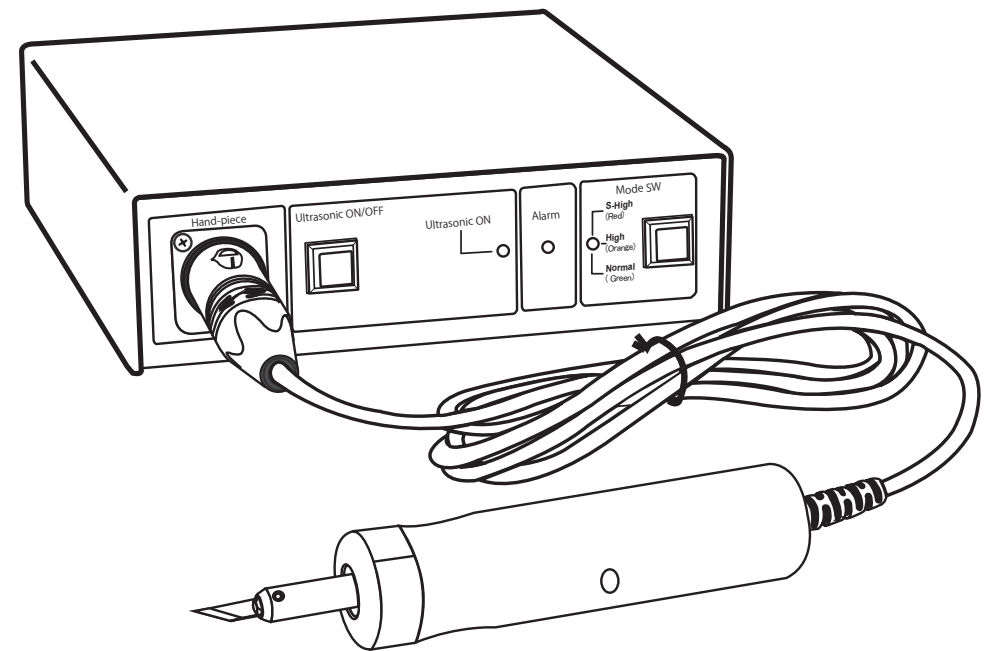


User Guide

(Included instruction for safety use)

ZD-95

Hobby use Ultrasonic cutter



<General sales agent>

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MADE IN JAPAN

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Safety precautions

Thank you very much for purchasing our hobby use Ultrasonic cutter. Before you use, please read this "Safety precautions" page and use a unit properly. After read this page, please keep this manual where users could read every time. Please conform the listed points to prevent electric shock, ignition, malfunction, health injury and damage to real property.

- If abnormalities such as odor or smoke emission occurs, disconnect the plug immediately and do not use the unit. Please make contact to purchased shop.
- Do not let use child without adult, and keep or use unit where child could not touch.
- Do not use at the place conditions here.
 - Place where corrosive gas and dust generates.
 - Place where vibration and impact happens frequently, and not flat.
 - Place where is wet , moist, high temperature.
- Do not use near or upon electric device and heat sources.
- Do not use the device when the plug' s insertion has loosened. Also, do not let adhere a dust or water to plug.
- Do not bend, pull, twist, bundle, place heavy matter on the cables. Do not use the damaged cable.
- Do not pour water to the unit Also, do not leave unit at place where it become wet.
- Do not use the power other than 100 – 240 VAC VAC, 50 or 60 Hz. Do not share the outlet with any other device and do not use AC adaptor except attached one.
- When you equip or remove the blade, unplug the power cord from outlet.
- Before you use, check the blade whether it has equipped properly.
- Do not use the unspecified blade.
- Do not use near precision instruments or cardiac pacemaker.

