



## **R5/R5 +/R5-Cart Dental Chair Instructions For Use**

### **IMPORTANT**

This manual provides operating instructions for the Mr.Right.  
The instructions contained in this booklet should be thoroughly read  
and understood before operating the chair.  
After the installation is completed, keep this manual in a safe  
place and Referto it for future maintenance.

# Contents

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# **I .General notice**

## **1.1 Esteemed users**

It is our pleasure that you bought this dental unit made by Mr.Right , this product was designed and manufactured according to doctor's demands, please read the user manual carefully before operate the dental unit.

## **1.2 Usage notice**

Read this user manual carefully to familiar with the functions of this new dental unit before use, and pay attention to the warning and safety notices listed in this manual. Store this user manual at a certain location where able to reach easily by users.

## **1.3 Warranty and duty**

This device must be maintained regularly to ensure its safety and reliability, to protect doctor and patient or other user's safety and health during operation.

The Maintenance can only be done by us or the authorized agents from us, if there are something damaged with parts which matter with safe performance of the device, the faulted parts should be changed into original parts from factory.

## **1.4 Technician and the working area**

Operators should be trained by our company or our agents, this device should be used for dental diagnosis and treatment, it can not used at the area with risk of explosion.

## **1.5 Accessories**

The accessories mentioned in this manual like high-speed handpiece, low-speed handpiece, scaler, curing light, are not included in the dental unit, they are optional accessories available for further purchase.

## II . Safety notice

### 2.1 Dangerous class symbols

Comply with the warning and safety notice, to avoid casualty or property loss. Please be attention to the marks below:

|   |
|---|
| <b>Warning</b>  |
| <b>Personnel Injured Warning</b><br>A possible dangerous situation that could result in serious bodily injury or death.                 |
| <b>Notice</b>   |
| <b>Property Lost Warning</b><br>A possible harmful situation which could lead to damage of the product or an object in its environment. |
| <b>Important</b>  |
| <b>Helpful information</b><br>Application instruction and other important information.  |

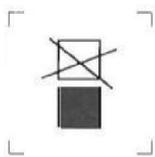
### 2.2 Symbol explanation

#### 2.2.1 The labels as below:

 Pay attention to the enclosed document

 Type B parts

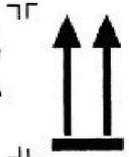
#### 2.2.2 Explanation to the symbol on the wood boxes



No heavy  
pressure



No raining



Upward  
placement



Handle with care



No direct sunshine

### 2.3 Media quality

To safeguard patients, please provide drinking water and oil-free medical use gas when use this dental unit, users are responsible to the quality of water. In order to ensure water's quality meet medical use request, users should check the water quality periodically.

### 2.4 Patient Chair

Maximum load capacity of the base of patient chair is 300KG.(dental unit net weight excluding stools is 245KG) patients must stretch feet on the cushion.

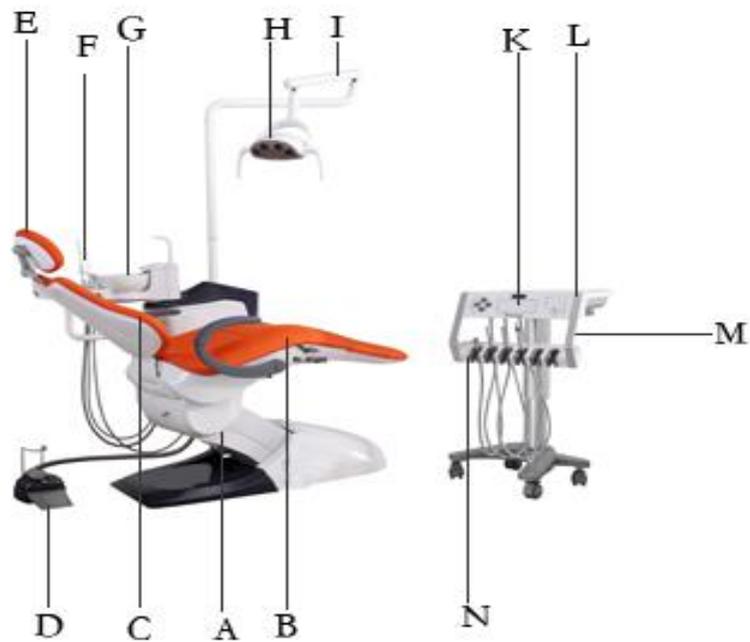
### 2.5 Air Vent

The air vent should not be shielded, or it will affect air ventilation to lead device over heat. Do not spray liquid such as disinfectant into the air vent. Or it will lead to device malfunctions.

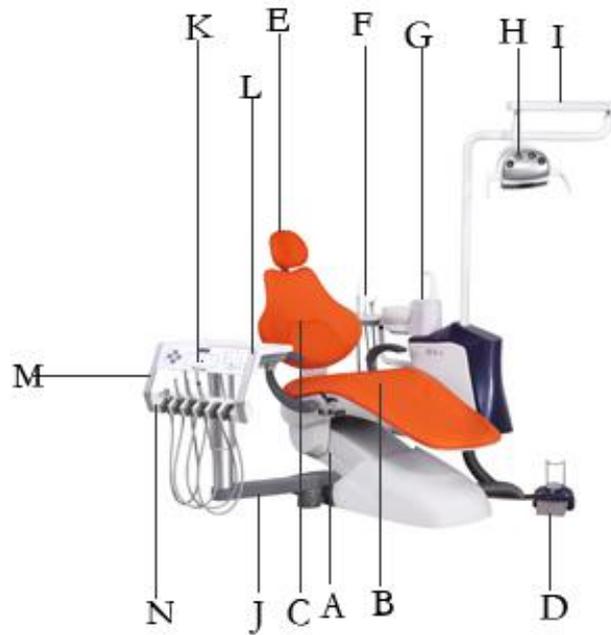
### III. Construction



**MODEL:R5 Diagram**



**MODEL:R5-Cart Diagram**



**MODEL:R5+ Diagram**

|   |          |   |                   |   |                 |   |                             |   |                 |
|---|----------|---|-------------------|---|-----------------|---|-----------------------------|---|-----------------|
| A | Base     | D | Foot controller   | G | Spittoon        | J | Balance arm                 | M | Air lock        |
| B | Cushion  | E | Headrest          | H | Operating light | K | Air pressure meter          | N | Instrument rack |
| C | Backrest | F | Assistant control | I | Light arm       | L | Touch sense Instrument tray |   |                 |

### **3.2 Description of construction**

This dental unit consists of patient chair, connector of handpiece, operation lamp, 3-way Syringe, weak saliva ejector, strong saliva ejector, spittoon, film-viewer, foot pedal, air and water supply system.

