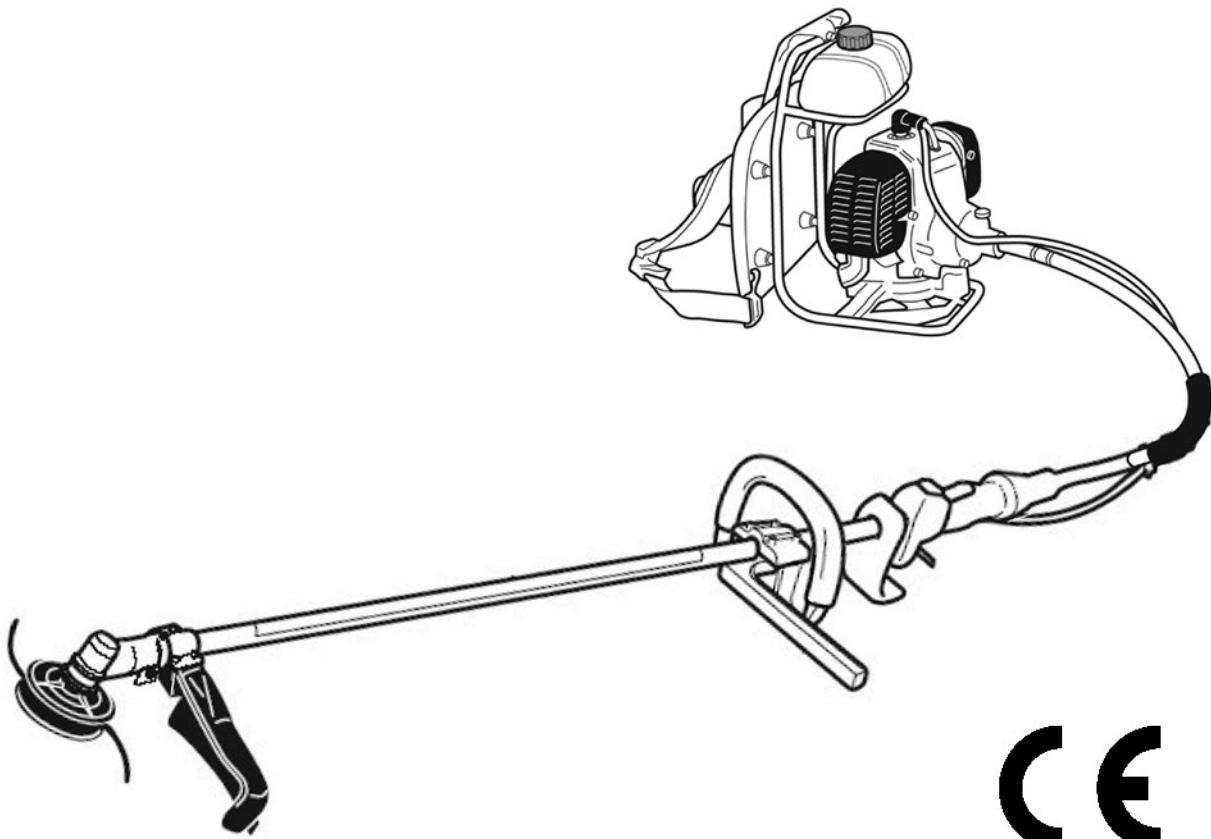


**SHINDAIWA OWNER'S/OPERATOR'S MANUAL**

# **BP45 BRUSHCUTTER**



**WARNING!**

- Read this manual and familiarize yourself with its contents.
- This machine is designed for cutting grass, weed, 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 available at all times so that you can reference it whenever you have a question about the use of this unit.

# **shindaiwa**

Part Number 62106-94310 Rev. 3/05

## Introduction

The Shindaiwa BP45 Brushcutter has been designed and built to deliver superior performance and reliability without compromise to quality, comfort, safety or durability.

Shindaiwa's high-performance engines represent the leading edge of 2-cycle engine technology, delivering exceptionally high power with 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 owner's/operator's manual describes units 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 Inc. reserves the right to make changes to products without prior notice, and without obligation to make alterations to units previously manufactured.

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## Attention Statements

Throughout this manual are special attention statements.



### WARNING!

A statement preceded by the triangular attention symbol and the word "WARNING" contains information that should be acted upon to prevent serious bodily injury.

### CAUTION!

A statement preceded by the word "CAUTION" contains information that should be acted upon to prevent mechanical damage.

### IMPORTANT!

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

### NOTE:

A statement preceded by the word "NOTE" contains information that is handy to know and may make your job easier.

### IMPORTANT!

The operational procedures described in this manual are intended to help you get the most from your unit as well as 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 Shindaiwa power tool, or if you do not understand something in this manual, your Shindaiwa dealer will be glad to assist you. You may also contact Shindaiwa, Inc. at the address printed on the back of this manual.

## Warning Labels

Warning labels placed on this unit mean the following:



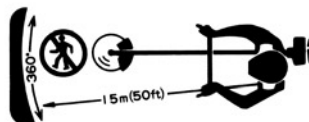
Read and follow this operators manual. Failure to do so could result in serious injury.



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



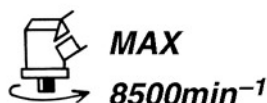
Wear non-slip gloves, long trousers and non-skid boots during the operation of this machine.



Make sure no one is within 15 meters of an operating machine.



Beware of thrown objects.



The maximum speed of the cutting attachment shaft in min<sup>-1</sup>.



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

# General Safety Instructions

---

## Work Safely

Trimmers and brushcutters operate 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 this unit!*



### **WARNING!**

Never make unauthorized attachment installations.



### **WARNING!**

#### **Use Good Judgment**

**NEVER** run the engine when transporting the unit.

**NEVER** run the engine indoors! Make sure there is always good ventilation. Fumes from engine exhaust can cause serious injury or death.

**ALWAYS** use the proper cutting tool for the job.

**ALWAYS** stop the unit 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 unit 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.

## Stay Alert

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



### **WARNING!**

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

## The Properly Equipped Operator

Wear hearing protection devices and a broad-brimmed hat or helmet. A helmet is required when using a blade-equipped brushcutter to clear small trees.

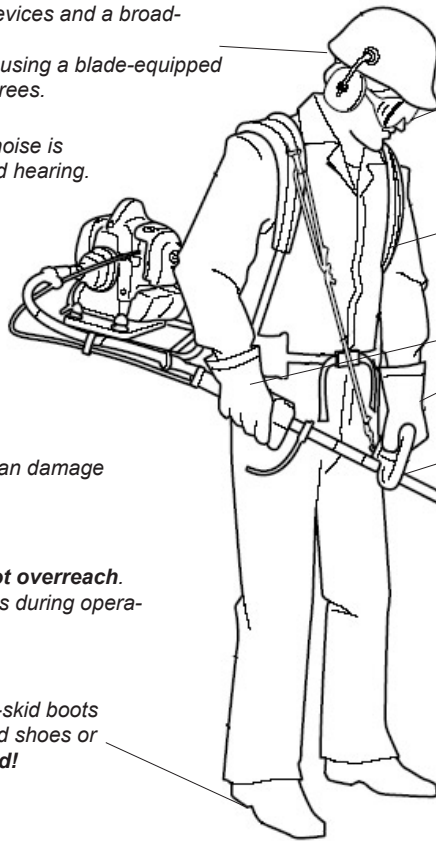
Prolonged exposure to excessive noise is fatiguing and could lead to impaired hearing.

Wear close-fitting clothing to protect legs and arms. Gloves offer added protection and are strongly recommended. Do not wear clothing or jewelry that could get caught in machinery or underbrush. Secure long hair so that it is above shoulder level. **NEVER** wear shorts!

Long-term exposure to vibration can damage your hands.

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

Wear appropriate footwear (non-skid boots or shoes): do not wear open-toed shoes or sandals. **Never work barefooted!**



**Always** wear eye protection such as goggles or safety glasses to shield against thrown objects.

**Always** wear a harness when operating the unit. It adds comfort and helps ensure safety by limiting movement fore and aft. When the harness is adjusted properly, the unit should balance with the cutting attachment parallel to the ground.

**Always** operate with both hands firmly gripping the unit.

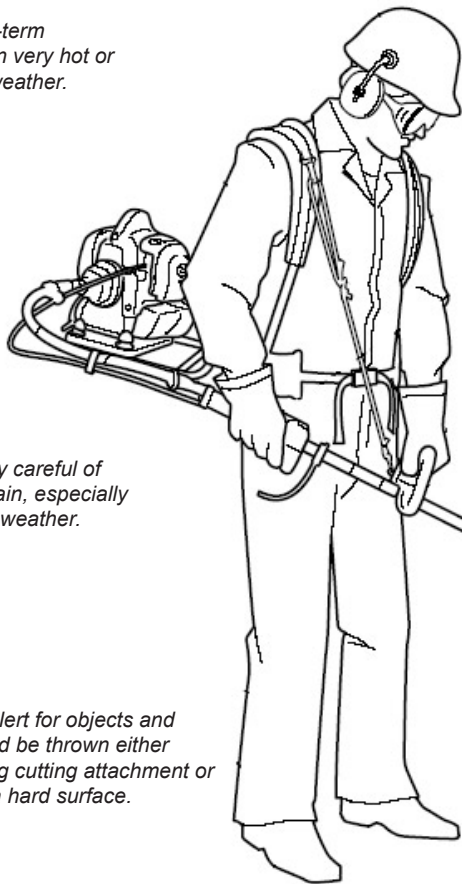
When operating with a blade, make sure the handle is positioned to provide you with maximum protection from contacting the blade. Always make sure the handlebar is installed in accordance with the manufacturers instructions.

