To correctly use the brush cutter and prevent accidents, do not start work without having first carefully read this manual. You will find explanations concerning the operation of the various parts plus instructions for necessary checks and relative maintenance.

Note: Illustrations and specifications in this manual may vary according to Country requirements and are subject to change without notice by the manufacturer.

THE OPERATOR’S MANUAL

Your operator’s manual is for your protection. READ IT. Keep it in a safe place for reference. Know what you are doing before you begin assembly of the unit. Proper preparation and upkeep go hand-in-hand with satisfactory performance of the brush cutter and safety.

Contact your dealer or the distributor for your area if you do not understand any of the instructions in this manual.

In addition to the operating instructions, this manual contain paragraphs that require your special attention.

Such paragraphs are marked with the symbols described below:

**Warning:** where there is a risk of an accident or personal injury or serious damage to property.

**Caution:** where there is a risk of damaging the machine or its individual components.

---

**WARNING -** To ensure safe and correct operation of the brush cutter, this operator’s manual should always be kept with or near the machine. Do not lend or rent your brush cutter without the operator’s instruction manual.

**WARNING:** Allow only persons who understand this manual to operate your brush cutter.
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**Brush Cutter Components**

1 - Carburetor Adjustment Screw  
2 - Choke Lever  
3 - Starter Handle  
4 - Doubles Harness  
5 - Combination Wrench  
6 - Locking Pin  
7 - Blade / Trimmer Head  
8 - Bevel Gear  
9 - Cutting Attachment Guard  
10 - Shaft  
11 - Handlebar  
12 - Throttle Trigger  
13 - On/Off Switch  
14 - Throttle Trigger Lockout  
15 - Handle  
16 - Muffler Cover  
17 - Air Filter Cover  
18 - Fuel Tank Cap  
19 - Purge Bulb
SAFETY

Understanding Safety Symbols

- This symbol indicates Warning, and Caution.

- Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. PLEASE READ ALL THE INFORMATION CAREFULLY TO AVOID INJURY AND MACHINE DAMAGE.

- Wear eye, hearing and head protection when operating this equipment.

- Wear non-slip, heavy-duty protective gloves when handling the brush cutter and blades.

- Wear safety strong shoes or boots having skid-proof sole and anti-piercing insert.

- Be aware that objects can be thrown.

- Keep bystanders away 50 ft (15 m).

State and Local Requirements

Your brush cutter is equipped with a temperature limiting muffler, a spark arresting screen in order to comply with the requirements of SAE Recommended Practice J335 and California Codes 4442 and 4443. All national forest land and land managed by the states of California, Maine, Washington, Idaho, Minnesota, New Jersey and Oregon require internal combustion engines to be equipped with a spark arrester screen by law. Other states and federal agencies are enacting similar regulations. If you operate a brush cutter in a state or locale where such regulations exist, you are legally responsible for maintaining the operating condition of these parts. Failure to do so is a violation of a law. Spark arrester maintenance is described in the Maintenance-Spark Arresting Muffler Section of the manual.

Note: When using a brush cutter for logging purposes, refer to Code of Federal Regulations, Parts 1910 and 1928.

WARNING: The ignition system of your unit produces an electromagnetic field of a very low intensity. This field may interfere with some pacemakers. To reduce the risk of serious or fatal injury, persons with pacemaker should consult their physician and the pacemaker manufacturer before operating this tool.

WARNING: Muffler surfaces are very hot during and after operation of the brush cutter, keep all body parts away from the muffler. Serious burns may occur if contact is made with the muffler.
WARNING: Exposure to vibrations through prolonged use of gasoline powered hand tools could cause blood vessel or nerve damage in the fingers, hands, and wrists of people prone to circulation disorders or abnormal swellings. Prolonged use in cold weather has been linked to blood vessel damage in otherwise healthy people. If symptoms occur such as numbness, pain, loss of strength, change in skin colour or texture, or loss of feeling in the fingers, hands, or wrists, discontinue the use of this tool and seek medical attention.

WARNING: The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Operate your brush cutter outdoors only in a well ventilated area.

WARNING: Under no circumstances may the design of the machine be modified. Always use genuine accessories. Non-authorized modifications and/or accessories can result in serious personal injury or the death of the operator or others. Your warranty may not cover damage or liability caused by the use of non-authorized accessories or replacement parts.

WARNING: A clearing saw, brush cutter or trimmer can be dangerous if used incorrectly or carelessly, and can cause serious or fatal injury to the operator or others. It is extremely important that you read and understand the contents of this operator’s manual.
SAFETY RULES

Basic Safety Precautions

- Read this manual carefully until you completely understand and can follow all safety rules, precautions, and operating instructions before attempting to use the unit.
- Restrict the use of your brush cutter to adult users who understand and can follow safety rules, precautions, and operating instructions found in this manual. Minors should never be allowed to use a brush cutter.
- Do not handle or operate a brush cutter when you are fatigued, ill, or upset, or if you have taken alcohol, drugs, or medication. You must be in good physical condition and mentally alert. Brush cutter work is strenuous. If you have any condition that might be aggravated by strenuous work, check with your doctor before operating a brush cutter (Fig. 1). Be more cautious before rest periods and towards the end of your shift.
- Keep children, bystanders, and animals a minimum of 50 feet (15 meters) away from the work area. Do not allow other people or animals to be near the brush cutter when starting or operating the brush cutter (Fig. 2).
- Major cases of brush cutter accidents happen when the blade or thrown objects hits the operator. While working with the brush cutter, always use safety protective approved clothing. The use of protective clothing does not eliminate injury risks, but reduces the injury effects in case of accident. Consult your trusted supplier to choose equipment in compliance with legislation. The clothing must be proper and not an obstacle. Wear adherent protective clothing. Protective jackets (Fig.3) and dungarees (Fig.3) leggings are ideal. Do not wear clothes, scarves, ties or bracelets that may get stuck into twigs. Tie up and protect long hair (example with foulards, cap, helmets, etc.). Safety boots having skid-proof sole and anti-piercing insert (Fig.4). Wear protective goggles or face screens (Fig. 5). Use protections against noises: for example, noise reduction ear guards (Fig.4) or earplugs. The use of protections for the ear requires much more attention and caution, because the perception of audible warning signals (screaming, alarms, etc.) is limited. Always remove your hearing protection as soon as the engine stops. Wear gloves (Fig.6, page 8) that permit the maximum absorption of vibrations.
- Only allow others to use this brush cutter who have read this Operator’s Manual or received adequate instructions for the safe and proper use of this brush cutter.
- Check the brush cutter each day to ensure that each device, whether for safety or otherwise, is functional.
- Never use a damaged, modified, or improperly repaired or assembled brush cutter. Do not remove, damage or deactivate any of the safety devices. Only use cutting tools indicated in the table (page 10). Always replace cutting tools or safety devices immediately if it becomes damaged, broken or is otherwise removed.
- Carefully plan your operation in advance. Do not start cutting until you have a clear work area, secure footing, and, if you are felling trees, a planned retreat path.
- All brush cutter service, other than the operations shown in the present manual, have to be performed by competent personnel.
- The brush cutter must only be used for trimming grass, grass clearing and / or forestry clearing. It is unadvisable to cut other types of material.
• It is unadvisable to hitch tools or applications to the P.t.o. that are not specified by the manufacturer.

