FORM NO. 3319–305 REV A

TORO®

ProLine Brushcutter

Model No. 53020 — 7900001 & Up
Model No. 53021 — 7900001 & Up

Operator's Manual

⚠ WARNING: ⚠

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

⚠ AVERTISSEMENT: ⚠

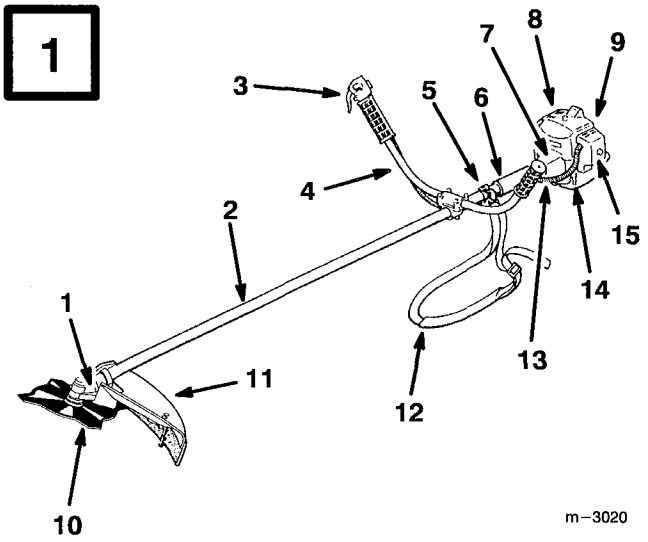
Les gaz d'échappement du moteur de ce produit contiennent des produits chimiques reconnus dans l'état de Californie comme cancérigènes, responsables de malformations congénitales, ou comme nocifs à l'égard des fonctions de la reproduction.

⚠ ADVERTENCIA: ⚠

El escape del motor de esta herramienta contiene productos químicos que según la información del Estado de California producen cáncer, defectos congénitos u otros riesgos reproductivos.

Figures

1

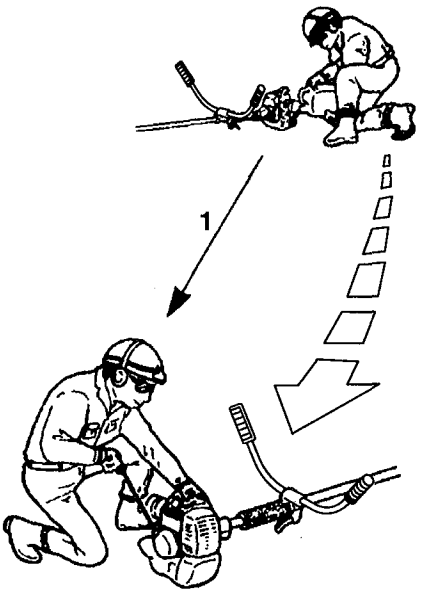


m-3020

English

1. Gearcase
2. Shaft Assembly
3. Throttle Trigger and Stop Switch
4. Bullhorn Handle
5. Shoulder Harness Attachment
6. Shaft Grip
7. Clutch Drum Housing
8. Engine
9. Model and Serial Number Decal (on rear of engine stand)
10. Brushcutter Blade
11. Blade Shield
12. Strap
13. Throttle Cable and Stop Switch Wires
14. Fuel Tank
15. Air Filter

2



m-3021

English

1. 10 feet (3m) Minimum

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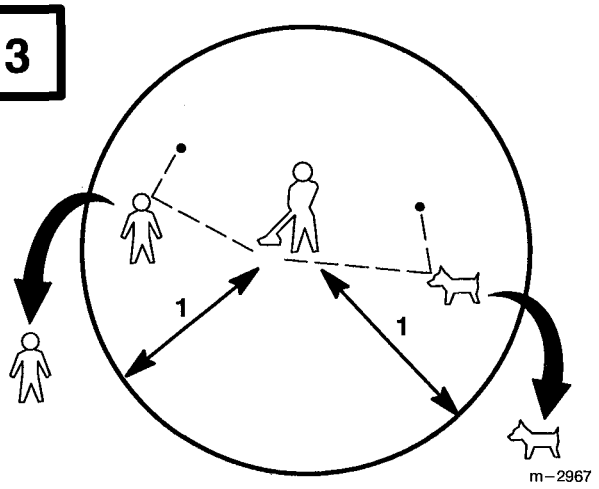
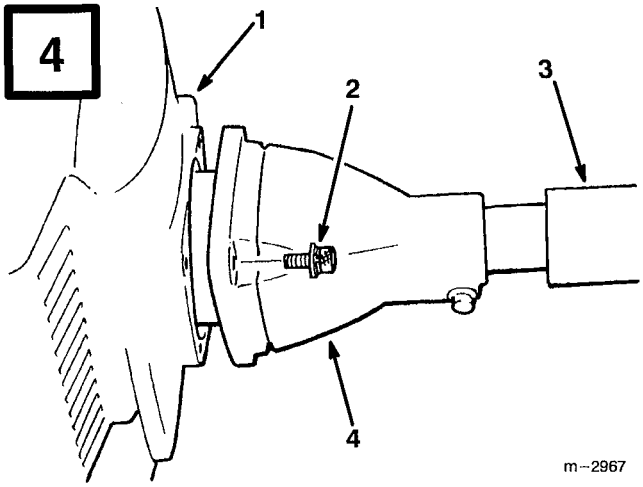
3



English

1. 50 ft. (15 m) Minimum

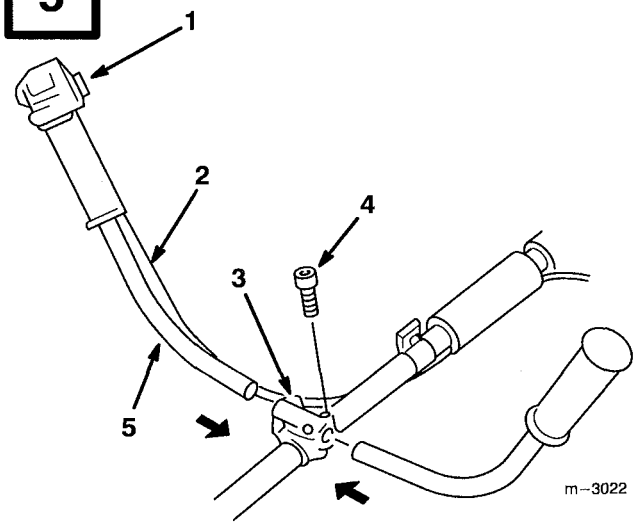
4



English

1. Engine
2. M6 x 20 Screw (4)
3. Shaft
4. Clutch Drum Housing

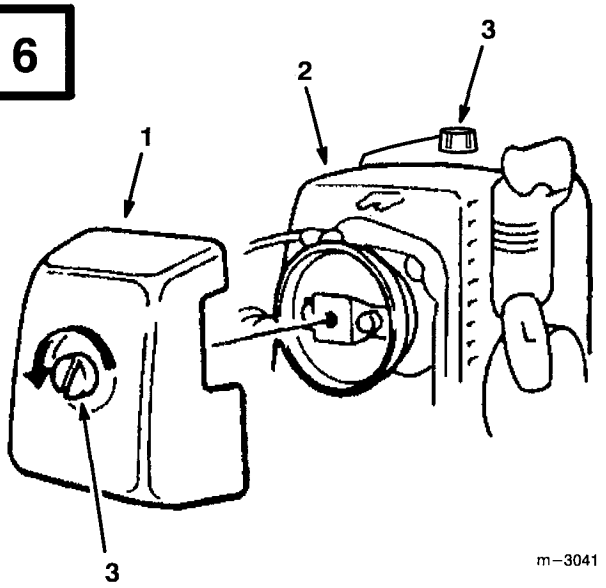
5



English

1. Throttle Trigger/Stop Switch
2. Stop Switch Wires/Throttle Cable
3. Clamp Bracket
4. Screw (4)
5. Bullhorn Handle (2)

6

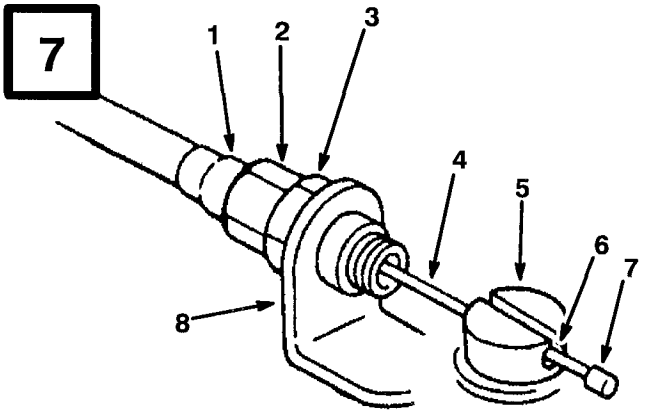


m–3041

English

1. Air Cleaner Cover
2. Cylinder Cover
3. Knob

7

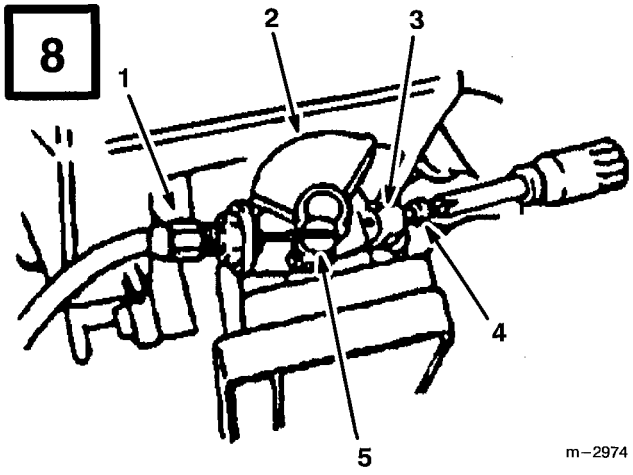


m–2973

English

1. Throttle Cable Housing
2. Cable Adjuster Sleeve
3. Locknut
4. Throttle Cable
5. Slotted Fitting
6. Recessed Hole
7. Cable Lug
8. Carburetor Bracket

