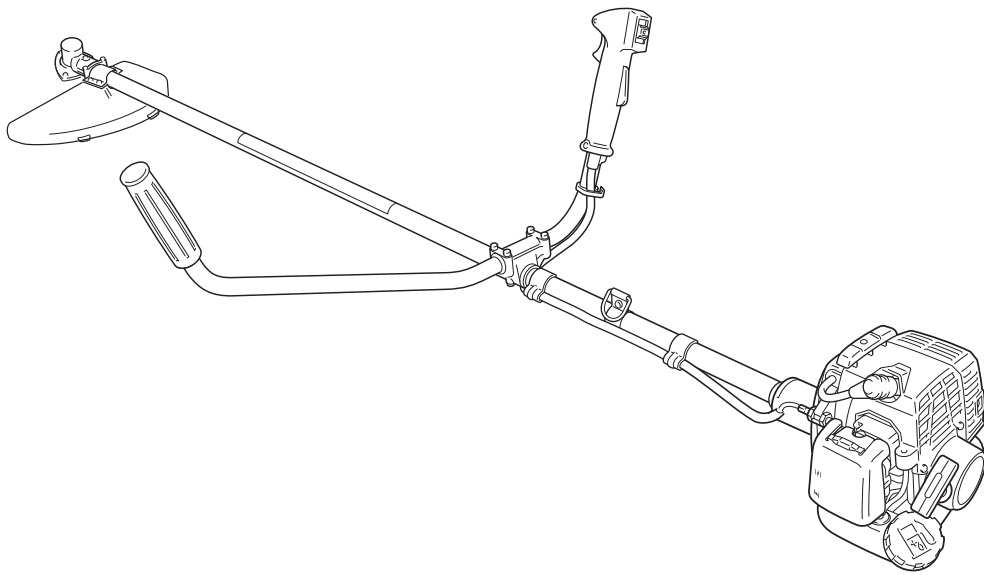




GB ENGLISH

ES ESPAÑOL

BR PORTUGUÊS



OPERATOR'S MANUAL

GRASS TRIMMER / BRUSHCUTTER

SRM-22GESU

WARNING



Read the instructions carefully and follow the rules for safe operation.
Failure to do so could result in serious injury.

Introduction

ECHO Grass trimmers / Brushcutters are lightweight, high-performance, petrol engined units designed for weed control, grass trimming and brush cutting in areas difficult to control by any other means.

Do not use this unit for any purpose other than aforementioned.
Never let children operate this unit.

This Manual provides the information necessary for assembly, operation and maintenance.
You must read this Manual to understand the safe and effective operation of your ECHO product.
For future reference, you should keep this Operator's Manual.
If this Operator's Manual has become illegible through impairment or is lost, please purchase a new one from your ECHO dealer.

When renting or lending this machine to a person who will operate it, always include this Operator's Manual, which provides explanation and instructions.
When transferring a product, please deliver it attaching the Operator's Manual.

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.

If there is any clause in this Manual that is hard to be understood, please contact your ECHO dealer.

Feature of this model: "E S" START

"E S" START generates enough revolving power to rotate crankshaft up to a speed to ignite the engine and bring almost no kickback.

"E S" START makes engine start far easier than you ever expect.

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Decals and symbols

⚠ DANGER

This symbol accompanied by the word "DANGER" calls attentions to an act or a condition which will lead to serious personal injury or death of operators and bystanders.

⚠ WARNING

This symbol accompanied by the word "WARNING" calls attentions to an act or a condition which can lead to serious personal injury or death of operators and bystanders.

⚠ CAUTION

"CAUTION" indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



Circle and slash symbol means whatever is shown is prohibited.

NOTE

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

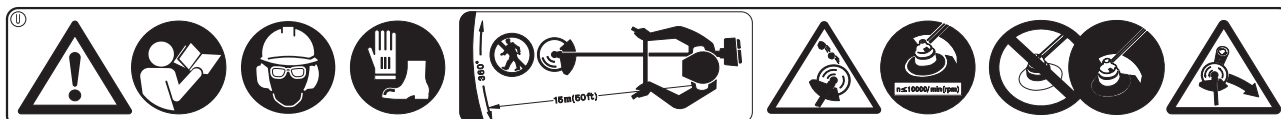
Symbol form / shape	Symbol description / application	Symbol form / shape	Symbol description / application
	Carefully read the Operator's Manual		Warning, side thrust
	Wear eyes, ears and head protection		The maximum speed of the cutting attachment shaft in r/min
	Wear foot protection and gloves		Keep bystanders away 15 m
STOP	Emergency stop		Beware of high-temperature areas
	Warning! Thrown objects!		Petrol and oil mixture
	Usage without shield not permitted	L	Carburettor adjustment - Low speed mixture
	Usage of metal blades not permitted	H	Carburettor adjustment - High speed mixture
	Usage of nylon line cutting head not permitted	T	Carburettor adjustment - Idle speed

Locate this safety decal on your unit.

The complete unit illustration found in the "Description" section will help you locate them.

Make sure the decal is legible and that you understand and follow the instructions on it.

If a decal cannot be read, a new one can be ordered from your ECHO dealer.



Part number 890617-43130

Rules for safe operation

Training



⚠ WARNING

Grass trimmers and brushcutters can throw small gravel, stone, glass, metal or plastic objects as well as the material being cut.
Read these "Rules for safe operation" with care.
Follow instructions in the Operator's Manual.

Do not permit operation without proper training and protective equipment.

- ♦ Read the Operator's Manual carefully.
Be thoroughly familiar with the controls and proper use of the unit.
Know how to stop the unit and shut off the engine.
Never allow anyone to use the unit without proper instruction.
- ♦ If you have any questions or problems, please contact your ECHO dealer.

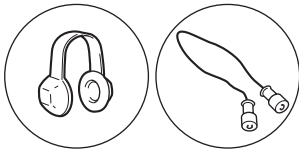
Eye protection

The operator must wear eye protection not only against objects thrown by the unit, but also because eye infections can be caused by airborne dust, seeds and pollen.
Prescription glasses may be worn under the safety goggles.
Eye protection should also be worn by persons in the risk zone which extends beyond the danger zone.



Hearing and ear protection

Prolonged exposure to loud noise can cause impairment or loss of hearing.
Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



Protective clothing

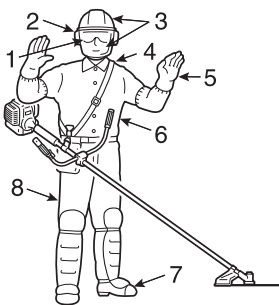
Choose trousers, shirts and jackets that fit trimly and have no strings, frills or dangling straps which could catch on the unit or the underbrush.
Do not wear ties, loose clothing or jewellery.
Keep clothing buttoned or zipped up and shirttails tucked in.
Secure hair so it is above shoulder length.
The wearing of gloves offers some protection against contact with skin irritants such as poison ivy.
Soft leather work gloves may also improve your grip.