Fuel Handling

WARNING: Gasoline is an extremely flammable fuel. Use extreme caution when handling gasoline or fuel mix. Do not smoke or bring any fire or flame near the fuel or the brush cutter (Fig. 7).

WARNING: Fuel and fuel fumes can cause serious injury when inhaled or allowed to come in contact with the skin. For this reason observe caution when handling fuel and make sure there is adequate ventilation.

WARNING: Beware of carbon monoxide poisoning.

• To reduce the risk of fire and burn injury, handle fuel with care. It is highly flammable.
• Mix, store and transport fuel in a container approved for gasoline (Fig. 8).
• Mix fuel outdoors where there are no sparks or flames.
• Select bare ground, stop engine, and allow to cool before refuelling.
• Loosen fuel cap slowly to release pressure and to keep fuel from escaping around the cap.
• Tighten fuel cap securely after refuelling. Unit vibration can cause an improperly tightened fuel cap to loosen or come off and spill quantities of fuel.
• Wipe spilled fuel from the unit and allow remaining fuel to evaporate. Move 10 feet (3 m) away from refuelling site before starting engine (Fig. 9).
• Never attempt to burn off spilled fuel under any circumstances.
• Do not smoke while handling fuel or while operating the brush cutter.
• Store fuel in a cool, dry, well ventilated place.
• Never place the brush cutter in a combustible area such as dry leaves, straw, paper, etc.
• Store the unit and fuel in an area where fuel vapors cannot reach sparks or open flames from water heaters, electric motors or switches, furnaces, etc.
• Never take the cap off the tank when the engine is running.
• Never use fuel for cleaning operations.
• Take care not to get fuel on your clothing. If you have spilt fuel on yourself or your clothes, change your clothes. Wash any part of your body that has come in contact with fuel. Use soap and water.
• Don't expose fuel tank to direct sunlight.
• Keep fuel out of reach of children.

Operation and Safety

WARNING: Always hold the brush cutter with both hands when the engine is running. Use a firm grip with thumbs and fingers encircling the brush cutter handles (Fig. 10).
SAFETY RULES

- Keep all parts of your body away from the cutting attachment when the engine is running.
- Always carry the brush cutter with the engine stopped and the muffler away from your body. When transporting your brush cutter, use the appropriate blade guard (Fig. 11). When transporting in a vehicle, keep blade covered with the guard. Properly secure your brush cutter to prevent turnover, fuel spillage and damage.
- **Do not operate a brush cutter with one hand!** Serious injury to the operator, helpers, bystanders, or any combination of these persons may result from one-handed operation. **A brush cutter is intended for two-handed use.**
  - Before you start the engine, make sure the cutting attachment is not contacting any object.
  - Shut off the engine before setting down the brush cutter. Do not leave the engine running unattended.
  - Only use the brush cutter in well-ventilated places, do not operate the brush cutter in explosive or flammable atmospheres or in closed environments (Fig. 12). Beware of carbon monoxide poisoning.
  - Do not operate brush cutter from a ladder or in a tree. Always cut from a firm-footed and safe position.

**WARNING:** Take great care when working on sloping ground.

- Do not cut near electric cables.
- Keep the handles dry, clean, and free of oil or fuel mixture.
- Never cut with the brush cutter above shoulder height (Fig. 13).
- Never use the brush cutter without blade guard or the head.
- Do not start the engine with the arm not mounted.

Precautions Against Kickout

**WARNING:** Avoid kickout which can result in serious injury. Kickout is the sideward, or sudden forward motion of the machine occurring when the blade contacts any object such as a log or stone, or when the wood closes in and pinches the saw blade in the cut. Contacting a foreign object can also result in loss of brush cutter control.

Reduce the Risk of Kickout

**WARNING:** Recognize that kickout can happen. With a basic understanding of kickout, you can reduce the element of surprise which contributes to accidents.

- Never let the moving blade contact any object.
- Keep the working area free from obstructions such as other trees, branches, rocks, fences, stumps, etc. Eliminate or avoid any obstruction that your blade could hit while you are cutting.
- Keep your blade sharp. Follow manufacturer’s blade sharpening and maintenance instructions.
- Begin and continue cutting at full speed. If the blade is moving at a slower speed, there is greater chance of kickout occurring.

Maintain Control (Fig.14-15)

- Keep a good, firm grip on the brush cutter with both hands when the engine is running and don’t let go. A firm grip will help you reduce kickout and maintain control of the brush cutter. Keep the fingers encircling the handle.
- Stand with your weight evenly balanced on both feet.
- Do not overreach. You could be drawn or thrown off balance and lose control of the brush cutter.
Safety Features

WARNING: As a brush cutter user, do not solely rely on the product’s safety features. You must follow all safety precautions, instructions, and maintenance in this manual to help avoid serious injury.

WARNING: Even with proper maintenance, the correct operation of the safety features under field conditions can not be certified.

• Position of handlebars, designed with correct distance with each other. The spread and position of the hands provided by this design work together to give balance and resistance in controlling the machine.

Recommended cutting attachments

<table>
<thead>
<tr>
<th>p. n.</th>
<th>Cutting attachments</th>
<th>p. n.</th>
<th>Guards</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4095605 Nylon blade with 3 teeth, Ø 10”</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4095597 Nylon blade with 4 teeth, Ø 10”</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>4175157 “Pro Trim Universel” Head 3 blades, Ø 12”</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>61112059 “tap'n go” head with 2 nylon lines Ø 5.1” with .11” line</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>63019008 “tap’n go” head with 2 nylon lines Ø 5.1” with .094” line</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>61062023 “tap’n go” head with 2 nylon lines Ø 6.2” with .14” line</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>4180053 Universal multi-line head Ø 2.75” with 8 lines (0.13”)</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>4180055 Universal multi-line head Ø 2.75” with 8 lines (0.13”)</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>4180961 Universal multi-line head Ø 5.2” with 8 lines (0.11”)</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>4095638R Steel blade with 3 teeth, Ø 10”, thickness .05”</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>4095673R Steel blade with 3 teeth, Ø 10”, thickness .07”</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>4095674R Steel blade with 3 teeth, Ø 12”, thickness .09”</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>4095658 Steel blade with 8 teeth, Ø 10”, thickness .05”</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>4095666R Steel blade with 22 teeth, Ø 8”, thickness .06”</td>
<td>4174280 Metal guard for 22-tooth blade</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>4095647 Steel blade with 60 teeth, Ø 10”, thickness .05”</td>
<td>4174279 Metal guard for 60-tooth blade</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>4095641R Steel blade with 3 teeth, Ø 10”, thickness .11”</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>4095665R Steel blade with 3 teeth, Ø 12”, thickness .11”</td>
<td>61042035 Plastic guard</td>
<td>8460-8530</td>
<td></td>
</tr>
</tbody>
</table>

* protection p. n. 4174283A not needed

WARNING: The use of cutting devices not authorized by the manufacturer can generate safety risks.

WARNING: A saw blade can only be used in connection with the proper guard, a twin handle and double harness with release mechanism.
Safety equipment checking

**WARNING:** Never use a machine with faulty safety equipment. The machine’s safety equipment must be checked and maintained as described in this section. If your machine fails any of these checks contact your service agent to get it repaired.