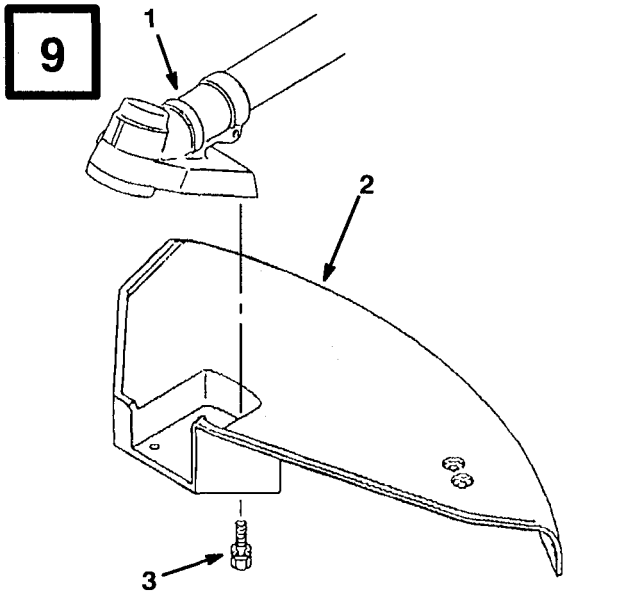
8



English

1. Cable Adjuster Sleeve
2. Carburetor Throttle Cam
3. Throttle Stop/Idle Speed Adjuster Screw Bracket
4. Idle Speed Adjuster Screw
5. Slotted Fitting

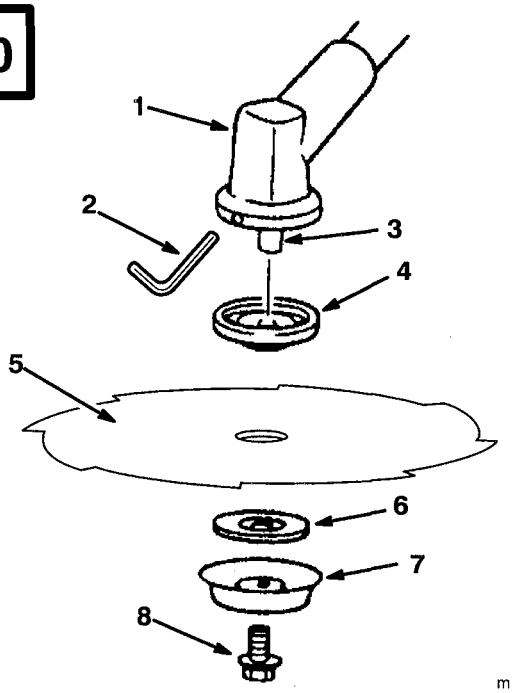
9



English

1. Gearcase
2. Blade Shield
3. M5 x 12 Screw (4)

10

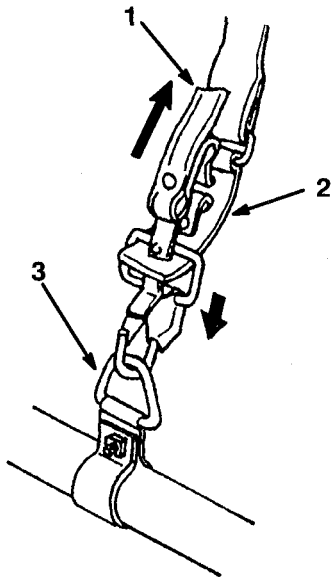


m−2984

English

1. Gearcase
2. 3mm Hex Wrench
3. Splined Shaft
4. Boss Adapter
5. Edger Blade (eight-tooth)
6. Clamping Washer
7. Stabilizer
8. Blade Bolt (left-hand thread)