Additional protection

⚠ WARNING

In addition to head, eye and ear protection wear protective clothes, safety gloves and shoes to protect your feet and body from thrown objects, and improve your footing on slippery surfaces.
Do not wear ties, jewellery, or loose, dangling clothing which could be caught in the unit.
Do not wear open-toed footwear, or go bare-foot or barelegged.
In certain situations, total face and head protection may be required.
For heavy brush cutting with metal blade, logger's trousers or leg chaps with protective inserts are added considerations.



1. Safety goggles.
2. Hearing protectors.
3. Head and face protection.
4. Shoulder harness.
5. Safety gloves.
6. Trim-fitting clothes.
7. Sturdy shoes or boots.
8. Long trousers.

Hay fever (Rhinitis) sufferers may wear disposable masks to help reducing the intake of allergenic particles.

Using shoulder harness

WARNING

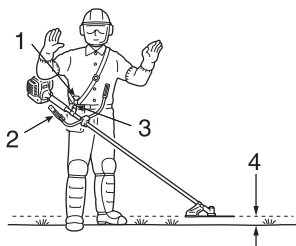
- ♦ ECHO trimmers and brushcutters are designed to fit a wide variety of body sizes, but may not be adjustable for extremely tall persons. Do not use the unit if your feet can reach the cutting attachment when the unit is attached to the harness.
- ♦ In case of an emergency, use quick-release pin on harness to free yourself from unit.

NOTE

A person's size can affect the balancing adjustment. Also the balancing procedure may not work with some ECHO units on some persons. If the shoulder harness does not fit you or cannot be adjusted well, please ask your ECHO dealer for assistance.

Balance tool for a level plane of cutting head rotation.

- 1. Harness quick-release pin. 2. Throttle trigger. 3. Suspension point. 4. Ground level.**

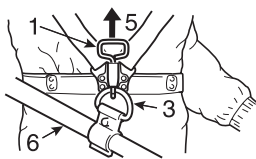


Use a shoulder harness when provided or when recommended in this Manual.

Adjust both harness and the suspension point on the unit so the unit hangs with the cutting attachment a few centimetres above ground level.

The cutting attachment and shield should be level in all directions.

Harness the unit on the right side as shown.



- 5. Pull out. 6. Shaft tube.**

Place shoulder harness over the left shoulder and adjust straps so the quick-release pin rests just below the waist.

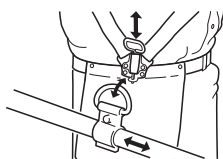
Buckle waist belt.

Belt should be snug.

Attach grass trimmer / brushcutter to harness.

Check for correct adjustment by moving cutting attachment along ground.

Re-adjust position of suspension point if necessary.



- a) Slide suspension point up and down the tube to find the right balance.

Rotate the clamp to level the cutting attachment and shield.

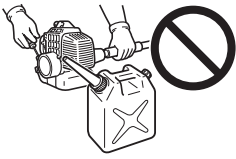
Lock in position.

If the suspension point is a free-spinning type, the unit may tend to roll over sideways, however, you should still level the attachment and shield on the front-to-rear axis.

- b) Balancing and levelling, as above, may require relocation of the clamp and readjustment of the harness straps.

Also, each type of cutting attachment and shield mounted on the unit may require balancing.

- c) The accompanying shoulder harness is suitable for people of standard adult physique, who are 150 cm - 195 cm in height and 60 cm - 120 cm in waist size.



Fuel

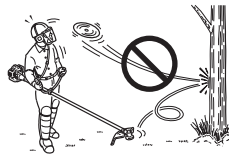
Handle fuel with care.
It is highly flammable.

- a) Use an appropriate type of fuel container.
- b) Do not smoke or bring flame or sparks near to fuel supplies.
- c) The fuel tank may be under pressure.
Always loosen the fuel cap and wait for pressure to be equalized before removing the cap.
- d) Fill the fuel tank outdoors over bare ground and install the fuel cap securely.
Do not pour fuel indoors.
- e) Wipe any spilled fuel off the unit.
Then move at least 3 m from the fuelling spot before starting the engine.
- f) Never refuel while the engine is still hot, or fuel a running engine.
- g) Do not store the unit with fuel in its tank, because a fuel leak could start a fire.



Physical condition

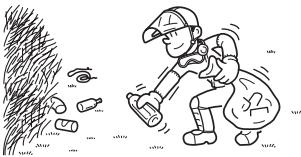
- ◆ You should be in good mental and physical health.
Do not operate if you are under the influence of alcohol or any medication or substance which could affect your vision, dexterity or judgement.
- ◆ For your own health and your safe and comfortable work, operate the machine within the air temperature range of -5°C to 40°C.



Area and equipment inspection

WARNING

- ◆ **Improper fit will result fly off the cutting attachment.**
- ◆ **Never start the engine if the power transmission shaft is not in place to prevent the engine from over speeding or the clutch from flying apart.**



Inspect the area before using the unit.

Remove objects the unit could throw.

Remember where there are obstructions to be avoided.

Inspect the unit before using it.

Perform only maintenance or adjustments for which the Operator's Manual gives instruction.

Do not try to repair the unit without proper instruction.

The unit should be serviced only by trained ECHO dealer servicemen with the proper tools.

Be sure that:

- a) Engine does not leak fuel.
- b) Fasteners are tight, and none are missing.
- c) Silencer is in good condition.
- d) The unit has the proper equipment-shield, handles, harness, etc.-for the cutting attachment to be used.
- e) If used on the unit, the cutting attachment is properly tightened.

General operation

WARNING

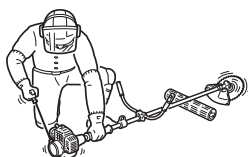
**Eye protection should be considered for everyone in the zone of risk.
Risk of eye injury diminishes with distance.**



Do not run the engine indoors, or where there is poor ventilation.

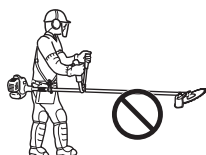
Engine fumes contain deadly poisonous carbon monoxide.
Do not operate with a worn or damaged cutting attachment.
Do not run engine at full throttle without a load.

Do not hit rocks, stones, tree stumps, and other foreign objects with the cutting attachment.
If cutting attachment strikes an obstruction, stop engine immediately and inspect cutting attachment for damage.



Start on ground with cutting attachment in the clear.

Lay the unit down on a clear area and set the controls for starting.
Be sure the cutting attachment cannot contact the ground or any obstruction.
Hold the unit firmly down so you will not lose control during starting.
Do not start the unit in the air, or from the harness.
The unit could swing into your leg or an obstruction if you lose control.



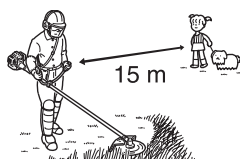
Do not raise the cutting attachment above knee height.

If raised higher, the cutting attachment will be more directly in line with your face.
Thrown objects may hit your face and eyes.

Wear the recommended protective gear.

Never operate the unit without the proper guards, shoulder harness and other protective devices.

Never operate the unit without good visibility and light.



Do not allow anyone to enter the operating danger zone with you.

The danger zone is an area of 15 m in radius.

