

# P9 SERIES

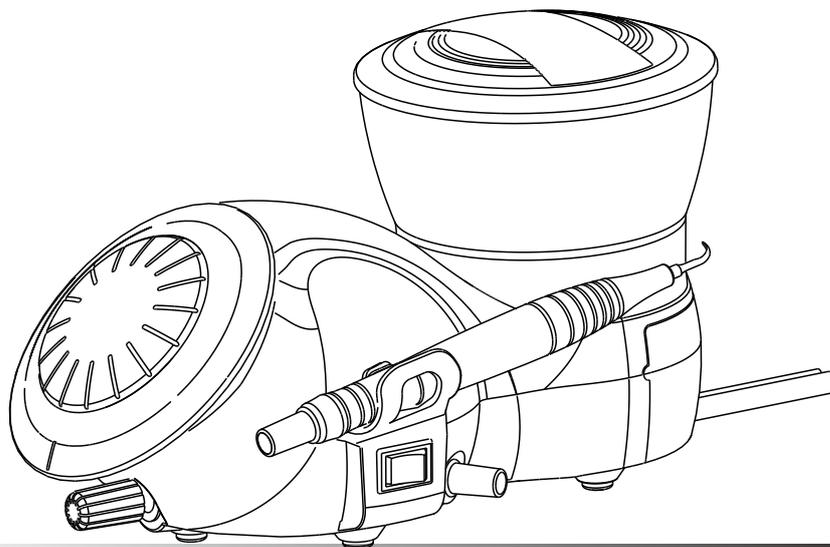
ULTRASONIC SCALER

## INSTRUCTION MANUAL

Please read the instruction manual carefully before operating



CE<sub>0197</sub>



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成型尺寸：140\*210MM 材质：80g书写纸 双色印刷 粘胶成本

物料名称	P9系列英文说明书	设计		日期	
物料编号	PA-P9-M-E-1	审核		日期	
版本	A7	批准		日期	



# P9 SERIES

ULTRASONIC SCALER

This manual is suitable for P9&P9U&P9L series ultrasonic scaler



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# Contents

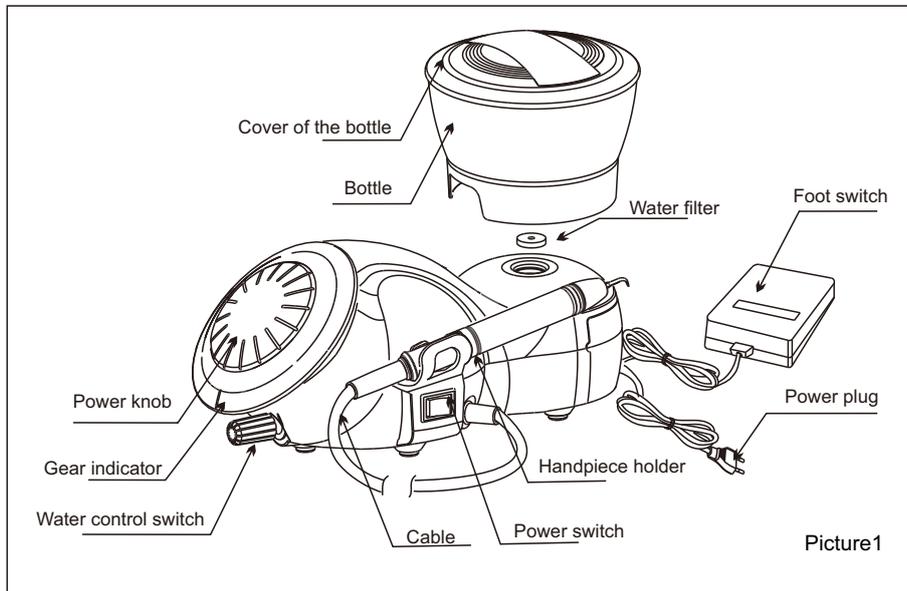
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## 1 Symbol instruction

