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Product name: Ultrasonic Scaler
Product model: VRN-Q6

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VRN

Ultrasonic Scaler
VRN–Q6

OPERATION MANUAL

URIT Medical Electronic Co., Ltd.

CE 0123

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Statement

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Congratulations on becoming a respected customer of URIT Medical Electronic Co., Ltd. and welcome to use the ultrasonic scaler VRN-Q6 , which will bring you a new experience and convenience. This Operation Manual includes the latest information up to the time of its printing. URIT Medical Electronic Co., Ltd. is solely responsible for the revision and interpretation of simplified English version of this Operation Manual, and reserves the right to make alterations without notice after printing. Some schematic diagrams listed in this Operation Manual are for reference only. If the picture is inconsistent with the real object, the real object shall prevail.

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The use of the product must comply with the requirements of relevant operating procedures and relevant regulations of the medical department, and can only be used by trained doctors or technicians.

The circuit diagrams, parts lists, instructions, calibration instructions and other information provided in the manual can be used by companies or individuals authorized by the company to repair the products.

Please carefully read this Operation Manual before use and properly keep it for future reference. All operations must be carried out in strict accordance with the operating instructions of this Operation Manual. Otherwise,URIT Medical Electronic Co., Ltd. will not be responsible for any errors and product damage caused by illegal operation.

⚠ **Note:**

URIT Medical Electronic Co., Ltd. does not promise the products to be used for certain special purposes, or make any implied guarantee for their marketability and applicability;

If any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user and/or patient is established.

If you need the support of after-sales service, please contact URIT Medical Electronic Co., Ltd. or its authorized agent.

1. Product instruction

1.1 Overview

By employing the multifunctional piezoelectric ceramic ultrasonic generator and intelligent air polishing system, the is available to realize such functions as scaling, periodontal treatment, endodontic irrigating, and air polishing ; in addition, it has the following features:

- Two large water bottles, to satisfy switching pure water or disinfectant.
- Adjust the water flow rate at the panel,to improve the clinical operation efficiency.
- The handpiece can be sterilized under high temperature 134 °C and 0.22 MPa pressure.
- By employing the wireless foot switch to remotely control the operation of the main unit, the operation is more convenient, and the wired foot switch can be selected according to the needs of the user.
- Soft bright LED light, which not only improves the clinical operation efficiency, but also enables the commonly used detachable handpiece to have high compatibility.
- Life time is 10 years.
- Shelf life is 10 years.

1.2 Structure and Composition

The ultrasonic scaler is mainly composed of function control circuit, liquid circuit, air circuit, powder, powder chamber,handpiece, nozzle, tips, wrench, power adapter and foot switch (wired or wireless).

1.3 Intended use

This device is a piezo-operated ultrasonic device for use in dental applications. It is mainly used for the treatment of periodontal defects. In addition, the device is used in the area of prophylaxis, peri-implantitis treatment as well as dental hygiene.

Intended patient population: Adults and pediatrics patients with periodontal disease and peri-implantitis.

Pediatrics: Age levels ranged from 12 to 18 years.

Intended user: Trained dentist.

Place of use: professional dental clinics and hospitals.

1.4 Contraindications

- Patients with cardiac pacemakers
- Patients with gingival malignant tumor
- Patients with active angina pectoris, myocardial infarction within six months, and uncontrolled hypertension and heart failure
- Patients with local oral inflammation in the acute phase (except acute necrotizing gingivitis)
- Patients with bleeding diseases
- Patients with acute infectious diseases
- Pregnant
- Patients suffering from chronic bronchitis or asthma must not, under any circumstances, be treated with air polishing handpiece. The jet of air and powder could cause respiratory difficulties.

1.5 Main technical parameters

- Input voltage: 100V-240 V~, 50/60 Hz
- Supply Voltage: DC30V 1.3 A
- Input power: 30VA ~ 48VA
- Output Power: 3 W ~ 20 W
- Software Version: V1
- Wireless foot switch battery: AA battery x 2
- Receiving sensitivity: -114 dB (in accordance with China National Telecommunication Law) ; Receiving frequency: 2.4 GHz band.
- Compressed Air supply:5 bar~6 bar(0.5 MPa~0.6 Mpa)
- The recommended atmospheric pressure for the products shall be in the range of 70 kPa~106 kPa, and the water pressure is 0.01Mpa ~ 0.5Mpa. Air consumption is 2cfm and the water consumption delivered to the operating area of the products shall be at maximum of 50 mL/min during working. Outlet pressure of water bottle is 0.02 MPa.
- Tip amplitude: Minimum: 1 μm; deviation -50%. Maximum: 100 μm; deviation +50%
- Output half-excursion force: Minimum: 0.1 N; deviation -50%. Maximum: 2 N; deviation +50%

- Tip vibrating frequency: 25 kHz ~ 35 kHz

Note: The tip vibrating frequencies are different of different type tips , but all are distributed within the described range.

- Tip output power: 3 W~20 W
- Fuse: T1AL250V
- Weight of main unit:1.5 kg
- Working environment:
  Temperature: 5℃~40℃
  Relative humidity: ≤80%
  Atmospheric pressure: 70 kPa~106 kPa
  Applicative range of power supply and voltage: 100V-240 V~, 50/60 Hz
  See the specific specifications on the label.
- 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 ingress of water: main unit (IPX0), wired foot switch (IPX1), wireless foot switch(IPX1).
- Degree of safety of application in the presence of a Flammable Anesthetic Mixture with air, Oxygen or Nitrous Oxide: Non-AP, APG type equipment.
- Wireless foot switch: transmission frequency: 2.412 GHz~2.462 GHz, modulation type: GFSK, Max. radiation power: 10 dBm.
- Radio Frequency Interface Requirements - Related to European installation：

Note: This equipment has been tested and found to comply with the limits for EN 300 440 V2.1.1 receiver Category 3.
These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment is sensitive to other equipment that intentionally generates, radio frequency energy in the 2402~2483.5 MHz that may conduce to the instability to use the Remote Control on it. However there is no guarantee that interference will not occur in a particular installation. If this equipment suffer from the harmful interference from another radio device to radio this can be

determined by turning the respective equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Turn off the disturbance equipment
- Increase the separation between the disturbance equipment
- Consult the dealer or an experienced radio/TV technician for help.

