



### Product composition

Items	Model	Quantity
1 Sterilization box	—	1
2 Scaler handpiece	See label	1
3 Torque wrench	TW-1L	1
4 Scaler tip	See label	—

The sterilization box is used to hold scaler handpiece, scaler tips and torque wrench when sterilizing.

The sterilization procedure of high temperature autoclave is recommended: sterilization temperature 134°C, sterilization time 4 minutes, vacuum times 3 times, drying time 15 minutes.

While disinfecting, put the scaler handpiece, scaler tips and torque wrench into the sterilization box. Using sterile towel or sterilized bags to pack the sterilization box.

## INSTRUCTION MANUAL For HANDPIECE OF ULTRASONIC SCALER

### 1 Description of device

#### 1.1 Description

Handpiece Of Ultrasonic Scaler is the accessory of scalers, It is the handheld energy transformation part of ultrasonic piezo scaler, by using piezoceramics to transfer electric energy to mechanical energy to eliminate the dental calculus.

#### 1.2 Models

Note: The exact model see package labels.

#### 1.3 Product structure

The HANDPIECE is composed of cover and ultrasonic transducer.

#### 1.4 Scope of applicaton

The HANDPIECE is used for the dental calculus elimination and root canal cleaning.

#### 1.5 Contraindication

- 1.5.1 The hemophilia disease patient is not allowed to use this equipment.
- 1.5.2 The patients with heart pacemaker are forbidden to use this equipment.
- 1.5.3 The doctors with heart pacemaker are forbidden to use this equipment.
- 1.5.4 The heart disease patient, pregnant woman and children should be cautious to use the equipment.

#### 1.6 The classification of the device

- 1.6.1 Operating mode: Continuous operation
- 1.6.2 Protection degree against water(used on the pedal): IPX1
- 1.6.3 Degree of safety of application in the presence of a Flammable Anaesthetic Mixture with air or with Oxygen or Nitrous Oxide : Equipment not suitable for being used in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide

#### 1.7 The main technical specifications

- 1.7.1 Power source Input: 190VAC-230VAC
- 1.7.2 Output primary tip Vibration excursion: < 200µm
- 1.7.3 Output tip Vibration frequency: 28kHz±5kHz
- 1.7.4 Output half-excision force: 0.5N-5N
- 1.7.5 Tip's output power: 3W-20W
- 1.7.6 Water pressure: 0.01MPa-0.5MPa

#### 1.8 Working condition

- 1.8.1 Environmental temperature +5°C-+40°C
- 1.8.2 Relative humidity: 30%-75%

1.8.3 Atmospheric pressure: 70kPa-106kPa

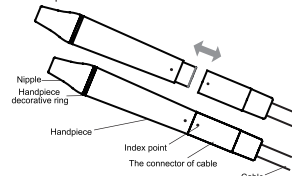
### 2 Installation of the product

#### 2.1 Installation of handpiece

2.1.1 Open the packing box, make sure that all the parts and accessories are complete according to the packing list. Contact with dealer if necessary.

2.1.2 Keep dry the handpiece connector and cable plug socket before installing the handpiece.

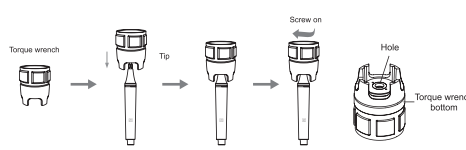
2.1.3 Make sure that the bottom jack point is at the plug, make the handpiece fixed to the cable correctly. (Picture 1)



picture 1

#### 2.2 Installation of tips

2.2.1 Fix the tip to handpiece by torque wrench. (Picture 2)



Picture 2

2.2.2 Please use "REFINE" brand scaling tips.

Notes: The detachable handpiece is a high-tech device which should be used carefully. Don't use too much torque force to, screw the tips, by torque wrench. In order to avoid the vibration by stepping on the foot switch by accident, unscrew the scaling tips after each operation.

### 3 Product function and operation

#### 3.1 Scaling function

3.1.1 Connect the handpiece and the connector of cable correctly, and adjust the water and vibration intensity to a suitable level.

3.1.2 The handpiece can be handled in the same gesture as a pen in hand.

3.1.3 Select a suitable scaling tip as you need, screw it on the handpiece tightly by the torque wrench.

3.1.4 During the clinical treatment, don't make the end of tip touch the teeth vertically.

3.1.5 Don't make the tip overexert on the surface of the teeth in case of hurting the teeth and damaging the tip.

3.1.6 After finishing operation, keep the machine working for 30 seconds on the water supply condition in order to clean the handpiece and the scaling tip.

