CE 0197

D8 LED ULTRASONIC SCALER

INSTRUCTION MANUAL

Please read this manual before operating

ZMN-SM-835 V1.0 - 20231225

Industrial design patent No.: CN 200830300434.9



www.glwoodpecker.com

GUILIN WOODPECKER MEDICAL INSTRUMENT CO., LTD.

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Contents

1 Product Introduction 1
2 Product Installation 2
3 Product Function and Use 4
4 Troubleshooting 8
5 Cleaning, Disinfection and Sterilization 10
6 Storage, Maintenance and Transportation.....14
7 Environmental Protection 15
8 After-Sales Service 15
9 Symbol instruction 16
10 European authorized representative.....16
11 EMC-Declaration of conformity.....16
12 Statement.....20

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 D8 LED has scaling, perio functions with the following features:

The features of this equipment are:

a) The Handpiece 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 Handpiece 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

D8 LED Type

1.3 Machine Configuration

Number	Name
1	Main unit
2	Handpiece
3	Foot switch
4	Water bottle
5	Tip
6	Power cord
7	wrench
8	Instruction manual

1.4 Structural Composition

It consists of Main unit, Handpiece, Tip, Water bottle, Foot switch and Power cord.

1.5 Intended use: It is used for the dental calculus elimination and root canal treatment.

1.5.1 Intended user: Professional dentists.

1.5.2 Intended patient: patients who need to calculus elimination and root canal treatment.

1.6 Contraindications

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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 Degree of protection against electric shock: Type B applied part
1.7.4 Applied part of the equipment: Handpiece within 80 mm of the tip and Metal tip.
1.7.5 Degree of protection against liquid ingress: Ordinary equipment (IPX0), and the foot switch is anti-dripping equipment (IPX1).
1.7.6 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: 1.8kg

