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SHINDAIWA OWNER'S MANUAL

SPLITBOOM ATTACHMENT SBA-AH230

CE



WARNING!

Read this manual and the manual provided with Shindaiwa 230PH Multipurpose Engine and familiarize yourself with its contents.

This machine is designed for trimming hedge with Shindaiwa 230PH Multipurpose Engine.

Do not use this machine for other purposes.


Minimize the risk of injury to yourself and others.

Do not operate or service this machine unless you clearly understand this manual.


Keep this manual at a particular place so that you can reread it whenever you have a question about its use.

Attention Statements

Throughout this manual are special attention statements.

 **DANGER!**

A statement preceded by the triangular attention symbol and the word "DANGER" indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury!

 **WARNING!**

A statement preceded by the triangular attention symbol and the word "WARNING" indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.

CAUTION!

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

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.

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Introduction

The Shindaiwa Splitboom Attachment SBA-AH230 is designed and built to deliver superior performance and reliability without compromise to quality, comfort, safety or durability.

As an owner/operator, you'll soon discover for yourself why Shindaiwa is simply in a class by itself!

IMPORTANT!

The information contained in these instructions describes components available at the time of publication.

While every attempt has been made to provide the latest information about your Shindaiwa product, there may be some differences between your attachment and what is described here. Shindaiwa reserves the right to make changes to products without prior notice and without obligation to make alterations to components previously manufactured.

IMPORTANT!

The operational procedures described in this manual are intended to help you get the most from your machine 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.

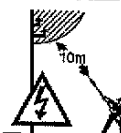
If you have questions regarding your power tool, or if you do not understand something in this manual, your Shindaiwa dealer will be glad to assist you.

You may also contact Shindaiwa at the address printed on the back of this Manual.

Safety Precautions



DANGER!



THE ARTICULATED HEDGE TRIMMER IS NOT INSULATED AGAINST ELECTRICAL SHOCK!

Approaching or contacting electrical lines with the trimmer could cause death or serious injury. Keep the trimmer at least 10 meters away from electrical lines or branches that contact electrical lines.

NOTE:

For specific maintenance and safety information about the 230PH Multipurpose Engine, consult the operator's/owner's manual provided with that product. If it has been lost or misplaced, contact Shindaiwa Inc. at the telephone number provided on the back cover of this manual for a replacement.

An articulated hedge trimmer has the potential to do serious damage if misused, abused or mishandled. To reduce the risk of injury, you must maintain control at all times, and observe all safety precautions during operation. Never permit a person without training or instruction to operate this trimmer!

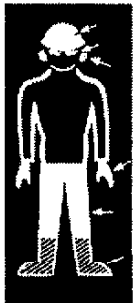


Read and follow this manual, make sure anyone using the trimmer does likewise. Failure to do so could result in serious personal injury or machine failure. Keep this manual for future reference.



Always wear a hard hat to reduce the risk of head injuries during operation of this machine. In addition, always wear eye and hearing protection.

Shindaiwa recommends wearing a face shield as additional face and eye protection.

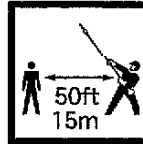


Wear non-slip heavy-duty gloves to improve your grip on the trimmer handle. Wear sturdy footwear with non-slip soles to provide good footing. Steel-toes safety boots are recommended.

Wear snug-fitting clothes that also permits freedom of movement.



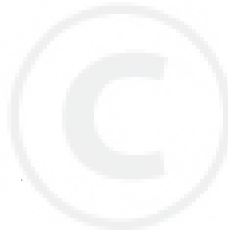
Never operate this tool or any other power equipment if you are tired, ill, or under the influence of alcohol, drugs, or any substance that could affect your ability or judgement.



Keep bystanders at least 15 meters (50 feet) away from the operating trimmer to reduce the risk of being struck by falling objects or thrown debris.



Never cut off branches over your head. The cut-off branches may hit you and cause serious injury.



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.

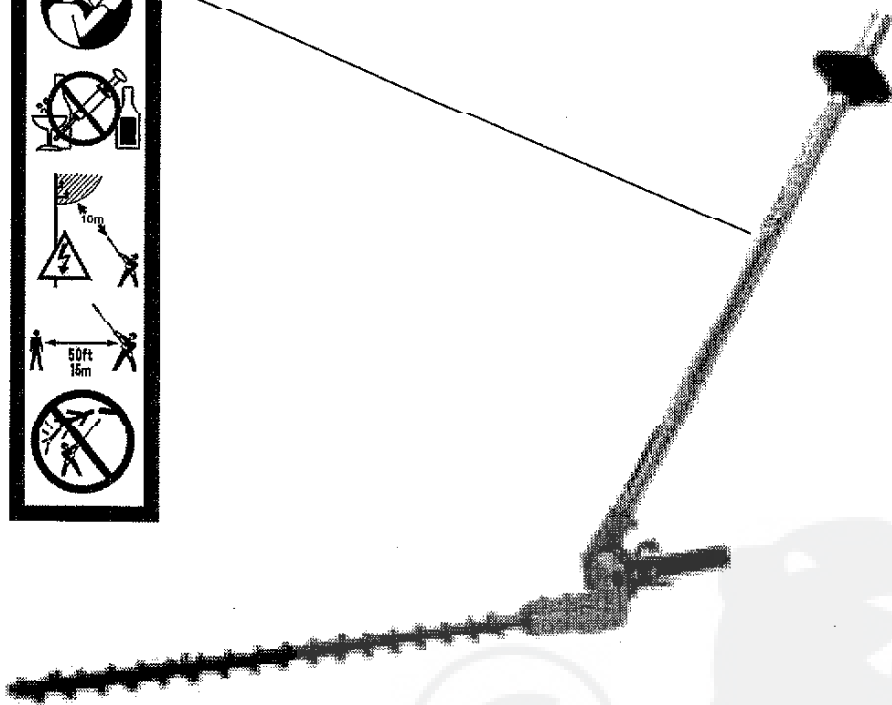


Figure 1

Operating Precautions



WARNING!

