

Greeloy® GU-P212

Mobile Cabinet Dental Unit

Instruction Manual (Technical Instruction)





Note: Read all these instructions before attempting to operate this product, and save these instructions for future reference.

※ Thank you for choosing our brand dental product.

※ It is designed for users to safely and effectively use this equipment. Please carefully read the product instruction manual before installation and debugging as well as operation and maintenance, and properly keep it for future use.

※ Properly keep the product quality maintenance card, product instruction manual as well as installation and maintenance accessories provided with product.

※ Please strictly follow the operation instruction when using and properly maintain it.

※ Any problems arise during using, please contact with local distributor or our company, and we will provide you with excellent service and help.

Commitment: when handling failure, if necessary, we commit to provide users with necessary and more specific technical data.

Contents

I.	General.....	1
II.	Transportation and storage.....	1
III.	Environmental safety.....	1
	1. Disposal of packing material	1
	2. Disposal of equipment	2
	Section one (For end-user).....	3
IV.	Profile.....	3
V.	Structure of complete unit.....	3
VI.	Working Conditions.....	3
VII.	Operation.....	4
	1. Turn on power switch (With Compressor)	4
	2. Installation of handpiece	4
	3. Handpiece operation	4
	4. Adjustment of air pressure of handpieces	4
	5. Installation of 3-way syringe	6
	6. Adjustment of 3-way syringe	6
	7. Saliva ejector	6
	8. Water bottle system	6
VIII.	Cleaning and sterilization.....	6
	1. Handpiece	7
	2. Other instruments	7
	Section two (For technicians).....	8
IX.	Equipment installation.....	8
	1. Uncase examination	8
	2. Connection of pipeline and circuit	8
X.	Function debugging.....	8
	1. Adjustment of air pressure of handpieces	8
	2. Adjustment of 3-way syringe	9
XI.	Maintenance.....	9
	1. Handpiece	9
	2. Saliva ejector	10
	3. Fuse (with compressor)	10
	4. Drainage of tank(With compressor)	10
XV.	Failure diagnosis.....	10

I. General

The manual is divided into two sections: the first one is for end-user, the second section is for technicians.

The meaning of signs used in the instruction manual is as follows: Attention, Caution and Warning.

Attention: important content is included that deserves attention.

Caution: it comes before some particular operations. The equipment can be damaged once these provisions are violated.

Warning: it comes before some particular operations. The equipment can be damaged and operator can be injured once these provisions are violated.

Warning:

To guarantee the safe and normal operation, this unit shall not be placed in the environment of mixture of the inflammable anesthesia gas with air or oxygen or nitrous oxide.

Attention:

- **No load running and over-pressure start of the handpiece is strongly forbidden.**
- **Cut off the power before replacing the safety fuse.**
- **The plastic membrane used for packing shall be disposed properly due to its harm to human body and environment.**

II. Transportation and storage

The unit can be transported or stored since it has been properly packed. Under the following ambient conditions can be placed fifteen weeks at most:

- a) Environment temperature: - 40°C~+55°C.
- b) Relative humidity: ≤ 93%
- c) Range of the atmospheric pressure: 500 hPa~1060 hPa
- d) In well-ventilated room without erosive gasses.

III. Environmental safety

1. Disposal of packing material

All packing material does no harm to the environment and can be completely recycled.

- Wooden base plate

- Carton
- Polyethylene bag

The collection and recycling of packing material are good for saving raw material and disposing substantial waste. Please place the packing material in the specified deposit site of recycle material.

2. Disposal of equipment

The equipment mustn't be used if it reaches its operation life. In view of this, please cut off the power first.

The disposal of equipment won't cause any danger.

To protect the environment, please place the equipment that can't be used any more in the specified deposit site of recycle and non-recycle material.

