DENTAL UNIT

CLESTA II

PEDESTAL TYPE

INSTALLATION INSTRUCTIONS

IMPORTANT

This manual provides installation instructions for the BELMONT CLESTA-II. The instructions contained in this booklet should be thoroughly read and understood before installing the chair and unit.
After the installation has been completed, keep this manual in a safe place and refer to it for future maintenance.

Belmont

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1. OVERVIEW AND MAJOR COMPONENTS

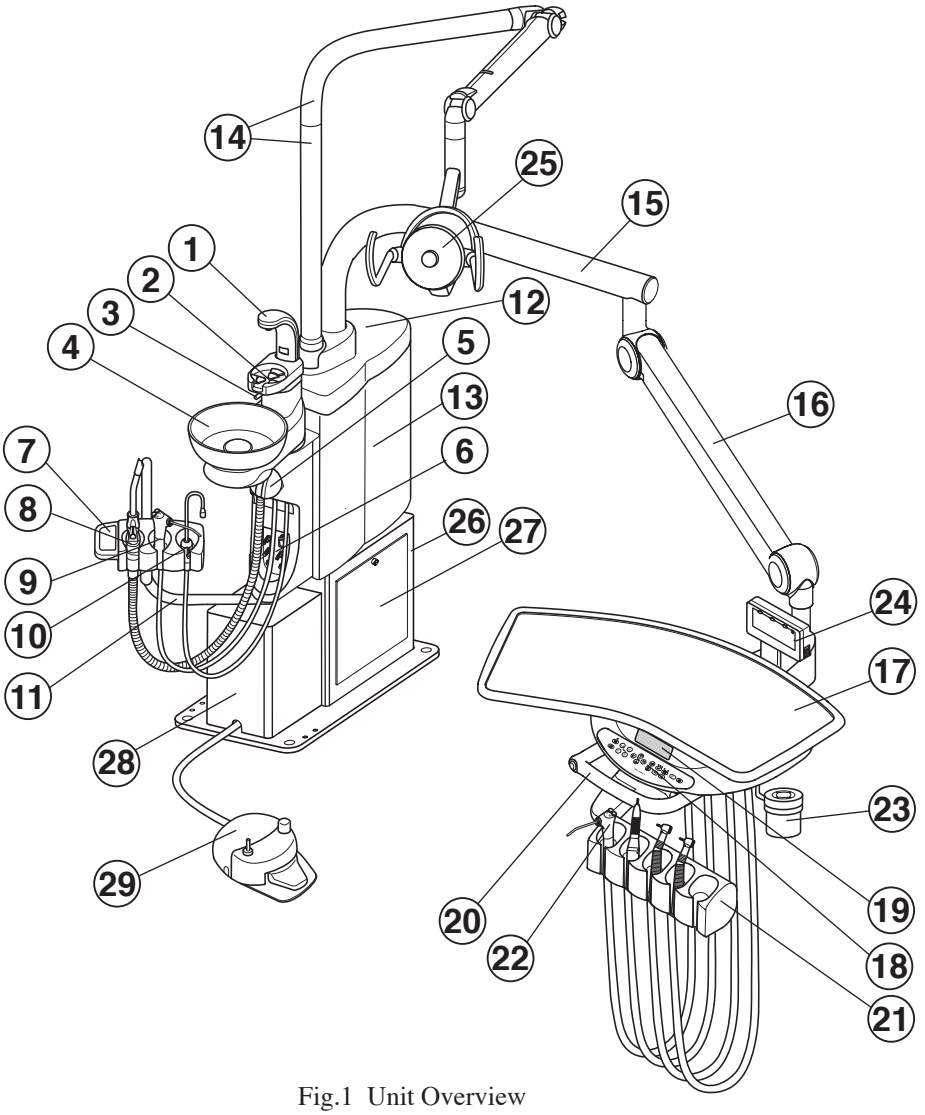

Fig.1 Unit Overview

Unit Major Components

(1) Cupfiller Nozzle
(2) Cupfiller Base
(3) Bowl Flush Nozzle
(4) Spittoon Bowl
(5) Solid Collector
(6) Cuspidor Unit Control Panel
(7) Assistant Holder
(With Membrane Switch)
(8) Vacuum Handpiece
(9) Assistant Side Syringe
(10) Saliva Ejector Handpiece
(11) Assistant Holder Arm
(12) Cuspidor Top
(13) Cuspidor Body
(14) Light Pole
(Light Pole and L-Light Pole)
(15) First Arm (Horizontal Arm)
(16) Balance Arm
(17) Instrument Tray
(18) Main Control Panel
(19) Dr. Table Indicator (for E spec.)
(20) Tray Handle (With Arm Air Brake Button)
(21) Dr. Side Handpiece Holder
(22) Dr. Side Syringe
(23) Waste Receptacle
(24) Film Viewer
(25) Dental Light
(26) Utility Box
(27) Utility Box Cover
(28) Electric Housing
(29) Foot Controller

2. DIMENSIONS AND SPECIFICATIONS

2-1. UNIT DIMENSIONS

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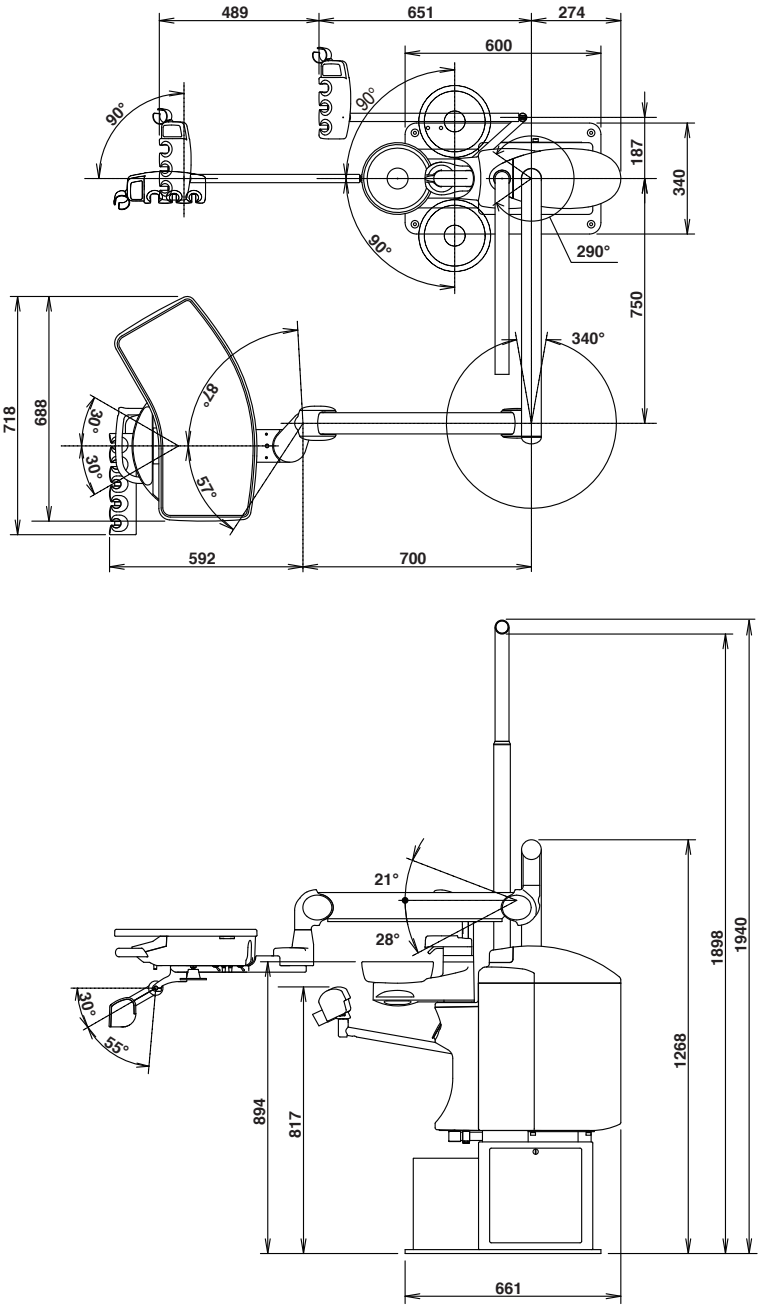


Fig.2-1 Unit Dimensions

2-2. UNIT SPECIFICATIONS

Doctor Side Instrument	2 x High Speed Turbine Tubings
	1 x Low Speed Air Motor Tubing
	1 x 3 Way Syringe
Assistant Side Instrument	Saliva Ejector (Central Vacuum Type)
	Vacuum (Central Vacuum Type)
	1 x 3 Way Syringe
Bowl Flush	Timer Mode and Continuous Mode
Cupfiller	Timer
Net Weight	111.7 kg (Without Dental Light)
Service Life	10 Years

3. REQUIREMENTS FOR INSTALLATIONS

A. General Requirements

(1) The contractor is to supply the necessary service and materials to complete the installation to the satisfaction of the dentists and the installation engineer.

(2) This includes the supply and installation of the electric power supply cables with main isolating switch and fuses, air supply piping, water supply piping, suction piping including vacuum pump and its control wires and drain piping as noted on the installation diagrams.

B. Setting Requirements

(1) The CLESTA II dental unit comprises of a Chair section, Cuspidor section, Doctor table section and Light section.

(2) The CLESTA II should be mounted taking the opening end of drain pipe into due consideration. Refer to Page 5, Fig.3-1.

(3) The area on which the CLESTA II (250 kg) is to be installed must have endurance force of 250kg/cm^2.

(4) The installation position of the CLESTA II chair is shown in Fig.3-1 as a recommended example.