- This Shindaiwa spitboom Attachment SBA-AH230 is specifically designed for use on the 230PH Multipurpose Engine. Installation and/or use on any other model, brand or type of power tool is not approved by Shindaiwa. Attempts to use on non-approved models can damage the equipment and cause accidents, serious injury or death. Never permit a person without training or instruction to operate this machine
- Always make sure the cutter tool is properly installed and firmly tightened before operation.
- Never use a cracked or warped cutter or cutter bar. Replace it with a serviceable one if found to be damaged.
- Before starting the engine, make sure the cutter is not contacting anything.
- Always stop the engine immediately and check for damage if you strike a foreign object or if the machine becomes tangled. Do not operate with broken or damaged equipment.
- For the details of Filling fuel, consult the owner's manual that was provided with 230PH multipurpose Engine. If it has been lost or misplaced, contact a Shindaiwa dealer for a replacement.
- Never operate power equipment of any kind if you are tired or if you are under the influence of a alcohol, drugs, or any other substance that could affect your ability or judgement.
- When cutting a branch that is under tension, be alert for spring-back so that you will not be struck by the moving branch.
- Stop the machine immediately if it suddenly begins to vibrate or shake. Inspect for broken, missing or improperly installed parts or attachments.
- Do not operate the articulated hedge trimmer with the muffler removed.
- Make sure there is always good ventilation when operating the articulated hedge trimmer. Fumes from engine exhaust can cause serious injury or death. Never run the engine indoors!
- Make sure there are no missing or loose fasteners, and that the stop switch and throttle controls are working properly.
- If a cutter should bind fast in a cut, shut off the engine immediately. Push the branch or tree to ease the bind and free the cutter.
- Make sure the cutters are correctly adjusted before operating the articulated hedge trimmer (see page 19 for cutter adjustment procedures). Never attempt cutter adjustments with the engine running!
- Make sure of no fuel leaking from Fuel tank, Fuel cap, Fuel pipe and Carburetor and other parts which fuel may leak. Repair the machine if fuel leaking, make sure no leaking again.



WARNING!

- Never transport the articulated hedge trimmer or set it down with the engine running. An engine that's running could be accidentally accelerated causing the blades to oscillate.
- Make sure the blade cover is in place when transporting and storing the articulated hedge trimmer.
- When carrying an articulating hedge trimmer, the blade of the cutting attachment must be in the transport position. See page 13 and 14 for directions. See Figure 2.



Figure 2

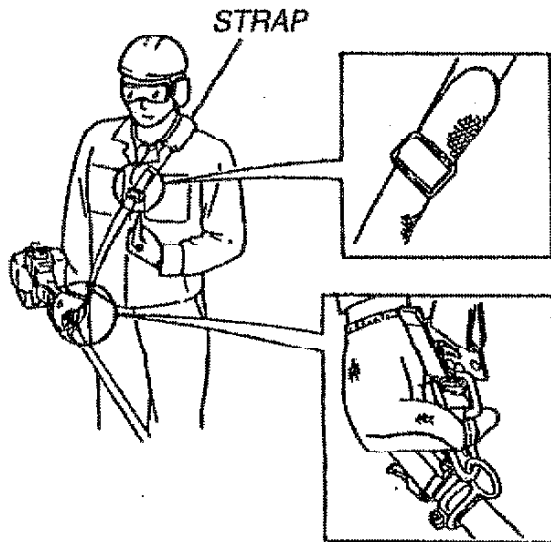
CAUTION!

- Always maintain the Splitboom Attachment SBA-AH230 according to this owner's manual and follow the recommended scheduled maintenance.
- Never modify or disable any of the hedge trimmer's safety devices.
- Always use genuine Shindaiwa parts and accessories when repairing or maintaining this machine.
- Do not make unauthorized modifications to the articulated hedge trimmer.
- When transporting the hedge trimmer in a vehicle, tie it down securely to prevent fuel spillage or damage to the machine.
- Always clear your work area of trash or hidden debris to help ensure good footing.
- Keep the cutters sharp and properly adjusted.
- Keep the articulated hedge trimmer as clean as possible. Keep it free of loose vegetation, mud, debris, etc.

Operating the Splitboom Attachment SBA-AH230

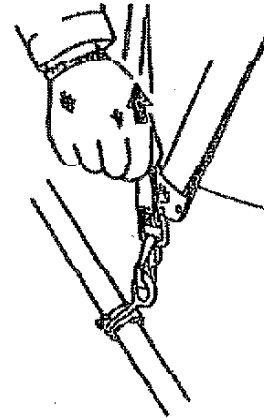
To Wear the Strap

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



Emergency Release

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



The properly Equipped Operator

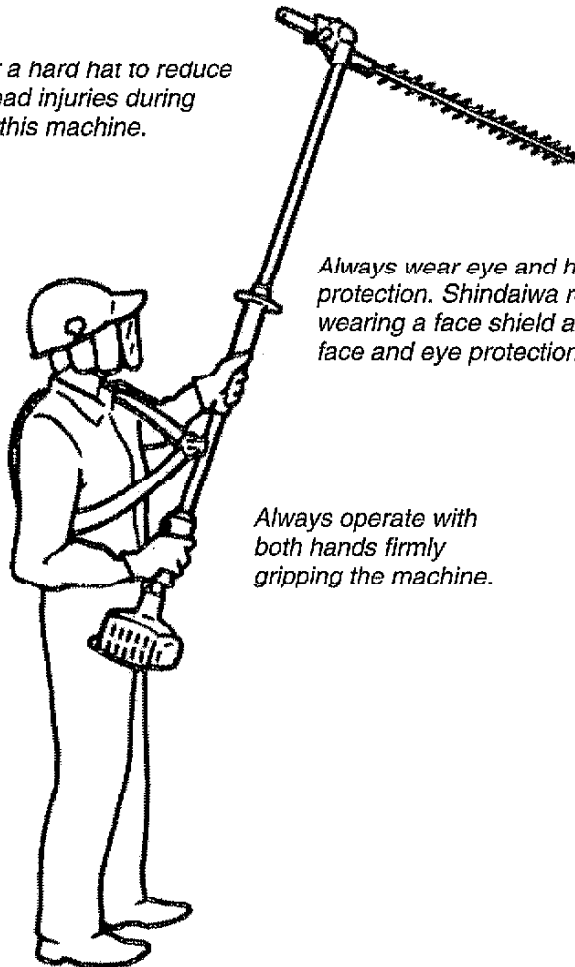
Always wear a hard hat to reduce the risk of head injuries during operation of this machine.

