



**WOODPECKER**

**UDS-N3 BUILT-IN ULTRASONIC PIEZO SCALER**

**INSTRUCTION MANUAL**

Product conforms with the standard of EN ISO 9001:2000,  
EN ISO 13485:2003, IEC 60601-1, IEC 60601-1-2.

**GUILIN WOODPECKER MEDICAL INSTRUMENT CO., LTD.**

**Registration Add: Information Industrial Park, National High-Tech  
Zone. Guilin, Guangxi, P. R. China 541004**

**Manufactory Add: Information Industrial Park, National High-Tech  
Zone. Guilin, Guangxi, P. R. China 541004**

**Tel : +86-773-5855350 (English service for 24 hours)**

**+86-773- 2125222**

**Fax: +86-773-5855350**

**E-mail: woodpecker@mailgl.cn sales@glwoodpecker.cn**

**http://www.glwoodpecker.com**

All our products including their shape and inner structure have applied for Patents. All rights reserved.  
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.

# Catalogue

<b>1. The installation and components of equipment</b>	<b>1</b>
1.1 Instruction	1
1.2 Components	1
1.3 The main technical specifications	1
1.4 Instruction of installing the equipment	2
<b>2. Product function and usage</b>	<b>4</b>
2.1 Working principle	4
2.2 Scaling function	5
2.3 Endo function	7
<b>3. Sterilization and maintenance</b>	<b>8</b>
3.1 Sterilization of detachable handpiece	8
3.2 Sterilization of scaling tips and endochuck	9
3.3 Sterilization of torque wrench and endo wrench	9
3.4 Cleaning of tips, endochuck, torque wrench and endo wrench	10
3.5 Trouble analysis	10
<b>4. Precaution</b>	<b>12</b>
4.1 Notice when using equipment	12
4.2 Contraindication	13
4.3 Storage and maintenance	13
4.4 Transportation	13
4.5 Manufacturer's right	14
<b>5. After service</b>	<b>14</b>
<b>6. Symbol instruction</b>	<b>14</b>
<b>7. Environmental protection</b>	<b>15</b>

# **1. The installation and components of equipment**

## **1.1 Instruction**

The“Woodpecker”built-in ultrasonic piezo scaler UDS-N3 made in Guilin Woodpecker Medical Instrument Co., Ltd. are used along with dental unit for teeth cleaning.They are also indispensable equipments for tooth disease prevention and treatment.

## **1.2 Components**

1.2.1 The Components of the machine are listed in the packing list.

1.2.2 Components and scope of application

- a) Ultrasonic piezo scaler is composed of electrocircuit, water way and ultrasonic transducer.
- b) Ultrasonic piezo scaler this model is used for the dental calculus elimination and root canal treatment.

## **1.3 The main technical specifications**

1.3.1 Technical specifications of ultrasonic scaler

- a) Power Input: With transformer 220V to 230V~ 50Hz/60Hz 150mA  
Without transformer 24V~ 50Hz/60Hz 1.3A
- b) Output primary tip Vibration excursion:  $\leq 100 \mu m$
- c) Output half-excursion force:  $< 2N$
- d) Output tip Vibration frequency:  $28kHz \pm 3kHz$
- e) Output power: 3W to 20W
- f) Water pressure: 0.01MPa to 0.5MPa
- g) Weight of main unit: 0.2kg
- h) Weight of transformer: 1 kg (optional)
- i) Operating mode: Continuous operation
- j) Type of protection against electric shock: Class II equipment

