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CHECK WITH LOCAL CODE AUTHORITIES ABOUT INSTALLATION REQUIREMENTS FOR THIS PRODUCT

## INSTALLATION INSTRUCTIONS

# CASCADE® 7015 ASSISTANT'S INSTRUMENTATION AND CASCADE 3180 DUO INSTRUMENTATION

(to Preference® II 5551 and 5557 Treatment Consoles)

### YOU WILL NEED:

- Diagonal cutters
- 15/16" socket
- 1/4" or adjustable wrench
- Measuring tape
- Phillips screwdriver
- Small, flat-blade screwdriver
- Hex keys: 1/8", 3/16"
- Torque wrench
- Pliers
- Pencil
- Silicone sealant

### BEFORE BEGINNING THE INSTALLATION

If the air and water manual shutoff valves have not been installed, install them now.

### INSTALL THE ASSISTANT'S INSTRUMENTATION

1. Channel the vacuum tubing, yellow with red stripe tubing (1/8" OD), yellow with red dash tubing (1/8" OD), red tubing (1/8" OD), and any additional tubings the configuration may require (see **NOTE**), from the rear of the unit, and through the tubing chase attached to the assistant's module (see *Figure 1*).

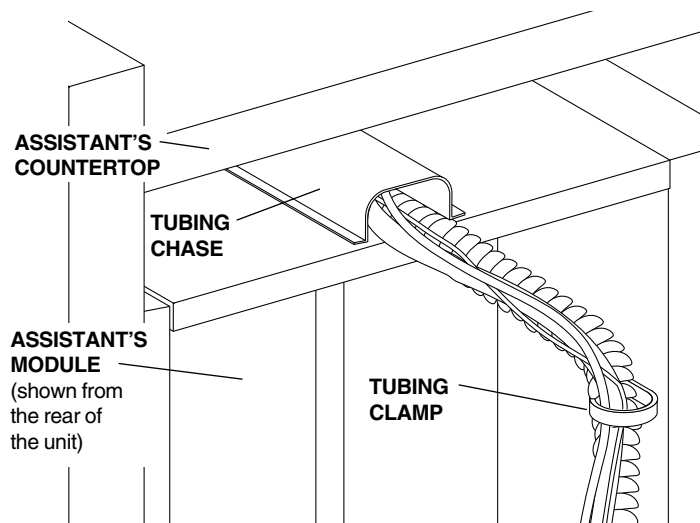


FIGURE 1

### NOTE

The following versions of Assistant's instrumentation require that the specified tubing be removed from the kit and channeled through the tubing chase with the assistant's instrumentation tubings:

**Assistant's instrumentation with circulating syringe.** Purple tubing (1/8" OD): make sure to channel the end of the tubing without the copper drip tube through the tubing chase.

**Assistant's instrumentation with self-contained water system.** Yellow tubing with light green dashes (1/8" OD).

**Assistant's instrumentation with air quick disconnect.** Yellow tubing (1/4" OD).

**Assistant's instrumentation with city water quick disconnect.** Blue tubing (1/4" OD).

2. Push the tubing through the chase. Make sure there is adequate tubing to work with to install the instrumentation to the front of the unit.
3. Place the tubing into the two tubing clamps (one clamp if the console has a computer option) (see *Figure 1*).
4. Store the ends of the tubings down into the area where the utilities will be installed.
5. Refer to *A-dec Publication No. 85.0535.00* to complete installation of the 5551 Treatment Console.

Refer to *A-dec Publication No. 85.0552.00* to complete installation of the 5557 Treatment Console, Single Sink.

Refer to *A-dec Publication No. 85.0547.00* to complete installation of the 5557 Treatment Console, Dual Sink.

## INSTALL THE MOUNTING BRACKET ASSEMBLY

- Remove the mounting bracket assembly and three Phillips head screws from the kit.
- Locate the pre-drilled mounting holes in the cabinet face.
- Place the mounting bracket assembly against the cabinet face and use a Phillips screwdriver to install the three mounting screws (see Figure 2). Tighten the screws.

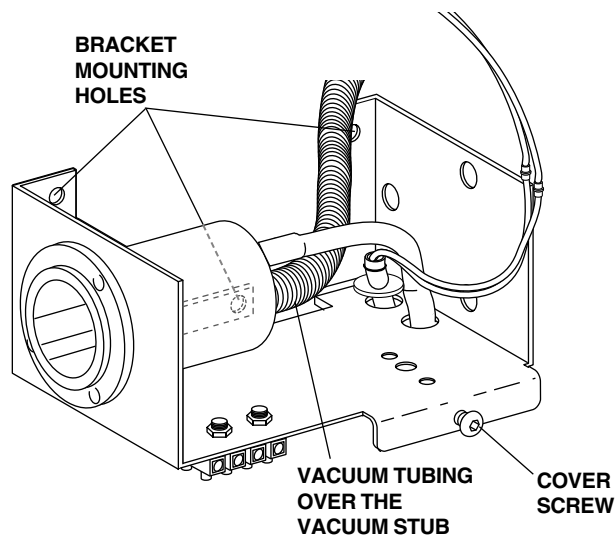


FIGURE 2

- Apply a liberal amount of silicone sealant to the vacuum stub on the vacuum canister (see Figure 2).
- Connect the vacuum tubing to the vacuum stub (see Figure 2).

**Figures 21 through 27 (on pages 8 through 12) illustrates the plumbing connections for the various Assistant's and Duo Instrumentation configurations.**

**Figure 28 (on page 13) provides the proper plumbing connection for the Assistant's Vacuum Instrumentation.**

**Refer to Figures 21 through 28 (on pages 8 through 13), and the following sections, for the specific information needed to complete the installation.**

## ASSISTANT'S SYRINGE

- A standard syringe has air and water tubings which must be separated (see Figure 3).

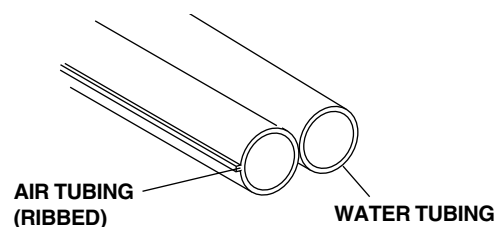


FIGURE 3

*A Low Voltage Water Heater with Heated Syringe Tubing has air and water tubings which have been separated at the factory and are similar to Figure 3. It also has two wires extending from the sheathing.*

### CAUTION

**Do not** trim the outer sheathing of the heated syringe tubing. The sheathing covers the resistance wire which heats the tubing. Exposing the resistance wire reduces the efficiency of the unit and may damage other components in the control head.

*A warm water circulating syringe also has a return water tubing which must be separated (see Figure 4).*

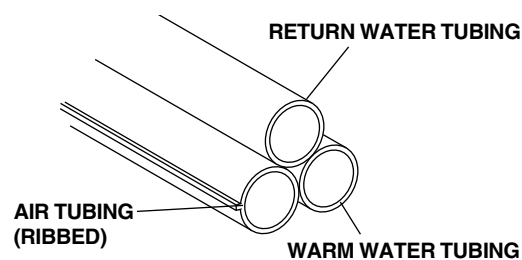


FIGURE 4

- Install the air tubing in one side of the pinch valve and the water tubing in the opposite side of the pinch valve. **Do not** install the return water tubing or electrical wiring in a pinch valve.
- Slide a uni-clamp onto the syringe air tubing (*ribbed*, see Figures 3 and 4) and then install an inline barb to the tubing. Slide a uni-clamp onto the yellow tubing channeled through the tubing chase. Connect the yellow tubing to the syringe air tubing.
- Connect the syringe water tubing (*non-ribbed*, see Figures 3 and 4) to the red tubing channeled through the tubing chase.

