UDS-T LED ULTRASONIC SCALER

INSTRUCTION MANUAL

Please read this manual before operating

ZMN-SM-767 V1.2-20231030

www.glwoodpecker.com

GUILIN WOODPECKER MEDICAL INSTRUMENT CO., LTD.

Contents

1 Product Introduction

1.1 Product Introduction

Guilin Woodpecker Medical Instrument Co., Ltd. is a professional manufacturer in researching, developing and producing ultrasonic scalers. The product is mainly used for teeth cleaning and also an indisensable equipment for teeth dise-ase prevention and treatment.The ultrasonic scaler UDS-T LED has scaling, perio functions with the following features:

The features of this equipment are:

a) The handle is equipped with LED light, which is more convenient for clinical operation.

b) With automatic water supply function, it is more convenient to use.

c) The inner water pipe is made of antiseptic material, and special liquid medicine can be used, such as hydrogen peroxide (3% concentration), chlorhexidine (0.2% concentration) and sodium hypochlorite (5% concentration), which greatly improves the effect of periodontal treatment and root canal washing.

d) Adopt automatic frequency tracking system, automatically search for the best working state, and the mechanical performance is stable.

e) The working handle can be pulled and inserted freely, and can be disinfected at high temperature of 134℃ and high pressure of 0.22MPa.

f) The working process is fully controlled by microcomputer, with convenient and concise operation and high efficiency.

1.2 Model specification

UDS-T LED Type

1.3 Machine Configuration

Machine configuration mainly includes main engine, pedal, handle, power cord, working tip, wrench, water bottle, instruction manual, etc. See the packing list for other details.

1.4 Structural Composition

It consists of a host, a water bottle, a handle, a working tip, a foot switch and a power cord.

1.5 Area of Application

It is used for the dental calculus elimination and root canal treatment.

1.6 Contraindications

1.6.1 Hemophilia patients are prohibited.

1.6.2 Disabled for patients with pacemakers.

1.6.3 Doctors with pacemakers are prohibited.

1.6.4 Use with caution for patients with heart disease, pregnant women and young children.

1.7 Equipment Safety Classification

1.7.1 Classification by operation mode: Continuous operation
1.7.2 According to the type of electric shock prevention: Class I equipment
1.7.3 According to the degree of electric shock prevention: The working tip belongs to the type B application part.
1.7.4 Degree of protection against liquid ingress: Ordinary equipment (IPX0), and the foot switch is anti-dripping equipment (IPX1).
1.7.5 The degree of safety when using flammable anesthetic gas mixed with air or flammable anesthetic gas mixed with oxygen or nitrous oxide: Equipment that cannot be used in the presence of flammable anesthetic gas mixed with air or flammable anesthetic gas mixed with oxygen or nitrous oxide.

1.8 Main Technical Parameters

1.8.1 Input power: 220-240V~ 50Hz/60Hz 50VA
1.8.2 Output tip main vibration offset: 1μm~200μm
1.8.3 Output tip vibration frequency: 30kHz±5kHz
1.8.4 Output half offset force: 15N±50%
1.8.5 Tip output power: 3W~20W
1.8.6 Host insurance: T500mAL 250V
1.8.7 Host weight: 2.0kg

1.9 Working Conditions

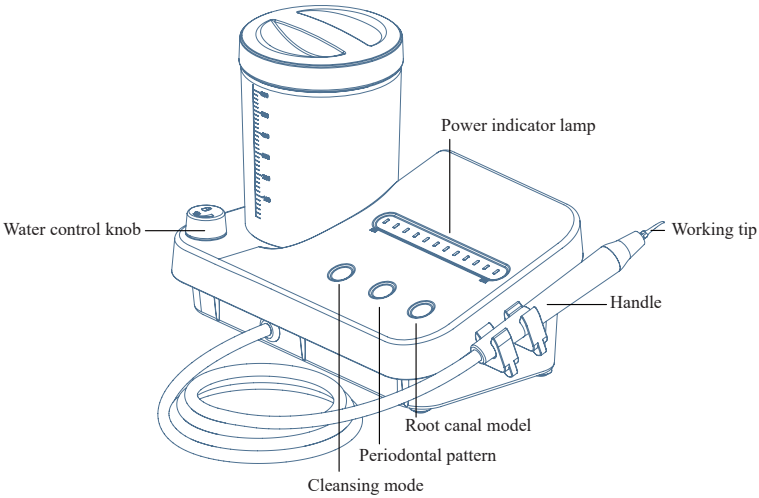
1.9.1 Ambient temperature: +5℃ ~ +40℃
1.9.2 Relative humidity: 30% ~ 75%
1.9.3 Atmospheric pressure: 70kPa ~ 106kPa
1.9.4 Water inlet temperature: ≤ +25℃

1.10 Expected Users

a) Age: Adult.
b) Gender: Unlimited.
c) Language: At least can normal reading English instructions.
d) Educational background: At least 16 years of education (School).
e) Cultural background: Unlimited.
f) Professional ability: A qualified dental professional doctor.