#### 3.2 Endo funtion

3.2.1 Usage process

- a) Fix endochuck to handpiece by endo wrench.
- b) Unscrew the screw cap on the endochuck.
- c) Put the ultrasonic file into the hole in the front of endochuck.
- d) Screw down the screw cap with endo wrench to tight up the ultrasonic file.
- e) Press option key, turn to endo root canal cleaning function.
- f) Press option key, turn the water and vibration intensity to a suitable level.
- g) Put the ultrasonic file into the patient's root canal slowly, step on the foot pedal, then make endo root canal cleaning. During the treatment, turn up the power gradually according to the needs.

3.2.2 Notes

- a) When fixing endochuck, it must be screwed down.
- b) The screw on the endochuck must be screwed down.
- c) Don't press it too much when the ultrasonic file in root canal.
- d) Don't start up the foot pedal until the ultrasonic file is in root canal.
- e) The power range is supposed from 1st to 5th grades.
- f) Please sterilize the endo chuck and handpiece after

operation.

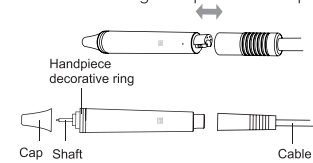
### 3.3 Instruction for main components of detachable handpiece

3.3.1 Nipple: The nipple can be removed, for easy cleaning.

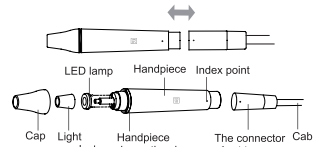
3.3.2 Light pipe: light guide, can be autoclaved under high temperature and pressure.

3.3.3 LED lamp: illuminate the oral area, detachable and sterilized.

3.3.4 Handpiece: The main part of the whole handpiece, can be autoclaved under the high temperature and pressure.



Picture 3 (A) Handpiece Without LED Lamp



Picture 3 (B) Handpiece With LED Lamp

### 4 Notes

4.1 Don't knock or rub the handpiece.

4.2 Don't screw or unscrew the scaling tip and endochuck when stepping on the foot pedal.

4.3 The handpiece, scaling tip, torque wrench, endo wrench and endochuck must be sterilized before treatment.

4.4 The internal screw thread of the scaling tips produced by some manufactures is coarse, rusty and collapsed. This will damage the external screw thread of the handpiece irretrievably. Please use "REFINE" brand scaling tips.

4.5 We are only responsible for the safety on the following conditions: The maintenance, repair and modification are made by the manufacturer or the authorized dealer.

### 5 Trouble shooting

Fault	Possible causes	Solutions
Handpiece doesn't work	The tip is loosened	Tighten it
	Something wrong with the Handpiece	Take out the handpiece and send it back for repair
	Something wrong with the Cable	Contact our dealers or us
	The connect plug between the cable and circuit board is loosened	Contact our dealers or us
There is no spray when getting through the electricity	The water control switch is not on	Turn on the water control switch
	No pressure or low pressure	Check the pressure
There is no water when getting through the electricity	The water control switch is not on	Turn on the water control switch
	There is impurity in the sdenoid valve	Contact our dealers or us
	Water way clogs	Clean the water line by three-way syringe
Low vibration	The tip hasn't been screwed on the handpiece tightly	Screw the tips tightly by torque wrench
	The tip is shaken loose by vibration	Screw on the tip tightly
	The coupling between the handpiece and the cable isn't dry	Dry it, especially the water between handpiece and connector
	The tip is worn out or deformed	Change another tip
The handpiece generates heat	The water control switch is in a low setting	Turn the water control switch to a higher grade

LED light doesn't work	Poor contact	Contact tightly
	Something wrong with LED light	Change a new one
There is water seeping from the coupling between the handpiece and the cable	LED lamp installed backwards	Please install the "+" of the LED lamp to the "+" of the handpiece
	The waterproof "O" ring is damaged	Change a new "O" ring

If the problem still can't be solved, please contact with local dealer or manufacturer.

## 6 Cleaning and sterilization

6.1 Clean and sterilize the handpiece after using it.  
6.2 Remove the nipple, light pipe, and LED lamp before autoclaved, clean by pure water and dry it by three-way syringe. (Picture 3)

### 6.3 Autoclaved in high temperature/pressure:

- 6.3.1 121°C/1bar(0.1MPa);
- 6.3.2 134°C/2.2bar(0.22MPa);
- 6.3.3 Using sterile towel or sterilized bags to pack the handpiece, nipple, light pipe and LED lamp before autoclaved, install them as show in picture 3 after cooling down.