**Always** make sure the appropriate cutting attachment shield is correctly installed and in good condition. Do not operate the unit if the cutting attachment shield is missing, loose, or broken.

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

## Be Aware of the Working Environment

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



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. Stop immediately if a child, pet, or person comes within a 15 meter radius.

Do not operate the unit if the cutting attachment shield is missing, loose, or broken.

**15 METERS**

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

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

**Always** make sure the appropriate cutting attachment shield is correctly installed.

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

**ALWAYS** clear your work area of trash or hidden debris that could be thrown back at you or toward a bystander. When operating in rocky terrain or near electric wires or fences, use extreme caution to avoid contacting such items with the cutting attachment.

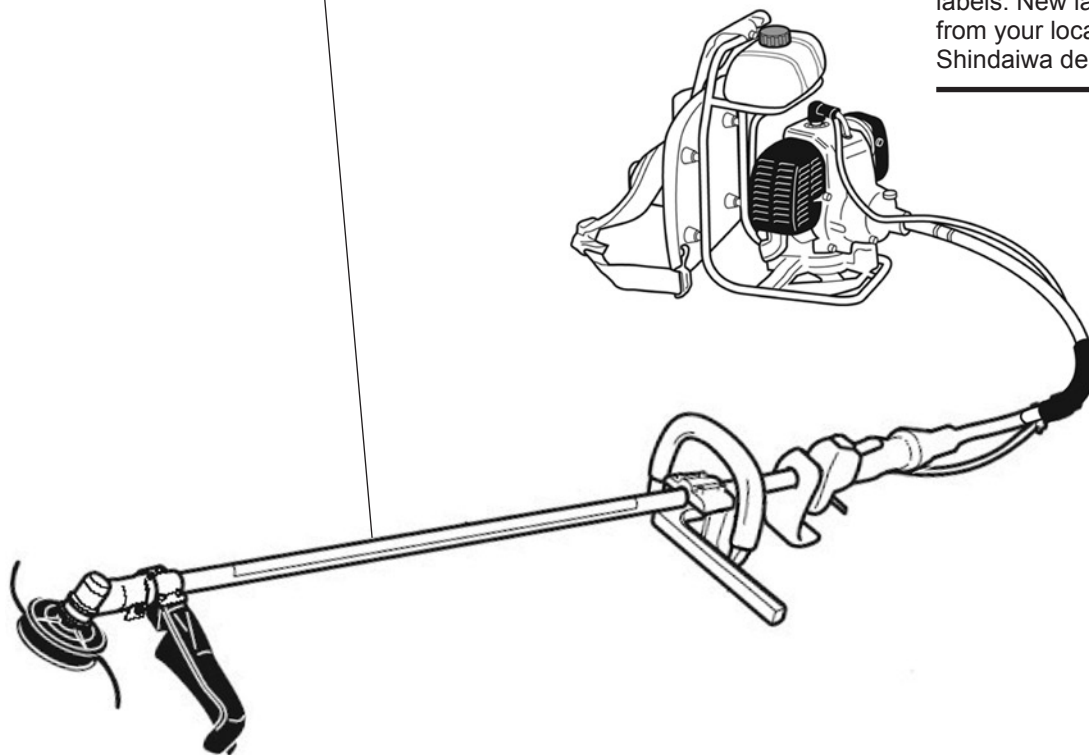
If contact is made with a hard object, stop the engine and inspect the cutting attachment for damage.

## Safety Labels



### IMPORTANT!

Safety 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.



## Checking Unit Condition



### WARNING!

A cutting attachment shield or other protective device is no guarantee of protection against ricochet. **YOU MUST ALWAYS GUARD AGAINST FLYING DEBRIS!**

Use only authorized Shindaiwa parts and accessories with your Shindaiwa trimmer or brushcutter. Do not make modifications to this unit without the written approval of Shindaiwa, Inc.

**NEVER** operate the unit with the cutting attachment shield or other protective devices (harness, ignition switch, blade retention clip, etc.) removed!

**ALWAYS** make sure the cutting attachment is properly installed and firmly tightened before operation.

**NEVER** use a cracked or warped cutting attachment: 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 unit becomes tangled. Do not operate with broken or damaged equipment.

**NEVER** allow the engine to run at high RPM without a load. Doing so could damage the engine.

**NEVER** operate a unit with worn or damaged fasteners or attachment holders.

**NEVER** cut with a dull blade. Doing so will increase the risk of blade thrust and may also cause equipment damage.

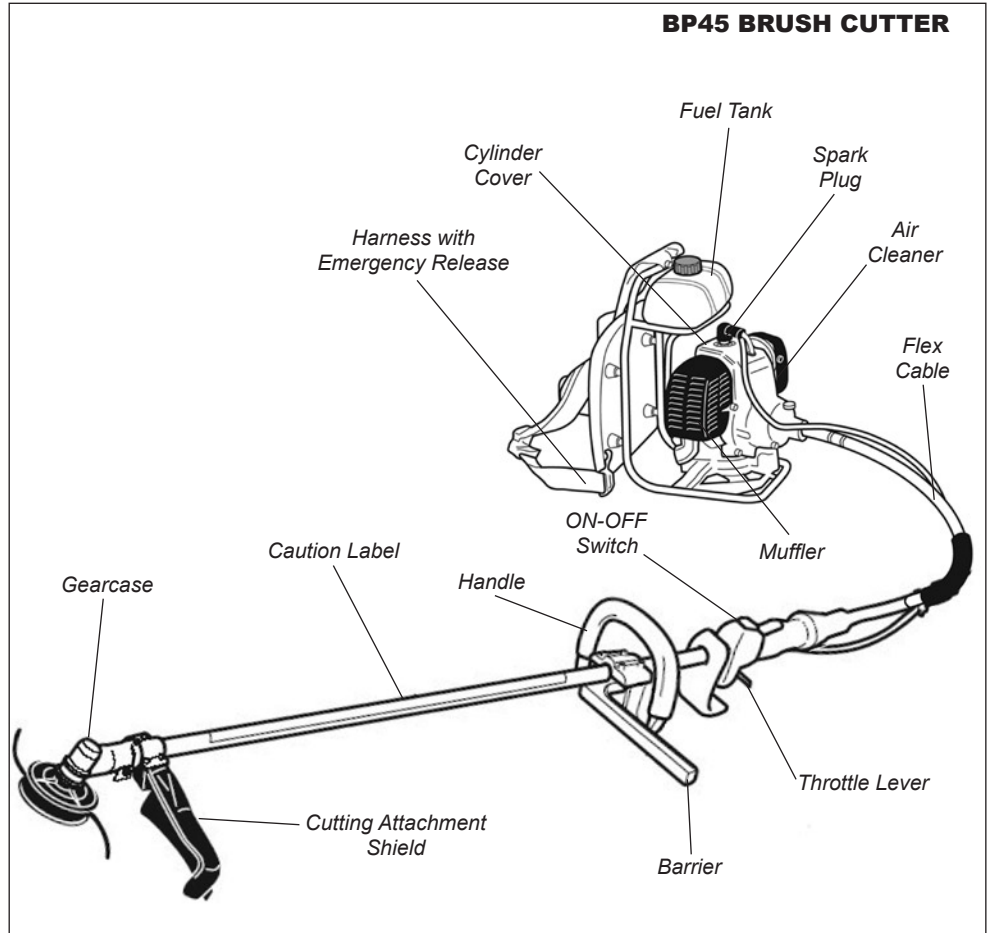
## Unit Description

Using the accompanying illustrations as a guide, familiarize yourself with this unit and its various components. Understanding the product helps ensure top performance, long service life, and safer operation.