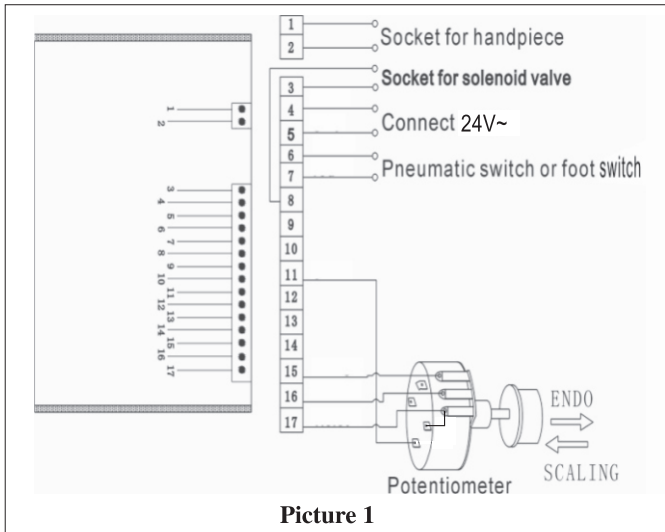
- k) Degree of protection against electric shock: Type B applied part
- l) Degree of protection against harmful ingress of water: Ordinary equipment (IPX0)
- m) Degree of safety of application in the presence of a Flammable Anaesthetic Mixture with air or with Oxygen or Nitrous Oxide: Equipment not suitable for being used in the presence of a flammable anaesthetic mixture with air or with oxygen or nitrous oxide

1.3.2 Working condition

- a) Environment temperature: 5°C to 40°C.
- b) Relative humidity: ≤80%.
- c) Atmospheric pressure: 70 kPa to 106 kPa

**1.4 Instruction of installing the equipment**

The main components of this equipment and installation are showed as picture 1.



**Picture 1**

**Notice:**

- (1) Please connect power supply and pneumatic switch (or foot switch) showed as picture 1.**
- (2) The NO.5 and NO.4 lead should be connected with 24V~, and this circuit isn't allowed to act as switch circuit.**
- (3) The NO.7 and NO.6 lead can be connected with pneumatic switch (or foot switch) directly, and this circuit isn't allowed to do short circuit.**
- (4) When press the main pole of the potentiometer down, the function of the equipment is scaling; when pull it out, the function is endo.**
- (5) The followings should be noticed during installation.**
  - ① Pneumatic power switch, pneumatic penstock and pneumatic foot switch are equipped by manufacturers of dental unit or the end-users.**
  - ② The manufacturers of dental unit, dealers and end-users need to dig holes in salver of dental unit to fix potentiometer and fetch out the handpiece cable silica gel pipe.**
  - ③ Keep enough space for dispersing heat of ultrasonic generator.**
  - ④ Built-in ultrasonic scaler without transformer occupies a small space and works with voltage of 24V~, power  $\geq$  20W.**
  - ⑤ Before turning on the scaler, turn the potentiometer knob to the minimum and the water control switch to the maximum.**

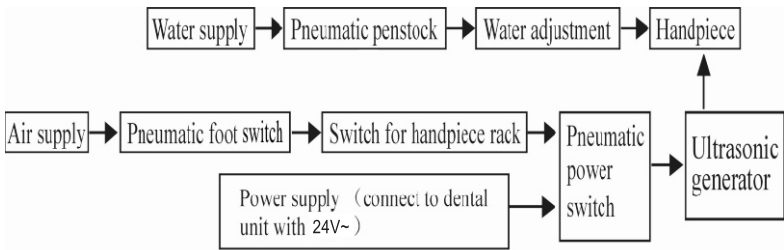
- ⑥ **The frequency of ultrasonic piezo scaler is extremely high. Under normal working state of the scaling tip, a light touch and a certain to-and-fro motion will eliminate the tartar without obvious heat. Overexertion and longtime lingering are forbidden.**

## **2. Product function and usage**

### **2.1 Working principle**

2.1.1 Summarization: Built-in ultrasonic scaler consists of ultrasonic generator(circuit),cable,handpiece (transducer), scaling tip, pneumatic switch (the power switch used after commutating and filtering pneumatic penstock and circuit, controlled by pneumatic foot switch of dental unit and switch of handpiece rack of ultrasonic scaler.) and switch for handpiece rack (it controls the air opening into pneumatic penstock and pneumatic power switch. Air supply is cut when handpiece inserts the rack and air supply is on when handpiece is out).