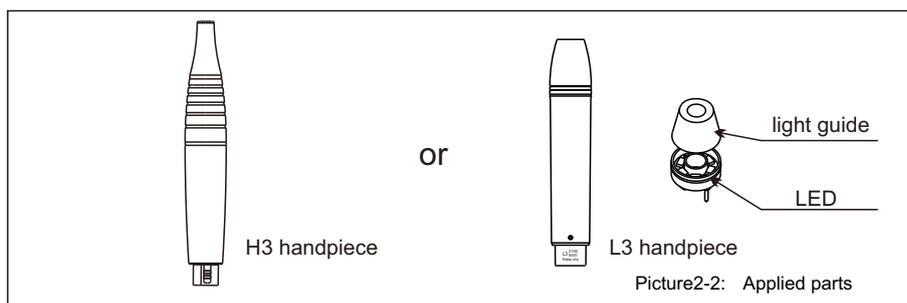
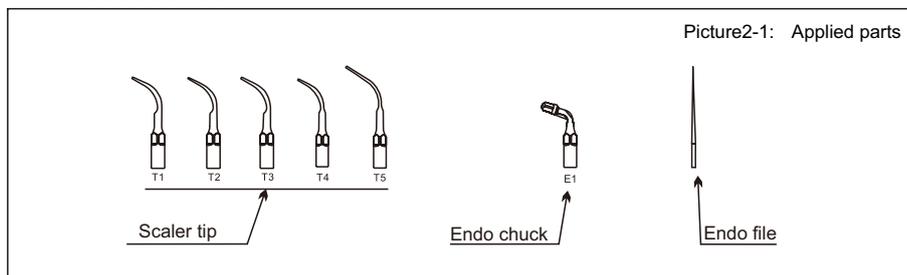
	Trademark		Caution
	Type B applied part		Follow instructions for use
	Alternating current		Water control switch
	Foot switch	IPX0	Ordinary equipment
	Use indoor only	IPX1	Drop-proof
	Autoclavable		Appliance compliance with WEEE directive
	Fail-safe safety isolating transformer		Date of manufacture
<b>SN</b>	Serial number		Manufacture
	CE marked product		Authorised representative in the European Community

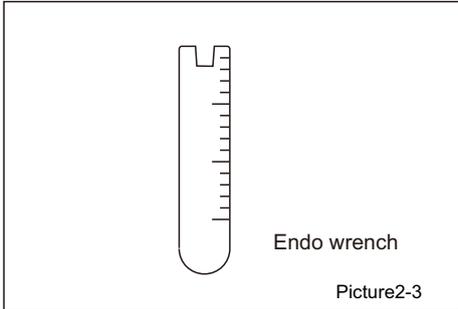
## 2 Acquaintance of the product and its parts

