WARNING

DANGER

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

WARNING

DANGER

The muffler or catalytic muffler and surrounding cover may become extremely hot. Always keep clear of exhaust and muffler area, otherwise serious personal injury may occur.

WARNING

DANGER

Read rules for safe operation and instructions carefully. ECHO provides an Operator's Manual and a Safety Manual. Both must be read and understood for proper and safe operation.
INTRODUCTION

Welcome to the ECHO family. This ECHO product was designed and manufactured to provide long life and on-the-job dependability. Read and understand this manual and the SAFETY MANUAL you found in the same package. You will find both easy to use and full of helpful operating tips and SAFETY messages.

THE OPERATOR’S MANUAL

Read and understand this manual before operation. Keep it in a safe place for future reference. Contains specifications and information for operation, starting, stopping, maintenance, storage and assembly specific to this product.

THE SAFETY MANUAL

Read and understand this manual before operation. Keep it in a safe place for future reference. Explains possible hazards involved with the use of Grass Trimmers and Brush Cutters and what measures you should take to make their use safer.

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Specifications, descriptions and illustrative material in this literature are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories, and may not include all standard equipment.
SAFETY

MANUAL SAFETY SYMBOLS AND IMPORTANT INFORMATION

Throughout this manual and on the product itself, you will find safety alerts and helpful, informational messages preceded by symbols or key words. The following is an explanation of those symbols and key words and what they mean to you.

**IMPORTANT**

The enclosed message provides information necessary for the protection of the unit.

**NOTE**

This enclosed message provides tips for use, care and maintenance of the unit.

INTERNATIONAL SYMBOLS

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>🟢</td>
<td>“WARNING, SEE OPERATOR’S MANUAL”</td>
<td>🟠</td>
<td>Hot Surface</td>
</tr>
<tr>
<td>🟠</td>
<td>Wear eye, ear and head protection</td>
<td>🟠</td>
<td>Finger Severing</td>
</tr>
<tr>
<td>🟠</td>
<td>Wear hand and foot protection</td>
<td>🟠</td>
<td>DO NOT allow flames or sparks near fuel.</td>
</tr>
<tr>
<td>🟠</td>
<td>Safety/Alert</td>
<td>🟠</td>
<td>DO NOT smoke near fuel.</td>
</tr>
<tr>
<td>🟠</td>
<td>Keep bystanders and helpers away 15 m (50 ft.).</td>
<td>🟠</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>🟢</td>
<td>Emergency Stop</td>
<td>🟢</td>
<td>Fuel and oil mixture</td>
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<td>🟢</td>
<td>Carburetor Adjustment - High speed mixture</td>
<td>🟢</td>
<td>Primer Bulb</td>
</tr>
<tr>
<td>🟢</td>
<td>Carburetor Adjustment - Idle speed</td>
<td>🟢</td>
<td>Ignition ON/OFF</td>
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<tr>
<td>🟢</td>
<td>Carburetor Adjustment - Low speed mixture</td>
<td>🟢</td>
<td>Do not use blades. String line only</td>
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<tr>
<td>🟢</td>
<td>Choke Control “Run” Position (Choke Open)</td>
<td>🟢</td>
<td>Choke Control “Cold Start” Position (Choke Closed)</td>
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PERSONAL CONDITION AND SAFETY EQUIPMENT

**WARNING DANGER**

Users of this product risk injury to themselves and others if the unit is used improperly and/or safety precautions are not followed. Proper clothing and safety gear must be worn when operating unit.
**Physical Condition**

Your judgment and physical dexterity may not be good:

- if you are tired or sick,
- if you are taking medication,
- if you have taken alcohol or drugs.

Operate unit only if you are physically and mentally well.

**Eye Protection**

Wear eye protection that meets ANSI Z87.1 or CE requirements whenever you operate the unit.

**Hand Protection**

Wear no-slip, heavy-duty work gloves to improve your grip on the handle. Gloves also reduce the transmission of machine vibration to your hands.

**Hearing Protection**

ECHo recommends wearing hearing protection whenever unit is used.

**Proper Clothing**

Wear snug fitting, durable clothing;

- Pants should have long legs, shirts with long sleeves.
- **DO NOT WEAR SHORTS.**
- **DO NOT WEAR TIES, SCARFS, JEWELRY.**

Wear protective hair covering to contain long hair.

Wear sturdy work shoes with nonskid soles;

- **DO NOT WEAR OPEN TOED SHOES.**
- **DO NOT OPERATE UNIT BAREFOOTED.**

**Hot Humid Weather**

Heavy protective clothing can increase operator fatigue which may lead to heat stroke. Schedule heavy work for early morning or late afternoon hours when temperatures are cooler.

**Extended Operation/Extreme Conditions**

It is believed that a condition called Raynaud’s Phenomenon, which affects the fingers of certain individuals, may be brought about by exposure to vibration and cold. Exposure to vibration and cold may cause tingling and burning sensations, followed by loss of color and numbness in the fingers. The following precautions are strongly recommended, because the minimum exposure, which might trigger the ailment, is unknown.

- Keep your body warm, especially the head, neck, feet, ankles, hands, and wrists.
- Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks, and also by not smoking.
- Limit the hours of operation. Try to fill each day with jobs where operating the unit or other hand-held power equipment is not required.
- If you experience discomfort, redness, and swelling of the fingers followed by whitening and loss of feeling, consult your physician before further exposing yourself to cold and vibration.
**Repetitive Stress Injuries**

It is believed that overusing the muscles and tendons of the fingers, hands, arms, and shoulders may cause soreness, swelling, numbness, weakness, and extreme pain in those areas. Certain repetitive hand activities may put you at a high risk for developing a Repetitive Stress Injury (RSI). An extreme RSI condition is Carpal Tunnel Syndrome (CTS), which could occur when your wrist swells and squeezes a vital nerve that runs through the area. Some believe that prolonged exposure to vibration may contribute to CTS. CTS can cause severe pain for months or even years.

