, then pull handle with short, sharp strokes until engine starts (Fig. 27). Move choke lever to "OPEN" position after engine starts and release throttle to allow the engine to idle. Close choke momentarily if engine starts to die. Continue monitoring choke until engine is warm.

Note: If engine is warm, leave throttle trigger in idle position. Do not use choke.

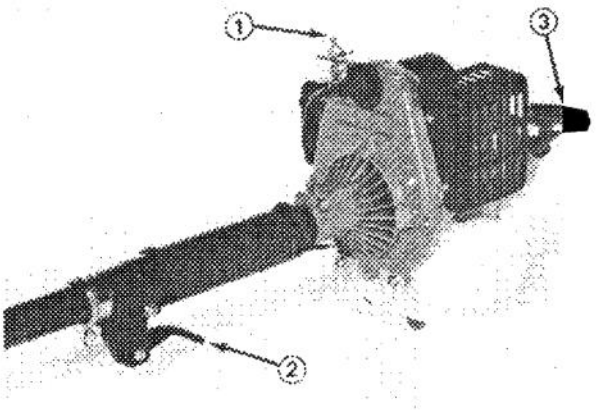


Figure 27

1. Ignition switch 3. Recoil starter
2. Throttle trigger

6. Allow engine to run at idle speed until it is thoroughly warm before beginning operation.

Note: DO NOT put the engine under load during warm up period.

To Stop Engine:

1. Allow engine to run at idle speed for a few minutes to cool the engine.

2. Move ignition switch to "OFF" position to stop engine (Fig. 27).

ENGINE OPERATION

1. To achieve maximum engine performance, squeeze throttle lever and allow engine to attain maximum RPM before placing the unit under load.

2. Always reduce engine speed to idle when not trimming. DO NOT operate the engine at high RPM under "no load" conditions or serious engine damage could occur.

IMPORTANT: The normal sparking action of the breaker points during operation may bring about a chemical process which can cause the contacts to glaze over and cause a loss of ignition within the first few hours of initial operation. Should this occur, either return the unit to the local Toro Service outlet or polish the contact points; refer to Servicing Breaker Points, page 16.

CENTRIFUGAL CLUTCH

This machine is equipped with a centrifugal clutch which is designed to engage when engine speed reaches approximately 3500 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

OPERATING TIPS

CAUTION

Always wear safety goggles or other suitable eye protection and long pants while operating Trimmer.

CAUTION

Wear a long sleeve shirt or other similar arm protection to avoid possible contact with hot muffler surface.

1. The Trimmer will cut grass, thick weeds, ivy and other similar grasses quickly and easily 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 strap so it fits snugly and adjust the D-Handle (Model 30900) or U-Handle (Model 30910) according to your height and the job you are doing. Be sure to stand on the left of the Trimmer so it rests at your right hip. When trimming you should be standing in a natural position without having to bend over or stand on your toes (Fig. 28).

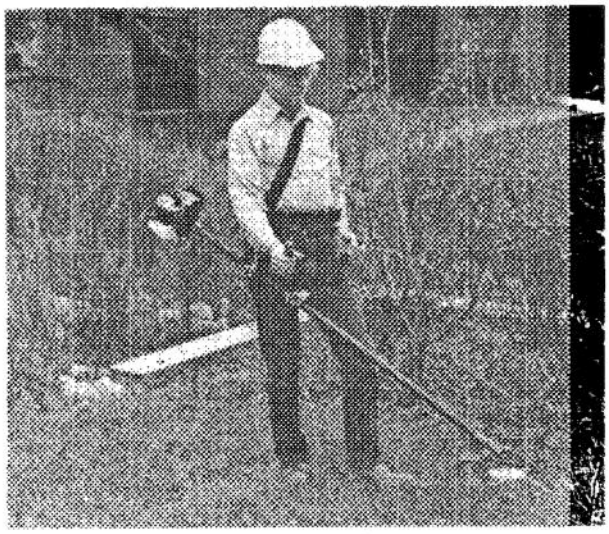


Figure 28

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

TAP-N-TRIM HEAD OPERATION (Model 30900)

1. To lengthen line, firmly tap spool on the ground while keeping the engine RPM up high enough to keep spool rotating. The line will be automatically fed out from spool approximately 1 inch (25 mm) with each tap.

IMPORTANT: DO NOT allow the line to extend more than 5-1/2 to 6 inches (14 to 16.5 cm), nor less than 2 in. (51 mm) from the O.D. of the spool or cutting efficiency will be severely affected.