- When you disconnect a plug, do not hold a cable and please disconnect a plug straightly.
- Do not use for inflammable things, such as paper saturated oil.
- Never touch the blade under any circumstances while the main unit is turn ON.
- Do not look closing blade and point blade to other peoples while the main unit is operating.
- While operating unit, please wear goggles to protect eyes.
- Do not make processing on the energized devices or cables.
- When you carry unit, please turn OFF the power and, remove blade or put edge protector on it.
- Do not make processing on the materials with Ultrasonic Cutter, which might generate toxic substances.
- Do not touch anything with blade, except working material.
- If abnormalities such as odor or smoke emission occurs, disconnect the plug immediately and do not store in closed space box or shelf.
- Do not apply too much power (upper than 50N) on working material.
- Mode switch must be operate under unit standby mode.
- When you leave from working space, or not using unit, the plug must be disconnected from outlet.
- Do not apply impact on unit.
- Do not disassemble an unit except trained repair engineer.
- Do not put any foreign matters into opening or gap on unit.
- Do not spray on the product or accessories, or wipe with alcohol such as organic solvent.
- Please dispose the old used blade, conform to the rules determined in each municipality.

Specifications

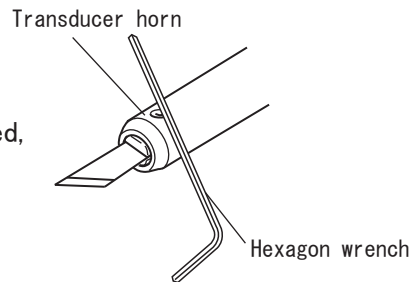
Product name & Model number	Ultrasonic cutter ZO-95
Nominal oscillation frequency	40 kHz
Power Source	AC adapter INPUT : 100-240 VAC 50/60 Hz OUTPUT : 12 VDC
Max. power consumption	Max. 110 VA
Operating temperature range	Temperature: 10 to 35 °C (No condensation)
External dimensions	Main unit : 185 mm × 169 mm × 55 mm Hand-piece: φ28 × 150mm (including blade)
Hand-piece cable	1.6 m (straight cable)
Weight	Main unit (Generator): Approx. 1.2 kg Hand-piece: Approx. 350 g (including the hand-piece cable)

The product specification and design might be change without notice.

How to check the transducer horn vibration

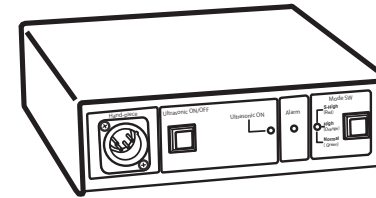
1 Contact the hexagon wrench to a side face of horn like on graph, and push the output switch. Please operate shorter than 2 seconds.

2 If horn vibration transmitted to hexagon wrench and heard sound or wrench moved, it is operating normally.

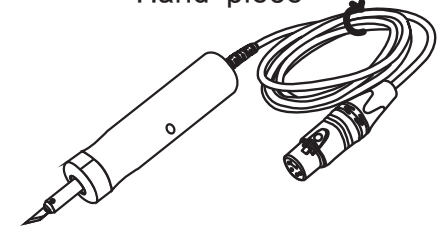


Standard accessory set

Main unit



Hand-piece



- User Guide (1 cpy.)
- AC adaptor (1 pc.)
- Power cord (1 pc.)
- BDC-200P(40 pcs. per pack)
- Blade anchor screw (3 pcs.) [HB03]
- Blade anchor (1 pc.) [ZH04]
- Hexagon wrench (1 pc.) [RR02]
- Edge protector (1 pce) [ZH805]
- Foot switch (1 pc.) [ZH801]
- Torque screwdriver (1 pc.) [ZH25T]

Blade with hole might be broken when it use, and it's danger, please avoid using.