2 Product Installation

2.1 Front Schematic Diagram of Main Engine



Description: Mode, function indicator and power indicator are all blue lights.

Figure 1

2.2 Schematic Diagram of the Back of the Host

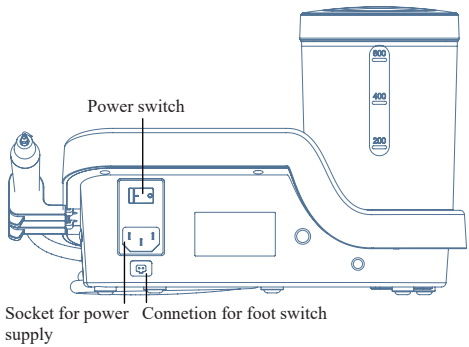


Figure 2

2.3 Schematic Diagram of Installation and Connection of Plug-in handle

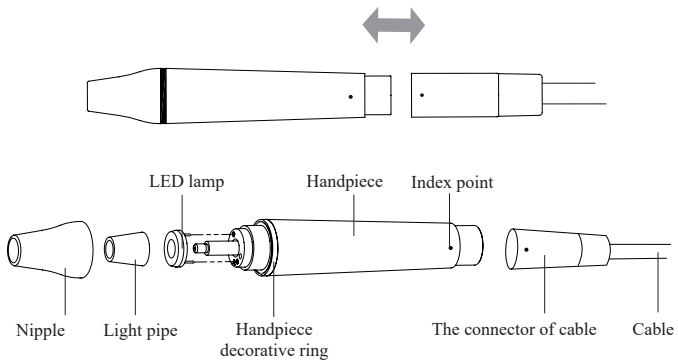


Figure 3

2.4 Schematic Diagram of Installation and Connection of Working Tip

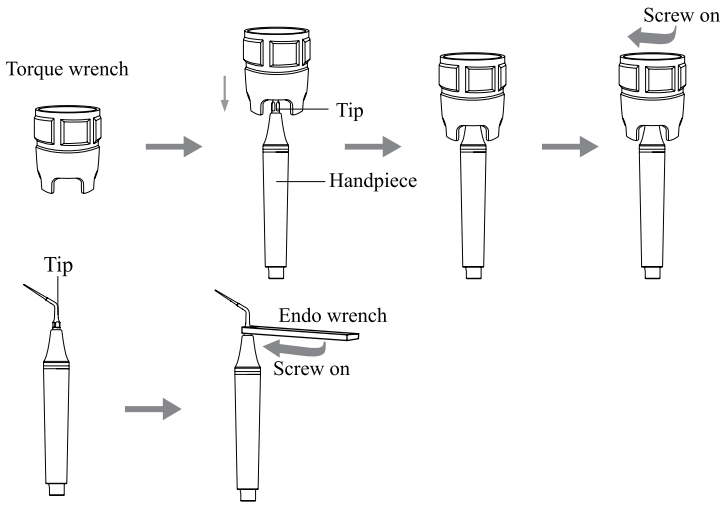


Figure 4

2.5 Product Installation Steps

2.5.1 Open the package, check whether all items of the equipment are complete according to the packing list, and put the main machine on a stable plane facing the operator.

2.5.2 Turn the water volume adjustment knob to a larger level as shown in the icon (See 4.2) [Note 1].

2.5.3 Insert the footswitch plug into the footswitch socket.

2.5.4 Bottle the water, and put a proper amount of water in the bottle. (See

Figure 2)

2.5.5 Socket the handle and the tail plug correctly. Before installing the handle, thoroughly dry the connecting end of the handle and the tail plug socket.

2.5.6 Turn off the power switch on the host computer, and then plug in the 220 V ~ power cord plug (as shown in Figure 2).

3 Product Function and Use

3.1 Instructions for Use of Main Components of Plug-In Handle (See Figure 3):

3.1.1 Cone head: It can be screwed out, the cone head can be taken out regularly, and the main rod can be cleaned with alcohol.

