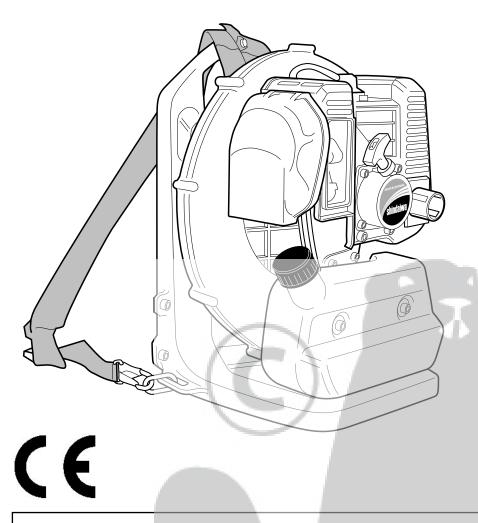


OWNER'S/OPERATOR'S MANUAL

EB500 BLOWER



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

IMPORTANT!

Before using this product, consult local regulations concerning noise restrictions and hours of operation!

The Shindaiwa EB500 has been designed and built to deliver superior performance and reliability without compromise to quality, comfort, safety, or durability.

Shindaiwa high performance engines represent the leading edge of 2-cycle engine technology and deliver exceptionally high power, remarkably low displacement and weight. As a professional owner/operator, you will soon discover why Shindaiwa is simply in a class by itself!

IMPORTANT!

The information contained in this manual describes machines available at the time of production. While every attempt has been made to give you the very latest information about your Shindaiwa EB500 blower, there may be some differences between your machine and what is described here. Shindaiwa Inc. reserves the right to make changes in production without prior notice, and without obligation to make alterations to machines previously manufactured.

Contents

	PAGE
Attention Statements	2
Product Description	3
Technical Specifications	3
Assembling the Blower	4
Mixing Fuel	5
Filling the Fuel Tank	5
Starting and Stopping the Blower	6
Adjusting Engine Idle Speed	7
Adjusting the Harness	7
Using the Blower	8
Routine Maintenance	9
Spark Arrester Maintenance	10
Storage	11
Troubleshooting Guide	12

Attention Statements

This manual contains special "attention statements" surrounded by boxes and preceded by the triangular Attention Symbol.

WARNING!

A statement preceded by 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 damaging your machine.

Additional attention statements that are not preceded by the Attention Symbol are:

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.

Warning Labels

Warning labels affixed to the machine are as follows:



Read and follow this manual, make sure anyone using this unit does likewise. Failure to do so could result in serious personal injury

or machine failure. Keep this manual for future reference.



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



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

IMPORTANT!

The operational procedures described in this manual are intended to help you get the most from this unit and also to protect you and others from harm. These procedures are general guidelines only, and are not intended to replace any safety rules/laws that may be in force in your area.

If you have any questions regarding your EB500 blower, or if you do not understand something in this manual, your Shindaiwa Dealer will be glad to assist you. For additional information, you may also contact Shindaiwa Inc. at the address printed on the back of this manual.

CAUTION!

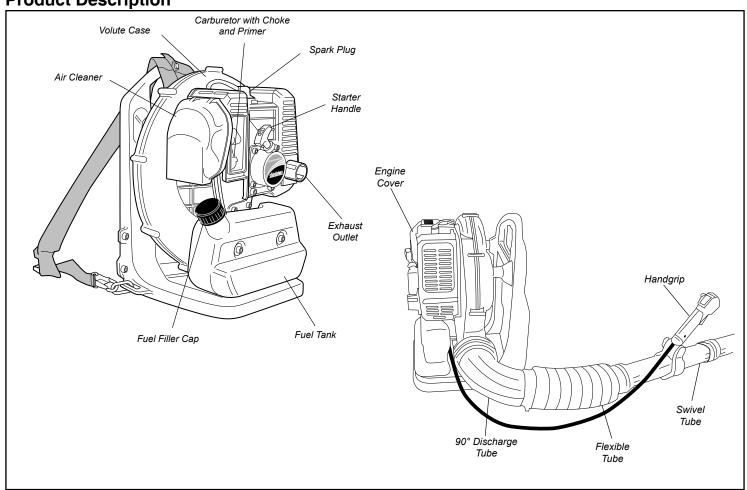
This unit is equipped with a spark arresting muffler. Never operate this machine without both the muffler and spark arrester installed and properly functioning.

