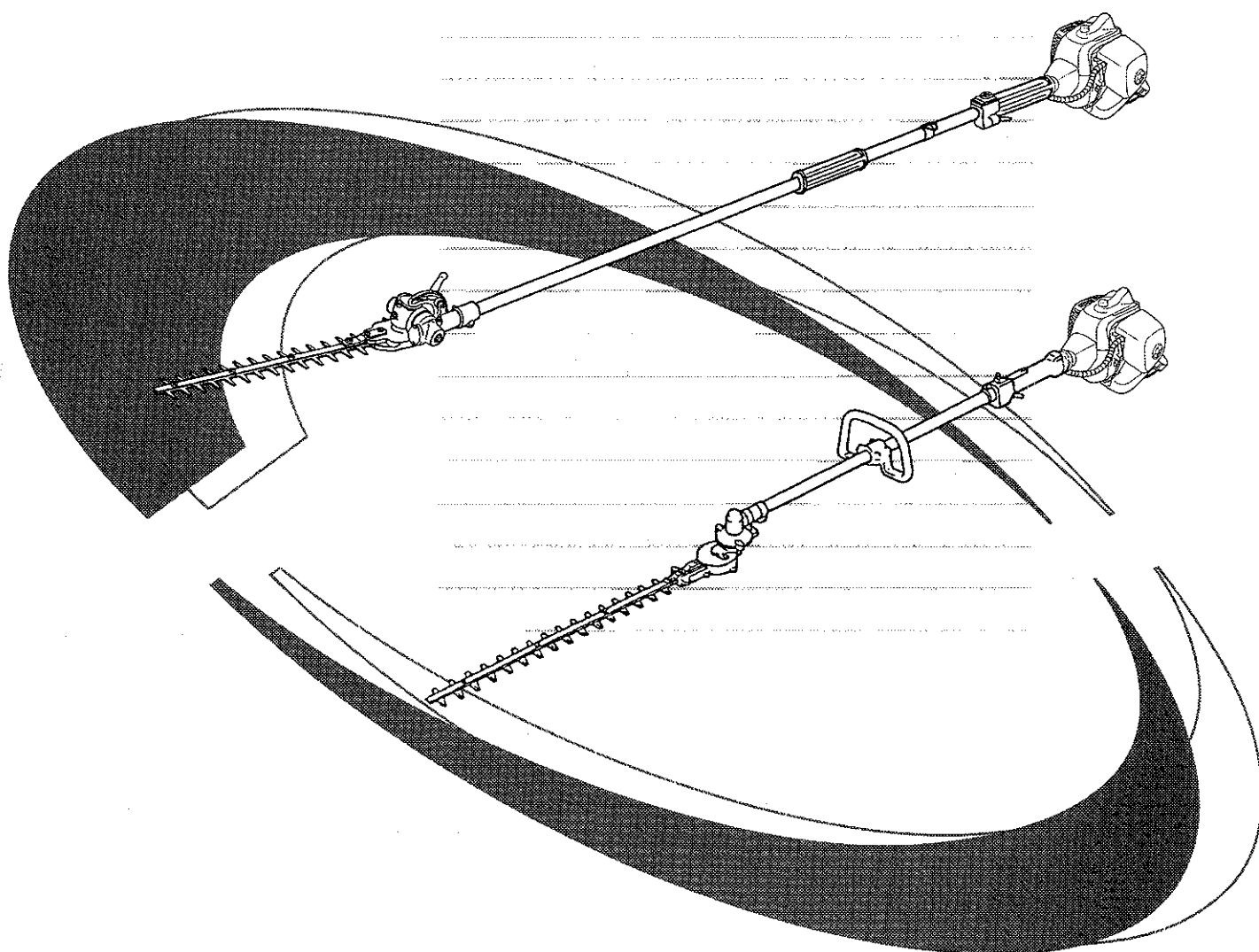


MARUYAMA

**OWNER'S
OPERATOR'S MANUAL
EHT2321DSL, EHT2321D
HEDGE TRIMMER**



Premium Outdoor Power Equipment  Maruyama. *Extraordinary.*

Completely read and understand this manual prior to using this product.



Limited Warranty Statement

All Maruyama commercial/ industrial products are warranted to the original purchaser to be free from defects in material and workmanship **from the date of purchase** for the time periods listed as follows:

Lifetime for inner drive shaft on trimmers and brushcutters and all ignition modules.

3 years for residential, non-institutional, non-income producing use.

1 year for industrial, commercial, institutional, rental and income producing use.

Maruyama AE series engines and Kawasaki TEX45/TEX54 are covered exclusively for one additional year of industrial, commercial, institutional, rental and income producing use (total of 2 years).

All other engines refer to engine manufacturer's warranty statement.

Any part of a Maruyama product found to be defective within the applicable warranty period shall, at Maruyama's option, be repaired or replaced without charge. Warranty consideration is obtained by delivering any Maruyama product believed to be defective to an Authorized Maruyama Servicing Dealer within the applicable warranty period.

The purchaser shall not be charged for diagnostic labor that leads to the determination that a warranted part is defective, if the diagnostic work is performed at a Maruyama Dealer.

Any warranted part which is not scheduled for replacement as required maintenance, or which is scheduled only for regular inspection to the effect of "repair or replace as necessary" shall be warranted for the warranty period. Any warranted part, which is scheduled for replacement as, required maintenance shall be warranted for the period of time up to the first scheduled replacement point for that part. Maruyama Mfg. Co., Inc. is liable for damages to other engine components caused by the failure of a warranted part still under warranty.

The purchaser is responsible for the performance of the required maintenance, as defined by Maruyama Mfg. Co., Inc. in the Owner's/Operator's Manual.

EMISSION-RELATED PARTS WARRANTY: In addition to the above warranty coverage, Maruyama Mfg. Co., Inc. will repair or replace, free of charge, for the original purchaser and each subsequent purchaser any emission-related part or parts found to be defective in material and workmanship for two (2) years from original retail delivery date **except catalytic converter. Catalytic converter is warranted one year from original retail delivery date. Emission-related parts are the carburetor assembly, the ignition coil assembly, the ignition rotor, the spark plug, the catalytic converter and the fuel tank.** Any replacement part that is equivalent in performance and durability may be used in non-warranty maintenance or repairs, and shall not reduce the warranty obligations of Maruyama Mfg. Co., Inc.

This warranty does not cover the following:

1. Maintenance items (excluding defects in materials and workmanship) including hoses, spark plugs, starter rope, air and fuel filters, clutch shoes, vibration isolators, throttle cables and all cutting attachments, etc.
2. Extra expenses including shipping and handling, travel, payment for lost time or pay and for any inconvenience and storage.
3. Alterations or modifications including aftermarket parts not authorized by Maruyama U.S., Inc.
4. Wear, accident, abuse, neglect, misuse, negligence, improper fuels, lubricants, fuel mixtures (when applicable), or failure to operate or maintain the product in accordance with instructions approved by Maruyama.

Repair or replacement as provided under this warranty is the exclusive remedy of the consumer. Maruyama shall not be liable for any incidental or consequential damages for breach of any express or implied warranty on these products except to the extent prohibited by applicable law. Any implied warranty of merchantability or fitness for a particular purpose on these products is limited in duration to the warranty period as defined in the limited warranty statement. Maruyama reserves the rights to change or improve the design of the product without notice and does not assume obligation to update previously manufactured products.

This warranty provides you with specific legal rights, which may vary from state to state.

