


Dental Unit Operation Manual

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I. SAFETY INFORMATION

Before using the unit, please read this operation manual carefully to operate the dental unit properly, and please keep the manual properly for future reference. In case of special need, please contact our distributor.

1. In order to reduce fire and electric shock possibility, you are not recommended to place the equipment in the damp place and open box. Let only the professional and qualified servicing staff to do repairing if necessary.

2. In the event that dental unit goes wrong, smoke comes out somewhere or involves in the possibility causing fire. The power supply of dental unit must be switched off immediately, meanwhile you should contact the local distributor or manufacturer's servicing department.
3. Water, if goes into the dental unit, may cause electronic leakage or other unexpected situations; in this case you are recommended to witch off the power supply immediately and contact with the local distributor or manufacturer's servicing department.
4. In the event that the dental unit goes wrong due to unknown reasons, you are required to switch off the power supply immediately and contact with the local distributor or manufacturer's servicing department.
5. You are not allowed to disassemble or try to rebuild the dental unit; otherwise some parts or components inside may be damaged or cause electronic shock.
6. Keep always the power supply cord in good condition, if power supply is broken or damaged, pls. disconnect the power supply immediately and do not touch the power supply wit hand directly, and then try to get in touch with your local distributor to replace.
7. The product applies to the power supply of 230Vac @ 50Hz. Any other power supply other than 230Vac @ 50Hz may cause the dental unit to be in danger.
8. The power socket should only be protective grounding reliably.
9. Pls. pay attention to the changes in weather. In the event that it thunders and lighting, you are strongly recommended to disconnect the power supply of dental unit immediately.
10. Never touch the power plug if your hand is wet, otherwise you will be exposed in danger of electronic shock.
11. Never clean the dental unit with insecticide, alcohol, thinner and chemical liquid, otherwise it will cause peeling or deterioration to dental unit.
12. All relevant parameters of the dental unit have been set well; non-professional personal are not allowed to adjust without authorization.
13. The maximum load of product is 160 Kg, any load more than 160 Kg will cause potential damage to dental unit.
14. The mode of operation of dental chair is Non-CONTINOUS OPERATION. The maximum activation time is 1 min.
15. Never reconstruct the dental unit; otherwise it will be excluded from manufacturer's warranty.
16. Place the unit away from high-power electromagnetic devices to avoid electromagnetic interference.
17. Dear customer, we recommend that you use the device fixed on the ground.

Notice to user:

This product has been tested and is found conforming to Directive 93/42/EEC. And the complete dental unit CE mark CE-0598 indicating its conformity with the provision of Council Directive 93/42/EEC concerning medical devices.

This product is not designed the mercury separator, so the water-draining system designed for the unit cannot be used for filtering solid particle, debris or mercury alloy. In order to avoid the water drained from the unit from causing pollution, user is strongly recommended to install the mercury separator on the water-draining system of the unit.

The product complies with the requirement of standard EN60601-1-2 "Electromagnetic Compatibility – Medical Electrical Equipment".













You are welcome to contact us for more information.










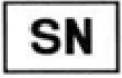







Please record product's sequence number here for your future reference.

Item No. _____

Date of manufacture _____

II. GRAPH AND SYMBOL

	Warning		Dental chair, Up
	Type B applied part		Dental chair, Down
	Protective earth wire		Dental chair tilt backward
	ON		Dental chair tilt forward
	OFF		Mouth cleaning
	Dental operating light		Bowl flush

	Film viewer		Cup filler
	This way up		Heating
	Fragile		Rated voltage 220V, current 5A
	Keep dry		Manufacturer
	Stacking limits		Serial number
	Temperature limits		Separate collection for EEE
	Humidity limitation		Authorized Representative
	Atmospheric pressure limitation		Refer to instructions manual
	No rolling		

III. IMPORTANT NOTICES

- ✧ Please read the Instruction carefully before using the unit; follow all warnings and descriptions contained by the Instruction or marked on the unit when operating this unit.
- ✧ The unit is only used for dental diagnosis, treatment and operation.
- ✧ The unit can only use the fuse and accessory recognized and approved by our company.
- ✧ The unit contains electric and mechanical moving parts; user is required to make sure these moving parts won't touch or contact any article within their respective movement range.
- ✧ When using this product, needs to turn on the water, gas, power at the same time.
- ✧ Lower the dental chair to the minimum and switch off water, air and power supply if the Integral Dental Unit is out of use.
- ✧ Lock the pillow up before using dental chair.
- ✧ Never use the product in the high-temperature, high-humidity, shaking, inflammable and

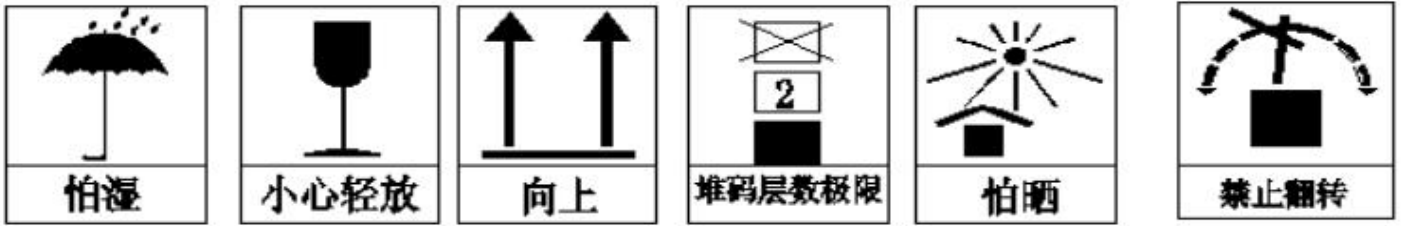
unbalanced environment.

- ✧ Water can only come from the dental handpiece when the foot switch is flipped to “Water on”.
- ✧ Connect and open the water source before using the water heater; otherwise the water heater may work without water and cause short circuit.
- ✧ Do not place overweight article on the instrument tray.
- ✧ Do not contact the operating light with hand directly; if it needs to replace, please wear your protective gloves to replace and avoid burning after the lamp cools.
- ✧ Contact the professional and qualified maintenance staff if the unit is needed to repair or maintain; before starting maintenance, please disconnect the water, air and power source.
- ✧ Make sure you disconnect the water, air and power source if the unit is not used for a long time!
- ✧ The recommended service life of the comprehensive dental unit is 8 years; the use beyond such limit may cause pipeline aging and invalid functions, even cause accident. User is recommended to contact the qualified medical apparatus and instruments recycling agent and make preparations for phasing out or replacing new equipment.
- ✧ Do not use the unit if there is available the inflammable anesthetizing gas mixed with the air or the inflammable anesthetizing gas mixed with the oxygen or nitrous oxide.
- ✧ After using the equipment, please do the settlement in accordance with the relevant regulations for the waste in dirt collection cup and other residue processing, so as to avoid contamination.
- ✧ Improper operation may cause other parts of the gums and mouth injuries, non-executive physicians may not use the machine.
- ✧ During operation of the dental chair, make sure that within the travel range of motion, without the existence of accessible goods; unforeseen circumstances, the user should immediately press the emergency stop button, and contact the professional and qualified maintenance staff.
- ✧ Annually by a professional service technician to perform primary circuit, water, gas and mechanical structures for a checkup to determine whether needs to be repaired to continue to use.
- ✧ At the end of the product's life, you should turn on the water, gas, pipeline flushing remnants, and then follow the metal, plastic waste disposal.
- ✧ The weight of the dental unit :AY-A1000 & AY-A2000<220kgs, the other model >220kgs.

IV. TRANSPORTATION AND STORAGE

1. Conditions of transportation: keep the unit upside, handle the unit with care and keep the unit dry always.
2. Transport environment: Temperature $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$ Relative humidity: $\leq 80\%$
3. Storage environment: Indoor environment with the temperature of $-10^{\circ}\text{C}\sim 40^{\circ}\text{C}$, the relative humidity not more than 80% (incl.), good ventilation and without corrosive gas.
4. When transporting or storing the unit in wooden box, it can be stacked by two pieces maximally.
5. Transport distance under other conditions may not more than 30 km.
6. During transportation, it should be moisture-proof, fragile, upward, prohibiting stacking, sun protection, and prohibiting turning.

7. Identification of outside box



8. Identification of products



Protective grounding



Applied Part: Type B



High temperature
careful burns



Read the instructions
before use

V. INTRODUCTION TO THE UNIT

1. Functions and Intended use

Integral Dental Unit is dental equipment specially designed and provided for qualified dentist to be used in a professional clinic or hospital facility to carry out dental procedures. Integral Dental Unit applies to professional environment for dental diagnosis, treatment and/or operation.

Integral Dental Unit is an integrated structure comprising dental chair, including base box, dental cabinet, spittoon, 3-way syringe(cold & hot), water heater, saliva ejector, instrument tray, film viewer, operating light, foot switch, control system and so on. Dental patient chair is assembled by chair frame, electricity driven and so on; Optional parts is composed by dental hand pieces , cure light, ultrasonic scaler, camera system and doctor stool.

2. Safety Feature

- ◇ Type of protection against electronic shock: Class I
- ◇ Degree of protection against electronic shock of Applied Part: Type B
- ◇ Protection against harmful ingress of water or particulate matter: IPX4 (foot switch)
- ◇ Protection against hazards of ignition of flammable anaesthetic mixtures: Non-AP/APG RATINGS
- ◇ Mode of operation: Non-CONTINUOUS OPERATION
- ◇ Type of power source: single-phase 3-core, power supply from the electric grid.
- ◇ Power supply: AC 220V, 50Hz
- ◇ Power input: 1200VA
- ◇ Don't have the effect of discharge protection part;

- ✧ There is no signal input or output.
- ✧ This is fixed ME equipment
- ✧ This is common non-mobile dental device.

