

# **Grass Trimmer/Brush Cutter**

Operator's Manual

**MODEL SRM - 251** 

**SRM - 251E** 

### **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



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



# WARNING A 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. You will find it 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. It 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. It explains possible hazards involved with the use of this product and what measures you should take to make their use safer.





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## SAFETY

### MANUAL SAFETY SYMBOLS AND IMPORTANT INFORMATION

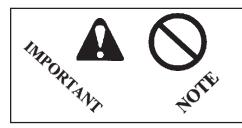
Throughout this manual and on the product itself, you will find safety alerts and helpful, informational messages preceded by symbols or key words. The following is an explanation of those symbols and key words and what they mean to you.



This symbol accompanied by the words **WARNING** and **DANGER** calls attention to an act or condition that can lead to serious personal injury to operator and bystanders.



The circle with the slash symbol means whatever is shown within the circle is prohibited.



#### **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

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
<b>**</b>	"WARNING, SEE OPERATOR'S MANUAL	and the same of th	Hot Surface	
<b>(a)</b>	Wear eye, ear and head protection		Finger Severing	
	Wear hand and foot protection	(3)	DO NOT allow flames or sparks near fuel.	
<u> </u>	Safety/Alert	DO NOT smoki near fuel.		
ig (3) (501)-		Keep bystanders and helpers away 15 m (50 ft.).		

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
STOP	Emergency Stop	+0	Fuel and oil mixture
Н	Carburetor Adjustment - High speed mixture		Primer Bulb
T	Carburetor Adjustment - Idle speed	Ignition ON OFF	Ignition ON/ OFF
L	Carburetor Adjustment - Low speed mixture	<b>TO</b>	Do not use blades. String line only
	Choke Control "Run" Position (Choke Open)	1	Choke Control "Cold Start" Position (Choke Closed)

#### PERSONAL CONDITION AND SAFETY EQUIPMENT



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.
- DONOTWEAR SHORTS,
- DONOTWEARTIES, SCARFS, JEWELRY.

Wear protective hair covering to contain long hair.

Wear sturdy work shoes with nonskid soles;

- DONOT WEAR OPEN TOED SHOES.
- DONOTOPERATE 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.

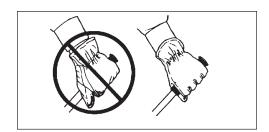


#### Repetitive Stress Injuries

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
- 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.







Do not operate this product indoors or in inadequately ventilated areas. Engine exhaust contains poisonous emissions and can cause serious injury or death.

#### 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

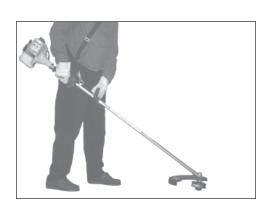
• Hold the front and rear handles with both hands, with thumbs and fingers encircling the handles.

#### 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 CHECK**





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 SRM-251E

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

#### IMPORTANT ENGINE INFORMATION

ENGINE FAMILY: 6EHXS.0254ED DISPLACEMENT: 25.4 co EMISSION COMPLIANCE PERIOD: 300 HRS. THIS ENGINE MEETS U.S. EPA PHASE 2 EMISSION REGULATIONS FOR SMALL NONROAD ENGINES. REFER TO OWNER'S MANUAL FOR MAINTENANCE SPECIFICATIONS AND ADJUSTMENTS.



KIORITZ CORP. 1111

#### California Tier 2 SRM-251

The emission control system for these engines is EM/ TWC (Engine Modification and Catalyst).

#### IMPORTANT ENGINE INFORMATION

ENGINE FAMILY: 6EHXS.0254KE DISPLACEMENT: 25.4 cc EMISSION COMPLIANCE PERIOD: 300 Hours THIS ENGINE MEETS U.S. EPA PH2 AND 2005 - 2006 CALIFORNIA EXH EMISSION REGULATIONS FOR SORES. REFER TO OWNER'S MANUAL FOR MAINTENANCE SPECIFI-CATIONS AND ADJUSTMENTS.