### 2.1 The top and bottom map of main unit

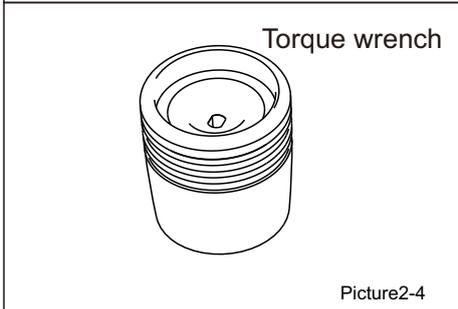


### 2.2 Accessories

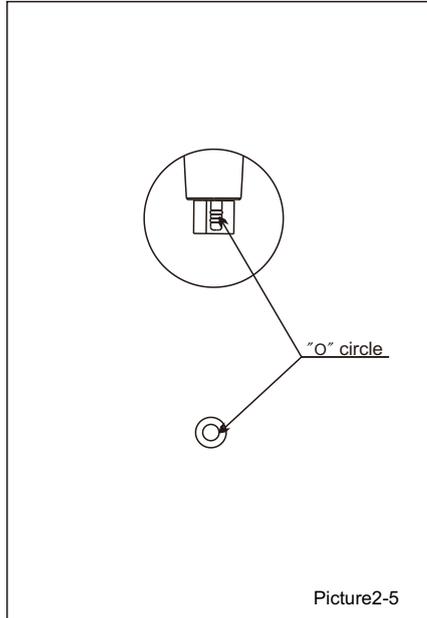




Picture2-3

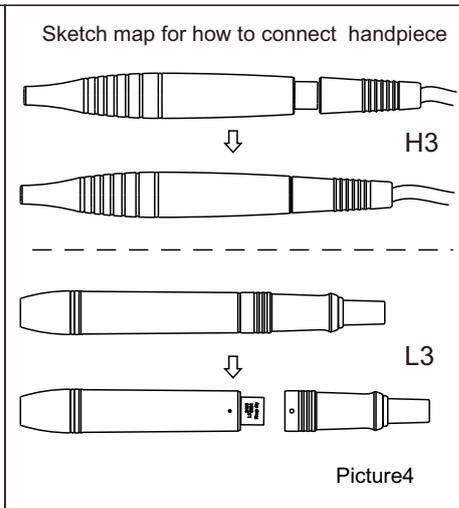
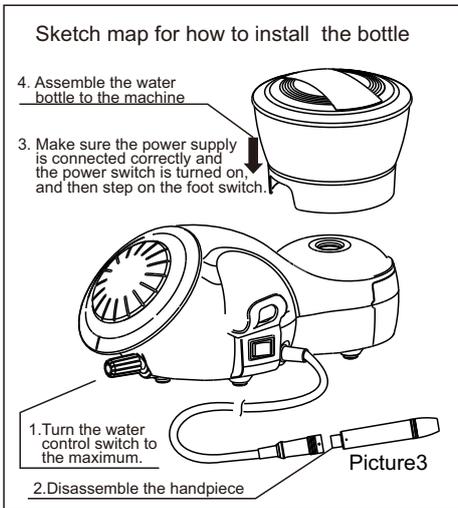