A

WARNING!

Do not make unauthorized modifications to this machine.

Product Description



Technical Specifications

Model	EB500/EC1
Engine Model	SEB500EC1
Dimensions (L x W x H)	325 x 380 x 475 mm
Engine Type2 cycle a	ir cooled gasoline engine, vertical cylinder
Bore & Stroke	
Displacement	43.6 cc
Engine Speed at Idling	2,700 min ⁻¹
Maximum Engine Speed	6,100 min ⁻¹
Engine Speed at Maximum Power Output	7,500 min ⁻¹
Maximum Power Output	
FuelGasoline/oil mixture (50:1 wi	th Shindaiwa Premium 2-cycle Engine Oil)
Carburetor Type	Walbro rotary-type with primer pump
Ignition	
Spark Plug	NGK BMR6A
Starting Method	
Stopping Method	
Fuel Tank Capacity	
Exhaust System	
Air Cleaner Type	Dry element
Weight (dry; without blower tubes)	
Sound pressure Level *	
	(WOT) 94.5 dB (A)
Sound Power Level **	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	(WOT) 106.4 dB (A)
Vibration Level ***	
	(WOT) 2.0 m/s^2

* Sound Pressure Level: in accordance with ISO 7917

Standard Accessories

- 90° Discharge Tube
- Flexible Tube
- Swivel Tube (Throttle Lever Attached)
- Straight Tube
- Nozzle Tube
- Handgrip (removable)
- Three Tube Clamps (115 mm, 100 mm, 85 mm)

Standard Tools

- Spark Plug Wrench
- Three Hex Wrenches (3 mm, 4mm, 5mm)

^{**} Sound Power Level: in accordance with ISO 10884

^{***} Vibration Level: in accordance with ISO 7916

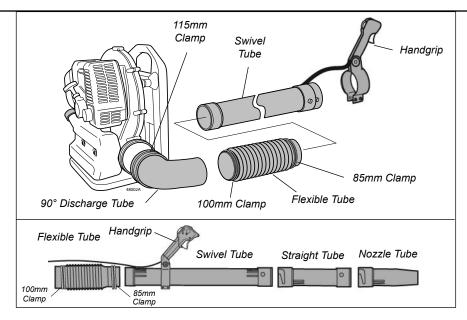
Assembling The Blower

- 1. Place the blower upright on the ground or a sturdy work surface.
- 2. Fit the 90° discharge tube over the blower outlet port and secure with the 115 mm diameter clamp.
- 3. Slip the flexible tube over the end of the 90° discharge tube, and secure with the 100mm clamp.

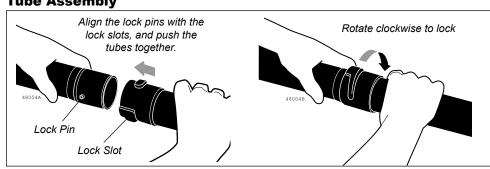
NOTE:

Check to make sure that the 90° discharge tube swivels freely from front to back. If any binding is present, loosen 100mm clamp and pull wire towards engine to get more slack and recheck for free movement.

- 4. Install the 85mm clamp over the opposite end of the flexible tube and push the swivel tube into the flexible tube and then tighten the 85 mm clamp.
- 5. Slide the hand grip over the swivel tube and secure with the bolt and wingnut.
- 6. Grasp the straight tube as shown, and push the tube over the swivel tube locking pins.
- 7. Lock the straight tube to the swivel tube by rotating the straight tube.
- 8. Grasp the nozzle tube and lock the nozzle to the straight tube as in steps 6 and 7.
- 9. Attach the cable clamp over the outer end of the flexible tube and hook the throttle cable as shown.



Tube Assembly



IMPORTANT!

Blower tube installation affects blower performance! Make sure the tubes and nozzle are correctly assembled per above, and that all connections are tight. Blower tubes may come apart during use unless tubes are aligned and locked into place.

Cable Clamp Throttle Cable

WARNING!

Danger from rotating impeller! Stop the engine before installing or removing the blower tubes! Never perform any maintenance or assembly procedures on this machine while the engine is running!

Mixing Fuel



WARNING!