### 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.



## Specifications

Model Name.....	BP45/EC1
Engine Model.....	SBP45EC1
Engine Type.....	2-cycle, vertical-cylinder, air-cooled
Displacement .....	41.5 cm <sup>3</sup>
Bore and Stroke.....	40 x 33 mm
Maximum Power Output .....	1.4 kW
Engine Speed at Idling .....	2,500 min <sup>-1</sup>
Maximum Engine Speed .....	11,500 min <sup>-1</sup>
Engine Speed at Maximum Power Output .....	6,500 min <sup>-1</sup>
Dry Weight (Without cutting attachment and guard) .....	9.7 kg
Dimensions (L x H x W) mm.....	2,720 x 365 x 405
Fuel Tank Capacity.....	1,400 cm <sup>3</sup>
Fuel/Oil Ratio.....	50:1 with a premium 2-cycle mixing oil
Carburetor Type .....	TK, PC10W
Ignition .....	Fully electronic, transistor controlled
Spark Plug.....	NGK BMR6A
Air Cleaner Type .....	Foam element
Starting Method.....	Recoil Starter
Stopping Method .....	Slide Switch
Handle Type .....	Loop type handle w/barrier
Sound Pressure Level* (average data between at Idling and at Racing) Note 1 .....	83 dB (A)
Sound Power Level** (average data between at Idling and at Racing) Note 1 .....	103 dB (A)
Vibration Level*** Note 1 Idling (Left/Right) .....	0.6/0.7 m/s <sup>2</sup>
..... Racing (Left/Right) .....	2.6/2.7 m/s <sup>2</sup>
Sound Pressure Level* (average data between at Idling and at WOT) Note 2 .....	93 dB (A)
Sound Power Level** (average data between at Idling and at WOT) Note 2 .....	105 dB (A)
Vibration Level*** Note 2 Idling (Left/Right) .....	0.7/0.6 m/s <sup>2</sup>
..... WOT (Left/Right) .....	1.4/2.0 m/s <sup>2</sup>

\* Sound Pressure Level: In accordance with EN ISO 14865 and ISO 7917

\*\* Sound Power Level In accordance with EN ISO 14865 and ISO 10884

\*\*\* Vibration Level: In accordance with EN ISO 14865 and ISO 7916

Note 1: 8-tooth blade equipped.

Note 2: Trimmer head equipped.

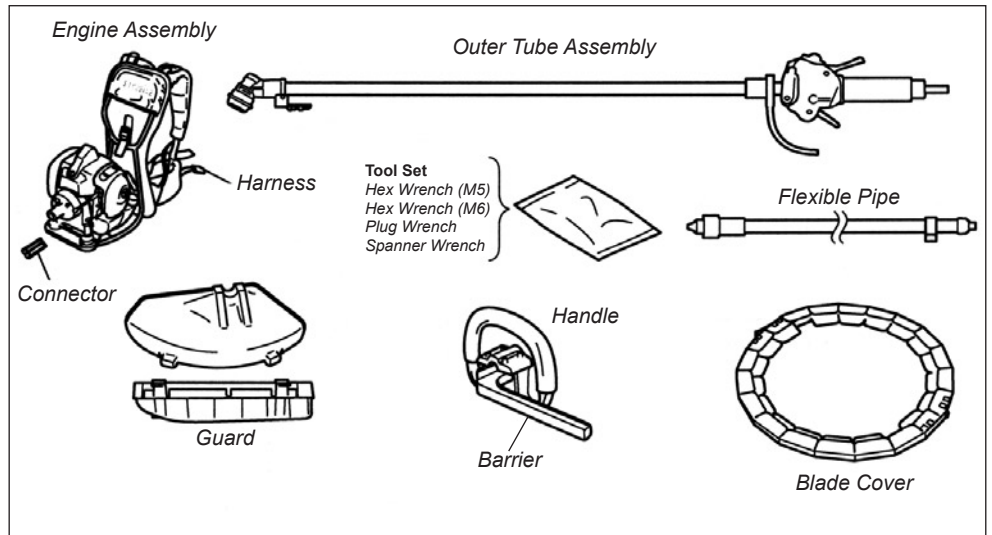
# Assembly Procedure

## Prior to Assembly

Before assembling, make sure you have all the components required for a complete unit:

- Engine assembly
- Outer tube assembly
- Debris shield
- Cutting attachment
- Loop Handle and Barrier
- Blade cover
- Tool kit, which includes 4 mm and 5 mm "L" type hexagonal wrenches, 8 mm/10 mm open-end wrench and combination spark plug/ tool holder wrench. Tool kits vary by model.
- Components required for assembly (throttle cable connector).

Carefully inspect all components for damage.

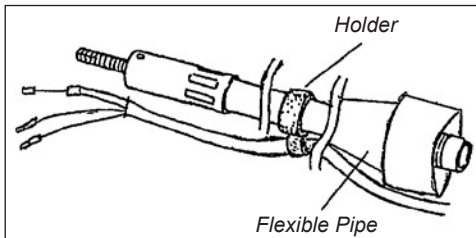


### IMPORTANT!

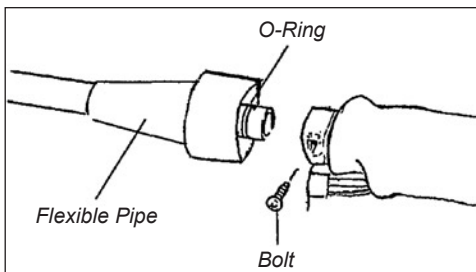
The terms "left", "left-hand", and "LH"; "right", "right-hand", and "RH"; "front" and "rear" refer to directions as viewed by the operator during normal operation.

## Assembly of the Flexible Pipe

1. Put the flexible pipe through the holder hole.



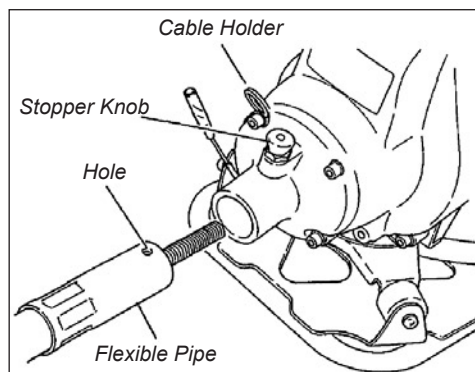
2. Loosen the bolt of the outer tube and insert the O-ring of the flexible pipe into the outer tube.



### CAUTION!

Pull the flexible pipe and make sure it is securely locked by the stopper knob.

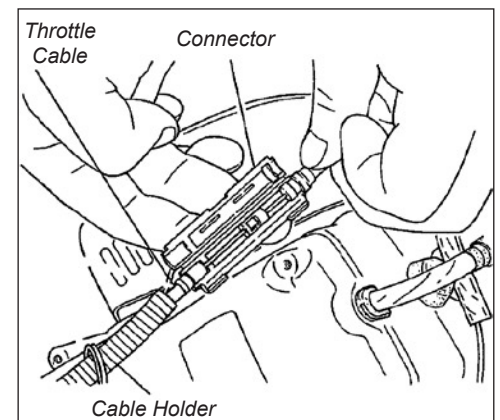
3. Make sure the groove of the flexible pipe aligns with the bolt, and then tighten the bolt. Make sure the flexible pipe does not come off the outer tube.
4. Insert the other end of the flexible pipe straight into the engine to the end. (It is not necessary to pull the stopper knob when doing this.)
5. Make sure the stopper knob is in the hole of the flexible pipe and it is securely locked.



### CAUTION!

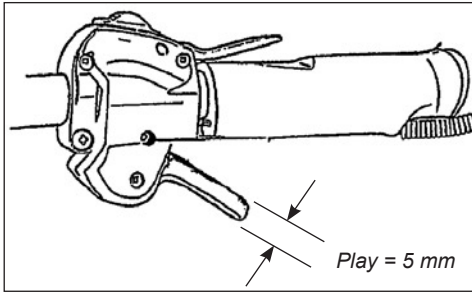
Make sure the inserting direction of the flexible pipe is correct as shown.

6. Put the throttle cable (flexible pipe side) through the cable holder, and then connect the throttle cables in the connector as shown.
7. Connect the red wire from the engine to the white wire from the throttle, and connect the black wire from the engine to the black wire from the throttle.

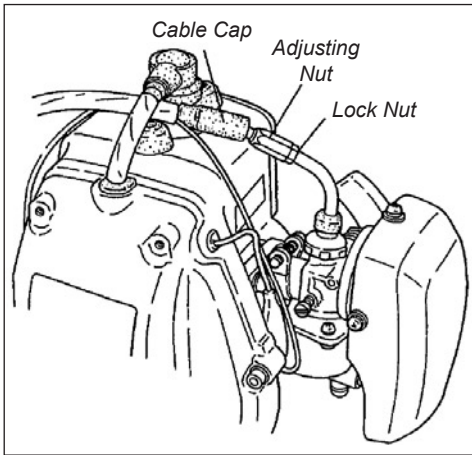


## Throttle Cable Adjustment


1. Pulling the throttle trigger gently, make sure the play is about 5 mm.



2. If the play is too long or too short:
  - (a) Slide the cable cap toward the muffler side until the adjusting nut and the lock nut appear.
  - (b) Loosen the lock nut slightly.
  - (c) Turn the adjusting nut so that the play becomes about 5 mm.
  - (d) Tighten the lock nut.
  - (e) Finally, slide the cable cap back.



## Cutting Attachment Shield Assembly

**WARNING!**  
 NEVER operate this machine without the cutting attachment shield. Operating without the cutting attachment shield may result in serious injury.

1. Insert the cutting attachment shield between the outer tube and the lower clamp.

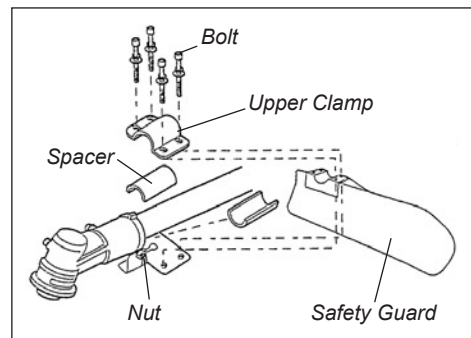
**NOTE:**

It may be necessary to loosen the lower clamp bolt so that the shield will fit between the tube and clamp.