VI. OPERATING CONDITIONS

In order to guarantee the unit to work normally, the following operating conditions must be available:

1. Environmental temperature: 5°C~40°C
2. Relative humidity: 30%~80%
3. Atmospheric pressure: 86 kPa~106 kPa
4. Rated voltage: 230 Vac± 10%, 5 A
5. Rated frequency: 50Hz±1 Hz
6. Water source:
 - water pressure: 0.20 MPa ~0.40 MPa;
 - flow: >10 L/min;
 - hardness: <25°
7. Air source:
 - air pressure: 0.5MPa~0.80 Mpa;
 - flow: >50 L/min; Oil-free
8. The floor on which the dental unit shall be fixed must be horizontal and flat; the deflection angle of the body after the dental unit is installed and fixed can not be more than 0.5°

VII. BASIC PARAMETERS

◆Noise	<70 dBA
◆Base box	Power supply: 110V/220V 60Hz/50Hz, single-phase 3core, protective grounding. Power input: 1200VA Water filter hole diameter: <90μm Air filter hole diameter: <25μm
◆Water heater	Power supply: 24 V dc , Inside power supply Power input: 80 VA Thermostatic: 40±5°C
◆Saliva ejector	Weak saliva: <ul style="list-style-type: none"> - vacuum degree >15 kPa; - water pumping rate>80 mL/min

	<p>Strong saliva:</p> <ul style="list-style-type: none"> - vacuum degree >25 kPa; - water pumping rate >1000 mL/min
◆Instrument tray	<p>Rotating angle: $>270^\circ$</p> <p>Up-down moving range: >440mm</p> <p>Max. Load: ≤ 6 Kg</p> <p>Loading of instrument tray: 1.5KGs</p>
◆Film viewer	<p>Power supply: 24 V ac Inside power supply</p> <p>Power input: 80 VA</p>
◆LED Operating light	<p>Power supply: AC12V-24V</p> <p>Power input: 9-16 VA</p> <p>Illuminance: 7000lux-50000lux</p> <p>Color Temperature: 4800-5500K</p> <p>Shadowless Effect: $<\varphi 10$</p> <p>Loading of lamp arm: 1.5KGs</p>
◆Foot switch	<p>Tripping force: >10N and <30N</p> <p>Degree of protection against harmful ingress of water: IPX4(foot switch)</p> <p>Service life: >25 000 repeats</p>
◆Dental chair	<p>Power supply: 24 V dc Inside power supply</p> <p>Loading capacity: 1568N (about 160 Kg)</p> <p>Loading capacity of headrest: 300N (about 30Kg)</p> <p>Moving range of headrest: 120mm</p> <p>Range of backrest when going backwards : 100° ~175°</p> <p>Seat cushion's maximum height away from ground: 790mm</p> <p>Seat cushion's minimum height away from ground: 450mm</p> <p>Package size: length:150cm width:105cm height:125cm</p> <p>Dental units size: length:200cm width:95cm height:200cm</p>
Attachment ----- Amalgam separation device	<p>It has a medical device product registration card</p> <p>Attachment parameters are reflected in its operating instructions</p> <p>Electrical safety performance in accordance with GB 9706.1-2007 "Medical electrical equipment Part 1: General requirements for safety"</p>
◆Work space	<p>L: ≥ 3 000 mm; W: ≥ 2700 mm; H: ≥ 2 500 mm</p>

VIII. INSTRUCTIONS FOR USE

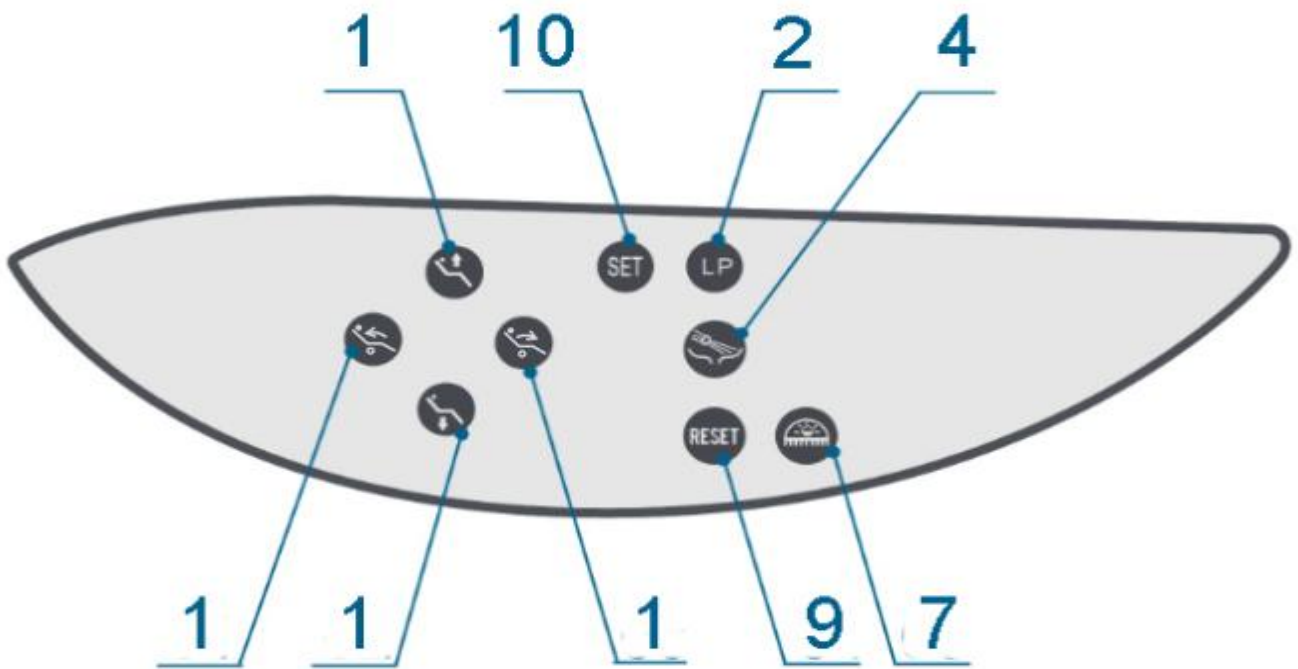
- ✧ When using the unit, please make sure you have already switched on the water, air and electric power supply;

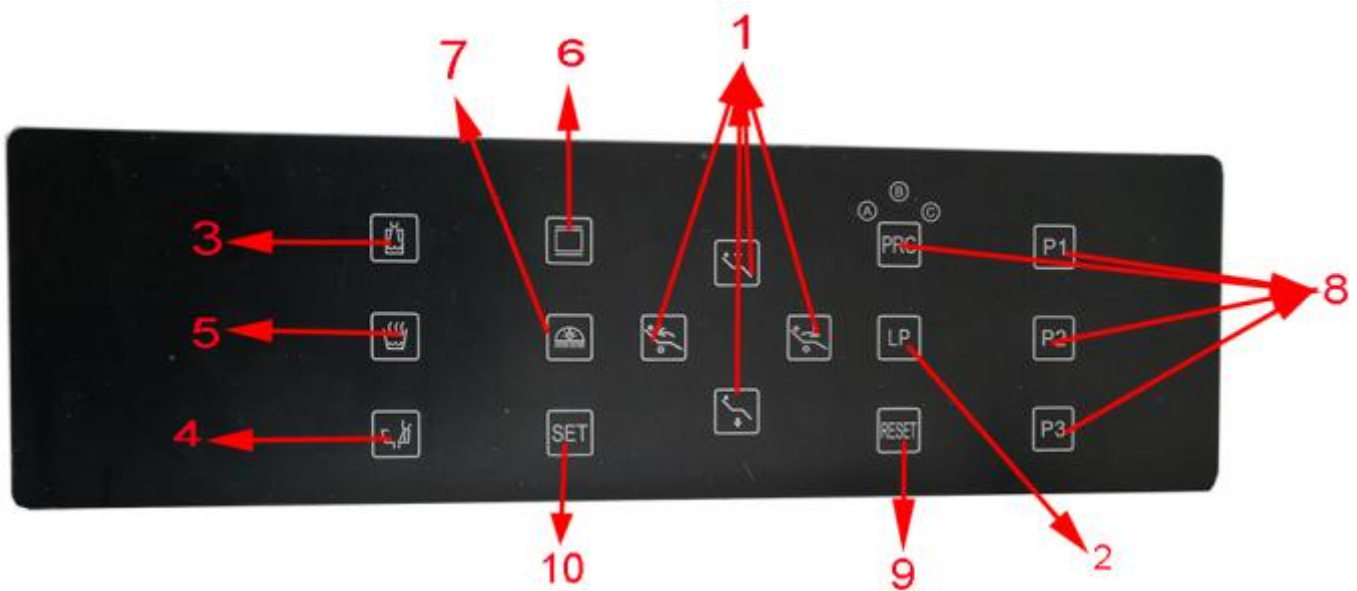
- ✧ All parameters can be stored automatically if the power supply shuts down;
- ✧ After the power supply shuts down and recovers, except that the on-going operation suspends, no safety problems shall occur. If it is needed to work continuously, please re-start the unit

1. How to use Keyboard Plate of instrument tray

The keyboard plate is shown as follows:

Down mounted instrument tray : A1000/A2000








(1) Position of dental chair

Every long press on the button shall trigger the patient chair to move according to every respective arrow indication; the patient chair shall stop moving if the button is released:

—“”: Dental chair, upwards;

—“”: Dental chair, downwards;

—“”: Dental chair, tilt backwards;

—“”: Dental chair, tilt forwards;


(2) Mouth cleaning

Press the “LP” key one time, the dental chair backrest shall move to the most front position so as to facilitate the patient to spit and clean mouth; press the button again, the dental chair backrest shall move back to its previous position.



