Bellagio Dental Delivery Unit

Bellagio Installation Instructions

5000 / 5015

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Table of Contents

Parts List is available online (Parts List)

Unpacking and Inventory

Each Mirage delivery unit will contain the following items in each box:

1. Flex Arm Box (largest box)

- Delivery unit flex arm
- Assistance arm
- Light post
- Skid pad
- Cosmetic beauty ring

2. Post Mount Utility Center

- Utility center
- Master controls attached to the umbilical for air and water
- Wet dry foot control
- HEV/SE valves with tubing
- Water bottle (1000 ml)

3. Optional 2000-C Cuspidor

- Cuspidor
- Bowl rinse spout
- Cuspidor bowl strainer

3.1 Built-In Options

- Built-In LED Curing Light
- Built-in Piezo Scaler
- Integrated Controls

4. Separate Junction Box (for use with chairs that don't have an integrated pump cover/junction box)

- Junction box cover
- Junction box frame

J Box Template for Non TPC chairs. (Here)

J Box Template for TPC chairs. (Here)

Need Help? If at any time you have questions regarding your installation, please don't hesitate to contact TPC toll-free at 800-560-8222 or via email at service@tpcdental.com

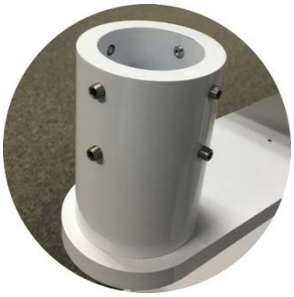
Installation Instructions

• Mount the utility center onto the 2" chair adaptor cup**.**

• Check for level in all directions (front-to-back and side-to-side) to ensure the utility center is not tilted.

• Once level, secure the set screws on the adaptor cup.

• Confirm alignment: The utility center should be parallel with the chair armrest — this ensures functionality and comfort.



• Insert the Light Post:

- Place the light post into the center opening on the top of the utility center**.**
- Make sure the machined side is facing down (this ensures a proper fit and secure mounting).

• Tighten the Set Screws:

- Locate the two light post set screws on the side of the utility center**.**
- Tighten both set screws, one on each side, to secure the light post in place.



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Install the Trim Piece First

- Before anything else, slide the trim piece into position.
- This piece must be in place before the arm is mounted.

Route the Tubing

- First, pass the tubing through the support post.
- Then, continue routing the tubing out of the mounting hub and into the utility center.
- Make sure the tubing is not pinched or twisted during this step.

Mount the Unit Arm

- Slide the unit arm down onto the mounting hub.
- Once in place, verify the arm is secure — it should not wobble or lift off easily.

Double-Check:

- Tubing is free and properly routed.
- The trim piece is correctly positioned.
- The arm is stable and secure after mounting.

Route the Wet/Dry Foot Control Tubing

Run the Tubing into the Side Box

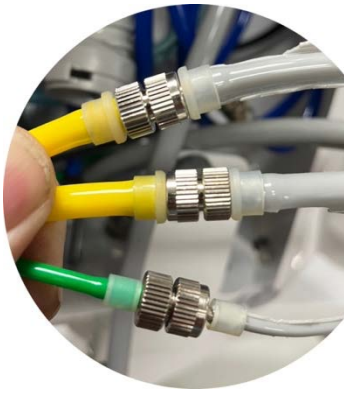
Make sure each tube is correctly identified and routed according to its function:

Tubing Connections and Functions:

1. **Yellow / Grey Tubing (First)**
   - Yellow Line:
     → Supply the foot control from the 2” umbilical
     → Source: J-Box
     → Destination: Foot control inlet port
2. **Yellow / Grey Tubing (Second)**
   - Yellow Line:
     → Supply FROM the foot control
     → Destination: Main Block flex arm

     Even though both sets are Yellow/Grey, track them carefully based on their direction and function. They are keyed to connect in only one direction. If the tubing is reversed, air will be purged out of the foot control disc.

3. **Green / Grey Tubing**
   - Green Line:
     → Signal air to the water relay in the unit head
     → Used to control the water on / off function from the foot control



Connect Tubing (Final Tubing Connections)

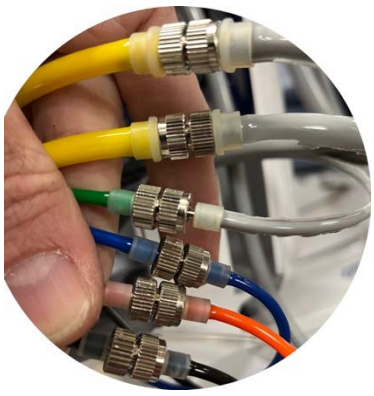
Connect the following color-coded tubing exactly as shown in your diagram, paying close attention to the tubing colors and their functions:

Tubing Connections and Their Functions:

1. Blue / Blue Tubing
    - Blue Line:
      → Water supply from the side box routing valve to the unit head
      → Carries operational water used at the handpiece or utility head

2. Orange / Orange Tubing
    - Orange Line:
      → Signal air return from the master switch
      → This returns the air signal once the master switch is released/off

3. Black / Black Tubing
    - Black Line:
      → Signal air supply to the master switch
      → Delivers the air signal to activate the master switch



* A complete plumbing schematic is at the end of this manual*

Connect & Configure Master Controls

- Before connecting the master controls, purge both air and water supply lines to remove:
  - Debris
  - Dust
  - Any contaminants that could damage valves or clog filters
- You can do this by briefly turning on the supply to flush out each line into a container or drain.

Connect to the Junction Box

- Connect the air and water master controls to a suitable angle stop (usually found inside the junction box).
- Ensure secure, leak-free connections.

Micron Filter

- Note: A replaceable micron filter is located inside the pilot valve body.
  - This filters fine particles from the air line, protecting sensitive components.
  - Replace this filter periodically as part of regular maintenance.

Set Regulator Pressures

- **Air Master Regulator**:
  → Set to 80 PSI
- **Water Master Regulator**:
  → Set to 40 PSI

🔧 To Adjust the Regulators:

1. Loosen the lock nut on the mini regulator.
2. Turn the adjustment knob:
   - Clockwise = Increase pressure
   - Counter-clockwise = Decrease pressure
3. Once the desired pressure is reached:
   - Tighten the lock nut to secure the setting.

Set the Water Bottle Pressure

🔧 **Procedure:**

Open the Side Utility Center Panel

- Locate the mini regulator that controls pressure to the water bottle.

Adjust the Mini Regulator

- Turn the adjustment knob to set the pressure:
  - Set to 35 PSI
  - ⚠️ Do not exceed 40 PSI — exceeding this may cause leaks or damage the bottle.

Secure the Setting

- If the regulator has a lock nut, tighten it after adjustment to prevent unintentional pressure changes.

Low Voltage Power Terminal Setup (PMU)

Power Connection Overview:

- The Side Utility Center includes a low-voltage power terminal strip designed for:
  - Powering the unit head
  - Supporting 24VAC low-voltage devices
  - Controlling operatory lights (e.g., LED)

Connect the 24VAC Power Supply

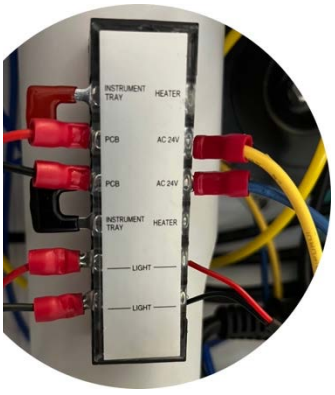
- Locate the low-voltage terminal strip inside the utility center.
- Connect your unit's 24VAC power leads to the terminal.
- This powers the unit head and any attached low-voltage accessories.