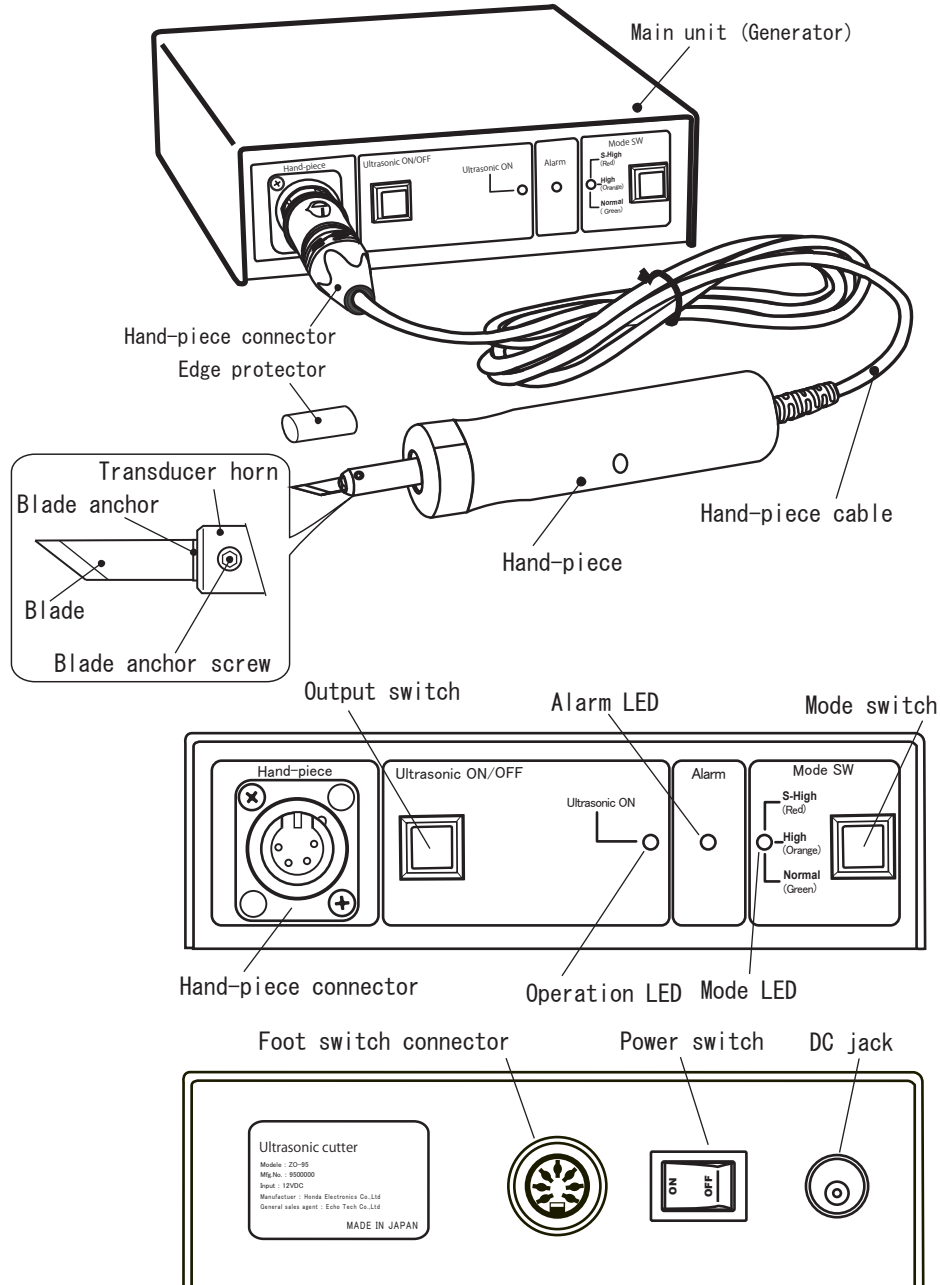


Optional items

- (A) Maintenance set [SB01]
 - (Cleaning bar (1 pc)
Abrasive paper for the cleaning bar (10 pcs.))
- (B) Abrasive paper for the cleaning bar (3 pcs.) [SB02]
- (C) Cutting mat (1 pc. : 150 x 200 x 3 mm) [CM02]
- (D) Carrying case [ZH804]

Please check the website link below to check other optional items and replacement blades.
URL: <https://echotech.co.jp/en/products/2562/>

Parts name



Before requesting repair service

Before you request for repair, please check the following points.