### 6.4 Notice

- 6.4.1 Clear the cleaning liquid in the handpiece with three-way syringe before sterilization.
- 6.4.2 Be sure that the scaling tip has been unscrewed from the handpiece and it cannot be sterilized with others.
- 6.4.3 Please confirm whether the outer of the handpiece is damaged during the treatment or sterilization.
- 6.4.4 Please don't smear any protective oil on the surface of handpiece.
- 6.4.5 Please take out the handpiece, nipple, light pipe, LED lamp as Picture 3 and sterilize separately.
- 6.4.6 There are two waterproof "O" rings at the end of handpiece. Please lubricate them with dental lube frequently, as sterilization and repeated pulling and inserting will reduce their using life. Change a new one once it is damaged or worn excessively.
- 6.5 The following sterilizing methods are forbidden:
  - 6.5.1 Put handpiece into any liquid for boiling.
  - 6.5.2 Dip handpiece in disinfectors such as iodine, alcohol and glutaraldehyde.
  - 6.5.3 Put handpiece into oven or microwave oven for baking.
  - 6.5.4 Put handpiece into ultrasonic cleaner for cleaning.

## 7 Transportation, Storage And Maintenance

### 7.1 Transportation

- 7.1.1 Excessive impact and shake should be prevented during transportation. Lay it carefully and lightly and don't invert it.
- 7.1.2 Don't put it together with dangerous goods during transportation.
- 7.1.3 Avoid solarization and getting wet in rain or snow during transportation.

### 7.2 Storage

- 7.2.1 Don't store the machine together with the articles which are combustible, poisonous, caustic, or explosive.
- 7.2.2 This equipment should be stored in a room where the relative humidity is 10%-93%, atmospheric pressure is 70kPa-106kPa, and the temperature is -20°C+40°C.

### 7.3 Maintenance

The equipment should be handled carefully and lightly. Be sure that it is far from the vibration, and installed or kept in a cool, dry and ventilated place.

## 8 Environmental Protection

There is not any harm factor in our products. You can deal with it based on the local law.

## 9 After Service

We offer one year's free repair to the equipment according to the warranty card. The repair of the equipment should be carried out by our professional technician. We are not

responsible for any irretrievable damage caused by the non-professional person.

# Ultrasonic Scaler Tip Users Manual

## 1. Product Description

- 1.1 Formed by working tip and shaft. Connected with Ultrasonic Scaler handpiece, replaceable. Driven by Ultrasonic Scaler.
- 1.2 Operate with Ultrasonic Scaler, to do teeth cleaning, perio and endo treatment.

## 2. Contraindications

- 2.1 Hemophilia patients, patients or operator with pacemaker are not allowed to use.
- 2.2 Heart disease, pregnant women and children need to be cautious to use.

## 3. Instructions of Use

- 3.1 Scaling,Cavity Preparation tips should work with Scaling function on the Ultrasonic Scaler. Perio tips should work with Perio function on the scaler. Endo tips should work with Endo function on the scaler.
- 3.2 Select suitable tip according to operation needs, install on the handpiece tightly by torque wrench.
- 3.3 Turn on the Ultrasonic scaler for operation. During operation, do not let the scaler tip contact the teeth surface with vertical direction, do not press too hard in case of damaging the teeth or damaging the tip.
- 3.4 After operation, rinse the tip and handpiece by letting the scaler work 30 seconds with water, uninstall the tip and handpiece for sterilization.

## 4. Precautions

- 4.1 Make sure the tip installed on the handpiece tightly and spray well during operation.
- 4.2 Scaler tip must be cleaned and sterilized before each use, Disinfection and sterilization methods: Boiling disinfection, 134°C sterilization method. Should not use chemical disinfection, Disinfectants containing chlorine ingredients must never be used which will cause permanent damage.
- 4.3 Do not uninstall the tip while the Ultrasonic scaler still working.
- 4.4 Replace a new one while the tip damaged or worn seriously.
- 4.5 Do not bend nor polish the tip.
- 4.6 After the golden color coated tips have contacted with Oxidizing solution such as H<sub>2</sub>O<sub>2</sub> or NaClO, please use clean water to rinse the tip.

## 5. Storage

The tip should be stored in a clean, dry, ventilated, relative humidity of 10% to 93%, atmospheric pressure of 70kPa - 106kPa, temperature of -20°C - +40°C non-corrosive gas indoor environment.

## After service and Warranty Instruction

- 1 Period validity: One year's free repair for the handpiece from the date of purchase. Lifetime maintenance.
- 2 Range of warranty: Within the warranty period of validity, we are responsible for any troubles caused by quality problems or products technique and structure.
- 3 The followings are beyond our warranty:
  - 1) The damage caused by disobeying the operation instruction or lack of the needed condition.
  - 2) The damage caused by unsuitable operation or disassembly without authorization.
  - 3) The damage caused by unadvisable transportation or preservation.
  - 4) There isn't the seal of distributor or the warranty card isn't filled in completed.

## After service card

Name of Customer			
Address			
Post Code	Tel		
E-mail			
Purchase Date	Production Date		
Distributor			
Model	Product No.		



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