WARNING!

Minimize the risk of injury to yourself and others! Read this manual and familiarize yourself with the contents. Always wear eye and hearing protection when operating this unit.
**Introduction**

The Shindaiwa T261 Series hand held power equipment has been designed and built to deliver superior performance and reliability without compromise to quality, comfort, safety or durability. Shindaiwa engines represent the leading edge of high-performance engine technology, delivering exceptionally high power with remarkably low displacement and weight. As an owner/operator, you’ll soon discover for yourself why Shindaiwa is simply in a class by itself!

**IMPORTANT!**

The information contained in this owner’s/operator’s manual describes units available at the time of publication.

Echo Inc. reserves the right to make changes to products without prior notice, and without obligation to make alterations to units previously manufactured.

**WARNING!**

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

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**Attention Statements**

Throughout this manual are special “attention statements”.

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

- **CAUTION!**
  
  A statement preceded by the word “CAUTION” contains information that should be acted upon to prevent mechanical damage.

- **IMPORTANT!**
  
  A statement preceded by the word “IMPORTANT” is one that possesses special significance.

- **NOTE:**
  
  A statement preceded by the word “NOTE” contains information that is handy to know and may make your job easier.

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**IMPORTANT!**

The operational procedures described in this manual are intended to help you get the most from this unit as well as to protect you and others from harm. These procedures are guidelines for safe operation under most conditions, and are not intended to replace any safety rules and/or laws that may be in force in your area. If you have questions regarding your T261 series hand held power equipment, or if you do not understand something in this manual, your Shindaiwa dealer will be glad to assist you. You may also contact Echo Inc. at the address printed on the back of this Manual.
General Safety Instructions

Work Safely
Shindaiwa trimmers operate at very high speeds and can do serious damage or injury if they are misused or abused. Never allow a person without training or instruction to operate this unit!

WARNING!
Never make unauthorized attachment installations. Do not use attachments not approved by Shindaiwa for use on this unit.

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

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

WARNING!
Minimize the Risk of Fire
- NEVER smoke or light fires near the engine.
- ALWAYS stop the engine and allow it to cool before refueling. Avoid overfilling and wipe off any fuel that may have spilled.
- ALWAYS inspect the unit for fuel leaks before each use. During each refill, check that no fuel leaks from around the fuel cap and/or fuel tank. If fuel leaks are evident, stop using the unit immediately. Fuel leaks must be repaired before using the unit.
- ALWAYS move the unit to a place well away from a fuel storage area or other readily flammable materials before starting the engine.
- NEVER place flammable material close to the engine muffler.
- NEVER operate the engine without the spark arrester screen in place.

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

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

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

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

Reduce the risk of bystanders being struck by flying debris. Make sure no one is within 50 feet (15 meters)—that’s about 16 paces—of an operating attachment.

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

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

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

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.

This label indicates the minimum distance between front handle and rear grip per ANSI B175.3.

Figure 2

Figure 3
Product Description

Using the accompanying illustrations as a guide, familiarize yourself with this unit and its various components. See Figure 4. Understanding your unit helps ensure top performance, long service life, and safer operation.

WARNING!
Do not make unauthorized modifications or alterations to any of these units or their components.

Specifications

T261 dry weight (less attachments) ............... 12.8 lb./5.8 kg
T261X dry weight (less attachments) ............... 13.1 lb./5.9 kg
Engine model .......................................................... Shindaiwa S260C
Engine type .................. 2-cycle, catylist, vertical-cylinder, air cooled
Bore x stroke ......................................................... 1.3x1.2 in./32x30 mm
Displacement .......................................................... 1.5 cu. in./24.1 cc
Maximum power ................ 1.2 HP/0.9 kW @ 7500 rpm (min-1)
Fuel/oil ratio .................. 50:1 with ISO-LEGD or JASO FC class 2-cycle mixing oil*
Spark plug .......................................................... Champion CJ8Y
Air cleaner type .............. Non-reversible heavy-duty filter element
Starting method .................. Recoil
Stopping method .................. Slide switch
Transmission type .................. Automatic, centrifugal clutch w/bevel gear

EPA Emission Compliance Period** .................. Category A

* ONE meets or exceeds these specifications and is recommended for all Shindaiwa products.

** The EPA emission compliance referred to on the emission compliance label located on the engine, indicates the number of operating hours for which the engine has been shown to meet Federal emission requirements. Category C = 50 hours (Moderate), B = 125 hours (Intermediate) and A = 300 hours (Extended).

Specifications are subject to change without notice.
Assembly and Adjustments

This unit comes fully assembled with the exception of the cutting attachment shield and cutting attachment.

Prior to Assembly
Before assembling, make sure you have all the components required for a complete unit and inspect unit and components for any damage.

Handle

1. The handle is attached to the outer tube at the factory and positioned in an off-set position. See Figure 5.
2. Loosen the 4 socket-head cap screws on the handle and rotate the handle until the barrier bar is positioned horizontally on the left side of the unit. See Figure 6.
3. Position the handle forward of the Handle Positioning Label at the best position for operator comfort (usually about 10 inches ahead of the throttle housing).
4. Secure the handle by alternately tightening the four socket-head cap screws in a diagonal or “criss-cross” fashion.