Warning: the manufacturer is responsible for the safety, reliability and performance of equipment only under the following circumstances:

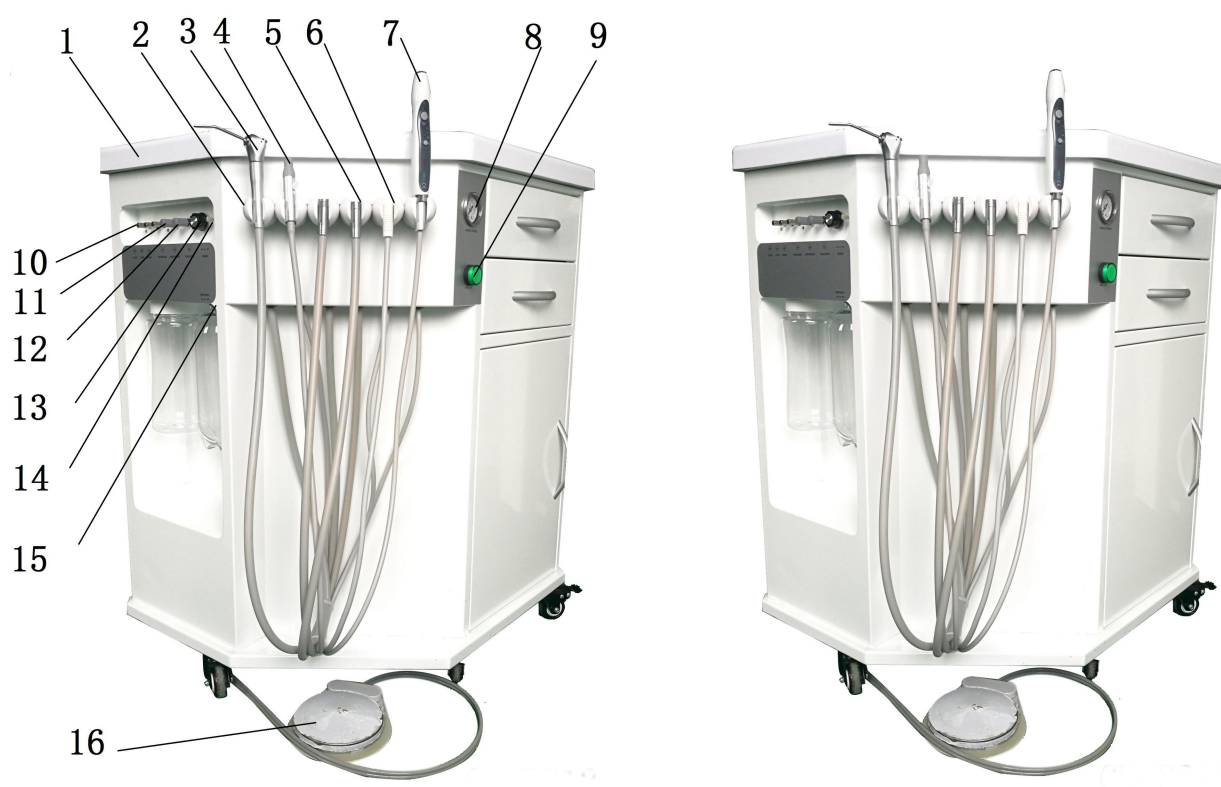
- Any repair or modification is carried out by qualified technician.
- The electric wiring of operational site must meet all the effective provisions of installation.
- Operate according to operating instruction.

Section one (For end-user)

IV. Profile

TR-C300 Mobile Cabinet Dental Unit is suitable for the diagnosis, treatment and operation on oral disease.

- It is suitable for the diagnosis, treatment and operation of oral disease.
- It is class I and B-type equipment.



Structure of complete machine

Fig. 1 Main Unit

1, Unit Body	2, Holder	3,3-Way Syringe	4, Saliva Ejector
5, Hanpiece Connector	6, Ultrasonic Scaler	7, LED Curing Light	8,Handpiece Pressure Gauge
9, Power light	10, Adjustor	11, Air Pressure	12, Water pressure
13, Sclaer power	14, Drainage	15, Water supply	16,Foot Switch

V. Working Conditions

To ensure its normal use, the technical requirements on air, water, electricity and environment are as follows:

- a) Power supply: 110~240V 50/60Hz
- b) Air source: without oil, water and impurity
Air pressure: 0.55~0.80Mpa flow $\geq$ 50L/min
- c) Environment: temperature 5~40℃; relative humidity $\leq$ 80%
- d) Atmospheric pressure range: 860hPa~1060hPa

VI. Operation

1. Turn on power switch (With Compressor) Power Switch



Fig. 2 Power Switch

2. Installation of handpiece

- Align four holes of joint core with relevant connection pipe of handpiece.
- Align adaptor sleeve with screw mouth of handpiece, gently screw it in, moderately screw it tight until it won't leak.



