

# shindaiwa

ENGLISH  
GB (Original instructions)

## OPERATOR'S MANUAL

# GRASS-TRIMMER/BRUSHCUTTER BP420S

### WARNING



READ THE INSTRUCTIONS CAREFULLY AND FOLLOW THE  
RULES FOR SAFE OPERATION.  
FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY.

# Important information

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**Please ensure that you read the operator's manual before using your product.**

## ○ Intended use of this product

- ◆ Shindaiwa Grass Trimmers/Brushcutters are lightweight, high-performance, petrol engined units designed for weed control, grass trimming and brush cutting in areas difficult to control by any other means.
- ◆ Do not use this unit for any purpose other than aforementioned.

## ○ Users of the product

- ◆ You should not use this product until you have read the operator's manual carefully and fully absorbed its content.
- ◆ This product should not be used by anyone who has failed to read the operator's manual properly, is suffering from a cold, tiredness or otherwise in poor physical condition, or children.
- ◆ Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.

## ○ About your operator's manual

- ◆ This manual contains necessary information about the assembly, operation, and maintenance of your product. Please read it carefully and absorb its contents.
- ◆ Always keep your manual in a place where it is readily accessible.
- ◆ If you have lost your manual or it is damaged and no longer readable, please purchase a new one from your shindaiwa dealer.
- ◆ The units used in this manual are SI units (International System of Units). Figures in parentheses are reference values, and there may be a slight conversion error in some cases.

## ○ Loaning or assigning your product

- ◆ When loaning the product described in this manual to another party, ensure that the person borrowing and working with the product receives the operator's manual along with the product. If you assign your product to another party, please enclose the operator's manual with the product when handing it over.

## ○ Enquiries

- ◆ Please contact your shindaiwa dealer for requests regarding information about your product, the purchase of consumables, repairs, and other such enquiries.

## ○ Notices

- ◆ The content of this manual may be changed without notice for the purpose of upgrades to the product. Some of the illustrations used may differ from the product itself in order to make the explanations clearer.
- ◆ This product requires the assembly of some parts.
- ◆ Please consult your shindaiwa dealer if anything is unclear or of concern.

## **Manufacturer:**

**YAMABIKO CORPORATION**

**7-2 SUEHIROCHO 1-CHOME, OHME, TOKYO 198-8760, JAPAN**

## **Authorized Representative in Europe:**

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# For safe use of your product

## Be careful to read this section before using your product.




○ The precautions described in this section contain important safety information. Please observe them carefully.

○ You must also read the precautions that appear in the body of the manual itself.

Text following a [diamond mark] mark describes the potential consequences of failing to observe the precaution.


## Warning notices

Situations where there is a risk of physical injury to the operator and other people are indicated in this manual and on the product itself by the following warning notices. Always read and observe them carefully in order to ensure safe operation.

 <b>DANGER</b>	 <b>WARNING</b>	 <b>CAUTION</b>
This symbol accompanied by the word " <b>DANGER</b> " calls attentions to an act or a condition which will lead to serious personal injury or death of operators and bystanders.	This symbol accompanied by the word " <b>WARNING</b> " calls attentions to an act or a condition which can lead to serious personal injury or death of operators and bystanders.	" <b>CAUTION</b> " indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.




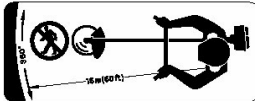






## Other indicators

As well as warning notices, this manual uses the following explanatory symbols:











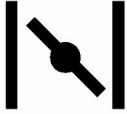



	Circle and slash symbol means whatever is shown is prohibited.	<b>NOTE</b>	<b>IMPORTANT</b>
		This enclosed message provides tips for use, care and maintenance of the product.	Framed text featuring the word " <b>IMPORTANT</b> " contains important information about the use, checking, maintenance and storage of the product described in this manual.

## Symbols

In this manual and on the product itself, a series of explanatory symbols is used. Please make sure that you fully understand what each symbol means.

Symbol form/shape	Symbol description/application	Symbol form/shape	Symbol description/application
	Carefully read the operator's manual		The maximum speed of the cutting attachment shaft in r/min
	Wear eyes, ears and head protection		Keep bystanders away 15 m
	Wear foot protection and gloves		Petrol and oil mixture
	Emergency stop		Purge bulb (Primer)
	Warning! Thrown objects!		Carburettor adjustment - Low speed mixture

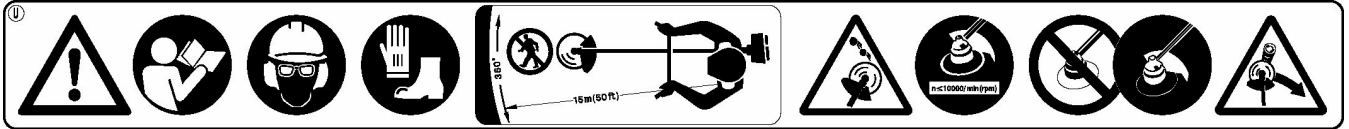
# For safe use of your product

Symbol form/shape	Symbol description/application	Symbol form/shape	Symbol description/application
	Warning, side thrust	<b>H</b>	Carburettor adjustment - High speed mixture
	Usage without shield not permitted	<b>T</b>	Carburettor adjustment - Idle speed
	Usage of metal blades not permitted		Lubricate in every 18 hours
	Usage of nylon line cutting head not permitted		Loop handle
	Do not use the product in places with poor ventilation		Beware of high-temperature areas
	Beware of fire		Guaranteed sound power level
	Choke Control "Cold Start" Position (Choke Closed)		Choke Control "Run" Position (Choke Open)
	Beware of electric shocks		Engine start

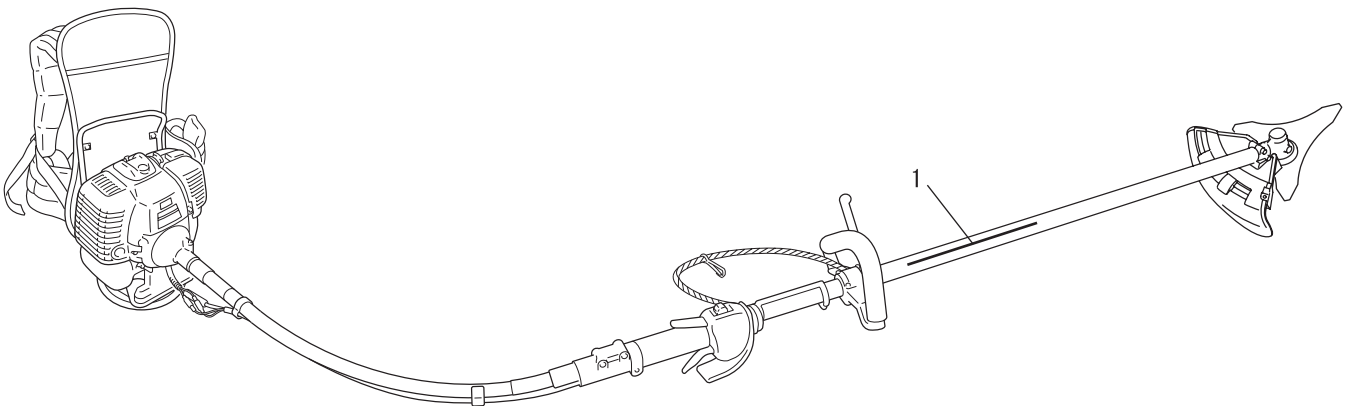
# For safe use of your product

## Location in which a safety decal is attached

- The safety decal shown below has been attached to the products described in this manual. Ensure that you understand what the decal means before using your product.
- If the decal becomes unreadable due to wear and tear or damage, or peels off and is lost, please purchase a replacement decal from your dealer and attach it in the location shown in the illustrations below. Ensure that the decal is readable at all times.



1. Safety decal (Part number 890617-43130)



# For safe use of your product

## Handling fuel

### DANGER

#### **Always keep well away from fire when refuelling**

Fuel is highly inflammable and leads to a risk of fire if mishandled. Use extreme care when mixing, storing or handling or serious personal injury may result. Be careful to observe the following instructions.

- Do not smoke or hold a flame near when refuelling.
- Do not fuel up while the engine is hot or in operation.
- ◆ If you do so, the fuel could ignite and cause fire, leading to burns.



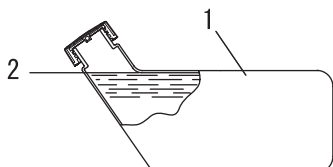
#### **About the container and refuelling place**

- Use an approved fuel container.
- Fuel tanks/cans may be under pressure.  
Always loosen fuel caps slowly allowing pressure to equalize.
- DO NOT fill fuel tanks indoors.  
ALWAYS fill fuel tanks outdoors over bare ground.

#### **Fuel spills can cause fire**

Observe the following precautions when refuelling:

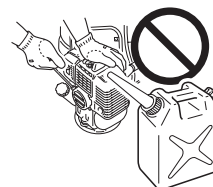
- Do not add so much fuel that it reaches the mouth of the fuel tank. Keep the fuel within the prescribed level (up to the shoulder level of the fuel tank).
- Mop up any fuel that overflows or spills out due to over-filling.
- Tighten the fuel tank cap securely after refuelling.
- ◆ Fuel spills can cause fire and burns when ignited.



- 1. Fuel tank
- 2. Shoulder level

#### **Do not start the engine in the area where you refueled**

- You must not start the engine in the place where you carried out the refuelling. Move at least 3m from the place where you refueled before starting the engine.
- ◆ Fuel leaks that occur while refuelling can cause fire if ignited.



#### **Fuel leaks cause fire**

- After refuelling, always check that there are no leaks or discharges of fuel from the fuel pipe, fuel system grommets, or around the fuel tank cap.
- If you do find fuel leaks or discharges, stop using the product immediately and contact your dealer to have it repaired.
- ◆ Any fuel leaks could cause fire.



# For safe use of your product

## Handling the engine

### **WARNING**

#### Starting the engine

Be particularly careful to observe the following precautions when starting the engine:

- Check that none of the nuts and bolts are loose
- Check that there are no fuel leaks
- Place the product in a flat, well ventilated place
- Leave plenty of space around the product and do not allow people or animals near it
- Start the engine with the throttle trigger in the idle speed position
- Hold the product firmly to the ground when starting the engine
- ◆ Failure to observe the precautions could cause an accident or injury, or even lead to a fatality.

#### Once the engine has started, check for abnormal vibrations and sounds

- Check that there are no abnormal vibrations or sounds once the engine starts. Do not use the product if there are abnormal vibrations or sounds. Contact your dealer to have it repaired.
- ◆ Accidents involving parts that fall or shatter off can cause wounds or serious injury.

#### Do not touch high temperature or high voltage components while the product is running

Do not touch the following high temperature or high voltage components while the product is running or for some time after it stops.

- Silencer, spark plug, angle transmission, and other high temperature components
- ◆ You could burn yourself if you touch a high temperature component.
- Spark plug, spark plug wire, and other high voltage components
- ◆ You could receive an electric shock if you touch a high voltage component while the product is running.



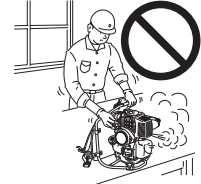
#### Put safety first in the case of fire or smoke

- If fire comes from the engine or smoke appears from any area other than the exhaust vent, first distance yourself from the product to ensure your physical safety.
- Use a shovel to throw sand or other such material on the fire to prevent it from spreading, or put it out with a fire extinguisher.
- ◆ A panicked reaction could result in the fire and other damage becoming more extensive.



#### Exhaust fumes are toxic

- The exhaust fumes from the engine contain toxic gases. Do not operate the product indoors or in other ill ventilated places.
- ◆ The exhaust fumes could cause poisoning.



#### Turn off the engine when checking or maintaining the product

Observe the following precautions when checking and maintaining your product after use:

- Turn the engine off and do not attempt to check or maintain the product until the engine has cooled
- ◆ You could burn yourself.
- Remove the spark plug cap before performing checks and maintenance
- ◆ An accident could occur if the product starts unexpectedly.

#### Checking the spark plug

Observe the following precautions when checking the spark plug.

- If the electrodes or terminals are worn, or if there are cracks in the ceramics, replace them with new parts.
- The spark test (for checking whether the spark plug is sparking) must be carried out by your dealer.
- The spark test must not be carried out in proximity of the spark plug hole.
- The spark test must not be performed in places where there are fuel spills or inflammable gases
- You must not touch the metal parts of the spark plug
- ◆ The spark plug could ignite a fire or give you an electric shock.





# For safe use of your product

## Handling the product General precautions

### WARNING

#### Operator's manual

- Be careful to read the operator's manual properly before using your product in order to ensure correct operation.
- ◆ Failure to do so could lead to an accident or serious injury.



