

SONIC CUTTER

OPERATION MANUAL

OM-K0139E Rev.3

Before using the Sonic Cutter, please read through this instruction manual to thoroughly understand how it should be used.

Always keep this manual where it will be easily accessible to the user.

1 Precautions for Use

- Check that the equipment is grounded.
- Before turning on the power switch, check that the hand-held tool or the blade is free and clear, and that the output ON/OFF switch is set to the OFF position.
- When using the equipment, always wear goggles.
- The handpiece, especially the tip, may get hot even during no-load operation. The temperature of the tip rises substantially after cutting work. Therefore, do not touch the tip.
- Avoid continuous output (the output lamp remains on constantly) so that the equipment does not overheat. If continuous output is necessary, use the equipment at 1/3 or less of the output adjustment graduation.
- Fastening a blade too tightly or using a cracked blade is dangerous as the blade may break and come off abruptly when the output switch is turned ON.
- If there is something contacting the blade before the output ON/OFF switch is turned ON, it will be difficult to ensure a smooth start of oscillation. Re-output during cutting may not be possible if the blade is contacting something.
- If abnormal noise is being generated at the tip of the handpiece, the blade may be broken in the groove of the horn, or the blade may not be mounted properly. Take out the blade and check it. If it is broken, replace it. If it is not broken, remount it correctly.
- To prevent poor output or heating, clean the groove of the horn whenever you remove the blade and replace it. (Be careful not to damage the groove surface.)
- Before turning the equipment's ON/OFF switch (or foot switch) ON, check that the handpiece is plugged into the main unit. Otherwise, the unit may suffer a failure.
- Do not turn the ON/OFF switch (or foot switch) ON when the cap is on the tip of the handpiece.
- Whenever the blade is attached to the handpiece, do not place it on anything except the exclusive stand (spring).
- The equipment uses an ultrasonic oscillator. Therefore, if there is a radio nearby, you may hear noise. When using the equipment, always make sure that there are no radios nearby.
- The handpiece gradually becomes hotter if you use it continuously. If the equipment is to be used continuously for a long time, use with an optional handpiece (US-15CB). If the handpiece heats up quickly, try changing the direction of the blade.
- If the blade breaks at its base soon after it is used for the first time, it may have been mounted incorrectly. Check that the blade is free of burrs, and replace the set screw with a new one. Do not use a punctured blade.
- Do not use engine welding machines near the equipment. If you do so, the equipment may not oscillate.

2 Specifications

(1) Main Unit (Oscillation Unit) NE-80

Current	120/230 VAC, 50/60 Hz, 0.7 A
Max. output	30 W
Oscillation frequency	39.5kHz
Oscillation system	Self-induced oscillation, automatic tracking
Dimensions	150(W)×250(D)×120(H)mm (excluding the knob and rubber feet)
Weight	approx. 2.6 kg

(2) Handpiece US-15CB

Oscillator	Bolt-clamped PZT type
Dimensions	25 mm dia. × 156 mm
Cable length	3 m
Weight	Approx. 210 g
Cover material	Acetal resin
Cover color	Black

(3) Accessories

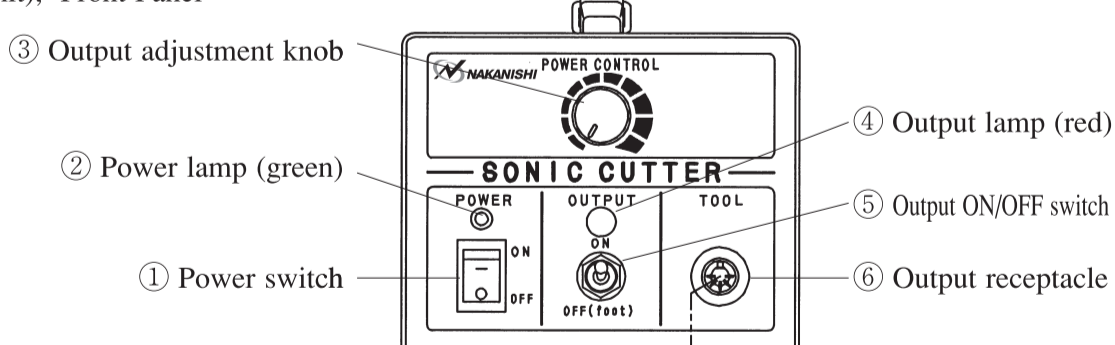
- Hexagonal wrenches (1.5mm): 3pcs.
- Spare set screws : 4pcs.
- Spare blades : 40pcs.
(DC-200 30 degrees, by NT K.K.)
- Plug fixing screws : 2pcs.
- Tool stand (spring): 1pc.
- Washer: 1pc.
- Spring retainer: 1pc.
- Hexagonal socket-head bolt : 1pc.
- Hexagonal wrench (5.0mm) : 1pc.