To reduce the risk of RSI/CTS, do the following:

- Avoid using your wrist in a bent, extended, or twisted position. Instead try to maintain a straight wrist position. Also, when grasping, use your whole hand, not just the thumb and index finger.
- Take periodic breaks to minimize repetition and rest your hands.
- Reduce the speed and force with which you do the repetitive movement.
- Do exercise to strengthen the hand and arm muscles.
- Immediately stop using all power equipment and consult a doctor if you feel tingling, numbness, or pain in the fingers, hands, wrists, or arms. The sooner RSI/CTS is diagnosed, the more likely permanent nerve and muscle damage can be prevented.

---

**Read the Manuals**

- Provide all users of this equipment with the Operator’s Manual and Safety Manual for instructions on Safe Operation.

**Clear the Work Area**

- Spectators and fellow workers must be warned, and children and animals prevented from coming nearer than 15 m (50 ft.) while the unit is in use.

**Keep a Firm Grip**

- Hold the front and rear handles with both hands, with thumbs and fingers encircling the handles.

**Keep a Solid Stance**

- Maintain footing and balance at all times. Do not stand on slippery, uneven or unstable surfaces. Do not work in odd positions or on ladders. Do not over reach.

**Avoid Hot Surfaces**

- Keep exhaust area clear of flammable debris. Avoid contact during and immediately after operation.
EQUIPMENT

WARNING DANGER
Use only ECHO approved attachments. Serious injury may result from the use of a non-approved attachment combination. ECHO, INC. will not be responsible for the failure of cutting devices, attachments or accessories which have not been tested and approved by ECHO. Read and comply with all safety instructions listed in this manual and safety manual.

• Check unit for loose/missing nuts, bolts, and screws. Tighten and/or replace as needed.

• Inspect fuel lines, tank, and area around carburetor for fuel leaks. DO NOT operate unit if leaks are found.

• Inspect shield for damage and ensure that the cut-off knife is securely in place. Replace if either is damaged or missing.

• Check that the cutting attachment is firmly attached and in safe operating condition.

• Check that front loop handle and shoulder strap/ or shoulder/ waist harness are adjusted for safe, comfortable operation. See Assembly Section for proper adjustment.

EMISSION CONTROL

EPA Phase 2
The emission control system for this engine is EM (Engine Modification).

Emission Control Label (located on Engine) (EXAMPLE ONLY, information on label varies by FAMILY).

PRODUCT EMISSION DURABILITY
The 300 hour emission durability compliance period is the time span selected by the manufacturer certifying the engine emissions output meets applicable emissions regulations, provided that approved maintenance procedures are followed as listed in the Maintenance Section of this manual.
DESCRIPTION

Locate these safety decals on your unit. Make sure the decals are legible and that you understand and follow the instructions on them. If a decal cannot be read, a new one can be ordered from your ECHO dealer. See PARTS ORDERING instructions for specific information.

Shaft Decal

Spanish Decal

P/N 89022809560

English Translation

P/N 89016054130

WARNING DANGER

This unit can be dangerous and cause serious injury if improperly used. To reduce injury risk to operator, helpers and bystanders, read and understand the Operators and Safety Manuals, which are provided in Spanish.

2. **GRIP** - Rear (right hand) handle.

3. **THROTTLE TRIGGER LOCKOUT** - This lever must be held during starting. Operation of the throttle trigger is prevented unless throttle trigger lockout lever is engaged.

4. **STOP SWITCH** - "SLIDE SWITCH" mounted on top of the Throttle Trigger Housing. Move switch FORWARD to RUN, BACK to STOP.

5. **FRONT HANDLE** - The Front (loop) handle is loosely assembled to the Drive Shaft assembly and must be positioned for proper cutting attitude and operator comfort.

6. **DRIVE SHAFT ASSEMBLY** - Includes the Gear Housing assembly, flex drive cable and Safety Decal.

7. **NYLON CUTTER HEAD** - Contains replaceable nylon trimming lines.

8. **CUT-OFF KNIFE** - Trims line to the correct length (5 in.). If trimmer is operated without a cut-off knife the line may be too long - more than (5 in.) - the operating speed will slow, the engine overheat and performance will suffer.

9. **PLASTIC DEBRIS SHIELD ASSEMBLY** - Included in plastic bag (co-pack). MUST be installed on unit before use, see Assembly Instructions. Shield assembly includes the Cut-Off Knife. Mounts on the Gear Housing Assembly just above the cutting attachment. Helps protect the operator by deflecting debris produced during the trimming operation. This shield must be replaced with the steel shield for blade use.

10. **THROTTLE TRIGGER** - Spring loaded to return to idle when released. During acceleration, press trigger gradually for best operating technique.

11. **SPARK PLUG** - Provides spark to ignite fuel mixture.

12. **TOP GUARD** - Protects arm from the hot engine.

13. **SPARK ARRESTOR - CATALYTIC MUFFLER/MUFFLER** - The muffler or catalytic muffler controls exhaust noise and emission. The spark arrestor screen prevents hot, glowing particles of carbon from leaving the muffler. Keep exhaust area clear of flammable debris.


