

**Installation**  
**Operation**  
**Maintenance**  
**Troubleshooting**  
Version Dec/17



**1455 Delivery Unit**

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## Congratulations!

All of us at Summit Dental Systems want you to know that your 1455 Palm Beach Delivery Unit has been built with the finest materials available.

The assembly and testing was completed by technicians devoted to making SDS products perform to all prescribed specifications.

Our five year limited warranty is just one of the ways we express our confidence that you will be completely satisfied with your purchase.

We appreciate your support and look forward to meeting your future professional needs through our expanding product line.

*Cesar Coral*

President

## Important Information

### Technical Specifications

Factory Pre-set Air Regulator Pressure: 80 PSI  
 Factory Pre-set Water Regulator Pressure: 40 PSI  
 Syringe: 3-way  
 Terminal: 4 Hole Low and High Speed  
 Tray's maximum load capacity: 2 Kg

Handpiece Pressure: 30-35 PSI (for most high-speed handpieces)  
 40-45 PSI (for most low-speed handpieces)

### Unpacking

Pay careful attention when unpacking the unit and its accessories. Damage caused by mishandling the equipment during unpacking or installation is not covered under warranty.

### New Owner

Please read, sign and submit the warranty registration form that is located at the end of this manual. Failure to return this form may void the warranty.





### Serial Number

The serial number of your unit is located under the unit head cover. Record this serial number in a convenient location. You will be asked for this number when requesting service or warranty information.

### Warning

Medical Electrical equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in this manual.

Portable and mobile RF communications equipment can affect Medical Electrical Equipment.

| Attention  | CE-mark   | Manufacturer and Date of manufacture   | Serial Number   |
|--|---|--|---|
| <br>Attention, consult accompanying operation instructions. |  |  Company Address<br>2005-06 |  |

European Authorized Representative

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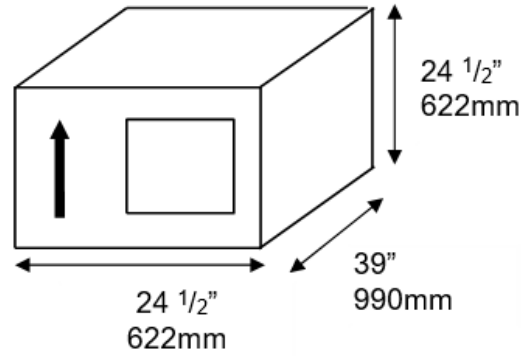
MT Promedt Consulting GmbH  
Altenhofstrasse 80  
D-66386 St. Ingbert, Germany  
Phone: +49 (0)6894-581020  
Fax: +49 (0)6894-581021

Questions?

Read this manual carefully. If you have any questions, please call Summit Dental Systems Technical Service at 1-800.275.3368 (USA) or (954) 730-3636 (Outside USA).