Symptom	Item to be checked	Referring page
Unable to turn ON the unit.	<ul style="list-style-type: none"> ● Is the power plug connected to the outlet? ● Is it correctly connected to AC 100-240 V power source? ● Is AC adapter connected correctly? ● Is specified AC adapter have used for the device? ● Is hand-piece connected to the main device? 	P9
Blade doesn't vibrate after pushed output switch.	<ul style="list-style-type: none"> ● Is Power switch turned on? ● Is transducer horn vibrating? ● Are blade and the blade anchor fixed tightly? ● Are there contamination, deformation, damage on the Blade, Blade anchor or in inside the transducer horn? ● Is power applied on hand piece too much? ● Is Output switch pressed for long time? ● Is Alarm LED blinking? ● Is Operation LED blinking? 	P4~8, P9 P13, P14
Abnormal noise sounds from hand-piece.	<ul style="list-style-type: none"> ● Are blade and the blade anchor fixed tightly? ● Is blade got bend or broken? ● Are there contamination, deformation, damage on the blade, Blade anchor or in inside the transducer horn? ● Is specified blade equipped on hand piece? 	P5~8, P12
Hand-piece heated up.	<ul style="list-style-type: none"> ● Were product used for long time? ● Were the S-High or High mode have used for a long time? ● Is power applied on hand piece too much? ● Are blade and the blade anchor fixed tightly? ● Are there contamination, deformation, damage on the Blade, Blade anchor, Blade anchor screw, or in inside the transducer horn? 	P5~8, P9 P12

Majority of unit malfunction is caused by by loosened or contamination stuck on blade and blade anchor. Before you request for repair, check the blade, blade anchor and blade anchor screw whether it is tightened within proper torque level.

Cleaning blade, blade anchor, inside horn incurs repair cost even if it was the period of warranty.

※ Blade and blade anchor is consumable parts, if you find abnormalities even if you had maintenance, please replace the parts.

If you could not solve the unit problem listed all instructions above, please make contact to the shop or company, which you purchased.

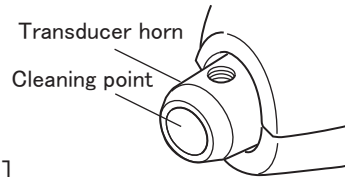
Unit maintenance

Transducer horn maintenance

- If the transducer horn were not cleaned enough, the following troubles might occur.
 - Hand-piece heats up instantly.
 - ✗ Temperature increase inside hand-piece become speedily, and unit become tendency to shifting stopped state.
 - Decrease of cutter sharpness.
 - ✗ Horn is an important part that fixing blade and transducer.
Due to part's contamination, vibration might not transmit to blade normally.
 - Abnormal noise
 - ✗ Due to part's contamination, vibration become unstable and might makes abnormal sound.
- Blade anchor and blade anchor screw become contaminate and wear, when it is operating.
When you find contamination on parts, or it is wearing, please replace it.

How to maintenance

1. Before you do maintenance, please disconnect the power cord from outlet.
2. Make sure that the unit is turned OFF.
3. Remove contamination from the inside of transducer horn with Maintenance set [SB01].



Do not clean the parts except transducer horn with any organic solvent such as an alcohol.
Do not do wash whole unit and hand-piece.
Do not put any contamination or scratch in on blade anchor slit and inside horn.
It might become cause of abnormal vibration or blade anchor defect.

4. Rub away the contamination inside transducer horn with cotton swab.

Before using unit

Operating caution

- Hobby used Ultrasonic cutter could cut sharply than normal cutter.
Please pay attention when you use.