Secure long hair so it is above shoulder level.

Wear non-slip heavy-duty gloves to improve your grip on the trimmer handle. Wear snug-fitting clothes that also permit freedom of movement. NEVER wear shorts!

Always wear eye and hearing protection. Shindaiwa recommends wearing a face shield as additional face and eye protection.

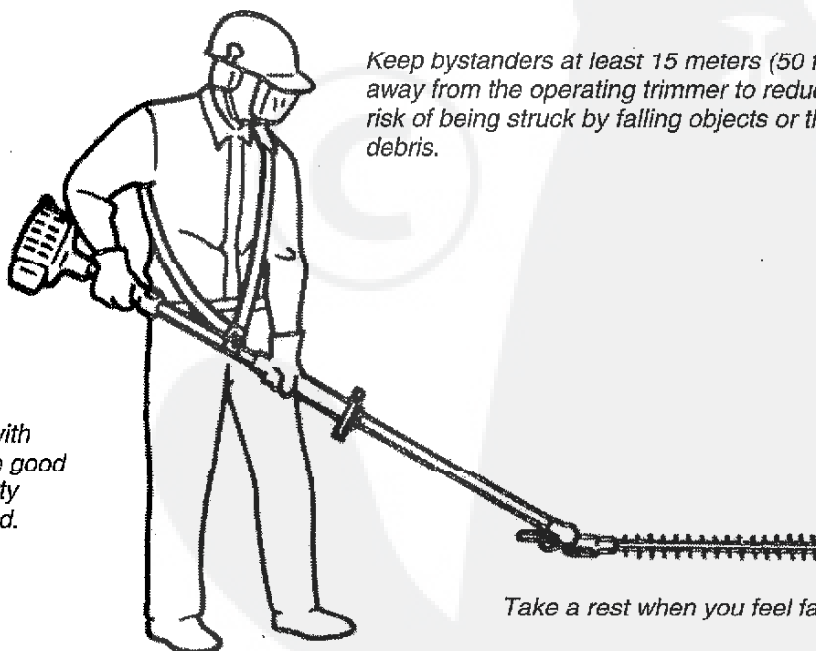
Always operate with both hands firmly gripping the machine.



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

Keep bystanders at least 15 meters (50 feet) away from the operating trimmer to reduce the risk of being struck by falling objects or thrown debris.

Wear sturdy footwear with nonslip soles to provide good footing. Steel-toed safety boots are recommended.



Take a rest when you feel fatigue.

Figure 3

Specifications: Splitboom Attachment SBA-AH230

Dry Weight (SBA-AH230) 2.35 kg
 Length (SBA-AH230) Folded in transportation position 940 mm
 Length (SBA-AH230) extended in cutting position 1460 mm
 Length (Installed on 230PH extended in cutting position 2405 mm
 Blade Length 567 mm
 Cutter Drive Spur gear
 Gear Lubricant Lithium-based grease
 Standard Equipment:
 Cuttertool, blade cover, owner's/operator's manual, and tool kit

Tool Kit Contents
 Combination wrench with 13 mm x 19 mm
 sockets/flat blade screwdriver,
 4mm hex wrench, and
 8 mm x 10 mm spanner
 (with Shindaiwa 230PH Multipurpose Engine)

| | | |
|-----------------------|---------------------|-------------------------|
| Sound Pressure Level* | | 90dB(A) |
| Sound Power Level* | | 105dB(A) |
| Vibration Level* | Idling [Front/Rear] | 1.9/2.2m/s ² |
| | Racing [Front/Rear] | 4.5/5.6m/s ² |

*Sound Pressure Level : in accordance with ISO 11680-1(Annex B)

*Sound Power Level : in accordance with ISO 11680-1(Annex B)

*Vibration Level : in accordance with ISO 11680-1(Annex C)