Light Port Function

- The light port on the low-voltage power terminal allows on/off control of an LED operatory light.
- This enables remote control of the light.

Touchpad Requirement (TP2005)

- To control the light remotely, a TP2005 Touchpad is required.
  - This touchpad sends signals through the light port to toggle the light on/off.
  - Must be wired correctly into the low-voltage circuit.



Install and connect the Touchpad Harness

Route the Touchpad Harness

- Begin at the flex arm (where the touchpad is mounted or located).
- Route the harness around the unit support post:
- Ensure a clean path with no pinching, pulling, or twisting.
- Use cable clips or ties as needed to keep the harness secure and organized.

Connect to the Main PCB

- Locate the main PCB (Printed Circuit Board) inside the utility center or control housing.
- Connect the touchpad harness securely to its designated port on the PCB.
- This connection allows the TP2005 touchpad to control functions like LED light ON/OFF, and other programmable features depending on the chair it's installed on.

Final Touchpad Harness Connection (Chair Integration)

Locate the Touchpad Harness in the Umbilical

- Identify the touchpad harness that runs through the unit umbilical — this connects the dental unit to the chair base.
- Some touchpad harnesses are pre-installed in the dental chair. In this case, run the harness directly to the PCB board on the delivery unit.

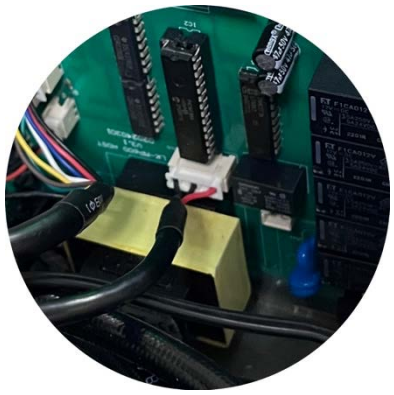
Connect to the Chair Pump Cover PCB

- Open the pump cover housing on the chair — this applies to:
  - Mirage 1.0
  - Mirage 2.0
  - Laguna 2.0
- Inside the pump cover, locate the chair's main PCB.

Connect the Harness to the PCB

- Plug the touchpad harness into the designated port on the chair's main PCB.
- This connection links the chair PCB to the unit PCB, enabling:
  - Touchpad control of chair functions
  - Remote activation of LED lights and other features (depending on model and configuration)

Laguna 2.0



Bellagio Unit Power Mirage 2.0

Pressure Switch & Low-Voltage Power Control on Mirage 2.0

Function of the Pressure Switch:

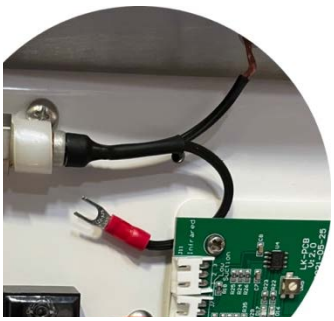
- The pressure switch in the Mirage 2.0 delivery system acts as a safety/control device for the low-voltage power supply.
- When the master air is OFF:
    - The pressure switch disables the low-voltage power.
    - This means the system cannot power on certain low-voltage devices in the unit head or operatory lights.

Bypassing the Pressure Switch:

- If you do not want this automatic power disable feature (for example, if you want low-voltage power available regardless of air supply), you can bypass the pressure switch.
- Bypassing involves wiring around the switch so that low-voltage power is always on, regardless of the air pressure state.

Refer to the Image for Wiring:

- The image shows how to jumper or reroute wiring to bypass the pressure switch.
- Always ensure safety and code compliance when bypassing safety features.
- Consult the manufacturer or a qualified technician if unsure.



TPC

Adjusting the Flex Arm Tension

Tension Set Screws:

- There are three tension set screws located on the delivery unit flex arm.
- These screws control the drag (resistance) at the arm's pivot points.

🛠️ Adjustment Procedure:

1. **Check the Unit Level**
   - Confirm the delivery unit is properly leveled first.
   - If the unit is level but still drifts or moves unintentionally, proceed to adjust tension.
2. **Adjust the Tension Set Screws**
   - Turn each set screw slightly to increase or decrease drag on the pivot.
   - Turn clockwise to tighten (increase drag)
   - Turn counterclockwise to loosen (decrease drag)
3. **Avoid Over-Tightening**
   - Do not over-tighten these screws — excessive force can:
     - Damage the arm mechanism
     - Cause stiffness or binding
4. **Test After Adjustment**
   - Move the arm through its range of motion.
   - Check if it holds position without drifting.
5. **If Drift Persists**
   - Re-check and re-level the delivery unit utility center — tension adjustment alone won't fix a leveling issue.

✅ Final Tip:

- Adjust small increments at a time to find the right balance between smooth movement and holding position.

Unit Arm

Unit Head

Spring Arm

Adjusting the Level of the Instrument Head

Adjustment Procedure:

1. **Loosen the 4 Allen Bolts**
   - Locate the **four Allen bolts** securing the instrument head.
   - Use the appropriate Allen wrench to **loosen** these bolts just enough to allow movement.
2. **Adjust the Smaller Allen Set Screws**
   - Find the **smaller Allen set screws** designed for fine adjustment.
   - Turn these screws to **level the instrument head**:
     - Turning one side up or down will tilt the head accordingly.
   - Adjust until the instrument head is perfectly level.
3. **Secure the 4 Allen Bolts**
   - Once level, **tighten the 4 Allen bolts** firmly to lock the instrument head in place.
   - Avoid over-tightening to prevent stripping bolts or damaging components.

Tips:

- Make small adjustments and check the level frequently.
- Use a spirit level or a digital level app for accuracy.
- Ensure no cables or tubing interfere with the adjustment.

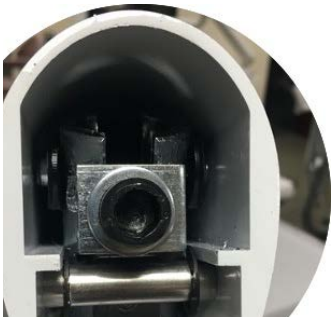
Adjusting Spring Arm Tension Inside the Flex Arm

Procedure:

1. **Remove the Back-End Cap**
   - Carefully remove the back-end cap of the flex arm to expose the spring tension adjustment area.
   - Keep the cap and any fasteners safe for reassembly.
2. **Adjust the Spring Tension Allen Bolt**
   - Locate the Allen bolt inside the flex arm spring assembly.
   - Turn the bolt:
     - Clockwise to increase tension (makes the arm stiffer)
     - Counterclockwise to decrease tension (makes the arm easier to move)
3. **Find the Ideal Tension**
   - The goal is a floating, level arm when the delivery unit master switch is OFF.
   - This means the arm should hold position without drifting but also move smoothly when adjusted.
4. **Reinstall the Back-End Cap**
   - Once the tension is set, replace the back-end cap securely.

Tips:

- Make small incremental turns to avoid over-tensioning.
- Test arm movement frequently during adjustment.
- If unsure, contact the manufacturer for specs of the tension range.



