

Dental Suction Unit

(External Oral Suction Device)

Model No.: TR-YP606D4

Operational Manual
(Technical Specification)

Note:

Read well all these instructions before attempting to operate this unit, and save these instructions for future reference.

Content

1. Introduction.....	1
1.1 Product introduction.....	1
1.2 Scope of application.....	1
1.3 Term of use.....	1
1.4 Marks.....	1
2. Structure.....	2
3. Technical parameters.....	2
3.1 Specification.....	2
3.2 Operating conditions.....	2
3.3 Transportation and storage conditions.....	2
3.4 Equipment safety classification.....	3
4. Installation instructions.....	3
5. Instructions for use.....	3
5.1 Instructions for the main unit.....	3
5.2 Instructions for the free arm.....	3
6. Attention.....	4
6.1 Precautions for use.....	4
6.2 Precautions for maintenance.....	4
6.3 Environmental protection.....	4
7. Maintenance.....	4
7.1 UV disinfection lamp.....	4
7.2 Plasma disinfection.....	4
7.3 Filter replacement.....	4
7.4 Fuse replacement.....	4
8. Troubleshooting.....	4
9. Working principle diagram.....	5
9.1 Electrical diagram.....	5
9.2 Air line diagram.....	5
10. Packing list.....	6
11. Electromagnetic Compatibility.....	6
12. Addendum.....	9
12.1 Appendix I. Schematic diagram of suction hood installation.....	9
12.2 Appendix II. Free Arm Rotation Diagram.....	10
13. Manufacturer information.....	11
14. Disclaimer.....	11

- Thank you for purchasing our dental suction unit.
- Before using this dental suction unit, please read these instructions carefully and keep it for future reference purposes.
- When use the dental suction unit, please strictly abide by the rules, proper care and maintenance.
- The " ⚠ " mark paragraph should carefully review the accompanying documents.
- The "Note" logo paragraph should read carefully, to avoid cause damage or injury to the device, the operator and patient.
- If the device has a problem in the process, please contact your local dealer or contact us directly, we will provide you with technical support and assistance.
- Commitment: When handling a fault, if you need, we will provide you with the necessary more detailed technical information.

1. Introduction

1.1 Product introduction

Our dental suction unit is novel in shape, complete in function and excellent in production; it is combined with dental unit, intraoral suction unit, oral light, etc., easy to move, suitable for Hospital Stomatology, Dental Clinic, Community Stomatology etc.











1.2 Scope of application

For auxiliary treatment of stomatology in medical institutions.

1.3 Term of use

5 years (depends on the service life of vacuum pump)