2. Product installation

a. Main Unit Front & Rear Schematic Diagram

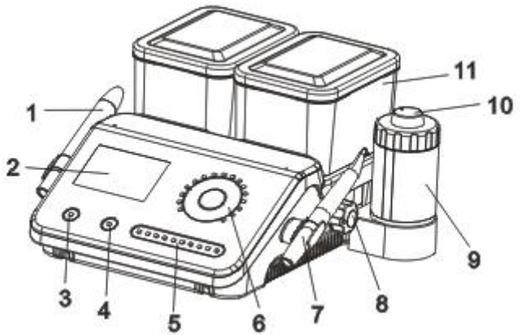


Figure 1 Front Schematic Diagram

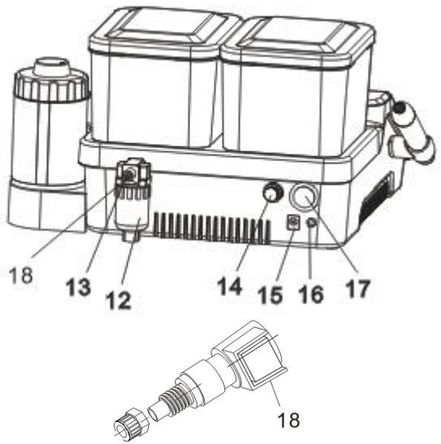


Figure 2 Rear Schematic Diagram

Figure 1:
1. Scaling handpiece
2. LCD screen
3. “M” Working mode selection:

At scaling mode,you can choose:
“G” Scaling treatment
“P” Periodontal treatment
“E” Endodontics treatment
“A” Air polishing treatment

4. Water bottles selection
5. Water flow rate adjustment
6. Power setting
7. Air-polishing handpiece
8. Air pressure adjustment
9. Powder chamber
10. Powder chamber cap
11. Water bottle

Figure 2:
12. Air/water separator
13. Air supply intake
14. Fuse
15. DC electric socket
16. Wired foot switch socket
17. Power switch
18. Quick connector

b. Assembly and Disassembly of Ultrasonic Scaler Tips and File by Torque Wrench Schematic Diagram

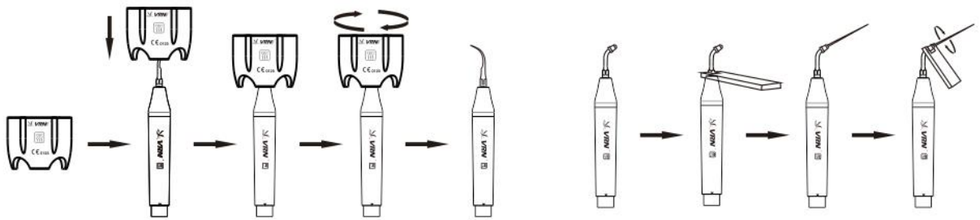


Figure 3

c. Assembly and Disassembly of Nozzle by Endo Wrench Schematic Diagram

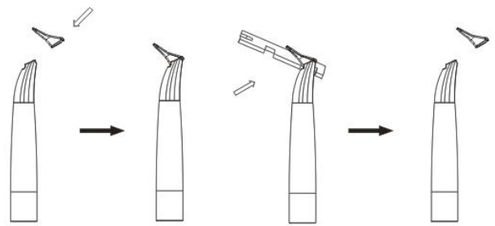


Figure 4

d. Handpiece Installation and Connection Schematic Diagram

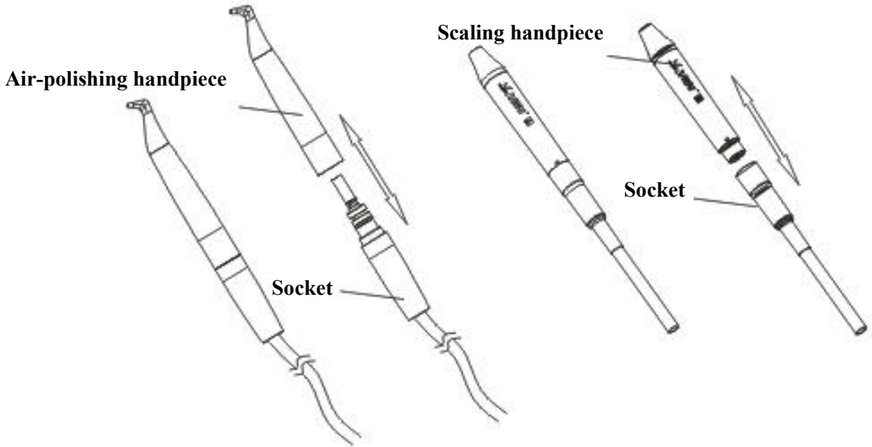


Figure 5

e. Install the batteries to wireless foot switch

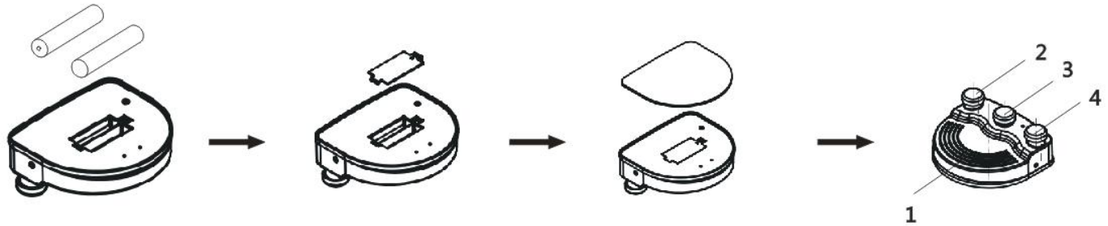


Figure 6

“1”--Turn on the device

“2”--Decrease the power of the device

“3”--Working mode selection

“4”--Increase the power of the device

f. Wireless foot switch matching

(1) When the equipment is electrified, long press the three keys of “Mode”, ” Liquid:L/R” and “Min” of the Flow rate adjustment until the screen displays the“Wireless foot switch matching state”, then release the three keys.

