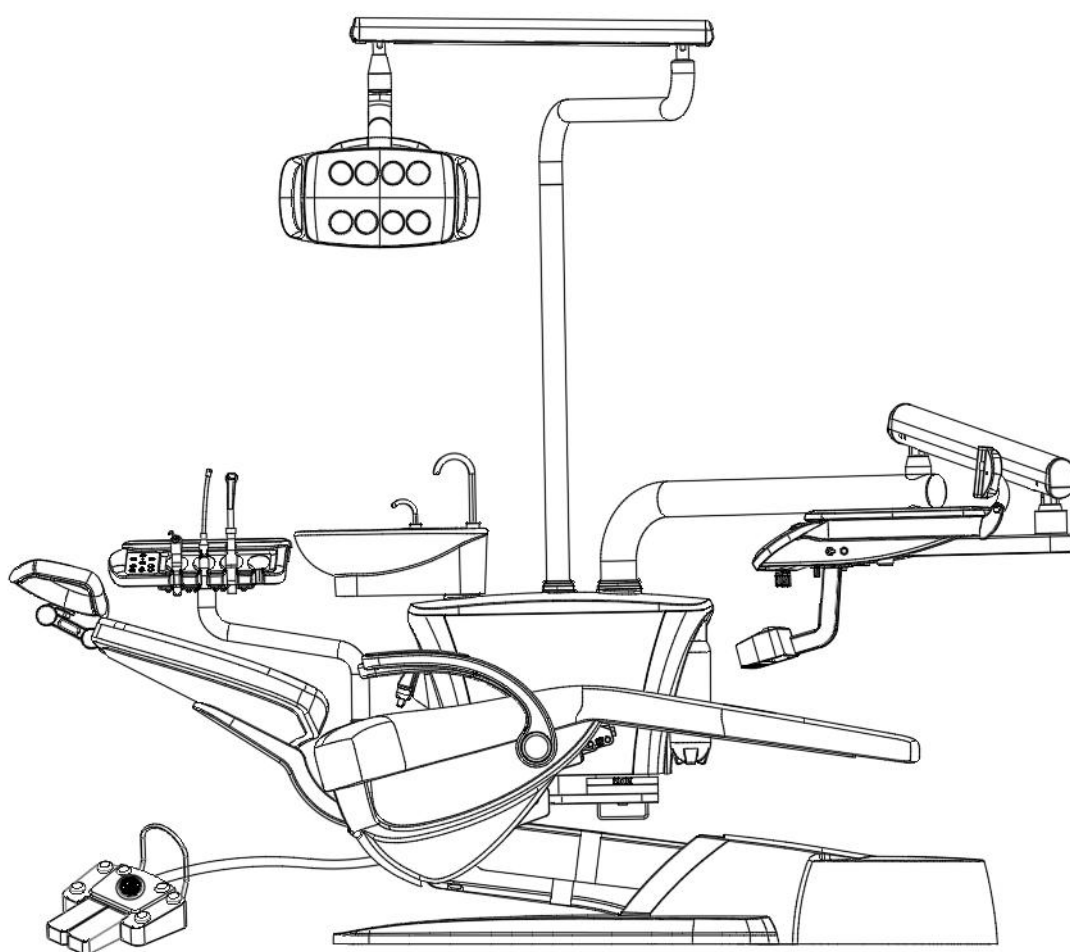


Comprehensive dental treatment

machine

Technical specification for product use

Applicable models: M100, M200



catalogue

I. Product Introduction	1
II. Introduction of complete machine components	1
III. Technical parameters	4
IV. Functional symbols	7
V. Equipment installation	10
6. Start debugging	12
Vii. Maintenance and repair	17
VIII. Notes	18
IX. Circuit schematic diagram	21
10. Water and gas schematic diagram	23
11. Electromagnetic compatibility	24
12. Manufacturer information	29



Note: Read the instruction carefully before operating this

machine

I. Product Introduction

The dental comprehensive treatment machine manufactured by consists of the following components: dental chair, side cabinet, oral lamp, instrument tray, mouthwash dispenser, multifunctional spray gun, suction cup, sputum basin, viewing light, foot pedal switch, ultrasonic scaler interface, light-curing machine interface, dental phone interface, and low-voltage electric motor interface. This equipment is designed for use in dental departments of medical institutions for diagnostic and therapeutic purposes.

II. Introduction of complete machine components

2.1 Dental comprehensive treatment machine (Figure 1)

1. dental chair
2. Side boxes
3. mouth lamp
4. instrument tra
5. Toothbrush water supply device
6. Multi-functional spray gun
7. dental pump
8. spittoon
9. viewbox
10. foot pedal
11. Sono-dental machine interface, light curing machine interface
Dental phone interface, low voltage electric motor interface

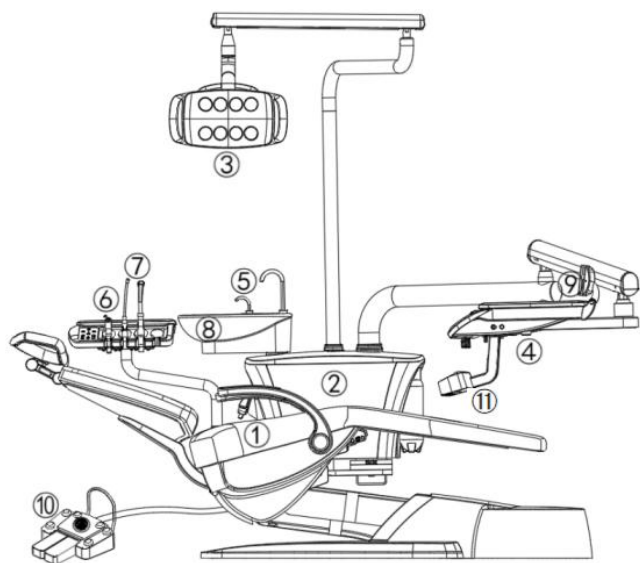


Figure 1 Whole machine diagram (M100 as an

2.2 Dental chair (Figure 2)

1. Headboard
2. Backrest
3. Handrails
4. Cushions
5. The bunker

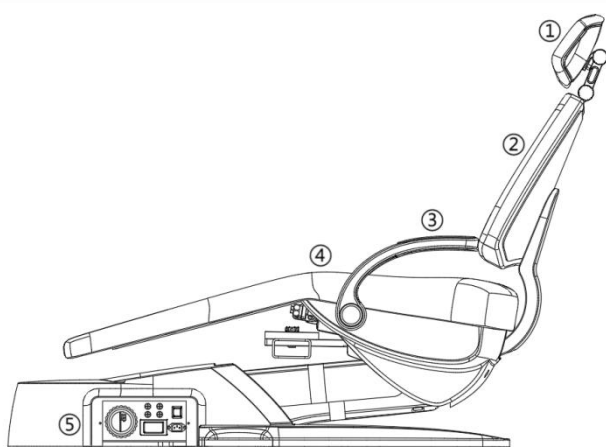


Figure 2 Dental chair

2.3 Instrument tray

- 1. cradle
- 2. Airlock switch
- 3. barometer
- 4 . Master control panel
- 5 . Hook assembly
- 6 . viewbox

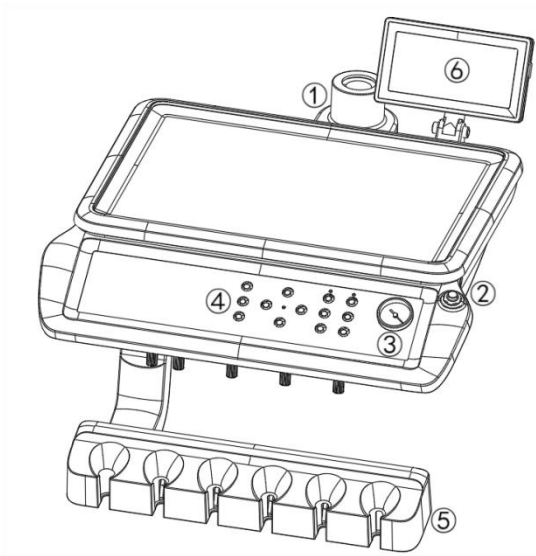


Figure 3 M 100 instrument

- 1. cradle
- 2. Airlock switch
- 3. Stainless steel handle
- 4 . Master control panel
- 5 . Hook assembly
- 6 . viewbox
- 7. Stainless steel pallet

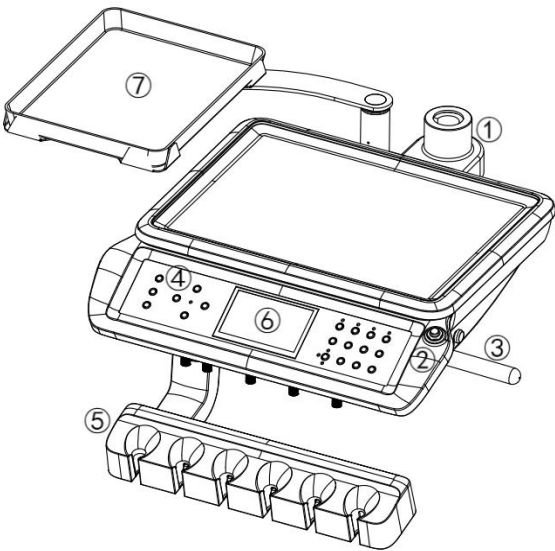
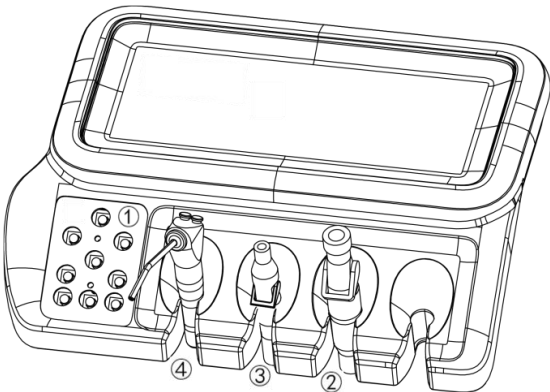


Figure 4 M 200 instrument

2.4 Assistant scaffolding (Figure 5)

- 1. Sub-control panel
- 2. Strong suction device
- 3. Weak salivary glands



4 .three ways syringe

Figure 5 Assistant scaffold

三、technical parameter

3.1 Classification

3.1.1 This machine belongs to the Class I B application part

3.1.2 Classification by operation mode: non-continuous operation, that is, 2min working and 18min rest.

3.1.3 Classification according to the protection degree of the inlet liquid: foot pedal switch (IPX1)

3.1.4 The safety level of the equipment is classified according to the use in flammable anesthetic gas mixed with air or flammable anesthetic gas mixed with oxygen or nitrous oxide: it does not belong to AP type and APG type equipment.