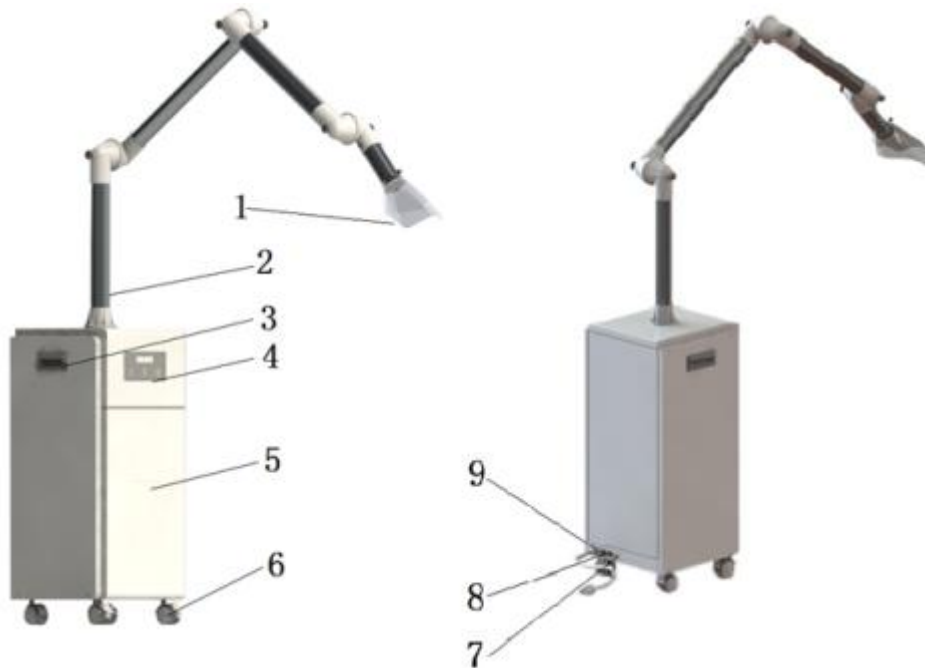
1.4 Marks

Marks	Information
	Note! Read the operation manual
	Protective grounding
	AC Power
	Avoid of rain
	Up side
	Handle with care
	Storage humidity
	Storage temperature
	Manufacturer
	Production Date

2. Structure

Our dental suction unit is composed of vacuum pump, free arm, primary HEPA + activated carbon filter, secondary HEPA + activated carbon filter, plasma sterilizer and UV disinfection lamp.

This dental suction unit is an independent structure. Refer to figure 1 as below:



(Fig. 1) Schematic of dental suction unit TR-YP606D4

1	Suction hood	2	Free arm	3	Handle
4	Operation panel	5	Unit body	6	Universal wheel
7	Power switch	8	Fuse	9	Power line

3. Technical parameters

3.1 Specification

3.1.1 Power supply: AC 110V-240V 50Hz/60Hz

3.1.2 Power: 1000VA

3.1.3 Control mode: touch screen, two-gear adjustment

3.1.4 Fuse: T10AL 250V

3.1.5 Noise: ≤65dB

3.1.6 Negative pressure flow: 3500~4000L / min

3.1.7 Filtration: First filter at suction hood to prevent blocking particles enter into suction, HEPA + activated carbon primary filter, HEPA + activated carbon secondary filter. Filtration efficiency > 99.97%

3.1.8 Disinfection: Built-in Plasma sterilizer and UV disinfection lamp

3.1.9 Free arm: Segmented rotary arm (four-section), universal adjustment

3.1.10 Dimensions: 320mm × 330mm × 755mm (do not contains the free arm)

3.2 Operating conditions

3.2.1 Ambient temperature range: 5 °C ~ 40 °C

3.2.2 Relative humidity range: ≤80%

3.2.3 Atmospheric pressure range: 86Kpa ~ 106Kpa

3.3 Transportation and storage conditions

3.3.1 Ambient temperature range: -10 °C ~ + 55 °C

3.3.2 Relative humidity range: ≤90%

3.3.3 Atmospheric pressure range: 50Kpa ~ 106Kpa

3.3.4 Attention should be paid to transportation and storage: "upwards" and "fear of moisture"

3.4 Equipment safety classification

3.4.1 Anti-shock type: Class I equipment

3.4.2 Protection against electric shock: Type B

4. Installation instructions

4.1 After unpacking, please check whether the components of the suction unit are intact, and check whether the accessories are complete and intact according to the packing list. If with any doubt, please contact us.

4.2 After the inspection, place the suction unit on a flat, clean, dry and ventilated place.

4.3 Install the free arm (please refer to Appendix I).

4.4 Install the suction hood (please refer to Appendix I).

4.5 Move the suction unit to a suitable position, step on the foot brake wheel, and fix the unit.

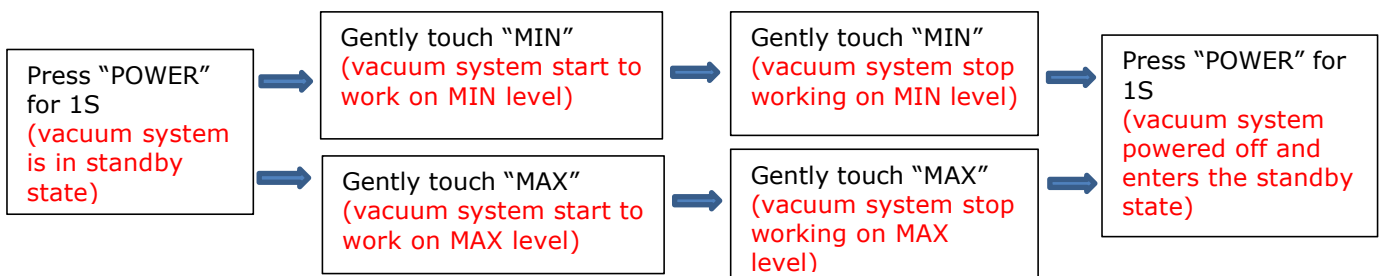
4.6 Connect to correct electric power supply according to the voltage requirements from name plate.