Fig.3 Installation of handpiece

Attention: No load running or over-pressure start of the handpiece is strongly forbidden.

3. Handpiece operation

Take up handpiece from holder and stamp on foot switch to start it when the handpiece rotates. Try the both one by one!

4. Adjustment of air pressure of handpieces

Handpiece air flow adjustor, clockwise keep less, counterclockwise keep more.

Attention:

- **Before debugging handpiece, read instruction manual of handpiece firstly and understand operation air pressure of each handpiece. (Refer to the following enclosed list)**
- **Dental bur or test bar must be inserted during debugging. No load running or over pressure start-up is strictly prohibited.**
- **Fill clean lubricant into handpiece before debugging.**



Before using, the handpiece must be adjusted within specified air pressure range. Otherwise, over-low pressure will cause invalid operation and over-high pressure will damage handpiece.

If the adjustment of air and water pressure of handpiece is needed, relevant air and water regulating valves can be adjusted. Rotate clockwise to adjust down the pressure and counter clockwise to adjust up the pressure. Careful and slow adjustment is needed during adjustment.



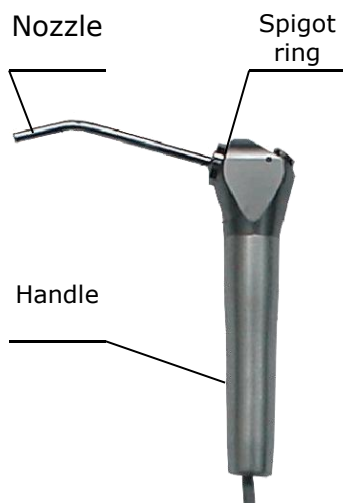


Fig.4 Installation of three-way syringe

5. Installation of three-way syringe

- About three-way syringe barrel with joint below instrument tray, and screw it tightly.
- Press down spigot ring, then insert nozzle, the nozzle will be locked when the spigot ring resets. (Fig. 4)

Attention: distinguish waterway and airway (the left one is waterway and right one is airway), check if the water and air injected by three-way syringe match with the pattern on the button of three-way syringe.

6. Adjustment of Three-way syringe

Press down air-out button  and water-out button

 respectively, mist will be sprayed out if these two buttons are pressed at the same time.

7. Saliva ejector

Take up saliva ejector from holder, it starts to work.

8. Water bottle system

The unit has water bottle system. Handpieces use water from this bottle. Uncontaminated water or medical distilled water must be filled in timely when the water is empty.

The specific method of filling water is as follows:

- a) Close air check valve.
- b) Screw off water bottle clockwise when the airflow sound can't be heard on the position of water switch.
- c) After filling up the water, counterclockwise screw water bottle tightly and open air check valve to use it.

Attention: As for the first water filling of newly bought equipment or the reuse of equipment after long-time stand-by, please make sure if the water purification bottle is clean before filling water.

VII. Cleaning and sterilization

After a period of using, it is necessary to clean and sterilize the equipment regularly.

1. Handpiece

Please refer to the enclosed instruction manual of handpiece for its sterilization.

- a) Clean the surface of dental drill with alcohol cotton.
- b) Blow it with clean lubricating oil for 2-3S.
- c) Wrap it with sterilization package.
- d) High-temperature steam sterilization (135°C, 15min, 220KPa).

2. Other instruments

- a) High-temperature steam sterilization (135°C, 15min, 220KPa) should be used for three-way syringe.
- b) Disposable suction nozzle should be equipped with saliva ejector. Throw away the suction nozzle after treating each patient and replace with a new one before the treatment of next patient.
- c) Put the high vacuum suction nozzle in high temperature sterilization box of 134°C to sterilize it for four minutes.

Section two (For technicians)

VIII. Equipment installation

1. Uncase examination

Before opening the box, please examine the upper and lower side as well as the surrounding of box-plate to see if there is damage due to collision and drench due to rain, then open the box and check parts and accessories by referring to "packing list" to see if it is in good condition. Any queries, please contact with the distribution unit immediately or inquiry with us.

Caution: The opening process of external packing should be properly and orderly to avoid injury to equipment and personnel.

2. Connection of pipeline and circuit

With compressor: Connect the plug with power supply

Without compressor: Connect black PU pipe with air source

IX. Function debugging

1. Adjustment of air pressure of handpieces

Debug high speed and low speed hanpiece in turn.