KIORITZ CORP. [111]



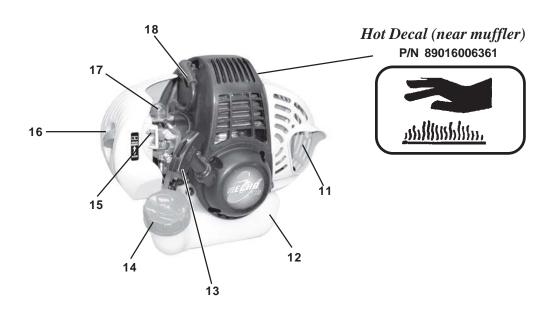
An Emission Control Label is located on the engine. (This is an EXAMPLE ONLY, information on label varies by engine FAMILY).

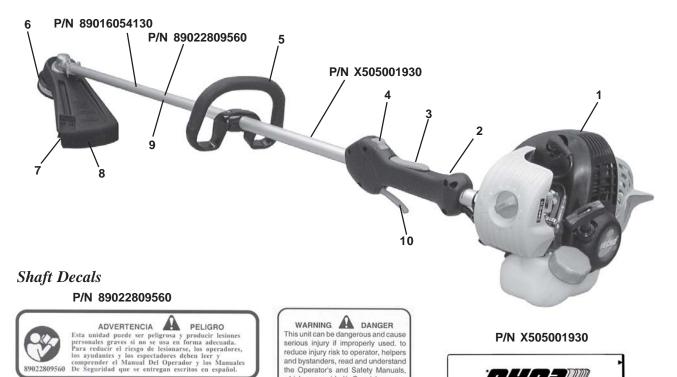
#### PRODUCT EMISSION DURABILITY

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 ORDER-ING instructions for specific information.







reduce injury risk to operator, helpers and bystanders, read and understand



- 1. **POWER HEAD** Includes the Engine, Clutch, Fuel System, Ignition System and Recoil Starter.
- 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. **NYLON CUTTER HEAD** Contains replaceable nylon trimming line that advances when the trimmer head is tapped against the ground while the head is turning at normal operating speed.
- 7. **CUT-OFF KNIFE** Automatically trims line to the correct length: 5" after head is tapped on the ground. If trimmer is operated without a cut-off knife the line will become too long, the engine will overheat and engine damage may occur.
- 8. 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.
- 9. **DRIVE SHAFT ASSEMBLY** Includes the Rear (right hand) Handle assembly, Gear Housing assembly, Front (loop, left hand) Handle assembly, steel drive shaft and Safety Decal.
- 10. **THROTTLE TRIGGER** Spring loaded to return to idle when released. During acceleration, press trigger gradually for best operating technique.
- 11. **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.
- 12. FUEL TANK Contains fuel and fuel filter.
- 13. *I-30* **RECOIL STARTER/HANDLE** *i*30 spring-assisted recoil starter requires 30% less pulling force than standard recoil starter. Pull handle slowly until starter engages, then quickly and firmly. When engine starts, return handle slowly. DO NOT let handle snap back or damage to unit will occur.
- 14. **FUEL TANK CAP** Covers and seals fuel tank opening.
- 15. **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" ( to position to open choke.
- 16. AIR CLEANER Contains replaceable filter element.
- 17. **PURGE BULB** Pumping purge bulb before starting engine draws fresh fuel from the fuel tank, purging air from the carburetor. Pump purge bulb until fuel is visible and flows freely in the clear fuel tank return line. Pump purge bulb an additional 4 or 5 times.
- 18. **SPARK PLUG** Provides spark to ignite fuel mixture.