Picture2-4

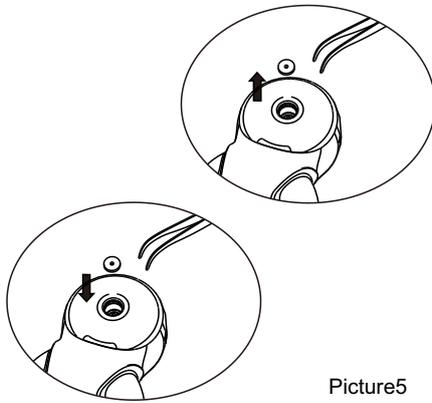


Picture2-5

### 2.3 Connection sketch map

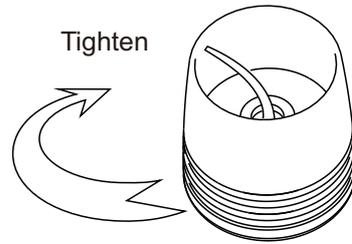


Sketch map for how to replace water filter

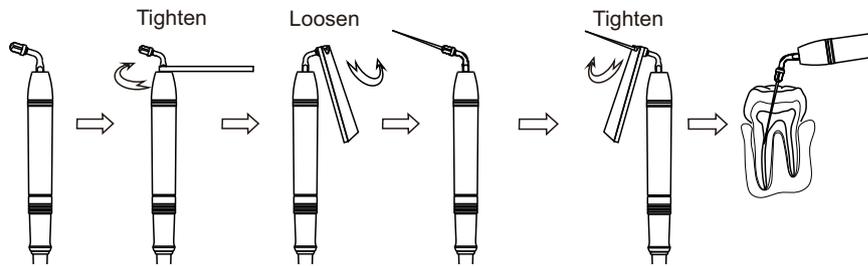


Sketch map for how to install tip

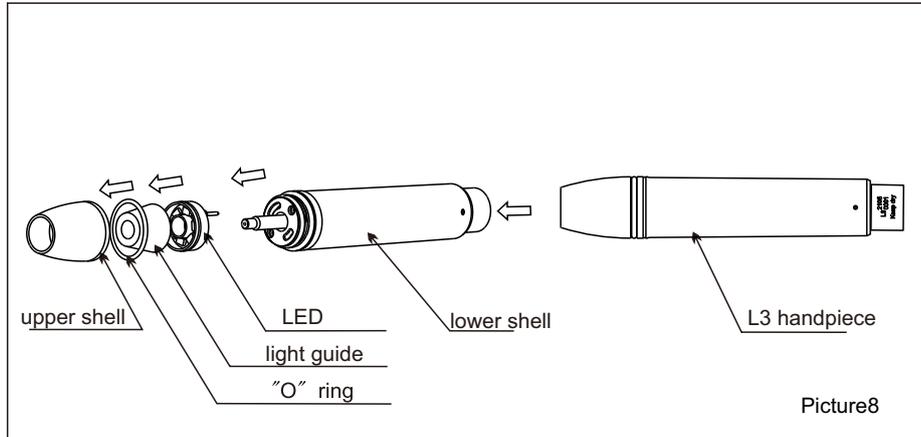
Note: The tip is tightened when the wrench slips for 2 circles.



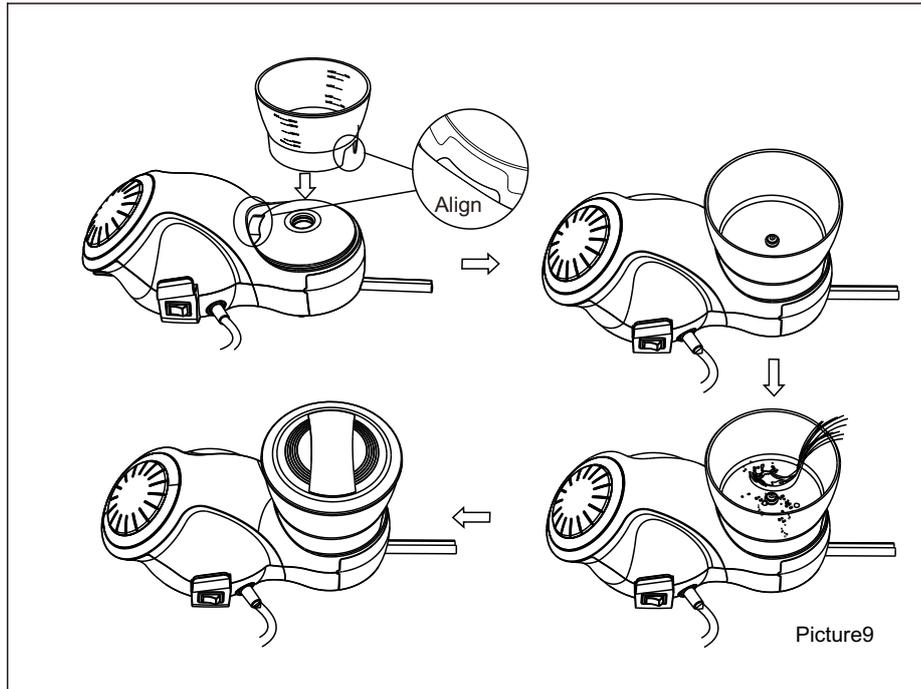
Sketch map for how to install endo file



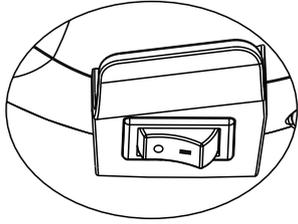
## 2.4 Sketch map of assembling L3



## 2.5 Sketch map of assembling bottle

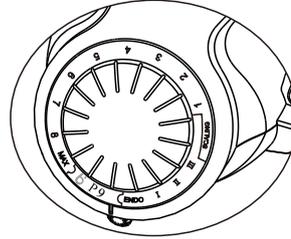


Power switch



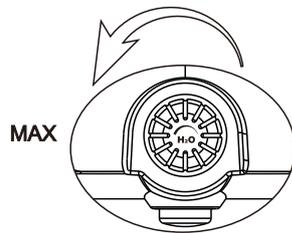
Picture10

Power knob

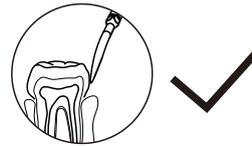
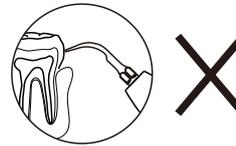


Picture11

Water control switch



Picture12



Picture13

### 3 Product structure, scope of application and contraindication

#### 3.1 Product performance and structure

Ultrasonic scaler is composed of electrocircuit, waterway and ultrasonic transducer.