C. Piping and Plumbing Requirements

(1) All piping and conduit for cables are to be laid under the floor and to come out from the floor in the positions shown Fig 3-1

(2) The installation position and height from the floor of each pipe and cable conduit are shown in Fig.3-1.

(3) The recommended sizes, materials and end piece are shown in Table 1.

Note : The suction pipe and drain pipe should be laid under the floor with an inclination of 1/200 - 1/400.

(4) Regarding installation of the vacuum pump and its connection to the main suction line, follow the specifications of central vacuum pump system manufacture's recommendation.

(5) All Piping should be arranged avoiding bends as much as possible.

Table 1 The Recommended Sizes, Materials and End Piece of Pipes

Item	Material	Size	End Piece
Compressed Air Supply Pipe	Shock Resistance P.V.C. Pipe HI-13	Out. Dia.18mm In. Dia. 13mm	PT1/2
Water Supply Pipe	Shock Resistance P.V.C. Pipe HI-13	Out. Dia. 18mm In. Dia. 13mm	PT1/2
Suction Pipe	P.V.C. Pipe VP-20	Out Dia. 26mm IN. Dia. 20mm	
Drain Pipe	P.V.C. Pipe VP-50	Out. Dia. 58mm In. Dia. 50mm	
Power Supply Cable Conduit	P.V.C. VE-16	In. Dia. 16mm	
Vacuum Control Wire Conduit	P.V.C. VE-16	In. Dia. 16mm	

Air vacuum type does not require suction pipe, vacuum control wire and its conduit.

D. Air Supply Requirements

(1) Compressed air to be supplied should be filtered.

Dirt and moisture in the air may cause trouble in unit air system.

(2) Air Pressure

Regulate the outlet air pressure of the compressor to the utility section at 0.55-0.6Mpa (5.5 - 6.0kg/cm^2) and the air pressure should be kept higher than 0.5Mpa (5.0kg/cm^2) at any time.

(3) Compressed Air Supply Capacity

Compressed air supply capacity is at least 55 l/min. (Central Vacuum type)

Compressed air supply capacity is at least 88 l/min. (Air vacuum type)

E. Water Supply Requirements

(1) The supply water should be clean.

Dirty water may cause trouble in unit water line.

(2) Water Pressure

More than 0.1Mpa(1.0kg/cm^2) water pressure in utility section is required for operating unit efficiently at any time.

F. Electric Supply Requirements

(1) The connection of the power supply cable is to be carried out in accordance with the local electrical regulation.

(2) Rating of supply voltage and power consumption :

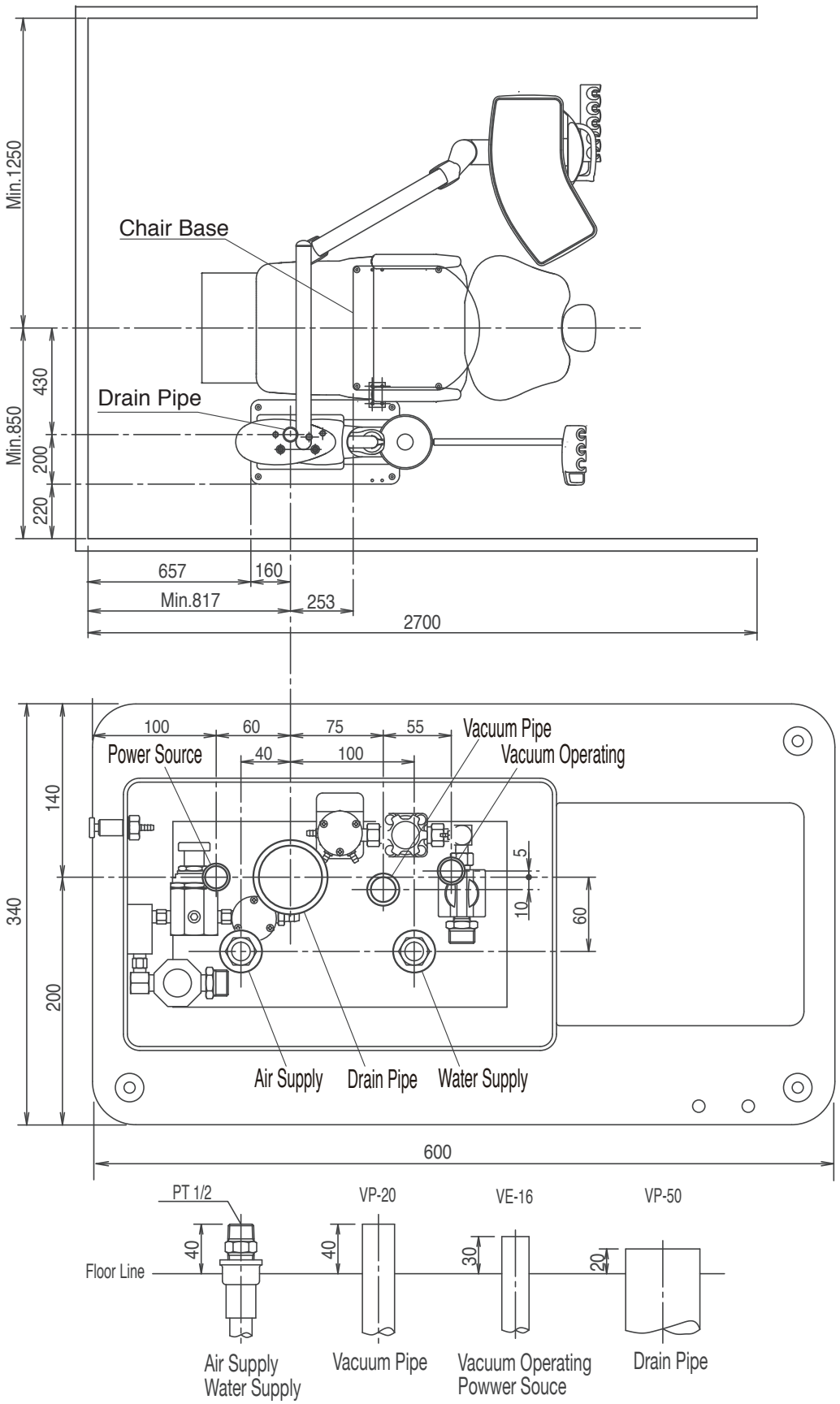
100/110/115V Type Single Phase 50/60 Hz : 15 A

220/230/240V Type Single Phase 50/60 Hz : 10 A

(3) Power supply line should be provided with fuses or circuit breaker in accordance with power consumption.

(4) The earth wire (ground wire) should be proved in the utility section.

(5) All cables should have at least 500mm surplus from the floor so that they are long enough to be connected to the terminals in the utility section.



Note

Air vacuum type does not need vacuum pipe, vacuum operating wires and conduit.

Fig.3-1 Installation Position and Plumbing Layout
(Central Vacuum Type)

4. UNIT PREPARATIONS FOR INSTALLATIONS

4-1.UNIT UNPACKING

Checking Contents

The standard type Clesta-2 unit is delivered in 1 carton.

Installation parts and accessory parts are packing in the small carton boxes.

Open the parts boxes and check the contents of each packing with following the check list.

⚠CAUTION

Do not use a sharp instrument to open the packing, it may damage the parts.

Check List

1. Cuspidor Unit with Doctor Table and Utility Box ---------- 1 set

2. L-Light Pole and Light Pole (2xM6 Cap Bolt with S/Washer) ---------- 1 set

3. Dr. Table Tray (4xM5 Screw) ---------- 1set

4. Parts Boxes
   - (1) Drain Cap and Basket Strainer ---------- 1 piece
   - (2) Cuspidor Bowl ---------- 1 piece
   - (3) Vacuum Tip (Straight and Bent) ---------- 1 set
   - (4) Vacuum Silicon Tip ---------- 10 pieces
   - (5) Vacuum Socket ---------- 1 piece
   - (6) Drain Socket ---------- 1 piece
   - (7) Stop Valve with Seal (Water & Air) ---------- 2 set
   - (8) Stainless Flexible Pipe with 2-Seals ---------- 2 set
   - (9) Waste Receptacle ---------- 1 set
   - (10) Cotton Container with Base ---------- 1 set
   - (11) Vials (5 Colour Vials) with Base ---------- 1 set
   - (12) Vacuum Hose with Handpiece ---------- 1 set
   - (13) Saliva Ejector Hose with Handpiece ---------- 1 set
   - (14) Foot Controller ---------- 1 set
   - (15) Cap Bolt for Fixing Cuspidor Unit ---------- 6 sets
     (M10 x 35 Cap Bolt with Spring Washer)
   - (16) Wood Screw for Fixing Utility Box to the Floor ---------- 4 set
     (M8 x 40 Wood Screw and Hole Plug)
   - (17) Joint Bracket & Joint Bracket Cover ---------- 1 set
     (M10 x 30 Cap Bolt with Spring Washer)
   - (18) Dental Size Film Viewer ---------- 1 set

Note : The check list is for the standard type.

4-2.UNIT PREPARATIONS FOR INSTALLATIONS

(1) Remove all wood screws fixing the carton to the pallet and lift up to remove the carton. (Fig.4-1)

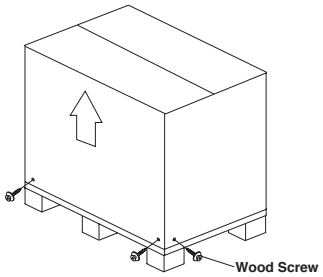


Fig.4-1 Unit Section Carton

(2) Place the unit with pallet behind the planned location.