3.1.2 Decorative ring: The decorative ring can be taken out regularly and cleaned with alcohol.

3.1.3 Handle: The working body can be disinfected at high temperature and high pressure.

3.1.4 Tail insertion: Waterway and circuit connecting plug-in handle and main machine.

3.1.5 LED light: Can be removed and cleaned with purified water, and can be disinfected at high temperature and high pressure.

3.1.6 Light guide column: Can be removed and cleaned with purified water, and can be disinfected at high temperature and high pressure. Note: Please keep the joint between plug-in handle and tail plug dry.

3.2 Instructions for Use of Force-Limiting Wrench (See Figure 4)

The force-limiting wrench adopts a special structural design to control the force of loading and unloading the working tip reasonably and effectively, which ensures that the user can load and unload the working tip effectively in use and protects the user's hands from being scratched by the working tip during loading and unloading.

The use steps of the force-limiting wrench are as follows:

a) Take out the force-limiting wrench and assemble and disassemble the working tip as shown in Figure 4;

b) Install the working tip: Hold the handle tightly, and use the force-limiting wrench to rotate the working tip in the direction shown in Figure 4 until the working tip stops rotating, and then continue to rotate for one turn, so that the working tip is installed;

c) Unloading tip: Hold the handle tightly, and use the force-limiting wrench to rotate in the opposite direction of the tightening direction as shown in Figure 4 to remove the working tip;

d) After each use, please put the force-limiting wrench in the disinfection cabinet for disinfection;

e) After disinfection, because the surface temperature of the force-limiting

wrench is very high, it can only be used after the force-limiting wrench is cooled to avoid scalding;
f) When the limit wrench is not used, it should be placed in a ventilated and dry place and kept clean.

3.3 Cleaning Function and Use

3.3.1 Install the product correctly according to the product installation steps, the operator is facing the machine, and the water switch is turned to a higher level.
3.3.2 The product has the function of remembering the last operation. Press the power switch on the host, and the indicator light will show the mode and power when it was turned off last time. Press the “G” key to switch to the tooth cleaning function, and the tooth cleaning function indicator light will light up, and the power indicator light will remember the power of the tooth cleaning mode when it was turned off last time. During the clinical treatment, the power can be adjusted by touching the power indicator light on the panel according to the actual situation.
3.3.4 Select a suitable working tip as required and tighten it on the handle with a force-limiting wrench (see Figure 4).
3.3.5 When the foot switch is pressed, the working tip vibrates, and the LED lamp on the head of the handle lights up for clinical operation. After the foot switch is released, the LED light continues to shine for 10 seconds and then goes out.
3.3.6 Generally, the handle is held in a pen-holding position.
3.3.7 When the machine works normally, the frequency is extremely fast. Under the condition of ensuring the normal vibration of the working tip and the normal atomization of water, the dental calculus can be eliminated only by gently touching the tooth surface and reciprocating at a certain speed when cleaning teeth, and the working tip has no obvious feeling of heating; Don’t overdo it locally or stay too long when cleaning your teeth.
3.3.8 Vibration intensity: Adjust the vibration intensity as required, generally to a moderate vibration intensity, or adjust the vibration intensity at any time in the clinical process according to the sensitivity of the patient’s teeth and the hardness of dental calculus.
3.3.9 Water regulation: When the foot switch is pressed, the working tip vibrates, and the water quantity adjusting knob is rotated to make water mist to cool the handle and clean the tooth surface.
3.3.10 During clinical scaling, the tip of the working tip should not be in vertical contact with the tooth surface, and no heavy pressure should be applied to avoid damaging the tooth body and the working tip.
3.3.11 After the operation is completed, let the machine adjust the minimum power for about 30 seconds under the condition of water to flush the handle and working tip; Remove the handle and working tip for disinfection.

3.5 Periodontal Scaling Function and Use

3.5.1 Press “P” key to switch to periodontal scaling function, and the indicator light of periodontal scaling function will light up;
3.5.2 After the Ultrasonic scaler is switched to periodontal therapy function, the power indicator remembers the power of periodontal mode when it was turned off last time, and the power can be adjusted by touching the power indicator on the panel according to the actual situation during clinical treatment;
3.5.3 Select a suitable working tip and install it as shown in Figure 6, and then perform periodontal scaling;
3.5.4 The power range of periodontal scaling is suggested to be between 1 and 8.