### **C**ONTENTS

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 may be 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 Operator's Manual
- \_\_\_\_1 Safety Manual
  - \_\_\_1 Warranty Registration Card
- \_\_\_\_\_1 Limited Warranty Statement
  - \_\_\_\_1 Safety Glasses
- \_\_\_\_\_1 Echo Power Blend TM 2-stroke oil sample
- \* \_\_\_\_ 1 Nylon Trimmer Head
- \* \_\_\_\_ 1 T-wrench 17x19, P/N 89541008030
- \* \_\_\_\_ 1 Lockingtool, P/N 89751801131
- \* \_\_\_\_ 1 Plastic shield
- \* \_\_\_\_ 1 Shield plate
- \* \_\_\_\_ 3 5mm x 16mm screws (shield mtg.)















### **A**SSEMBLY

Tools Required: Screwdriver, Head Locking Tool, 17x19mm T-Wrench

Parts Required: Plastic Shield, Shield Plate, three (3) 5mm x 16mm

screws, Nylon Line Head

### PLASTIC SHIELD INSTALLATION

(For Nylon Line Operation)

#### **NOTE**

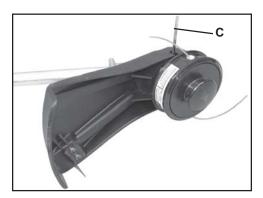
The plastic shield is for use with the Nylon Line Head only.

- 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).



#### NYLON LINE HEAD INSTALLATION

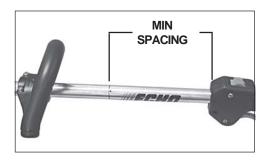
- 1. Align hole in upper plate with notch in edge of gear housing and insert head locking tool (C). Remove plastic sleeve from PTO shaft.
- 2. Be sure upper plate (A) remains on PTO shaft.
- 3. Thread line head onto PTO shaft by turning it counter clockwise until head is tight against upper plate.
- 4. Remove locking tool (C).



### FRONT HANDLE INSTALLATION

#### NOTE

Label shows minimum spacing for front handle location.



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





### **OPERATION**

#### **FUEL**

**NOTICE:** Use of unmixed, improperly mixed, or fuel older than 90 days, (stale fuel), may cause hard starting, poor performance, or severe engine damage and void the product warranty. Read and follow instructions in the Storage section of this manual.

#### 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 TM 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 TM 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



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.

Fuel to Oil Mix - 50:1 Ratio				
U.S		METR	IC	
GAS	OIL	GAS	OIL	
Gallons	Fl. oz.	Liter	CC.	
1 2 5	2.6 5.2 13	4 8 20	80 160 400	

#### **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.

#### **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**

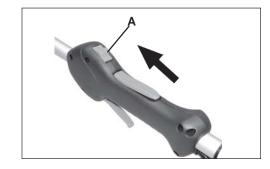
Stored two-stroke fuel may separate. ALWAYS shake fuel container thoroughly before each use.

#### STARTING COLD ENGINE

## WARNING A DANGER

The attachment will operate immediately when the engine starts and could result in loss of control and possible serious injury. Keep movable parts of the attachment off the ground and away from objects that could become entangled or thrown.

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



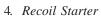
#### 2. Choke

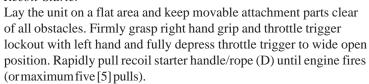
Move choke lever (B) to Cold Start Position ( ).



#### 3. Purge Bulb

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





#### 5. Choke

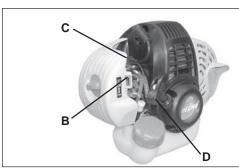
After engine fires (or 5 pulls), move choke lever back to Run ( position. Hold throttle trigger and throttle trigger lockout fully depressed, and pull recoil starter starter handle/rope until engine starts and runs. Allow engine to run at partial throttle for approximately 10 seconds. Release throttle trigger, and allow unit to warm up at idle for several minutes.



If engine does not start with choke in "Run" position after 5 pulls, repeat instructions.

#### 6. Throttle Trigger

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 A 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) away from the STOP position.