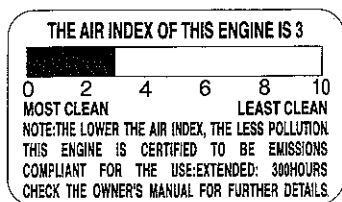
It is the Owner's and Dealer's responsibility to make sure the Warranty Registration Card is properly filled out and mailed to Maruyama U.S., Inc. Proof of purchase and registration will be required in order to obtain warranty service.

To locate an Authorized Maruyama Servicing Dealer nearest you, contact:

Maruyama U.S., Inc.
PO Box 2107
3570 Shelby Lane
Denton, TX 76207
(940) 383-7400
maruyama@maruyama-us.com
www.maruyama-us.com

⚠ WARNING: ⚠

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



FEDERAL EMISSION CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS

The U.S. Environmental Protection Agency (EPA), and Maruyama Manufacturing Company, Inc. are pleased to explain the **emission control system warranty** on your small off-road engine. New 1997 and later model year small off-road engines must be designed, built and equipped, at the time of sale, to meet the U.S. EPA regulations for small off-road engines. The equipment engine must be free from defects in materials and workmanship which cause it to fail to conform with U.S. EPA standards for the first two years of engine use from the date of sale to the ultimate purchaser. Maruyama Manufacturing Company, Inc. must warrant the emission control system on your small off-road engine for the period of time listed above provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Emission durability of 300 hours.

Your emission control system may include parts such as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, belts, and connectors and other emission related assemblies.

Where a warrantable condition exists, Maruyama Manufacturing Company, Inc. will repair your small off-road engine at no cost to you, including diagnosis (if the diagnostic work is performed at an authorized dealer), parts, and labor.

MANUFACTURER'S WARRANTY COVERAGE:

The 1997 and later model year small off-road engines are warranted for two years. If any emission-related part on your engine is defective, the part will be repaired or replaced by Maruyama Manufacturing Company, Inc. free of charge.

OWNER'S WARRANTY RESPONSIBILITIES:

(a) As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual.

Maruyama Manufacturing Company, Inc. recommends that you retain all receipts covering maintenance on your small off-road engine, but Maruyama Manufacturing Company, Inc. cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance. Any replacement part or service that is equivalent in performance and durability may be used in non-warranty maintenance or repairs, and shall not reduce the warranty obligations of the engine manufacturer.

- (b) As the small off-road engine owner, you should be aware, however, that Maruyama Manufacturing Company may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.
- (c) You are responsible for presenting your small off-road engine to a Maruyama Manufacturing Company, Inc. service center as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact Maruyama U.S., Inc. at **1-940-383-7400**.

COVERAGE

Maruyama Manufacturing Company, Inc. warrants to the ultimate purchaser and each subsequent purchaser that your small off-road engine will be designed, built and equipped, at the time of sale, to meet all applicable regulations. Maruyama Manufacturing Company, Inc. also warrants to the initial purchaser and each subsequent purchaser that your small off-road engine is free from defects in materials and workmanship which cause the engine to fail to conform with applicable regulations for a period of two years.

The 1997 and later model years, EPA requires manufacturers to small off-road engines for two years. These warranty periods will begin on the date the small off-road engine is purchased by the initial purchaser. If any emission-related part on your engine is defective, the part will be replaced by Maruyama Manufacturing Company, Inc. at no cost to the owner.

Maruyama Manufacturing Company, Inc. shall remedy warranty defects at any authorized Maruyama Manufacturing Company, Inc. engine dealer or warranty station. Any authorized work done at an authorized dealer or warranty station shall be free of charge to the owner if such work determines that a warranted part is defective. Any manufacturer-approved or equivalent replacement part may be used for any warranty maintenance or repairs on emission-related parts, and must be provided free of charge to the owner if the part is still under warranty, Maruyama Manufacturing Company, Inc. is liable for damages to other engine components caused by the failure of a warranted part still under warranty.

EPA considers emission-related warranted parts to include all the parts listed below. These warranted parts are: **the carburetor assembly, the ignition coil assembly, the ignition rotor, the spark plug, the catalytic converter, and the fuel tank.**

MAINTENANCE REQUIREMENTS

The owner is responsible for the performance of the required maintenance as defined by the Maruyama Manufacturing Company, Inc. in the owner's manual.

LIMITATIONS

This Emission Control System Warranty shall not cover any of the following:

- (a) repair or replacement required because of misuse or neglect, lack of required maintenance, repairs improperly performed or replacements not conforming to Maruyama Manufacturing Company, Inc. specifications that adversely affect performance and/or durability, and alterations or modifications not recommended or approved in writing by Maruyama Manufacturing Company, Inc., and
- (b) replacement of parts and other services and adjustments necessary for required maintenance at and after the first scheduled replacement point.

CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board (CARB), and Maruyama Manufacturing Company, Inc. are pleased to explain the emission control system warranty on your 2008 and later small off-road engine. In California, new small off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Maruyama Manufacturing Company, Inc. must warrant the emission control system on your small off-road engine for the period of time listed above provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Your emission control system may include parts such as the carburetor or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, belts, and connectors and other emission related assemblies.

Where a warrantable condition exists, Maruyama Manufacturing Company, Inc. will repair your small off-road engine at no cost to you, including diagnosis, parts, and labor.

MANUFACTURER'S WARRANTY COVERAGE:

The 1995 and later small off-road engines are warranted for two years. If any emission-related part on your engine is defective, the part will be repaired or replaced by Maruyama Manufacturing Company, Inc.

OWNER'S WARRANTY RESPONSIBILITIES:

- (a) As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual.
Maruyama Manufacturing Company, Inc. recommends that you retain all receipts covering maintenance on your small off-road engine, but Maruyama Manufacturing Company, Inc. cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- (b) As the small off-road engine owner, you should be aware, however, that Maruyama Manufacturing Company may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.
- (c) You are responsible for presenting your small off-road engine to a Maruyama Manufacturing Company, Inc. distribution center as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact Maruyama U.S., Inc. at **1-866-783-7400**.

Emission System Parts

Exhaust Emission
Carburetor
Muffler
Catalytic Converter
Ignition Coil / Magneto
Spark Plug
Air Filter
EGR Valve (piston)
Fuel Filter

Evaporative Emission
Fuel Tank

Contents

	Page
Limited Warranty Statement	1
Federal Emission Control	3
California Emission Control	5
Foreword	6
Specifications	6
Product Description	7
Symbol explanation	8
Safety Instructions	9
Assembly	12
Before Operation	13
Starting and Stopping	17
Operating Power Hedge Trimmer	19
Storage	24
Troubleshooting	24

Foreword

This Owner's/ Operator's Manual is designed to familiarize the operator with the various features and component parts of the equipment and to assist you with the assembly, operation and maintenance of your new Hedge Trimmer.

It is essential that any operator of this Hedge Trimmer product reads and understands the contents of this manual before using the Hedge Trimmer.

Important safety instructions will be identified by the following safety alert symbol:



Failure to comply with the instructions in this manual may result in serious injury or death.