3.6 Function and Application of Root Canal Washing

3.6.1 Tighten the root canal working tip to the handle with a root canal wrench, which must be ensured;
3.6.2 Press the “E” key to switch to the root canal washing function, and the indicator light of root canal washing function will be on;
3.6.3 After the Ultrasonic scaler is switched to root canal washing function, the power indicator remembers the power of root canal mode when the machine was turned off last time, and the power can be adjusted by touching the power indicator on the surface according to the actual situation during clinical treatment;
3.6.4 Select an appropriate root canal file, slowly put it into the root canal of the patient’s teeth, and start the foot switch to perform ultrasonic root canal cleaning;
3.6.5 The root canal file should not be compressed too tightly when it is in the root canal during clinical scaling;
3.6.6 The root canal file must be put into the root canal to start the foot switch;
3.6.7 The power range of root canal irrigation is recommended to be used between 1 and 5.

3.7 Precautions for Use

3.7.1 The machine should be kept clean before and after use.
3.7.2 Please disinfect the handles, working tips, wrenches and other accessories before each use.
3.7.3 Do not remove the working tip when stepping on the foot switch.
3.7.4 The working tip must be tightened and there must be water mist when working.
3.7.5 When the working tip is damaged or worn, it should be replaced with a new working tip.
3.7.6 Do not bend or grind the working tip.
3.7.7 Please don’t use unclean water.

3.7.8 Under normal circumstances, please do not use anhydrous mode unless it is needed for a short time during treatment. If the handle doesn't produce water or the water output is too small, it will cause the handle and the working tip to be hot, which will hurt the patient's teeth.
3.7.9 Please do not pull the tail wire forcibly during the use of the equipment, so as not to damage the tail wire.
3.7.10 Do not knock or scrape the handle.
3.7.11 After using the machine, turn off the power switch and pull out the power plug.
3.7.12 Our Company is a company specializing in the production of medical devices. Only when the maintenance, repair and modification of the machine are carried out by our company or the dealers authorized by our company, and the replaced accessories are woodpecker brand accessories of our company and operated according to the instruction manual, will we be responsible for its safety.
3.7.13 The internal thread of the working tip produced by some manufacturers is rough, rusted, cracked or adopts other threads, which is easy to be damaged and slippery when used together with the external thread of the handle, and even causes irreparable damage to the dental cleaner. Please use the working tip corresponding to Woodpecker brand.
3.7.14 The use of the product must meet the requirements of the relevant operating specifications and relevant laws and regulations of the medical department, and it is limited to the use of trained doctors or technicians.
3.7.15 Select the appropriate power according to different types of working tips (see Schedule: Working Tip Power Table for details).
3.7.16 After each treatment with liquid medicine, please change into a water bottle filled with pure water, adjust the water volume to the maximum and the power to the minimum, step on the pedal to let the machine work for 30 seconds, and clean the pipeline to avoid water blockage or rust of metal parts.
3.7.17 The equipment should be placed in a place where it is easy to unplug the power plug during use.
3.7.19 Ultrasonic scaler is used in the electromagnetic environment specified in Chapter 9.
3.7.21 Install the product in strict accordance with Chapter 2.
3.7.22 The equipment should be placed in a place where it is easy to unplug the power plug during use.
3.7.23 Release the pedal, and the product can safely exit the running mode.
3.7.24 Do not modify this equipment without the authorization of the manufacturer.
3.7.25 This product is not allowed to change or replace any other electronic components except the host socket insurance.
3.7.26 When the equipment interferes with each other during special diagnosis

or treatment, the vibration of the working tip will stop, which will delay the treatment.

3.7.27 The third wire in the power cord is only a functional ground.

3.8 Log Out Safely

Before starting the machine: Install the product correctly according to the product installation steps, select the required working tip for installation, and tighten it with a wrench. The operator is facing the machine, and the water switch is turned to a higher level.

Turn on the power switch and the indicator light will light up; When the foot switch is pressed, the working tip vibrates, and the LED lamp on the head of the handle lights up for lighting during clinical operation; When the foot switch is released, the vibration of the working tip stops and the LED light continues to shine for 10 seconds, then it goes out, and the handle is put back into the handle bracket; Disconnect the power supply, the indicator light goes out, unplug the 220 V ~ power cord plug, and the product exits the running mode safely.