- Connect the syringe return water tubing (see Figure 4 on page 2) to the drip tubing (purple) channeled through the tubing chase.

### Circulating Syringe Drip Tube

- Locate the drain pipe in the floor. Bend and position the drip tube to allow a **minimum** of a 1" (25 mm) air gap from the end of the drip tube to the drain pipe (see Figure 5). Attach the drip tube to the drain pipe using two cable ties.
- Repeat Step 6 if the control head is equipped with a circulating syringe.

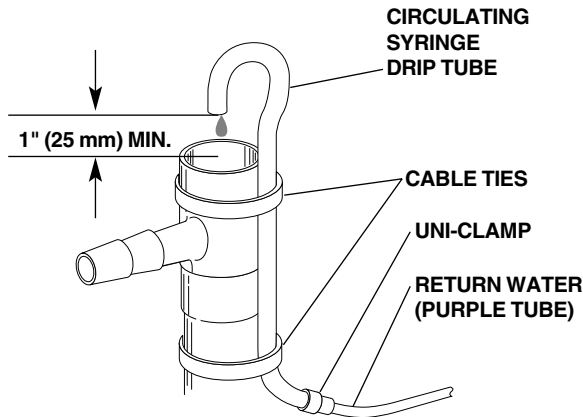


FIGURE 5

### LOW VOLTAGE WIRING, ASSISTANT'S

- Route the wiring harness into the mounting bracket assembly to the position shown in Figure 6.

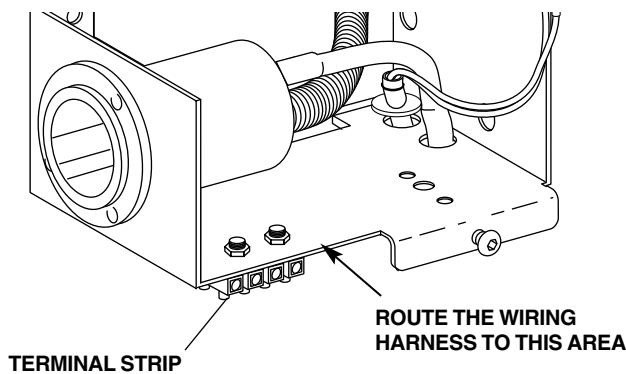


FIGURE 6

- Using a small flat-blade screwdriver, loosen the terminal strip screws.
- Insert the GRAY (or blue) WIRE in the first position (24 volt) of the terminal strip (see Figures 7 and 8). Tighten the terminal strip screw.
- Insert the RED WIRE in the second position (6 volt) of the terminal strip (see Figures 7 and 8). Tighten the terminal strip screw.

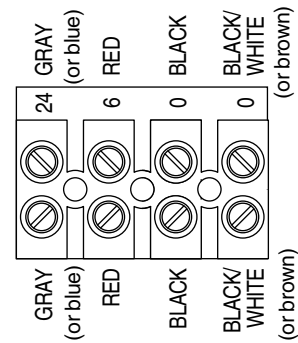
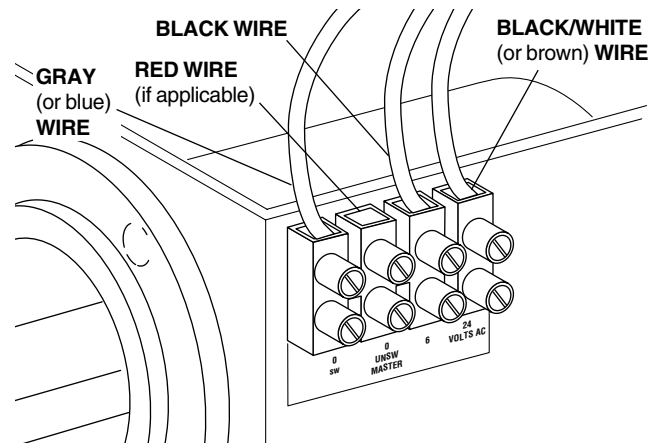


FIGURE 7



MOUNTING BRACKET-UNDERSIDE  
FIGURE 8

- Insert the BLACK WIRE in the third position (0 volt) of the terminal strip (see Figures 7 and 8). Tighten the terminal strip screw.
- Insert the BLACK/WHITE (or brown) WIRE in the fourth position (0 volt) of the terminal strip (see Figures 7 and 8). Tighten the terminal strip screw.
- Make sure all wires are securely in place by gently tugging upon each individual wire.
- Locate the opposite end of the wiring harness, in the console. Loop the unused end of the harness and secure it in position using a cable tie.

### PLUMBING CONNECTIONS

- Make all plumbing connections, and channel all tubing, as shown in Figures 20 through 26 (on pages 8 through 13).

### INSTALL THE ASSISTANT'S INSTRUMENTATION HOUSING

- Remove the housing and retaining screw from the kit.
- Place the housing over the mounting bracket assembly. Use a 1/8" hex key to install, and tighten, the housing retainer screw.

## INSTALL THE ASSISTANT'S INSTRUMENTATION ARM

29. Remove the assistant's instrumentation arm and mounting bracket assembly from the kit. Remove the two mounting screws from the kit.
30. Locate the threaded inserts in the bottom of the cabinet shelf. Align the through holes in the mounting bracket with the threaded inserts. Loosely install the mounting screws.
31. Use a 3/16" hex key to tighten the mounting screws (see Figure 9).

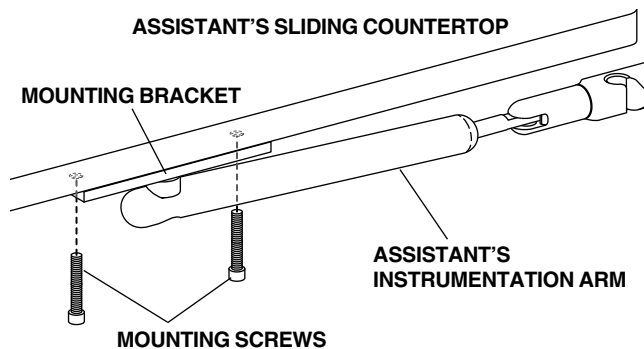


FIGURE 9

32. Remove the HVE and solids separator assembly from the kit.
33. Insert the solids separator in the side of the housing (see Figure 10).