(3) Remove four wood screws fixing the utility box to the pallet.(Fig 4-2)

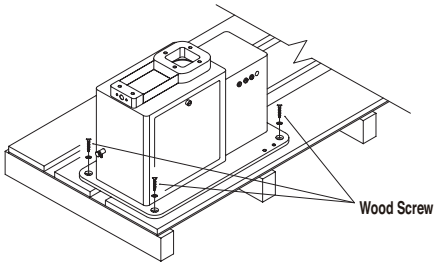


Fig.4-2 Removing Utility Box from Pallet

Note : Do not remove the cuspidor unit from the pallet until the utility box is completely fixed to the floor.

5. INSTALLATIONS INSTRUCTIONS (Combine with Clair Chair)

5-1.FIX THE UTILITY BOX TO THE FLOOR

(1) Place the utility box on the planned location. (Fig.5-1)

(2) Fix the utility box to the floor with four wood screws (M8 x 40) and fix the hole plug

(3) Fix the joint bracket between the Clair chair base plate and the utility box with six cap bolts(M10 x 30) (Fig.5-1)

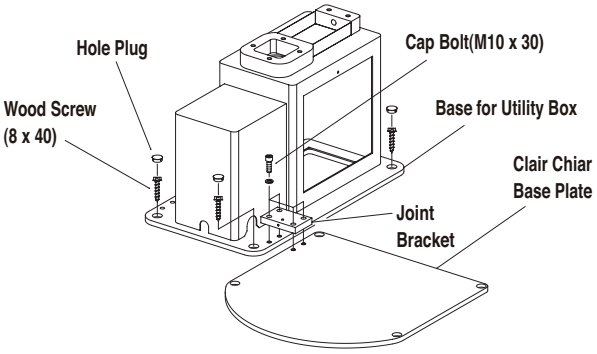


Fig.5-1 Fix the Utility Box to the Floor

⚠CAUTION

Carry the unit by holding the cuspidor at the bottom and inside frame.
Do not carry by holding the arm, cupfiller nozzle or cuspidor bowl. When mounting the cuspidor unit onto the utility box, keep the assistant arm to the out side of the chair.

⚠CAUTION

Do not remove packing where the arm is fixed to prevention of flow.

Note: Before remove the cuspidor unit from the pallet, remove the water heater, vacuum line valve, solenoid valve from the cuspidor unit body. When cuspidor unit is fix to the Utility box, those parts become obstructive.

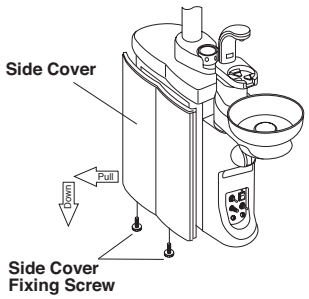


Fig.5-2 Open the Cuspidor Cover

(1) Loose the side cover fixing screw and open the both side of the cuspidor body cover. (Fig.5-2)

(2) Remove the water heater, vacuum line valve, solenoid valve from the cuspidor unit body.

(2) Hold the cuspidor unit while on the pallet and remove four nuts (M10) in the cuspidor unit. (Fig.5-3)

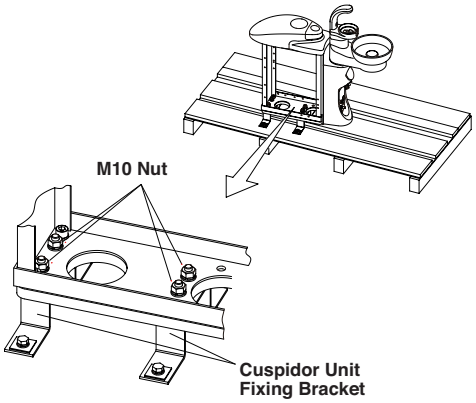


Fig.5-3 Removing the Cuspidor Unit

(3) Lift up the cuspidor unit from pallet.
Keep the doctor table and arm position as figure 5-4 then carry the cuspidor unit.

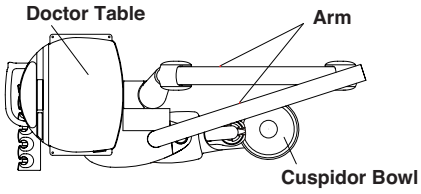


Fig.5-4 Doctor Table and Arm Position

(4) Tubing and wire, drain and vacuum hose pass through to the hole in the upper side of the utility box.

(5) Put the cuspidor unit on to the utility box and fix with six cap bolts (M10 x 35)

(6) Fix the water heater, vacuum line valvem solenoid valve to the ccuspidor unit body.

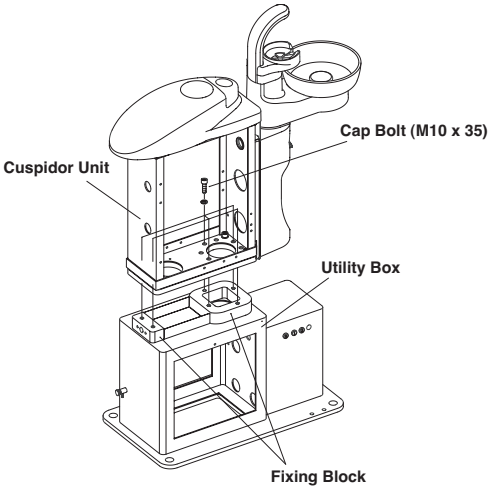


Fig.5-5 Fix the Cuspidor Unit

5-3. FIX THE CART HOSE TO THE BASE PLATE

(Only Cart Type) Refer to Fig.5-11-2

1. Remove the front lower cover from the base then bend the right part of it.
2. Put the tubings and wires of cart to the front side of base plate.
3. Fix the cart bracket to the base plate.
4. Fix the cart hose to the cart bracket with two nuts and attach the ring between cart bracket and front lower cover.
5. Fix the front lower cover to the base plate.

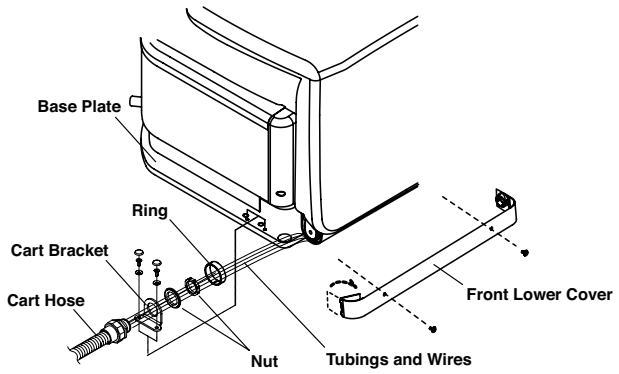


Fig.5-11-2 Tubings Connections for Cart Type

5-4.INSTALLATIONS OF UTILITY SECTION

(1) Stop Valves Installations

A.Install the water stop valve and the air stop valve to each supply pipe.The positioning of the stop valves are shown in Fig.5-6.

B.After installation of the stop valves, fully open the valves and flush out dust and chips from the piping.

Note :During installation, close the stop valves.

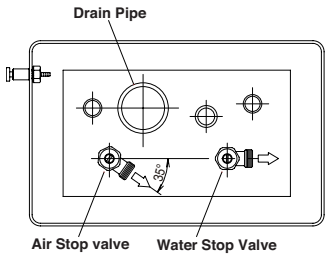


Fig.5-6 Direction of Water and Air Stop Valves

(2) Drain Hose and Vacuum Hose Connection

A.Cut the drain hose and vacuum hoses at suitable length and connect to each socket with plastic glue.(Pipe solvent)

B.Insert the drain socket and vacuum socket into each pipe. (Fig.5-7)

Note : The Drain pipe should be sealed with silicone sealant or taping.

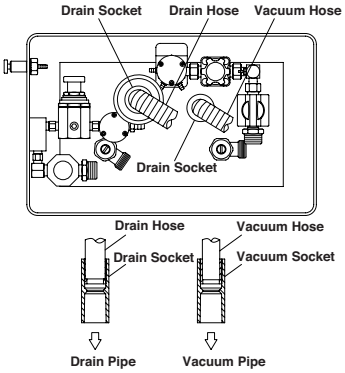


Fig.5-7 Drain Hose and Vacuum Hose Connection

(3) Water and Air Supply Line Connection

A. Bend each stainless flexible pipe to a suitable angle for connection.

B. Connect the water supply line to the water stop valve with the stainless flexible pipe and the seals. (Fig.5-8)

C. Connect the air supply line to the air stop valve with the stainless flexible pipe and the seals. (Fig.5-8)

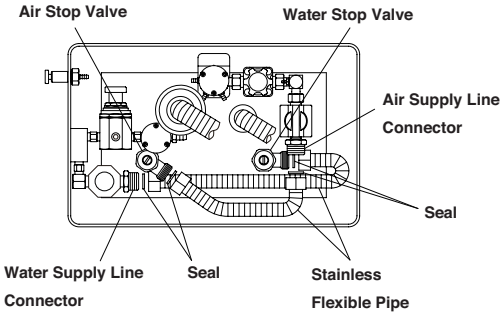


Fig.5-8 Water and Air Supply Line Connection

(4) Electrical Connections in The Utility Section

A.Remove the four screws (M14 x 15) from the inside of utility box and open the electric housing.(Fig.5-9)

B.Chair Control Connector (4P) (Fig.5-10A/ Fig.5-10B)

Connect the unit side connectors (4P Female) to the chair side connectors (4P Male) in the utility section.

C.Chair Power Supply (Fig.5-10A / Fig.5-10C Fig.5-10B)

Connect the chair power supply cable to terminal No.5 and No.6. Connect the earth wire in the power supply cable onto the utility section frame with M4 screw.