2.1.2 Chart of working principle:

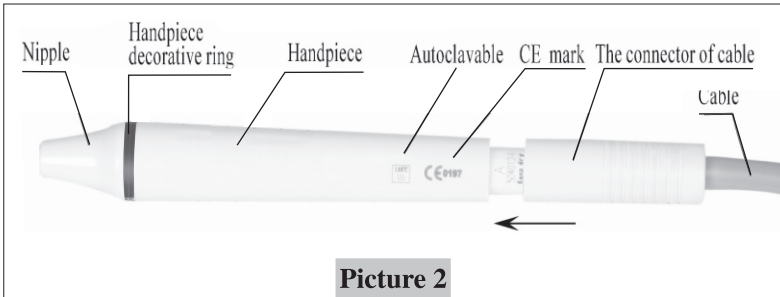


Pull the handpiece out from the rack, air supply switch is on.  
Step on the foot switch, pneumatic power switch, pneumatic

penstock, ultrasonic generator, detachable handpiece and scaling tip start to work at the same time and water supply is on .

## 2.2 Scaling function

### 2.2.1 Instruction for main components of detachable handpiece



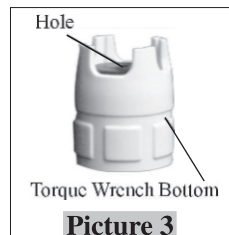
**Picture 2**

(showed in picture 2):

- a) **Nipple:** The nipple can be removed. You can screw out the nipple and clean the pole with alcohol termly.
- b) **Handpiece decorative ring:** The seal can be removed and cleaned with alcohol termly.
- c) **Handpiece:** The main part of the whole handpiece, can be autoclaved under the high temperature and pressure.
- d) **Symbol:** Autoclaved( $135^{\circ}\text{C}$ ,  $0.22\text{MPa}$ ).
- e) **The connector of the cable:** Connect the handpiece with the water source and power supply of the main unit.

### 2.2.2 Instruction for using torque wrench (showed in picture 3)

- a) The torque wrench's structure is designed in special way which can control the strength of the scaling tip installation properly and correctly. It



**Picture 3**

also can guarantee the operator screw or unscrew the scaling tip effectively and keep their hands away from being scratched.

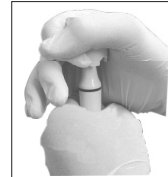
**b) Operation**

- ① Take the scaling tip into the torque wrench; operate as showed in picture 4.



**Picture 4**

- ② Install and uninstall the scaling tip as showed in picture 5
  - i . Installation: Hold the handpiece turn the tip toward clockwise direction with the torque wrench. Turn one more circles when the tip stops, then the tip is installed.
  - ii . Uninstallation: Hold the handpiece, turn the wrench toward anti-clockwise direction.



**Picture 5**

**2.2.3 Cutting sleeve use instruction (showed as picture 6)**

- a) Put the cutting sleeve through the water pipe, keep it 10mm to 20mm away from the entrance.
- b) Put the water pipe in the middle of the water exit connector (about 3mm), then push the cutting sleeve forward to the front edge of the water exit connector.
- c) Pinch the cutting sleeve and the water pipe with your fingers, push them forward at the same time until they are wrapped into the water exit connector fully. Then the cutting sleeve is in the middle of the water exit connector.

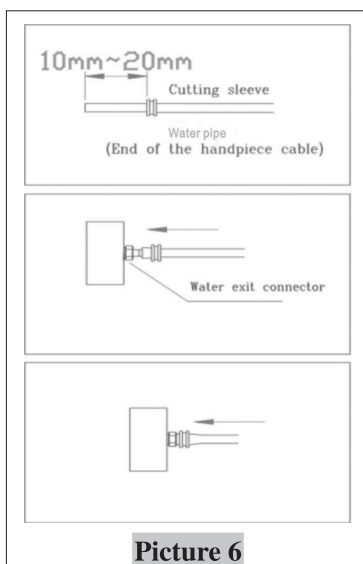


**Notice: Cut off the forepart of the water line about 6mm before repeating the above operation.**

## 2.3 Endo function

### 2.3.1 Usage process

- a) Fix endochuck to handpiece by endo wrench;
- b) Unscrew the screw cap on the endochuck;
- c) Put the ultrasonic file into the hole in the front of endochuck;
- d) Screw the screw cap with endo wrench to tight up the ultrasonic file;



- e) Pull out the main pole of the power potentiometer to switch to endo function (when push it in, switch to scaling function), then turn the potentiometer toward anti-clockwise direction to the minimum grade.
- f) Step on the foot switch to start endo treatment.
- g) Use for Endo function when step on foot switch. During the treatment, turn up the power gradually according to the needs.