(2) When the wireless foot switch is depressed, install two sets of AA battery (it shall be operated when the wireless foot switch is depressed).

(3) At this time, the power setting slider starts to flash.Then wait for 30 seconds or restart, the wireless foot switch can control the device.

g. Air supply connection and power adapter connection

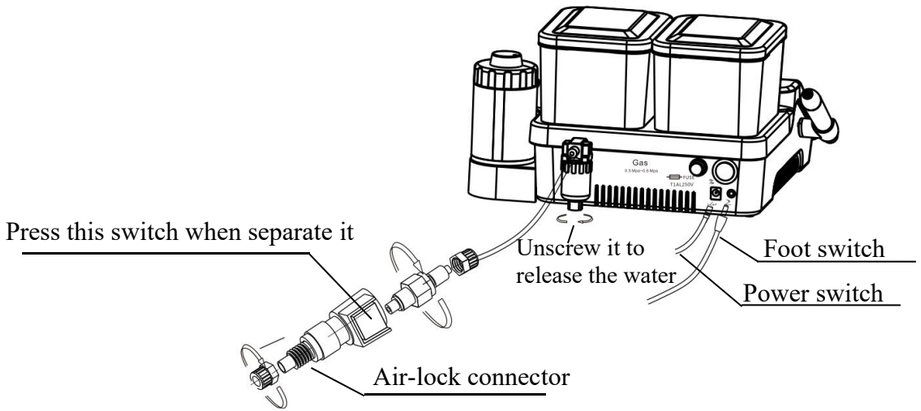


Figure 7

(1) Insert pipe into the connector through nut.

(2) Tighten the nut.

(3) Insert the connector until hearing a click. Press the switch when separate it.

h. Setting the water/air/powder flow rate

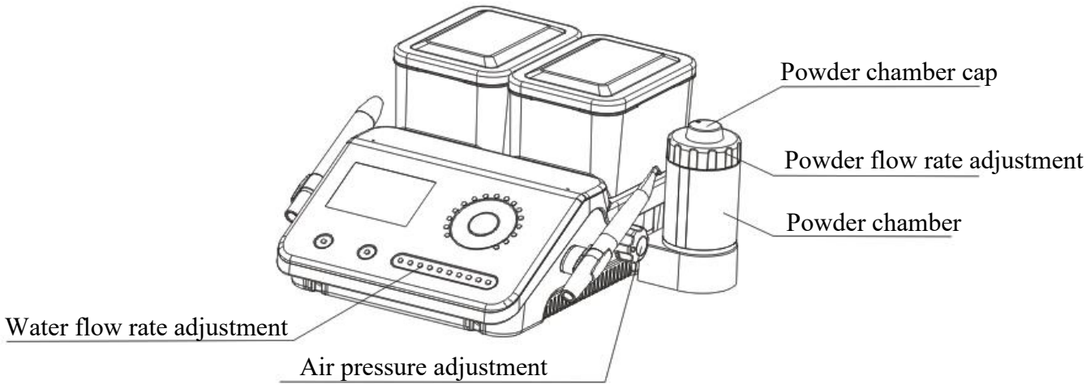


Figure 8

(1) Slide water flow rate adjustment slider to set the water flow rate.

(2) Rotate powder flow rate adjustment knob to set powder flow rate.

(3) Rotate air pressure adjustment knob to set air pressure. The product has the function of detecting air pressure , you can read the information about air pressure gear in the screen.

(4) Keep powder chamber dry to prevent powder from moisture condensation.

(5) The maximum scale must not be exceeded when the powder is loaded into the chamber.

3. Product function and operation

3.1 Ultrasonic Scaling and Ultrasonic Periodontal Treatment

3.1.1 Operation

(1) Take the main unit out of the box and put it on a stable plane.

(2) Install batteries into wireless foot switch, or insert the plug of the wired foot switch into the socket of main unit.(See Fig. 6,7)

(3) Liquid circuit installation: Fill up appropriate amount of purified water into the water bottle,and then insert the water bottle to the main unit.

(4) Air circuit installation: Connect external air source to the air supply intake.(See Fig.7)

(5) Fasten the tip to the handpiece with wrench, and then correctly connect the handpiece to the handpiece socket. Before install the handpiece, dry the handpiece connection and socket thoroughly.

(6) Make sure that the power switch on the main unit is off. Insert the output plug of the power adapter to the main unit, and then insert the input plug of the power adapter to the electric supply.

(7) Turn on the power switch of the main unit, and then LCD screen lights up. The left bottle is used by default.

(8) The frequency during the normal working state is extremely high. Ensure that the tip is in normal working state, only light touch and reciprocate at a certain speed to clean tartar. There is no obvious heating at the tip and please avoid excessive local force or stay too long when cleaning teeth.

(9) Vibration intensity: Adjust the vibration intensity as required, generally to a medium vibration intensity, or adjust the vibration intensity at any time during the clinical process according to the patient's sensitivity and the hardness of the calculus.

(10) Water flow rate adjustment: Step on the foot switch, and the tip begins to vibrate, and then adjust the water flow rate to form spray to cool down the handpiece and clean the teeth.

(11) After finishing operation, keep the device working for 30 seconds on the water supply condition in order to clean the handpiece and tip. Please sterilize them according to the sterilize requirements of the Article 4.1 for detail.