**Throttle lock**
The throttle lock is designed to prevent accidental operation of the throttle control. This arrangement means that the throttle control is automatically locked at the idle setting.
Make sure the throttle control is locked at the idle setting when the throttle lock is released.
Press the throttle lock and make sure it returns to its original position when you release it.
Check that the throttle control and throttle lock move freely and that the return springs work properly.

**Stop switch**
Use the stop switch to switch off the engine.
Start the engine and make sure the engine stops when you move the stop switch to the stop setting.

**Cutting attachment guard**
This guard is intended to prevent loose objects from being thrown towards the operator. The guard also protects the operator from accidental contact with the cutting attachment.
Check that the guard is undamaged and not cracked. Replace the guard if it has been exposed to impact or is cracked.
Always use the recommended guard for the cutting attachment you are using. See chapter on Technical data.

**WARNING:** Never use a cutting attachment without an approved guard. See the section on Technical Data. Use of an incorrect or faulty guard may lead to serious personal injury.

**Precautions to Reduce Vibration Risk**
- The brush cutter is provided with anti-vibration (AV) system; never alter or modify it.
- Wear gloves and keep your hands warm.
- Keep the blade sharp and the brush cutter, including the AV system, well maintained. A dull blade will increase the vibrations transmitted to your hands.
- When using a string cord attachment check that the cord is correctly wound; an unbalanced attachment will highly increase the vibration level.
- Maintain a firm grip at all times, but do not squeeze the handles with constant, excessive pressures, take frequent breaks. All the above mentioned precautions do not guarantee that you will not sustain whitefinger disease or carpal tunnel syndrome. Therefore, continual and regular users should monitor closely the condition of their hands and fingers. If any of the above symptoms appear, seek medical advice immediately.

**Maintenance Precaution**

**WARNING:** Never operate a brush cutter that is damaged, improperly adjusted, or is not completely and securely assembled.

- Be sure that the cutting attachment stops moving when the throttle control trigger is released. If the cutting attachment moves at idle speed, the carburetor may need adjusting, see Operation-Carburetor Adjusting Section. If the cutting attachment still moves at idle speed after adjustment has been made, contact a Servicing Dealer for adjustment and discontinue use until the repair is made.

**WARNING:** All brush cutter service, other than items in the Operator's Manual maintenance instructions, must be performed by competent brush cutter service personnel. (If improper tools are used to remove the flywheel or clutch, or if an improper tool is used to hold the flywheel in order to remove the clutch, structural damage to the flywheel could occur which could cause the flywheel to burst and serious injury could result.)
SAFETY RULES

• Never modify your brush cutter in any way.
• Keep the handles dry, clean, and free of oil or fuel mixture.

WARNING: Use only recommended accessories and replacement parts.

• Never touch the cutting attachment or attempt to service the brush cutter while the engine is running.
• Never use fuel for cleaning operations.
• Keep the brush cutter in a dry place, off the ground with the blade guard on and the tanks empty.
• If your brush cutter is no longer usable, dispose of it properly without damaging the environment by handing it in to your local Dealer who will arrange for its correct disposal.
• Replace immediately any safety device when damaged or broken.

WARNING: The muffler and other parts of the engine (e.g. fins of the cylinder, spark plug) become hot during operation and remain hot for a while after stopping the engine. To reduce risk of burns do not touch the muffler and other parts while they are hot.
Fitting the handlebar

- Fit the handle bar onto the shaft arm and secure it using screws (A, Fig.16), washers, and nuts. The handle position is calculated depending on the requirements of the operator.
- Adjust roughly and tighten the screws slightly.
- Now make a final adjustment, with the machine hanging from the harness, to obtain the most comfortable working position (Fig.17). Tighten the screws.
- Make the final adjustment to the right handle and lock it in the most comfortable position.

⚠️ WARNING: In mounting the handlebar be careful to avoid the cables getting twisted.

Fitting the cutting attachment guard

Fitting the safety guard (Fig.18-19)
Fit the blade guard (A) to the shaft arm with screws (B) in a position allowing the operator to work safely.

NOTE: assemble the trimmer guard (C, Fig.18) when using the nylon heads. Secure the trimmer guard (C) to the protection (A) by means of the screw (D).

⚠️ WARNING: When using discs for wood (22-60 teeth), always set up metal guard (see Fig.19).

⚠️ WARNING: Never use a cutting attachment without an approved guard. See the section on Recommended cutting attachments (Page 10). An incorrect or faulty guard may lead to serious personal injury.

⚠️ WARNING: The deflector provided with your brush cutter may not protect the operator from all foreign objects (gravel, glass, wire, etc) thrown by the rotating cutting attachment. Thrown objects may also ricochet and strike the operator.

⚠️ WARNING: Immediately replace a broken or damaged guard; never try to mount the guard in incorrect position.

Assembling the cutting attachment

⚠️ WARNING: When fitting the cutting attachment it is extremely important that the drive flange engages correctly in the centre hole of the cutting attachment. If the cutting attachment is fitted incorrectly it can result in serious and/or fatal personal injury.
WARNING: Only use cutting attachments with the guards we recommend! See the chapter on Recommended cutting attachments (Page 10). Refer to the instructions for the cutting attachment to check the correct way to load the cord and the correct cord diameter. Keep the teeth of the blade correctly sharpened! Follow our recommendations. Also refer to the instructions on the blade packaging. Maintain the correct blade setting! Follow our instructions.

WARNING: Always stop the engine before doing any work on the cutting attachment. The attachment continues to rotate even after the throttle has been released. Ensure that the cutting attachment has stopped completely and disconnect the HT lead from the spark plug before you start to work on it.

WARNING: Using an incorrect cutting attachment or an incorrectly sharpened blade increases the risk of kickout.

WARNING: Always discard a blade that is bent, twisted, cracked, broken or damaged in any other way (Fig.20, page 13). Never attempt to straighten a twisted blade so that it can be reused. Only use original blades of the specified type.

WARNING: To reduce the risk of serious injury, never use wire or metal-reinforced line or other material in place of the nylon cutting lines. Pieces of wire could break off and be thrown at high speed toward the operator or bystanders.

Fitting the trimmer head (Fig.21)
Put the upper (A) flange in place. Push the head fixing button (B) and tighten the head (C) counter-clockwise by hand.

Fitting the blade (Fig.22)
Loosen the nut (A) clockwise; remove cup (B) and lower flange (C), fix the blade (D) onto the upper flange (F) making sure that the rotation direction is correct. Fix the lower flange (C), the cup (B) and tighten nut (A) counter-clockwise. Push the button (F) to block the blade and allow the nut (A) to be tightened to 22 ftlb (30 Nm).

WARNING: Arrows on the cutting attachment guard (Fig.23) show the correct direction of rotation of the cutting tool.

WARNING: Fit the blade protection (M) p.n. 4196086 as shown (Fig.24-25) before transporting or storing the brush cutter.

CAUTION: Never use the brush cutter without the cup (B, Fig.22) to avoid damages to the thread.
WARNING: Never touch or adjust the blade while the motor is running. The blade is very sharp, always wear protective gloves when performing maintenance.

WARNING: After use the bevel gear may be very hot, always wear protective gloves when performing maintenance.

Fueling
(Do Not Smoke!) (Fig. 28)
This product is powered by a 2-cycle engine and requires pre-mixing gasoline and 2-cycle oil. Pre-mix unleaded gasoline and 2-cycle engine oil in a clean container approved for gasoline (Fig. 26).

