# 890F

# Hi-Tech 4 Stroke Brushcutter Trimmer

# OPERATOR'S MANUAL

N197

**IMPORTANT MANUAL**

**DO NOT THROW AWAY**

# INTRODUCTION

## THANK YOU

Thank you for buying this quality product. This modern outdoor power tool will provide many hours of useful service. You will find it to be a great labor-saving device. This operator's manual provides you with easy-to-understand operating instructions. Read the whole manual and follow all the instructions to keep your new outdoor power tool in top operating condition. The other manual that came with your power tool, the parts manual, contains all the information that you need to order parts.

## PRODUCT REFERENCES, ILLUSTRATIONS AND SPECIFICATIONS

All information, illustrations and specifications in this manual are based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice.



Quick-Link® is a registered trademark of Ryobi Outdoor Products.

## SERVICE INFORMATION

Service on this unit both within and after the warranty period should be performed only by an authorized and approved service dealer.

**DO NOT RETURN THE UNIT TO THE RETAILER.**

**NOTE: PROOF OF PURCHASE WILL BE REQUIRED FOR WARRANTY SERVICE.**

Make sure this manual is carefully read and understood before starting or operating this equipment.

THIS PRODUCT IS COVERED BY ONE OR MORE US PATENTS, OTHER PATENTS PENDING.

# WARNING!

**Read the Operator's Manual(s) and follow all warnings and safety instructions. Failure to do so can result in serious injury to the operator and/or bystanders.**

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- J-Handle and Hardware
- Large Bump Head Cutting Attachment
- Cutting Attachment Shield with Hardware
- Shoulder Harness
- Locking Rod Tool
- Operator's Manual
- Parts Manual
- Product Registration Card
- Bottle of 4-Cycle Oil

# RULES FOR SAFE OPERATION

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and their explanations, deserve your careful attention and understanding. The safety warnings do not by themselves eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

| SYMBOL | MEANING |
|---|---|
|  | **SAFETY ALERT SYMBOL:** Indicates danger, warning, or caution. Attention is required in order to avoid serious personal injury. May be used in conjunction with other symbols or pictographs. |
| **NOTE:** | Advises you of information or instructions vital to the operation or maintenance of the equipment. |

**DANGER:** Failure to obey a safety warning will result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock, and personal injury.

**WARNING:** Failure to obey a safety warning can result in injury to yourself and others. Always follow the safety precautions to reduce the risk of fire, electric shock, and personal injury.

**CAUTION:** Failure to obey a safety warning may result in property damage or personal injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock, and personal injury.

## • IMPORTANT SAFETY INFORMATION •

## READ ALL INSTRUCTIONS

### BEFORE OPERATING

- Read the instructions carefully. Be familiar with the controls and proper use of the unit.
- Do not operate this unit when tired, ill, or under the influence of alcohol, drugs, or medication.
- Children and teens under the age of 15 must not use the unit, except for teens guided by an adult.
- Inspect the unit before use. Replace damaged parts. Check for fuel leaks. Make sure all fasteners are in place and secure. Replace cutting attachment parts that are cracked, chipped, or damaged in any way. Make sure the cutting attachment is properly installed and securely fastened. Be sure the cutting attachment guard is properly attached, and positioned as recommended. Failure to do so can result in personal injury to the operator and bystanders, as well as damage to the unit.
- Use only 2.41 mm (0.095 inch) diameter genuine Ryobi replacement line. Never use metal-reinforced line, wire, or rope, etc.. These can break off and become a dangerous projectile.
- Be aware of the risk of injury to the head, hands and feet.
- Clear the area to be cut before each use. Remove all objects such as rocks, broken glass, nails, wire, or string which can be thrown or become entangled in the cutting attachment. Clear the area of children, bystanders, and pets. At a minimum, keep all children, bystanders and pets outside a 15 meters (50 ft.) radius; there still may be a risk to bystanders from thrown objects. Bystanders should be encouraged to wear eye protection. If you are approached, stop the engine and cutting attachment immediately.
- Squeeze the throttle control and check that it returns automatically to the idle position. Make all adjustments or repairs before using unit.

### SAFETY WARNINGS FOR PETROL TRIMMERS

**WARNING:** Petrol (gasoline) is highly flammable, and its vapors can explode if ignited. Take the following precautions:

- Store fuel only in containers specifically designed and approved for the storage of such materials.
- Always stop the engine and allow it to cool before filling the fuel tank. Never remove the cap of the fuel tank, or add fuel, when the engine is hot. Never operate the unit without the fuel cap securely in place. Loosen the fuel tank cap slowly to relieve any pressure in the tank.
- Add fuel in a clean, well-ventilated area outdoors where there are no sparks or flames. Slowly remove the fuel cap only after stopping engine. Do not smoke whilst fueling or mixing fuel. Wipe up any spilled fuel from the unit immediately.
- Avoid creating a source of ignition for spilled fuel. Do not start the engine until fuel vapors dissipate.
- Move the unit at least 9.1 m (30 feet) from the fueling source and site before starting the engine. Do not smoke, keep sparks and open flames from the area whilst adding fuel or operating the unit.

### WHILST OPERATING

- Never start or run the unit inside a closed room or building. Breathing exhaust fumes can kill. Operate this unit only in a well ventilated area outdoors.
- Wear safety glasses or goggles, and ear/hearing protection when operating this unit. Wear a face or dust mask if the operation is dusty. Long sleeve shirts are recommended.
- Wear heavy, long pants, boots and gloves. Do not wear loose clothing, jewelry, short pants, sandals or go barefoot. Secure hair above shoulder level.

# RULES FOR SAFE OPERATION

- The cutting attachment guard must always be in place whilst operating the unit. Do not operate unit without both trimming lines extended, and the proper line installed. Do not extend the trimming line beyond the length of the guard.
- This unit has a clutch. The cutting attachment remains stationary when the engine is idling. If it does not, have the unit adjusted by an authorized service technician.
- Adjust the J-Handle to your size to provide the best grip.
- Be sure the cutting attachment is not in contact with anything before starting the unit.
- Use the unit only in daylight or good artificial light.
- Avoid accidental starting. Be in the starting position whenever pulling the starter rope. The operator and unit must be in a stable position whilst starting. See Starting/Stopping Instructions.
- Use the right tool. Only use this tool for the purpose intended.
- Do not overreach. Always keep proper footing and balance.
- Always hold the unit with both hands when operating. Keep a firm grip on both the front and rear handle or grips.
- Keep hands, face, and feet at a distance from all moving parts. Do not touch or try to stop the cutting attachment when it is rotating.
- Do not touch the engine or muffler. These parts get extremely hot from operation. When turned off they remain hot for a short time.
- Do not operate the engine faster than the speed needed to cut, trim or edge. Do not run the engine at high speed when not cutting.
- Always stop the engine when cutting is delayed or when walking from one cutting location to another.
- If you strike or become entangled with a foreign object, stop the engine immediately and check for damage. Do not operate before repairing damage. Do not operate the unit with loose or damaged parts.
- Stop and switch the engine to off for maintenance, repair, or for changing the cutting attachment or other attachments.
- Use only genuine Ryobi replacement parts when servicing this unit. These parts are available from your authorized service dealer. Do not use parts, accessories or attachments not authorized by Ryobi for this unit. Doing so could lead to serious injury to the user, or damage to the unit, and void your warranty.
- Keep unit clean of vegetation and other materials. They may become lodged between the cutting attachment and guard.
- To reduce fire hazard, replace faulty muffler and spark arrestor, keep the engine and muffler free from grass, leaves, excessive grease or carbon build up.

## WHILST OPERATING WITH CUTTING BLADE

- Read and understand all safety warnings before operating this unit.
- Always use the shoulder harness when using the brush blade accessory.
- Keep the J-handle between the operator and cutting attachment or blade at all times.
- NEVER cut with the cutting blade located over 76 cm (30 inches) or more above the ground level.
- **Kick back** may occur when the spinning blade contacts an object that it does not immediately cut. **Kick back** can be violent enough to cause the unit and/or operator to be propelled in any direction , and possibly lose control of the unit. **Kick back** can occur without warning if the blade snags, stalls or binds. This is more likely to occur in areas where it is difficult to see the material being cut.
- For operation with the brush blade, do not cut anything thicker than 1/2 inch or a violent kickback could occur.
- Do not attempt to touch or stop the blade when it is rotating.
- A coasting blade can cause injury whilst it continues to spin after the engine is stopped or the throttle trigger is released. Maintain proper control until the blade has completely stopped rotating.
- Do not run the unit at high speed when not cutting.
- If you strike or become entangled with a foreign object, stop the engine immediately and check for damage. Have any damage repaired before attempting further operations. Do not operate unit with a bent, cracked or dull blade. Discard blades that are bent, warped, cracked or broken.
- Do not sharpen the cutting blade. Sharpening the blade can cause the blade tip to break off whilst in use. This can result in severe personal injury. Replace the blade.
- Do not use the cutting blade for edging or as an edger, severe personal injury to yourself or others can occur. Use the cutting blade only for the purpose as described in this manual.
- Stop the engine IMMEDIATELY if you feel excessive vibration. Vibration is a sign of trouble. Inspect thoroughly for loose nuts, bolts or damage before continuing. Repair or replace affected parts as necessary.

## AFTER USE

- Clean cutting blades with a household cleaner to remove any gum buildup. Oil the blade with machine oil to prevent rust.
- Lock up and store the cutting blade in an appropriate area to protect the blade from unauthorized use or damage.

# RULES FOR SAFE OPERATION

## OTHER SAFETY WARNINGS

- Never store the unit, with fuel in the tank, inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing or transporting. Be sure to secure the unit whilst transporting.
- Store the unit in a dry area, locked up or up high to prevent unauthorized use or damage, out of the reach of children.
- Never douse or squirt the unit with water or any other liquid. Keep handles dry, clean and free from debris. Clean after each use, see **Cleaning and Storage** instructions.
- Keep these instructions. Refer to them often and use them to instruct other users. If you loan someone this unit, also loan them these instructions.

## SAVE THESE INSTRUCTIONS

## SAFETY AND INTERNATIONAL SYMBOLS

This operator's manual describes safety and international symbols and pictographs that may appear on this product. Read the operator's manual for complete safety, assembly, operating and maintenance and repair information.

| SYMBOL | MEANING |
|---|---|
|  | **• SAFETY ALERT SYMBOL**<br>Indicates danger, warning, or caution. May be used in conjunction with other symbols or pictographs. |
|  | **• WARNING - READ OPERATOR'S MANUAL**<br>Read the Operator's Manual(s) and follow all warnings and safety instructions. Failure to do so can result in serious injury to the operator and/or bystanders. |
|  | **• WEAR EYE AND HEARING PROTECTION**<br>**WARNING:** Thrown objects and loud noise can cause severe eye injury and hearing loss. Wear eye protection and ear protection when operating this unit. |
|  | **• KEEP BYSTANDERS AWAY**<br>**WARNING:** Keep all bystanders, especially children and pets, at least 15 meters (50 feet) from the operating area. |
|  | **• PRIMER BULB**<br>Push primer bulb, fully and slowly, 5 to 7 times. |
|  | **• UNLEADED FUEL (Petrol)**<br>Always use clean, fresh unleaded fuel.(Petrol) |
|  | **• OIL**<br>Refer to operator's manual for the proper type of oil. |
|  | **• THROWN OBJECTS AND ROTATING CUTTER CAN CAUSE SEVERE INJURY**<br>**WARNING:** Do not operate without the cutting attachment guard in place. Keep away from the rotating cutting attachment. |

# RULES FOR SAFE OPERATION

**SYMBOL** **MEANING**

**• IGNITION SWITCH**

ON / START / RUN

**• IGNITION SWITCH**

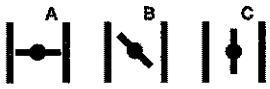
OFF OR STOP

**• HOT SURFACE WARNING**

Do not touch a hot muffler or cylinder. You may get burned. These parts get extremely hot from operation. When turned off they remain hot for a short time.

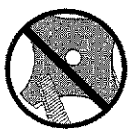
**• SHARP BLADE**

**WARNING:** Sharp blade on cutting attachment guard. To prevent serious injury, do not touch line cutting blade.



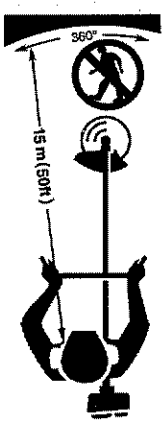

**• CHOKE CONTROL**

A • **FULL** choke position.
B • **PARTIAL** choke position.
C • **RUN** position.



**• BRUSHCUTTERS • Replace dull blade.**

Do not sharpen the cutting blade. Sharpening the blade can cause the blade tip to break off whilst in use. This can result in severe personal injury.