#### Do not use the product for anything other than its intended purpose

- You must not use the product for any purpose other than those described in the operator's manual.
- ◆ To do so could lead to an accident or serious injury.

#### Do not modify the product

- You must not modify the product.
- ◆ To do so could lead to an accident or serious injury. Any malfunction resulting from a modification to the product will not be covered by the manufacturer's warranty.

#### Do not use the product unless it has been checked and maintained

- You must not use the product unless it has been checked and maintained. Always ensure that the product is checked and maintained on a regular basis.
- ◆ Failure to do so could lead to an accident or serious injury.

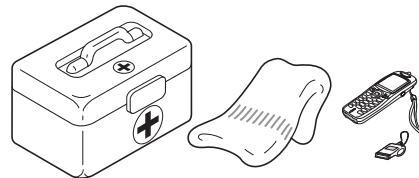
#### Loaning or assigning your product

- When loaning your product to another party, ensure that the person borrowing the product receives the operator's manual along with it.
- If you assign your product to another party, please enclose the operator's manual with the product when handing it over.
- ◆ Failure to do so could lead to an accident or serious injury.

#### Being prepared in case of an injury

In the unlikely event of an accident or injury, please ensure that you are prepared.

- First aid kit
- Towels and wipes (to stop any bleeding)
- Whistle or mobile phone (for calling outside help)
- ◆ If you are unable to perform first aid or call for outside help, the injury could worsen.



## Precautions for use

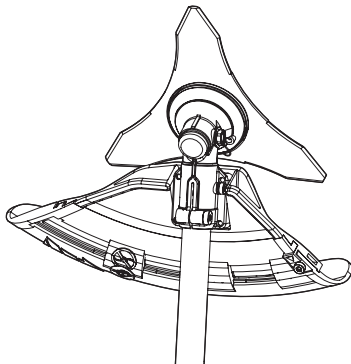
### DANGER

#### Do not use the product when the trimmer blade is turning at idle speed

- You must not use the product while the trimmer blade is turning if the Grass Trimmer is running with the throttle trigger in the idle speed position.
- ◆ To do so could lead to an accident or serious injury.

#### Do not remove the shield

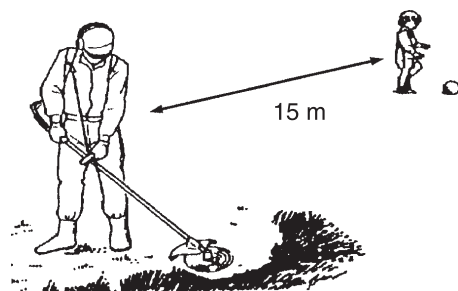
- Do not operate the product without the shield in place.
- ◆ Any objects that ricochet off the trimmer blade could cause an accident or serious injury.



#### The area within a 15 m radius is a danger zone

The area within a 15 m radius of the product is a danger zone. Be careful to observe the following precautions while working with the product.

- Do not allow children and other people or pets to enter the danger zone.
- If another person enters the danger zone, turn off the engine to stop the blade from rotating
- When approaching the operator, signal to him by, for example, throwing twigs from outside the danger zone, and then check that engine has been switched off and the blade has stopped turning
- If more than one person is working with the product, identify the way in which you will signal to each other and work at least 15 m apart
- ◆ Any objects that ricochet off the trimmer blade, and any contact with the trimmer blade, could cause blindness or a fatal accident.



# For safe use of your product

## WARNING

### Users of the product

The product should not be used by:

- people who are tired
- people who have taken alcohol
- people who are on medication
- people who are pregnant
- people who are in poor physical condition
- people who have not read the operator's manual
- children

◆ Failure to observe these instructions could lead to an accident.



### Environment of use and operation

- Do not use the product in places where there is no sure foothold, such as on steep slopes or after rainfall, as such places are slippery and dangerous.
- Do not operate the product at night or in dark places with poor visibility.
- When using the product on a gentle slope, work in a level, contour-like motion.
- ◆ A serious injury could result if you fall or slip, or fail to operate the product correctly.
- For your own health and your safe and comfortable work, operate the machine within the air temperature range of  $-5^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ .
- ◆ Failure to observe these instructions could result in damage to your health.

### Turn off the engine when moving around

When moving around in the situations described below, turn off the engine and ensure that the trimmer blade has stopped rotating, then fit the trimmer blade cover and position the silencer away from yourself.

- Moving to the place where you are working
- Moving to another area while you are working
- Leaving the place where you have been working
- ◆ Failure to observe these precautions could cause burns or serious injury.
- When transporting the product by car, empty the fuel tank, fit the trimmer blade cover, and secure the product firmly in place to prevent it from moving around.
- ◆ Travelling by car with fuel in the trimmer tank could lead to a fire.

### Vibration and cold

It is believed that a condition called Raynaud's Phenomenon which affects the fingers of certain individuals may be brought about by exposure to vibration and cold. Exposure to vibration and cold may cause tingling and burning, followed by loss of colour and numbness in the fingers. The following precautions are strongly recommended because the minimum exposure which might trigger the ailment is unknown.

- Keep your body warm, especially the head and neck, feet and ankles, and hands and wrists.
- Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks, and also by not smoking.
- Limit the number of hours of operation.  
Try to fill each day with jobs where operating the trimmer or other hand-held power equipment is not required.
- If you experience discomfort redness and swelling of the fingers, followed by whitening and loss of feeling, consult your physician before exposing yourself further to cold and vibration.
- ◆ Failure to observe these instructions could result in damage to your health.

### Repetitive stress injuries

It is believed that over-using the muscles and tendons of the fingers, hands, arms and shoulders may cause soreness, swelling, numbness, weakness and extreme pain to the areas just mentioned. Certain repetitive hand activities may put you at a high risk for developing a repetitive stress injury (RSI).

To reduce the risk of RSI, do the following:

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

### **Proper training**

**Do not permit operation without proper training and protective equipment.**

Be thoroughly familiar with the controls and proper use of unit.

Know how to stop the unit and shut off the engine.

Know how to unhook a harnessed unit quickly.

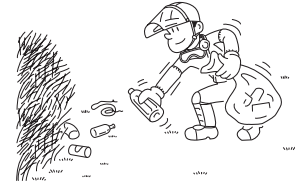
Never allow anyone to use the unit without proper instruction.

# For safe use of your product

## WARNING

### Remove foreign objects and obstructions before working with the product

- Before starting work, check the area where you will be working and remove any small stones and empty cans likely to ricochet off the cutting attachment, as well as any pieces of string or wire that might become twisted around the cutting attachment.
- ◆ An accident or serious injury can occur if foreign objects ricochet off the cutting attachment or wire and other materials twisted round the product spring off it.



### Do not hold the cutting attachment up when working with the product

- Do not hold the cutting attachment up while you work. You must not work with the cutting attachments raised above knee level.
- ◆ Raising the cutting attachment above knee level brings the plane of rotation closer to the face, and any objects that fly off the cutting attachments could cause an accident or serious injury.

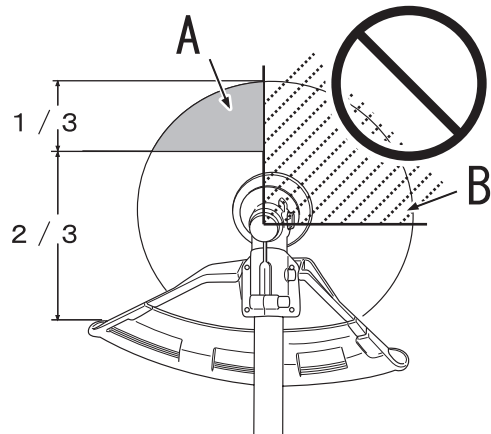
### Turn off the engine immediately if anything goes wrong

In the following situations, turn off the engine immediately and ensure that the cutting attachments have stopped before checking each area of the product. Replace any damaged parts.

- If the cutting attachment hits a rock, tree, post, or other such obstruction while you work.
- If the product suddenly starts to vibrate abnormally.
- ◆ Continuing to use parts when they are damaged could lead to an accident or serious injury.

### Kickback

- The phenomenon that occurs if the trimmer blade comes into contact with a tree, post, rock or other hard object while rotating at high speed and reacts by recoiling powerfully and instantaneously is known as kickback.
- Causing kickback can result in a loss of control over the product and is highly dangerous.
- In particular, if the front-right quadrant of the trimmer blade (B) strikes a shrub or other such object, the trimmer blade will cause the product to recoil sharply backwards to the right.
- To prevent kickback, do not trim from left to right. Be careful to ensure that the trimmer blade does not strike any hard objects.
- When trimming, ensure that the object you are cutting meets the portion of the blade  $\frac{1}{3}$  in from the front edge on the left-hand side (A).
- ◆ Failure to do so could cause an injury or fatal accident.



# For safe use of your product

## Precautions concerning the cutting attachment

### DANGER

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

### 1. With metal blade

#### WARNING

##### Use correct blades

- Serious injury may result from the improper use of blades.  
Read and comply with all safety instructions listed in this manual.
- The 3 cutter blade is designed especially to cut weeds and grass. To avoid injury due to kickback or blade fracture, do not use the 3 cutter blade to cut brush or trees.
- Use only cutting attachments recommended by YAMABIKO CORPORATION.
  - ◆ Damaged or shattered blades can cause accidents and serious injury.

##### Inspect blade before use

Pieces from a cracked metal blade can fly off during operation. Inspect metal blades for cracks before each use. Discard cracked blades no matter how small the crack. Cracked blades can be the result of the misuse or improper sharpening.

- ◆ Damaged or shattered blades can cause accidents and serious injury.

##### Reaction forces

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

- ◆ Failure to do so could cause an injury or fatal accident.

### 2. With nylon line cutting head

#### WARNING

##### Use correct cutting attachment

- Serious injury may result from the improper use of cutting attachment.  
Read and comply with all safety instructions listed in this manual.
- Use only cutting attachments recommended by YAMABIKO CORPORATION.
- Use only nylon line cutting head. Do not use any type of metal blade.
  - ◆ Failure to do so could lead to an accident or serious injury.
- Excessive nylon line beyond cut off knife could fly off when the nylon line cutting head starts rotating after adjustment of nylon line length.
  - ◆ Failure to do so could lead to an accident or injury.

##### Do not trim near cars or pedestrians

Use extreme caution when operating over bare spots and gravel, because the line can throw small rock particles at high speeds. The shield on the unit cannot stop objects which bounce or ricochet off hard surfaces.

- ◆ Failure to do so could lead to an accident or serious injury.

##### Avoid wire

Do not trim in any area where there are broken strands of fencing wire. Remove the broken pieces of wire, or give the area wide berth. Wear proper safety protection. Do not cut where you cannot see what the cutting device is cutting.

- ◆ Failure to do so could lead to an accident or serious injury.

#### CAUTION

Use only flexible, non-metallic line recommended by YAMABIKO CORPORATION.

# For safe use of your product

## Protective gear

### WARNING

#### Wear protective gear

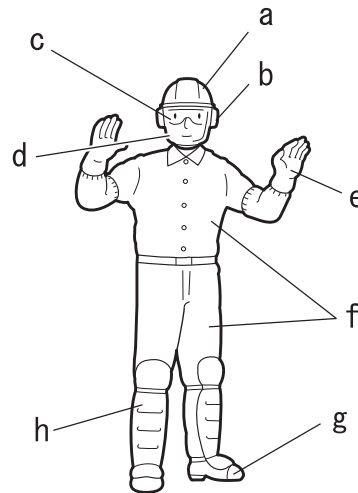
Always wear the following protective gear when working with the trimmer.

- a **Head protection (helmet):** Protects the head
- b **Ear muffs or ear plugs:** Protect the hearing
- c **Safety goggles:** Protect the eyes
- d **Face shield:** Protects the face
- e **Safety gloves:** Protect the hands from cold and vibration
- f **Work clothes that fit (long sleeves, long trousers):** Protect the body
- g **Heavy duty, non-slip protective boots (with toecaps) or non-slip work shoes (with toecaps):** Protect the feet
- h **Shin guards:** Protect the legs

◆ Failure to observe these precautions could result in damage to your sight or hearing, or lead to a serious injury.

**When necessary, please use the protective gear below.**

- **Dust mask:** Protects the breathing apparatus
- **Bee net:** To deal with attacks by bees



#### Wear proper clothing.

Do not wear ties, jewellery, or loose, dangling clothing which could be caught in the unit. Do not wear open toed footwear, or go bare-foot or barelegged. In certain situations, total face and head protection may be required. For heavy brush cutting with metal blade, logger's trousers or leg chaps with protective inserts are added considerations.

