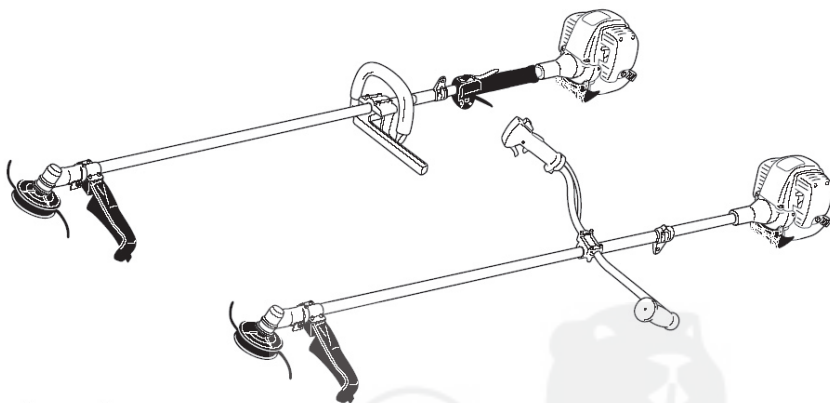


**SHINDAIWA OWNER'S/
OPERATOR'S MANUAL**

**T2510 GRASS TRIMMER
C2510 BRUSHCUTTER**



WARNING!

- Read this manual and familiarize yourself with its contents.
- This machine is designed for cutting grass, weeds and brush. Do not use this machine for other purposes.
- Minimize the risk of injury to yourself and others.
- Do not operate or service this machine unless you clearly understand this manual.
- Keep this manual at a particular place so that you can reread it whenever you have a question about its use.

Introduction

The Shindaiwa T2510 and C2510 Brushcutter has been designed and built to deliver superior performance and reliability without compromise to quality, comfort, or durability. Shindaiwa high performance engines represent the leading edge of 4-cycle engine technology, delivering exceptionally high power from remarkably low displacement and weight. As an owner/operator, you'll soon discover for yourself why Shindaiwa is simply in a class by itself!

IMPORTANT!

The information contained in this manual describes machines available at the time of publication. While every attempt has been made to give you the very latest information about your Shindaiwa product, there may be some differences between your machine and the machine described in this manual. Shindaiwa reserves the right to make changes to products without prior notification, and without obligation to make alterations to machines previously manufactured.



WARNING!

The engine exhaust from this product contains chemicals which may cause cancer, birth defects or other reproductive harm.

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GENERAL DESCRIPTIONS

Attention Statements



WARNING!

A statement preceded by a triangular Attention Symbol and the word WARNING! contains information that should be acted upon to prevent bodily injury.

CAUTION!

A statement preceded by the word CAUTION! contains information that should be acted upon to avoid damaging the machine.

IMPORTANT!

A statement preceded by the word "IMPORTANT!" is one that possesses special significance.

IMPORTANT!

The operational procedures described in this manual are intended to help you get the most from your machine, and to protect you and others from harm. These procedures are guidelines for safe operation under most conditions, and are not intended to replace any safety rules and/or laws that may be in force in your area. If you have questions regarding your T2510 and C2510 brushcutter, or if you do not understand something in this manual, your Shindaiwa dealer will be glad to assist you. You may also contact Shindaiwa at the address printed on the back of this manual.

Warning Labels

Warning labels affixed to the machine mean as follows.



Read and follow the operator's manual. Failure to do so could result in serious injury.



Wear head, eye and hearing protection during the operation of this machine.



Wear non-slip gloves, long trousers and non-skid boots during the operation of this machine.



Make sure no one is within 15 meters (50 feet) of an operating attachment.



Beware of thrown objects.



The maximum speed MAX of the cutting attachment shaft in min^{-1} .



Sound Power Level (measured in accordance with 2000/14/EC).

Safety Equipment and Labels

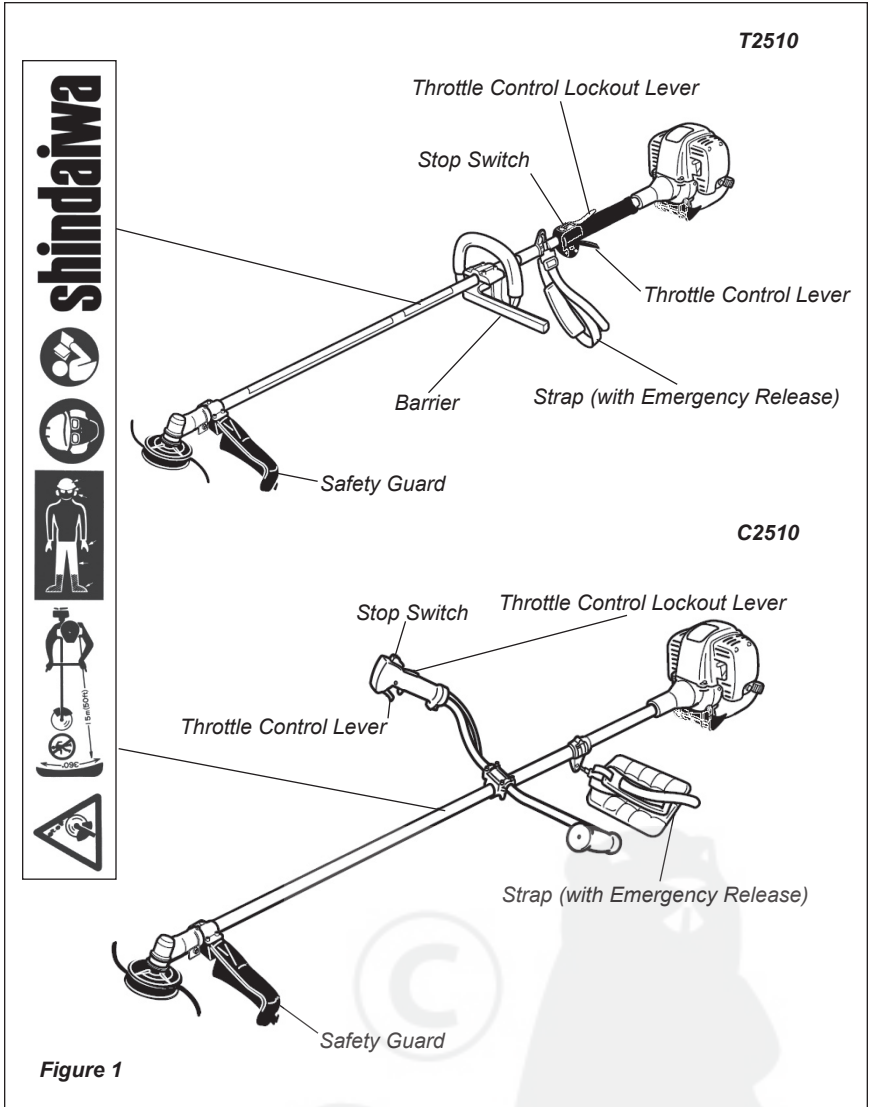


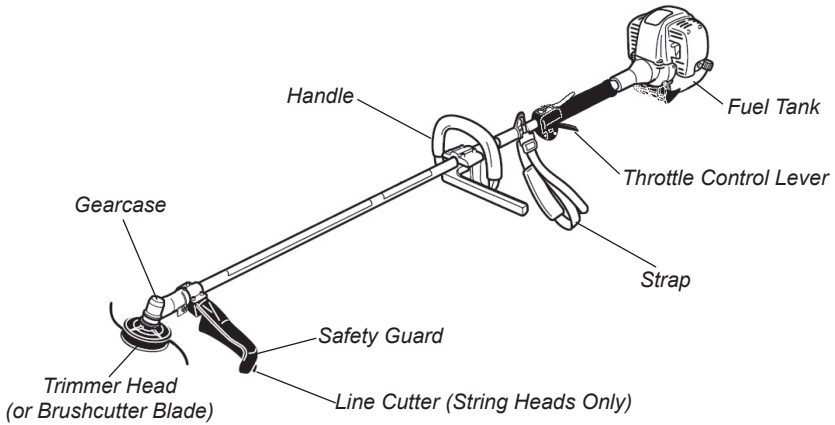
Figure 1

IMPORTANT!

Caution, Danger, Warning, and Operation Information Labels: Make sure all information labels are undamaged and readable. Immediately replace damaged or missing information labels. New labels are available from your local authorized Shindaiwa dealer.

