



# UDS-J ULTRASONIC PIEZO SCALER INSTRUCTION MANUAL

Certificated     
EN ISO 9001:2000  
EN ISO 13485:2003



(Please read this manual before operating)

The industrial design, inner structure, etc, have claimed for several patents by WOODPECKER, any copy or fake product must take legal responsibilities.

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

# Catalogue

1. Components .....	01
2. Product performance and structural composition .....	01
3. Scope of application .....	01
4. The main technical specifications .....	01
5. Working condition .....	02
6. Components instruction .....	02
7. Installation and adjustment .....	02
8. Operation methods and function instruction .....	03
9. Sterilization .....	04
10. Notice .....	04
11. Contraindication .....	04
12. Storage and maintenance .....	05
13. Troubleshooting and notes .....	05
14. After service .....	08
15. Transportation .....	09
16. Symbol instruction .....	09
17. Environmental protection .....	10
18. Manufacturer's right .....	10
19. For technical data, please contact .....	10
20. EMC - Declaration of conformity .....	11

WOODPECKER UDS-J ultrasonic piezo scaler made by Guilin Woodpecker Medical Instrument Co., Ltd. is used for tooth cleaning. It's also an indispensable equipment for tooth disease prevention and treatment.

## 1. Components

The components of the machine are listed in the packing list.

## 2. Product performance and structural composition

Ultrasonic piezo scaler is composed of electrocircuit, water way and ultrasonic transducer.

## 3. Scope of application

WOODPECKER ultrasonic scaler is used for the dental calculus elimination.

## 4. The main technical specifications

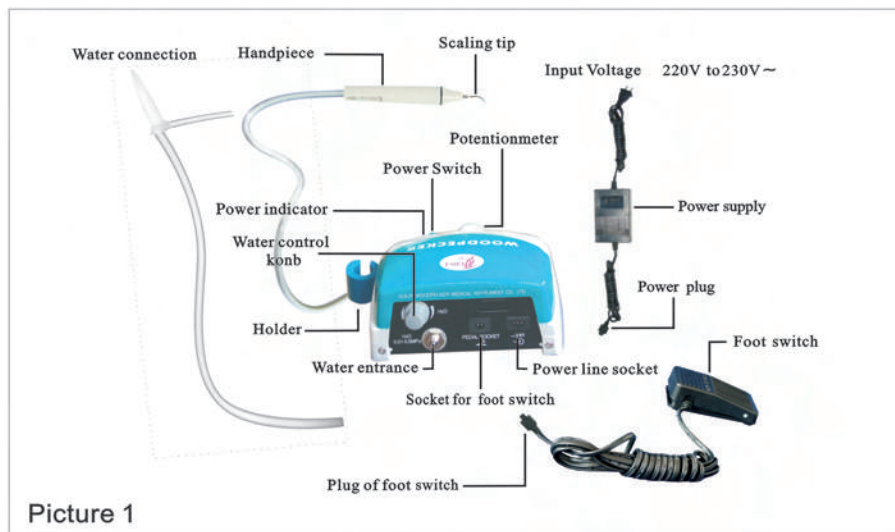
Power source input:	220V to 230V~	50Hz/60Hz	150mA
Main unit input:	24V~	50Hz/60Hz	1.3A
Output power:	3W to 20W	Output tip Vibration frequency:	30kHz±3kHz
Output half-excursion force:	<2N		
Output primary tip vibration excursion:	≤100 μ m		
Fuse rating:	F1:250V T0.5AL; F2:250V T1.6AL		
Water pressure:	0.01MPa to 0.5MPa		
Main unit weight:	0.8 kg	Power supply weight:	1.2 kg
Operating mode:	Continuous operation		
Type of protection against electric shock:	class II equipment		
Degree of protection against electric shock:	Type B applied part		
Degree of protection against harmful ingress of water:	Ordinary equipment(IPX0), the foot switch is drip-proof equipment(IPX1)		
Degree of safety of application in the presence of a Flammable Anaesthetic Mixture with air, Oxygen or Nitrous Oxide:	Equipment not suitable for being used in the presence of a flammable anaesthetic mixture with air, oxygen or nitrous oxide.		