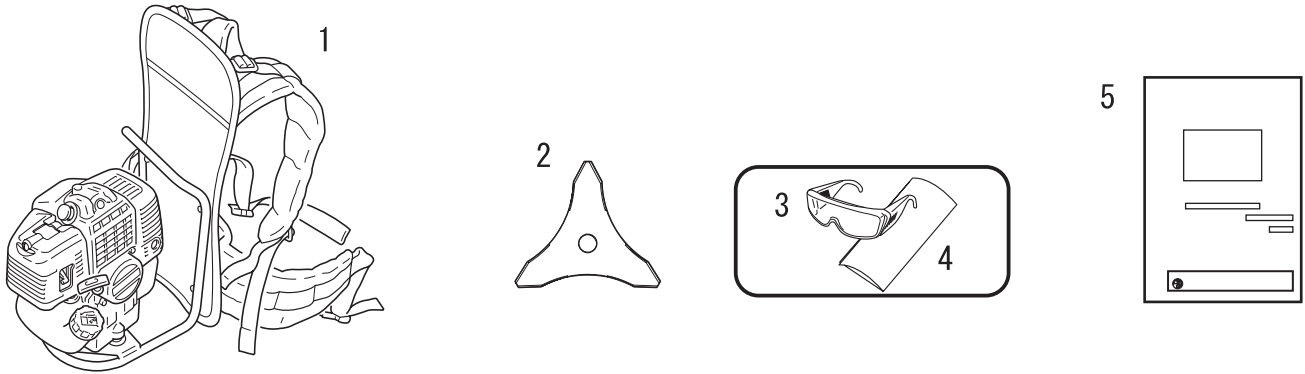
◆ Failure to observe these precautions could result in damage to your sight or hearing, or lead to a serious injury.



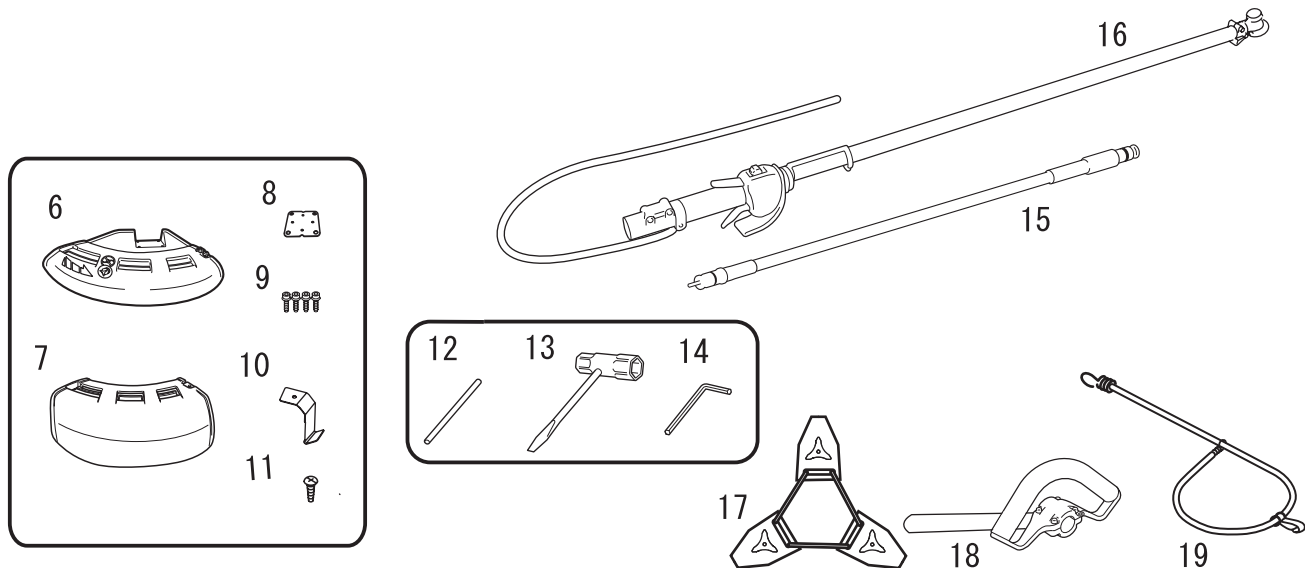
# Packing list

- ♦ The following parts are packed separately in the packing box.
- ♦ When you have unpacked the box, please check the parts that it contains.
- ♦ Contact your dealer if anything is missing or broken.

## Engine



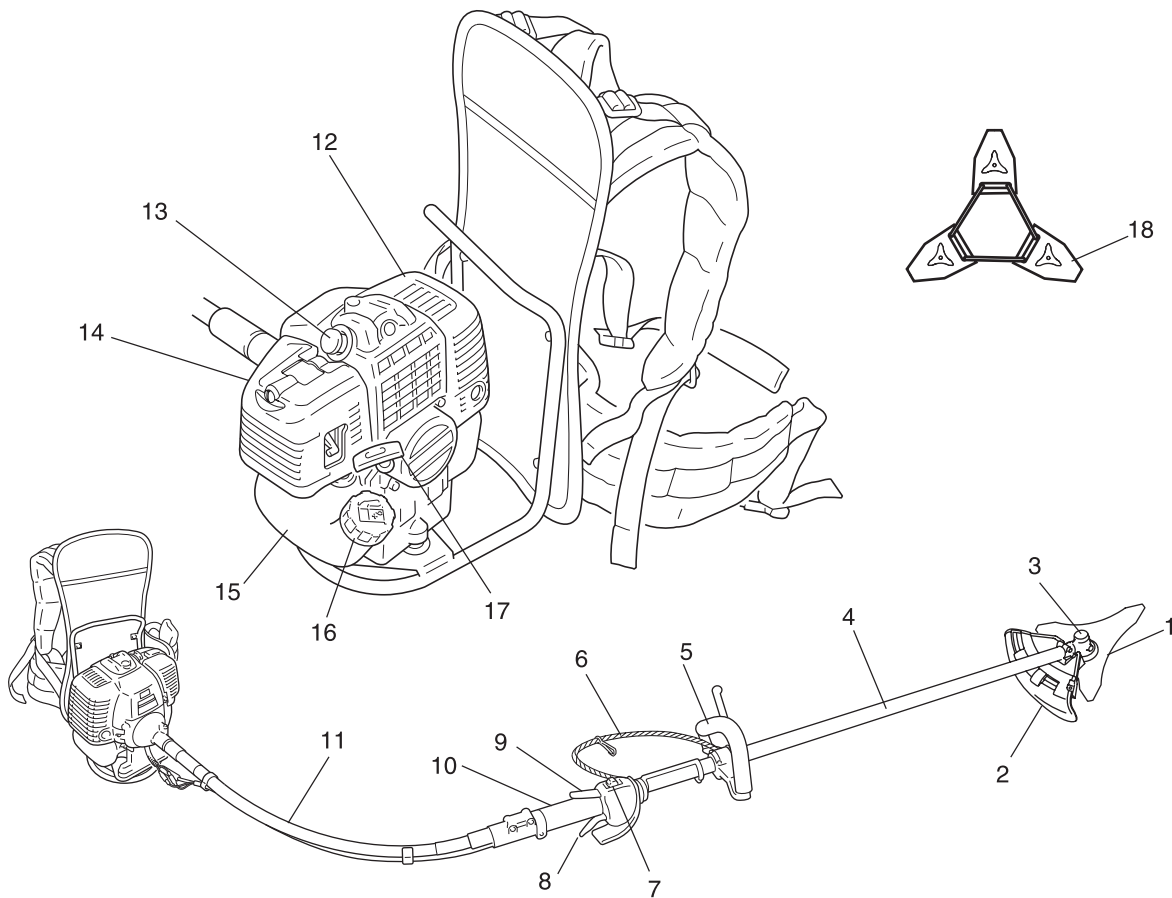
## Operation Shaft



1. Engine
2. 3 cutter blade
3. Safety goggles (ANSI Z 87.1 compliant)
4. Caution tag
5. Operator's manual
6. Shield (for metal blade)
7. Shield (for nylon line cutting head)
8. Convex of fitting plate
9. Bolt M5×25
10. Cut off knife

11. Screw 5×12
12. Locking tool
13. Socket wrench
14. Hexagonal wrench
15. Flexible shaft assembly
16. Shaft tube
17. Blade cover
18. Front handle
19. Strap

# Description



1. **Cutting attachment** 3 cutter blade for cutting grass, garden debris and weeds.
2. **Shield** Device to protect the operator from accidental contact with the cutting head and thrown objects.
3. **Angle transmission** Having two gears to change to angle of rotating axis.
4. **Shaft tube** Part of the unit that provides a casing for power transmission shaft.
5. **Front handle** Handle located towards the cutting device.
6. **Strap** Rubber strap to hang power transmission shaft.
7. **Ignition switch** "Slide switch" mounted on top of the throttle trigger housing, move switch upward to RUN, downward to STOP position.
8. **Throttle trigger** Activated by the operator's finger for controlling the engine speed.
9. **Throttle trigger lockout** Locks throttle trigger in the idling position until you have a proper grip with your right hand around the handle.
10. **Rear handle** Handle located towards the knapsack power unit.
11. **Flexible shaft assembly** Flexible tube for the power transmission shaft.
12. **Silencer cover** Cover the silencer not to make operator touch to hot surface of silencer.
13. **Spark plug**
14. **Air cleaner cover** Covers air filter.
15. **Fuel tank** Contains fuel and fuel filter.
16. **Fuel tank cap** For closing the fuel tank.
17. **Starter handle** Pull handle to start the engine.
18. **Blade cover** When transporting the unit, use the appropriate metal blade cover.

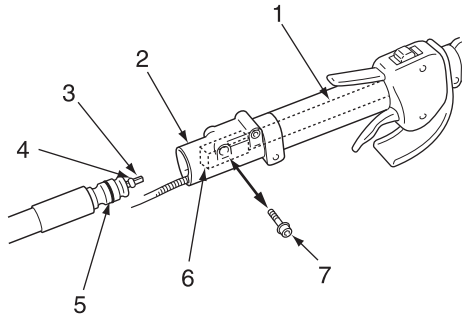
# Before you start

## Assembly

### WARNING

Read the operator's manual carefully to ensure that you assemble the product correctly.

◆ Using a product that has been incorrectly assembled could lead to an accident or serious injury.

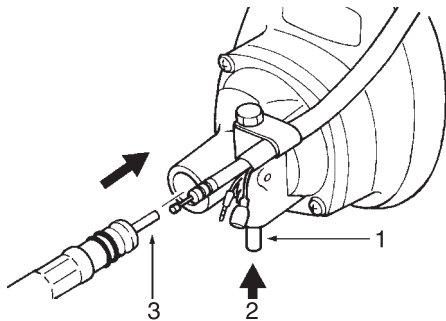


- |                                 |              |
|---------------------------------|--------------|
| 1. Power transmission shaft (F) | 5. Connector |
| 2. Holder                       | 6. Socket    |
| 3. Power transmission shaft (R) | 7. Bolt      |
| 4. Spacer                       |              |

### Flexible shaft assembly

First stage of assembling is coupling of the power transmission shaft (F) and (R).

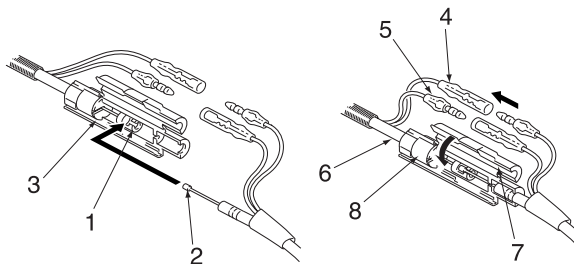
- ◆ Loosen bolt with hexagonal wrench.
- ◆ Insert the power transmission shaft (R) with the spacer into the socket gradually and fully. - The socket is assembled on the power transmission shaft (F) and located inside of the rear handle. - The spacer that is located at the end of the power transmission shaft (R) prevents the shaft (R) from loosening off.
- ◆ Insert connector into holder and tighten bolt securely using hexagonal wrench.



- |             |                                 |
|-------------|---------------------------------|
| 1. Lock pin | 3. Power transmission shaft (R) |
| 2. Push     |                                 |

Second stage is coupling of the power transmission shaft (R) and the engine.

- ◆ As pushing in the lock pin fully, insert the other end of power transmission (R) to the driving shaft of the engine. - For easier coupling, pull out the power transmission (R) about 4 mm more in advance.
- ◆ After set the lock pin free, confirm that the flexible shaft assembly can not be drawn out and is coupled properly with the engine.