Product Description

T2510



C2510

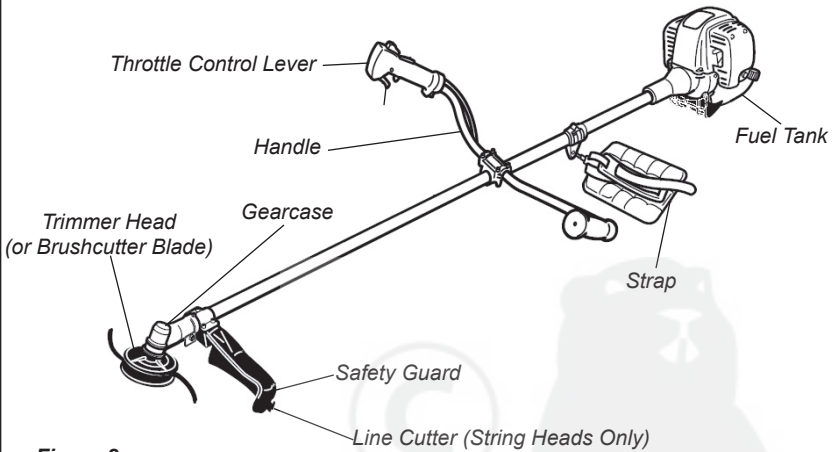


Figure 2



WARNING!

Do not make unauthorized modifications or alterations to this machine or any of its components. Shindaiwa must authorize alterations and modifications, in writing. Unauthorized modifications or alterations may alter the machine operation and could jeopardize personal safety during operation.

IMPORTANT!

Use only factory authorized Shindaiwa parts and accessories with your Shindaiwa machine.

Using Figure 2 as a guide, familiarize yourself with your machine and its various components. Understanding your machine helps ensure top performance, longer service life, and safer operation.

Technical Specifications

Model Name		T2510/EC1	C2510/EC1	
Engine Model		SF2510EC1		
Engine Type		4-cycle, vertical-cylinder, air-cooled		
Displacement		25.4 cm ³		
Bore X Stroke		34X27 mm		
Maximum Speed at the Cutting Attachment Shaft		8,500 min ⁻¹		
Engine Speed at Idling		3,000 min ⁻¹		
Maximum Engine Speed		10,500 min ⁻¹		
Engine Speed at Max Power Output		8,000 min ⁻¹		
Maximum Power Output		0.8 kW		
Ignition		Fully electronic, program-controlled		
Spark Plug		NGK CMR5H		
Starting Method		Recoil Starter		
Stopping Method		Slide Switch		
Air Cleaner Type		Non-reversible flocked filter element		
Fuel/Oil Ratio		50:1		
Fuel Tank Capacity		590 cm ³		
Carburetor Type		Walbro WYL-Diaphragm		
Dry Weight without Cutting Attachment and Guard		5.1 kg	5.2 kg	
Dimensions (L X W X H)		1,725 X 375 X 300	1,725 X 565 X 470	
Sound Pressure Level	TRIMMER	96 dB(A)	95 dB(A)	
	BLADE note.1	90 dB(A)	89 dB(A)	
Sound Power Level	TRIMMER	107 dB(A)	107 dB(A)	
	BLADE note.1	102 dB(A)	102 dB(A)	
Vibration Level	Idling [Front (left)/ Rear (Right)]	TRIMMER	[2.7/1.6] m/s ²	[1.4/1.4] m/s ²
		BLADE note.1	[3.1/1.6] m/s ²	[1.0/1.2] m/s ²
	WOT [Front (left)/ Rear (Right)]	TRIMMER	[5.9/8.1] m/s ²	[4.1/3.4] m/s ²
		BLADE note.1	[4.2/9.8] m/s ²	[4.4/4.5] m/s ²
Handle Type		Loop Type Handle	Bicycle Type Handle	

* Sound Pressure Level: in accordance with EN ISO 11806 and EN27917 (average data between at Idling and at WOT).

* Sound Power Level: in accordance with EN ISO 11806 and ISO 10884 (average data between at Idling and at WOT).

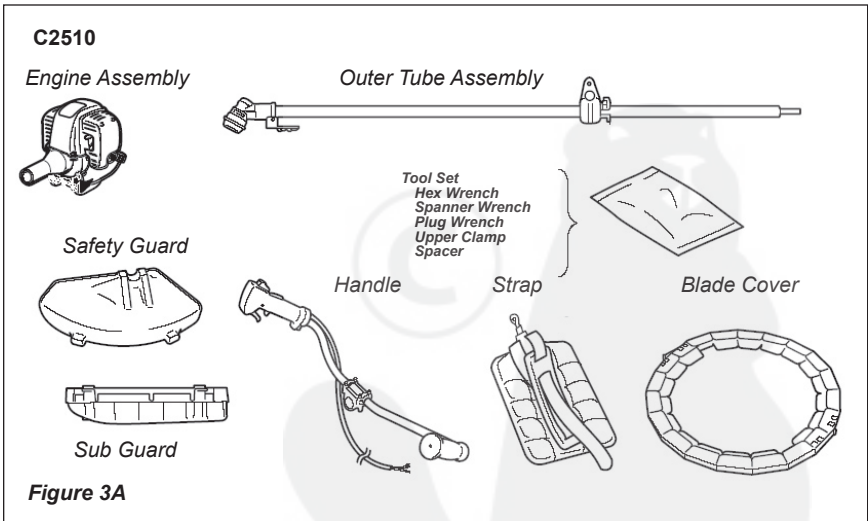
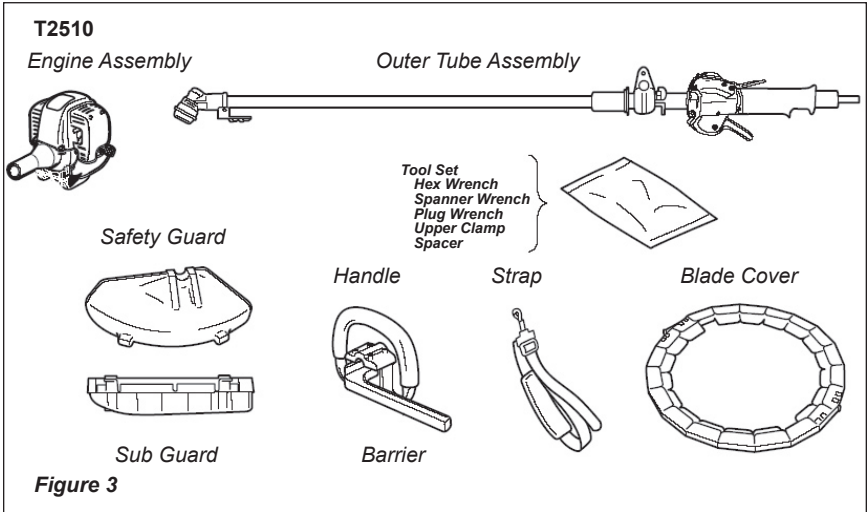
* Vibration Level: in accordance with EN ISO 11806 and ISO 7916.

note.1: 8-tooth blade equipped.

HOW TO ASSEMBLE

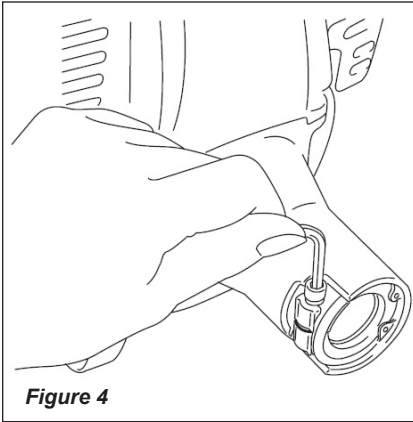
Prior to Assembly

Before assembling, make sure you have all the components required for a complete unit. This machine consists of the following components and accessories. Carefully inspect all components for damage. If you find any damaged or missing items, contact your Shindaiwa dealer for consultation.



Assembly of the Outer Tube

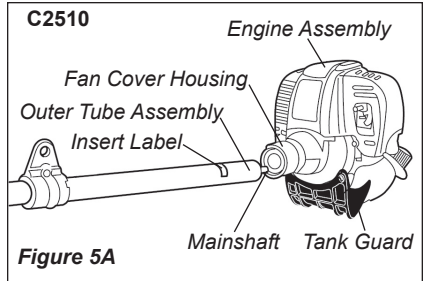
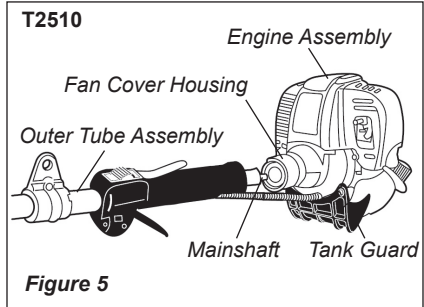
1. Using the hex wrench, loosen the joint bolt.



IMPORTANT!

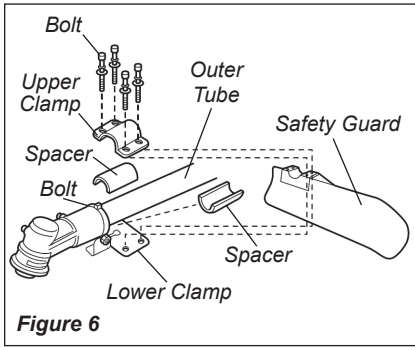
The terms “left,” “left-hand,” and “LH”; “right,” “right-hand,” and “RH”; “front” and “rear” refer to directions as viewed by the operator during normal operation of this product.