11

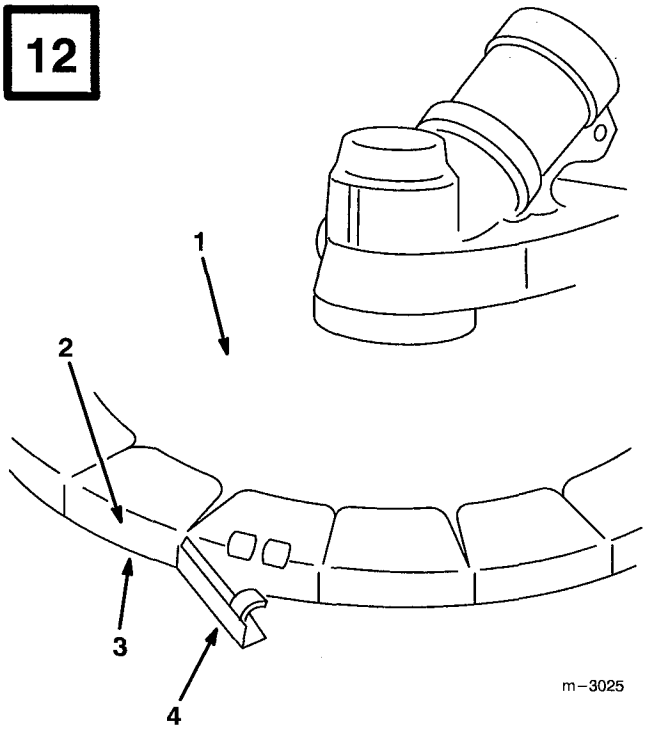


m−2991

English

1. Red Band
2. Strap
3. Ring

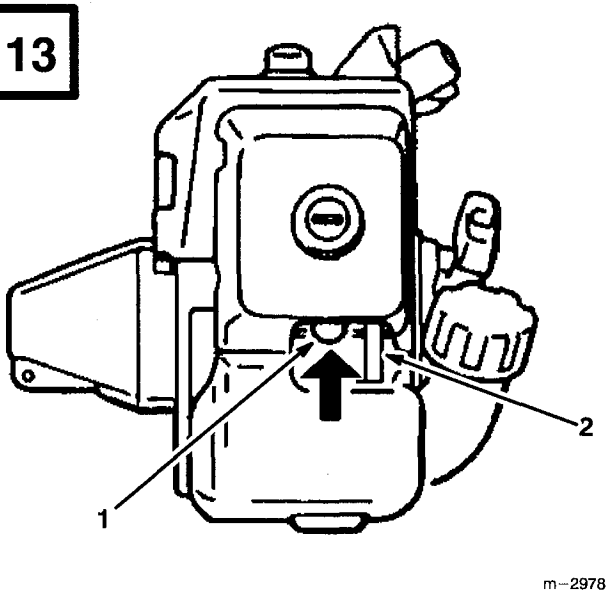
12



English

1. Brushcutter Blade
2. Groove
3. Blade Cover
4. Hook

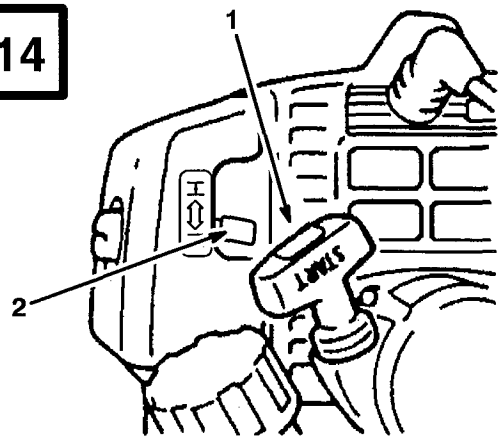
13



English

1. Primer Bulb
2. Fuel Return Line

14

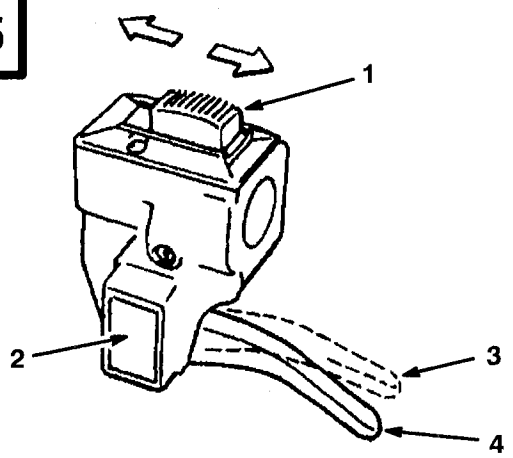


m-2938

English

1. Starter Handle
2. Choke Lever (typical)

15

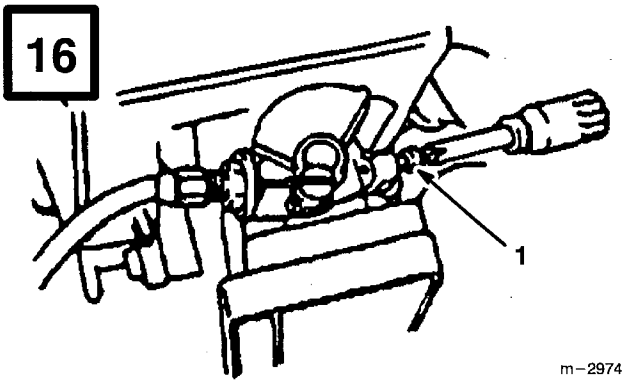


m-2939

English

1. Stop Switch
2. Fast-idle Lock
3. Throttle Trigger (in fast-idle start position)
4. Throttle Trigger (in idle position)

16

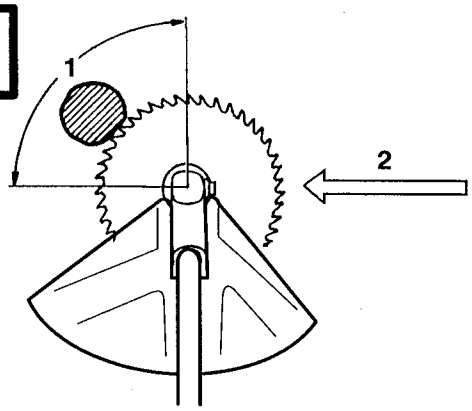


m–2974

English

1. Idle Speed Adjustment Screw

17



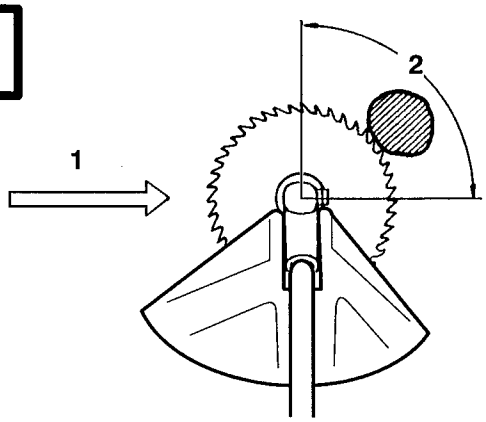
CORRECT

m–2995

English

1. No Kick-back Zone
2. Direction of Swing

18



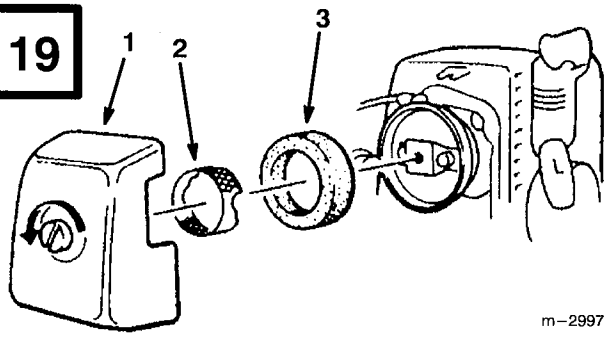
INCORRECT

m–2996

English

1. Direction of Swing
2. DANGER – Kick-back Zone

19

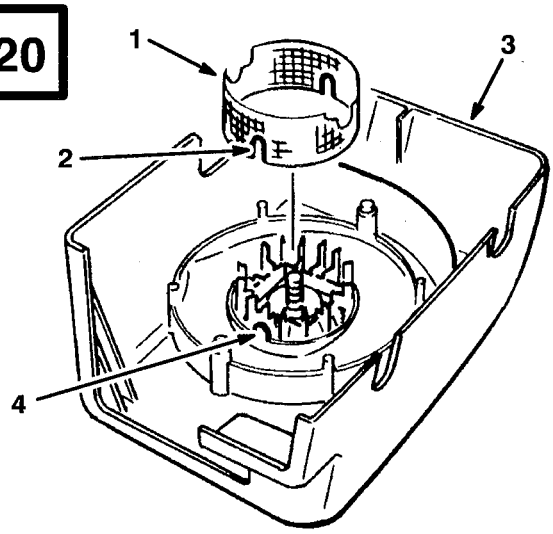


m–2997

English

1. Air Filter Cover
2. Filter Screen
3. Foam Ring

20

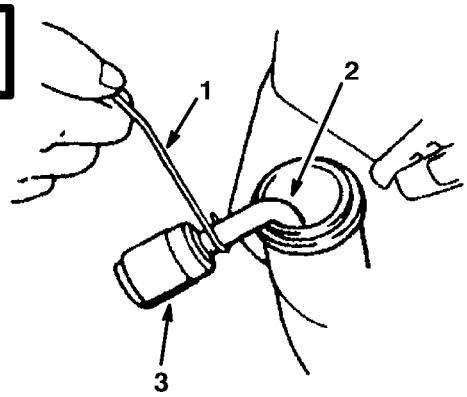


m–3010

English

1. Filter Screen
2. Cutout (typical)
3. Air Filter Cover
4. Plastic Post (typical)

21

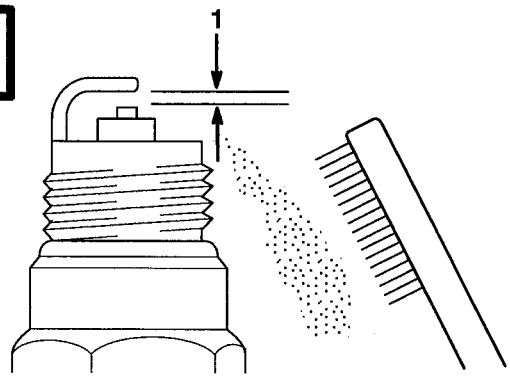


m–2931

English

1. Wire
2. Fuel Pick-up Hose
3. Fuel Filter

22

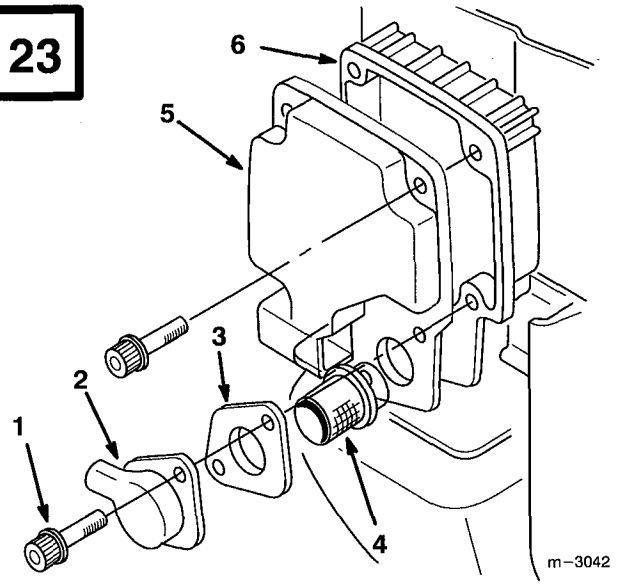


m–2932

English

1. .024"–.028" (0.6–0.7 mm)

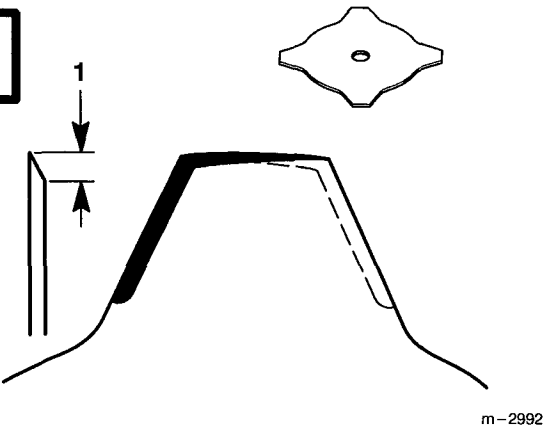
23



English

1. Socket Head Screw (5)
2. Tail
3. Gasket
4. Spark Arrester
5. Muffler Cover
6. Muffler Body

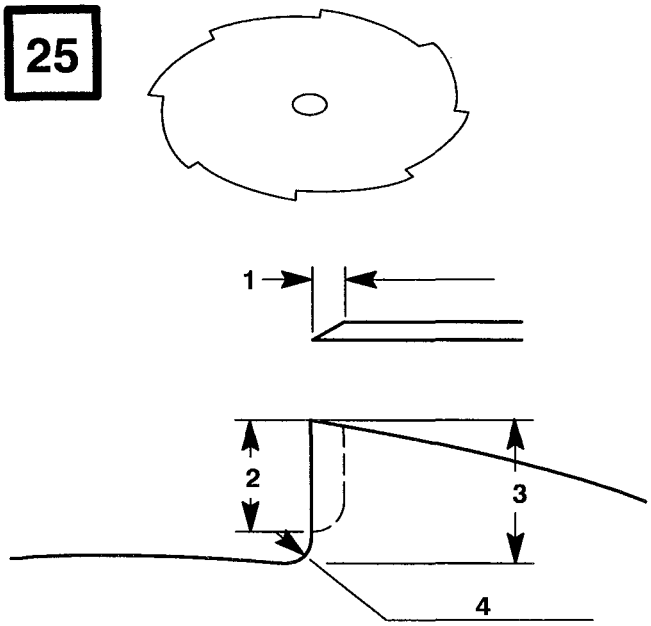
24



English

1. 0.118" (3mm)