**• TRIMMER/BRUSHCUTTER SAFETY**

**WARNING:** Thrown objects and rotating cutter can cause severe injury. Keep bystanders, especially children and pets, at least 15 meters (50 ft.) away from the cutting area. The cutting attachment shield must be used when using the trimmer cutting attachment.


**WARNING:** The operation of any power tool can cause foreign objects to be thrown into your eyes. This can lead to severe eye damage. Before commencing power tool operation, always wear safety glasses or goggles, and a full face shield when needed.

## KNOW YOUR UNIT

**APPLICATIONS**

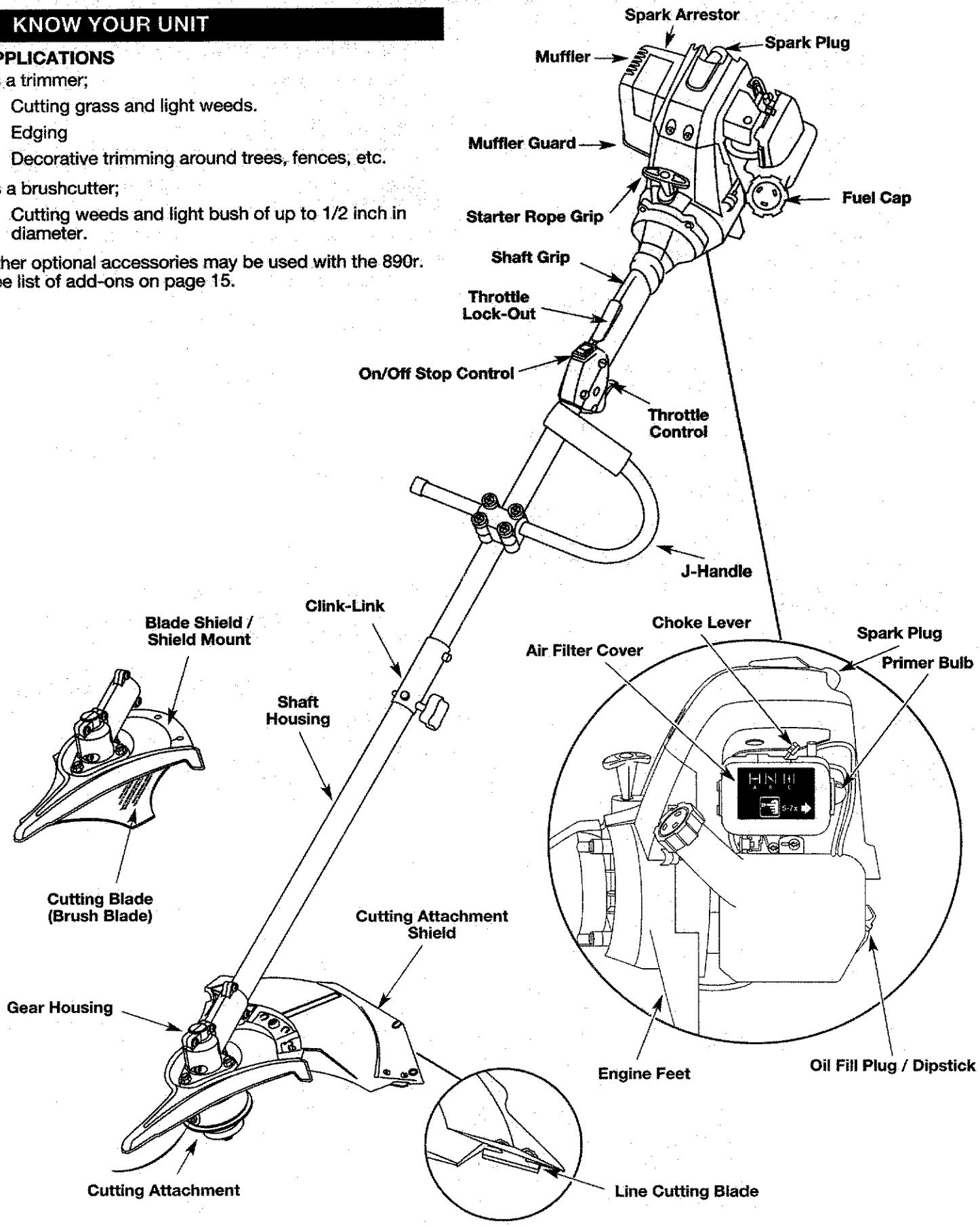
As a trimmer;

- Cutting grass and light weeds.
- Edging
- Decorative trimming around trees, fences, etc.

As a brushcutter;

- Cutting weeds and light bush of up to 1/2 inch in diameter.

Other optional accessories may be used with the 890r. See list of add-ons on page 15.



# ASSEMBLY INSTRUCTIONS

## INSTALLING AND ADJUSTING THE J-HANDLE

1. Place the J-handle between the top and middle clamp pieces (Fig. 1).

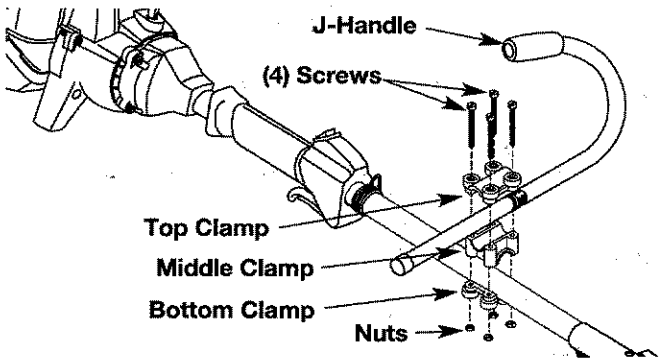



Fig. 1

2. Whilst holding the three pieces together, install the four (4) screws through the top clamp and into middle clamp.

**NOTE:** The holes in the top and middle clamp will line up only when assembled correctly.

3. Place the clamps and J-handle the over the shaft housing and onto the bottom clamp.
4. Hold each hex nut in the bottom clamp recess with a finger. Start screws with a large Phillips screwdriver. Do not tighten until you make the handle adjustment.
5. Slide the J-handle in or out until the arrow/white line on the decal touches the clamp assembly (Fig. 2).

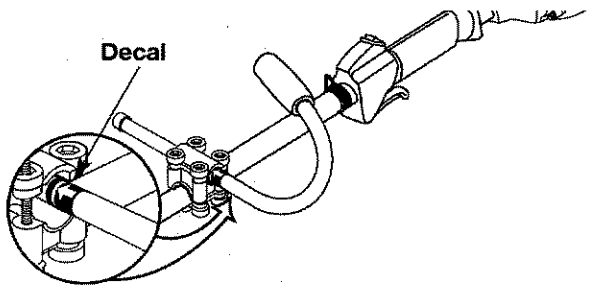



Fig. 2

Fig. 3

6. Whilst holding the unit in the operating position (Fig. 3), position the J-handle to the location that provides you the best grip.
7. Tighten the clamp screws evenly, until the J-handle is secure.

## INSTALLING THE HARNESS

**WARNING:** Always use the shoulder harness when using the cutting blade to avoid serious personal injury.

1. Push the strap through the center of the buckle.
2. Pull the strap over the cross bar and down through the slot in the buckle (Fig. 4).

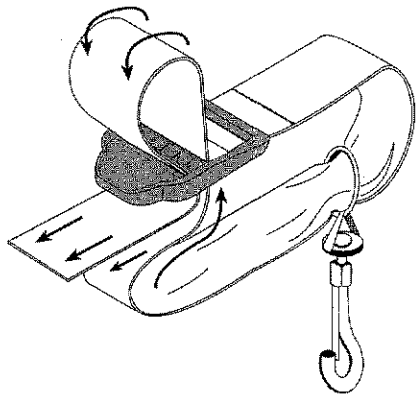


Fig. 4

3. Put the harness on over head and onto shoulder. Snap it on to the support fitting (Fig. 5).

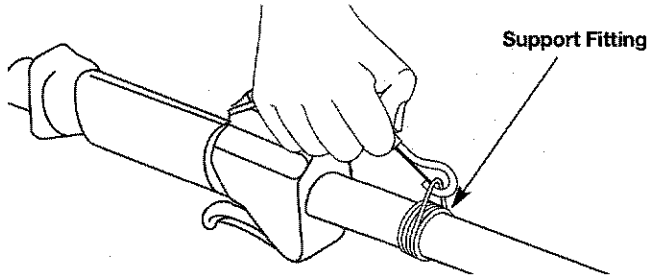



Fig. 5

4. Adjust length to fit the operator's size. Pull tab to lengthen, pull strap to shorten (Fig 6).

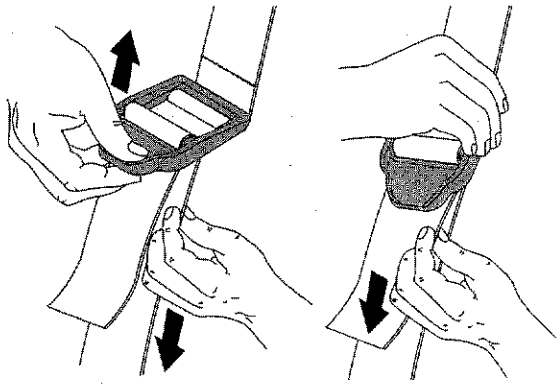


Fig. 6

## REMOVING AND INSTALLING CUTTING ATTACHMENT SHIELD

**Remove the cutting attachment shield when using the unit as a brushcutter.**

> **WARNING:** The cutting attachment shield should NOT be installed when operating the unit with a blade. Remove the cutting attachment shield before removing or installing the blade.

Remove the cutting attachment shield from the shield mount by removing the three (3) screws with a flat blade screwdriver (Fig. 7). Store parts for future use.

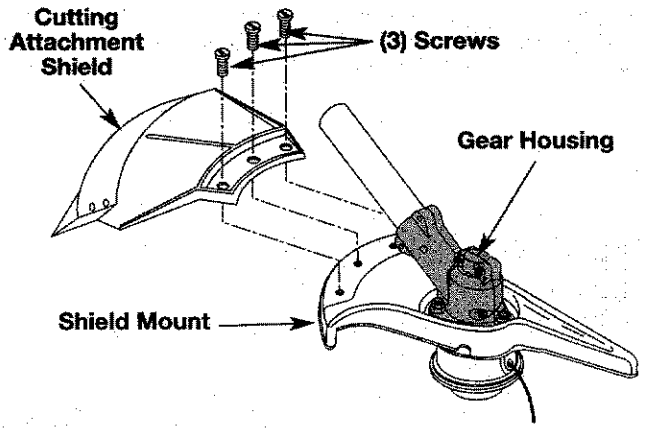



Fig. 7

**Install the cutting attachment shield when using the unit as a grass trimmer.**

> **WARNING:** To avoid serious personal injury, the cutting attachment shield SHALL be in place at all times whilst operating the unit as a grass trimmer.

Install the cutting attachment shield on the shield mount by inserting the three (3) screws into the shield mount. Tighten securely with a flat blade screwdriver (Fig. 7).

## REMOVE THE CUTTING ATTACHMENT AND INSTALL THE CUTTING BLADE

**NOTE:** To make removing or installing the cutting blade or cutting attachment easier, place the unit on the ground or on a work bench.

### Remove the Cutting Attachment Shield

See Removing and Installing Cutting Attachment Shield,.

### Remove the Cutting Attachment

> **WARNING:** The gear housing gets hot with use and can result in injury to the operator. When the unit is turned off it remains hot for a short time. Do not touch the gear housing until it has cooled.

1. Align the shaft bushing hole with the locking rod slot and insert the locking rod into the shaft bushing hole (Fig. 8).

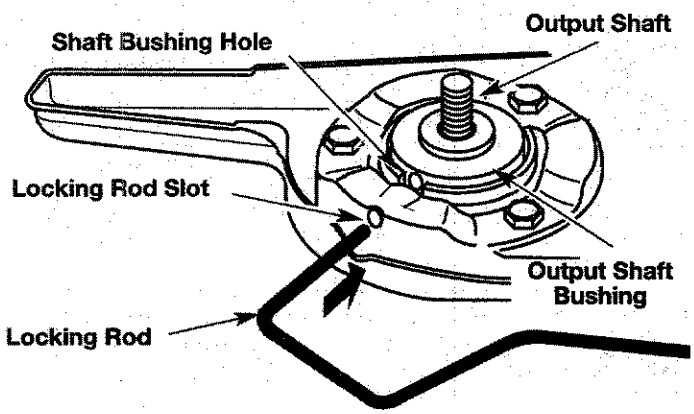



Fig. 8

2. Hold the locking rod in place by grasping it next to the boom of the unit (Fig. 9).
3. Whilst holding the locking rod, remove the cutting attachment by turning it clockwise off of the output shaft (Fig. 10). Store the cutting attachment for future use.