- |                |                   |
|----------------|-------------------|
| 1. Joint       | 5. Lead (B)       |
| 2. Inner cable | 6. Throttle cable |
| 3. Holder      | 7. Cover (A)      |
| 4. Lead (A)    | 8. Cover (B)      |

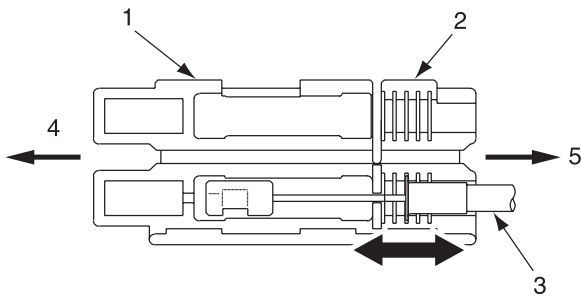
### Throttle cable retainer assembly

This assembly is designed to provide a simple connection and adjustment for the throttle cable.

- ◆ Hook inner cable terminal into joint, set the cable in holder and shut cover (A).
- ◆ Connect lead (A) and lead (B).

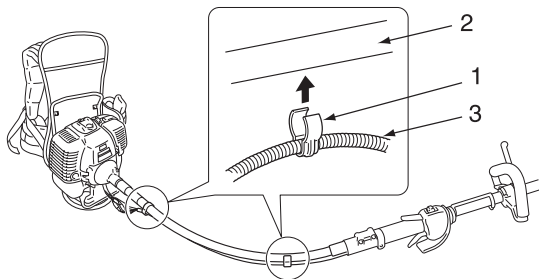


# Before you start



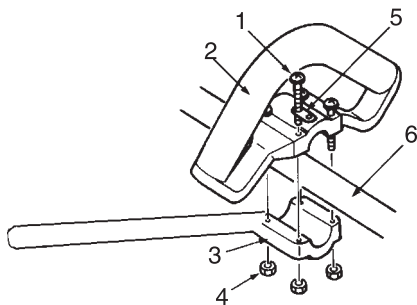
- 1. Cover (A)
- 2. Cover (B)
- 3. Throttle cable
- 4. Engine side
- 5. Shaft tube side

- ♦ The length of inner cable can be adjusted for proper pulling by opening cover (B) and resetting flange of throttle cable into a suitable groove on the left or right.



- 1. Clip
- 2. Flexible shaft assembly
- 3. Throttle cable

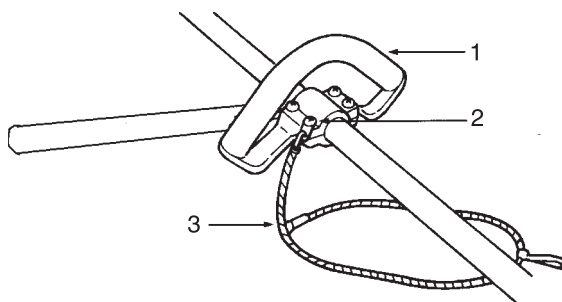
- ♦ The 2 pieces of clip attached to flexible shaft assembly must be set to appropriate positions on the throttle cable (at equal distance on the whole length of the flexible shaft assembly).



- 1. Screw M5×35
- 2. Front handle
- 3. Bracket
- 4. Nut
- 5. Hanger
- 6. Shaft tube

## Loop handle

- ♦ Assemble the front handle and bracket on the shaft tube loosely.
- ♦ Adjust the location of the front handle to a convenient position.
- ♦ Tighten the screws (M5×35) and nuts securely. - One of the 4 screws must be tighten together with the hanger as illustrated.

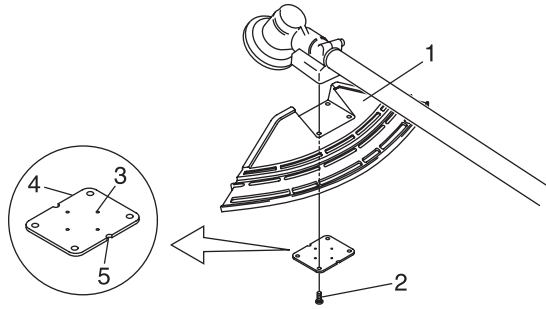


- 1. Front handle
- 2. Hanger
- 3. Strap

## Shoulder harness

- ♦ Suit the length of knapsack band to comfort.
- ♦ As the strap is elastic and adjustable, it is preferable to connect the strap to the hangers located on the front handle and the left or right knapsack band to maintain a fatigueless and comfortable operation.

# Before you start

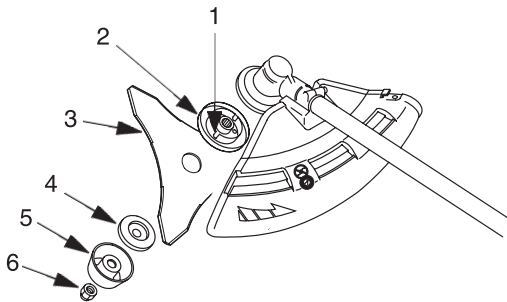


- 1. Bracket
- 2. Bolt M5×25
- 3. Convex of fitting plate
- 4. Fitting plate
- 5. Notch of fitting plate

## Installation of bracket

Fit bracket to mounting portion of angle transmission and fix the bracket by holding fitting plate pressed from beneath and tighten 4 bolts (M5×25) lightly.

Get notches and convexes of fitting plate to face corresponding convexes and concaves of bracket, and fix bracket tightening 4 bolts (M5×25) securely.



- 1. Blade retainer fixing slot
- 2. Blade retainer
- 3. Blade
- 4. Lower blade retainer
- 5. Cup
- 6. Nut

## Installing blade

Inspect blades before installation. Check for sharpness.

Dull blades increase the risk of blade kickback reactions.

Small cracks can develop into fractures resulting in a piece of blade flying off during operation.

Discard cracked blades no matter how small the crack.

Blade retainer, blade, lower blade retainer, cup and nut finger tight.

### **⚠ DANGER**

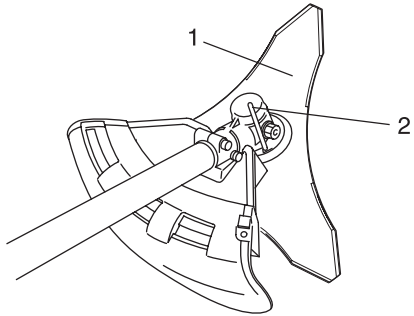
If worn nut and cup for blade are used, there is a danger of blade getting loose. Replace them with new one.

### **⚠ WARNING**

- Do not attempt to fit the trimmer blade with one hand or without using the socket spanner. Fit the trimmer blade accurately using the supplied socket spanner and tighten firmly in position.
- The trimmer must not be used if the blade vibrates or is loose.
- Wear heavy duty gloves when working with the trimmer blade. When replacing the trimmer blade during a trimming task, ensure that the engine is switched off and that the blades have stopped.
- Do not use any tools other than the proved socket spanner to tighten the blade, a pneumatic or electric tool may tighten the blade more than necessary and cause the nut or the output shaft to break.
- When turning the product over to replace the trimmer blade, ensure that the fuel tank cap is securely in place.
- ◆ Failure to do so could lead to an injury or serious accident, or cause a fire.

# Before you start

Insert locking tool into a hole located on the right side of angle transmission while forcing retainer spring to the left side. Insert locking tool further into blade retainer fixing slot to fix output shaft.

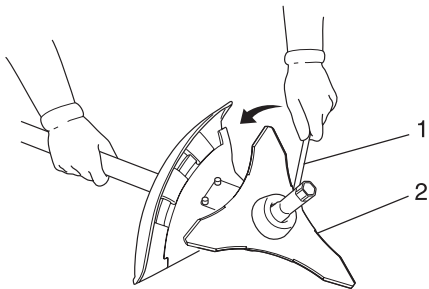


1. Blade

2. Locking tool

<b>⚠ CAUTION</b>
<b>Fasten output shaft using locking tool securely in order to avoid the possibility of output shaft rotating when mounting cutting blade which will prevent the cutting blade fastening nut from being tightened sufficiently.</b>

Tighten the nut (turn anticlockwise) using a socket wrench. Never fasten while applying your weight. Otherwise the thread of nut could be broken. Replace nut and cup with new ones no matter how small the wear is.



1. Socket wrench

2. Blade

# Before you start

## Preparing the fuel

### DANGER

- Fuel is highly inflammable and there is a risk of fire if it is handled incorrectly. Carefully read and observe the precautions in the section of this manual titled "For safe use of your product".
- Once the refuelling is complete, securely tighten the fuel tank cap and do not forget to check that there are no leaks or discharges of fuel from the fuel pipe, fuel system grommets, or around the fuel tank cap. If you do find fuel leaks or discharges, stop using the product immediately and contact your dealer to have it repaired.
- ◆ If the fuel ignites, it could cause burns and fire.



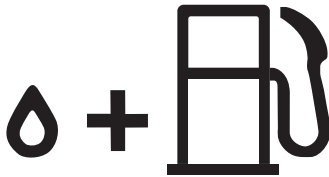
### CAUTION

- There is difference in pressure between the fuel tank and the outside air. When refuelling, loosen the fuel tank cap slightly to eliminate the difference in pressure.
- ◆ Otherwise, fuel may get spewed.

### NOTE

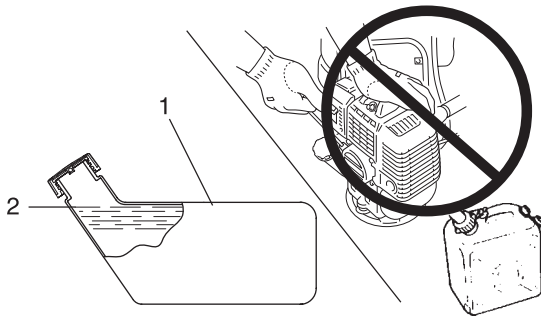
Stored fuel ages. Do not mix more fuel than you expect use in thirty (30) days. Do not mix directly in fuel tank.

## Fuel



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

## Fuel supply



1. Fuel tank

2. Shoulder level

- ◆ Always refuel in a well ventilated location. Do not pour fuel indoors.
- ◆ Place the product and the refuelling tank on the ground when performing the refuelling operation. Do not refuel the product on the loading platform of a truck, or in other such places.
- ◆ Always ensure that the fuel level remains below the shoulder level of the fuel tank when refuelling.
- ◆ There is a difference in pressure between the fuel tank and the outside air. When refuelling, loosen the fuel tank cap slightly to eliminate the difference in pressure.
- ◆ Always wipe up any fuel spills.
- ◆ Move at least 3m away from where you refueled before you start the engine.
- ◆ Keep the refuelling tank in a shaded area away from fire.

## Starting the engine

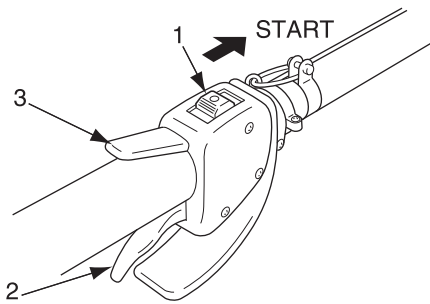
### WARNING

- When starting the engine, observe the precautions described from Page 4 in the section "For safe use of your product" to ensure that you operate the product correctly.
- If the cutting attachment rotates even though the throttle trigger is in the idle speed position when the engine is started, adjust the carburettor before using the product.
- ◆ Failure to observe the precautions could cause an accident or injury, or even lead to a fatality.

### NOTE

- ◆ Pull out the starter grip gently at first, and then more rapidly. Do not pull the starter rope out to more than 2/3 of its length.
- ◆ Do not let go of the starter grip as it returns.

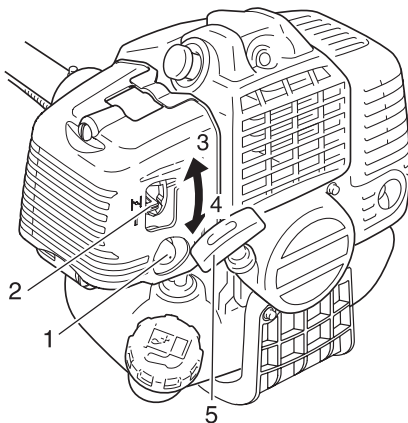
## Starting a cold engine



- 1. Ignition switch
- 2. Throttle trigger
- 3. Throttle trigger lockout

(Connect the spark plug cap if the product has been in storage for a long period of time)

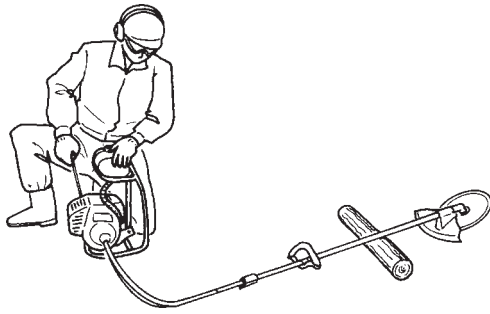
The starting procedure depends on whether the engine is cold or warm. A cold engine is started as follows.