(4) Optional accessory

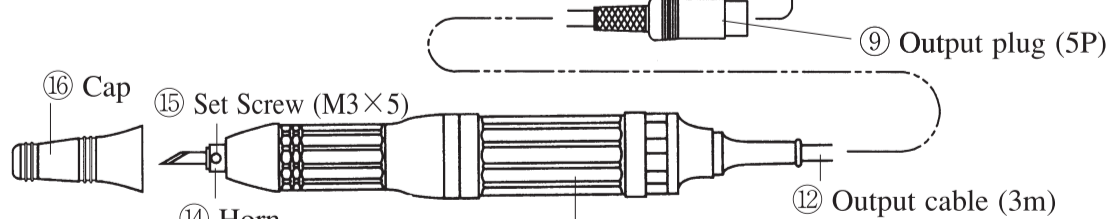
- Foot switch (FC-40)

3 Part Names

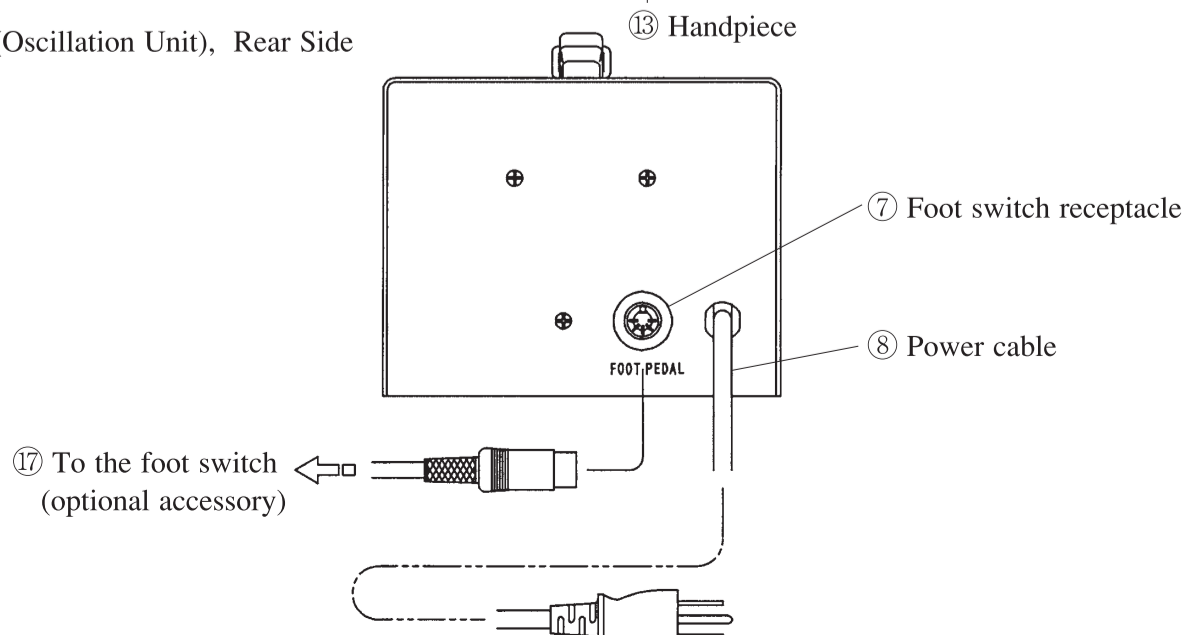
● Main Unit (Oscillation Unit), Front Panel



● Handpiece



● Main Unit (Oscillation Unit), Rear Side



4 Operation

● Before use.