Optional Equipment Shoulder stap and bracket

Product Description

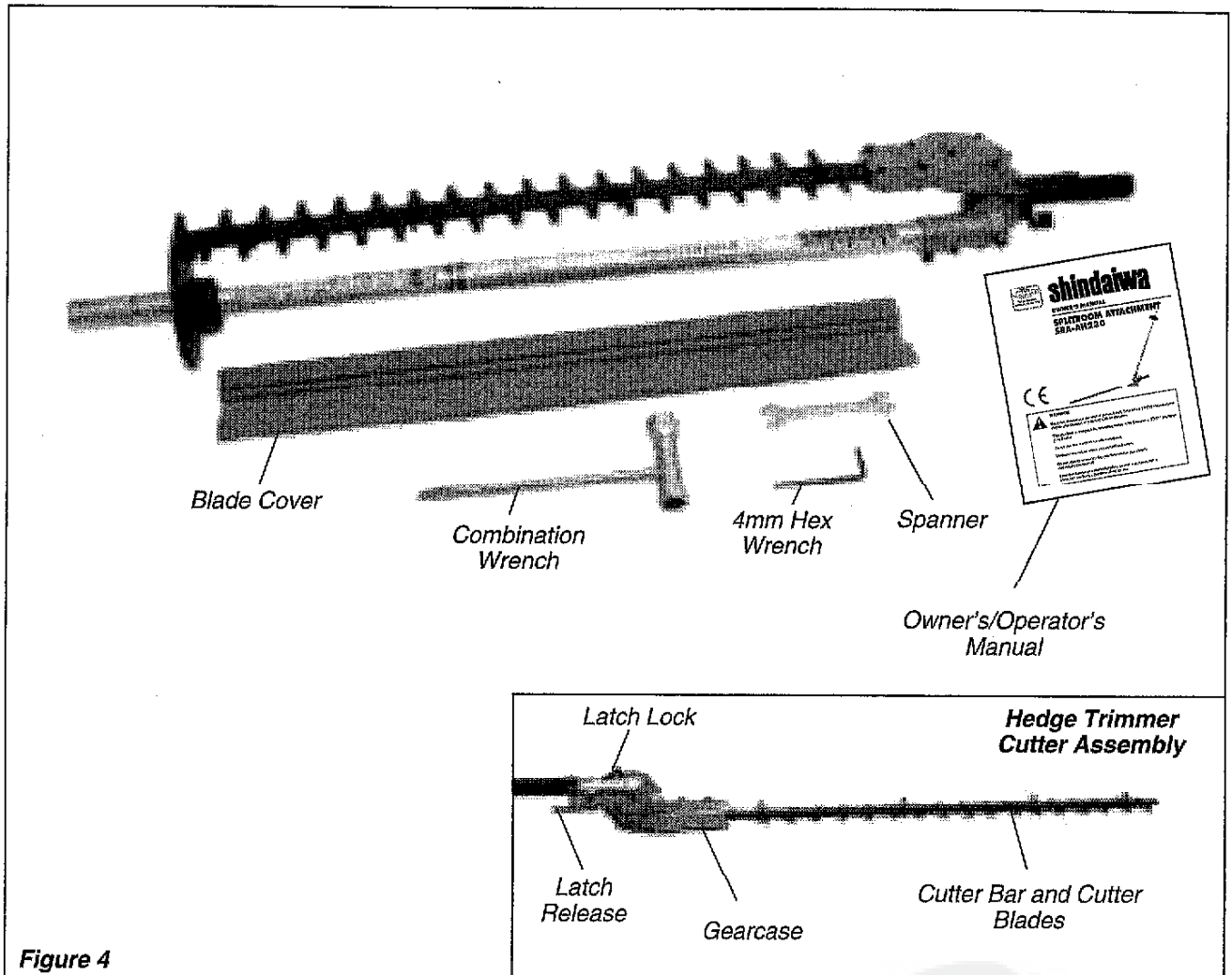


Figure 4

Prior To Assembly

Using Figure 4 as a guide, familiarize yourself with the Shindaiwa Splitboom Attachment SBA-AH230 and its various components. Understanding your machine helps ensure top performance, longer service life, and safer operation.

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

- Cutter Assembly
- Cutter Blade Cover
- Owner's/Operator's Manual
- Tool Kit for routine maintenance

Carefully inspect all components, making sure they are not damaged.

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.



WARNING!

Do not make unauthorized modifications or alterations to your articulated hedge trimmer or its components.

Installing a Tool Attachment

1. Place 230PH Multipurpose Engine and the Splitboom Attachment SBA AH230 on a clean, flat surface so that both assemblies fit end to end. The powerhead assembly should be facing up, and the Splitboom Attachment SBA-AH230 should be positioned with the locking hole in the tube end facing up. See Figure 5.

CAUTION!

Keep the open ends of the tubes clean and free of Debris!

2. Slip off the protective cover from the end of the tool, and loosen the coupler screw knob.
3. Insert the tube into the coupler, with the tool decal facing up, until the line of the decal is flush with the end of the coupler. Twist the tool back and forth until you are sure it snaps in place by the coupler latch. See Figure 5.

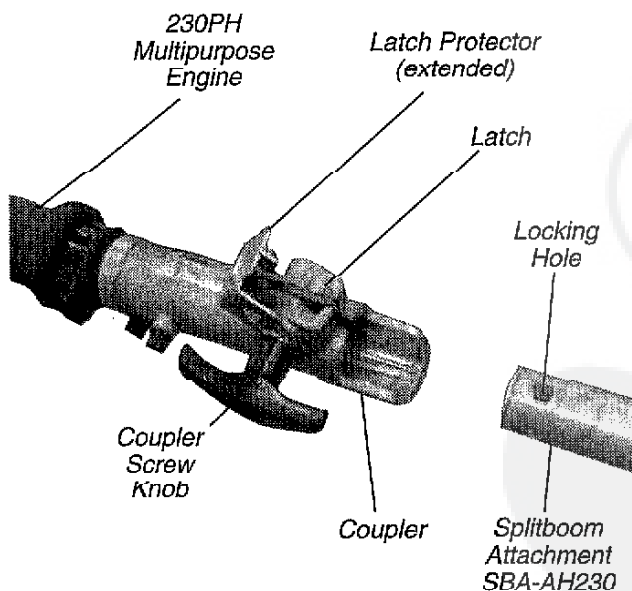


Figure 5

4. When the two tube halves are locked together, press down on the spring loaded latch protector and tighten the coupler screw. See Figure 6.

CAUTION!

Make sure no gap between the Latch Protector and the Coupler.

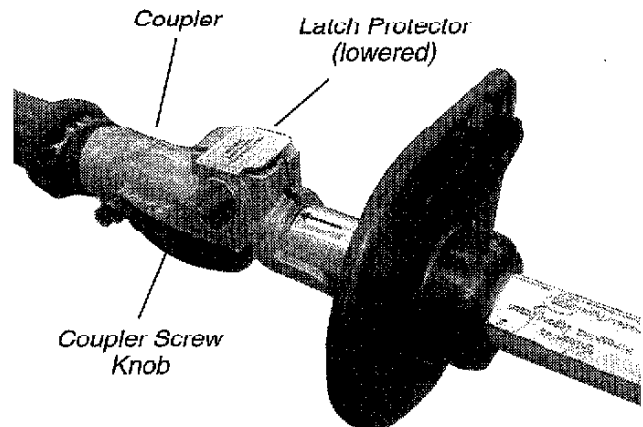


Figure 6

Disassembling The Pole Sections

1. Place the unit on a clean, flat surface, loosen the coupler screw. The spring-loaded coupler protector should pop up.
2. Press down on the latch with your finger or thumb. This releases the coupler lock. See Figure 7.
3. Pull the tube out of the coupler.

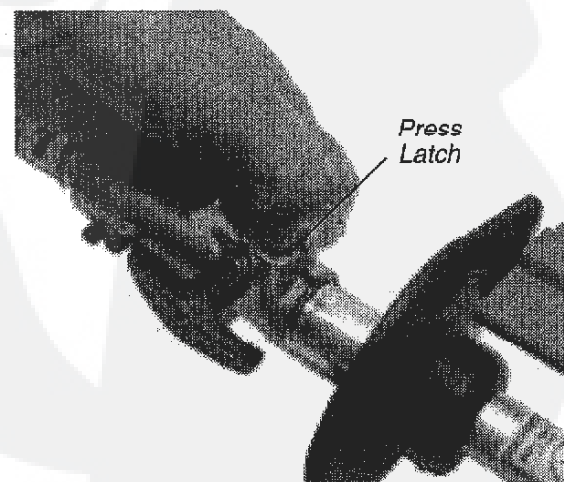


Figure 7

Adjusting the Articulated Hedge Trimmer Cutter Assembly



WARNING!