Notes:

In the running course of the dental chair backrest, if other function keys are pressed, the functions triggered by such key shall stop automatically.


(3) Mouth water supply

Press the “” key one time, the mouth wash supply shall stop after the setting time is up; during the mouth wash supply period, every press on this key shall stop water supply. For the time setting, please refer to “**Instruction for Setting Key**”.

(4) The spittoon flush

Press the "SET" button, pilot lamp is shining, press the "" key fourth times the spittoon flush, press the key "SET" again, the pilot lamp is extinguish, then finishing setting, the whole flowing process is set about 15 seconds. Repeat the process, press one time  to set 30 minutes for whole flowing process, twice for 60 minutes, three times for all times, fifth times is cycling as the first time.


(5) Heating..

Press the "" key one time, the constant-temperature water heater shall be started to heat water to a temperature of $40^{\circ}\text{C} \pm 5^{\circ}\text{C}$; if the water temperature reduces, the water heater shall start automatically (the indicator lamp shall flash in the heating process; the indicator lamp shall be always on after the setting value is reached); every press on the key again shall stop the water heater (the indicator lamp shall be off).

Notes:

The hot water shall only be supplied for mouth cleaning and 3-way syringe (connect the open the water supply before using the water heater so as to prevent it from burning without water and causing short circuit).


(6) Film viewer

Press the "" key one time, the power supply of the film viewer shall be connected; press the key again, the power supply of the film viewer shall be disconnected. (Model dependent)

Notes:

There is a power switch on the film viewer.

(7) Operating light

Press the "" key one time, the power supply of the operating light shall be connected; press the key again, the power supply of the operating light shall be disconnected. (Model dependent)

Notes:

There is a power switch on operating light.

(8) Memory positioning of dental chair (Model dependent)

Press the "PRG" key to change the program, in order to change from A to B; press again to change from B to C; if you press "PRG" again, the program changes from C to A;

User can customize 0-9 memory positions for the dental chair. (Depending on function of the device.)

Every press on the memory key shall trigger the corresponding indicator light and the corresponding memory procedure; in such case the dental chair shall move to the corresponding memory position.

As for the customized setting, please refer to "(10) Setting Key".

Notes:

In the running course of the dental chair, if other function keys are pressed, the functions triggered by such key shall stop automatically.

(9) Reset dental chair

Press the "RESET" key one time, the dental chair shall lower minimally and leans forward.


Notes:

In running dental chair, if other function keys are pressed, the functions triggered by such key shall stop automatically.

(10) Setting key

I) Set mouth water supply time

Step 1: Press the "SET" key one time, the indicator shall be on;

Step 2: Keep on pressing the "  " key till the desired water volume is reached;



Step 3: Press the "SET" key one time, the indicator shall be off. Finish setting.



Notes:

The setting procedure limits only the water supply time; however the huge change in water pressure may cause change in water supply volume; in this case please re-set accordingly.

II) Set dental chair memory positioning

Step 1: Press the "SET" key one time, the indicator shall be on;

Step 2: Keep on pressing the "  " or the "  "key (press one of them only, or both are not pressed) till the dental chair moves to the presetting height;

Step 3: Keep on pressing the "  " or the "  " key (press one of them only, or both are not pressed) till the dental chair backrest moves to the presetting angle;

Step 4: Press Key A, B or C, and then press any key of the 3 memory positions;

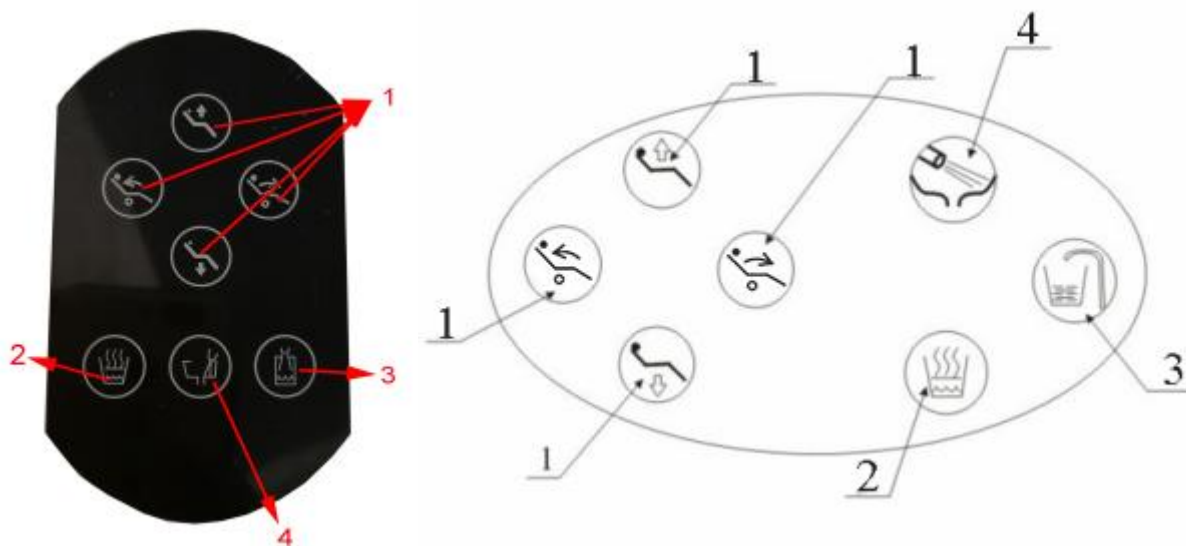
Step 5: Press the "SET" key, the indicator shall be off and the setting is thence finished; till now the presetting seat position has been stored in the corresponding memory key.

2. How to use Keyboard Plate of parallel tray

- 1: Patient chair position;
- 2: Water water boiled;
- 3: Water supply;
- 4: Water flues;

As for the functions of every key, please refer to Chapter XI, Section 1


"How to use the Keyboard plate of the instrument tray"



3. How to use water tank

The water stored in the water tank is only used for the instruments on the instrument tray; when selecting and using the water tank to supply water, the following procedures must be followed:

Step 1: Press the “” “AIR OFF” switch to disconnect the water supply;

Step 2 : Flip the switch “” “AIR ON”, the water source for the instruments on the instrument tray shall be switched to water tank.

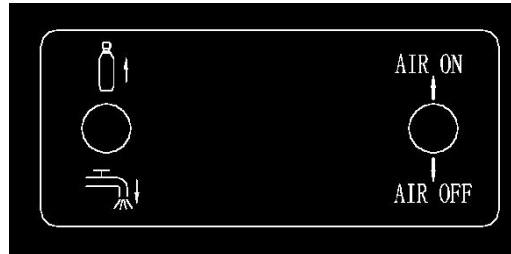


Figure 1

Notes:

If the tap water is used for the instruments on the instrument tray, please make sure the switch is

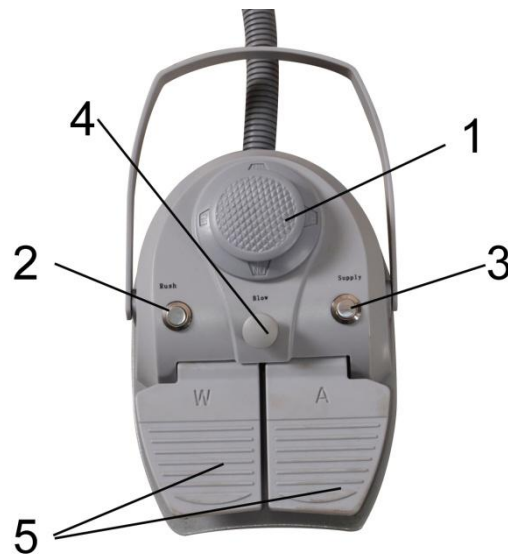
flipped to  position.

4. How to use foot control

(1) Position of dental chair

Pull the ball arm to the four directions, dental chair shall move according to the indication; after releasing the ball arm, the dental chair shall stop moving.

- “UP” : Dental chair, upwards;
- “DO” : Dental chair, downwards;
- “BO” : Dental chair, tilt backward;
- “BU” : Dental chair, tilt forward;



(2) Mouth water supply (SUPPLY)

Step on this key one time, the mouth wash supply shall stop after the setting time is up; during this period, the step on this key again shall stop water supply.

(3) Bowl flush (RUSH)

Press this key one time, the spittoon shall be rinsed for three minutes; during this period, every press on this key again shall stop water rinsing.(Depending on the setting of the flush)

(4) Blow Key (BLOW)

After the work with the handpiece is done, please step on this key to dry the pipe of the handpiece.

Notes:

The required air flow can be adjusted according to the needs [see Page20 chapter]

5.How to adjust water and air flow of hand piece.

(1) Operating foot pedal of handpiece

The left pedal (W) means the operating water supply control switch; the right pedal (A) means the operating air source control switch. Instructions for use:

- Step on the left pedal: the water source of the handpiece works only;
- Step on the right pedal: the air source of the handpiece works only;
- Step on the left and right pedal: the water and air source of the handpiece work simultaneously

See Fig.1,2,3 for handpiece's adjustment identification



Fig.2





Fig.1

Fig.3


In Fig.1 ①, ② and ③ show the flows of water and air in operation of hand-pieces, ④ Show the flow of flog. The adjustment method is: connect three hand pieces, pull out one hand piece randomly and step on two pedals of the foot controller simultaneously, and then turn the corresponding knob shown by Fig.2 to adjust the water and Fig.3 for air volume. The air volume can be viewed through the hand-pieces pressure gauge installed on the instrument tray. The volume of water can be viewed visually.

Note:

Please do not pull two or three handpieces for use simultaneously!

6. How to use operating light

Instructions for use:

- 1) Press the key "  " on the instrument to turn on the operating light
- 2) The manual switch is on the back of the operating light; press the switch can adjust the light illumination.
- 3) The sensor switch is on the right hand side of the operating light; hold the hand in front of the sensor switch(within 10 CM) can adjust the light illumination.