Blade and blade anchor

- ① If blade or blade anchor are not fixed properly, ultrasonic vibration will not transmit to the blade.
 - ✗ Before you use unit, make sure if the parts have fixed properly.
- ② The contamination on the blade, blade anchor, and inside of horn might be cause of overheat, odor, and damage.
 - ✗ Before using unit, please check if there are parts contamination.
If you found, use unit after you removed contamination.

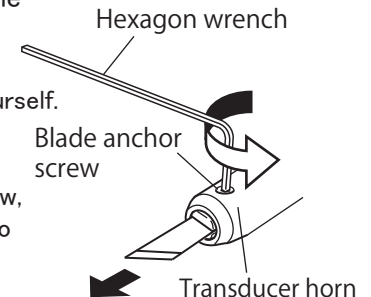
Blade replacement

Unplug the power plug from outlet, when you equip or remove blade, or doing maintenance.

- 1 Make sure that the unit is turned OFF.
- 2 Loosen the blade anchor screw fixed on side of transducer horn (metallic part, edge of hand-piece), with attached set hexagon wrench and remove the blade.

Pay attention when you touch blade, not to injure yourself.

After using unit, blade, blade anchor, blade anchor screw, transducer horn becomes very hot. Pay attention not to burn your hands accidentally.



3 Insert new blade in blade anchor slit, directing edge same as right graph.

Pay attention to the directions of the tip and under part of blade.

Please use the specified blade. If any unspecified blade has been used, the blade will not vibrate correctly and it might be cause blade defect that might lead serious trouble.

Do not use the blade with hole.



4 Match position of blade anchor dent and blade anchor screw.

5 Confirm the blade and blade anchor, whether it has inserted properly, and tighten the blade anchor screw with set attached hexagon wrench.

Confirm the blade anchor screw, whether it has tightened up. (The torque level is around 60 cN·m)

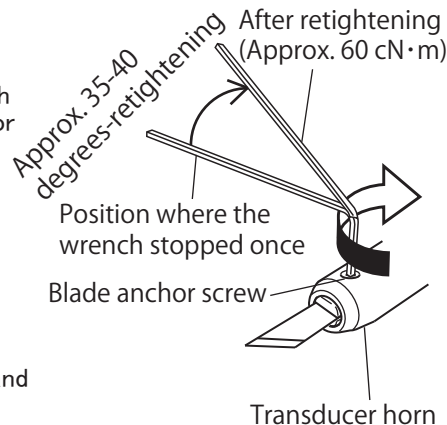
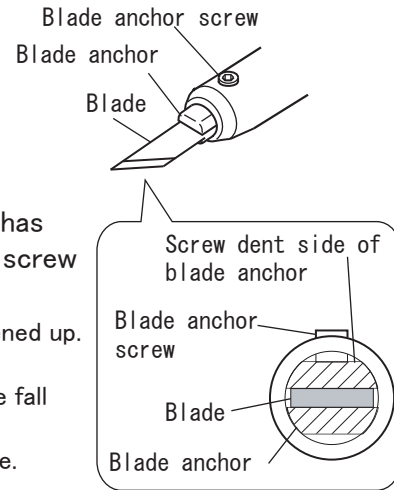
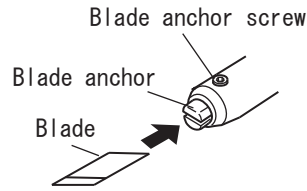
If the blade anchor screw loosened, the blade might be fall out from blade anchor and it might lead accident. It might also lead decrease of sharpness or unit trouble.

Replace the blade anchor screw to the new one, when a hexagon hole on the screw has stripped.

Replace the hexagon wrench if the edge of wrench is abraded away and could not tighten blade anchor screw.

Please ask repair, if it could not remove blade anchor screw.

If blade has replaced when transducer horn were heating, blade anchor screw might be loosen when transducer horn lost heat. Please confirm looseness of blade anchor screw and retighten when it was loosened.