15. **RECOIL STARTER HANDLE/ROPE** - Pull recoil starter handle/rope using light pulling force, approximately 2/3 (2 ft.) of rope length. Two (2) to Six (6) pulls are required to properly tension starter spring prior to automatic engine engagement. DO NOT let handle snap back or damage to unit will occur.


17. **PRIMER BULB** - Pumping primer bulb before starting engine draws fresh fuel from the fuel tank priming the carburetor for starting. Pump primer bulb until fuel is visible and flows freely in the clear fuel tank return line. Pump bulb an additional 4 or 5 times.

18. **AIR CLEANER** - Contains replaceable filter element.

19. **CHOKE** - The choke control is located on the top of the air filter case. Move choke lever to "Cold Start" to close choke for cold start. Move choke lever to "Run" position to open choke.
The ECHO product you purchased has been partially assembled for your convenience. Due to packaging restrictions, installation of the plastic debris shield, nylon line head, and positioning of the front handle are necessary.

After opening the carton, check for damage. Immediately notify your retailer or ECHO Dealer of damaged or missing parts. Use the contents list to check for missing parts.

* Some units may be factory pre-assembled. No assembly tools are needed and the nylon line head, plastic debris shield, and mounting hardware, shown in the contents list, are pre-assembled to the unit. Only the front handle may need to be re-positioned for comfortable operation.

______ 1 - Power Head / Drive Shaft Assembly
______ 1 - Plastic Bag (co-pack)
______ - 1, Operator’s Manual
______ - 1, Safety Manual
______ - 1, Warranty Registration Card
______ - 1, Limited Warranty Statement
______ - 1, Locking Tool, P/N 89751801131
______ - 1, Safety Glasses
______ - 1, Echo Power Blend™ 2-stroke oil sample
* ___ - 1, Nylon Trimmer Head
* ___ - 1, wrench 17x14.5, P/N X602000030
* ___ - 1, locking tool, P/N 89751801131
* ___ --1, Plastic shield
* ___ --1, shield plate
* ___ --3, 5mm x 16mm screws (shield mtg.)
* ___ - 1, Large Washer
* ___ - 1, Split Pin
* ___ - 1, Hex nut, L.H. M10 x 1.25
___ - 12, 8 in. x .095 Pre-Cut Nylon Line
PLASTIC SHIELD INSTALLATION
(For Nylon Line Operation)

NOTE
The plastic shield is for use with the Nylon Line Head only. Install Metal Shield when using plastic or metal blades.

1. Remove plastic sleeve and upper plate (A) from PTO shaft.
2. Install the shield on the bottom of the bearing housing flange.
3. Place shield plate (B) on shield, align holes and install three (3) 5x16mm screws.
4. Install upper plate (A) onto PTO shaft.
NYLON LINE HEAD INSTALLATION

1. Align hole in upper plate with notch in edge of gear housing and insert head locking tool (C).
2. Be sure upper plate (A) remains on PTO shaft.
3. Place line head onto PTO shaft. Followed by large metal washer.
4. Thread L.H. nut on PTO shaft. Tighten securely.
5. Install new split pin.
6. Remove locking tool (C).

NYLON LINE INSTALLATION

1. Shut engine off. Lay unit on the ground with head assembly up.
2. Remove old nylon line through center recess of head.
3. Thread new lines through outside holes (D) in housing until ends meet in center of recess.

   NOTE
   Insert cutting line ends to center of head recess to insure easy removal of used lines.

FRONT HANDLE INSTALLATION

   NOTE
   Label shows minimum spacing for front handle location.

1. Position front handle for comfortable operation and secure screws.
OPERATION

OPERATION WITH BLADES

Preparing the Trimmer/Brush Cutter for Blade Use

WARNING DANGER
Blade use DEMANDS specific Brush Cutter configuration. Operation without specified shield, harness, and handle can result in serious personal injury.

Grass/Weed Blades Require:

Install Blade Conversion Kit, Includes metal shield (A), barrier bar (B), and shoulder harness (C).

NOTE
The Barrier Bar is used to restrict rearward movement of the unit. The Barrier Bar is NOT A HANDLE and should not be gripped when using or carrying the unit.

Brush/Clearing Blades Require:

Install U-Handle / Blade Conversion Kit, Includes metal shield (A), shoulder harness with hip pad (C), and U-Handles (D).

Choosing the Correct Blade

WARNING DANGER
The type of Blade used MUST be matched to the type and size of material cut. An improper or dull blade can cause serious personal injury. Blades MUST be sharp. Dull blades increase the chance of kick out and injury to yourself and bystanders.
Plastic/Nylon Blades may be used where ever the nylon line head is used. DO NOT use this blade for heavy weeds or brush!

8 Tooth Weed/Grass Blade P/N 69600120331 is designed for grass, garden debris and thick weeds. DO NOT use this blade for brush or heavy woody growth, 19 mm (3/4 in.) diameter or larger.

80 Tooth Brush Blade (P/N 69500120331) is designed for cutting brush and woody growth up to 64 mm (2-1/2 in.) diameter.

22 Tooth Clearing Blade (99944200130) is designed for dense thickets and saplings up to 64 mm (2-1/2 in.) diameter.

Use Shoulder/Waist Harness (P/N 99944200200) Use of the Shoulder/Waist Harness is recommended for ALL Trimmer/Brush Cutter use. The Shoulder/Waist Harness suspends the trimmer from the operator's shoulder and reduces operator fatigue.

The restrictive harness enhances operator safety by reducing the possibility of blade contact with the operator's hands and feet.