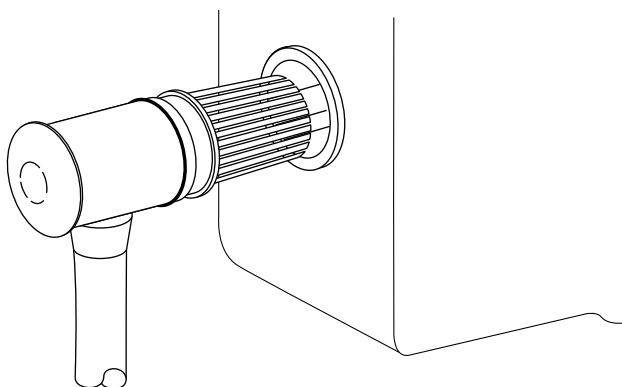


FIGURE 10

34. Place the syringe, saliva ejector and HVE in the assistant's holder.

**If you are installing Duo Unit (doctor's and assistant's instrumentation), go to DOCTOR'S INSTRUMENTATION.**

**If you are only installing Assistant's Instrumentation, go to TEST THE UNIT on page 14.**

## DOCTOR'S INSTRUMENTATION

1. Disconnect the foot control and utilities from the umbilical tubing by unscrewing the in-line connectors.

## INSTALL THE FOOT CONTROL

3. Remove the foot control and the strain relief bushing from the kit. Insert the foot control tubing through the bushing so the large outside diameter of the bushing is closest to the foot control.
4. Insert the foot control tubing through the hole in the cabinet base. When the sheathing extends into the base, slide the strain relief bushing up the tubing and push it into the base (see Figure 11).

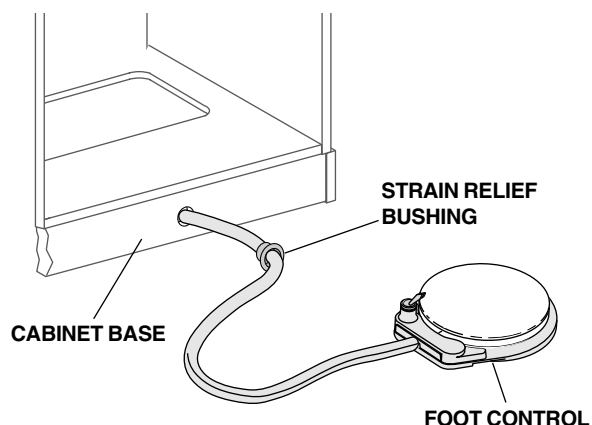


FIGURE 11

## INSTALL THE CONTROL HEAD

5. Pull the mounting platform out from the cabinet (see Figure 12).

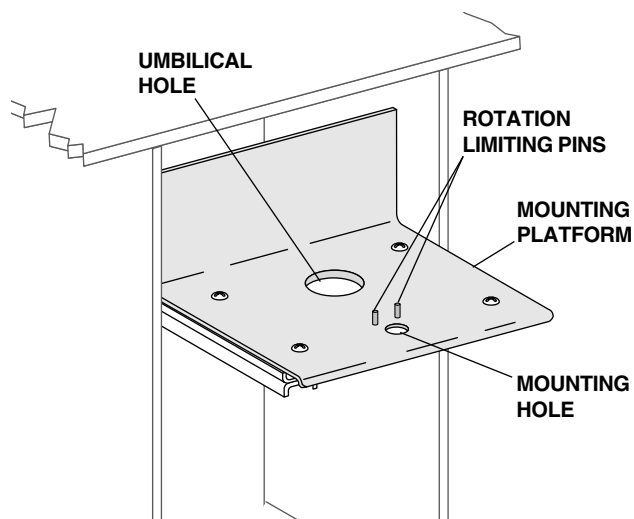
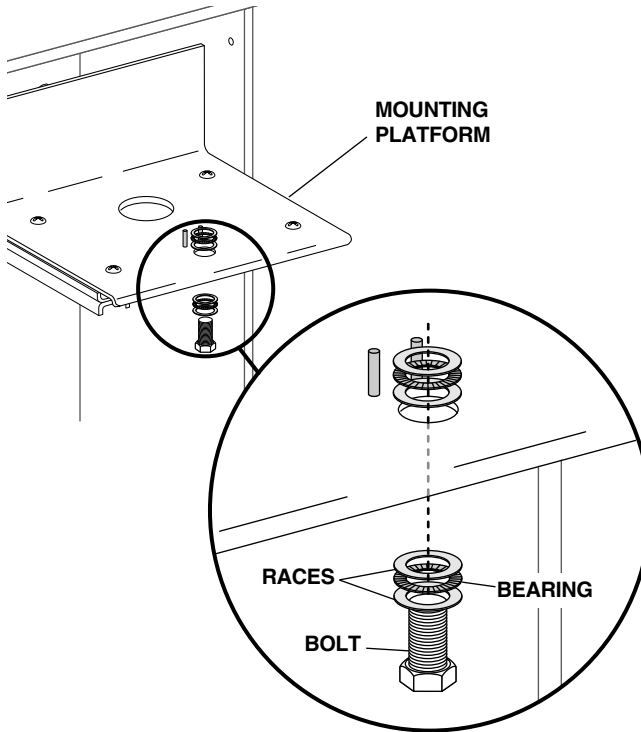


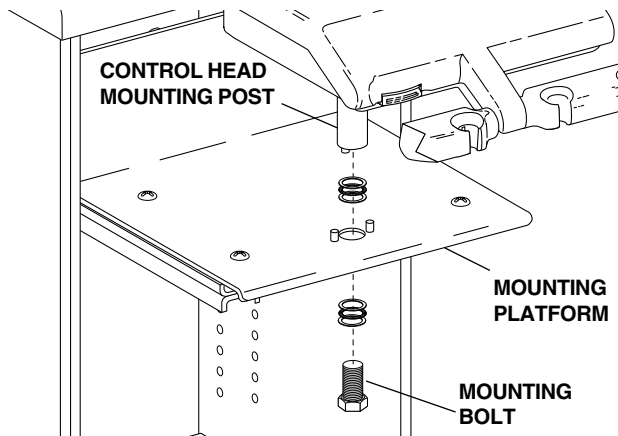
FIGURE 12

6. Remove the mounting bolt, four races, two bearings and the Loctite® from the kit. Have a 2" to 4" (5 to 10 cm) long piece of masking tape readily available.
7. Place a bearing between two races (see Figure 13) and insert the bolt through this assembly.



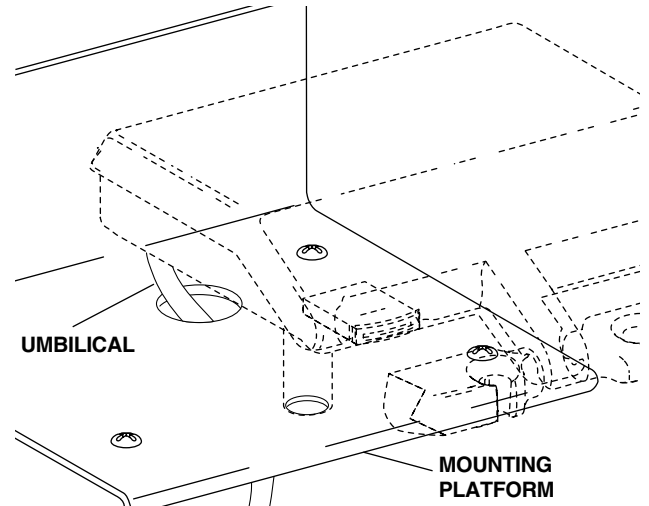
**FIGURE 13**

8. Insert bolt through the unit mounting hole of the sliding base plate.
9. Place a bearing between two races (see Figure 13) and place these items on the bolt.
10. Tape the hex of the bolt to the bottom of the sliding base plate.
11. Place a bead of Loctite around the top threads of the mounting bolt.