- 1. Purge bulb
- 2. Choke lever
- 3. Cold Start (CLOSE)
- 4. Run (OPEN)
- 5. Starter handle

1. Remove the trimmer blade cover and check the trimmer blade. If anything is wrong, replace it with a new one.
2. Placing the product on level ground, check to ensure that the blade does not come into contact with the surface of the ground or any other impediment using a beam or other such implement.
3. Check that there are no fuel leaks.
4. Move the ignition switch to the Start position.
5. Make sure that the throttle trigger is at the idle speed position.
6. Move the choke lever to the "Cold Start" position.
7. Alternately press and release the purge bulb until the fuel is sucked up into it.

# Engine operation

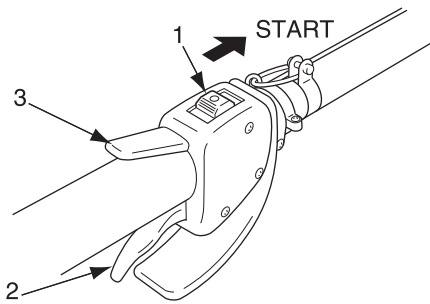


8. Checking that the area around you is safe, hold the position closest to the engine firmly as shown in the illustration, pulling several times on the starter grip.
9. If you hear an explosion-like sound and the engine stops immediately, move the choke lever to the "Run" position and continue pulling on the starter grip to start the engine.
10. If the engine starts immediately when you carry out the instructions in step 8, above, return the choke lever gently to the "Run" position.
11. Leave the engine to warm up at idle speed for a while.

## Engine warm-up

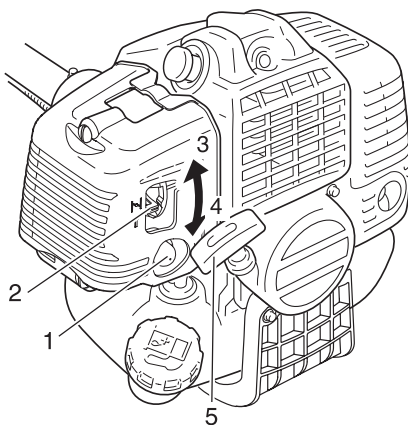
1. Once the engine starts, allow it to warm up for 2 to 3 minutes at idling (i.e. low speed).
2. Warming the engine helps to lubricate its internal workings more smoothly. Allow the engine to warm up fully, especially when it is cold.
3. Never run the engine without the cutting attachment fitted.

## Starting a warm engine



1. Ignition switch
2. Throttle trigger
3. Throttle trigger lockout

1. Move the ignition switch to the Start position.
2. Make sure that the throttle trigger is at the idle speed position.
3. Check that the choke lever is in the "Run" position.
4. If fuel tank is not empty, pull on the starter grip to start the engine.
5. If no fuel is visible in the purge bulb, alternately press and release the purge bulb until the fuel is sucked up into it.

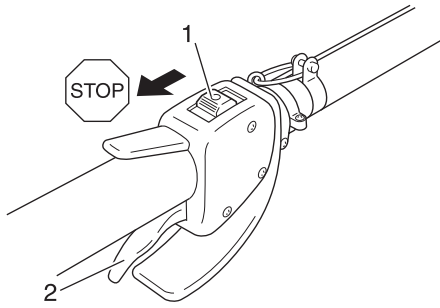


1. Purge bulb
2. Choke lever
3. Cold Start (CLOSE)
4. Run (OPEN)
5. Starter handle

6. Checking that the area around you is safe, hold the position closest to the engine firmly, and pull on the starter grip to start the engine.

# Engine operation

## Stopping the engine

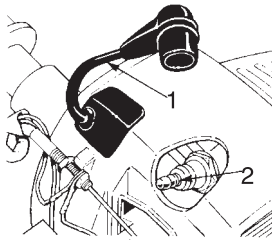


1. Ignition switch

2. Throttle trigger

1. Move the throttle trigger to the idle speed position and set the engine to idling (i.e. low speed).
  2. Move the ignition switch to the Stop position.
  3. In the event of an emergency, stop the engine immediately using the ignition switch.
  4. If the engine fails to stop, move the choke lever to the "Cold Start" position. The engine will stall and come to a halt (an emergency stop).
- \* If the engine fails to stop when the ignition switch is used, have the ignition switch checked and repaired by your dealer before you use the product again.

Always disconnect the spark plug wire from the spark plug to ensure the engine cannot be started before you work on the unit or leave it unattended.



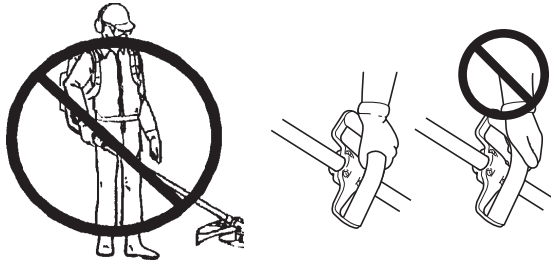
1. Spark plug wire

2. Spark plug

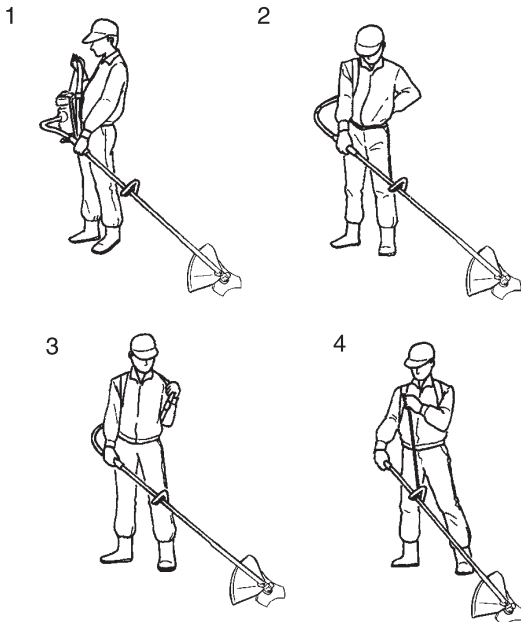
# Trimming operation

## DANGER

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



- ♦ Never attempt to operate the product with one hand.
- ♦ Ensure that you hook your thumbs around the grips, wrapping them in your thumb and remaining fingers.



1. Hold the rear handle of shaft tube in left hand and hang the right knapsack band on the right shoulder.
2. Hold the rear handle of shaft tube in right hand and hang the left knapsack band on the left shoulder.

3. For even load on both sides of shoulder, joggle the unit on the shoulder a couple of times.
4. It is preferable to connect the strap to the hangers located on the loop handle the left or right knapsack band and adjust the length of the strap to maintain a comfortable operation.

Increase engine speed as necessary, heavy weeds will require more power than cutting grass. - Small trees or heavy brush can be cut using the circular saw. - The 3 cutter blade should be used only for cutting grass, brush or for heavy weed control.



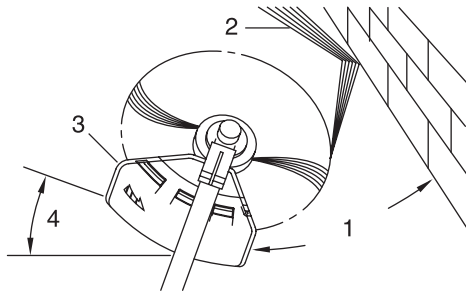
Hold the front handle (loop handle) and rear handle both hands.

- ♦ When cutting weeds or grass, swing the blade right and left in an arc as you move forward.
- ♦ The blade rotates anticlockwise, so it is necessary to cut the object from the right to the left.
- ♦ The manner of walking is as follows: - Place the right foot in front of the left foot without fail. - Step the right foot forward firstly and secure your footing. - And then follow the left foot to the behind of the right foot.
- ♦ Avoid striking any obstruction such as rocks, stones or tree stumps which can damage the blade. - In the event that the blade strikes an obstruction or is otherwise prevented from rotating in normal operation, the clutch will slip to prevent possible engine damage. - In this case, stop the engine, free the blade and then start the operation again.
- ♦ Do not cut into the ground.
- ♦ Do not run the unit unloaded at full throttle to avoid damage to the engine.
- ♦ Should the unit be operated for an extended period of time in high temperatures, the angle transmission may become very hot. If it is too hot to touch, allow the unit to cool down, check the lubricant as the instruction and continue to operate if in order.

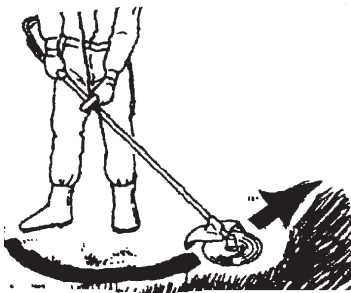


# Trimming operation

## Basic trimming operation with nylon line cutting head The basic cutting actions



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



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

### Trimming

This is feeding the trimmer carefully into the material you wish to cut. Tilt the head slightly to direct the debris away from you. If cutting up to a barrier such as a fence, wall or tree, approach from an angle where any debris ricocheting off the barrier will fly away from you.

Move the nylon line cutting head slowly until the grass is cut right up to the barrier, but do not jam (overfeed) the line into the barrier. If trimming up wire mesh or chain link fencing, be careful to feed only up to the wire. If you go too far, the line will snap off around the wire.

Trimming can be done to cut through weed stems one at a time. Place the nylon line cutting head near the bottom of the weed never high up, which could cause the weed to chatter and catch the line. Rather than cut the weed right through, just use the very end of the line to wear through the stem slowly.

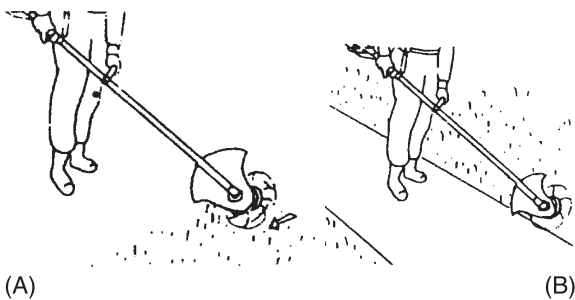
### Scything

This is the cutting or mowing of large grassy areas by sweeping or swinging the trimmer in a level arc. Use a smooth, easy motion. Do not try to hack or chop down the grass. Tilt the nylon line cutting head to direct the debris away from you on the scything stroke. Then return without cutting grass for another stroke. If you are well protected and do not care whether some debris is thrown in your direction, you may scythe in both directions.

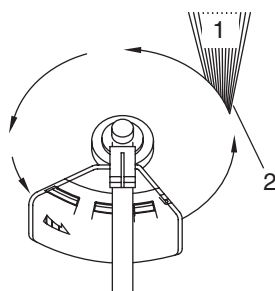
### Scalping and edging

Both of these are done with the nylon line cutting head tilted at a steep angle. Scalping is removing top growth, leaving the earth bare. Edging is trimming the grass back where it has spread over a pavement or driveway. During both edging and scalping, hold the unit at a steep angle in a position where the debris, and any dislodged dirt and stone, will not come back towards you even if it ricochets off the hard surface.

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



- A: Scalping
- B: Edging



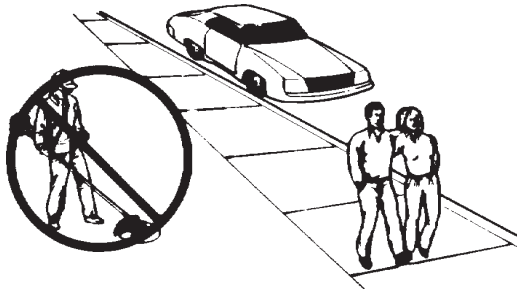
**Nylon line cutting head rotates anticlockwise.  
The knife will be on the left side of the shield.**

- 1. Debris
- 2. Cut on this side

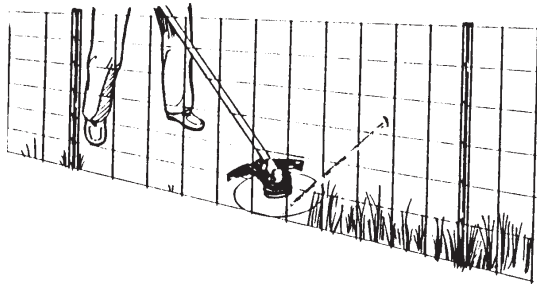
For nearly all cutting, it is good to tilt the nylon line cutting head so that contact is made on the part of line circle where the line is moving away from you and the shield (See appropriate picture). This results in the debris being thrown away from you.

