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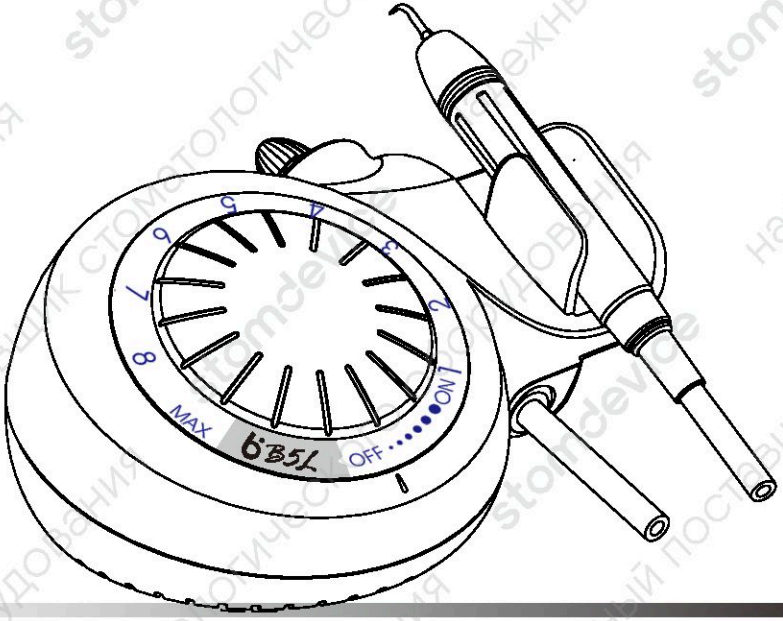
B5L

ULTRASONIC SCALER

INSTRUCTION MANUAL

Please read the instruction manual carefully before operating

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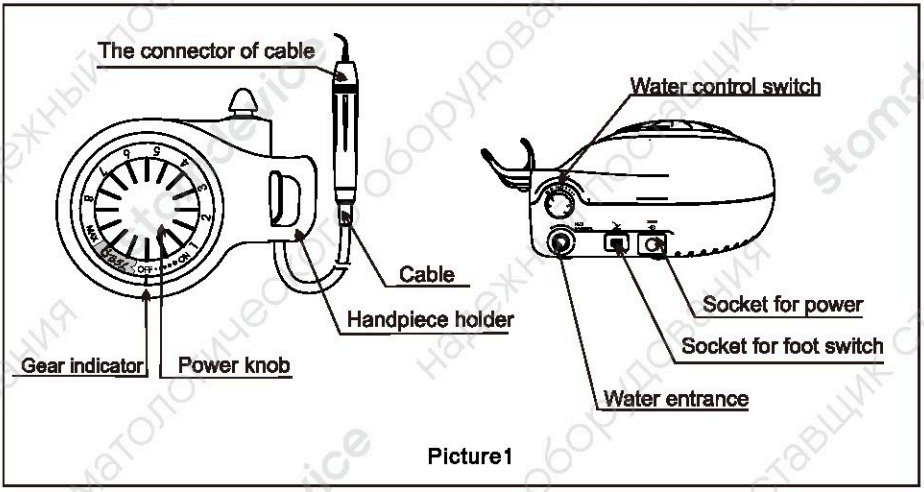
1 Symbol instruction

	Trademark		Caution
	Class Ⅱ equipment		Follow instructions for use
	Type B applied part		30VDC input
	Alternating current		Water control switch
	Foot switch	H_2O 0.1-0.5MPa	Water entrance 0.1MPa~0.5MPa(1bar~5bar)
	Use indoor only		Appliance compliance with WEEE directive
	Autoclavable	IPX0	Ordinary equipment
	Date of manufacture	IPX1	Drop-proof
SN	Serial number		Manufacture