Electricity, water and air are supplied from the floor box (drainage system). There are air filter, Pressure reducing valve, water filter and electricity filter for purifying the water, air and electricity supplying to this device.

The air for handpiece is switched on or off by the foot pedal, and the air and water system of handpieces, ejectors are controlled by the relevant valves in the rack.

This dental unit is equipped with bottle for purified water. which is helpful for handpieces to extend its lifespan. And it is easy for exchanging between tap water and purified water.

### **3.3 Application**

For dental diagnosis and treatment from medical department use only.

## IV. Specification

**Input Voltage** : 230V AC $\pm$ 22V , 50HZ $\pm$ 1HZ;

**Power consumption**:  $\leq$ 600W;

**Rated current**: 3.2A;

**Fuse**: 05 $\times$ 20, 6.3A;

**Safety class**: Class II a

**Protection level of anti electric shock**: B Type applied part

**Work mode** : Intermittent work

**Signals connection**: No signal input or output

**Signals connection class**: Common electrical appliance;the foot control is for IPX4 level

### **Transportation and storage conditions:**

Temperature: -40 $^{\circ}$ C-- $+$ 55 $^{\circ}$ C

Relative humidity: 10%--90%

Air pressure : 50kPa--106kPa

### **Working condition:**

Working temperature: 5 $^{\circ}$ C--40 $^{\circ}$ C

Air relative humidity:  $\leq$ 80%

No condensation

Air Pressure : 86kpa--106kpa

Air discharge volume: 55L/min;

Air input pressure: 500kPa--800kPa;

Water input pressure: 200kPa--400kPa;

**Dental unit total weight**: 245kg $\pm$ 5kg;

Patient seat (Cushion)lowest height: $\leq$ 410mm;

Patient seat (Cushion)highest height $\geq$ 760mm;

Backrest front rake: 105 $^{\circ}$  $\pm$ 5 $^{\circ}$ ;

Backrest back rake : 180 $^{\circ}$  $\pm$ 5 $^{\circ}$

Air pressure for high speed handpiece: 0--300kPa;

Air pressure for low speed handpiece: 0--250kPa;

## V. Installation and setting

### 5.1 Installation conditions

To make sure dental unit work properly ,the technical request for air ,electricity,water and environment should be as below:

Air supply : Air pressure: 0.5 MPa--0.8MPa Flow volume : >50L/min

Water supply : Water pressure: 0.2MPa--0.4MPa Current volume: >10Lmin

Power supply : AC 220V±10% 50Hz±1Hz

### 5.2 Preparation for installation

Choosing the dental unit installation position according to general layout ,lighting,convenient to use and

other conditions. Dental unit should be installed in the place with clean ,dry, good air ventilation and cool place environment and make sure the floor is flat and solid for electric controlled baseboard .

Then chooses the right position to install ( the installation position should be kept the dental unit away from any other objects when move ),and open the front cover, connects the wires and tubes on the floor as bellow diagram.

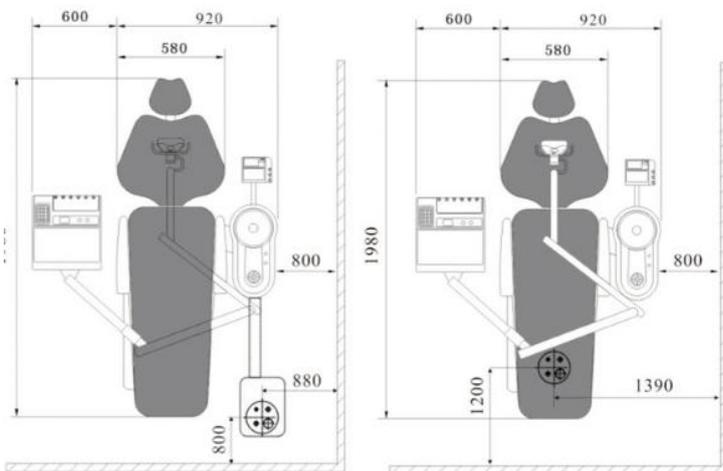
#### 5.2.1 Arrangement for water ,air ,electricity in and drainage system

Get the things ready before installation

A) The end of wire tubing should stretch over 80mm from ground.

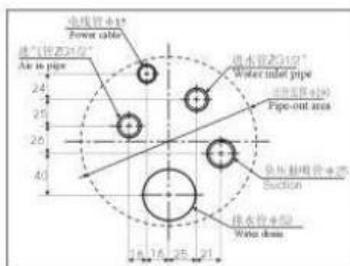
B) Water input and air input use 22mm

C) Drainage pipe internal diameter 40mm, the end of pipe stretch over 50mm from ground

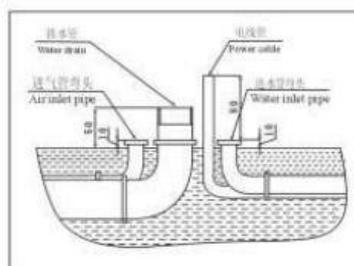


Installation diagram of external floor box

Installation diagram of built-in floor box



Outlet Graph



Tubes Outlet Graph

## **5.2.2 Steps of installation**

### **A)Patient chair installation**

Fit the chair base at the planned place. If the installation floor is not flat enough, user can fix the five pieces of enclosed leveling screws(M12\*15) into the five screw holes (M12),adjust the height of five screws to make sure the dental unit stand firmly onto the ground.and then fix four pieces of expansive screws into the ground, to make sure the device works stable and quietly.