RECOMMENDED FUEL: THIS ENGINE IS CERTIFIED TO OPERATE ON UNLEADED GASOLINE INTENDED FOR AUTOMOTIVE USE WITH AN OCTANE RATING OF 89 ([R + M] / 2) OR HIGHER (Fig. 27).
Mix 2-Cycle Engine Oil with gasoline according to the instructions on the package. If 2-Cycle Engine Oil is not available, use a high quality 2-cycle engine oil for correct mixing proportion see table below.

CAUTION: DO NOT USE AUTOMOTIVE OIL OR 2-CYCLE OUTBOARD OIL.

CAUTION: Never use a fuel with an alcohol percentage higher than 10%. Gasohol with up to 10% alcohol or E10 fuel are acceptable.

When using an oxygenated gasoline a good practice of fuel management is necessary. Gasoline oxygenated with alcohol readily takes up water when it is present; the water may be condensed out of humid air or be a contaminant in the fuel system, including tank.

CAUTION:
- Match your fuel purchases to your consumption; don’t buy more than you will use in one or two months;
- Store gasoline in a tightly-closed container in a cool, dry place.

The use of oxygenated gasoline may cause the occurrence of vapor-lock easier.

NOTE: 2-Cycle Engine Oil contains a fuel stabilizer and will stay fresh up to 30 days. DO NOT mix quantities larger than usable in a 30 day period. A 2-cycle oil containing a fuel stabilizer is recommended.

Fuel Mixture
2-Cycle Engine Oil (25:1) 4%

<table>
<thead>
<tr>
<th>Gasoline</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Gallon (US) ........................................... 5.2 oz.</td>
<td></td>
</tr>
<tr>
<td>1 Liter .................................................... 40 cc (40 ml)</td>
<td></td>
</tr>
</tbody>
</table>
Filling the Tank

**WARNING:** Follow safety instruction for fuel handling. Always shut off engine before fuelling. Never add fuel to a machine with a running or hot engine. Move at least 10 feet (3 m) from refuelling site before starting engine (Fig. 29). **DO NOT SMOKE!**

1. Clean surface around fuel cap to prevent contamination.
2. Loosen fuel cap slowly.
3. Carefully pour fuel mixture into the tank. Avoid spillage.
4. Prior to replacing the fuel cap, clean and inspect the gasket.
5. Immediately replace fuel cap and hand tighten. Wipe up any fuel spillage.

**NOTE:** It is normal for smoke to be emitted from a new engine during and after first use.

**WARNING:** Check for fuel leaks, if any are found, correct before use. Contact a Servicing Dealer if necessary.

Preparation for Cutting

**WARNING:** When using rigid blades, avoid cutting close to fences, sides of buildings, tree trunks, stones or other such objects that could cause the brush cutter to kick out or could cause damage to the blade. We recommend use of the nylon line heads for such jobs. In addition, be alert to an increased possibility of ricochets in such situations.

**WARNING:** The brush cutter is normally to be used at ground level with the cutting attachment parallel to the ground. Use of a brush cutter above ground level or with the cutting attachment perpendicular to the ground may increase the risk of injury, since the cutting attachment is more fully exposed and the brush cutter may be more difficult to control. Never use your brush cutter as a hedge trimmer.

**WARNING:** If the blade loosens after being properly tightened, stop work immediately. The retaining nut may be worn or damaged and should be replaced. Never use unauthorized parts to secure the blade. If the blade continues to loosen, see your dealer. Never use a brush cutter with a loose blade.
Basic Cutting Procedure

1. Wear non-slip gloves for maximum grip and protection.

![Image](33)

**WARNING:** Hold the brush cutter firmly with both hands (Fig. 31). Always keep your body to the left of tube. Never use a cross-handed grip. Left-handers should follow these instructions too.

Keep a proper cutting stance (Fig. 32).

2. Maintain a proper grip (Fig. 31) on the brush cutter whenever the engine is running. The fingers should encircle the handlebar and the thumb is wrapped under the handlebar.

Fitting the harness

- Put on the double harness.
- Fasten the waist buckle (A, Fig. 33) and adjust by tightening the top belt strap (B) until comfortable.
- Fasten the chest buckle (C).
- Adjust the shoulders by tightening the two straps (D, Fig. 34) until comfortable. With this type of harness, the weight of the machine can be distributed between shoulders and waist according to the preference of the operator.
- Adjust the chest strap (E, Fig. 33).
- Hook the brush cutter to the harness with the snap (F, Fig. 35).
- Position the hanger (G) so that the machine is balanced to best advantage.
- Adjust the carrying height by shortening or lengthening the belt straps (H-I, Fig. 36). The correct distance between the belt and the snap (F, Fig. 35) can be measured as in Fig. 37. This adjustment will also help to distribute the weight of the brush cutter so that it stays comfortably balanced during operation.

Correct balance (Fig. 35)

1 Forestry clearing
The machine is balanced by moving the support ring on the machine forwards or backwards. On some models the support ring is fixed, however, this will then have a number of holes for the support hook. The machine is correctly balanced when it freely hangs horizontally from the support hook. In this way the risk of hitting stones is reduced if you need to release the handlebar.

2 Grass clearing
Let the blade balance at a comfortable cutting height, i.e. close to the ground.

Work Area Precautions

**WARNING:** Cut only grass or weed. Cut wood only with appropriate saw blade. Do not cut metal, plastics, masonry, or non-wood building materials.
Never allow children to operate your brush cutter. Only allow others to use this brush cutter who have read this Operator's Manual or received adequate instructions for the safe and proper use of this brush cutter.

Keep everyone - helpers, bystanders, children, and animals at a safe distance from the cutting area (Fig. 38). During operations, keep a minimum distance of 50 feet (15 m) between workers.

Always cut with both feet on solid ground to prevent being pulled off balance.

Make sure you can move and stand safely. Check the area around you for possible obstacles (roots, rocks, branches, ditches, etc.) in case you have to move suddenly. Take great care when working on sloping ground.

Do not cut above chest height, as a brush cutter held higher is difficult to control against kickout forces.

Do not work near electrical wires. Leave this operation for professionals.

Cut only when visibility and light are adequate for you to see clearly.

Do not cut from a ladder, this is extremely dangerous.

Stop the brush cutter if the blade strikes a foreign object. Inspect the brush cutter and repair parts as necessary.

Keep the blade out of dirt and sand. Even a small amount of dirt will quickly dull a blade and increase the possibility of kickout.

Stop the engine before setting the brush cutter down.

Be particularly cautious and alert while wearing hearing protection because such equipment may restrict your ability to hear sounds indicating danger (calls, signals, warnings, etc).

Be extremely cautious when working on slopes or uneven ground.

WARNING: Never use rigid blades when cutting in stony areas. Thrown objects or damaged blades may result in serious or fatal injury to the operator or bystanders. Watch out for thrown objects. Always wear approved eye protection. Never lean over the cutting attachment guard. Stones, rubbish, etc. can be thrown up into the eyes causing blindness or serious injury. Keep unauthorised persons at a distance. Children, animals, onlookers and helpers should be kept outside the safety zone of 50 ft (15 m). Stop the machine immediately if anyone approaches. Never swing the machine around without first checking behind you to make sure no-one is within the safety zone.