**NOTE:** The blade retainer under the cutting attachment will be used when installing the cutting blade.

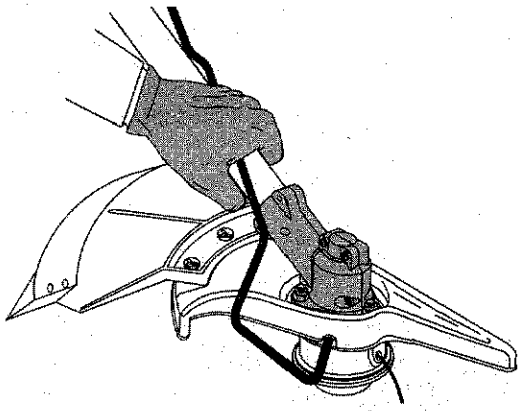


Fig. 9

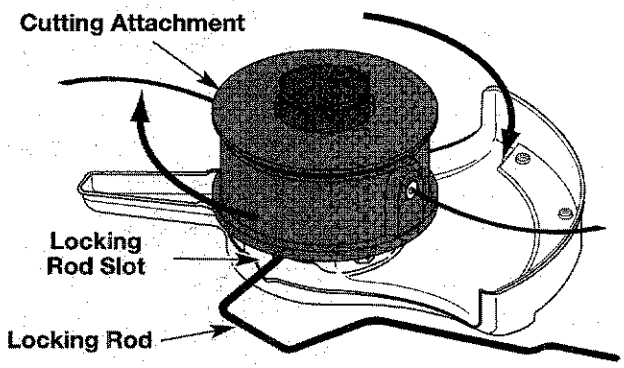



Fig. 10

# ASSEMBLY INSTRUCTIONS

### Install the Cutting Blade

**WARNING:** To avoid serious personal injury, always wear gloves whilst handling or installing the blade.

4. Place the cutting blade on the output shaft (Fig. 11).
5. Make sure that the cutting blade is centered on the pilot step and sitting flat against the output shaft bushing (Fig. 12).

**WARNING:** If the cutting blade is off-center, the unit will vibrate, and the blade may fly off, which can cause serious personal injury.

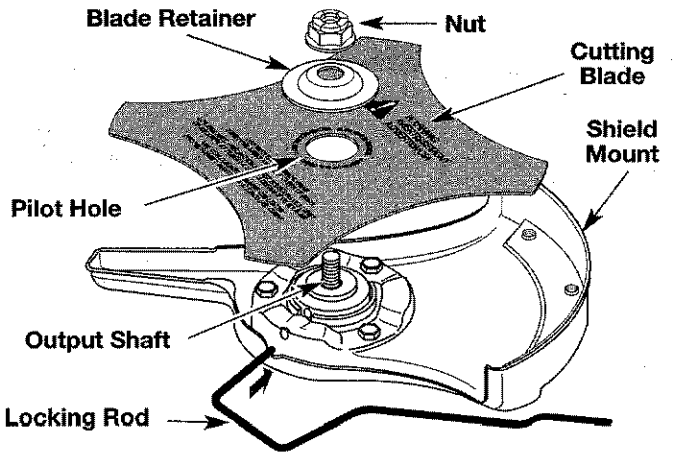



Fig. 11

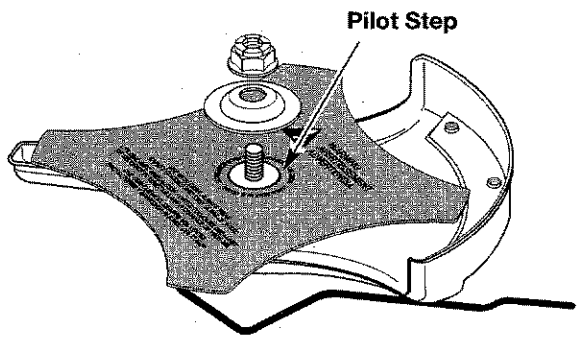



Fig. 12

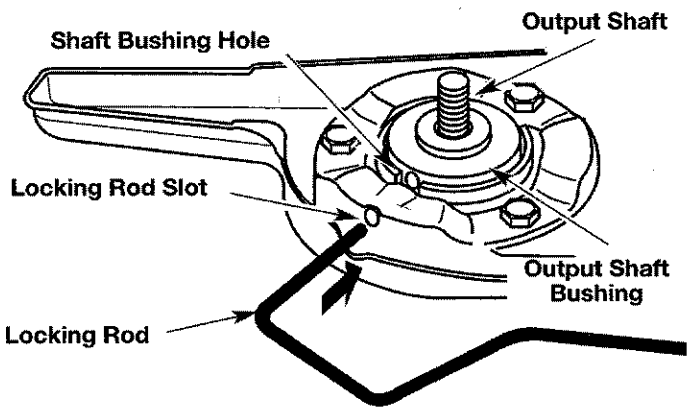



Fig. 13

6. Align the shaft bushing hole with the locking rod slot and insert the locking rod into the bushing hole (Fig. 13).
7. Put the blade retainer and nut on the output shaft. Make sure that the blade is installed correctly.
8. Tighten nut counterclockwise against the blade whilst holding the locking rod;

- If using a torque wrench and an 5/8 inch socket tighten to;

  37 -38 N•m.

  325 - 335 in•lb,

  27 - 28 ft.•lb,

- Without a torque wrench, use a 5/8 inch closed-end or socket wrench, turning the nut until the blade retainer is snug against the shaft bushing. Make sure that the blade is installed correctly, then rotate the nut an additional 1/4 to 1/2 turn counterclockwise (Fig. 13).

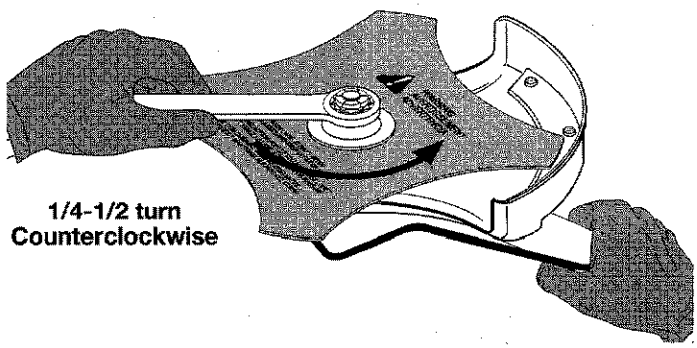



Fig. 14

9. Remove the locking rod from the locking rod slot.

**WARNING:** To avoid serious personal injury or damage to the unit, do not start or operate this unit with the locking rod in the locking rod slot.

**WARNING:** Do not sharpen the cutting blade. Sharpening the blade can cause the blade tip to break off whilst in use. This can result in severe personal injury. Replace the blade.

## REMOVE THE CUTTING BLADE AND INSTALL THE CUTTING ATTACHMENT

### Remove the Cutting Blade

**WARNING:** To avoid serious personal injury, always wear gloves whilst handling or installing the blade.

1. Align the shaft bushing hole with the locking rod slot and insert the locking rod into the bushing hole (Fig. 8).
2. Hold the locking rod in place by grasping it next to the boom of the unit (Fig.15).

3. Whilst holding the locking rod, loosen the nut on the blade by turning it clockwise with a 5/8 inch closed-end or socket wrench (Fig. 15).

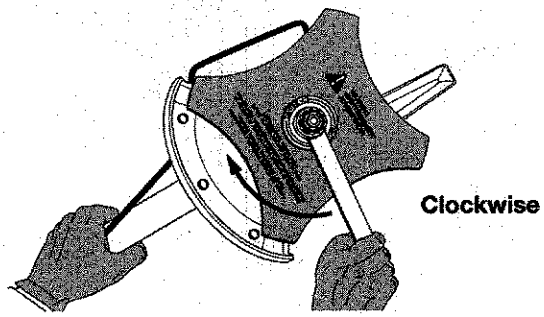



Fig. 15

4. Remove the nut, blade retainer, and blade. Store the nut and blade together for future use in a secure place. Store out of reach of children.

**Install the Cutting Attachment**

5. Align the shaft bushing hole with the locking rod slot and insert the locking rod into the shaft bushing hole. (Fig. 13). Place the blade retainer on the output shaft with the flat surface against the output shaft bushing as shown in Fig. 16. Screw the cutting attachment counterclockwise onto the output shaft. Tighten securely.

**NOTE:** The blade retainer must be installed on the output shaft in the position shown for the cutting attachment to work correctly.

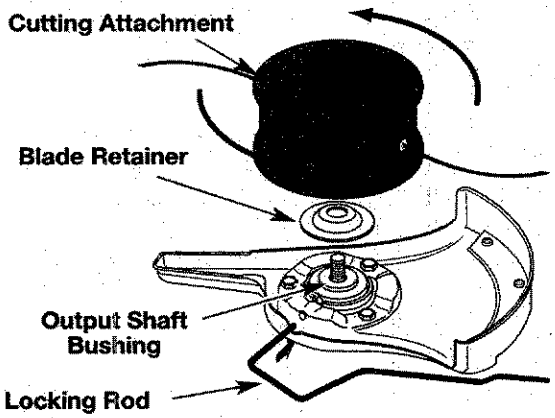



Fig. 16

6. Remove the locking rod.
7. Install the cutting attachment shield. See Removing and Installing Cutting Attachment Shield, Pg. 9.

**WARNING:** To avoid serious personal injury, the cutting attachment shield SHALL be in place at all times whilst operating the unit as a grass trimmer.

# OIL AND FUEL INFORMATION

## RECOMMENDED OIL TYPE

Using the proper type and weight of oil in the crankcase is extremely important. Check the oil before each use and change the oil regularly. Failure to use the correct oil, or using dirty oil, can cause premature engine wear and failure.

Use a high-quality SAE 30 weight oil of API (American Petroleum Institute) service class SF, SG, SH.

### ADDING OIL TO CRANKCASE – INITIAL USE

**NOTE:** This unit is shipped without being filled with oil. In order to avoid damage to the unit, put oil in the crankcase before attempting to start unit.

Your unit is supplied with one 100 ml (3.4 oz.) bottle of SAE 30 SF, SG, SH oil (Fig. 17).

**NOTE:** Save the bottle to measure the correct amount for future oil changes. See **Changing the Oil** Pg. 21.

**NOTE:** Your new 4-Cycle trimmer is shipped for operation in conditions above 4°C (40°F). For cold weather operation, temperatures below 4°C (40°F) use a high-quality SAE 10W30 weight oil of API (American Petroleum Institute) service class SF, SG, SH.

1. Unscrew the top of the bottle of oil and remove the paper seal covering the opening. Replace top. Cut the tip off the funnel spout (Fig. 17).

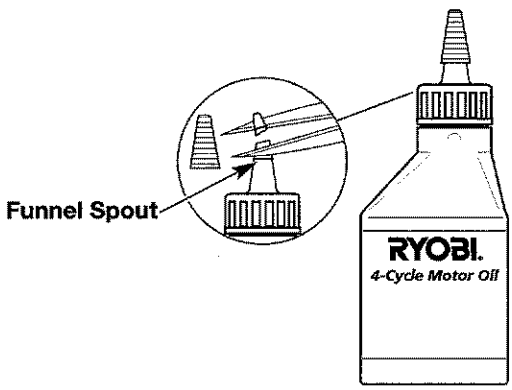



Fig. 17

2. Place the unit on a flat level surface.
3. Remove the oil plug / dipstick from the crankcase (Fig. 18).
4. Pour the entire bottle of oil into the oil fill hole (Fig. 19).

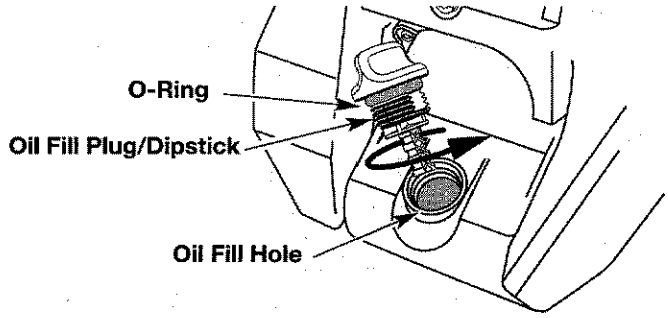



Fig. 18

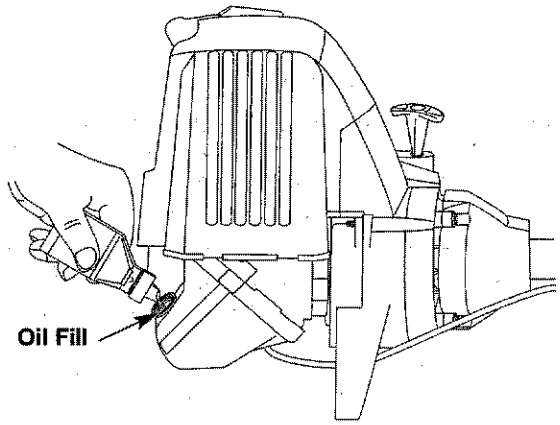



Fig. 19

**NOTE:** Never add oil to the fuel or fuel tank.

5. Wipe up any oil that may have spilled and reinstall the oil fill plug / dipstick.

The importance of checking and maintaining the proper oil level in the crankcase cannot be overemphasized. Check oil before each use and change as needed. See **Changing the Oil** Pg. 21.