3.1.2 Scaling Function

Screw the scaling tip tightly to the handpiece by wrench. Press Mode selection button and select "G" to clean teeth.

3.1.3 Periodontal Treatment Function

Screw the titanium alloy tip tightly to handpiece by wrench. Press Mode selection button and select "P" to conduct periodontal treatment.

⚠ Note:

- Do not pull out the handpiece when the foot switch is stepped on and the product is producing ultrasonic vibration. Please unscrew the batteries if you do not use the wireless foot switch for long time.
- Choose the appropriate power according to different types of tip (See Chapter 13).
- The temperature of tip may reach to 45.7°C once water spray not supplied when continuous operated at the ambient 35°C. Do not touch it until it cools down.

3.1.4 Instruction of Torque wrench Using (See fig.3)

The Torque wrench can control the strength of the tip's installation properly and correctly. It also can guarantee the operator screw or unscrew the tip effectively and keep their hands away from being scratched.

Operation step:

(1) Put the tip into the hole of the wrench and hold the handpiece tightly, and then rotate the tip in a clockwise direction till the tip does not turnround anymore, and then it is installed.

(2) Unscrew the tip: hold the handpiece and rotate the tip in a counter-clockwise direction by wrench to remove it.

(3) Once after using, please clean and sterilize the wrench.

3.2 Endodontics Treatment Function

Operation step:

(1) Fix endodontic tip clamper to handpiece by Endo wrench, unscrew the nut on the clamper.

(2) Put the tip into the hole in front of clamper, and tighten up the clamper nut by wrench.

(3) Press Mode selection button and select "E". Put the tip into the patient's root canal slowly, and step on the foot switch to start root canal irrigation. During the treatment, turn up the power gradually according to the needs.

(4) Please clean and sterilize the tip,handpiece and wrench after use.

⚠ Note:

- When fixing clamper, it must be tightened up.
- The nut on the clamper must be tightened up.
- Do not press it too much during irrigation for root canal.
- Do not step on the foot switch until the tip is put in the root canal.
- The power range of endodontics treatment is advised from the 1st to the appropriate grade.
- Operators must be the trained doctors or technicians. It must do a good job of protection according to hospital requirements during treatment.

3.3 Air Polishing Treatment Function

(1) Pick up the air polishing handpiece, the system will automatically switch to the air polishing treatment mode , at this time the screen shows "A" mode. Without picking up the scaling and air polishing handpiece, shortly press the "M" button, you can also enter the "A" mode.

(2) Fasten the air polishing nozzle to the air polishing handpiece(this operation is not performed during the supragingival air

polishing). (See fig.4)

(3) Insert the air polishing handpiece into the handpiece socket. (See fig.5)

(4) Powder flow rate setting: Rotate the powder flow rate adjustment knob to control the powder consumption.

(5) Water flow rate setting: Slide flow rate adjustment slider to adjust and select the appropriate water consumption.

(6) Stepping on the foot switch to start treatment. 45°~60° of jet angle and 4~6mm of separation with teeth for the best treatment conditions.

(7) After finishing treatment, touch power control slider, and it will clean the internal air circuit of air polishing system automatically for 5 seconds.

(8) After self-cleaning,unscrew the nozzle (nozzle is single-use) and pull out the handpiece for cleaning and sterilization.

⚠ Note

· When doing treatment, doctors must wear special goggles, and the rest shall be protected according to hospital requirements.And the patient must be protected in accordance with the requirements of the hospital.

3.4 Wireless Foot switch Control Function

3.4.1 Operation

Put two AA batteries into wireless foot switch, stick the waterproof label on the bottom after install the battery cover. Leave the wireless foot switch on the flat ground. After connecting the ultrasonic scaler, turn on the ultrasonic scaler, and then the wireless foot switch is available.

3.4.2 Applicable Scope

Within any distance of 5 meters, the wireless foot switch could fully control the ultrasonic scaler.

3.5 Automatic Water Supply System with Double Bottles

Operation step:

(1) Open the bottle cap, fill up the purified water, and then cover the cap.

(2) Clean the bottleneck and the water supply intake of the main unit.

(3) Insert the bottle to the water supply intake of the main unit.

(4) Press "Liquid: L/R" button to switch the left or right bottle and the corresponding lamp on the bottom of bottle will light up.

⚠ Note

· Make sure the air intake and outlet are not blocked.

· Check the O-ring at the bottle cap is not damaged. If the O-ring is damaged or falling, please replace it immediately.

· Please rotate the powder chamber cap in the specified location for sealing the powder chamber.

· Clean the intake of the water supply bottle before each use.

· When change the liquid inside of bottle, please turn the water flow rate to the maximum and run the device for 30 seconds in order to maintain and clean the current liquid circuit.

· When the liquid inside the bottle is below the lower limit, please fill up the liquid to ensure the regular work.

· After each use, please clean the powder chamber to remove the residual powder.

3.6 Using or Turn Down the Device.

(1) Before and after each use, check whether the equipment and its accessories are in good condition. The main accessories of the product must be used after maintenance.

(2) At the end of the working, you must:

· Rinse the circuit and water bottle with distilled or demineralized water.

· Use the one-key cleaning function to clean the residual powder in the pipe.

· Disassemble the handpiece.

· Switch off the device.

4. Reprocessing

4.1 Handpiece

Reprocess according to Reprocessing Instructions. Please read the instructions carefully before operating.

⚠ **Note:**

(1) Before sterilization, use compressed air to blow and clean the liquid remaining on the handpiece.

(2) Make sure to remove the tip and nozzle from the handpiece before reprocessing, and sterilize with specified equipment.

(3) During reprocessing process, please pay your attention to the external damage of the handpiece at any time. Do not apply any protective oil to the handpiece surface.

(4) The products have been designed for 250 reprocessing cycles. Do not exceed the maximum number of reprocessing cycles.