Adjust Throttle Lever Free Play

The throttle lever free play should be approximately 3/16-1/4 inch (4-6 mm). See Figure 7. Make sure that the throttle lever operates smoothly without binding. If it becomes necessary to adjust the lever freeplay, follow the procedures and illustrations that follow.

1. Loosen the throttle cable lock nut and rotate the cable adjuster in or out to achieve proper free play of 3/16-1/4 inch (4-6 mm). See Figure 8.
2. Retighten the locknut.
**Assembly: Cutting Attachment Shield**

*Install the Cutting Attachment Shield*

1. Insert the cutting attachment shield between the outer tube and the cutting attachment mounting plate. See Figure 9.

**NOTE:**

It may be necessary to loosen the retaining nut and clamp screw to adjust cutting attachment shield mounting plate.

2. Fit the two shims and the bracket over the outer tube and loosely install the four socket-head cap screws. See Figure 9.

**CAUTION!**

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

3. Tighten the four socket-head cap screws to secure the cutting attachment shield.

**WARNING!**

NEVER operate the unit without the cutting attachment shield installed and tightly secured!

---

**Assembly: Trimmer Head**

*Install the Trimmer Head*

1. Turn the trimmer over so that the gearcase output shaft faces UP.

2. Remove and discard the black plastic retaining plug from the output shaft. See Figure 10.

3. Rotate the holder until the hole in the holder aligns with the notch on the gearcase. Use the long end of the hex wrench to lock the holder and output shaft. See Figure 10.

4. While holding the hex wrench, thread the trimmer head onto the output shaft, turning counter-clockwise. Using hand pressure only, tighten the trimmer head firmly on the output shaft.

**IMPORTANT!**

The trimmer head has a left-hand thread. For removal turn the trimmer head clockwise.

5. Remove the hex wrench.

6. Adjust the trimmer line length to reach no further than the line cutter on the cutting attachment shield. Trim to the correct length if necessary.

---

**To Change Position of Line Cutter**

The line cutter can be positioned in 2 positions to obtain different line length for cutting.

1. Remove the 2 hex screws with a 4mm hex wrench. See Figure 9A.

**NOTE:**

Be careful to not lose the 2 nuts in the cutting attachment shield, they are not captured.

2. Rotate line cutter. See Figure 9A.

3. Reinstall the two hex screws and tighten them securely.

---

**WARNING!**

The line cutter is very sharp. Wear gloves to protect your hands when handling.

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A standard grass trimmer with a loop handle should NEVER be operated with blade-type attachments. For blade use the trimmer must be fitted with a bicycle-type handlebar or a loop handle with a barrier bar that is located in front of the operator to reduce the risk of the operator coming in contact with the cutting attachment (per ANSI B175.3). When using a blade, the unit must also be equipped with a harness or strap.
Assembly: Blade T261X

Mount the Cutting Blade.

Turn the T261X upside down so the gearcase output shaft is facing UP and remove the shaft bolt, bolt guard and holder B from the gearcase shaft.

1. Align the hole in blade holder A with the matching hole in the gearcase flange and then temporarily lock the output shaft by inserting a hex wrench through both holes. See Figure 12.

2. Slide the safety clip off-center. See Figure 13.

3. Fit the blade over the safety clip and then center it over the flange on holder A. See Figure 14.

CAUTION!

Install the blade so its printed surface is visible to the operator when the brushcutter is in the normal operating position.

WARNING!

The blade must fit flat against the holder flange. The blade mounting hole must be centered over the raised boss on blade holder A.

NOTE:

When installing certain blades, it may be necessary to temporarily remove the safety clip.

4. Lock the blade in place by centering the safety clip on the output shaft. See Figure 14.

WARNING!

Never operate the T261X without the safety clip in place!

IMPORTANT!

The machined recess in holder B must completely surround the safety clip, and both holders must be flat against the surface of the blade.

5. Install blade holder B on the output shaft. See Figure 15. The recess in the holder must completely cover the safety clip, and must fit tightly against the blade.

6. Install the bolt guard and then the blade retaining bolt. Using the combination spark plug wrench/screwdriver, tighten the bolt firmly in a counterclockwise direction.

7. Remove the hex wrench.

The T261X should now be completely assembled and ready for use with a blade.
Mixing Fuel

**CAUTION!**
Some types of gasoline contain alcohol as an oxygenate. Oxygenated gasoline may cause increased operating temperatures. Under certain conditions, alcohol-based gasoline may also reduce the lubricating qualities of some 2-cycle mixing oils. Never use any type of gasoline containing more than 10% alcohol by volume! Generic oils and some outboard oils may not be intended for use in high-performance C4 engines, and should never be used in your Shindaiwa engine.

**IMPORTANT!**
Mix only enough fuel for your immediate needs! If fuel must be stored longer than 30 days and oil with fuel stabilizer is not used, it should first be treated with a fuel stabilizer such as StaBil™.