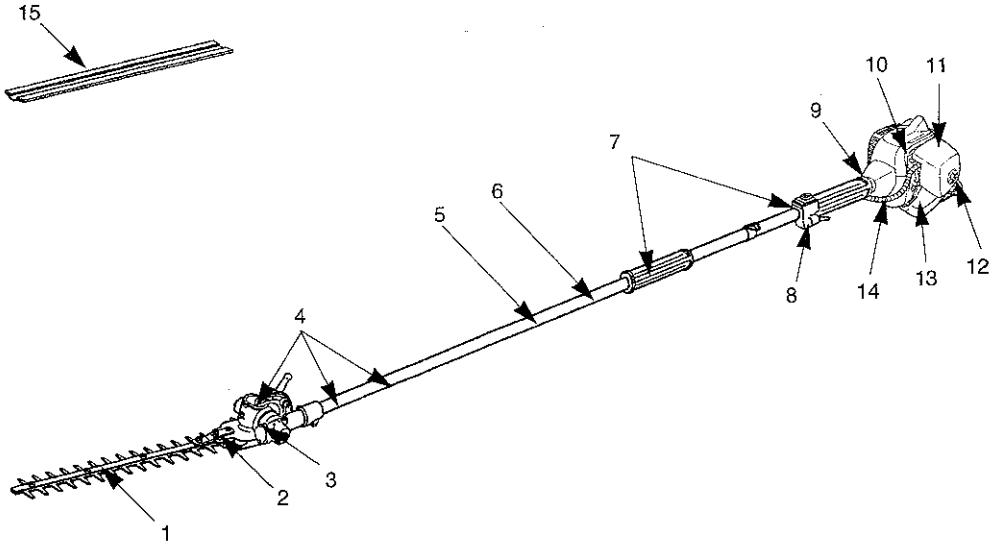
For additional assistance, contact any local MARUYAMA dealer.

Specifications

Model	EHT2321DSL	EHT2321D
Dry Weight	13 6lbs (6.2) kg	14 5lbs (6.6) kg
Cutting Length	626 mm	560 mm
Engine Model	CE230	
Engine Displacement	22.5 cm ³	
Fuel Tank Capacity	0.53qts (0.5 l)	
Carburetor	Walbro Diaphragm Type	
Ignition System	Solid State	
Spark Plug	NGK BPMR6Y (electrode gap : 0.6 - 0.7 mm)	

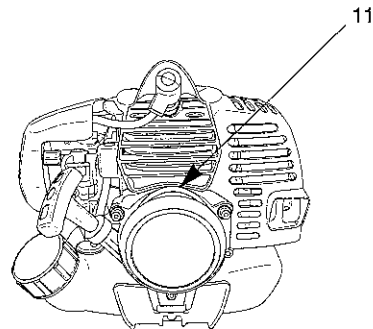
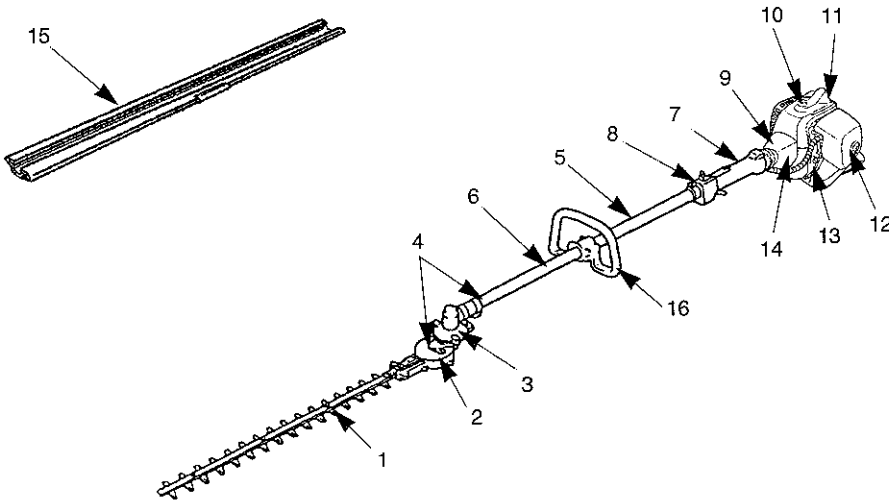
Product Description

EHT2321DSL

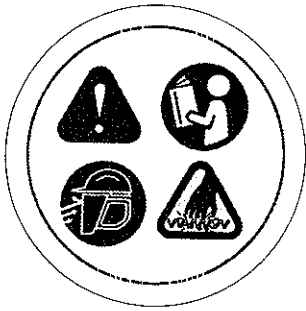


- 1 Blade
- 2 Gearcase
- 3 Angle Drive
- 4 Safety Decal
- 5 Shaft Assembly
- 6 Model Name
- 7 Shaft Grip
- 8 Throttle Trigger and Stop Switch
- 9 Clutch Drum Housing
- 10 Engine
- 11 Serial Number (on rear of engine)
- 12 Air Filter
- 13 Fuel Tank
- 14 Throttle Cable and Stop Switch Wires
- 15 Blade Cover
- 16 Loop Handle

EHT2321D



Safety Decals



ON ANGLE DRIVE [EHT2320DS]
(Part No. 631786)



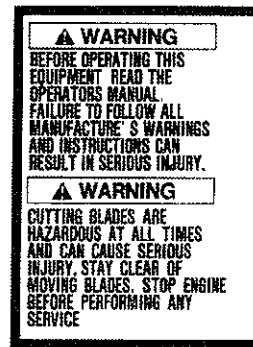
ON SHAFT [EHT2320DS]
(Part No. 221501)

CAUTION : Extremely sharp blades. Do not touch.

ON BLADE GUARD [EHT2321D]
(Part No. 591450)

Add grease to
gearcase every
10 hours of use.

ON GEARCASE
(Part No. 223925)



ON SHAFT
(Part No. 217879)

Safety Decals are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.

Symbol explanation



Indicates Warning, Danger, Caution.



Read and understand this Owner's/Operator's Manual.



Always be careful to wear a face protector, ear protector and helmet when using your Hedge Trimmer.

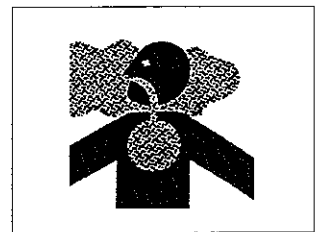
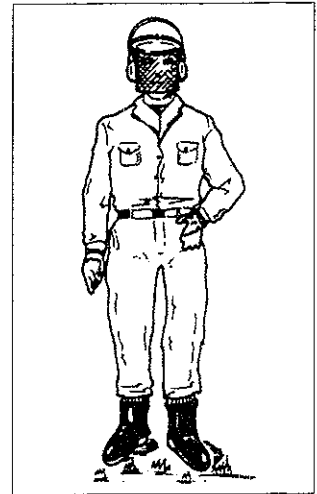


Keep hands away from cutting blades.

Safety Instructions

Operator safety

1. Read and understand this Owner's/Operator's Manual before using the product. Be thoroughly familiar with the proper use of this product.
2. Always wear eye protection.
3. Wear hearing protection.
4. Always wear heavy long pants, a long sleeved shirt, boots and gloves. Do not wear loose clothing, jewelry, short pants, sandals, or go barefoot. Secure hair so it is above shoulder length.
5. Never operate this Hedge Trimmer when you are tired, ill, or under the influence of alcohol, drugs or medication.
6. Never start or run the engine inside a closed room or building. Breathing exhaust fumes can cause death.
7. Keep the handles clean of oil, fuel and dirt.