D. Electric wire (14V.24V.)

Connect the same number connection(No 1& 2).
No.1 Line to doctor table PCB.
No.2 Line to assistant PCB.
(Refer to Fig.5-10A / Fig.5-10B)

E. Communication Line from Cart Table (Fig.5-10B)

Connect the 4P connector from the cart table to unit side.(Only cart type)

F.Fix the earth line (Fig.5-10A / Fig.5-10B)

Fix the earth line from unit and chair onto the utility section frame.

G.Fix the wire to the joint bracket

Fix the all wire to the joint bracket with wire clamp.(Chair control line, Chair power supply line) (Fig.5-10A / Fig.5-10B)

H.Vacuum Operating Wires (Central Vacuum)

Connect the central vacuum operating wires to terminal No.1 and No. 2. (Yellow wires are connecting.) (Fig.5-10B)

Note : How to connect terminal block (Fig.5-10B)

While pressing the slot of the terminal with a small thin screw driver, insert the wire to the terminal and release the screw driver. Confirm that the wire is connected securely.

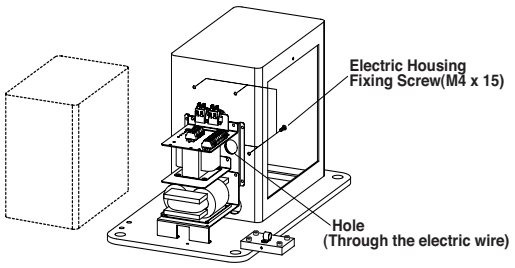


Fig.5-9 Electrical Housing

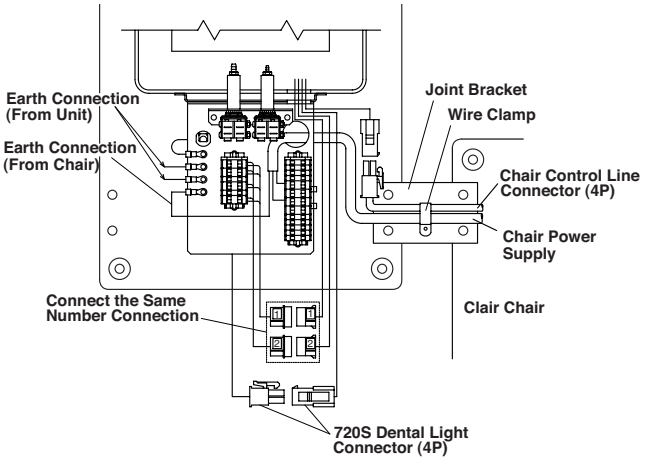


Fig.5-10A Wires Connection for Over the Patiant Type

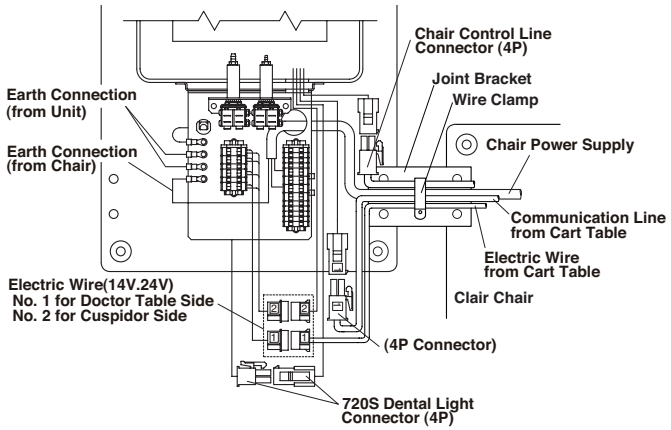


Fig.5-10B Wires Connection for Cart Type

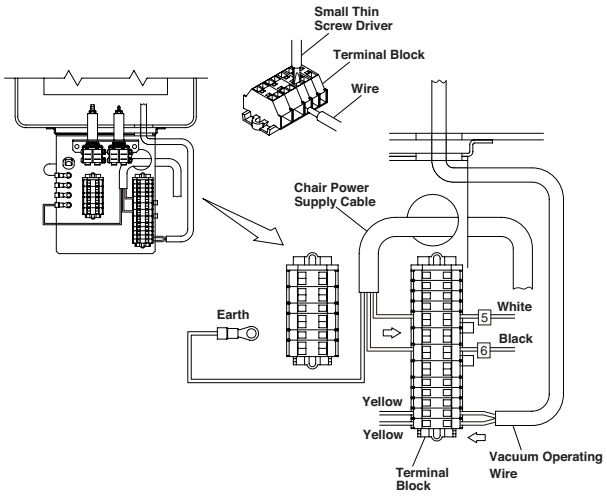


Fig.5-10C Wires Connection

I.Unit Power Supply Line

Fix the plug on the end of the unit power supply cable. Plug the unit power supply plug into the suitable power supply line in the utility section. (Fig.5-10D)

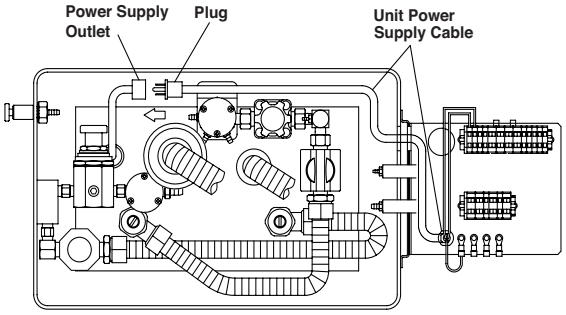


Fig.5-10D Wire Connection

(5) Tubing connection

A.Chair mount over the patiant type(Refer to Fig.5-11-A)

Connect the tubings from the cuspidor unit to utility parts.

B.Cart type (Refer to Fig.5-11-B)

Connect the tubings from the cuspidor unit and cart doctor table to utility parts.

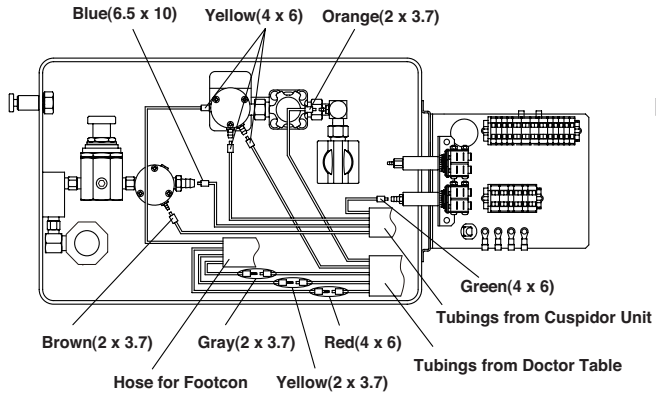


Fig.5-11-A Tubings Connection for Over the Patiant Type

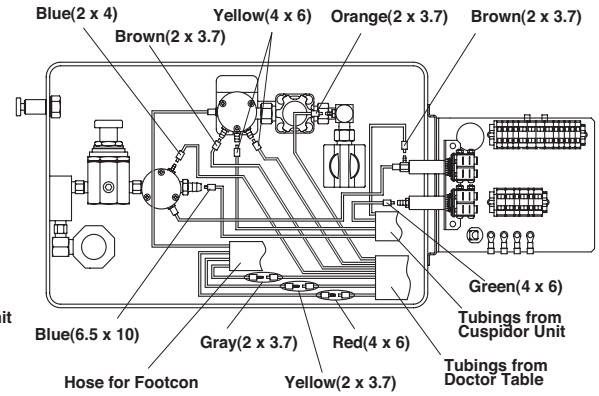


Fig.5-11-B Tubings Connection for Cart Type

Note : After connecting the utility section, open the stop valves and turn on the main switch to check the unit and chair. (Fig.5-12)

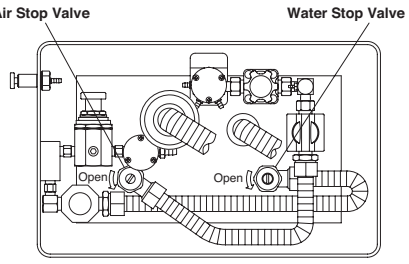


Fig.5-12 Air and Water Stop Valve

(6) Fixing Electric Housing and Joint Bracket Cover

Before fixing the covers, check all unit and chair functions are working correctly.

After fixing the covers, check again.

⚠CAUTION

Do not pinch or damage the tubing and wire with the covers.

Do not bend the tubing excessively with the covers (prevent kinking tubings.)

Fix the electric housing with 4 screws(M4 x 15)

The joint bracket cover is fix with (M4 x 8) screws and set cap washer and set cap cover. (Fig.5-13)

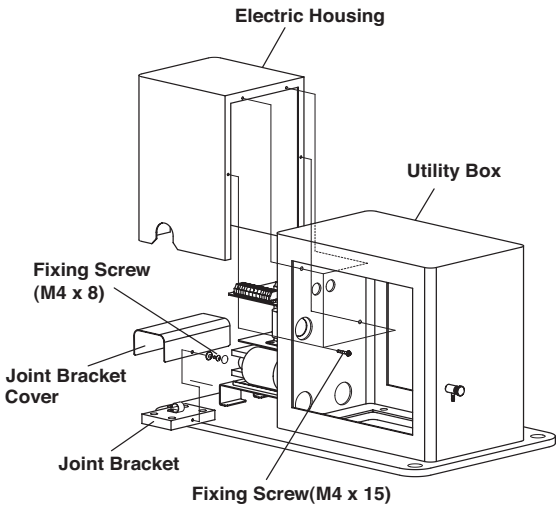


Fig.5-13 Electric Housing and Joint Bracket Cover

5-5. INSTALLATION OF THE DENTAL LIGHT

(1) Installing The Dental Light

A Remove the 4 x side panel fixing screws from the bottom of the cuspidor unit and remove the side cover. (Fig.5-14)

B. Pass the light wires through the L-light pole and insert the light spigot into the light pole and fix it with 2 x M6 screws. (Fig.5-14)

C. Remove the light pole cover from the cuspidor unit. Insert the light pole into the light pole cover. (Fig.5-15)

D. Pass the light wires through the light pole and insert the L-light pole into the light pole. Insert the light pole with dental light and L-light pole into top of the cuspidor unit. (Fig.5-15)

E. Fix the light pole in to the cuspidor unit and tightening the 2x M6 cap bolts. Fix the light pole cover to the cuspidor unit. (Fig.5-15)

F. Pass the light cable through the cuspidor frame hole. Connect the connectors of the dental light cable to the dental light PCB. The dental light PCB is located at the rear side of the cuspidor unit. (Fig.5-16) Detail of connections, refer to fig.5-17 for Dental Light PCB connections.