4 Troubleshooting

4.1 Fault Analysis and Elimination Table

Fault phenomenon	Possible reasons	Exclusion method
After the power is turned on and the foot switch is pressed, the working tip does not vibrate and does not produce water.	Poor contact of power plug	Plug in the power supply
	Poor contact of foot switch	Plug in the foot switch.
	Safety tube break in main engine	Contact the local distributor or our company.
After electrifying and stepping on the foot switch, the working tip does not vibrate, but water column flows out.	Loose working tip	Tighten the working tip (see Figure 4)
	The connection plug between the tail wire and the circuit board is loose.	Contact the local distributor or our company.
	Handle failure	Pull out the handle and send it back for repair.
	Tail line fault	Contact the local distributor or our company.
After electrifying and stepping on the foot switch, the working tip vibrates but no water mist is formed.	The water quantity adjusting knob is not turned on.	Turn on the water quantity adjustment knob [Note 1]
The handle still comes out after the power is cut off.	There are impurities in the solenoid valve.	Contact the local distributor or our company.

Handle fever	The water adjustment knob is turned too small.	Turn up the water adjustment knob.
Vibration attenuation of working tip	Working tip not tightened.	Tighten the working tip (see Figure 4)
	The working tip is shaken loose.	Tighten the working tip (see Figure 4)
	Damage of working tip [Note 2]	Replace the working tip
	The joint between the handle and the tail plug is not dry.	Blow dry the joint between the handle and the tail plug with hot air.
Water seepage at the joint of handle and tail plug	Waterproof O-ring breakage	Replace waterproof O-ring
Handle does not produce water (automatic water supply mode)	There is air in the water pipe.	Turn the water switch to the maximum, and plug the water bottle again.
The LED light is not on.	Poor contact	Checking circuit
	The LED lamp is burnt out.	Replace LED lamp
	LED lamp is installed backwards	The LED light “+”is aligned with the handle “+”mark.

[Note]: If the fault is still not solved, please contact your local dealer or our company.

4.2 Annotate

[Note 1]: When the water quantity adjusting knob is rotated as shown in the icon, it means that the water quantity is the minimum, otherwise, it means that the water quantity is increased.

[Note 2]: It is considered that the working tip has been damaged when the following phenomena appear under the condition that the working tip has been tightened and water mist is sprayed:

1) The vibration force of the working tip and the degree of water atomization are obviously weakened.

2) The working tip makes a harsh “buzzing” sound when working.

5 Cleaning, Disinfection and Sterilization

Sterilized handles and sterilized working tips should be used for each cleaning; Before disinfection and sterilization of the handle and working tip, the handle and working tip must be cleaned first (especially the interface of the handle must be cleaned to avoid the residue attached to the handle and working tip from solidifying during high temperature and high pressure sterilization, causing blockage and other failures). The disinfection and sterilization methods are as follows:

5.1 Disinfection/Sterilization of Handles

5.1.1 The temperature, pressure and time of high-temperature autoclave should be selected for disinfection: 134℃, 2.0bar~2.3bar (0.20MPa~0.23MPa), 4min.
5.1.2 Pull out the handle and remove the working tip after each use.
5.1.3 Wrap the handle with a disinfectant towel or bag.
5.1.4 After disinfection, the handle should be cooled naturally before it can be used again to avoid scalding hands.
5.1.5 Matters need attention
a) Before disinfection, please use compressed air to blow off the cleaning liquid remaining on the handle;
b) When disinfecting, the working tip must be removed from the handle and must not be mixed with other instruments for disinfection;
c) During use or disinfection, please always pay attention to whether the handle is damaged externally. It is forbidden to apply any protective oil on the surface of the handle.
d) There are two waterproof O-rings at the back of the handle. Because it needs disinfection and repeated plugging and unplugging, dental lubricant should be used frequently to prolong the service life. Once damaged or excessively worn, the waterproof O-ring should be replaced in time.
e) The disinfection times of the handle are limited to less than 1000 times.

5.2 Disinfection/Sterilization of Working Tip, Root Canal Wrench

Working tips, root canal wrenches can be disinfected with alcohol or disinfectant towels, or they can be disinfected with a sterilizer at high temperature and high pressure. Disinfection times are not more than 1000 times.

5.3 Sterilization/Sterilization of Limit Wrench

The force-limiting wrench can be disinfected with any commonly used neutral disinfectant without corrosiveness, or it can be disinfected with a sterilizer at high temperature and high pressure.

5.4 Cleaning of Working Tip, Root Canal Wrench and Force Limiting Wrench

The working tip and the force-limiting wrench can be cleaned with clean water or in an ultrasonic cleaner.