**Examples of 50:1 mixing quantities**
- 1 gallon of gasoline to 2.6 oz. mixing oil
- 5 liters of gasoline to 100 ml. mixing oil

Filling the Fuel Tank

**WARNING!** Minimize the risk of fire!
- STOP engine before refueling.
- ALWAYS allow the engine to cool before refueling!
- Wipe all spilled fuel and move the engine at least 10 feet (3 meters) from the fueling point and source before restarting!
- NEVER start or operate this unit if there is a fuel leak.

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

Starting the Engine

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

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

1. Slide the ignition switch to the “I” position (engine ON).
2. Press the primer bulb until fuel can be seen flowing in the transparent return tube.
3. Set the choke lever to the CLOSED position if engine is cold.
4. While holding the outer tube firmly with left hand, use your other hand to slowly pull the recoil starter handle until resistance is felt, then pull quickly to start the engine.

**CAUTION!**
Do not pull the recoil starter to the end of the rope travel. Pulling the recoil starter to the end of the rope travel can damage the starter.
Starting the Engine (continued)

5. When the engine starts, slowly move the choke lever to the "OPEN" position. See Figure 20. (If the engine stops after the initial start, close the choke and restart.)

When the Engine Starts

- After the engine starts, allow the engine to warm up at idle 2 or 3 minutes before operating the unit.
- After the engine is warm, pick up the unit and clip on the shoulder strap if so equipped. See page 11.
- Advancing the throttle makes the cutting attachment turn faster; releasing the throttle permits the attachment to stop turning. If the cutting attachment continues to rotate when the engine returns to idle, carburetor idle speed should be adjusted (see "Adjusting Engine Idle" below).

Stopping the Engine

Figure 20

Idle the engine briefly before stopping (about 2 minutes), then slide the ignition switch to the “O” (Engine OFF) position.

Adjusting Engine Idle

Figure 21

idle the engine briefly before stopping (about 2 minutes), then slide the ignition switch to the “O” (Engine OFF) position.

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

Idler Speed Adjustment

1. Place the trimmer on the ground, then start the engine, and allow it to idle 2-3 minutes until warm.

2. If the attachment rotates when the engine is at idle, reduce the idle speed by turning the idle adjustment screw counter-clockwise. See Figure 22.

3. If a tachometer is available, the engine idle speed should be final adjusted to 2,750 ±250 rpm (min⁻¹).

4. Carburetor fuel mixture adjustments are preset at factory and cannot be serviced in the field.

WARNING!

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

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

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

Shoulder Strap

Adjust the shoulder strap so the shoulder pad rests comfortably on the off-side shoulder and the cutting path of the cutting attachment is parallel to the ground. Make sure all hooks and adjustment devices are secure.

**NOTE:**
Although a shoulder strap accessory is not required for use with a grass trimmer, a shoulder strap can increase operator comfort during extended periods of operation. See Figure 23.

Cutting Grass—Units Equipped with a Trimmer Head

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

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

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

**NOTE:**
Additional hardware may be required to mount the Fixed Line or the Flail type trimmer heads.

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

**Engine Operating Speeds**

Operate the unit at full throttle while cutting grass.

**CAUTION!**
Operation of trimmer without a cutting attachment shield and using excessive line length can lead to premature clutch failure.

**CAUTION!**
Operation at low RPM can lead to premature clutch failure.

**Trimming and Mowing Grass**

Hold the trimmer so the trimmer head is angled slightly into the area to be cut. To ensure maximum trimmer-line service life, cut only with the tip of the trimmer line. Hold the trimmer by swinging the trimmer from left to right. Keep the trimmer head horizontal. See Figure 25.

**Edging**

Tilt the handle about 100° to the left (from horizontal) and move forward, holding the trimmer vertically as shown in Figure 25.

**WARNING!**
Always wear a shoulder strap when operating this unit with a blade. A shoulder strap is also recommended when using trimmer line.

**NOTE:**
Using a shoulder strap when operating this unit with a blade allows you to maintain proper control of the unit and reduces fatigue during extended operation.

**WARNING!**
A cutting attachment shield or other protective device is no guarantee of protection against ricochet. YOU MUST ALWAYS GUARD AGAINST FLYING DEBRIS!
Using a Blade T261X

**WARNING!**

- Before working with a blade-equipped unit, always inspect and clean the area of objects that could interfere with or damage the blade.
- Never use a blade near sidewalks, fence posts, buildings or other objects that could cause injury or damage.
- Never use a blade for purposes other than those for which it was designed.
- Whenever you strike a hard object with a blade, always stop the brushcutter and carefully inspect the blade for damage. NEVER OPERATE THE BRUSHCUTTER WITH A DAMAGED BLADE!
- A blade-equipped unit must be equipped with a bicycle-type handlebar or barrier bar as well as a harness or shoulder strap.
- Always make sure the cutting attachment shield is properly installed before operating this unit.

**Blade Thrust**

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

**Brushcutter Handlebar**

A brushcutter handlebar or barrier bar helps prevent the operator from moving forward, or the unit moving rearward, thus preventing inadvertent bodily contact with the blade. ALWAYS KEEP THE HANDLEBAR OR BARRIER BAR SECURELY IN PLACE ON THE UNIT!

**Brushcutter Shoulder Strap**

A shoulder strap provides additional protection against blade thrust. In addition, a shoulder strap gives significant support and comfort to help ensure safe and efficient operation.

