

WARNING MIXED FUEL WEED EATER

Any piece of equipment can be dangerous if not operated properly. **YOU** are responsible for the safe operation of this equipment. The operator must carefully read and follow any warnings, safety signs and instructions provided with or located on the equipment. Do not remove, defeat, deface or render inoperable any of the safety devices or warnings on this equipment. If any safety devices or warnings have been removed, defeated, defaced or rendered inoperable, **DO NOT USE THIS EQUIPMENT!!!**

Requires 50:1 Mixed Fuel

⚠WARNING: Operating, servicing and maintaining this equipment can expose you to chemicals including engine exhaust, carbon monoxide and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize your exposure, avoid breathing exhaust, do not idle the engine except as necessary, operate and service your equipment in a well-ventilated area and wear gloves or wash your hands frequently when servicing your equipment. For more information go to www.P65warnings.ca.gov

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With all mowers, mower attachments and other rotary cutting devices, there is a chance of objects *being shot out at high speeds. These objects could cause serious injury or death to the operator or bystanders.*

Thoroughly inspect the area where the equipment is to be used. Clear it of objects such as rocks, toys, wire, bones, sticks, etcetera. Always wear safety goggles and other protective clothing. Keep children, animals and others at least 50 feet away at all times.

- Use extreme caution whenever operating, moving, loading or unloading this equipment. During and after operation the Muffler & other components are Extremely Hot & will cause Serious Burns.
- Never operate power equipment of any kind if you are tired or if you are under the influence of alcohol, drugs, medication or any substance that could affect your ability or judgment. Be alert! If you get tired while operating this equipment, take a break. Tiredness may result in loss of control.
- Provide adequate ventilation when operating this equipment. Internal combustion engines consume oxygen & give off deadly carbon monoxide gas.
- Do not tape down or otherwise by-pass any safety devices! Always operate this equipment from the designated operator's position.
- Use extreme caution: The mower blade is very sharp! Keep your hands & feet clear of the blade at all times.

IMPORTANT SAFETY RULES TO FOLLOW

1. Wear a long-sleeved shirt/jacket & long pants.
2. Use extra caution when operating on a slope.
3. Wear eye protection & non-skid boots or shoes.
4. Do not smoke when operating trimmer.
5. When refueling, always shut off the engine.
6. When starting engine, start in a safe place, away from fuel & other persons.
7. Do not place flammable material close to the muffler.
8. Do not run without spark arrestor screen in place.
9. Make sure no one is within 50ft during operation.
10. When removing grass or brush wound at the blade area, always stop engine & wait for the blade rotation to stop.
11. Never run engine when transporting machine.
12. Do not use near fences or sides of buildings. The blade can ricochet back resulting in serious injury to yourself.

If the person receiving this handout will not be the user of the equipment, forward these instructions to the operator. If there is any doubt as to the operation or safety of the equipment,

DO NOT USE!!! CALL A TOOL SHED IMMEDIATELY!!!

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN INJURY OR DEATH

Safety (continued)

The Properly Equipped Operator

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

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

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

Long-term exposure to vibration can damage your hands.

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

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



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

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

Always operate with both hands firmly gripping the unit.

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

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

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

Be Aware of the Working Environment

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

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

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



Make sure bystanders or observers outside the 15 meter (50 feet) "danger zone" wear eye protection.

15 METERS (50 FEET)

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

Reduce the risk of bystanders being struck by flying debris. Make sure no one is within 15 meters (50 feet)— that's about 16 paces of an operating attachment. Stop immediately if a child, pet, or person comes within a 15 meter (50 feet) radius. Outside this radius, there is still a risk of injury from thrown objects.

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

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

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

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

Mixing Fuel



WARNING!

Diesel fuels and alternative fuels, such as E15 (15% ethanol), E85 (85% ethanol) or any fuels not meeting Shindaiwa requirements are **NOT** approved for use in Shindaiwa 2-stroke or Hybrid 4-stroke gasoline engines. Use of diesel or alternative fuels may cause performance problems, loss of power, overheating, fuel vapor lock, and unintended machine operation, including, but not limited to, improper clutch engagement. Diesel or alternative fuels may also cause premature deterioration of fuel lines, gaskets, carburetors and other engine components.

Fuel Requirements

Gasoline - Use 89 Octane [R+M/2] (mid grade or higher) gasoline known to be good quality. Gasoline may contain up to 10% Ethanol (grain alcohol) or 15% MTBE (methyl tertiary-butyl ether). Gasoline containing methanol (wood alcohol) is NOT approved. ECHO brand Power Fuel™ is 93 octane, ethanol-free fuel premixed with ECHO Red Armor® engine oil at 50:1 ratio. Use of ECHO Power Fuel™ is recommended to extend engine life in all air-cooled 2-stroke and 214-stroke hybrid engines.