Insist that persons in the risk zone beyond the danger zone wear eye protection to protect them from thrown objects.

If the unit must be used where there are unprotected people, operate at a low throttle speed to reduce the risk.

Ensure that there are no children, bystanders, and pets in the work area.

Keep all children, bystanders and fellow workers outside 15 m radius for grass trimmers / brushcutters.

Stop the engine before leaving the machine, children are not allowed to use the machine, stop the machine between different working places.

If you are approached, stop the engine and cutting attachment immediately.

Keep your hands and body away from silencer to prevent heat injury while the engine is hot.



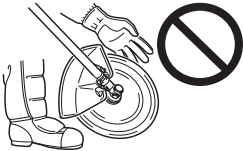
Sudden vibration?

Shut down immediately!

Shut down immediately if the unit starts to shake or vibrate.

A sudden vibration is a sign there may be dangerous trouble, such as a broken flywheel, clutch or cutting attachment, or loose parts.

Do not use the unit until the problem has been properly diagnosed and corrected.



Keep feet and hands away until rotation stops.

When the unit is turned off, make sure the cutting attachment stops before the unit is set down.

If the cutting attachment rotates after throttle is returned to idle, carburettor adjustment is required.

Follow instruction on this Manual to make the adjustment yourself, or have the carburettor adjusted by your ECHO dealer.

All maintenance and adjustments given in this Manual should be performed by you or your ECHO servicing dealer on a timely basis.

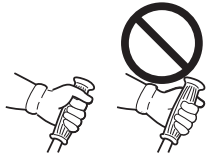
All required service or repair must be done only by ECHO servicing dealer.

Never attempt to use an incomplete or one fitted with unauthorized modification.



Do not operate one-handed.

Always use both hands on the handles.



Always hold the unit with the fingers and thumbs encircling the handles.

Vibration and cold

It is believed that a condition called Raynaud's Phenomenon, which affects the fingers of certain individuals, may be brought about by exposure to cold and vibration. Exposure to cold and vibration may cause tingling and burning followed by loss of colour 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 and neck, feet and ankles, and hands and wrists.
- ♦ Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks and also by not smoking.
- ♦ Limit the number of hours of operation.
Try to fill each day with jobs where operating the trimmer 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

Painful or numb fingers?

See your doctor immediately!

It is believed that over-using the muscles and tendons of the fingers, hands, arms and shoulders may cause soreness, swelling, numbness, weakness and extreme pain to the areas just mentioned.

Certain repetitive hand activities may put you at a high risk for developing a repetitive stress injury (RSI).

To reduce the risk of repetitive stress injury, do the following:

- ♦ Avoid using your wrist in a bent, extended or twisted position.
- ♦ Take periodic breaks to minimize repetition and rest your hands.
- ♦ Reduce the speed and force in which you do the repetitive movement.
- ♦ Do exercises to strengthen the hand and arm muscles.
- ♦ See a doctor if you feel tingling, numbness or pain in the fingers, hands, wrists or arms.
The sooner RSI is diagnosed, the more likely permanent nerve and muscle damage can be prevented.



Rules for safe operation with metal blade

DANGER

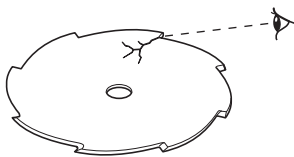
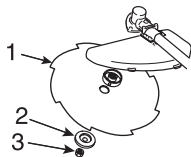
Always stop the engine when a cutting attachment jam occurs.
Do not attempt to remove an object causing a jam if the engine is running.
Injury can occur if a jam is removed and the cutting attachment suddenly starts.

Use correct blade

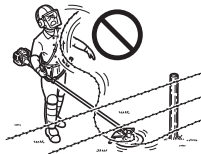
WARNING

- ♦ Serious injury may result from the improper use of blades.
Read and comply with all safety instructions listed in this Manual.
- ♦ The metal blade is designed especially to cut weeds and grass.
To avoid injury due to kickback or blade fracture, do not use the metal blade to cut brush or trees.
- ♦ Use only cutting attachments recommended by ECHO.
- ♦ Pieces from a cracked metal blade can fly off during operation.
Inspect metal blades for cracks before each use.
Discard cracked blades no matter how small the crack.
Cracked blades can be the result of misuse or improper sharpening.

1. Blade. 2. Lower blade retainer. 3. Nut.



Inspect blades before use.



Wires can catch and flap around

- ♦ Always use the blade suited for the job.
- ♦ Do not hit rocks, stones, tree stumps, and other foreign objects with the blade.
- ♦ Do not cut into the ground with the blade.
- ♦ If blade strikes an obstruction, stop engine immediately and inspect blade for damage.
- ♦ Do not operate with a dull, bent, fractured or discoloured blade and worn or damaged nut.
- ♦ Do not run engine at full throttle without a load.
- ♦ Remove all foreign objects from work area.
- ♦ Do not operate brushcutter without shoulder harness and shield.

Scything weeds

This is cutting by swinging the cutting attachment in a level arc.

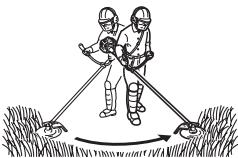
It can quickly clear areas of field grass and weeds.

Scything should not be used to cut large, tough weeds or woody growths.

If a sapling or shrub binds the cutting attachment, do not use the cutting attachment as a lever to free the bind, because this will cause cutting attachment failure.

Instead, shut off the engine and push the sapling or shrub to free the blades.

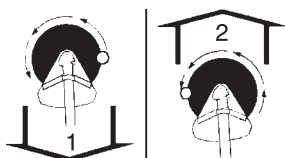
Do not use a cracked or damaged blade.



Reaction forces

WARNING

Be sure you understand the reaction forces of push and pull, and kickback described in this Manual, and how these forces may affect your balance in the operation of a unit.



1. Push

The operator may feel the unit push toward him when he tries to cut the object on right. If he cannot hold the blade in the cut, a kickback may occur when the blade is pushed out to where the teeth at the outside furthest point from the operator are cutting. The blade will "kickback" sideways.

2. Pull

The opposite of push. When object on left, the operator may feel the unit pull away. Although this pull type of cutting may cause sawdust to be thrown back at the operator, it is recommended for sawing off heavy brush because the cutting is smoother and more stable than when the unit pushes.

Kickback

This may occur when the moving blade at the front of the blade circle contacts strong brush or trees.

The force that occurs pushes the entire unit and blade violently away in an arc.

Kickback is a danger to a bystander and also a jolting force to the operator.

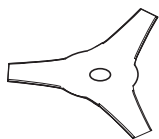


Blade selection

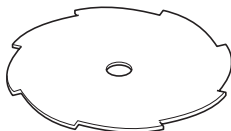
WARNING

Use only ECHO approved attachments.
Serious injury may result from the use of a non-approved attachment combination. ECHO 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.
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.

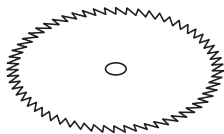
Plastic grass / weed blade may be used wherever the nylon line head is used.
Do not use this blade for heavy weeds or brush!