When operating a T261X with a blade, make sure both the handle and shoulder strap are adjusted to the size of the operator using the unit.

**Engine Operating Speeds**

Operate the unit at full throttle while cutting. Best fuel efficiency is obtained by releasing the throttle when swinging back after a cut.

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

**WARNING!**

When cutting wood with a saw, feed the blade slowly—never strike or “slam” a spinning blade against the wood.

**WARNING!**

DO NOT use 2-tooth or non-Shindaiwa approved 4-tooth cutting blades with Shindaiwa trimmers and brushcutters.

**Vertical Cuts**

Hold the brushcutter with the blade at a 90° angle to the ground so the blade’s bottom edge rotates toward the operator. Move the blade from top to bottom through the cut, and cut only with the bottom edge of the blade. See Figure 27.

**WARNING!**

When making vertical cuts, never allow the blade to exceed waist height.

---

The blade rotates counter-clockwise. For best performance and to minimize being stuck by debris, move the blade from right to left while advancing on your work.

Position the blade so cuts are made between the blade’s 7 o’clock and 10 o’clock positions (as viewed from above). DO NOT cut between the 10 o’clock and 5 o’clock positions. See Figure 26.
General Maintenance

**IMPORTANT!**
MAINTENANCE, REPLACEMENT OR REPAIR OF EMISSION CONTROL DEVICES AND SYSTEMS MAY BE PERFORMED BY ANY REPAIR ESTABLISHMENT OR INDIVIDUAL; HOWEVER, WARRANTY REPAIRS MUST BE PERFORMED BY A DEALER OR SERVICE CENTER AUTHORIZED BY SHINDAIWA CORPORATION. THE USE OF PARTS THAT ARE NOT EQUIVALENT IN PERFORMANCE AND DURABILITY TO AUTHORIZED PARTS MAY IMPAIR THE EFFECTIVENESS OF THE EMISSION CONTROL SYSTEM AND MAY HAVE A BEARING ON THE OUTCOME OF A WARRANTY CLAIM.

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

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

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

**WARNING!**
Never repair a damaged blade by welding, straightening, or by modifying its shape. An altered blade may break during operation, resulting in serious personal injury.

**WARNING!**
DO NOT use 2-tooth or NON-Shindaiwa approved 4-tooth cutting blades on Shindaiwa trimmers or brushcutters.

**Blades**
Keep blades sharp and check blade condition frequently. If a blade’s performance changes suddenly, stop the engine and check the blade for cracks or other damage. Replace a damaged blade IMMEDIATELY!

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

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

**Spark Plug**
Keep the spark plug and wire connections tight and clean.

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

**Daily Maintenance**
Prior to each work day, perform the following:

- Remove dirt or debris from the engine, check the cooling fins and air cleaner for clogging and clean them as necessary.

**10-Hour Maintenance**
Every 10 hours of operation (more frequently in dusty or dirty conditions):
Remove the air cleaner element.
See Figure 28. Clean or replace as necessary. To clean element: wash it thoroughly in soap and water. Let it dry before reinstalling the element.

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

- Carefully remove any accumulation of dirt or debris from the muffler or the fuel tank. Dirt build-up in these areas could cause the engine overheating, induce premature wear, or create a fire hazard.

- Check for loose or missing screws or components. Make sure the cutting attachment is securely fastened.

- Check the entire unit for leaking fuel or grease.

**Figure 28**
Remove and clean or replace the element
Unscrew Fastener
**10/15-Hour Maintenance**

Every 10 to 15 hours of operation:
Remove and clean the spark plug. Adjust the spark plug electrode gap to 0.024 inch (0.6 mm). If the spark plug must be replaced, use only an champion CJ8Y or equivalent type spark plug of the correct heat range. See Figure 29.

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

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**50-Hour Maintenance**

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

- Remove and clean the cylinder cover and clean grass and dirt from the cylinder fins.
- Remove the cutting attachment, cutting attachment holder and gear shaft collar. Remove the filler plug from the side of the gearcase and press new grease into the gearcase until old grease is pushed out. Use only lithium-base grease such as Shindaiwa Gear Case Lubricant or equivalent. See Figure 30.
- Lubricate main shaft splines.
- Use a hooked wire to extract the fuel filter from inside the fuel tank. See Figure 31.

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

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

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*Figure 29: Clean the spark plug and check the gap at the electrode.*

*Figure 30: Gear Shaft Collar, Old Grease, New Grease.*

*Figure 31: Hooked Wire, Filter Element.*
135-Hour Maintenance

Every 135 hours of operation, remove and clean the muffler.

**WARNING!**
Never operate the machine with a damaged or missing muffler or spark arrester! Operating with missing or damaged exhaust components is a fire hazard and could also damage your hearing.

1. Remove the spark plug boot.
2. Remove the two 4 mm engine cover screws (located at the top of the recoil housing).
3. Loosen the 5 mm engine top cover screw (the screw is captive) and lift the cover from the engine.
4. Remove the two 5 mm muffler screws. Remove the lower muffler screw, then lift the muffler assembly from the engine.