# OIL AND FUEL INFORMATION

## RECOMMENDED FUEL TYPE

Old fuel is the primary reason for the unit not running properly. Be sure to use fresh, clean, unleaded Petrol (gasoline).

**NOTE:** This is a four cycle engine. In order to avoid damage to the unit, **do not mix oil with Petrol (gasoline).**

### Definition of Blended Fuels

Today's fuels are often a blend of petrol (gasoline) and oxygenates such as ethanol, methanol or MTBE (ether). Alcohol-blended fuel absorbs water. As little as 1% water in the fuel can make fuel and oil separate or form acids when stored. Use fresh fuel (less than 60 days old), when using alcohol-blended fuel.

### Using Blended Fuels

If you choose to use a blended fuel, or its use is unavoidable, follow recommended precautions.

- Always use fresh unleaded petrol (gasoline)
- Use the fuel additive STA-BIL® or an equivalent.
- Drain tank and run the engine dry before storing unit.

### Using Fuel Additives

The use of fuel additives, such as STA-BIL® Gas Stabilizer or an equivalent, will inhibit corrosion and minimize the formation of gum deposits. Using a fuel additive can keep fuel from forming harmful deposits in the carburetor for up to six (6) months. Add 23 ml (0.8 oz.) of fuel additive per gallon of fuel according to the instructions on the container. NEVER add fuel additives directly to the unit's petrol (gasoline) tank.

## FUELING UNIT

**WARNING:** Petrol (gasoline) is extremely flammable and its vapors can explode if ignited. To avoid serious personal injury, always stop the engine and allow it to cool before filling the fuel tank. Do not smoke whilst filling the tank. Keep sparks and open flames away from the area.

1. Remove fuel cap (Fig. 20).

**WARNING:** Remove fuel cap slowly to avoid injury from petrol (gasoline) spray.

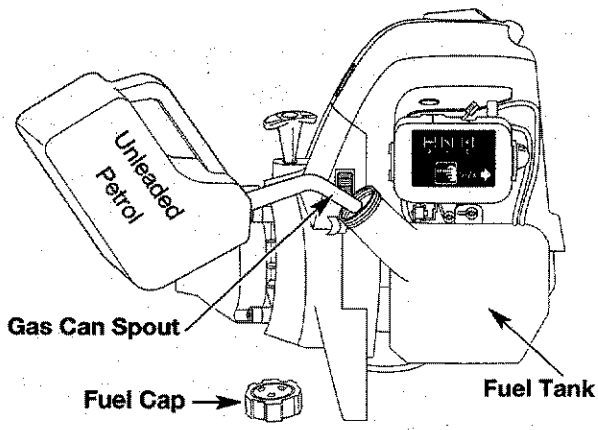



Fig. 20

2. Place spout of petrol (gasoline) container into the fill hole on the fuel tank (Fig. 20) and fill tank.

**WARNING:** Add petrol (gasoline) in a clean, well ventilated area outdoors. Avoid creating a source of ignition for spilt fuel.

**NOTE:** Do not overfill tank.

3. Wipe up any petrol (gasoline) that may have spilled
4. Reinstall the fuel cap.

**WARNING:** Never operate the unit without the fuel cap securely in place.

5. Move the unit at least 9.1 meters (30 ft) from the fueling source and site before starting the engine.

# STARTING/STOPPING INSTRUCTIONS

## STARTING INSTRUCTIONS

**Cold Start - First Start of the Day or Engine Ran Out of Fuel**

**WARNING:** Operate this unit only in a well ventilated area outdoors. Carbon monoxide exhaust fumes can be lethal in a confined area.

1. Check oil level in crankcase. See **Checking the Oil Level** Pg. 21.
2. Fill the fuel tank with fresh, clean, unleaded petrol (gasoline) (see page 13).
3. Put the Ignition Switch in the **START** [I] position (Fig. 21).

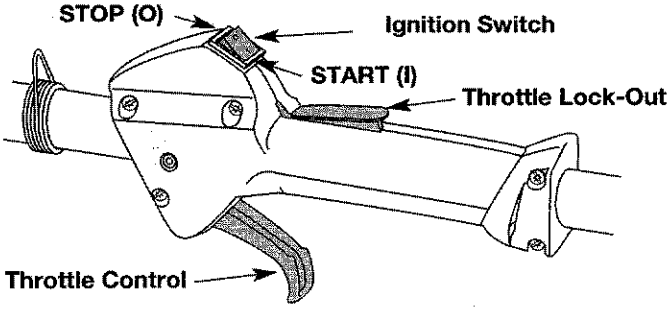



Fig. 21

4. Place the choke lever in the **FULL** choke (**A**) |⊢| position (Fig. 22).

**NOTE:** Slide the choke lever directly above the appropriate symbol on air filter cover decal (Fig. 22).

5. Fully press and release the primer bulb slowly 5 to 7 times. Petrol (gasoline) should be felt and visible in the bulb (Fig. 22). If petrol (gasoline) has not entered the bulb, press three more times, or until it does.

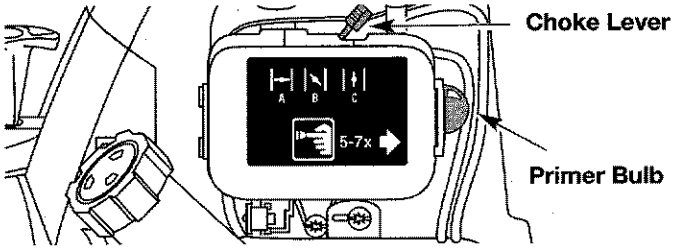



Fig. 22

6. Whilst pressing the throttle lock-out, squeeze the throttle control to the wide open (full throttle) position (Fig. 21).
7. With the unit in the starting position (Fig. 23) pull the starter rope briskly 5 times in the **FULL** choke (**A**) |⊢| position. If the engine attempts to run before the fifth pull, proceed to step 8.
8. Move the choke lever to the **PARTIAL** (**B**) |◹| position (Fig. 22).

**NOTE:** The engine will not run in the **FULL** choke (**A**) |⊢| position.

9. Pull the starter rope 1 to 3 pulls until the engine starts. Run for 15-30 seconds. If the unit fails to start return to step 7.

**WARNING:** Avoid accidental starting. Be in the starting position whenever pulling the starting rope. To avoid serious personal injury, the operator and unit must be in a stable position whilst starting.

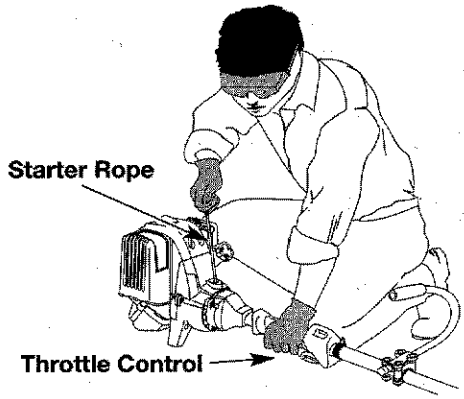



Fig. 23

10. Move the choke lever to the **RUN** (**C**) |↟| position and run at full throttle for 30 seconds.
11. Release the throttle control to the idle position and begin operation.

**NOTE:** If the engine does not start using these procedures, repeat steps 5 through 11 using TWO (2) pulls in the **FULL** choke (**A**) |⊢| position.

**Engine Re-Start - Warm Engine With Fuel**

1. Put the Ignition Switch in the **START** [I] position (Fig. 21).
2. Move the choke lever to the **PARTIAL** (**B**) |◹| position (Fig. 22).
3. Whilst pressing the throttle lock-out, squeeze the throttle control to the wide open (full throttle) position (Fig. 21).
4. With the unit in the starting position (Fig. 23), pull the starter rope briskly until the engine starts.
5. When the engine starts, move the choke lever to the **RUN** (**C**) |↟| position, and run at full throttle for 30 seconds.

**NOTE:** If the engine does not start using the **Engine Re-start** procedures, revert to the **Cold Start** procedures.

**NOTE:** 4-stroke engines, like cars, are able to start in the idle position. As an alternate method, you may want to start your unit in the idle position when the unit is warm. With the Ignition Switch in the **START** position and the choke lever in the **RUN** (**C**) |↟| position, pull the starter rope briskly. When the engine starts, run at full throttle for 30 seconds. If the unit fails to start or dies, revert to the **Engine Re-Start** procedure.

## STOPPING INSTRUCTIONS

1. Release your hand from the throttle control (Fig. 21). Allow the engine to idle.
2. To stop the engine, put the Ignition Switch in the **STOP** [O] position (Fig. 21).

# STARTING/STOPPING INSTRUCTIONS (Cold Weather)

## STARTING INSTRUCTIONS-COLD WEATHER

These instructions will help in starting your unit for cold weather operation, temperatures below 4°C (40°F).

**Cold Start - First Start of the Day or Engine Ran Out of Fuel**

**WARNING:** Operate this unit only in a well ventilated area outdoors. Carbon monoxide exhaust fumes can be lethal in a confined area.

**WARNING:** Avoid accidental starting. Be in the starting position whenever pulling the starting rope. To avoid serious personal injury, the operator and unit must be in a stable position whilst starting.

1. Check oil level in crankcase. See **Checking the Oil Level** Pg. 21.
2. Fill the fuel tank with fresh, clean, unleaded petrol (gasoline) (see page 13).
3. Put the ignition switch in the **START** position [I] (Fig. 21).
4. Place the choke lever in the **FULL** choke **(A)** |⊢| position (Fig. 22).
5. Fully press and release the primer bulb slowly 5 to 7 times. Petrol (gasoline) should be felt and visible in the bulb (Fig. 22). If gasoline has not entered the bulb, press three more times, or until it does.
6. Whilst pressing the throttle lock-out, squeeze the throttle control to the wide open (full throttle) position (Fig. 21).
7. With the unit in the starting position (Fig. 23) pull the starter rope briskly 5 times in the **FULL** choke **(A)** |⊢| position. If the engine attempts to run before the fifth pull, proceed to step 8.
8. Move the choke lever to the **PARTIAL (B)** |◺| position (Fig. 22).

**NOTE:** The engine will not run in the **FULL** choke **(A)** |⊢| position.

9. Pull the starter rope 1 to 3 pulls until the engine starts (Fig. 23). Run for a minimum of 30 seconds.

**NOTE:** If the unit failed to start in step 9, move the choke lever to the **RUN (C)** |↟| position (Fig. 22) and pull the starter rope until the unit starts (1 to 7 pulls maximum). If the unit still fails to start, repeat steps 3 through 9.

10. Move the choke lever to the **RUN (C)** |↟| position and run at full throttle for 30 seconds to one (1) minute.
11. Release the throttle control and allow the unit to idle.
12. Your unit is now ready to operate.

**Failed to Start**

If your unit failed to start using the above procedure or dies, repeat steps 1 through 11. If the unit still fails to start, see the troubleshooting section.

**Engine Re-Start - Warm Engine With Fuel**

1. Put the ignition switch in the **START** position [I] (Fig. 21).
2. Move the choke lever to the **PARTIAL (B)** |◺| position (Fig. 22).
3. Whilst pressing the throttle lock-out, squeeze the throttle control to the wide open (full throttle) position (Fig. 21).
4. With the unit in the starting position, pull the starter rope briskly (Fig. 23) until the engine starts (1 to 5 pulls).
5. When the engine starts, run at full throttle for 10 to 30 seconds. Move the choke lever to the **RUN (C)** |↟| position (Fig. 22). Release the throttle control and allow the unit to idle.

**NOTE:** If the engine does not start using the **Engine Re-start** procedures, revert to the **Cold Start** procedures.

## STOPPING INSTRUCTIONS

1. Release your hand from the throttle control and allow the unit to idle (Fig. 21).
2. To stop the engine, put the Ignition Switch in the **STOP [O]** position (Fig. 21).

## OPERATING THE QUICK-LINK® SYSTEM

The Quick-Link® system enables the use of these optional add-ons.

| | |
|---|---|
| Blower/Vacuum | RBV1100A |
| Cultivator | RGC1100A |
| Edger | RLE1100A |
| Hedge Trimmer | RHS1100A |
| Sweeper/Blower | RLS1100A |
| Tree Pruner | RGP1100A |
| Vacuum | RLV1100A |

**WARNING:** Read and understand operator's manual for add-on prior to operation.

**Removing the Cutting Attachment or Add-Ons:**

1. Turn the knob counterclockwise to loosen (Fig. 24).
2. Press and hold the release button (Fig. 24).
3. Whilst firmly holding the upper Shaft Tube, pull the cutting attachment or add-on straight out of the Quick-Link® coupler (Fig. 25).