The operating light is respectively marked as follows:



Operating light



Lighting,illumination



illumination, Closed



illumination, weak

Notes:

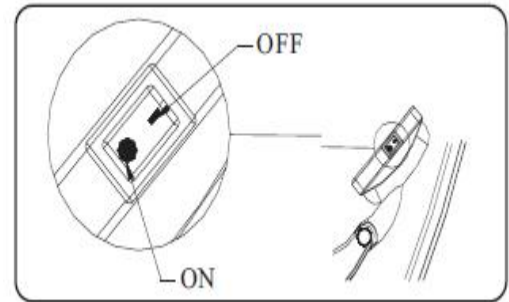
The cold light lamp's power supply is controlled through the keys on the instrument tray.

7. How to use film viewer

As shown by the Figure, if switch on film viewer is flipped to “ON”, the operating light shall be on, and be off when flipped to “OFF”.





The power for film viewer is controlled by keys on the instrument tray.





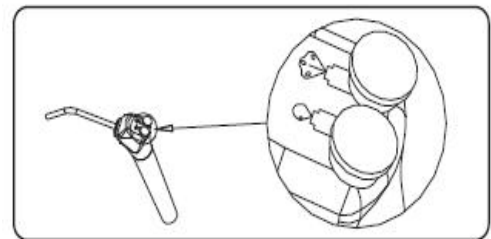
8. How to use 3-way syring and saliva pump

(1) 3-way syring

Press the “” key to trigger spray gun to spray air independently;

Press the “” key to trigger spray gun to spray water independently;

Press the “” and “” to trigger spray gun to spray mist.



(2) Saliva ejector

Take the strong and weak nozzle off the parallel tray to make them work automatically.

IX. MAINTENANCE AND REPAIR

1. In order to make and keep the moving parts of dental unit in good condition, it's recommended to add lubricant every year at least.
2. To keep cleaning products, use the medical alcohol to wipe clean the surface of the product daily.
3. In order to maintain and keep tap water clean, water filter element inside the water tank must be cleaned with neutral detergent (hole size of filter is less than 90um); After a long time used, the filter core will be blocked by dirt, affecting water flow and filtration effect. It is recommended to clean the water filter every 2 months. If housing or filter of water is broken or damaged, pls. replace accordingly.
4. In order to maintain the quality of water in water tank, neutral detergent should be used for tank cleaning on a regular basis and it's recommended to do this job weekly. Before disassembling water tank, air source of water tank should be disconnected.
5. In order to maintain the quality of air, it's needed to drain the seeper inside the air relief valve inside the base box on a regular basis (spec. of filter is less than 25 um) and it's recommended to do this job weekly. If air relief valve leaks, pls. replace accordingly.

6. It's needed to drain the seeper after every used.
7. The operating light can only be maintained in normal temperature; the wet cloth can be used for cleaning; the reflective panel can only be cleaned by using compressed air;
8. Solid pollutant, after the filter of saliva pump is used, may possibly go into and accumulate, therefore the filter should be cleaned by clean water on a regular basis; it's recommended to clean before getting off every day.
9. As for the maintenance and before-use sterilization of handpiece, pls. refer to its Operation Instruction.

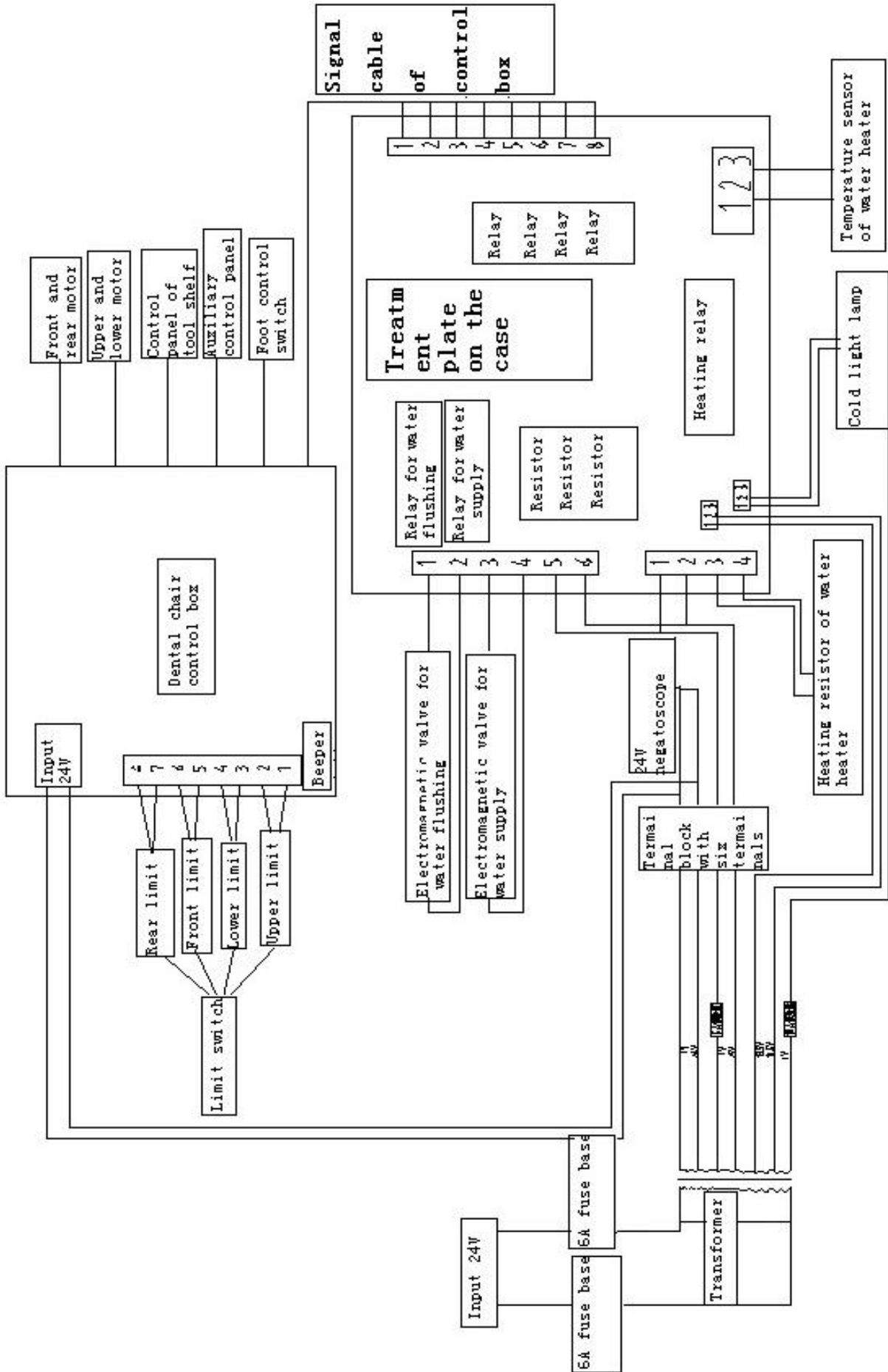
X. COMMON TROUBLES

Trouble description	Reason analysis	Trouble solution
The operating light is not lit	<ul style="list-style-type: none"> - The bulb burns out; - The lamp is not connected properly; - The connecting piece is not connected properly; - The fuse on the secondary end of the power transformer burned out; - The electric wire inside the moving joint is broken. 	<ul style="list-style-type: none"> - Replace the bulb of the same type; - Correct with the instruments; - Correct with the instruments, and then insert again; - Replace the fuse of the same type; - Replace the new wire.
The mouth wash supply cannot be switched off	<ul style="list-style-type: none"> - The solenoid valve is blocked by foreign matters inside. 	<ul style="list-style-type: none"> - Remove the solenoid valve and clean.
The mouth wash supply fails to work.	<ul style="list-style-type: none"> - The water pipe is twisted and damaged; - The solenoid valve burns out. 	<ul style="list-style-type: none"> - Replace new pipe; - Replace new solenoid valve.
The water temperature of the mouth wash supply is too high or no heated	<ul style="list-style-type: none"> - A temperature relay inside the top cover fails to work; - The temperature of the temperature controller is too high. 	<ul style="list-style-type: none"> - Replace new water heater; - Readjust the temperature.
The spittoon is not drained smoothly	<ul style="list-style-type: none"> - The pipe is blocked; - The plastic pipe is twisted and damaged. 	<ul style="list-style-type: none"> - Remove and clean the pollutant; - Remove it and dip it into the hot water; alternatively replace new pipe.
No water is supplied to the spittoon	<ul style="list-style-type: none"> - The water pipe is twisted and damaged; - The solenoid valve burns out. 	<ul style="list-style-type: none"> - Replace new pipe; - Replace new solenoid valve.
The saliva pump does not work well	<ul style="list-style-type: none"> - The pipe is blocked; - The filter is blocked. 	<ul style="list-style-type: none"> - Suck clear water to clean or remove to clean with clear water; - Remove and clean, and then install it again.