NOTE
In case of Emergency, pull up on the Quick Release Collar to disconnect the trimmer from the harness.
FUEL

Fuel Requirements

Gasoline - Use 89 Octane [R+M/2] (mid grade or higher) gasoline known to be good quality. Gasoline may contain up to 15% MTBE (methyl tertiary-butyl ether). Gasohol containing methyl (wood) alcohol is NOT approved.

Two Stroke Oil - A two-stroke engine oil meeting ISO-L-EGD (ISO/CD 13738) and J.A.S.O. FC Standards must be used. Echo brand premium Power Blend™ Universal 2-Stroke Oil meets these standards. Engine problems due to inadequate lubrication caused by failure to use an ISO-L-EGD and J.A.S.O. FC certified oil, such as Echo premium Power Blend™, will void the two-stroke engine warranty. (Emission related parts only are covered for two years, regardless of two-stroke oil used, per the statement listed in the Emission Defect Warranty Explanation.)

IMPORTANT
Echo premium Power Blend™ Universal 2-Stroke Oil may be mixed at 50:1 ratio for application in all Echo engines sold in the past regardless of ratio specified in those manuals.

Handling Fuel

WARNING DANGER
Fuel is VERY flammable. Use extreme care when mixing, storing or handling or serious personal injury may result.
• Use an approved fuel container.
• DO NOT smoke near fuel.
• DO NOT allow flames or sparks near fuel.
• Fuel tanks/cans may be under pressure. Always loosen fuel caps slowly allowing pressure to equalize.
• NEVER refuel a unit when the engine is HOT or RUNNING!
• DO NOT fill fuel tanks indoors. ALWAYS fill fuel tanks outdoors over bare ground.
• DO NOT overfill fuel tank. Wipe up spills immediately.
• Securely tighten fuel tank cap and close fuel container after refueling.
• Inspect for fuel leakage. If fuel leakage is found, do not start or operate unit until leakage is repaired.
• Move at least 3m (10 ft.) from refueling location before starting the engine.

Mixing Instructions
1. Fill an approved fuel container with half of the required amount of gasoline.
2. Add the proper amount of 2-stroke oil to gasoline.
3. Close container and shake to mix oil with gasoline.
4. Add remaining gasoline, close fuel container, and remix.

Fuel to Oil Mix - 50:1 Ratio

<table>
<thead>
<tr>
<th>U.S.</th>
<th>METRIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAS</td>
<td>OIL</td>
</tr>
<tr>
<td>GAS</td>
<td>OIL</td>
</tr>
<tr>
<td>Gallons</td>
<td>Fl. oz</td>
</tr>
<tr>
<td>1</td>
<td>2.6</td>
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<tr>
<td>2</td>
<td>5.2</td>
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<tr>
<td>5</td>
<td>13</td>
</tr>
</tbody>
</table>

IMPORTANT
Spilled fuel is a leading cause of hydrocarbon emissions. Some states may require the use of automatic fuel shut-off containers to reduce fuel spillage.

After use
• DO NOT store a unit with fuel in its tank.
  Leaks can occur. Return unused fuel to an approved fuel storage container.

Storage - Fuel storage laws vary by locality. Contact your local government for the laws affecting your area. As a precaution, store fuel in an approved, airtight container. Store in a well-ventilated, unoccupied building, away from sparks and flames.

IMPORTANT
Stored fuel ages. Do not mix more fuel than you expect to use in thirty (30) days, ninety (90) days when a fuel stabilizer is added.

IMPORTANT
Stored two-stroke fuel may separate. ALWAYS shake fuel container thoroughly before each use.
STARTING COLD ENGINE

1. **Stop Switch**
   Move stop switch button (A) forward away from the STOP position.

2. **Choke**
   Move choke lever (B) to Cold Start Position (↑↓).

3. **Primer**
   Pump primer bulb (C) until fuel is visible and flows freely in the clear fuel tank return line. Pump bulb an additional 4 or 5 times.

   **NOTE**
   Energy is stored in the starter spring each time the handle/rope is pulled. Generally two to six pulls, using light pulling forces, will store enough energy to engage the starter and spin the engine. Do not pull the rope out to end stop.

4. **Recoil Starter**
   Lay the unit on a flat, clear area. Firmly grasp right hand grip and throttle trigger lockout with left hand, and fully depress throttle trigger to wide open position. Gently pull starter handle/rope (D) until engine fires or 2 to 3 engine engagements.

5. **Choke**
   After engine fires or 2 to 3 engine engagements, move choke lever (B) to Run position (↑↓). Hold throttle trigger and throttle trigger lockout fully depressed, and pull starter handle/rope until engine starts and runs. Release throttle trigger and allow unit to warm up at idle for several minutes.

   **NOTE**
   If engine does not start with choke in “Run” position after 5 engine engagements, repeat instructions.

6. After engine warm up, gradually depress throttle trigger to increase engine RPM to operating speed.
STARTING WARM ENGINE

The starting procedure is the same as Cold Start except DO NOT close the choke, and do not depress throttle trigger to wide open position.

WARNING DANGER
The attachment should not move at idle, otherwise serious personal injury may result.

NOTE
If attachment moves, readjust carburetor according to “Carburetor Adjustment” instructions in this manual or see your ECHO Dealer.

1. Stop Switch
   Move stop switch button (A) forward away from the STOP position.

2. Primer
   Pump primer bulb (C) until fuel is visible and flows freely in the clear fuel tank return line. Pump bulb an additional 4 or 5 times.