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

- STOP engine before refueling.
- ALWAYS allow the engine to cool before refueling
- ALWAYS open the fuel cap slowly to allow any pressure build-up in the tank to release fuel vapor slowly.
- **ALWAYS** transport and store fuels in an approved container.
- Avoid overfilling and wipe-up all spilled fuel. Move the engine at least 3 meters (10 feet) from the fueling point, storage area, and other readily flammable materials before restarting.
- ALWAYS inspect the unit for fuel leaks before each use. During each refill, make sure there are no fuel leaks around the fuel cap and/ or tank. If a fuel leak is evident, stop using the unit immediately. Fuel leaks must be repaired before using the unit.
- **Never** smoke or light any fires near the engine or fuel source.
- **NEVER** place any flammable material near the engine or muffler.
- **NEVER** operate the engine without the muffler and spark arrester in good working condition.

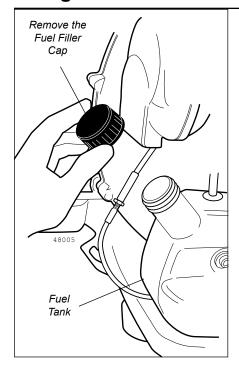
CAUTION!

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

CAUTION!

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

Filling The Fuel Tank



IMPORTANT!

Mix only enough fuel for your immediate needs! If fuel must be stored longer than 30-days, it should first be treated with a stabilizer such as StaBil™ or equivalent product!

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

Gasoline	2-cycle mixing oil
liters	milliliters
2.51	50 ml
51	
101	
201	400 ml

CAUTION!

Never attempt tp mix fuel in the blower fuel tank. Always mix all fuels in a clean approved container.

- 1. Place the blower upright on the ground or on a sturdy work surface, and wipe any debris from around the fuel cap.
- 2. Remove the fuel cap.
- 3. Fill the tank with clean, fresh fuel.
- 4. Replace the cap, and wipe away any spilled fuel before starting the blower engine.

Starting And Stopping The Blower



WARNING!

Danger from rotating impeller!

The impeller will rotate whenever the blower is operating! Never operate this blower unless the intake cover and blower tubes are properly installed and in good working order!

Danger from thrown dust or debris! Always wear eye and respiratory pro-

tection when operating this machine! Never direct the blower stream toward people or animals!

Never operate this blower unless all controls are properly installed and in good working order.

CAUTION!

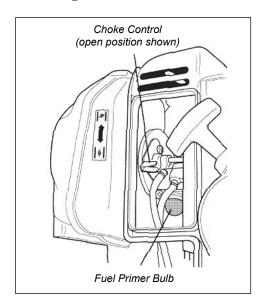
Avoid continuous running of the engine without the blower tubes installed, or if the intake cover or blower tubes are blocked. Doing so can lead to an overheated engine, seized piston, or melted engine cover.

IMPORTANT!

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

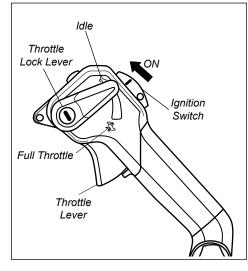
Starting procedure

- 1. Place the blower on the ground.
- 2. Prime the fuel system by repeatedly depressing the fuel primer bulb until no air bubbles are visible in the fuel discharge line.



3. **Cold Engine Only.** Choke the engine by moving the choke lever up. (choke is closed).

4. Slide the ignition switch to the "I" (ON) position, then depress the throttle lever half way and lock throttle by moving throttle lock lever halfway down.



- 5. Hold the blower firmly with your left hand on the volute case.
- 6. Using your right hand, pull the starter handle slowly until you feel the starter engage.
- 7. As the starter engages, pull the starter handle upward rapidly.
- 8. If necessary, repeat Steps 6 and 7 until the engine starts.

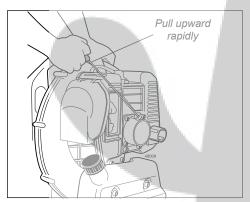
When The Engine Starts

- 1. Open the choke (if it is not already open) by moving the choke lever down.
- 2. If the engine does not continue to run, repeat the appropriate starting procedures for a cold or warm engine.
- 3. Operate the throttle to reduce engine to idle speed until operating temperature is reached (2–3 minutes).

The blower should now be ready for use.

If The Engine Does Not Start

Repeat the appropriate starting procedures for warm or cold engine. If the engine still will not start, follow the "Starting a Flooded Engine" procedure.