#### 2. Purge Bulb

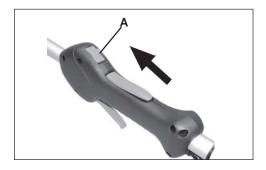
Pump purge bulb (C) until fuel is visible and flows freely in the clear fuel tank return line. Pump bulb an additional 4 or 5 times.

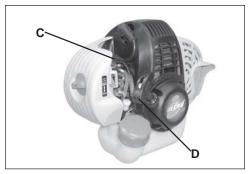
3. Recoil Starter

Lay the unit on a flat area and keep movable attachment parts clear of all obstacles. Rapidly pull recoil starter handle/rope (D) until engine fires.

#### NOTE

If engine does not start after 5 pulls, use Cold Start Procedure.







#### STOPPING ENGINE

1. Throttle

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

2. Stop Switch

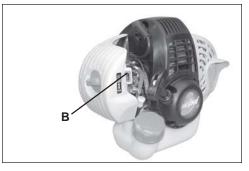
Move stop switch button (A) backward to STOP position.

# WARNING A 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.





## **M**AINTENANCE

Your ECHO unit is designed to provide many hours of trouble free service. Regular scheduled maintenance will help your unit 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 task is not listed, see your 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 service.

ECHO offers REPOWER<sup>TM</sup> Maintenance Kits and Parts to make your maintenance job easier. Just below each task heading are listed the various part numbers required for that task. See your ECHO dealer for these parts.

#### **MAINTENANCE INTERVALS**

COMPONENT/ SYSTEM	MAINTENANCE PROCEDURE	REQ'D SKILL LEVEL	DAILY OR BEFORE USE	EVERY REFUEL	3 MONTHS OR 90 HOURS	6 MONTHS OR 270 HOURS	YEARLY 600 HOURS
	Recommended Ech	o Dealer	Maintenanc	e Procedur	es		
Cylinder Exhaust Port	Inspect/Clean/Decarbon	3			I/C		
	Do-lt-Yourse	If Mainter	nance Proce	dures			
Air Filter	Inspect/Clean/Replace	1	I/C		R*		
Choke	Inspect/Clean	2	I/C				
Fuel Filter	Inspect/Replace	1			I		I / R *
Fuel System, leaks	Inspect/Replace	1	I *	I	I		
Cooling System	Inspect/Clean	2	I/C				
Muffler Spark Arrestor	Inspect/Replace	2			I / R *		
Drive Shaft (Flex Cable Models)	Grease	2			I (1)		
Gear Housing	Grease	2			I (2)		
Recoil Starter Rope	Inspect/Clean	1	I / C *				
Spark Plug	Inspect/Clean	2			I/C	R *	
Screws/Nuts/Bolts	Inspect/Tighten/Replace	1	I / R *				

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  $ECHO_{\odot}$  LUBETM every 25 hours of use.

(2) Apply ECHO<sub>®</sub> LUBE™ every 50 hours of use.

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

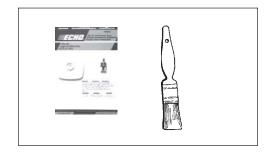
#### **AIR FILTER**

#### Level 1.

Tools Required: Cleaning brush 25 or 50 mm (1 or 2 in.)

Parts Required: 90008 REPOWER™ AIR & FUELFILTER 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 air cleaner area.
- 2. Remove air filter cover. Brush dirt from inside cover.
- 3. Remove air filter and lightly brush debris from filter. Replace filter if it is damaged, fuel soaked, very dirty, or the rubber sealing edges are deformed.
- 4. If filter can be reused, be certain it:
  - Fits tightly in the air filter cavity.
  - Is installed with the original side out.
- 5. Install air filter cover.





#### **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 & FUELFILTER KIT.

# WARNING A DANGER

Fuel is  $\mbox{\bf VERY}$  flammable. Use extreme care when mixing, storing or handling.

- 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.