(5) It is strictly prohibited to reprocess the handpiece in the following manner:

- **Put the handpiece in the solution for stewing.**
- **Immerse the handpiece with iodine, alcohol, glutaraldehyde and other disinfectants.**
- **Put the handpiece in oven or microwave oven for high temperature baking.**

4.2 Tips

Reprocess according to Reprocessing Instructions. Please read the instructions carefully before operating.

4.3 Torque/Endo wrench

Reprocess according to Reprocessing Instructions. Please read the instructions carefully before operating.

⚠ **Note: We shall not be responsible for any direct or indirect damage to the Torque wrench and the Endo wrench**

caused by the improper use mentioned above.

5. Maintenance

(1) Touch power control slider to clean air circuit automatically for 5 seconds after each use.

(2) If there is residual liquid in the air/water separator, rotate the knob at the bottom of separator to empty the residual liquid before each use.

(3) Unscrew the filter valve every month and clean the filter spool regularly. Before cleaning the filter, disconnect the air source. As shown in Fig.7.

(4) The control unit, handpiece cord and foot switch must be cleaned and disinfected daily.

(5) The accessories and cords should be regularly checked for faulty insulation.Replace them if necessary.

(6) When used for patients, the parts of the device should not be in repaired or maintained state.It is important to keep the control unit ventilation vents clean in order to avoid abnormal heating.Check that there is no humidity in the handpiece connector. If there is, dry it out by wiping, then blowing with the multifunction syringe.

⚠ Note:

- Do not use the device if it appears to be faulty.
- Do not use an abrasive cleaning agent on the device.

6. Safety precautions

(1) Keep the product clean before and after use.

(2) Do not suspend or place the device upside down.

(3) Before each clinical operation, please keep the product to working with water for 10 seconds to remove residual water from the pipeline.

(4) During operation, the operator shall be equipped with adequate protection (e.g. goggles, face mask, etc.) to prevent them

from cross-infection.

(5) The operation of the product must comply with the requirements of relevant operating procedures and relevant regulations of the medical department, and can only be used by trained doctors or technicians.

(6) Before first use or after each use, please reprocessing the accessories such as tips, wrench and handpiece so as to prevent patients from cross-infection.

(7) Do not assemble or disassemble the tips when the foot switch is pressed and the tip vibrates.

(8) The tips must be tightened in the head of the handpiece, and there must be water mist during operation (except for the tips working without water).

(9) If the tips are breaking,damaged or worn, the vibration strength will decrease, and operator shall replace a new one according to the clinical conditions so as to prevent the patient from accidentally swallowing or inhaling debris.

(10) Please don't bend or polish the tips. The tips is sharp, please be carefully during operation.

(11) It is prohibited to use unclean water source, or use normal saline instead of pure water source.

(12) Do not pull the handpiece cable during operating, which can avoid damage to the handpiece cable.

(13) Do not beat or scrape the handpiece.

(14) After using the product, turn off the power switch and pull out the power plug.

(15) Only when the maintenance, repair and modification of the product are carried out by us or dealers, and the replaced parts are the original parts purchased from us and it is operated follow the Operation Manual, we will responsible for the product safety.

(16) The internal thread of the tips produced by some manufacturers is rough, rusty, cracked or subject to other standards. If the external thread of handpiece is used in combination with the tips that have aforesaid defects, it is easy to damage the thread,

result in the loose thread, even cause irreparable damage to the ultrasonic scaler, please use the original tips.

(17) When the operators use different series of tips, it is necessary to adjust the working mode of the product correspondingly to avoid breakage of tips.

(18) According to the operating conditions of different tips, it is recommended to set the power and water output in accordance with the requirements of section 13.1.

(19) The temperature of ultrasonic scaler tips may reach to 75.8℃ once water not supplied when continuous operated at the 35℃ ambient temperature. Do not touch it until it cools down.

(20) MR UNSAFE: the device cannot be used in MRI environment.

7. Troubleshooting

7.1 Troubleshooting table

Fault	Possible cause	Solutions
No response, or LCD screen doesn't light up	Poor connection of power supply cord	Correctly connect the power supply cord
	Poor connection of wired foot switch	Correctly connect the connector of wired foot switch
	The batteries of wireless foot switch run out	Replace the new batteries
	The foot switch is out of order	Press the reset button(See fig.6)
Tips don't vibrate	The tip hasn't been screwed on the handpiece tightly	Screw the tip on the handpiece tightly

	Fault of handpiece	Pull out handpiece and send it to us or anthorized dealers
	Fault of handpiece cable	Contact us or authorized dealers
	Poor connection of handpiece cable and connector of circuit board	Contact us or authorized dealers
Tips vibrate but there is no water spray	The water flow rate is too small	Increase the water flow rate
	The power is weak	Increase the power
Handpiece generates heat	The water flow rate is too small	Increase the water flow rate
Handpiece severely generates heat	Fault of handpiece	Pull out handpiece and send it to us or anthorized dealers
The vibration of the tip becomes weak	The tip hasn't been screwed on to the handpiece tightly	Screw the tip on the handpiece tightly
	The connection between the handpiece and the cable isn't dry	Dry it by hot air
	The tip is excessively damaged【1】	Replace a new one

Water leakage between handpiece and cable.	The handpiece connecting O-ring is damaged	Replace a new one
Water leakage from device	The internal tube was broken	Contact us or authorized dealers
The file does not vibrate or there is noise	The nut is loose	Tighten it
	The file is damaged	Replace a new one
There is no powder, air or water spraying from the tip	No air or water	Contact us or authorized dealers.
	The handpiece or nozzle is blocked	Pull out the handpiece and check if there is air or powder spraying from the air polishing handpiece cord. If yes, please use a steel wire to unblock it and place it in the cleaning machine to clean it.
There is no powder or water,but air spraying from the tip	No powder	Check that if the powder in the chamber is too much or little
	No water	Check that if there is water in the bottle
	Powder is wet	Empty and dry the chamber, and then fill in the powder

⚠ **Note: If the problem has not been solved, please contact us or local authorized dealers.**

7.2 Note

[Note 1]

In the case of ensuring that the tip has been tightened and has been sprayed with water mist, the tip is deemed to have been damaged by the following phenomena:

(1) The vibrating strength and water atomization degree of the tip are obviously weakened.