2. To properly use, lengthen line only when necessary or line will be wasted. If cutting is affected because line is too short, tap head once on ground and try unit. If unit is still not trimming properly, tap once again and again try unit. Continue procedure until unit functions properly. However, if unit has been tapped more than six times, the line is over-extended from the spool; refer to IMPORTANT preceding this paragraph. Stop the engine and cut the line to the proper length, 5-1/2 to 6 inches (14 to 16.5 cm).

3. To extend line manually with engine stopped, push and hold spool cap inward, pull line out to desired length and release cap.

Note: The spool cap may wear during normal use of the line advance feature and may require replacement. Empty spools and spools pre-wound with 30 feet (9.1 m) of 0.095 in. (2.4 mm) heavy duty cutting line are available from your local Toro Commercial Products Dealer.

CUTTER HEAD OPERATION (Model 30910)

Either one or two 14 inch (35 cm) sections of cutting line may be used on the cutter head. Never use line longer than 14 inches (35 cm) 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 OF 0.130 INCH (3.3 mm) DIAMETER. USE OF IMPROPER MONOFILAMENT LINE COULD RESULT IN PERSONAL INJURY.

MAINTENANCE

SPECIAL TOOLS (Optional – Fig. 29)

A Deluxe Tool Kit, Toro Part Number 41-6810, is available for use during minor maintenance procedures. The kit contains a flat blade and Phillips screwdriver, metric end wrenches, allen wrenches, a double-ended box-type wrench with handle, a tool to lock the gear case shaft and 400 grit sandpaper for use in dressing the breaker points. Order the kit from your local Toro Dealer.

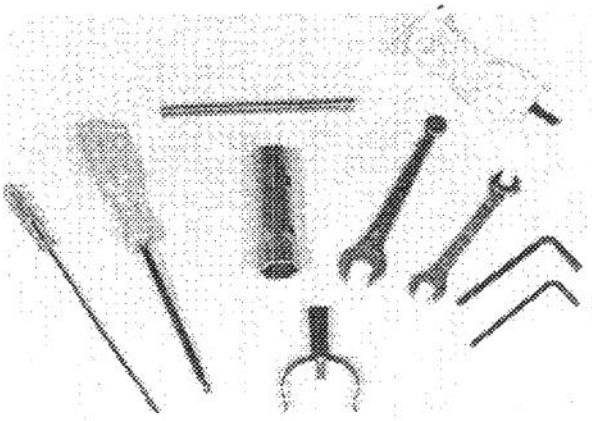


Figure 29

ENGINE CARE

CAUTION

Disconnect spark plug wire before performing any of the maintenance procedures on your Trimmer (Fig. 30).

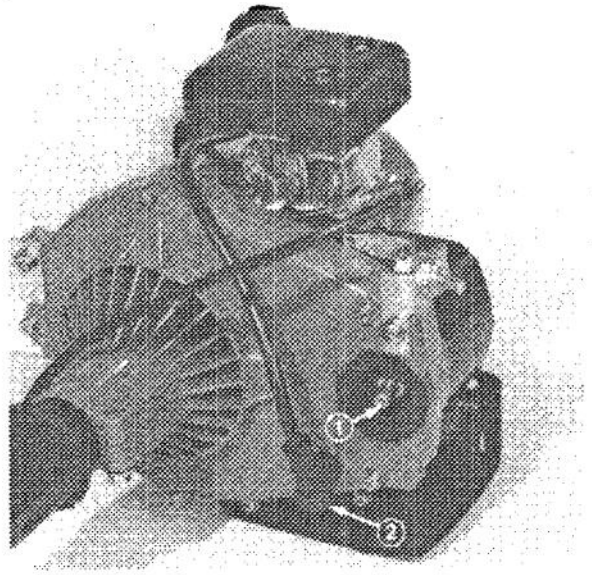


Figure 30

1. *Spark plug*
2. *High tension wire*

Air Cleaner Service:

Check and clean the air filter after each use of the Trimmer to make sure that performance and durability of the engine will not be affected.

1. Remove the screws securing the air cleaner cover and remove cover (Fig. 31).

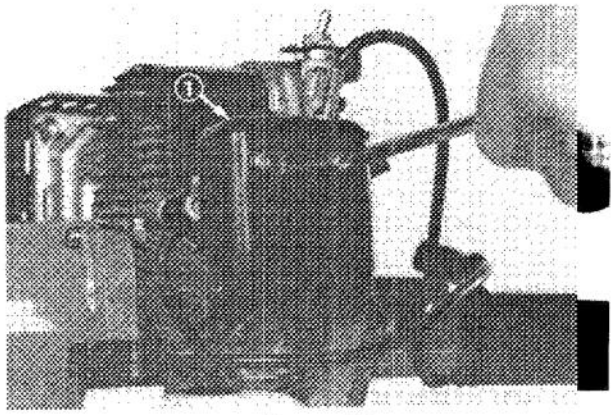


Figure 31

1. *Air cleaner cover*

2. Remove filter, wash in cleaning solvent and thoroughly dry (Fig. 32). Use compressed air whenever possible. If filter shows any sign of damage, replace it.