5. Remove the rear muffler shield socket head screw and, while noting the orientation of parts, separate the muffler shield. See Figure 32.
6. Remove the spark arrester screen and clean with a stiff bristle brush.
7. Gently tap the muffler on a wood surface to dislodge any loose carbon.
8. Inspect the cylinder exhaust port for carbon buildup.

**IMPORTANT!**
If you note excessive carbon buildup, consult with an authorized servicing dealer.

9. Reassemble the muffler in the reverse order of disassembly.

Long Term Storage

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

- Clean external parts thoroughly.
- Drain all the fuel from the fuel tank.

**IMPORTANT!**
All stored fuels should be stabilized with a fuel stabilizer such as STA-BIL™, if oil with fuel stabilizer is not used.

- Remove the remaining fuel from the fuel lines and carburetor.

Blade Sharpening

When the cutting edges of the blade become dull, they can be resharpened with a few strokes of a file.

In order to keep the blade in balance, all cutting edges must be sharpened equally.

**Shindaiwa Tornado® Blade**

To sharpen the cutters on a Shindaiwa Tornado Blade, use a 7/32-inch round file. File the leading edge of each tooth to a razor edge. The top plate of each tooth should angle back 30°.

**WARNING!**
Sharpen only the cutting teeth of a blade. DO NOT alter the contour of the blade in any way.

Multiple-tooth Circular Blade

Use a round file to maintain a radius of 0.04 to 0.06" (1 to 1.5 mm) at the base of each tooth. Cutting edges must be offset equally on each side.
## Troubleshooting Guide

**ENGINE DOES NOT START**

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<tr>
<td><strong>YES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the tank contain fresh fuel of the proper grade?</td>
<td>Fuel incorrect, stale, or contaminated; mixture incorrect.</td>
<td>Refill with clean fresh unleaded gasoline with a pump octane of 87 or higher, mixed with Shindaiwa Premium 2-cycle mixing oil at a 50:1 gasoline/oil ratio.</td>
</tr>
<tr>
<td><strong>YES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is fuel visible and moving in the return line when priming?</td>
<td>Check for clogged fuel filter and/or vent.</td>
<td>Replace fuel filter or vent as required. Restart.</td>
</tr>
<tr>
<td><strong>YES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there spark at the spark plug wire terminal?</td>
<td>The ignition switch is in “O” (OFF) position. Shorted ignition system. Faulty ignition unit.</td>
<td>Move switch to “I” (ON) position and re-start. Consult with an authorized servicing dealer.</td>
</tr>
<tr>
<td><strong>YES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check the spark plug.</td>
<td>If the plug is wet, excess fuel may be in the cylinder.</td>
<td>Crank the engine with the plug removed, replace the plug, and re-start.</td>
</tr>
<tr>
<td></td>
<td>The plug is fouled or improperly gapped.</td>
<td>Clean and re-gap the plug to 0.024 inch (0.6 mm). Re-start.</td>
</tr>
<tr>
<td></td>
<td>The plug is damaged internally or of the wrong size.</td>
<td>Replace the plug with a Champion CJ8 or equivalent type spark plug of the correct heat range.</td>
</tr>
</tbody>
</table>
**Troubleshooting Guide** (continued)

**LOW POWER OUTPUT**

<table>
<thead>
<tr>
<th>What To Check</th>
<th>Possible Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the engine overheating?</td>
<td>Operator is overworking the unit. Carburetor mixture is too lean. Improper fuel ratio. Fan, fan cover, cylinder fins dirty or damaged. Carbon deposits on the piston or in the muffler.</td>
<td>Shorten trimmer line. Cut at a slower rate. Consult with an authorized servicing dealer. Refill with clean fresh unleaded gasoline with a pump octane of 87 or higher, mixed with Shindaiwa Premium 2-cycle mixing oil at a 50:1 gasoline/oil ratio. Consult with an authorized servicing dealer. Consult with an authorized servicing dealer.</td>
</tr>
<tr>
<td>Engine is rough at all speeds. May also have black smoke and/or unburned fuel at the exhaust.</td>
<td>Clogged air filter. Loose or damaged spark plug. Air leakage or clogged fuel line. Water in the fuel. Piston seizure. Faulty carburetor and/or diaphragm.</td>
<td>Clean or replace the air filter. Tighten or replace the plug with a Champion CJ8 or equivalent type spark plug of the correct heat range. Repair or replace filter and/or fuel line. Refill with fresh fuel/oil mixture. See Page 9. Consult with an authorized servicing dealer.</td>
</tr>
</tbody>
</table>
### Troubleshooting Guide (continued)