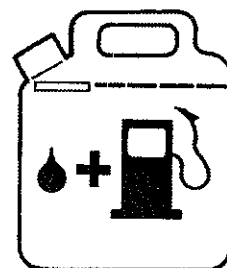
Power Hedge Trimmer safety

1. Shut off the engine and be certain the cutting blades has completely stopped moving before :
 - cleaning or when cleaning a blockage;
 - checking, maintenance or working on the machine;
 - when adjusting the working position of the cutting device.
2. Inspect the Hedge Trimmer before each use. Replace damaged parts. Check for fuel leaks. Make sure all fasteners are in place and tightened securely.
3. Where the Hedge Trimmer is provided with adjustments to the angle of the cutting device never hold the cutter blades when making adjustments to the working position of the cutting device. Always ensure that the cutting device is correctly located in a designated working position before starting the engine or plugging in to the mains.
4. Inspect the cutting blades and guide. Replace any parts that are cracked, chipped or damaged before using the Hedge Trimmer.
5. Never use a replacement parts that are not approved by MARUYAMA.
6. Maintain the Hedge Trimmer in accordance with the recommended maintenance intervals and procedures in the maintenance section, page 20 to 23.

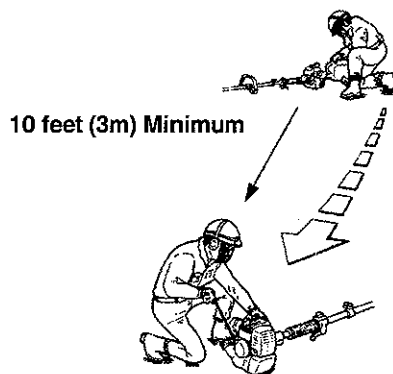
7. If running problems or excessive vibration occur, stop immediately and inspect the unit for the cause. If the cause cannot be determined or is beyond your ability to correct, return the Hedge Trimmer to your servicing dealer for repair.
8. Never use a machine that has been modified so that it no longer corresponds with the original design.
9. Do not attempt to repair the Hedge Trimmer unless you are qualified to do so.
10. When transporting or storing the Hedge Trimmer always fit the blade cover.

Fuel safety

1. Gasoline is highly flammable and must be handled and stored carefully. Use a container approved for storing gasoline.
2. Mix and pour fuel outdoors and where there are no sparks or flames.
3. Do not smoke near fuel or Hedge Trimmer, or while using the Hedge Trimmer.
4. Do not overfill the fuel tank. Stop filling 1/4-1/2 inch (6mm-13mm) from the top of the tank.
5. Wipe up any spilled fuel before starting the engine.
6. Move the Hedge Trimmer at least 10feet (3m) away from the fueling location before starting the engine.
7. Do not remove the Hedge Trimmer fuel tank cap while the engine is running or immediately after stopping the engine.
8. Allow the engine to cool before refueling.
9. Drain the fuel tank before storing the Hedge Trimmer.
10. Store fuel and Hedge Trimmer away from open flame, sparks and excessive heat. Make sure fuel vapors cannot reach sparks or open flames from water heaters, furnaces, electric motors, etc.



WIPE UP ANY SPILLED FUEL



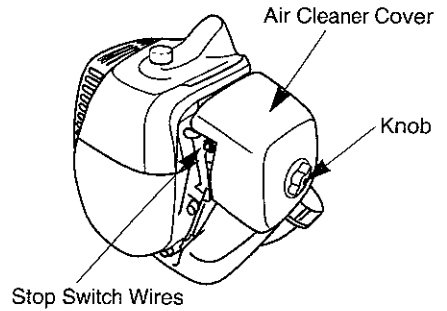
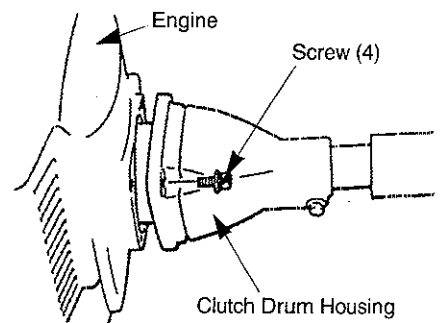
Power Hedge Trimmer Operating safety

1. THIS HEDGE TRIMMER CAN CAUSE SERIOUS INJURIES.
Read the instructions carefully. Be familiar with all controls and the proper use of the Hedge Trimmer.
2. Never allow children to operate the Hedge Trimmer. It is not a toy. Never allow adults to operate the unit without first reading this Operator's Manual.
3. Keep the area of operation clear of all persons, particularly small children and pets.
4. The Hedge Trimmer blades are extremely sharp. Do not put hands or feet near or under any moving parts. Keep body clear at all times.
5. Use the Hedge Trimmer only in daylight or good artificial light.
6. Inspect your work area before operation. Remove string, rope or similar materials which can become entangled in the Hedge Trimmer blades.
7. Avoid hidden hazards. Watch for hidden objects within your working area, such as chain link fencing, cables, wires, telephone and power lines.
8. Never operate the Hedge Trimmer without proper guards in place.
9. Keep firm footing and balance. Do not operate the Hedge Trimmer while standing on a ladder or similar temporary support.
10. Use the right tool for the job. Do not use the Hedge Trimmer for any job that is not recommended by the manufacturer.
11. While operating the Hedge Trimmer be always sure of safe and secure operating position. Do not over-reach.
12. To reduce fire hazard keep engine and silencer free of debris, leaves, and dry materials. Always wipe away spilled fuel and excessive lubricant before starting.
13. Always use two hands to operate the Hedge Trimmer.
14. Always be aware of your surroundings and stay alert for possible hazards that you may not hear due to the noise of the machine.
15. Know how to stop the engine quickly. (Refer to Starting and Stopping procedure section, page 17)

Assembly

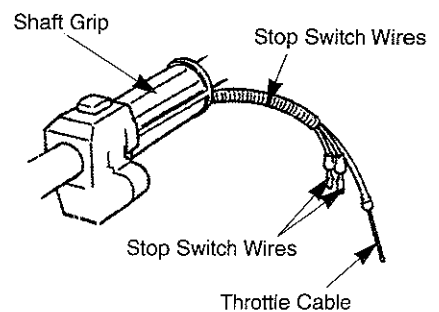
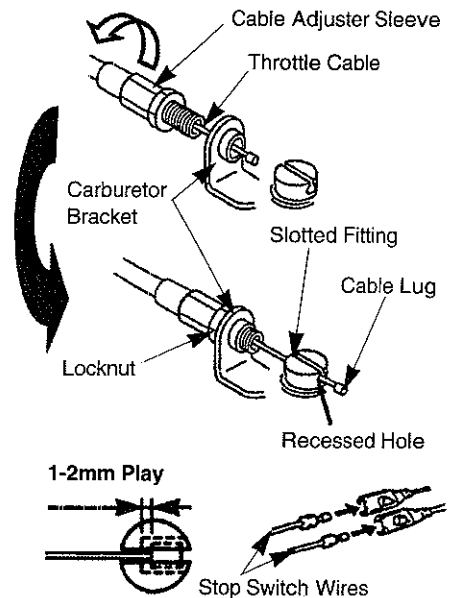
Assembling Engine and Drive Shaft Assembly

Attach the clutch drum housing to the engine using the four screws supplied with the unit.