### **B)Mount the patient chair cushion**

Stretch the backrest to the end first,fix two flat head screws into screw wholes of the seat through the screw slots of the base frame,adjust the seat board to best position to make sure the bottom surface touch firmly with the metal frame, finally fix the rest two screw firmly.

### **C) Floor box installation**

Seal this device's outlet tubes with the inlet tubes from outside tightly, thus to avoid the water and air input or output leak outside. The outlet unit may set in the frame base or outside of the base, it depends on your choice. Open the cover of the base , install the floor box in the right position.

### **D)Tubes connection**

You must get rid of the water and air inside the tubes from this dental unit,as well as the waste, note to get the tubes connected tightly with outside tubes.

### **E)Dental lamp installation**

Pass the power wire through the supporting arm inside,and connect it with the wire from pillar bases of the dental unit,put the plug in unit into the pillar and then fix the supporting pillar onto the dental unit,(Please mind not to damage the power wire when connecting the wire)

Pass the power wire from the pillar into the cover ring of dental to fit together with the wire of dental lamp.insert the connective pivot into the balance arm,and fix with screw.

### **F)Connect power supply**

Put the plug into the power socket,which must have the wire connected to ground.the wire should have the copper wire inside less than 1mm make sure this wire connected well with ground.

## **5.3 Modulation**

Now the device is at state of modulation after different parts are fitted well.

Open the base box,check the air pressure meter of air filtering adjusting valve whether it reads 0.6mpa,if not, adjust the valve to keep the air pressure in 0.6mpa.(Method: pull up the rotary knob at the top air pressure valve,turn clockwise for increasing pressure, turn anticlockwise for reducing pressure.)

## VI. Operation instruction

### 6.1 Master switch of water,electricity,and air

This switch is set at the back of base,Pulling out means power,water and air on,Pushing down means power,water and air off.

#### Notice

For protecting the dental unit and extend its lifespan as well as saving power,please get this master switch off after use.

### 6.2 Operation lamp

Led dental lamp

#### 6.2.1 LED dental lamp

LED dental lamp have a function of stepless dimming . Please refer to"LED Dental Lamp User Manual". Power on or off can be controlled by foot pedal controller or main control panel. Press the button down first to start. Press again to shut down the light. Every press will receive buzzer feedback.

#### Warning

No shining to eyes directly with the LED dental lamp

### 6.3 Connective end for high speed handpiece

Take the connective end of high speed handpiece off the instrument rack,connect it to high-speed handpiece. Step on the side of foot controller,which mark"W" and the water can get out of it. If stepping on the button of blow, the handpiece can blow, and you can adjust the water mist volume of handpiece with spray knob. And you can adjust the working air pressure with air pressure knob aside(normal air pressure is 0.25 MPa). Get off the foot controller to get power off, then put the handpiece back on to the rack.

### 6.4 Low and High speed handpiece

Take the end of low-speed handpiece out of the rack,and connect it to the low speed handpiece,the operation steps are the same with those of high speed handpiece. You can adjust the water mist volume of handpiece with spray knob,and you can adjust the working air pressure with air pressure knob aside(normal low handpiece air pressure is 0.3MPa, high speed handpiece air pressure is 0.25MPa).

Step off the foot controller to get power off, then put the handpiece back on the rack.

#### Notes

We'd better raise the water or air volume gradually to get the ideal performance. do not idle the handpiece or start with over air pressure. otherwise it may shorten lifespan of the handpiece.

### 6.5 3-ways syringe

This dental unit is equipped with 2 pieces of 3-ways syringe.When using the 3 way syringe, press the corresponding button to eject water(air), pressing the two button together can be sprayed with mist.

## 6.6 Strong/Weak saliva ejector

The strong ejector or weak ejector will start once they get away from the rack, and it will stop when it get back to the rack

**Air Master Switch    Water switch**



Press:On/Pull:Off

**R5 bottle sticker**

Pull:Choose A bottle(A bottle for disinfection water)

Press:Choose B bottle(B bottle for purified water)

Switch under the Touch control panel instrument tray



## 7.Purified water bottle

### 7.1 Single bottle (only for R9)

This bottle is equipped purified water bottle for 3-ways syringes and handpieces use of instrument tray.

Turn the air switch to **ON**,and turn on water switch when use purified water; Close the air supply witch before adding purified water into the water bottle. Turn the switch to **OFF** side if need to use running water.

### 7.2 Two bottles (only for R7)

Compare with single-bottle dental unit, Double bottle dental unit has two switches for two bottles selection, it is the same way use as 7.1 above, the switch at the side of **A**, means the bottle **A** is ready to supply water. Turn to **B** side,means the bottle **B** is ready to supply water (Front for **A** bottle,behind for **B** bottle).

### 7.3Function of cleaning & disinfection (only for R5 and R7)

This is the function of cleaning and disinfecting tube of handpiece . Operation steps as below:

#### A) Preparation

Add purified water into bottle **B**,and add bottle **A** with disinfectant liquid.(advice of 500mg/L disinfectant liquid including chlorine). Shift the master switch to **ON** side to get the air and water supply ready. Turn the water switch to the side **A** .

#### B) Flush and disinfection

Take the handpiece connective end out of the rack and put it over the spittoon, turn on the disinfection switch on the instrument tray,then water spouts out from the end of handpiece connective end. and you can control the water volume from the end with valve knob beside the instrument tray.(20 to 60 seconds for advice).