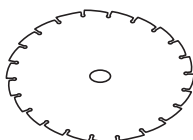
8 tooth weed / grass blade is designed for grass, garden debris and thick weeds.
Do not use this blade for brush or heavy woody growth, 2 cm diameter or larger.



80 tooth brush blade is designed for cutting brush and woody growth up to 2 cm diameter.



22 tooth clearing blade is designed for dense thickets and saplings up to 6.5 cm diameter.



Rules for safe operation with nylon line cutting head

⚠ DANGER

Always stop the engine when a cutting attachment jam occurs.
Do not attempt to remove an object causing a jam if the engine is running.
Injury can occur if a jam is removed and the cutting attachment suddenly starts.

Use correct cutting attachment

⚠ WARNING

- ♦ Serious injury may result from the improper use of cutting attachment. Read and comply with all safety instructions listed in this Manual.
- ♦ Use only flexible, non-metallic line recommended by ECHO.
- ♦ Use only cutting attachments recommended by ECHO.
- ♦ Excessive nylon line beyond cut off knife could fly off when the nylon line cutter starts rotating after adjustment of nylon line length.
- ♦ Use extreme caution when operating over bare spots and gravel, because the line can throw small rock particles at high speeds.
The shield on the unit cannot stop objects which bounce or ricochet off hard surfaces.
- ♦ Do not trim in any area where there are broken strands of fencing wire. Remove the broken pieces of wire, or give the area wide berth.
Wear proper safety protection.
Do not cut where you cannot see what the cutting device is cutting.

- ♦ Operate the machine with its throttle trigger fully grasped for higher engine speed.
- ♦ Do not give an excessive load to the spinning cutting head to stop.
- ♦ In case of cutting the thick grass, cut the grass little by little so as to maintain engine speed.
- ♦ When the rotation of the cutting head stops during operation, immediately release the throttle trigger to lower the engine speed, pull the machine away from the grass, and fully grasp the throttle trigger and rotate the cutting head to continue cutting.
- ♦ Stop the engine immediately when grass or cord / string like object wound around the cutting head, and take them off before starting the engine.

The basic cutting actions pictured are: Trimming, scything, scalping and lawn edging.

These actions are as follows:

Trimming

- 1. Angle to wall. 2. Debris. 3. Knife side raised. 4. Angle to ground.**

This is feeding the trimmer carefully into the material you wish to cut.

Tilt the head slightly to direct the debris away from you.

If cutting up to a barrier such as a fence, wall or tree, approach from an angle where any debris ricocheting off the barrier will fly away from you.

Move the line head slowly until the grass is cut right up to the barrier, but do not jam (overfeed) the line into the barrier.

If trimming up to wire mesh or chain link fencing, be careful to feed only up to the wire.

If you go too far, the line will snap off around the wire.

Trimming can be done to cut through weed stems one at a time.

Place the nylon line cutter near the bottom of the weed never high up, which could cause the weed to chatter and catch the line.

Rather than cut the weed right through, just use the very end of the line to wear through the stem slowly.

Scything

This is the cutting or mowing of large grassy areas by sweeping or swinging the trimmer in a level arc.

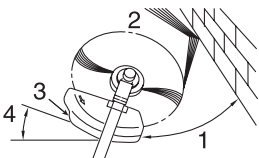
Use a smooth, easy motion.

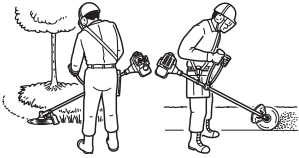
Do not try to hack or chop down the grass.

Tilt the line head to direct the debris away from you on the scything stroke.

Then return without cutting grass for another stroke.

If you are well protected and do not care whether some debris is thrown in your direction, you may scythe in both directions.





Scalping and edging

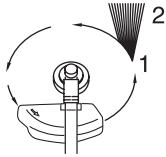
Both of these are done with the line head tilted at a steep angle.

Scalping is removing top growth, leaving the earth bare.

Edging is trimming the grass back where it has spread over a pavement or driveway.

During both edging and scalping, hold the unit at a steep angle in a position where the debris, and any dislodged dirt and stone, will not come back towards you even if it ricochets off the hard surface.

Although the pictures show how to edge and scalp, every operator must find for himself the angles which suit his body size and cutting situation.



**Nylon line head or disc rotates anticlockwise.
The knife will be on the left side of the shield.**

1. Cut on this side. 2. Debris.

For nearly all cutting, it is good to tilt the nylon cutter so that contact is made on the part of line circle where the line is moving away from you and the shield (See appropriate picture). This results in the debris being thrown away from you.

Tilting the head to the wrong side will shoot the debris toward you.

If the nylon line cutter is held flat to the ground so that cutting occurs on the whole line circle, debris will be thrown at you, drag will slow the engine, and you will use up a lot of line.



Do not trim near cars or pedestrians.

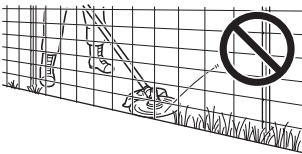
Always wear proper eye protection against thrown objects.

Objects can bounce up at you from the ground under the shield, or ricochet off any nearby hard surface.

Do not trim at high speed near roadways when there is traffic, or in places where there are pedestrians.

If you must trim where people are in the zone of risk use a much lower or reduced speed, by using a partial trigger setting.

Do not use full throttle.



Line pushed into wire fencing will snap off.

Do not push the line into tough weeds, trees, or wire fences.

Pushing the line into chicken wire, chain link fencing or thick brush can result in snapped-off line ends being hurled back at the operator.

The proper way is to cut right up to a barrier, such as any of those mentioned, but never run the line into or through the obstruction.

Do not cut closely to obstruction or barrier.