- The cutter blades are very sharp. Do not grasp the blades with your hands. Do not brush the blades against your body.
- Never run the engine or operate the machine when the cutter assembly is in the storage/transport position.

IMPORTANT!

Always use gloves when working with or near the cutter assembly.

Position the hedge trimmer on a flat, level surface with the engine resting on the fuel tank guard. Make sure the hedge trimmer blade cover is in place.

1. With your right hand, grasp the handle, located immediately aft of the hand guard. With your left hand, grip the adjustment lever on the cutter assembly. See Figure 8.

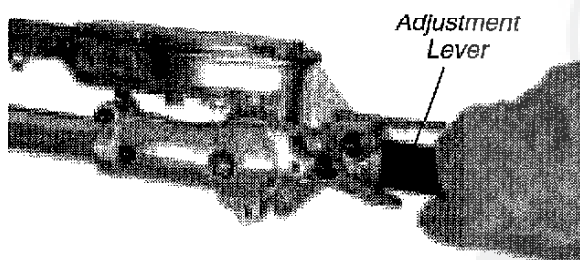


Figure 8

IMPORTANT!

The latch lock provides an interlock to help prevent inadvertent depression of the latch release.

2. With the index finger of your left hand, press the latch release. With your left thumb, press the latch lock. See Figure 9.

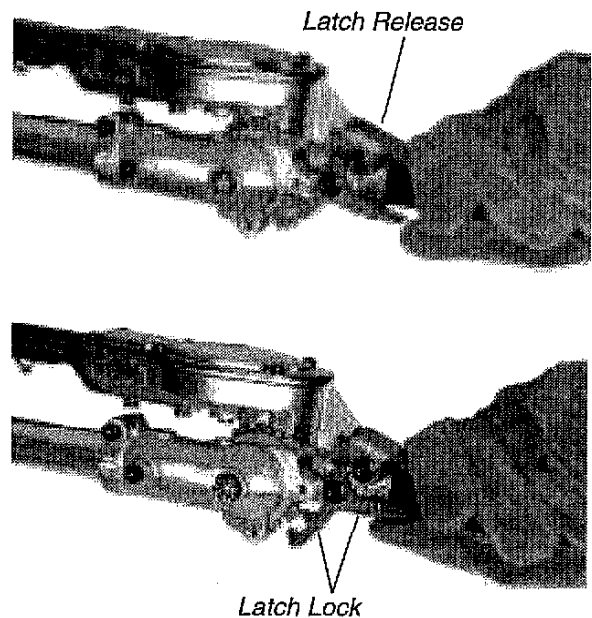


Figure 9

3. While holding the latch lock down, pivot the cutter assembly using the adjustment lever until it is straight with the outer tube (pivot 180°). See Figure 10.



Figure 10

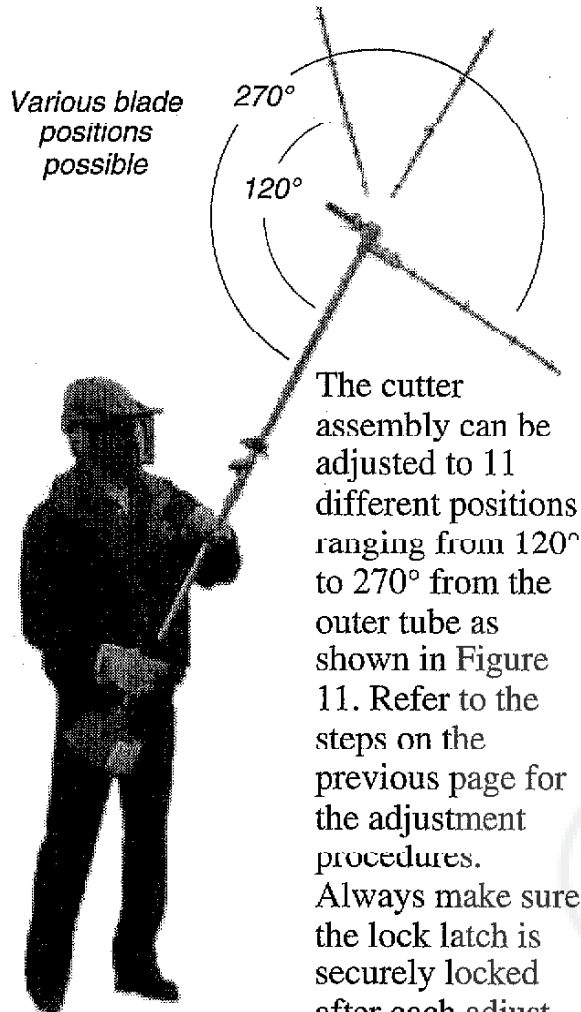
4. Release the latch lock and the latch release. Make sure the latch lock and the latch release return securely to a locking position.
5. Remove the cover from the cutter blade. The engine now may be started.

Adjusting the Hedge Trimmer Cutter Assembly for Desired Cutting Angles



WARNING!

Do not touch the cutter blades when the engine is running. The blades can oscillate even if the engine is idling.



The cutter assembly can be adjusted to 11 different positions ranging from 120° to 270° from the outer tube as shown in Figure 11. Refer to the steps on the previous page for the adjustment procedures. Always make sure the lock latch is securely locked after each adjustment.

Figure 11

Adjusting the Cutter Assembly for Storage or Transportation



WARNING!

Never run the engine when adjusting the cutter assembly to the storage position.

1. With the engine stopped, install the cover onto the blade.
2. Using the procedures described on the previous page, rotate the cutter assembly so it is parallel to the tube. Make sure the latch lock and the latch release return securely to a locking position. See Figure 12.
3. Make sure the cover is in place on the cutters before storing or transporting.