Turn the purified water bottle switch to side **B**, the handpiece can spout out disinfectant liquid at this time. (2 to 10 minutes of sterilizing the handpiece tube for advice), when turning the switch to **A** side again, it will flush the handpiece tube again to clean away the disinfectant liquid (we advise 20 to 60 seconds)

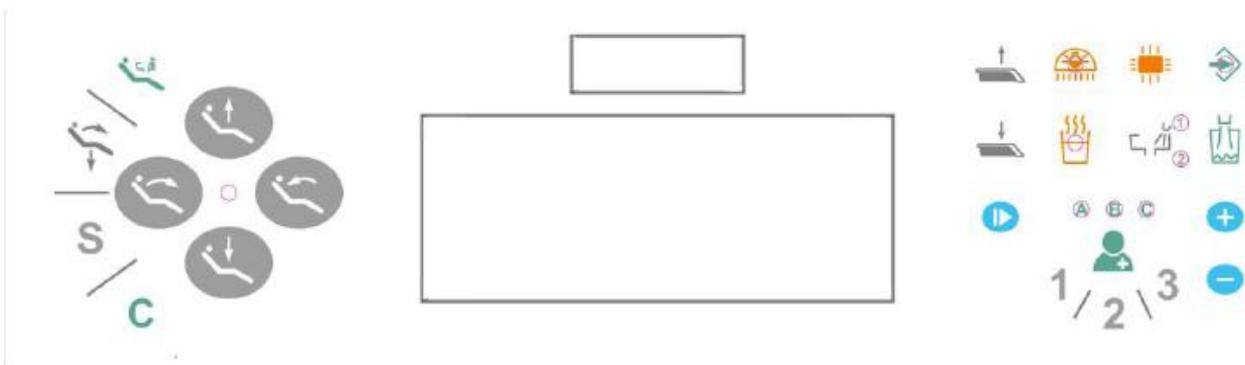
**C)** Turn the disinfection switch to **OFF** side, Put handpiece connective end back to the rack after finish flushing the tube.



**Notice**

There is a air pressure reducing valve in the main machine cabinet box for controlling its level during 0.2-0.25MPa, but it is set before delivery to user, please do not adjust the valve except the professional technician.

**8. Usage and operation direction**



R5 /R5+/R5-Cart main control panel



R5/R5+/R5-Cart assistant control panel

| Symbol  | Meanings                              | Symbol  | Meanings                  |
|---|---------------------------------------|---|---------------------------|
|    | Seat rising up                        |    | Setting button            |
|    | Seat getting down                     |    | X-ray film viewer button  |
|    | Backrest rising up                    |    | Dental Lamp               |
|    | Backrest getting down                 |    | Heating                   |
|    | Rescue position                       |    | Water supply to Cup       |
|    | Entry/exit position                   |    | Flushing spittoon         |
|    | Instrument tray rising up             |    | Clean up chair position   |
|    | Instrument tray getting down          |    | Preseted Chair Position 1 |
|   | Choose doctor                         |   | Preseted Chair Position 2 |
|  | Chair position for patient's spitting |  | Preseted Chair Position 3 |
|  | Increase                              |  | Reduce                    |

### 8.1 Tumbler filling

- A) Keep pressing the setting button for **5** seconds, when hearing buzzer sound”di” and the signal indicator lights up at the same time. Which means the machine is ready for setting.
- B) Keep pressing the button of water supply , the water comes out when the signal indicator lights on; releasing the button when the water filling meet your demand, then the water stopped.
- C) Press the setting button again, the buzzer sound”di” again, the signal indicator light turns off at the same time. which means that water volume in the cup is the setting volume for next time or future.

## 8.2 Time setting for flushing spittoon

A) Keep pressing the setting button for 5 seconds, when hearing buzzer sound "di" and the signal indicator lights up at the same time. Which means the device is ready for setting now.

B) Keep pressing the button of flushing spittoon, the light will show to "1", then spittoon will flush disinfection water, after 3-5 seconds, release the button, the wash pipe will turn to tap water and show light "2". This for disinfection timing setting.

### Notice

A) Put 500mg/L of disinfectant liquid including chlorine and turn on the master air switch before setting.

B) Disinfection time can be set for 0 to 60 seconds.

C) You can skip over this setting step if you do not need this function, or turn on the air master switch below the main box.

C) **Setting time of flushing spittoon according to times of pressing buttons with buzzer sound prompt:**

| Pressing times | Buzzer sound | LED Flash | Flushing time   |
|----------------|--------------|-----------|-----------------|
| 1 times        | 1 sound      | 1 times   | 30s             |
| 2 times        | 2 sound      | 2 times   | 3 minutes       |
| 3 times        | 3 sound      | 3 times   | 15minutes       |
| 4 times        | 4 sound      | 4 times   | No time limited |

D) Press the setting button and the buzzer sounds again, this signal indicator light turns down, that means the time of flushing spittoon is remembered by machine, and exit the general setting.

8.3 **Seat rising up:** Pressing this button to reset the seat up, stop pressing to stop rising

8.4 **Seat getting down:** Press this button to get seat down, stop pressing to stop getting down.

8.5 **Backrest rising up:** Press this button to rise backrest up, stop press to stop rising.

8.6 **Backrest getting down:** Press this button to get the backrest down, stop pressing to stop getting it down.

8.7 **Instrument tray rising up:** Press this button to rise up the instrument tray, stop pressing to stop rising. (The function only for R5+/R5+CART/R9)

8.8 **Instrument tray getting down:** Press this button to lower the instrument tray. stop pressing to stop lowering. (The function only for R5+/R5+CART/R9)

8.9 **Patient chair initial position:** Press this button, the backrest rise and the seat get down to lowest, motor can only during its limited.

8.10 **Rescue position:** Press this button, the backrest will lay down to lowest(-5°) but the seat rise to the top.

8.11 **Clean up chair position:** Press this button, backrest rises to top, and the seat does as well, and the light turns down, spittoon is being flushing.

8.12 **Chair position for patient spitting:** Press this button, backrest rise to top, dental lamp turns off at the same time, and water is flushing the spittoon, press again, return to original treatment pose, light up and stop flushing. (this function only for R3 & R5 series)

8.13 **Setting button:** the button for preparing to set parameter of other function, press this button again mean to lock the parameter.

8.14 **Heating:** this button is for control of heating water, it owns the protection system of over heating. and the the temperature is set before delivery to user.

## Notice

Heating button of R5: the heating button of the assistant control panel control the heater in the main machine cabinet box, the heating button on the instrument tray can control the heater in itself.

8.15 **Water supply to cup:** Press this button to set the water volume according to the water flowing time ,time is available for setting .

8.16 **Flushing spittoon:** Press this button to flush according according to the water flowing time only after pressing the setting button.

8.17 **X-ray film viewer:** This button is for turning on or off X-RAY viewer light.