2-Stroke Mixture Oil - A 2-stroke engine oil meeting ISO-L-EGD (ISO/CD 13738) and J.A.S.O. M345/FD standards must be used. Shindaiwa Red Armor™ 2-Stroke Oil is strongly recommended as it meets this standard and is specifically formulated for use in all Shindaiwa 2-stroke engines. Engine problems due to inadequate lubrication caused by failure to use an ISO-L-EGD (ISO/CD 13738) and J.A.S.O. M345/FD certified oil will void the engine warranty.

IMPORTANT!

Shindaiwa Red Armor™ 2-Stroke oil engine oil may be mixed at 50:1 ratio for application in all Shindaiwa engines sold in the past, regardless of ratio specified in those manuals.

IMPORTANT!

Stored fuel ages. Do not mix more fuel than you expect to use in thirty (30) days, ninety (90) days when a fuel stabilizer is added. Use of unmixed, improperly mixed, or stale fuel, may cause hard starting, poor performance, or severe engine damage and void the product warranty. Read and follow instructions in the Long Term Storage section of this manual.

Handling Fuel



DANGER

- Fuel is **VERY** flammable. Use extreme care when mixing, storing or handling or serious personal injury may result.
- Use an approved fuel container.
- DO NOT smoke near fuel.
- DO NOT allow flames or sparks near fuel.
- DO NOT allow fuel tanks to be under pressure. Always loosen fuel caps slowly allowing pressure to equalize.
- NEVER refuel a unit when the engine is **HOT** or **RUNNING!**
- DO NOT fill fuel tanks indoors. ALWAYS fill fuel tanks outdoors over bare ground.
- DO NOT overfill fuel tank. Wipe up spills immediately.
- Securely tighten fuel tank cap and close fuel container after refueling.
- Inspect for fuel leakage. If fuel leakage is found, do not start or operate unit until leakage is repaired.
- Move at least 3 m (10 ft.) from refueling location before starting the engine.

Mixing Instructions

- Fill an approved fuel container with half of the required amount of gasoline.
- Add the proper amount of engine oil to gasoline.
- Close container and shake to mix oil with gasoline.
- Add remaining gasoline, close fuel container, and remix.

Fuel to Oil Mix - 50:1 Ratio		Metric	
US	Oil	Gas	Oil
1	2.6	5	100
2	5.2	10	200
5	13	25	500

Examples of 50:1 mixing quantities

Spilled fuel is a leading cause of hydrocarbon emissions. Some states may require the use of automatic fuel shut-off containers to reduce fuel spillage.

IMPORTANT!

- After use**
- DO NOT store a unit with fuel in its tank. Leaks can occur. Return unused fuel to an approved fuel storage container.

Storage - Fuel storage laws vary by locality. Contact your local government for the laws affecting your area. As a precaution, store fuel in an approved, airtight container. Store in a well-ventilated, unoccupied building, away from sparks and flames.

IMPORTANT!

Stored fuel may separate. ALWAYS shake fuel container thoroughly before each use.



Filling the Fuel Tank



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.
- ALWAYS wipe all spilled fuel and move at least 3 meters (10 feet) from the fueling point and source before starting.
- NEVER place flammable material close to the engine muffler.
- NEVER operate the engine without the muffler and spark arrester screen in place and in good working condition.
- FUELS HIGHLY FLAMMABLE.
- ALWAYS store gasoline in a container approved for flammable liquids.
- 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 at least 3 meters (10 feet) away from a fuel storage area or other readily flammable materials before starting the engine.

CAUTION!

Slowly remove the fuel cap only after stopping the engine.

- Place the unit on a flat, level surface.
- Clear any dirt or other debris from around the fuel filler cap.
- Remove the fuel cap, and fill the tank with clean, fresh fuel.
- Reinstall the fuel filler cap and tighten firmly.
- Wipe away any spilled fuel before starting engine.

Starting the Engine

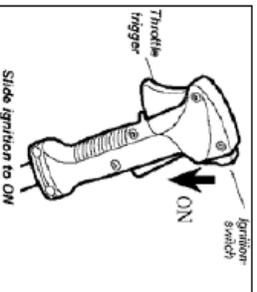
IMPORTANT!

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

WARNING!

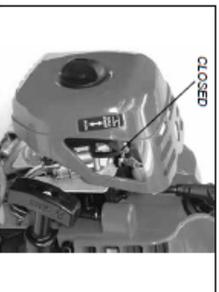
Never start the engine from the operating position.

1. Slide the ignition switch to the "T" (ON) position.
2. Press the primer bulb until fuel can be seen flowing in the transparent return tube.



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

3. Set the choke lever to the CLOSED position if engine is cold.
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.



Set the choke lever to the CLOSED position

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.

WARNING!

The cutting attachment may move when the engine is started! Keep your hands and your body away from the cutter assembly while starting the engine!