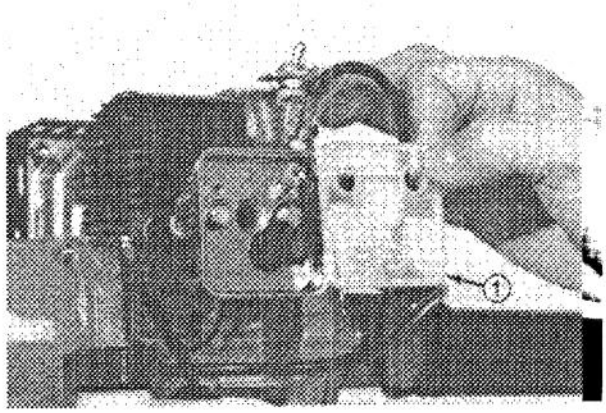


Figure 32

1. *Air filter*

3. Install filter. Make sure filter is in proper place before installing cover and tightening screws.

Adjusting Carburetor:

The carburetor has been adjusted at the factory and normally does not require adjustment. If you are sure that everything else that could affect engine performance is correct and that the carburetor is out of adjustment, proceed as follows:

1. Turn low and high speed needles (L and H) clockwise gently until they are lightly seated (Fig. 33) and back them out one full turn.

2. Turn idle speed adjusting screw until screw tip lightly contacts indexing plate of throttle shaft and turn the screw clockwise three additional turns (Fig. 33).

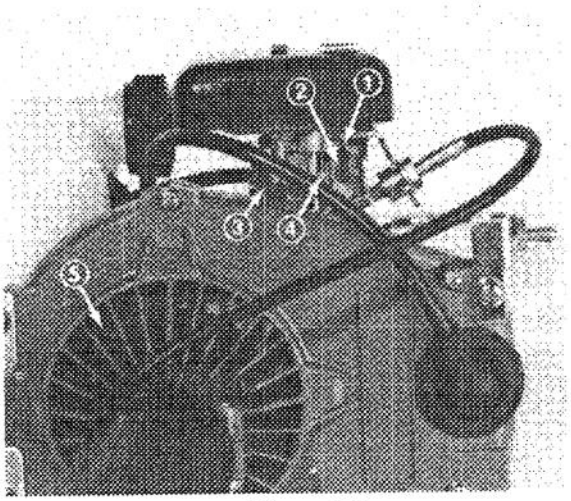


Figure 33

1. High speed adjustment needle
2. Low speed adjustment needle
3. Idle speed adjusting screw
4. Indexing plate
5. Cooling air inlet

3. Start engine, turn idle speed screw counterclockwise until cutter head stops rotating (Fig. 33). Allow engine to run at idle speed for at least three minutes to make sure engine is thoroughly warm.

4. Adjust low speed needle (L) to obtain maximum, consistent idle speed (Fig. 33).

5. Turn idle speed screw counterclockwise one turn from clutch engaging position (Fig. 33).

6. Turn low speed needle (L) counterclockwise in small increments until smooth acceleration is obtained (Fig. 33).

7. Adjust high speed needle (H) until engine runs slightly on the rich side (four-cycles) under no load at full throttle position (Fig. 33). Engine should four-cycle slightly at full throttle so that optimal engine performance is obtained during cutting operation.

SERVICING AND REPLACING SPARK PLUG

Since air gap between center and side electrodes of the spark plug increases gradually during normal operation of the engine, check condition of electrodes after every 25 operating hours. Recommended spark plug is a Champion CJ-8 or NGK BM-6A and correct air gap is 0.024 - 0.028 of an inch (0.6 - 0.7 mm).

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

2. Pull high tension wire off spark plug and remove plug from cylinder head.

3. Check condition of side electrode, center electrode and insulator to assure there is no damage.

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

4. Set air gap between center and side electrodes at 0.024 to 0.028 of an inch (0.6 to 0.7 mm) (Fig. 34). Install correctly gapped spark plug w/gasket seal, and tighten plug to 130 - 165 in. - lb (14.7 - 18.6 N·m). If torque wrench is not used, tighten plug firmly.