Optional Cuspidor Installation (2000-C-2.0)

Steps to Install the Cuspidor:

1. Remove the Cuspidor Housing Cover
    - Locate the cuspidor housing cover on the unit.
    - Remove the cover carefully to access the mounting area.
2. Loosen the Locking Screw
    - Find and loosen the locking screw that secures the mounting hub or cuspidor assembly.
3. Route the Tubing
    - Guide the necessary tubing through the mounting hub.
    - Ensure tubing is not kinked or pinched during routing.
4. Slide the Cuspidor into Place
    - Slide the cuspidor assembly firmly into the mounting hub.
    - Make sure it seats properly and aligns with the housing.
5. Tighten the Fastening Screw
    - Secure the cuspidor by tightening the fastening screw.
    - Check the cuspidor for stability and proper alignment.

Tips:

- Double-check tubing connections to avoid leaks.
- Make sure the cuspidor drain is properly connected and sealed.
- Test the cuspidor function after installation.

Installing Cuspidor Components

1. Insert the Bowl into the Cuspidor
    - Take the cuspidor bowl and place it firmly into the cuspidor housing.
    - Ensure it sits properly and securely (see Figure 16.1).
2. Install the Cuspidor Strainer
    - Place the cuspidor strainer inside the bowl opening.
    - Make sure it fits snugly to catch debris and prevent clogging (see Figure 16.2).
3. Install the Bowl Rinse Spout
    - Align the bowl rinse spout with its designated slot or hole on the cuspidor.
    - Press the spout firmly into place until securely seated (see Figure 16.3).

Tips:

- Confirm all components are properly seated to prevent leaks or misalignment.
- Check the rinse spout for firm attachment—loose spouts may cause water spray issues.
- After assembly, test the rinse function to ensure proper water flow.

16.2

Connecting Cuspidor Power

1. **Route the Cuspidor Power Harness**
   - Guide the **cuspidor power harness** to the **backside of the PMU** (Power Management Unit).
   - Refer to **Figure 17.1** for the exact routing path.
2. **Connect to the Main PCB**
   - Connect the power harness plug into the **designated port on the main PCB**.
   - See **Figure 17.2** for the PCB location and connector details.
   - Ensure the connector is fully seated and secure.
3. **Replace the Side Cover**
   - Once the connection is complete, **replace the side cover** to close the access panel.
   - Check **Figure 17.3** for proper cover placement.

Optional: Deactivating the Motion Sensor

- If you **do not want the cup fill to activate automatically** via the motion sensor:
  - **Do NOT connect the wire** shown in Figure 17.2 (the motion sensor connection).
  - Instead, **activate cup fill manually** using the **button on either touchpad control**.

Tips:

- Double-check all connectors before closing the cover.
- Test both automatic (motion sensor) and manual cup fill functions after installation.
- Keep wiring neat to avoid interference or damage.

Figure 17.2

Cuspidor Plumbing Connections

Connecting Drain and Vent Lines

1. **Prepare the Drain and Vent Lines**
   - Measure and cut the drain and vent lines to the correct length so they can reach the Y connector fittings without tension.
2. **Connect Lines to Y Connector Fittings**
   - Insert both the drain line and vent line into the quick-connect fittings on the Y connector.
   - Refer to Figure 18.1 for the location of the Y connector.
   - Figure 18.2 shows how to install the tubing securely into the quick-connect fittings.
3. **Ensure Proper Routing**
   - Make sure both lines are routed without kinks, bends, or binding to allow free flow of drainage and venting.
   - Proper tubing routing prevents blockages or backflow.

Tips:

- Use a sharp tubing cutter to ensure clean cuts for proper sealing.
- After installation, check for leaks by running water through the cuspidor system.
- Secure tubing with clips or ties as needed to maintain routing and prevent accidental disconnection.

ure 18.2

Connecting Water Lines

1. **Identify the Water Lines and Solenoids**
    - Two water lines are coming from the cuspidor:
        - **Clear water line**
        - **Blue water line**
2. **Locate the Water Solenoids**
    - Inside the post-mounted utility center, find the two water solenoids.
    - Refer to Figure 19.1 for their exact location.
3. **Prepare Tubing**
    - **Cut the tubing to the correct length before connecting to ensure a neat and secure fit.**
4. **Connect Water Lines to Solenoids**
    - Connect the clear water line to the solenoid on the left.
    - Connect the blue water line to the solenoid on the right.
5. **Secure Connections**
    - Ensure tubing is fully seated into the solenoid fittings to prevent leaks.
    - Avoid kinks or bends in the tubing that could restrict water flow.

Tips:

- Use tubing cutters for clean, straight cuts.
- After installation, test for water flow and leaks.
- Label tubing if necessary to avoid confusion during maintenance.

Adjusting Water Flow

1. **Locate the Adjustment Knobs**
   - Find the **water solenoids** inside the post-mounted utility center.
   - Each solenoid has an **adjustment knob** for regulating water flow.
2. **Adjust Water Flow**
   - Turn the knob clockwise **to** decrease **water flow.**
   - Turn the knob counterclockwise **to** increase **water flow.**
3. **Test and Fine-Tune**
   - Run water through the cup fill, and bowl rinse to check flow rates.
   - Adjust gradually to reach the desired flow.

Tips:

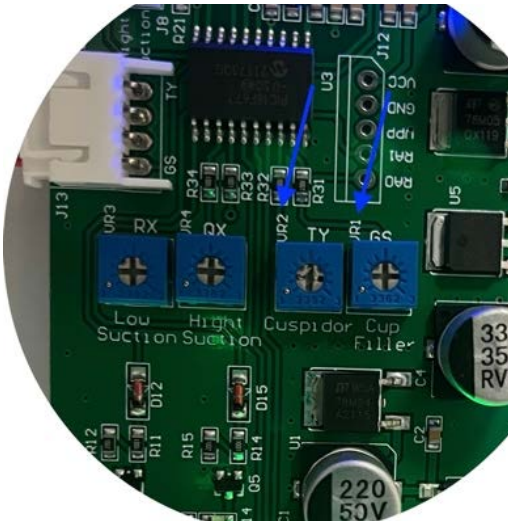
- Make small adjustments to avoid over- or under-flow.
- Monitor for consistent water delivery during use.

Adjusting Water Timing

1. **Locate the Timing Controls**
   - On the patient side of the PMU box main PCB board, find the two variable resistors (potentiometers):
     - VR2 — Controls Bowl Rinse Timing
     - VR1 — Controls Cup Fill Timing
2. **Adjust the Timing Settings**
   - To increase the time**,** turn the corresponding VR clockwise**.**
   - To decrease the time**,** turn the VR counterclockwise**.**
3. **Timing Limits**
   - **Max Bowl Rinse Time:** 20 seconds
   - **Max Cup Fill Time:** 10 seconds
4. **Test After Adjustment**
   - Activate bowl rinse and cup fill functions to verify the new timing settings.
   - Fine-tune adjustments as needed.

Tips:

- Use a small screwdriver to turn the VR knobs gently.
- Mark the original settings before adjustment to revert if necessary.
- Avoid forcing the potentiometers beyond their physical limits.



Junction Box Connections

Clearing Supply Lines

Before making any connections in the junction box, be sure to purge the supply lines. If there is any debris in the air line, it will collect on the micron filter. Verify the line is clear.

Connecting Master Controls

- Air master control - Identified by the large yellow tubing that exits the back end of the master control valve
- Water master control - Identified by the large blue line that exits the back of the master control valve

Setting Pressures

Once the connections are made, you may open the angle stops or equivalent shut-off valve. Once the valve is open, you may check the master control gauges and verify that the pressures are set accordingly: The master on / off switch must be turned to the on position.

- **Air pressure** should read approximately 80 PSI
- **Water pressure** should read 40 PSI

Step 24: Final Adjustments

Once air and water pressure are set, you may now adjust the syringe blocks if necessary. Also, check your handpiece pressure and adjust accordingly.