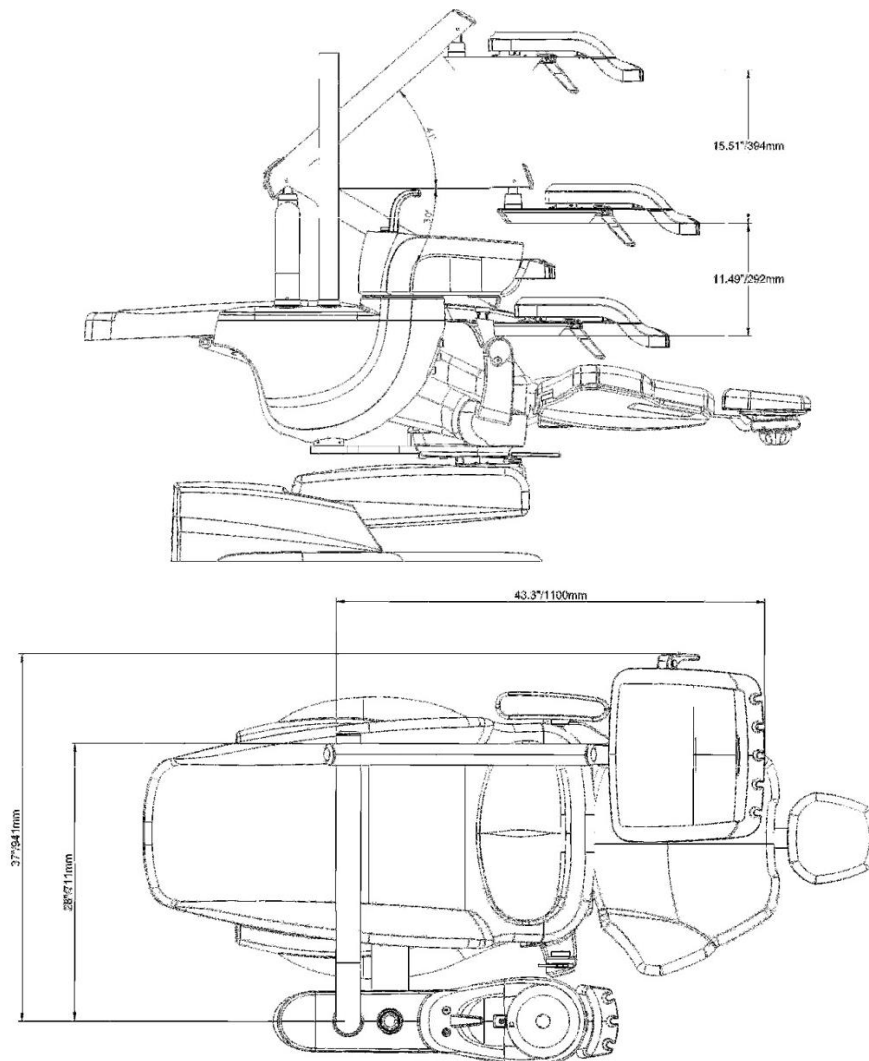
# Weight & Dimensions

## Shipping Information

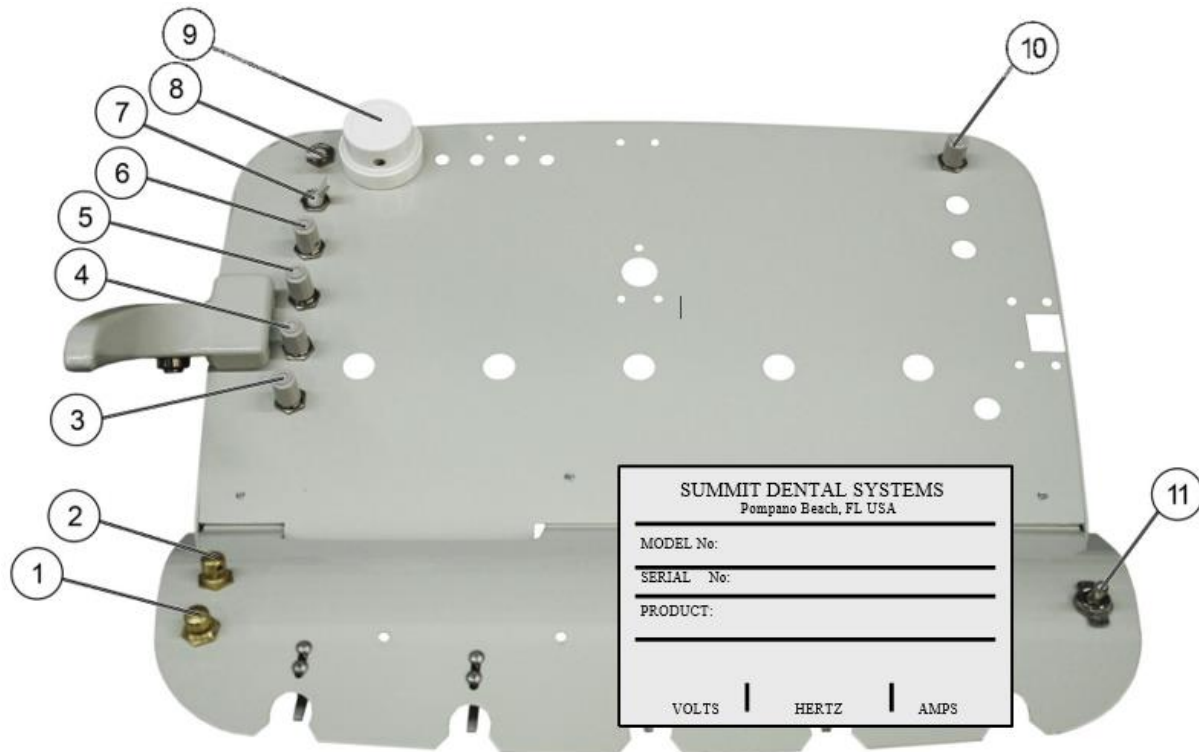


Shipping Weight: 55 lbs / 25Kg

## General Dimensions



## Operator's Instructions

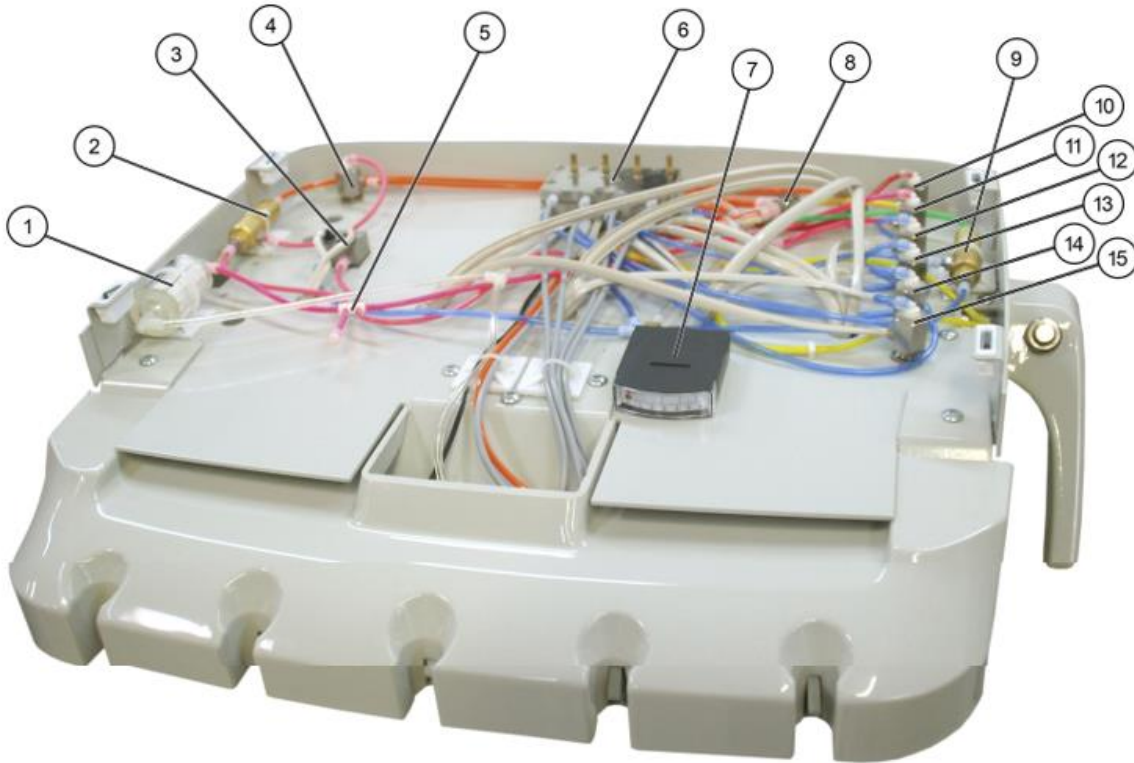


Product Serial Number Label is located underneath Unit Head Chassis.

1. Remote Bowl Flush Switch (with cuspidor) - Activates the cuspidor bowl rinse cycle.
2. Remote Cup Filler Switch (with cuspidor) - Activates the cup fill feature of the cuspidor.
- 3, 4, 5 & 6. Water Coolant Flow Control - Controls the flow of water coolant to handpieces. Turn counter-clockwise to increase, and clockwise to decrease or to fully cease for low-speeds.
7. Handpiece Tubing Flush Switch - Remove handpieces from holders and activate the switch to flush all liquid from handpieces lines.
8. Master Air & Water On/Off Switch - Opens and closes the valves in the floor-mounted Utility Box, supplying air and water to complete system. Shut off nightly.
9. Oil Collector - Collects excess of fluids from handpieces.
10. Air Coolant Flow Control - Adjusts the spray air to the handpiece burr. Turn clockwise to decrease pressure, and counter-clockwise to increase pressure. Also affects atomization at the burr.
11. Electric Switch - Spare line and switch. Use as necessary.

**CAUTION:** When adjusting the handpiece pressure, do not over-tighten the screws. This may result in unnecessary damage to the handpiece control block, air-brake valve. Failure to release the air-brake valve may cause damage.

## Flow Diagram



| Item | Description         | Part #     |
|------|---------------------|------------|
| 1    | Filter Air          | 5-020-1000 |
| 2    | Clipper Valve       | 3-020-1003 |
| 3    | Manifold            | 5-020-0145 |
| 4    | Air Coolant         | 5-070-0054 |
| 5    | Tee 6 way           | 5-020-1012 |
| 6    | Quad Block          | 5-020-0390 |
| 7    | Pressure Gauge      | 5-020-0008 |
| 8    | 4 Way Cross         | 5-070-0005 |
| 9    | Clipper Valve       | 3-020-1003 |
| 10   | Master On/Off 3 way | 5-070-0051 |
| 11   | Purge               | 5-070-0053 |
| 12   | Water Coolant       | 5-070-0054 |
| 13   | Water Coolant       | 5-070-0054 |
| 14   | Water Coolant       | 5-070-0054 |
| 15   | Water Coolant       | 5-070-0054 |



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## Purging Your System

### Daily Maintenance

**Handpiece Only Purge System:** Your Palm Beach unit comes equipped with a .01 micron Bono-silica air filtration system. This is an exclusive and innovative system found only on the Palm Beach model. This system is used to flush all liquids from your dental unit handpiece water lines. Dry lines prohibit the growth of bacteria.

To operate system:

1. Hold handpiece hoses over cuspidor bowl or sink.
2. Activate flush toggle, located under delivery tray back right side, until all water is expelled from all handpiece lines.

To Flush Complete System

1. Turn “OFF” toggle on cuspidor (supplies pressure to water bottle)
2. Remove bottle and empty content.
3. Replace bottle and turn on toggle.
4. Activate water quick connect and both syringes until all water is expelled.
5. Activate all handpiece hoses over sink until dry.

### Weekly Maintenance

The weekly cleaning procedure should be performed at least once a week, preferably at the start of the week before treating patients. If the unit is stored for any length of time, perform the weekly maintenance routine immediately before and after storage.

1. Purge the unit with air (see Daily Maintenance).
2. Flush the system with disinfectant solution:
  - a. Turn unit off. Empty the water bottle, replacing the water with cleaning solution (see Disinfectant Solution).
  - b. Remove handpieces from tubing and hold the handpiece tubing and syringe over a sink. Turn unit on, wait a few moments and then operate the syringes and all handpiece hoses until a continuous stream of solution is running through the system.
3. Allow the disinfectant to remain in the unit as per manufacturer instructions, rinse the system with sterile water until all disinfectant is expelled from all water lines.
4. Purge the unit with Bio-Filtered air:
  - a. Empty water bottle and replace onto cuspidor.
  - b. Turn “on” toggle to supply pressure to bottle.
  - c. Hold the handpiece tubing and syringe over a sink. Turn the unit on, wait a few moments and then operate syringes and foot control until all solution is purged from all water lines in the system, including quick disconnect.
  - d. Turn unit off. (If the unit is to be stored, stop here.)
5. Fill with clean water:
  - a. With the unit turned off, remove the empty disinfectant bottle. Replace with clean bottle and sterile water.
  - b. Hold the handpiece tubing and syringe over a sink. Turn unit on, wait a few moments and then operate syringe and foot control until a continuous stream of sterile water is running through the system, including quick disconnect.
  - c. All disinfectants must be removed before treating patients.

## Troubleshooting Guide

### SYMPTOM

### PROBABLE CAUSE

1. Handpiece Lacks Power

- A. Check junction box regulator adjustment (80 psi).
- B. Check handpiece pressure adjustment on control block.
- C. Plugged air filter.
- D. Pinched supply tubing. Check for kinks.
- E. Bad handpiece gasket or o-ring at connection with tubing or leak in handpiece hose / swivel adaptor.
- F. Defective handpiece.

2. Water coolant does not shut off when Foot Control is released.

- A. Adjust air pressure to 80 psi - water pressure to 40 psi.
- B. Foot Control is not exhausting.
- C. Defective water relay valve.
- D. Pinched green hose from foot control to water relay.