Gearcase rotated to the storage/transportation position

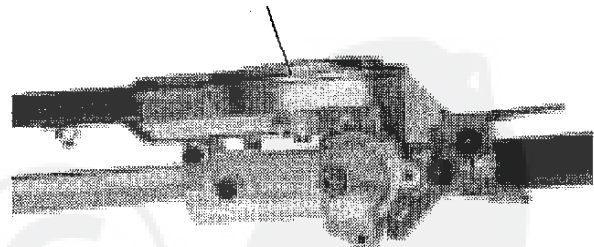


Figure 12

Safety Operation

This machine is designed especially for trimming headge.
Never use this machine for any other purposes. Never try to cut stones, metals, plastics or any other hard objects. Using for other purposes than trimming headge may damage the machine or cause serious injury.

Preparations

- Wear suitable protective clothing and equipment-see section "Safety Precautions".
- Choose the best work position for safety against the falling object (Branch etc)
- Start the engine.
- Put on the strap.
- Take a rest when you feel fatigue.

Never stand directly underneath the branch you are cutting-be wary of falling branches. Note that a branch may spring back at you after it hits the ground.

Working position:

Hold the control handle with your right hand, and the shaft with your left hand.

Your left arm should be extended to the most comfortable position.

NOTE:

Take a rest when you feel fatigue

Applications

Preparations

Use lopping shears to cut out thick branches first.

Cutting sequence

If a radial cut is necessary, cut a little at a time in several passes.

Cutting techniques

Vertical cut:

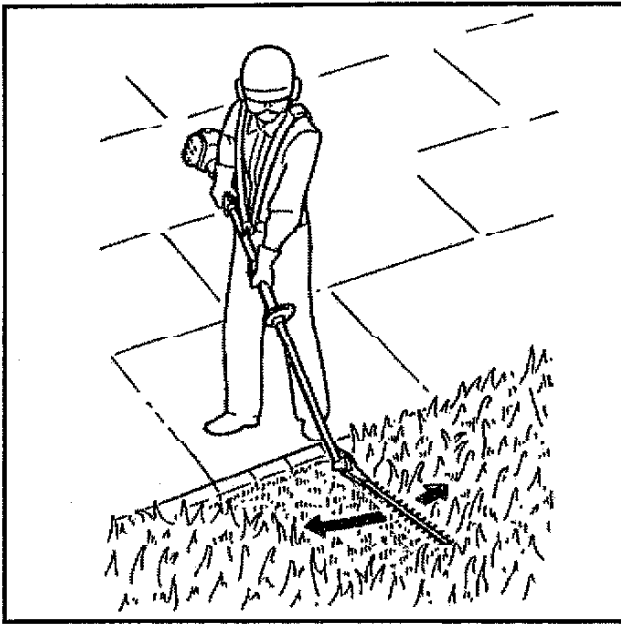
Swing the cutting blade up and down in an arc as you move along the hedge-use both sides of the cutting blade.

Horizontal cut:

Hold the cutting blade at an angle of 0° to 10° as you swing the hedge trimmer horizontally.

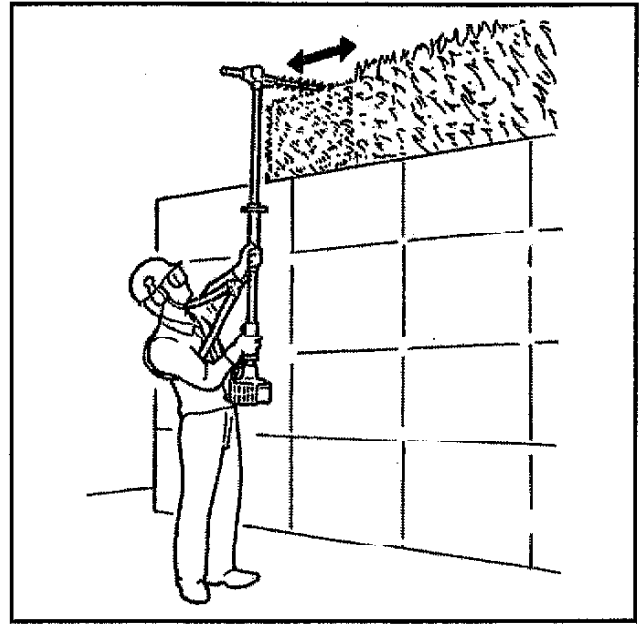
Swing the blade in an arc towards the outside of the hedge so that the cuttings are swept on to the ground.





Horizontal cut

Cutting close to ground from a standing position, e.g. low shrubs.



Overhead cut

Hold the shaft upright with a 90° blade angle to cut an upper surface of a hedge.



Vertical cut

Cutting without standing directly next to hedge, e.g. flowerbed between operator and hedge.



Horizontal cut

Cutting without standing directly in front of the hedge, e.g. reaching over a flowerbed.

Maintenance

IMPORTANT!

For detailed maintenance information about your 230PH Multipurpose Engine, consult the owner's manual that was provided with it. If it has been lost or misplaced, contact Shindaiwa for a replacement.



WARNING!

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



WARNING!

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



WARNING!

Always wear gloves when working around the cutter assembly.

Daily Maintenance

Prior to each work day, perform the following:

- Carefully remove any accumulations of dirt or debris from the muffler and fuel tank. Dirt build-up in these areas can lead to engine overheating, fire, or premature wear.
- Clean any debris or dirt from the hedge trimmer cutter blades.
Lubricate the blades before use and after refueling. Check the cutters for damage or incorrect adjustment.
- Check for loose or missing screws or components. Make sure the cutting attachment is clean, free of debris and securely fastened.
- Check the entire machine for leaking fuel or grease.
- Make sure that nuts, bolts, and screws (except carburetor adjusting screws) are tight.



10/15-Hour Maintenance

- Lubricate the cutter assembly gearbox by pumping one or two strokes of lithium-base grease into the grease fitting using a lever-type grease gun. See Figure 13.

CAUTION!

Overlubricating can cause the gearcase to operate sluggishly and can cause grease to leak out.

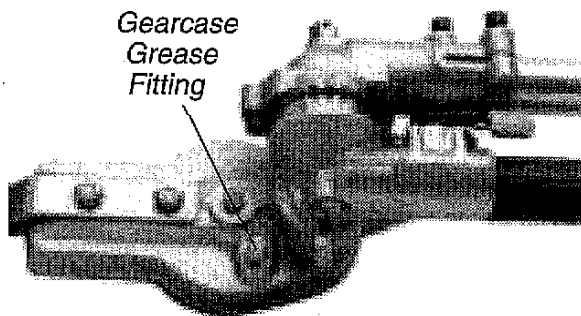


Figure 13

50-Hour Maintenance

Every 50 hours of operation (more frequently in dusty or dirty conditions):

- Remove and clean the cylinder cover and clean the dirt and debris from the cylinder cooling fins.
- **Lubricate the gearcase.** To perform this operation, first remove the gearcase from the outer tube. See Figure 14.