WARNING!



Never operate the blower unless all controls are

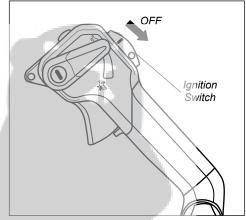
properly installed and in good working order. Never operate the blower if the intake cover or blower tubes are missing or damaged!

Starting A Flooded Engine

- 1. Disconnect the spark plug lead, and remove the spark plug (see page 9 for procedures).
- 2. If the spark plug is fouled or is soaked with fuel, clean or replace the plug as required.
- 3. With the spark plug removed, 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.
- 4. Install and tighten the spark plug, and reconnect the spark plug lead.
- 5. Repeat the starting procedures for a warm engine.
- 6. 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. Cool the engine by allowing it to run at idle for 2–3 minutes.
- 2. Slide the ingnition switch towards the rear to "O" (OFF).



Adjusting Engine Idle Speed

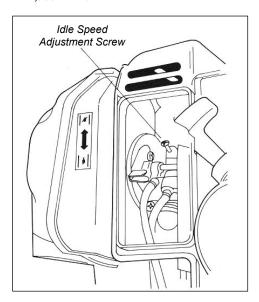
IMPORTANT!

A clean and unrestricted airflow is essential to your blower's engine performance and durability! Before attempting any carburetor adjustments, inspect and clean the engine air filter as described on page 9 of this manual.

IMPORTANT!

Blower tubes and the air cleaner must be in place while adjusting engine idle! Engine idle speed will also be affected if the blower tubes are blocked or incorrectly installed!

- 1. Place the unit on the ground and start the engine, then allow it to idle 2-3 minutes until warm.
- If a tachometer is available, the engine idle speed should be final adjusted to 2,700 min⁻¹.



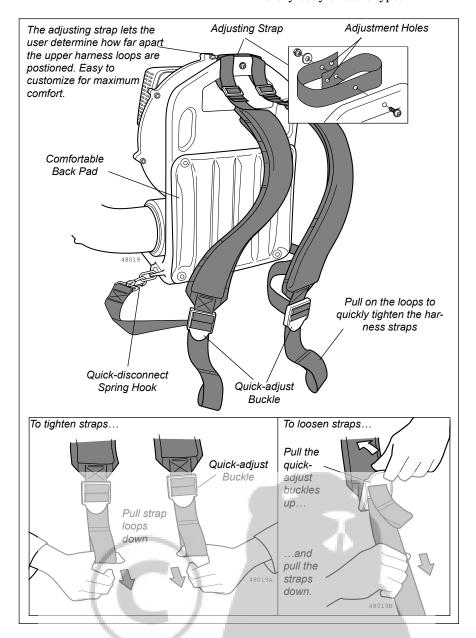
NOTE:

Carburetor fuel mixture adjustments are preset at factory on units with emission control systems and cannot be serviced in the field.

Adjusting The Harness

The Shindaiwa EB500 Blower features an advanced harness system that helps ensure maximum operator comfort and ease of operation.

- The shoulder harness is filled with soft padding for reduced operator fatigue.
- The simplified adjustment system makes it easy to match the harness to every body size and type.



Using The Blower



THINK SAFETY!

OPERATING TIPS

In the hands of an experienced operator, the EB500 can efficiently move a wide variety of debris ranging from grass clippings to gravel. As a general rule, operate your EB500 at the **lowest throttle setting** required to get the job done:

■ Use low throttle settings when clear-

- ing lightweight materials from around lawns or shrubbery.
- Use medium to higher throttle settings to move grass or leaves from parking lots or walkways.
- Use full throttle when moving heavy loads such as dirt or snow.

IMPORTANT!

Blower noise increases at higher throttle settings! Always use the lowest throttle setting required to get the job done!



Routine Maintenance

WARNING!

Before performing any maintenance on this blower, stop the engine and disconnect the spark plug wire!

WARNING!

Improper maintenance, use of nonconforming replacement components, or removal of safety devices could result in serious injury.

Daily Maintenance

- Remove dirt and debris from the blower exterior.
- Inspect the engine, tank, and hoses for possible fuel leaks, and repair as neces-
- Inspect the entire blower for loose. damaged, or missing components, and repair as necessary.
- Inspect the engine cooling fins for accumulations of dirt or debris, and clean as necessary.