Post Mount Utility Center Adjustments (PMU)

Main Adjustments

Two main adjustments can be made in the PMU:

Assistant's Side Syringe Block Adjustments:

- Turning the screw counterclockwise will increase the air/water pressure
- Turning the screw clockwise will decrease the air/water pressure

Water Bottle Pressure Adjustments:

- Loosen the lock nut, then turn the knob counterclockwise to decrease the air pressure
- Turn the knob clockwise to increase pressure
- **Do not allow more than 40 PSI of air pressure to supply the bottle**

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Tension Adjustments

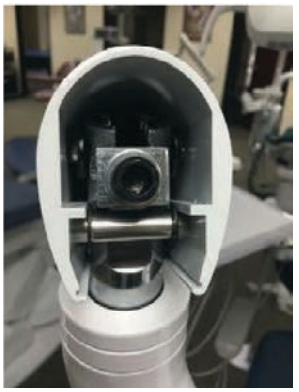
Flex Arm Tension

In a situation where you need to add tension to the delivery unit flex arms, please see the following locations.

Note: Tension adjustments are only a temporary fix for drifting arms. If your arms are drifting, first verify the PMU is level. Check the light post to verify it's plumb. If the light post is not level, make the proper adjustments by re-leveling the unit.

Tension Spring Adjustment

If you need to adjust the tension spring in the flex arm, follow the procedure below:



- Remove the flex arm cap cover
- Use an 8 mm Allen wrench on the adjustment bolt
- Turn clockwise to increase the tension
- Turn counterclockwise to decrease tension
- **Only adjust in half-turn increments**

Delivery Head Leveling Adjustments

If you need to level the unit head or adjust the tilt, use the following adjustments:

Leveling the Unit Head:

- Loosen the 4 Allen screws that attach the unit head to the short control arm (see image)
- Once the screws are loose, use the 4 adjustment screws in the center on each side to level the head and front to back and side to side.

Adjusting the Unit Head Tilt:

Operation Instructions

Master Controls ON/OFF Toggle

- The master control toggle switches the master pilot valves located inside **the** junction box between the ON and OFF positions.
- When toggled ON**,** the pilot valves allow air and water flow to the delivery unit systems.
- When toggled OFF**,** the pilot valves shut off supply lines, disabling system functions for safety or maintenance.

Operating the Brake System Release

1. Press and Hold the Button
    - Press and hold the brake release button to release air pressure in the brake system.
    - This will allow you to freely move or adjust the arm.
2. Adjust the Arm Position
    - While holding the button, move the arm to the desired position**.**
3. Release the Button to Lock
    - Once the arm is positioned correctly, release the button**.**
    - The air pressure will re-engage, and the arm will **lock securely** in place.

Adjusting the Air Coolant Spray Pattern

1. **Ensure the Air Coolant Valve is Open**
   - Make sure **the** air coolant valve is open to allow airflow.
2. **Activate the High-Speed Handpiece**
   - Run **the** high-speed handpiece with the water turned on**.**
3. **Observe the Spray Pattern**
   - You should see a spray pattern of air and water cooling the handpiece.
4. **Adjust the Valve**
   - Open the air coolant valve more to increase the spray intensity.
   - Close the valve partially to decrease the spray.

Flush Valve Operation

1. **Toggle the Flush Valve**
   - Press or toggle the flush valve button to **flush water through all three handpiece tubing** at the same time.
2. **Catch the Water**
   - Place all handpiece tubing ends into a **capture basin** or suitable container to collect the flushed water.
3. **Stop Flushing**
   - **Release the button** to stop the water flow through the handpieces.

✅ Tips:

- Use this flushing process to clear debris or stagnant water from handpiece lines.
- Regular flushing helps maintain hygiene and equipment performance.

Filling and securing the water bottle

1. **Use Only Distilled Water**
    - Fill the bottle only with *distilled water* to prevent mineral buildup and ensure equipment longevity.
2. **Fill the Bottle**
    - Fill the bottle to the recommended level.
3. **Secure the Bottle to the Cap**
    - Turn the bottle **clockwise** to screw it onto the bottle cap securely.
    - **Do not over-tighten**, as this can damage the bottle cap threads or gasket.

✅ Tips:

- Check the gasket regularly for wear or damage. Replace if worn or damaged.
- Proper sealing prevents leaks and maintains system pressure.

Activating Bottle Pressure

Function:

- Activates the pressure supply to the bottled water system, allowing water to flow from the bottle.

Operation:

1. **Turn ON** – Enables water flow by pressurizing the bottle.
2. **Turn OFF** – Releases (purges) excess pressure through the toggle to safely depressurize the bottle before removal.
3. **Before Turning ON:**
    - Ensure the bottle is properly installed.
    - Confirm the pressure regulator is correctly set.

Selecting the Water Source

- Choose between **City Water** or **Bottled Water** as the water supply source.
- Ensure the selector valve or switch is set to the desired source before operating the system.

Tips:

- Use **bottled water** when city water quality is uncertain or as recommended.
- Confirm the correct setting during setup and maintenance.

Adjusting Water Flow to Handpiece Tubing

- Each **handpiece** has its own **water adjustment knob**.
- To **decrease water flow**, turn the knob **clockwise**.
- To **increase water flow**, turn the knob **counterclockwise**.

Tips:

- Adjust flow gradually for optimal cooling and patient comfort.
- Check each handpiece separately to ensure proper water delivery.

Adjusting Handpiece Drive Air Pressure

1. **Loosen the Stop Nut**
   - Before adjusting, **loosen the stop (lock) nut** on the adjustment knob to allow movement.
2. **Adjust the Drive Air Pressure**
   - Turn the **HP adjustment knob counterclockwise** to **increase** the drive air pressure.
   - Turn the knob **clockwise** to **decrease** the drive air pressure.
3. **Secure the Lock Nut**
   - After achieving the desired pressure, **tighten the stop nut** to lock the adjustment knob in place.

Handpiece Pressure Gauge

- The **HP (Handpiece) pressure gauge** is located on the **lower left side** of the instrument head.
- To get a **pressure reading**, both the **foot control** must be engaged, and an **active handpiece** must be in use.
- Without these, the gauge will not display the pressure.

Tips:

- Use the gauge to monitor and adjust handpiece drive air pressure for optimal performance.
- Ensure the foot control and handpiece are functioning properly to get accurate readings.

Handpiece Exhaust Particulate Collector

- This component **collects all exhausted particulates** coming from the **handpiece tubing exhaust line**.

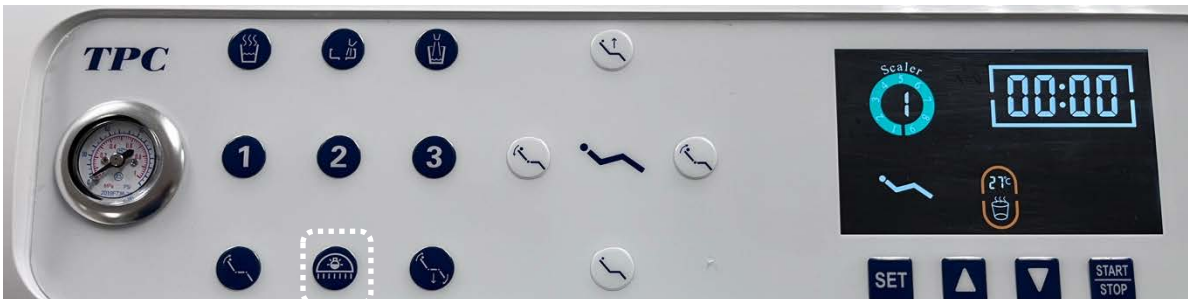
It helps maintain cleanliness and prevents debris from contaminating the surrounding area or equipment.