5.5 It is forbidden to disinfect/sterilize the handle and limit wrench by the following disinfection methods.

5.5.1 Cooking in solution;
5.5.2 Soak in disinfectant such as iodine, alcohol and glutaraldehyde;
5.5.3 Bake in an oven or microwave oven at high temperature.
Note: If the handle or force-limiting wrench is disinfected by any of the above three items, the company will not guarantee the direct or indirect damage.

5.6 Disinfection and cleaning of LED lamps and light guide columns

After each operation, clean the LED lamp and light guide column with purified water, and then put them into an environment with high temperature of 134℃ and high pressure of 0.22 Mpa for disinfection.

6 Storage, Maintenance and Transportation

6.1 Storage and Maintenance

6.1.1 Do not mix with toxic, corrosive, flammable and explosive articles when storing.

6.1.2 This equipment should be handled with care, far away from the earthquake source, and should be installed or stored in a cool, dry and ventilated place indoors.

6.1.3 Products should be stored in an environment with relative humidity not exceeding 10% ~ 93%, atmospheric pressure of 70 kPa ~ 106 kPa and temperature of -20℃ ~ +55℃.

6.1.4 When this equipment is not in use, turn off the power switch and unplug the power plug. When it is not used for a long time, it should be electrified once a month for five minutes each time.

6.1.5 Replacement of main engine fuse: Maintenance personnel replace main engine insurance.

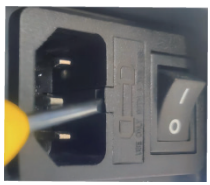
When doing the following operations, be sure to cut off the power supply (see Figure 4-Reference B) to turn off the equipment and disconnect the power cord from the main power supply.

(1) Insert a screwdriver into the groove below the power hole and move outward (Figure 7-Reference A).

(2) Pull out the fuse compartment (see Figure 4-Reference B), and select the appropriate fuse to replace it according to the safety information marked near the fuse.

(3) Push the safety tube compartment to the initial position (see Figure 4-Reference A).

Reference A



Reference B

Figure 5

6.2 Transport

6.2.1 Excessive shock and vibration should be prevented during transportation, and it should be handled with care.

6.2.2 It should not be mixed with dangerous goods during transportation.
6.2.3 Avoid the sun, rain and snow during transportation.

7 Environmental Protection

Component name	Toxic and harmful substances or elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chrome (Cr6+)	Polybrominated biphenyl (PBB)	Polybrominated diphenyl ether (PBDE)
Host machine	○	○	○	○	○	○
Handle	○	○	○	○	○	○
Working tip	○	○	○	○	○	○
Foot switch	○	○	○	○	○	○
Mechanical components, including screws, nuts, washers, etc.	○	○	○	○	○	○

○: It means that the content of the toxic and harmful substances in all homogeneous materials of the component is below the limit specified in SJ/T-11363-2006 Requirements for the Limit of Toxic and Hazardous Substances in Electronic Information Products.
×: It means that the content of the toxic and harmful substances in at least one homogeneous material of the component exceeds the limit requirements specified in SJ/T11363-2006.
(This product meets EU RoHS environmental protection requirements; At present, there is no mature technology in the world to replace or reduce the lead content in electronic ceramics, optical glass, steel and copper alloys.
According to the Administrative Measures for Restricting the Use of Hazardous Substances in Electrical and Electronic Products, the Administrative Regulations on the Recycling of Waste Electrical and Electronic Products and related standards, Please observe the safety and precautions of the product, and recycle or discard the product in an appropriate way according to local laws and regulations after use.

8 After-Sales Service

After the equipment is sold, if it can't work normally due to quality problems, our company will be responsible for the maintenance with the warranty card. Please refer to the warranty card for specific matters such as the warranty period. If you need to repair equipment parts, you can contact the manufacturer for information such as circuit diagram, component list, illustration, calibration and detailed rules.

9 Symbol instruction


Follow Instructions for Use

IPX0 Ordinary equipment


Used indoor only

~ Alternating current

Sterilizable up to the temperature specified

G Cleansing mode

P Periodontal pattern

E Root canal model


Keep dry

MIN Maximum power

MAX Maximum power

I/O Power-on

Disconnect the power supply

Atmospheric pressure for storage

Humidity limitation for storage


Type B applied part

IPX1 Drip-proof


Foot switch interface


Do not dispose of the product into the ordinary municipal waste or garbage system.