25

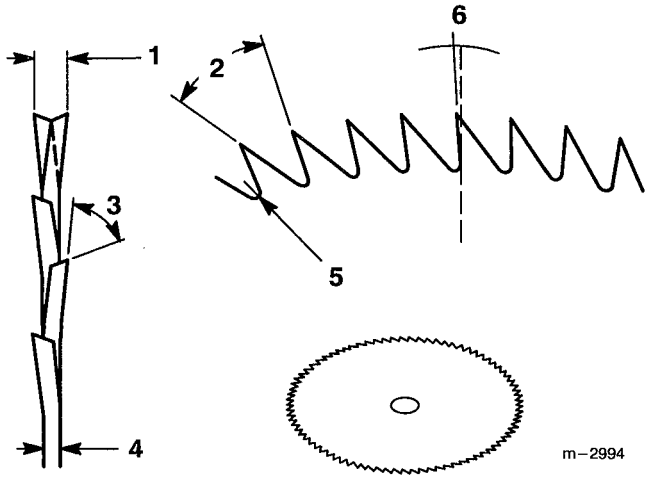


m–2993

English

1. 0.079"–0.118" (2–3mm)
2. 0.275"–0.315" (7–8mm)
3. 0.394" (10mm)
4. 0.059"–0.098" (1.5–2.5mm) Radius

26

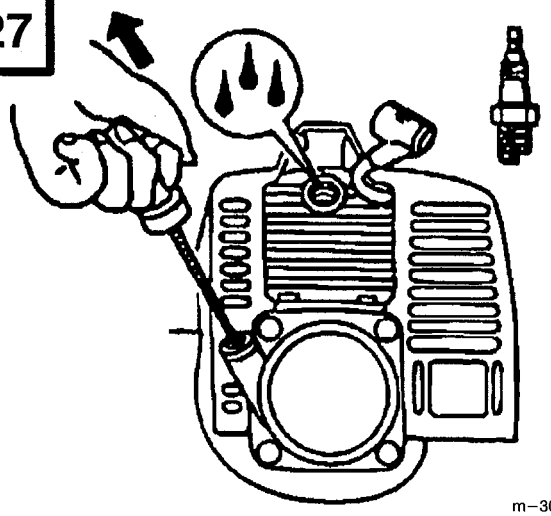


m–2994

English

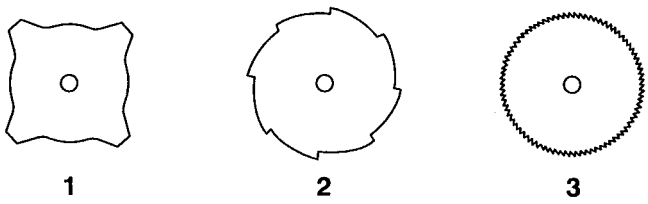
1. 1.4–1.7 Times Original Blade Thickness
2. 40°
3. 80°
4. Blade Thickness
5. 0.039"–0.059" (1–1.5mm) Radius
6. 5°

27



m–3002

28



m–2985/2986/2987

English

1. Four-tooth Blade
2. Eight-tooth Blade
3. 80-tooth Blade

Contents

	Page
Introduction	1
Safety	2
Operator Safety	2
Brushcutter Safety	2
Fuel Safety	3
Power Brushcutter Operating Safety	3
Safety and Instruction Decals	5
Assembly	5
Assembling Engine and Drive Shaft Assembly	5
Bullhorn Handle Installation	5
Connecting Stop Switch Wires	5
Connecting Throttle Cable	6
Installing Shield	6
Installing Brushcutter Blade	6
Attaching Strap	7
Installing Brushcutter Blade Cover	7
Before Operation	7
Oil and Fuel	7
Mixing Gasoline And Oil	9
Starting And Stopping	10
Idle Speed Adjustment	10
Operation	11
Operating Position	11
Cutting Direction	12
Cutting Blades	12
Maintenance	13
Air Filter	13
Fuel Filter	13
Spark Plug	13
Cylinder Cooling Fins	14
Spark Arrester	14
Exhaust Muffler	15
Gearcase Maintenance	15
General Cleaning and Tightening	15
Blade Sharpening	15
Storage	16
Accessories	16
Troubleshooting	17
Specifications	18
California Emission Control Warranty Statement	19
Warranty	21

Introduction

Thank you for purchasing a Toro product.

All of us at Toro want you to be completely satisfied with your new product, so feel free to contact your local Authorized Service Dealer for help with service, genuine Toro parts, or other information you may require.

Whenever you contact your Authorized Service Dealer or the factory, always know the model and serial numbers of your product. These numbers will help the Service Dealer or Service Representative provide exact information about your specific product. You will find the model and serial number decal located in a unique place on the product (Fig. 1).

For your convenience, write the product model and serial numbers in the space below.

Model No. _____

Serial No. _____

Read this manual carefully to learn how to operate and maintain your product correctly. Reading this manual will help you and others avoid personal injury and damage to the product.

Although Toro designs, produces and markets safe, state-of-the-art products, you are responsible for using the product properly and safely. You are also responsible for training persons who you allow to use the product about safe operation.

The Toro warning system in this manual identifies potential hazards and has special safety messages that help you and others avoid personal injury, even death. DANGER, WARNING and CAUTION are signal words used to identify the level of hazard. However, regardless of the hazard, be extremely careful.

DANGER signals an extreme hazard that will cause serious injury or death if the recommended precautions are not followed.

WARNING signals a hazard that may cause serious injury or death if the recommended precautions are not followed.

CAUTION signals a hazard that may cause minor or moderate injury if the recommended precautions are not followed. Two other words are also used to highlight information. "Important" calls attention to special mechanical information and "Note" emphasizes general information worthy of special attention.

Safety

Operator Safety

1. Read and understand this Operator's Manual before using this product. Be thoroughly familiar with the proper use of this product.

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

3. Always wear eye protection that complies with ANSI (American National Standards Institute) Z87–1.

4. Always wear hearing protection.

5. Always wear heavy, long pants, a long sleeved shirt, boots and gloves. Do not wear loose clothing, jewelry, short pants, sandals, or go barefoot. Secure hair so it is above shoulder length.

6. Never operate this Brushcutter when you are tired, ill, or under the influence of alcohol, drugs or medication.

7. Never start or run the engine inside a closed room or building. Breathing exhaust fumes can cause death.

8. Keep handles clean of oil, fuel and dirt.

Brushcutter Safety

1. Make sure the Brushcutter is assembled correctly and that the Brushcutter blade is correctly installed and securely fastened as instructed in the Assembly section.

2. Inspect the Brushcutter before each use. Replace damaged parts. Check for fuel leaks. Make sure all fasteners are in place and tightened securely. Follow the maintenance instructions beginning on page 13.

3. Make sure the Brushcutter blade does not rotate at engine idle speed. Refer to Idle Speed Adjustment, page 10.

4. Inspect the Brushcutter cutting blade and replace any parts that are cracked, chipped or damaged before using the Brushcutter.

5. Make sure the blade shield is installed and positioned correctly before using the Brushcutter.

6. Never use a cutting blade or replacement parts that are not approved by Toro.

7. Maintain the Brushcutter according to the recommended maintenance intervals and procedures in the Maintenance section on page 13.

8. Shut off the engine and be certain the cutting blade has completely stopped rotating before inverting the Brushcutter, performing maintenance on or working on the machine.

9. If running problems or excessive vibration occur, stop immediately and inspect the unit for the cause. If the cause cannot be determined or is beyond your ability to correct, return the Brushcutter to your servicing dealer for repair.

Fuel Safety

1. Gasoline is highly flammable and must be handled and stored carefully. Use a container approved for fuel for storing gasoline and/or fuel/oil mixture.