2. Slip the outer tube into the joint until the tube bottoms. The outer tube or gearcase shaft may have to be rotated slightly for the splines on the mainshaft to fully engage to the engine.
3. Tighten the joint bolt securely using the hex wrench.



Assembly of the Safety Guard

Install the Safety Guard



1. Insert the safety guard between the outer tube and the lower clamp. See Figure 6.
2. Fit the two spacers and the upper clamp over the outer tube and loosely install the four bolts. See Figure 6.

NOTE:

It may be necessary to loosen the nut and bolt to adjust lower clamp.

CAUTION!

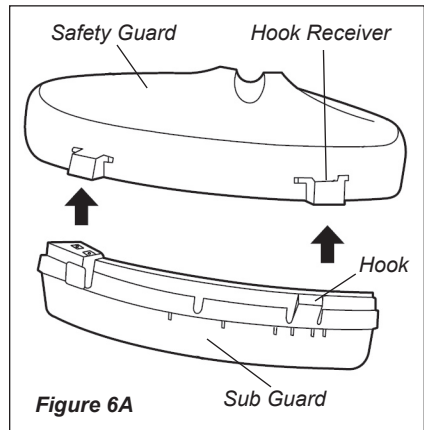
Make sure the clamp screw and nut is securely tightened before tightening the four bolts.



WARNING!

NEVER operate the T2510 and C2510 without the Safety Guard installed and tightly secured!

Install the Sub Guard



1. Install the sub guard. See Figure 6A.

NOTE:

Make sure the edge of Safety Guard is aligned with the groove of the sub guard.

CAUTION!

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

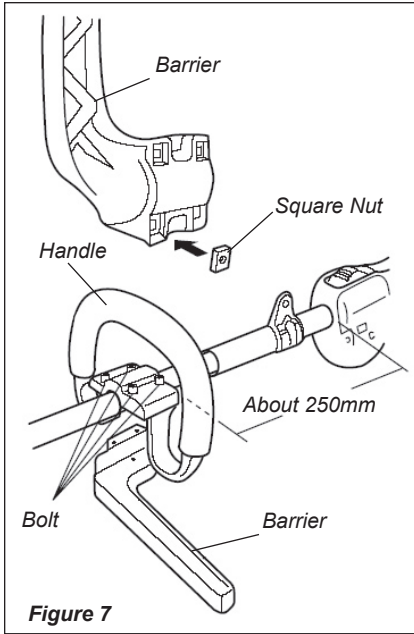


WARNING!

NEVER use this machine without sub guard when using a trimmer head.

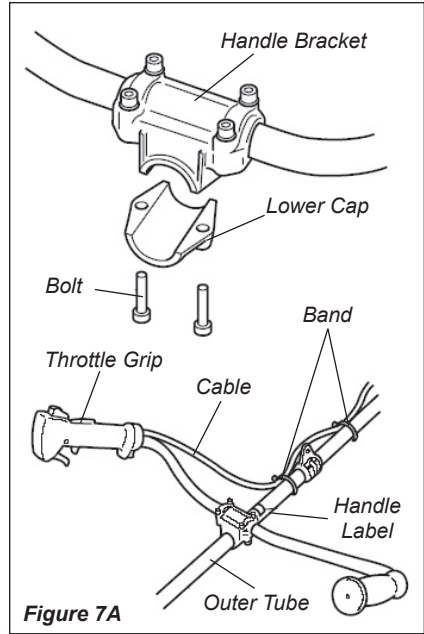
Assembly of the Handle

T2510



1. Put the 4 square nuts in the frame of barrier. See Figure 7.
2. Fit the handle and barrier over the outer pipe and tighten the 4 bolts.
3. Position the handle about 250mm ahead of the throttle housing end.
4. Secure the handle by alternately tightening the 4 bolts in a diagonal or “crisscross” fashion.

C2510



1. Loosen the 2 bolts of the lower cap and remove the lower cap.
2. Position the handle bracket on the handle label stuck to the outer tube.
3. Attach the lower cap with the 2 bolts and tighten the bolts. Make sure the handle stays as the illustration shows.
4. Secure the cable to the outer tube with the 2 bands as the illustration shows. The 2 bands are in the tool bag.

Adjustment of the Throttle

Lever Free Play

The throttle lever free play should be approximately 4-6 mm. See Figure 8. Make sure that the throttle lever operates smoothly without binding. If it becomes necessary to adjust the lever free play, follow the procedures and illustrations that follow.

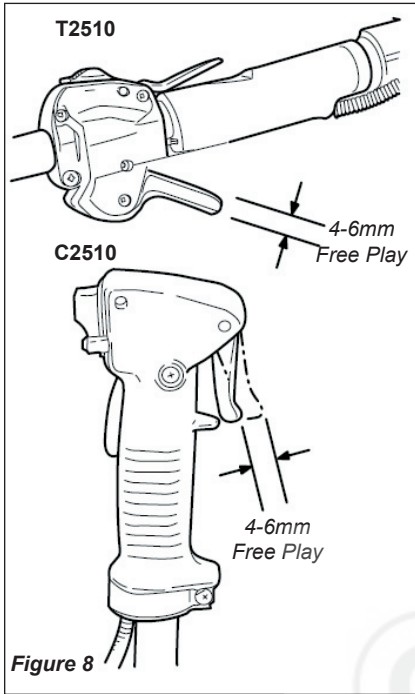


Figure 8

1. Loosen the air cleaner cover knob and remove the air cleaner cover. See Figure 9.

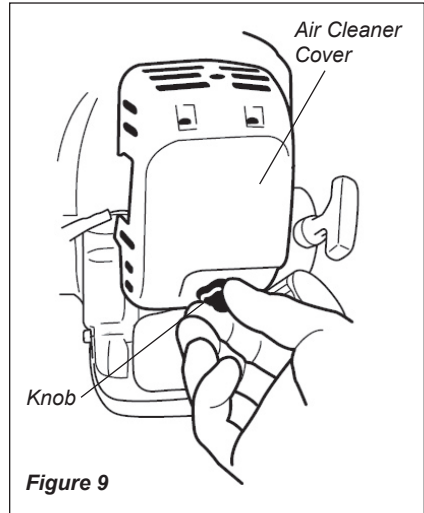


Figure 9

2. Loosen the nut on the cable adjuster. See Figure 10.

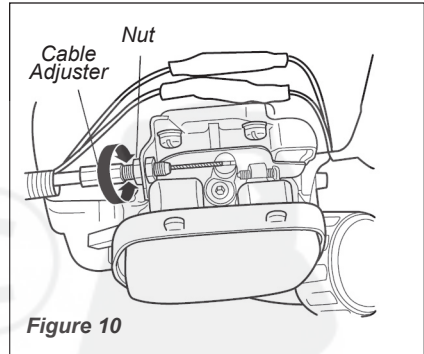
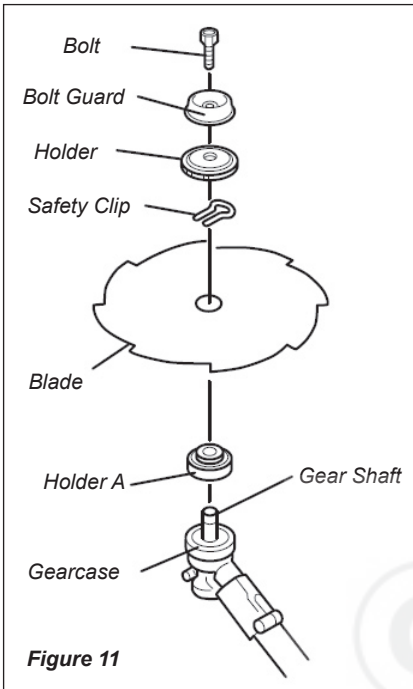


Figure 10

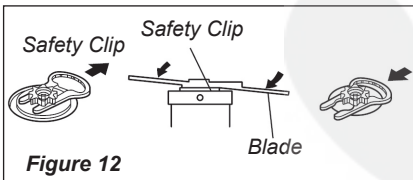
3. Turn the cable adjuster in or out as required to obtain proper free play (4-6mm). See Figure 8.
4. Tighten the nut.
5. Reinstall the air cleaner cover.

Installation of the Saw Blade

1. Make sure the switch is off and the engine is stopped.
2. Wear gloves to protect your hands.
3. Turn the unit over so that the gearshaft extending from the gearcase faces up.
4. Using the small end of the plug wrench, loosen the bolt (turn clockwise) and remove the bolt, bolt guard and holder.



5. Slide the safety clip as the illustration shows.



WARNING!

Never operate this machine without the safety clip in place.

6. Fit the blade over the safety clip and onto Holder A. Then, slide the safety clip back to the original position.



WARNING!

The blade must fit flat against the Holder A. The blade's mounting hole must be centered over the raised boss of Holder A.

7. Put the holder and bolt guard back and tighten the bolt finger tight only at this time. Make sure the holder is flat against the blade. The recess in the holder must face the blade and completely cover the safety clip.
8. Rotate Holder A until the hole in its skirt aligns with the hole in the gearcase. Insert the hex wrench through both holes (to prevent the shaft from turning).
9. Holding the hex wrench and the blade with one hand, tighten the bolt securely (turn counter-clockwise) using the small end of the plug wrench.
10. Remove the hex wrench.