WARNING: Never cut when visibility is poor or in very high or low temperatures or in freezing weather.

Starting The Engine

WARNING: When the engine is started with the choke in either the choke or start throttle positions the cutting attachment will start to rotate immediately.

Place the brush cutter on level ground and ensure that no objects or obstructions are in immediate vicinity which could come in contact with the cutting attachment. Hold the body of
the machine on the ground using your left hand (CAUTION! Not with your foot!), see Fig. 39.
• Slowly push the purge bulb 6 to 8 times (A, Fig. 40).
• Move the on/off switch (B, Fig. 41) to the start position “I”.
• Pull the choke lever (D, Fig. 42) in the CLOSE position. The half-throttle is automatically set when choke lever is set at CLOSE.
• Pull the starter rope (Fig. 39) until the first firing of the engine is heard (no more than five (5) pulls). A new unit may require additional pulls.
• Never wrap the starter cord around your hand.
• When the engine starts, wait for about 5-10 seconds and then pull the throttle lever (C, Fig. 41), the choke lever (D, Fig. 43) will return automatically to the original “OPEN” position.
• When pulling the starter rope, do not use the full extent of the rope as this can cause the rope to break. Do not let starter rope snap back. Hold the handle and let the rope rewind slowly.

WARNING: Do not cut material with the choke/fast idle lever at the CLOSE position. Do not operate your brush cutter with the starting throttle lock engaged. Cutting with the starting throttle lock engaged does not permit the operator proper control of the brush cutter.

NOTE - STARTING WARM ENGINE:
Follow above starting instructions, but do not use the CLOSE position for start up again.

WARNING: Weather conditions and altitude may affect carburetion. Do not allow bystanders close to the brush cutter while adjusting the carburetor.

Keep the engine at full throttle the entire time you are cutting.

Breaking-in the Engine

The engine reaches the maximum power after 5-8 hours of activity. During this period of breaking-in do not make the machine function idly at full throttle, to avoid excessive functioning stress.

CAUTION! – During the breaking-in period do not vary the carburetion to obtain a presumed power increment; the engine can be damaged.

Difficult Starting (or starting a flooded engine)
The engine may be flooded with too much fuel if it has not started after 10 pulls. Flooded engines can be cleared of excess fuel by following the warm engine starting procedure listed above. Ensure the ON/STOP switch is in the ON position. Starting could require pulling the starter rope handle many times depending on how badly the unit is flooded. If engine fails to start refer to the TROUBLESHOOTING TABLE (page 31).

Engine is Flooded
• Set the on/off switch to STOP.
• Unscrew the screw on the spark plug cover (1, Fig. 44).
• Remove the spark plug cover (2).
• Engage a suitable tool in the spark plug boot (3, Fig. 45).
• Pry off the spark plug boot.
• Unscrew and dry off the spark plug.
• Open the throttle wide.
• Pull the starter rope several times to clear the combustion chamber.
• Refit the spark plug and connect the spark plug boot, press it down firmly – reassemble the other parts.
• Set the on/off switch to I, the starting position.
• Set the choke lever to OPEN position – even if engine is cold.
• Now start the engine.

Stopping The Engine

Release the throttle trigger (C, Fig. 46) and let the engine return to idle.

To stop the engine, move the on/off switch (B) to the “STOP” position. Do not put the brush cutter on the ground when the cutting attachment is still moving.

In the event that the “STOP” position of the switch will not function, pull the choke lever in the CLOSE position (Fig. 42, page 19) to stop the engine.

Pre-operation checking

**WARNING:** THE CUTTING ATTACHMENT SHOULD NEVER TURN AT IDLE. Turn the idle speed screw “T” counter-clockwise to reduce the idle RPM, or contact a Servicing Dealer for adjustment and discontinue use until the repair is made.

Serious personal injury may result from the cutting attachment turning at idle.

A damaged clutch may cause a cutting attachment to rotate at idle speed and increase the risk of personal injury from loss of control and from contact with the cutting tool.

Working Techniques

General working instructions

**WARNING:** This section describes the basic safety precautions for working with clearing saws and trimmers. If you encounter a situation where you are uncertain how to proceed you should ask an expert. Contact your dealer or your service workshop. Avoid all usage which you consider to be beyond your capability. You must understand the difference between forestry clearing, grass clearing and grass trimming before use.

Basic safety rules

1. Look around you:
   • To ensure that people, animals or other things cannot affect your control of the machine.
   • To ensure that people, animals, etc., do not come into contact with the cutting attachment or loose objects that are thrown out by the cutting attachment.
**WARNING:** Do not use the machine unless you are able to call for help in the event of an accident.

2. Do not use the machine in bad weather, such as dense fog, heavy rain, strong wind, intense cold, etc. Working in bad weather is tiring and often brings added risks, such as icy ground, unpredictable felling direction, etc.

3. Make sure you can move and stand safely. Check the area around you for possible obstacles (roots, rocks, branches, ditches, etc.) in case you have to move suddenly. Take great care when working on sloping ground.

4. Switch off the engine before moving to another area.

5. Never put the machine down with the engine running.

- Always use the correct equipment.
- Make sure the equipment is well adjusted.
- Follow the safety precautions.
- Organise your work carefully.
- Always use full throttle when starting to cut with the blade.
- Always use sharp blades.
- Avoid stones.

**WARNING:** Neither the operator of the machine nor anyone else may attempt to remove the cut material while the engine is running or the cutting equipment is rotating, as this can result in serious injury. Stop the engine and cutting equipment before you remove material that has wound around the blade shaft as otherwise there is a risk of injury. The bevel gear can get hot during use and may remain so for a while afterwards. You could get burnt if you touch it.

**WARNING:** Watch out for thrown objects. Always wear approved eye protection. Never lean over the cutting attachment guard. Stones, rubbish, etc. can be thrown up into the eyes causing blindness or serious injury. Keep unauthorised persons at a distance. Children, animals, onlookers and helpers should be kept outside the safety zone of 50 ft (15 m). Stop the machine immediately if anyone approaches. Never swing the machine around without first checking behind you to make sure no-one is within the safety zone.

**WARNING:** Sometimes branches or grass get caught between the guard and cutting attachment. Always stop the engine before cleaning.

---

**Check before starting**

- Check the blade to ensure that no cracks have formed at the bottom of the teeth or by the centre hole. Discard a blade if cracks are found (Fig. 47).
- Check that the support flange is not cracked due to fatigue or due to being tightened too much. Discard the support flange if it is cracked (Fig. 48).
- Ensure the locking nut has not lost its captive force. The tightening torque of the locking nut should be 22.1 ftlb (30 Nm). (Fig. 48)
- Check that the blade guard is not damaged or cracked. Replace the blade guard if it is cracked (Fig. 49).
- Check that the trimmer head and trimmer guard are not damaged or cracked. Replace the trimmer head or trimmer guard if they have been cracked (Fig. 49).
OPERATION

**WARNING:** Never use the machine without a guard or with a defective guard.

**WARNING:** The complete clutch cover and shaft must be fitted before the machine is started, otherwise the clutch can come loose and cause personal injury. Ensure the cutting attachment cannot come into contact with any object. Make sure no unauthorised persons are in the working area, otherwise there is a risk of serious personal injury. The safety distance is 50 ft (15 metres).