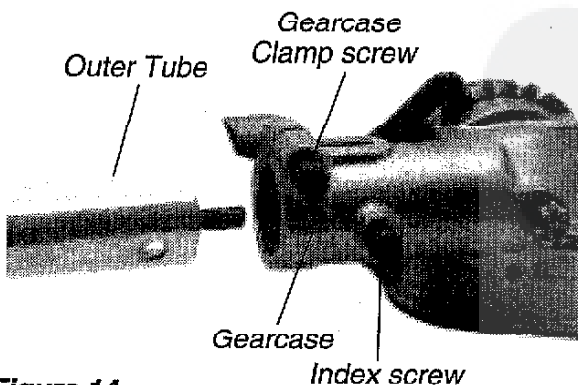


Figure 14

CAUTION!

Do not remove the D-shaped shim washer from the gearcase clamp! The shim washer prevents damage from overtightening the gearcase clamp screw.

1. Loosen the gearcase clamp screw.
2. Remove the index screw from the gearcase.
3. Slide the gearcase out of the tube.

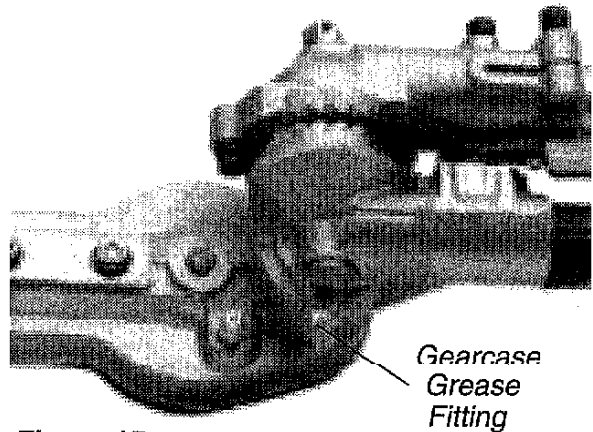


Figure 15

Using a grease gun, pump lithium-base grease (about 10 grams) into the grease fitting on the gearcase until you see old grease being purged from the gearcase. See Figure 15. Purged grease will be visible in the outer tube cavity. Clean up the excess grease, then reassemble the gearcase onto the outer tube. Make sure the index screw fits into the hole on the outer tube. Securely tighten both screws.

Cutter Blade Adjustment



WARNING!

The cutter blades are very sharp!
Always wear gloves when working
around the cutter assembly.

CAUTION!

Operating the trimmer with worn or
improperly adjusted cutters will
reduce cutter performance and
may also damage your machine.

Cutter performance of your machine depends in great measure on the cutter blade clearance. Properly adjusted blades will oscillate freely yet help prevent binding of cut material between blades. Adjust the blades as follows: See Figure 16.

1. Loosen all the blade locknuts at least one full turn.
2. Tighten each blade shoulder bolt firmly, and then loosen the shoulder bolts $1/4$ to $1/2$ turn.
3. Working from the gearcase end, lock each bolt in place by firmly tightening its locknut while preventing the shoulder bolt from turning.

When shoulder bolt adjustment is correct, there should be a gap of 0.25 0.50 mm between the cutter blades and the flat washers, and the flat washer beneath each bolt head should turn freely.

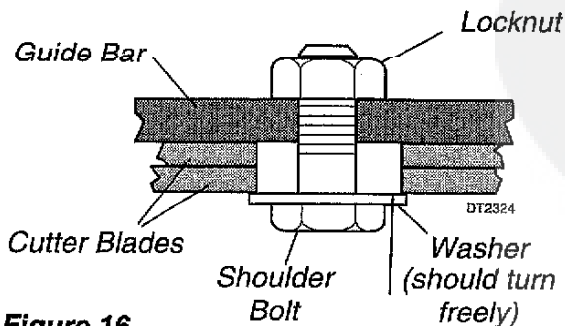


Figure 16

Storage

Short Term Storage

(Less than 30 days)

- Clean the air filter.
- Clean cylinder fins, flywheel fins, and muffler surfaces.
- Clean cooling air intake grill.
- Clean debris from gearcase and outer tube exterior surfaces.
- Lubricate gearcase as outlined in page 32 of this manual.
- Drain fuel tank.
- Cover engine and store unit in a clean, dry place.

- Remove the spark plug and pour about 7g of oil into the cylinder through the spark plug hole. Crank the engine over slowly two or three times so oil will coat the cylinder wall and piston rings.
- Reinstall the spark plug.
- Repair damaged or faulty components as necessary.
- Clean all external parts thoroughly and apply a light coating of oil to all metal surfaces.
- Cover the engine and store the brushcutter in a clean, dry place.
- Cover the blade with the blade cover.

Long Term Storage

(More than 30 days)

CAUTION!

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

IMPORTANT!

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

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

- Drain all fuel from fuel tank and allow unit to run until all the fuel in the carburetor is spent.



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. | Return unit to dealer. |
| Good compression? ↓ YES | NO → Loose spark plug. Excess wear on cylinder, piston, rings. | Tighten and re-test. Return unit to dealer. |
| Does the tank contain fresh fuel of the proper grade? ↓ YES | NO → Fuel incorrect, stale, or contaminated, Fuel mixture incorrect | Refill with fresh fuel of the correct mixture (gasoline and 2-cycle Engine Oil, 25:1 ratio) |
| Is fuel visible and moving in the return line when priming? ↓ YES | NO → Check for clogged fuel filter and/or vent. | Clean as required; restart. |
| Is there spark at the spark plug wire terminal? ↓ YES | NO → The ignition switch is in "0" (Stop) Position. Faulty ignition ground. Faulty transistor unit. | Move switch to "I"(Start) position and restart. Return unit to the dealer. |
| Check the spark plug | NO → If the plug is wet, excess fuel may be in the cylinder. The plug is fouled or improperly gapped. The plug is damaged internally or of the wrong size. | Crank the engine with the plug removed, replace the plug, and restart. Clean and re-gap the plug to 0.6mm. Restart. Replace the plug-NGK BMR6A Restart. |