WARNING!

- Before operating, make sure the blade is securely mounted. Turn the blade with your hand slightly and make sure the blade turns smoothly without wobbling.
- Make sure the direction of the arrow indicated on the blade corresponds with the arrow indicated on the safety guard.

Installation of the Trimmer Head

CAUTION!

Never use this machine without sub guard when using a trimmer head.

IMPORTANT!

The bolt, bolt guard, and safety clip are not used with a trimmer head cutting attachment. Save these parts for future blade installation.

1. Make sure the switch is turned off and the engine is stopped.
2. Turn the unit over so the gearshaft from the gearcase faces up.
3. Remove the bolt, bolt guard, holder and the safety clip from the output shaft.
4. Attach holder onto the gear shaft.

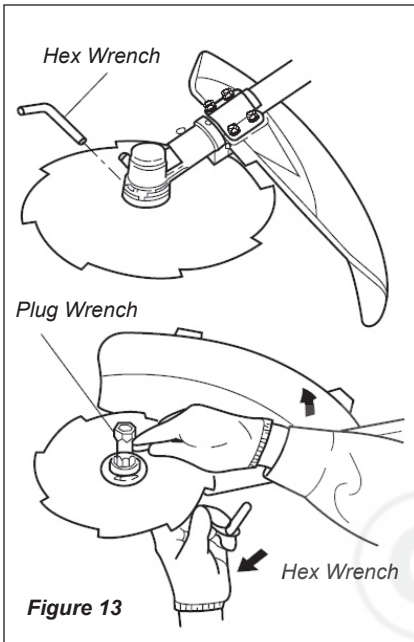


Figure 13

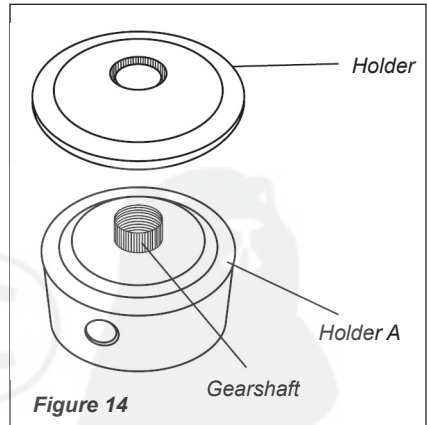
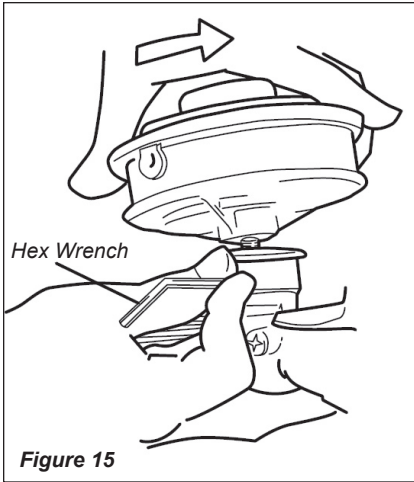


Figure 14

5. Rotate Holder A until the hole in Holder A aligns with the hole in the gearcase. Using the hex wrench, lock the gearcase as shown.



6. While holding Holder A with the hex wrench, thread the trimmer head onto the gearshaft and install securely using hand pressure. Turn counter-clockwise to install.
7. Remove the hex wrench.



HOW TO USE

Mixing Fuel Fuel Precautions

CAUTION!

- Some types of gasoline contain alcohol as an oxygenate. Oxygenated gasoline may cause increased operating temperatures. Under certain conditions, alcohol-based gasoline may also reduce the lubricating qualities of some 2-cycle mixing oil.
- Never use any type of gasoline containing more than 10% alcohol by volume! Generic oils and some outboard oils may not be intended for use in high-performance 2-cycle engines, and should never be used in your Shindaiwa engine.

IMPORTANT!

This engine is certified to operate on a 50:1 mixture consisting of unleaded gasoline and 2-cycle mixing oil only. Mix only enough fuel for your immediate needs! If fuel must be stored longer than 30 days, it should first be treated with a stabilizer such as STA-BIL™.

- Mix fuel by combining unleaded gasoline with Shindaiwa 2-cycle Mixing Oil at a ratio of 50:1 (1000cm of gasoline mixed with 20 cm of 2-cycle mixing oil).
- Use only fresh, clean, unleaded gasoline with an octane rating of 87 or higher.

Gasoline liters	2-cycle mixing oil milliliters
2.5 l.....	50 ml
5 l.....	100 ml
10 l.....	200 ml
20 l.....	400 ml

Fuel Tank Filling Procedure



WARNING!

Minimize the Risk of Fire!

- Stop the engine before refueling!
- Always allow the engine to cool before refueling!
- Wipe all spilled fuel and move the brushcutter at least 3 meters from the fueling point and source before restarting!
- Never smoke or light any fires near the brushcutter or fuel source!
- Never place any flammable material near the engine muffler!
- Never operate the engine without the muffler in good working condition.
- ALWAYS inspect the unit for fuel leaks before each use. During each refill, check that no fuel leaks from around the fuel cap and/or fuel tank. If fuel leaks are evident, stop using the unit immediately. Fuel leaks must be repaired before using the unit.

1. Place the brushcutter on a flat, level surface.
2. Clear any dirt or other debris from around the fuel filler cap.
3. Remove the fuel cap, and fill the tank with clean, fresh fuel.
4. Reinstall the fuel filler cap and tighten firmly.

Starting the Engine

IMPORTANT!

Engine ignition is controlled by a two position switch mounted on the throttle housing labeled, "I" for ON or START and "O" for OFF or STOP.

1. Slide the ON-OFF switch to the "I" position (engine ON).

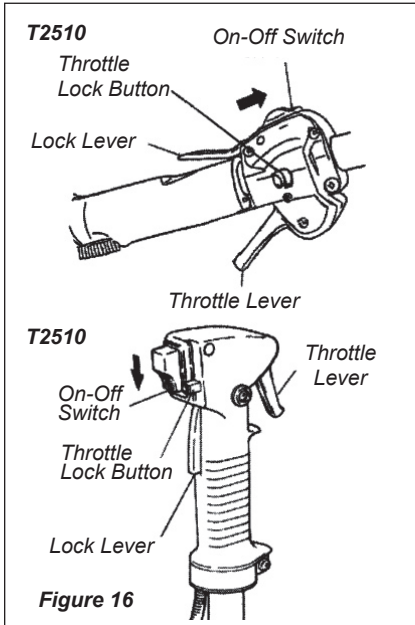


Figure 16

2. Press the primer bulb until fuel can be seen flowing in the transparent overflow pipe.

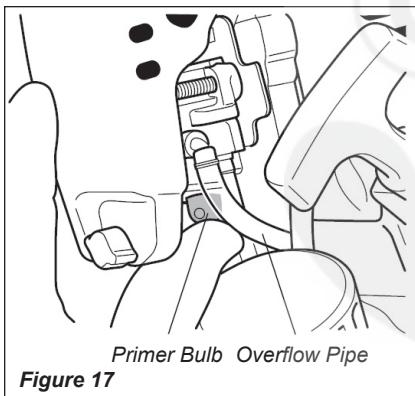


Figure 17

IMPORTANT!

The primer system only pushes fuel through the carburetor. Repeatedly pressing the primer bulb will not flood the engine with fuel.

3. Set the choke lever to the CLOSED (|/|) position if engine is cold.

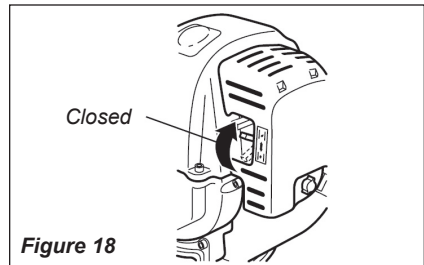


Figure 18

4. Depressing the lock lever, pull the throttle lever fully and depress the throttle lock button. While depressing the throttle lock button, release the throttle lever and the lock lever. Now the throttle stays at fast-idle (starting speed).
5. While holding the outer pipe firmly with one hand, slowly pull the recoil starter handle until resistance is felt, then pull quickly to start the engine.

CAUTION!

Do not pull the recoil starter to the end of the rope travel. Pulling the recoil starter to the end of the rope travel can damage the starter.

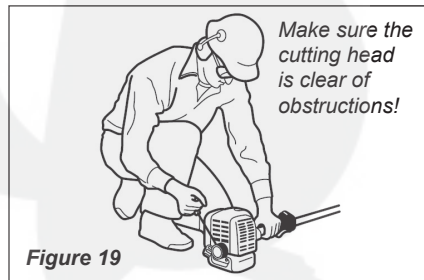


Figure 19



WARNING!

The cutting attachment may rotate when the engine is started!



WARNING!

Never start the engine from the operating position.