<p>The handpiece is dripping when it is not in use</p>	<ul style="list-style-type: none"> - The switch of foot control does not back to the original place - Triple diaphragm valve is damaged - Hexagon Water pressing valve is damaged 	<ul style="list-style-type: none"> - Check the foot control and the switch of foot control - Change the triple diaphragm valve - Change the hexagon Water pressing valve
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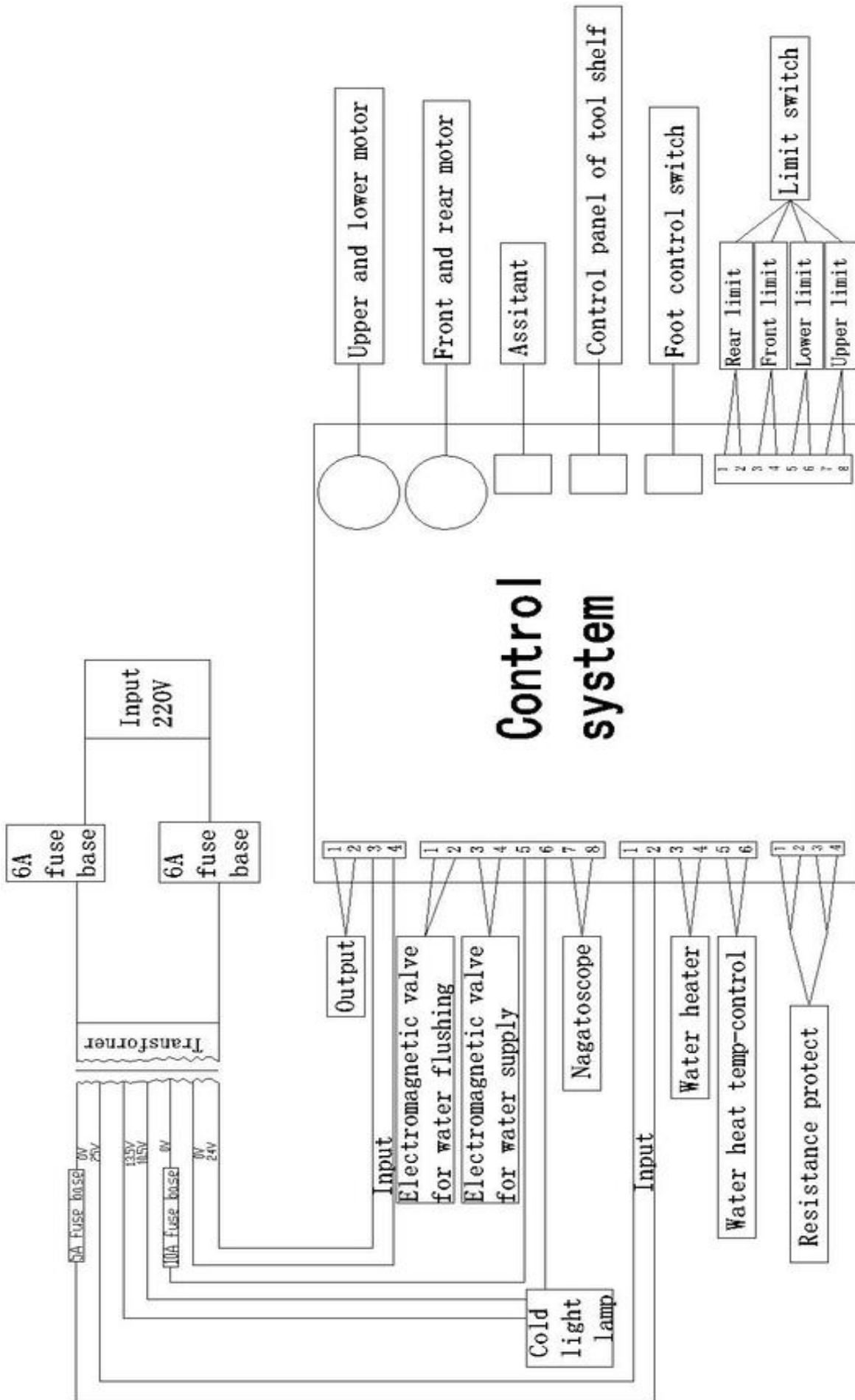
XI. SCHEMATIC DIAGRAM FOR WORKING PRINCIPLE

Electric
↓
water
↓
Air
↓
Air
↑

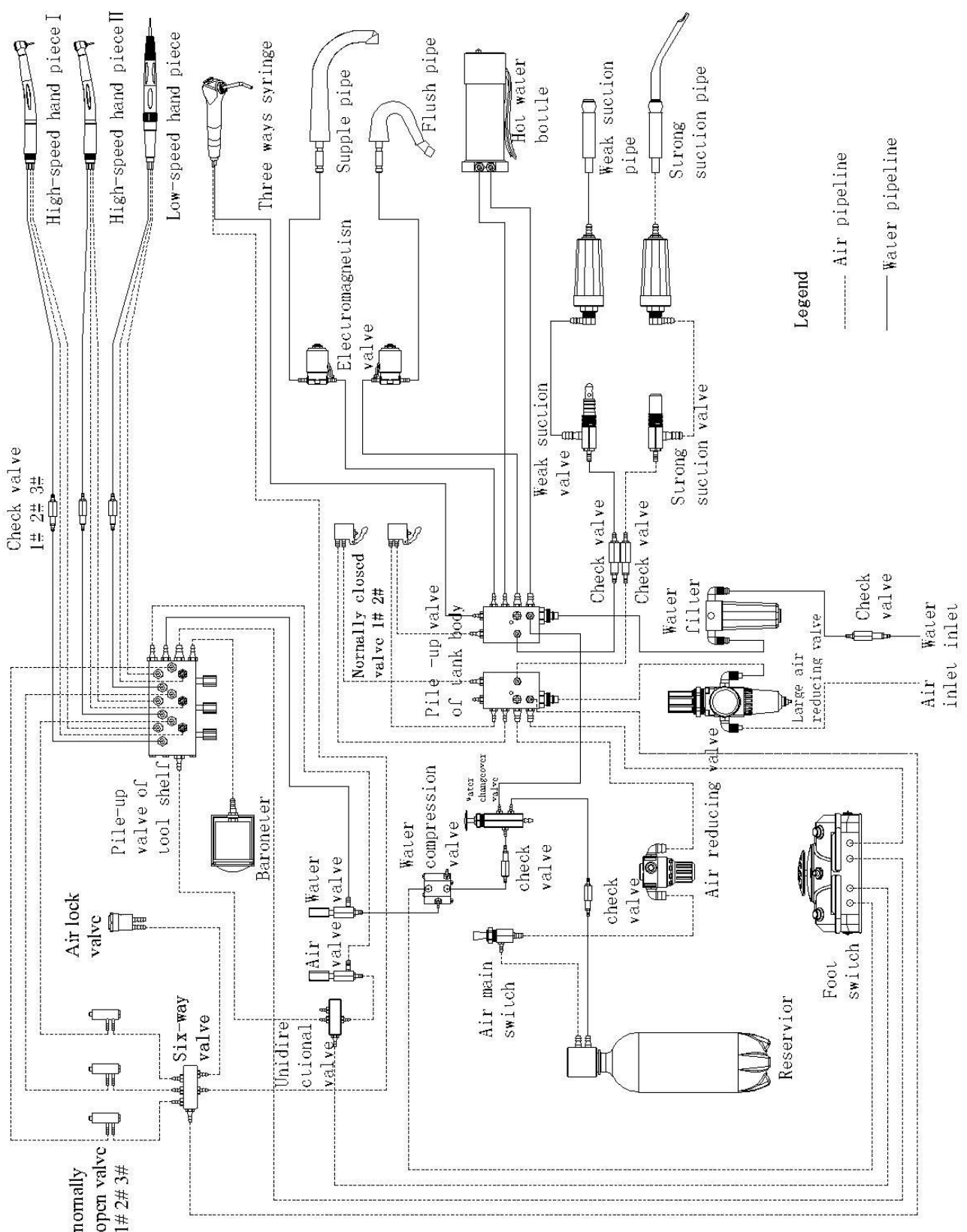


IRCUIT DIAGRAM FOR DENTAL UNIT

XIII. SCHEMATIC DIAGRAM FOR ELECTRIC CIRCUIT



XIV. SCHEMATIC DIAGRAM FOR AIR AND WATER OPERATING PRINCIPLE



- | | | | |
|---|------------------------------------|---|--------------------------------------|
| 1 | Air filter pressure reducing valve | 3 | Foot controller |
| 2 | Integration valve | 4 | Integration valve in instrument tray |

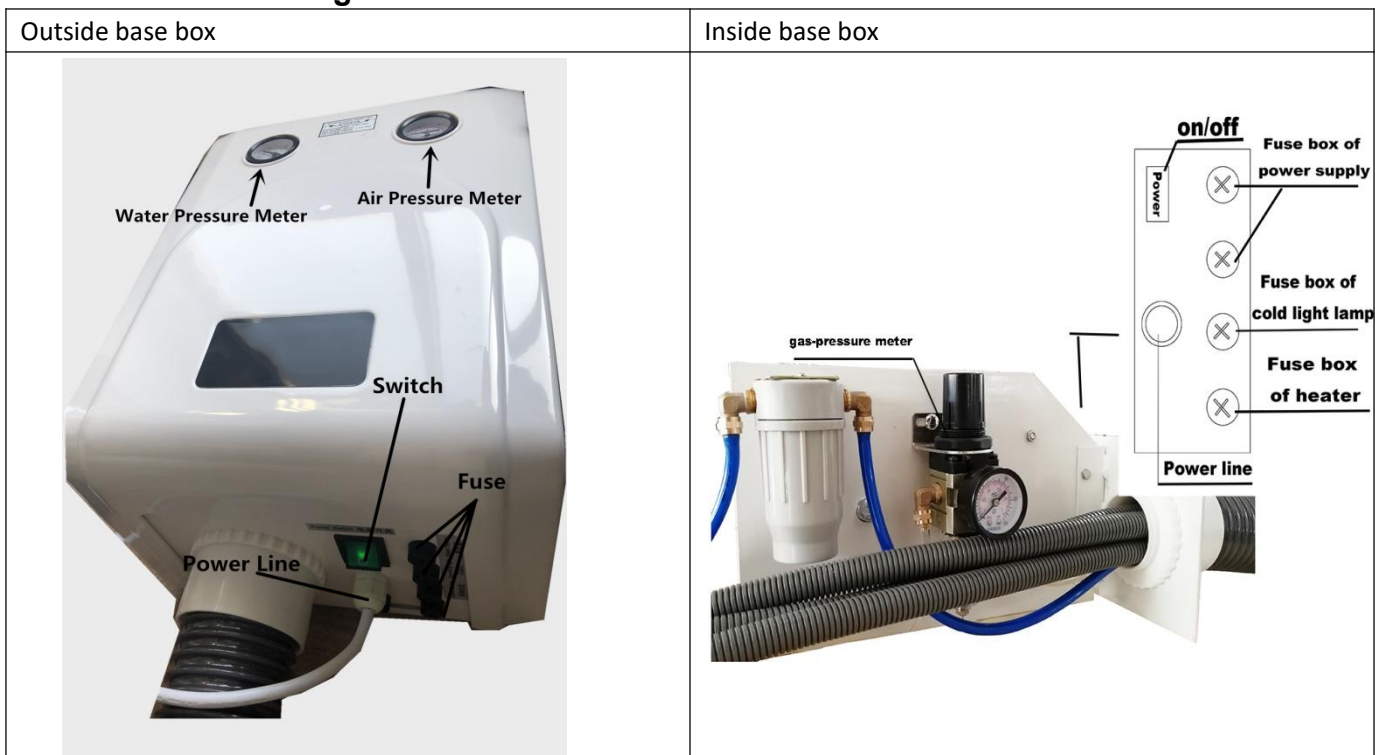
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1.Overview diagram