**Installing the Cutting Attachment or Add-Ons:**

**WARNING:** To avoid serious personal injury and damage to the unit, shut unit off before removing or installing add-ons.

**NOTE:** To make installing or removing the add-on easier, place the unit on the ground or on a work bench.

1. Turn knob counterclockwise to loosen (Fig. 24).

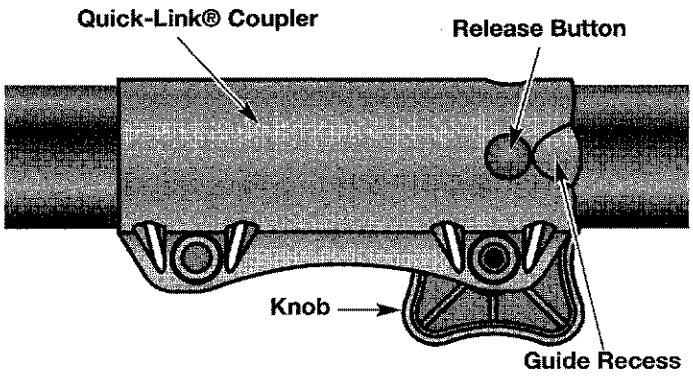



Fig. 24

2. Whilst firmly holding the add-on, push it straight into the Quick-Link® coupler (Fig. 25).

**NOTE:** Aligning the release button with the guide recess will help installation (Fig. 24).

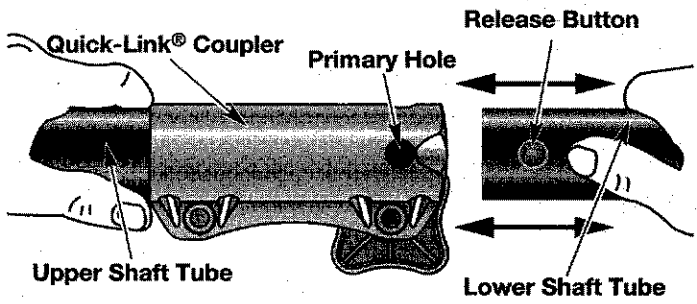



Fig. 25

3. Turn the knob clockwise to tighten (Fig. 26).

**CAUTION:** Lock the release button in the primary hole and securely tighten the knob before operating this unit.

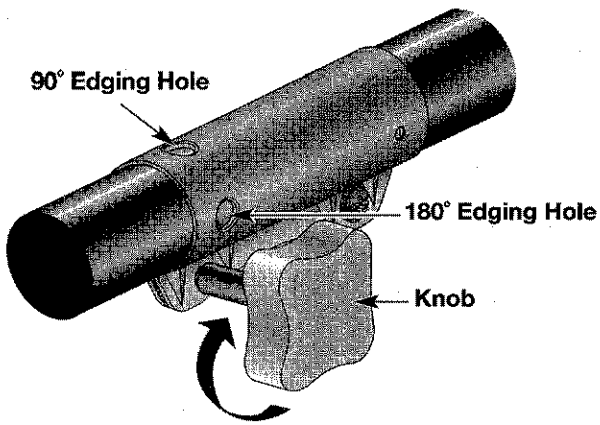



Fig. 26

**CAUTION:** The cutting attachment and add-ons with the Quick-Link® system are to be used in the primary hole unless stated otherwise in the specific add-ons operator's manual. Using the wrong hole could lead to personal injury, or damage to the unit.

For edging when using the line head cutting attachment with Quick-Link® models, lock the release button of the cutting attachment into the **90° edging hole** or the **180° edging hole**(Fig. 26).

**WARNING:** Do not use the cutting blade for edging or as an edger, severe personal injury to yourself or others can occur.

# OPERATING INSTRUCTIONS

## HOLDING THE TRIMMER

**WARNING:** Always wear eye, hearing, foot and body protection to reduce the risk of injury when operating this unit.

Before operating the unit, stand in the operating position (Fig. 27). Check for the following:

- The operator is wearing eye protection and proper clothing.
- The right arm is slightly bent, and the hand is holding the shaft grip.
- The left arm is straight, and the hand is holding the J-handle.
- The unit is at waist level.

Fig. 27

## ADJUSTING TRIMMING LINE LENGTH

The Bump Head™ cutting attachment allows you to release trimming line without stopping the engine. To release more line, lightly tap the cutting attachment on the ground (Fig. 28) whilst operating the trimmer at high speed.

**NOTE:** Always keep the trimming line fully extended. Line release becomes more difficult as cutting line becomes shorter

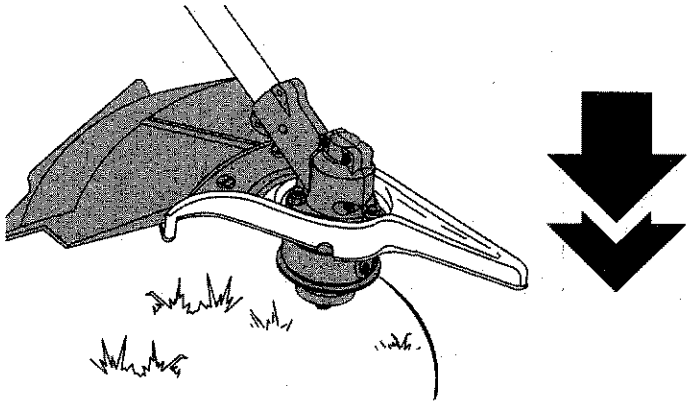


Fig. 28

Each time the head is bumped, about 25.4 mm (1 inch) of trimming line is released. A blade in the cutting attachment guard will cut the line to the proper length if excess line is released.

For best results, tap the Bump Head™ on bare ground or hard soil. If line release is attempted in tall grass, the engine may stall. Always keep the trimming line fully extended. Line release becomes more difficult as the cutting line becomes shorter.

**NOTE:** Do not rest the Bump Head™ on the ground whilst the unit is running .

**CAUTION:** Do not remove or alter the line cutting blade assembly. Excessive line length will make the clutch overheat. This may lead to serious personal injury or damage to the unit.

Some line breakage will occur from:

- Entanglement with foreign matter
- Normal line fatigue
- Attempting to cut thick, stalky weeds
- Forcing the line into objects such as walls or fence posts

## TIPS FOR BEST TRIMMING RESULTS

- Keep the cutting attachment parallel to the ground.
- Do not force the cutting attachment. Allow the tip of the line to do the cutting, especially along walls. Cutting with more than the tip will reduce cutting efficiency and may overload the engine.
- Cut grass over 200 mm (8 inches) by working from top to bottom in small increments to avoid premature line wear or engine drag.
- Cut from left to right whenever possible. Cutting to the right improves the unit's cutting efficiency. Clippings are thrown away from the operator.
- Slowly move the trimmer into and out of the cutting area at the desired height. Move either in a forward-backward or side-to-side motion. Cutting shorter lengths produces the best results.
- Trim only when grass and weeds are dry.
- The life of your cutting line is dependent upon;
  - Following the previous trimming techniques
  - What vegetation is being cut
  - Where it's being cut

For example, the line will wear faster when trimming against a foundation wall as opposed to trimming around a tree.

## DECORATIVE TRIMMING

Decorative trimming is accomplished by removing all vegetation around trees, posts, fences, etc.

Rotate the whole unit so that the cutting attachment is at a 30° angle to the ground (Fig. 29).

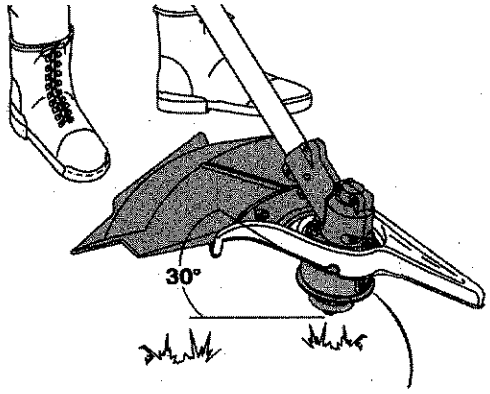



Fig. 29

## USING THE CUTTING BLADE

**WARNING:** Always wear eye, hearing, foot, body protection and the strap to reduce the risk of injury when operating this unit.

**WARNING:** Do not use the cutting blade for edging or as an edger, severe personal injury to yourself or others can occur.

Before operating the unit with the cutting blade stand in the operating position (Figs. 30). Refer to Holding the Trimmer, Pg. 17.

**Cutting Blade Operating Tips:**

To establish a rhythmic cutting procedure:

- Plant feet firmly, comfortably apart.
- Bring the engine to full throttle before entering the material to be cut. The blade has maximum cutting power at full throttle and is less likely to bind, stall, or cause kick back, which can result in serious personal injury to the operator or others.

**WARNING:** Kick back may occur when the spinning blade contacts an object that it does not immediately cut. Kick back can be violent enough to cause the unit and/or operator to be propelled in any direction, and possibly lose control of the unit. Kick back can occur without warning if the blade snags, stalls or binds. This is more likely to occur in areas where it is difficult to see the material being cut.

- Cut whilst swinging the upper part of your body from right to left.
- Always release the throttle trigger and allow the engine to return to idle speed when not cutting.
- When done always unsnap unit from harness before taking harness off.

**WARNING:** The blade continues to spin after the engine is turned off. The coasting blade can seriously cut you if accidentally touched.

- Swing the unit in the same direction as the blade spins, which increases the cutting action.
- Move forward to the next area to be cut after the return swing and plant feet again.
- The cutting blade is designed with a second cutting edge, which can be used by removing the blade, turning it upside down, and reinstalling it.

**WARNING:** Do not sharpen the cutting blade. Sharpening the blade can cause the blade tip to break off whilst in use. This can result in severe personal injury to yourself or others. Replace the blade.

To reduce the chance of material wrapping around the blade, follow these steps:

- Cut at full throttle.
- Swing the unit into material to be cut from your right to your left (Fig. 31).
- Avoid the material just cut as you make the return swing.

**WARNING:** Do not clear away cut material with the engine running or blade turning. To avoid serious personal injury, turn off engine. Allow the blade to stop before removing materials wrapped around the blade shaft.

Fig. 30

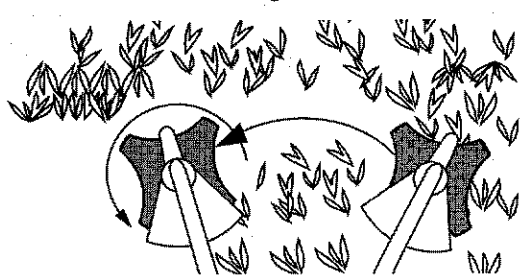


Fig. 31

# MAINTENANCE AND REPAIR INSTRUCTIONS

**NOTE:** Some maintenance procedures may require special tools or skills. If you are unsure about these procedures take your unit to an authorized service dealer.

**WARNING:** To prevent serious injury, never do maintenance or repairs with unit running. Always do maintenance and repairs on a cool unit. Disconnect spark plug wire to ensure the unit will not start.

## MAINTENANCE SCHEDULE

These required maintenance procedures should be performed at the frequency stated in the table. They should also be included as part of any seasonal tune-up.

| FREQUENCY | MAINTENANCE REQUIRED | REFER TO: |
|---|---|---|
| Before Starting Engine | Fill fuel tank with fresh fuel<br>Check oil | Page 13<br>Page 21 |
| Every 10 Hours | Clean and re-oil air filter. | Page 22 |
| 1st Change at 10 Hours<br>Every 25 Hours there after<br>Every 25 Hours | Change oil<br>Change oil<br>Clean Spark Arrestor | Page 21<br>Page 21<br>Page 25 |
| 10 hours on new engine<br>Every 50 Hours<br>Every 50 Hours | Check rocker arm to valve clearance and adjust as required<br>Check rocker arm to valve clearance and adjust as required<br>Check spark plug condition and gap | Page 23-25<br>Page 23-25<br>Page 25 |

## LINE INSTALLATION

Always use genuine Ryobi 2.41 mm (0.095 in.) replacement line. Larger line may make the engine overheat or fail.

**WARNING:** Never use metal-reinforced line, wire, or rope, etc. These can break off and become a dangerous projectile.

There are two methods to replace the trimming line.

- Wind the inner reel with new line
- Install a prewound inner reel

### Winding the Existing Inner Reel

1. Hold the outer spool with one hand and unscrew the Bump Knob™clockwise (Fig. 32). Inspect the bolt inside the Bump Knob to make sure it moves freely. Replace the Bump Knob if damaged.
2. Remove the inner reel from the outer spool (Fig. 32).
3. Remove spring from the inner reel (Fig. 32).