2. Fit the upper clamp over the outer pipe and install four bolts finger tight.
3. Tighten the lower clamp bolt and nut securely.
4. Securely tighten four upper clamp bolts in a crisscross fashion.


**WARNING!**  
 Carefully inspect the gearcase and cutting attachment shield assembly to make sure they are tightened securely and do not wobble.

**CAUTION!**  
 Make sure the clamp screw and retaining nut are securely tightened before tightening the four socket head cap screws.




### Sub-Shield (when trimmer head is in use)

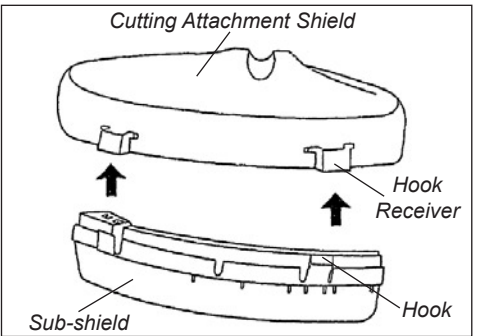
1. Attach the shield extension to the cutting attachment shield.

**WARNING!**  
 NEVER use this machine without sub-shield when using a trimmer head.

**CAUTION!**  
 Make sure the sub-guard is completely hooked at the hook receiver.

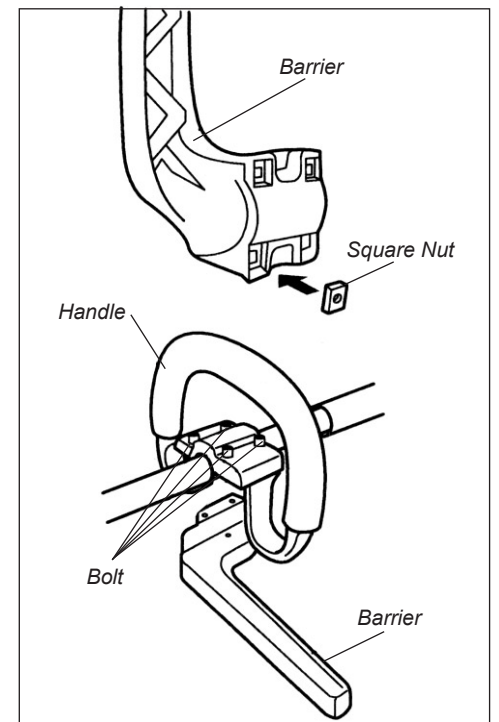
**CAUTION!**  
 The line cutter is attached to the shield extension and must be used when operating with a trimmer head.

**WARNING!**  
 The line cutter is very sharp. When handling, wear gloves to protect your hands.

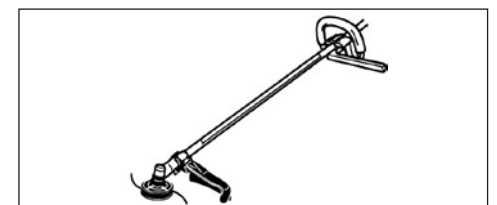


## Assembly of the Handle

1. Put the 4 square nuts in the frame of the barrier.
2. Fit the handle and barrier over the outer tube and tighten the four bolts.



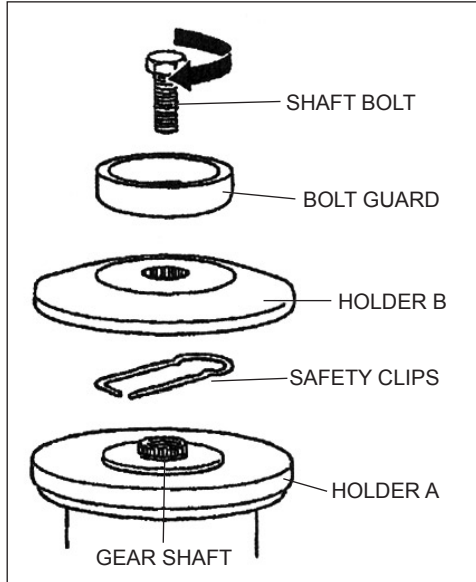
3. Position the handle at the best position for operator comfort.
4. Secure the handle by alternately tightening the 4 bolts in a diagonal or crisscross fashion.





# Installing a 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 the saw holder flange extending from the gear case is facing up.
4. Using the small end of the plug wrench, loosen the bolt (turn clockwise) and remove the bolt, bolt guard, and holder B.



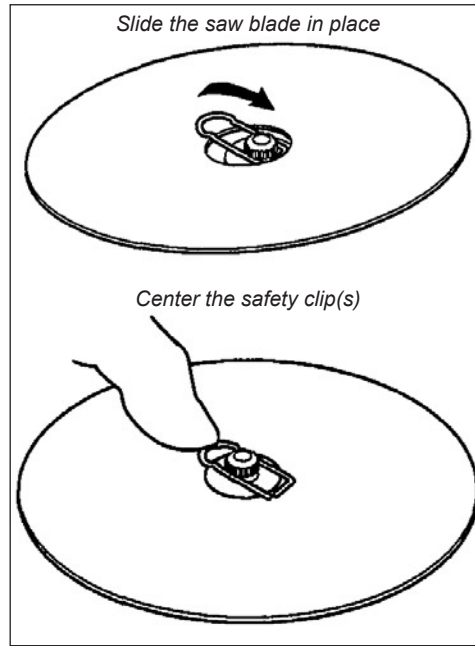
5. Slide the safety clip as shown in the illustration.



**WARNING!**

Never operate this machine without the safety clip in place.

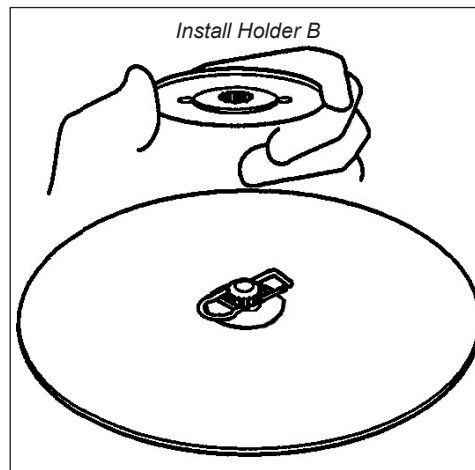
6. Fit the blade over the safety clip onto holder A. Then, slide the safety clip back to its original position.



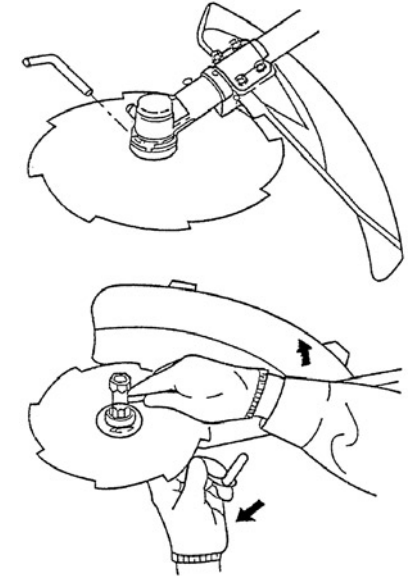
**WARNING!**

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

7. Put holder B and bolt guard back and at this time only finger tighten the bolt. Make sure holder B is flat against the blade. The recess in holder B 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 gear case. Insert the hex wrench through both holes (to prevent the shaft from turning).
9. Holding the hex wrench and blade with one hand, tighten the bolt (turn counterclockwise) securely using the hex socket 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.

**WARNING!**

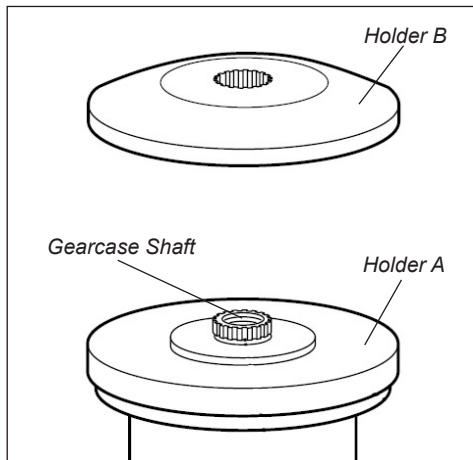
Make sure the direction of the arrow indicated on the blade corresponds with the arrow indicated on the cutting attachment shield.