Operating the Operatory Light

1. **Activate Light Using Touchpad**
   - Press the **light button** on the touchpad to turn the operatory light **ON** or **OFF**.
2. **Initial Toggle Switch (If needed)**
   - In some setups, you must first **toggle the main light switch ON** before the touchpad can control the LED operatory light.

Tips:

- Confirm the main light switch position if the touchpad light button doesn't respond.
- Use the touchpad for convenient remote light control during procedures.



Delivery Unit Head Timer Adjustments:

Start / Stop

- Press **START/STOP** to begin or stop the countdown.

Set Timer

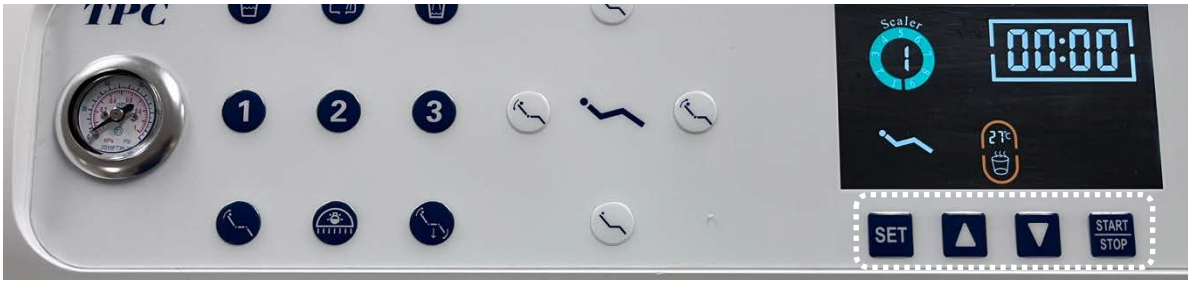
1. Press and hold **SET** to enter time-setting mode.
2. The **seconds** digits will flash.
3. Use **UP** / **DOWN** to adjust the value.
4. Press **SET** to move to the next segment (minutes → hours).
5. Press and hold **SET** again to confirm and lock in your settings.

Reset Timer

- Press **SET** once to reset the timer to the default.

Stop Countdown

- Press **START/STOP** to pause or stop the countdown at any time.



Scaler Intensity Adjustment

The scaler intensity setting is displayed on the scaler indicator located on the delivery unit. To modify the intensity, rotate the adjustment knob positioned at the bottom of the delivery unit head. Turning the knob clockwise increases the intensity level, while turning it counterclockwise decreases the intensity. The updated setting will be reflected on the scaler indicator in real time as 1-9.

Piezo Scaler Frequency Adjustment Knob

Touchpad Chair Controls

Base Down
Press and hold the **Base Down** switch to lower the chair base to the desired height.

Base Up
Press and hold the **Base Up** switch to raise the chair base to the desired height.

Back Down
Press and hold the **Back Down** switch to lower the chair backrest to the desired position.

Back Up
Press and hold the **Back Up** switch to raise the chair backrest to the desired position.

Preset Positions 1, 2, 3

The chair can be positioned using the **Preset 1, 2, or 3** buttons.

To recall a preset position:
Press the desired preset button to automatically move the chair to the programmed position.

To program a preset position:

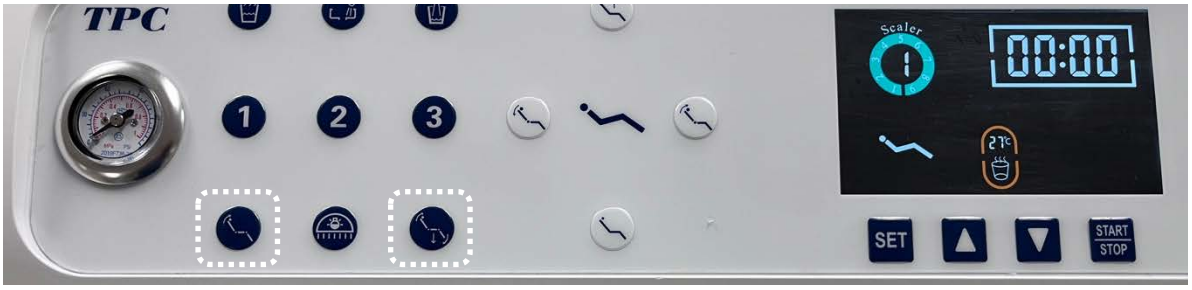
1. Manually adjust the chair to the desired position.
2. Press and hold the preset button you wish to program.
3. Upon initial press, a single beep will sound.
4. Continue holding the button; after approximately 5 seconds, a second beep will confirm that the position has been successfully programmed.

Backrest Last Position

Press the **Backrest Last Position** button to move the chair backrest to the last position it was in.

Auto Return

The **Auto Return** function moves the chair to a pre-programmed exit position. Press this button to simultaneously lower the chair base and raise the backrest, positioning the chair for patient exit.



Activating Bowl Rinse and Cup Fill (Touchpad)

- **Press the bowl rinse button** to start the **bowl rinse** function.
- **Press the cup fill button** to start the **cup fill** function.

Tips:

- Ensure the water supply is active before pressing the buttons.
- Use these controls to provide water flow as needed during patient treatment.

Operating Foot Control and Wet/Dry Switch

1. **Activate Air Pressure**
   - **Press down on the foot control disc** to supply **air pressure to the main block**.
   - This engages the air drive for the handpiece.
2. **Turn On the Water Supply**
   - Toggle the **wet/dry switch to the right** to **turn on the water supply** to the handpiece tubing.
   - This enables water flow for cooling and irrigation.

Water Quick Connect Location

- For **standard units**, the **water quick connect** is located on the **bottom of the side utility center**, next to the **2" unit umbilical**.
- For **swing mount units**, this quick connect is found **under the rear swing mount 4-position suction holder**.

Tips:

- Use the quick connect for easy water line attachment or detachment during installation or maintenance.
- Check both locations based on your unit type to locate the quick connect.

Activating Cup Fill and Bowl Rinse

- **Press the blue button** to **activate the cup fill** function.
- **Press the green button** to **activate the bowl rinse** function.

Tips:

- Use these buttons to manually control water flow for patient convenience and hygiene.
- Make sure the water supply is turned on before activating these functions.

Cuspidor Water Flow Adjustment Valves

- Located in the **side utility center**, there are two water flow adjustment knobs for the cuspidor:
  - **Left knob:** Controls the **cuspidor cup fill flow**
  - **Right knob:** Controls the **cuspidor bowl rinse flow**

Tips:

- Turn knobs clockwise to decrease flow and counterclockwise to increase flow.

Adjusting Bowl Rinse and Cup Fill Timing

- Located on the **patient side of the PMU box Main PCB board**, there are two variable resistors (VRs):
  - **VR2:** Controls **Bowl Rinse timing**
  - **VR1:** Controls **Cup Fill timing**
- **Adjust timing by turning:**
  - **Clockwise** to **increase** the time
  - **Counterclockwise** to **decrease** the time
- **Maximum timing limits:**
  - Bowl Rinse: **20 seconds**
  - Cup Fill: **10 seconds**

Adjusting the Water Bottle Regulator

1. **Locate the Regulator**
   - The **water bottle regulator** is located inside the **side utility center**.
2. **Release the Stop Nut**
   - Before adjusting, **loosen the stop nut** on the adjustment knob to allow movement.
3. **Adjust the Pressure**
   - Turn the knob **clockwise** to **increase** water bottle pressure.
   - Turn the knob **counterclockwise** to **decrease** pressure.
4. **Pressure Limit**
   - **Do not exceed 40 PSI** on the water bottle system to avoid damage.
5. **Secure the Stop Nut**
   - After adjustment, **tighten the stop nut** to lock the knob in place.