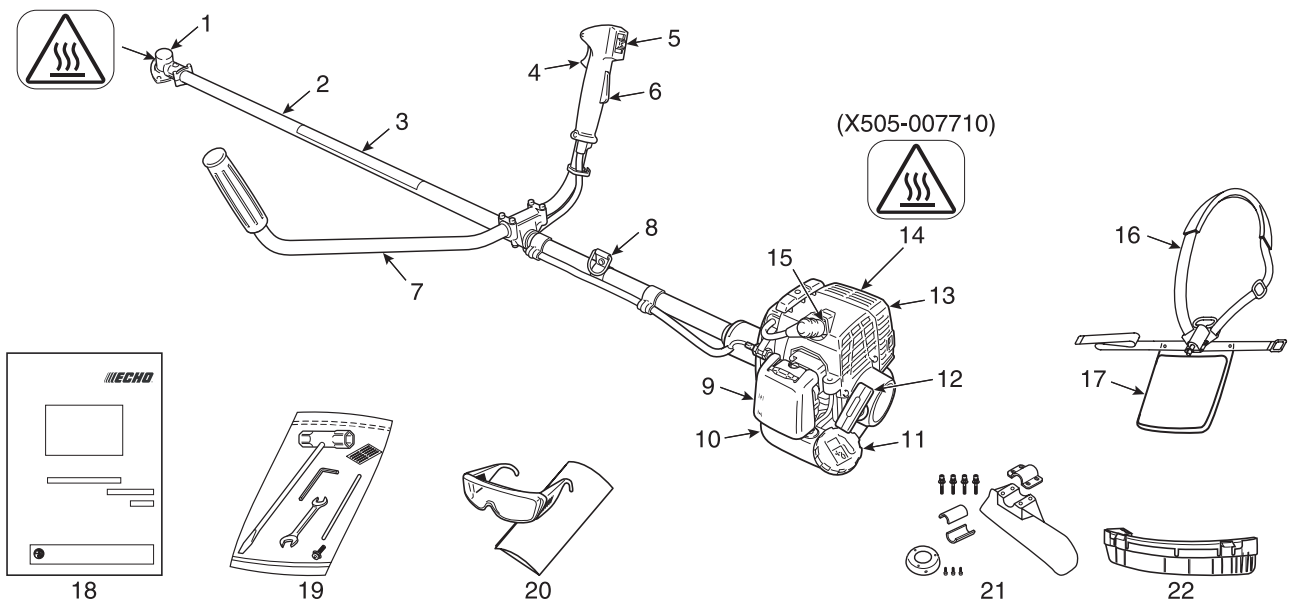


Avoid wire.

Avoid nylon line contact with broken wire fencing.

Pieces of wire broken off by the trimmer can be hurled at high speeds.

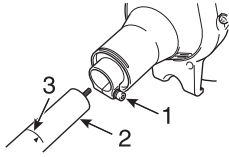
Description



1. **Angle transmission** - Having two gears to change the angle of rotating axis.
2. **Shaft tube** - Part of the unit that provides a casing for power transmission shaft.
3. **Safety decal** - Part number 890617-43130
4. **Throttle trigger** - Activated by the operator's finger for controlling the engine speed.
5. **Ignition switch** - "Slide switch" mounted on top of the throttle trigger housing, move switch upward to RUN, downward to STOP position.
6. **Throttle trigger lockout** - Locks throttle trigger in the idling position until you have a proper grip with your right hand around the handle.
7. **U-handle** - Having the configuration of a bicycle handle bar.
8. **Suspension point** - Device on which the harness can be hooked.
9. **Air cleaner cover** - Covers air filter.
10. **Fuel tank** - Contains fuel and fuel filter.
11. **Fuel tank cap** - For closing the fuel tank.
12. **Starter handle** - Pull handle to start the engine. ("E S" START)
13. **Silencer cover** - Cover the silencer not to make operator touch to hot surface of silencer.
14. **Safety decal** - Part number X505-007710
15. **Spark plug**
16. **Shoulder harness** - An adjustable straps to suspend unit.
17. **Hip pad** - To protect hip / leg and clothing.
18. **Operator's Manual** - Included with unit. Read before operation and keep for future reference to learn proper, safe operating techniques.
19. **Tools** - 17 x 19 mm T-wrench (combination screwdriver / spark plug socket), 8 x 10 mm spanner, 4 mm hexagonal wrench, bar tool, screw (M4 x 16) and split pin (10 pieces).
20. **Goggles**
21. **Shield** - Device to protect the operator from accidental contact with the cutting head and thrown objects. Shield support, two spacers, four bolts and clog prevention plate, three screws.
22. **Guard plate** - For nylon line head. Device to protect the operator from accidental contact with the cutting head and thrown objects. Cut off knife; Cut nylon line to adjust line length to proper swath.

Assembling

Drive shaft installation



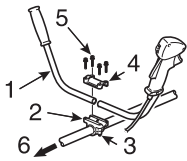
1. Bolt (M5 x 28). 2. Shaft tube. 3. Line.

- ♦ Stand the engine upright on a level surface.
- ♦ Loosen the bolt at the connection between the engine and the shaft tube.
- ♦ Carefully fit the shaft tube to the engine, making sure that the power transmission shaft is correctly engaged.
- ♦ Rotate the drive shaft housing until the bearing housing is in line with the engine.
- ♦ Tighten the bolt to fasten the drive shaft assembly.

U-handle installation

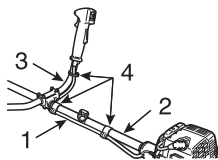
⚠ CAUTION

Install the handle so that it does not hide any of the safety decals.



1. U-handle. 2. Handle bracket. 3. Two bolts (M5 x 25). 4. Handle bar support.
5. Four bolts (M5 x 25). 6. To engine.

- ♦ Loosen handle bracket and handle bar support bolts.
- ♦ Locate handle bar in a comfortable operating position and tighten bolts (M5 x 25) lightly.
- ♦ Adjust inclination of handle to adequate position (easy to operate) and tighten firmly handle assembling bolts (M5 x 25).



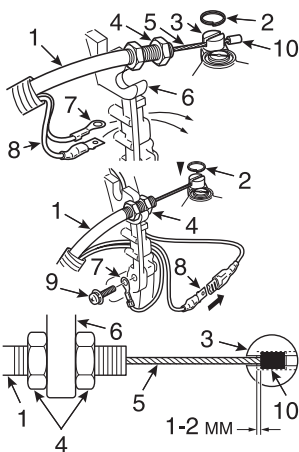
1. Throttle cable. 2. Shaft tube. 3. Right hand U-handle. 4. Cable fixing clip.

- ♦ To eliminate loosening of throttle cable fix it to shaft tube (two places) and to right hand U-handle (one place) with cable fixing clips.

Throttle cable installation

⚠ CAUTION

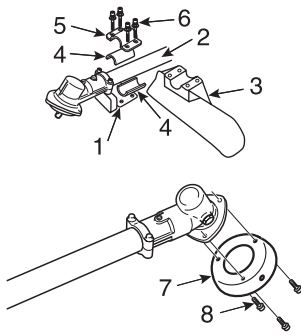
Completing assembly, adjust the play of wire end on carburettor side to 1 - 2 mm.



1. Throttle cable. 2. Clip. 3. Swivel. 4. Nut. 5. Inner cable.
6. Fan cover bracket. 7. Ground lead. 8. Stop lead. 9. Screw (M4 x 16).
10. Wire end.

As the engine is delivered with throttle cable (engine side) unconnected, assemble the cable to carburettor as follows.

- ♦ Remove the clip from the swivel on throttle lever.
- ♦ Loosen nut from throttle cable.
- ♦ Attach the inner cable to swivel on throttle lever.
- ♦ Insert throttle cable through the fan cover bracket as shown and finger-tighten the nut.
- ♦ Insert the ground lead and the stop lead through the fan cover, tighten the ground lead with the screw (M4 x 16), connect the stop lead and tuck behind the air cleaner cover.
- ♦ Tighten the nuts to secure in this position.
- ♦ Check that throttle operates freely and returns to idle position.
- ♦ Adjust the play of wire end on carburettor side to 1 - 2 mm.
- ♦ Install the clip on the swivel.