**Working methods**

**WARNING:** Avoid cutting with the area of the blade between the 12 o’clock and 3 o’clock positions. Because of the speed of rotation of the blade kickout can occur if you attempt to cut thick stems with this area of the blade.

**Forestry clearing**

- Before you start clearing, check the clearing area, the type of terrain, the slope of the ground, whether there are stones, hollows etc.
- Start at whichever end of the area is easiest, and clear an open space from which to work.
- Work systematically to and fro across the area, clearing a width of around 13-16 ft (4-5 m) on each pass. This exploits the full reach of the machine in both directions and gives the operator a convenient and varied working area to work in.
- Clear a strip around 250 ft (75 m) long. Move your fuel can as work progresses.
- On sloping ground you should work along the slope. It is much easier to work along a slope than it is to work up and down it.
- You should plan the strip so that you avoid going over ditches or other obstacles on the ground. You should also orient the strip to take advantage of wind conditions, so that cleared stems fall in the cleared area of the stand.

**Forestry clearing using a saw blade.**

- The risk of kickout increases with increasing stem size. You should therefore avoid cutting with the area of the blade between 12 o’clock and 3 o’clock. **(Fig. 50)**
- To fell to the left, the bottom of the tree should be pushed to the right. Tilt the blade and bring it diagonally down to the right, exerting firm pressure. At the same time push the stem using the blade guard. Cut with the area of the blade between 3 o’clock and 5 o’clock. Apply full throttle before advancing the blade. **(Fig. 51)**
- To fell to the right, the bottom of the tree should be pushed to the left. Tilt the blade and bring it diagonally up to the right. Cut with the area of the blade between 3 o’clock and 5 o’clock so that the direction of rotation of the blade pushes the bottom of the tree to the left. **(Fig. 52)**
- To fell a tree forwards, the bottom of the tree should be pulled backwards. Pull the blade backwards with a quick, firm movement. **(Fig. 53)**
- If the stems are tightly packed, adapt your walking pace to suit.
- If the blade jams in a stem, never jerk the machine free. If you do this the blade, bevel gear, shaft or handlebar may be...
damaged. Release the handles, grip the shaft with both hands and gently pull the machine free.

Using the circular saw blade

**WARNING:** Circular saw blades are suitable for thinning brush and cutting small trees up to a diameter of 5 cm (2"). Do not attempt to cut trees with larger diameters, since the blade may catch or jerk the clearing saw forward. This may cause damage to the blade or loss of control of the clearing saw which may result in serious injury.

**WARNING:** A saw blade can only be used in connection with the proper guard (see table pag. 10) a twin handle and double harness with release mechanism.

Brush cutting with a saw blade

- Thin stems and brush are mown down. Work with a sawing movement, swinging sideways.
- Try to cut several stems in a single sawing movement.
- With groups of hardwood stems, first clear around the group. Start by cutting the stems high up around the outside of the group to avoid jamming. Then cut the stems to the required height. Now try to reach in with the blade and cut from the centre of the group. If it is still difficult to gain access, cut the stems high up and let them fall. This will reduce the risk of jamming. ([Fig. 54](#))

Grass clearing using a grass blade

- Grass blades and grass cutters must not be used on woody stems.
- A grass blade is used for all types of tall or coarse grass.
- The grass is cut down with a sideways, swinging movement, where the movement from right-to-left is the clearing stroke and the movement from left-to-right is the return stroke. Let the left-hand side of the blade (between 8 and 12 o’clock) do the cutting. ([Fig. 55](#))
- If the blade is angled to the left when clearing grass, the grass will collect in a line, which makes it easier to collect, e.g. by raking.
- Try to work rhythmically. Stand firmly with your feet apart. Move forward after the return stroke and stand firmly again.
- Let the support cup rest lightly against the ground. It is used to protect the blade from hitting the ground.
- Reduce the risk of material wrapping around the blade by following these instructions:
  1. Always work at full throttle.
  2. Avoid the previously cut material during the return stroke.
- Stop the engine, unclip the harness and place the machine on the ground before you start to collect the cut material.

Grass trimming with a trimmer head

**CAUTION:** Do not work with mowing line longer than the intended diameter. With a properly mounted guard, the built-in cutter will automatically adjust the line to its proper length. Overly long lines can overload the engine, resulting in damage to the clutch mechanism and nearby parts.
OPERATION

Trimming
- Hold the trimmer head just above the ground at an angle. It is the end of the cord that does the work. Let the cord work at its own pace. Never press the cord into the area to be cut. (Fig. 56)
- The cord can easily remove grass and weeds up against walls, fences, trees and borders, however it can also damage sensitive bark on trees and bushes, and damage fence posts.
- Reduce the risk of damaging plants by shortening the cord to 4 - 4.7 in (10-12 cm) and reducing the engine speed.

Clearing
- The clearing technique removes all unwanted vegetation. Keep the trimmer head just above the ground and tilt it. Let the end of the cord strike the ground around trees, posts, statues and the like. (Fig. 57)

CAUTION: This technique increases the wear on the cord.
- The cord wears quicker and must be fed forward more often when working against stones, brick, concrete, metal fences, etc., than when coming into contact with trees and wooden fences.
- When trimming and clearing you should use less than full throttle so that the cord lasts longer and to reduce the wear on the trimmer head.

Cutting
- The trimmer is ideal for cutting grass that is difficult to reach using a normal lawn mower. Keep the cord parallel to the ground when cutting. Avoid pressing the trimmer head against the ground as this can ruin the lawn and damage the tool. (Fig. 58)
- Do not allow the trimmer head to constantly come into contact with the ground during normal cutting. Constant contact of this type can cause damage and wear to the trimmer head.

Sweeping
- The fan effect of the rotating cord can be used for quick and easy clearing up. Hold the cord parallel to and above the area to be swept and move the tool to and fro. (Fig. 59)
- When cutting and sweeping you should use full throttle to obtain the best results.

WARNING: Never cut when visibility is poor or in very high or low temperatures or in freezing weather.

WARNING: If the cutting tool or deflector becomes clogged or stuck, always turn off the engine and make sure the cutting tool has stopped before cleaning. Grass, weeds, etc. should be cleaned off the cutting tool at regular intervals.
# Maintenance Chart

Please note that the following maintenance intervals apply for normal operating conditions only. If your daily work requires longer than normal or harsh cutting conditions are present, then the suggested intervals should be shortened accordingly.

<table>
<thead>
<tr>
<th>Component</th>
<th>Before Each Use</th>
<th>After Each Refueling Stop</th>
<th>After Finished Daily Work</th>
<th>Weekly</th>
<th>Monthly</th>
<th>If Damaged or Faulty</th>
<th>As Required</th>
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*Every 6 Months*
Cutting Attachment Maintenance

**WARNING:** It is absolutely essential to comply with the angles and dimensions specified below. If the blade is incorrectly sharpened there is a risk of increased kickout of the brush cutter and increase risk of thrown object, with resulting risk of injury. Failure to replace or repair damaged cutting attachment can cause serious injury. The blades are very sharp, always wear protective gloves when performing maintenance to the blades.