3. More than one handpiece is operating.

- A. Handpiece is not completely in the hanger.
- B. Improper adjustment of Pilot Valve in the hanger.
- C. Kinked or pinched signal line from the Pilot Valve.

4. Insufficient water coolant.

- A. Adjust coolant flow valve.
- B. Check water filter.
- C. Plugged handpiece.
- D. Kinked or pinched tubing.
- E. Air leak in green line from F/C toggle.

5. Water coolant is running from handpiece while in holder.

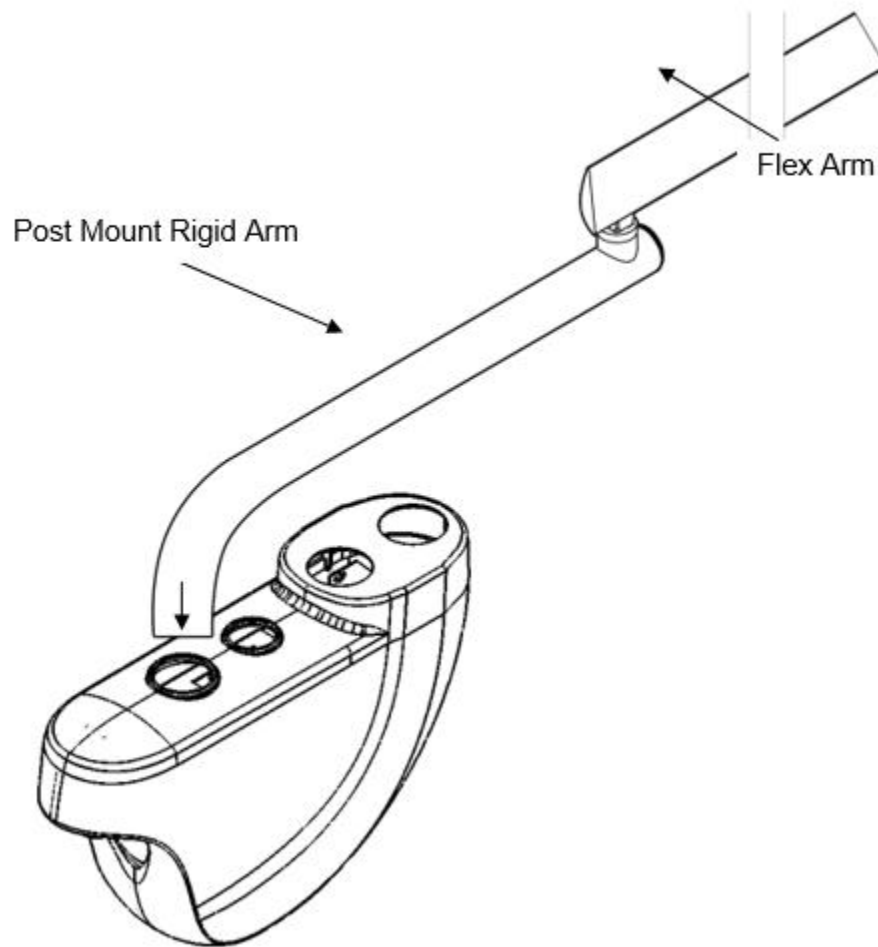
- A. Water pressure is too high. Set at 40 PSI
- B. Air pressure is too low. Set at 80 PSI.
- C. Handpiece holder out of adjustment.
- D. Defective diaphragm in handpiece control block.

6. Water coolant is running continuously.

- A. Purge switch is on (on applicable systems).
- B. Water pressure is too high.
- C. Handpiece holder out of adjustment.
- D. Defective water relay.
- E. Defective diaphragm in handpiece control block.

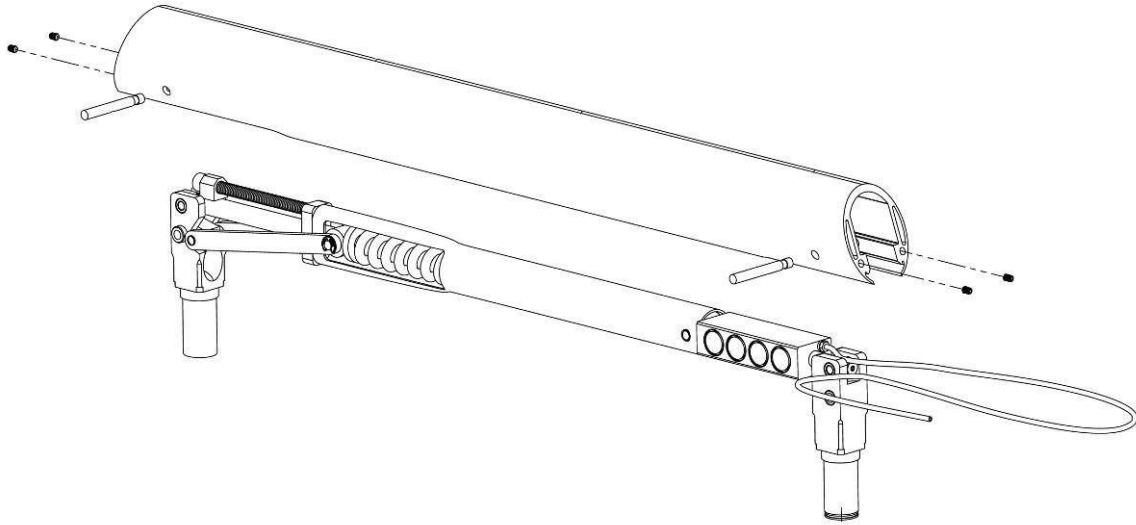
## Installation Instructions

### Mounting Unit to Utility Center



1. Slide Beauty Collar onto Rigid Arm.
2. Insert all the tubing from the unit head into the Flex and Rigid Arm.
3. Slide the Rigid Arm of the unit down the cuspidor Post Mounted Utility Center.
4. Connect all tubing with twist lock connectors, match colors.
5. Connect bowl flush/cup filler tubing to indexed relay valves.