(2) Abnormal noise of "buzzing" is sound when the tip works.

8. Storage and transportation

8.1 Storage

- The product 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.
- Do not store the product together with the combustible, poisonous , caustic or explosive goods.
- In case the product is not used for a long time, it should be electrified once a month.
- The product shall be stored at the location as follow:
  - ① Temperature: -20 °C ~ 55 °C,
  - ② Relative humidity: ⩽ 90%,
  - ③ Atmospheric pressure: 70 kPa ~ 106 kPa.

8.2.Transportation

- During transportation, it shall not be packed with dangerous goods.
- During transportation, excessive shock and vibration shall be prevented, and carefully place, do not place it upside down.
- Protect the product from direct sunlight, rain, or snow during transportation.

9. Product list

No.	Name	Replacement cycle	Replacement Method
1	Main unit	/	/
2	Scaling handpiece	250 reprocessing cycle	See article 2(d)
3	Air polishing handpiece	250 reprocessing cycle	See article 2(d)
4	Tips	250 reprocessing cycle/5 years/abrasion	See article 2(a)
5	Torque wrench	250 reprocessing cycle	Replace new one
6	Endo wrench	250 reprocessing cycle	Replace new one
7	Endo file	250 reprocessing cycle	See article 2(b)
8	Connector of liquid circuit	/	/
9	Sterilization box	/	/
10	Power supply cord	/	/
11	Water bottle	/	/
12	Wireless foot switch	/	/
13	Wired foot switch	/	/
14	Main software	/	/

⚠ **Note: There doesn't exhaustively list the accessories and specifications of VRN-Q6. Please refer to the random**

delivery materials and packing list for details.Should your product need serviced and repairs,please send it to your dealer or to an authorized repair center.We decline responsibility for the safety of the device and declare the warranty null and void if service or repair is carried out by an unauthorized third party or if non-genuine spare parts are used.

10. Warranty

Since the date of sale, the warranty of this product is effective with its warranty card, and we are responsible for life-long maintenance. The product cannot be disassembled privately. If necessary, please disassemble and repair it under the authorization of the company. The repair is limited to the replacement of the tail line, main board, and water pump.

For the non-repairable damage caused by the maintenance of any non-designated and dedicated maintenance personnel is not covered by the free warranty.

11. Manufacturer's rights

We reserves the right to modify the design, technology, accessories, description and packing list of the products without prior notice at any time. In case of any difference, the actual product shall prevail.

12. Product disposal

No.	Components	Disassemble methods	Dispose methods
1	Printed-wiring boards	Use a Phillips screwdriver to remove the fixing screw, unplug the cable, and remove the items.	Recycle as metals and metal compounds. Please put them to the waste sorting recycling bin of metals.
2	Transformer		
3	Pump		1.For metals and metal compounds, please put them to the waste sorting recycling bin of metals. 2.For nonmetal, please put them to the waste sorting recycling bin of organic substances which are not used as solvents,which can be used for composting and other biological transformation processes.
4	Solenoid valve		
5	Handpiece cord		Please put them to the waste sorting recycling bin of organic substances which are not used as solvents,which can be used for composting and other biological transformation processes.
6	Enclosure		
8	PU tube	Remove the PU tube with nipper pliers.	
9	Water bottle	Remove from the main unit.	
10	Tips	Refer to the fig.3 in the manual.	Please dispose it in the infectious clinical waste containers.
11	Foot switch	/	1.For metals and metal compounds, please put them to the waste sorting recycling bin of metals. 2.For nonmetal, please put them to the waste sorting recycling bin of organic substances which are not used as solvents,which can be used for composting and other biological transformation processes.
12	Handpiece	Remove from the handpiece cord.	

⚠ Note:

(1) Electrical waste products should not be disposed of with household waste.

(2) Please recycle where facilities exist. Check with your local authority or retailer for recycling advice if you are unclear.

(3) Powder shall be disposed and destroyed according to relevant local regulations after expiration, and shall not be discarded in drainage ditches or rivers or mixed with household garbage.

13. Symbols

VRN	Manufacturer's logo		Caution!		Class II Equipment		Type B applied part		Do not dispose of the product into the ordinary municipal waste or garbage system
134 °C	Sterilizable at up to 134℃ in the steam sterilizer (autoclave) attemperature specified		Manufacturer		Refer to instruction manual/ booklet	SN	Serial number		Keep dry
	Temperature limit		Humidity limitation		Fragile,handle with care		Atmospheric pressure limitation		Date of manufacture
	Use-by date		This way up	MD	Medical device		Foot switch		Fuse
	"OFF" (power)		"ON" (power)	**Mode**	Mode selection	**Power**	Power indicator	IPX1	Degree of protection against ingress of water
Min	Minimum power	**Max**	Maximum power		Do not roll	3	Stacking limit by number	+ AA −	AA battery

Liquid:L/R	Water bottle selection	- +	Electrical outlet	**Gas** 0.5Mpa~0.6Mpa	Air supply	CE 0123	The symbol indicates that the device complies with the EU 2017/745	UDI	Unique device identifier
	Coupling identification	EC REP	Authorized representative in the European Community/European Union						

14. Electromagnetic compatibility (EMC)

⚠ Warning:

(1) The ME EQUIPMENT or ME SYSTEM is suitable for hospital or professional dental clinic environment.

(2) Non-authorized repairs may result in some EMC problems of this product or other products without express consent of URIT Medical Electronic Co., Ltd.