5. Instructions for use

5.1 Instructions for the main unit

Please make sure all the switches are turned off before operation, and start to use the suction unit as follows:

- 1) Connect to correct electric power supply, insert the power cord into the power supply jack which with grounding protective.
- 2) Set the power switch to ON position, the green working indicator light on touch panel is ON, disinfection system start to work.
- 3) About operation panel:



About exchange between "MIN" & "MAX":

- 1, Working at "MIN", gently touch "MAX", after 2S, "MAX" starts to work automatically.
- 2, Working at "MAX", gently touch "MIN", after 2S, "MIN" starts to work automatically.
- 4) Set power switch to OFF position, the green working indicator light on touch panel is OFF, disinfection system stop working.
- 5) Unplug the power cord, the whole unit is powered off.

5.2 Instructions for the free arm

5.2.1 Adjustment of free arm, please refer to Appendix II.

5.2.2 During operation, the best distance between patient's mouth to suction hood is 10-20cm.

Note: Please rotate and move the free arm gently to avoid shifting or falling

6. Attention

6.1 Precautions for use

- ※ Make sure for a reliable ground protective for power supply. ⚠
- ※ Clean up the suction device in time. After every treatment, please make sure the suction would keep working for another 5 min to make sure inner system with disinfection.
- ※ Once suction device stops working, please cut off electric power supply.
- ※ Clean up the suction in time, including dust accumulation.
- ※ If in need to replace electrical components, must cut off power supply first.
- ※ Personnel without professional training are forbidden to use this equipment to avoid operation with mistake.
- ※ Do not use this device if you know or foresee that there are hidden dangers in this device, which may cause harm to patients or medical personnel.

6.2 Precautions for maintenance

- ※ Before cleaning or maintenance, please cut off power supply.

6.3 Environmental protection

- ※ This suction device does not contain any toxic and harmful ingredients, and can be disposed of or destroyed according to local regulations.
- ※ Please replace filter on time.

7. Maintenance

7.1 UV disinfection lamp

UV disinfection lamp should be regularly cleaned and maintained every 6 month (or 1000hour). (Method: clean the lamp with a fine brush. If there is damage with the lamp, please contact us for replacement.)

7.2 Plasma disinfection

Plasma sterilizers should be regularly cleaned and maintained every 6 month (or 1000hour). (Method: clean the generator with a fine brush. If there is damage with the lamp, please contact us for replacement.)

7.3 Filter replacement

HEPA + activated carbon primary filter and HEPA + activated carbon secondary filter, should be replaced every 6 month (or 1000hour).

7.4 Fuse replacement

Use a Phillips screwdriver to remove the fuse base, pull out the failed fuse, replace with a new one, and install the fuse base back.

8. Troubleshooting

	Problem	Reason	Check	Tips
1	The whole suction is powered off	The power line is not connected	Make sure power cord plugged in correctly.	Insert the plug and connect to the correct power supply
		Fuse is loose or blown down	Check if the fuse is loose or blown down.	Fix the fuse well or replace with a new one.

2	Vacuum motor does not start	Power supply wiring or some electrical components are disconnected	Check the terminals, and wire connection to vacuum motor.	Connect all wires well according to the electrical diagram
		Vacuum motor is overheat	Temperature of the housing of vacuum motor is too high	Power off and wait about 2 hours before re-start
3	Cannot work properly with weak suction.	The filter is clogged	Check the filter	Cut off power supply, remove the door of suction body, and replace filter.

If the suction unit still does not work normally after all the above inspection and treatment, please contact the dealer or our after-sales service department, please send us the model number, serial number and details about failure.