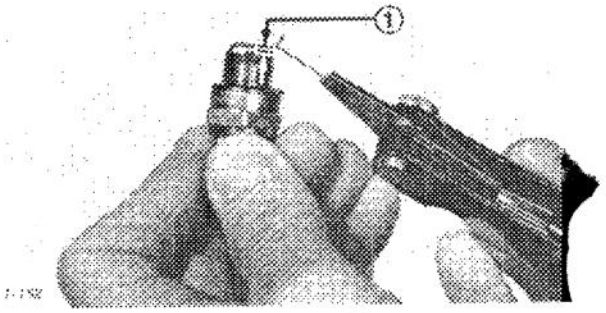


Figure 34

1. Set gap

COOLING SYSTEM SERVICE

To avoid overheating and possible engine damage, visually inspect the cooling air inlet for debris obstructing the air passages (Fig. 33) 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 or use compressed air.

SERVICING MUFFLER AND EXHAUST PORTS

After every 75 to 100 hours operation, inspect and clean muffler and exhaust ports of carbon deposits to relieve back pressure and increase engine speed and power.

MAINTENANCE

1. Remove screws securing muffler cover and remove muffler (Fig. 35).

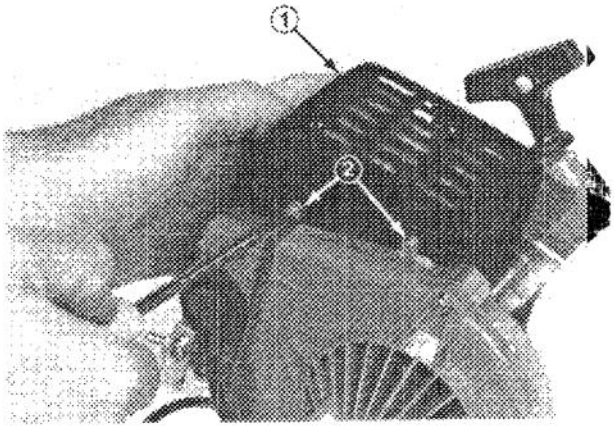


Figure 35

1. Muffler cover 2. Muffler screws

2. Remove and discard locknuts securing muffler assembly to engine and remove muffler (Fig. 36).

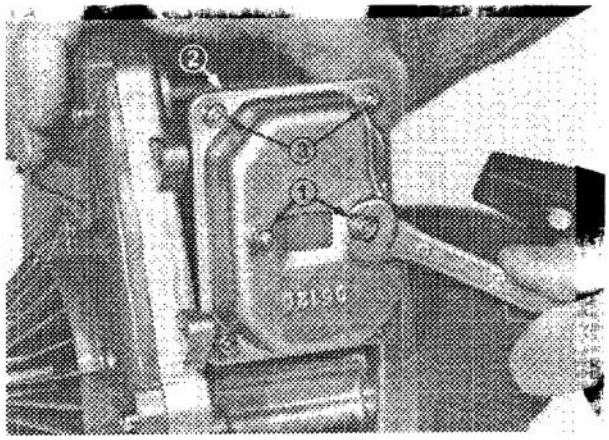


Figure 36

1. Locknuts
2. Muffler lid
3. Muffler screws

3. Remove muffler screws securing muffler lid to muffler body and separate the two components (Fig. 36).

4. Clean all carbon buildup out of all internal parts. Inspect for deterioration or damage and replace parts, if necessary.

5. Re-assemble parts. Be sure parts are assembled properly.

6. Rotate the engine crankshaft until the piston totally covers the exhaust port (Fig. 37). Clean the exhaust port area by using a clean, flat piece of hard wood (Fig. 37).

IMPORTANT: Use extreme care if you elect not to use a piece of hard wood and are using a screwdriver or other metal object to clean the port. Stay clear of the piston so it will not be damaged. Piston damage can cause early engine failure.

7. Make sure the muffler gasket is still useable and install muffler. Use two new locknuts to secure muffler to engine (Fig. 36).

8. Install muffler cover (Fig. 35).

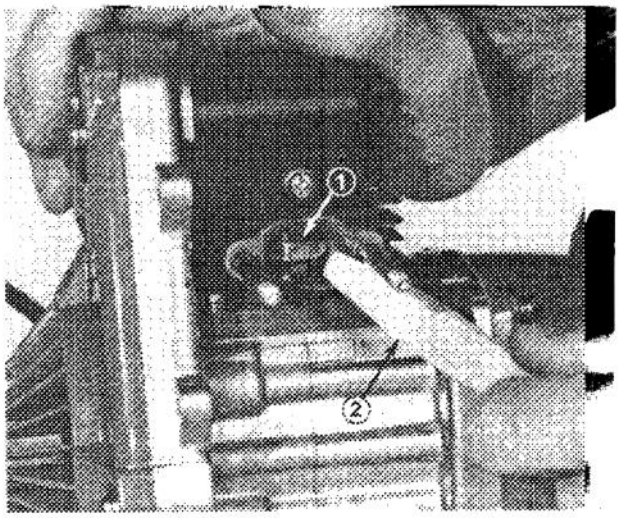


Figure 37

1. Piston totally covering exhaust port
2. Clean, flat piece of hardwood

SERVICING BREAKER POINTS

Note: Special tools and materials will be required to service the breaker points. The tools can be purchased from your local Toro Parts supplier. The tools necessary are as follows:

1	41-7650	Flywheel Puller
1	41-7670	2-pin Wrench

Other special tools will be needed which can be obtained from your local suppliers of tools and hardware:

1 Torque Wrench
Quantity of #400/600 grit SANDPAPER
Continuity light or meter

1. Remove mounting screws securing recoil starter and remove starter. Use care so gasket will not be damaged.

2. Using care not to damage coil under flywheel, insert 2-pin wrench into slotted holes in flywheel, hold flywheel with wrench and remove starter ratchet mounting screws.

Note: Starter ratchet screws are installed at factory with thread locking sealant. Take care so screws will not be damaged.

3. Hold flywheel with wrench and remove flywheel nut and lockwasher.

4. Install flywheel puller, using starter ratchet screw holes for puller screws and remove flywheel.

5. Visually inspect point contacts for arcing, pitting, oil contamination, etc. Rotate engine crankshaft to be sure points open and close properly. Check rubbing block on moveable side of points for excessive wear. Replace points if wear or damage is excessive; refer to Replacing Breaker Points, page 17. If points appear to be in working order, check for continuity across the points; proceed to paragraph 6. If difficulty with points can be corrected, correct as necessary and check for continuity; proceed to paragraph 6.

6. Remove the wires from the breaker point terminal post. Connect one lead from the tester to the breaker point post and the other lead to a good clean ground on the engine. Rotate the engine crankshaft to open and close the points with the cam. There should be continuity when the points are closed and no continuity when they are open. If there is no continuity when the points are closed, clean the points and test for continuity again.

7. Rotate crankshaft until points are closed. Open points manually, insert a strip of 400/600 grit sandpaper between points and allow points to close. Pull sandpaper back and forth between contacts a number of times, open points, remove sandpaper and check for continuity; refer to paragraph 6. Repeat process if no continuity is established. Clean area around points with compressed air. Open points, insert strip of lint free paper between contacts, make sure points are closed. Move paper back and forth to clean contacts. Manually open contacts and remove paper.

8. Adjust point gap and install wires. Rotate crankshaft until piston is at Top Dead Center (TDC) and set point gap to 0.012 - 0.016 in. (0.3 - 0.4 mm) with a flat feeler gauge. Be sure wires are installed in same manner as originally assembled, black condenser-stop switch lead under coil, white coil lead between condenser bracket and oiler felt, to point terminal, etc. Also check to make sure leads are not so high they could come in contact with rotating flywheel.

9. Install flywheel. Tighten flywheel nut to 175 - 210 in.-lb (198 - 237 N·m).

10. Check and adjust ignition timing;

A. Connect lead from continuity tester to stop switch wire and other lead to good ground on engine.

B. Locate cast-in timing mark at lower right corner of casting around lower edge of flywheel and vertical line stamped into outer perimeter of flywheel.

C. Rotate flywheel in clockwise direction. If engine is properly timed, points will open, indicating loss of continuity, at instant flywheel mark passes cast mark. If points open at wrong time, adjust point gap.

D. Insert screwdriver through slot in flywheel and loosen locking screw for breaker points. Align timing marks, insert screwdriver blade into adjusting slot in points and stationary slot in engine casting and adjust points so they break contact at that instant. Tighten breaker point locking screw. Recheck timing adjustment as it may change when screw is tightened.

Note: Always rotate flywheel in clockwise direction so play in engine components due to tolerance variation and wear will be taken up.

11. Install starter ratchets. Apply Loctite 242 (Blue) to threads of mounting screws before installing. Make sure spacers are installed and springs are not pinched under ratchets.

12. Install starter. Place starter case over flywheel, hold in position and pull starter cord. Pull cord until cut-outs in center of recoil drum engage ratchets. Release cord handle and pull out again to make sure of engagement. Install and tighten mounting screws.

REPLACING BREAKER POINTS

Insure against a loss of continuity across the point contacts, which may be induced by a chemical reaction on the contact surface caused by the normal sparking function between the contacts during the first few hours of operation, as follows:

1. Polish the contacts with 400/600 grit sandpaper before installing.

2. Make sure contacts are aligned with each other after installation.

3. Be sure magneto felt piece is lightly lubricated with magneto grease so point rubbing block will not wear prematurely.

4. Refer to Servicing Breaker Points, paragraphs 1-4 to remove flywheel, install new points and refer to paragraphs 8 - 12 to finish installation.