#### 3.2 Intended use

A powered device utilizes a vibrating ultrasonic tip to remove calculus and other accretions from tooth surfaces during dental cleaning, periodontal therapy and root canal treatment.

#### 3.3 Contraindication

3.3.1 The hemophilia disease patients or patients with thrombocytopenia purpura are forbidden to use this equipment.

3.3.2 The patients or doctors with heart pacemaker are forbidden to use this equipment.

3.3.3 The heart disease patients, pregnant women and children should be cautious to use the equipment.

### 4 Components

Number	Description	Type
01	Main unit	P9/P9U/P9L
02	Foot switch	F1
03	Handpiece	H3 or L3
04	Scaling tip	T1
05	Scaling tip	T2
06	Perio tip	T3
07	Scaling tip	T4
08	Scaling tip	T5
09	Endo chuck	E1
10	Endo file	—————
11	Torque wrench	TW3
12	Endo wrench	EW1
13	Bottle	Φ 120mm×70mm
14	Cover of bottle	Φ 120mm×19mm
15	"O" circle	—————
16	Water filter	Φ 16mm×3mm
17	Instruction manual	P9 series
18	Qualified certificate	P9/P9U/P9L
19	Warranty card	P9/P9U/P9L
20	Packing list	P9/P9U/P9L

Product components are subject to the packing list.

## 5 Technical specifications

### 5.1 Performance technical specifications

Input:	230V~ 50/60Hz 150mA	110V~ 50/60Hz 300mA
Main unit fuse	F1(250VT 0.3AL) F2(250VT 0.3AL) F3(250VT 1.6AL)	F1(250VT 0.5AL) F2(250VT 0.5AL) F3(250VT 1.6AL)
Output power	3W to 20W	
Output primary tip vibration excursion	≤200 μm	
Output tip vibration frequency	28kHz ± 3kHz	
Output half-excursion force	<2N	
Water flow rate	0~50ml/min	
Weight of main unit	2.5kg	
Operating mode	Continuous operation	
Classification 93/42/EEC	Class II a	
Electric shock protection type	Class II	
Degree of protection against electric shock	B F	
Degree of protection against harmful ingress of water	Ordinary equipment (IPX0), Foot switch(IPX1)	
Degree of safety of application in the presence of a Flammable Anesthetic Mixture with air or with Oxygen or Nitrous Oxide	Equipment not suitable for being used in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.	

### 5.2 The conditions of working environment:

5.2.1 Environmental temperature: +10°C to +40°C

5.2.2 Environmental humidity: 0 to 80%

5.2.3 Atmospheric pressure: 700hPa to 1060hPa

## 6 Usage

6.1 Open the packing, make sure that all the parts and accessories are complete according to the packing list. Take the main unit out of the box and put it on a stable plane.

6.2 Turn the water control switch to the max based on symbol as shown in 9.2.1[Note 1]

6.3 Insert the plug of the foot switch to its socket.

6.4 Install the bottle:

① Clean the connection interface of the bottle.

② Install the bottle to the main unit (Picture 3).

③ Put proper amount of pure water or special liquid medicine, such as Hydrogen Peroxide, Chlorhexidine, Sodium Hypochlorite into the bottle.

Note: The liquid medicine can not be lower than the lower limit to insure flowing smoothly, and can not be higher than the upper limit to insure safety.

④ Install the cover (Picture 9).

6.5 Connect the handpiece with the cable (Picture 4). Hold the handpiece in the same gesture as a pen in hand.

6.6 Select a suitable scaler tip as you need and screw it on the handpiece (Picture 6).

6.7 Connect the power and press the power switch. The power is connected when it shows blue color (Picture 10).

6.8 Adjust the power knob as you need, step on the foot switch and start the machine (Picture 11).

6.9 Vibration intensity: Adjust the vibration intensity according to the scaling or endo requirement at any time in the clinical treatment. (Picture 11)

6.10 Water volume adjustment: Step on the foot switch to let the tip vibrate, and then adjust the water control switch to choose suitable water flowing out and form spray to cool down the handpiece and clean the teeth (Picture 12).

