

SONOTEC SH-3510.HP-8701

SONOTEC SONOFILE Ultrasonic Cutter SH-3510.HP-8701 User Manual

1. INTRODUCTION

This manual provides essential information for the safe and effective operation, maintenance, and troubleshooting of the SONOTEC SONOFILE Ultrasonic Cutter model SH-3510.HP-8701. Please read this manual thoroughly before using the product and keep it for future reference.

2. SAFETY INFORMATION

WARNING: Failure to follow these safety instructions may result in electric shock, fire, serious injury, or death.

- Always ensure the power supply matches the product's specifications (Single-phase AC 200V 50/60Hz).
- Do not operate the cutter with wet hands or in damp environments.
- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves, during operation.
- Keep the work area clean and well-lit.
- Disconnect power before performing any maintenance or changing blades.
- Ensure proper ventilation and, for continuous use, supply air cooling to prevent overheating.
- Do not modify the product or use non-approved accessories.

3. PRODUCT FEATURES

The SONOTEC SONOFILE Ultrasonic Cutter SH-3510.HP-8701 is designed for precision cutting tasks, offering robust performance and durability.

- Generates powerful and stable vibrations, suitable for high-load workpieces that are typically difficult to cut.
- Engineered for extended periods of continuous use.
- Utilized in demanding applications such as aircraft component processing.



Image 1: The SONOTEC SONOFILE Ultrasonic Cutter SH-3510.HP-8701 unit, showcasing its compact design and main components.

4. SPECIFICATIONS

Parameter	Value
Oscillation Frequency	24 kHz
Oscillator Input	AC 200V, 50/60Hz
Oscillator Rated Current	5 A
Oscillator Mass	10.5 kg
Power Consumption (VA)	1000 VA
Power Consumption (W)	500 W
Handpiece Cord Length	5 m
Maximum Output	500 W
Oscillator Dimensions (WxDxH)	300 × 400 × 200 mm
Frequency Adjustment	Automatic tracking type
Power Supply	Single-phase AC 200V, 50/60Hz
Output Adjustment	Stepless continuous variable type
Vibrator Dimensions	φ12 / φ23 / φ55 × L220.8 mm
Vibrating Element	PZT electrostrictive vibrator
Material/Finish (Blade Holding Part)	Titanium alloy

Parameter	Value
Material/Finish (Case)	SUS303
Country of Origin	Japan
Code Number	760-6508

5. PACKAGE CONTENTS

Verify that all items listed below are included in your package:

- SONOTEC SONOFILE Ultrasonic Cutter Unit (SH-3510.HP-8701)
- Replacement Blade(s)
- Automatic Machine Connection Plug
- Power Cord
- User Manual (This document)

6. SETUP

1. **Unpacking:** Carefully remove all components from the packaging. Retain packaging for future transport or storage.
2. **Placement:** Place the oscillator unit on a stable, level, and dry surface with adequate ventilation.
3. **Blade Installation:** Refer to the specific instructions for installing the replacement blade into the handpiece. Ensure it is securely fastened.
4. **Connect Handpiece:** Connect the handpiece cord to the designated port on the oscillator unit.
5. **Power Connection:** Connect the power cord to the oscillator unit, then plug it into a single-phase AC 200V 50/60Hz power outlet.
6. **Air Cooling (Optional but Recommended for Continuous Use):** If continuous operation is planned, connect an air cooling supply to the designated port to prevent overheating.

7. OPERATION

1. **Power On:** Turn on the main power switch on the oscillator unit. The unit will perform an automatic frequency adjustment.
2. **Output Adjustment:** Use the stepless continuous variable output adjustment control to set the desired cutting power. Start with a lower setting and gradually increase as needed.
3. **Cutting:** Gently apply the blade to the workpiece. The ultrasonic vibrations will facilitate the cutting process. Avoid excessive force.
4. **Important Note on Tool Changes:** The oscillator settings are sensitive to the specific vibrator and blade used. If you change the vibrator or blade, consult the manufacturer or a qualified technician to ensure proper recalibration or setting adjustments.
5. **Continuous Use:** For prolonged operation, ensure that an air cooling system is actively supplying air to the unit to maintain optimal operating temperature.
6. **Power Off:** After use, turn off the main power switch and disconnect the power cord from the outlet.

8. MAINTENANCE

- **Cleaning:** Regularly clean the handpiece and oscillator unit with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Blade Inspection:** Inspect blades for wear or damage before each use. Replace dull or damaged blades immediately to ensure optimal performance and safety.
- **Cord Inspection:** Check the power cord and handpiece cord for any signs of damage (fraying, cuts). Replace if damaged.
- **Storage:** Store the unit in a clean, dry, and dust-free environment when not in use.
- **Professional Servicing:** For internal maintenance or repairs, contact qualified service personnel. Do not attempt to open or repair the oscillator unit yourself.

9. TROUBLESHOOTING

Problem	Possible Cause	Solution
Unit does not power on	No power supply; Power cord not connected; Faulty power outlet	Check power cord connection; Verify power outlet functionality; Ensure main switch is ON.
No vibration or weak cutting power	Blade improperly installed; Worn or damaged blade; Incorrect output setting; Handpiece cable issue	Reinstall blade correctly; Replace blade; Adjust output setting; Check handpiece cable connection.
Unit overheats during continuous use	Insufficient air cooling; Prolonged high-load operation without cooling	Ensure air cooling supply is connected and functioning; Reduce continuous operating time or provide adequate breaks.
Unusual noise or vibration	Loose blade; Internal component issue	Check blade tightness; If problem persists, discontinue use and contact service.

10. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact your authorized SONOTEC dealer or the manufacturer directly. Please have your model number (SH-3510.HP-8701) and purchase date available when contacting support.

Manufacturer: SONOTEC