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℃

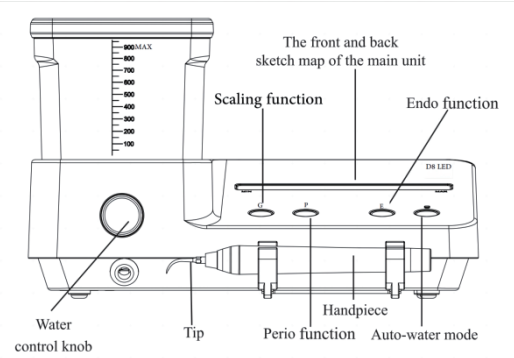
1.10 Expected Users

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

2 Product Installation

2.1 Front Schematic Diagram of Main Engine

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

Figure 1

2.2 Schematic Diagram of the Back of the Host

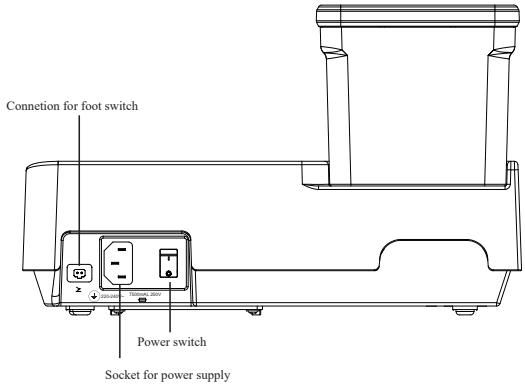


Figure 2

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

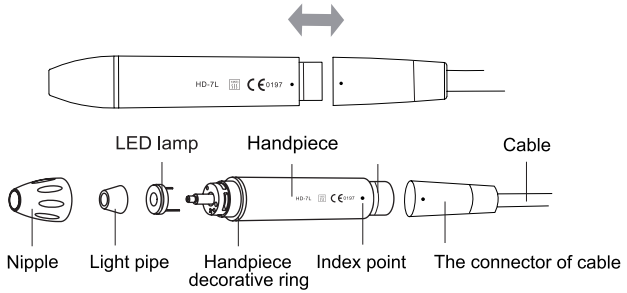


Figure 3

2.4 Schematic Diagram of Installation and Connection of Tip

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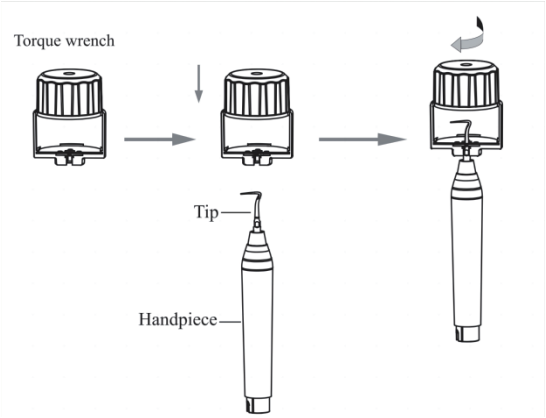


Figure 4

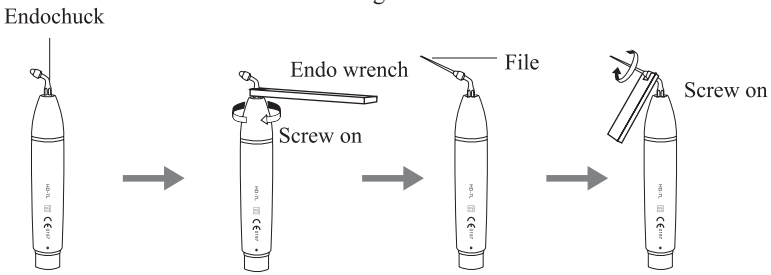


Figure 5

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 Handpiece and the tail plug correctly. Before installing the Handpiece, thoroughly dry the connecting end of the Handpiece 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

Auto-water mode: press the button, the key light on, the water control knob can adjust the size of the water normally, the machine will not produce water after turning off.

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

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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 Handpiece: The working body can be disinfected at high temperature and high pressure.
3.1.4 Tail insertion: Waterway and circuit connecting plug-in Handpiece 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 Handpiece 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 Tip reasonably and effectively, which ensures that the user can load and unload the Tip effectively in use and protects the user's hands from being scratched by the 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 Tip as shown in Figure 4;
b) Install the Tip: Hold the Handpiece tightly, and use the force-limiting wrench to rotate the Tip in the direction shown in Figure 4 until the Tip stops rotating, and then continue to rotate for one turn, so that the Tip is installed;
c) Unloading tip: Hold the Handpiece 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 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

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indicator light on the panel according to the actual situation.
3.3.4 Select a suitable Tip as required and tighten it on the Handpiece with a force-limiting wrench (see Figure 4).
3.3.5 When the foot switch is pressed, the Tip vibrates, and the LED lamp on the head of the Handpiece 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 Handpiece 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 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 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 Tip vibrates, and the water quantity adjusting knob is rotated to make water mist to cool the Handpiece and clean the tooth surface.
3.3.10 During clinical scaling, the tip of the 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 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 Handpiece and Tip; Remove the Handpiece and 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 periodontal therapy instrument 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 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 Tip to the Handpiece 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 periodontal therapy instrument 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

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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 Handpieces, Tips, wrenches and other accessories before each use.
3.7.3 Do not remove the Tip, root canal adapter or root canal file when stepping on the foot switch.
3.7.4 The Tip must be tightened and there must be water mist when working.
3.7.5 When the Tip is damaged or worn, it should be replaced with a new Tip.
3.7.6 Do not bend or grind the 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 Handpiece doesn't produce water or the water output is too small, it will cause the Handpiece and the 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 Handpiece.
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 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 Handpiece, and even causes irreparable damage to the dental cleaner. Please use the 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 Tips (see Schedule: 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

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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 Tip will stop, which will delay the treatment.
3.7.27 WARNING: To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth."
3.7.28 the device cannot be used in an oxygen rich environment.
3.7.29 Maximum temperature of the applied parts of the device under the most severe conditions of use: 46.5℃.

3.8 Log Out Safely

Before starting the machine: Install the product correctly according to the product installation steps, select the required 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 Tip vibrates, and the LED lamp on the head of the Handpiece lights up for lighting during clinical operation; When the foot switch is released, the vibration of the Tip stops and the LED light continues to shine for 10 seconds, then it goes out, and the Handpiece is put back into the Handpiece bracket; Disconnect the power supply, the indicator light goes out, unplug the 220-240V ~ 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 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.