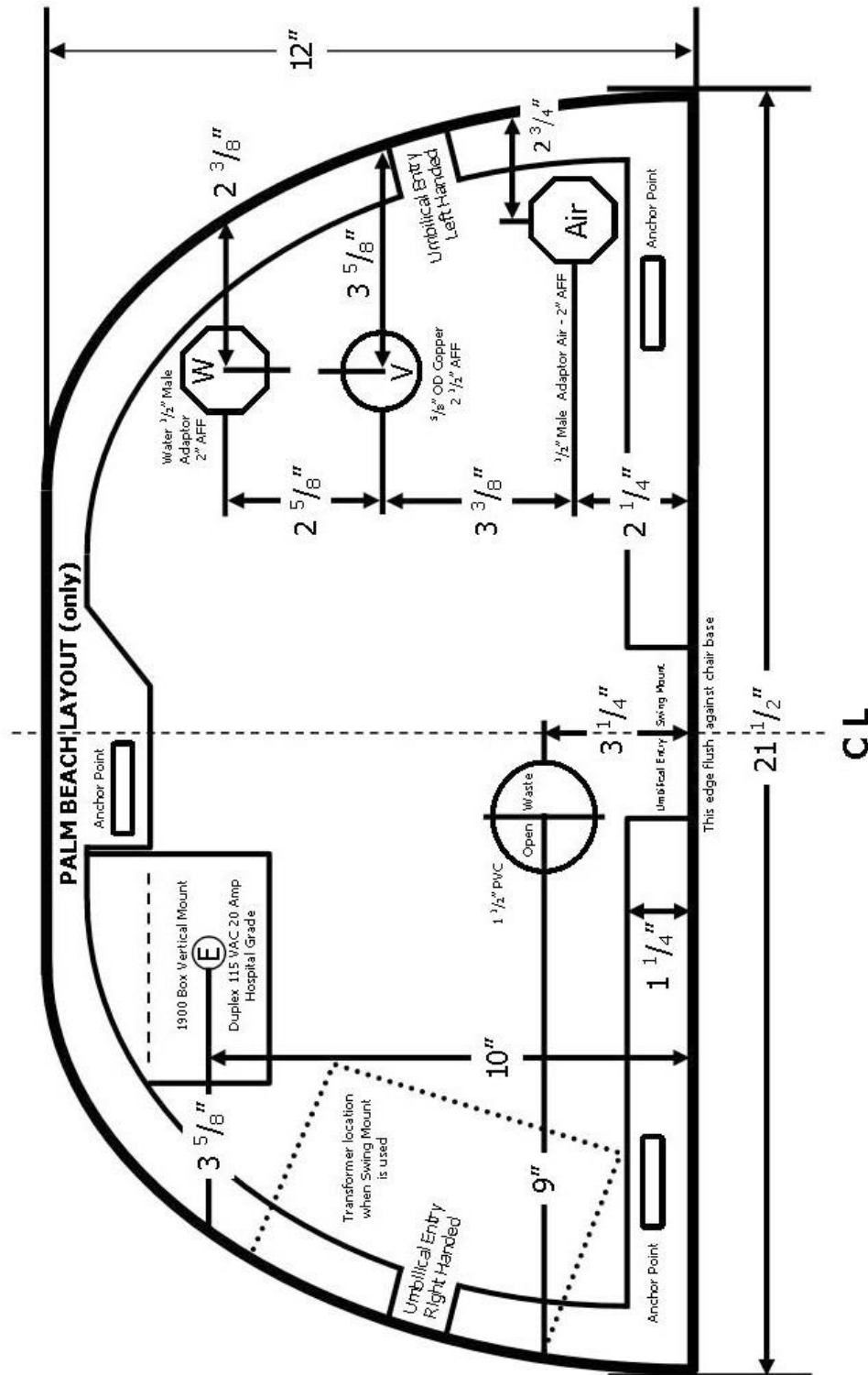
## Spring Tension Adjustment



### Spring Tension Adjustment

1. Remove end cap of arm.
2. Using 5/64 hex key turn clockwise to increase tension.

## Junction Box Plumbing Layout Not to Scale



## Cuspidor Umbilical Connections

- Red 1/8" - from air filter housing to in port on master switch
- Yellow 1/8" - signal air from master switch to air operated solenoids in Junction Box
- Orange 1/4" - drive air to unit
- Blue 1/4" - regulated and filtered water supply to cup filler relay valve and bowl flush solenoid in cuspidor
- Clear Blue 1/8" - to city water toggle valve in cuspidor

## Post Mount Unit and Cuspidor Utility Box Connections

### FROM PALM BEACH UNIT ARM

- 1/8" red - master valve
- 1/8" yellow - pilot air to unit
- 1/4" orange - drive air
- 1/8" pink - bio filter air, purge, syringe
- 1/8" blue - water to unit
- 1/8" orange - air coolant
- 1/8" green - purge
- 1/8" clear - handpiece valves, remote bowl and cup fill valves, biofilter
- 1/8" gray - pattern

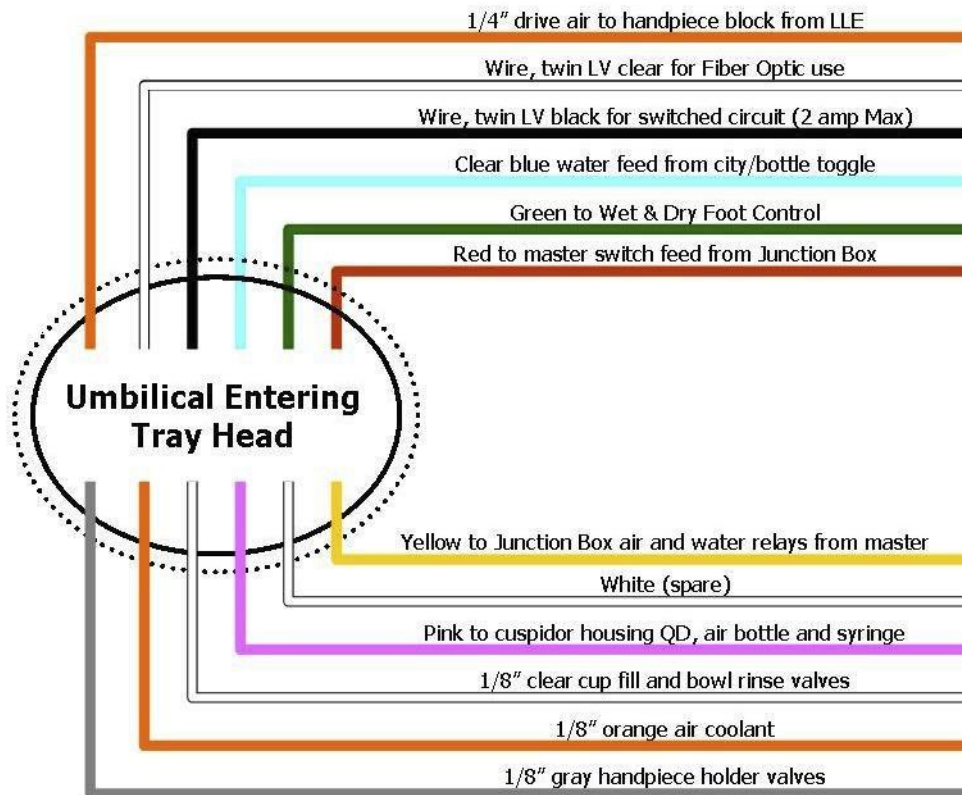
## Junction Box Connections for Post Mount Unit

- 1/8" red to master
- 1/8" yellow pilot air to unit
- 1/4" orange drive air to unit
- 1/4" gray foot control inlet
- 1/8" blue water to unit
- 1/4" blue water to cuspidor
- 1/8" green purge
- 1/4" gray air supply for cupfill & bowl rinse