## 5. Working condition

1. Environment temperature: 5°C to 40°C.
2. Relative humidity: ≤80%.
3. Atmospheric pressure: 70kPa to 106kPa

## 6. Components Instruction

The components of the equipment are as showed in picture 1:



Picture 1

## 7. Installation and adjustment

1. Open the packing box, make sure that all the parts and accessories are complete according to the packing list.
2. Take the main unit out of the box and put it on a stable plane, keep the main unit straight to the operator.
3. Turn the water control knob towards clockwise direction to the max and turn the vibrating intensity control knob towards clockwise direction to a suitable position. 【note 2】
4. Insert the plug of the foot switch to its socket.
5. Connect one end of the water pipe to the water entrance, and the other end to the clean water source.
6. Connect the output end of power supply with main unit and get through to the power.

7. Press the power switch of the main unit, then the power indicator shines.

## 8. Operation methods and function instruction

1. Direct the pit of the power control knob at the "1" dial on the corer before turning on the scaler, make the main unit straight to the operator and turn the water control knob towards clockwise direction about three circles to the maximum when the water control knob at the minimum.
2. The normal frequency is  $30\text{kHz} \pm 3\text{kHz}$ . With the high frequency and under normal working state, a light touch and a certain to-and-fro motion will eliminate the tartar without obvious heating. Overexertion and overstay are forbidden.
3. The assembly and disassembly of the scaling tips is as showed in picture 2.
4. The choice and operation methods of tips is shown in detail in attached materials with the equipment.
5. Vibrating intensity: Adjust the vibrating intensity as you need, generally turn the knob to the middle grade. According to patient's different sensitivity and the rigidity of the gingival tartar, to adjust the vibrating intensity during the clinical treatment.
6. Water volume adjust: Step on the foot switch, and the tip begins to vibrate, then turn the water control knob to form fine spray to cool down the handpiece and clean the teeth.
7. The handpiece can be handled in the same gesture as a pen in hand.
8. During the clinical treatment, be sure not to make the end of tip touch the teeth vertically and not to make the tip overexert on the surface of the teeth, in case of hurting the teeth and damaging the tip.
9. After finishing operation, keep the machine working for 30 seconds on the water supply condition, to clean the handpiece and the scaling tip.
10. Unscrew the scaling tip and sterilize it.



picture 2

Fasten the scaling tip by wrench with the hand between thumb and index finger

## 9. Sterilization

1. All the scaling tips can be autoclaved to 135°C.
2. Handpiece can be sterilized by any neutral sterilized liquid for cleaning and sterilizing. Do not sterilize under the high temperature and pressure.
3. The scaling tip and wrench can be cleaned by ultrasonic cleaner.

## 10. Notice



1. Keep the scaler clean before and after operation.
2. The scaling tip, wrench and handpiece must be sterilized before every treatment.
3. Don't screw the scaling tip when stepping on the foot switch.
4. The scaling tip must be fastened. There must be fine spray coming out from the tip when operating.
5. Change a new one when the tip is damaged or worn excessively.
6. Don't twist or rub the tip.
7. Don't use impure water source, and be sure not to use normal brine instead of pure water source.
8. If use the water source without hydraulic pressure, the water surface should be one meter higher than the head of the patient.
9. After operating, turn off electrical source, then pull out the plug.
10. As a professional manufacturer of medical instruments, we are only responsible for the safety on the following conditions:
  - I. The maintenance, repair and modification are made by the manufacturer or the authorized dealer.
  - II. The changed components are original of "WOODPECKER" and operated correctly according to instruction manual.
11. The screw thread of the scaling tips produced by some other manufacturers maybe coarse, rusty and collapsed, which will damage the screw thread of the handpiece irretrievably. Please use "WOODPECKER" brand scaling tip.