2. Mix and pour fuel outdoors and where there are no sparks or flames.

3. Do not smoke near fuel or Brushcutter, or while using the Brushcutter.

4. Do not overfill the fuel tank. Stop filling 1/4–1/2 inch (6mm–13mm) from the top of the tank.

5. Wipe up any spilled fuel before starting the engine.

6. Move the Brushcutter at least 10 feet (3 m) away from the fueling location before starting the engine (Fig. 2).

7. Do not remove the Brushcutter fuel tank cap while the engine is running, or right after stopping the engine.

8. Allow the engine to cool before refueling.

9. Drain the tank and run the engine dry before storing the unit.

10. Store fuel and Brushcutter away from open flame, sparks and excessive heat. Make sure fuel vapors cannot reach sparks or open flames from water heaters, furnaces, electric motors, etc.

Power Brushcutter Operating Safety

1. THIS BRUSHCUTTER CAN CAUSE SERIOUS INJURIES. Read the instructions carefully. Be familiar with all controls and the proper use of the Brushcutter.

2. Make sure the 3mm hex wrench has been removed from the gearcase and boss adapter before you start the engine (Fig 10).

3. Avoid using the Brushcutter near rocks, gravel, stones and similar material that would cause harmful missiles.

4. Keep children, bystanders and animals outside a 50 ft. (15 m) radius from the operator and Brushcutter (Fig. 3).

5. If you are approached while operating the Brushcutter, stop the engine and Brushcutter blade rotation.

6. Use the Brushcutter only in daylight or good artificial light.

7. Never operate the Brushcutter without proper guards or other protective safety devices in place.

8. Do not put hands or feet near or under any rotating parts. Keep clear at all times. Keep all parts of your body away from the rotating Brushcutter blade and hot surfaces such as the muffler.

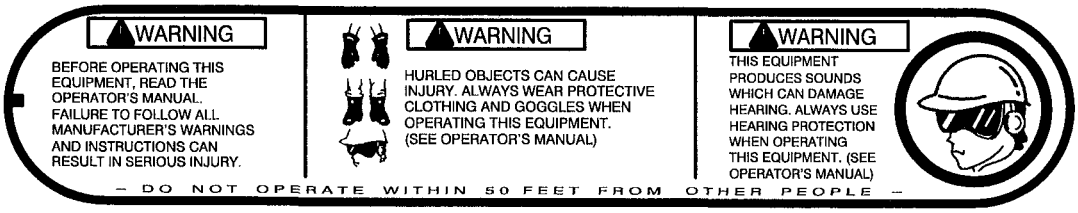
9. When cutting heavy brush or small trees, always swing the Brushcutter from right to left to prevent kick-back (Figs 17 and 18).

10. Keep firm footing and balance. Do not overreach.

11. Use the right tool for the job. Do not use the Brushcutter for any job that is not recommended by Toro.

Safety and 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 or lost.



ON SHAFT
(Part No. M221501)

ON SHAFT
(Part No. M221502)

Assembly

Assembling Engine and Drive Shaft Assembly

The drive shaft, clutch drum housing and gearcase are assembled. Attach the clutch drum housing to the engine using the four M6 x 20 screws supplied with the unit (Fig. 4).

Bullhorn Handle Installation

IMPORTANT: Be careful not to damage the throttle cable and stop switch wires when you remove the bullhorn handles from the shipping carton.

1. Loosen the four Phillips hex head screws on the top of the clamp bracket (Fig. 5).
2. Insert the left and right bullhorn handles into the clamp bracket. Note that the bullhorn handle with the throttle trigger and stop switch goes on the right-hand side of the Brushcutter (Fig. 5).
3. Adjust the bullhorn handles to the desired position, then tighten the four Phillips hex head screws (Fig. 5).

Connecting Stop Switch Wires

1. Loosen the knob and remove the air cleaner cover to access the stop switch wires (Fig. 6).
2. Plug the stop switch wires into the matching connectors from the engine. Note that wire polarity is not important.

Connecting Throttle Cable

1. With the air cleaner cover off, insert the throttle cable through the cable adjuster sleeve on the carburetor bracket. Make sure the end of the cable housing is seated positively in the sleeve (Figs. 7 and 8).

2. Position the slotted fitting on the carburetor so the recessed hole for the cable lug is away from the cable adjuster sleeve (Fig. 7).

3. Rotate the carburetor throttle cam clockwise and slip the throttle cable through the slot in the slotted fitting, making sure the cable lug drops into the recessed hole (Figs. 7 and 8).

4. Operate the throttle trigger a few times to make sure that it works correctly (Fig. 15).

5. Adjust the cable adjuster sleeve so the stop on the carburetor throttle cam just contacts the throttle stop when the throttle trigger is fully depressed (Figs. 7 and 8).

6. When the throttle cable is adjusted correctly, tighten the locknut (Fig. 7).

Installing Shield

⚠ WARNING

POTENTIAL HAZARD
- **Foreign objects can be thrown by Brushcutter.**

WHAT CAN HAPPEN
- **Contact with thrown objects can cause personal injury.**

HOW TO AVOID THE HAZARD
- **Never operate the Brushcutter without the blade shield in place.**

1. Install the blade shield onto the gearcase (Fig. 9).

2. Install and tighten the four M5 x 12 screws (Fig. 9).

Installing Brushcutter Blade

⚠ CAUTION

POTENTIAL HAZARD
- **If the Brushcutter blade is not adequately tightened, it can come loose from the Brushcutter during use.**

WHAT CAN HAPPEN
- **This may cause damage to property or personal injury.**

HOW TO AVOID THE HAZARD
- **Make sure the Brushcutter blade is securely fastened to the splined shaft in the gearcase.**

1. Remove the blade bolt, stabilizer and clamping washer from the splined shaft out of the gearcase (Fig. 10).

   Note: The blade bolt has left-hand threads.

⚠ WARNING

POTENTIAL HAZARD
- **Brushcutter blade is sharp.**

WHAT CAN HAPPEN
- **Contact with sharp blade can cause serious personal injury.**

HOW TO AVOID THE HAZARD
- **Wear gloves when you handle the blade.**

2. Install the brushcutter blade onto the boss adapter, then reinstall the clamping washer, stabilizer and blade bolt (Fig. 10).

3. Align the hole in the boss adapter with the hole in the gearcase (Fig. 10).

4. Insert a 3mm hex wrench or other suitable tool into the holes in the boss adapter and gearcase to lock the splined shaft (Fig. 10).

5. Tighten the blade bolt to 100 in.-lbs. (11.3 N•M) (Fig. 10).

6. Remove the 3mm hex wrench from the boss adapter and gearcase (Fig. 10).

Attaching Strap

⚠ WARNING

POTENTIAL HAZARD
- **Without the strap installed on the Brushcutter, the blade can produce side thrust which can expose the operator and bystanders to blade contact.**

WHAT CAN HAPPEN
- **Contact with the Brushcutter blade can cause severe personal injury.**

HOW TO AVOID THE HAZARD
- **Never operate the Brushcutter without installing and using the strap.**

Snap the strap hook into the ring on the drive shaft. To detach the strap quickly from the Brushcutter, pull upward on the red band (Fig. 11).

Installing Brushcutter Blade Cover

⚠ WARNING

POTENTIAL HAZARD
- **Brushcutter blade is sharp.**

WHAT CAN HAPPEN
- **Contact with sharp blade can cause serious personal injury.**
- **An unprotected blade is subject to damage.**

HOW TO AVOID THE HAZARD
- **Keep the blade cover on the blade when the Brushcutter is not in use. This will protect persons from injury from blade contact, and will protect the blade from damage.**

1. Insert the tips of the blade into the grooves in the blade cover (Fig. 12).

2. Wind the cover around the blade, then snap the hook to secure the blade cover (Fig. 12).

Before Operation

Oil and Fuel

⚠ DANGER

POTENTIAL HAZARD
- **In certain conditions gasoline is extremely flammable and highly explosive.**

WHAT CAN HAPPEN
- **A fire or explosion from gasoline can burn you, others, and cause property damage.**

HOW TO AVOID THE HAZARD
- **Use a funnel and fill the fuel tank outdoors, in an open area, when the engine is cold. Wipe up any gasoline that spills.**
- **Do not fill the fuel tank completely full. Add gasoline to the fuel tank until the level is 1/4" to 1/2" (6 mm to 13 mm) below the bottom of the filler neck. This empty space in the tank allows gasoline to expand.**
- **Never smoke when handling gasoline, and stay away from an open flame or where gasoline fumes may be ignited by a spark.**
- **Store gasoline in an approved container and keep it out of the reach of children.**
- **Never buy more than a 30-day supply of gasoline.**

1. Do not smoke near fuel.

2. Mix and pour fuel outdoors and where there are no sparks or flames.

3. Always shut off the engine before refueling. Never remove the Brushcutter fuel tank cap while the engine is running or right after just stopping the engine.

⚠ WARNING

POTENTIAL HAZARD
- **Gasoline contains gasses that can build up pressure inside a gas tank.**

WHAT CAN HAPPEN
- **Fuel can be sprayed on you when removing gas cap.**

HOW TO AVOID THE HAZARD
- **Remove fuel cap slowly to avoid injury from fuel spray.**

4. Always open the fuel tank cap slowly to release any possible overpressure inside the tank.

5. Do not overfill the fuel tank. Stop filling 1/4–1/2 inch (6mm–13mm) from the top of the tank.

6. Tighten the tank fuel cap carefully but firmly after refilling.

7. Wipe up any spilled fuel before starting the engine.

8. Move the Brushcutter at least 10 feet (3 m) away from the fueling location and fuel storage container before starting the engine (Fig. 2).