G. After installing the dental light, fix the side panel back onto the cuspidor. (Fig.5-15)

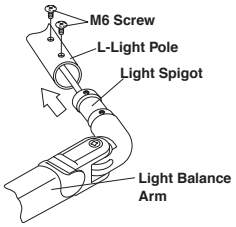


Fig.5-14 Fixing the Dental Light to L-Light Pole

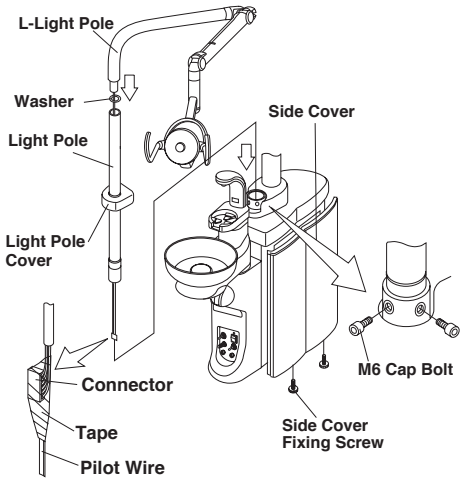


Fig.5-15 Fixing Light Pole to Cuspidor Unit

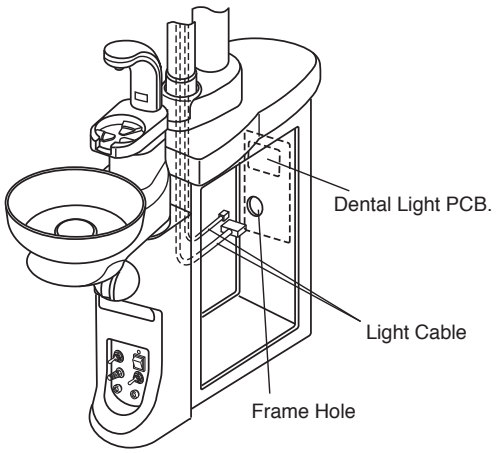


Fig.5-16 Connecting the Dental Light Connectors

(2) Dental Light PCB Connections

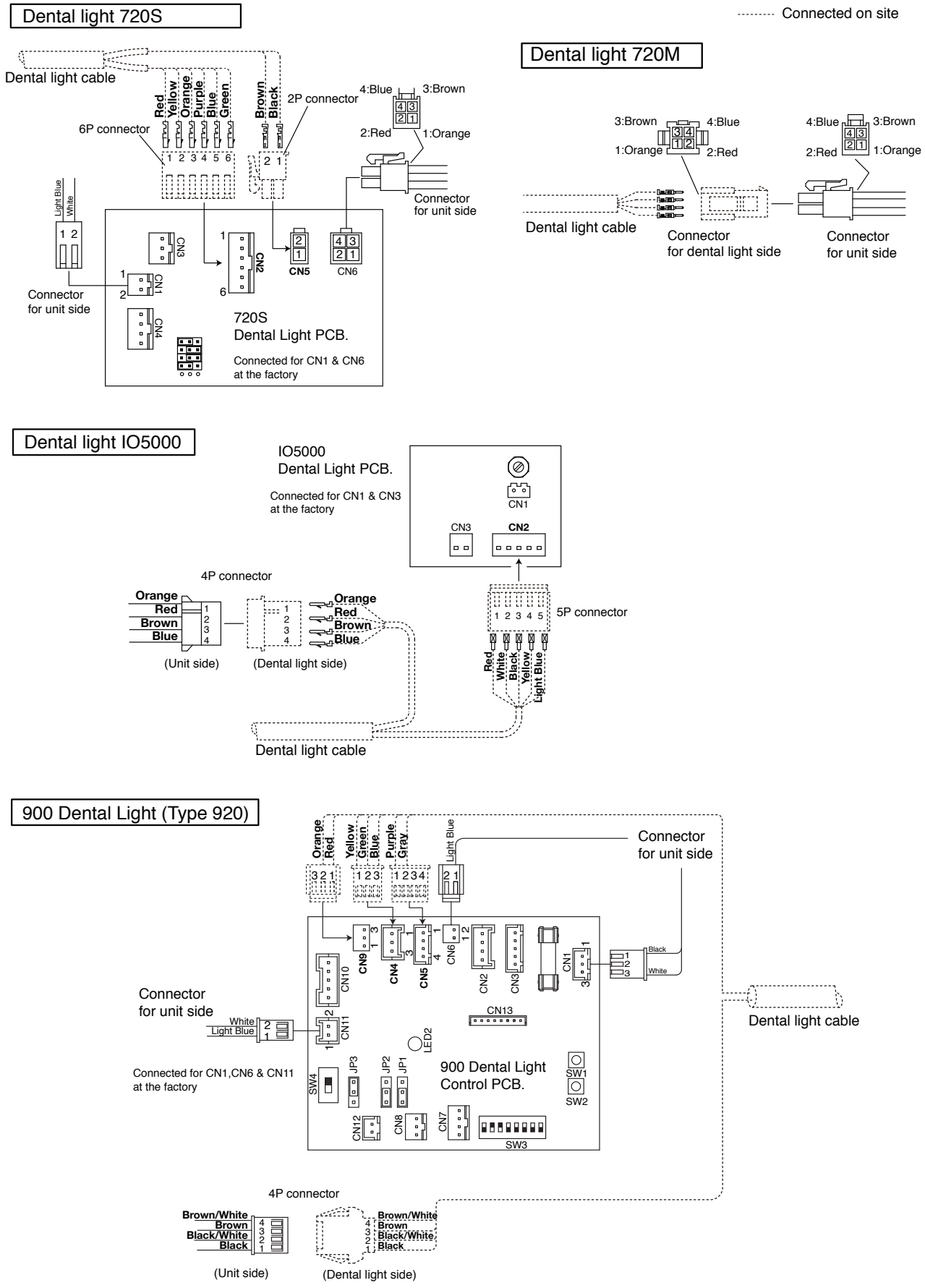


Fig.5-17 Dental Light PCB connections

5-6. UNIT SECTION ASSEMBLY

(1) Doctor's Syringe and Handpiece Tubings.

Fit the syringe and the handpiece tubings into each handpiece holder. Position the handpiece to each handpiece tubing.

(2) Vacuum Hose and Saliva Ejector Hose

Fix the vacuum hose and saliva ejector hose to the vacuum manifold by turning the hose connector 90˚ clockwise. (Fig.5-18)

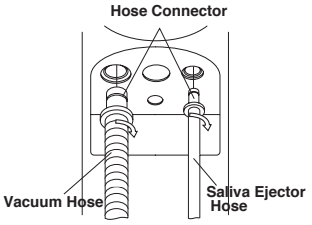


Fig.5-18
Fixing Vacuum and Saliva Ejector Hose

(3) Assistant's Syringe, Vacuum and Saliva Ejector Handpiece

Fit the syringe, the vacuum handpiece and the saliva ejector handpiece in the assistant holder.

(4) Cuspidor Bowl, Drain Cap and Basket Strainer (Fig.5-19)

Insert the cuspidor bowl into the cuspidor unit.

Fit the drain cap and the basket strainer in the centre of cuspidor bowl.

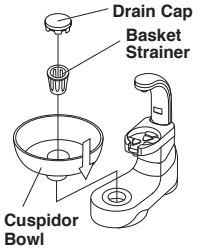


Fig.5-19 Cuspidor Bowl

(5) Film Viewer for Holder and Place Type

Fix the film viewer on the table bracket with 2 x M4 screws. (Fig.5-20)

(6) Table Tray for Holder and Place Type

Fix the table tray on the table with 4 x M5-10 screws and 1 x M5- 60 screw. (Fig.5-20)

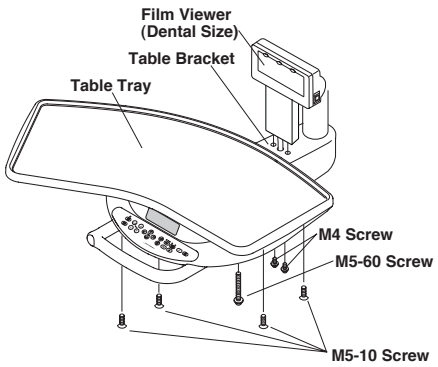


Fig.5-20 Fixing Film Viewer and Table Tray

(7) Rod and Rest Cover for Rod Type (Fig.5-21)

Lift the rod holder and insert the rod to the rod holder.

Attach the rest cover to the table cover.