Connecting Throttle Cable and Stop Switch Wires

1. Loosen the knob and remove the air cleaner cover, insert the throttle cable through the carburetor bracket, then screw a cable adjuster sleeve into the carburetor bracket fully.
2. Position the slotted fitting on the carburetor so the recessed hole for the lug is away from the cable adjuster sleeve.
3. Rotate the carburetor throttle cam and slip the throttle cable through the slot in the slotted fitting, making sure the cable lug drops into the recessed hole.
4. Operate the throttle trigger a few times to make sure that it works correctly.
5. Adjust the cable adjuster sleeve so the stop on the carburetor throttle cam just contacts the throttle stop and the cable position keep 1-2mm play between cable lug and slotted fittings when the throttle trigger is fully depressed.
6. When the throttle cable is adjusted correctly, tighten the lock-nut.
7. Plug the stop switch wires into the matching connectors from the engine. Note that wire polarity is not important.

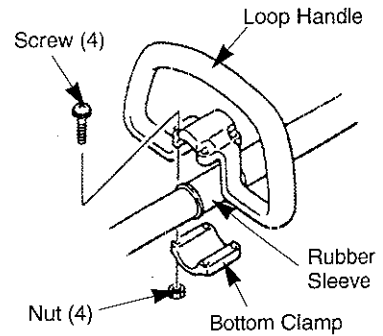


[Model: EHT2321DSL]

Install the plastic tube around the throttle cable and stop switch wires.

Loop Handle Installation [Model: EHT2321D]

1. Slip the rubber sleeve around the shaft approximately 9 inches (23cm) from the end of the stop switch/throttle trigger assembly for an initial handle position.
2. Rotate the rubber sleeve so the split is to one side.
3. Place the loop handle and the bottom clamp over the rubber sleeve.
4. Install the four screws and nuts. Tighten the screws evenly.

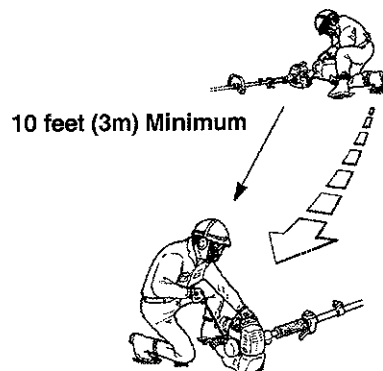


Before Operation

Oil and Fuel

WARNING: The following precautions will lessen the risk of fire.

1. Do not smoke near fuel.
2. Mix and pour fuel outdoors and where there are no sparks or flames.
3. Always shut off the engine before refueling. Never remove the Hedge Trimmer fuel tank cap while the engine is running or immediately after stopping the engine.
4. Always open the fuel tank cap slowly to release any possible pressure inside the tank.
5. Do not overfill the fuel tank. Stop filling 1/4-1/2 inch (6mm-13mm) from the top of the tank.
6. Tighten the fuel tank cap carefully but firmly after refilling.
7. Wipe up any spilled fuel before starting the engine.
8. Move the Hedge Trimmer at least 10 feet (3m) away from the fueling location and fuel storage container before starting the engine.



Recommended Oil Type

Only use a 2-cycle engine oil formulated for use in high-performance, air-cooled 2-cycle engines. Maruyama brand 2-cycle oil is formulated for use in high-performance, air-cooled 2-cycle engines.

IMPORTANT: Do not use National Marine Manufacturer's Association (NMMA) or BIA certified oils. This type of 2-cycle engine oil does not have the proper additives for air-cooled, 2-cycle engines and can cause engine damage.

Do not use automotive motor oil. This type of oil does not have the proper additives for air-cooled, 2-cycle engines and can cause engine damage.

Recommended Fuel Type

Use clean, fresh lead-free gasoline, including oxygenated or reformulated gasoline, with an octane rating of 85 or higher. To ensure freshness, purchase only the quantity of gasoline that can be used in 30 days. Use of lead-free gasoline results in fewer combustion chamber deposits and longer spark plug life. Use of premium grade fuel is not necessary or recommended.

Use of Fuel Additives

IMPORTANT: NEVER USE METHANOL, GASOLINE CONTAINING METHANOL, GASOLINE CONTAINING MORE THAN 10% ETHANOL, PREMIUM GASOLINE, OR WHITE GAS BECAUSE ENGINE FUEL SYSTEM DAMAGE COULD RESULT.

DO NOT USE FUEL ADDITIVES OTHER THAN THOSE MANUFACTURED FOR FUEL STABILIZATION DURING STORAGE SUCH AS MARUYAMA'S STABILIZER/CONDITIONER OR A SIMILAR PRODUCT. MARUYAMA'S STABILIZER/CONDITIONER IS A PETROLEUM DISTILLATE BASED CONDITIONER/STABILIZER.

MARUYAMA DOES NOT RECOMMEND STABILIZERS WITH AN ALCOHOL BASE SUCH AS ETHANOL, METHANOL OR ISOPROPYL. ADDITIVES SHOULD NOT BE USED TO TRY TO ENHANCE THE POWER OR PERFORMANCE OF MACHINE.

Mixing Gasoline and Oil

IMPORTANT: The engine used on this Hedge Trimmer is of a 2-cycle design. The internal moving parts of the engine, i.e., crankshaft bearings, piston pin bearings and piston to cylinder wall contact surfaces, require oil mixed with the gasoline for lubrication.

Failure to add oil to the gasoline or failure to mix oil with the gasoline at the appropriate ratio will cause major engine damage which will void your warranty.

For your fuel premix, only use a quality oil designed for 2-cycle air-cooled engines. Maruyama 50:1 2-cycle oil is formulated to meet the requirements of high-performance, air-cooled 2-cycle engines.

Fuel Mixture

The fuel: oil ratio is 50 parts gasoline to 1 part oil or 50:1.



Note: Never use a mixing ratio less than 50:1 regardless of the oil package mixing instructions. Ratios less than the 50:1, (for example, 60:1, 80:1, 100:1), reduce the amount of lubrication to the internal moving parts of the engine and can cause damage.

Fuel Mixture Chart

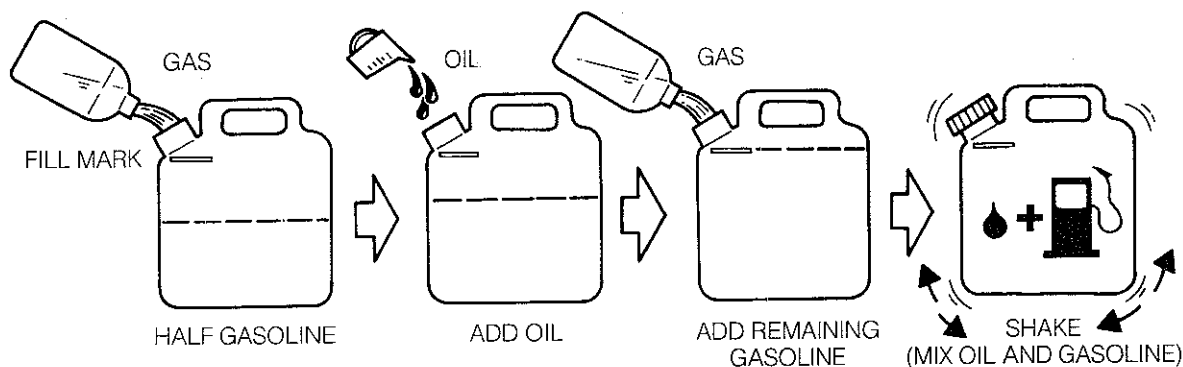
Gasoline	50:1 2-cycle oil
1 gallon	2.6 oz.
2 gallons	5.2 oz.
5 gallons	12.8 oz.