GEAR CASE

CAUTION

Stay clear of gear case after operation as it gets very hot and could be painful to the touch. Allow adequate time for it to cool before attempting any service procedures.

Every 50 hours operation, check for the proper amount of grease in the gear case.

1. Remove the bolt from the side of the gear case (Fig. 38).

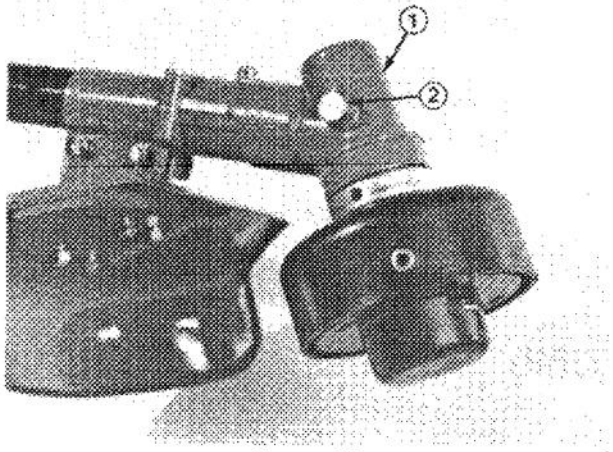


Figure 38

1. Gear case
2. Bolt

2. The grease should be up to just below the bottom threads of the hole.

3. Add a good quality multi-purpose Lithium base grease, if necessary.

4. Install the bolt.

REPLACING CUTTING LINE

Tap-N-Trim Head:

1. Insert a medium blade screwdriver into one of two slots on spool hub, twist screwdriver 1/4 turn to remove spool (Fig. 39).

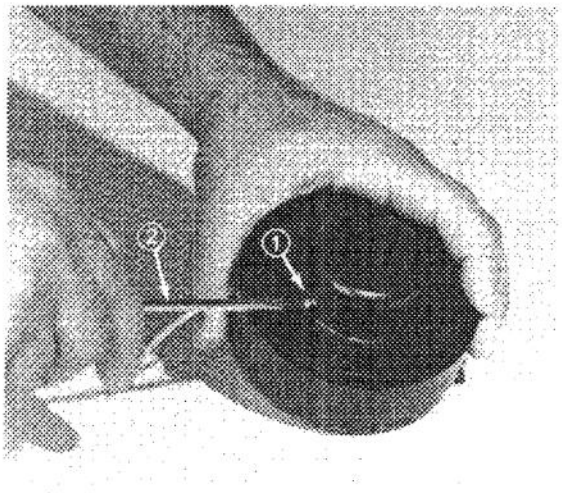


Figure 39

1. Slot
2. Medium blade screwdriver

2. To rewind empty spool, hook end of line into grooved notch on spool. Wind line around spool in direction signified by arrow identified with word "GAS". Wind line in level rows between flanges to avoid crossover or criss-crossing which can affect proper line advancing (Fig. 40).

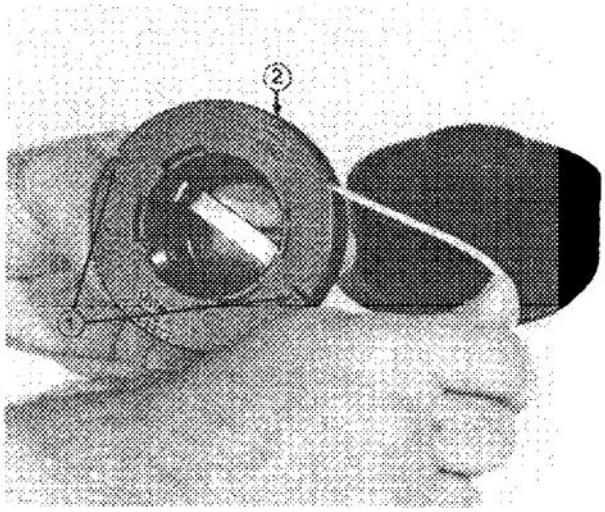


Figure 40

1. Grooved notch
2. Arrow

Note: Pinch line with pliers approximately 1/8 in. (3 mm) from end to assist installation into grooved notch (Fig. 41). Clean drum area and inspect for damaged or worn parts before assembly.

3. Pull line tight, make loop in line approximately 2 in. (51 mm) from end and insert cross of loop into spool notch to keep line tight.