**General rules**
- Only use cutting attachments with the guards we recommend! **See Recommended cutting attachments (Page 10).**
- Keep the teeth of the blade correctly sharpened! Follow our instructions and use the recommended file gauge. An incorrectly sharpened or damaged blade increases the risk of accidents. (Fig. 60)
- Keep the correct setting on the saw blade! Follow our instructions and use the recommended setting tool. An incorrectly set saw blade increases the risk of jamming and kickout, and damage to the saw blade.
- Check the cutting attachment for damage or cracks. A damaged cutting attachment should always be replaced. (Fig. 61)
- Resharpen frequently, take away as little material as possible – two or three strokes of the file are usually enough.

**To avoid out-of-balance:**
- Resharpen the cutters uniformly – do not alter the contour of the parent blade in any way.
- After resharpening about 5 times, have blade checked by your dealer.

**WARNING:** Never repair damaged cutting attachments by welding, straightening or modifying the shape. This may cause parts of the cutting tool to come off and result in serious or fatal injuries.

**Sharpening grass cutters and grass blades**
- See the cutting attachment packaging for correct sharpening instructions. Sharpen blades and cutters using a single-cut flat file.
- Sharpen all edges equally to maintain the balance of the blade. (Fig. 60)

**WARNING:** Always discard a blade that is bent, twisted, cracked, broken or damaged in any other way. Never attempt to straighten a twisted blade so that it can be reused. Only use original blades of the specified type.

**Sharpening the saw blade**
- See the cutting attachment packaging for correct sharpening instructions.
- A correctly sharpened blade is essential for working efficiently and to avoid unnecessary wear to the blade and clearing saw.
- Make sure that the blade is well supported when you file it (Fig. 62). Use a 0.22 in. (5.5 mm) round file with a file holder.
• The filing angle is 15°. File alternate teeth to the right and those in between to the left. If the blade has been heavily pitted by stones it may be necessary to dress the top edges of the teeth with a flat file, in exceptional cases. If so, this should be done before filing with a round file. The top edges must be filed down by the same amount for all the teeth. (Fig. 63)
Adjust the blade setting. This should be 0.04 in. (1 mm). (Fig. 64)

Trimmer head

CAUTION: Always ensure the trimmer cord is wound tightly and evenly around the drum, otherwise the machine will generate harmful vibration.

• Only use the recommended trimmer heads and trimmer cords. These have been tested by the manufacturer to suit a particular engine size. This is especially important when a fully automatic trimmer head is used. Only use the recommended cutting attachment. See Recommended cutting attachments (Page 10).
• Smaller machines generally require small trimmer heads and vice versa. This is because when clearing using a cord the engine must throw out the cord radially from the trimmer head and overcome the resistance of the grass being cleared.
• The length of the cord is also important. A longer cord requires greater engine power than a shorter cord of the same diameter.
• Make sure that the cutter on the trimmer guard is intact. This is used to cut the cord to the correct length.
• To increase the life of the cord it can be soaked in water for a couple of days. This will make the line tougher so that it lasts longer.
• Only use line of the same diameter as the original to avoid overloading the engine (Fig. 65).
• In order to get more line out of the cutting head, tap it lightly on the ground while working (Fig. 66). NOTE: never hit the nylon head against hard spots such as concrete or stones, it could be dangerous.

Replacing the nylon line
1. Press the tab (Fig. 67) and remove the cover and the internal spool.
2. Double back the line, leaving one end 5.5” (14 cm) longer than the other one. Lock the line in the notch (A, Fig. 68). Wind the line in the direction of the arrow, each end in its chink, regularly, without crossing them.
3. At the end of the winding, lock in the slits (Fig. 69A) Assemble the spring. Slip the line through the eyelet (Fig. 69B) and pull it towards the outside. Lock the head with the cover.
Carburetor Adjustment
Before adjusting the carburetor, clean the cover vents as shown in Illustration Fig. 70, and air filter as shown in Illustration Fig. 71, refer to Operation-Starting Unit and Maintenance-Air Filter Sections for details. Allow the engine to warm up prior to carburetor adjustment.
This engine is designed and manufactured in order to comply with EPA (Environmental Protection Agency) Phase 1 regulations. The carburetor is factory set and should not require adjusting. The carburetor will permit only adjustment of the “T” screw (Fig. 72).

WARNING: Don’t modify the carburetor in any way in such case the engine will not run in compliance with emissions regulations.

Idle Speed Adjustment
• If the engine starts, runs, and accelerates but will not idle; turn the idle speed screw “T” clockwise to increase idle speed (Fig. 72).
• If the cutting attachment turns at idle, turn the idle speed screw “T” counter-clockwise to reduce the idle RPM and stop the cutting attachment movement. If the cutting attachment still moves at idle speed, contact a Servicing Dealer for adjustment and discontinue use until the repair is made.

Fuel Filter
Check the fuel filter (Fig. 73) periodically. Replace it if contaminated or damaged.

Air Filter
- WARNING: Do not clean filter in gasoline or other flammable solvent to avoid creating a fire hazard or producing harmful evaporative emissions.
- If a power drop is noticed, check the air filter.
  Open the air filter cover and check the air filter (C, Fig. 74) each day; change the filter if it is not clean or damaged. Reinstall the air filter into cover. Place the air filter cover onto the brush cutter. Tighten the air filter cover screw securely.
  A used air filter can never be completely cleaned. It is advisable to replace your air filter with a new one after six months of operation. Make sure the cover and the support are clean before fitting the new filter.
- CAUTION: Never run the engine without the air filter, serious damage could result.
  Make sure the air filter is correctly placed in the air filter cover before reassembly.
  Always replace damaged filters.
  Do not clean a filter with a brush.

Starter Unit
- WARNING: The coil spring is under tension and could fly apart causing serious injuries. Never try to disassemble or modify it.
**Engine**

Clean the cylinder fins with compressed air or a brush periodically (Fig. 75). Dangerous overheating of engine may occur due to impurities on the cylinder.

*WARNING:* Never run the machine without all the parts, including the starting housing, securely in place. Because parts can fracture and pose a danger of thrown objects, leave repairs to the flywheel and clutch to trained Servicing Dealers.

**Spark Plug**

This engine uses a NGK BPMR7A with .02” (0.5 mm) electrode gap (Fig. 76). Use an exact replacement and replace every six months or more frequently, if necessary.

*WARNING:* Never test the ignition system with ignition wire connector removed from spark plug or with unseated spark plug, since uncontained sparking may cause a fire. A loose connection between spark plug terminal and ignition wire connector in the boot may create arcing that could ignite combustible fumes and cause a fire.

Use only resistor type spark plugs of the approved range. Factors such as:
- too much oil in fuel mix;
- dirty air filter;
- unfavourable running conditions, e.g. operating at part load; may result in rapid deterioration of the spark plug.

**Spark Arresting Muffler**

The brush cutter is provided with a Spark Arrester System p.n. 61110123 (Fig. 77) complying with the requirements of SAE J335 standard; you can check the p.n. of the Spark Arrester System on the muffler itself.

*WARNING:* A faulty or altered spark arrester system screen can create a fire hazard.

Through normal use the screen can become dirty and should be inspected weekly and cleaned as required.

To clean:
- Allow the muffler to cool.
- Remove the two (2) deflector screws (A).
- Remove the deflector (B, Fig. 78) and spark arrester (C).
- Clean and inspect the spark arrester screen. If the spark arrester screen is damaged, faulty or deteriorated, replace the screen.
- Reassemble components in reversed order of removal and torque the screw to 45 in/lbs (4.9 Nm).