Tips:

- Use a pressure gauge if available to monitor settings accurately.
- Adjust gradually and test water flow after changes.

Warning: Do not exceed 35 PSI or damage to the bottle may occur.

Syringe Pressure Adjustments

Assistant's Side Syringe

- Located in the **side utility center**.
- Use a **flat-head screwdriver** to adjust pressures:
  - **Turn clockwise** to **decrease** pressure
  - **Turn counterclockwise** to **increase** pressure
- **Line colors:**
  - **Blue line side:** Water pressure
  - **Clear or yellow line side:** Air pressure

Doctor's Side Syringe

- Located **under the instrument head**.
- Two adjustment knobs:
  - **Right side:** Water pressure
  - **Left side:** Air pressure
- Adjust with a screwdriver, turning clockwise to decrease and counterclockwise to increase pressure.

Tips:

- Adjust pressures gradually and test the syringe function after changes.
- Proper syringe pressure ensures effective air and water delivery.

Assistance Side Syringe

Dr. Side Syringe

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Solids Collector Trap

Location: In front of the side utility center.

Before Removing the Lid:

1. Turn off the vacuum system.

To Change the Solids Collector Trap:

1. To remove the cap: Grasp the cap with one hand.
2. Turn it ¼ rotation.
3. Gently lift the cap off.
4. Lift the trap out of the solid's collector canister.
5. Place a new trap into the solid's collector canister.
6. Inspect the O-ring on the top cap to ensure it is intact and seated properly.
7. Reinstall the cap.