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After electrifying and stepping on the foot switch, the Tip does not vibrate, but water column flows out.	Loose Tip	Tighten the Tip (see Figure 4)
	The connection plug between the tail wire and the circuit board is loose.	Contact the local distributor or our company.
	Handpiece failure	Pull out the Handpiece 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 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 Handpiece still comes out after the power is cut off.	There are impurities in the solenoid valve.	Contact the local distributor or our company.
Handpiece fever	The water adjustment knob is turned too small.	Turn up the water adjustment knob.
Vibration attenuation of Tip	Tip not tightened.	Tighten the Tip (see Figure 4)
	The Tip is shaken loose.	Tighten the Tip (see Figure 4)
	Damage of Tip [Note 2]	Replace the Tip
	The joint between the Handpiece and the tail plug is not dry.	Blow dry the joint between the Handpiece and the tail plug with hot air.
Water seepage at the joint of Handpiece and tail plug	Waterproof O-ring breakage	Replace waterproof O-ring
Root canal file does not vibrate.	The nut is not tightened.	Tighten the nut
	Root canal adapter damaged	Replace the root canal adapter
Root canal adapter makes noise	The nut is not tightened.	Tighten the nut
Handpiece 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.

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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 Handpiece “+” 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 Tip has been damaged when the following phenomena appear under the condition that the Tip has been tightened and water mist is sprayed:

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

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

5 Cleaning, Disinfection and Sterilization

The cleaning, disinfection and sterilization of handpiece, tip, and wrench (include torque wrench and Endo wrench) are as follow.

Unless otherwise stated, they will be hereinafter referred to as “products”.

Warnings

The use of strong detergent and disinfectant (alkaline pH>9 or acid pH <5) will reduce the life span of products. And in such cases, the manufacturer takes no responsibility.

Do not clean the handpiece with ultrasound cleaning machine.

This device shall not be exposed to high temperature above 138℃.

Processing limit

The products have been designed for a large number of sterilization cycles. The materials used in manufacture were selected accordingly.

However with every renewed preparation for use, thermal and chemical stresses will result in ageing of the products. The maximum number of sterilizations for handpiece is 1000 times. For tips, it is 1000 times. And for wrench, it is 1000 times.

5.1 Initial processing

5.1.1 Processing principles

It is only possible to carry out effective sterilization after the completion of effective cleaning and disinfection. Please ensure that, as part of your responsibility for the sterility of products during use, only sufficiently validated equipment and product-specific procedures are used for cleaning/disinfection and sterilization, and that the validated parameters are adhered to during every cycle.

Please also observe the applicable legal requirements in your country as well as the hygiene regulations of the hospital or clinic, especially with regard to the additional

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requirements for the inactivation of prions.

5.1.2 Post-operative treatment

The post-operative treatment must be carried out immediately, no later than 30 minutes after the completion of the operation. The steps are as follows:

1. Let the Ultrasonic scaler works for 20-30 seconds under irrigation mode to flush the handpiece and tip;
2. Remove the handpiece from the Ultrasonic scaler, and rinse away the dirt on the surface of product with pure water (or distilled water/ deionized water);
3. Dry the product with a clean, soft cloth and place it in a clean tray.

Notes

a) The water used here must be pure water, distilled water or deionized water.

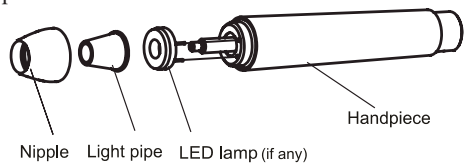
5.2 Preparation before cleaning

Steps

Tools: Torque wrench, tray, soft brush, clean and dry soft cloth.