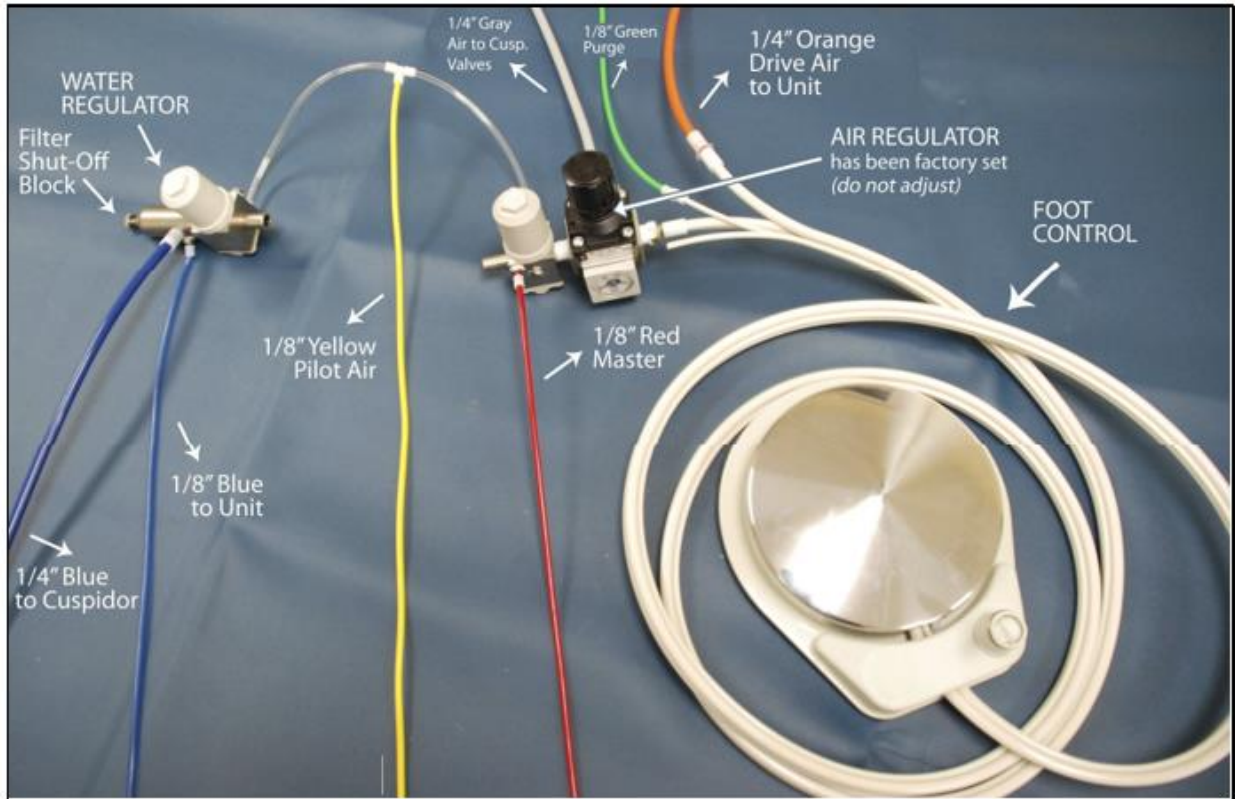
## Foot Control Connections

- 1/4" Orange Drive air out
- 1/4" Gray Drive air in

## Umbilical Entering Tray Head



## Utility Center Tubing Diagram Post and Swing Mounted Unit



Water and Air Regulator Assembly

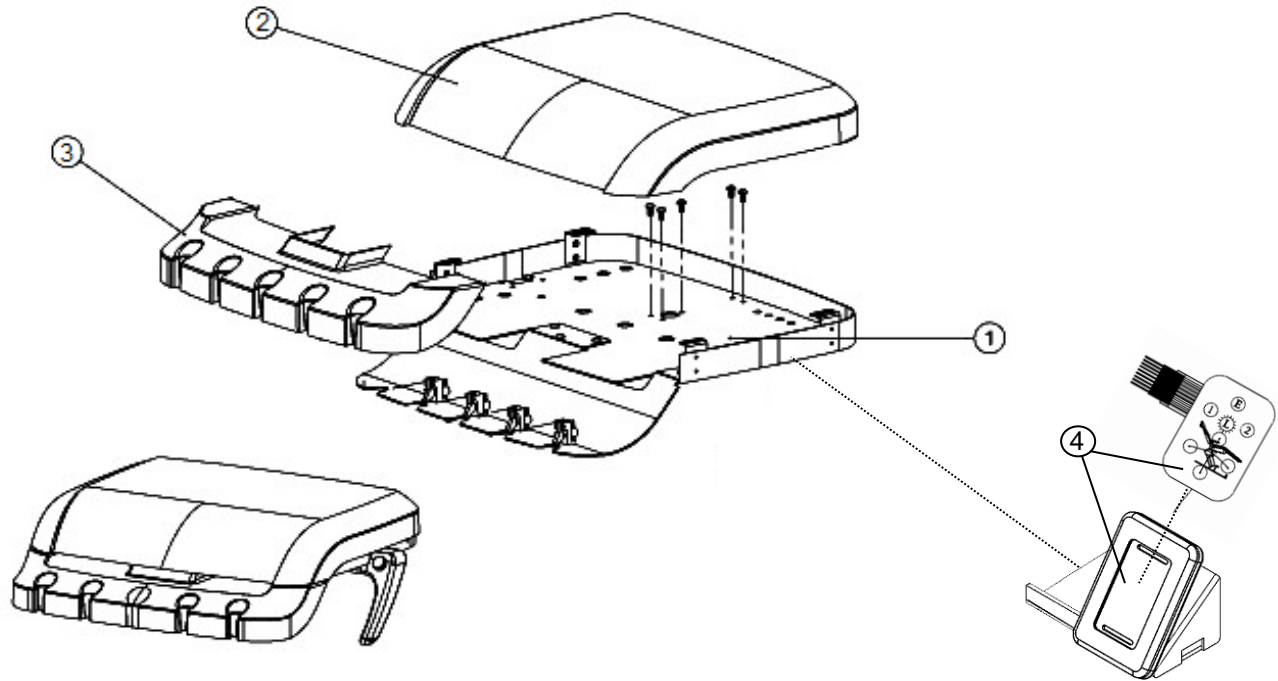
| Description           | Part #     |
|-----------------------|------------|
| Wet & Dry Ft Ctrl     | 5-020-0158 |
| Tubing, Gray 4H       | 5-070-0022 |
| Water Regulator       | 5-070-0103 |
| Filter Shut-Off Block | 5-070-0102 |
| Air Regulator         | 5-070-0111 |
| 1/4" Gray Tubing      | 5-070-0040 |
| 1/4" Blue Tubing      | 5-070-0049 |
| 1/8" Blue Tubing      | 5-070-0090 |
| 1/8" Red Tubing       | 5-070-0028 |
| 1/4" Orange Tubing    | 5-070-0047 |
| 1/8" Green Tubing     | 5-070-0083 |
| 1/8" Yellow Tubing    | 5-070-0026 |
| 1/8" Clear Tubing     | 5-070-0027 |



# Parts List

## Palm Beach Unit Head Assembly

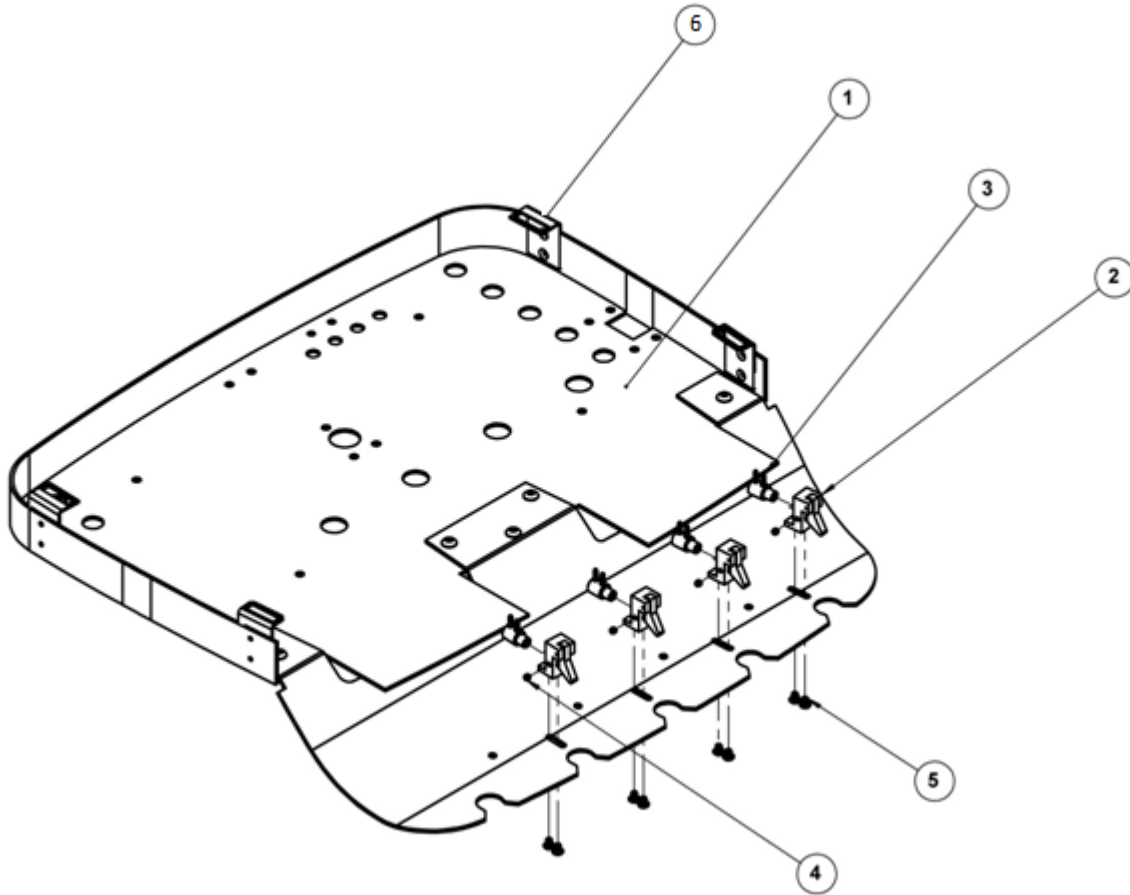
2-020-3020



| Item | Description              | Part #     |
|------|--------------------------|------------|
| 1    | Chassis                  | 5-020-1021 |
| 2    | Unit Cover               | 2-020-0059 |
| 3    | Syringe/Handpiece Holder | 5-020-0169 |
| 4    | Touch Pad Assembly       | 1-020-1074 |