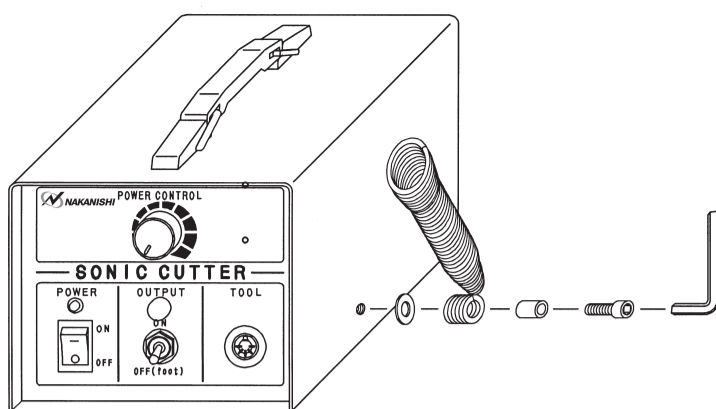
(1) Mount the tool stand as shown on the right.

Mount the tool stand at an arbitrary angle.

⚠ Caution

The tool stand has a projected part of spring.

Put it to the recessed part of the spring retainer, and fasten it with a hexagonal socket-head bolt (M6×20).

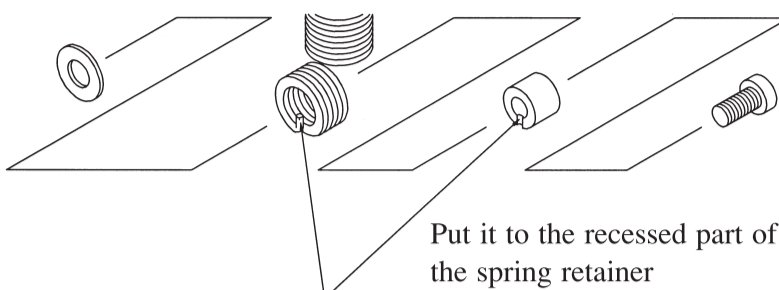


(2) Connect the output plug ⑨ of the handpiece

to the output receptacle ⑥ of the main unit.

(3) Check that the power switch ① is OFF, and

plug the power cable ⑧ into the power supply.



● Operation

(1) Check that the output ON/OFF switch ⑤ is set to the OFF position.

(2) Turn ON the power switch ①. The power lamp ② lights up green.

(3) Remove the cap ⑩ from the tip of the handpiece ⑬.

(4) Make sure that nothing is contacting the handpiece tip or the blade, and turn ON the output ON/OFF switch ⑤ (or press the foot switch). The output lamp ④ lights up red to indicate that the cutter is ready to operate.

(5) The output adjustment knob ③ is used to adjust the cutting efficiency. Turn the knob clockwise to increase the efficiency. Turn the knob counterclockwise to decrease the efficiency. Since the optimum value will vary depending on the materials being cut, adjust the knob appropriately.

● Replacement of blade

(1) Loosen the set screw ⑮ at the tip of the handpiece ⑬ using a hexagonal bar wrench (1.5mm), and remove the old blade. (Remove any dust or dirt in the groove, of the horn ⑭ and be sure to keep it clean.)

(2) Insert a new blade all the way in, and fasten the set screw ⑮. Be careful, since fastening too tightly may break the blade. (No punctured blade can be used.)

(3) Never fasten the set screw ⑮ if no blade has been inserted, since this could damage the groove.

5 Maintenance

● If the power cord is damaged, it must be replaced by NSK NAKANISHI INC. or our authorized agent or a similarly qualified person in order to avoid a hazard.

● Whenever the blade is replaced, be sure to remove any dust or dirt in the groove of the horn. (Dust or dirt in the groove may cause noise or damage the blade.)

6 Failures and Remedies

Nature of failure	Items to be checked	Cause	Remedy	
Does not cut well.	The power lamp does not light up when the power switch is turned ON.	Is the power plug disconnected?	Properly connect the power plug.	
		Disconnection of the power cable. The power switch is defective. The power lamp is defective.	Send the equipment back to us for repair.	
	The power lamp lights up.	The output lamp lights up.	The output plug is imperfectly connected to the output receptacle.	Properly connect the output plug.
			Abnormal noise is being generated in the hand-held tool.	Clean the blade mounting groove, and replace the blade.
			The handpiece heats up even when it is intermittently used.	Send the equipment back to us for repair.
		The output cable is disconnected.		
			The set screw is loose.	Fasten the set screw.
	The power lamp does not light up.	The power lamp does not light up.	The output ON/OFF switch is defective.	Send the equipment back to us for repair.
The foot switch is defective.				