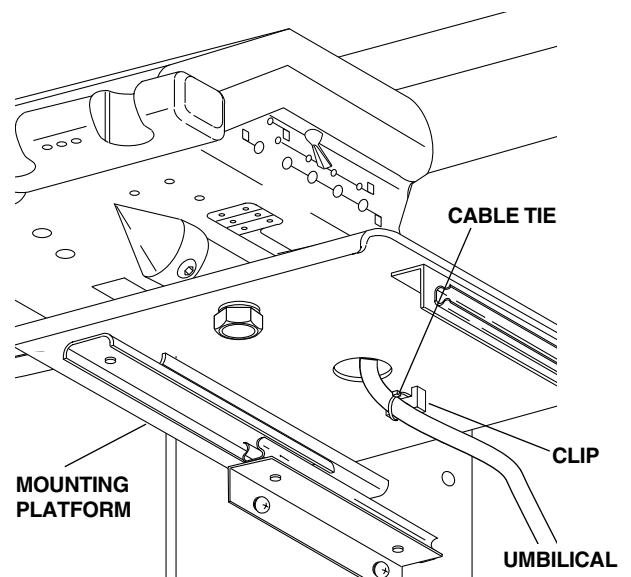
**FIGURE 14**

12. Place the control head over the mounting bolt (see Figure 14), making sure the pin extending from the back of the mounting post is between the rotation limiting pins. Remove the tape and tighten the mounting bolt by hand.
13. Using a torque wrench and a 15/16" socket, torque the mounting bolt to 25-foot pounds (34 Nm).
12. Route the umbilical down through the umbilical hole in the mounting platform (see Figure 15).



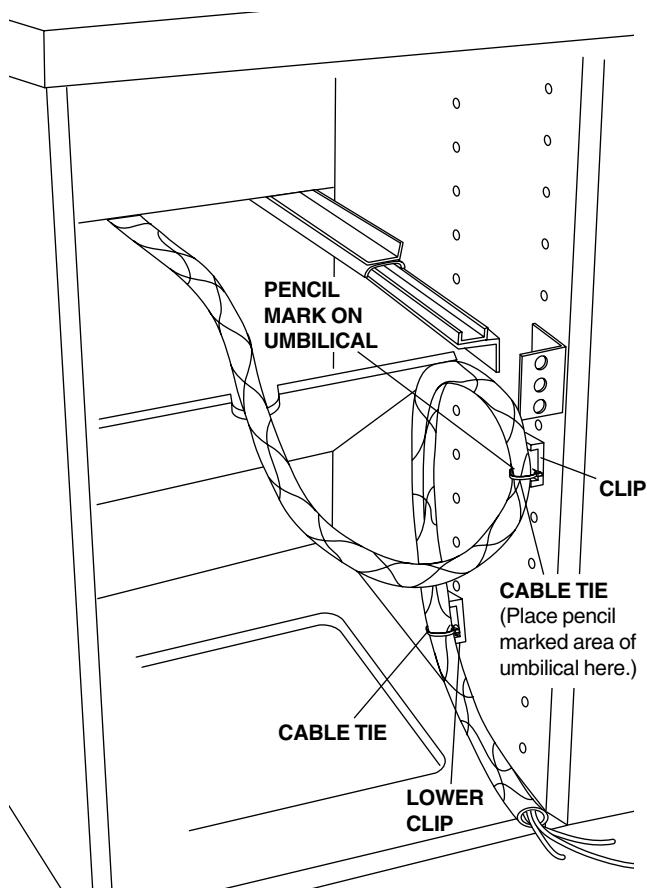
**FIGURE 15**

15. Remove a cable tie from the kit and slide it through the clip on the bottom of the sliding base plate. Route the umbilical over the clip and secure it firmly in position with the cable tie (see Figure 16). Use diagonal cutters to remove the loose end of the cable tie.



**FIGURE 16**

16. From the cable tie installed in Step 11, measure 26-1/2" (67 cm) down the umbilical and mark this location with a pencil.
17. Remove two cable ties from the kit. Slide them through the two clips on the inside of the cabinet.
18. Make a loop in the umbilical as shown in Figure 18. Place the pencil mark, made on the umbilical in Step 12, under the cable tie in the upper clip and secure it firmly in position with the cable tie.



VIEWED FROM THE BACKSIDE OF THE CONSOLE

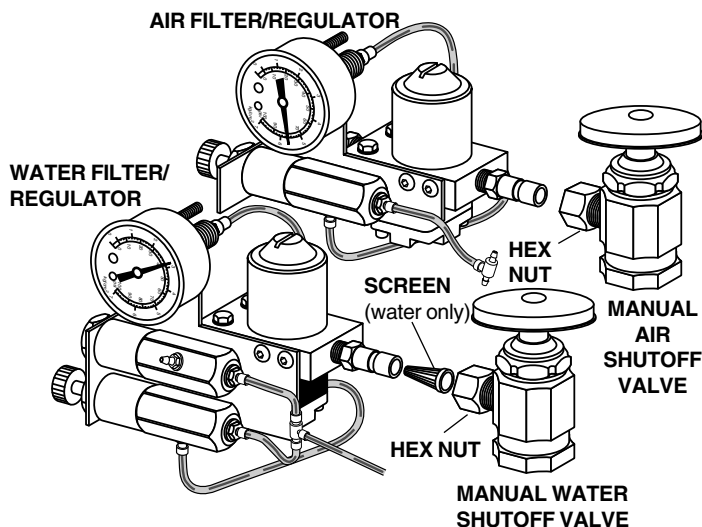
**FIGURE 18**

19. Complete the loop by routing the umbilical against the cabinet and securing it firmly in position with the cable tie in the lower clip.
20. Use diagonal cutters to remove the loose ends of the cable ties.

## INSTALLING THE UTILITIES

### AIR AND WATER FILTER/REGULATOR MODULES

1. Connect the filter/regulators to the umbilical (see Figures 21 through 26 on pages 8 through 12).
2. Make sure the air and water supplies have been purged of debris.
3. Loosen the hex nut on the air and water manual shutoff valves (see Figure 19).



**FIGURE 39**

4. Install the water screen only in the water filter/regulator, identified by a black valve body (see Figure 19).
5. Connect the air and water filter/regulators to the manual shutoff valves (see Figure 19). Do not overtighten the fittings.

## FOOT CONTROL

1. Reconnect the foot control tubing to the corresponding tubings coming from the umbilical (see Figure 20). These tubings are color matched and have inline connectors attached. No tools are required to connect the inline connectors.

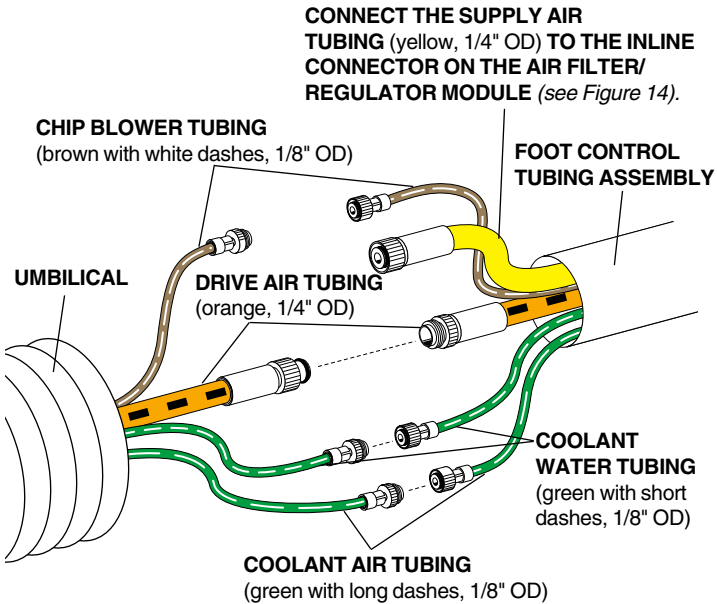


FIGURE 20

## INSTALL THE OPTIONAL POWER SUPPLY

*Install the power supply. Refer to the installation instruction that came with the power supply.*

## CONTROL HEAD CONNECTIONS

1. Connect the tubings coming from the utility modules to the umbilical using the factory installed inline connectors (refer to Figures 20 to 26 on pages 8 through 13 for plumbing variations). Compare tubing size, color, and dash/stripe pattern and connect those that match.