Protective earth (ground)


Date of manufacture


Recyclable packaging materials


Manufacturer


Fragile, handle with care


Safety tube

SN Serial number

600MAX Maximum filling level warning

Temperature limitation for storage

MD Medical Device

10 EMC-Declaration of conformity

A list of all cables are replaceable by the RESPONSIBLE ORGANIZATION:

Port No.	Name	Type*	Cable maximum lengths
1	Enclosure	N/E	—
2	AC Mains	AC power port	1.5m
3	Ultrasonic handpiece Cable	PATIENT COUPLING PORT	2m

Guidance and manufacturer's declaration - electromagnetic emissions		
The model UDS-T LED is intended for use in the electromagnetic environment specified below. The customer or the user of the model UDS-T LED should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The model UDS-T LED RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR11	Class B	The model UDS-T LED RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
Harmonic emissions lEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions lEC 61000-3-3	Complies	

Guidance & Declaration — electromagnetic immunity			
The model UDS-T LED is intended for use in the electromagnetic environment specified below. The customer or the user of the model UDS-T LED should assure that It is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) lEC 61000-4-2	± 8 kV contact ± 15 kV air	± 8 kV contact ± 15 kV air	Floors should be wood, concrete or ceramic tile If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	±2kV for power supply lines ±1kV for Input/ output lines	± 2kV for power supply lines ± 1kV for interconnecting cable	Mains power quality should be that of a typical commercial or hospital environment.
Surge lEC 61000-4-5	± 1 kV line to lie ± 2 kV line to earth	Line-to-line--- ± 0,5 kV, ± 1 kV Line-to-ground--- ± 0,5 kV, ± 1 kV, ± 2 kV	Mains power quality should be that of a typical commercial or hospital environment.

Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000--11	0 % U_T; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T; 1 cycle and 70 % U_T; 25/30 cycles Single phase: at 0° 0 % U_T; 250/300 cycle	0 % U_T; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0 % U_T; 1 cycle and 70 % U_T; 25/30 cycles Single phase: at 0° 0 % U_T; 250/300 cycle	Mains power quality should be that of a typical commercial or hospital environment If the user of the model require continued operation during power mains interruptions, it is recommended that the model be powered from an uninterruptible power adapter or a battery.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	30 A/m, 50 Hz and 60 Hz	30 A/m, 50 Hz and 60 Hz	Power frequency magnetic fields should be at levels charactenst1c of a typical location in a typical commercial or hospital environment.
NOTE U_T is the ac mains voltage prior to application of the test level.			

Guidance & Declaration - Electromagnetic immunity			
The model UDS-T LED is intended for use in the electromagnetic environment specified below. The customer or the user of the model UDS-T LED should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance

Conducted RF lEC 61000-4-6 Conducted RF lEC 61000-4-6 Radiated RF lEC 61000-4-3	3 V, 0.15 MHz – 80 MHz, 6 V in ISM bands between 0.15 MHz – 80 MHz, 80 % AM at 1 kHz 3 V/m and 10 V/m, 80 MHz – 2,7 GHz, 80 % AM at 1 kHz 385 MHz, pulse modulation 18 Hz, 27 V/m; 450 MHz, FM +/- 5 kHz deviation 1 kHz sine, 28 V/m; 710 MHz, 745 MHz, 780 MHz, pulse modulation 217 Hz, 9 V/m; 810 MHz, 870 MHz, 930 MHz, pulse modulation 18 Hz, 28 V/m; 1,720 MHz, 1,845 MHz, 1,970 MHz, pulse modulation 217 Hz, 28 V/m; 2,450 MHz, pulse modulation 217 Hz, 28 V/m; 5,240 MHz, 5,500 MHz, 5,785 MHz, pulse modulation 217 Hz, 9 V/m	3 V, 0.15 MHz – 80 MHz, 6 V in ISM bands between 0.15 MHz – 80 MHz, 80 % AM at 1 kHz 3 V/m and 10 V/m, 80 MHz – 2,7 GHz, 80 % AM at 1 kHz 385 MHz, pulse modulation 18 Hz, 27 V/m; 450 MHz, FM +/- 5 kHz deviation 1 kHz sine, 28 V/m; 710 MHz, 745 MHz, 780 MHz, pulse modulation 217 Hz, 9 V/m; 810 MHz, 870 MHz, 930 MHz, pulse modulation 18 Hz, 28 V/m; 1,720 MHz, 1,845 MHz, 1,970 MHz, pulse modulation 217 Hz, 28 V/m; 2,450 MHz, pulse modulation 217 Hz, 28 V/m; 5,240 MHz, 5,500 MHz, 5,785 MHz, pulse modulation 217 Hz, 9 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the models UDS-T LED, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d=1.2\times P^{1/2}$ $d=2\times P^{1/2}$ $d=1.2\times P^{1/2}$ 80 MHz to 800 MHz $d=2.3\times P^{1/2}$ 800 MHz to 2.7 GHz where P is the maximum output power rating of the transmitter In watts (W) according to the transmitter manufacturer and d Is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,a should be less than the compliance level in each frequency range.b Interference may occur In the vicinity of equipment marked with the following symbol: 
NOTE 1 At 80 MHz - 800 MHz, the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			

a Field strengths from fixed transmitters, such as base stations for radio (cellular/ cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the model is used exceeds the applicable RF compliance level above, the model should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the model.
b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.