## 11. Contraindication

1. The patient who has hemophilia is not allowed to use this equipment.
2. The patient or doctor who with heart pacemaker is forbidden to use this equipment.
3. The heart disease patient, pregnant woman and children should be cautious to use the equipment.

## 12. Storage and Maintenance

1. The equipment should be handled carefully and lightly. Be sure that it is far from the vibration, and is installed or kept in a cool, dry and ventilated place.
2. Don't store the machine together with the articles that are combustible poisonous, caustic, or explosive.
3. This equipment should be stored in a room where the relative humidity is  $\leq 80\%$ , atmospheric pressure is 50kPa to 106kPa, and the temperature is  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .
4. Please turn off the power switch and pull out the power plug when the equipment is not used. If the machine is not used for a long time, please make it get through to the power and water once per month for five minutes.

## 13. Troubleshooting and notes

Fault	Possible cause	Solutions
The scaling tip doesn't vibrate and there is no water flowing out when stepping on the foot switch.	The power plug is in loose contact	Make the plug insert to the socket well
	The foot switch is in loose contact.	Make the foot switch plug into the socket well.
	The fuse of power supply is broken.	Open the power box, change a new 250VT 0.5AL fuse.
	The fuse in the main unit is broken.	Take off the cover, change a new 250VT1.6AL fuse .
The scaling tip doesn't vibrate but there is water flowing out when stepping on the foot switch.	The tip hasn't been screwed on the handpiece tightly.	Screw on the tip to the handpiece tightly (as showed in the picture2).
	The connect plug between the handpiece and the circuit board is in loose contact.	Open the cover of the main unit and insert the plug well.
	Something wrong with the handpiece.	Send the handpiece to our company <b>【note1】</b> .

Fault	Possible cause	Solutions
The scaling tip vibrates but there is no fine spray when stepping on the foot switch.	The water control knob is turned off.	Turn on the water control knob 【note2】.
	There is impurity in the solenoid valve.	Clean inside of solenoid valve (as showed in the picture5).
	The water pipe is blocked.	Clean the water pipe by multi-function syringe 【note3】 .
There is still water flowing out after the electricity is off.	There is impurity in the solenoid valve.	Clean inside of solenoid valve (as showed in the picture5).
The handpiece generates heat.	The water control knob is in a low grade.	Turn on the water control knob to a higher grade 【note2】 .
	The potentiometer is damaged 【note2】 .	Change a new one.
The amount of spouting water is too little.	The water control knob is in a low grade.	Turn on the water control knob to a higher grade 【note2】 .
	The water pressure is not high enough.	Make the water pressure higher.
	The water pipe is blocked.	Clean the water pipe by multi-function syringe 【note3】 .
The vibration of the tip becomes weak.	The tip hasn't been screwed on the handpiece tightly.	Screw on the tip to the handpiece tightly (as showed in the picture2).
	The tip is vibrated loose	Screw on the tip to the handpiece tightly (as showed in the picture2).
	The tip is damaged 【note4】 .	Change a new one.
The vibration is too strong and the potentiometer is failure.	The potentiometer is damaged 【note2】 .	Change a new one.