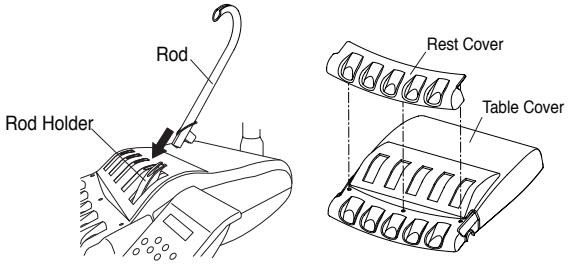


Fig.5-21 Rod and Rest Cover

6. ADJUSTMENT

6-1. UNIT SECTION ADJUSTMENT

(1)Water and Air Stop Valves (Fig.6-1)

Open the water stop valve and the air stop valve in the utility section. Turn on the master switch and check that water and air are not leaking.

(2) Main Air Pressure (Fig.6-1)

The main air pressure has been adjusted in the factory. Confirm that the main air pressure is at 0.5-0.55Mpa (5.0 - 5.5 kg/cm^2)by the main air pressure gauge. The main air pressure can be regulated by the main air regulator in the utility section.

(3) Main Water Pressure (Fig.6-1)

The main water pressure has been adjusted in the factory. Confirm the main water pressure is at 0.1-0.2Mpa (1.0-2.0 kg/cm^2) by the main water pressure gauge. The main water pressure can be regulated by themain water regulator in the utility section.

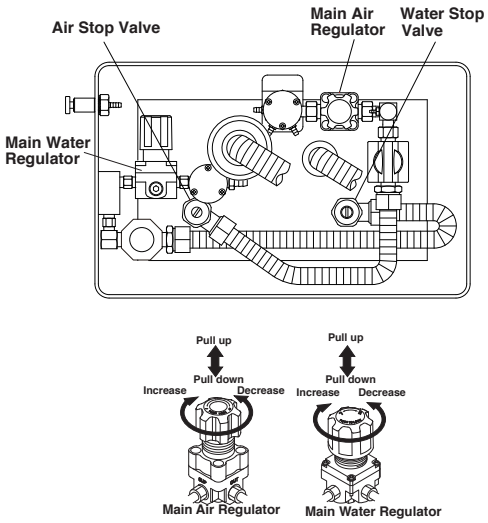


Fig.6-1 Main Air and Main Water Pressure Adjustment

6-2. HANDPIECE ADJUSTMENT

(1) Removing Doctor Table Top (Fig.5-20)

Loosen and remove 4 x M5 screws from the doctor table bottom and remove the doctor table top.

(2) Handpiece Drive Air Adjustment

Adjustment of each handpiece drive air can be made by the screw on the auto select valve. It is important to set the drive air pressure in according with the handpiece manufacture's recommendation. Drive air pressure is indicated on the handpiece pressure gauge located on the rear side of table. (Fig.6-2)

(3) Setting The Optimum Condition

Turn the appropriate drive air screw fully clockwise, then depress the drive air pedal on the foot control fully (maximum foot pressure) and turn the screw counterclockwise slowly. Stop turning the screw immediately when the handpiece pressure gauge shows the desired drive air pressure. (Fig.6-2)

(4) Handpiece Coolant Air Adjustment

Handpiece coolant air adjustment screws are provided for individual adjustment of handpiece coolant air. Turning a handpiece coolant air adjustment screw counterclockwise increases flow volume and turning clockwise decreases. (Fig.6-2)

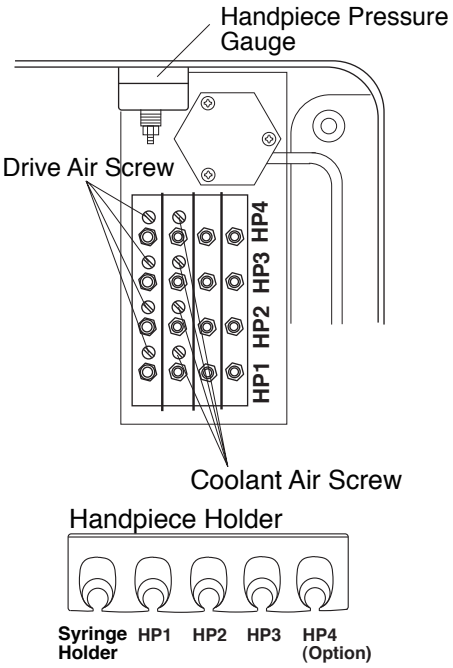


Fig.6-2 Auto Select Valve

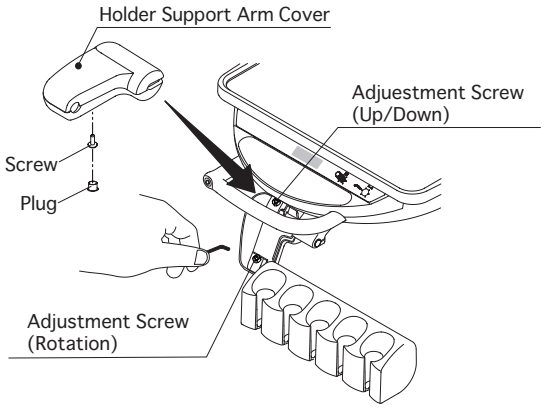
Note : Do not loosen the adjustment screw excessively, it will make air leaking.

6-3. HANDPIECE HOLDER ADJUSTMENT

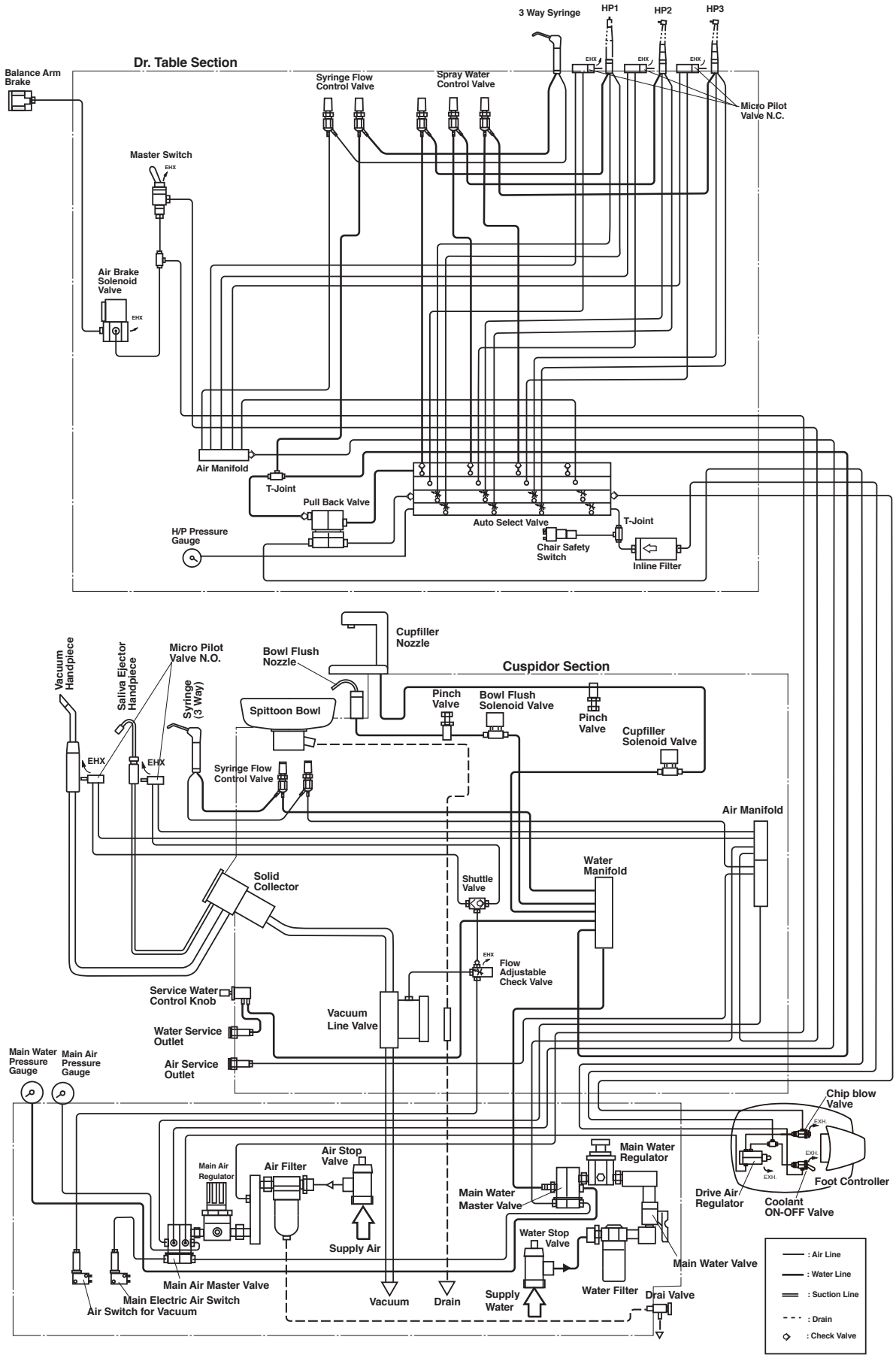
(1) Angle and Height Adjustment

A. Remove the holder support arm cover and loosen the adjustment screw with a hex L wrench. (Remove the plug located on the underside of the holder support arm with a fingernail. The cover can be detached by removing the screw.)

B. Set the holder at the client's favorite position and fix by tightening the screw.
Be carefull not to tighten the screw too much.