3.1.5 Basic performance: None

3.1.6 Application part: headrest, backrest, seat, oral lamp, strong and weak suction, multi-functional spray gun

3.2 Working parameter conditions

The technical parameters of this medical device are shown in the following table.

supply voltage	220V ~	supply frequency	50Hz
interiorinput power	350 VA	Water hardness PH value	$\leq 60\text{mg/L}$ (7.2 ~ 7.8)
Water pressure	200 ~ 400kPa	Water flow rate	$\geq 10\text{L/min}$
bleed pressure	$\geq 550\text{kPa}$	Air source flow	$\geq 50\text{L/min}$
Air velocity limit	$> 80\text{NL/min}$	Humidity limits	Dew point at atmospheric pressure Not higher than -20°C
Oil pollution limits	Maximum 0.5mg/m^3	Micro particle pollution limits	Particles of $1\sim 5\mu\text{m}$ in size Not higher than 100 per m^3
Source gas requirements	No oil, water, bacteria or tap water Or comply with GB5749-2006 Hygienic Standard for Drinking Water The source of water	air filter aperture	$40\mu\text{m}$
Water source requirements		Water filter aperture	$74\mu\text{m}$
Waste water drainage Maximum water flow	$\geq 5\text{L/min}$	Waste water piping Minimum inclination	30°
transportation environment temperature range	$-40 \sim 55^{\circ}\text{C}$	Transportation is relative temperature range	$\leq 80\%\text{RH}$
atmospheric pressure scope	500 ~ 1060hPa	During transportation and storage Attention should be paid	"Avoid heavy pressure, avoid rain, place upward, fragile, handle carefully, avoid sun"
A powerful suction device	When the air pressure is 400kPa, Draw rate is greater than or equal to 1000mL/min, vacuum degree is greater than or equal to 25kPa	Weak suction device	When the water pressure is 200kPa, The pumping rate is $\geq 400\text{m L/min}$, and the vacuum degree is $\geq 10\text{kPa}$
Constant temperature heater	AC24V 80W; Level 1 protection: 45°C Level 2 protection: 70°C	LED mouth lamp	AC 12 ~ 24V

impedance	$\leq 100\text{m}\Omega$	Drainage current	$\leq 5\text{mA}$
The solid collector intercepts the solid diameter	$\geq 2\text{mm}$	Interface performance	$24\text{V} \pm 10\%$
work environment temperature range	$5 \sim 40^\circ\text{C}$	Work atmosphere pressure limit	$700 \sim 1060\text{hPa}$
Work is relative Humidity range	$30 \sim 75\text{RH}$	Pressure systems Working air pressure	$0.55 \sim 0.6\text{MPa}$
viewbox power rating	4W	viewbox working voltage	AC 24V 50 ~ 60Hz

3.3 Specifications and parameters

The specifications and parameters of this medical device are shown in the following table.

The viewing lamp should have a brightness of $\geq 2000\text{cd}/\text{m}^2$, with an observation screen size of $135 \times 65\text{mm}$ (the recommended image size for observed photos is $130 \times 60\text{mm}$). The lamp must maintain uniformity >0.7 , stability $\leq 2\%$, and a scattering coefficient >0.9 , with a color temperature of 6500K. The reading rooms ambient illumination should not exceed 100 lx.	
Weight of dental comprehensive treatment machine	250kg
Weight of dental chair	150 kg
Oral lamp illumination	6000-45000 lx
Oral lamp movement pattern	continuous work
Constant temperature heater temperature	$40^\circ\text{C} \pm 5^\circ\text{C}$
Backrest range of motion	$2 \sim 67^\circ$
The length of the pillow that can be extended	0-120mm
The maximum off ground height of the dental chair	780mm
The minimum off ground height of the dental chair	380mm
Strong suction connector ($\Phi 11.9 \pm 0.1\text{mm}$)	Strong suction ($\Phi 12.1 \pm 0.2\text{mm}$) sleeve
Weak suction connector ($\Phi 7.7 \pm 0.1\text{mm}$)	Weak suction ($\Phi 6 \pm 0.2\text{mm}$) casing
Total weight of the maximum load on the instrument disk (maximum load at the most unfavorable position)	5kg (3kg)
Maximum seating capacity of dental chair (maximum load of dental chair in the most unfavorable position)	150kg (100kg)
The dental chair can bear the maximum weight of additional equipment	5kg
Product service life	Fifteen years

Oral lamp at maximum illuminance, 10%,50% and 75% of the illuminance line in the illuminated area (see oral lamp specification)

3.4 Nameplate

On the dental integrated treatment machine, there is an identification nameplate of this equipment, from which the basic parameters of the product can be seen.

4、function symbol

4.1 Description of identification symbols

	Type B application section		protective ground		alternating current (AC
	Usability documentation		No sitting		Push banned
	No trampling		Mind your head		Warning: Electric
	warn		Pinch Point Hazard! Keep Hands Clear		Professional recovery
	temperature extremes		Humidity limits		Avoid sun exposure
	Lift up		breakable handle with care		Avoid rain
	Avoid stress				

4.2 Description of functional symbols

The dental chair functions can be manually operated by using the dental chair direction buttons on the main and secondary control panels. The following lists the icons and the corresponding operations for each icon.

order number	symbol	Key name	order number	symbol	Key name
A		Press the up key with your back	K		Doctor Keys
B		Press the back down key	L		I remember the key
C		Press the upward movement key on the dental chair	M		Key to memory II
D		Press the tooth chair down button	N		III Memory key
E		reset key	O		Throat lozenges
F		Sputum toilet seat button	P		Water supply key

G		Treatment chair keys	Q		Heating key
H		Set the key	R		Oral ligation key
I		Disinfect the key	S		View the film button
J		Water diversion switch			

A Move the back of your chair up

Hold down this button continuously and the back of the dental chair will move upward. When you reach the desired position, stop pressing the button and the back of the dental chair will stop moving immediately.

B Move the back of the chair down

Hold down this button continuously and the back of the dental chair will move downward. When you reach the desired position, stop pressing the button and the back of the dental chair will stop moving immediately.

C Dental chair up button

Keep pressing this button and the chair will move upward. When you reach your desired position, stop pressing the button and the chair will stop immediately.

D. Press the chair down button

Hold down this button and the chair will move downward. When you reach your desired position, stop pressing the button and the chair will stop immediately.

E reset key

Press this button, the seat and back will automatically reach the preset seat position. (preset seat position: back in the highest limit position, seat in the lowest limit position.)

F Spitting chair key

Press this button to automatically raise the backrest to its maximum position while keeping the seat stationary. The mouthpiece light will turn off and the sputum flushing function will activate, making it easier for patients to expel phlegm. When pressed again from this position, the backrest will return to its original therapeutic position, the mouthpiece light will turn back on (for Model M200, the sputum flushing function only activates after the light turns on), and the sputum flushing will automatically deactivate.

G Therapeutic chair keys

Press this button to move the seat upward to the highest position and the backrest downward to the limit position.

H Settings key

Press the Settings key for 3 seconds to enter the Settings interface and then select the function key to be set for corresponding Settings. Please refer to the corresponding keys for the setting of related function keys.

I Disinfection button

Press this button to activate the automatic disinfection interface. Press again to enter system self-check mode, where it will verify water levels for both disinfectant solution and purified water. If insufficient water is detected, the system will emit audible alerts (3 tones for purified water, 4 tones for disinfectant solution) while displaying real-time status messages. Press this button for 5 seconds to activate the 25-minute disinfection cycle, which will automatically shut down after 5 minutes of operation.

J Source conversion key

Press this button to automatically switch the water source. If there is a shortage of water, the system will automatically send out a prompt sound (three times) and pop up a prompt message on the screen. After filling up the water, press this button to confirm (exit the prompt message).

Doctor K key L I memory key M ii memory key N iii memory key

This machine provides three doctor positions "A", "B" and "C", and each doctor position can preset three memory positions "I", "II" and "III".

The specific installation method is as follows:

Press the "SET" key on the main control panel of the instrument disk for 3 seconds to enter the setting interface and press again  The selection of the physician was approved     Move the four motion keys to the required position, select the corresponding memory position and press the "SET" key on the main control panel. The indicator light is turned off, and the above process is automatically recorded by the computer with new setting data and the setting is completed.