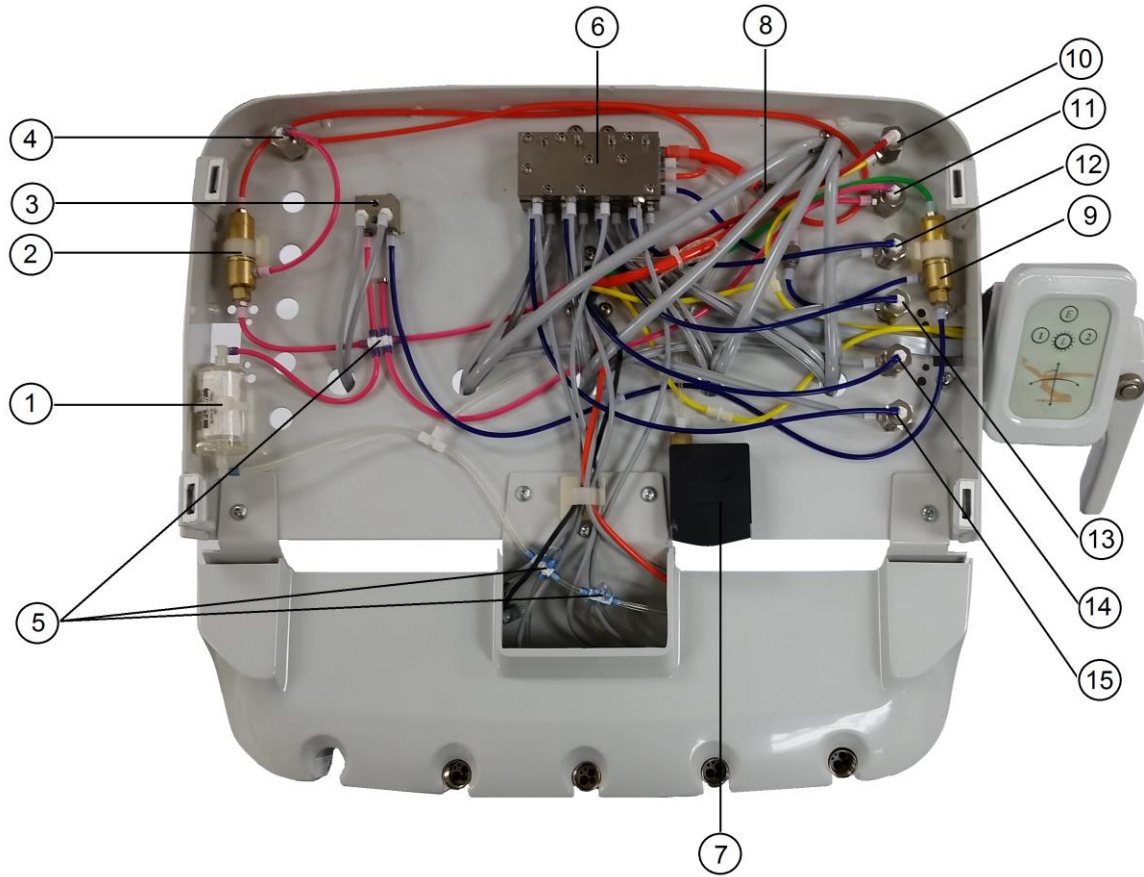
## Tower Handpiece/Syringe Activator Assembly

2-020-1011



| Item | Description         | Part #     |
|------|---------------------|------------|
| 1    | * Chassis           | 5-020-1021 |
| 2    | Tower Bracket       | 2-020-0079 |
| 3    | Pilot Valve         | 5-020-0070 |
| 4    | Screw 6-32 x 1/8    | 4-070-0030 |
| 5    | Screw 6-32 x 3/16   | 4-020-0020 |
| 6    | Magnet, Cover Units | 4-020-0006 |

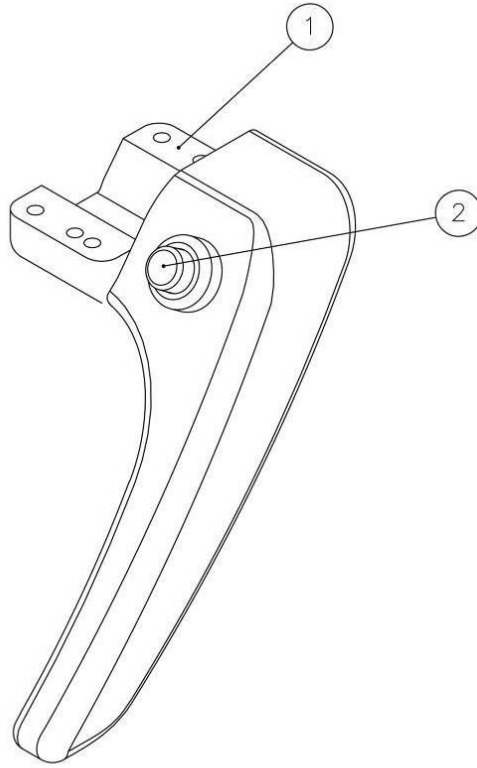
\* For illustrative purpose only. Not included on the Tower Activator Assembly.



| Item | Description         | Part #     |
|------|---------------------|------------|
| 1    | Filter Air          | 5-020-1000 |
| 2    | Clipper Valve       | 3-020-1003 |
| 3    | Manifold            | 5-020-0145 |
| 4    | Air Coolant         | 5-070-0054 |
| 5    | Tee 6 way           | 5-020-1012 |
| 6    | Quad Block          | 5-020-0390 |
| 7    | Pressure Gauge      | 5-020-0008 |
| 8    | 4 Way Cross         | 5-070-0005 |
| 9    | Clipper Valve       | 3-020-1003 |
| 10   | Master On/Off 3 way | 5-070-0051 |
| 11   | Purge               | 5-070-0053 |
| 12   | Water Coolant       | 5-070-0054 |
| 13   | Water Coolant       | 5-070-0054 |
| 14   | Water Coolant       | 5-070-0054 |
| 15   | Water Coolant       | 5-070-0054 |

## Air Brake Handle Assembly with Valve

3-020-0073

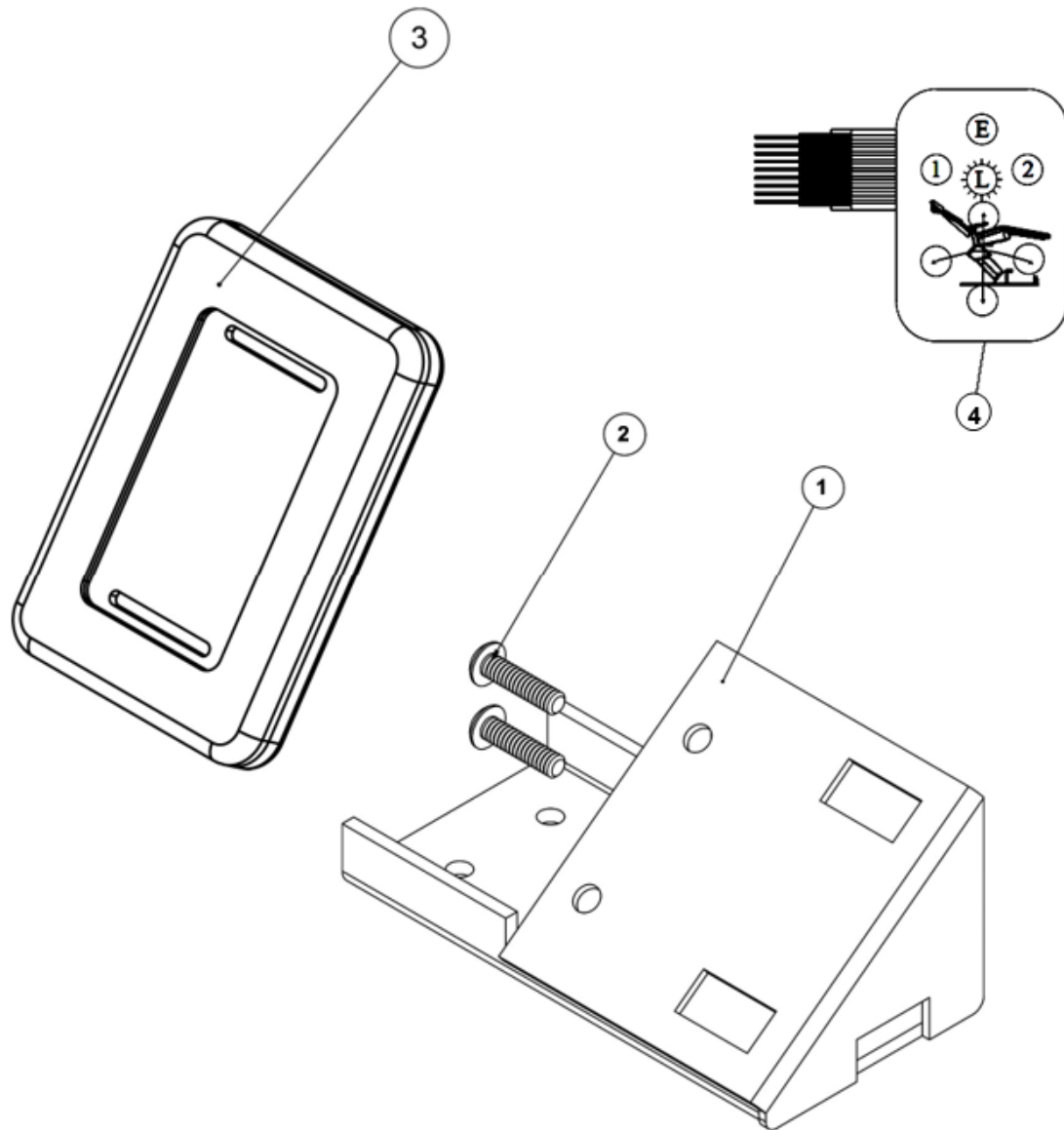


| Item | Description       | Part#      |
|------|-------------------|------------|
| 1    | Right Side Handle | 5-070-0071 |
| 2    | Pilot Valve       | 5-020-0013 |