1. Remove the tip from product with torque wrench provided by Guilin Woodpecker Medical Instrument Co., Ltd, and then put the tip and wrench into a clean tray.
2. Unscrew the nipple of product counterclockwise, remove the sealing ring, light pipe, and LED lamp(if any), and put them in the tray.
3. Use a clean soft brush to carefully brush the joints between product and the connector of cable, front thread, horn, nipple, seal ring, light pipe and LED lamp(if any) until the dirt on surface is not visible. Then use soft cloth to dry the product and accessories and put them into a clean tray. The cleaning agent can be pure water, distilled water or deionized water.

Disassembling steps



5.3 Cleaning

The cleaning should be performed no later than 24 hours after the operation.

The cleaning can be divided into automated cleaning and manual cleaning. Automated cleaning is preferred if conditions permit.

5.3.1 Automated cleaning

• The cleaner is proved to be valid by CE certification in accordance with EN ISO 15883.
• There should be a flushing connector connected to the inner cavity of the product.
• The cleaning procedure is suitable for the product, and the irrigating period is sufficient.
• Do not clean the handpiece with ultrasound.

It is recommended to use a washer-disinfector in accordance with EN ISO 15883.

For the specific procedure, please refer to the automated disinfection section in the next section “Disinfection”.

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Notes

a) The cleaning agent does not have to be pure water. It can be distilled water, deionized water or multi-enzyme. But please ensure that the selected cleaning agent is compatible with the product.

b) In washing stage, the water temperature should not exceed 45 °C, otherwise the protein will solidify and it would be difficult to remove.

c) After cleaning, the chemical residue should be less than 10mg / L.

5.4 Disinfection

Disinfection must be performed no later than 2 hours after the cleaning phase. Automated disinfection is preferred if conditions permit.

5.4.1 Automated disinfection-Washer-disinfector

• The washer-disinfector is proved to be valid by CE certification in accordance with EN ISO 15883.

• Use high temperature disinfection function. The temperature does not exceed 134 °C, and the disinfection under the temperature cannot exceed 20 minutes.

• The disinfection cycle is in accordance with the disinfection cycle in EN ISO 15883.

Cleaning and disinfecting steps by using Washer-disinfector

1. Carefully place the product into the disinfection basket. Fixation of product is needed only when the product is removable in the device. The products are not allowed to contact each other.

2. Use a suitable rinsing adaptor, and connect the internal water lines to the rinsing connection of the washer-disinfector.

3. Start the program.

4. After the program is finished, remove the product from the washerdisinfector, inspect (refer to section “Inspection and Maintenance”) and packaging (refer to chapter “Packaging”). Dry the product repeatedly if necessary (refer to section “Drying”).

Notes

a) Before use, you must carefully read the operating instructions provided by the equipment manufacturer to familiarize yourself with the disinfection process and precautions.

b) With this equipment, cleaning, disinfection and drying will be carried out together.

c) Cleaning: (c1) The cleaning procedure should be suitable for the product to be treated. The flushing period should be sufficient (5-10 minutes). Pre-wash for 3 minutes, wash for another 5 minutes, and rinse it for twice with each rinse lasting for 1 minute. (c2) In the washing stage, the water temperature should not exceed 45 °C, otherwise the protein will solidify and it is difficult to remove. (c3) The solution used can be pure water, distilled water, deionized water or multi-enzyme solution, etc., and only freshly prepared solutions can be used. (c4) During the use of cleaner, the concentration and time provided by manufacturer shall be obeyed. The used cleaner is neodisher MediZym(Dr. Weigert).

d) Disinfection: (d1) Direct use after disinfection: temperature ≥ 90 °C, time ≥ 5 min or A0 ≥ 3000.

D8 LED 超声洁牙机英文说明书1.0版 无LOGO 231225 [14.02.01.0093].indd 12 2024/1/6 11:29:22

(d2) Sterilize it after disinfection and use: temperature ≥ 90 °C, time ≥ 1 min or A0 ≥ 600.
(d3) For the disinfection here, the temperature is 93 °C, the time is 2.5 min, and A0>3000.
e) Only distilled or deionized water with a small amount of microorganisms (<10 cfu/ml) can be used for all rinsing steps.
(For example, pure water that is in accordance with the European Pharmacopoeia or the United States Pharmacopoeia).
f) After cleaning, the chemical residue should be less than 10mg / L.
g) The air used for drying must be filtered by HEPA.
h) Regularly repair and inspect the disinfector.