**The brushcutter should be fully assembled.**

## Installing Trimmer Head

### To install a trimmer head

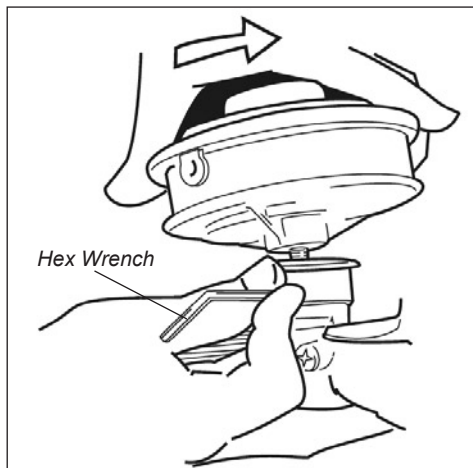
1. Position the brushcutter with the head of the shaft bolt facing up.
2. Remove the shaft bolt, bolt guard, Holder B and the retainer clip(s) from the output shaft.



### IMPORTANT!

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

3. Re-install Holder B on the output shaft.
4. Rotate the holder until the hole in the holder aligns with the notch on the gearcase flange. Using the hex wrench, lock the gearcase as shown.
5. While holding the holder with the hex wrench, thread the trimmer head onto the gear-shaft and install securely using hand pressure. Turn counterclockwise to install.
6. Remove the hex wrench.



**The brushcutter can now be used as a grass trimmer**

## Mixing Fuel

### WARNING!



**Minimize the risk of fire, burns, and personal injury!**

- **STOP** engine before refueling.
- **ALWAYS** allow the engine to cool before refueling
- **ALWAYS** open the fuel cap slowly to allow any pressure build-up in the tank to release fuel vapor slowly.
- **ALWAYS** transport and store fuels in an approved container.
- Avoid overfilling and wipe-up all spilled fuel. Move the engine at least 3 meters from the fueling point, storage area, and other readily flammable materials before restarting.
- **ALWAYS** inspect the unit for fuel leaks before each use. During each refill, make sure there are no fuel leaks around the fuel cap and/or tank. If a fuel leak is evident, stop using the unit immediately. Fuel leaks must be repaired before using the unit.
- **NEVER** smoke or light any fires near the engine or fuel source.
- **NEVER** place any flammable material near the engine or muffler.
- **NEVER** operate the engine without the muffler in good working condition.
- **ALWAYS** move the unit to a place well away from a fuel storage area or other readily flammable materials before starting the engine.

### CAUTION!

This engine is designed to operate on a 50:1 mixture consisting of unleaded gasoline and a premium 2-cycle mixing oil only. Use of Non-approved mixing oils can lead to excessive maintenance costs and/or engine damage.

### CAUTION!

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

## Filling The Fuel Tank

### IMPORTANT!

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™ or equivalent product!

- Use only fresh, clean unleaded gasoline with a pump octane rating of 87 or higher.
- Mixing fuel with a Premium 2-cycle mixing oil designed for use with high-performance 2-cycle air-cooled engines.
- Refer to the following examples of 50:1 fuel to oil mix quantities:

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

### CAUTION!

Never attempt to mix fuel in the unit's fuel tank. Always mix all fuels in a clean approved container.

1. Place the unit on a flat, level surface, and wipe any debris from around the fuel cap.
2. Remove the fuel cap.
3. Fill the tank with clean, fresh fuel.
4. Replace the cap, and wipe away any spilled fuel before starting the engine.

## Starting the Engine



### WARNING!

Before starting the engine, make sure children, bystanders, and pets and/or any other objects are well clear of the cutting attachment! The cutting attachment will rotate when the engine is started with the throttle control set in the "fast idle" position.



### WARNING!

MAKE SURE THE BLADE IS WELL CLEAR OF ANY INTERFERENCE. Before starting the engine, place unit on clear, level surface. Make sure you have good secure footing and always keep a firm grip on the machine. THE CUTTING ATTACHMENT MAY ROTATE WHEN THE ENGINE STARTS.



### WARNING!

Move at least three meters away from the fuel site before starting the engine.



### WARNING!

Never operate the engine without the cutting attachment installed.



### WARNING!

Never start the engine from the operating position.

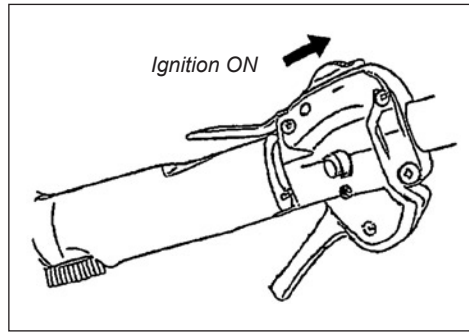
## Starting a Cold Engine and/or Restarting After Refueling.

### IMPORTANT!

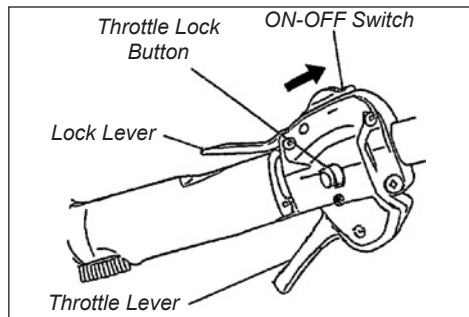
A two-position ignition switch mounted on the throttle control body controls the engine ignition system. This slide switch is embossed "START" and "STOP" and has arrows pointing towards the START and the STOP positions. The letter "I" (ON) and "O" (OFF) are embossed on the left side of the throttle handle, near the switch bottom.

## Starting the Engine (Continued)

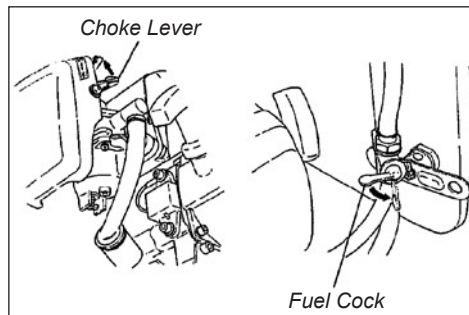
1. Move the ignition switch to the "ON" position.



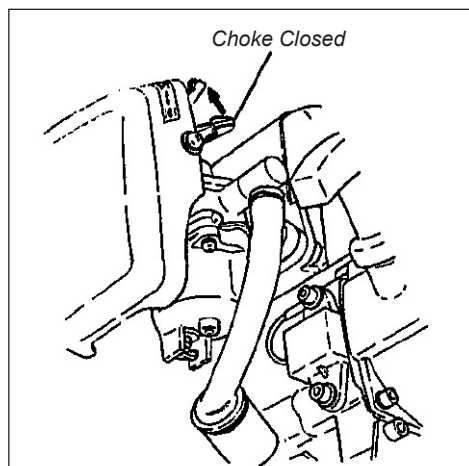
2. Set the throttle lever to "fast idle" by performing the following:
  - a. Squeeze and hold throttle lever (toward the handgrip).
  - b. Depress and hold throttle lever lock button.
  - c. While holding the throttle lever lock button, release throttle lever.



3. Open the fuel cock by moving the lever to the down position



4. **(Cold Engine Only)** Choke the engine by moving the choke lever up towards the spark plug (choke is closed).



### WARNING!

KEEP WELL CLEAR OF THE CUTTING ATTACHMENT! THE CUTTING ATTACHMENT MAY ROTATE WHEN THE ENGINE IS STARTED!

- Place the trimmer on the ground during all starting operations.
- Make sure you have a secure footing, and keep a firm grip on the unit as well.
- Keep all bystanders and pets well clear of the brushcutter during starting.

### CAUTION!

The recoil starter can be easily damaged by abuse!

- Always engage the starter before attempting to start the engine.
- Never pull the starter cord to its full length.
- Always rewind the starter cord slowly.

5. While holding the unit firmly with your left hand, use your right hand to pull the starter handle slowly upward until you feel the starter engage.
6. Start the trimmer by pulling the starter handle upward rapidly.

Make sure the cutting attachment is clear of obstructions!



## Starting the Engine (Continued)

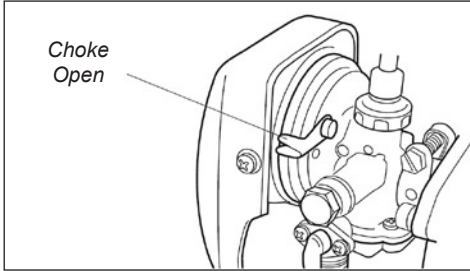
### When the engine starts or fires—



#### WARNING!

The cutting attachment will rotate as the engine accelerates!

7. Open the choke by moving the choke lever down.
8. If the engine does not continue to run, repeat the starting procedure as previously described.
9. When the engine starts, clear excess fuel from the combustion area by revving the engine several times with the throttle lever.



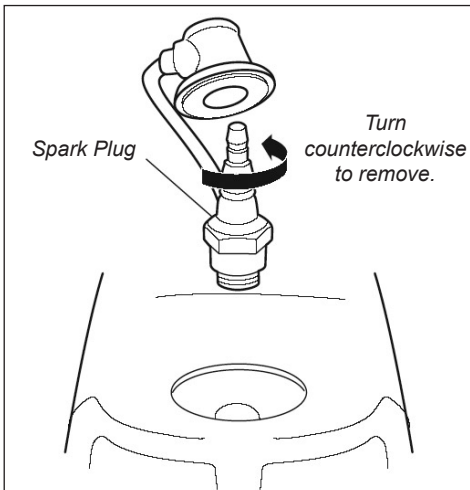
10. Operating the throttle will automatically disengage the fast-idle setting.