8.18 **Dental lamp:** This button is for controlling the dental lamp light weak or strong, on or off .(please refer to 6.2 operation instruction of dental lamp)

8.19 **Choose doctor :** Press this button can choose the presetted patient chair position of different dentists, there are 3 dentists options A, B, C, and every dentist can preset 3 chair position, 1, 2, 3.

1) please keep pressing the “setting button” for 5 seconds until its signal indicator light up,

2) press A, B or C which refer to dentist code,

3) adjust the patient chair position to your ideal position by pressing the seat & backrest buttons, set it by.

press P1

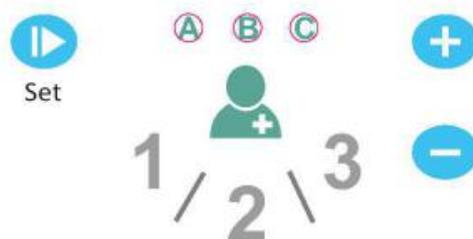
4) Same does the other chair position 2 or 3.

5) Press the setting button again to lock your choice.

## Set the temperature, time and display pressure

Press on the control panel “+” or “-” key could be display the “air pressure, heater temperature and time of operation ” those functions on panel.

A) **Setting the heater temperature:** press “+ ” or “ - ” key will display the temperature on panel, after press the setting key about 3 seconds, the buzzer sounds “Di”, the temperature display will flashing that could press the “+” or “-” key to adjust the temperature. After setting is ok , please press the setting key again means confirm setting, and the flash will stop. (Normally please set the temperature 35 to 45 degree)



B) **Setting dentist operation time:** press “+” or “-” key will display the time on panel (only the number), after press the setting key about 3 seconds, the buzzer sounds “Di”, the numbers will display in flashing , then pressing the “+ ” or “ - ” key to set the time. Normally for Anesthesia, whitening, curing, dentist need to set the time on phone and waiting, now R5 dental unit could set on panel to remind our dentist, like the alarm clock . please press the setting key again means confirm setting. The flash will stop. Press the “setting” key again, will start to countdown.

### Other functions:

- A) we can not press the two engines of backrest and seat to work at the same time
- B) Different buttons of engine running parts can lock each other for considering the safe operation.
- C) the engine will be locked as soon as the handpiece work( The handpiece and engine lock each other when use handpiece )

### Notice

- A) Recovery position of patient chair do not need to be set, it runs up to its limited
- B) Heating button work as function of start or finish, its signal indicator light will be flashing when it heating, and it will keep lighting when finish heating. the temperature is set well before delivery this device to user. do not need set again.
- C) Button of X-ray film viewer only work for start or finish lighting, do not need to set anymore.
- D) All the settings can be stored automatically against power failure.
- E) There will not be anything wrong with this device when power failure happens, please keep working when power on.
- F) The buzzer will sound up at once when switching on this dental unit, the power signal lamp lights up, the device examine its own system automatically at this moment.
- G) You can not go on further operation during setting parameter unless the signal indicator light stops flashing.

### Warning

Please make sure this dental unit can stretch its arms at utmost. thus to avoid knocking with other objects, which may result in incident.

### 8.20 Usage and operation direction of foot controller:

#### A) Movement of foot controller

This switch can control backrest and seat of patient chair to move at four direction, back or front, up or down.

#### B) Water switch of foot controller

Step on this switch to get water supply to cup

#### C) Lamp switch of foot controller

step on this switch to control the lamp light in weak or strong, or power on or off.

#### D) Blowing switch of foot controller

Step on this button to blow away the scraps in the mouth with handpiece

#### E) Air & Water supply pedal

Step on this pedal to supply air to handpiece



### 8.21 Handpiece driving air control

Handpiece driving air control knob is below the instrument tray, their symbols are:



**Control method:** turning in clockwise is for reducing air

### 8.22 Handpiece cooling water control

Handpiece cooling water control knob is located at the right side of instrument tray, their symbols are:



**Control method:** turning in clockwise is for reducing water

### 8.23 Handpiece spray control

Handpiece spray control knob is located at the right side of instrument tray.its symbol is above.

**Control method:** Turning clockwise is for reducing spray.

### 8.24 Adjustable rack use and operation

A)The instrument tray rack can adjust the angle.

Specific method:Both side have the screw,please make the screw out about 3~5mm,after use the finger to press the screw that will see the rack can adjust the angle. Make the right angle and lock the screw.



Screw position at both side

**B)The rack shell remove and install.**

Specific method:Remove,two finger press to centre that can remove the rack shell.

Install: Press the rack shell to centre and fix it in the rack.



Both sides to prssure

**8.25 USB charger**

With USB charger to charge the mobile phone on cabinet on left side.



**8.26 Assistant control drawer**

The assistant control have drawer to put the disposable.



**8.27 Spittoon lock (only for R7 & R9)**

Spittoon can rotate 180°C.In parallel to the seat cushion direction as a benchmark, chair frame will lock when spittoon swing to the direction of seat cushion. When it parallel swing to the direction of chair frame or to another direction, chair frame is unlocked.



**8.28 Electrocardiogram (ECG) equipment& Intra oral camera(only for R9)**

Electrocardiogram equipment: The doctor can observe the patient's heart electrical activity

Intra oral camera: The doctor can check the teeth in different part with real-time video inspection



## 8.29 Multi-function stainless steel plate

3 stainless steel plate , different size, can remove, clean and disinfection.



## VII. Maintenance notice

For daily maintenance, Please keep this device clean, keep passage of tube system clear, check out there is no leaking of water or air. the rotatable parts should be applied to lubricant oil periodically to keep it with well performance

### 7.1 Water filter

There is a water filter at the end of water-in tube connecting in the base box, this is for blocking impurity in water to get into the device, user should clean or exchange this filter on schedule to make its passage clear.