When the Engine Starts...

- After the engine starts, allow the engine to warm up at idle 2 or 3 minutes before operating the unit.

IMPORTANT!

If the engine fails to start after several attempts with the choke in the closed position, the engine may be flooded with fuel. If flooding is suspected, refer to the "Starting a Flooded Engine" section of this manual.



When the engine starts, slowly move the choke lever to the "OPEN" position

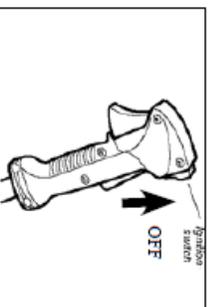
- Advancing the throttle makes the cutting attachment move faster; releasing the throttle permits the attachment to stop moving. If the cutting attachment continues to move when the engine returns to idle, carburetor idle speed should be adjusted (see "Adjusting Engine Idle").

Starting a Flooded Engine

1. Slide the ignition switch to the "T" (ON) position.
2. Open the choke, put the throttle lever in the full throttle position, then clear excess fuel from the combustion chamber by cranking the engine several times.
3. If the engine still fails to start or fire, refer to the troubleshooting flow chart at the end of this manual.

Stopping the Engine

1. Idle the engine briefly before stopping (about 2 minutes).
2. Slide the ignition switch to the "O" (Engine OFF) position.



IMPORTANT!

When the unit is turned off make sure the cutting attachment has stopped before the unit is set down.

Checking Unit Condition

NEVER operate the unit with the cutting attachment shield or other protective devices removed!

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

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

NEVER use a cracked or warped cutting attachment; replace it with a serviceable one.

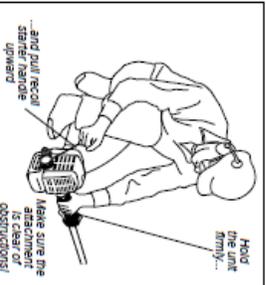
ALWAYS make sure the cutting attachment fits properly into the appropriate attachment holder. If a properly installed attachment vibrates, replace the attachment with new one and re-check.

ALWAYS stop the engine immediately and check for damage if you strike a foreign object or if the unit becomes tangled. Do not operate with broken or damaged equipment.

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

WARNING!

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



Operation

WARNING! Moving parts can amputate fingers or cause severe injuries. Keep hands, clothing and loose objects away from all openings. Always stop engine, disconnect spark plug, and make sure all moving parts have come to a complete stop before removing obstructions, clearing debris, or servicing unit.

WARNING! Engine exhaust IS HOT, and contains Carbon Monoxide (CO), a poison gas. Breathing CO can cause unconsciousness, serious injury, or death. Exhaust can cause serious burns. ALWAYS position unit so that exhaust is directed away from your face and body..

WARNING! Operation of this equipment may create sparks that can start fires. This unit is equipped with a spark arrestor to prevent discharge of hot particles from the engine. Metal blade use also can create sparks if the blade strikes rocks, metal, or other hard objects. Contact local fire authorities for laws or regulations regarding fire prevention requirements.

Shoulder strap

WARNING! Always wear a shoulder strap or harness when operating this unit. Using a harness with a brush cutter allows you to maintain proper control of the unit and reduces fatigue during extended operation.

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

Cutting grass with a trimmer head
Your Shinaiwa unit may be equipped with one of several Shinaiwa 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.

IMPORTANT!

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:

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.



Engine Operating Speeds
Operate at full throttle while cutting grass.

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

Operation (continued)

Trimmer head styles:
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.

Fall: 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 Fall type trimmer heads.

Using a blade

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.

Trimming and Mowing Grass

Hold the grass 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. Cut grass by swinging the unit's trimmer head from left to right. Keep the trimmer head horizontal.

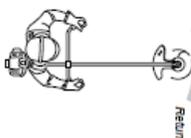
CAUTION!

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

CAUTION!

Use only flexible, nonmetallic line recommended by the manufacturer. Never use, for example, wire or wire-rope, which can break off and become a dangerous projectile.

Cut from left to right



WARNING!

Remove all objects such as rocks, broken glass, nails, wire, or string, which can be thrown or become entangled in the cutting attachment.

CAUTION!

- Operation of trimmer without a cutting attachment shield and using excessive line length can lead to premature clutch failure.
- Operation at low rpm can lead to premature clutch failure.

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

 **WARNING!** Blade thrust can occur without warning if the blade snags, stalls or binds.

Using a blade

The blade rotates counterclockwise. 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 8 o'clock and 10 o'clock positions (as viewed from above). DO NOT cut between the 10 o'clock and 5 o'clock positions.

 **WARNING!** Blade thrust is more likely to occur in areas where it is difficult to see the material being cut.

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!

 **WARNING!** When cutting wood with a blade, 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 brush cutters.

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.