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor acceleration.</td>
<td>Clogged air filter.</td>
<td>Clean or replace the air filter.</td>
</tr>
<tr>
<td></td>
<td>Clogged fuel filter.</td>
<td>Replace the fuel filter.</td>
</tr>
<tr>
<td></td>
<td>Lean fuel/air mixture.</td>
<td>Consult with an authorized servicing dealer.</td>
</tr>
<tr>
<td></td>
<td>Idle speed set too low.</td>
<td>Adjust: 2,750 (±250) rpm (min⁻¹)</td>
</tr>
<tr>
<td>Engine stops abruptly.</td>
<td>Switch turned off.</td>
<td>Reset the switch and re-start.</td>
</tr>
<tr>
<td></td>
<td>Clogged fuel filter.</td>
<td>Replace filter.</td>
</tr>
<tr>
<td></td>
<td>Shorted spark plug or loose terminal.</td>
<td>Clean or replace spark plug with a Champion CJ8 or equivalent type spark plug of the correct heat range.</td>
</tr>
<tr>
<td></td>
<td>Ignition failure.</td>
<td>Replace the ignition unit.</td>
</tr>
<tr>
<td></td>
<td>Piston seizure.</td>
<td>Consult with an authorized servicing dealer.</td>
</tr>
<tr>
<td>Engine difficult to shut off.</td>
<td>Ground (stop) wire is disconnected, or switch is defective.</td>
<td>Test and replace as required.</td>
</tr>
<tr>
<td></td>
<td>Overheating due to incorrect spark plug.</td>
<td>Replace spark plug with a Champion CJ8 or equivalent spark plug of the correct heat range.</td>
</tr>
<tr>
<td></td>
<td>Overheated engine.</td>
<td>Idle engine until cool.</td>
</tr>
<tr>
<td>Cutting attachment rotates at engine idle.</td>
<td>Engine idle too high.</td>
<td>Set idle: 2,750 (±250) rpm (min⁻¹)</td>
</tr>
<tr>
<td></td>
<td>Broken clutch spring or worn clutch spring boss.</td>
<td>Replace spring/shoes as required, check idle speed.</td>
</tr>
<tr>
<td></td>
<td>Loose attachment holder.</td>
<td>Inspect and re-tighten holders securely.</td>
</tr>
<tr>
<td>Excessive vibration.</td>
<td>Warped or damaged cutting attachment.</td>
<td>Inspect and replace attachment as required.</td>
</tr>
<tr>
<td></td>
<td>Loose gearcase.</td>
<td>Tighten gearcase securely.</td>
</tr>
<tr>
<td></td>
<td>Bent main shaft/worn or damaged bushings.</td>
<td>Inspect and replace as necessary.</td>
</tr>
<tr>
<td>Cutting attachment will not rotate.</td>
<td>Shaft not installed in powerhead or gearcase.</td>
<td>Inspect and reinstall as required.</td>
</tr>
<tr>
<td></td>
<td>Broken shaft.</td>
<td>Consult with an authorized servicing dealer.</td>
</tr>
<tr>
<td></td>
<td>Damaged gearcase.</td>
<td>Consult with an authorized servicing dealer.</td>
</tr>
</tbody>
</table>
SHINDAIWA LIMITED WARRANTY STATEMENT FOR
PRODUCT SOLD IN USA AND CANADA BEGINNING 01/01/2010

ECHO, INC’S RESPONSIBILITY
ECHO Incorporated’s (ECHO, INC.) Limited Warranty, provides to the original purchaser that this Shindaiwa product is free from defects in material and workmanship. Under normal use and maintenance from date of purchase, ECHO, INC. agrees to repair or replace at its discretion, any defective product free of charge at any authorized Shindaiwa servicing dealer within listed below application time periods, limitations and exclusions. THIS LIMITED WARRANTY IS ONLY APPLICABLE TO SHINDAIWA PRODUCTS SOLD BY AUTHORIZED SHINDAIWA DEALERS. IT IS EXTENDED TO THE ORIGINAL PURCHASER ONLY, AND IS NOT TRANSFERABLE TO SUBSEQUENT OWNERS EXCEPT FOR EMISSION RELATED PARTS. Repair parts and accessories replaced under this warranty are warranted only for the balance of the original unit or accessory warranty period. Any damage caused by improper installation or improper maintenance is not covered by this warranty. All parts or products replaced under warranty become the property of ECHO, INC. This warranty is separate from the Emission control warranty statement supplied with your new product. Please consult the Emission Control Warranty Statement for details regarding emission related parts. For a list of Authorized Shindaiwa Dealers refer to WWW.SHINDAIWA.COM or call 1-877-986-7783.

OWNER’S RESPONSIBILITY
To ensure trouble free warranty coverage it is important that you register your Shindaiwa equipment on-line at WWW.SHINDAIWA.COM or by filling out the warranty registration card supplied with your unit. Registering your product confirms your warranty coverage and provides a direct link if we find it necessary to contact you.

The owner shall demonstrate reasonable care and use, and follow preventative maintenance, storage, fuel and oil usage as prescribed in the operator’s manual. Should a product difficulty occur, you must, at your expense, deliver or ship your Shindaiwa unit to an authorized Shindaiwa servicing dealer for warranty repairs (within the applicable warranty period), and arrange for pick-up or return of your unit after the repairs have been made. For your nearest authorized Shindaiwa servicing dealer, call Shindaiwa’s Dealer Referral Center, at 1-877-986-7783 or you can locate a Shindaiwa servicing dealer at WWW.SHINDAIWA.COM. Should you require assistance or have questions concerning Shindaiwa’s Warranty Statement, you can contact our Consumer Product Support Department at 1-800-673-1558 or contact us through the web at WWW.SHINDAIWA.COM.

PRODUCT WARRANTY PERIOD

RESIDENTIAL APPLICATION
• 2 YEAR WARRANTY - Units for residential, or non-income producing use will be covered by this limited warranty for two (2) years from date of purchase.