1 liter	20 ml.
5 liter	100 ml.

Mixing Instructions

IMPORTANT: Never mix gasoline and oil directly in the Hedge Trimmer fuel tank.

1. Always mix fuel and oil in a clean container approved for gasoline.
2. Mark the container to identify it as fuel mix for the Hedge Trimmer.
3. Use regular unleaded gasoline and fill the container with half the required amount of gasoline.
4. Pour the correct amount of oil into the container then add the remaining amount of gasoline.



5. Close the container tightly and shake it momentarily to evenly mix the oil and the gasoline before filling the fuel tank on the Hedge Trimmer.
6. When refilling the Hedge Trimmer fuel tank, clean around the fuel tank cap to prevent dirt and debris from entering the tank during cap removal.
7. Always shake the premix fuel container momentarily before filling the fuel tank.
8. Always use a spout or funnel when fueling to reduce fuel spillage.
9. Fill the tank only to within 1/4-1/2 inch (6-13mm) from the top of the tank. Avoid filling to the top of the tank filler neck.

Adjusting Cutting Blades



Warning: Do not touch the sharpened edges of the cutting blades. The cutting blades are extremely sharp and dangerous at all times. Always wear gloves to protect your hands and fingers from injury.

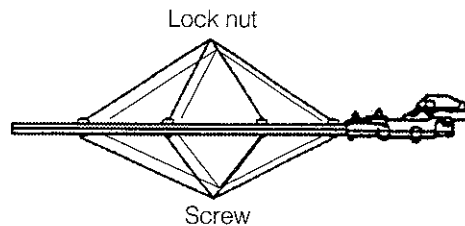
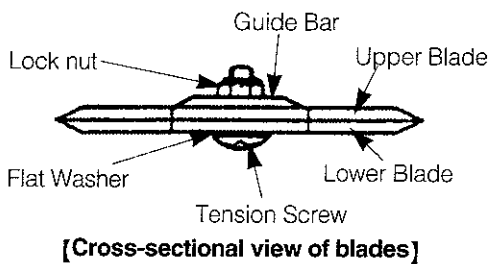
Before operating the Hedge Trimmer, it is necessary to check the adjustment of the cutting blades. Blades that are too loose may vibrate, and will not provide a clean, smooth cut.



Caution: Blades that are too tight can cause overloading which may damage the equipment.

To adjust the cutting blades, refer to the illustration and locate the screws.

Loosen the lock nuts. Gently turn the tension screws in until snug, then turn the tension screws back out 1/3-1/2 turn. While holding the screws in place, tighten the lock nuts. Liberally coat the cutting blades with light oil. Start the engine and operate the Hedge Trimmer at full speed for at least one minute. Stop the engine, and when the blades are motionless, touch the blades with your hand. The blades may be warm, but if they are too hot to touch, loosen the tension screws another 1/8 turn.



Starting and Stopping

Before Starting the Engine

1. Fill the fuel tank as instructed in the Before Operation section of this manual.
2. Rest the Hedge Trimmer on the ground.
3. Make sure the cutting blades are clear of branches, shrubs, debris etc.
4. Keep all bystanders, children and animals away from the working area.

Cold Starting Procedure

This engine is equipped with a fuel primer and a choke system. To start a "cold" engine properly, perform the following procedure:

1. Pump the primer bulb at the bottom of the carburetor until fuel can be seen flowing through the fuel return line to the fuel tank. (Flowing fuel should be almost clear, not foamy or full of bubbles.)
2. Move the choke lever to the closed (\perp) position.
3. Set the stop switch to the "ON" position. The throttle trigger positioned at idle.
4. Grasp the starter grip and slowly pull the starter cord out until you feel some resistance, then pull the cord quickly and powerfully. Pull the starter grip until the engine starts. After the engine is started, turn the choke lever to the Open (\equiv) position.

NOTE:

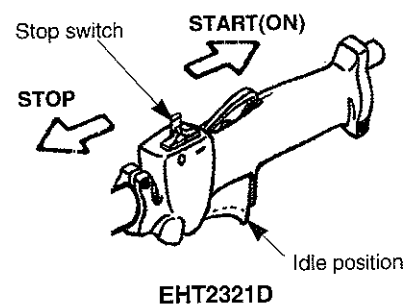
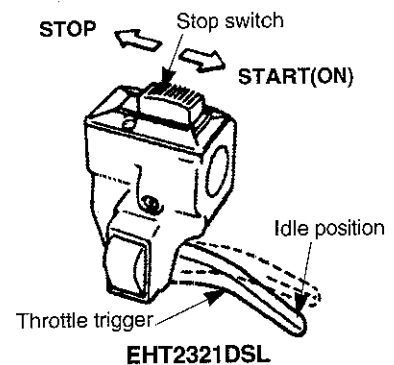
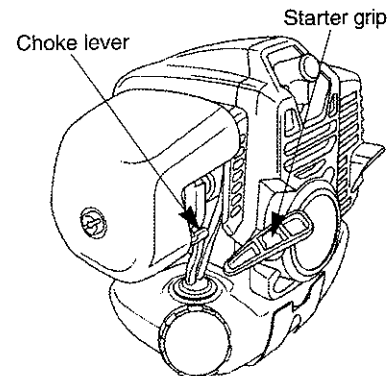
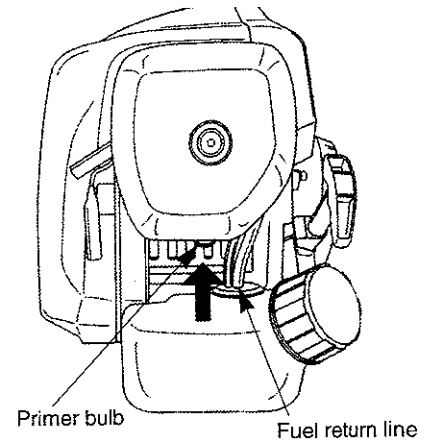
- Do not pull the starter cord out completely.
 - Do not release the starter cord from the fully extended position.
5. After starting, allow the engine to run a few minutes to warm it before using.

Hot Restart

For starting the engine that is already warmed up (hot restart), turn the choke lever to the Open (\equiv) position and follow steps 3 and 4 only. If the engine fails to start after three to four pulls, follow the Cold Starting Procedure section above.

To Stop the Engine:

1. Release the throttle trigger.
2. Slide the stop switch to "STOP" position.



Idle Speed Adjustment

This Hedge Trimmer is equipped with non-adjustable fuel mixture carburetor. The idle speed is the only adjustment for the operator.

The cutting blades may be moving during idle speed adjustment. Wear the recommended personal protective equipment and observe all safety instructions. Keep hands and body away from the blades.

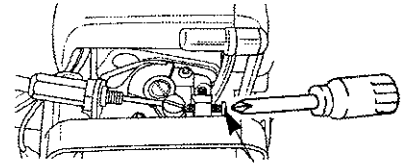
When the throttle trigger is released, the engine should return to an idle speed. The correct speed is 2700 - 3300 RPM, or just below the clutch engagement speed. The cutting blades must not move and the engine should not stall (stop running) at engine idle speed.

To adjust the engine idle speed, rotate the idle speed adjustment screw on the carburetor.

- Turn the idle speed screw in (clockwise) to increase the engine idle speed.
- Turn the screw out (counterclockwise) to decrease the engine idle speed.