- When the engine first fires, slowly move the choke lever to the “OPEN (| ↑ |)” position. See Figure 20. (If the engine stops after the initial start, close the choke and restart.)

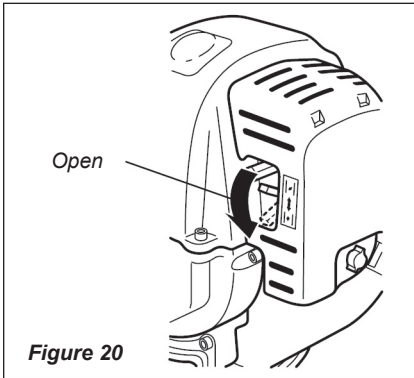


Figure 20

- When the engine starts and is running, set the engine to idle by tapping the throttle lever to release the throttle lock.

IMPORTANT!

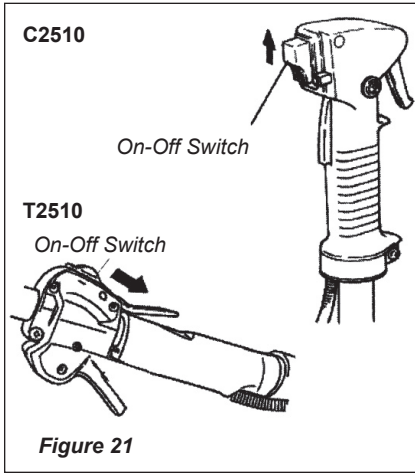
If the engine fails to start after several attempts with the choke in the closed position, the engine may be flooded with fuel. If flooding is suspected, move the choke lever to the open position and repeatedly pull the recoil starter to remove excess fuel and start the engine. If the engine still fails to start, refer to the troubleshooting section of this manual.

When the Engine Starts...

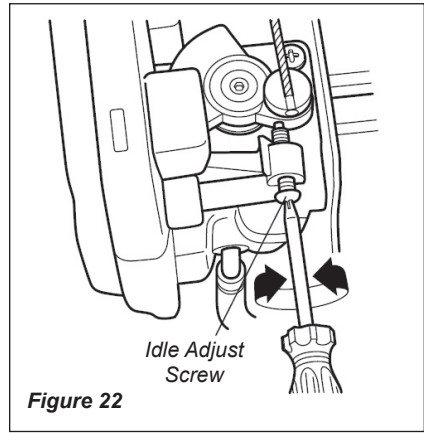
- After the engine starts, allow the engine to warm up at idle 2 or 3 minutes before operating the unit.
- After the engine is warm, pick up the unit and clip on the strap if so equipped. (See page 19 “Shoulder Strap”).
- Advancing the throttle makes the cutting attachment turn faster; releasing the throttle permits the attachment to stop turning. If the cutting attachment continues to rotate when the engine returns to idle, carburetor idle speed should be adjusted (see page 18 “Adjusting the Engine Idle”).

Stopping the Engine

Idle the engine briefly before stopping (about 2 minutes), then slide the ON-OFF switch to the 'O' (Engine OFF) position. See Figure 21.



1. Place the trimmer on the ground, then start the engine, and then allow it to idle 2-3 minutes until warm.
2. If the cutting attachment rotates when the engine is at idle, reduce the idle speed by turning the idle adjust screw counter-clockwise. See Figure 22.



Adjusting the Engine Idle



WARNING!

The cutting attachment must NEVER rotate at engine idle! If the idle speed cannot be adjusted by the procedure described here, return the trimmer to your Shindaiwa dealer for inspection.

The engine must return to idle speed whenever the throttle lever is released. Idle speed is adjustable, and must be set low enough to permit the engine clutch to disengage the cutting attachment.

3. If a tachometer is available, the engine idle speed should be final adjusted to 3,000 min⁻¹.
4. Carburetor fuel mixture adjustments are preset at factory and cannot be serviced in the field.

Shoulder Strap

A shoulder strap accessory must be required for use with T2510 or C2510 Multipurpose Engine.

NOTE:

A shoulder strap can increase operator comfort during extended periods of operation. See Figure 23.

A Shoulder strap must used with the T2510, C2510 and various tools being used.



Figure 23

Emergency Release

In case of emergency, firmly pull the white tab at the hook. The machine will be released from the strap.

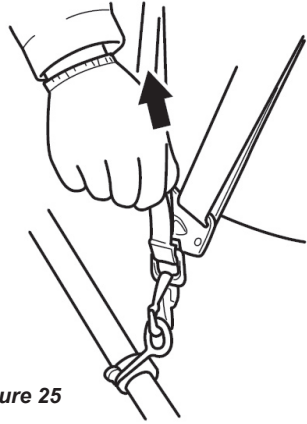


Figure 25

To wear the strap

1. Hook the strap hook to the hanger on the outer pipe.
2. Hook the strap so that hook stays at your right hand side.
3. Adjust the length of the strap so that you can hold and operate the machine comfortably.

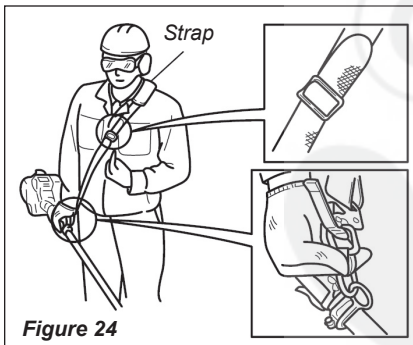


Figure 24

GENERAL SAFETY INSTRUCTIONS



WARNING!

- NEVER operate the unit with the Safety Guard and/or other protection devices removed!
- ALWAYS make sure the cutting attachment is properly installed and firmly tightened before operation.
- NEVER use a cracked or warped cutting attachment.
- ALWAYS make sure the cutting attachment fits properly into the appropriate cutter holder. If a properly installed attachment vibrates, replace the attachment with a new one and re-check.
- ALWAYS stop the engine immediately and check for damage if you strike a foreign object or if the cutting attachment becomes entangled.
- NEVER cut with dull blades. Use a blade that is sharp and in good condition.
- NEVER operate a machine with loose, worn, damaged, or missing fasteners or cutting attachment holders. Improper maintenance, use of nonconforming replacement components, or the removal of safety devices could result in serious injury.
- When transporting, make sure the engine is not running and the blade is covered with the blade cover.
- NEVER run the engine indoors! Make sure there is always good ventilation. Fumes from engine exhaust can cause serious injury or death.
- NEVER allow the engine to run at high speeds without a load. Over-revving without a load could damage the engine.



The Properly Equipped Operator

*Wear hearing protection devices, such as ear-muffs.
Wear a head protection device, such as a helmet.
Secure hair so it is above shoulder level.*

Wear close-fitting clothing to protect legs and arms. Do not wear clothing or jewelry that could get caught in machinery or underbrush.

Always wear eye protection such as goggles or safety glasses.

Always wear a strap.

Wear non-slip gloves. Always operate with both hands firmly gripping the machine.

When operating with a blade, make sure the handle is positioned to provide you with maximum protection from contacting the blade.

Keep a proper footing and do not overreach — maintain your balance at all times during operation.

Keep away from the rotating trimming line or blade at all times, and never lift a moving attachment above waist-high.

Wear long trousers. NEVER wear shorts!

Always make sure the appropriate safety guard is correctly installed.

*Wear non-skid boots. Do not wear open-toed shoes or sandals.
Never work barefooted!*

Figure 26

Work Safely

Trimmers and brushcutters run at very high speeds and can do serious damage or injury if they are misused or abused. Never allow a person without training or instruction to operate your machine.



WARNING!

Never make unauthorized attachment installations.

Stay Alert

You must be physically and mentally fit to operate this machine safely.



WARNING!

Never operate power equipment of any kind if you are tired or if you are under the influence of alcohol, drugs, or any other substance that could affect your ability or judgment.



WARNING! Minimize the Risk of Fire!

- NEVER smoke or light fires near the trimmer or brushcutter.
- ALWAYS stop the engine and let it cool before refueling. Avoid overfilling and wipe off any fuel that may have spilled.
- ALWAYS move the unit to a place well away from a fuel storage area or other readily flammable materials before starting the engine.
- NEVER place flammable material close to the engine muffler.



WARNING! Use Good Judgment

- ALWAYS wear eye protection to shield against thrown objects.
- NEVER run the engine when transporting the machine.
- NEVER run the engine indoors— make sure there is always good ventilation. Fumes from engine exhaust can cause serious injury or death.
- ALWAYS clear your work area of trash or hidden debris that could be thrown back at you or toward a bystander.
- ALWAYS use the proper cutting tool for the job.
- ALWAYS stop the machine immediately if it suddenly begins to vibrate or shake. Inspect for broken, missing or improperly installed parts or attachments.
- NEVER extend trimming line beyond the length specified for your unit.
- ALWAYS keep the unit as clean as practical. Keep it free of loose vegetation, mud, etc.
- ALWAYS hold the machine firmly with both hands when cutting or trimming, and maintain control at all times.
- ALWAYS keep the handles clean.
- ALWAYS disconnect the spark plug wire before performing any maintenance work.
- ALWAYS, if a saw blade should bind fast in a cut, shut off the engine immediately. Push the branch or tree to ease the bind and free the blade.