5.5 Drying

If your cleaning and disinfection process does not have an automatic drying function, dry it after cleaning and disinfection.
Methods
1. Spread a clean white paper (white cloth) on the flat table, point the product against the white paper (white cloth), and then dry the product with filtered dry compressed air (maximum pressure 3 bar). Until no liquid is sprayed onto the white paper (white cloth), the product drying is completed.
2. It can also be dried directly in a medical drying cabinet (or oven).
The recommended drying temperature is 80℃~120℃ and the time should be 15~40 minutes.
Notes
a) The drying of product must be performed in a clean place.
b) The drying temperature should not exceed 138 °C;
c) The equipment used should be inspected and maintained regularly.

5.6 Inspection and maintenance

In this chapter, we only check the appearance of the product. After inspection, if there is no problem, the handpiece should be immediately reassembled, installing the sealing ring, LED, light guide, and cone head in sequence to the handpiece, and then tighten the cone head clockwise.
5.6.1 Check the product. If there is still visible stain on the product after cleaning/disinfection, the entire cleaning/disinfection process must be repeated.
5.6.2 Check the product. If it is obviously damaged, smashed, detached, corroded or bent, it must be scrapped and not allowed to continue to be used.
5.6.3 Check the product. If the accessories are found to be damaged, please replace it before use. And the new accessories for replacement must be cleaned, disinfected and dried.
5.6.4 If the service time (number of times) of the product reaches the specified service life (number of times), please replace it in time.

5.7 Packaging

Install the disinfected and dried product and quickly package it in a medical sterilization bag (or special holder, sterile box).

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Notes
a) The package used conforms to ISO 11607;
b) It can withstand high temperature of 138 °C and has sufficient steam permeability;
c) The packaging environment and related tools must be cleaned regularly to ensure cleanliness and prevent the introduction of contaminants;
d) Avoid contact with parts of different metals when packaging.

5.8 Sterilization

Use only the following steam sterilization procedures (fractional prevacuum procedure*) for sterilization, and other sterilization procedures are prohibited:
Repeat the wipe for at least 3 times.
• Before each use, please let the Ultrasonic scaler work under irrigation mode for 20-30s, then install the handpiece.
• After each use, please let the Ultrasonic scaler work under irrigation mode for 20-30s, then remove the handpiece.
• After each use, wipe the surface of the connector of cable and cable with a soft cloth soaked in clean water (distilled or deionized water) or a clean disposable wipe. Repeat the wipe for at least 3 times.

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 Handpieced 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 6-Reference A) 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 6-Reference A).
(2) Pull out the fuse compartment (see Figure 6-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 6-Reference A).

D8 LED 超声洁牙机英文说明书1.0版 无LOGO 231225 [14.02.01.0093].indd 14 2024/1/6 11:29:22



Reference A



Reference B

Figure 6

6.2 Transport

6.2.1 Excessive shock and vibration should be prevented during transportation, and it should be Handpieced 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	○	○	○	○	○	○
Handpiece	○	○	○	○	○	○
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.

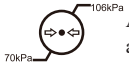
8 After-Sales Service

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

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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		Type B applied part
IPX0	Ordinary equipment	IPX1	Drip-proof
	Used indoor only		Foot switch interface
~	Alternating current		Do not dispose of the product into the ordinary municipal waste or garbage system.
	Sterilizable up to the temperature specified		Protective earth (ground)
G	Cleansing mode		Date of manufacture
P	Periodontal pattern		Recyclable packaging materials
E	Root canal mode		Manufacturer
	Keep dry		Fragile, Handpiece with care
MIN	Maximum power		Safety tube
MAX	Maximum power	SN	Serial number
Max	Maximum filling level warning	I/O	Power-on Disconnect the power supply
	Atmospheric pressure for storage		Temperature limitation for storage
	Humidity limitation for storage		Auto-water mode
MD	Medical Device	CE 0197	CE marked product
EC REP	Authorised Representative in the EUROPEAN COMMUNITY		