3. Recoil Starter
   Lay the unit on a flat, clear area and pull the recoil starter handle (D) until the engine fires.

NOTE
If engine does not start after 5 engine engagements, use Cold Start Procedure.
STOPPING ENGINE

1. **Throttle**
   Release throttle and allow engine to return to idle before shutting off engine.

2. **Stop Switch**
   Move stop switch button (A) backward to STOP position.

**WARNING DANGER**
If engine does not stop when stop switch is moved to STOP position, close choke - COLD START position - to stall engine. Have your ECHO dealer repair stop switch before using trimmer again.

MAINTENANCE

Your ECHO trimmer is designed to provide many hours of trouble free service. Regular scheduled maintenance will help your trimmer achieve that goal. If you are unsure or are not equipped with the necessary tools, you may want to take your unit to an ECHO Service Dealer for maintenance. To help you decide whether you want to DO-IT-YOURSELF or have the ECHO Dealer do it, each maintenance task has been graded. If the task is not listed, see you Echo Dealer for repairs.

**SKILL LEVELS**

**Level 1** = Easy to do. Most required tools come with unit.

**Level 2** = Moderate difficulty. Some specialized tools may be required.

**Level 3** = Experience required. Specialized tools are required. ECHO recommends that the unit be returned to your ECHO dealer for servicing.

ECHO offers **REPOWER™** Maintenance Kits and Parts to make your maintenance job easier. Below each task heading are listed the various part numbers required for that task. See your ECHO dealer for these parts.
### MAINTENANCE INTERVALS

<table>
<thead>
<tr>
<th>COMPONENT/SYSTEM</th>
<th>MAINTENANCE PROCEDURE</th>
<th>REQ'D SKILL LEVEL</th>
<th>DAILY OR BEFORE USE</th>
<th>EVERY REFUEL</th>
<th>3 MONTHS OR 90 HOURS</th>
<th>6 MONTHS OR 270 HOURS</th>
<th>YEARLY 600 HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended Echo Dealer Maintenance Procedures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cylinder Exhaust Port</td>
<td>Inspect/Clean/Decarbon</td>
<td>3</td>
<td></td>
<td>I / C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Do-It-Yourself Maintenance Procedures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Air Filter</td>
<td>Inspect/Clean/Replace</td>
<td>1</td>
<td></td>
<td>I / C</td>
<td>R*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choke</td>
<td>Inspect/Clean</td>
<td>2</td>
<td></td>
<td>I / C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Filter</td>
<td>Inspect/Replace</td>
<td>1</td>
<td></td>
<td>I</td>
<td>I / R *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel System, leaks</td>
<td>Inspect/Replace</td>
<td>1</td>
<td></td>
<td>I *</td>
<td>I</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>Cooling System</td>
<td>Inspect/Clean</td>
<td>2</td>
<td></td>
<td>I / C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muffler Spark Arrestor</td>
<td>Inspect/Replace</td>
<td>2</td>
<td></td>
<td>I / R *</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive Shaft (Flex Cable Models)</td>
<td>Grease</td>
<td>2</td>
<td></td>
<td>I (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gear Housing</td>
<td>Grease</td>
<td>2</td>
<td></td>
<td>I (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recoil Starter Rope</td>
<td>Inspect/Clean</td>
<td>1</td>
<td></td>
<td>I / C *</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spark Plug</td>
<td>Inspect/Clean</td>
<td>2</td>
<td></td>
<td>I / C</td>
<td>R*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screws/Nuts/Bolts</td>
<td>Inspect/Tighten/Replace</td>
<td>1</td>
<td></td>
<td>I / R *</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MAINTENANCE PROCEDURE LETTER CODES:** I = INSPECT, R = REPLACE, C = CLEAN

**IMPORTANT NOTE:** Time intervals shown are maximum. Actual use and your experience will determine the frequency of required maintenance.

**MAINTENANCE PROCEDURE NOTES:**

1. Apply ECHO LUBE™ every 25 hours of use.
2. Apply ECHO LUBE™ every 50 hours of use.

* All recommendations to replace are based on the finding of damage or wear during inspection.
**AIR FILTER**

**Level 1.**

*Tools required:* 25 - 50 mm (1 - 2 in.) Cleaning Brush

*Parts required:* 90008 REPOWER™ AIR & FUEL FILTER KIT.

1. Close choke (Cold Start Position [ ]). This prevents dirt from entering the carburetor throat when the air filter is removed. Brush accumulated dirt from the air cleaner area.

2. Remove the air cleaner cover. Clean and inspect the element for damage. If element is fuel soaked and very dirty, replace.

3. If element can be cleaned and reused, be certain it:
   - still fits the cavity in the air cleaner cover.
   - is installed with the original side out.

   **NOTE**
   Carburetor adjustment may be needed after air filter cleaning/replacement.

**FUEL FILTER**

**Level 1.**

*Tools required:* 200 - 250 mm (8 - 10 in.) length of wire with one end bent into a hook, Clean rag, funnel, and an approved fuel container

*Parts required:* 90008 REPOWER™ AIR & FUEL FILTER KIT.

**WARNING**

DANGER

Fuel is **VERY** flammable. Use extreme care when mixing, storing or handling, or serious personal injury may result.

1. Use a clean rag to remove loose dirt from around fuel cap and empty fuel tank.

2. Use the “fuel line hook” to pull the fuel line and filter from the tank.

3. Remove the filter from the line and install the new filter.
**SPARK PLUG**

Level 2.