Attention:

- **Before debugging handpiece, read instruction manual of handpiece first and understand operation air pressure of each handpiece. (Refer to the following enclosed list)**
- **Dental bur or test bar must be inserted during debugging. No load running or over pressure start-up is strictly prohibited.**
- **Fill clean lubricant into handpiece before debugging.**



Before using, the handpiece must be adjusted within specified air pressure range. Otherwise, over-low pressure will cause invalid operation and over-high pressure will damage handpiece.

If the adjustment of air and water pressure of handpiece is needed, relevant air and water regulating valves can be adjusted. Rotate clockwise to adjust down the pressure and counter clockwise to adjust up the pressure. Careful and slow adjustment is needed during adjustment.

2. Adjustment of 3-way syringe

Press down air-out button  and water-out button  respectively, mist will be sprayed out if these two buttons are pressed at the same time.

X. Maintenance

1. Handpiece

Handpiece is a delicate device, so it shall not be pounded or dropped. It shall be cleaned and lubricated with special detergent and lubricant every day. As for the specific method, refer to the instruction manual of handpiece.

The cleaning and sterilization methods shall be based on the recommended methods by manufacturer of handpiece. Oil spray lubrication shall be conducted before high temperature sterilization.

The following contents are only for reference:

High speed turbine handpiece is easy to be damaged. There are many causes, and only by using it properly can the service life be prolonged.

- 1) Observe the working pressure of the handpiece regularly, which should not be too high or too low. When it exceeds the standard, adjust it in time.
- 2) Rinse and lubricate the handpiece regularly, oil it not less than 3 times every day, and increase the times of oiling as appropriate.
- 3) Bearing will be damaged.

4) Change the needle regularly. Obtuse needle will damage the handpiece bearing. The sharpness of the needle must be checked every time before grinding teeth. Generally the needle should be renewed after grinding 4-5 teeth.

Before HTHP sterilization, rinse, lubricate and oil the handpiece, package it with special sealing bag and put into HTHP sterilizer.

2. Saliva ejector

Besides the maintenance of their exterior cleanness, the cleanness of interior pipeline system of saliva ejector and suction still need to be maintained. The method of cleaning pipe system is as follows: regularly pump clear water or special sterilized water about 30s with recommended 1 or 2 times every day.

3. Fuse (With compressor)

The fuse is inside electrical outlet. The method of replacing fuse is as follows:

Cut off the power, pull out the fuse cover to take out the fuse and replace with a new one, then push it up.



Fig 5 Fuse

4. Drainage of tank (With compressor)

The air tank has the function of stabilizing air pressure and eliminating water. To ensure normal operation of the machine, the dirty water deposited in the air tank should be discharged regularly, ordinarily once a week.

A waste rainspout is available at the lower left side of the equipment. For discharging of dirt, turn the switch. Then the waste water accumulated in the air reservoir will be discharged.

Attention: what is discharged from the reservoir is dirty water; in order to preserve environmental cleanliness, please place a container under the waste rainspout pipe mouth, to prevent dirty water from spilling all around.