(3) VRN-Q6 is designed and tested according to the requirements of Electromagnetic Compatibility.

(4) EFT/BEndo indicator light and perio indicator light would be blinking under EFT/B, which will not affect the normal use of the machine and can recover when test finished. According to experienced clinicians, professionally trained how to use specialized equipment and system, this level of risk is accepted.

(5) The emissions characteristics of this equipment make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.

(6) Don't near active HF surgical equipment and the RF shielded room of an ME system for magnetic resonance imaging, where the intensity of EM disturbances is high.

(7) Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

(8) Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

(9) **Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the equipment, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.**

14.1 Requirements for cable installation

Cable name	Cable type	Cable length
Power input cable	Unshielded parallel cables	1.2m
Input cable of foot switch	Unshielded parallel cables	2.2m
Handpiece cable	Unshielded parallel cables	2m

14.2 Key components of electromagnetic compatibility (EMC)

The key components of electromagnetic compatibility of the product are the main-board chip, touch-panel chip, transformer, and diaphragm pump, in the case of using or replacing non-original accessories, cables and transducers, it may result in obvious decrease of emission and immunity of the electromagnetic compatibility. Do not replace machine parts at random.

14.3 Guidance and manufacturer's declaration - electromagnetic emissions

VRN-Q6 is intended for use in the electromagnetic environment specified below. The customer or the user should assure that it is used in such an environment.

(1) It is suitable for used in domestic establishment directly connected to a low voltage power supply network which supplies buildings used for domestic purpose.

(2) Floors should be wood, concrete or ceramic tile. If floors are cover with synthetic material, the relative humidity should be at least 30% .

(3) Main power quality should be that of a typical commercial or hospital environment.

(4) If the user requires continued operation during power mains interruptions, it is recommended that it be powered for an uninterrupted power supply or a battery.

12.4 Guidance and manufacturer's declaration-electromagnetic Immunity

Guidance and manufacturer's declaration - electromagnetic Immunity		
Immunity Test	**IEC 60601-1-2** **Test level**	**Compliance level**
Electrostatic discharge (ESD) IEC 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
Electrical fast transient/burst IEC 61000-4-4	±2 kV power supply lines ±1 kV signal input/output 100 kHz repetition frequency	±2 kV power supply lines Not applicable 100 kHz repetition frequency
Surge IEC 61000-4-5	±0.5 kV, ±1 kV differential mode ±0.5 kV, ±1 kV, ±2 kV common mode	±0.5 kV, ±1 kV differential mode ±0.5 kV, ±1 kV, ±2 kV common mode

Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0 % UT; 0,5 cycle. At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°. 0 % UT; 1 cycle and 70 % UT; 25/30 cycles; Single phase: at 0°. 0 % UT; 250/300 cycle	0 % UT; 0,5 cycle. At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°. 0 % UT; 1 cycle and 70 % UT; 25cycles; Single phase: at 0°. 0 % UT; 250 cycle
Power frequency magnetic field IEC 61000-4-8	30 A/m 50Hz/60Hz	30 A/m 50Hz
Conducted RF IEC61000-4-6	3 V 0,15 MHz – 80 MHz 6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz	3 V 0,15 MHz – 80 MHz 6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz
Radiated RF IEC61000-4-3	3 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz	3 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz
NOTE U_T is the a.c. mains voltage prior to application of the test level.		

Guidance and manufacturer's declaration - electromagnetic emissions	
Emissions test	**Compliance**
RF emissions CISPR 11	Group 1
RF emissions CISPR 11	Class A
Harmonic emissions IEC 61000-3-2	Not Applicable
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not Applicable

Guidance and manufacturer's declaration - electromagnetic Immunity						
Radiated RF IEC61000-4-3 (Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment)	**Test Frequency** (MHz)	**Band** (MHz)	**Service**	**Modulation**	**IEC 60601-1-2 Test Level** (V/m)	**Compliance level** (V/m)
	385	380 –390	TETRA 400	Pulse modulation 18 Hz	27	27
	450	430 –470	GMRS 460, FRS 460	FM ± 5 kHz deviation 1 kHz sine	28	28
	710	704 – 787	LTE Band 13, 17	Pulse modulation 217 Hz	9	9
	745					
	780					
	810	800 – 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation 18 Hz	28	28
	870					
	930					
	1720	1700 – 1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation 217 Hz	28	28
	1845					
	1970					

	2450	2400 – 2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation 217 Hz	28	28
	5240	5100 – 5800	WLAN 802.11 a/n	Pulse modulation 217 Hz	9	9
	5500					
	5785					

Guidance and manufacturer's declaration - electromagnetic Immunity				
Radiated RF IEC61000-4-39 (Test specifications for ENCLOSURE PORT IMMUNITY to proximity magnetic fields)	**Test Frequency**	**Modulation**	**IEC 60601-1-2 Test Level** (A/m)	**Compliance level** (A/m)
	30 kHz	CW	8	8
	134,2 kHz	Pulse modulation 2.1 kHz	65	65
	Not applicable	Pulse modulation 50 kHz	7,5	7,5