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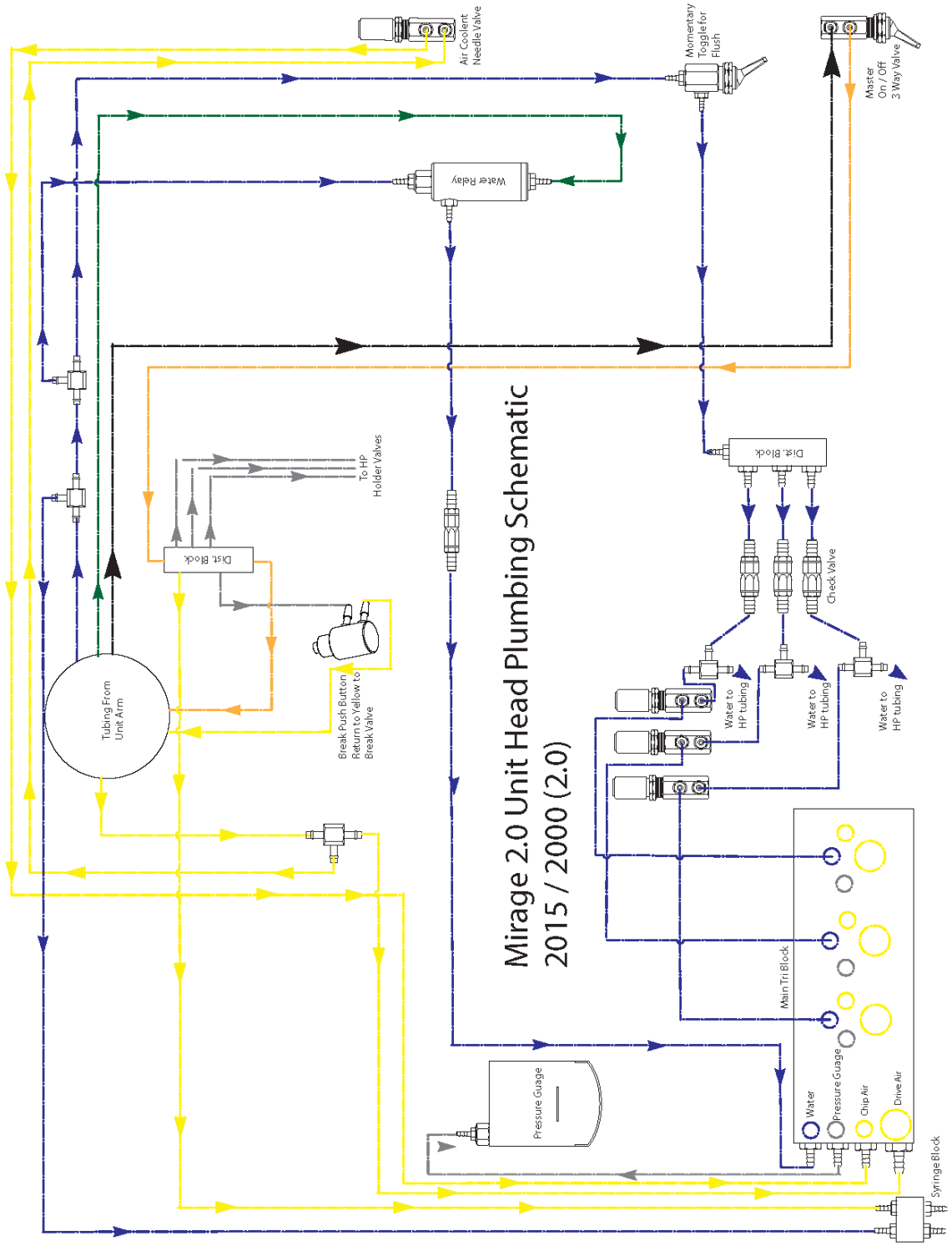
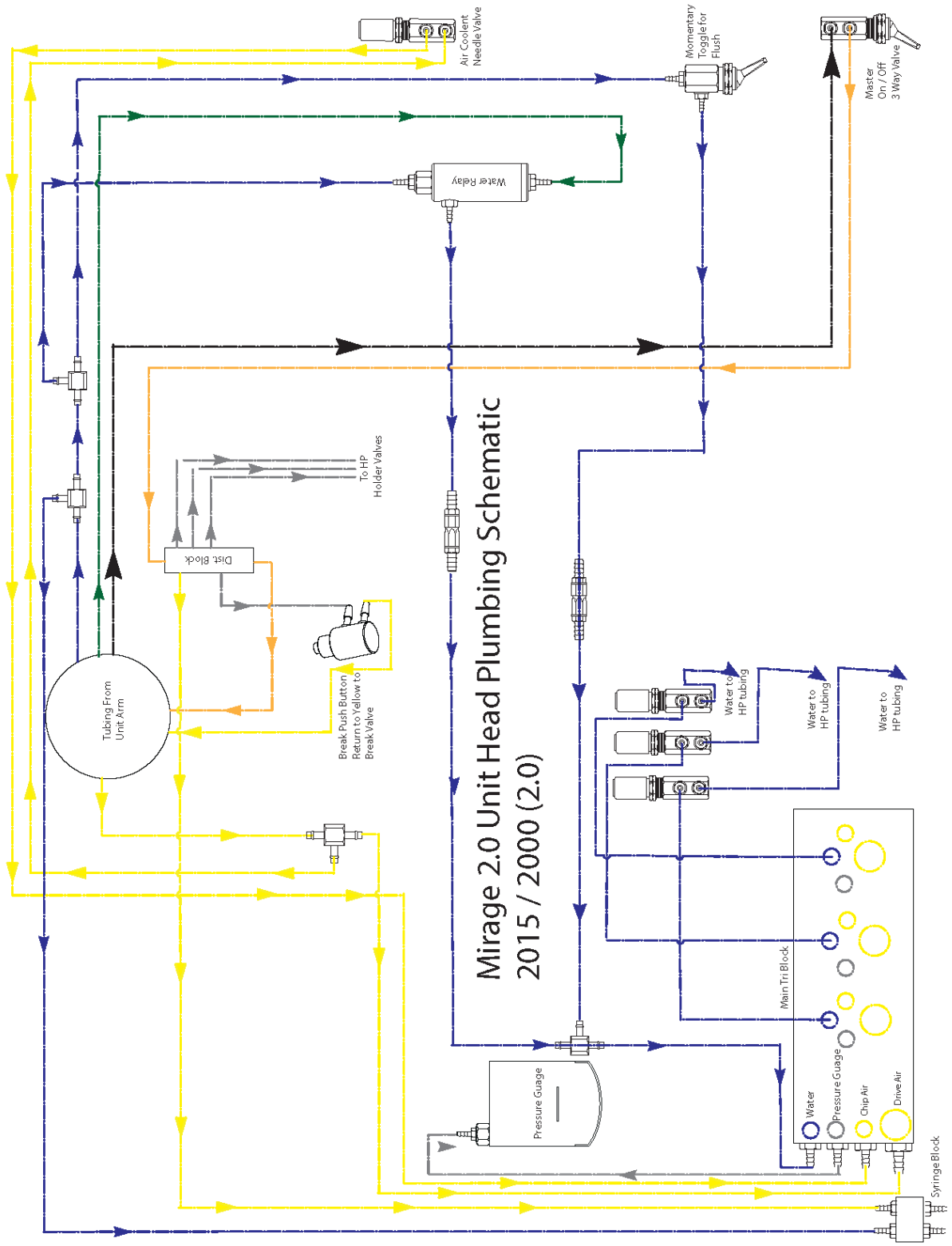
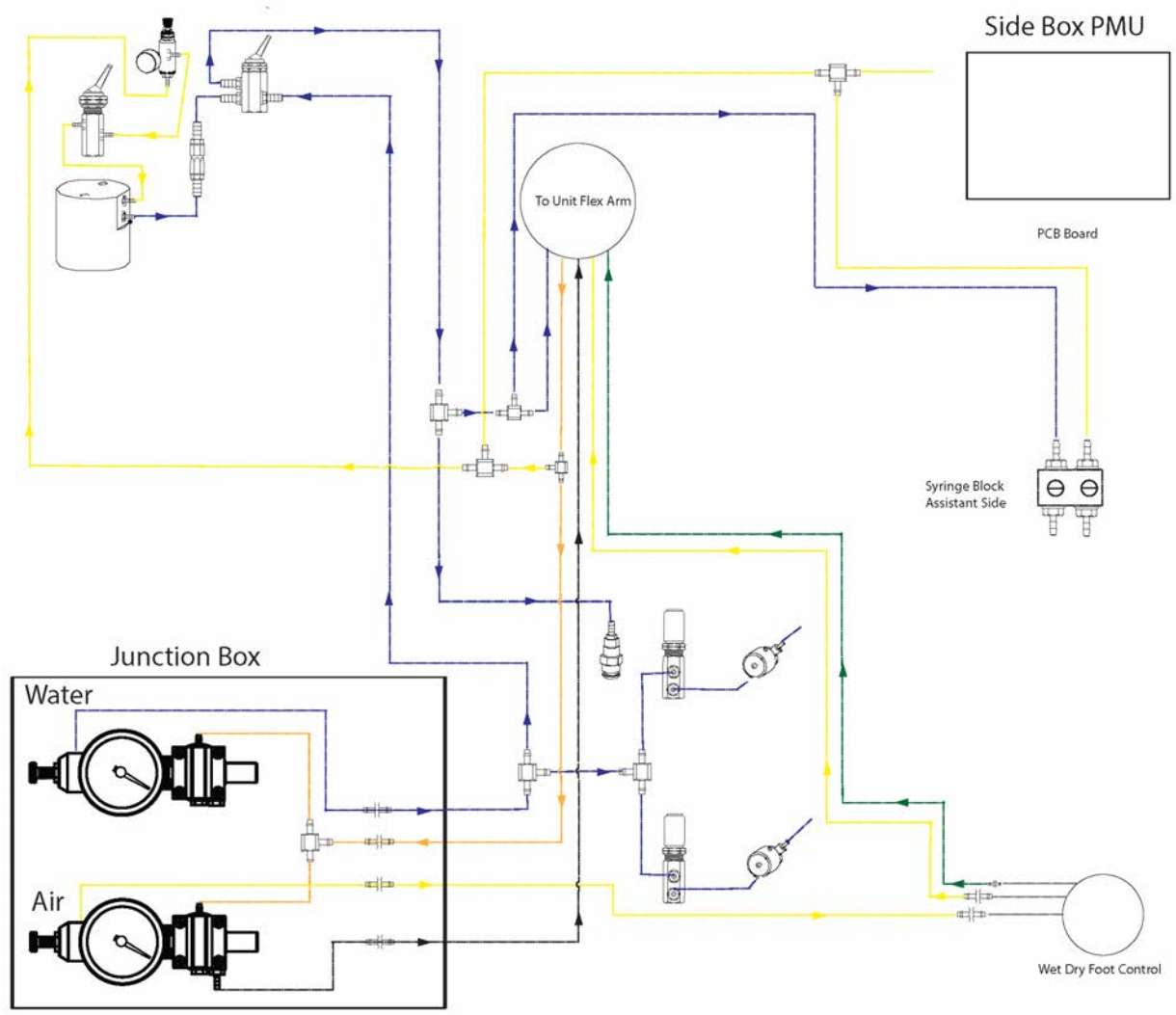
Tubing Diagram Unit Head (OEM)