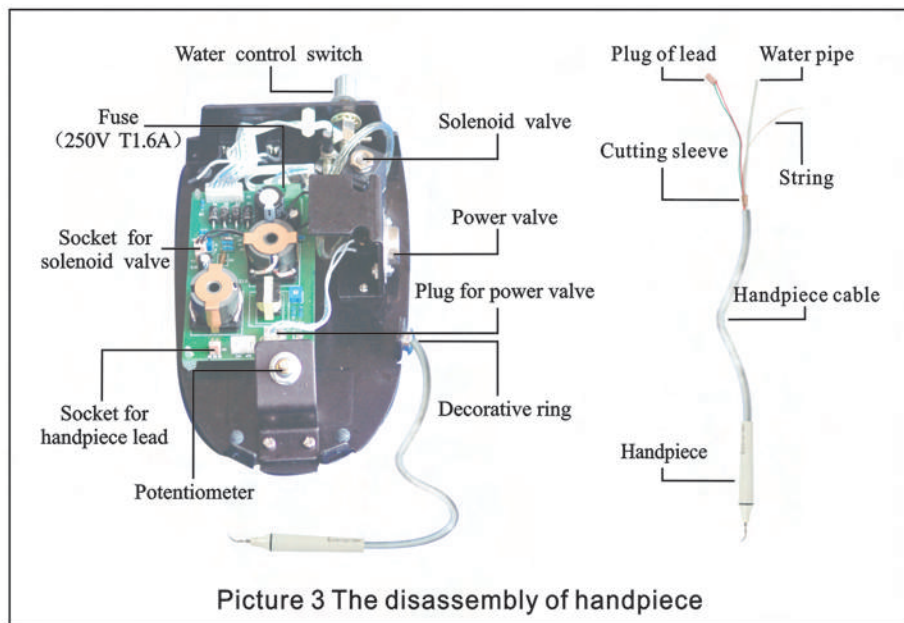
If the troubles still can't be solved , please contact with the local distributors or our company.

【note 1】 The disassembly of the handpiece (As showed in picture 3) :

1. Remove the screw from the cover, pull out the potentiometer vertically, then take off the cover from the end of the machine lightly ( because there is a line connecting the cover and the machine, don't use too much strength ). The inner of the machine is as showed in picture 3.



2. Pull out the water pipe in the handpiece cable from the coupling between the water control knob and the water pipe.
3. Pull out the lead plug from circuit board and untie the string.
4. Hold the joint of handpiece cable and the main unit and push it into the main unit about 1cm, then pull out the cutting sleeve from the cable.
5. Take off the handpiece from the main unit, and the disassembly is finished.



The assembly of handpiece is on the contrary. Be sure not to assemble the lead plug in a wrong direction, otherwise the tip will be electriferous.

Check-up method: get through to the power, step on the foot switch, and check-up the scaling tip with electric pen. If the electric pen shines, the scaling tip is electriferous. Turn off the machine and then insert the lead plug correctly.

**【note 2】** Turn the water control knob towards anticlockwise direction, when the knob can't be turned any more, it comes to the min. on the contrary direction, the water volume increases step by step till the knob is back-out. The grade of the potentiometer is from gear 1 to 9. The ninth grade is the max. Be sure not to overdo.

**【note 3】** To clean the water pipe with the multi-function syringe of the dental unit (as showed in the picture 4):

- 1.Snip the water pipe at a distance of 10cm to 15cm from the water entrance.
- 2.Turn on the power switch, get through to the power.
- 3.Connect the multi-function syringe of the dental unit to the water pipe.
- 4.Step on the foot switch.
- 5.Turn on the switch of the multi-function syringe, press the air or water into the water pipe in the machine, then eliminate the impurity in the water pipe.



Picture 4 multi-function syringe

**【note 4】** If the scaling tip has been screwed on tightly and there is fine spray too, the following phenomena shows that the scaling tip was damaged:

- 1.The vibrating intensity and the pulverization degree become weak obviously.
- 2.When operating, there is some buzz when the scaling tip is working.

## 14. After service

1. We offer one year's free repair to the equipment according to the equipment according to the warranty card.
2. 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.

**Note: "P" was put on the valve seat to designate the water entrance.**



Picture 5 The assembly and disassembly of the solenoid valve

## 15. Transportation

1. Excessive impact and shake should be forbidden during transportation. Lay it carefully and lightly and don't invert it.
2. Don't put it together with dangerous goods.
3. Avoid solarization and getting wet in rain and snow during transportation.