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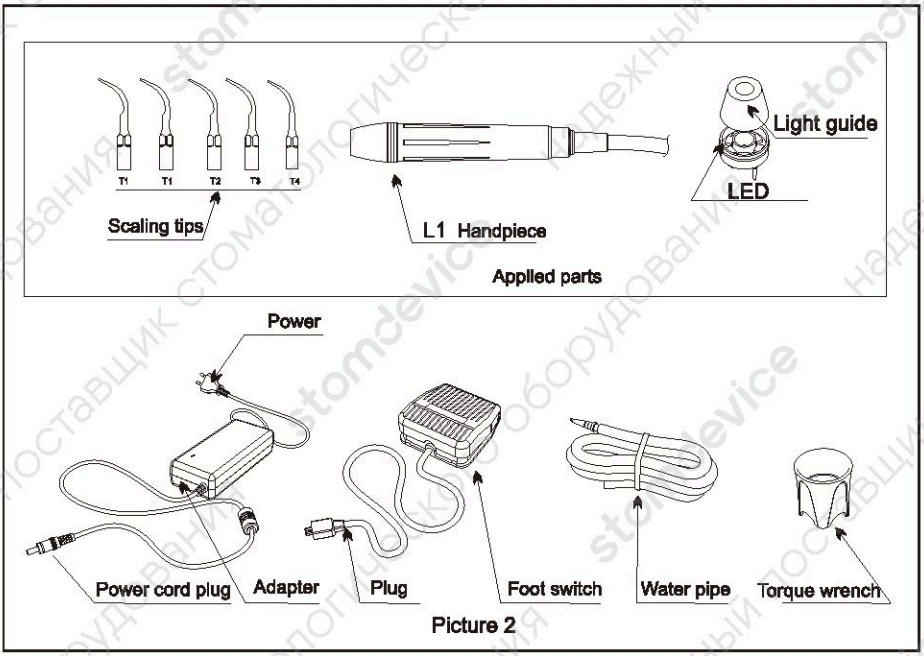
2 Acquaintance of the product and its parts

2.1 The top and bottom map of main unit



Picture1

2 B5 L accessories

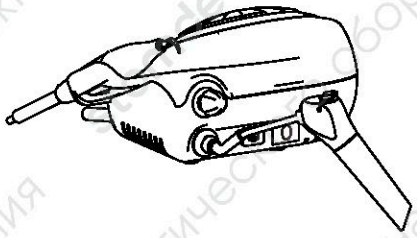


Picture 2

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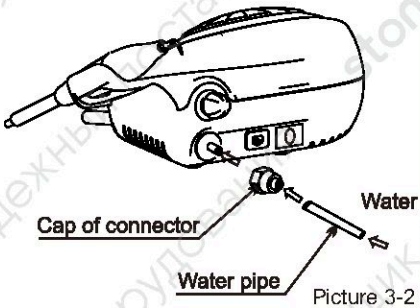
2.3 Connection sketch map

Clean the water pipe with the multi-function syringe of the dental unit



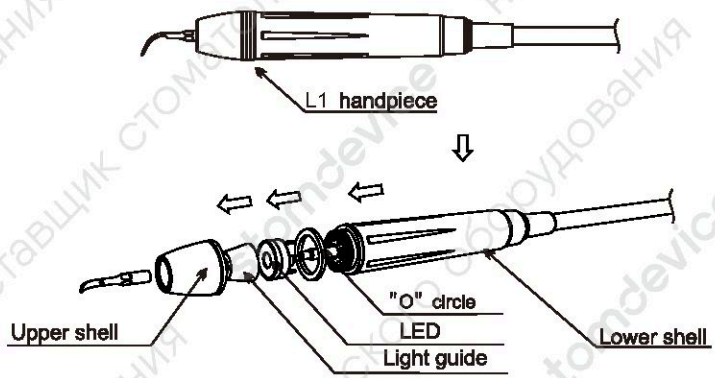
Picture 3-1

Sketch map for connection of water supply system



Picture 3-2

Sketch map for how to connect L1 handpiece

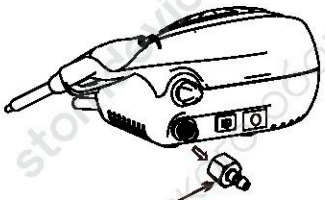


Picture 3-3

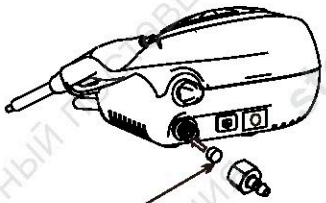
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Sketch map for how to replace water filter

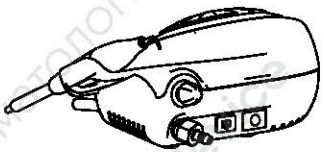
(Remarks: The water filter is optional.)