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

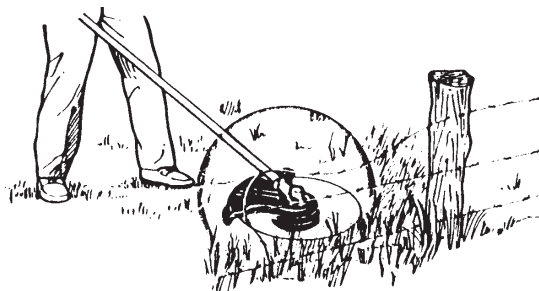
# Trimming operation



**Do not trim near cars or pedestrians.**



**Line pushed into wire fencing will snap off.**



**Avoid wire**

Always wear proper eye protection against thrown objects. Objects can bounce up at you from the ground under the shield, or ricochet off any nearby hard surface.

Do not trim at high speed near roadways when there is traffic, or in places where there are pedestrians. If you must trim where people are in the zone of risk use a much lower or reduced speed, by using a partial trigger setting. Do not use full throttle.

Do not push the line into tough weeds, trees, or wire fences. Pushing the line into chicken wire, chain link fencing or thick brush can result in snapped-off line ends being hurled back at the operator. The proper way is to cut right up to a barrier, such as any of those mentioned, but never run the line into or through the obstruction. Do not cut closely to obstruction or barrier.

Avoid nylon line contact with broken wire fencing. Pieces of wire broken off by the trimmer can be hurled at high speeds.

## Basic trimming operation with metal blade

### **WARNING**

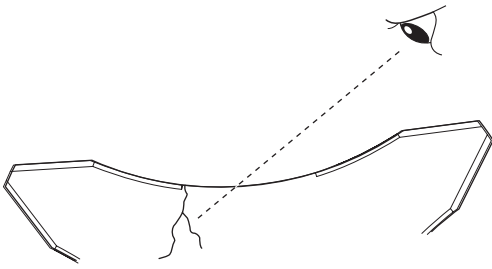
Please observe the following instructions when trimming.

- Ensure that the trimmer blade does not come into contact with hard obstructions such as stone, metal, or concrete.
- If the blade hits an obstruction, turn off the engine immediately and ensure that the blade has stopped before checking the blade and shield for damage.
- Never use cracked blades, as they could fly off while you are working.
- Check to ensure that the trimmer blade has been tightened securely in place.
- Replace the shield if it is damaged or cracked.
- Replace the trimmer blade nut when it becomes worn.
- ◆ Failure to do so could lead to an accident or serious injury.



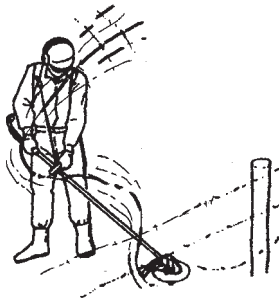
# Trimming operation

## Use correct blade



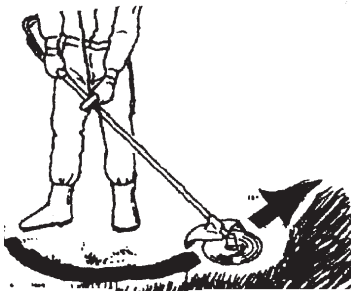
- ♦ Always use the blade suited for the job.
- ♦ Do not allow the trimmer blade to come into contact with hard obstructions such as stone, concrete or metal.
- ♦ Do not cut into the ground with the blade.
- ♦ If the blade hits an obstruction, turn the engine off immediately and ensure that the trimmer blade has stopped rotating before checking the blade and shield for damage.
- ♦ Do not operate with a dull, bent, fractured or discoloured blade and worn or damaged nut.
- ♦ Never use a cracked trimmer blade as it could shatter off while you are working.
- ♦ Do not run engine at full throttle without a load.
- ♦ Remove all foreign objects from work area.
- ♦ Do not operate brushcutter without shield.

## Inspect blades before use



## Wires can catch and flap around

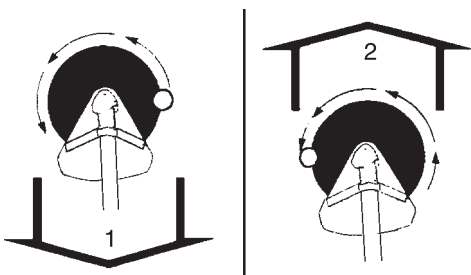
## Scything weeds



This is cutting by swinging the cutting attachment in a level arc. It can quickly clear areas of field grass and weeds. Scything should not be used to cut large, tough weeds or woody growths. If a sapling or shrub binds the cutting attachment, do not use the cutting attachment as a lever to free the bind, because this will cause cutting attachment failure. Instead, shut off the engine and push the sapling or shrub to free the blades.

Do not use a cracked or damaged blade.

## Reaction forces



Anticlockwise rotation

1. Push

2. Pull

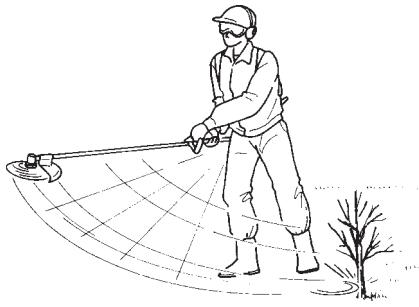
## Push.

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

## Pull.

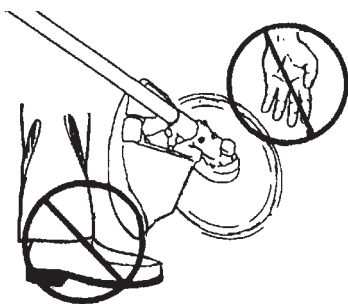
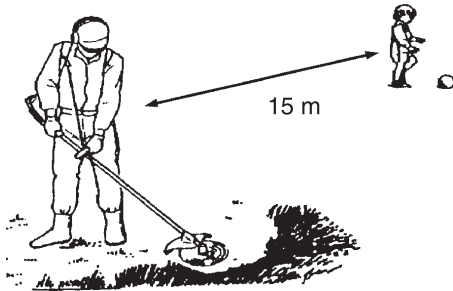
The opposite of push. When object on left, the operator may feel the unit pull away. Although this pull type of cutting may cause sawdust to be thrown back at the operator, it is recommended for sawing off heavy brush because the cutting is smoother and more stable than when the unit pushes.

# Trimming operation



Kickback

## Precautions to observe when working



### Kickback.

If you hit a hard object with the front-right of the trimmer blade, such as when trimming in both directions, the blade will kick sharply back to the right. This is a phenomenon known as "kick back", and can cause a serious accident due to the operator losing control over the product. Take particular care to ensure that you do not strike any hard object with the front-right of the trimmer blade.

- ♦ The area within a radius of 15m of the product is a danger zone. Make sure that there are no children, onlookers, or pets in this zone. If anyone comes within 15m, turn off the engine immediately to stop the blade from rotating.
- ♦ If someone is helping you with the work or you are working together, identify the way in which you will signal to each other and work at least 15m apart. You are advised to carry a whistle in case you need to communicate.
- ♦ Turn off the engine immediately if the product suddenly starts to vibrate abnormally. Sudden vibration may be caused by a problem with a component such as the flywheel, clutch, or trimmer blade, or by a loose screw or other such factor. Do not use the product until you have identified the cause of the problem and the repair has been completed.
- ♦ The trimmer blade could fly off unless tightened securely. Ensure that it is fitted securely in place.
- ♦ Replace the shield if it is damaged or cracked.
- ♦ If you work with the angle transmission in contact with the surface of the ground, the trimmer blade nut and cup can easily become worn. Replace them with new parts if this happens.
- ♦ When you turn off the engine, check to ensure that the trimmer blade has stopped rotating before you lower the product to the ground. Even if the engine has been turned off, the blade can still cause an injury while free-wheeling.
- ♦ The silencer will remain hot for some time after the engine has been turned off. Carry the product with the silencer away from you to avoid touching it with your body.
- ♦ When carrying the product, always turn the engine off and fit the trimmer blade cover over the trimmer blade.

# Maintenance and care

## Servicing guidelines

Area	Maintenance	Page	Before use	Monthly
Air filter	Clean/Replace	29	•	
Fuel filter	Inspect/Clean/Replace	30	•	
Spark plug	Inspect/Clean/Adjust/Replace	31		•
Carburettor	Adjust/Replace and adjust	30		•
Cooling system	Inspect/Clean	30	•	
Silencer	Inspect/Tighten/Clean	31	•	
Flexible shaft	Grease	32		•*
Angle transmission	Grease	32		•**
Starter	Inspect	-	•	
Cut off knife	Inspect/Clean	-	•	
Fuel system	Inspect	31	•	
Screws, bolts and nuts	Inspect, Tighten/Replace	-	•	

## IMPORTANT

Time intervals are maximum. Actual use and your experience will determine the frequency of required maintenance.

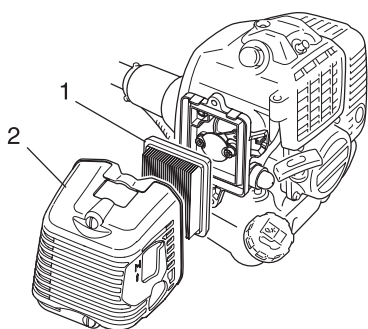
\* Or 18 hours, whichever occurs first.

\*\* Or 50 hours, whichever occurs first.

## Maintenance and care

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

### Cleaning air filter



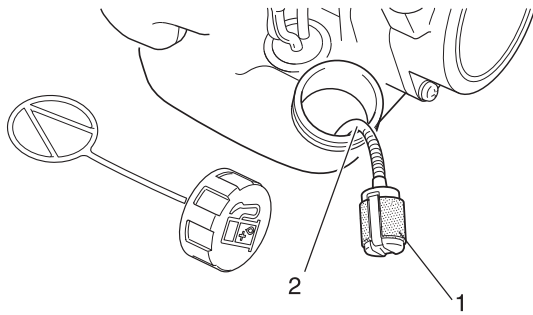
1. Air filter

2. Air cleaner cover

- ♦ Close choke. Loosen screw and remove air cleaner cover.
- ♦ Remove air filter (air filter is located inside air cleaner cover).
- ♦ Brush dirt from filter or clean with compressed air. Do not wash the air filter.
- ♦ Reinstall air filter with cover, after installing air filter to cover.
- ♦ Tighten screw.

# Maintenance and care

## Replacing fuel filter



1. Fuel filter

2. Fuel line

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

### NOTE

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

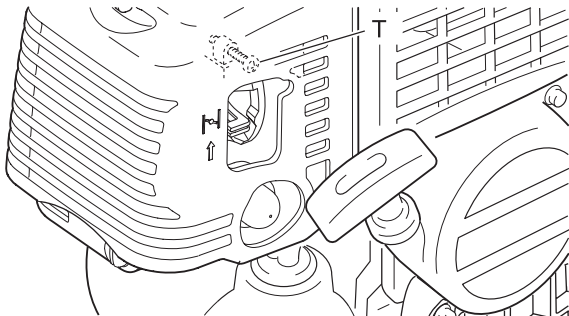
## Carburettor adjustment

### ⚠ WARNING

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

### ⚠ CAUTION

When starting, idle speed adjuster (T) should be adjusted not to rotate the cutting attachment.  
When there is some trouble with the carburettor, contact your dealer.



T: Idle speed adjustment screw

Every unit is test run at the factory and the carburettor is fine tuned for maximum performance.

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

To adjust the carburettor proceed as follow:

Turn "idle" speed adjustment screw (T) clockwise until cutting attachment begins to turn, then turn screw(T) out anticlockwise until cutting attachment stops turning. Turn screw (T) out, anticlockwise, and additional 1/4 turn.

## Cooling system maintenance

### IMPORTANT

To maintain proper engine operating temperature, cooling air must pass freely through the cylinder fin area. This flow of air carries combustion heat away from the engine.

Overheating and engine seizure can occur when:

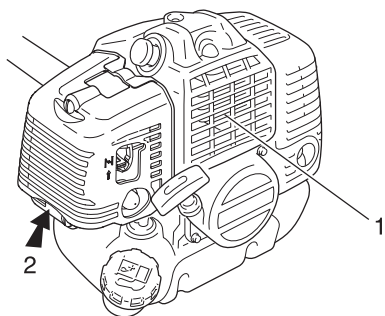
- ♦ Air intakes are blocked, preventing cooling air from reaching the cylinder,

or

- ♦ Dust and grass build up on the out side of the cylinder. This build-up insulates the engine and prevents the heat from leaving.

Removal of cooling passage blockages or cleaning of cylinder fins is considered "Normal Maintenance". Any resultant failure attributed to lack of maintenance is not warranted.