*When you have completed all plumbing connections, go to TEST THE UNIT on page 14.*

# STANDARD ASSISTANT'S INSTRUMENTATION

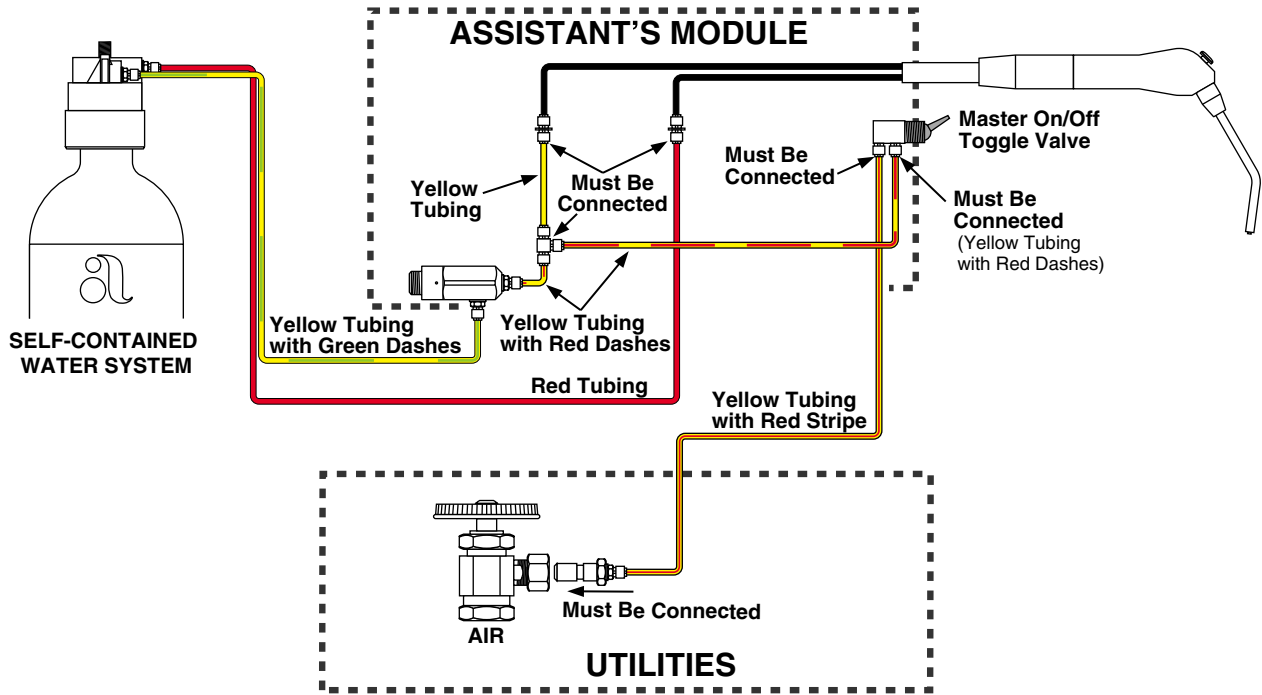


FIGURE 21

# DUO ASSISTANT'S INSTRUMENTATION

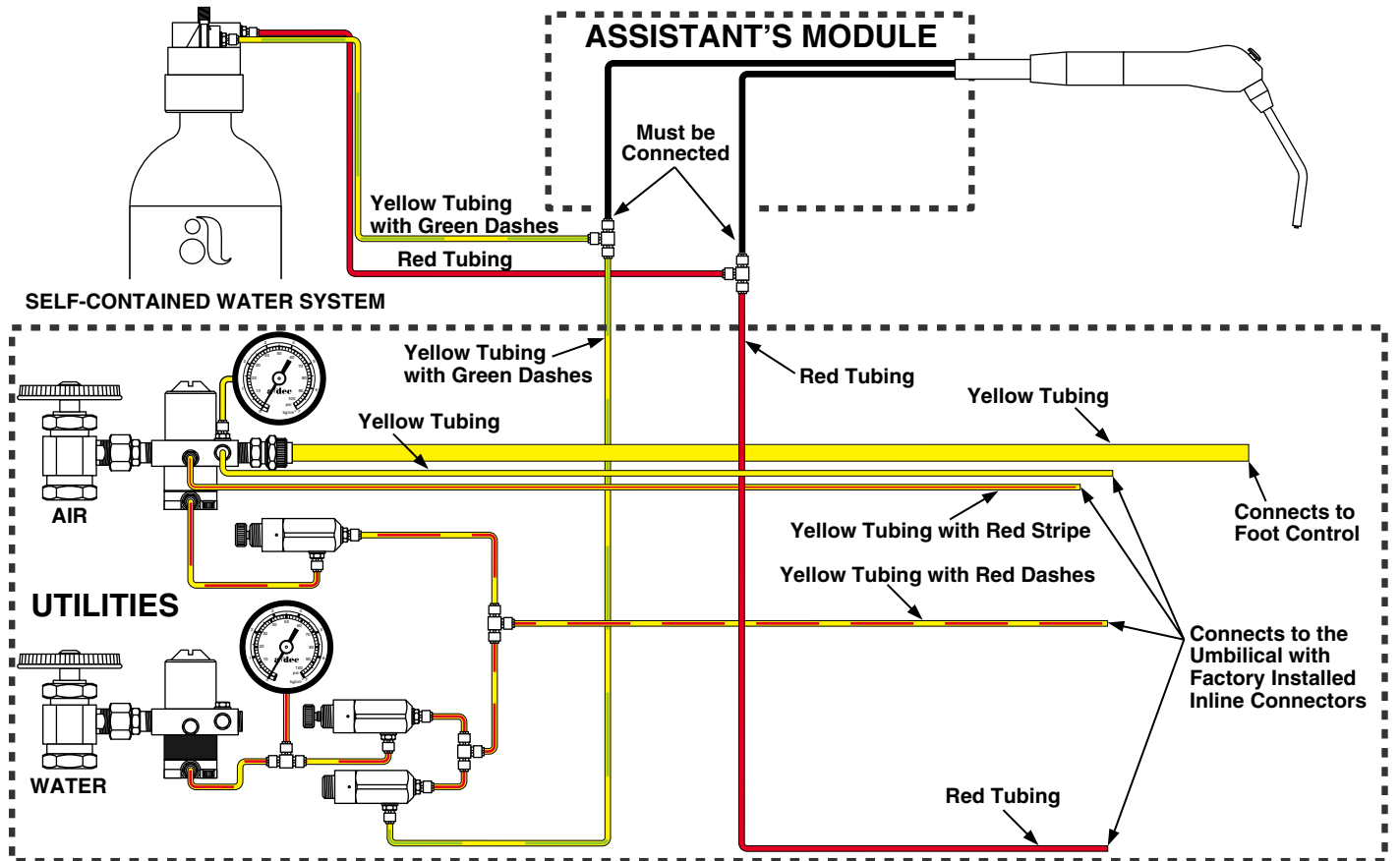


FIGURE 22



# DUO ASSISTANT'S INSTRUMENTATION WITH SELF-CONTAINED WATER SYSTEM AND LOW VOLTAGE WATER HEATER/HEATED SYRINGE TUBING

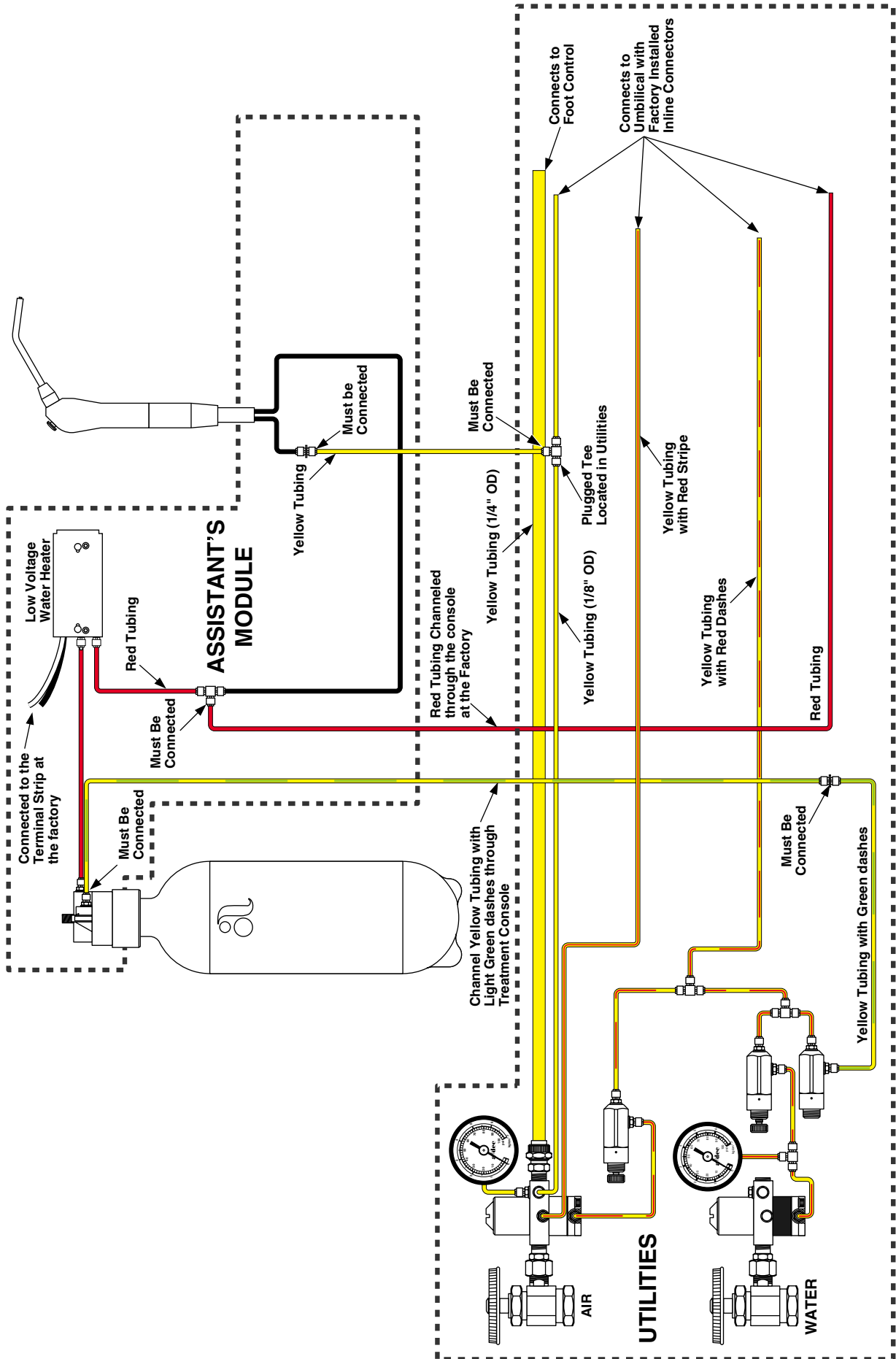


FIGURE 23

# DUO ASSISTANT'S INSTRUMENTATION WITH SELF-CONTAINED WATER SYSTEM

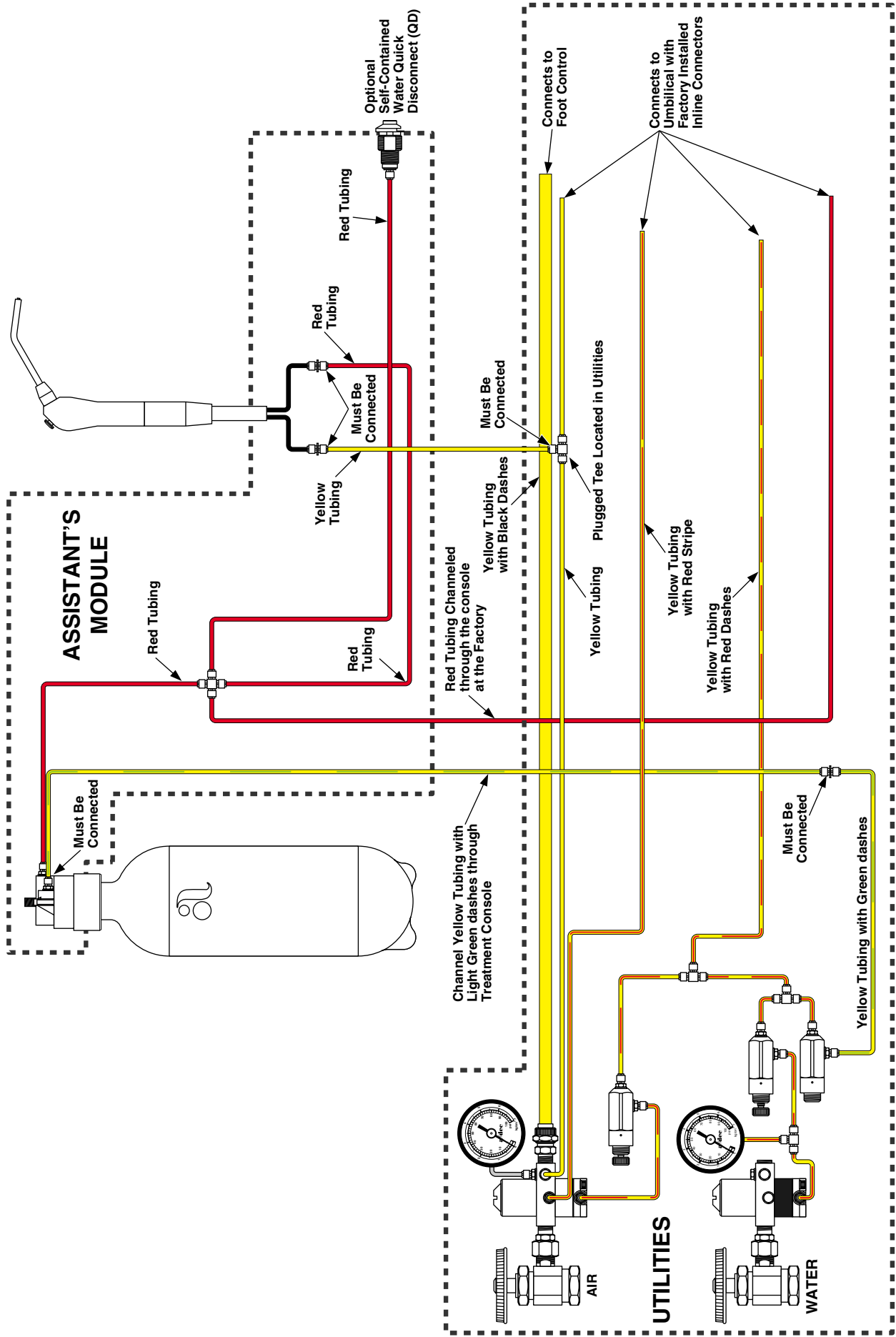


FIGURE 24

# DUO ASSISTANT'S INSTRUMENTATION WITH CITY WATER QUICK-DISCONNECT

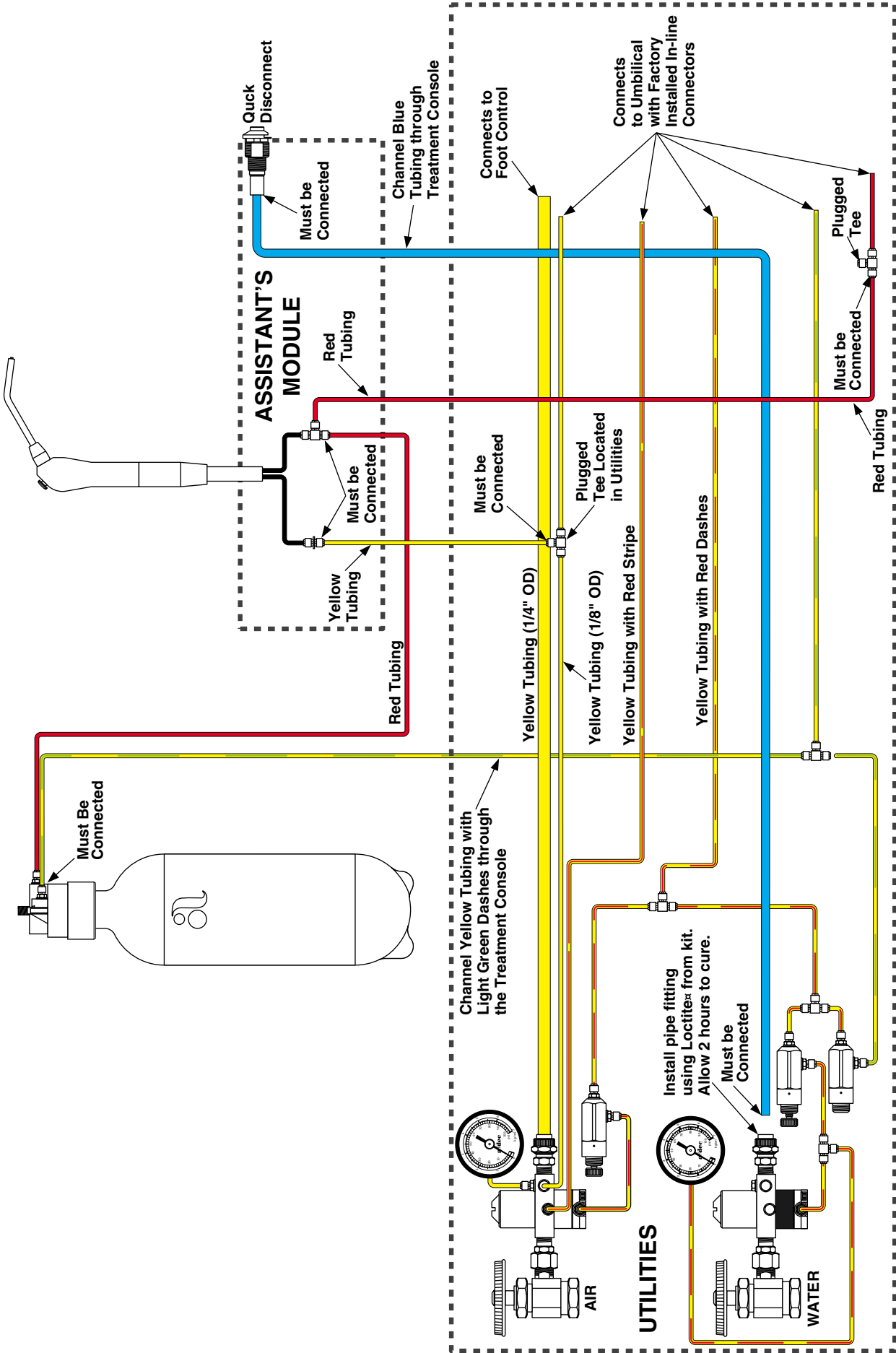


FIGURE 25

# DUO ASSISTANT'S INSTRUMENTATION WITH AIR QUICK-DISCONNECT

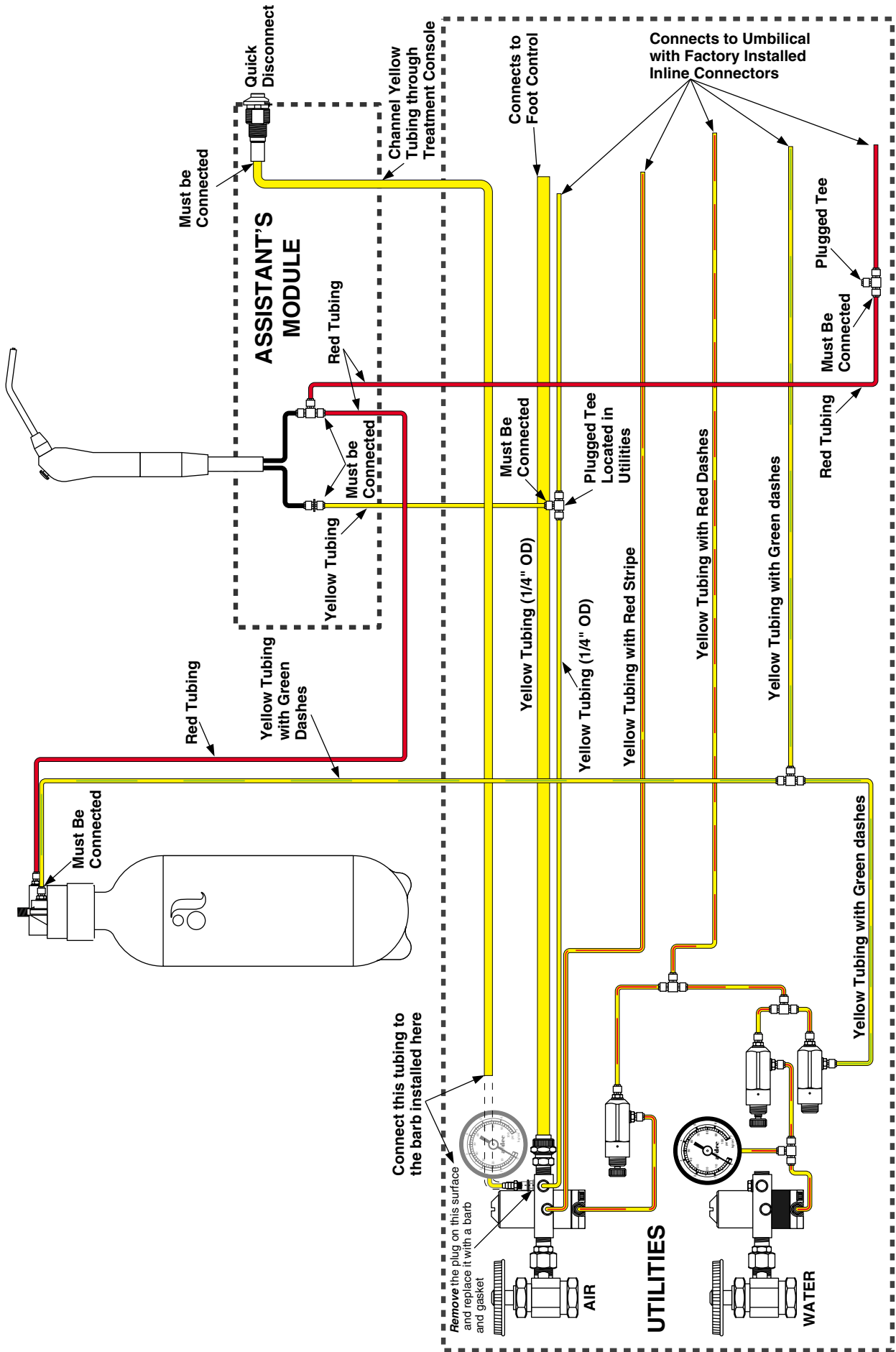