If idle speed adjustment is necessary, and after adjustment the cutting blades are moving or the engine stalls, stop using the Hedge Trimmer immediately!

Contact your local MARUYAMA Dealer for assistance and servicing.



Idle Speed Adjustment Screw

Operating Power Hedge Trimmer



Caution: Read the Safety instructions beginning on page 8 concerning proper use of the Power Hedge Trimmer.



Caution: The thickness of branches which may be cut using this trimmer is limited to up to approximately 3/16". Never try to cut branches thicker than this, as doing so may result in damage to the trimmer.



Warning: Do not touch the sharpened edges of the cutting blades. The cutting blades are extremely sharp and dangerous at all times. Always wear gloves and protective clothing when operating the Hedge Trimmer.

If the cutting blades become jammed, stop the engine immediately. Make certain all moving parts have stopped and disconnect the spark plug before inspecting the equipment for damage. Never use a Power Hedge Trimmer that has chipped, cracked, or broken cutting blades.

Operating Position

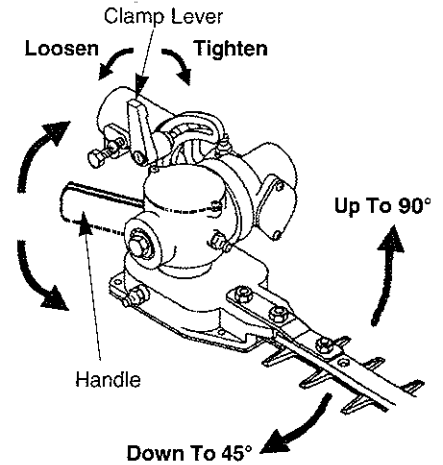
1. The Hedge Trimmer should be on the operator's right side. The operator's right hand should be holding the rear shaft grip, with his or her fingers on the throttle trigger.
2. The left hand should be holding the front shaft grip with the fingers.
3. The Hedge Trimmer weight should be evenly distributed between the arms.
4. Make sure the cutting blades are moving (at least half throttle) before actual cutting begins. The Hedge Trimmer performs best at full throttle.
5. Always release the throttle trigger and allow the engine to return to speed when not cutting.
6. Stop the engine when moving between work sites.
 - If the cutting blades becomes jammed, stop the engine immediately.
 - Make certain cutting blades stopped and disconnect the spark plug before inspecting the equipment for damage.
 - Never use a Power Hedge Trimmer that has chipped, cracked or broken cutting blades.

Adjusting the angle of the blades [Model: EHT2321DSL]



Warning: Do not touch the sharpened edges of the cutting blades. The cutting blades are extremely sharp and dangerous at all times. Always wear gloves to help protect your hands and fingers from injury. Do not hold any other part except the handle when adjusting the angle of the blades. Stop the engine when adjusting the angle of the blades.

1. Turn the clamp lever and loosen the clamp bolt. The clamp lever is designed to turn freely for your desired position. Lift and turn down the lever for your desired position. The lever should be fixed at the desired position.
2. Always hold the handle when you adjust the angle of the blades. The blades are able to adjust the angle from 90 degree upwards to 45 degree downwards.
3. After adjusting the angle, tighten the clamp lever firmly and fix the gearcase.



Regular Maintenance

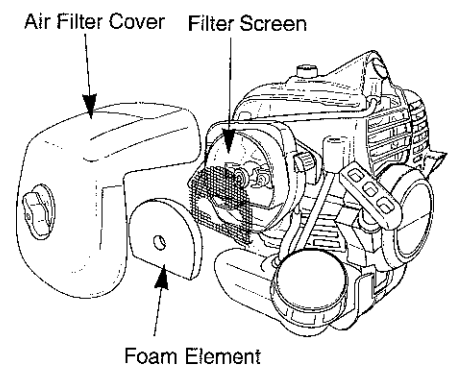
Air Filter

Maintenance Interval

- The air filter should be cleaned daily, or more often when working in extremely dusty conditions.
- Replace after every 100 hours of operation.

Air Filter Cleaning

1. Loosen the knob and remove the air filter cover.
2. Remove the foam element and filter screen from the air filter body.
3. Clean the foam element and filter screen with warm, soapy water. Let the element dry completely.
4. Apply a light coat of SAE 30 motor oil to the foam element and squeeze out all excess oil.
5. Reassemble the filter screen and foam element to the air filter body.
6. Reinstall the air filter cover and tighten the knob.



Fuel Filter

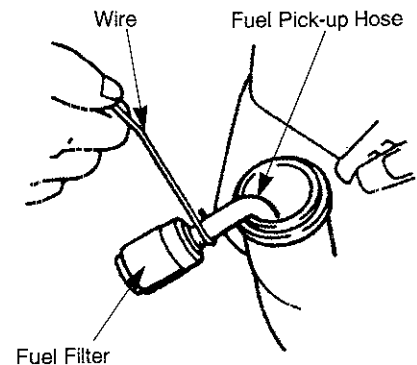
Maintenance Interval

The fuel filter should be replaced after every 100 hours of operation.

Fuel Filter Replacement

The fuel filter is attached to the end of the fuel pick-up hose inside the tank. To replace the fuel filter:

1. Make sure the fuel tank is empty.
2. Remove the fuel cap.
3. Using a wire hook, gently pull the fuel filter out through the fuel filler opening.
4. Grasp the fuel hose next to the fuel filter fitting and remove the filter, but do not release the hose.
5. While still holding on to the fuel hose, attach the new fuel filter.
6. Drop the new fuel filter back into the fuel tank.
7. Make sure that the fuel filter is not stuck in a corner of the tank, and that the fuel hose is not doubled over (kinked) before refueling.



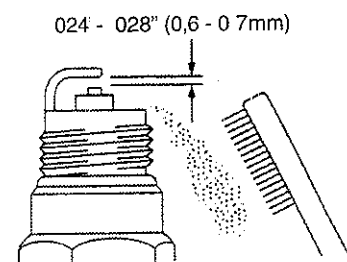
Spark Plug

Maintenance Interval

- The spark plug should be removed from the engine and checked after each 25 hours of operation.
- Replace the spark plug after every 100 hours of operation.

Spark Plug Maintenance

1. Twist the high tension lead boot on the spark plug back and forth a couple of times to loosen the boot, then pull the boot off of the spark plug.
2. Remove the spark plug.
3. Clean the electrodes with a stiff brush.
4. Adjust the electrode air gap to .024-.028 in. (0.6-0.7 mm).
5. Replace the spark plug if it is oil-fouled, damaged, or if the electrodes are worn down.
6. Do not over tighten the spark plug when installing. The tightening torque is 95-148 in. lbs. (10.7-16.6 N·m).

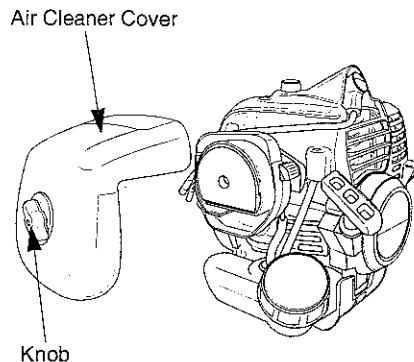


Cylinder Cooling Fins

Maintenance Interval

The cylinder cooling fins should be cleaned after every 25 hours of operation, or once a week, whichever comes first.

Air must flow freely around and through the cylinder cooling fins to prevent engine overheating. Leaves, grass, dirt and debris buildup on the fins will increase the operating temperature of the engine, which can reduce engine performance and shorten engine life.