  EXCEPTIONS:
  • For engine powered products, the electronic ignition module, flexible drive cable, and solid drive shaft are warranted for the life* of the product on parts only.
  • Cutting attachments such as, but not limited to, bars, chains, sprockets, tines, blades, Power Broom™, belts, and nylon trimmer heads for residential or non-income producing use will be covered for failures due to defects in material or workmanship for a period of 60 days from original product purchase date. Any misuse from contact with concrete, rocks, or other structures is not covered by this warranty.
  • Multipurpose Tool Attachments carry the same warranty duration as the units they are designed to fit.

COMMERCIAL APPLICATION
• 90 DAY WARRANTY - All Chain Saws and Cut-Off Saws for commercial, institutional, agricultural, industrial, or income producing use will be covered by this limited warranty for 90 Days from the date of purchase.
• 2 YEAR WARRANTY - Units for commercial, institutional, agricultural, industrial, or income producing use will be covered by this limited warranty for two (2) years from the date of purchase.

  EXCEPTIONS:
  • For engine powered products, the electronic ignition module, flexible drive cables, and solid drive shafts are warranted for the life* of the product on parts only.
  • Cutting attachments such as, but not limited to, bars, chains, sprockets, tines, blades, Power Broom™, belts, and nylon trimmer heads for commercial, institutional, agricultural, industrial, rental, or income producing will be covered for failures due to defects in material or workmanship for a period of 30 days from original product purchase date. Any misuse from contact with concrete, rocks, or other structures is not covered by this warranty.
  • Multipurpose Tool Attachments carry the same warranty duration as the units they are designed to fit.

RENTAL APPLICATION - 90 DAYS WARRANTY
• Units for rental use will be covered against defects in material and workmanship for a period of 90 days from the date of purchase.
* ECHO INC’s liability under the “Lifetime” coverage is limited to furnishing parts specified under the PRODUCT WARRANTY PERIOD section of this warranty statement for “Life” free of charge for a period of ten (10) years after the date of the complete unit’s final production.
ATTENTION ENGINE POWERED PRODUCT OWNERS

This Shindaiwa engine powered product is a quality-engineered unit which has been manufactured to exact tolerances to provide superior performance. To help ensure the performance of the unit, it is required to use engine oil which meets the ISO-L-EGD Standard per ISO/CD 13738 and JASO M345/FD Standards. Shindaiwa Red Armor™ and Shindaiwa One™ are a premium engine oil specifically formulated to meet ISO-L-EGD (ISO/CD 13738) and JASO M345/FD Standards. The use of engine oils designed for other applications, such as for outboard motors or lawn mowers, can result in severe engine damage, and will void your engine limited warranty.

THIS WARRANTY DOES NOT COVER DAMAGE CAUSED BY:

- Lack of lubrication or engine failure, due to the use of engine oils that do not meet the ISO-L-EGD (ISO/CD 13738) and JASO M345/FD Standards. Shindaiwa ONE™ Engine Oil meets the ISO-L-EGD and JASO M345/FD Standard. Emission related parts are covered for 2 years regardless of engine oil used, per the statement listed in the EPA or California Emission Control Warranty Explanation.
- Damage caused by use of gasohol, containing methanol (wood alcohol), or gasoline containing less than 89 octane. Only use gasoline which contains 89 octane or higher. Gasohol which contains a maximum 10% ethanol (grain alcohol) or 15% MTBE (methyl/tertiary/butyl/ether) is also approved. The prescribed mixing ratio of gasoline to oil is listed on the Shindaiwa oil label and covered in your operator’s manual.
- Engine damage caused by use of ether or any starting fluids.
- Damage caused by tampering with engine speed governor or emission components, or running engines above specified and recommended engine speeds as listed in your operator’s manual.
- Operation of the unit with improperly maintained/removed cutting shield or removed/damaged air filter.
- Damage caused by dirt, pressure or steam cleaning the unit, salt water, corrosion, rust, varnish, abrasives, and moisture.
- Defects, malfunctions or failures resulting from abuse, misuse, neglect, modifications, alterations, normal wear, improper servicing, or use of unauthorized attachments.
- Incorrect storage procedures, stale fuel, including failure to provide or perform required maintenance services as prescribed in the operator’s manual. Preventative maintenance as outlined in the operators manual is the customer’s responsibility.
- Failures due to improper set-up, pre-delivery service or repair service by anyone other than authorized Shindaiwa servicing dealer during the warranty period.
- Certain parts and other items are not warranted, including but not limited to: lubricants, starter cords, and engine tune-ups.
- Use of spark plugs other than those meeting performance and durability requirements of the OEM spark plug listed in the Operator’s Manuals.
- Overheating or carbon scoring failures due to restricted, clogged exhaust port or combustion chamber, including damage to spark arrester screen.
- Adjustments after the first (30) thirty days and beyond, such as carburetor adjustment and throttle cable adjustment.
- Damage to gears or gear cases caused by contaminated grease or oil, use of incorrect type or viscosity of lubricants, and/or failure to comply with recommended grease or oil change intervals.
- Damage caused by pump or sprayer running dry, pumping or spraying caustic or flammable materials, or lack of or broken strainers.
- Additional damage to parts or components due to continued use after operational problem or failure occurs. Should operational problem or failure occur, the product should not be used, but delivered as is to an authorized Shindaiwa servicing dealer.