Troubleshooting Guide (continued)

LOW POWER OUTPUT

| What to check | Possible cause | Remedy |
|---|--|--|
| <div style="border: 1px solid black; padding: 5px;"> Is the engine overheating? </div> | Operator is overworking the machine. 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. | Operate the Hedge trimmer at a slower rate. Return unit to dealer. Re-fill with fresh fuel of the correct mixture (gasoline and 2-cycle English Oil, 25:1 ratio) Clean, repair or replace as necessary. Decarbonize. |
| <div style="border: 1px solid black; padding: 5px;"> Engine is rough at all speeds. May also have black smoke and/or unburned fuel at the exhaust. </div> | 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. | Service the air cleaner element. Tighten or replace. Repair or replace filter and/or fuel line. Replace the fuel. Return unit to dealer. Return unit to dealer. |
| <div style="border: 1px solid black; padding: 5px;"> Engine is knocking. </div> | 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. Decarbonize. |

Troubleshooting Guide (continued)

ADDITIONAL PROBLEMS

| Symptom | Possible cause | Remedy |
|---|---|---|
| <div style="border: 1px solid black; padding: 5px; display: inline-block;">Poor acceleration.</div> | Clogged air cleaner element. | Clean the air cleaner element. |
| | Clogged fuel filter. | Replace the fuel filter. |
| | Carburetor mixture too lean. | Return the unit to the dealer. Adjust $2750\text{min}^{-1}(\pm 250)$ |
| | Idle speed set too low. | |
| <div style="border: 1px solid black; padding: 5px; display: inline-block;">Engine stops abruptly.</div> | Switch turned off. | Reset the switch and re-start. |
| | Fuel tank empty. | Refuel. |
| | Clogged fuel strainer. | Replace strainer. |
| | Water in the fuel. | Drain:replace with clean fuel. |
| | Shorted spark plug or loose terminal. | Clean and replace spark plug. tighten the terminal. |
| | Ignition failure. | Replace the ignition unit. |
| | Piston seizure. | Return unit to the dealer. |
| <div style="border: 1px solid black; padding: 5px; display: inline-block;">Engine difficult to shut off.</div> | Ground (Stop) wire is disconnected, or switch is defective. | Test and replace as required. |
| | Overheating due to incorrect spark plug. | Clean and regap to 0.6mm Correct plug: NGK BMR6A. |
| | Overheated engine. | Idle engine until cool. |
| <div style="border: 1px solid black; padding: 5px; display: inline-block;">Cutting attachment rotates at engine idle.</div> | Engine idle too high. | Set idle: $2750\text{min}^{-1}(\pm 250)$ |
| | Broken clutch spring or worn clutch spring boss. | Replace spring/shoes as required, check idle speed. |
| | Loose attachment holder. | Inspect and re-tighten holders securely. |

Troubleshooting Guide (continued)

ADDITIONAL PROBLEMS

Symptom

Excessive vibration

Possible cause

Warped or damaged attachment.

Loose gearcase.

Bent main shaft/worn or damaged bushings.

Remedy

Inspect and replace attachment as required.

Tighten gearcase securely.

Inspect and replace as necessary.

Attachment will not rotate

Shaft not installed in powerhead or gearcase.

Broken shaft.

Damaged gearcase.

Inspect and reinstall as required.

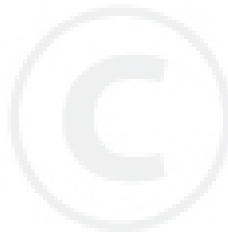
Return unit to the dealer.

Return unit to the dealer.



European Distributors List

| Ref. No. | Country | Name | Address | Tel. No. | Fax. No. |
|----------|-------------|--|---|--------------------|--------------------|
| 1 | France | Yvan Beal | 21, avenue De l'Agriculture, B.P.16-Zone Industrielle du Brezet, 63014 Clermont- Ferrand Cedex 1 | (33) 04 7391 9351 | (33) 04 7390 23 11 |
| 2 | Italy | Fercad S.P.A. | Via Retrone, 49, 36077 Altavilla Vicentina, Vicenza | (39) 0444 220811 | (39) 0444 348986 |
| 3 | Germany | Iseki Maschinen GmbH | Rudolf-Diesel-Str. 4, 40670 Meerbusch | (49) 02159 5205 0 | (49) 02159 520512 |
| 4 | England | PLMPower Products Ltd. | Unite 5-6, The Shires Indust- rial Estate, Essington Close, Birmingham Road, Lichfield, Staffs, WS14 9AZ | (44) 01543 414477 | (44) 01543 414541 |
| 5 | Ireland | Danfay Ltd. | 61D Sallynoggin Road, Dun Laoghaire, Co. Dublin | (353)1 2859 177 | (353)1 2858810 |
| 6 | Holland | MatracomInt. B.V. | Hogelandseweg51, 6545 AB Nijmegen | (31) 024 373 1990 | (31) 024 373 1765 |
| 7 | Belgium | Intergarden Import N.V. | Brechtsebaan 284-B 2900 Schoten | (32) 03 652 02 61 | (32) 03 652 02 40 |
| 8 | Switzerland | Solo Motorgeraete AG | Seuzachstrasse 26, CH-8413 Neftenbach | (41) 52 315 1221 | (41) 52 315 1004 |
| 9 | Portugal | Joaquim Verdasca Junior Heads Lda | Apartado 11-2490, Ourem | (351) 249 544540 | (351) 249 544361 |
| 10 | Greece | Technellas S.A. | 92, Athinon Avenue, 104 42 Athens | (30) 1 5193 110 | (30) 1 5193 114 |
| 11 | Finland | Tuonti Jarvela KY | Itkonniemenkatu 11, PB1234 70501 Kuopio | (358) 17 2652 845 | (358) 17 2652 801 |
| 12 | Turkey | Taral Tarim Makina VeAletleri Sanayi A.S. | Gumussuyu Caddesi Hastane Yolu No.1 34020 Topkapi- Maltepe, Istanbul | (90) 212 567 95 50 | (90) 212 674 06 79 |



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