MAINTENANCE

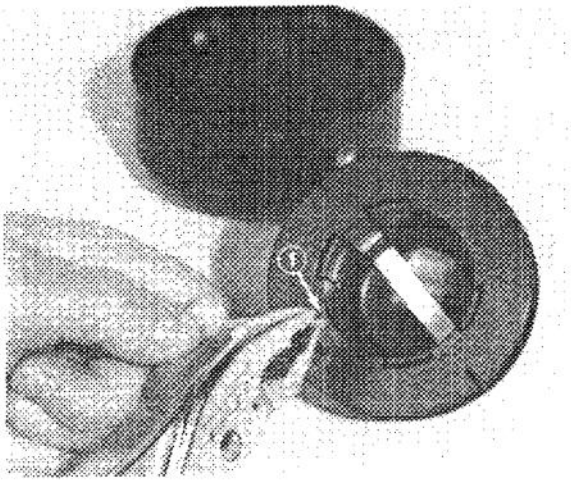


Figure 41

1. Approximately 1/8 in. (3 mm) from end

4. Thread line through spool eyelet, align projections on drum core with slots in spool, place spool over core and push in place until assemblies click together (Fig. 42).

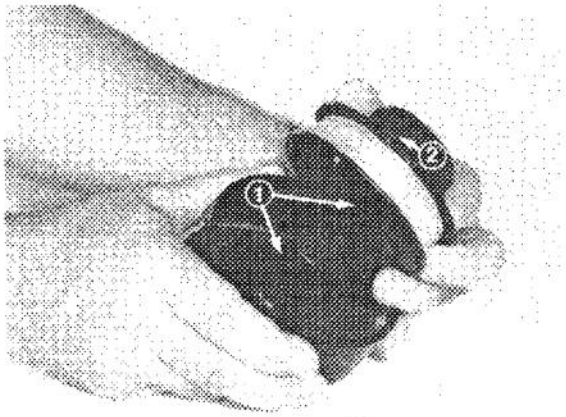


Figure 42

1. Drum core projections
2. Spool slot

5. Pull end of line to free loop from notch. Do not allow line to extend more than 6 in. (15.2 cm), nor less than 2 in. (51 mm) from spool.

Note: If line breaks at eyelet during operation, stop engine, remove spark plug lead, push spool in as far as it will go and thread line through eyelet. Spool can also be completely removed to re-feed line through eyelet. Line must be extended at least 2 in. (51 mm) from eyelet or spool may not feed automatically.

Cutter Head Line:

To install line, refer to Set-Up Instructions, Install Cutter Head Assembly, paragraph 5, page 9.

PREPARING TRIMMER FOR STORAGE

1. Drain gasoline from fuel tank. Pull recoil starter handle a number of times to purge fuel remaining from carburetor.

2. Remove dirt and grime from external parts of Trimmer housing and engine. Also clean the cooling system: refer to Cooling System Service, page 15.

3. Clean carbon from internal parts of engine: refer to Servicing Muffler and Exhaust Ports, page 15.

4. Pull high tension 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 two tablespoons (30 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 130 - 165 in.-lb (14.7 - 18.6 N·m). If torque wrench is not used, tighten plug firmly. DO NOT INSTALL HIGH TENSION WIRE ON SPARK PLUG.

5. Check condition of cutter head; replace line, if necessary; refer to Replacing Cutting Line, page 18.

6. Check gear case; refer to Gear Case, page 18.

7. Clean the air cleaner: refer to Air Cleaner Service, page 14.

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

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

Note: TORO Re-Kote "touch-up" paint is available from an authorized Toro Service Dealer or Distributor. The spray paint dries in minutes to a glossy, factory-finish.

10. Apply light coating of rust preventive or oil to all metal parts.

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

IDENTIFICATION AND ORDERING

The Trimmer has two identification numbers: a model number and a serial number. The two numbers are stamped into a plate (Fig. 43) attached to the lower end of the driveshaft assembly. In any correspondence concerning the Trimmer, supply the model and serial numbers to assure that correct information and replacement parts are obtained.

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

1. Model and serial numbers of the Trimmer.

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

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

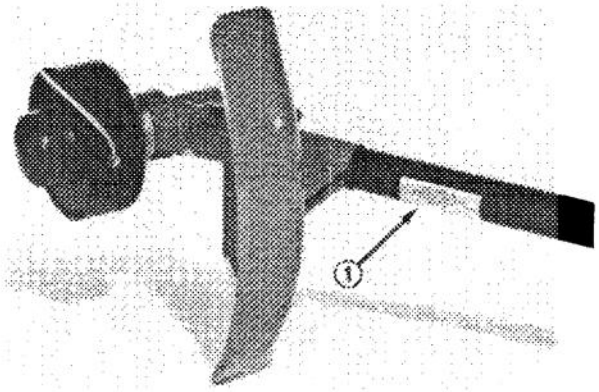


Figure 43

1. Model and serial number plate

TROUBLE SHOOTING CHART

This Trouble Shooting 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 Trouble Shooting Chart or this Operator's Manual, consult your TORO Distributor.