Be Aware of the Working Environment

Avoid long-term operation in very hot or very cold weather.

Make sure bystanders or observers outside the 15 meters "danger zone" wear eye protection.



Reduce the risk of bystanders being struck by flying debris. Make sure no one is within 15 meters - that's about 16 paces - of an operating attachment.

Be extremely careful of slippery terrain, especially during rainy weather.

Always make sure the appropriate safety guard is correctly installed.

If contact is made with a hard object, stop the engine and inspect the cutting attachment for damage.

Beware of a coasting blade when brushcutting. A coasting blade can injure while it continues to spin after the throttle trigger is released or after the engine is stopped.

Be constantly alert for objects and debris that could be thrown either from the rotating cutting attachment or bounced from a hard surface.

When operating in rocky terrain or near electric wires or fences, use extreme caution to avoid contacting such items with the cutting attachment.

Figure 27

Using a Brushcutter Equipped with a Blade

A blade-equipped brushcutter is a professional tool that demands the utmost attention. Observing the following important guidelines will help ensure safe and effective performance from your brushcutter.



WARNING!

- Your brushcutter is equipped with a barrier-type front handle, shoulder strap, and a safety guard. These items must be installed and adjusted according to the instructions in this manual before using the unit with a blade or a trimmer head cutting attachment.
- A unit equipped with a blade can throw or get entangled in loose objects. Before operating, inspect the area thoroughly. Remove all objects, such as rocks, broken glass, nails, wire, or string. Note the location of large rocks, stumps, and other fixed objects to avoid hitting them.
- Make sure children, bystanders, and pets are at least outside a 15 meter radius. If a child, person, or pet comes into the 15 meter radius, stop the engine immediately.
- Beware of the dangers of blade thrust! Blade thrust can occur when the top or right cutting zone of the blade strikes a fixed object. Blade thrust can be violent enough to cause the unit and/or operator to be propelled in any direction, and possibly lose control of the unit. A violent blade thrust poses an extreme risk to anyone and anything nearby.

- Do not overreach! Do not raise the cutting attachment above waist level. Assume a safe and comfortable position before starting, and maintain your balance at all times.
- STOP the machine immediately if it suddenly begins to vibrate or shake. Inspect it for loose, broken, missing, or improperly installed parts or attachments.

Barrier Type Front Handle (T2510)

The barrier type front handle helps prevent the operator from moving forward or the cutting attachment from moving rearward to prevent inadvertent bodily contact with the blade. The front handle must be installed in accordance with the instruction provided in this manual. Always keep the front handle securely in place on the unit!

Precautions Relating to Work



WARNING!

- When cutting small trees with a blade, feed the blade slowly—never strike or “slam” the spinning blade against the tree trunk.
 - DO NOT use 2-tooth (lawnmower type) cutting blades. Use only Shindaiwa approved blades with your Shindaiwa brushcutter. Using a blade not authorized by Shindaiwa may result in serious injury.
- Avoid blade thrust by keeping the blade in view during operation. Watch your cut at all times. Cut ONLY small trees and/or branches with the left side of the blade between the 8 o'clock and 10 o'clock positions as shown in Figure 28. Avoid cutting with any other part of the blade. When cutting brush, sweep the blade from right to left, always keeping the blade well in front. It is recommended that the blade be tilted down slightly to help keep debris from accumulating on the edge of the blade.

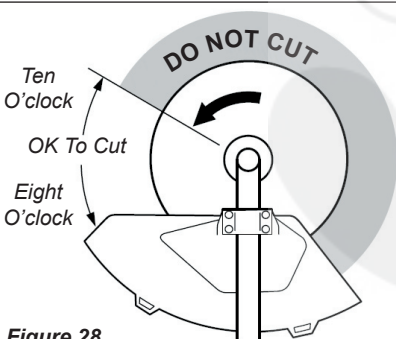


Figure 28

- Blade thrust will occur without warning if the blade snags, stalls, or binds in the cut. A dull blade is more likely to thrust than a sharp one because a sharp blade tends to bite into the cut while a dull blade tends to bounce away.
- When using a blade, stay away from fences and buildings. Watch for stakes, wires, and other objects that can cause kick back or that can wrap around the blade.
- DO NOT overreach. Move to a comfortable position before starting a cut, and maintain your balance at all times.
- Keep the engine at maximum throttle during the cut. Apply just enough feed pressure to maintain engine speed without wasting fuel or causing unnecessary wear. Avoid extended operation at low speeds to prevent clutch slippage. Excessive clutch slippage will cause premature wear of clutch components.
- If the blade strikes a solid object or if abnormal vibration develops, stop cutting immediately, stop the engine, and inspect the blade. If the blade is bent, warped, cracked, broken or damaged in any way, replace it with a sharp blade.
- Small trees usually can be felled with a single cut. Use the 8 o'clock-to-10 o'clock cutting zones of the blade to avoid blade thrust.
- If the blade snags or binds in a cut, STOP the engine before proceeding to clear the blade from the cut.

Engine Operating Speeds

Operate the machine at full throttle while cutting. Best results are obtained by releasing the throttle when swinging back after completing a cut.

- To prevent possible engine damage, do not allow the brushcutter to run at high speeds without a load.
- Avoid operating the engine below the recommended operational speed range. Doing so can lead to rapid clutch wear. In addition, slow-speed operation may cause grass and debris to wrap around the cutting attachment.

Trimming/Mowing Grass Using a Trimmer Head

CAUTION!

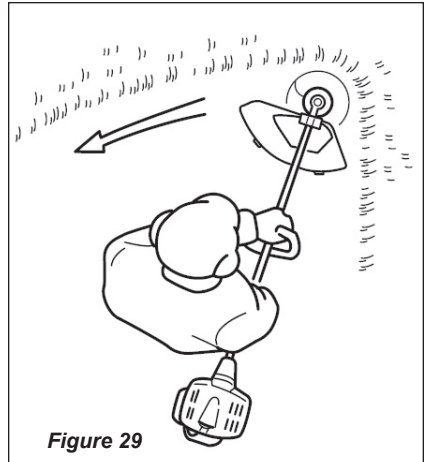
Do not push the rotating trimmer line into trees, wire fences or any material that could entangle or break line.

Your Shindaiwa T2510 and C2510 brushcutter can be equipped with the recommended Shindaiwa trimmer head.

CAUTION!

Operation at low speed may cause premature clutch failure.

For best cutting performance and extending trimmer line life, follow these recommended procedures when using a string-type cutting head. See Figure 29.



- Cut from right to left, with the trimmer head angled slightly towards the cut.
- Use full throttle when cutting, then release the throttle momentarily before beginning the next cut.
- Cut only with the tip of the trimmer line.

HOW TO MAINTAIN AND STORE

Periodic Maintenance



WARNING!

Before performing any service and maintenance or repair work on the machine, make sure that the stop switch is in the STOP position and the engine and the cutting attachment are completely stopped. Always disconnect the spark plug lead.

General Maintenance

IMPORTANT!

Maintenance, replacement or repair of emission control devices and systems may be performed by any repair establishment or individual; however, warranty repairs must be performed by a dealer or service center authorized by Shindaiwa Kogyo Co., Ltd. The use of parts that are not equivalent in performance and durability to authorized parts may impair the effectiveness of the emission Control system and may have a bearing on the outcome of a warranty claim.



WARNING!

- Before performing any maintenance, repair or cleaning work on the unit, make sure the engine and cutting attachment are completely stopped. Disconnect the spark plug wire before performing service or maintenance work.
- Non-standard parts may not operate properly with your unit and may cause damage and lead to personal injury.

NOTE:

Using non-standard replacement parts could invalidate your Shindaiwa warranty.

Muffler

This unit must never be operated with a faulty or missing muffler. Make sure the muffler is well secured and in good condition. A worn or damaged muffler is a fire hazard and may also cause hearing loss.

Spark Plug

Keep the spark plug and wire connections tight and clean.

Fasteners

Make sure nuts, bolts, and screws (except carburetor adjusting screws) are tight.

Blades



WARNING!

- Never repair a damaged blade by welding, straightening, or by modifying its shape. An altered blade may break during operation, resulting in serious personal injury.
- DO NOT use 2-tooth (lawnmower type) cutting blades. Use only blades approved by Shindaiwa for use with your brushcutter.
- Operating the machine with a blade or attachment not authorized for use for this unit can result in serious injury to the operator and/or bystanders.
- Keep blades sharp and check blade condition frequently. If cutting performance changes suddenly.



WARNING!

Stop the engine and check the blade for cracks or other damage. Replace the damaged blade immediately!

Daily Maintenance

Prior to each work day, perform the following:

- Remove dirt or debris from the engine, check the cooling fins and air cleaner for clogging and clean them as necessary.
- Carefully remove any accumulation of dirt or debris from the muffler or the fuel tank. Dirt build-up in these areas could cause engine overheating, induce premature wear, or create a fire hazard.
- Check for loose or missing screws or components. Make sure the cutting attachment is securely fastened.
- Check the entire unit for leaking fuel or grease.