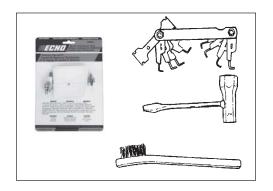
Tools Required: T-Wrench, feeler gauge, soft metal brush.

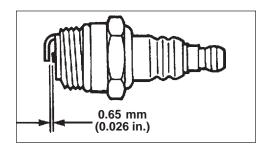
Parts Required: REPOWER™ Tune-Up Kit P/N90074

#### **IMPORTANT**

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

- 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: 3 & 4 mm Hex Wrench, cleaning brush, 25 or 50 mm

(1 or 2 in.)

Parts Required: None if you are careful.

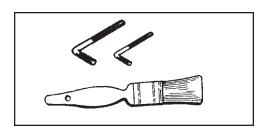
#### **IMPORTANT**

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.



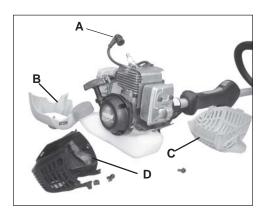


- 1. Remove spark plug lead (A).
- 2. Remove air filter cover (B).
- 3. Remove one (1) muffler cover screw and muffler cover (C).
- 4. Remove two (2) screws and engine cover (D).

#### **IMPORTANT**

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

- 5. Use brush to remove dirt from the cylinder fins.
- Remove grass and leaves from the grid between the recoil starter and fuel tank.
- 7. Assemble components in reverse order.





#### **EXHAUST SYSTEM**

Spark Arrestor Screen

#### Level 2.

Tools Required: Cross Head Screwdriver, Soft Metal Brush,

4 mm Hex Wrench

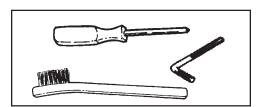
Parts Required: Spark Arrestor Screen, Gasket

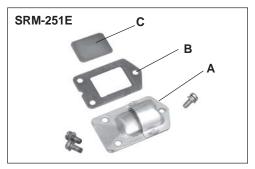
- 1. Remove spark plug lead.
- 2. Remove one (1) muffler cover screw and muffler cover.
- 3. Place piston at Top Dead Center (TDC) to prevent carbon/dirt from entering cylinder.
- 4. Remove spark arrestor screen cover (A), gasket (B) and screen (C) from muffler body.
- 5. Clean carbon deposits from screen and muffler components.

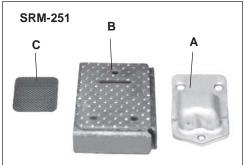
#### NOTE

When cleaning carbon deposits, be careful not to damage the catalytic element inside muffler.

- 6. Replace screen if it is cracked, plugged or has holes burned through.
- 7. Assemble components in reverse order.







#### 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 a minimum duration of two tanks of fuel break-in 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.

#### Level 2.

*Tools required:* Screwdriver, tachometer (Echo P/N 99051130017)

Parts required: None.

#### NOTE

Do not adjust carburetor unless necessary. If you have difficulty, see your ECHO dealer.

#### Adjustment Screws

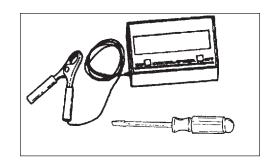
Idle Speed (A) Controls throttle opening at idle.

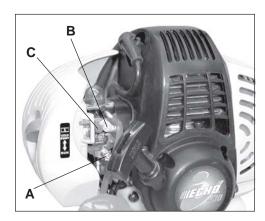
Low(LO)Speed(B) Controls amount of fuel at low speed and

supplementary fuel for smooth progression from

idle to high speed.

High (HI) Speed (C) Controls amount of fuel at full throttle







### Before Adjustment

#### Check that:

- Air filter is clean and properly installed.
- Spark arrestor screen and muffler are free of carbon.
- Nylon line head with lines trimmed to 8 in. is installed.