15. Attachment

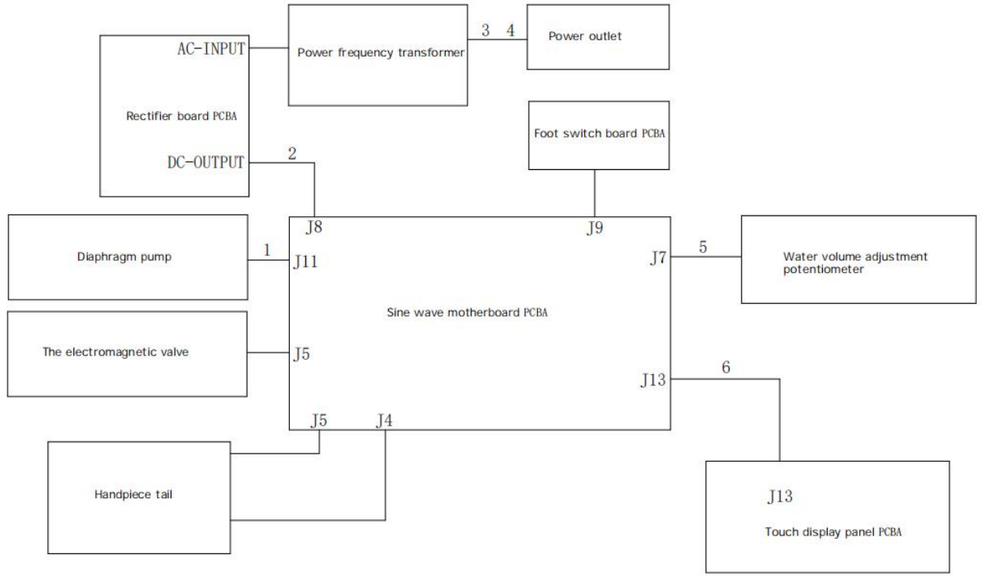
15.1 Attached table: Power table of ultrasonic scaler tips

Scaling		
Model	Grade	Water volume
G1	l-10(G)	Yes
G2	l-10(G)	Yes
G4	1-6(G)	Yes
G5	l-10(G)	Yes

Periodontal		
Model	Grade	Water volume
P1	l-10(P)	Yes
P4	1-6(P)	Yes
P11	1-6(P)	Yes
P12	1-6(P)	Yes
P12L	1-6(P)	Yes
P12R	1-6(P)	Yes
P16	1-6(P)	Yes
IM1	1-4(P)	Yes

Root canal		
Model	Grade	Water volume
E1	l-3(E)	Yes

15.2 Attached figure: Electrical schematic diagram



The control signal is given to the main control board through wired or 2.4 GHz wireless communication. The main control board of the product can control the water pump, solenoid valve and handle work.

15.3 Compatible ultrasonic scaler tips

Model	Brand	Model	Brand
G1	VRN	P1	VRN
G2	VRN	E1	VRN
P2L	VRN	E14	VRN
P2R	VRN	E15	VRN
P4	VRN	P11	VRN
P13L	VRN	P12	VRN
P13R	VRN	P12L	VRN
P15	VRN	P12R	VRN
G3	VRN	P16	VRN
G4	VRN	IM1	VRN
P3	VRN	G5	VRN

⚠ **Warning:**

The internal thread of the ultrasonic scaler tips produced by some manufacturers is rough, rusty, cracked or subject to other standards. If the external thread of handpiece is used in combination with the ultrasonic scaler tips that have aforesaid defects, it is easy to damage the thread, result in the loose thread, even cause irreparable damage to the ultrasonic scaler, please use the VRN original ultrasonic scaler tips .

15.4Compatible Prophylaxis Powder

The Prophylaxis Powder manufactured by Guilin Veirun Medical Technology Co.,Ltd. compatible with the VRN-Q6 Ultrasonic Scaler. See the table below for model details:

No.	Model	Specifications	Main component	Function
1.	Classic	130g/bottle,260g/bottle	Sodium bicarbonate	For supragingival treatment
2.	UKC-S2	160g/bottle,220g/bottle	Erythritol	For supragingival/ subgingival treatment
3.	UKG-S3	160g/bottle,220g/bottle	Glycine	For supragingival/ subgingival treatment

⚠ Warning:

The powder provided by VRN are specially designed for use with the unit.Do not use powders from other manufacturers as this could damage the unit or could adversely affect its efficiency, please use the VRN original prophylaxis powders.

1.Product Name:Prophylaxis Powder

2.Product Model:Classic、UKC-S2、UKG-S3

3.Manufacturer Name:Guilin Veirun Medical Technology Co.,Ltd.

Address: No. D-07 Information Industry District, High-Tech Zone, 541004 Guilin, Guangxi, PEOPLE'S REPUBLIC OF CHINA

4.Contraindications:

• Under any circumstances, patients or users with chronic bronchitis or asthma should not use pneumatic polishing equipment for treatment, otherwise the exhaled gas and tooth powder may cause breathing difficulties for the patients or users.

• People with allergies may be allergic to dental sandblasting powder. If an allergic reaction is observed,please stop using this product and completely remove the dental powder from the mouth immediately.

• Periodontal bag treatment may lead to bacterial infection. For patients at the following risk conditions (endocarditis, pregnant

women, breast feeding, contact infectious diseases), immune deficiency (neutropenia, granulocytopenia, diabetes, hemophilia), and patients undergoing treatment (radiotherapy, chemotherapy, antibiotic treatment), please take appropriate protective measures.

• Do not aim the nozzle of the sand blasters at dental fillings, crowns or dentures, as this may cause damage to these restorations.

• Patients with severe periodontal disease are advised to eliminate the inflammation before sandblasting treatment.

5.Scope of application:Used in the oral cavity to grind and polish tooth tissue or prostheses to make their surfaces smooth and uniform. This product is not sterile.

6.Safety data sheet:please refer to File No.: VRN-SDS-001 for detail.

7.Storage conditions: temperature: - 10 ℃ to 40 ℃, relative humidity: 10% to 95%, sealed storage.

8.Shelf-life:Expiry date for bottle opening: After bottle opening, the bottle cap needs to be tightly closed, and the expiration date for bottle opening under specified storage conditions is 3 months.

Note:

•Patients on a low salt diet must not be treated with the powder containing sodium bicarbonate. For patients on a law salt diet use the powder without sodium bicarbonate provided by VRN.

•The powder containing sodium bicarbonate provided by VRN can be used only for supra-gingival application. For sub-gingival application, please use the specific powder provided by VRN and refer to its operation instructions.

•Never use an abrasive powder i.e. alumina based. This would damage the unit.