**7.1.1 In general,if there's one of the condition listed below, means it's the time to clean or exchange the water filter.**

- A)The dental unit has been used for over a year
- B)Pressure loss from this filter is over 0.1MPa
- C)The filter is contaminated
- D) Filtered water is muddy

### 7.1.2 Cleaning or exchanging steps

- A)Shut down water and power supply
- B)Open the front base cover,rotate down the crystal cup under the filter in anticlockwise direction.
- C)Unscrew the fixed screw in the middle of the filter, take it off to clean or exchange
- D)Fix it back the new or clean one in reverse steps

### 7.1.3 Right material and size for the filter

Water filter:its filtering tolerance of accuracy is 40um, it is sintered with bronze particle

### Warning

Can not overexert while installing the water filter in case of crushing the filter. keep the crystal plastic cup sealed with care.

### 7.2 Air filter valve

This dental unit is equipped with a air filter valve at the air-in end of air supply tube in the front base box,in order to ensure the air supply clean,stable and dry,as well as reducing the air pressure and make the air pressure stable and not over the limited. Meanwhile,it can also filter impurity and water in the air.

There must be some wasted water gathered in the filtering cup after use, we should clean it after use for a long time.

### **7.2.1 If there's one of conditions listed as below, we must drain the water in the air filter valve**

- A)The dental unit have been used for over a week.
- B)Water volume in the bottle reaches up to 3/4 of total volume.
- C)The water in the bottle has discoloring the water( not transparent water).

### **7.2.2 Water drain steps of air filter valve**

- A)Shut down electricity and air supply
- B)Open the front base cover, release the rest air in the device by pressing 3-way syringe,
- C)Take down the water bottle by turning in anticlockwise, unscrew the air filter regulator to get rid of the water inside

### **7.2.3 The size and material of the air filter valve**

**Air filter valve:** filtering accuracy is 5um, **Material** : polyethylene fibre

### **7.3 Spittoon**

Spittoon must be cleaned on schedule, the filter net in the drain must be cleaned every day to prevent blockage

### **7.4 Patient chair**

Clean and sterilize the patient chair in time with disinfectant liquid or neutral detergent.

### **7.5 Dental Lamp**

Please maintain it refer to the user manual of dental lamp

### **7.6 Filter of saliva ejector**

The two filter are inserted at the joint parts between the ejector tube and the main machine cabinet box, they should be cleaned on schedule (it's better for every week), which usually hold some dirty scraps when ejecting water or air pass through them.

## VIII. Malfunction removal

| <b>Malfunction Description</b>                                       | <b>Malfunction Causes</b>                    | <b>Removal methods</b>   |
|--|--|--|
| 1.Powerless handpiece  | 1.Bad bur                                    | Contact the handpiece seller   |
|  | 2.Bearing fault                              |  |
|  | 3.Low driving pressure                       | Check the air pressure   |
| 2.Powerless saliva ejector   | 1.Air or water pressure not high enough      | Raise the air or water pressure                                      |
|  | 2.Joint part not sealed well                 | Exchange the seal ring   |
| 3.Leaking water from the tap to cup or the one for flushing spittoon | 3.Magnetic valve gets blocked                | Clean the Magnetic valve core  |
| 4.Driving air pressure not stable                                    | 1.Filter gets blocked                        | Clean the filter   |
|  | 2.The tube gets twisted                      | Stretch the tube   |
|  | 3.Air supply not open                        | Open the air supply  |
| 5.No water mist gets out from handpiece                              | 1.Water supply is blocked                    | Contact handpiece seller   |
|  | 2.The water control knob get wrong ways      | Refer to user manual   |
| 6.Handpiece water control fail                                       | Valve for controlling water break down       | Refer to user manual   |
| 7.Handpiece spouts out water and bubble                              | 1.Shim of handpiece breaks down              | Contact handpiece seller   |
|  | 2.Handpiece tube is broken                   | Examine and exchange   |
| 8.Handpiece sprays badly   | 1.Handpiece spray nozzle gets blocked        | Contact handpiece seller   |
|  | 2.The water control knob get wrong ways      | Turn control knob to right level                                     |
| 9.Leaking water at the joint part of handpiece                       | 1.Shim of high speed handpiece breaks down   | Contact handpiece seller   |
|  | 2.Too much water in air filter               | Empty the filter every day   |
| 10.No water spout out from 3-way syringe                             | 1.Its water tube gets blocked                | Block the spray nozzle,and press water and air control button        |
|  | 2.The water control knob gets the wrong ways | Adjust the control knob again  |
| 11.Air mingled with water gets out while 3-way syringe spurts air    | 1.Too much water in the air filter           | Empty water in time, examine to exchange bad parts, or install again |
|  | 2.Get something wrong with air valve core    |  |
|  | 3.Wrong installation of spray nozzle         |  |
| 12.Leaking air when handpiece stops working                          | Rack valve gets loose                        | Adjust the rack valve  |

## IX. Waste treatment

No handling these dental unit waste by ways of household waste done They must be entirely disinfected,sterilized and purified before being dismantled or being thrown away.

| Part names                 | Hazardous substances or element |                  |              |                            |                               |                                      |
|----------------------------|---------------------------------|------------------|--------------|----------------------------|-------------------------------|--------------------------------------|
|                            | Lead (Pb)                       | Hydrargyrum (Hg) | Cadmium (Cd) | Hexavalent chromium (Cr6+) | Polybrominated biphenyl (PBB) | Polybrominated DiphenylEthers (PBDE) |
| Power wire with plug       | x                               | o                | o            | o                          | o                             | o                                    |
| Power switch               | x                               | o                | o            | o                          | o                             | o                                    |
| Voltage transformer        | x                               | o                | o            | o                          | o                             | o                                    |
| Fuse                       | x                               | o                | o            | o                          | o                             | o                                    |
| Over temperature Protector | x                               | o                | o            | o                          | o                             | o                                    |
| Electric Motor             | x                               | o                | o            | o                          | o                             | o                                    |
| PCB                        | x                               | o                | o            | o                          | o                             | o                                    |

○: This mark means the hazardous material content in the homogenous parts is under the standard regulated in SJ/T 11363-2006 , the requirements for concentration limits for certain hazardous substances in electronic information products.