Shield installation

1. Bracket. 2. Shaft tube. 3. Shield. 4. Two spacers. 5. Shield support.
6. Four bolts (M5 x 45).

- ♦ Insert the shield between the shaft tube and the bracket with a spacer.
- ♦ Fit a spacer and the shield support on the shaft tube and tighten four bolts (M5 x 45) lightly.
- ♦ Tighten the four bolts firmly.

7. Clog prevention plate. 8. Three screws (M5 x 20).

- ♦ Install the clog prevention plate with three screws (M5 x 20).

Installing blade

DANGER

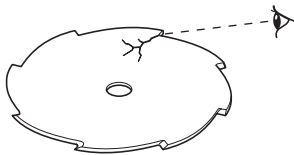
If worn nut and retainers for blade are used, there is a danger of blade getting loose. Replace them with new ones.

CAUTION

- ♦ Fasten output shaft using locking tool securely in order to avoid the possibility of output shaft rotating when mounting cutting blade which will prevent the cutting blade fastening nut from being tightened sufficiently.
- ♦ Wear gloves to reduce the risk of injury caused by unintentional contact with the blade.

NOTE

Check to be sure the locking tool is fully engaged to prevent the output shaft from turning.

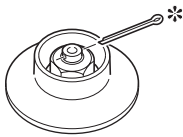


Inspect blades before installation.

Check for sharpness.

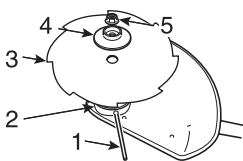
Dull blades increase the risk of blade kickback reactions.

Small cracks can develop into fractures resulting in a piece of blade flying off during operation. Discard cracked blades no matter how small the crack.



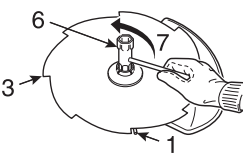
* Split pin

Remove split pin, nut and lower blade retainer.



1. Locking tool. 2. Blade retainer. 3. Blade. 4. Lower blade retainer. 5. Nut.

Use a locking tool to prevent the output shaft from turning during blade installation. Install blade retainer, blade, lower blade retainer and nut finger tight.



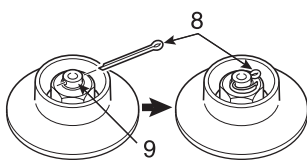
6. Socket wrench. 7. Tightening direction.

Tighten the nut (turn anticlockwise) using a socket wrench.

Never fasten while applying your weight.

Otherwise the thread of nut could be broken.

Replace nut and retainers with new ones no matter how small the wear is.



8. Split pin. 9. Output shaft.

Insert split pin in hole in output shaft, and bend pin legs around shaft anticlockwise to retain nut.

Remove locking tool.

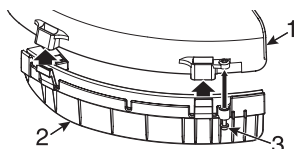
Guard plate installation (For nylon line operation)

WARNING

The cut off knife on the debris shield has sharp edges.
Avoid contact when installing or removing the line head.

NOTE

Make sure the guard plate is completely hooked at the hook receiver.



1. Shield. 2. Guard plate. 3. Bolt.

- 1) Attach the guard plate to the shield.
- 2) Be sure to tighten the bolt.

Nylon line head installation

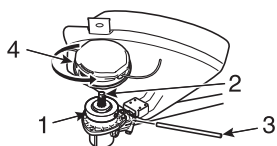
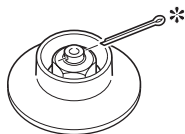
(Use with guard plate)

CAUTION

Fasten output shaft using locking tool securely in order to avoid the possibility of output shaft rotating when mounting nylon line head.

* Split pin

- 1) Remove split pin, nut and lower blade retainer.



1. Blade retainer. 2. Output shaft. 3. Locking tool. 4. Nylon line head.

- 2) Be sure blade retainer remains on output shaft.
- 3) Align locking hole in blade retainer with notch in edge of angle transmission and insert locking tool.
- 4) Thread line head onto output shaft by turning it anticlockwise until head is tight against blade retainer.
- 5) Remove locking tool.

Fuel

Fuel

NOTE

Stored fuel ages.
Do not mix more fuel than you expect to use in thirty (30) days.
Do not mix directly in fuel tank.



- ♦ Fuel is a mixture of regular grade petrol and an air-cooled 2-stroke engine oil of reputable brand name.
Minimum 89 Octane unleaded petrol is recommended.
Do not use fuel containing methyl alcohol or more than 10 % of ethyl alcohol.
- ♦ Recommended mixture ratio; 50 : 1 (2 %) for ISO-L-EGD Standard (ISO/CD 13738), JASO FC, FD grade and ECHO Premium 50 : 1 oil or 25 : 1 (4 %) for JASO FB grade oil.
 - Do not mix directly in engine fuel tank.
 - Avoid spilling petrol or oil.
Spilled fuel should always be wiped up.
 - Handle petrol with care, it is highly inflammable.
 - Always store fuel in approved container.

Handling fuel

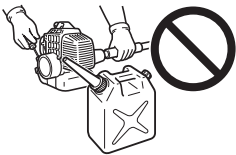
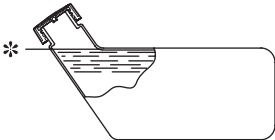
DANGER

**After refuelling, tighten fuel cap firmly and check for leakage.
In case of fuel leakage, repair before starting operation since there is a danger of fire.**

- ♦ Never smoke or allow flame or sparks near fuel.
- ♦ Always fill the fuel tank outdoors.
Never pour fuel indoors.
- ♦ Always remove the fuel cap slowly to relieve any pressure buildup in the tank.
- ♦ Never refuel the engine when it is hot or running.
- ♦ Always use an approved, safe fuel container.

* Shoulder level

- ♦ It is not permitted to fill fuel above the shoulder level of fuel tank.
- ♦ After fuelling, always wipe away spilled fuel.



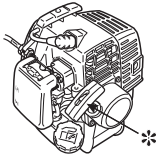
- ♦ Always move at least 3 m away from the fuelling spot before starting the engine.
- ♦ Never store the unit with fuel in the tank a fuel leak could start a fire.

Operation

Starting the cold engine

WARNING

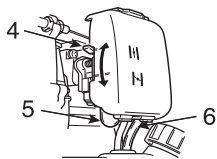
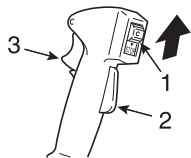
- ♦ When engine starts, the cutting attachment may rotate, even with throttle trigger in low-speed position.
- ♦ When engine is started, confirm if there is not any abnormal vibration or sound. If there is abnormal vibration or sound, ask your dealer to repair.



* Starter handle

NOTE

- ♦ Check unit for loose nuts, bolts and screws before starting.
- ♦ Always clear work area of debris before starting operation.
- ♦ Always hold the unit firmly on the ground.
- ♦ When pulling starter handle, use short pulls, 1/2 to 2/3 of rope length.
- ♦ Do not allow the starter handle to snap back against the housing.



1. Ignition switch. 2. Throttle trigger lockout. 3. Throttle trigger.
4. Choke lever. 5. Purge bulb. 6. Fuel return line.