### 2.3.2 Notice

- a) **When fixing endo chuck, it must be screwed down;**
- b) **The screw cap on the endo chuck must be screwed down;**
- c) **Don't press it too hard when the ultrasonic file is in root canal;**
- d) **Don't step on the foot switch until the ultrasonic file is in the root canal.**

## **3. Sterilization and maintenance**

### **3.1 Sterilization of detachable handpiece**

3.1.1 Autoclaved to the high temperature/pressure:

- a) 121°C/1bar (0.1MPa)
- b) 135°C/2.2bar (0.22MPa)

3.1.2 Pull out the handpiece and unscrew the scaling tip and endochuck after each operation

3.1.3 Pack the handpiece with sterile gauze or sterile bag before sterilization.

3.1.4 Reuse handpiece after it cools naturally in case of burning hand.

### **3.1.5 Notice**

- a) **Clear the cleaning liquid in the handpiece with compressed air before sterilization.**
- b) **Be sure that the scaling tip has been unscrewed from the handpiece and it cannot be sterilized with others.**
- c) **Please notice whether the outer of the handpiece is damaged during the treatment and sterilization. Don't smear any protective oil on the surface of handpiece.**

d) There are two waterproof “O” rings at the end of handpiece. Please lubricate them with dental lube frequently, as sterilization and repeated pulling and inserting will reduce their life-span .Change a new one once it is damaged or worn excessively.

e) The following sterilization methods are forbidden:

- ① Put handpiece into any liquid for boiling.
- ② Dip handpiece in disinfectors such as iodine, alcohol and glutaraldehyde.
- ③ Put handpiece into oven or microwave oven for baking.

### **3.2 Sterilization of scaling tips and endochuck**

All the scaling tips and endochuck can be sterilized with alcohol cotton or disinfected cloth. It's also ok to sterilize them by ultrasonic cleaner.

### **3.3 Sterilization of torque wrench and endo wrench**

3.3.1 The torque wrench and endo wrench can be sterilized by neutral non-corrosive disinfectant for cleaning and sterilizing, or be sterilized in high temperature and pressure.

3.3.2 The following sterilization ways for torque wrench are forbidden:

- a) Braise in liquor;
- b) Dip in iodine, alcohol or glutaraldehyde;
- c) Torrefy in oven or microwave oven.

**Notice: We are not responsible for any damage caused in the above items.**

### 3.4 Cleaning of tips, endocuck, torque wrench and endo wrench

The scaling tip, endochuck, torque wrench and endo wrench can be cleaned by ultrasonic cleaner.

### 3.5 Trouble analysis

Fault	Possible causes	Solutions
The scaling tip doesn't vibrate when stepping on the foot switch	The plug is in loose or wrong contact	Connect as picture 1 showed
	Handpiece and the connector of cable connect irrelevantly	Pull out handpiece and insert it again
	Scaling tip is in loose	Screw down with wrench
	There is water between handpiece and the connector of cable	Dry it with hot wind
	There is something wrong with detachable handpiece	Send it to our company to repair
The scaling tip vibrates, but there is no water flowing out	Water supply of dental unit is off	Examine the water supply of dental unit
	There is no water coming out from the cable	Clean the water pipe of cable multi-function syringe