10 European authorized representative

EC REP MedNet EC-REP C IIb GmbH
Borkstrasse 10 · 48163 Muenster · Germany

11 EMC-Declaration of conformity

D8 LED 超声洁牙机英文说明书1.0版 无LOGO 231225 [14.02.01.0093].indd 16 2024/1/6 11:29:22

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 models UDS-T LED and D8 LED are intended for use in the electromagnetic environment specif ied below. The customer or the user of the models UDS-T LED and D8 LED should assure that they are used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The models UDS-T LED and D8 LED use RF energy only for their internal function. Therefore, these RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR11	Class B	The models UDS-T LED and D8 LED are suitable for used for use in all establishments, including domestic establishments and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions lEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions lEC 61000-3-3	Complies	

Guidance & Declaration — electromagnetic immunity			
The models UDS-T LED and D8 LED are intended for use in the electromagnetic environment specif ied below. The customer or the user of the models UDS-T LED and D8 LED should assure that they are 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 ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±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	±2 kV for power supply lines ±1 kV for Input/ output lines	±2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge lEC 61000-4-5	±0.5 kV, ±1 kV line to line ±0.5 kV, ±1 kV, ±2 kV line to ground	±0.5 kV, ±1 kV line to line ±0.5 kV, ±1 kV, ±2 kV line to ground	Mains power quality should be that of a typical commercial or hospital environment.

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Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % U_T (>95% dip in U_T.) for 0.5 cycle <5 % U_T (>95% dip in U_T) for 1 cycle 70% U_T (30% dip in U_T) for 25/30 cycles <5% U_T (>95 % dip in U_T) for 5 sec	<5 % U_T (>95% dip in U_T.) for 0.5 cycle <5 % U_T (>95% dip in U_T) for 1 cycle 70% U_T (30% dip in U_T) for 25/30 cycles <5% U_T (>95 % dip in U_T) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the models UDS-T LED and D8 LED require continued operation during power mains interruptions, it is recommended that the models UDS-T LED and D8 LED be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field lEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE U_T is the a.c. mains voltage prior to application of the test level.			

Guidance & Declaration - Electromagnetic immunity			
The models UDS-T LED and D8 LED is intended for use in the electromagnetic environment specif ied below. The customer or the user of that the models UDS-T LED and D8 LED should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance

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Conducted RF lEC 61000-4-6	3 Vrms 150 kHz to 80 MHz 6 Vrms in ISM and amateur radio bands	3 Vrms 150 kHz to 80 MHz 6 Vrms in ISM bands	Portable and mobile RF communications equipment should be used no closer to any part of the models UDS-T LED and D8 LED, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. If higher IMMUNITY TEST LEVELS than those specified in Table 9 are used, the minimum separation distance may be lowered. Minimum separation distances for higher IMMUNITY TEST LEVELS shall be calculated using the following equation: $E = [6/d] \times P^{1/2}$ Where P is the maximum power in W, d is the minimum separation distance in m, and E is the IMMUNITY TEST LEVEL in V/m.
Radiated RF lEC 61000-4-3	3 V/m 80 MHz to 2.7 GHz	3 V/m 80 MHz to 2.7 GHz	
	385MHz-5785MHz Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communication equipment (Refer to table 9 of IEC 60601-1-2:2014+A1:2020)	385MHz-5785MHz Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communication equipment (Refer to table 9 IEC 60601-1-2:2014+A1:2020)	

NOTE 1 At 80 MHz and 800 MHz. the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is af fected 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 $d=2.3\times P^{1/2}$

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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 effected by electromagnetic interference Avoid using the device in high electromagnetic environment.

12 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 WOO- DPECKER, any copy or fake product must take legal responsibilities.

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Website: http://www.glwoodpecker.com
EC REP MedNet EC-REP C IIb GmbH
Borkstrasse 10·48163 Muenster·Germany

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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After-sales Service Dept.: 0773-5827898
E-mail: woodpecker4@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: woodpecker4@glwoodpecker.com
Website: http://www.glwoodpecker.com

Distributor:

Seal

Cut along the dashed line

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

and 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.