9. Working principle diagram

9.1 Electrical diagram

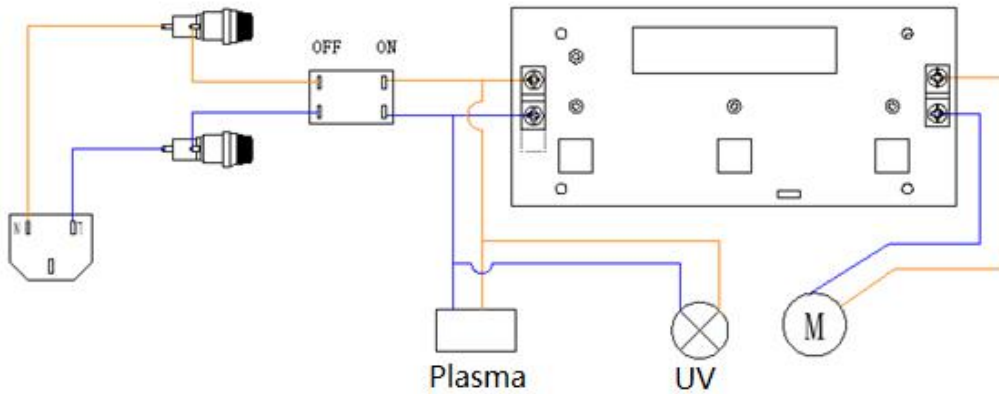
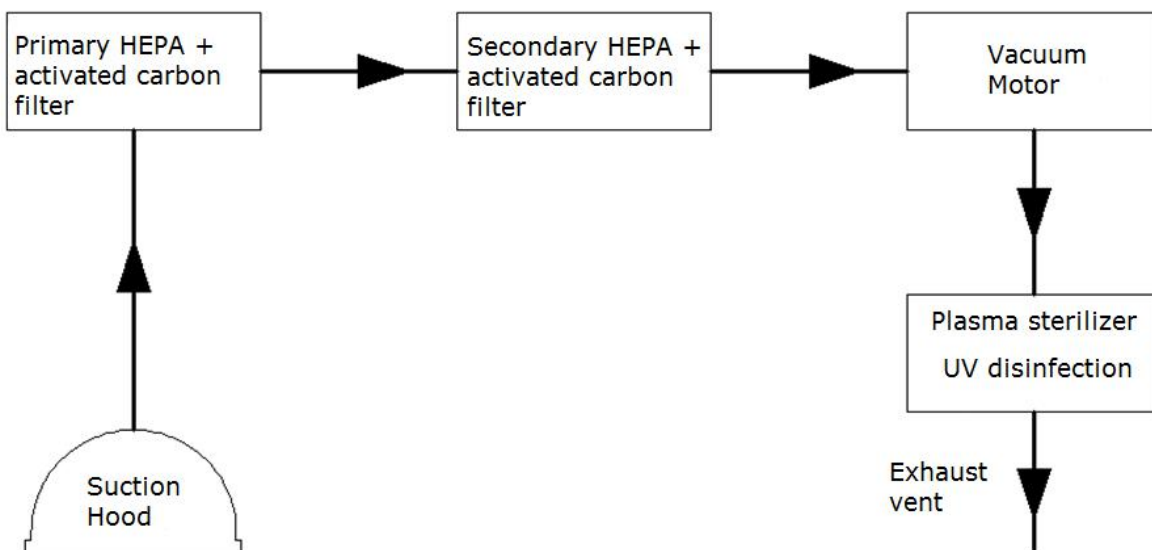


Fig 2 Electrical diagram

9.2 Air line diagram



10. Packing list

No.	Item	Quantity
1	Dental suction unit GS-E1000	1pc
2	Operation manual	1pc
3	Fuse T10AL 250V	2pcs
4	Free arm	1set
5	Suction hood	1pc

11. Electromagnetic Compatibility

The machine pass the electromagnetic compatibility test of IEC60601-1-2, should you have any questions, please contact our service department, thank you!

Keep away from the active high-frequency surgical equipment in the hospital and the RF shielding room of the system for magnetic resonance imaging.

If the equipment cannot work normally due to electromagnetic interference, disconnect the power supply and stop using it.

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.

Input/output Ports:

Port No.	Name	Type	Cable length	Cable Shielded
1	Power supply cord	AC	1.5	Unshielded

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.