Touch Pad Assembly (Optional)

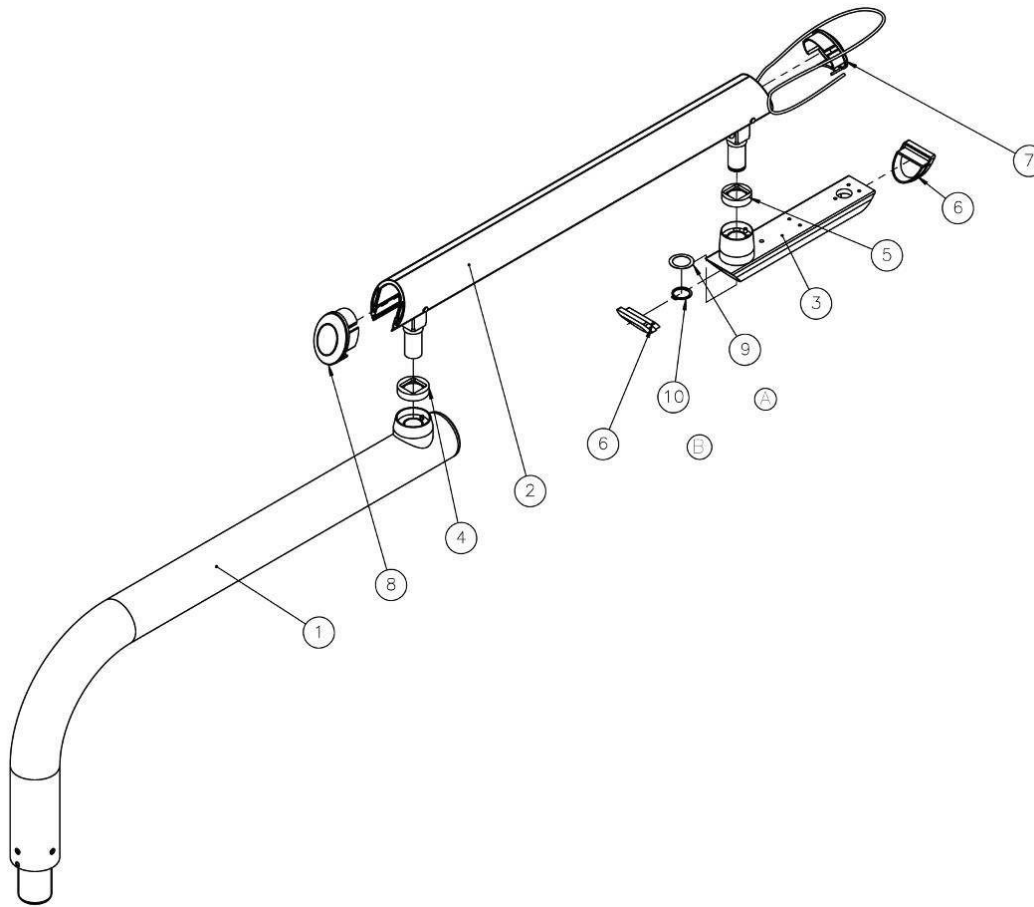
1-020-1074



| Item | Description           | Part #     |
|------|-----------------------|------------|
| 1    | Bracket               | 2-020-0168 |
| 2    | Screw 10-24 x 3/4"    | 4-010-1044 |
| 3    | Housing               | 5-020-0170 |
| 4    | Membrane Pad Assembly | 7-020-0004 |

## Flex and Rigid Arm Assembly

3-020-0076

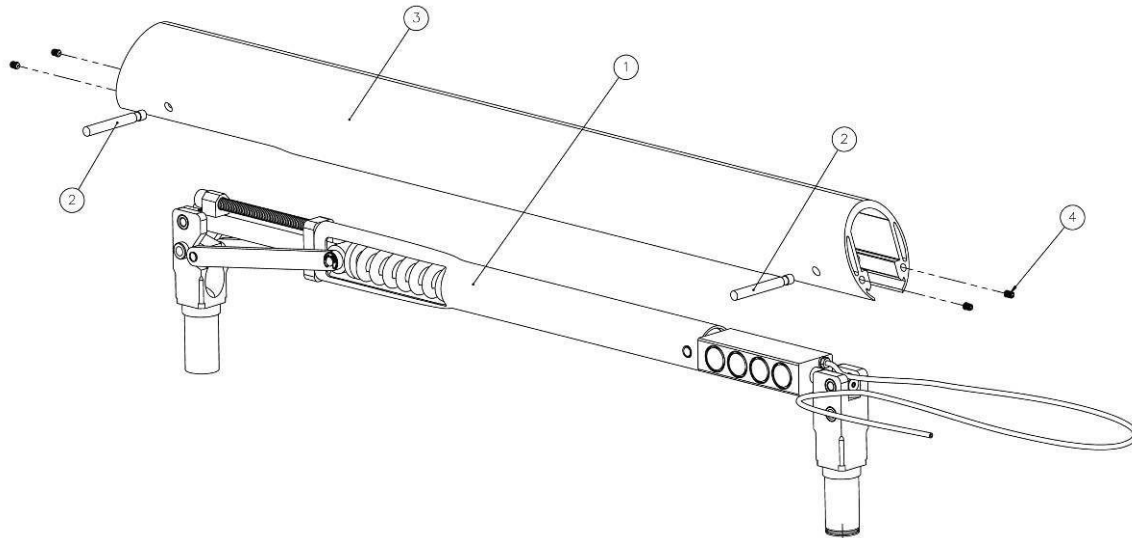


| Item | Description                  | Part #     |
|------|------------------------------|------------|
| 1    | Rigid Arm Assy               | 2-020-0062 |
| 2    | Flex Arm Assy                | 2-020-0067 |
| 3    | Control Mount Head           | 2-020-0031 |
| 4    | Stop Ring 350°               | 2-020-0007 |
| 5    | Stop Ring 180°               | 2-020-0076 |
| 6    | Ctrl Mount End Cap           | 2-020-0019 |
| 7    | Flex Arm End Cap             | 5-020-1032 |
| 8    | Flex Arm End Cap with Groove | 5-020-1031 |
| 9    | Washer                       | 5-020-0128 |
| 10   | Retaining Ring               | 2-020-0023 |