*WARNING:* If the spark arrester screen is damaged, faulty or deteriorated, replace the screen or entire muffler assembly.
The Spark Arrester System needs a periodic and accurate maintenance and cleaning, in particular:
- check periodically the spark arrester screen and substitute it when holes, bends or deformations appear;
- check carefully if dust, debris or organic material is in contact with parts of the Spark Arrester System; clean it often with tools or shop air.

If the screen needs to be replaced, please order the whole inner part p.n. 61110127 (C) and 61110128 (B, Fig. 78, Page 29).

**WARNING:** the spacer p.n. 61110131 (Fig. 79) must to be mounted.

**WARNING:** Do not operate your brush cutter if the muffler is damaged, missing or modified. An improperly maintained muffler will increase the risk of fire and hearing loss.

**Bevel Gear (Fig. 80)**

Fill with grease using the correct tube to the level of the lower lip of the access hole (A). Do not use more than 0.02 lb (10 grams).

**CAUTION:** do not use a grease gun. The high pressure can damage the bearings and seals.

Use high quality molybdenum bisulphide grease.

**Guard**

**WARNING:** If the cutting tool or deflector becomes clogged or stuck, always turn off the engine and make sure the cutting tool has stopped before cleaning. Grass, weeds, etc. should be cleaned off the cutting tool at regular intervals. Replace guard if damaged.
Using Troubleshooting Chart

**WARNING:** Always stop unit and disconnect spark plug before performing all of the recommended remedies below except remedies that require operation of the unit.

When you have checked all the possible causes listed and you are still experiencing the problem, see your Servicing Dealer. If you are experiencing a problem that is not listed in this chart, see your Servicing Dealer for service.

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>POSSIBLE CAUSE</th>
<th>SOLUTION</th>
</tr>
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</table>
| Engine will not start or will run only a few seconds after starting. *(Make sure Ignition switch is in start position “I”)* | 1. No spark  
2. Flooded engine. | 1. Check Spark. Remove spark plug cover. Remove spark plug from cylinder. Reattach the spark plug wire and lay spark plug on top of cylinder. Pull the starter rope and watch for spark at spark plug tip. If there is no spark, repeat test with a new spark plug (BPMR7A).  
2. With the ignition switch off, remove spark plug. Move choke lever to Run position and pull starter cord 15 to 20 times. This will clear excess fuel from engine. Clean and reinstall spark plug. Pull starter three times with choke lever at run. If engine does not start, move choke lever to choke and repeat normal starting procedure. If engine still fails to start, repeat procedure with a new spark plug. |
| Engine starts but will not accelerate properly. | | * Contact a Servicing Dealer for carburetor adjustment. |
| Engine does not reach full speed and / or emits excessive smoke | 1. Check oil fuel mixture.  
2. Air filter dirty.  
4. Carburetor requires checking. | 1. Use fresh fuel and the correct 2-cycle oil mix.  
2. Clean per instructions in Maintenance-Air Filter Section.  
3. Clean per instructions in Maintenance-Spark Arresting Muffler Section.  
4. * Contact a Servicing Dealer for carburetor checking. |
| Engine starts, runs, and accelerates but will not idle. | Carburetor requires adjustment. | Turn idle speed screw “T” clockwise to increase idle speed. (If cutting attachment turns at idle, turn idle speed screw “T” counterclockwise to decrease speed); see Operation-Carburetor Adjustment. |
| Cutting attachment running incorrectly and with high vibration | 1. Cutting attachment damaged.  
2. Cutting attachment incorrectly assembled. | 1. Replace the cutting attachment.  
2. Reassemble the cutting attachment with care. |
| Engine starts and runs, but cutting attachment is not rotating | 1. Cutting attachment incorrectly assembled.  
2. Bevel gear damaged.  
3. Clutch drum damaged. | 1. Refer to Assembly-Assembling the cutting attachment Section.  
2. Replace if necessary - contact a Servicing Dealer.  
3. Replace if necessary - contact a Servicing Dealer. |

*Note: This engine complies with EPA (Environmental Protection Agency) regulations which require exhaust emission control. If your unit exhibits specific performance problems that can not be corrected by the Trouble Shooting Section, the unit should be taken to a Servicing Dealer for repair.*
**WARNING:** Stop engine and allow to cool, and secure the unit before storing or transporting in a vehicle. Store unit and fuel in an area where fuel vapors cannot reach sparks or open flames from water heaters, electric motors or switches, furnaces, etc. Store unit with all guards in place. Position so that any sharp object cannot accidentally cause injury to passersby. Store the unit out of reach of children and other unauthorized persons.

1. Drain and clean the fuel tank in a well ventilated area.
2. Drain all fuel from tank into a container approved for gasoline. Run engine until it stops. This will remove all fuel-oil mix which could become stale and leave varnish and gum in the fuel system.
3. Clean all foreign material from the brush cutter. Keep away from corrosive agents such as garden chemicals and de-icing salts.
4. Abide by all Federal and local regulations for the safe storage and handling of gasoline. Excess fuel should be used in other 2-cycle engine powered equipment.

**CAUTION:** It is important to prevent gum deposits from forming in essential fuel system parts such as the carburetor, fuel filter, fuel hose, or fuel tank during storage. Alcohol blended fuels (called gasohol or E10 or using ethanol, methanol) can attract moisture which leads to fuel mixture separation and formation of acids during storage. Acidic gas can damage the engine.

### TECHNICAL DATA

**8460**

**ENGINE:**
- Displacement: 2.79 cu. in (45.7 cc)
- Bore: 1.65 in (42 mm)
- Stroke: 1.30 in (33 mm)

**PERFORMANCE:**
- Idle Speed: 2,500 ÷ 2,800 RPM
- WOT (With Blade): 10,500 ± 300 RPM
- Power: 2.5 hp/1.8 kW (7,500 RPM)

**FUEL AND OIL SYSTEMS:**
- Carburetor: Multi Position Diaphragm Carburetor
- Fuel Tank Capacity: 47.3 oz. (1,400 ml)
- Fuel Mix: See Operation-Fueling Section

**IGNITION SYSTEM:**
- Spark Plug: NGK BPMR7A
- Spark Plug Gap: 0.02 in. (0.5 mm)

**8530**

**ENGINE:**
- Displacement: 3.21 cu. in (52.5 cc)
- Bore: 1.77 in (45 mm)
- Stroke: 1.30 in (33 mm)

**PERFORMANCE:**
- Idle Speed: 2,500 ÷ 2,800 RPM
- WOT (With Blade): 10,500 ± 300 RPM
- Power: 2.8 hp/2.1 kW (7,500 RPM)

**8460 and 8530**
**WARNING:** To ensure safe and correct operation of the brush cutter, this operator's manual should always be kept with or near the machine. Do not lend or rent your brush cutter without the operator's instruction manual.

**AVERTISSEMENT:** Afin de garantir un fonctionnement correct et en toute sécurité de la débroussailleuse, il est recommandé de toujours conserver le manuel de l'utilisateur à proximité de la machine. Ne prêtez ou ne louez jamais votre débroussailleuse sans fournir le présent manuel d'utilisation et d'entretien.

**ADVERTENCIA:** Para garantizar el funcionamiento seguro y correcto de la desbrozadora, este manual del operador deberá conservarse siempre con la máquina o estar cerca de ella. No preste ni alquile la desbrozadora sin el manual de instrucciones del operador.