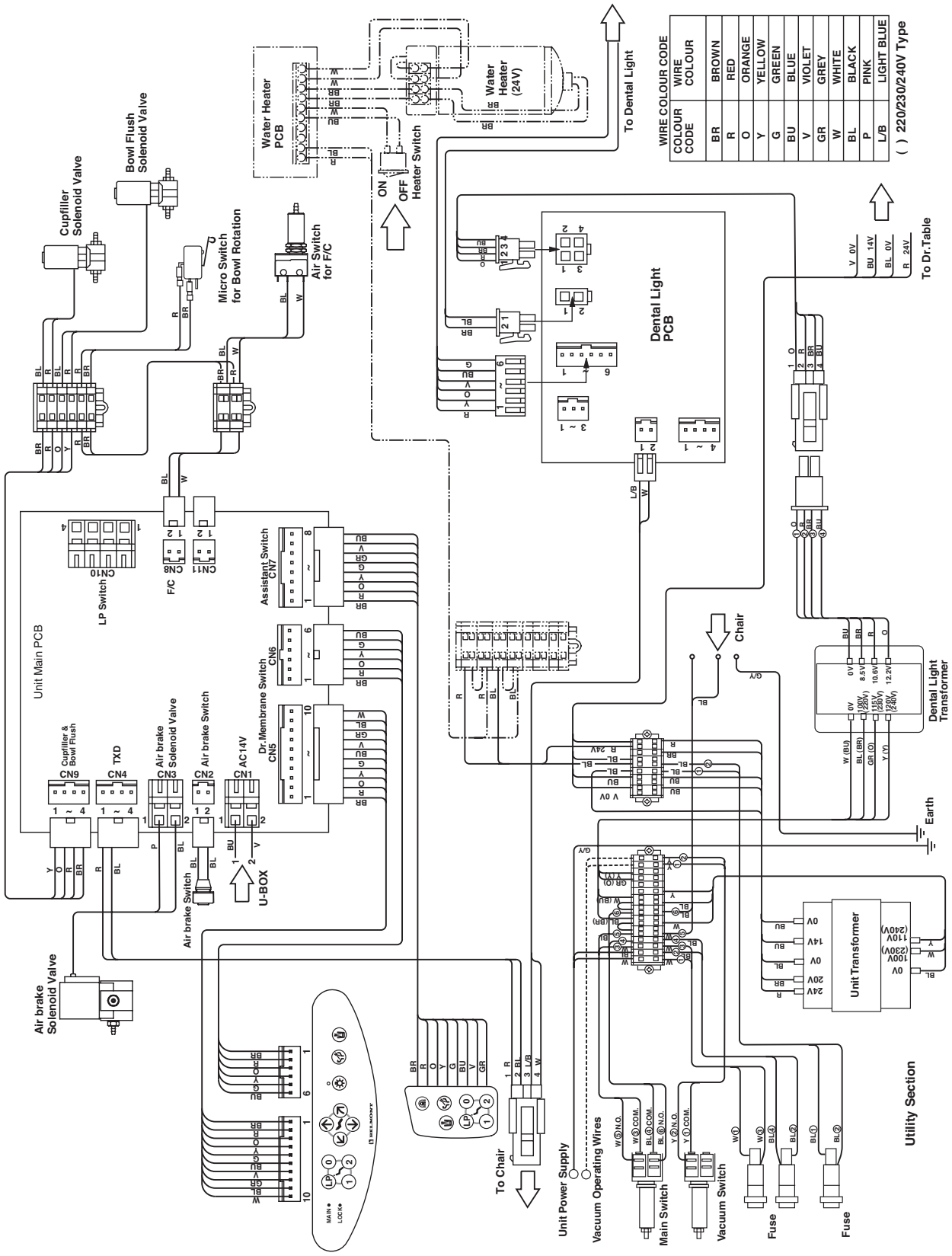


7. UNIT FLOW DIAGRAM

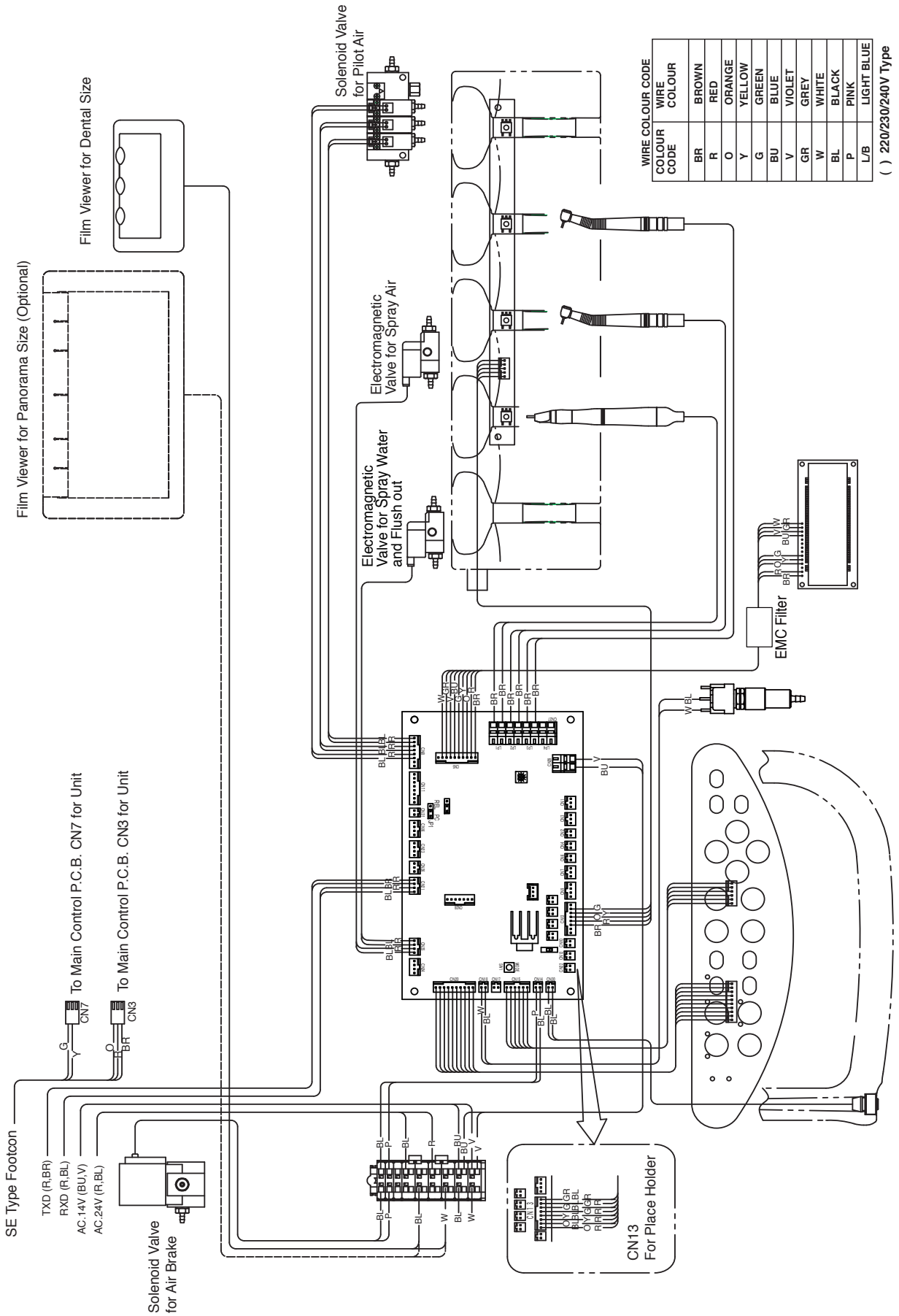


8. ELECTRICAL DIAGRAM

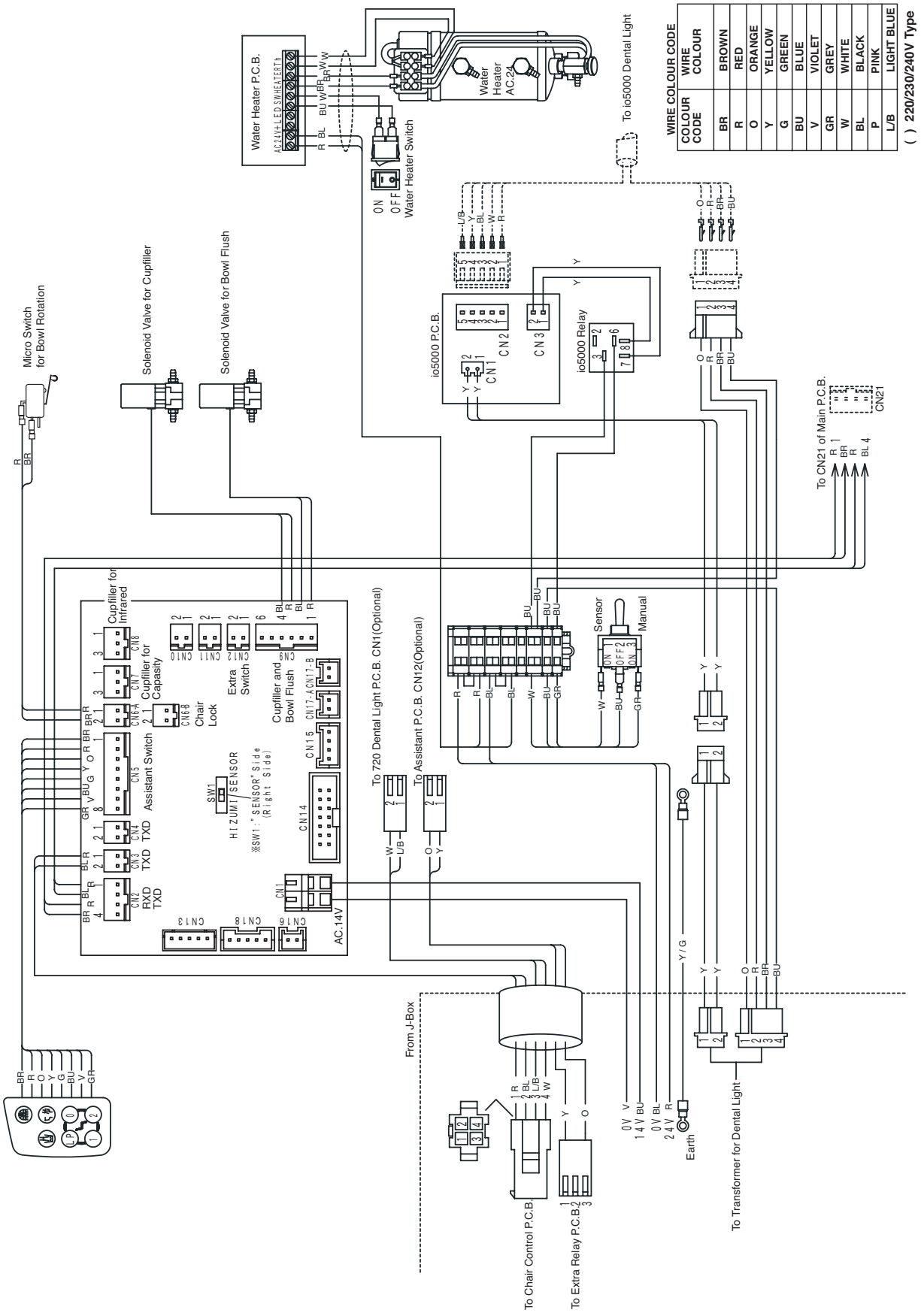
8-1. UNIT ELECTRICAL DIAGRAM (A Spec.)