### Starting a Flooded Engine

1. Slide the ignition switch button to the STOP position.
2. Disconnect the spark plug wire, and remove the spark plug.

#### CAUTION!

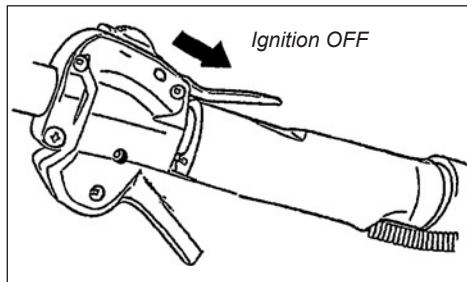
Incorrect spark plug installation may cause serious engine damage!



3. If the spark plug electrodes and ceramic insulator are fouled or soaked with fuel, clean or replace the plug. For spark plug specifications and gapping procedure, refer to page 17.
4. Open the choke.
5. Hold the throttle control lever depressed and crank the engine several times to clear excess fuel from the combustion chamber.
6. Reinstall the spark plug finger tight and tighten it firmly with the spark plug wrench provided in the tool kit. If a torque wrench is available, torque the spark plug to 16.7-18.6 Nm.
7. Repeat the "warm engine" starting procedure.
8. If the engine fails to start, consult the troubleshooting guide provided.

## Stopping the Engine

Idle the engine briefly before stopping (about 2 minutes), then slide the ON-OFF switch to the "O" (for STOP) position.



## Engine Idle Adjustment

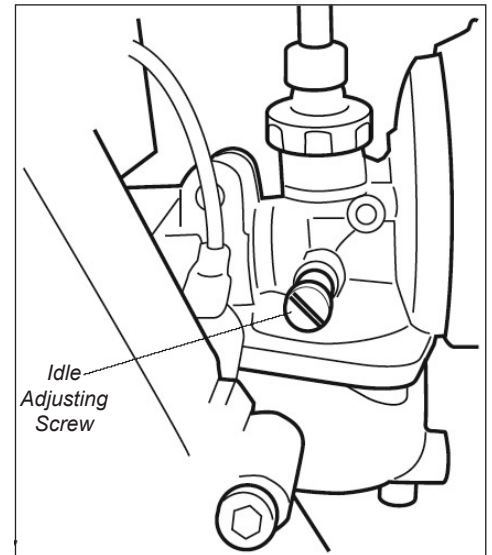


#### WARNING!

The cutting attachment must NEVER rotate at engine idle! If the idle speed cannot be adjusted by the procedure described here, have the unit inspected at an authorized Shindaiwa dealer.

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 when the throttle is released.

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

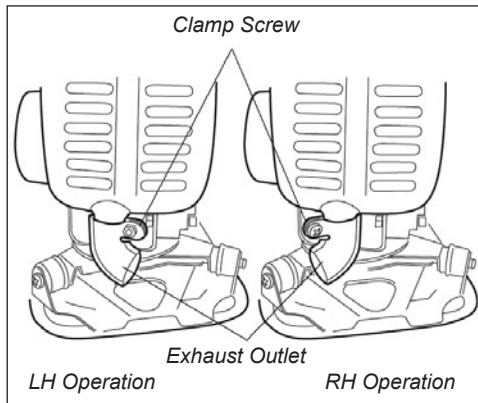


3. If a tachometer is available, the engine idle speed should be final adjusted to 2,500 rpm ( $\text{min}^{-1}$ ).

## Left Hand Operation

Some users of the BP45 may wish to operate the unit left handed. It is very important to follow these instructions if you wish to do so.

1. Loosen the exhaust outlet clamp and rotate the exhaust outlet approximately 90 degrees counterclockwise as viewed from the top of the powerhead.
2. Tighten the clamp screw firmly to prevent the outlet from moving out of position.
3. Put unit on, and in the operating position, check exhaust outlet to make sure exhaust flow is out and to the side of the operator. Readjust if necessary.

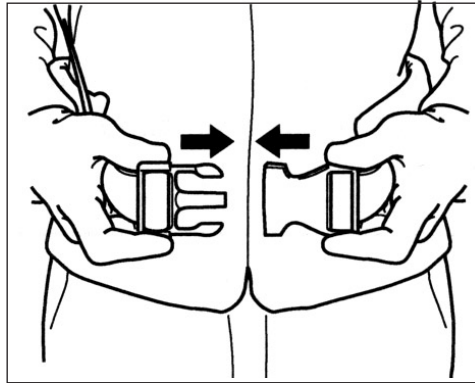


## Double Shoulder Harness

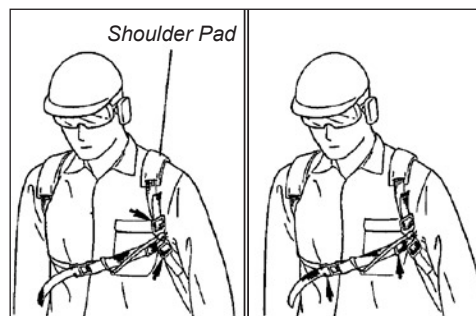
1. Holding the outer tube with your right hand, shoulder the left side strap on your left shoulder.
2. Holding the outer tube with your left hand and shoulder the right side strap on your right shoulder.



3. Fasten the chest belt.

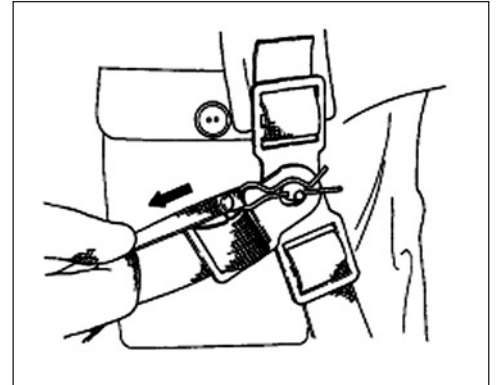


4. Adjust the length of the right and left strap so that the back strap stays a little high on your hip.
5. Adjust the shoulder pads so that they stay on both shoulders.
6. Adjust the length of the chest belt so that the back pad properly stays on your back.



## Emergency Release

In case of emergency, strongly pull the red tab on your left chest, and pull off the pin. The machine will be released from your left shoulder. Practice how to release before use.



# Operation

## 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 handlebar, shoulder harness, and a cutting attachment debris shield. 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 area thoroughly. Remove all objects, such as rocks, broken glass, nails, wire, or string. Note 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 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

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.

## Shoulder Harness

The shoulder harness provided with the unit affords additional protection against blade thrust. Additionally, a shoulder harness provides support and comfort to help ensure safe and efficient operation. Before operating the brushcutter, make sure the harness is adjusted correctly to the operator. The shoulder harness is equipped with a quick release mechanism to assure that the unit can be released quickly from the operator in the event of emergency.



### WARNING!

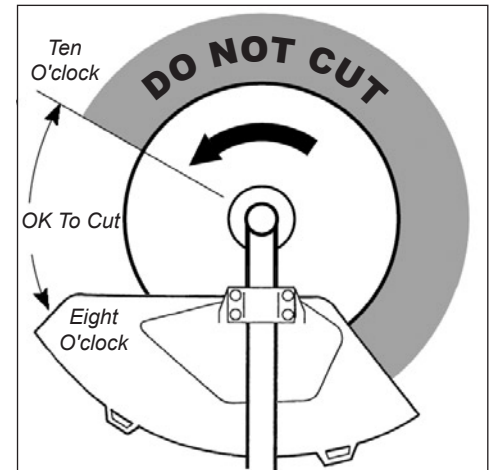
- When cutting small trees with a blade, feed the blade slowly, never strike or "slam" the spinning blade against the tree trunk.
- DO NOT use 2-tooth (lawn mower type) cutting blades. Use only Shindaiwa approved blades with your Shindaiwa brushcutter.
- Using a blade not authorized by Shindaiwa may result in serious injury.
- 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.
- Keep blades sharp and check blade condition frequently. If cutting performance changes suddenly, stop the engine and check the blade for cracks or other damage. Replace the damaged blade immediately!



### WARNING!

When transporting, make sure the engine is not running and blade is covered with blade cover.

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 below. 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.



## Engine Operating Speeds



### WARNING!

Position the blade so cuts are made between blade's 8 o'clock and 10 o'clock positions (as viewed from above). DO NOT cut between the 11 o'clock and 5 o'clock positions.



### WARNING!

"BLADE THRUST" is a sudden sideways or backward motion of the machine. Such motion may occur when the blade jams or catches on an object such as a sapling tree or tree stump. BE CONSTANTLY ALERT FOR BLADE THRUST AND GUARD AGAINST ITS EFFECTS.

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.

## Using a Brushcutter With a Trimmer Head

Your Shindaiwa BP45 Brushcutter may be fitted with one of several Shindaiwa trimmer head models, each with features for specific applications and/or operational requirements.