1. ground box	2.foot controller	3.patient chair
4.weak suction system	5.strong suction system	6.Triple function handpiece(hot)
7.cuspidor:water flues&supply	8.cabinet box	9.operation lamp
10.film viewer	11.instrument control system	12.instrument tray
13.Triple function handpiece(cold)	14.cup collector	

II. Outside & Inside ground box



2.Installation Guidance

2.1.Installation preparation

According to the overall layout, lighting, easy to use and other specific condition of the consulting room, determining position where installing the dental chair .The machine should be placed in a clean, dry, well-ventilated condition to keep in good working environment. And it must make sure that the dental chair is placed in flat and sturdy ground. Under the ground floor where placing the ground box, there must be input or output interfaces of water, gas, electricity provided with this unit, distributed in the range of 140 × 120mm. Inlet water &



air pipes is a 8x5.5 PU tube. Insert three water pipes into ϕ 50mm PVC drain-pipe. (Figure I)The size of each tube interfaces to the ground is about 40mm. Input wire is 1mm three core sheathed cord, (Figure I) the length should be off the ground about 400mm, and protective ground wire connected.

2.2.Installation space

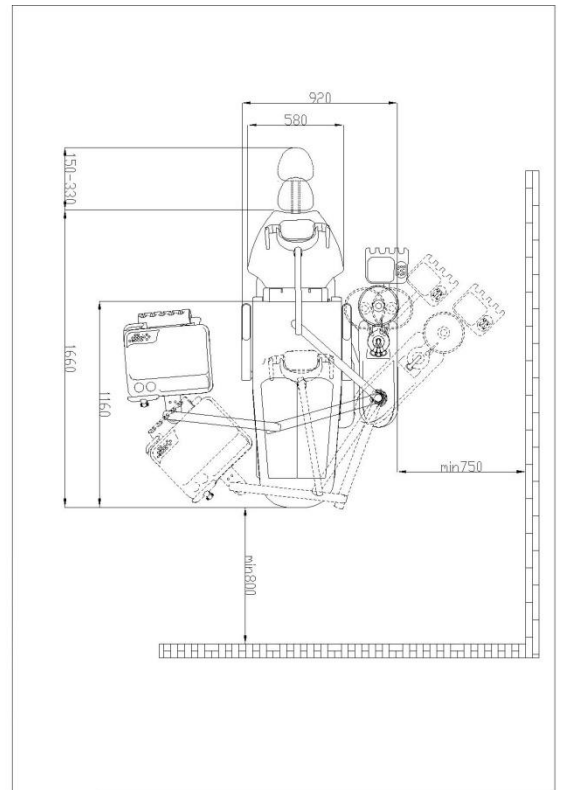
(1) Environment requirement

In order to ensure dental unit to work normally, we recommend you install the dental unit in a clean, dry, and well ventilated area, and leave the ground where the dental unit to be installed flat and solid.

(2) Space requirement

In order to ensure dental unit will not contact with any article within its moving space, pls. make sure sufficient space is available.

- I) The length: > 3000mm;
- II) The width: > 2700mm;
- III) The height: > 2500mm.



2.3.Check the dental chair when open the package

Opening the package box to see if the machine intact. Comparing with the package list, check the annex, spare parts if are complete and intact. If in doubt proposed, please check immediately to the distribution or our company. (Figure II)

(Figure

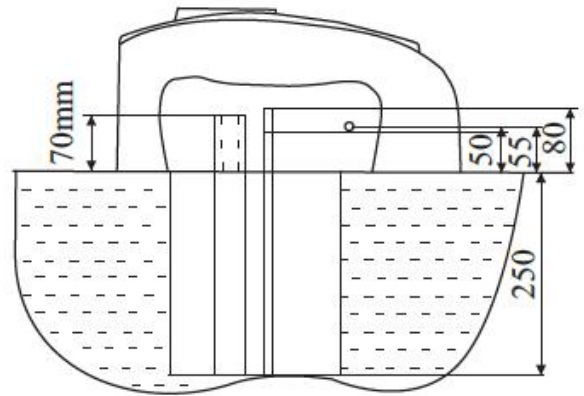


2.4.Product Installation

I.Install base box's air and water pipe

As shown by the Figure at the right side: connect the water inlet pipe, air inlet pipe and water outlet pipe of the unit with the water source, air source and water outlet; when connecting, please make sure the air inlet pipe and the air inlet pipe is airtight; otherwise water or air may leak from the connecting interface. Finally connect the earth wire with the ground.

According to the installation position of the unit, lay the water inlet, air inlet and water outlet pipe in the desirous position; the water inlet pipe and the air inlet pipe must be of PVC material with the specification of $\varnothing 8 \times \varnothing 5$ (i.e. ZG1/2"); each of them must be connected by the elbow. The water outlet pipe to be used must have the inner diameter more than 27.5mm; it will be enough if the water outlet is reserved.





Do not let the height between water outlets and dental chair's installation floor be more than 100mm; otherwise the water inside the outlet pipe may flow back.

Keep the water outlet downwards.

Do not twists, protrude or corrugate the pipe, and do not put the water outlet into water.

As shown by the Figure at the right side: connect the water inlet pipe, air inlet pipe and water outlet pipe of the unit with the water source, air source and water outlet; when connecting, please make sure the air inlet pipe and the air inlet pipe is airtight; otherwise water or air may leak from the connecting interface. Finally connect the earth wire with the ground.

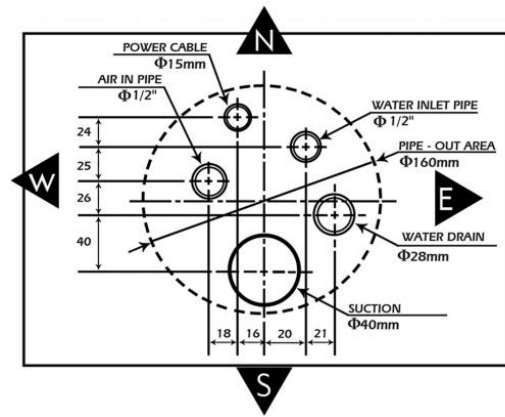
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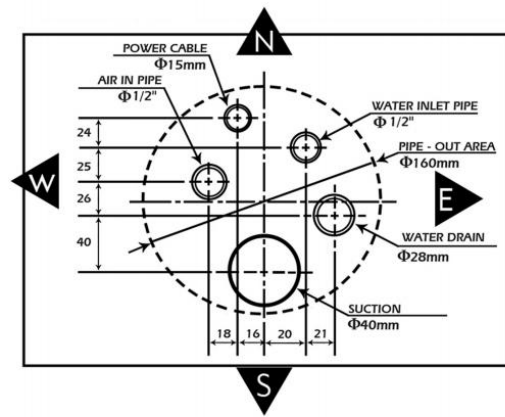
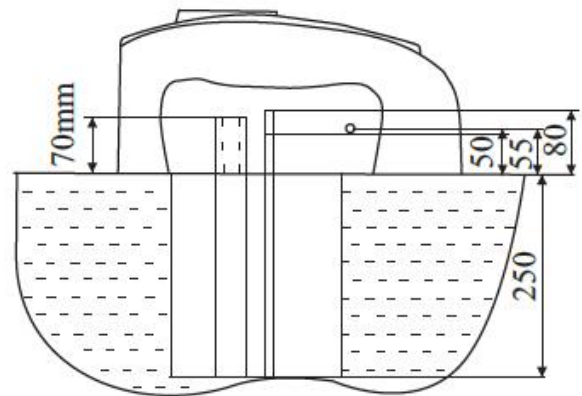
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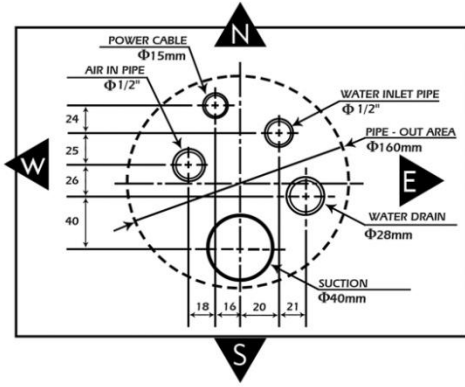