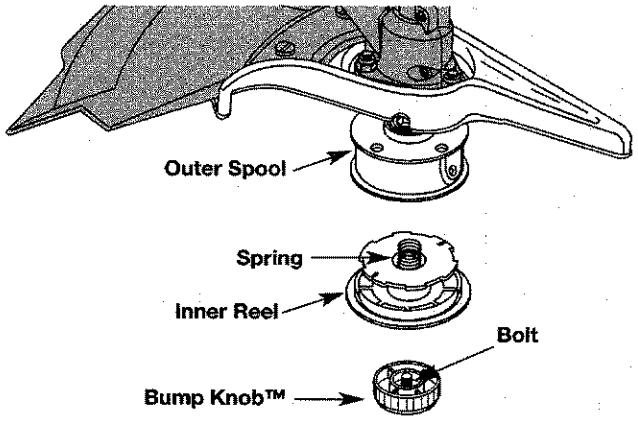



Fig. 32

4. Use a clean cloth to clean the the inner reel, spring, shaft, and inner surface of the outer spool (Fig. 33).
5. Check the indexing teeth on the inner reel and outer spool for wear (Fig. 34). If necessary, remove burrs or replace the reel and spool.

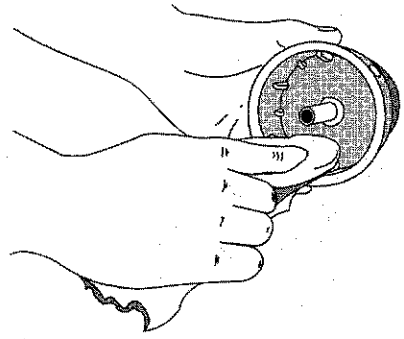


Fig. 33

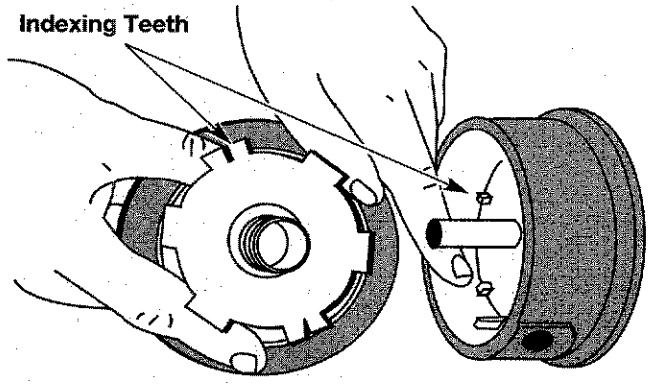



Fig. 34

6. Take approximately 25 feet (7.6 m) of new trimming line, loop it into two equal lengths. Insert each end of the line through one of the two holes in the inner reel (Fig. 35). Pull the line through the inner reel so that the loop is as small as possible.

**NOTE:** Always use the correct line length when installing trimming line on the unit. The line may not release properly if the line is too long.

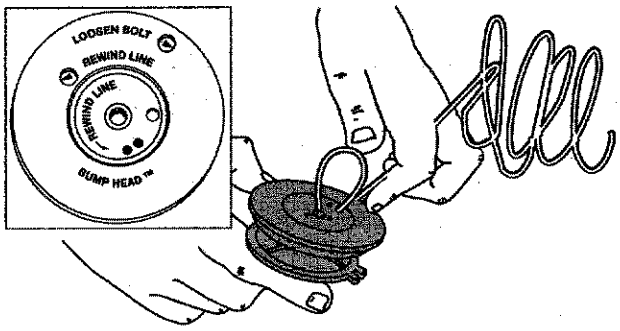



Fig. 35

7. Wind the lines in tight even layers, onto the reel (Fig. 36). Wind the line in the direction indicated on the inner reel. Place your index finger between the two lines to stop the lines from overlapping. Do not overlap the ends of the line.

**NOTE:** Failure to wind the line in the direction indicated will cause the cutting attachment to operate incorrectly.

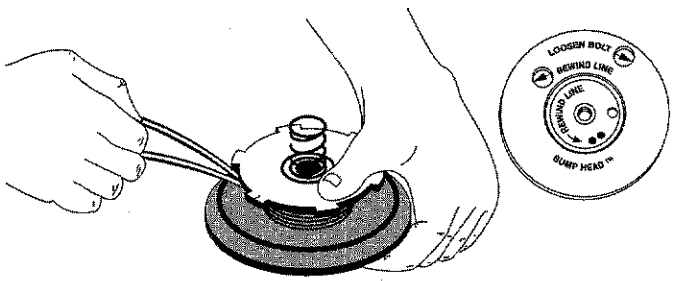



Fig. 36

8. Insert the ends of the line into the two holding slots (Fig. 37).
9. Place the spring in the inner reel. Insert the ends of the line through the eyelets in the outer spool and place inner reel inside the outer spool (Fig. 38). Push the inner reel and outer spool together. Whilst holding the inner reel and outer spool, grasp the ends and pull firmly to release the line from the holding slots in the spool.

**NOTE:** The spring must be assembled on the inner reel before reassembling the cutting attachment.

10. Hold the inner reel in place and install the Bump Knob by turning counterclockwise. Tighten securely.

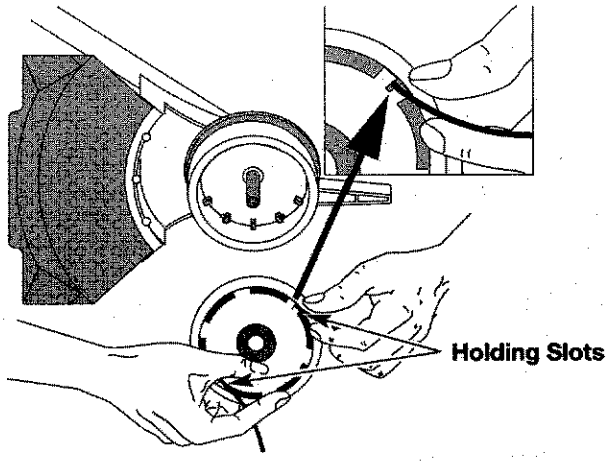



Fig. 37

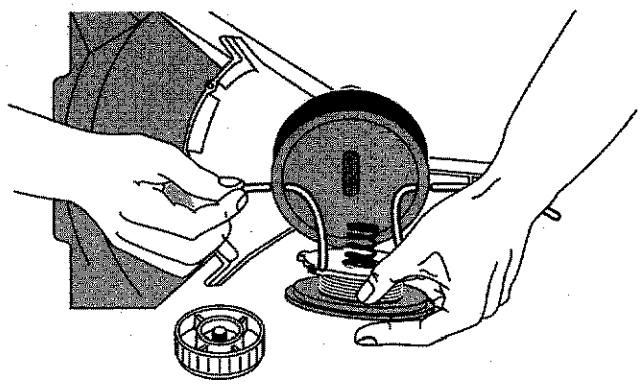


Fig. 38

## INSTALLING A PREWOUND REEL

1. Hold the outer spool with one hand and unscrew the Bump Knob counterclockwise (Fig. 32, Pg. 19). Inspect the bolt inside the Bump Knob to make sure it moves freely. Replace the Bump Knob if damaged.
2. Remove the old inner reel from the outer spool (Fig. 32, Pg. 19).
3. Remove the spring from the old inner reel (Fig. 32, Pg. 19).
4. Place the spring in the new inner reel.

**NOTE:** The spring must be assembled on the inner reel before reassembling the cutting attachment.

5. Insert the ends of the line through the eyelets in the outer spool (Fig. 38).
6. Place the new inner reel inside the outer spool. Push the inner reel and outer spool together. Whilst holding the inner reel and outer spool, grasp the ends and pull firmly to release the line from the holding slots in the spool.
7. Hold the inner reel in place and install the Bump Knob by turning clockwise. Tighten securely.

**Replacement Parts:**

See Accessories / Replacement Parts on page 25.

## CHECKING THE OIL LEVEL

**CAUTION:** To prevent extensive engine wear and damage to the unit, always maintain the proper oil level in the crankcase. Never operate the unit with the oil level below the bottom of the dipstick.

The importance of checking and maintaining the proper oil level in the crankcase cannot be overemphasized. Check oil before each use:

1. Stop engine and allow oil to drain into the crankcase.
2. Place the unit on a flat, level surface to get a proper oil level reading.
3. Keep dirt, grass clippings, etc., out of the engine. Clean the area around the oil fill plug/dipstick before removing it.
4. Remove the oil fill plug/dipstick and wipe off oil. Reinsert it all the way back in.
5. Remove the oil fill plug/dipstick and check oil level. Oil should be up to the top of the dipstick (Fig. 39).

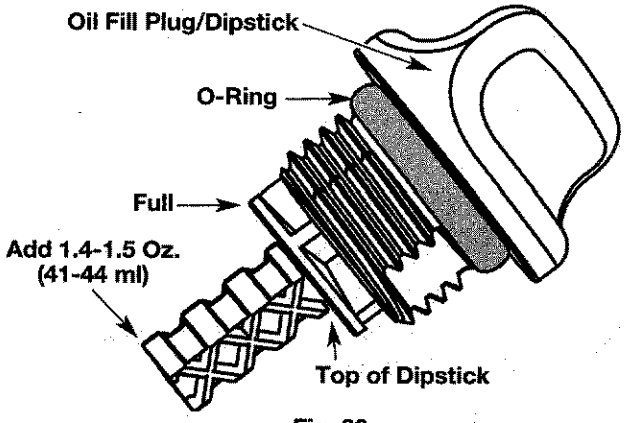



Fig. 39

6. If the level is low, add a small amount of oil to the oil fill hole and recheck (Fig. 40). Repeat until the oil level reaches the top of the dipstick.

**NOTE:** Do not overfill the unit.

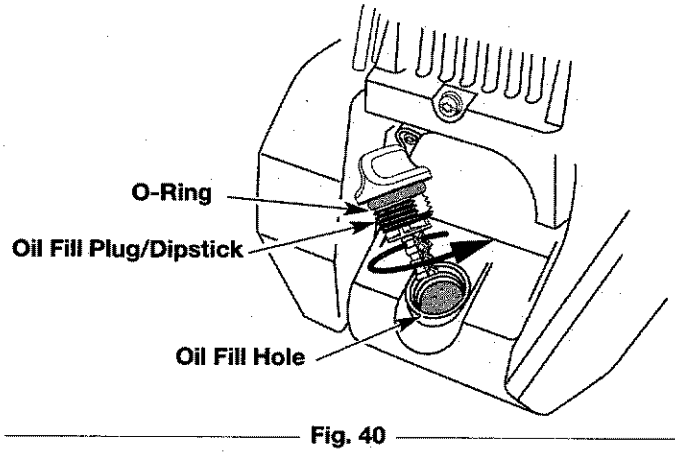



Fig. 40

**NOTE:** Make sure the O-ring is in place on the oil fill plug/dipstick when checking and changing the oil (Fig. 40).

## CHANGING THE OIL

For a new engine, change the oil after the first 10 hours of operation. Change the oil whilst the engine is still warm. The oil will flow freely and carry away more impurities.

**CAUTION:** Wear gloves to prevent injury when handling the unit.

1. Unplug spark plug boot to eliminate starting
2. Remove the oil fill plug/dipstick.
3. Pour the oil out of the oil fill hole and into a container by tipping the unit to a vertical position (Fig. 41). Allow ample time for complete drainage.

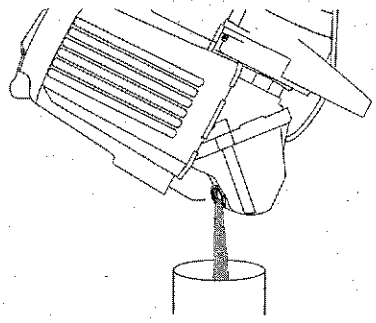


Fig. 41

4. Wipe up any oil residue on the unit and clean up any oil that may have spilled.
5. Refill the crankcase with 100 ml (3.4 oz) of SAE 30 SF, SG, SH oil.

**NOTE:** For cold weather operation, temperatures below 4°C (40°F) use a high-quality SAE 10W30 weight oil of API (American Petroleum Institute) service class SF, SG, SH.

**NOTE:** Use the bottle and spout saved from initial use to measure the correct amount. 100 ml (3.4 oz) is approximately to the top of the label on the bottle (Fig. 42). Check the level with the dipstick. If the level is low, add a small amount of oil and recheck (Fig. 39). Do not overfill.