#### **Initial Adjustment**

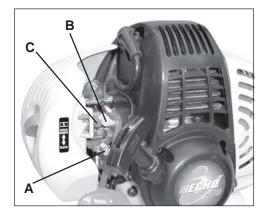
- 1. With engine off, turn HI speed screw (C) counterclockwise to stop.
- 2. Turn LO speed screw (B) midway between stops.
- 3. Turn idle screw (A) until tip of screw just touches throttle plate; then turn three (3) turns clockwise.

### Final Adjustment

#### **IMPORTANT**

Limiter caps prevent exceeding emission limits and over rich adjustment, but **not** over lean adjustment, which can cause engine failure: Do not exceed recommended HI speed engine R.P.M. during operation, or for long periods during adjustment.

- 1. Start engine, run at idle for one minute.
- 2. Complete warm up by running at full throttle for 5 minutes, operating choke twice to clear air from carburetor chambers.
- 3. Run at idle and accelerate to check for smooth transition from idle to high speed; if engine hesitates, turn LO speed screw (B) counter-clockwise 1/8th of a turn at a time until acceleration is smooth.
- 4. Use a tachometer to adjust idle speed to specifications found on page 25.



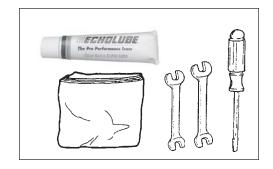
#### **LUBRICATION**

#### Level 1.

Tools required: 8 & 13 mm Open End Wrench, Cross Head

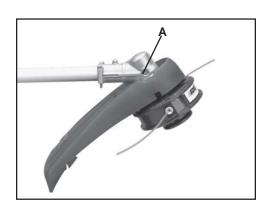
Screwdriver, Clean rag, Grease gun P/N 91016

Parts Required: ECHO<sub>®</sub> LUBE™8 oz. (P/N 91014) or Lithium Base



### 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.

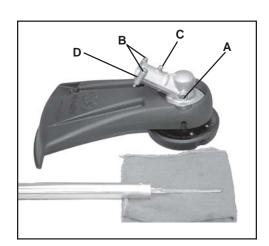


#### Drive Shaft

- 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.





#### NYLON LINE REPLACEMENT

#### Level 1.

Parts Required: ECHO2.4mm(0.095 in.) Nylon Trimmer Line 12m(40

feet [two 20 ft. sections])

#### Echomatic Pro Trimmer Head

- 1. Do not push spool in. Hold drum and turn spool clockwise until peg clicks and disappears from hole. Pull spool out of drum.
- 2. Place ends of two 20 ft. x .095 in. Crossfire™ trimmer lines into holes in spool, one on each side of barrier.
- 3. Wind both lines tightly and evenly (one on each side of barrier) in the direction of arrow on bottom of spool.
- 4. Place ends of lines into notches in spool, leaving 6 in. protruding.

- 5. Feed ends of line outward through eyelets in drum.
- 6. Turn inner drive so that pegs in drive align with grooves in spool, and push spool into drum
- 7. Hold spool and drum securely with one hand, and pull each line to disengage from notches.
- 8. Hold drum and twist spool counter clockwise until peg clicks into hole.
- 9. Trim lines to 8 in. length.