It is a dealer’s and/or customer’s responsibility to complete and return the warranty registration card supplied with your Shindaiwa product or by visiting WWW.SHINDAIWA.COM. Your receipt of purchase including date, model and serial number must be maintained and presented to an authorized Shindaiwa servicing dealer for warranty service. Proof of purchase rests solely with the customer. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so you may also have other specific legal rights which vary from state to state. This limited warranty is given by ECHO Incorporated, 400 Oakwood Rd., Lake Zurich, IL 60047.

DISCLAIMER OF IMPLIED WARRANTIES

This limited warranty is in lieu of all other expressed or implied warranties, including any warranty of FITNESS FOR A PARTICULAR PURPOSE OR USE and any implied warranty of MERCHANTABILITY otherwise applicable to this product. ECHO, INC. and its affiliated companies shall not be liable for any special incidental or consequential damage, including lost profits. There are no warranties extended other than as provided herein. This limited warranty may be modified only by ECHO, INC.
ECHO INCORPORATED EMISSION CONTROL WARRANTY STATEMENT
FOR ECHO AND SHINDAIWA BRANDS

The Environmental Protection Agency (EPA) and the California Air Resources Board (C.A.R.B.) and ECHO Incorporated (ECHO Inc.) are pleased to explain the emission control system warranty on your 2010 and later equipment/small off-road engine (SORE). New equipment/SORE must be designed, built and equipped to meet stringent EPA and C.A.R.B. anti-smog standards. ECHO Inc. must warrant the emission control system on your equipment/SORE for the periods of time listed below, provided there has been no abuse, neglect or improper maintenance of your equipment/SORE. Your emission control system may include parts such as: carburetor, fuel-injection system, ignition system, catalytic converter/muffler, fuel tank, fuel feed lines, fuel cap assembly, spark plug, air filters, and other associated components. Where a warrantable condition exists, ECHO Inc. will repair your equipment/SORE at no cost to you including diagnosis, parts and labor. The Emission Control System warranty is extended to the original owner including all subsequent owners.

MANUFACTURER'S WARRANTY COVERAGE:
The emission control system is warranted for 2 years or the length of the ECHO Inc. warranty, whichever is longer. If any emission-related part on your equipment is defective, the part will be repaired or replaced by ECHO Inc. or its Authorized Service Representative.

OWNER'S WARRANTY RESPONSIBILITIES:
As the equipment/SORE owner, you are responsible for the performance of the required maintenance listed in your Operator's Manual. ECHO Inc. recommends that you retain all receipts covering maintenance on your equipment/SORE however, ECHO Inc. cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance. As the equipment/SORE owner, you should be aware that ECHO Inc. may deny you warranty coverage if your equipment/SORE or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

Any emission related part scheduled for replacement during "required maintenance" is warranted for the period of time listed below, provided there has been no abuse, neglect or improper maintenance of your equipment/SORE. ECHO Inc. recommends that you retain all receipts covering maintenance on your equipment/SORE however, ECHO Inc. cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance. As the equipment/SORE owner, you should be aware that ECHO Inc. may deny you warranty coverage if your equipment/SORE or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

WHAT IS NOT COVERED?
Any failure caused by abuse, neglect, improper maintenance, unapproved modifications, use of unapproved add-on parts/modified parts or unapproved accessories.

This Emission Control Warranty is valid only for the U.S.A., its Territories, and Canada.
Servicing Information
Parts/Serial Number
Genuine Shindaiwa Parts and Assemblies for your Shindaiwa products are available only from an Authorized Shindaiwa Dealer. When you do need to buy parts always have the Model Number, Type and Serial Number of the unit with you. You can find these numbers on the engine. For future reference, write them in the space provided below.

Model No. _____________ Type _________ SN. ______________

Service
Service of this product during the warranty period must be performed by an Authorized Shindaiwa Service Dealer. For the name and address of the Authorized Shindaiwa Service Dealer nearest you, ask your retailer or call: 1-877-986-7783. Dealer information is also available on WWW.SHINDAIWA.COM. When presenting your unit for Warranty service/repairs, proof of purchase is required.

Consumer Product Support
If you require assistance or have questions concerning the application, operation or maintenance of this product you may call the Shindaiwa Consumer Product Support Department at 1-877-986-7783 from 8:30 am to 4:30 pm (Central Standard Time) Monday through Friday. Before calling, please know the model and serial number of your unit.

Warranty Registration
To ensure trouble free warranty coverage it is important that you register your Shindaiwa equipment by filling out the warranty registration card supplied with your unit. Registering your product confirms your warranty coverage and provides a direct link if we find it necessary to contact you.

Additional or Replacement Manuals
Replacement Operator and Parts Catalogs are available from your Shindaiwa dealer or at WWW.SHINDAIWA.COM or by contacting the Consumer Product Support Department (1-877-986-7783). Always check WWW.SHINDAIWA.COM for updated information.