O The expectorant button

Press this button, the system will start to flush water automatically according to the set time, and press this button during the flushing process to stop flushing.

If flushing time needs to be set, the method is as follows:

Press the "SET" key on the main control panel of the instrument disk. After the indicator light is on, press the phlegm flushing key to set.

Press the first button, the buzzer will sound once, and the time to rush the phlegm is 30 seconds.

At the second time, the buzzer sounded twice, and the time to clear phlegm was 60 seconds.

According to the third step, the buzzer sounds three times, and the time to clear phlegm is 3 minutes.

According to the fourth time, the buzzer sounds four times, and the time to clear phlegm is always on.

After the setting is completed, press the setting key again. The indicator light will be turned off and the setting is complete. The computer will automatically record the new setting data. After that, only

Press the phlegm flushing button lightly, and the water will be flushed automatically until the set time stops.

P Water supply key

Press this button, the system will start to supply water automatically according to the set water output, and press this button during the water supply process to stop the water supply.

If the water supply time needs to be set, the method is as follows:

First, press the "SET" button on the main control panel of the device. When the indicator light illuminates, place an empty cup at the mouthwash outlet. Hold down the "Water Supply" button on the main control panel until water flows out, then release it. Stop the flow when you reach the desired water volume. Press the "SET" button again, and the indicator light will turn off. The computer will automatically record these settings as new parameters, completing the configuration process.

Q Heating key

Press this key, the heating indicator light on the main control panel flashes, indicating that the water heater is in heating state. When the heating reaches the specified temperature, the indicator light stays on, and press the button again to turn off the heating function, and the indicator light goes out.

R Oral lamp button

Press this button to turn on the mouth light, and press it again to turn off the mouth light.

S Film viewing button

M100: Keep the power switch of the viewing lamp on. Press this button to turn on the viewing lamp, and press it again to turn off the viewing lamp.

M200: The viewfinder lamp does not have a built-in switch. Just press this button to turn on the viewfinder lamp, and press it again to turn off the viewfinder lamp

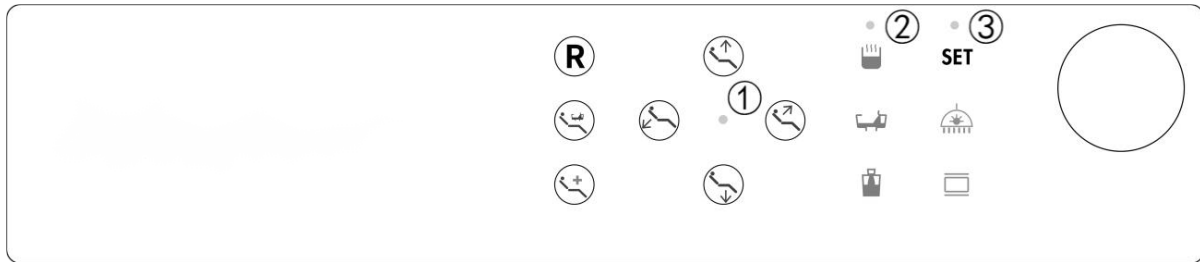
Note: 1. Technically speaking, there exists a certain pressure difference between the gauge reading on the instrument panel and the actual operating pressure of the turbine phone. This difference precisely corresponds to the pressure loss value measured at the phones connecting pipe. However, from a practical standpoint, using the gauge reading as the representative operating pressure significantly contributes to extending the phones service life.

4.3 Control panel

M100 main control panel

The main control panel enables operation of dental chairs, including chair elevation and retraction, backrest

adjustment, as well as activation/deactivation of sputum flushing, water supply, heating, oral cavity illumination, and imaging lights. Users can also set automatic shutdown intervals for both sputum flushing and water supply systems. When any indicator light on the control panel illuminates, it signifies normal operational status, allowing users to perform standard procedures.



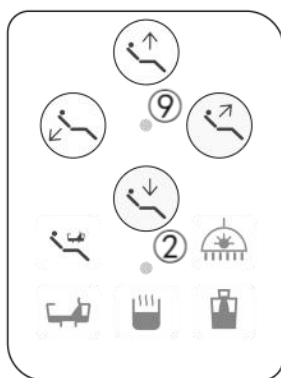
M200 main control panel

The main control panel of this dental chair system enables precise operation of multiple functions including chair elevation, backrest adjustment, and activation/deactivation of features such as sputum flushing, water supply, heating, oral illumination, imaging lights, water source switching, and sterilization. Users can also configure automatic shutdown times for both sputum flushing and water supply systems. When any indicator light on the control panel illuminates, it signifies normal operational status, allowing users to perform standard procedures.



M100/M200 type sub-control control panel

The sub-control control panel of this model can control the elevation and lowering of the dental chair, the elevation and lowering of the backrest, and the opening/closing of the expectorating, water supply, heating and oral lamp. If any indicator light on the sub-control control panel is on, it indicates that the indicator light is in normal working condition, and you can carry out normal operation.



1. Master power supply indicator
2. Heating indicator
3. Set the indicator light
4. Disinfection indicator
5. Water source conversion indicator
6. Doctor As work indicator light
7. B Doctors work indicator
8. Doctor Cs work indicator
9. Sub-control panel indicator light

Oral lamp control panel (read the oral lamp manual for details)

V. Equipment installation

5.1 Installation preparation

Open the box inspection: open the outer packing box, check whether the whole machine is intact, and check

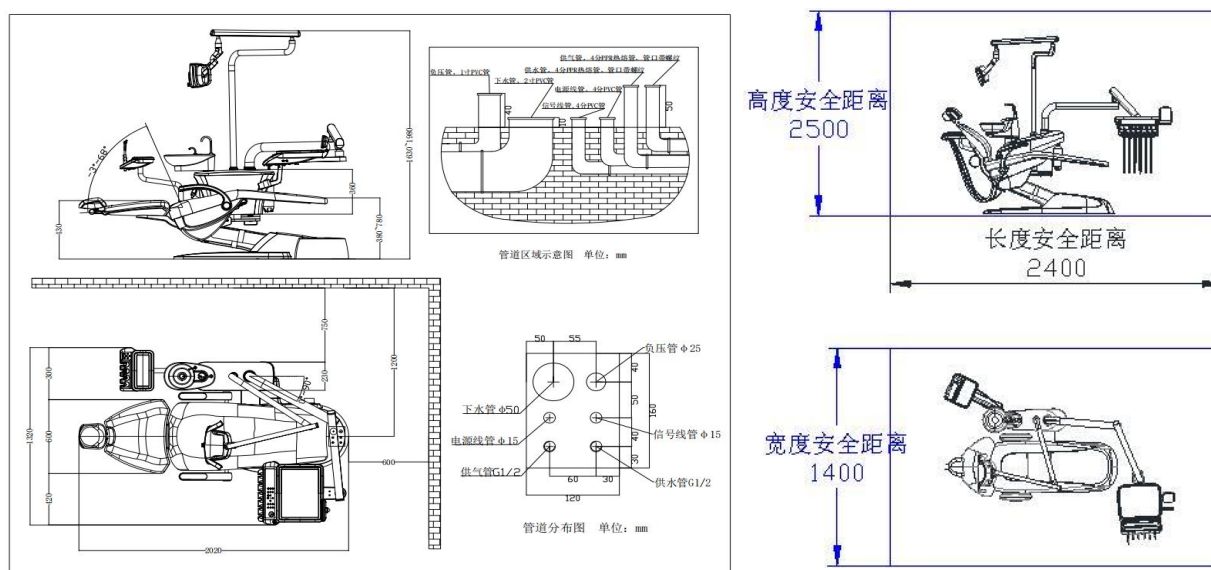
whether the accessories and spare parts are complete and intact according to the contents of the packing list. If there is any doubt, please immediately inquire to the distributor or our company.

5.1.1 The diagnosis and treatment room shall be clean, dry and ventilated to maintain a good working environment. It shall also ensure that the floor of the dental chair is in contact with a level and firm ground.

5.1.2 The size of the dental comprehensive treatment machine (length × width × height) is 2020mm × 1320mm × 1980mm, and its range of motion is 2180mm × 2200mm × 2300mm. The space for doctors to diagnose and treat should be no less than 2400mm × 1400mm × 2500mm. The specific dimensions are shown in construction reference Figure 6.

5.1.3 Below the ground level at the location of the underground box, there must be water, gas, and electrical input/output connectors for the machines use, distributed within a 180 × 160mm area. The inlet pipe (blue) and air intake pipe (transparent) shall be $\Phi 8 \times 5$ PU pipes, while the drainage pipe shall be $\Phi 16$ mm steel wire flexible hose. Specific dimensions are shown in Construction Reference Figure 5.

5.1.4 The capture area is shown in Figure 6



graph 6

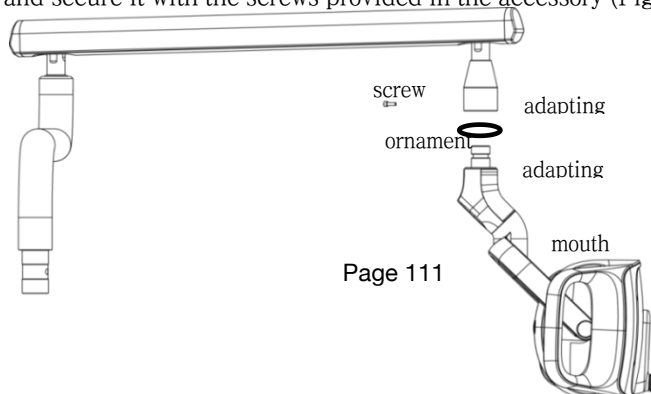
5.2 Whole machine positioning

5.2.1 The dental comprehensive treatment machine should be positioned at the predetermined position first. The design of this machine has taken into account the stability of the whole machine, so there is no need to install foot bolts. However, the ground in contact with the dental chair base plate must be level and firm to prevent accidents caused by uneven ground.