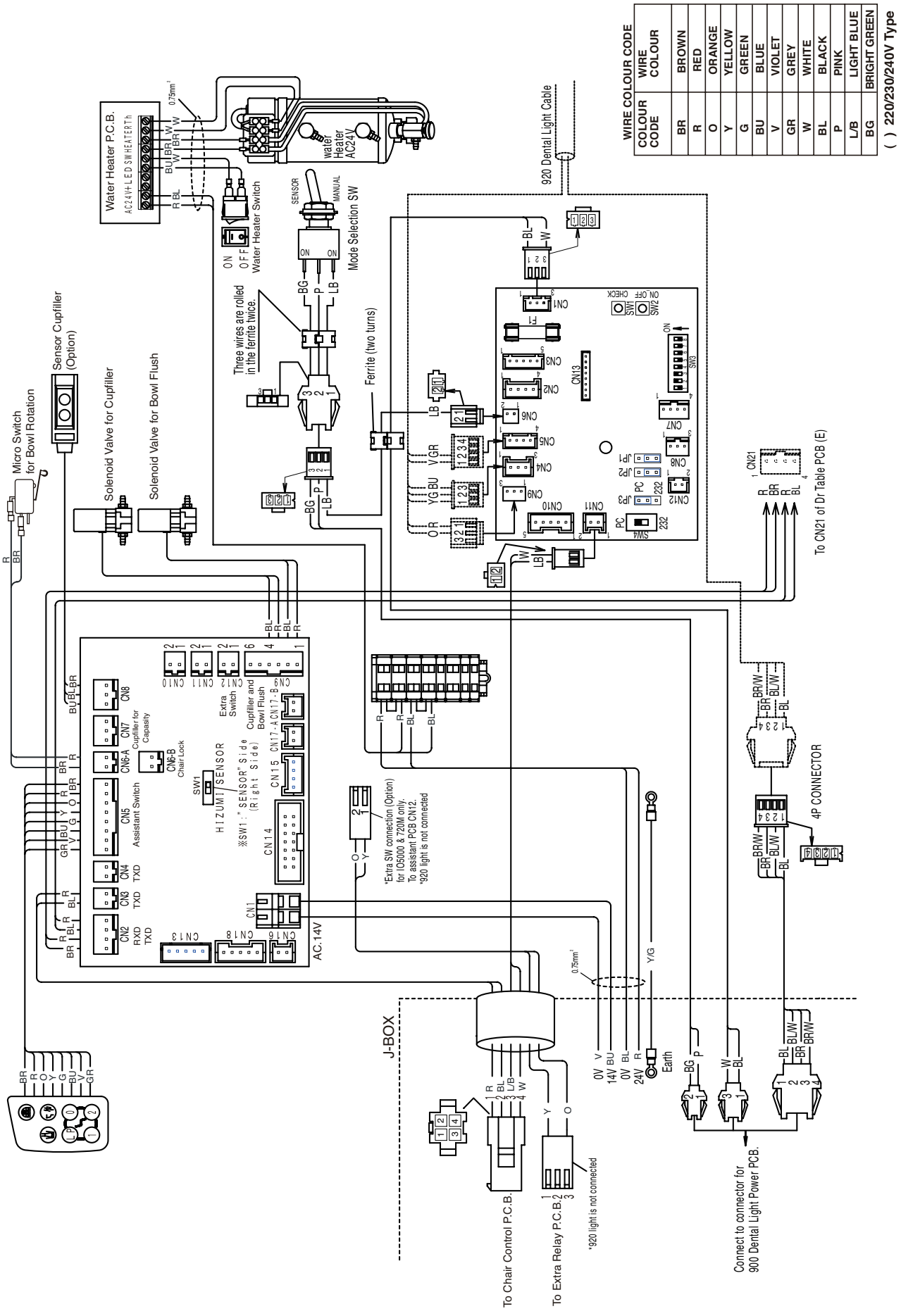
8-2. DOCTOR TABLE SECTION ELECTRICAL DIAGRAM (E Spec.)



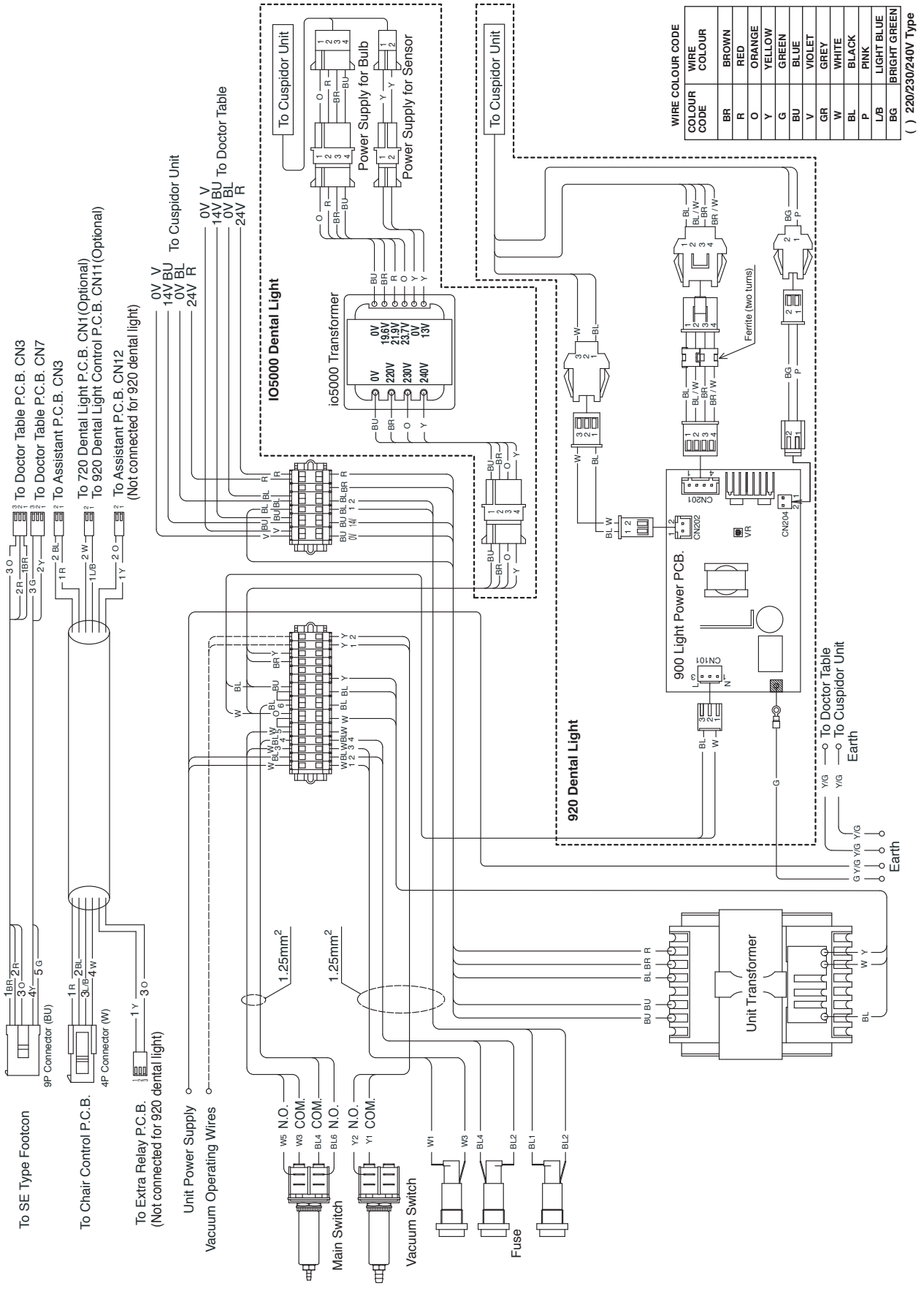
8-3. CUSPIDOR SECTION ELECTRICAL DIAGRAM (E Spec.)(with IO5000)



8-4. CUSPIDOR SECTION ELECTRICAL DIAGRAM (E Spec.)(with 900 Dental Light)



8-5. UTILITY SECTION ELECTRICAL DIAGRAM



NOTE

TAKARA BELMONT CORPORATION
2-1-1, Higashishinsaibashi,Chuo-ku,Osaka,Japan
TEL : (06) 6213-5945 FAX : (06) 6212-3680

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