# Maintenance and care

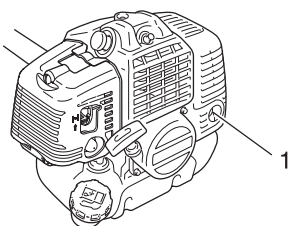


1. Cylinder fins

2. Air intake

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

## Cleaning silencer



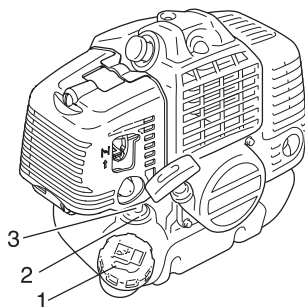
1. Silencer

- ♦ Carbon deposits in silencer will cause a drop in engine output and overheating. Clean deposits from silencer.

### IMPORTANT

Do not remove the silencer cover. If necessary, Please consult your dealer.

## Check fuel system



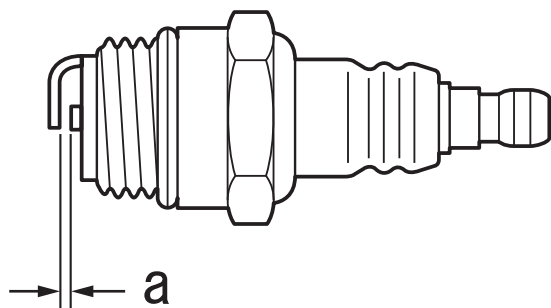
1. Fuel tank cap

2. Fuel grommet

3. Fuel pipe

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

## Check spark plug

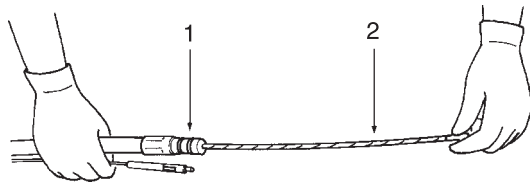


a: 0.6 - 0.7 mm

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

# Maintenance and care

## Lubricating flexible shaft

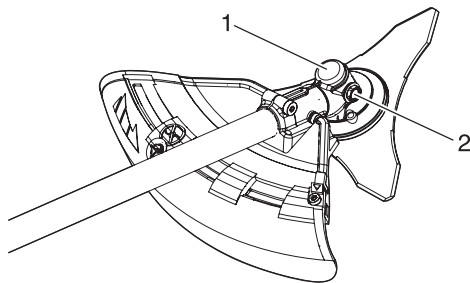


1. Flexible shaft

2. Power transmission shaft

- ♦ All the surface of the power transmission shaft (R) should always be properly greased.
- ♦ At the time of delivery from the plant, this is greased, so evenly grease all the surface of the power transmission shaft (R) approximately 10 mL in every 18 hours.
- ♦ The major points necessary for disassembling and reassembling are as follows: - As pushing in the lock pin of the engine fully, draw out the flexible shaft assembly from the engine. - Unfasten the coupling of the flexible shaft assembly at the grip end, draw out the flexible shaft assembly from the rear handle assembly. - Then the power transmission shaft (R) with the spacer can easily draw out from the flexible shaft assembly. - Use the same grease as the angle transmission's. - When reassemble, it is preferable to fit the power transmission shaft (R) reversely, but the spacer is fitted on the rear handle assembly side of the power transmission shaft (R) at all times.

## Angle transmission



1. Angle transmission

2. Plug (Bolt)

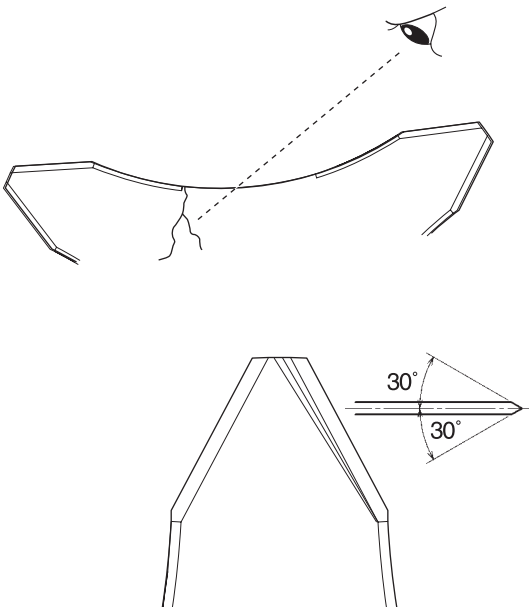
- ♦ Remove plug from angle transmission.
- ♦ Add grease, if necessary, using low pressure pump.

### NOTE

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

- ♦ Reinstall plug.

## Checking the blade



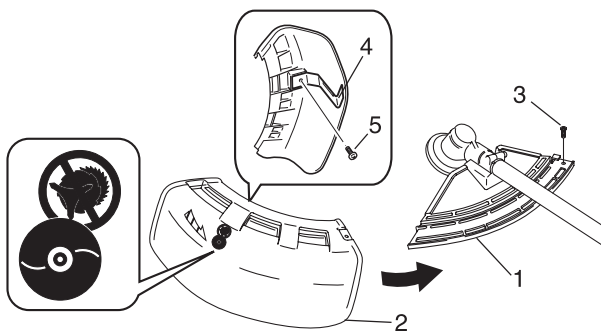
- ♦ Use only blade designated for this model by the manufacturer.
- ♦ When a crack is noticed on the blade, do not use it but replace with a new one.
- ♦ Ensure that the blade is correctly fitted in accordance with the instructions.

- ♦ When the cutting blade becomes dull due to wear reverse it for further use.
- ♦ When chip or bend occurs on the blade, vibration will increase. Replace with new one.
- ♦ When filing the blade file 3 cutting edges evenly using a flat file as shown in the illustration. Otherwise, the balance will be lost and vibration will increase.



# Maintenance and care

## Installing nylon line cutter (option)



- 1. Bracket
- 2. Shield (for nylon line cutting head)
- 3. Bolt M5×18
- 4. Cut off knife
- 5. Screw 5×12

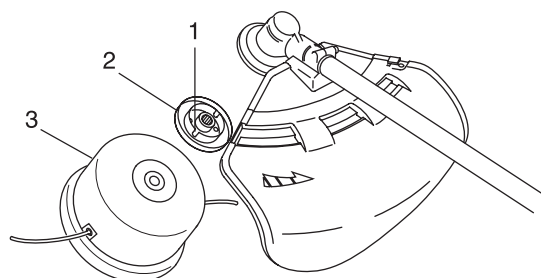
### Method to change shield (Consult your dealer.)

There are two types of shields: namely one used exclusively for nylon line cutting head and another one used exclusively for metal blade. When using nylon line cutting head, use the shield for nylon line cutting head.


Remove bolt (M5×18) on the right side of the shield and slide the shield to the left and remove it. Put shield of another type into groove and slide it to the right until it stops and be sure to fasten with the removed bolt (M5×18).

Fit cut off knife to the shield for nylon line cutting head using screw (5×12).

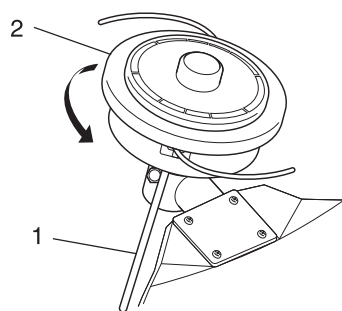
## Installing nylon line cutting head



- 1. Blade retainer fixing slot
- 2. Blade retainer
- 3. Nylon line cutting head

 <b>CAUTION</b>
<ul style="list-style-type: none"> <li>○ Use only flexible, non-metallic line recommended by YAMABIKO CORPORATION.</li> <li>○ Fasten output shaft using locking tool securely in order to avoid the possibility of output shaft rotating when mounting nylon line cutting head.</li> </ul>

Insert locking tool into a hole located on the right side of angle transmission while forcing retainer spring to the left side. Insert locking tool further into blade retainer fixing slot to fix output shaft.

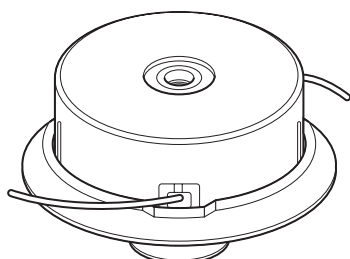


- 1. Locking tool
- 2. Nylon line cutting head

Thread nylon line cutting head onto shaft (anticlockwise) until it is tight.

Remove locking tool.

Z5

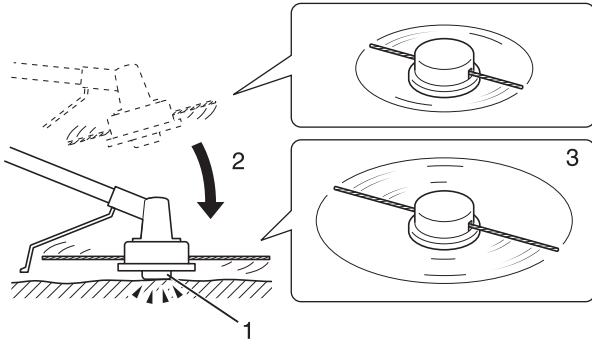


### Nylon line cutting head

Type: Z5

Thread: Left-hand thread M10×1.25 pitch

# Maintenance and care



1. Tap knob
2. Hit knob against the ground surface lightly

3. Nylon line comes out

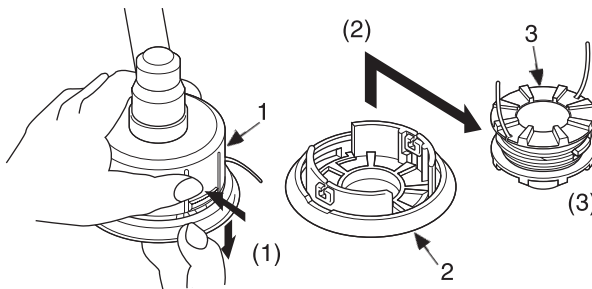
## Adjusting nylon line

- ♦ Make sure there is no bystander within 15 m radius and pay enough attention to objects in the surroundings before starting operation.
- ♦ Do not rotate the nylon line cutting head at more than 10000 r/min.
- ♦ Do not hit the nylon line cutting head against hard foreign matters such as rocks, concrete, tree stub and bottle etc.
- ♦ When releasing nylon line from spool hit tap knob of spool against the ground surface lightly at rotation speed lower than 4500 r/min.
- ♦ Cut off knife on the shield adjusts cutting swath automatically by cutting nylon lines evenly when attachment starts rotating.
- ♦ When operating with less than maximum cutting swath, cut two nylon lines in equal lengths.

## Replacing nylon line

**⚠ DANGER**

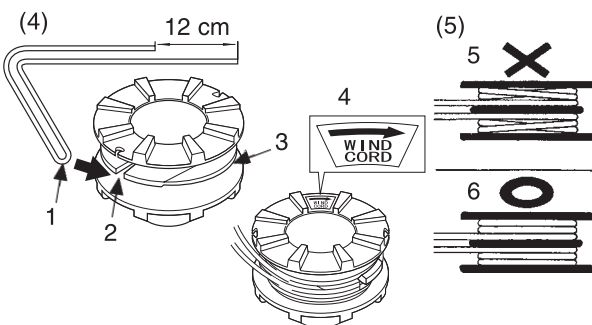
**Shut down trimmer engine without fail and make sure nylon line cutting head has stopped rotating before starting replacement procedure.**



1. Housing
2. Cover

3. Spool

1. Press "retaining pawls" (at two places) inward and remove cover.  
It is easier to remove one after another.
2. Remove spool.
3. When nylon line on the spool is almost exhausted, remove remaining line from spool and wind "new line" according to the procedures (4) and beyond.  
When the line on the spool is "melted and stuck" remove the entire line while peeling off the "melted and stuck" portion and wind the "removed line" anew according to procedures (4) and beyond.