×: This mark means that hazardous substance content in a certain part of this homogenous parts is beyond limits required by SJ/T 11363-2006

### Explanation for the parts with lead element

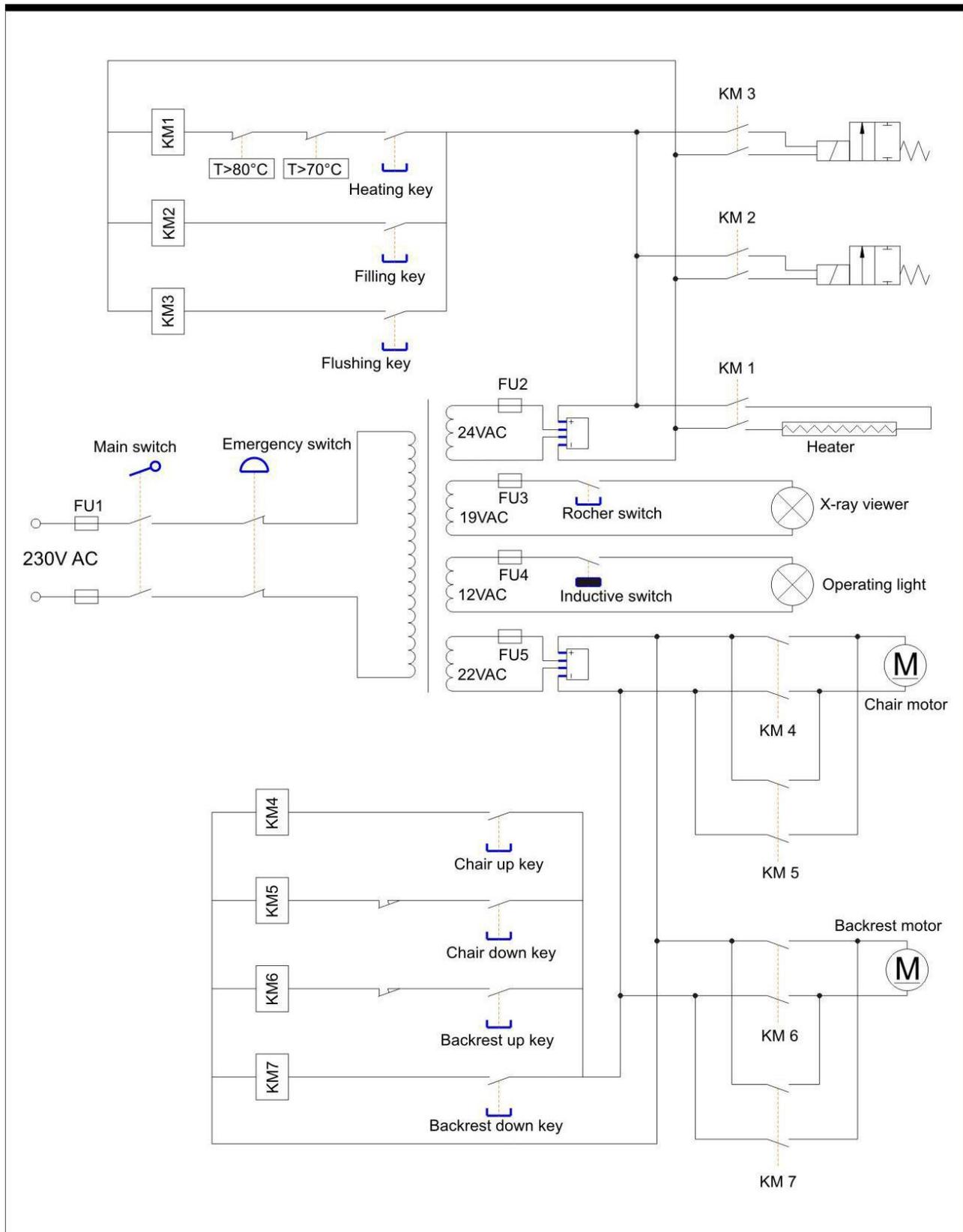
- 1.Power wire with plug:most parts of power wire with plug or switch including the metal cover of the connector,ends of the pings
- 2.High temperature solder contain 85% lead,which is adopted to welding the voltage transformer.
- 3.The resistance in the fuse.
- 4.The over temperature protector resistance contain lead.
- 5.The resistance in the electric motor contain lead.
- 6.PCB bonding pad contain lead.