6.11 Function selection. Adjust the power knob to select the needed function.

#### 6.11.1 Scaling function

- ① Adjust the power knob until the blue indicator lights.
- ② Select a suitable scaler tip according to your need and screw it on the handpiece tightly by the torque wrench (Picture 6).
- ③ During clinical treatment, please do not vertically touch the teeth with the point of tip so as to avoid damage of both teeth and tip.
- ④ The working frequency is extremely high during operation. A light touch and a certain to and fro motion will be able to eliminate the tartar without heating. Overexertion and long time lingering are forbidden.

#### 6.11.2 Endo function (Picture 11)

- ① Adjust the power knob until the green indicator lights.
- ② Screw the endo chuck on the handpiece with endo wrench.
- ③ Loosen the nut of endo chuck.
- ④ Insert the endo file into the front hole of endo chuck and use endo wrench to tighten the nut so as to clamp the file.
- ⑤ Put the endo file into the patient's root canal slowly, step on the foot switch and conduct the ultrasonic root canal therapy. Power and water can be adjusted according to actual needs during clinical treatment.

Note: Don't step on the foot switch before putting the endo file into the root canal.

6.12 Disassemble the scaler tip and unplug the handpiece. Sterilize the scaler tip, handpiece, endo chuck, endo file and torque wrench.

## 7 Sterilization

### 7.1 Precautions

- a) Please pay attention to the handpiece during the process of operation and sterilization to see whether it is externally broken. No protective oil is allowed to be painted on the handpiece.
- b) There are two "O" circles in each handpiece which need to be sterilized, plugged and unplugged repeatedly. For the purpose of extending life time, dental lubricant should be used.

The circles should be replaced once they are broken or over abrasive.

## 7.2 Cleaning, disinfection and sterilization procedure

Operation	Operating mode	Warning
1 Cleaning and disinfection	Disassemble handpiece from detachable cable. Disassemble tip from handpiece. Wipe handpiece & scaler tip & torque wrench with medical alcohol or with special dental disinfection towel.	Cleaned in the ultrasonic bath is forbidden. Dipped in liquor is forbidden. Torrefied in oven or microwave oven is forbidden.
2 Packing	Pack handpiece & scaler tip & torque wrench in sterilization pouches.	Check the validity period of the pouch given by the manufacturer to determine the shelf life. Use packing which are resistant up to a temperature of 141°C and in accordance with EN ISO 11607.
3 Sterilization	Steam sterilization at: 135°C and 0.22MPa during 3 min.	Use fractionated vacuum autoclaves (according to EN 13060, EN 285). Use validated sterilization procedure according to EN ISO 17665-1. Respect maintenance procedure of the autoclave device given by the manufacturer. Use only the listed sterilization procedures.
4 Storage	Keep handpiece & scaler tip & torque wrench in sterilization packing in a dry and clean environment.	Sterility cannot be guaranteed if packing is open, damaged or wet (check the packing before using the instruments).

## **8 Precautions**

- 8.1 Performing endo function under the scaling status (the blue area) is forbidden.
- 8.2 Please use Baolai's T series scaler tip, as the other brand's scaler tip may not be compatible with the device's handpiece, and forcibly using it may result in damaging handpiece beyond repair.
- 8.3 Please check the water filter routinely, replace if necessary (Picture 7).
- 8.4 Please keep the device clean.
- 8.5 The handpiece, scaler tip, endo chuck, endo file, endo wrench and torque wrench must be sterilized before each treatment.
- 8.6 Don't screw or unscrew handpiece and scaler tip when stepping on the foot switch.
- 8.7 The scaler tip must be fastened by torque wrench and there must be fine spray coming from the tip when operating.
- 8.8 Replace a new scaler tip when it is worn by 2mm.
- 8.9 Don't twist the scaler tip or rub it.
- 8.10 Keep the connection of cable and handpiece dry.
- 8.11 Choosing the liquid according to clinic treatment.
- 8.12 Don't pull the handpiece forcibly during operation in case damage the handpiece or the cable.
- 8.13 Don't knock or rub the handpiece.
- 8.14 Turn off the switch and cut off the power source after stopping operation.
- 8.15 Put the liquid into the bottle and close it with its cover after the bottle is properly installed on the main unit.
- 8.16 Only use the device after the bottle is closed with its cover.
- 8.17 After stopping operation, let the device continuously work under condition of water getting through for 20 to 30 seconds to clean the water circuit, and then clean the connection of bottle.
- 8.18 If don't use the device for a long time, please install the dry and clean bottle on the main unit and close its cover, in case the dust fly into the connection of bottle.
- 8.19 Only Baolai or authorized distributors have the right to maintain, repair or amend the device. Baolai takes the safety responsibility only if the replaced spare parts belong to Baolai and operator properly operate according to the instruction manual.