1. Unscrew cap of connector



2. Replace water filter



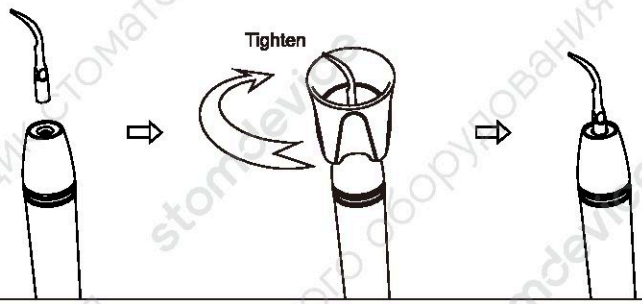
If water has many impurities, please assemble water filter and replace it in time when necessary.

3. Screw cap of connector tightly and avoid water leakage

Picture 3-4

Sketch map for how to install tip

Picture 3-5



3 Product structure,scope of application and contraindication

3.1 Product performance and structure

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

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3.2 Intended Use

A powered device utilizing a vibrating ultrasonic tip to remove calculus and other accretions from tooth surfaces during dental cleaning periodontal therapy.

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	B5L
02	Adapter	BL-PW-02 /BL-PW-03
03	Foot switch	F1
04	Scaling tip	T1
05	Scaling tip	T2
06	Scaling tip	T3
07	Scaling tip	T4
08	Wrench	TW2
09	Water pipe	———
10	Instruction manual	B5L
11	Qualified certificate	B5L
12	Warranty card	B5L
13	Packing list	B5L

Product components are subject to the packing list.

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5 Technical specifications

5.1 Performance technical specifications

Adapter Input	100 - 240V~ 50/60Hz 0.7A - 0.4A
Main unit input	30V⎓ 1.2A
Main unit fuse	250V/T 1.6AL
Output power	3W~ 20W
Output primary tip vibration excursion	≤200μm
Output tip vibration frequency	28kHz ±3kHz
Output half-excursion force	<2N
Water pressure	0.1MPa~0.5MPa(1bar~5bar)
Weight of main unit	0.55kg
Weight of adapter	0.34kg
Operating mode	Continuous operation
Electric shock protection type	Class Ⅱ
Classification 93/42/EEC	Class Ⅱa
Degree of protection against electric shock	B
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℃ to +40℃

5.2.2 Environmental humidity: 0 to 80%

5.2.3 Atmospheric pressure: 700hPa to 1060hPa

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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 Connect one end of the water pipe to the water entrance，lock the water pipe tightly with locknut, and connect the other end to the pure water source.

6.5 Connect the handpiece with the cable(Picture 3-3), select a suitable scaling tip as you need and screw it on the handpiece tightly by the torque wrench (Picture 3-5).

6.6 Turn off the main unit power, then insert the plug of the power source, and then get through to the power.

6.7 Turn on the power button, and start the machine.

6.8 Vibration intensity: Adjust the vibration according to the requirement. Generally adjust to 3 to 4 grade, but also adjust vibration intensity according to the patient's sensitivity and hardness of dental calculus at any time in during the clinical course.

6.9 Water volume adjustment: Step on the foot switch and the tip vibrates, and then turn the water control switch to form fine spray to cool handpiece and clean teeth.

6.10 Generally, hold the handpiece in the gesture as a pen in hand.

6.11 In clinical scaling, don't use the point of tip to contact with the teeth vertically, so as not to damage teeth and tip.

6.12 The normal frequency is extremely high. Under the normal working state of scaling tips, a light touch and a certain to-and-fro motion will eliminate the tartar without heating. Overexertion and long-time lingering are forbidden.

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6.13 After finishing operation, keep the machines working for 20-30 seconds on the water supply condition in order to clean the handpiece and tips.

6.14 Uninstall the tip, sterilize handpiece, tips, endo chuck ,endo file and torque wrench.

Note: Please don't pull out the handpiece and tips when the foot switch is stepped on and the machine is producing ultrasonic vibration.