Recommended separation distances between portable and mobile RF communications equipment and the model

The model is intended for use in electromagnetic environment in which radiated RF disturbances is controlled. The customer or the user of the model can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the model is recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150kHz to 80MHz $d=1.2\times P^{1/2}$	80MHz to 800MHz $d=1.2\times P^{1/2}$	800MHz to 2,7GHz $d=2.3\times P^{1/2}$
0,01	0.12	0.12	0.23
0,1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) accordable to the transmitter manufacture.
NOTE I At 80 MHz - 800 MHz, the separation distance for the higher frequency rane applies.
NOTE II These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

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 affected by elec

11 Statement

All rights of modifying the product are reserved to the manufacturer without further notice. The pictures are only for reference. The final interpretation rights belong to GUILIN WOODPECKER MEDICAL INSTRUMENT CO., LTD. The industrial design, inner structure, etc, have claimed for several patents by WOODPECKER, any copy or fake product must take legal responsibilities.

Scan and Login website
for more information

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Http://www.glwoodpecker.com
E-mail: woodpecker@glwoodpecker.com

Cut along the dashed line

Ultrasonic Scaler Warranty Card

Name of Customer		(Ⅰ) For Customer
Address Details		
Postal Code		
Tel		
Model		
Product No.		
Handpiece No.		
Purchase Date		
Contact Person		
Date	Maintenance Record	Repairer

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Fax: +86-773-5822450
E-mail: woodpecker@glwoodpecker.com, sales@glwoodpecker.com
Website: http://www.glwoodpecker.com

Distributor:

Seal

Ultrasonic Scaler Warranty Card

Name of Customer		(Ⅱ) For Distributor
Address Details		
Postal Code		
Tel		
Model		
Product No.		
Handpiece No.		
Purchase Date		
Contact Person		
Date	Maintenance Record	Repairer

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E-mail: woodpecker@glwoodpecker.com, sales@glwoodpecker.com
Website: http://www.glwoodpecker.com

Distributor:

Seal

Warranty Instruction

Ⅰ Period validity:

Two year's free repair for the whole unit (except for the easily-consumed parts) from the date of purchase. Lifetime maintenance.

Ⅱ Range of warranty:

Within the warranty period of validity, we are responsible for any troubles caused by quality problems or products technique and structure.

Ⅲ The following 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.

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Harm of fake products

WOODPECKER and DTE are two brands of Guilin woodpecker medical instrument company. Recently, growing fake ultrasonic scaler handpieces, tips curing lights are produced and sold on the market, which do harm to users' interest.On this issue, We Woodpecker will crack down fake products and provide safe and secure medical instrument products.

1. Harm of fake ultrasonic scaler handpieces.

1.1 Fake handpieces with poor-designed inner structure can lead to frequent power leakage, which may cause medical accidents.
1.2 Material used on fake handpieces don' t pass biocompatible test, which can easily lead to irritability and poisoning.
1.3 Fake handpieces have quality problems of overheating, non-vibration and cracking, which cause ultrasonic scalers out of order.
1.4 Fake handpieces can' t be compatible with ultrasonic scalers, thus leading to circuit burn out.

2. Harm of fake scaler tips.

2.1 Fake tips are low in toughness, poor in resistance and easy to crack, thus easily cause medical accident.
2.2 Fake tips' screw threads are roughly processed, which can cause handpiece' s screw loosing and cracking.
2.3 Material used on fake tips is inferior and easily rusting, which can cause infection of patient.
2.4 Fake tips have used problem of poor water-spraying, bad screw-thread fit and water leaking, which leads ultrasonic scalers work wrongly.

3. Harm of fake curing light.

3.1 Fake curing light' s batteries can cause self-ignite, even explosion with poor-quality material and no complete charging management.
3.2 Light intensity of fake curing light is not constant, when battery level goes down under 60%, it would lead to incomplete solidification of resin, causing secondary dental caries.