5.2.2 If uneven surfaces cause rotation or tilting of the entire unit, insert six M10 hex socket set screws from the accessory into the six threaded holes on the dental chair base plate, ensuring full contact with the floor. During adjustment, maintain the units levelness and maximize contact points to ensure stability.

5.3 Installation of oral lamp (read the manual of oral lamp in detail before installation)

First, thread the wire from the lamp arm into the lamp post, then securely connect both components. Next, align the wire connector on the lamp arm with the corresponding connector in the side cabinets lamp post base, insert it into the base, and position the lamp post securely in its holder. (Note: Be careful not to damage the wires.) Connect the lamp head wire connector to the lamp arms wire connector via the decorative ring, then insert the lamp handle into the lamp arm hole and secure it with the screws provided in the accessory (Figure 7).



graph

5.4 Floor box installation

Install the two G1/2" × Φ8 pipe fittings from the machines accessories onto the blue water inlet pipe and transparent air intake pipe for later use. Ensure proper sealing during installation to prevent air or water leakage. Open the floor box cover and position it at ground level (no higher than the floor) to maintain smooth drainage. This placement must allow the bellows connecting the side box and floor box to remain undistorted during the dental chairs vertical movement.

5.5 Pipeline installation

Before connecting the pipeline to the treatment machine, it is essential to remove dirt and impurities inside the pipe to extend the equipments service life. Securely connect the Φ8 × 5 PU pipe to both water and air sources while ensuring proper sealing. Additionally, insert the steel flexible hose into the drainage pipe outlet and securely fasten it with airtight connections.

5.6 Power connection

This machine is equipped with a single-phase three-prong socket before leaving the factory. If the user does not have a grounding device, it should be grounded at the power socket before being powered on.

5.7 Mobile phone installation

Connect the phone according to the requirements of the users manual, and pay attention to not running the phone for a long time without load or starting the phone under high pressure. (The buyer or user can choose the dental phone suitable for this connector by themselves)

5.8 Installation of viewing lamp

The viewing lamp is already installed when the dental comprehensive treatment machine leaves the factory and does not need to be installed separately before use.

5.9 Other annexes

The machine has reserved interfaces for the installation of functional accessories such as dental low-voltage electric motor, low-speed pneumatic motor phone, light curing machine, high-speed gas turbine phone, pneumatic cleaning machine, ultrasonic cleaning machine, oral endoscope, etc., but the accessories selected by users must be high-quality products that meet the corresponding standards and obtain the corresponding certification.

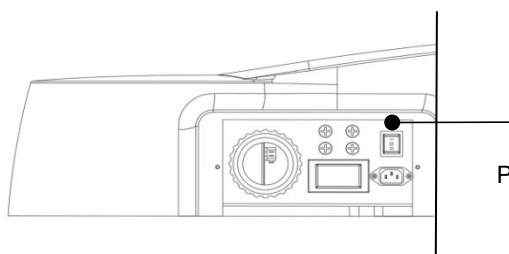
Please install according to the manufacturers instructions of dental low-voltage electric motor, low-speed pneumatic motor phone, light curing machine, high-speed gas turbine phone, pneumatic cleaning machine, ultrasonic cleaning machine and oral endoscope. Input the power supply to the reserved 24 V power line input port of this machine.

6. Start debugging

6.1 Dental chair

6.1.1 Power supply

The position of the M100/M200 power supply is next to the fuse seat of the earth box, as shown in Figure 8.



M100 power switch



I: Electric control state (used when no gas source is available)

Page 212



II: Air control state (it can only be achieved when air is supplied and pressure is adjusted properly. This is the working mode, and the switch must be pressed into air control state during daily use.)

grap

6.1.2 Ground box fuse (Figure 9)

F1, F2: 24V output power supply fuse (F10AL 250V)
F3, F4: whole machine power input fuse (T6.3AL 250V)

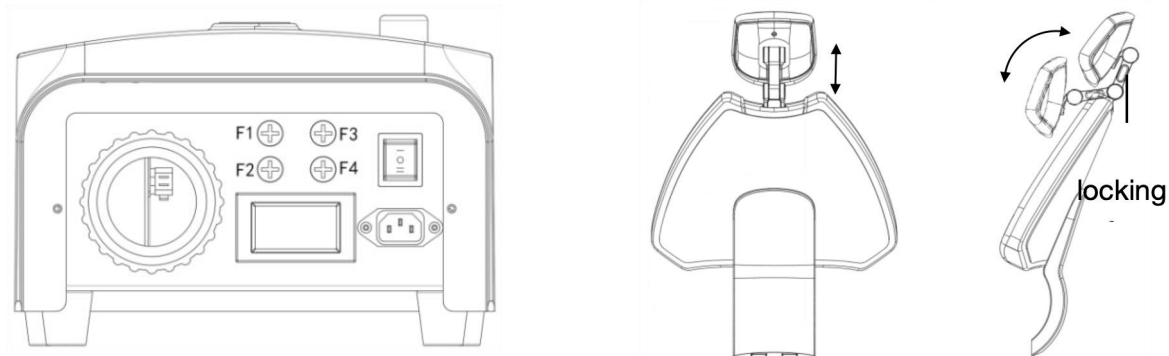


Figure 9 Ground

graph

6.1.3 Dental chair pillow

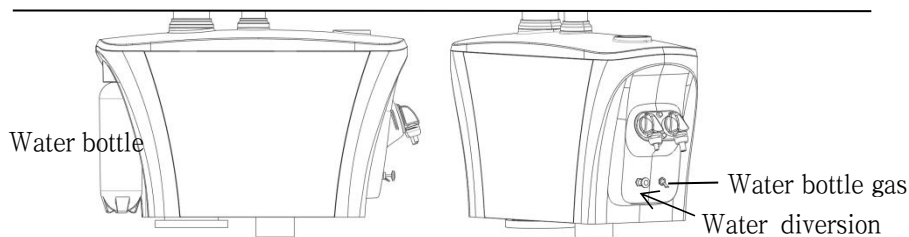
To adjust the height and Angle of the pillow, you need to first press down the locking clip, adjust the pillow to the appropriate Angle and height of the patient, and then loosen the locking clip to lock the headrest. See Figure 10.

6.Two side boxes

6.2.1 Side box water supply

The side box water supply system can provide pure water or tap water for the dental phone device. The pure water system has a built-in anti-pullback device, which does not need to be replaced regularly.

Applicable model: M100



graph

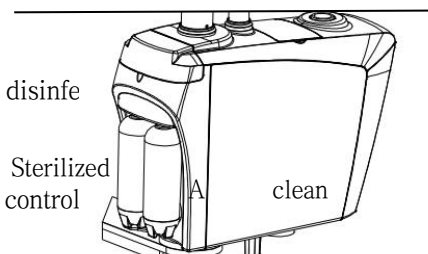
The side tank water supply system provides pure water or tap water for the dental phone device. The system consists of a 1000ml capacity pure water bottle installed on the outside of the side tank.

In general, the water supply of the dental phone device is tap water. If you want to use the pure water in the storage bottle, you need to open the gas switch of the storage bottle first, and then pull up the water source conversion switch (Figure 11).

Applicable model: M200

The side box water supply system can provide pure water or Tap water, the system includes a 1000ml capacity of pure water bottle and disinfe One bottle is installed on the outside of the side box.

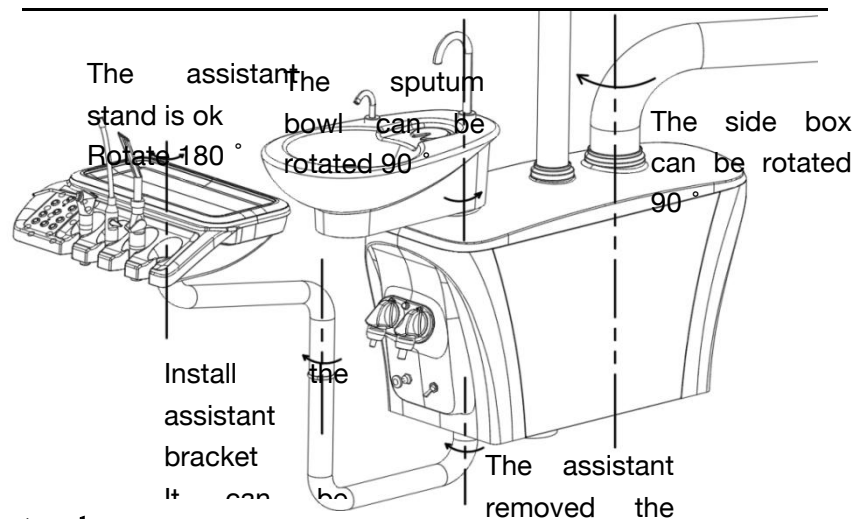
In general, the water supply for dental mobile devices is tap water, if Sterilized To use the purified water in the storage bottle, press the water on the main control



Source conversion key. This product has its own disinfectant and pure water anti-backflow device, The drainage of disinfectant has been fully considered in the disinfection process, so there is no after disinfection Disinfectant water residue, can be used at ease.