7 Cleaning、disnifection and sterilization

Operation	Operating mode	Warning
1 Cleaning and disinfection	Disassemble tip from handpiece. Wipe handpiece & scaling tips & 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 & scaling tips & 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℃ and in accordance with EN ISO 11607.
3 Sterilization	Steam sterilization at: 135℃ 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 & scaling tips & 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).

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8 Precautions ⚠

8.1 Please keep the scaler clean.

8.2 The handpiece, scaling tip, endo chuck, endo file, endo wrench and torque wrench must be sterilized before each treatment.

8.3 Don't screw or unscrew handpiece and scaling tip when stepping on the foot switch.

8.4 The scaling tip must be fastened by torque wrench and there must be fine spray coming from the tip when operating.

8.5 Change a new one when the tip is damaged or worn excessively.

8.6 Don't twist the tip or rub it.

8.7 Please use purity water source and be sure not to use normal brine instead of purity water source.

8.8 If use non-pressure water, the water should be one meter higher than the head of the patient.

8.9 When the scaler is operated, please don't pull the handpiece forcibly in case of the handpiece or handpiece cord damage.

8.10 Don't knock or rub the handpiece.

8.11 After operating, turn off power (turn the power switch to OFF), then pull out the plug, and cut off power supply.

8.12 We are only responsible for the safety of machine in the following conditions:

I. The maintenance, repair and modification are made by the manufacturer or the authorized dealer.

II. The changed components are original of "B5L" and operated according to instruction manual.

8.13 Please use our T series tips, if forcibly use other tips which may not match the scaler it may result in damage beyond repair.

8.14 Please use our power supply or same model power supply.

8.15 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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9 Maintenance

9.1 Troubleshooting and notes

Fault	Possible cause	Solutions
The scaling tip doesn't vibrate and there is no water flowing out when stepping on the switch.	The power pipe plug is in loose contact.	Make the plug insert to the socket well.
	The foot switch is in loose contact.	Insert the foot switch to its socket tightly.
	The fuse of transformer is broken.	Contact our dealers or us .
	The fuse in the main unit is broken.	Contact our dealers or us.
The scaling 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 3-5).
	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 scaling 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 【note 1】.
	There is impurity in the solenoid valve.	Contact our dealers or us.
	The water system is blocked.	Clean the water pipe by multi-function syringe【note2】.
	There is air in the water pipe.	Disassemble the scaler tip, and turn the water control switch to maximum. Meanwhile, make water pressure higher to 0.5MPa max.
	Water single pass is blocked	Replace water filter (picture 3-4).
There is still water flowing out after the power is off.	There is impurity in the solenoid valve.	Contact our dealers or us.
The handpiece generates heat.	The water control switch is in a low grade	Turn the water control switch to a higher grade【note 1】.
The amount of spouting water is too little.	The water pressure is not high enough.	Make the water pressure higher.
	The water pipe is blocked.	Clean the water pipe by multi-function syringe【note2】.
The vibration of the tip becomes weak.	The tip hasn't been screwed on to the handpiece tightly.	Screw the tip on the handpiece tightly(picture 3-5).
	The tip is loose because of vibration.	Screw on the tip tightly (picture 3-5).
	The tip is damaged.	Change a new one.
The joint of the handpiece and cable has water leakage.	"O" shape water-proof rubber circle is broken .	Change a new one.

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

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9.2 Notes

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

9.2.2 [Note 2] Clean the water pipe with the Multi-function syringe of the dental unit (Picture 3-1)

①Cut the water pipe at a distance of 10cm to 20cm from the water entrance.

②Turn on the electricity and get through the electricity.

③ Connect the multi-function syringe of dental unit to water pipe.

④ Disassemble the tip.

⑤ Turn on the power and step on the foot switch to start the scaler.

⑥ Turn on the switch of the Multi-function syringe, press the water into the machine and the impurity blocked in the water pipe can be eliminated.

9.2.3 [Note 3] If the scaling tip has been screwed on tightly and there is fine spray too, the following phenomena show that the scaling 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 scaling 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℃ to +50℃

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.

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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.

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.

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