WARNING: 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 GS Series Dental suction unit, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

“**WARNING:** Failure to use this equipment in the specified type of shielded location could result in degradation of the performance of this equipment, interference with other equipment or interference with radio services”;

Table 1 Electromagnetic emission level

Electromagnetic emission	
Electromagnetic requirements of this RF generator are given below and it is the responsibility of end user to meet these requirements.	
Emission test	Compliance
CISPR 11 Conducted emission	Group 1, Class A*
CISPR 11 Radiated emission	
IEC61000-3-2 Harmonic emission	Class A
IEC61000-3-3 Voltage fluctuation / flickering emission	Conform
* 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.	

Table 2 ENCLOSURE PORT

Phenomenon	Basic EMC standard	Immunity compliant levels
ELECTROSTATIC DISCHARGE	IEC 61000-4-2	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air
Radiated RF EM fields	IEC 61000-4-3	3 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz
Proximity fields from RF wireless communications equipment	IEC 61000-4-3	See Table 4
RATED power frequency magnetic fields	IEC 61000-4-8	30 A/m 50 Hz or 60 Hz

Table 3 Input a.c. power PORT

Phenomenon	Basic EMC standard	Immunity compliant levels
Electrical fast transients / bursts	IEC 61000-4-4	± 2 kV 100 kHz repetition frequency
Surges Line-to-line	IEC 61000-4-5	$\pm 0,5$ kV, ± 1 kV
Surges Line-to-ground	IEC 61000-4-5	$\pm 0,5$ kV, ± 1 kV, ± 2 kV
Conducted disturbances induced by RF fields	IEC 61000-4-6	3 V 0,15 MHz – 80 MHz 6 V in ISM bands between 0,15 MHz and 80 MHz 80 % AM at 1 kHz
Voltage dips	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°
Voltage interruptions	IEC 61000-4-11	0 % UT; 250/300 cycle

Table 4 Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment

Test Frequency (MHz)	Band (MHz)	Service	Modulation	IMMUNITY TEST LEVEL (V/m)
385	380 – 390	TETRA 400	Pulse modulation 18 Hz	27
450	430 – 470	GMRS 460, FRS 460	FM ±5 kHz deviation 1 kHz sine	28
710	704 – 787	LTE Band 13,17	Pulse modulation 217 Hz	9
745				
780				
810	800 – 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation 18 Hz	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
1845				
1970				
2450	2400 – 2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation 217 Hz	28
5240	5100 – 5800	WLAN 802.11a/n	Pulse modulation 217 Hz	9
5500				

12. Addendum

12.1 Appendix I. Schematic diagram of free arm installation

11.1.1 Extend the free arm as shown in Figure 4 (black knobs on both sides of the free arm can be adjusted for tightness, hold one side with left hand, adjust the opposite side with the right hand);

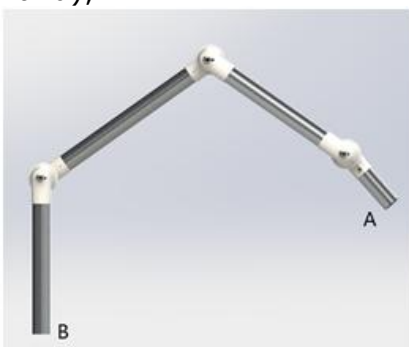


Fig 4



Fig 5

12.1.2 Insert B end of the free arm into the top interface of the main unit, as shown in Figure 5.

12.1.3 Unscrew the locking knob of the suction hood (Figure 6), insert A end of free arm into the suction hood, and screw in the locking knob as shown in Figure 7;

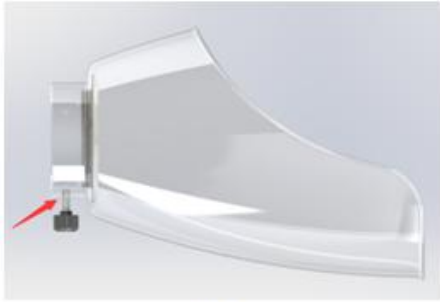


Fig 6



Fig 7



12.2 Appendix II. Free Arm Rotation Diagram

- Free arm interface ① 360° rotation
- Free arm joint ② rotate 180° up and down
- Free arm joint ③ rotate 360° up and down
- Free arm joint ④ 360° rotation left and right, 360° rotation up and down