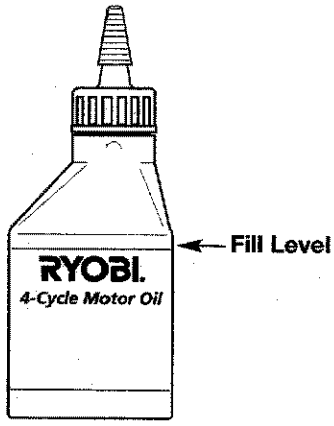



Fig. 42

6. Replace the oil fill plug/dipstick.
7. Reconnect spark plug boot.

## AIR FILTER MAINTENANCE

### Cleaning the Air Filter

**WARNING:** To avoid serious personal injury, always turn your trimmer off and allow it to cool before you clean or do any maintenance on it.

Clean and re-oil the air filter every 10 hours of operation. It is an important item to maintain. Not maintaining the air filter will **VOID** the warranty.

1. Open the air filter cover. Push the tab on the right side of the cover in, pull the air filter cover out and to the left (Fig. 43).

**NOTE:** It may be necessary to remove the fuel cap to completely remove the air filter cover

2. Remove the air filter (Fig. 43).

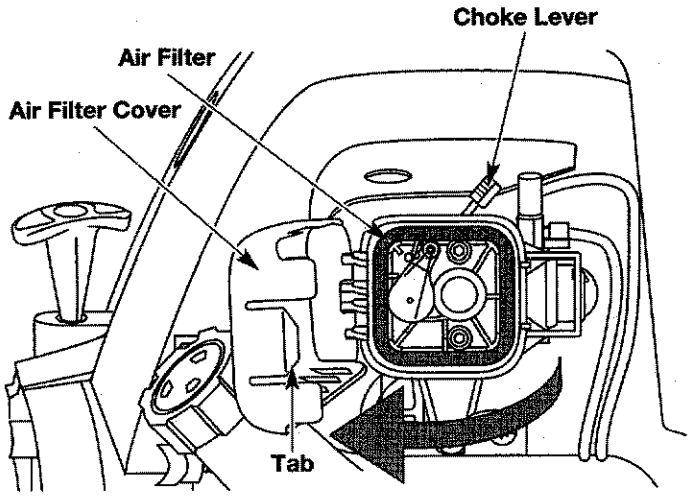



Fig. 43

3. Wash the filter in detergent and water (Fig. 44). Rinse the filter thoroughly and allow it to dry.

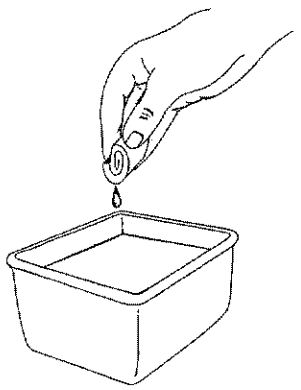


Fig. 44

4. Apply enough clean SAE 30 motor oil to lightly coat the filter (Fig. 45).

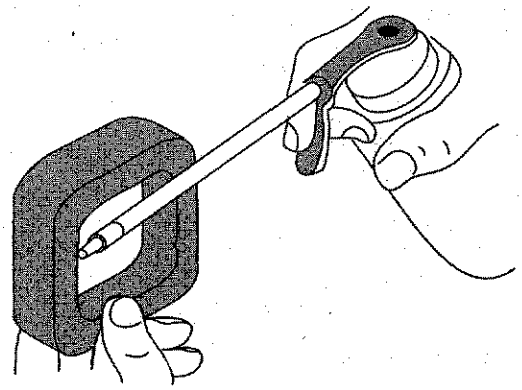


Fig. 45

5. Squeeze the filter to spread and remove excess oil (Fig. 46).

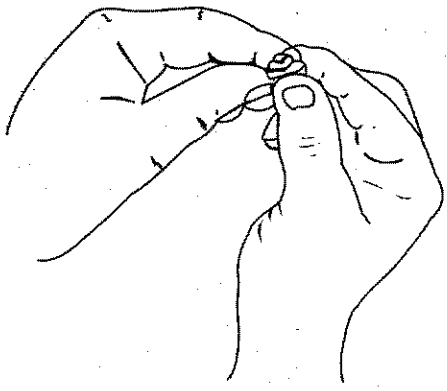


Fig. 46

6. Replace the filter (Fig. 47).

**NOTE:** If the unit is operated without the air filter, you will **VOID** the warranty.

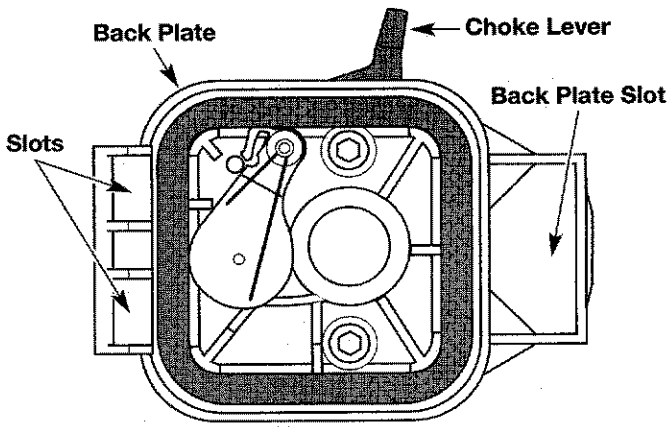



Fig. 47

7. Reinstall the air filter cover. Position the hooks on the left side of the air filter cover into the slots at the left side of the back plate (Fig. 47).

**NOTE:** It may be necessary to remove the fuel cap to reinstall the air filter cover

8. Swing the cover to the right until the tab on the air filter cover snaps into place in the slot on the back plate (Fig. 47).
9. Replace the fuel cap, if removed.

## CARBURETOR ADJUSTMENT

The idle speed of the engine is adjustable. An idle adjustment screw is reached though a hole in the top of the engine cover (Fig 48).

**NOTE:** Careless adjustments can seriously damage your unit. An authorized service dealer should make carburetor adjustments.

### Check Fuel

Old fuel is usually the main reason for the unit not running properly. Drain and refill the tank with clean, fresh unleaded fuel prior to doing any adjustments. Refer to **Oil and Fuel Information.**

### Clean Air Filter

The condition of the air filter is important to the operation of the unit. A dirty air filter will restrict air flow and change the air/fuel mixture. This is often mistaken for an out of adjustment carburetor. Check the condition of the air filter before adjusting the idle speed screw. Refer to **Air Filter Maintenance.**

### Adjust Idle Speed Screw

**WARNING:** The cutting attachment may be spinning during idle speed adjustment. Wear protective clothing and observe all safety instructions to prevent serious personal injury.

If after checking the fuel and cleaning the air filter the engine still will not idle, adjust the idle speed screw as follows.

1. Start the engine and let it run at a high idle for a minute to warm up.
2. Release the throttle trigger and let the engine idle. If the engine stops, insert a small phillips or flat blade screwdriver into the hole in the engine cover (Fig. 48). Turn the idle speed screw in, clockwise, 1/8 of a turn at a time (as needed) until the engine idles smoothly.

**NOTE:** The cutting attachment should not rotate when the engine idles.

3. If the cutting attachment rotates when the engine idles, turn the idle speed screw counterclockwise 1/8 of a turn at a time (as needed), to reduce idle speed.

Checking the fuel, cleaning the air filter, and adjusting the idle speed screw should solve most engine problems.

If not and:

- The engine will not idle,
- The engine hesitates or stalls on acceleration,
- There is a loss of engine power,

have the carburetor adjusted by an authorized service dealer.

**WARNING:** When the unit is turned off make sure the cutting attachment has stopped before the unit is set down to prevent serious personal injury.

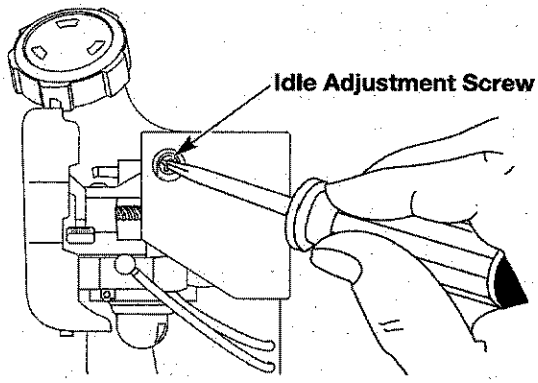



Fig. 48

## ROCKER ARM CLEARANCE

This requires disassembly of the engine. If you feel unsure or unqualified to perform this, take the unit to an authorized service center.

**NOTE:** Inspect the valve to rocker arm clearance with a feeler gauge after the first 10 hours of operation and then every 50 hours of operation thereafter.

- The engine must be cold when checking or adjusting the valve clearance.
- This task should be performed inside, in a clean, dust free area.

1. Remove the muffler cover by pressing down on the corner with a flat blade screwdriver (Fig. 49). Slide the notches on the sides of the muffler cover over the tabs on the engine cover and remove

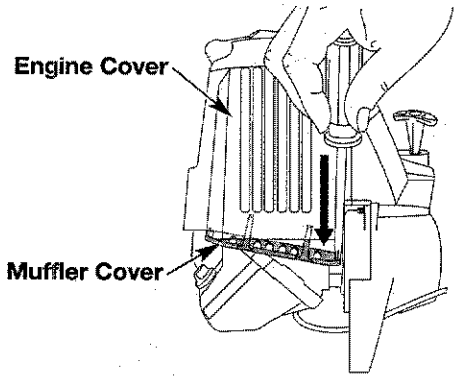



Fig. 49

2. Remove the two (2) screws on top of the engine cover with a phillips screwdriver (Fig. 50).
3. Remove the screw behind the engine cover (Fig. 51).
4. Disconnect the spark plug wire.
5. Clean dirt from around the spark plug.
6. Remove the engine cover (Fig. 50).
7. Clean dirt from around the rocker arm cover. Remove the screw holding the rocker arm cover with a large flat blade screwdriver or Torx T25 bit (Fig. 52). Remove the rocker arm cover and gasket.
8. Remove the spark plug from the cylinder head by turning counterclockwise using a 5/8 inch socket.

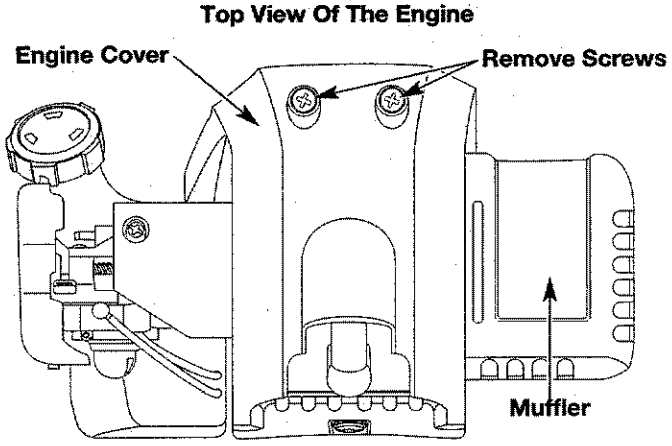



Fig. 50

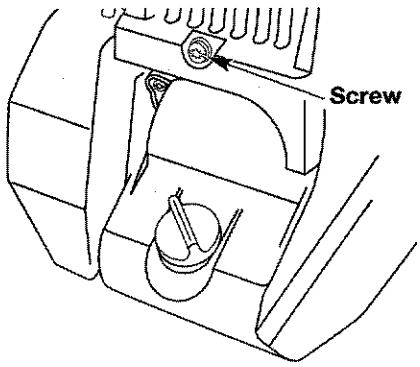



Fig. 51

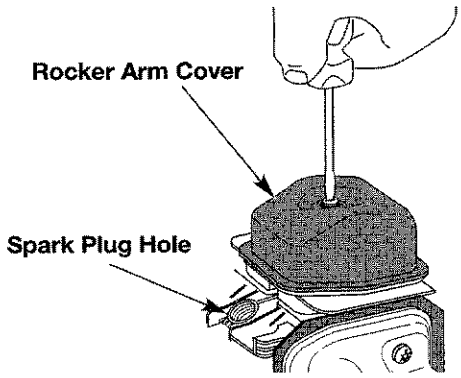



Fig. 52

9. Pull the starter rope slowly to bring the piston to the top of its travel, (known as top dead center). Check that:
   - The piston is at the top of its travel whilst looking in the spark plug hole (Fig. 52).
   - Both rocker arms move freely, and both valves are closed.

If not, repeat this step.

10. Slide the feeler gauge between the rocker arm and the valve return spring. Measure the clearance between the valve stem and rocker arm (Fig 53). Do both intake and exhaust valves.