Ex1.) After used Normal mode for 3 minutes, when the unit has continuously used High mode for 2 minutes, it will stop operation because total operation time becomes 5 minutes.

Ex2.) After used High mode for 4 minutes, when the unit has shifted to S-High mode, it will stop operation because total operation time overs the 3 minutes.

Ex3.) After used High mode for 1 minute, S-High mode for 1 minute, when the unit has continuously used Normal mode for 8 minutes, it will stop operation because total operation time overs the 10 minutes.

How to operate the device

1 Start operation

- Under Stand-by state, push Output switch once and unit will start operation.
- ※ During the operation, both Operation LED and Mode LED will light up.

2 Stop operation

- During the operation, push Output switch once and unit will stop operation, and shift to Stand-by state.
- After 10 min. operation with Normal mode, unit will stop activation and shift to Stand-by state.
- After 5 min. operation with High mode, unit will stop activation and shift to Stand-by state.
- After 3 min. operation with S-High mode, unit will stop activation and shift to Stand-by state.

※The major cause of shifting to Abnormal state is, untightened blade anchor screw or maintenance not done enough.

Check “Blade replacement” page and ”Blade anchor screw replacement” page, and tighten again.

Check “Maintenance” page and do cleaning maintenance.

■ Unconnected hand-piece

State that hand-piece is not connected to main unit.

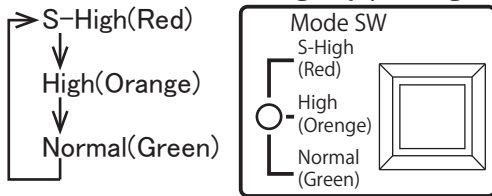
※Only Alarm LED(Red) will light up.

※Unit will not operate under this state, even if hand-piece has connected.

※After connected hand-piece, unit will be restore after pushing power switch 2 times to reset power.

Power mode

Power mode could change by pushing mode switch.



■ Normal mode (Stop operation within 10 min. total operation time)
Mode for standard use.

■ High mode (Stop operation within 5 min. total operation time)
Output has increased from Normal mode and it enhances sharpness.
Please use this mode only when you cut hard materials that could not processing with Normal mode.
Hand-piece temperature becomes high speedily than Normal mode, unit shifts to Stopping state within short time. (Approx. 5 min.)
Long or repeat using High mode might be a cause of transducer defect or deterioration.

■ S-High mode
Output has more increased than High mode and it more enhances sharpness.
Hand-piece temperature becomes high speedily than High mode, unit shifts to Stopping state within short time. (Approx. 3 min.)
Long or repeat using S-High mode might be a cause of transducer defect or deterioration.

Replacement of blade anchor

Replace the blade anchor when the blade anchor get deformed, hard to set in blade anchor, or when odor sounds from blade under operation.
Unplug the power plug when you equip or remove blade, or doing maintenance.

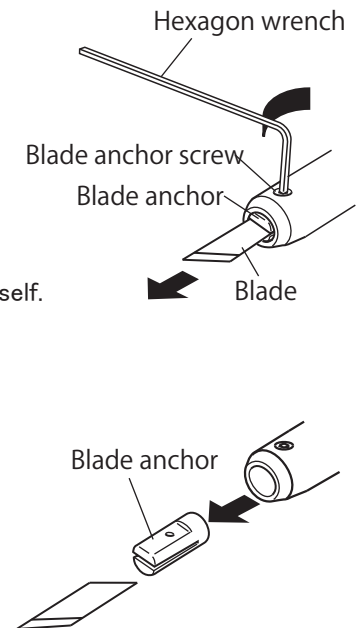
1 Make sure that “Power switch” is turned OFF.

2 Loosen the blade anchor screw with the hexagon wrench and remove the blade anchor and blade from transducer horn and blade anchor.