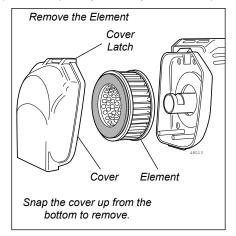
CAUTION!

Dirty or damaged cooling system components may allow the engine to overheat, possibly causing serious engine damage!

Operating the blower with loose. missing, or damaged components could allow the engine to overspeed, possibly causing serious engine damage!

10-Hour Maintenance

(more frequently in dusty conditions)



- 1. Remove the air cleaner cover by gently lifting the cover latch.
- 2. Inspect the filter. If the element is damaged or distorted, replace it with a new one.

IMPORTANT!

The EB500 uses a special high capacity dry-type air filter element. The filter can be cleaned with fuel or solvent, but must **NEVER** be oiled!

3. Use compressed air to blow debris from the air filter element.

NOTE:

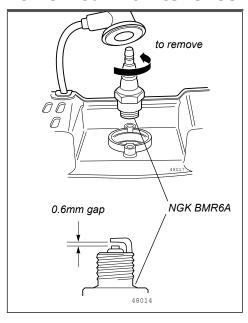
Direct the air stream at the inside face of the filter only!

- 4. Wash the filter cover in clean fuel, and wipe or blow dry.
- 5. Install the filter element and cover in the reverse order of removal.

CAUTION!

Never operate the blower if the air cleaner assembly is damaged or missing!

10-15 Hour Maintenence



- 1. Use the spark plug wrench to remove the spark plug (turn counter-clockwise to remove).
- 2. Clean and adjust the spark plug gap to 0.6mm. Replace any damaged or visibly worn plug with a NGK BMR6A or equivalent.
- 3. Install the spark plug finger-tight in the cylinder head, then tighten it firmly with the spark plug wrench. Avoid overtightening.

CAUTION!

Never allow dirt or debris to enter the cylinder bore! Before removing the spark plug, thoroughly clean the spark plug and cylinder head area!

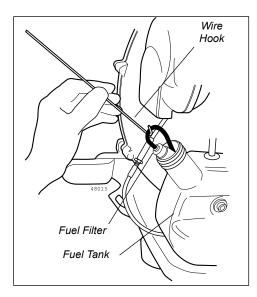
Allow the engine to cool before servicing the spark plug! Cylinder threads can be damaged by tightening or loosening the spark plug while the engine is hot!

50 Hour Maintenance

(more frequently if reduced performance is noted)

- **INSPECTION** Inspect the entire blower and tubes for damage, including loose or missing components, and repair as necessary.
- **SPARK PLUG** Replace the spark plug with a NGK BMR6A (or equivalent), gapped to 0.6mm.
- FUEL FILTER Use a wire hook to extract the fuel filter from inside the fuel tank, and then remove and wash the filter element in clean fuel.

Before reinstalling the filter, inspect the condition of the fuel line. If damage or deterioration are noted, the blower should be removed from service until it can be inspected by a Shindaiwa-trained service technician.



CAUTION!

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

■ COOLING SYSTEM Use a wood or plastic scraper and a soft brush to remove dirt and debris from the cylinder fins and crankcase.

Spark Arrester Maintenance

counter-clockwise to remove), and then

and then remove the exhaust tube,

to remove carbon deposits from the

arrester screen and exhaust tube.

replace any screen that has been perforated, distorted, or is otherwise

6. Reassemble the screen, gasket and

7. Replace the engine cover, and then

install and tighten the four cover

8. Install and tighten the spark plug, and

then reconnect the spark plug wire.

exhaust tube in the reverse order

of disassembly, and then install and

securely tighten the three exhaust tube

5. Inspect the screen carefully, and

4. Use a plastic scraper or wire brush

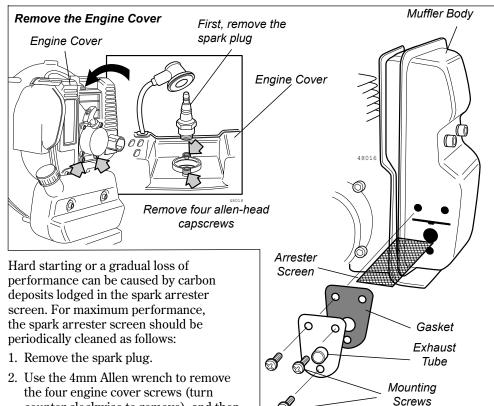
remove the engine cover. 3. Use the screwdriver to remove the three exhaust tube retaining screws,

gasket, and screen.

unserviceable.

retaining screws.

retaining screws.