## TROUBLESHOOTING

ENGINE PROBLEM TROUBLESHOOTING CHART					
Problem	Check	Status	Cause	Remedy	
	Fuel at carburetor	No fuel at carburetor	Fuel strainer clogged Fuel line clogged Carburetor	Clean or replace Clean or replace See your Echo dealer	
		No fuel at cylinder	Carburetor	See your Echo dealer	
Engine cranks - starts hard/ doesn't	Fuel at cylinder	Muffler wet with fuel	Fuel Mixture too rich	Open choke Clean/replace air filter Adjust carburetor See your Echo dealer	
start	Spark at end of plug wire	No spark	Stop switch off Electrical problem Interlock switch	Turn switch to ON See your Echo dealer See your Echo dealer	
	Spark at plug	No spark	Spark gap incorrect Covered with carbon Fouled with fuel Plug defective	Adjust to .65mm (0.026 in.) Clean or replace Clean or replace Replace plug	
	Air filter	Air filter dirty	Normal wear	Clean or replace	
	Fuel filter	Fuel filter dirty	Contaminants/residues in fuel	Replace	
Engine	Fuel vent	Fuel vent plugged	Contaminants/residues in fuel	Clean or replace	
runs, but dies or does not	Spark Plug	Plug dirty/worn	Normal wear	Clean and adjust or replace	
accelerate properly	Carburetor	Improper adjustment	Vibration	Adjust	
	Cooling System	Excessive dirt/debris	Extended operation in dirty/dusty locations	Clean	
	Spark Arrestor Screen	Screen cracked, plugged, or perforated	Normal wear	Replace	
Engine does not crank	N/A	N/A	Internal engine problem	See your Echo dealer	



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 A



### 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.
- 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).

# **S**PECIFICATIONS

MODELS	SRM-251,SRM-251E
Length	1800 mm(70.9 in.)
Width	245 mm(9.65 in.)
Height	330mm(13.0in.)
Weight (dry) w/Cutter Head (SRM-251)	5.52kg(12.2lb.)
Weight (dry) w/Cutter Head (SRM-251E)	5.42kg(11.9lb.)
Engine Type	Air cooled, two-stroke, single cylinder gasoline engine
Bore	34.0 mm (1.34 in.)
Stroke	28.0mm(1.10in.)
Displacement	25.4cc (1.55 cu. in.)
Exhaust(SRM-251)	Spark Arrestor Muffler with catalyst
Exhaust(SRM-251E)	Spark Arrestor Muffler
Carburetor	Zama diaphragm model w/purge pump
Ignition System	Flywheel magneto, capacitor discharge ignition
Spark Plug	NGK BPM-8Y (Gap 0.65 mm (0.026 in.)
Fuel	Mixed (Gasoline and Two-stroke Oil)
Fuel/Oil Ratio	50:1 two-stroke air cooled engine oil
Gasoline	89 Octane unleaded. DO NOT use fuel containing methyl alcohol,
	more than 10% ethyl alcohol or 15% MTBE.
Oil	Power Blend TM Premium Universal 2-Stroke Oil
Fuel Tank Capacity	0.40 lit. (13.5 US fl. oz.)
Recoil Starter System	i-30 Automatic Recoil Starter
Clutch	Centrifugal Type
Vibration Isolated System	Rubber anti-vibration grip on front handle.
Operating Rod	25.0 mm aluminum tube
Drive Shaft	6.35 mm (1/4 in.) flexible shaft
Gear Case Ratio	1.4:1 Reduction
Rotating Direction	Counter Clockwise; viewed from top
Cutter Head	Nylon line head (2-line) with .095 Crossfire™ Line capacity 6 m (20 ft.)
Handle	Front - Loop and right rear handle with rubber grip
Shoulder Harness	Optional
Idle Speed	2,400-3,200RPM
Wide Open Throttle Speed (W.O.T.)	7.850-9.850 RPM



NOTES

NOTES

# Servicing Information Parts/Serial Number

Genuine ECHO Parts and ECHO REPOWER<sup>TM</sup> 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	ſ <b>.</b>
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#### **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.

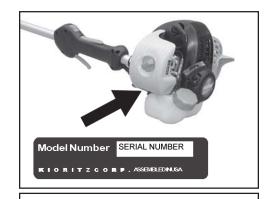
#### ADDITIONAL OR REPLACEMENT MANUALS

**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.



DEALER?
Call
1-800-432-ECHO
or
www.echo-usa.com

CONSUMER PRODUCT

SUPPORT 1-800-673-1558 8:30 - 4:30 Mon - Fri C.S.T.





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