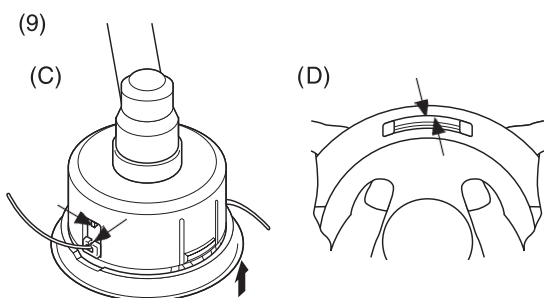
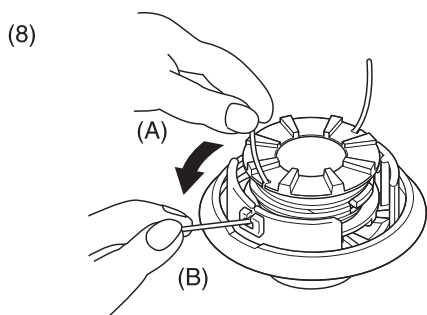
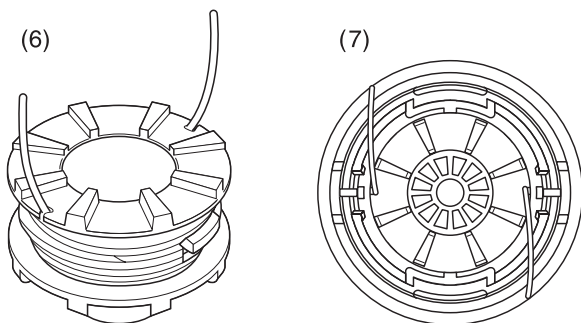


1. Bent portion
2. Notch Nylon line
3. Intermediate separator

4. Winding direction for the line
5. If wound unfirmly, the line loosens.
6. Wind firmly into respective groove.

4. Bend the line at the point 12 cm away from the middle of whole length and hook the bent portion into the "notch" of the intermediate separator.
5. Wind the line firmly into groove of the spool following "winding direction for the arrow".

# Maintenance and care



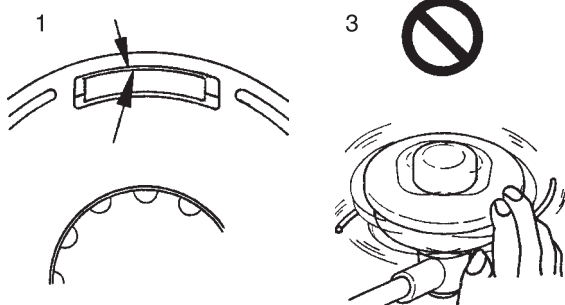
6. When the line is wound to the end hook both line ends into respective notch of spool for retaining tentatively the line while leaving line ends approximately 10 cm beyond notch.
7. Align notches of spool for the line with grooves of eyelets and fit spool into cover.

8. Pull out the line from cover.  
(A) Remove the line from "respective notch of spool", and (B) pass it through "groove of respective eyelet".
9. Fit cover and housing together.  
(C) Align "eyelets" of cover with "recesses" of housing, and (D) press pawls of housing into respective window of cover until the pawls are firmly fitted into the windows.

## DANGER

**Make sure each outer periphery of pawls of housing spreads almost fully up to the outer periphery of respective window of cover.**  
If they are loosely fitted and the cutting head is turned, cover or inside components can fly off which is dangerous.

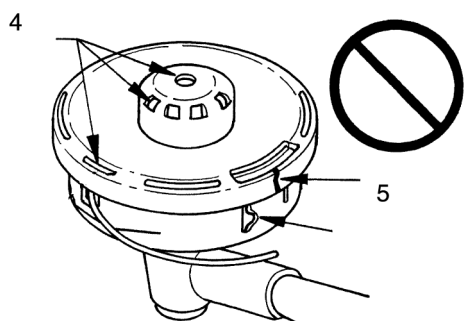
## Checking the nylon line cutting head



1. Make sure each periphery of the 2 retaining pawls of housing spreads almost fully up to the outer periphery of the respective cover window.
2. Check mount of cutting head on trimmer and tighten if it is loose.
3. Check the cutter head for deflection or abnormal noise rotating it by hand.  
Deflection or abnormal noise can cause abnormal vibration to occur or mount to trimmer to loosen during rotation which is dangerous.

# Maintenance and care

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4. Inspect cover and tap knob for wear.  
When slot appears on bottom of the tap knob or when slot appears on cover bottom close to outlet for nylon line, replace them with new parts without fail.
5. Check the cutting head for crack or chip.  
Replace parts that show any crack or chip with new ones without fail.

# Maintenance and care

## Troubleshooting table

Problem	Diagnosis	Cause	Solution
The engine does not start		<ol style="list-style-type: none"> <li>1. There is no fuel in the fuel tank</li> <li>2. The stop switch is in the Stop position</li> <li>3. Excess fuel suction</li> <li>4. Electrical fault</li> <li>5. Carburettor malfunction or internal sticking</li> <li>6. Internal engine malfunction</li> </ol>	<ol style="list-style-type: none"> <li>1. Fuel supply</li> <li>2. Move to the Start position</li> <li>3. Start the engine after servicing</li> <li>4. Consult your dealer</li> <li>5. Consult your dealer</li> <li>6. Consult your dealer</li> </ol>
Engine is difficult to start, fluctuating rotation	Fuel is entering the overflow pipe	<ol style="list-style-type: none"> <li>1. Fuel degradation</li> <li>2. Carburettor problem</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace with new fuel</li> <li>2. Consult your dealer</li> </ol>
	No fuel is entering the overflow pipe	<ol style="list-style-type: none"> <li>1. Fuel filter is clogged</li> <li>2. Fuel system is clogged</li> <li>3. Internal carburettor parts sticking</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean or replace</li> <li>2. Consult your dealer</li> <li>3. Consult your dealer</li> </ol>
	The spark plug is dirty or damp	<ol style="list-style-type: none"> <li>1. Fuel degradation</li> <li>2. Incorrect electrode gap</li> <li>3. Carbon deposits</li> <li>4. Electrical fault</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace</li> <li>2. Replace</li> <li>3. Replace</li> <li>4. Consult your dealer</li> </ol>
Engine starts but no acceleration is possible		<ol style="list-style-type: none"> <li>1. Dirty air filter</li> <li>2. Dirty fuel filter</li> <li>3. Blocked fuel passage</li> <li>4. Carburettor adjustment problem</li> <li>5. Blocked exhaust vent or silencer vent</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean or replace</li> <li>2. Clean or replace</li> <li>3. Consult your dealer</li> <li>4. Adjust</li> <li>5. Clean</li> </ol>
The engine stops		<ol style="list-style-type: none"> <li>1. Carburettor adjustment problem</li> <li>2. Electrical fault</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust</li> <li>2. Consult your dealer</li> </ol>
The engine fails to stop		<ol style="list-style-type: none"> <li>1. Stop switch malfunction</li> </ol>	<ol style="list-style-type: none"> <li>1. Perform an emergency stop and consult your dealer</li> </ol>
Cutting attachment rotates when the engine is idling		<ol style="list-style-type: none"> <li>1. Carburettor adjustment problem</li> <li>2. Damaged clutch spring</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust</li> <li>2. Consult your dealer</li> </ol>

- Checking and maintenance requires specialist knowledge. If you are unable to check and maintain the product or deal with a fault yourself, consult your dealer. Do not attempt to dismantle the product.
- Consult your dealer in the event of a problem that is not covered in the table above, or other such concerns.
- For spare parts and consumables, please use only genuine parts and designated products and components. Using parts from other manufacturers or non-designated components may result in a malfunction.

# Storage

## Long-term storage (30 days or more)

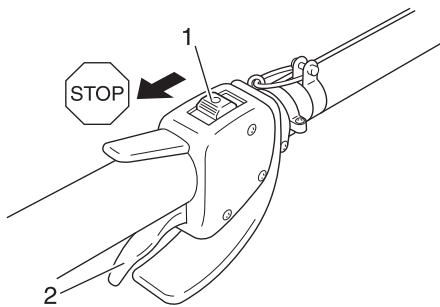
### WARNING

**Do not store in sealed locations filled with fuel gas, or close to naked flames or sparks.**

◆ You could cause a fire.

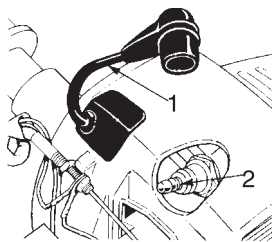


When storing the product for long periods of time (30 days or more), ensure that the following preparations for storage are carried out.



1. Ignition switch

2. Throttle trigger



1. Spark plug wire

2. Spark plug

1. Empty the fuel tank completely.
  - A. Remove any fuel from the fuel tank.
  - B. Alternately press and release the purge bulb a number of times to remove the fuel from the purge bulb.
  - C. Start the engine and run it at idle speed until it comes to a natural stop.
2. Move the ignition switch to the Stop position.
3. Once the product is sufficiently cool, wipe clean any grease, oil, dust, dirt and other materials on the outside of the trimmer.
4. Perform the periodic checks prescribed in this manual.
5. Check that the screws and nuts are tightened. Tighten up any that are loose.
6. Remove the spark plug and add the appropriate quantity (around 10 mL) of clean, new 2-stroke engine oil to the cylinder via the installation socket.
  - A. Place a piece of clean cloth over the spark plug installation socket.
  - B. Pull 2 or 3 times on the starter grip to distribute the engine oil into the cylinder.
7. Fit the spark plug. (Do not connect the spark plug cap.)
8. Fit the blade cover onto the trimmer blade and wrap the engine section in a plastic bag or other covering, and store in a dry, dust-free location out of reach of children.

Please contact your dealer in order to dispose of the product or its parts in compliance with national laws.

# Specifications

		BP420S
<b>External dimensions:</b> Length × Width × Height	mm	2770 × 360 × 560
<b>Mass:</b> Unit without cutting attachment, empty tank Unit with specified cutting attachment, empty tank Unit with specified cutting attachment, full tank	kg kg kg	11.5 12.0 12.9
<b>Volume:</b> Fuel tank	L	1.2
<b>Cutting attachment:</b> Specified blade diameter Specified blade thickness Number of cutting teeth Blade centre hole diameter Blade rotational speed at maximum allowable engine speed	mm mm  mm r/min	255 3.0 3 25.4 10000
<b>Gear ratio:</b> Gear ratio and lubrication		1.33 reduction and good quality lithium grease
<b>Rotational direction of output shaft seen from above:</b>		Anticlockwise
<b>Engine:</b> Type Engine displacement Maximum shaft brake power, measured in accordance Engine speed at maximum engine power Recommended maximum engine speed (With STD attachment installed) Carburettor Ignition Spark plug Starter Clutch	mL (cm <sup>3</sup> ) kW r/min r/min	Air cooled 2-stroke single cylinder 42.7 1.68 8000 10500 Diaphragm type Flywheel magneto - CDI system NGK BPMR7A Recoil starter Automatic centrifugal clutch
<b>Fuel:</b>  Oil  Ratio  Fuel consumption at maximum engine power Specific fuel consumption at maximum engine power	     L/h g/(kW•h)	Regular grade petrol. Minimum 89 Octane unleaded petrol is recommended. Do not use fuel containing methyl alcohol or more than 10 % of ethyl alcohol. Two stroke, air-cooled engine oil. ISO-L-EGD Standard (ISO/CD 13738), JASO FC,FD grade and shindaiwa 50 : 1 oil. 50 : 1 (2%) 1.20 529
<b>Sound pressure level:</b> (ISO 22868) L <sub>pAeq</sub>	dB(A)	94.9
<b>Guaranteed sound power level:</b> (ISO 22868) L <sub>WA</sub>	dB(A)	111
<b>Vibration levels:</b> (ISO 22867) <sub>a<sub>hv,eq</sub></sub>	m/s <sup>2</sup> m/s <sup>2</sup>	Front handle 1.3 Rear handle 1.5

These specifications are subject to change without notice.

# Declaration of conformity

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The undersigned manufacturer:

YAMABIKO CORPORATION  
7-2 SUEHIROCHO 1-CHOME  
OHME; TOKYO 198-8760  
JAPAN

declares that the hereunder specified new unit:

**PORTABLE BRUSHCUTTER**

**Brand: shindaiwa**  
**Type: BP420S**

complies with:

- \* the requirements of Directive **98/37/EC (1998)** and **2006/42/EC**: from 29th December 2009 (use of harmonized standard **ISO 11806 (EN 31806)**)
- \* the requirements of Directive **2004/108/EC** (use of harmonized standard **EN ISO 14982**)
- \* the requirements of Directive **2002/88/EC**
- \* the requirements of Directive **2000/14/EC**

Conformity assessment procedure followed **ANNEX V**

		<b>BP420S</b>
Measured sound power level	<b>dB(A)</b>	<b>108</b>
Guaranteed sound power level	<b>dB(A)</b>	<b>111</b>

Serial Number 36001001 and up

Tokyo, December 1st 2009

**YAMABIKO CORPORATION**

  
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**K. OYURI**  
**General Manager**

**The authorized representative in Europe who is authorized to compile the technical file.**

Company: Atlantic Bridge Limited  
Address: Atlantic House, PO Box 4800, Earley, Reading  
RG5 4GB, UK

**Mr. Philip Wicks**



# MEMORANDUM

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# YAMABIKO CORPORATION

7-2 SUEHIROCHO 1-CHOME, OHME, TOKYO 198-8760, JAPAN

PHONE: 81-428-32-6118. FAX: 81-428-32-6145.

# shindaiwa



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X750 222-660 1