*Tools required:* T-Wrench, feeler gauge, soft metal brush

*Parts Required:* REPOWER™ Tune-Up Kit P/N 90074

**IMPORTANT**

Use only NGK BPM-8Y spark plug (BPMR-8Y in Canada) otherwise severe engine damage may occur.

1. Remove spark plug and check for fouling, worn and rounded center electrode.
2. Clean the plug or replace with a new one. DO NOT sand blast to clean. Remaining sand will damage engine.
3. Adjust spark plug gap by bending outer electrode.
4. Tighten spark plug to 150-170 kg/cm (130-150 in. lb.).

**COOLING SYSTEM**

Level 2.

*Tools required:* Cross-head screwdriver, 3 and 4 mm hex wrench, 25 - 50mm (1 - 2 in.) cleaning brush

*Parts Required:* None if you are careful.

**IMPORTANT**

To maintain proper engine operating temperatures, cooling air must pass freely through the cylinder fin area. This flow of air carries combustion heat away from the engine.

Overheating and engine seizure can occur when:

- Air intakes are blocked, preventing cooling air from reaching the cylinder.
- Dust and grass build up on the outside of the cylinder. This build up insulates the engine and prevents the heat from leaving.

Removal of cooling passage blockages or cleaning of cooling fins is considered “Normal Maintenance”. Any failure attributed to lack of maintenance is not warranted.
1. Disconnect spark plug lead from spark plug.

2. Release stored energy in power spring by removing spark plug.

3. Remove three (3) screws (A) from starter assembly and remove starter.

**NOTE**
DO NOT disassemble the starter assembly.

4. Remove the four screws that retain the engine cover. Two at the inside top of the mounting plate (B), one on the top guard (C), and one at the muffler cover (D).

5. Disengage the heat deflector tabs (E) under the muffler from the slots in the engine/muffler cover.

6. Lift the cover from the engine.

7. Reinstall spark plug and starter assembly to prevent dirt and debris from entering engine and starter.

**NOTE**
When installing starter housing to mounting body, be sure that drive starter cam engages the starter pawls correctly.
8. Use a brush to remove dirt from the cylinder fins.

**IMPORTANT**
DO NOT use a metal scraper to remove dirt from the cylinder fins.

9. Remove grass and leaves from the grid between the starter and fuel tank.

10. Reassemble parts in reverse order of removal. When installing the cover, be certain:

- the tabs of the deflector shield (E) are in the slots of the cover
- the fuel check valve (F) is positioned in the cover
- the spark plug is tightened securely
- the ignition wire (G) is not pinched
EXHAUST SYSTEM

Spark Arrestor Screen

Level 2.

Tools required:  Cross-head screwdriver, soft metal brush.

Parts Required:  Screen, Gasket

1. Remove engine cover. See “Cleaning Cooling System” for instructions.

2. Remove spark arrestor screen cover (A), gasket (B), and screen (C) from muffler body.

3. Clean carbon deposits from muffler components.

4. Replace screen if it is cracked, plugged or has holes burned through.

5. Reassemble in reverse order of removal. Make sure screen is positioned properly before tightening screws.

NOTE
When installing the engine cover, be certain the tabs of the metal deflector shield are in the slot of the engine cover.

Cylinder Exhaust Port

Level 3

IMPORTANT
The cylinder exhaust port must be inspected and cleaned of excess carbon every 3 months or 90 hours of operation in order to maintain this engine within the emissions durability period. ECHO strongly recommends that you return your unit to your ECHO dealer for this important maintenance service.
CARBURETOR ADJUSTMENT

**Engine Break-In**
New engines must be operated for a minimum of two tanks of fuel before carburetor adjustments can be made. During the break-in period, your engine performance will increase and exhaust emissions will stabilize. Idle speed can be adjusted as required.

**High Altitude Adjustment**
High altitude adjustment is not required for proper operation of this engine.

**Idle Speed Adjustment**
Idle speed adjustment may be required periodically to comply with specifications for this unit. See "Specifications," for correct idle speed.

**Level 2.**

Tools required: Screwdriver, Tachometer (ECHO P/N 99051130017).

**NOTE**
Every unit is run at the factory and the carburetor is set in compliance with emission regulations. This carburetor does not have acceleration and high speed adjustment needles.

1. Check idle speed using a tachometer, and reset if necessary. Turn idle screw (A) clockwise to increase idle speed; counter clockwise to decrease idle speed.

**WARNING**
When carburetor adjustment is completed, cutting attachment should not move at idle, otherwise serious personal injury may result.
LUBRICATION

Level 1.

Tools required: 8 & 13 mm Open End Wrench, Cross Head Screwdriver, Clean rag, Grease gun P/N 91016

Parts Required: ECHO LUBETM 8 oz. (P/N 91014) or Lithium Base Grease.

Gear Housing

1. Clean all loose debris from gear box.
2. Remove plug (A) and check level of grease.
3. Add grease if necessary, DO NOT over fill.

Drive Shaft

1. Loosen two (2) screws (B) and remove center locating screw (C). Pull gear box and shield from drive shaft housing.
2. Pull flexible cable from the drive shaft housing, wipe clean and recoat with a thin coating [15 ml (1/2 oz.)] of grease.
3. Slide the flexible cable back in the drive housing. DO NOT get dirt on the flex cable.
4. Install the gear housing and shield assembly.

IMPORTANT
Flat edge of washers (D) must be against drive shaft.
SHARPENING METAL BLADES

Three styles of metal blades are approved for use on the ECHO Brush Cutter. The 8-tooth blade can be sharpened during normal maintenance. The clearing blade and 80 tooth blade require professional service.