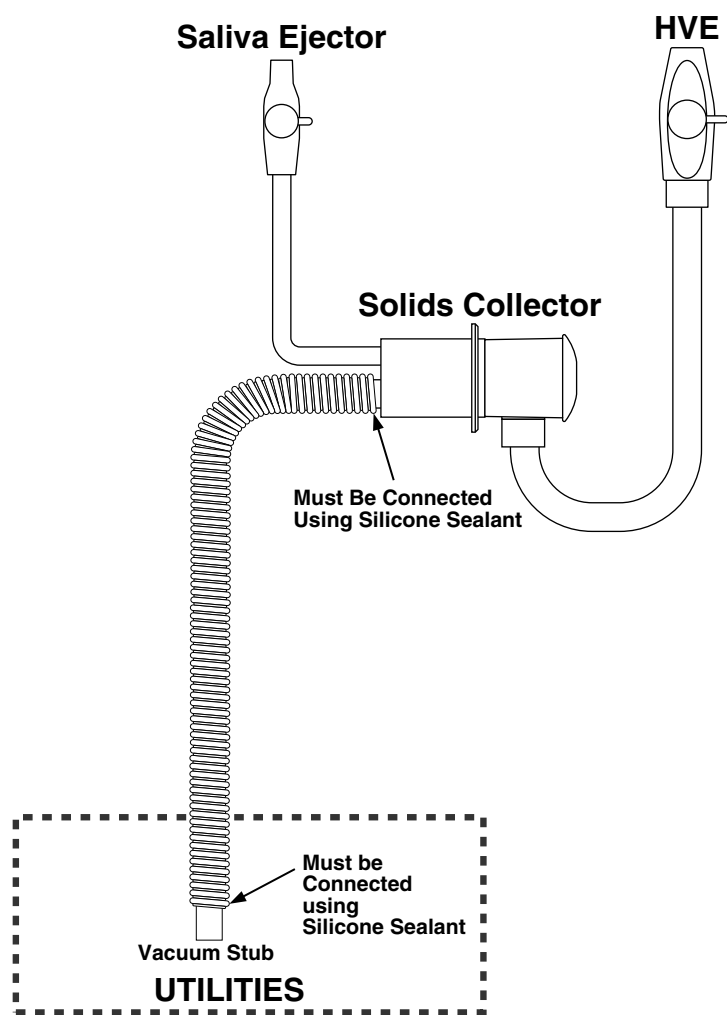


FIGURE 26

# DUO ASSISTANT'S VACUUM INSTRUMENTATION

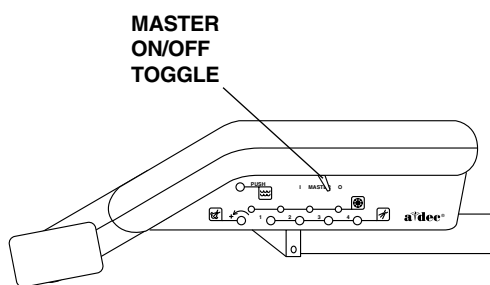


**FIGURE 27**

## TEST THE UNIT

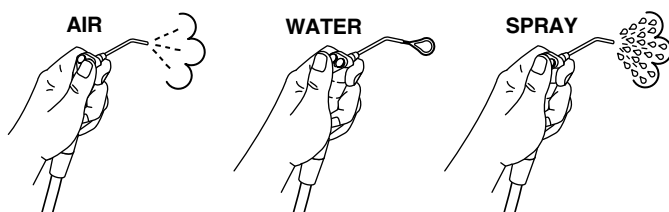
**If the unit does not have a Self-contained Water System, go to step 3.**

1. Fill the self-contained water bottle with water specified by the dental team.
2. Align the bottle with the self-contained water supply cap, making sure the clear tubing (1/4" OD) extends straight down into the water bottle. Screw the water bottle onto the cap until it is snug.
3. Fully open the manual air and water shutoff valves.
4. Move the master on/off toggle (located on the control head) to the ON position (see Figure 28).