- ♦ Before starting engine make sure cutting attachment is not in touch with ground or other objects.
- ♦ Place ignition switch in the "start" position.
- ♦ Push purge bulb until fuel is visible in clear fuel return line.
- ♦ Move choke lever to close (I→) position.
- ♦ Pull starter handle until first firing sound.
- ♦ Open (I+) choke.
- ♦ Restart engine and allow to warm up.

Starting the warm engine

NOTE

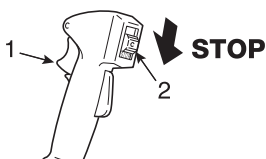
If engine does not start after 4 pulls, use cold starting procedure.

- ♦ Place ignition switch in the "start" position.
- ♦ Move choke lever to open (I+) position.
- ♦ If tank is not empty, pull starter handle.
- ♦ If fuel tank is empty, after refilling, push the purge bulb (until fuel is visible in clear fuel return line).
Pull starter handle.

Stopping the engine

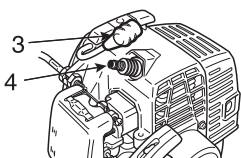
WARNING

If engine does not stop, close choke to stall engine.
Have your ECHO dealer inspect and repair ignition switch before using the unit.



1. Throttle trigger. 2. Ignition switch.

- ♦ Release throttle trigger and allow engine to idle.
- ♦ Place ignition switch in the "STOP" position.



3. Spark plug cap. 4. Spark plug.

Always disconnect the spark plug cap (ignition cable) from the spark plug to ensure the engine cannot be started before you work on the unit or leave it unattended.

Service maintenance guide

Area	Maintenance	Page	Before use	Monthly
Air filter	Clean / Replace	24	•	
Fuel system	Inspect	24	•	
Fuel filter	Inspect / Clean / Replace	24	•	
Spark plug	Inspect / Clean / Adjust / Replace	24		•
Cooling system	Inspect / Clean	24	•	
Carburettor	Adjust / Replace and adjust	25		•
Silencer	Inspect / Tighten / Clean	25	•	
Angle transmission	Grease	25		•*
Drive shaft	Grease	25		•*
Starter	Inspect	23	•	
Cut off knife	Inspect / Clean	-	•	
Screws, bolts and nuts	Inspect, Tighten / Replace	-	•	

IMPORTANT

Time intervals shown are maximum.

Actual use and your experience will determine the frequency of required maintenance.

* Or 50 hours, whichever occurs first.

Troubleshooting

Trouble		Cause	Remedy
Engine	- hard to start - does not start		
Engine cranks	Fuel at carburettor Not fuel at carburettor	<ul style="list-style-type: none"> ♦ Fuel filter clogged ♦ Fuel line clogged ♦ Carburettor 	<ul style="list-style-type: none"> ♦ Clean or replace ♦ Clean ♦ Ask your ECHO dealer
	Fuel at cylinder No fuel at cylinder	<ul style="list-style-type: none"> ♦ Carburettor 	<ul style="list-style-type: none"> ♦ Ask your ECHO dealer
	Silencer wet with fuel	<ul style="list-style-type: none"> ♦ Fuel mixture is too rich 	<ul style="list-style-type: none"> ♦ Open choke ♦ Clean / replace air filter ♦ Adjust carburettor ♦ Ask your ECHO dealer
	Spark at end of plug wire No spark at end of plug wire	<ul style="list-style-type: none"> ♦ Ignition switch off ♦ Electrical problem 	<ul style="list-style-type: none"> ♦ Turn switch on ♦ Ask your ECHO dealer
	Spark at plug No spark at plug	<ul style="list-style-type: none"> ♦ Spark gap incorrect ♦ Covered with carbon ♦ Fouled with fuel ♦ Spark plug defective 	<ul style="list-style-type: none"> ♦ Adjust 0.6 to 0.7 mm ♦ Clean or replace ♦ Clean or replace ♦ Replace plug
Engine does not crank		<ul style="list-style-type: none"> ♦ Internal engine problem 	<ul style="list-style-type: none"> ♦ Ask your ECHO dealer
Engine runs	Dies or accelerates poorly	<ul style="list-style-type: none"> ♦ Air filter dirty ♦ Fuel filter dirty ♦ Fuel vent plugged ♦ Spark plug ♦ Carburettor ♦ Cooling system plugged ♦ Exhaust port / silencer plugged 	<ul style="list-style-type: none"> ♦ Clean or replace ♦ Clean or replace ♦ Clean ♦ Clean and adjust / replace ♦ Adjust ♦ Clean ♦ Clean

WARNING

- ♦ All trimmer service operations, other than items listed in the Operator's Manual, should be performed by competent service personnel.
- ♦ 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.

NOTE

"ES" START (See page 2)

When starter grip cannot be pulled lightly, the trouble is diagnosed as failure of engine inside.

Please consult your dealer.

If disassembled inadvertently, it can cause injury.

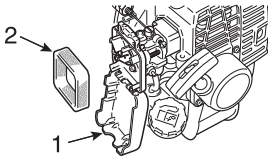
Maintenance and care

- ♦ If you have any questions or problems, please contact your ECHO dealer.

Cleaning air filter

NOTE

If filter is excessive dirty or no longer fits properly, replace it.



1. Air cleaner cover. 2. Air filter.

- ♦ Close choke and remove air cleaner cover.
- ♦ Remove air filter (air filter is located inside air cleaner cover).
- ♦ Brush dirt from filter or wash it in a suitable cleaner.
- ♦ Dry it completely before installation.
- ♦ Reinstall the air filter and cover.

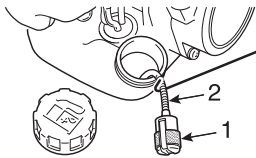
Check fuel system

- ♦ Check before every use.
- ♦ After refuelling, make sure fuel does not leak or exude from around fuel pipe, fuel grommet or fuel tank cap.
- ♦ In case of fuel leakage or exudation there is a danger of fire.
Stop using the machine immediately and request your dealer to inspect or replace.

Replacing fuel filter

1. Fuel filter. 2. Fuel line.

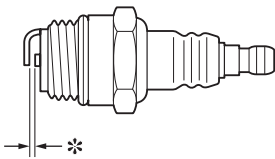
- ♦ Use a piece of steel wire or the like to pick up fuel filter through fuel tank opening.
- ♦ Pull old filter from fuel line.
- ♦ Install new fuel filter.



Check spark plug

* Spark plug gap: 0.6 to 0.7 mm

- ♦ Check plug gap.
- ♦ Correct gap is 0.6 to 0.7 mm.
- ♦ Inspect electrode for wear.
- ♦ Inspect insulator for oil or other deposits.
- ♦ Replace plug if needed and tighten to 15 - 17 N·m (150 to 170 kgf·cm).



Cooling system maintenance

IMPORTANT

To maintain proper engine operating temperature, 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,
- or
- ♦ Dust and grass build up on the out side of the cylinder.

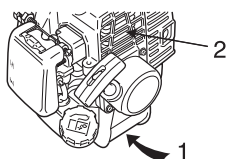
This build-up insulates the engine and prevents the heat from leaving.