CAUTION!

as removed. Substitution or incorrect assembly of cover retaining screws can permanently damage the aluminum castings.

Always assemble the four cover retaining screws in the same holes

Storage

(30 days or longer)

- **CLEANING** Thoroughly clean the blower exterior.
- **INSPECTION** Inspect the entire blower and tubes for damage, including loose or missing components, and repair as necessary.
- **FUEL** Drain the fuel tank, and then clear any remaining fuel from the carburetor and lines by running the blower until it stops from lack of fuel.

CAUTION!

Never store this product with any fuel remaining in the tank, fuel lines, or carburetor! Your Shindaiwa warranty does not include coverage for damage caused by "stale" or contaminated fuels!

- LUBRICATION Remove the spark plug, and then pour approximately 7g of oil into the cylinder through the spark plug hole. Before reinstalling the spark plug, pull the recoil starter gently 2–3 times to distribute the oil over the cylinder walls.
- AIR CLEANER Remove, clean, and reinstall the filter element as described under "daily maintenance."
- **STORAGE** Store the blower in a clean, dry, dust-free environment.



Troubleshooting Guide

ENGINE DOES NOT START What To Check Remedy **Possible Cause** Faulty recoil starter. Consult with an authorized Does the engine crank? Fluid in the crankcase. servicing dealer. Internal damage. YES V Loose spark plug. Tighten and retest. Good compression? Excess wear on cylinder, piston, rings. Consult with an authorized servicing dealer. YES V |Fuel incorrect, stale, or contaminated; Refill with clean fresh unleaded gasoline with a Does the tank contain fresh mixture incorrect. pump octane of 87 or higher, mixed with fuel of the proper grade? a Premium 2-cycle mixing oil at a 50:1 gasoline/oil ratio. YES ↓ Check for clogged fuel filter and/or vent. Replace fuel filter or vent as required. Restart. Is fuel visible and moving in the return line when priming? YES V The ignition switch is in "O" (OFF) Move switch to "I" (ON) position and re-start. Is there spark at the spark position. Shorted ignition system. plug wire terminal? Faulty ignition unit. Consult with an authorized servicing dealer. **YES** If the plug is wet, excess fuel may be in Crank the engine with the plug removed, Check the spark plug. the cylinder. replace the plug, and re-start. The plug is fouled or improperly gapped. Clean and re-gap the plug to 0.6 mm; Re-start. The plug is damaged internally or of the Replace the plug with a NGK BMR6A or equivalent type spark plug of the correct wrong size. heat range. Adjust the spark plug electrode gap to 0.6mm; Restart.

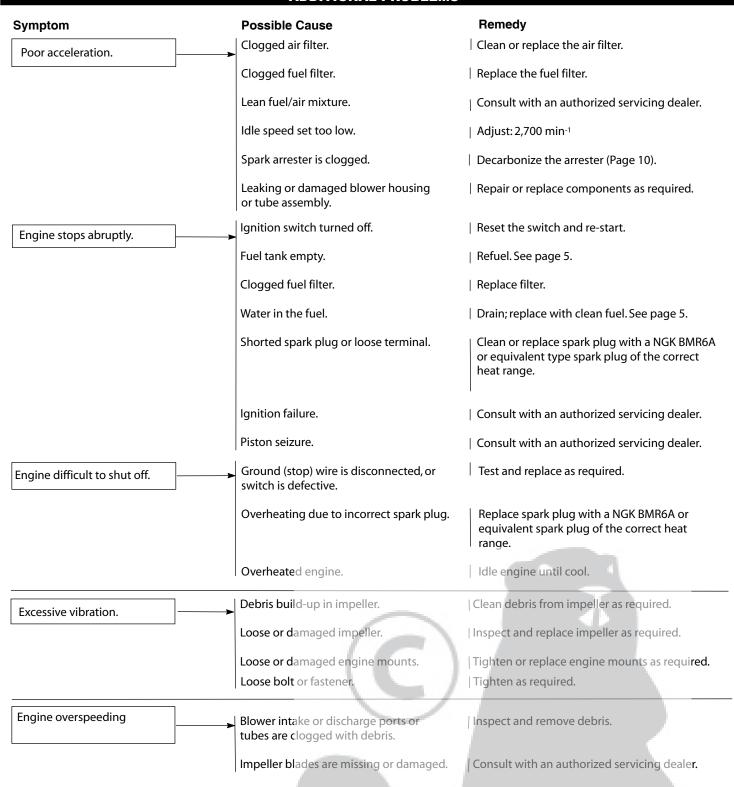


Troubleshooting Guide (continued)