For proper operation, always refer to instructions accompanying the trimmer head being used. Available trimmer head styles include:

- **Semi-automatic.** Trimmer line is indexed when the operator taps the trimmer head on the ground during operation.
- **Manual.** The operator indexes line manually with the grass trimmer stopped.
- **Fixed.** The operator must stop the unit and add new lengths of trimmer line manually.
- **Flail.** This device, designed for clearing weeds and light brush, features three nylon blades attached to the head by pivots.

### CAUTION!

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

## Engine Operating Speeds

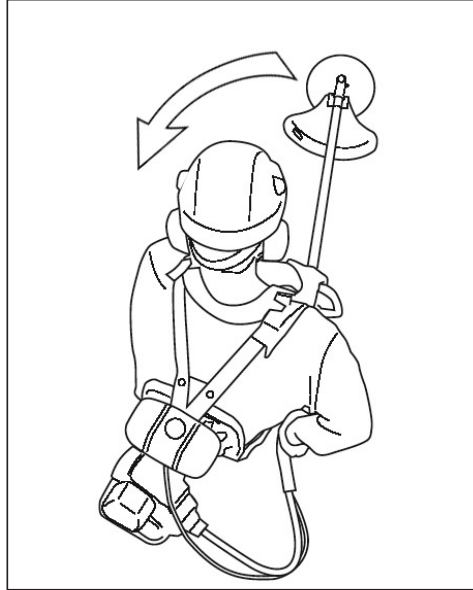
Operate at full throttle while cutting grass.

### CAUTION!

Operation at low rpm can lead to premature clutch failure.

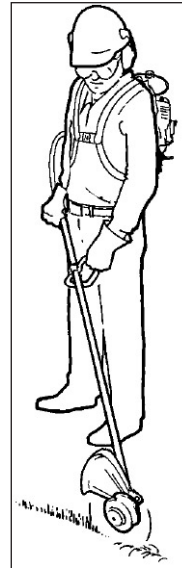
### Trimming and Mowing Grass

Hold the unit so the trimmer head is angled slightly into the area to be cut. To ensure maximum trimmer-line service life, cut only with the tip of the trimmer line. To prevent grass clippings from being thrown back towards the operator or wrapping around the gearcase, swing the unit's trimmer head from left to right while cutting. Keep the trimmer head horizontal.



### Edging

Tilt the handle about 100° to the left (from horizontal) and move forward, holding the unit so that the trimmer head cuts vertically.



## Maintenance



### WARNING!

Before performing any maintenance, repair, or cleaning work on the machine, make sure the engine and cutting attachment are completely stopped. Disconnect the spark plug wire before performing service or maintenance work.

### Muffler



### WARNING!

Never operate this machine with a damaged or missing muffler! Operating with missing or damaged exhaust components is a fire hazard, and may also damage your hearing.

### Daily Maintenance

Prior to each work day, perform the following:

- Remove the dirt and debris from the engine, check the cooling fins and air cleaner for clogging, and clean them as necessary.
- Carefully remove any accumulations of dirt or debris from the muffler and fuel tank. Dirt buildup in these areas can lead to engine overheating, fire, or premature wear.
- Check for loose or missing screws or components. Make sure the cutting attachment is securely fastened.
- Check the machine for leaking fuel or grease.

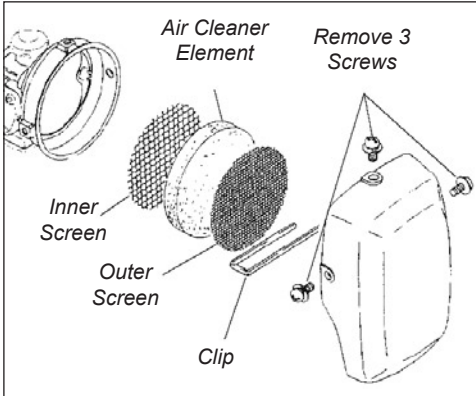
## 10 Hour Maintenance

### CAUTION!

Do not operate the unit if the air cleaner or element is damaged, or if the element is wet.

### Every 10 hours of operation (more frequently in dusty or dirty conditions):

Remove the air cleaner element from the carburetor and clean it thoroughly with soap and water. Let dry before reinstalling the element.



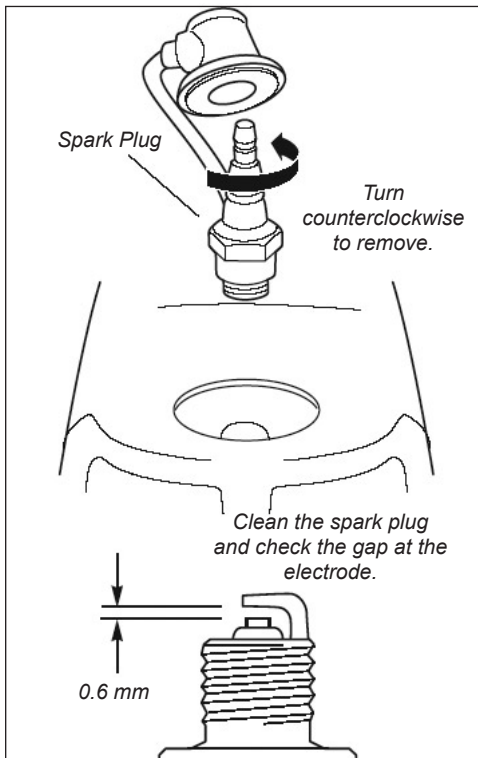
## 10/15 Hour Maintenance

### 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.

### Every 10 to 15 hours of operation:

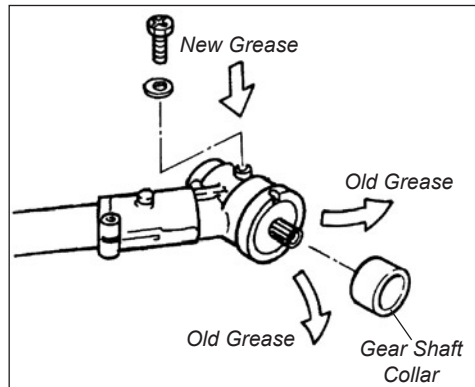
Remove and clean the spark plug. Adjust the spark plug electrode gap to 0.6 mm. If the plug must be replaced, use only a NGK BMR6A or equivalent spark plug of the correct heat range.



## 50 Hour Maintenance

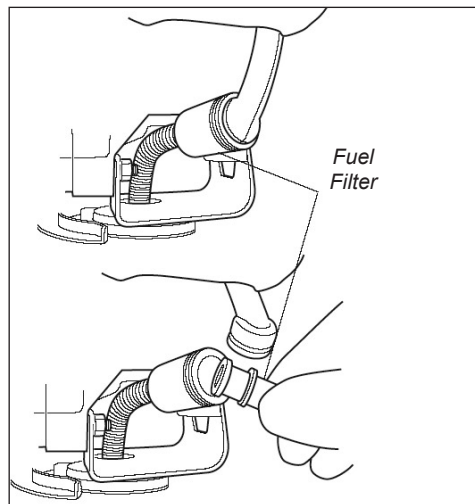
### Perform more frequently in dusty or dirty conditions.

- Remove the cutting attachment and the gear shaft collar, and press new grease into the gear case until the old grease has been pushed out. Use only lithium base grease (such as Shindaiwa Gear Case Lubricant).



### Fuel Filter Maintenance

Pull apart the fuel filter hose at the joint and remove the fuel filter to clean or replace as necessary.

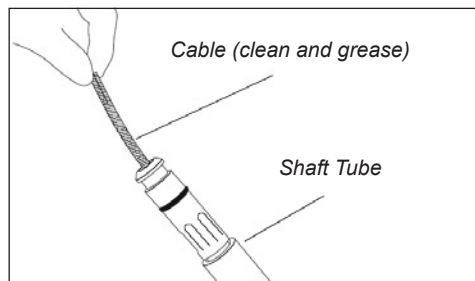


### NOTE:

For maximum cable life, the flexible cable should be reversed "end-for-end" during reinstallation.

### Lubricate the flex cable as follows:

1. Disconnect the flex cable from the powerhead. Slide the flexible cable out of the flex cable housing.
2. Wash the cable thoroughly in a solvent bath, and then coat the entire cable with Shindaiwa Premium Gearcase Lubricant.
3. Install the cable into the flex cable housing, then reconnect the flex cable assembly to the powerhead.





## Long Term Storage

Whenever the unit will not be used for 30 days or longer, use the following procedures to prepare it for storage:

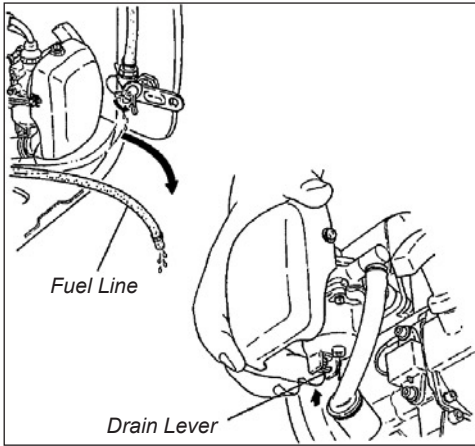
- Clean external parts thoroughly and apply a light coating of oil to all metal surfaces.
- Drain all the fuel from the fuel tank.