Recommended Oil Type

Only use a two-cycle engine oil formulated for use in high-performance, air-cooled two-cycle engines. Toro brand 2-cycle oil is formulated for use in high-performance, air-cooled two-cycle engines.

IMPORTANT: Do not use National Marine Manufacturer's Association (NMMA) or BIA certified oils. This type of 2–cycle engine oil does not have the proper additives for air-cooled, 2–cycle engines and can cause engine damage.

Do not use automotive motor oil. This type of oil does not have the proper additives for air-cooled, 2–cycle engines and can cause engine damage.

Recommended Fuel Type

Use clean, fresh lead-free gasoline, including *oxygenated* or *reformulated* gasoline, with an octane rating of 85 or higher. To ensure freshness, purchase only the quantity of gasoline that can be used in 30 days. Use of lead-free gasoline results in fewer combustion chamber deposits and longer spark plug life. Use of premium grade fuel is not necessary or recommended.

Use Of Fuel Additives

IMPORTANT: NEVER USE METHANOL, GASOLINE CONTAINING METHANOL, GASOHOL CONTAINING MORE THAN 10% ETHANOL, PREMIUM GASOLINE, OR WHITE GAS BECAUSE ENGINE FUEL SYSTEM DAMAGE COULD RESULT.

DO NOT USE FUEL ADDITIVES OTHER THAN THOSE MANUFACTURED FOR FUEL STABILIZATION DURING STORAGE SUCH AS TORO'S STABILIZER/CONDITIONER OR A SIMILAR PRODUCT. TORO'S STABILIZER/CONDITIONER IS A PETROLEUM DISTILLATE BASED CONDITIONER/STABILIZER.

TORO DOES NOT RECOMMEND STABILIZERS WITH AN ALCOHOL BASE SUCH AS ETHANOL, METHANOL OR

ISOPROPYL. ADDITIVES SHOULD NOT BE USED TO TRY TO ENHANCE THE POWER OR PERFORMANCE OF MACHINE.

Mixing Gasoline And Oil

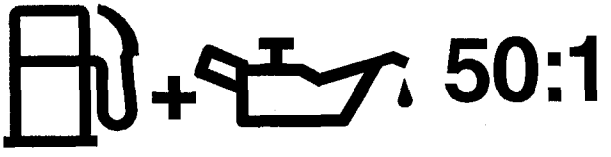
IMPORTANT: The engine used on this Brushcutter is of a 2–cycle design. The internal moving parts of the engine, i.e., crankshaft bearings, piston pin bearings and piston to cylinder wall contact surfaces, require oil mixed with the gasoline for lubrication.

Failure to add oil to the gasoline or failure to mix oil with the gasoline at the appropriate ratio will cause major engine damage which will void your warranty.

For your fuel premix, only use a quality oil designed for 2–cycle air cooled engines. Toro 50:1 2–Cycle Oil is formulated to meet the requirements of high-performance, air-cooled two-cycle engines.

Fuel Mixture

The fuel:oil ratio is 50 parts gasoline to 1 part oil or 50:1.



Note: **Never use a mixing ratio less than 50:1 regardless of the oil package mixing instructions. Ratios less the 50:1, (for example, 60:1, 80:1, 100:1), reduce the amount of lubrication to the internal moving parts of the engine and can cause damage.**

Fuel Mixture Chart

Gasoline	50:1 2-cycle oil
1 gallon	2.6 oz.
2 gallons	5.2 oz.
5 gallons	12.8 oz.

Mixing Instructions

IMPORTANT: Never mix gasoline and oil directly in the Brushcutter fuel tank.

1. Always mix fuel and oil in a clean container approved for gasoline.
2. Mark the container to identify it as fuel mix for the Brushcutter.
3. Use regular unleaded gasoline and fill the container with half the required amount of gasoline.
4. Pour the correct amount of oil into the container then add the remaining amount of gasoline.
5. Close the container tightly and shake it momentarily to evenly mix the oil and the gasoline before filling the fuel tank on the Brushcutter.
6. When refilling the Brushcutter fuel tank, clean around the fuel tank cap to prevent dirt and debris from entering the tank during cap removal.
7. Always shake the premix fuel container momentarily before filling the fuel tank
8. Always use a spout or funnel when fueling to reduce fuel spillage.
9. Fill the tank only to within 1/4–1/2 inch (6mm–13mm) from the top of the tank. Avoid filling to the top of the tank filler neck.

Starting And Stopping

Before Starting The Engine

1. Fill the fuel tank as instructed in the Before Operation section of this manual.

2. Rest the Brushcutter on the ground.

3. Make sure the Brushcutter blade is clear of any broken glass, nails, wire, rocks or other debris.

4. Keep all bystanders, children and animals away from the working area.

Cold Starting Procedure

The carburetors on Toro engines contain a choke system. To start a "cold" engine properly, perform the following procedure:

1. Pump the primer bulb at the bottom of the carburetor until fuel can be seen flowing through the fuel return line to the fuel tank (Fig. 13). (Flowing fuel should be almost clear, not foamy or full of bubbles.)

2. Move the choke lever to the closed (⊥) position and move the stop switch to the "ON" position (Figs. 14 and 15).

3. Lock the throttle trigger in the fast-idle start position, then pull the starter handle (Figs. 14 and 15).

4. After the engine starts, move the choke lever to the open (⊼) position, then squeeze and release the throttle trigger to allow it to return to the idle position (Figs. 14 and 15).

   If the engine stops running before you move the choke lever to the open (⊼) position:

   A. Go ahead and open the choke (Fig. 14).

   B. Make sure the throttle trigger is set to the fast-idle start position (Fig. 15).

   C. Pull the starter handle until the engine starts (Fig. 14).

Hot Restart

To start an engine that is already warmed up (hot restart), or if the ambient temperature exceeds 68°F (20°C):

1. Pump the primer bulb at the bottom of the carburetor until fuel can be seen flowing through the fuel return line to the fuel tank (Fig. 13).

2. Move the choke lever to the open (⊼) position and move the stop switch to the "ON" position (Figs. 14 and 15).

3. Leave the throttle trigger in the idle position and pull the starter handle (Figs. 14 and 15).

4. If the engine fails to start after three to four pulls, follow the instructions in the Cold Starting Procedure section above.

   If the engine fails to start after you follow the above procedures, contact an authorized Toro dealer.

To Stop The Engine:

1. Release the throttle trigger (Fig. 15).

2. Slide the stop switch to the "STOP" position (Fig. 15).

Idle Speed Adjustment

This Brushcutter is equipped with non-adjustable fuel mixture carburetor. The engine idle speed is the only adjustment for the operator.

⚠ WARNING

POTENTIAL HAZARD
- **Engine must be running to make some carburetor adjustments.**
- **When engine is running, Brushcutter blade is rotating and other parts are moving.**

WHAT CAN HAPPEN
- **Contact with rotating Brushcutter blade or other moving parts could cause serious personal injury or death.**

HOW TO AVOID THE HAZARD
- **Keep hands, feet and clothing away from Brushcutter blade and other moving parts.**
- **Keep all bystanders and pets away from unit while making carburetor adjustments.**

The Brushcutter blade may be rotating during idle speed adjustment. Wear the recommended personal protective equipment and observe all safety instructions. Keep hands and body away from the Brushcutter blade.

When the throttle trigger is released, the engine should return to an idle speed between 2400 and 2800 RPM, or just below the clutch engagement speed. The Brushcutter blade must not rotate and the engine should not stall (stop running) at engine idle speed.

To adjust the engine idle speed, rotate the idle speed adjustment screw on the carburetor (Fig. 16).

- Turn the idle speed screw in (clockwise) to increase the engine idle speed.
- Turn the screw out (counterclockwise) to decrease the engine idle speed.

If idle speed adjustment is necessary, and after adjustment the Brushcutter blade rotates or the engine stalls, stop using the Brushcutter immediately!

Contact your local authorized Toro Dealer for assistance and servicing.

Operation

⚠ WARNING

POTENTIAL HAZARD
- **Foreign objects can be thrown by Brushcutter.**

WHAT CAN HAPPEN
- **Contact with thrown objects can cause personal injury.**

HOW TO AVOID THE HAZARD
- **Never operate the Brushcutter without the blade shield in place.**

⚠ CAUTION

- **Read the Safety instructions on page 2 concerning proper use of the Brushcutter.**

Operating Position

Before using the Brushcutter, check the following:

1. Make sure the 3mm hex wrench has been removed from the gearcase and boss adapter before you start the engine (Fig 10).