LOW POWER OUTPUT What To Check **Possible Cause** Remedy Operator is overworking the unit. Use a lower throttle setting. Is the engine overheating? Carburetor mixture is too lean. | Consult with an authorized servicing dealer. Refill with clean fresh unleaded gasoline with a Improper fuel ratio. pump octane of 87 or higher, mixed with a Premium 2-cycle mixing oil at a 50:1 gasoline/oil ratio. Fallen leaves or debris on intake cover. Clean the intake cover. Fan, fan cover, cylinder fins dirty or Clean, repair or replace as necessary. damaged. Carbon deposits on the piston or in the Consult with an authorized servicing dealer. muffler. Clogged air filter. Clean or replace the air filter. Engine is rough at all speeds. May also have black smoke Tighten or replace the plug with an NGK BMR6A Loose or damaged spark plug. and/or unburned fuel at the or equivalent type spark plug of the exhaust. correct heat range. Air leakage or clogged fuel line. | Repair or replace filter and/or fuel line. Water in the fuel. Refill with fresh fuel/oil mixture. See Page 5. Piston seizure. Consult with an authorized servicing dealer. Faulty carburetor and/or diaphragm. Consult with an authorized servicing dealer. Overheating condition. See above. Engine is knocking. Improper fuel. Check fuel octane rating; check for presence of alcohol in the fuel. Refuel as necessary. See page 5. Carbon deposits in the combustion Consult with an authorized servicing dealer. chamber.

Troubleshooting Guide (continued)

ADDITIONAL PROBLEMS



DECLARATION OF CONFORMITY

We hereby declare the Shindaiwa Blower, Model EB500 (EB500/EC1)

meets the following respective requirements.

Council Directives:

89/336/EEC as amended

98/37/EC as amended

2000/14/EC as amended

2002/88/EC as amended

Standard taken:

EN 292 parts 1&2

CISPR 12

Measured sound power level: 106dB(A)

Guaranteed sound power level: 108dB(A)

Technical documentation is kept by:

K. Maeda DIV. Manager

Engineering Research and Development DIV.

Shindaiwa Kogyo Co., Ltd.

Head office: 6-2-11, Ozuka-Nishi, Asaminami-Ku,

Hiroshima, 731-3167, Japan

TEL:81-82-849-2003 . FAX:81-82-849-2482

9 November, 2004

T. Yoshitomi

DIV. Manager

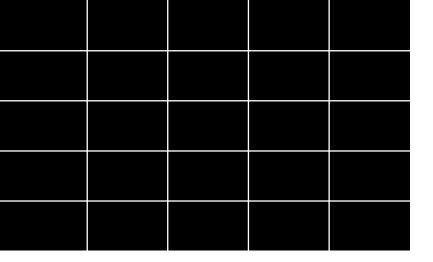
Quality Assurance DIV.

Shindaiwa Kogyo Co., Ltd.

Head office: 6-2-11, Ozuka-Nishi, Asaminami-Ku,

Hiroshima, 731–3167, Japan

TEL:81-82-849-2206 FAX:81-82-849-2481



shindaiwa

Shindaiwa Inc.

11975 SW Herman Rd. Tualatin, Oregon 97062

U.S.A.

Telephone: 503 692-3070 Fax: 503 692-6696 www.shindaiwa.com

Shindaiwa Kogyo Co., Ltd. 6-2-11, Ozuka-Nishi, Asaminami-Ku, Hiroshima

731-3167, Japan

Telephone: 81-82-849-2220 Fax: 81-82-849-2481

© 2004 Shindaiwa, Inc. Part Number 68237-94310 Revision 11/04

Shindaiwa is a registered trademark of Shindaiwa, Inc. Specifications subject to change without notice.