Before sharpening, CLOSELY inspect blade for cracks (look at the bottom of each tooth and the center mounting hole closely), missing teeth and bending. If ANY of these problems are discovered, replace the blade.

When sharpening a blade, always remove the same amount of materials from each tooth to maintain balance. A blade that is not balanced will cause unsafe handling due to vibration and can result in blade failure.

*Tool required:* Flat file (preferred). Electric grinder if special care is used. Round (rat tail) file for gullet (radius).

1. File each tooth at a 30 degree angle a specific number of times, eg. 4 strokes per tooth. Work your way around the blade until all teeth are sharp.

2. **DO NOT** file the 'gullet' (radius) of the tooth with the flat file. The radius must remain. A sharp corner will lead to a crack and blade failure.

**IMPORTANT**
If an electric grinder is used, use care not to overheat teeth, do not allow tips/tooth to glow red or turn blue. **DO NOT** place blade in cooling water. This will change the temper of the blade and could result in blade failure.

3. After sharpening teeth, check each tooth radius for evidence of a square (sharp) corner. Use the round (rat tail) file to renew the radius.
## Troubleshooting

### Engine Problem Troubleshooting Chart

<table>
<thead>
<tr>
<th>Problem</th>
<th>Check</th>
<th>Status</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel at carburetor</td>
<td>No fuel at carburetor</td>
<td>Fuel strainer clogged&lt;br&gt; Fuel line clogged&lt;br&gt; Carburetor</td>
<td>Clean or replace&lt;br&gt; Clean or replace&lt;br&gt; See your Echo dealer</td>
<td></td>
</tr>
<tr>
<td>Fuel at cylinder</td>
<td>No fuel at cylinder</td>
<td>Carburetor</td>
<td>See your Echo dealer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Muffler wet with fuel</td>
<td>Fuel Mixture too rich</td>
<td>Open choke&lt;br&gt; Clean/replace air filter&lt;br&gt; Adjust carburetor&lt;br&gt; See your Echo dealer</td>
<td></td>
</tr>
<tr>
<td>Spark at end of plug wire</td>
<td>No spark</td>
<td>Stop switch off&lt;br&gt; Electrical problem&lt;br&gt; Interlock switch</td>
<td>Turn switch to ON&lt;br&gt; See your Echo dealer&lt;br&gt; See your Echo dealer</td>
<td></td>
</tr>
<tr>
<td>Spark at plug</td>
<td>No spark</td>
<td>Spark gap incorrect&lt;br&gt; Covered with carbon&lt;br&gt; Fouled with fuel&lt;br&gt; Plug defective</td>
<td>Adjust to 0.70mm (0.026 in.)&lt;br&gt; Clean or replace&lt;br&gt; Clean or replace&lt;br&gt; Replace plug</td>
<td></td>
</tr>
<tr>
<td>Air filter</td>
<td>Air filter dirty</td>
<td>Normal wear</td>
<td>Clean or replace</td>
<td></td>
</tr>
<tr>
<td>Fuel filter</td>
<td>Fuel filter dirty</td>
<td>Contaminants/residues in fuel</td>
<td>Replace</td>
<td></td>
</tr>
<tr>
<td>Fuel vent</td>
<td>Fuel vent plugged</td>
<td>Contaminants/residues in fuel</td>
<td>Clean or replace</td>
<td></td>
</tr>
<tr>
<td>Spark Plug</td>
<td>Plug dirty/worn</td>
<td>Normal wear</td>
<td>Clean and adjust or replace</td>
<td></td>
</tr>
<tr>
<td>Carburetor</td>
<td>Improper adjustment</td>
<td>Vibration</td>
<td>Adjust</td>
<td></td>
</tr>
<tr>
<td>Cooling System</td>
<td>Cooling system dirty/plugged</td>
<td>Extended operation in dirty/dusty locations</td>
<td>Clean</td>
<td></td>
</tr>
<tr>
<td>Spark Arrestor Screen</td>
<td>Spark arrestor screen plugged</td>
<td>Normal wear</td>
<td>Replace</td>
<td></td>
</tr>
<tr>
<td>Engine does not crank</td>
<td>N/A</td>
<td>Internal engine problem</td>
<td>See your Echo dealer</td>
<td></td>
</tr>
</tbody>
</table>

### WARNING  DANGER

Fuel vapors are extremely flammable and may cause fire and/or explosion. **Never** test for ignition spark by grounding spark plug near cylinder plug hole, otherwise serious personal injury may result.
STORAGE

WARNING  DANGER
During operation the muffler or catalytic muffler and surrounding cover become hot. Always keep exhaust area clear of flammable debris during transportation or when storing, otherwise serious property damage or personal injury may result.

Long Term Storage (over 30 days)

Do not store your unit for a prolonged period of time (30 days or longer) without performing protective storage maintenance which includes the following:

1. Store unit in a dry, dust free place, out of the reach of children.

WARNING  DANGER
Do not store in enclosure where fuel fumes may accumulate or reach an open flame or spark.

2. Place the stop switch in the “STOP” position.
3. Remove accumulation of grease, oil, dirt and debris from exterior of unit.
4. Perform all periodic lubrication and services that are required.
5. Tighten all the screws and nuts.
6. Drain the fuel tank completely and pull the recoil starter handle several times to remove fuel from the carburetor.
7. Remove the spark plug and pour 7 cc (1/4 oz.) of fresh, clean, two-stroke engine oil into the cylinder through the spark plug hole.
   A. Place a clean cloth over the spark plug hole.
   B. Pull the recoil starter handle 2-3 times to distribute the oil inside the engine.
   C. Observe the piston location through the spark plug hole. Pull the recoil handle slowly until the piston reaches the top of its travel and leave it there.
8. Install the spark plug (do not connect ignition cable).