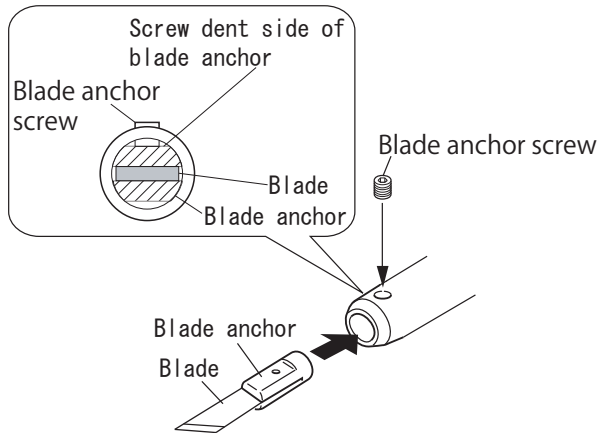
Pay attention for touching blade not to injuring yourself.

The blade, blade anchor, blade anchor screw and transducer horn become very hot after using unit.

Please take extra care to avoid burning yourself.

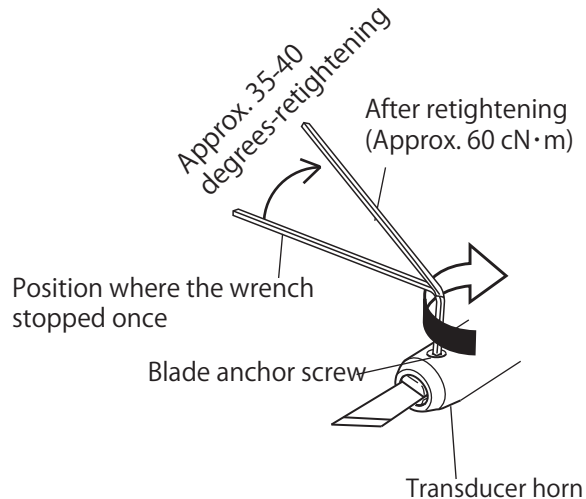


3 Match position of new blade anchor dent and new blade anchor screw.



4 Confirm whether the blade and blade anchor has been inserted properly, and tighten the blade anchor screw with set attached hexagon wrench.

Make sure the blade anchor screw has been tightened.
 (The tighten torque level is around 60 cN·m)
 If the blade anchor screw has been loosened, it might lead accident.
 Also, it might also lead decrease of sharpness or unit trouble.



How to use

Preparation

- 1 Check whether blade has properly equipped on hand piece.
- 2 Retighten the blade anchor screw again.
Sometimes the screw get loosen.
- 3 Connect the power cord to AC adaptor.
- 4 Connect the power cord to outlet.
- 5 Connect the AC adaptor cord to the main unit.
- 6 Connect the hand piece connector to the main unit.
- 7 Turn ON the main unit power.
※Mode LED (Green) will light up.

Unit status

- Stand-by state
Main unit has turned ON, and only the Mode LED will light up.
- Operating state
Transducer is vibrating.
※Operation LED and Mode LED will light up
- Stopped state, detected high temperature inside hand piece.
State under protective function detects high temperature on hand-piece.
※Only Alarm LED(Orange) will light up.
※In this state, all operation will be not accepted.
※After unit detected temperature decrease on hand piece, unit will shift to stand-by state.
- Stopped state detected high temperature on main unit
State under protective function detects high temperature on main unit.
※Only Alarm LED(Orange) will light up.
※In this state, all operation will be not accepted.
※After unit detected temperature decrease on hand piece, unit will shift to stand-by state.
- Abnormal state
State under protective function detects unit overload.
※Only Alarm LED(Red) will blink.
※In this state, all operation will be not accepted and the unit will not be restore automatically.
※Unit will restore to Stand-by mode by pushing Power switch 2 times to reset the unit power.
※Cause of shifting to Abnormal state
 - Blade anchor screw get loosened.
 - Maintenance were not done enough.
 - Cut work material applying too much power.
 - Hand-piece deterioration.