XV. Failure diagnosis

	Problem	Reason	Check	Tips
1	Power switch does not light.	1, Power not connected. 2, Fuse burnt. 3, Power switch inserter is detached or switch is damaged.	1, Check power switch and inserter. 2, Check the fuse.	1, Connect power. 2, Eliminate short circuit, replace the fuse. 3, Insert the inserter or replace the switch.
2	Air compressor does not start.	1, Connecting wires detached or electric components get loose. 2, Temperature of motor rises too sharply. 3, Air Tank full with pressed air. 4, Problem with pressure switch.	1, Check all wires connectors. 2, Touch the motor, feel the temperature, but be careful. 3, Release pressure from tank. 4, Contact the service department for maintenance.	1, Connect the connecting wires accordingly, and insert electric components. 2, Cool air pump and stop use for a while. 3, Properly release pressurized air from tank.
3	Compressor keeps running, but pressure does not go up.	1, Air leaking from pipe. 2, Solenoid valve fails. 3, Saliva ejector switch on. 4, Clean water tank not tightened. 5, Leaking from auto-drain.	1, Remove the operation panel check inner pipe connecting. 2, Compressor pumping, but leaking from solenoid valve. 3, Check the suction switch and clean water bottle. 4, Check the auto-drain.	1, Replace or tight the pipe connector. 2, Remove solenoid valve, replace the "O" ring, clean all the connecting pipe. 3, Turn off the suction switch and tight the clean water bottle. 4, Replace the auto-drain. 5, Eliminate air leakage.
4	Compressor starts with strong vibration and loud noise, ultimately fails to start up.	Voltage is too low.	Check the electric power with multimeter.	Wait till voltage rises or use voltage stabilizer.
5	The air compressor keeps working and can not be stopped.	1, Solenoid valve doesn't work. 2, Pressure switch is broken. 3, Leakage from tube connectors. 4, Leakage from drain valve.	1, Solenoid valve can not cut off completely. 2, Check whether the pressure switch is in normal. 3, Watch and listen to the flow, or check it with suds. 4, Check if there is air leakage from drain valve.	1, Open the solenoid valve core, clean or replace it. 2, Adjust or replace the pressure switch. 3, Connect the joints tightly, avoid leaking air. 4, Avoid leakage.
6	No spray water while	1, Water switch	1, Check the water	1, Open the water switch.

	handpiece rotating.	is not open. 2, Clean water bottle is empty. 3, Jet hole of handpiece is blocked. 4, Water supply adjustor closed.	switch. 2, Check the clean water bottle. 3, Check the water supply adjustor. 4, Check the 3-way syringe.	2, Fill clean water into the bottle. 3, Dredge the jet hole of handpiece, clean the valve. 4, Adjust the water supply adjustor correctly.
7	The handpiece leaks water when not in operation.	1, Air & water distributing valve fails, or there is impurities in valve core. 2, Foot switch is not restored..	1, Remove one side of the valves in handpiece, take out faucet, spring and valve core. 2, The pressure gauge does not decrease when foot switch is put up.	1, Replace the valve core. 2, Loosen the cover of foot switch, make it act freely, clean the core and replace the O-ring.
8	The handpiece isn't powerful or doesn't operate.	1, Operation air pressure is too low. 2, Bearing damaged. 3, Dental bur is worn or isn't clamped tightly. 4, Pipeline blocked. 5, Air pipe leaking.	1, Check pressure adjustor. 2, Check handpiece for bearing, bur, pipe connecting.	1, Adjust handpiece pressure according to instruction manual. 2, Replace the bearing of handpiece. 3, Replace with a new dental bur and clamp it tightly. 4, Dismount bearing assembly and dredge the pipeline of handpiece. 5, Replace the housing of handpiece.
9	Button of 3-way syringe leaks.	O-ring is worn or aging.	Check the "O" ring.	Replace O-ring and add silicon grease oil to lubricate.
10	3-way syringe doesn't sufficiently spray vapor.	1, Water-pipe and air-pipe of 3-way syringe connected oppositely. 2, Water supply of 3-way syringe is too strong or air supply is too weak.	1, Check the air and water pipe connecting. 2, Check air and water supply.	1, Exchange water-pipe and air-pipe of 3-way syringe. 2, Adjust the water and air of 3-way syringe accordingly.
11	Air and water leakage in 3-way	The core of 3-way syringe is not restored, or have impurities	Check the water and air button of 3-way syringe	Clean or replace the o-ring.

	syringe	or O-ring valve is fail		
12	Air and water leakage in adjustor.	1, Valve core is screwed too far. 2, O-ring is damaged. 3, Thread connector is loose.	1, Remove and check the component. 2, Remove and check the valve core. 3, Check if there is leakage in the thread connector.	1, Screw the valve core properly. 2, Replace O-ring. 3, Tighten the thread connector.
13	Saliva ejector is powerless	1, Flow of saliva ejector is low by saliva ejector regulator valve. 2, Switch of saliva ejector is closed or blocked filters. 3, Saliva ejector generator is plug.	1, Check whether the saliva ejector valve is in the minimum position. 2, Check the switch of saliva ejector and the internal filter of saliva ejector. 3, Remove the dirt bottle to check whether the saliva ejector generator is plug.	1, Turn the button counterclockwise to increase the flow. 2, Open switch and clean core. 3, Clean the saliva ejector generator.

Attention: If it is necessary for the user to repair this unit, we could provide detailed information of the components.