## 9 Maintenance

### 9.1 Troubleshooting and notes

Fault	Possible cause	Solutions
The scaler tip doesn't vibrate and there is no water flowing out when stepping on the switch	The foot switch is in loose contact	Insert the foot switch to its socket tightly
	The fuse in the main unit is broken	Contact our dealers or us
The scaler tip doesn't vibrate but there is water flowing out when stepping on the switch	The tip is in loose contact	Screw the tip on the handpiece tightly (Picture 6 )
	The connect plug between the handpiece and the circuit board is in loose contact	Contact our dealers or us
	Problem of handpiece	Contact our dealers or us
The scaler tip vibrates but there is no spray when stepping on the switch	The water control switch is not on	Turn on the water control switch <b>【Note 1】</b>
	There is air in the water pipe	Step on the foot switch, disassemble the water tank and assemble it. (Picture 3)
The handpiece generates heat	The water control switch is in a low grade	Turn the water control switch to a higher grade <b>【Note 1】</b>
The vibration of the tip becomes weak	The tip hasn't been screwed on the handpiece tightly	Screw the tip on the handpiece tightly(as showed in Picture 6)
	The tip is loose because of vibration	Screw the tip tightly (as showed in Picture 6)
	The tip is damaged <b>【Note 2】</b>	Change a new one
The joint of the handpiece and cable has water leakage	"O" is broken	Change a new one
The endo file doesn't vibrate	The screw is loosen	Tighten it(as showed in Picture 4)
	The endo chuck is damage	Change a new one
There is noise coming from the endo chuck	The screw is loosen	Tighten it(as showed in Picture 4)

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

## 9.2 Notes

9.2.1 [Note 1] Adjust the water control switch according to the direction shown control the water volume

9.2.2 [Note 2] If the scaler tip has been screwed tightly and there is fine spray too, the following phenomena show that the scaler tip is damaged:

① The vibrating intensity and the water atomization degree become weak obviously.

② During treatment, it produces the sound like "buzz" from the scaler tip.

9.3 If not use for a long time, please make the machine get through the electricity and water once per month for five to ten minutes.

## 10 Storage and transportation

10.1 Environmental conditions of storage and transportation:

a) Relative humidity: 0 to 80%

b) Atmospheric pressure: 50kPa to 106kPa

c) Environmental temperature: -10°C to +50°C

10.2 Prevent excessive shock and vibration in transportation, be sure to handle with care and avoid inversion.

10.3 Don't mix with dangerous goods during transportation.

10.4 Avoid the sun, rain or snow during transportation.

10.5 The equipment should be handled carefully and lightly. Be sure that it's far from the vibration, and install or store in a cool, dry and ventilated place.

10.6 Don't store the machine with the articles that are combustible, poisonous, caustic and explosive.

## **11 After-service**

11.1 We offer 15 months free repair to the equipment based on warranty card from the date when it is sold to the end user. Lifetime maintenance.

11.2 The repair of the equipment should be carried out by our professional technician. Irretrievable damage caused by the nonprofessional technician, and damage accidentally or deliberately caused by operators, are out of the range of warranty.

11.3 Using scaler tips which don't belong to Baolai's T series may result in damaging handpiece, which will not be within the scope of warranty.