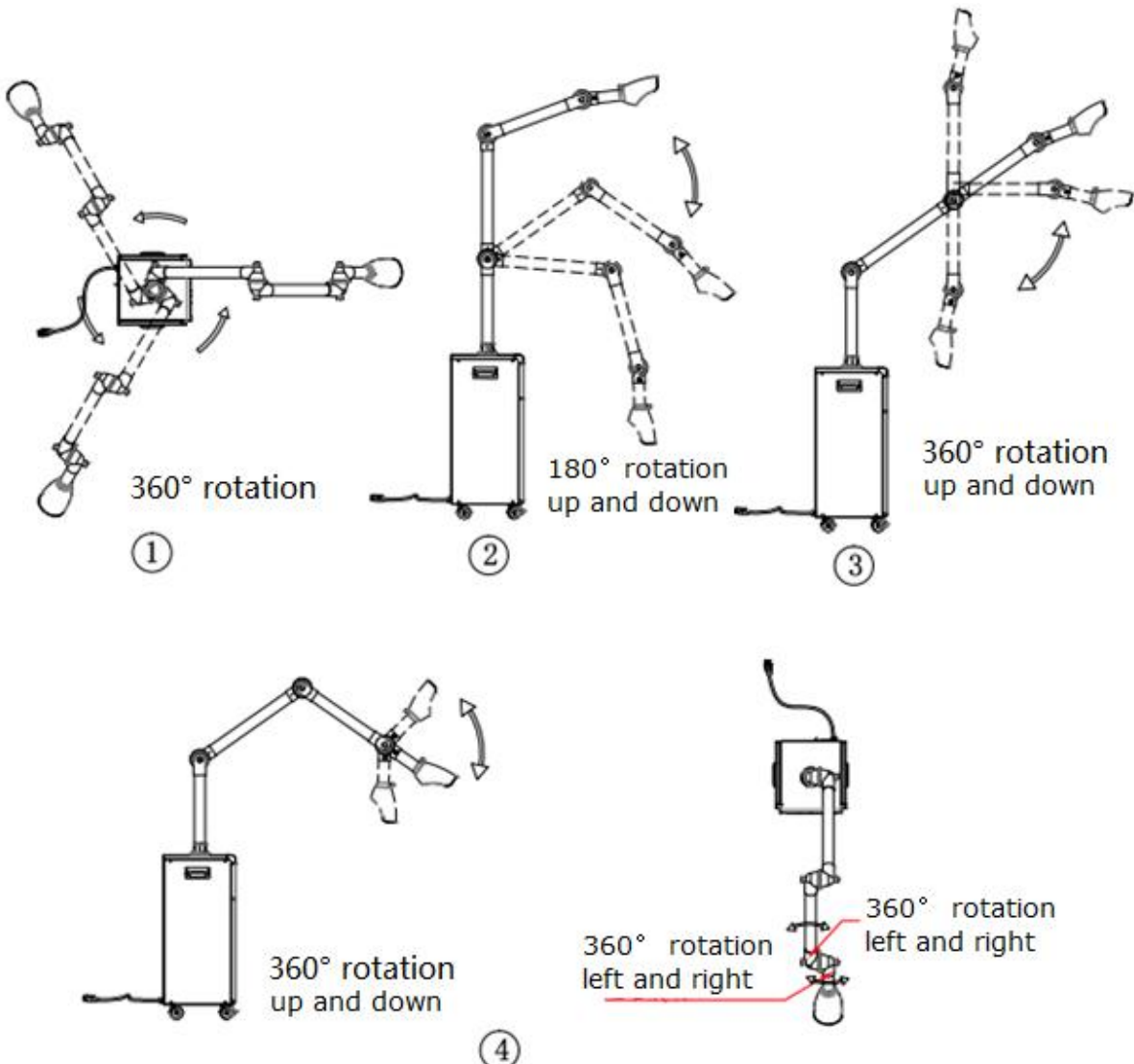


Fig 8 Diagram of free arm rotation

13. Manufacturer information

Item: Dental Suction Unit

Model No.: TR-YP606D4

14. Disclaimer

We reserves the right to modify the product design, technology, spare parts, operation manual or packaging contents at any time without prior notice. Thanks!