**FIGURE 28**

5. Check for air and water leaks while operating the syringe (see Figure 29).
  - Air — Press the right button down.
  - Water — Press the left button down.
  - Spray — Press both buttons down.



**FIGURE 29**

6. Check for vacuum leaks while operating the HVE. To operate the HVE, simply turn the control valve.
7. Check the system pressure gauges in the floor box. Air pressure should be 70–80 psi (483–552 kPa). If applicable, water pressure should be 35–40 psi (241–276 kPa). If an adjustment is necessary, refer to the **Floor Box Owner's Guide** (A-dec Publication No. 85.2611.00).
8. If an optional power supply is installed, plug it in.
9. Test all optional electrical accessories. Refer to each electrical accessory **Owner's Guide** for testing and adjustment procedures.

## ASSISTANT'S SYRINGE FLOW ADJUSTMENT

1. Remove the assistant's instrumentation housing cover and locate the dual pinch valve.
2. Determine which pinch valve knob controls the air flow and which controls the water flow.
3. Adjust air and water flow by turning the knob on the pinch valve clockwise to reduce flow, counterclockwise to increase flow.
4. Retest the syringe for air and water flow.

## BEFORE LEAVING THE FACILITY

1. Replace all covers and doors.
2. Install the console umbilical cover. The top of the cover fits on the two pins on either side of the umbilical opening.
3. Distribute and review the **Owner's Guide**. Instruct the dental team in the operation and maintenance of the equipment.