IMPORTANT
Do not store the unit with tension remaining on the starter spring.
### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>SRM-210 SRM-210</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td>SRM-210</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>1780 mm (70.1 in.)</td>
</tr>
<tr>
<td><strong>Width</strong></td>
<td>250 mm (9.84 in.)</td>
</tr>
<tr>
<td><strong>Height</strong></td>
<td>325 mm (12.8 in.)</td>
</tr>
<tr>
<td><strong>Weight (dry) w/cutter head</strong></td>
<td>5.1 kg (11.3 lb.)</td>
</tr>
<tr>
<td><strong>Engine Type</strong></td>
<td>Air cooled, two-stroke, single cylinder gasoline engine</td>
</tr>
<tr>
<td><strong>Bore</strong></td>
<td>32.2 mm (1.27 in.)</td>
</tr>
<tr>
<td><strong>Stroke</strong></td>
<td>26.0 mm (1.02 in.)</td>
</tr>
<tr>
<td><strong>Displacement</strong></td>
<td>21.2 cc (1.29 cu. in.)</td>
</tr>
<tr>
<td><strong>Exhaust</strong></td>
<td>Spark Arrestor Muffler</td>
</tr>
<tr>
<td><strong>Carburetor</strong></td>
<td>Zama w/purge pump</td>
</tr>
<tr>
<td><strong>Ignition System</strong></td>
<td>Flywheel magneto, capacitor discharge ignition type</td>
</tr>
<tr>
<td><strong>Spark Plug</strong></td>
<td>NGK BPM-8Y Gap 0.65 mm (0.026 in.)</td>
</tr>
<tr>
<td><strong>Fuel</strong></td>
<td>Mixed (Gasoline and Two-stroke Oil)</td>
</tr>
<tr>
<td><strong>Fuel/Oil Ratio</strong></td>
<td>50:1 two-stroke air cooled engine oil</td>
</tr>
<tr>
<td><strong>Gasoline</strong></td>
<td>89 Octane unleaded. DO NOT use fuel containing methyl alcohol, more than 10% ethyl alcohol or 15% MTBE.</td>
</tr>
<tr>
<td><strong>Oil</strong></td>
<td>Power Blend™ Premium Universal 2-Stroke Oil</td>
</tr>
<tr>
<td><strong>Fuel Tank Capacity</strong></td>
<td>0.45 lit. (15.2 US fl. oz.)</td>
</tr>
<tr>
<td><strong>Recoil Starter System</strong></td>
<td>Automatic Recoil Starter</td>
</tr>
<tr>
<td><strong>Clutch</strong></td>
<td>Centrifugal Type</td>
</tr>
<tr>
<td><strong>Drive Shaft</strong></td>
<td>1/4 in. Flex Shaft</td>
</tr>
<tr>
<td><strong>Rotating Direction</strong></td>
<td>Counter-Clockwise viewed from top</td>
</tr>
<tr>
<td><strong>Cutter Head</strong></td>
<td>Nylon line head (2-line) with .095 line capacity 203 mm (8 in.)</td>
</tr>
<tr>
<td><strong>Handle</strong></td>
<td>Front - Loop and Right Rear Handle w/rubber grips</td>
</tr>
<tr>
<td><strong>Shoulder Harness</strong></td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Idle Speed RPM</strong></td>
<td>2,400-3,200</td>
</tr>
<tr>
<td><strong>Wide Open Throttle Speed (W.O.T.) RPM</strong></td>
<td>8,000-10,000</td>
</tr>
</tbody>
</table>
SERVICING INFORMATION

PARTS
Genuine ECHO Parts and ECHO REPOWER™ Parts and Assemblies for your ECHO products are available only from an Authorized ECHO Dealer. When you do need to buy parts always have the Model Number and Serial Number of the unit with you. You can find these numbers on the engine housing. For future reference, write them in the space provided below.

Model No. _____________ SN. ____________

SERVICE
Service of this product during the warranty period must be performed by an Authorized ECHO Service Dealer. For the name and address of the Authorized ECHO Service Dealer nearest you, ask your retailer or call: 1-800-432-ECHO (3246). Dealer information is also available on our Web Site. When presenting your unit for Warranty service/repairs, proof of purchase is required.

ECHO CONSUMER PRODUCT SUPPORT
If you require assistance or have questions concerning the application, operation or maintenance of this product you may call the ECHO Consumer Product Support Department at 1-800-673-1558 from 8:30 am to 4:30 pm (Central Standard Time) Monday through Friday. Before calling, please know the model and serial number of your unit to help your Consumer Product Support Representative.

WARRANTY REGISTRATION
You may register your Echo equipment using the warranty registration card or register on-line at www.echo-usa.com. Registering provides a direct link between you and ECHO if we find it necessary to contact you.

ADDITIONAL OR REPLACEMENT MANUALS
Safety Manuals in English/Spanish or English/French are available, free of charge, from your ECHO dealer or at www.echo-usa.com.
Operator’s and Parts Manuals are available by:
• Downloading free from www.echo-usa.com
• Purchasing from your Echo Dealer.
• Manuals are available by sending a written request stating the model number and serial number of your Echo unit, part number of the manual, your name and address, and mail to the address below.

Safety Videos are available from your Echo dealer. A $5.00 shipping charge will be required for each video.