TROUBLE	POSSIBLE CAUSE	REMEDY
Engine Won't Start or Hard Starting	Fuel System:	
	A. No fuel	A. Fill fuel tank with gasoline, oil mix; refer to Preparation Before Starting, page11.
	B. Wrong fuel	B. Drain fuel tank. Fill with proper fuel; refer to A.
	C. Fuel contaminated	C. Drain fuel tank, clean fuel system.
	D. Clogged strainer	D. Replace strainer.
	E. Carburetor malfunction	E. Repair as necessary.
	Ignition System:	
	A. Faulty spark plug	A. Check. Clean, re-gap or replace, as necessary.
	B. Faulty secondary lead	B. Repair or replace.
	C. Faulty breaker points	C. Check. Clean, gap or replace; refer to Breaker Point servicing, page 16.
	D. Faulty stop switch	D. Replace switch.
	E. Faulty ignition components	E. Repair or replace, as necessary.
	Mechanical:	
	A. Improper starting procedures	A. Refer to Starting and Stopping Procedures, page 12.
	B. Engine component malfunction	B. Troubleshoot engine. Repair as necessary.
	C. Clogged air cleaner	C. Refer to Air Cleaner Service, page 14.
	D. Clogged muffler and exhaust ports	D. Refer to Servicing Muffler and Exhaust Ports, page 15.
Engine RPM Too Slow	Fuel System:	
	A. Wrong fuel mix	A. Drain fuel tank. Fill with proper gasoline, oil mix; refer to Preparation Before Starting, page 11.
	B. Partially clogged fuel system	B. Check strainer, line, carburetor.
	Ignition System:	
	A. Engine timing retarded	A. Re-set timing; refer to Servicing Breaker Points, paragraph 10, page 17.
	Mechanical:	
	A. Trimmer line too long	A. Refer to Tap-N-Trim and Cutter Head Operation, page 13.
	B. Clogged air cleaner	B. Refer to Air Cleaner Service, page 14.
	C. Clogged muffler and exhaust ports	C. Refer to Servicing Muffler and Exhaust Ports, page 15.
	D. Engine overheating	D. Refer to Cooling System Service, page 15.
	E. Excessive drivetrain wear	E. Repair.
	F. Normal engine wear	F. Repair.

TROUBLE SHOOTING CHART

TROUBLE	POSSIBLE CAUSE	REMEDY
Engine Runs Erratically	Fuel System:	
	A. Carburetor maladjusted	A. Adjust; refer to Adjusting Carburetor, page 14.
	Ignition System:	
	A. Faulty spark plug	A. Check. Clean, re-gap or replace, as necessary.
	B. Breaker points faulty	B. Check. Clean, re-gap or replace.
	C. Faulty ignition components	C. Repair or replace, as necessary.
Engine Stops Running	Fuel System:	
	A. Out of fuel	A. Fill fuel tank.
	Ignition System:	
	A. Faulty breaker points	A. Refer to Breaker Point Servicing, page 16.
	B. Faulty ignition components	B. Check. Repair or replace, as necessary.
	Mechanical:	
	A. Engine	A. Major internal component failure; repair as necessary.
	B. Drive train components	B. Repair as necessary.

MAINTENANCE RECORD

Date	Hours Used	Check Air Cleaner	Check Cooling System	Check Spark Plug	Check Muffler-Exhaust Ports	Preparing For Storage

V20-339

The Toro Promise

A ONE YEAR LIMITED WARRANTY ON COMMERCIAL PRODUCTS OTHER THAN WALK ROTARY MOWERS, TRIMMERS AND BLOWERS.

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

Commercial Products	1 Year
Hevi-Duty Walk Rotary Mowers	90 Days
Trimmers and Blowers	90 Days

The costs of parts and labor are included, but the customer pays the transportation costs on walk rotary mowers, trimmers and blowers.

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

1. Contact your Authorized TORO Distributor or Commercial Dealer (the Yellow Pages of your telephone directory is a good reference source).
2. The TORO Distributor or Commercial Dealer will advise you on the arrangements that can be made to inspect and repair your product.
3. The TORO Distributor or Commercial Dealer will inspect the product and advise you whether the product is defective and, if so, make all repairs necessary to correct the defect without an extra charge to you.

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

Write:

TORO Commercial Products Service Department
8111 Lyndale Avenue South
Minneapolis, Minnesota 55420

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

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

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

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

All warranty repairs reimbursable under the Toro Promise must be performed by an Authorized TORO Commercial Dealer or Distributor using Toro approved replacement parts.

Repairs or attempted repairs by anyone other than an Authorized TORO Distributor or Commercial Dealer 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 or limitation of incidental or consequential damages, so the above limitation or 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.

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