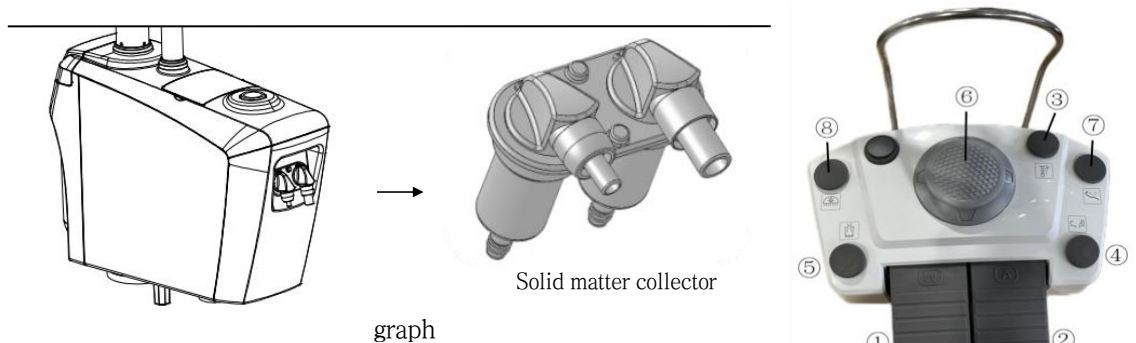
6.2 .Turn the side boxes

The side box, assistant frame and phlegm basin of M100/M200 type can be rotated to facilitate four-handed operation and after-sales maintenance. The rotation direction and Angle are shown in the figure below.



6.3 dental assistant racks

The standard components of the M100/M200 dental assistant stand include a strong suction device, a weak suction device, a three-in-one spray gun, and a secondary control panel (Figure 5). The side cabinet contains a solid material collector (Figure 12), which connects to both the strong suction device and the suction device to filter and remove solids from the materials.



6.4. The mucus pot

The chamber can be activated by pressing the flu  or water s  buttons on either the main control panel or auxiliary control panel. The default settings are automatically set to 30 seconds of flushing and 100ml of water supply. Both functions can be reset at any time.

6.5 foot pedal switch (Figure 1 3)

- ① Water control pedal: Press this pedal to flush the phone with water.
- ② Control pedal: Press this pedal to ventilate the phone.

Note: When both ① and ② pedals are pressed, the phone works and water mist is generated.

③ Chip blowing air control valve: Press this switch, the phone can only blow chip blowing air to blow off the tooth chips.

④ Phlegm flushing key: press this key to flush water, and it will stop automatically after the set time. (During flushing, press this button again to stop flushing)

⑤ Water supply key: press this key to supply water, and it will stop automatically after the set time. (During the water supply process, press this key again to stop the water supply)

⑥ Foot control switch: the up and down movement of the foot control ball valve controls the lifting and lowering of the seat,

Left and right movement controls the back up and down.

⑦ Puffing chair seat: press this button, the backrest will automatically reach the highest limit position, The seat does not move, the oral lamp is turned off and the expectorant is opened to facilitate the patient to spit out.

At this position, press the button again, and the backrest will return to the original treatment position, The mouth lamp is turned on (for M200 type, the mouth lamp will be turned on when the phlegm flushing is finished). The phlegm flushing will be automatically closed.

⑧ Mouth light: Press this button once, the mouth light will be on, and press it again to turn off the mouth light.

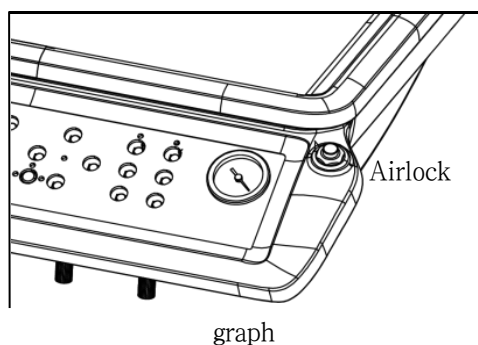
6.6 equipment disks

6.6.1 Start-up of dental mobile phone device

When you lift the dental phone from its rack, the dental phone will be pre-started. Please press the pedal control panel to control the corresponding dental phone.

6.6.2 Balance arm air lock switch

You can use the balance arm air lock switch to place objects of different weights on the control end equipment tray and maintain the operating position. The thumb-start air lock switch limits vertical movement but allows horizontal positioning by moving the control end left and right, see Figure 1 4.



6.6.3. One-click water and electricity switch for the device disk

The one-button water, air and electricity switch of the M100 dental comprehensive treatment machine is installed on the right side of the instrument tray (Figure 15). After power is connected, turn the switch to the 'on' position. The machine can be started with water and electricity. The whole machine can be started with water and electricity.

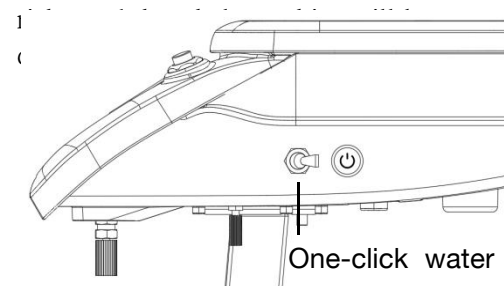


Figure 15 M100

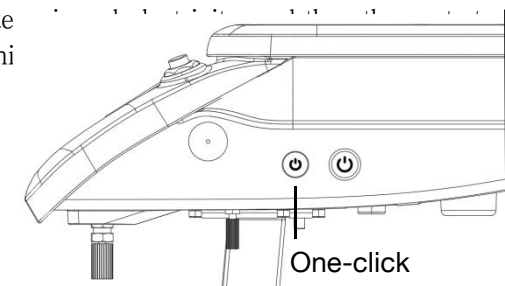


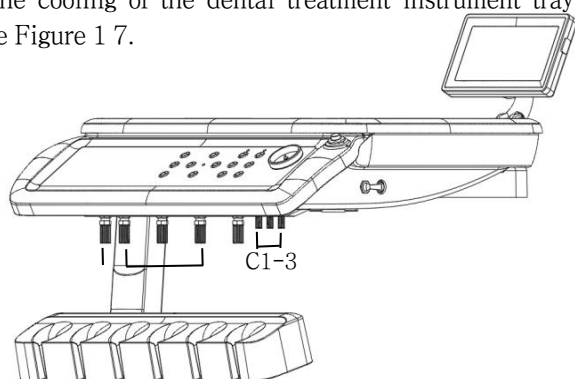
Figure 16 M200

The one-button water and air switch of M 2 00 type dental comprehensive treatment machine is installed on the right side of the instrument tray (Figure 16). After power-on, press the switch to turn on water and air, and then the next step can be carried out. Press the switch again to turn off water and air, and the system will enter the sleep state.

6.6.4 Device tray adjustment

A. Tooth care phone adjustments

The operation of the M100/M200 dental phone-assisted device provides and regulates air and water. You can adjust the cooling of the dental treatment instrument tray A B1-4 Water, blow-off air and working air pressure. See Figure 1 7.



A. Blow-off regulation
B. Cooling water regulation

graph

17

B. Blow-off gas regulation

The cooling airflow controller can adjust the cooling airflow to all dental phones, and the adjustment can be completed by manually rotating the knob.

To regulate cooling air:

Step 1: Remove the dental phone from its holder. Step 2: Locate the air-blowing controller. Step 3: Press the foot pedal to activate the device. Step 4: Adjust the airflow settings for optimal misting (Figure 11). Step 5: Control the airflow by turning the controller clockwise to reduce flow or counterclockwise to increase it.

C. Cooling water regulation

The system includes cooling water flow control for each dental phone, which can be adjusted by manually rotating a knob.

Step 1: Remove the dental phone from the holder. Step 2: Locate the cooling water flow adjustment. Step 3: Turn on the cooling water. Step 4: Press the foot pedal control panel to activate the dental phone. Step 5: Adjust the cooling water flow: Rotate the controller clockwise to reduce flow, or counterclockwise to increase flow.

D. Adjustment of ultrasonic scaler, light curing machine, dental phone and low-voltage electric motor

Note: Please adjust the working pressure of the corresponding configuration to meet the specifications of the corresponding configuration manufacturer. Please refer to the product manual of your corresponding configuration to understand the specifications of the corresponding configuration.

6.7. Disinfection operation

The disinfection steps of M200 dental comprehensive treatment machine are as follows:

- ① Insert the mobile phone tube, three-use spray gun, strong suction syringe and weak suction syringe into the disinfection module of the side box;
- ② Press the disinfection button on the main control panel, the disinfection indicator light is on, and the speaker will ring for 2 seconds before the disinfection starts;
- ③ Clean the water pipe for 2 minutes;
- ④ The system automatically switches to disinfectant, and the disinfectant pipeline is flushed for 30 seconds and stored for 20 minutes;
- ⑤ Finally, switch to tap water to flush the pipes for 2 minutes. Then rinse the pipelines with purified water for 30 seconds. When disinfection is complete, a prompt sound will be emitted—5 "beep beep beep beep beep" sounds. After 5 minutes of disinfection, if no button is pressed, the system will enter sleep mode (water and air cut-off). If any button is pressed within 5 minutes, the system will remain active.

Note: * Before disinfection, please make sure that all mobile phone tubes, strong and weak suction devices and dental cleaners are inserted into the disinfection cover panel.

* It is recommended to use a slightly acidic hypochlorous acid with a concentration of 50~80mg/L as a

disinfectant. If the concentration of the disinfectant you buy is higher than this recommended concentration, dilute it before use. For example, if the concentration of your disinfectant is 200mg/L, you need to dilute it in a 1:3 ratio before disinfection.