Cooling Fin Cleaning

1. With the engine at ambient (room) temperature, loosen the knob and remove the air cleaner cover.
2. Twist the high tension lead boot on the spark plug back and forth a couple of times to loosen the boot, then pull the boot off of the spark plug.
3. Loosen the knob and lift off the cylinder cover.
4. Clean all dirt and debris from the cooling fins and from around the cylinder base.
5. Reinstall the fan cover and the cleaner cover.

Spark Arrester

⚠ WARNING

POTENTIAL HAZARD

- Muffler surface becomes hot when Trimmer/Brushcutter is in operation and remains hot for some time after the engine is shut off.

WHAT CAN HAPPEN

- Contact with hot muffler surfaces could cause a burn.

HOW TO AVOID THE HAZARD

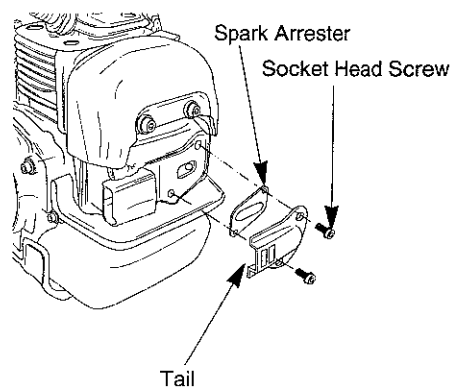
- Make sure the muffler is cool before inspecting and cleaning the spark arrester.

Maintenance Interval

- The spark arrester should be inspected and cleaned after every 25 hours of use.
- Replace the screen if it cannot be thoroughly cleaned, or if it is damaged.

Spark Arrester Maintenance

1. With the engine at ambient (room) temperature, loosen the knob and remove the air cleaner cover.
2. Twist the high tension lead boot on the spark plug back and forth a couple of times to loosen the boot, then pull the boot off of the spark plug.



3. Loosen the knob and lift off the cylinder cover.
4. Remove and clean the tail, gasket and spark arrester with a safety solvent and a stiff brush. If any part cannot be thoroughly cleaned, it must be replaced.
5. Reinstall the spark arrester and tail onto the muffler, then reinstall and tighten the two socket head screws.
6. Reinstall the cylinder cover and the air cleaner cover.

Exhaust Muffler Maintenance Interval

The muffler should be inspected and cleaned after each 100 hours of use.

Muffler Maintenance

1. With the engine at ambient (room) temperature, loosen the knob and remove the air cleaner cover.
2. Twist the high tension lead boot on the spark plug back and forth a couple of times to loosen the boot, then pull the boot off of the spark plug.
3. Loosen the knob and lift off the cylinder cover.
4. Remove the spark arrester (see spark arrester maintenance), Clean the muffler with a stiff brush.
IMPORTANT: Don't use solvent for cleaning inside of muffler, because of the catalytic converter in muffler.
Be careful not to allow any dirt or debris to fall into the exhaust port, as this can cause engine damage.
5. Reinstall the spark arrester and tail onto muffler, then reinstall and tighten the two socket head screws.
6. Reinstall the cylinder cover and the air cleaner cover.

Lubrication Maintenance Interval

The gearcase and angle drive should be inspected after each 10 to 20 hours of use.

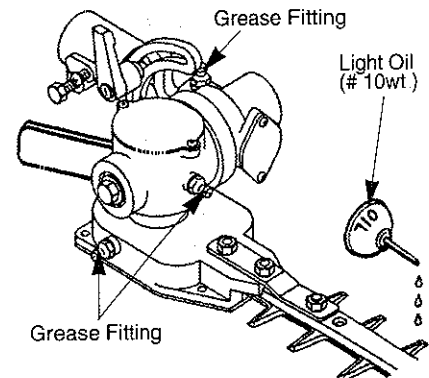
Cutting blades should be lubricated at all times.

Lubrication

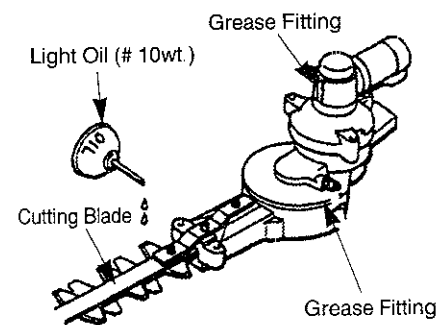
The gearcase and angle drive should be checked for lubrication after each 10 to 20 hours of use. Grease fittings are installed into both components. Use #2 lithium-base bearing lubricant. Lubrication of the cutting blades should be maintained at all times. Use a light oil (#10wt.).

General Cleaning and Tightening

The MARUYAMA Hedge Trimmer will provide maximum performance for many, many hours if it is maintained properly. Good maintenance includes regular checking of all fasteners for correct tightness, and cleaning the entire machine. Pitch and gum deposits should be removed from the cutting blades daily. Adjustment of the cutting blade tension should be checked regularly.



EHT2321DSL

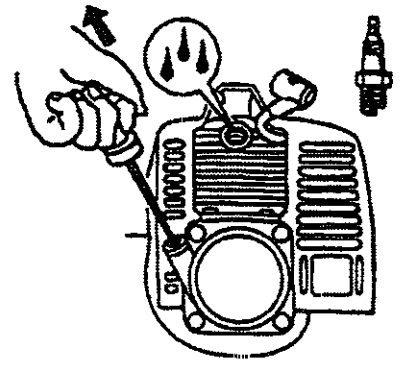


EHT2321D

Storage

For long term storage of the Hedge Trimmer:

1. Empty the fuel tank into a suitable fuel storage container.
2. Run the engine to remove any fuel that may remain in the carburetor.
3. Perform all regular maintenance procedures and any needed repairs.
4. Remove the spark plug and squirt a very small amount of engine oil into the cylinder.
5. Pull the starter grip once.



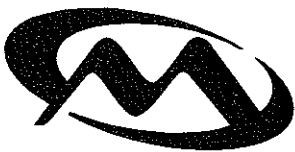
Caution: Oil may squirt out of the spark plug opening while pulling the starter cord. Protect your eyes and keep your face away from the spark plug opening.

6. Slowly pull the starter grip to bring the piston to the top of the cylinder (TDC).
7. Reinstall the spark plug.
8. Store the Hedge Trimmer in a dry place away from excessive heat, sparks or open flame.

Troubleshooting

Problem	Cause	Action
Engine will not start	<ul style="list-style-type: none"> • STOP switch set to off position • Empty fuel tank • Primer bulb wasn't pushed enough • Engine flooded 	<ul style="list-style-type: none"> • Move switch to on position • Fill fuel tank • Press primer bulb until fuel flows through fuel return line • Use warm engine starting
Engine will not Idle	<ul style="list-style-type: none"> • Idle speed set incorrectly 	<ul style="list-style-type: none"> • Set Idle speed
Engine lacks power or stalls when cutting	<ul style="list-style-type: none"> • Throttle wire has come loose • Dirty air filter 	<ul style="list-style-type: none"> • Tighten throttle wire • Clean or replace air filter

If further assistance is required, contact your local MARUYAMA service dealer.



Maruyama U.S., Inc.

3570 Shelby Lane
Denton, TX 76207 U.S.A
P.O. Box 2107
Denton, TX 76202 U.S.A
Phone 940-383-7400
Fax 940-383-7466

www.maruyama-us.com
225525-05 09.03 TAP/M