Removal of cooling passage blockages or cleaning of cylinder fins is considered "Normal Maintenance".

Any resultant failure attributed to lack of maintenance is not warranted.

1. Air intake. 2. Cylinder fins.

- ♦ Remove dust and dirt from between fins.
- ♦ Before each use, remove accumulated debris from bottom engine intake grille located between the fuel tank and starter.



Carburettor adjustment

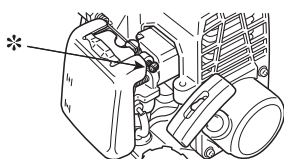
WARNING

When carburettor adjustment is completed, cutting attachment should not move at idle, otherwise serious personal injury may result.

CAUTION

When starting, idle speed adjuster should be adjusted not to rotate the cutting attachment.

When there is some trouble with the carburettor, contact your dealer.



* Idle speed adjuster

Every unit is test run at the factory and the carburettor is fine tuned for maximum performance. Any change from this setting should be performed only with the aid of an accurate tachometer (see Specification for r/min setting).

Before adjusting carburettor, clean or replace air filter, start engine and run several minutes to bring it to operating temperature.

Idle speed adjustment

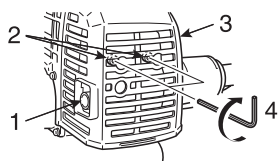
Turn idle speed adjuster clockwise until cutting attachment begins to turn, then turn screw out anticlockwise until cutting attachment stops turning.

Turn screw out, anticlockwise, and additional 1 turn.

Cleaning silencer

1. Silencer. 2. Two bolts. 3. Silencer cover. 4. Hexagonal wrench.

- ♦ Clean deposits from silencer and tighten two bolts.



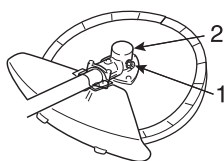
Angle transmission

NOTE

Use good quality lithium multi grease.
Do not overfill housing.

1. Plug (bolt). 2. Angle transmission.

- ♦ Remove plug from angle transmission.
- ♦ Add grease, if necessary, using low pressure pump.
- ♦ Reinstall plug.



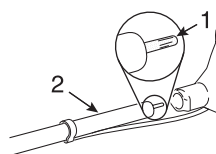
Lubricating drive shaft (flexible shaft)

NOTE

Use good quality lithium multi grease.

1. Flexible shaft. 2. Shaft tube.

- ♦ Inspect the drive shaft every 50 hours of use and replenish grease if it is insufficient.
- ♦ Pull flexible shaft from the shaft tube, wipe clean and recoat with a thin coating 10 to 20 g, of lithium base grease.
- ♦ Slide the flexible shaft back in the shaft tube.
Do not get dirt on the flexible shaft.

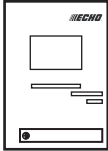


Storage

Long term storage (Over 30 days)

WARNING

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



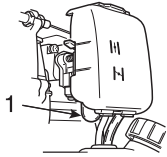
NOTE

For future reference, you should keep this Operator's Manual.

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. Purge bulb

- 1) Drain the fuel tank completely.
 - A. Alternately press and release the purge bulb a number of times to remove the fuel from the purge bulb.
 - B. Start the engine and run it at idle speed until it comes to a natural stop.
- 2) Always store fuel in approved container.



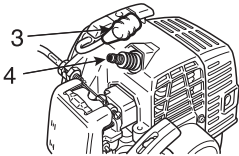
2. Ignition switch

- 3) Place the ignition switch in the "STOP" position.
- 4) Remove accumulation of grease, oil, dirt and debris from exterior of unit.
- 5) Perform all periodic lubrication and services that are required.
- 6) Tighten all the screws, bolts and nuts.



3. Spark plug cap. 4. Spark plug.

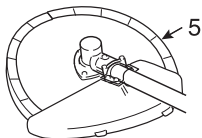
- 7) Remove the spark plug and pour 10 mL of fresh, clean, two-stroke engine oil into the cylinder through the spark plug hole.
 - A. Place a clean cloth over the spark plug hole.
 - B. Pull the recoil starter handle 2 or 3 times to distribute the oil inside the cylinder.
- 8) Install the spark plug (Do not connect ignition cable).



5. Blade cover

- 9) Fit the blade cover onto trimmer blade.

Once the unit is sufficiently cool and dry, wrap the engine section in a plastic bag or other covering before putting them in storage.
- 10) Store unit in a dry, dust free place, out of the reach of children and other unauthorized persons.



Disposal procedure



- ♦ Dispose of waste oil in accordance with local regulations.
- ♦ Major plastic parts making up the product have codes showing their materials. The codes refer to the following materials; dispose of those plastic parts in accordance with local regulations.

Mark	Material
>PA6-GF<	Nylon 6 - Glass fibre
>PP-GF<	Polypropylene - Glass fibre
>PE-HD<	Polyethylene

- ♦ Please contact your ECHO dealer in case you do not know how you should dispose of waste oil / plastic parts.

Specifications

Model	SRM-22GESU		
		Metal blade	Nylon line cutting head
Mass: Unit without fuel, cutting attachment and shield (ISO11806)	kg	4.9	4.9
Volume: Fuel tank	L	0.44	
Cutting attachment: (option) Blade centre hole diameter Blade rotational speed at maximum allowable engine speed Thread	mm r/min	25.4 10000	Left-handed M10 x 1.25
Gear ratio: Gear ratio and lubrication		1.4 reduction and good quality lithium grease	
Rotational direction of output shaft seen from above:		Anticlockwise	
External dimensions: Length × Width × Height	mm	1760 × 650 × 444	1780 × 650 × 484
Engine: Type Engine displacement Maximum shaft brake power, measured in accordance with ISO 8893 Engine speed at maximum engine power Recommended maximum engine speed Recommended engine idling speed Carburettor Ignition Spark plug Starter Clutch	mL (cm ³) kW r/min r/min r/min	Air cooled two stroke single cylinder 21.2 0.67 6500 10050 3000	- Diaphragm type Flywheel magneto, CDI system NGK BPM7A Recoil starter " ES " START (See page 2) Automatic centrifugal clutch
Fuel: Oil Ratio Fuel consumption at maximum engine power Specific fuel consumption at maximum engine power	 L/h g/(kW•h)	Regular grade petrol. Minimum 89 Octane unleaded petrol is recommended. Do not use fuel containing methyl alcohol or more than 10 % of ethyl alcohol. Two stroke, air-cooled engine oil. 50 : 1 (2 %) for ISO-L-EGD Standard (ISO/CD13738), JASO FC, FD grade and ECHO Premium 50 : 1 oil or 25 : 1 (4 %) for JASO FB grade oil. 0.62 685	
Sound pressure level: (ISO 22868) L _{pAeq} =	dB(A)	89.6	-
Sound power level: (ISO 22868) L _{WAeq} =	dB(A)	99	-
Vibration: (ISO 22867) Declared values a _{hveq} Left handle Right handle	m/s ² m/s ²	3.1 3.1	- -

Memorandum

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