AREA FOR PIPES AND CABLE DIAGRAM

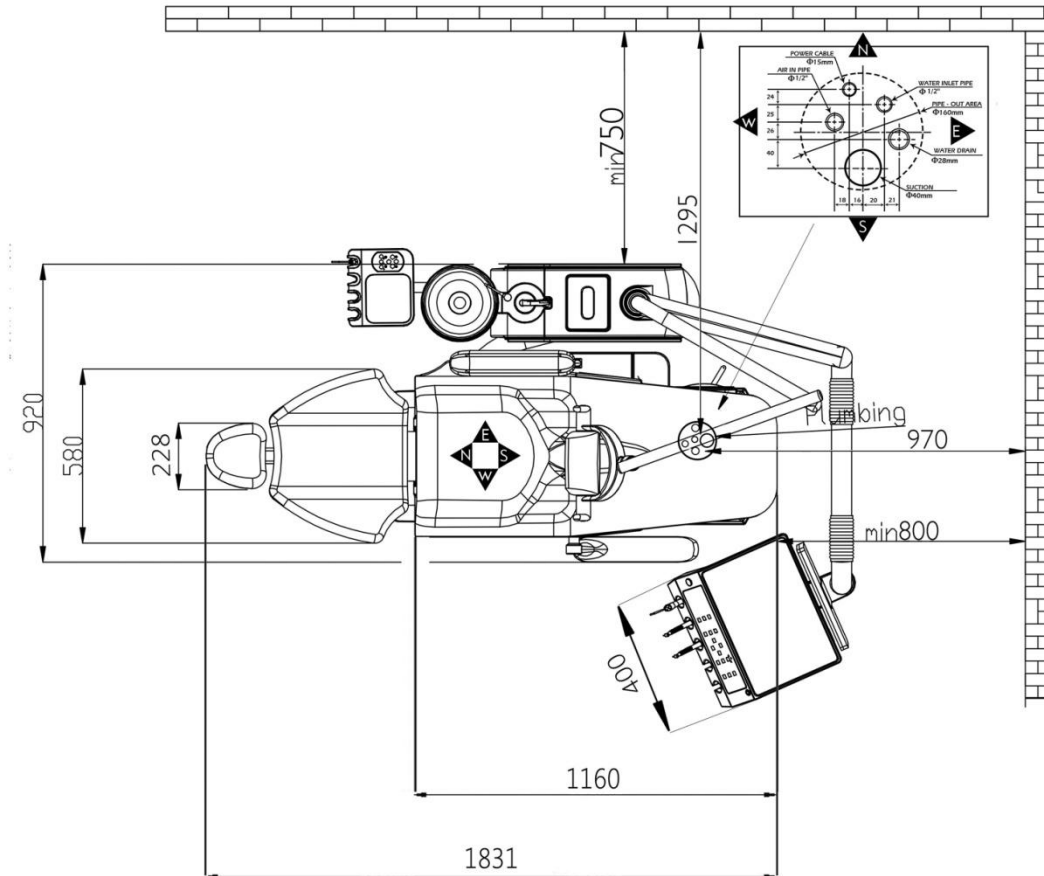
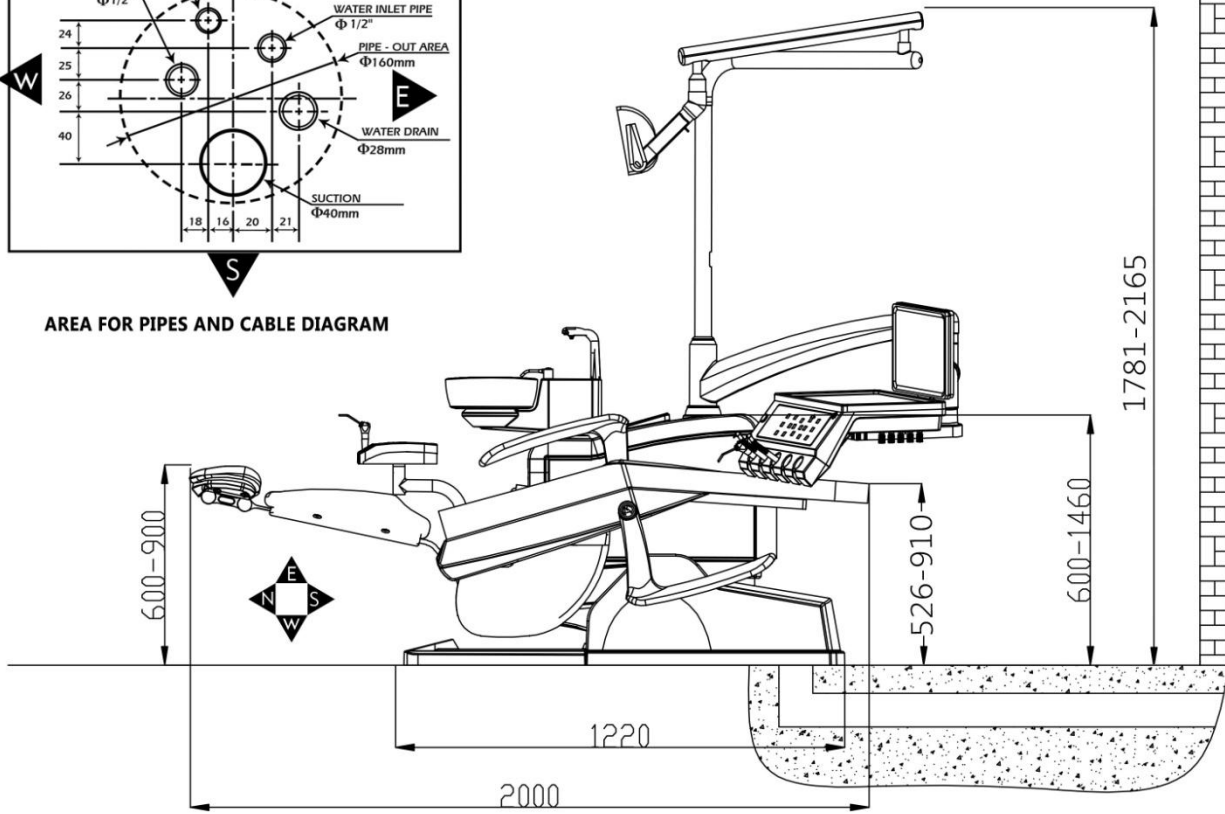


AREA FOR PIPES AND CABLE DIAGRAM

INSTALLATION SCHEME



AREA FOR PIPES AND CABLE DIAGRAM



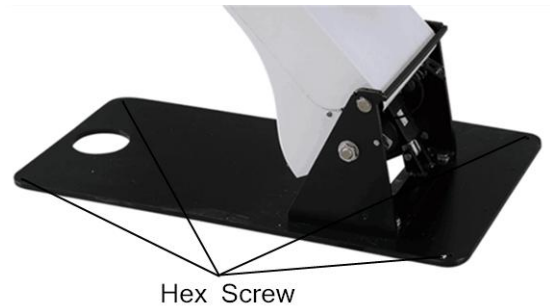
II. Handling and installation

Open the product's box and take out the power supply cord and connect it with the power supply.

Lift dental chair to maximum; take the front and bottom housing, and then remove the power cord.

Fix dental chair onto the packaging with M12 bolt spanner.

Remove 4 screws from the bottom panel, and then move the dental unit to the desired installation position with care.



change



Do not lift or turn pivoted arm, armrest, assistant frame, dental cabinet, plastic housing and other easily breakables in the handling courses, otherwise they may possibly be damaged.

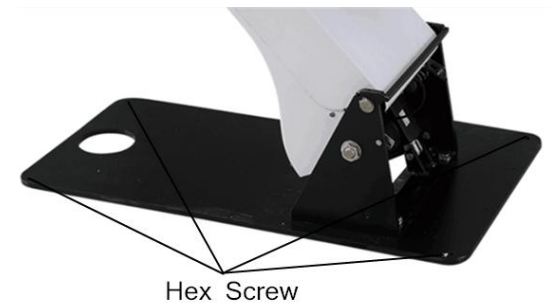
Hold the instrument tray in the handling course, otherwise it may possibly be damaged.

III. Level adjustment of equipment

Put four M12 hex bots into the corresponding four M12 screw holes in the dental chair, and then adjust the screwing-in length of these screws till the desirous level of the unit is achieved.



Leave the dental chair's bottom panel contact the floor as Much As possible; if so the best stability of the whole equipment shall be assured.



IV. The dental chair installation

Firstly, place the dental chair in the flat ground. The machine has been designed to be stability, so it is not necessary to install anchor screws, but the dental chair must be placed on level and solid ground, to prevent accidents due to the uneven ground.



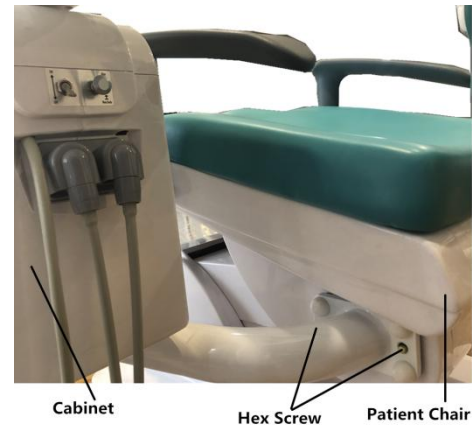
(Figure III)

If the machine is whirling or oblique caused by the uneven ground, you could insert six M10 hexagon screws into six M10 threaded holes on the base of the dental chair, and make full surfaces contact with the ground. When adjustment, we should keep the machine level in order to ensure stability of the machine. (Figure III)

V. Connect the therapeutic unit with dental chair

Lift therapeutic unit and let it align with the interface on dental chair. Secure the therapeutic unit onto dental chair using accompanied M10 bolts.

Pls. refer to Figure right hand.