10-Hour Maintenance

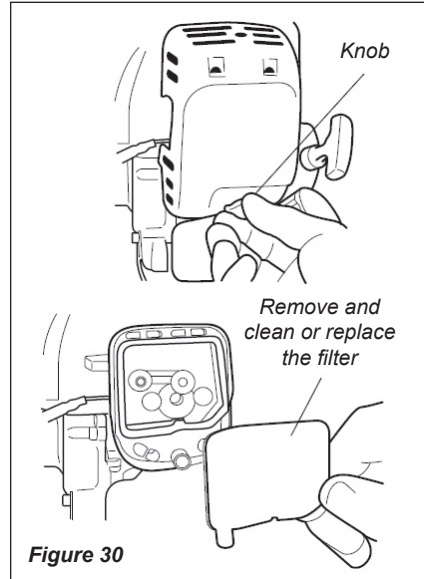
NOTE:

If the machine is used in dusty or dirty conditions, perform the periodic maintenance more frequently.

Remove the air cleaner filter. See figure 30. Clean or replace as necessary. To clean filter wash it thoroughly in soap and water. Let it dry before reinstalling the filter.

CAUTION!

Do not operate the unit if the air cleaner or filter is damaged, or if the filter is wet or water soaked.



10/15-Hour Maintenance

CAUTION!

Before removing the spark plug, clean the area around the plug to prevent dirt and debris from getting into the engine's internal parts.

Remove and clean the spark plug. Adjust the spark plug electrode gap to 0.6-0.7 mm. If the spark plug must be replaced, use only an NGK CMR5H or equivalent resistor type spark plug of the correct heat range. See Figure 31.

NOTE:

The NGK CMR5H also meets the requirements for electro magnetic compliance (EMC).

Clean the spark plug and check the gap at the electrode.

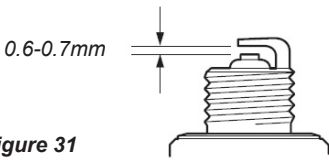
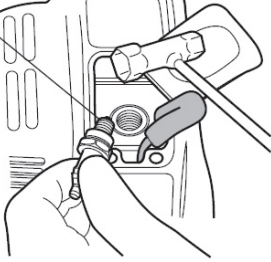


Figure 31

50-Hour Maintenance

NOTE:

If the machine is used in dusty or dirty conditions, perform the periodic maintenance more frequently.

- Remove and clean the cylinder cover and clean grass and dirt from the cylinder fins.
- Remove the cutting attachment, cutting attachment holder and gear shaft collar. Remove the filler plug from the side of the gearcase and press new grease into the gearcase until grease is pushed out. Use only lithium-base grease such as Shindaiwa Gearcase Lubricant or equivalent. See Figure 32.

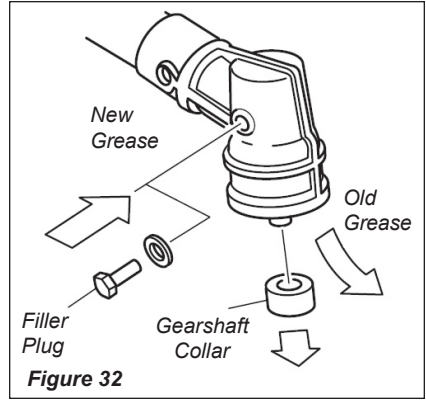


Figure 32

- Use a hooked wire to extract the fuel filter from inside the fuel tank. See figure 33.

CAUTION!

Make sure you do not pierce the fuel line with the end of the hooked wire. The line is delicate and can be damaged easily.

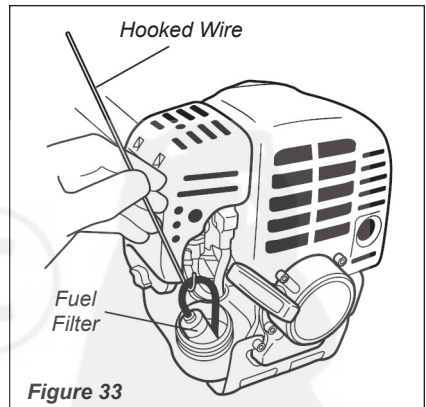


Figure 33

Remove and replace the fuel filter. Before reinstalling the new fuel filter, inspect the condition of all the fuel system components. If damage, splitting or deterioration is noted, the unit should be removed from service until it can be inspected or repaired by a Shindaiwa-trained service technician.

Spark Arrester Screen Maintenance

If the engine becomes sluggish and low on power, check and clean the spark arrester screen.



WARNING!

Never operate the unit with a damage or missing muffler or spark arrester! Operating with a missing or damaged spark arrester is a fire hazard and could also damage your hearing.

1. With a 3 mm hex wrench remove the 4 engine cover screws and the engine cover. See Figure 34.
2. With a 4 mm hex wrench remove the 3 muffler bolts and the muffler. See Figure 34.
3. With a small flat bladed screwdriver remove the 2 screws holding the spark arrester screen and cover to the muffler. See Figure 34.
4. Remove the screen and clean it with a stiff bristle brush.
5. Inspect the cylinder exhaust port for any carbon buildup.

IMPORTANT!

If you note excessive carbon buildup, consult with an authorized Shindaiwa servicing dealer.

6. Reassemble the spark arrester, muffler and engine cover in the reverse order of disassembly.

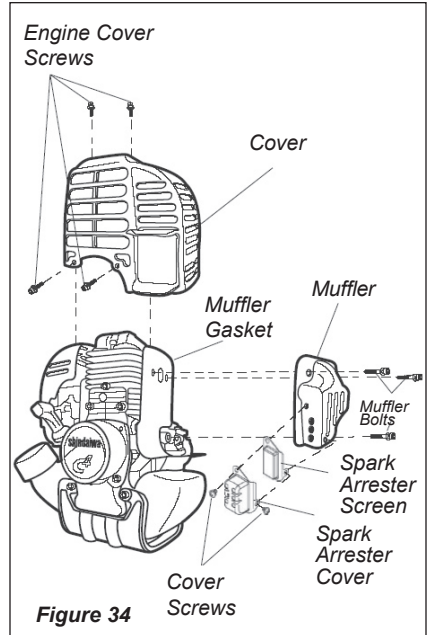


Figure 34

Storage

Short Term Storage (less than 30 days)

- Clean the air filter.
- Clean cylinder fins, flywheel fins, and muffler surfaces.
- Clean cooling air intake grill.
- Clean debris from gearcase and outer tube exterior surfaces.
- Lubricate gearcase as outlined in page 29 of this manual.
- Drain fuel tank.
- Cover engine and store unit in a clean, dry place.

Long Term Storage (more than 30 days)

CAUTION!

Never store this unit for more than 30 days with fuel remaining in the tank, fuel lines or carburetor! Storing with fuel remaining in the fuel tank, fuel tube and carburetor may cause gum deposits in the fuel system.

IMPORTANT!

All units to be stored, for 30 days or longer, with fuel remaining in the fuel tank, and carburetor and fuel system should be conditioned with a fuel stabilizer such as STA-BIL™.

Whenever the machine is going to be stored for 30 days and longer, prepare the unit for storage as follows:

- Drain all fuel from fuel tank and allow unit to run until all the fuel in the carburetor is spent.
- Remove the spark plug and pour about 7 grams of oil into the cylinder through the spark plug hole. Crank the engine over slowly two or three times so oil will coat the cylinder wall and piston rings.
- Reinstall the spark plug.
- Repair damaged or faulty components as necessary.
- Service air cleaner filter as outlined in page 28.
- Clean all external parts thoroughly and apply a light coating of oil to all metal surfaces.
- Cover the engine and store the brushcutter in a clean, dry place.
- Cover the blade with the blade cover.



Blade and Trimmer Head

Recommended Blades



WARNING

Non-standard parts may not operate properly with your unit and may cause damage and lead to personal injury.

Make sure to use the following recommended Shindaiwa blades with this machine.

Part Number: 60903-98310
8-Tooth Blade
Inner Bore: 25.4 mm
Diameter: 255.0 mm
Thickness: 2.0 mm

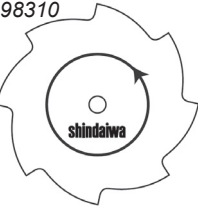


Figure 35

Part Number: 60903-98320
4-Tooth Blade
Inner Bore: 25.4 mm
Diameter: 255.0 mm
Thickness: 2.0 mm

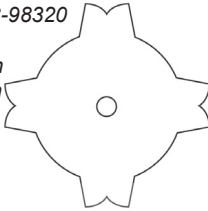


Figure 36

Recommended Trimmer Head

Part Number: 67000-65010
Type: Automatic
Cutting Line: Nylon
Line Diameter: 2.0 mm

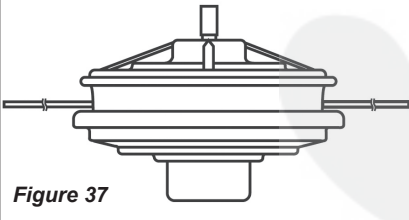


Figure 37

Blade Sharpening

With a file or a grinder, file a blade as follows.