### IMPORTANT!

All stored fuels should be stabilized with a fuel stabilizer such as STA-BIL™.

Drain all the fuel from the carburetor and the fuel tank.

1. Remove the fuel line and drain fuel from the fuel line.
2. Open the fuel cock.
3. Drain fuel from the fuel tank.
4. Push the drain lever up and drain the remaining fuel from the carburetor.



### CAUTION!

Gasoline stored in the carburetor for extended periods can cause hard starting, and could also lead to increased service and maintenance costs.

- Remove the spark plug and pour about 7 grams of 2-cycle mixing oil into the cylinder through the spark plug hole. Slowly pull the recoil starter 2 or 3 times so oil will evenly coat the interior of the engine. Reinstall the spark plug.
- Before storing the unit, repair or replace any worn or damaged parts.
- Remove the air cleaner element from the carburetor and clean it thoroughly with soap and water. Let dry and reassemble the element.
- Store the unit in a clean, dust-free area.
- Cover the blade with blade cover.

## Blade Sharpening

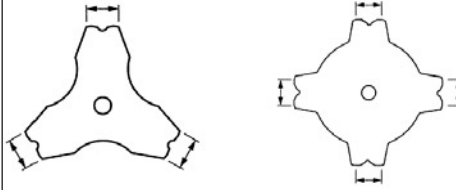
With the file or a grinder, file a blade as follows.



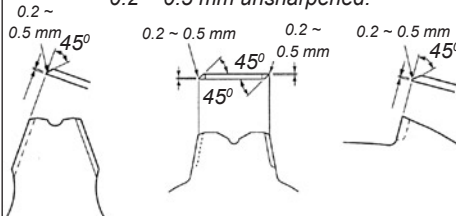
### WARNING!

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.

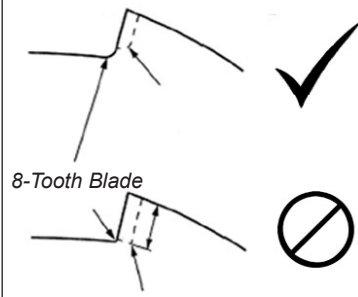
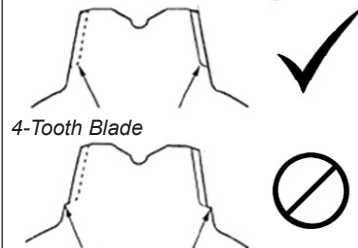
Make sure the width of the 3 sides/4 sides are all the same.



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



The bottom of each tooth must remain unsharpened. (Blade as viewed from bottom.)



## Recommended Cutting Attachments

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

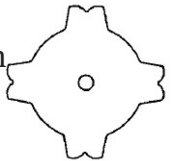
PART NUMBER 60903-98310  
8-TOOTH BLADE  
INNER BORE: 25.4 mm  
DIAMETER: 255.0 mm  
THICKNESS: 2.0 mm



PART NUMBER 72430-92142  
3-TOOTH BLADE  
INNER BORE: 25.4 mm  
DIAMETER: 255.0 mm  
THICKNESS: 2.2 mm



PART NUMBER 60903-98320  
4-TOOTH BLADE  
INNER BORE: 25.4 mm  
DIAMETER: 255.0 mm  
THICKNESS: 2.0 mm



PART NUMBER 78820-15000  
TAP & FEED TRIMMER HEAD  
BOLT DIAMETER: 8 mm  
THREAD: LEFT, 1.25 mm PITCH



# 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.	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 Shindaiwa Premium 2-cycle mixing oil at a 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.	Replace fuel filter or vent as required. Restart.
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 re-start. Consult with an authorized servicing dealer.
Check the spark plug.	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 restart. Clean and regap the plug to 0.6 ~ 0.7 mm. Restart. Replace the plug with a NGK BMR6A or equivalent resistor type spark plug of the correct heat range. Set spark plug electrode gap to 0.6 ~ 0.7 mm. Restart.

## LOW POWER OUTPUT

What To Check	Possible Cause	Remedy
Is the engine overheating?	Operator is overworking the unit. Carburetor mixture is too lean. Improper fuel ratio. Fan, fan cover, cylinder fins dirty or damaged. Carbon deposits on the piston or in the muffler.	Cut at a slower rate. Consult with an authorized servicing dealer. Refill with fresh, clean unleaded gasoline with a pump octane of 87 or higher, mixed with Shindaiwa Premium 2-cycle mixing oil at a 50:1 gasoline/oil ratio Clean, repair or replace as necessary. Consult with an authorized servicing dealer.
Engine is rough at all speeds. May also have black smoke and/or unburned fuel at the exhaust.	Clogged air cleaner element. Loose or damaged spark plug. Air leakage or clogged fuel line. Water in the fuel. Piston seizure. Faulty carburetor and/or diaphragm.	Clean or replace the air filter. Tighten or replace the plug with a NGK BMR6A. Restart. Repair or replace fuel filter and/or fuel line. Refill with fresh fuel/oil mixture. Consult with an authorized servicing dealer.
Engine is knocking.	Overheating condition. Improper fuel. Carbon deposits in the combustion chamber.	See above. Check fuel octane rating; check for presence of alcohol in the fuel. Refuel as necessary. Consult with an authorized servicing dealer.

## Troubleshooting Guide (continued)

### ADDITIONAL PROBLEMS

Symptom	Possible Cause	Remedy
Poor acceleration.	<ul style="list-style-type: none"> <li>Clogged air filter.</li> <li>Clogged fuel filter.</li> <li>Lean fuel/air mixture.</li> <li>Idle speed set too low.</li> </ul>	<ul style="list-style-type: none"> <li>  Clean or replace the air filter.</li> <li>  Replace the fuel filter.</li> <li>  Consult with an authorized servicing dealer.</li> <li>  Adjust: 2,500 min<sup>-1</sup>.</li> </ul>
Engine stops abruptly.	<ul style="list-style-type: none"> <li>Switch turned off.</li> <li>Fuel tank empty.</li> <li>Clogged fuel filter.</li> <li>Water in the fuel.</li> <li>Shorted spark plug or loose terminal.</li> <li>Ignition failure.</li> <li>Piston seizure.</li> </ul>	<ul style="list-style-type: none"> <li>  Reset the switch and restart.</li> <li>  Refuel. See page 10.</li> <li>  Replace fuel filter.</li> <li>  Drain; replace with clean fuel. See page 10.</li> <li>  Clean or replace spark plug with a NGK BMR6A. Tighten the terminal.</li> <li>  Replace the ignition unit.</li> <li>  Consult with an authorized servicing dealer.</li> </ul>
Engine difficult to shut off.	<ul style="list-style-type: none"> <li>Ground (stop) wire is disconnected, or switch is defective.</li> <li>Overheating due to incorrect spark plug.</li> <li>Overheated engine.</li> </ul>	<ul style="list-style-type: none"> <li>  Test and replace as required.</li> <li>  Replace spark plug with a NGK BMR6A.</li> <li>  Idle engine until cool.</li> </ul>
Cutting attachment rotates at engine idle.	<ul style="list-style-type: none"> <li>Engine idle too high.</li> <li>Broken clutch spring or worn clutch spring boss.</li> <li>Loose attachment holder.</li> </ul>	<ul style="list-style-type: none"> <li>  Set idle: 2,500 min<sup>-1</sup>.</li> <li>  Replace spring/shoes as required, check idle speed.</li> <li>  Inspect and re-tighten holders securely.</li> </ul>
Engine will not idle down.	<ul style="list-style-type: none"> <li>Engine idle set too high.</li> <li>Engine has an air leak.</li> </ul>	<ul style="list-style-type: none"> <li>  Set idle: 2,500 min<sup>-1</sup>.</li> <li>  Consult with an authorized servicing dealer.</li> </ul>
Excessive vibration.	<ul style="list-style-type: none"> <li>Warped or damaged attachment.</li> <li>Loose gearcase.</li> <li>Bent main shaft/worn or damaged bushings.</li> <li>Trimmer line not wound properly on spool.</li> </ul>	<ul style="list-style-type: none"> <li>  Inspect and replace attachment as required.</li> <li>  Tighten gearcase securely.</li> <li>  Inspect and replace as necessary.</li> <li>  Rewind trimmer line.</li> </ul>
Attachment will not rotate.	<ul style="list-style-type: none"> <li>Shaft not installed in powerhead or gearcase.</li> <li>Broken shaft.</li> <li>Damaged gearcase.</li> </ul>	<ul style="list-style-type: none"> <li>  Inspect and reinstall as required.</li> <li>  Consult with an authorized servicing dealer.</li> </ul>

# DECLARATION OF CONFORMITY

We hereby declare the Shindaiwa Engine Brushcutter,  
Model RK45 (BP45/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 14865

ISO 14740

CISPR 12

Measured sound power level: 109dB(A)

Guaranteed sound power level: 110dB(A)

Technical documentation is kept by:

K. Maeda DIV. Manager


Engineering Research and Development DIV.

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16th February, 2005



T. Yoshitomi

DIV. Manager

Quality Assurance DIV.

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