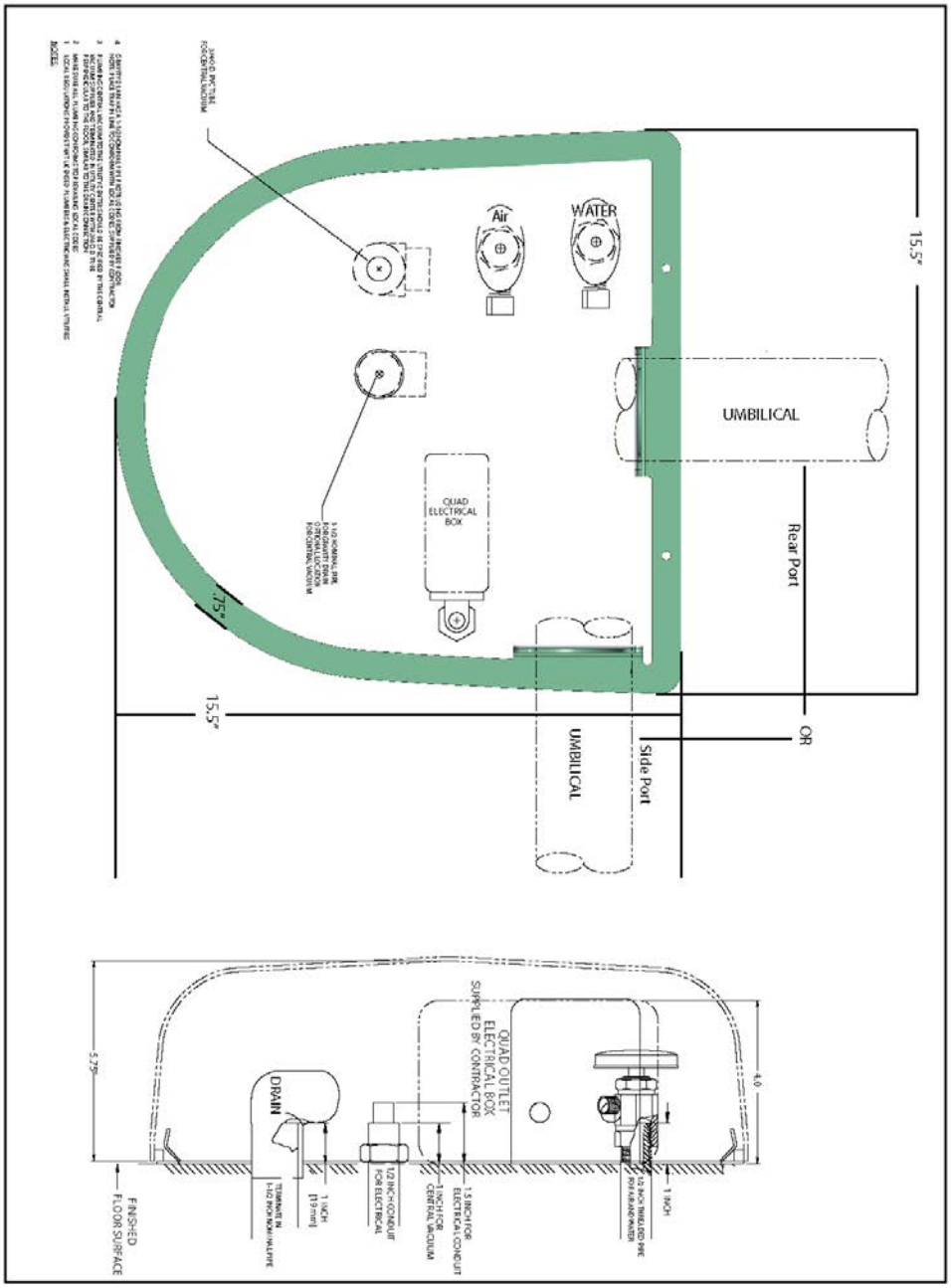
Tubing Diagram Unit Head (Flush Bypass)



Tubing Diagram PMU Side Box



Junction Box Template



WARRANTY INFORMATION

TPC 5 Year Limited Warranty

All TPC products sold are guaranteed to be free from defects in workmanship and materials under the following terms:

Coverage Periods

5 Year Warranty Coverage:

- Main Block
- Metal arms/bearing assemblies/holder bars
- Transformers
- Electrical wiring
- Internal delivery unit tubing
- Major cast components
- Brake assemblies
- All internal valving

1-Year Warranty Coverage:

- Upholstery
- Armrests
- Plastic Components
- Handpiece Tubing / Syringe Tubing
- All other parts and components
- Cuspidor Bowl

What is Covered

TPC will repair or replace any defective part at no charge during the applicable warranty period. All parts must be returned to TPC for inspection and warranty verification.

What is NOT Covered

This guarantee does not cover:

- Normal wear or stains on surface finishes
- Damage resulting from improper installation
- Damage from misuse or accidents
- Damage incurred during shipping and handling
- Labor charges for installation or removal
- Shipping charges to/from the TPC facility

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Shipping Damage Claims

All claims against the freight carrier must be initiated at the time damaged items are received. Filing the claim is the responsibility of the customer.

Service Requirements

⚠ **IMPORTANT:** Only authorized service technicians should attempt to service TPC equipment. Service performed by unauthorized technicians may result in a voided warranty.

Product Modifications

TPC continuously improves its products and reserves the right to make modifications without prior notification. TPC is not obliged to modify previously manufactured items.

Contact Information

For additional information, contact your TPC dealer

For technical support, contact:
TPC Dental
Phone: 800-560-8222
Email: service@tpcdental.com
Web: www.tpcdental.com

Troubleshooting:

1. Water is flowing out of all three handpieces when in the HP holder

- *Cause:*
  - Flush Valve Activated
  - Flush Valve Damaged
- *Solution:*
  - Turn the Flush Valve
  - Replace Flush Valve

---

2. When I use one handpiece, water leaks out of another HP position

- *Cause:*
  - Check Valve Failed
  - HP Holder Valve pressure is neutral
- *Solution:*
  - Replace Check Valve
  - Check and verify the HP holder valves are tied into the return of the master switch and not the 3-Way syringe

---

3. Water is leaking from the exhaust jar on the bottom of the unit

- *Cause:*
  - Water is leaking into the exhaust line in the HP tubing
  - Water in the supply air
- *Solution:*
  - Check the HP gasket
  - Tighten the HP nut to the HP
  - Check the compressor for moisture

---

4. Air is purging out of a handpiece position that is in its holder when I'm using a different handpiece

- *Cause:*
  - HP tubing is not in the proper holder location
  - The Main Block Diaphragm is damaged
- *Solution:*
  - Place the HP tubing in the correct holder

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- Replace the Main Diaphragm on the Block

---

5. The water from my HP is a stream and not spraying

- *Cause:*
  - Chip Air adjustment closed
- *Solution:*
  - Open chip air adjustment

---

6. Water from my 3-way syringe is very low

- *Cause:*
  - Low water pressure
  - Buttons have built debris on O-rings
- *Solution:*
  - Increase water pressure
  - Remove, clean, or replace buttons

---

7. When I use a HP position, the air pressure drops quickly

- *Cause:*
  - The Main Regulator in the junction box has failed or is below 80 psi
  - Pinched line
- *Solution:*
  - Replace the Main Air Pressure Regulator, adjust the air pressure if it's below 80 psi
  - Check plumbing for pinched air line

---

8. My unit arm squeaks when I try to move it

- *Cause:*
  - Brake button stuck
  - Brake pads on the brake are misaligned
  - Pinched line
- *Solution:*
  - Check and see if the air purges when the brake button is pressed
  - Realign brake pads
  - Pinch the supply line to the brake push button. See if the brake frees up

9. Water bottle leaks air

- *Cause:*
  - The water bottle gasket is damaged or missing
- *Solution:*
  - Inspect the water bottle gasket. Replace if needed or missing

10. The HP will not cut, but sounds like it is at the correct rpm

- *Cause:*
  - Pinched air line
  - Bad handpiece
- *Solution:*
  - Check for pinched lines from the master control to the foot control, then to the main control block
  - Check the Handpiece in another position or another delivery unit

11. The suction is low to the HVE, SE valves

- *Cause:*
  - The solids trap is full
  - Clog on the main suction line or canister
- *Solution:*
  - Check and replace the solids trap if it's full
  - Clear the obstruction or replace the main suction line

12. The silicon jacket is torn on the handpiece tubing

- *Cause:*
  - Chemical exposure
  - Excessive pulling on the coupling
- *Solution:*
  - Replace the tubing
  - Be gentle when pulling on the silicone jacket against the coupling

13. My cuspidor is overfilling our rinse cups

- *Cause:*
  - Timing needs to be adjusted to match the cup volume.
  - Cup size changed
- *Solution:*
  - Adjust the timing on the cuspidor to match the desired level of the cups