Vii. Maintenance and repair



Do not modify this equipment

7.1 Cleaning and disinfection

It is recommended to use household cleaning agent as the cleaning agent for the outer surface of the equipment (plastic shell and metal outer surface), and to use quaternary ammonium salt wipes to disinfect the parts frequently touched by patients (skin pads, handrails, etc.) (it is recommended to wipe them once every half a month).

7.1.1 Cleaning and maintenance methods:

- 7.1.1.1 The outer surface is thoroughly wiped and cleaned with a cleaner or surfactant, and then rinsed clean with water. This cleaning process can remove a large number of microorganisms on the surface.
- 7.1.1.2 The phlegm basin should be washed with a soft brush to keep it clean and clean.
- 7.1.1.3 Before and after each use of the oral lamp, the lens of the oral lamp should be cleaned with lens paper or degreased cotton, and should not be used with alcohol cotton or other solvent substances.
- 7.1.1.4 Medicines and chemical products commonly used in dental hospitals are likely to damage the paint and plastic parts of the equipment surface. Therefore, it is recommended to use isolation supplies as far as possible.
- 7.1.1.5 Cleaning of strong suction and weak suction filters: (Clean once after work every day) Turn the filter plug left to remove it, take out the filter screen, pour the dirt into the garbage collection bag for disposal, clean the filter screen and the inner wall of the cup with clean water or neutral detergent, then put the filter screen back into the cup, and turn the filter plug right to install it in place.
- 7.1.1.6 Cleaning of the bottom gas cylinder of the machine disc: Unscrew the cylinder, clean it with dish soap and then screw the cylinder back to the joint for use.

7.1.2 Disinfection and sterilization methods:

- 7.1.2.1 The nozzle and handle of the three-purpose spray gun should be put into the disinfection bag before disinfection, and then sterilized by high temperature (the highest temperature is 134 ° C) and high pressure steam (pressure 205.8kPa), and the disinfection time should not be less than 3 minutes.
- 7.1.2.2 Strong suction head and weak suction head are recommended to be disinfected with glutaraldehyde disinfectant.
- 7.1.2.3 Before cleaning and disinfecting the high-speed turbine dental drill mobile phone (high-speed mobile phone) and low-speed pneumatic motor (low-speed mobile phone), please read the manufacturers instruction manual.

Note: After cleaning, please discard all cleaning and disinfection supplies.

7.2 Water system

7.2.1 To ensure the normal use of this equipment, a filter is set at the water inlet end of this equipment to block impurities in the water and prevent them from entering the equipment. However, over time, the sewage will block the filter element and affect the flow of water. At this time, it is necessary to clean or replace the filter element to restore the function. Before cleaning and maintenance, the inlet valve should be closed.

7.2.2 Under normal circumstances, the filter element should be cleaned or replaced under one of the following conditions.

- 7.2.2.1. The service time is more than one year;

7.2.2.2. The pressure loss of the filter element is above 0.1MPa;

7.2.2.3. Filter element is contaminated;

7.2.2.4. The effluent becomes cloudy;

7.2.3 The specific method for cleaning and replacing filter cartridges is: Open the floor box cover, remove the water filter, rotate the outer shell of the water filter counterclockwise, and sequentially remove the lower sealing ring and filter cartridge. After cleaning or replacement, reinstall the water filter in reverse order while ensuring proper sealing. (User-installed filters should follow the same procedure.)

7.2.4 This equipment is equipped with a sampling point for input water. See the following figure for the sampling port

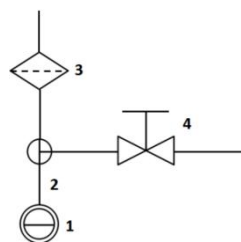
explain :

1---Water input from the supply of drinking water

2-Enter the water connection port

3-Water particle filter

4-Enter the water sampling port



7.3 Gas system

7.3.1 To ensure the gas input to this machine is clean, dry, and maintains stable pressure, an air filtration and pressure-reducing valve is installed at the intake port of the grounding box. This device stabilizes gas pressure, preventing it from exceeding preset values while filtering impurities and moisture from the gas. Before cleaning or maintaining the air filter, close the intake valve. Once closed, the filtered moisture will automatically drain out. To maintain environmental cleanliness, absorbent materials such as cotton cloth, toilet paper, or sponge can be placed on the outlet pad to absorb and collect discharged moisture.

7.4 Maintenance

It is recommended that the hospital's professional maintenance personnel conduct a whole machine electrical safety inspection and maintenance every six months, specifically checking whether the leakage current and protective grounding connection meet the requirements. When the oral lamp is not in use, ensure that the power supply is turned off and stored properly, and avoid direct exposure to sunlight or humid environment to prolong the service life.

VIII. Notes

8.1 The operation can be performed only after careful reading and understanding of all contents in the instruction manual.

8.2 Power socket lines shall be configured according to standards, and the grounding wire must be firm. The maintenance personnel shall replace the power soft wire. This product shall not be connected to other mobile equipment.

8.3 Turn off the main water, gas and power switches when leaving work.

8.4 The electromagnetic interference has been considered in the design of this product. In order to ensure normal application, it should be kept away from high frequency electrical signal equipment during operation to avoid interference.

8.5 The compressed air provided by the machine shall be oil-free, and other health indicators shall meet relevant

requirements.

8.6 During the operation of the machine, ensure that there is no contactable object within the range of motion. The power supply is cut off by one-button water and gas switch.

8.7 If the planting work is carried out together with the external equipment, disconnect the power supply of the machine every time to avoid personal injury caused by fault and accidental touch of the control button.

8.8 Users shall configure the amalgam separator of the wastewater discharge system terminal of their own machine.

8.9 Routine maintenance shall be done every quarter. When replacing electrical components or maintaining and cleaning, the power supply must be cut off and the components shall be replaced by maintenance personnel.

8.10 This machine shall not be used in the case of flammable anesthetic gas mixed with air or flammable anesthetic gas mixed with oxygen or nitrous oxide.

8.11 The placement of waste water and waste must comply with the local environmental protection requirements.

8.12 Parts and complete machines shall be disposed of in accordance with local regulations after being scrapped.

8.13 The maintenance of this machine must be carried out by the professional maintenance personnel authorized by the company. Privately disassembling and repairing the machine may cause fatal harm to the machine, and the right to enjoy the warranty service provided by the company will no longer be enjoyed.

8.14 This machine should be operated by professional medical personnel. Technical training and technical guidance should be provided before use.

8.1 5 Warning: This equipment must be connected to a power supply network with protective grounding to avoid the risk of electric shock.

8.1 6 Do not touch the viewing lamp with sharp and hard objects when using the viewing lamp, and keep the surface of the viewing lamp dry to avoid damage and moisture of the viewing lamp.

8.1 7 Contraindications: None.

8.1 There are no accessories, accessories and consumables that need to be replaced regularly.

8.1 9 List of common spare parts: 5X20 fuse 6.3A, 5X20 fuse 10A.

8.20 packing accessories:

order number	Name/model	quantity	order number	Name/model	quantity
1	Comprehensive dental treatment machine	1 unit	5	Lamp arm box	One
2	instructions	1 copy	6	accessories package	1 packet
3	certificate	One	7	mouth lamp	One
4	warranty card	One sheet	8	Doctors chair (optional)	One

8.21. Common faults and troubleshooting

Cause of failure and troubleshooting		
hitch	cause	processing method
The phone keeps losing water	The drain valve is faulty	Refer to the phone user manual
The phone is filled with bubbles	1 High speed machine tip washer is defective Two pipes burst	Refer to the phone users manual Check and replace B