## X.Taboos, warnings and notices

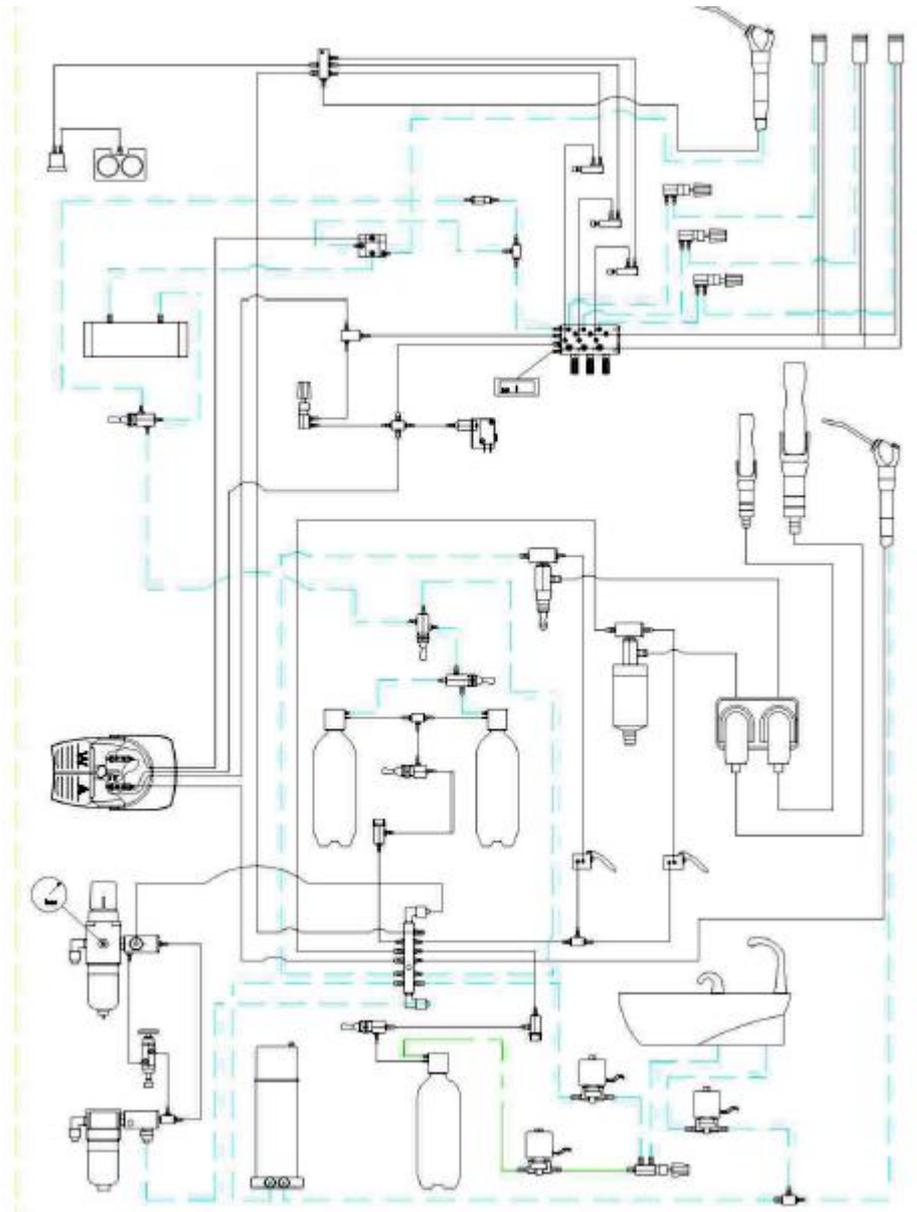
- 1.Read and master the user manual completely before working on this device
- 2.Operate according to the warnings and instructions of this device.
- 3.Power wire must the requirement of standard,the ground wire must be connected to ground well.
- 4.Never heating water without water supply,otherwise , that must break down heater.
- 5.Max load of this instrument tray is 2.5KG, pushing, pulling or pressing this try should be soft instead of overexerting.
- 6.Air pressure of this dental unit has been set down before delivery to user, do not adjust it by yourself unless the professional technician.
- 7.Action limit of this dental unit has been locked,do not adjust it by yourself unless the professional technician .
- 8.Shut down the master switch of water,air,electricity before getting off work.
- 9.If the foot controller adopts the round one with switch you should turn on this switch first,then step on this pedal to supply water to handpiece.
- 10.For this dental unit users, the dental clinic or other setups. amalgam separator must be equipped with this dental unit at the end of waste discharging system.
- 11.Before maintenance, we must empty the water and air first , and then shut down power supply.Open the water,air and electricity supply before using it.
- 12.Handle and spray nozzle of 3-way syringe should be put in a sterilizer bag first before sterilization, and do high sterilization at 1 35°C (2 bar), for less than 15 minutes.
- 13.For sterilization of high speed handpiece and low speed handpiece, please refer to the handpiece user manual, Sterilization time should be over15 minutes.
- 14.Use wet cloth with neutral cleaner to clean the device shell, to ensure the surface smooth and shining,and to keep it away from corrosion, Use soft cloth with soap water to clean PU and ABS parts, Use wet cloth with soap water or wax spray to clean the baking finish of metal parts.
15. Mind to avoid damaging the optic fiber part when you use a fiber optic handpiece,keep it away for a distance to avoid touching the waste produced from operating the handpiece,you can use a optic shelter 5 seconds before operating handpiece.
- 16.Get rid of any dirty on tools at once, take off handpiece and clean with a cloth alcohol after finishing using it.
- 17.Mind not to let the light from handpiece optic fibre shining on patient's eyes! which may hurt patients' eyes. like those of cataract. in general, these rays do not damage eyes constantly,but it can result in temporary blindness.
- 18.Maximum load of patient chair is 135kg.overloading may cause it fail to work.
- 19.when using external equipment to do dental implant operation together with this dental unit, but if no needs of dental unit to supply electricity to external equipment, please shut down the power supply to dental unit. to avoid bringing accident due to triggering any switch mindlessly.
- 20.Take off handpiece burs only after the handpiece stop working completely, otherwise the bars holder may get broken or fall down to hurt someone.
- 21.Use high quality bars and right size of screw bolt.
- 22.Check the bars holder everyday before using handpiece if the holder hold bars firmly.
- 23.Try to pull out the bars of high speed handpiece to check if it is installed well after it is exchanged.

24. Diameter of bars should be between 1.59 to 1.60mm (regulation by ISO1797 Class 3), Max length is 25mm (regulation by ISO6360-1).
25. Only after being equipped with bars and dental restoration tools, high speed handpieces can be used.
26. Do not press the off button of bars while the handpiece is working, the friction force between the button and the impellers of the air driving engine may burn the handpiece head due to overheating.
27. The tissues of the patient's mouth (tongue, cheeks, lips), etc., must be protected by appropriate means (with mirrors, etc.) so as not to touch the buttons.
28. Put on gloves to exchange dental lamp to avoid to be burnt by the lamp, do not touch lamp directly with bare hands.
29. Do not touch the electronic parts on the PCB with bare hands or metal tools
30. Air supply pressure is between 0.55MPa and 0.8MPa, and air supply pressure is 0.2-0.4MPa, the water should be clean enough.
31. Examine air and water tubes system on schedule if there is leaking
32. Mobile or portable high frequency communication tools may disturb medical electronic equipment. it is not allowed to use cell phone or other mobile communication tools in hospital or clinic. if you need to use external high frequency surgical equipment, please do not hang it onto this dental unit.

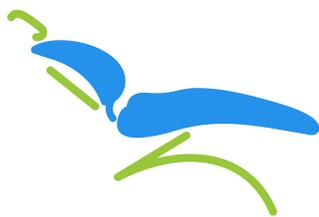
# XI. Electrical schematic diagram



## XII. Water-air layout diagram



1. Crystal tubes are for air layout system
2. Blue PU tube are for air layout system
3. PVC tubes (25MM of diagram) are for waste outlet



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