⚠ WARNING

POTENTIAL HAZARD

- **Without the strap installed, the Brushcutter blade can produce side thrust which can expose the operator and bystanders to blade contact.**
- **If the Brushcutter is not correctly positioned on the operator's right side, the blade can produce side thrust which can expose the operator and bystanders to blade contact.**

WHAT CAN HAPPEN

- **Contact with the Brushcutter blade can cause severe personal injury.**

HOW TO AVOID THE HAZARD

- **Never operate the Brushcutter without installing and using the strap.**
- **Always operate the Brushcutter with the unit on your right side.**

2. The operator must be wearing the strap attached to the Brushcutter, and the Brushcutter must be on the operator's right side.

3. The operator's right hand should be holding the right-hand bullhorn grip, with his or her fingers on the throttle trigger.

4. The left hand should be holding the left-hand bullhorn grip with the fingers and thumb fully enclosed around the grip.

5. Always release the throttle trigger and allow the engine to return to idle speed when not cutting.

6. Stop the Brushcutter engine when moving between work sites.

⚠ CAUTION

- **Always wear gloves and protective clothing when operating the Brushcutter.**

- If the Brushcutter blade becomes jammed, stop the engine immediately.

- Make certain all moving parts have stopped and disconnect the spark plug before inspecting the equipment for damage.

- Never use a Brushcutter that has chipped, cracked or broken blade or blade shield.

IMPORTANT: To detach the strap quickly from the Brushcutter, pull upward on the red band (Fig. 11).

Cutting Direction

⚠ WARNING

POTENTIAL HAZARD

- **Cutting heavy brush or small trees from the wrong direction can cause the Brushcutter blade to kick back.**

WHAT CAN HAPPEN

- **Contact with the Brushcutter blade can cause severe personal injury.**

HOW TO AVOID THE HAZARD

- **Always swing the Brushcutter from right to left when cutting heavy brush or small trees as shown in Fig. 17.**

When cutting heavy brush or small trees, always swing the Brushcutter from right to left (Fig. 17). Swinging the Brushcutter from left to right can cause the blade to kick back (Fig. 18).

Cutting Blades

1. Use only the correct blade (Toro genuine part) approved for the application and model Brushcutter.

2. Carefully check the condition of the blades before and after operation.

3. Sharpen dull blades. Replace any blade that is worn, cracked or damaged.

4. If a blade produces eccentric rotation or vibration, replace the blade and the boss adapter with genuine Toro parts (Fig. 10).

Maintenance

Air Filter

Maintenance Interval

- The air filter should be cleaned **daily**, or more often when working in extremely dusty conditions.
- Replace after every 100 hours of operation.

Air Filter Cleaning

1. Loosen the knob and remove the air filter cover (Fig. 19).
2. Remove the foam ring and filter screen from the air filter cover (Fig. 19).
3. Clean the foam ring and filter screen with warm, soapy water. Let the screen and ring dry completely.
4. Apply a light coat of SAE 30 motor oil to the foam ring and squeeze out all excess oil.
5. Reassemble the filter screen and foam ring to the air filter cover (Fig. 19).

   IMPORTANT: The air filter screen is designed to fit into the air filter cover ONE WAY ONLY. Make sure the cutouts in the screen fit onto the matching plastic posts in the air filter cover. The fit should be snug (Fig. 20).
6. Reinstall the air filter cover and tighten the knob (Fig. 19).

Fuel Filter

Maintenance Interval

The fuel filter should be replaced after every 100 hours of operation.

Fuel Filter Replacement

The fuel filter is attached to the end of the fuel pick-up hose inside the fuel tank (Fig. 21).

To replace the fuel filter:

1. Make sure the fuel tank is empty.
2. Remove the fuel cap.
3. Using a wire hook, gently pull the fuel filter out through the fuel filler opening (Fig. 21).
4. Grasp the fuel hose next to the fuel filter fitting and remove the filter, but do not release the hose.
5. While still holding on to the fuel hose, attach the new fuel filter.
6. Drop the new fuel filter back into the fuel tank.
7. Make sure that the fuel filter is not stuck in a corner of the tank, and that the fuel hose is not doubled over (kinked) before refueling.

Spark Plug

Maintenance Interval

- The spark plug should be removed from the engine and checked after each 25 hours of operation.
- Replace the spark plug after every 100 hours of operation.

Spark Plug Maintenance

1. With the engine at ambient (room) temperature, loosen the knob and remove the air cleaner cover (Fig. 6).

2. Loosen the knob and lift off the cylinder cover (Fig. 6).

3. Twist the high tension lead boot on the spark plug back and forth a couple of times to loosen the boot, then pull the boot off of the spark plug.

4. Remove the spark plug.

5. Clean the electrodes with a stiff brush (Fig. 22).

6. Adjust the electrode air gap to .024–.028 in. (0.6–0.7mm) (Fig. 22).

7. Replace the spark plug if it is oil-fouled, damaged, or if the electrodes are worn down.

8. Do not overtighten the spark plug when installing. The tightening torque is 95–148 in. lbs. (10.7–16.6 N•m).

9. Reinstall the cylinder and air cleaner covers (Fig. 6).

Cylinder Cooling Fins

Maintenance Interval

The cylinder cooling fins should be cleaned after every 25 hours of operation, or once a week, whichever comes first.

Air must flow freely around and through the cylinder cooling fins to prevent engine overheating. Leaves, grass, dirt and debris buildup on the fins will increase the operating temperature of the engine, which can reduce engine performance and shorten engine life.

Cooling Fin Cleaning

1. With the engine at ambient (room) temperature, loosen the knob and remove the air cleaner cover (Fig. 6).

2. Loosen the knob and lift off the cylinder cover (Fig. 6).

3. Clean all dirt and debris from the cooling fins and from around the cylinder base.

4. Reinstall the cylinder and air cleaner covers (Fig. 6).

Spark Arrester

⚠ WARNING

POTENTIAL HAZARD
- **Muffler surface becomes hot when Brushcutter is in operation and remains hot for some time after the engine is shut off.**

WHAT CAN HAPPEN
- **Contact with hot muffler surfaces could cause a burn.**

HOW TO AVOID THE HAZARD
- **Make sure the muffler is cool before inspecting and cleaning the spark arrester.**

Maintenance Interval

- The spark arrester should be inspected and cleaned after every 25 hours of use.

- Replace the screen if it cannot be thoroughly cleaned, or if it is damaged.

Spark Arrester Maintenance

1. With the engine at ambient (room) temperature, loosen the knob and remove the air cleaner cover (Fig. 6).

2. Loosen the knob and lift off the cylinder cover (Fig. 6).

3. Remove the two socket head screws holding the spark arrester assembly to the muffler (Fig. 23).

4. Remove and clean the tail, gasket and spark arrester with a safety solvent and a stiff brush. If any part cannot be thoroughly cleaned, it must be replaced.

5. Reinstall the spark arrester, gasket and tail onto the muffler, then reinstall and tighten the two socket head screws (Fig. 23).

6. Reinstall the cylinder and air cleaner covers (Fig. 6).

Exhaust Muffler

Maintenance Interval

The muffler should be inspected and cleaned after each 100 hours of use.

Muffler Maintenance

1. With the engine at ambient (room) temperature, loosen the knob and remove the air cleaner cover (Fig. 6).

2. Loosen the knob and lift off the cylinder cover (Fig. 6).

3. Remove the two socket head screws holding the spark arrester assembly to the muffler and remove the tail, gasket and spark arrester (Fig. 23).

4. Remove the three socket head screws holding the muffler cover to the muffler body and remove the muffler cover (Fig. 23).

5. Clean the muffler body and cover with a safety solvent and a stiff brush (Fig. 23).

   IMPORTANT: Be careful not to allow any dirt or debris to fall into the exhaust ports, as this can cause engine damage.

6. To reassemble the muffler cover to the muffler:

   A. Apply liquid gasket (p/n M261910) to the muffler cover sealing surfaces, then reinstall the cover onto the muffler body (Fig. 23).

   B. Apply removable Loctite to the three socket head muffler cover screws, then reinstall and tighten the three screws (Fig. 23).

7. Reinstall the spark arrester, gasket and tail onto the muffler, then reinstall and tighten the two socket head screws (Fig. 23).

8. Reinstall the cylinder and air cleaner covers (Fig. 6).

Gearcase Maintenance

The gearcase is a sealed unit which has been greased at the factory. No gearcase maintenance or lubrication is required or recommended.

General Cleaning and Tightening

⚠ WARNING

POTENTIAL HAZARD
- **When engine is running, cutting blade is rotating and other parts are moving.**

WHAT CAN HAPPEN
- **Contact with rotating cutting blade or other moving parts could cause serious personal injury or death.**

HOW TO AVOID THE HAZARD
- **Always turn off your Brushcutter before you clean or perform any maintenance on it.**

The Toro Brushcutter will provide maximum performance for many, many hours if it is maintained properly. Good maintenance includes regular checking of all fasteners for correct tightness, and cleaning the entire machine.

Blade Sharpening

IMPORTANT: Replace any blade that is worn, cracked or damaged.

IMPORTANT: Sharpen every tooth evenly so the blade rotates smoothly. If you sharpen a blade with a grinder, do not overheat the blade, and do not quench a hot blade in water to cool it.