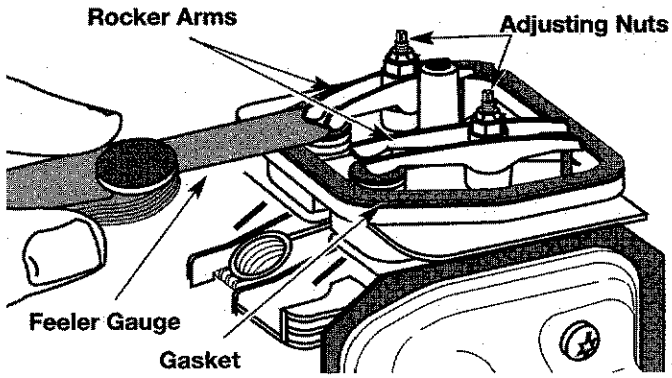



Fig. 53

The recommended clearance for both intake and exhaust is .076 – 0.152 mm (.003 – .006 in.). Use a standard automotive 0.127 mm (.005 in.) feeler gauge. The feeler gauge should slide between the rocker arm and valve stem with a slight amount of resistance, without binding (Fig. 54).

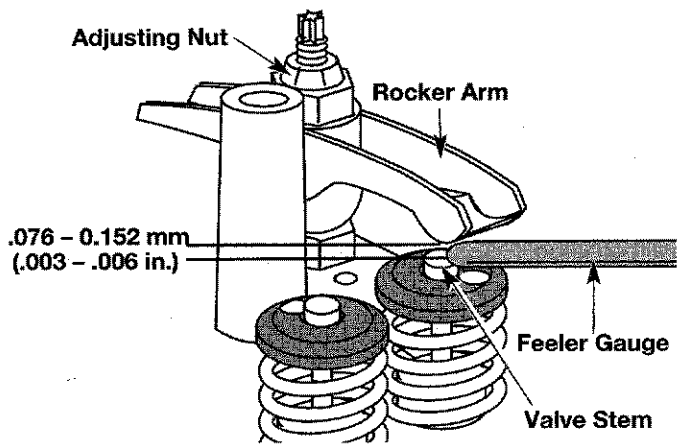



Fig. 54

11. If the clearance is not within specification:
    a. Turn the adjusting nut using a 8 mm (5/16 inch) wrench or nut driver (Fig. 53).
    - To increase clearance, turn the adjusting nut counterclockwise.
    - To decrease clearance, turn the adjusting nut clockwise.

    b. Recheck both clearances, and adjust as necessary.

12. Reinstall the rocker arm cover using a new gasket. Torque the screw to 2.2–3.4 N•m (20–30 in•lb).

**NOTE:** A rocker arm cover gasket, Part # 182099 can be purchased from your local authorized dealer.

13. Reinstall the engine cover. Check alignment of the cover before tightening the screws. Tighten screws.
14. Replace the muffler cover. Slip the long tabs on the muffler cover into the engine cover. Slide the notches on the side of the muffler cover over the tabs on the engine cover and snap into place (Fig. 49, Pg. 23).
15. Check the spark plug and reinstall. See **Replacing the Spark Plug.**
16. Replace the spark plug wire.

## REPLACING THE SPARK PLUG

Use only genuine Ryobi spark plugs. The correct air gap is 0.655 mm (0.025 in.). Remove the plug after every 50 hours of operation and check its condition.

1. Stop the engine and allow it to cool. Grasp the plug wire firmly and pull the cap from the spark plug.
2. Clean dirt from around the spark plug. Remove the spark plug from the cylinder head by turning a 5/8 in. socket counterclockwise.
3. Replace cracked, fouled or dirty spark plug. Set the air gap at 0.655 mm (0.025 in.) using a feeler gauge (Fig. 55).

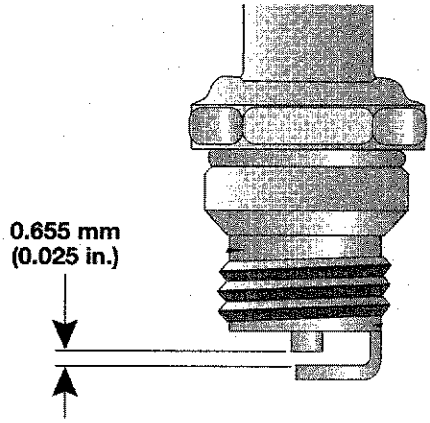



Fig. 55

**CAUTION:** Do not sand blast, scrape, or clean electrodes. Grit in the engine could damage the cylinder.

4. Install a correctly gaped spark plug in the cylinder head. Tighten by turning the 5/8 in. socket clockwise until snug.

If using a torque wrench torque to;

12.3-13.5 N•m (110-120 in.•lb.).

Do not over tighten.

**NOTE:** A replacement spark plug Part # 180852 can be purchased from your local authorized dealer.

## SPARK ARRESTOR MAINTENANCE

1. Remove the muffler cover. See **Rocker Arm Clearance**, Pg. 23.
2. With a flat blade screwdriver or Torx T20 bit, remove the screw attaching the spark arrestor cover to the muffler (Fig. 56).

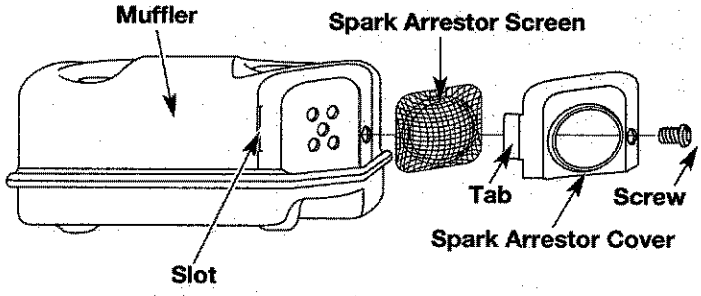



Fig. 56

3. Pull the tab on the spark arrestor cover out of the muffler. Remove the spark arrestor cover.
4. Remove the spark arrestor screen from the spark arrestor cover.
5. Clean the spark arrestor screen with a wire brush, or replace.
6. Reinstall the spark arrestor screen, spark arrestor cover, and screw.

**NOTE:** A replacement spark arrestor screen Part # 180890 can be purchased from your local authorized dealer.

## ACCESSORIES/REPLACEMENT PARTS

| | |
|---|---|
| 4-Cycle Oil | 181786 |
| Oil Fill Plug / Dipstick | 182378 |
| Spark Plug | 180852 |
| Spark Arrestor Screen | 180890 |
| Replacement Line | 612454 |
| Replacement Line Cartridge | 147345 |
| Inner Reel Spring | 610636 |
| Outer Spool | 683301 |
| Inner Reel | 147495 |
| Bump Knob™ | 180814 |
| Fuel Cap | 181083 |
| Shoulder Harness | 682075 |
| Quick-Link Coupler | 181616 |

# CLEANING AND STORAGE

## CLEANING

**WARNING:** To avoid serious personal injury, always turn your trimmer off and allow it to cool before you clean or do any maintenance on it.

Use a small brush to clean off the outside of the unit. Do not use strong detergents. Household cleaners that contain aromatic oils such as pine and lemon, and such as kerosene, can damage plastic housing or handle. Wipe off any moisture with a soft cloth.

## STORAGE

- Never store the unit with petrol (gasoline) in the tank where fumes may reach an open flame or spark.
- Allow the engine to cool before storing.
- Store the unit locked up to prevent unauthorized use or damage.
- Store the unit in a dry, well ventilated area.
- Store the unit out of the reach of children.

**Store the unit in one of three (3) positions:**

1. The unit hanging by the cutting attachment end.
2. The unit hanging by the engine.
3. The unit setting upright on the cutting attachment guard and engine feet.

## LONG TERM STORAGE

If the unit will be stored for an extended time,

1. Drain all petrol (gasoline) from the gas tank into a container. Do not use gas that has been stored for more than 60 days. Dispose of the old petrol (gasoline) in accordance to Local regulations.
2. Start the engine and allow it to run until it stalls. This ensures that all petrol (gasoline) has been drained from the carburetor.
3. Allow the engine to cool. Remove the spark plug and put 30 ml (1 oz.) of high quality motor oil into the cylinder. Pull the starter rope slowly to distribute the oil. Reinstall the spark plug.

**NOTE:** Remove the spark plug and drain all of the oil from the cylinder before attempting to start the trimmer after storage.

4. Change the oil. See **Changing the Oil**, Pg. 21. Dispose of the old oil in accordance to Local regulations.
5. Thoroughly clean the unit and inspect for any loose or damaged parts. Repair or replace damaged parts and tighten loose screws, nuts or bolts. The unit is ready for storage.

## TRANSPORTING

- Allow the engine to cool before transporting.
- Secure the unit whilst transporting.
- Drain the gas tank before transporting.
- Tighten gas cap before transporting.

# TROUBLESHOOTING

## ENGINE WILL NOT START

| CAUSE | ACTION |
|---|---|
| Ignition switch is in STOP or OFF | Turn switch to START or ON |
| Empty fuel tank | Fill fuel tank |
| Primer bulb wasn't pressed enough | Press primer bulb fully and slowly 5-7 times |
| Engine flooded | Use starting procedure with choke lever in the RUN position, Pg. 14 |
| Old Petrol (gasoline) | Drain fuel tank / Add fresh Petrol (gasoline) |
| Fouled spark plug | Replace or clean the spark plug |

## ENGINE WILL NOT IDLE

| CAUSE | ACTION |
|---|---|
| Air Filter is Plugged | Replace or clean the air filter |
| Old Petrol (gasoline) | Drain fuel tank / Add fresh Petrol (gasoline) |
| Improper carburetor adjustment | Adjust per instruction Pg. 23 |

## ENGINE WILL NOT ACCELERATE

| CAUSE | ACTION |
|---|---|
| Old Petrol (gasoline) | Drain gas tank / Add fresh Petrol (gasoline) |
| Improper carburetor adjustment | Take to an authorized service dealer for carburetor adjustment |
| Cutting attachment bound with grass | Stop the engine and clean the Cutting attachment |
| Dirty air filter | Clean or replace the air filter |
| Clogged Spark Arrestor Screen | Clean or Replace. See Pg. 25 |

## ENGINE LACKS POWER OR STALLS WHEN CUTTING

| CAUSE | ACTION |
|---|---|
| Old Petrol (gasoline) | Drain fuel tank / Add fresh Petrol (gasoline) |
| Improper carburetor adjustment | Take to an authorized service dealer for carburetor adjustment |
| Clogged Spark Arrestor Screen | Clean or Replace. See Pg. 25 |

## CUTTING ATTACHMENT WILL NOT ADVANCE LINE

| CAUSE | ACTION |
|---|---|
| Cutting attachment bound with grass | Stop the engine and clean cutting attachment |
| Cutting attachment out of line | Refill with new line |
| Inner reel bound up | Replace the inner reel |
| Cutting Attachment dirty | Clean inner reel and outer spool |
| Line welded | Disassemble, remove the welded section and rewind the line |
| Line twisted when refilled | Disassemble and rewind the line |
| Not enough line is exposed | Push the Bump Knob and pull out line until 102 mm (4 inches) of line is outside of the Cutting Attachment |

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

# SPECIFICATIONS

## ENGINE

| | |
|---|---|
| Engine Type | Air-Cooled, 4-Cycle |
| Displacement | 26.2 cc (1.6 cu. in.) |
| Clutch Type | Centrifugal |
| Operating RPM | 6,800-7,800 rpm |
| Idle Speed RPM | 2,800 rpm |
| Ignition Type | Electronic |
| Ignition Switch | Rocker Switch |
| Valve clearance (intake and exhaust) | .076–.0152 mm (.003–.006 inch) |
| Spark Plug Gap | 0.655 mm (0.025 inch) |
| Lubrication | SAE 30 Oil |
| Crankcase Oil Capacity | 100 ml (3.4 oz) |
| Fuel | Unleaded |
| Carburetor | Diaphragm, All-Position |
| Starter | Auto Rewind |
| Muffler | Baffled with Guard |
| Throttle | Manual Spring Return |
| Fuel Tank Capacity | 591 ml (20 oz) |
| Fuel Tank | HD Polyethylene |

## DRIVE SHAFT & CUTTING ATTACHMENT

| | |
|---|---|
| Drive Shaft Tube | Aluminum Tube (Quick-Link) |
| Throttle Control | Finger-Tip Trigger |
| Unit Weight (No Fuel, with J-handle, cutting attachment guard and cutting attachment) | 6.13 kg (13.5 lbs) |
| Cutting Mechanism | 4-Tooth Cutting Blade, Dual String Cutting Head |
| Line Spool | Bump Line Releaser |
| Line Spool Diameter | 101.6 mm (4 inches) |
| Trimming Line Diameter | 2.41 mm (0.095 inch) |
| Cutting Path Diameter, Cutting Attachment | 45.7 cm (18 inches) |
| Cutting Path Diameter, Cutting Blade | 204 mm (8 Inches) |
| Shoulder Harness | Single Quick-Snap |

**SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.**

**OPERATOR'S MANUAL PART NO. 182741**
**PRINTED IN U.S.A.**

**REV. B (10012)**
**7/00**