	There is no water coming out from the handpiece	Clean the water pipe of handpiece with multi-function syringe
The handpiece generates heat	The amount of spouting water is too little	Turn the water control switch to a higher grade
The amount of spouting water is too little	The water pipe of dental unit is jammed	Clean the water pipe
	The water pipe of cable is jammed	Clean water pipe of cable with multi-function syringe
	The water pipe of handpiece is jammed	Clean water pipe of handpiece with multi-function syringe
	The water pressure is not high enough	Enhance the water pressure
The vibration of the tip becomes weak	The tip hasn't been screwed down	Screw down the scaling tip
	The tip vibrate loose	Screw down the scaling tip
	The tip is damaged	Change a new one
There is water seeping from the coupling between the handpiece and cable	The waterproof "o" ring was damaged	Change a new "o" ring
The potentiometer is failure	The potentiometer is damaged	Change a new one
The U-files doesn't vibrate	The screw hasn't been screwed tightly	Screw it tightly

	Endochuck is damaged	Change a new endochuck
There is noise coming from the endochuck	The screw cap hasn't been screwed tightly	Screw it tightly

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

## **4. Precaution**

### **4.1 Notice when using equipment**

- 4.1.1 Keep the scaler clean before and after operation.
- 4.1.2 The handpiece, scaling tip, torque wrench, endo wrench and endochuck must be sterilized before each treatment.
- 4.1.3 Don't screw or unscrew the scaling tip when stepping on the foot switch.
- 4.1.4 The scaling tip and endochuck must be fastened and there must be fine spray or drip coming from the tip when operating.
- 4.1.5 Change a new one when the tip is damaged or worn excessively. Don't twist or rub the tip.
- 4.1.6 Don't use impure water source and be sure not use normal brine instead of pure water source.
- 4.1.7 Ensure the connector of handpiece and the socket of the cable dry before installing the handpiece.
- 4.1.8 Don't pull the cable forcibly in case of the handpiece falling off from the cable.
- 4.1.9 The internal screw thread of the scaling tips produced by some other manufacturers, maybe coarse, rusty and collapsed. This will damage the external screw thread of the handpiece irretrievably.

4.1.10 Before connecting the built-in ultrasonic scaler without transformer to power supply, please check the output voltage is 24V~, in case of connecting to wrong power supply and damaging the unit.

4.1.11 Manufacturers of dental unit or end-users aren't allowed to disconnect the built-in ultrasonic scaler, in case of affecting the function of scaler. If you have any special request, please contact with us.

## **4.2 Contraindication**

4.2.1 The hemophilia patient is forbidden to use this equipment.

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

4.2.3 The heart disease patient, pregnant woman and children should be cautious to use the equipment.

## **4.3 Storage and maintenance**

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

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

4.3.3 This equipment should be stored in a room where the relative humidity is  $\leq 80\%$  , atmospheric pressure is 50 kPa to 106kPa, and the temperature is  $-10^{\circ}\text{C} \sim +50^{\circ}\text{C}$ .

4.3.4 Please turn off the electrical source if not use it; If not use for a long time, please make the machine get through to the power and water once per month for five minutes.

## **4.4 Transportation**

4.4.1 Excessive impact and shake should be prevented in

transportation. Lay it carefully and lightly and don't invert it.

4.4.2 Don't put it together with dangerous goods during transportation.

4.4.3 Avoid solarization or get wet in rain and snow during transportation.

#### 4.5 Manufacturer's right

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

### 5. After service

Two years' warranty for the main unit, one year's warranty for the other spare parts(except the expendable parts)from the date of purchase. The repair of the equipment should be carried out by our professional technician.We are not responsible for any irretrievable damage caused by the non-professional person.

### 6. Symbol instruction



Trademark



CE marked product



Can be autoclaved



FDA marked product



Type B applied part



Caution! Consult accompany documents



Alternating current



Class II equipment

**IPX0**

Ordinary equipment

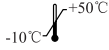


Used only indoor





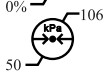
Appliance compliance WEEE directive



Temperature limitation



Humidity limitation



Atmospheric pressure for storage

ISO 9001:2000 Certified by international quality control system of ISO

ISO 13485:2003 Certified by medical instrument manufacturer quality control system of ISO

## 7. Environmental Protection

- ☞ There are no harm factors in our product. You can deal with it based on the local law.