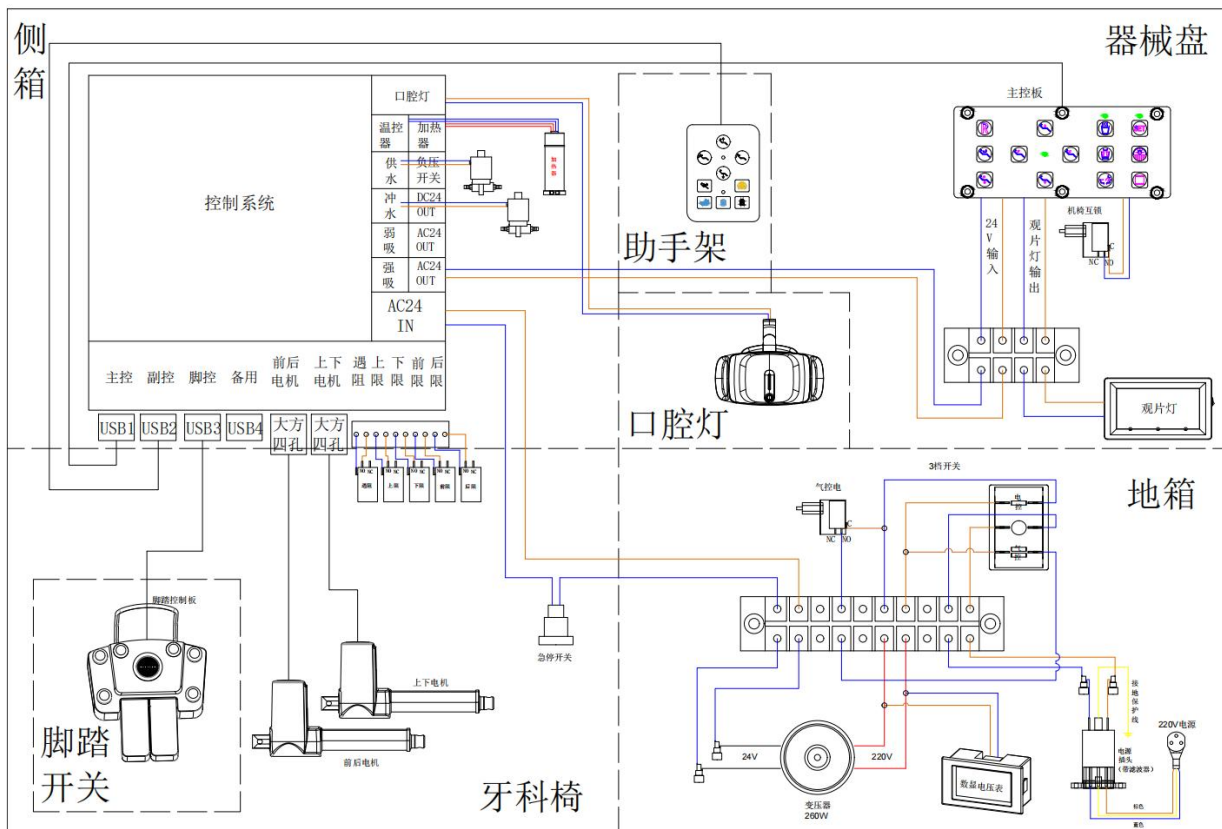
The mobile phone is not atomized well	1 High speed nose nozzle blockage 2. Improper adjustment of atomization	A contact the phone vendor B Regulate the atomizer again
The phone sprayed water out	1 The water pressure is too low The water regulating valve is not open The water switch on the 3 foot pedal switch is not open 4 The water source switch is not open Switch the tap water and purified water switch 6. No pressure in the pure water cup	A regulates water pressure Open the water control valve C. Turn on the foot pedal switch D Turn on the water source switch Adjust the transfer switch F Adjust the switch of the simple pressure reducing valve
My phone is weak	1 Needle fault, bearing fault 2. Insufficient working pressure	A contact the phone vendor Check air pressure
The phone leaks when its not working	The hook valve is loose	Adjust the corresponding position bracket valve
Job stress is unstable	1 Filter blockage 2. Inlet pipe is twisted and blocked	a wash Check the pipeline
The water does not flow smoothly when the gate is opened	The solenoid valve is blocked by foreign matter	Clean the solenoid valve core
No difficulty swallowing	1. Filter screen is blocked 2. Water pressure or air pressure is insufficient	A. Clean the filter screen Adjust water pressure or air pressure
The three spray guns do not produce water	1. Water pipe blockage 2. The outlet adjustment knob is not adjusted properly	A block the nozzle and press the water and air buttons B readjustment
Spray three times with a spray gun to contain moisture	1. Too much water in the air filter 2 Valve core failure The nozzle is not installed properly	Adequate drainage Check and replace B c full install

If the equipment still cannot work normally after the above inspection and treatment, please contact the distributor or our after-sales service personnel, and inform the product model, factory number and detailed information about the fault.

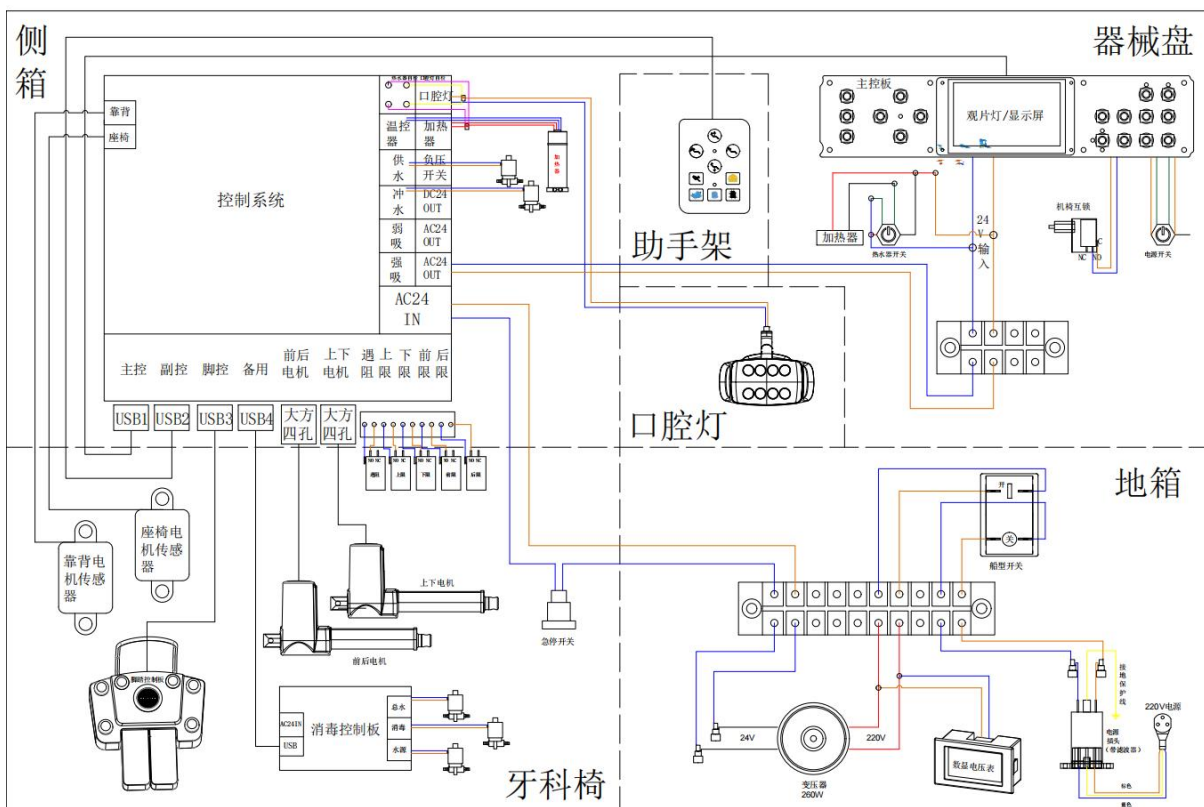
Note: This manual is used with standard products. For special ordered products, please refer to the relevant appendix pages of this manual.

IX. Circuit schematic diagram

M100 type:



M200:

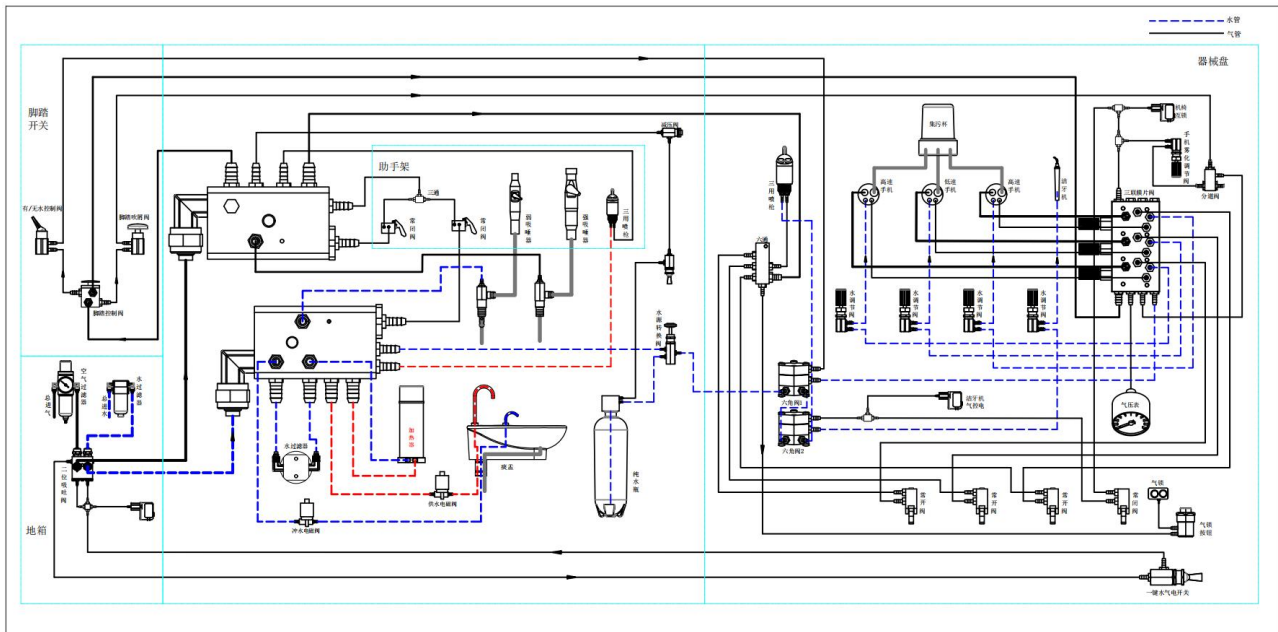


Note: Non-professionals are not allowed to disassemble this machine, our company only provides accessories to