WARNING!

Sharpen only the cutting teeth of a blade. DO NOT alter the contour of the blade in any way. In order to keep the blade in balance, all cutting edges must be sharpened equally. DO NOT file the tips of the teeth too sharp.

IMPORTANT!

The sharpening angle should be approximately 45° . Do not file the tips of the blade too sharp. Leave 0.2-0.5 mm unsharpened.

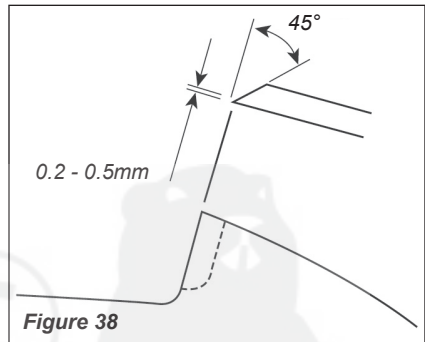


Figure 38

The bottom of each tooth must remain unsharpened.

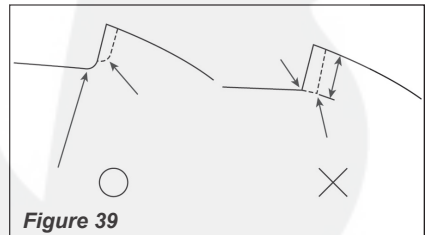


Figure 39

Troubleshooting Guide

ENGINE DOES NOT START

What To Check	Possible Cause	Remedy
Does the engine crank? YES	NO Faulty recoil starter. Fluid in the crankcase. Internal damage.	Consult with an authorized servicing dealer.
Good compression? YES	NO Loose spark plug. Excess wear on cylinder, piston, rings. Valves not seating.	Tighten and re-test. Consult with an authorized servicing dealer.
Does the tank contain fresh fuel of the proper grade? YES	NO Fuel incorrect, stale, or contaminated; mixture incorrect.	Refill with fresh, clean unleaded gasoline with a pump octane of 87 or higher mixed with a 2-cycle air cooled mixing oil that meets or exceeds ISO-L-EGD and/or JASCO FC classified oils at 50:1 gasoline/oil ratio.
Is fuel visible and moving in the return line when priming? YES	NO Check for clogged fuel filter and/or vent. Priming pump not functioning properly.	Clean as required; restart. Consult with an authorized servicing dealer.
Is there spark at the spark plug wire terminal? YES	NO The ignition switch is in "O" (OFF) position. Shorted ignition ground. Faulty ignition unit.	Move switch to "I" (ON) position and restart. Consult with an authorized servicing dealer.
Check the spark plug. NO	If the plug is wet, excess fuel may be in the cylinder. The plug is fouled or improperly gapped. The plug is damaged internally or of the wrong size.	Crank the engine with the plug removed, reinstall the plug, and re-start. Clean and regap the plug to 0.6 - 0.7mm. Restart. Replace the plug with an NGK CMR5H or equivalent resistor type spark plug of the correct heat range. Set the spark plug electrode gap to 0.6 - 0.7mm.

Troubleshooting Guide (continued)

LOW POWER OUTPUT

What To Check	Possible Cause	Remedy
<p>Is the engine overheating?</p>	Operator is overworking the machine.	Shorten trimmer line. Cut at a slower rate.
	Carburetor mixture is too lean.	Consult with an authorized servicing dealer.
	Improper fuel ratio.	Refill with fresh, clean unleaded gasoline with a pump octane of 87 or higher mixed with a 2-cycle air cooled mixing oil that meets or exceeds ISO-L-EGD and/or JASCO FC classified oils at 50:1 gasoline/oil ratio.
	Fan, fan cover, cylinder fins dirty or damaged.	Clean, repair or replace as necessary.
	Carbon deposits on the piston or in the muffler.	Consult with an authorized servicing dealer.
<p>Engine is rough at all speeds. May also have black smoke an/or unburned fuel at the exhaust.</p>	Clogged air cleaner element.	Service the air cleaner.
	Loose or damaged spark plug.	Tighten or replace.
	Air leakage or clogged fuel line.	Repair or replace filter and/or fuel line.
	Water in the fuel.	Replace the fuel.
	Piston seizure.	Consult with an authorized servicing dealer.
	Faulty carburetor and/or diaphragm.	
	Valve clearance set incorrectly.	
<p>Engine is knocking.</p>	Overheating condition.	See above.
	Improper fuel.	Check fuel octane rating; check for presence of alcohol in the fuel (pg. 15). Refuel as necessary.
	Carbon deposits in the combustion chamber.	Consult with an authorized servicing dealer.
	Valve clearance set incorrectly.	

Troubleshooting Guide (continued)

ADDITIONAL PROBLEMS

Symptom	Possible Cause	Remedy
Poor acceleration.	Clogged air filter.	Clean the air filter.
	Clogged fuel filter.	Replace the fuel filter.
	Lean fuel/air mixture.	Consult with an authorized servicing dealer.
	Idle speed set too low.	Adjust: 3,000 min ⁻¹ RPM.
Engine stops abruptly.	Switch turned off.	Reset the switch and re-start.
	Fuel tank empty.	Refuel.
	Clogged fuel filter.	Replace the fuel filter.
	Water in the fuel.	Drain; replace with clean fuel.
	Shorted spark plug or loose terminal.	Clean or replace spark plug, tighten the terminal.
	Ignition failure.	Replace the ignition unit.
Piston seizure.	Consult with an authorized servicing dealer.	
Engine difficult to shut off.	Ground (stop) wire is disconnected, or switch is defective.	Test and replace as required.
	Overheating due to incorrect spark plug.	Idle engine until cool. Clean and regap the plug at 0.6-0.7mm. Correct plug: NGK CMR5H or equivalent resistor type spark plug of the correct heat range.
	Overheated engine.	Idle engine until cool.
Top of engine is getting dirty and oily.	Valve cover is leaking.	Consult with an authorized servicing dealer.
Cutting attachment rotates at engine idle..	Engine idle too high.	Set idle: 3,000 min ⁻¹ RPM.
	Broken clutch spring or worn clutch spring boss.	Replace spring/shoes as required, check idle speed.
	Loose attachment holder.	Inspect and retighten holders securely.
Engine with not idle down.	Engine Idle set to high.	Set idle: 3,000 min ⁻¹ RPM.
	Engine has an air leak.	Consult with an authorized servicing dealer.
Excessive vibration.	Warped or damaged cutting attachment.	Inspect and replace attachment as required.
	Loose gearcase.	Tighten gearcase securely.
	Bent main shaft/worn or damaged bushings.	Inspect and replace as necessary.
	Trimmer line not wound properly on spool.	Rewind trimmer line.
Cutting attachment will not rotate.	Shaft not installed in powerhead or gearcase.	Inspect and reinstall as required.
	Broken shaft.	Consult with an authorized servicing dealer.
	Damaged gearcase.	

Declaration of Conformity (English)

DECLARATION OF CONFORMITY

We hereby declare the *Shindaiwa Engine Brushcutter, Model T2510 (T2510/EC1, C2510/EC1)*

meets the following respective requirements.

*Council Directives:
89/336/EEC as amended
98/37/EC as amended
2000/14/EC as amended
2004/26/EC as amended*

*Standard taken:
EN 292 parts 1&2
ISO 11806
CISPR 12*

Measured sound power level: 110dB(A)

Guaranteed sound power level: 111dB (A)

*Technical documentation is kept by:
K. Maeda DIV. Manager
Engineering Research and Development DIV.*

Shindaiwa Kogyo Co., Ltd.

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24 November, 2004

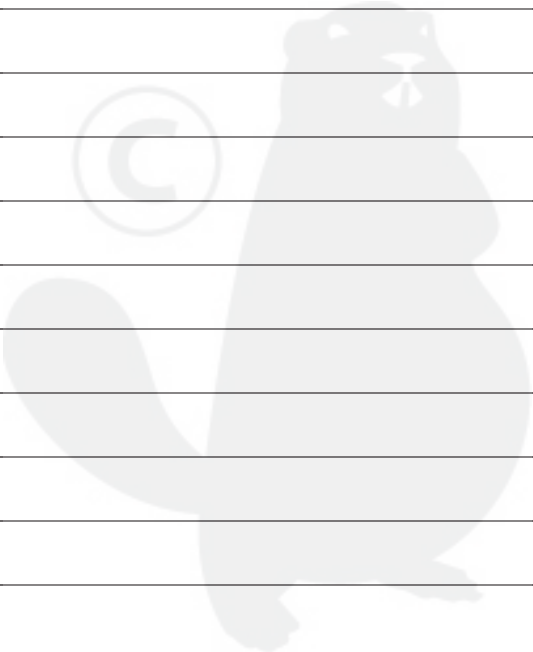
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Notes





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