## **12 Environmental protections**

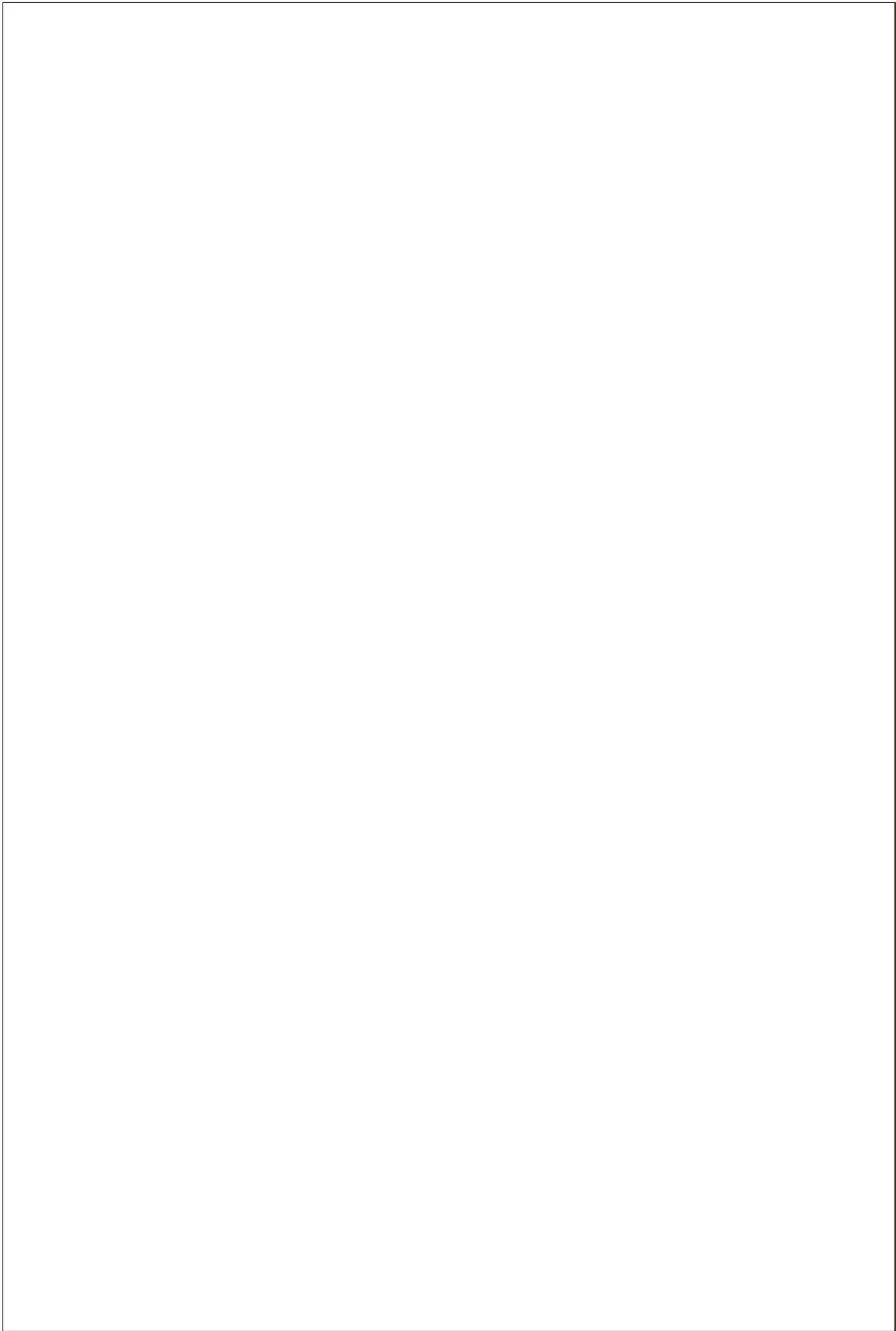
12.1 You can deal with it based on the local law.

12.2 We reserve the right to change the design of the equipment, product technique, accessories, instruction manual and the content of original packing at any time without notice. If there are some differences between picture and real equipment, take the real equipment as the norm.

## **13 Declaration**

The device has been tested and homologated in accordance with EN 60601-1-2 for EMC. This does not guarantee in any way that this device will not be effected by electromagnetic interference.

Avoid using the device in high electromagnetic environment.





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