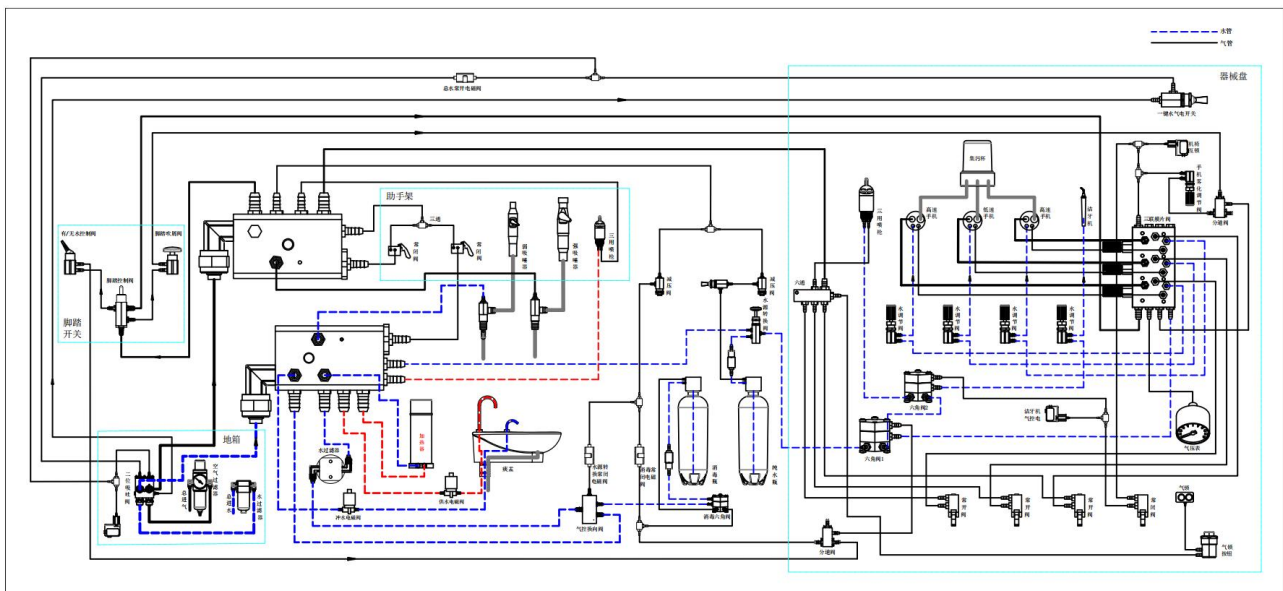
customers with maintenance agreements.

10. Water and gas schematic diagram

M100 type:



M200:



Note: Non-professionals are not allowed to disassemble the machine, and the company only provides accessories for customers with maintenance agreements.

11. Electromagnetic compatibility



pay attention to :

The comprehensive dental treatment machine complies with the electromagnetic compatibility requirements of YY 9706.102-2021 standard.

Users should install and use the product according to the electromagnetic compatibility information provided in the random file.

Portable and mobile radio frequency communication equipment may affect the performance of dental integrated treatment machine. Avoid strong electromagnetic interference during use, such as near mobile phones, microwave ovens, etc.;

See the annex for the guidelines and manufacturers statements.



caution :

Dental comprehensive treatment machines should not be used close to or stacked with other equipment. If it is necessary to use them close to or stacked, it should be observed and verified that they can operate normally under the configuration in which they are used.

In addition to the cables sold by the manufacturer of the dental integrated treatment machine as spare parts for internal components, the use of accessories and cables outside the regulations may lead to increased emissions or reduced immunity from dental integrated treatment machines.

appendix :

order numbe r	name	Cable length (m)	Whether to block	remarks
1	POWER LINE	1.8	DENY	/
2	CONNECT THE FOOT PEDAL SWITCH CABLE	2.2	YES	/

Basic performance: None.

Guidelines and manufacturers statements-electromagnetic emissions		
The dental comprehensive treatment machine is expected to be used in the following specified electromagnetic environment, and the purchaser or user shall ensure that it is used in this electromagnetic environment:		
launching test	compliance	Electromagnetic environment-guidelines
radio-frequency emission GB 4824	Group 1	The dental comprehensive treatment machine only uses radio frequency energy for its internal functions. Therefore, its radio frequency emission is very low and

		the possibility of interference to nearby electronic equipment is very small
radio-frequency emission GB 4824	B class	The dental comprehensive treatment machine is suitable for use in all facilities, including home facilities and directly connected to the public low-voltage power supply grid of the home
harmonic emission G B 17625.1	A class	
Voltage fluctuation/shooting emission GB 17625.2	accord with	

Guidelines and manufacturers statements–electromagnetic immunity

The dental comprehensive treatment machine is expected to be used in the following specified electromagnetic environment, and the purchaser or user shall ensure that it is used in this electromagnetic environment:

immunity test	IEC 60601 test level	Level compliance	Electromagnetic environment–guidelines
electrostatic discharge GB/T 17626.2	± 6 kV contact discharge ± 8 kV air discharge	± 6 kV contact discharge ± 8 kV air discharge	The floor should be wood, concrete or tile. If the floor is covered with synthetic materials, the relative humidity should be at least 30%
A group of electrical fast transient pulses GB/T 17626.4	± 2kV for power lines ± 1kV for input/output lines	± 2kV for power lines	The network power supply should have the quality typical of commercial or hospital environments
surge GB/T 17626.5	± 1 kV line to line ± 2 kV line to ground	± 1 kV line to line ± 2 kV line to ground	The network power supply should have the quality typical of commercial or hospital environments
Voltage dip, short interruption and voltage change on the power input line GB/T 17626.11	<5 % U_T , For a continuous period of 0.5 cycles (At U_{TUp} , >95% temporary reduction) 40 % U_T , For 5 consecutive cycles (At U_{TAbove} , 60% temporary reduction) 70 % U_T , For 25 consecutive cycles (At U_T Yes, 30% temporary reduction) <5 % U_T , Continue for 5s (At U_{TUp} , >95% temporary reduction)	<5 % U_T , For 0.5 cycles (At U_{TUp} , >95% temporary reduction) 40 % U_T , For a continuous period of 5 cycles (At U_{TAbove} , 60% temporary reduction) 70 % U_T , For 25 consecutive cycles (At U_T Yes, 30% temporary reduction) <5 % U_T , Continue for 5s (At U_{TUp} , >95% temporary reduction)	The network power supply should have typical quality for use in commercial or hospital environments. If the user of a dental integrated treatment machine needs to operate continuously during a power outage, it is recommended to use an uninterruptible power supply or battery power
Industrial frequency magnetic field (50/60Hz) GB/T 17626.8	3A/m	3A/m (50Hz)	The power frequency magnetic field should have the horizontal characteristics of the power frequency magnetic field in a typical commercial or hospital environment

pour : U_T Refers to the AC network voltage before the application of test voltage.

Guidelines and manufacturers statements–electromagnetic immunity

The dental comprehensive treatment machine is expected to be used in the following specified electromagnetic environment, and the purchaser or user shall ensure that it is used in this electromagnetic environment:

immunity test	IEC 60601 test level	Meets the level	Electromagnetic environment–guidelines
Radio frequency conduction GB/T 17626.6	3 V (effective value) 150 kHz ~ 80 MHz	3V (effective value)	Portable and mobile radio frequency communication equipment should not be used any closer than the recommended isolation distance from any part of the dental integrated treatment machine, including cables. This distance is calculated by a formula corresponding to the transmitter frequency. Recommended isolation distance $d = 1.2\sqrt{P}$
radio–frequency radiation GB/T 17626.3	3V/m 80 MHz ~ 2.5 GHz	3V/m	$d = 80 \text{ MHz} \sim 800 \text{ MHz} 1.2\sqrt{P}$ $d = 800 \text{ MHz} \sim 2.5 \text{ GHz} 2.3\sqrt{P}$ Where: <i>P</i> --Maximum transmitter provided by transmitter manufacturer Rated output power in watts (W); <i>d</i>–Recommended isolation distance in meters (m)^b. The field strength of a fixed radio frequency transmitter is measured by surveying the electromagnetic field^cTo determine, at each frequency range^dShould be lower than the corresponding level. Interference may occur near equipment marked with the following symbols. 

Note 1: Use the higher frequency band formula at 80MHz and 800MHz.

Note 2: These guidelines may not be suitable for all situations. Electromagnetic propagation is affected by absorption and reflection by buildings, objects and human bodies.

^a Fixed radio transmitters, including base stations for wireless (cellular/radio) phones and mobile radios, amateur radio systems, AM/FM broadcasting, and television transmissions, theoretically cannot have their field strength accurately predicted. To evaluate the electromagnetic environment of fixed radio transmitters, electromagnetic field surveys should be conducted. If the measured field strength in the dental treatment units location exceeds the applicable RF compliance levels, the device should be observed to verify its operational integrity. Should abnormal performance be detected, supplementary measures such as recalibrating the dental treatment units orientation or positioning may be necessary.

^bAt the entire frequency range of 150kHz ~80MHz, the field strength should be less than 3V/m.

Recommended isolation distance between portable and mobile radio frequency communication equipment and dental integrated treatment machine

Dental integrated treatment units are intended to operate in electromagnetic environments with controlled radio frequency radiation interference. Based on the maximum rated output power of communication equipment, purchasers or users may prevent electromagnetic interference by maintaining the minimum distance between portable and mobile radio frequency communication devices (transmitters) and dental integrated treatment units as recommended below.

The rated maximum output power of the transmitter W	Isolation distance/m corresponding to different frequencies of transmitter		
	150 kHz ~ 80 MHz $d = 1.2\sqrt{P}$	80 MHz ~ 800 MHz $d = 1.2\sqrt{P}$	800 MHz ~ 2.5 GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For the maximum rated output power of a transmitter not listed in the table above, the recommended isolation distance d, in meters (m), can be determined by using the formula in the corresponding transmitter frequency column, where P is the maximum rated output power of the transmitter provided by the transmitter manufacturer in watts (W).
Note 1: Use the higher frequency band formula at 80MHz and 800MHz frequencies.

Note 2: These guidelines may not be appropriate for all situations. Electromagnetic propagation is affected by absorption and reflection by buildings, objects and the human body.