## 16. Symbol instruction



Trademark












Class II equipment



Notice! Please read Instruction before use



Used only indoor

	Type B applied part		Water control knob
<b>IPX0</b>	Ordinary equipment	<b>IPX1</b>	Drip-proof
	Date of manufacture		Manufacturer
<b>FDA</b>	FDA marked product	<b>CE 0197</b>	CE marked product
	Foot switch interface		Alternating current
	Atmospheric pressure for storage		24V~ power supply input interface
<b>H<sub>2</sub>O</b> 0.01MPa-0.5MPa	Water entrance pressure 0.01MPa to 0.5MPa	<b>ON/OFF</b>	Power switch
	Appliance compliance WEEE directive		

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

## 17. Environmental Protection

There are no harmful factors in our product. You can deal with them based on the local law.

## 18. Manufacturer's right

We reserve the right to change the design of the equipment, the technique, accessories, 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 norm.

## 19. For technical data, please contact

YAOTONG S.L.  
 MAYORISTA IMPORTACIÓN Y EXPORTACIÓN  
 C/: AUSIÁS MARC 92-98 esc.C entre.3a  
 08013 BARCELONA ESPAÑA  
 TEL:0034-93 244 0204

## 20. EMC - Declaration of conformity

### Guidance and manufacturer's declaration - electromagnetic emissions

The model UDS-J is intended for using in the electromagnetic environment specified below. The customer or the user of the model UDS-J 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-J uses 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.  The model UDS-J is suitable for used in domestic establishment and in establishment directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.
RF emissions CISPR 11	Class B	
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Not applicable	

### Guidance & Declaration — electromagnetic immunity


The model UDS-J is intended for using in the electromagnetic environment specified below. The customer or the user of the model UDS-J should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 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 ±1 kV for Input/output lines	±2kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±2 kV common mode	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 61000-4-11.	<5 % <i>UT</i> (>95% dip in <i>UT</i> ) for 0.5 cycle 40 % <i>UT</i> (60% dip in <i>UT</i> ) for 5 cycles 70% <i>UT</i> (30% dip in <i>UT</i> ) for 25 cycles <5% <i>UT</i> (>95 % dip in <i>UT</i> ) for 5 sec	<5 % <i>UT</i> (>95% dip in <i>UT</i> ) for 0.5 cycle 40 % <i>UT</i> (60% dip in <i>UT</i> ) for 5 cycles 70% <i>UT</i> (30% dip in <i>UT</i> ) for 25 cycles <5% <i>UT</i> (>95 % dip in <i>UT</i> ) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the model UDS-J requires continued operation during power mains interruptions, it is recommended that the model UDS-J should be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	Not applicable	Not applicable

NOTE *UT* is the a.c. mains voltage prior to application of the test level.

## Guidance & Declaration - Electromagnetic immunity

The model UDS-J is intended for using in the electromagnetic environment specified below. The customer or the user of the model UDS-J should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3V	<p>Portable and mobile RF communications equipment should be used no closer to any part of the model UDS-J, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p style="text-align: center;">Recommended separation distance</p> $d=1.2 \times P^{1/2}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d=1.2 \times P^{1/2}$ <p style="text-align: right;">80 MHz to 800 MHz</p> $d=2.3 \times P^{1/2}$ <p style="text-align: right;">800 MHz to 2.5 GHz</p> <p>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).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,<sup>a</sup> should be less than the compliance level in each frequency range<sup>b</sup></p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> <div style="text-align: center;">  </div>

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2 These guidelines may not be applied 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 UDS-J is used exceeds the applicable RF compliance level above, the model UDS-J should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the model UDS-J.

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 UDS-J**

The model UDS-J is intended for using in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the model UDS-J can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the model UDS-J as 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 2.5GHz $d=2.3 \times P^{1/2}$
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 manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not be applied 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.