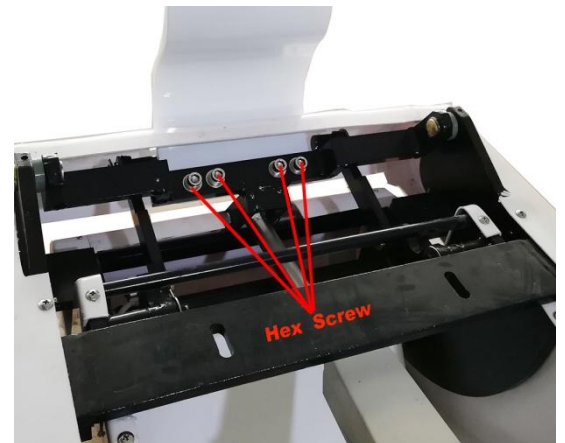


VI. Install dental chair backrest

Use four accompanied M10 bolts to fix backrest onto dental chair.



Pls. keep backrest away from sharp articles in handling course; otherwise it may scratch or damage backrest.



VII. Install dental chair cushion

Take five bolts from bottom of seat cushion; put them into the corresponding holes on dental chair, and then put on the seat cushion. Tighten the hex nuts subsequently.



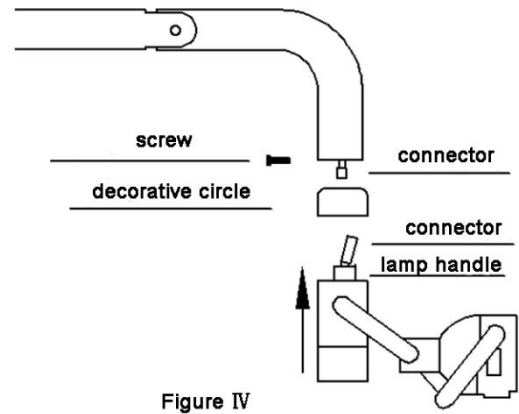
Pls. keep seat cushion away from sharp articles in the handling course; otherwise it may scratch or damage seat cushion.



VIII. Installation of operation lamp arm

Penetrate the wires from lamp arm into the lamp holes, connecting them. (Note: Put decorative circle) and then connecting the lamp arm wire connector with wire in the support arm and put into the support arm. And then correct the lamp arm with the support arm and let it in place. (Note: Do not damage the cord).

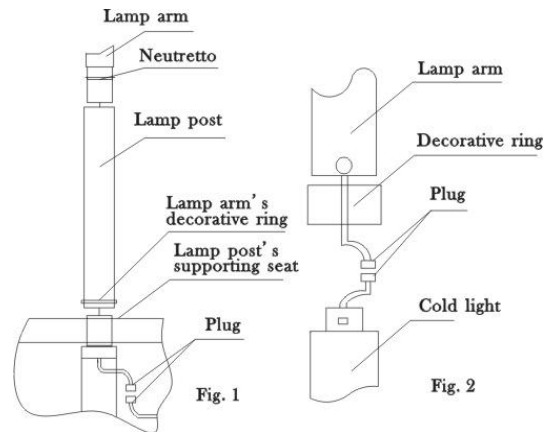
The decorative circle should be put between the wire from lamp arm and lamp head. (Note: prohibited wrong connecting color-coded). After inserting the lamp head into the lamp arm, using 4 screws to fix in position. And then cover the slit and screws decorative circle



IX. Installation of operating lights

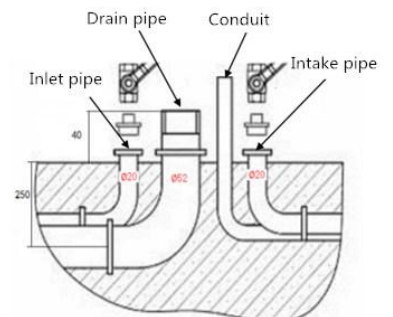
Open the lamp arm packing box; install the lamp arm in turns (see Fig.1 at the right side)

Take out operating light and screw off the M5 female- hex screw from the connecting shaft (see Fig. 2 at the right side), put the decorative ring onto the lamp arm's connecting shaft, connect the cold light lamp's connecting shaft with the power plug of the lamp arm's connecting shaft, put the power cord and the power plug into the lamp arm's connecting shaft, and then insert the cold light lamp's connecting shaft into the lamp arm's connecting shaft hole; finally tighten with the accompanied M5X12 bolts.



X. Pipe connection

Before the tubing is connected to the treatment machine, you must first remove dirt impurities in the pipeline to extend the life of the machine. Connect the $\phi: 8 \times 5.5$ PU tube whit water and gas supply, pay attention to sealing. In addition, the plastic drain fitting into the drain port, connect the drain, and pay attention to strong then it and sealed. (Figure V)



XI. Ground box installation

Two G1 / 2 "× ϕ 8 fittings are screwed into the inlet pipe and intake pipe for standby, (Note: white pipe is gas, blue is water pipe) Please sealed connection to ensure that no leak. Open the ground box cover ,installing the appropriate predetermined position ,where it's ensured that it won't bend between the motor box and the ground box when the dental chair working up and down movement.

XII. Install the accessories of instrument tray

I) Install 3-way spray gun

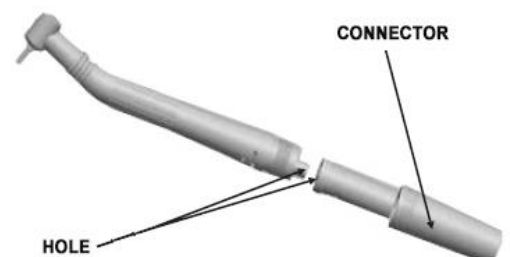
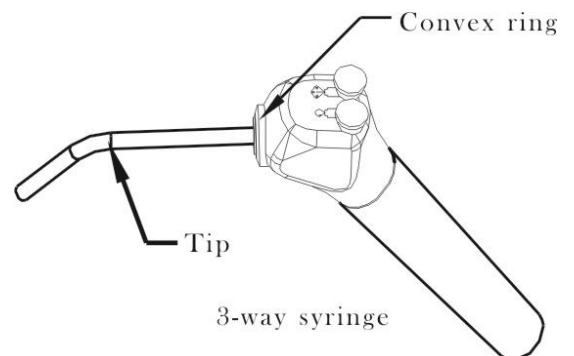
Remove the nozzle of the triple spray gun from the accessory box;

Insert the nozzle according to the convex ring on the lower gun, and

Then unfasten the convex ring to make it reset; if the convex ring is still pressed, it means the final installation position is not yet reached; in this case it is required to press the convex ring again and insert the nozzle inwards hardly till the convex ring comes out.

II) Install handpiece

Before installing the handpiece, it is required to open the water and air source and pull out every handpiece pipe and step on the foot switch to drain residual water and air inside pipes. When installing, all holes must be aligned each other to make connection.



Use of handpieces , disinfection and maintenance, please refer to their manuals!

XIII. Power plugs connection

The machine has been equipped with plug before the factory. Normally there are 4 plugs as the picture. If the user are not prepared with a grounding device, the power outlet can be grounded before the power supply.



US Plug



British Plug



Europe Plug



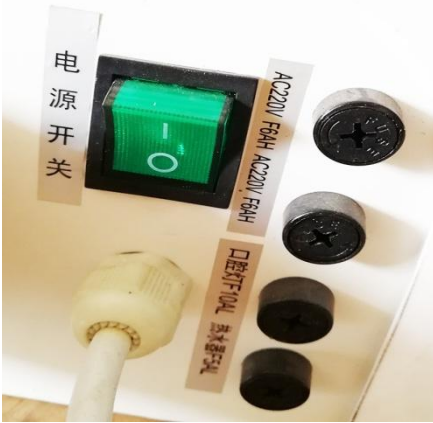
China Plug

3. Commissioning

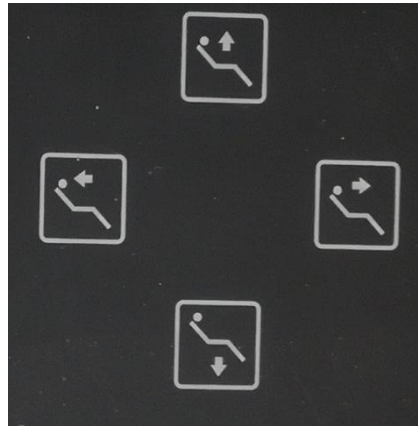
Close the main switch of water; air and electric power (see Figure.1 below).

Note : After finishing work, please disconnect the water, air and electric power supply; if so the parts and components inside the unit can be well protected and the service life of the whole unit can be extended; meanwhile the accident probability can be hugely reduced.

1. After the buzzer toots, the indicator lamp on instrument tray and assistant frame shall be "on"; since then the equipment shall make self-inspection. (Figure.2)
2. Inspect the water source connection joint and ensure there is no water leakage.
3. Inspect the air source connection joint and ensure there is no air leakage.
4. Check the pressure value of the gas-pressure meter (installed on the air reducing valve); the normal operating air pressure is 0.55 MPa; if it is not correct, please adjust the adjusting knob of the air filtering and pressure relief valve. Adjustment method: flip the knob on the top of the air filtering and pressure relief valve upwards, turn the knob clockwise to increase pressure valve; vice verse. (Figure.3)



(Figure.1)



(Figure.2)



(Figure.3)

XVI.Cleaning and disinfection

Note: Handpieces are not regarded as standard assemblies of this equipment and their sterilization shall be upon the method described in the handpieces.

The handpieces shall be used as follows:

- 1) Its CE Certification.
- 2)Its working pressure shall be 180-300kPa with filtered air.

- 3)Its mouth shall comply with International standard .

Cleaning and disinfection method: Our dental chair is equipped with a water filter device, and the disinfection method is to step on the foot with a water bottled disinfectant for management and disinfection. After the disinfection is completed, use another bottle of distilled water to step on the footwork to clean the pipeline.The disinfectant used is hypochlorous acid solution.