Four-tooth Blade

Sharpen with a single-cut flat file (Fig. 24).

Eight-tooth Blade

Sharpen with a single-cut flat file and a round file (Fig. 25).

80-tooth Blade

Sharpen with a single-cut flat file and a round file (Fig. 26).

Storage

For long-term storage of the Brushcutter (Fig. 27):

1. Empty the fuel tank into a suitable fuel storage container.
2. Pump the primer bulb on the carburetor until all fuel is discharged through the clear fuel return hose.
3. Run the engine to remove any fuel that may remain in the carburetor.
4. Perform all regular maintenance procedures and any needed repairs.
5. Remove the spark plug and squirt a very small amount of oil into the cylinder.

⚠ CAUTION

POTENTIAL HAZARD
- **Oil may squirt out of the spark plug opening when you pull the starter handle.**

WHAT CAN HAPPEN
- **Oil can cause eye injuries.**

HOW TO AVOID THE HAZARD
- **Protect your eyes and keep your face away from the spark plug opening.**

6. Pull the starter handle once.
7. Slowly pull the starter handle to bring the piston to the top of the cylinder (TDC).
8. Reinstall the spark plug.
9. Store the Brushcutter in a dry place away from excessive heat, sparks or open flame.

Accessories

The following accessories may be purchased at your local authorized TORO Service Dealer.

1. **Deluxe Strap Harness, Model No. 46–2961**—safety release straps made out of durable nylon webbing (Fig. 11).
2. **String Trimmer Conversion Kit, Model No. 53051**—allows you to convert the Brushcutter to a String Trimmer.

⚠ CAUTION

POTENTIAL HAZARD
- **If the Brushcutter blade is not adequately tightened, it can come loose from the Brushcutter during use.**

WHAT CAN HAPPEN
- **This may cause damage to property or personal injury.**

HOW TO AVOID THE HAZARD
- **Make sure the Brushcutter blade is securely fastened to the splined shaft in the gearcase.**

3. **10" Brushcutter Blades**—four-tooth, eight-tooth and 80-tooth blades are available for various cutting conditions (Fig. 28).
   - Four-tooth blade—exclusively for grass cutting, especially softer grass such as meadow grass.
   - Eight-tooth blade—for grass and lawns.
   - 80-tooth blade—for bush cutting, bamboo grass, and hard and thick grass.

IMPORTANT: Use only the correct Brushcutter blades approved for your model.

IMPORTANT: Make sure the blade is installed for LEFT-HAND rotation (as viewed from the operator's position), and all blade holding parts are assembled correctly and are secure. (Refer to the Installing Brushcutter Blade on page 6.)

Troubleshooting

Problem	Cause	Action
Engine Will Not Start	STOP switch set to off position	Move switch to on position
	Empty fuel tank	Fill fuel tank
	Primer bulb wasn't pushed enough	Press primer bulb until fuel flows through fuel return line
	Engine flooded	Use warm engine starting procedure
Engine Will Not Idle	Idle speed set incorrectly	Set idle speed
Engine Lacks Power or Stalls When Cutting	Throttle wire has come loose	Tighten throttle wire
	Dirty air filter	Clean or replace air filter

If further assistance is required, contact your local authorized Toro service dealer.

Specifications

Note: All models are CARB approved.

53020

Engine Displacement	26cc
Shaft	Straight (59"/150 cm) steel with 6 ball bearings, 5 bushings
Anti Vibration	Dual Isolation – grip and engine mount
Carburetor	Walbro – Choke Type
Ignition System	Solid State
Fuel Tank Capacity	0.85 qts. (0.8 liter)
Gas to Oil Ratio	50:1
Standard Blade Type	10", 8-tooth
Weight	15.7 lbs. (7.1 kg)
Spark Plug	NGK BPM6Y
Spark Plug Gap	.024–.028 in (0.6–0.7mm)
Harness	Single Standard; Deluxe Optional
Bullhorn Handle	Standard
Safety Goggles	Included

53021

Engine Displacement	32cc
Shaft	Straight (59"/150 cm) steel with 6 ball bearings, 5 bushings
Anti Vibration	Dual Isolation – grip and engine mount
Carburetor	Walbro – Choke Type
Ignition System	Solid State
Fuel Tank Capacity	1.05 qts. (1 liter)
Gas to Oil Ratio	50:1
Standard Blade Type	10", 8-tooth
Weight	16.2 lbs. (7.3 kg)
Spark Plug	NGK BPM6Y
Spark Plug Gap	.024–.028 in (0.6–0.7mm)
Harness	Single Standard; Deluxe Optional
Bullhorn Handle	Standard
Safety Goggles	Included

California Emission Control Warranty Statement

Your Warranty Rights And Obligations

The California Air Resources Board and Toro are pleased to explain the emission control system warranty of your 1995 and later lawn and garden equipment engine. In California, new lawn and garden equipment engines must be designed, built and equipped to meet the State's stringent anti–smog standards. Toro must warrant the emission control system on your lawn and garden equipment engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your lawn and garden equipment engine.

Your emission control system may include parts such as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, belts, connectors and other emission–related assemblies.

Where a warrantable condition exists, Toro will repair your lawn and garden equipment engine at no cost to you including diagnosis, parts and labor.

The 1995 and later utility and lawn and garden equipment engines are warranted for two years. If any emission–related part on your engine is defective, the part will be repaired or replaced by Toro.

Owner's Warranty Responsibilities:

- As the lawn and garden equipment engine owner, **you are responsible for the performance of the required maintenance listed in your Operator's manual**. Toro recommends that you retain all receipts covering maintenance on your lawn and garden equipment engine, but Toro cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

- As the lawn and garden equipment engine owner, you should however be aware that Toro may deny you warranty coverage if your lawn and garden equipment engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

- You are responsible for presenting your lawn and garden equipment engine to a Toro Authorized Service Dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed **30 days**.

If you have any questions regarding your warranty rights and responsibilities, you should call 1–800–237–2654.

Manufacturer's Warranty Coverage:

- The warranty period begins on the date the engine or equipment is delivered to the retail purchaser.
- The manufacturer warrants to the initial owner and each subsequent purchaser, that the engine is free from defects in material and workmanship which cause the failure of a warranted part for a period of two years.
- Repair of replacement of warranted part will be performed at no charge to the owner at an Authorized Toro Service Dealer. For the nearest location, please contact Toro at: 1–800–237–2654.
- Any warranted part which is not scheduled for replacement, as required maintenance which is scheduled only for regular inspection to the effect of "Repair or replace as necessary" is warranted for the warranty period. Any warranted part which is scheduled for replacement as required maintenance will be warranted for the period of time up to the first scheduled replacement point for that part.
- The owner will not be charged for diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed at an Authorized Toro Service Dealer.
- The manufacturer is liable for damages to other engine components caused by the failure of a warranted part still under warranty.
- Failures caused by abuse, neglect or improper maintenance are not covered under warranty.
- The use of add–on or modified parts can be grounds for disallowing a warranty claim. The manufacturer is not liable to cover failures or warranted parts caused by the use of add–on or modified parts.
- In order to file a claim, go to your nearest Authorized Toro Service Dealer. Warranty services or repairs will be provided at all Authorized Toro Service Dealers.
- Any manufacturer approved replacement part may be used in the performance of any warranty maintenance or repair of emission related parts and will be provided without charge to the owner. Any replacement part that is equivalent in performance or durability may be used in non–warranty maintenance or repair and will not reduce the warranty obligations of the manufacturer.
- The following components are included in the emission related warranty of the engine, air filter, carburetor, primer, fuel lines, fuel pick up/fuel filter, ignition module, spark plug and muffler.

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THE TORO TOTAL COVERAGE GUARANTEE

A One-Year Limited Warranty
(A Two-Year Full Warranty for Residential Use)

What Is Covered By This Express Warranty?

The Toro Company promises to repair any TORO product used for commercial, institutional, or rental purposes if defective in materials or workmanship for a period of one year from the date of purchase. The cost of parts and labor are included, but the customer pays the transportation cost. Transportation within a 15-mile radius of a TORO ProLine Service Dealer is covered under this warranty for Riding Products, Mid-size Mowers and Turf Maintenance Equipment.

What Products Are Covered By This Warranty?

The following products and their attachments are covered by this warranty:

- Z-Master Zero Radius Tractors
- ProLine Mid-size Mowers
- Groundsmaster Riding Mowers
- ProLine Hand-held Gas Products
- Backpack Blowers
- Commercial WPM
- Turf Maintenance Equipment
- Debris Management Equipment

How About Residential Use?

TORO products used for residential use are covered by a full two-year warranty.

How Do You Get Warranty Service?

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

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

Toro Customer Service Department
8111 Lyndale Avenue South
Bloomington, MN 55420–1196
612–888–8801 or 800–348–2424

What Must You Do To Keep The Warranty In Effect?

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

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

There is no other express warranty except as described above. This express warranty does not cover:

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

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

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

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

COUNTRIES OTHER THAN THE UNITED STATES OR CANADA

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

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