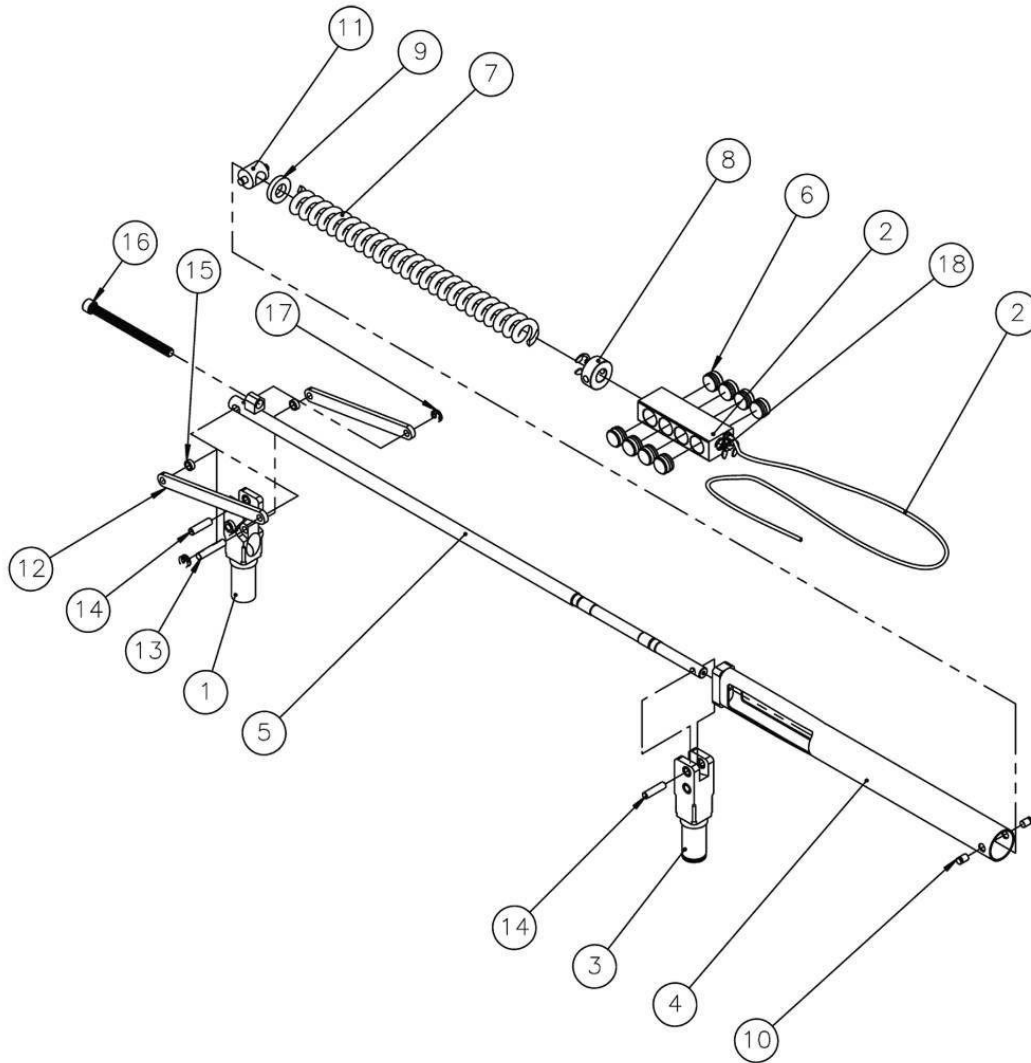
## Flex Arm Assembly

2-020-0067



| Item | Description      | Part #     |
|------|------------------|------------|
| 1    | Air Brake Assy   | 5-020-1040 |
| 2    | Pin              | 4-070-0134 |
| 3    | Flex Arm Cover   | 5-020-1071 |
| 4    | Screw 8-32 x 1/4 | 4-070-0140 |

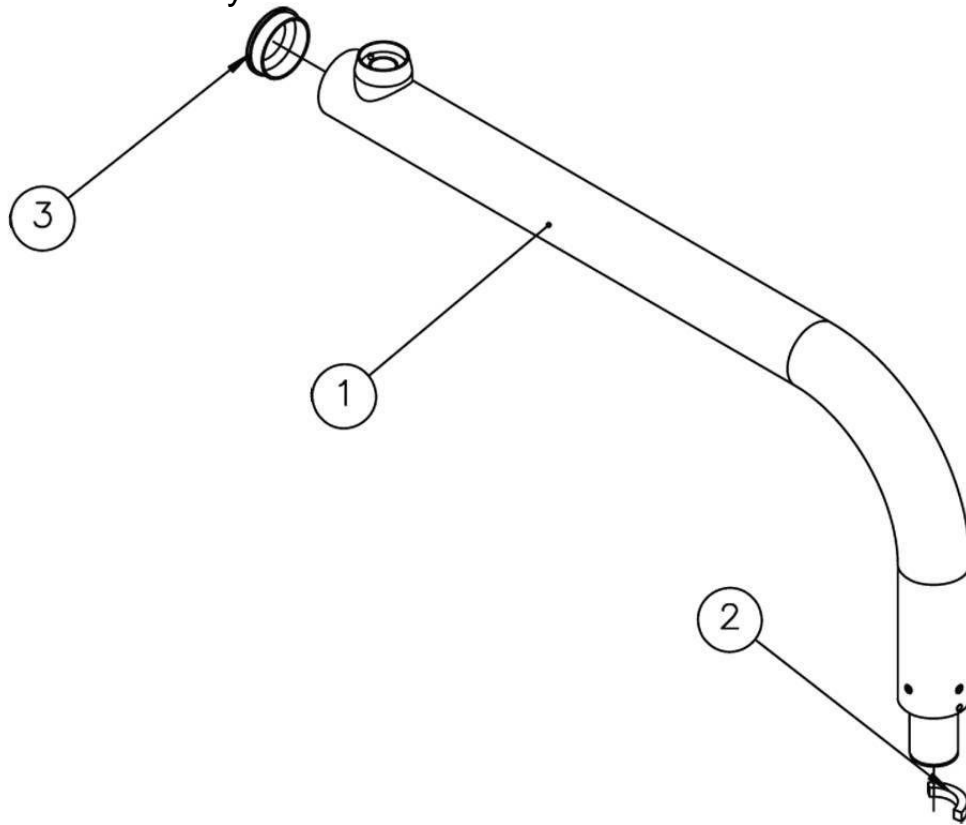
## Air Brake Arm Assembly



| Item | Description    | Part #     | Item | Description                | Part #     |
|------|----------------|------------|------|----------------------------|------------|
| 1    | Lower Knuckle  | 2-020-0041 | 10   | Pin, Chassis               | 4-070-0131 |
| 2    | Brake          | 5-020-0100 | 11   | Tension Adj. Nut           | 5-020-0101 |
| 3    | Upper Knuckle  | 2-020-0042 | 12   | Tension Link               | 2-020-0045 |
| 4    | Chassis        | 2-020-0043 | 13   | Pin, Tension Link          | 5-020-0083 |
| 5    | Rod            | 5-020-0077 | 14   | Pin, Knuckle               | 5-020-0084 |
| 6    | Pad Kit (8 un) | 5-070-0250 | 15   | Washer                     | 5-020-0088 |
| 7    | Spring         | 5-020-0079 | 16   | Carriage Bolt 5/16-18 x 4' | 4-010-0005 |
| 8    | Tension Ring   | 5-020-0080 | 17   | E-Clip 5/16"               | 5-010-0015 |
| 9    | Washer         | 4-070-0120 | 18   | Nipple                     | 5-020-0102 |

\* All item numbers for Light gray color delivery unit

### Rigid Arm Assembly



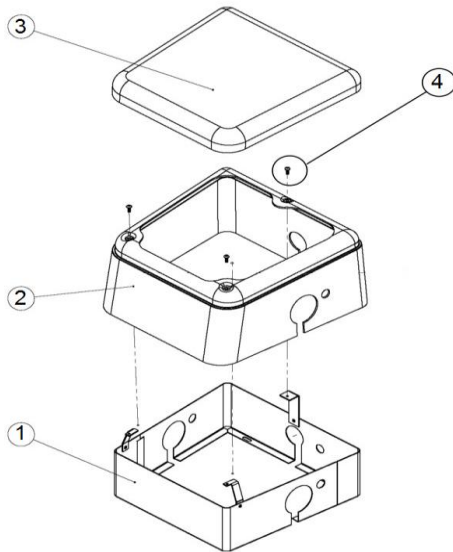
| Item | Description | Part #     |
|------|-------------|------------|
| 1    | Rigid Arm   | 2-020-0062 |
| 2    | Stopper     | 5-020-0103 |
| 3    | End Cap     | 2-020-0169 |

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## Miscellaneous

| Description                               | Part #     |
|---|------------|
| Wet/Dry Foot Control Assembly             | 5-020-0158 |
| Wet/Dry Foot Control w/ Tubing Assembly   | 3-020-1032 |
| Standard Syringe                          | 5-070-0158 |
| Standard Syringe Straight Tubing Assembly | 3-020-1031 |

## Junction Box



### DAYTONA

**2-020-3023**

Item Description Part #

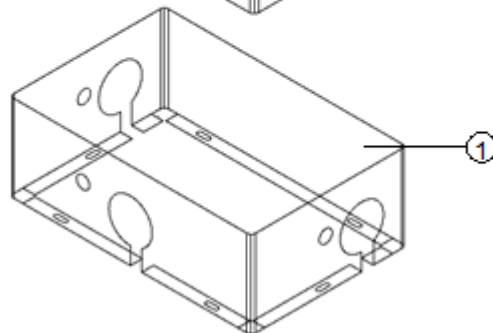
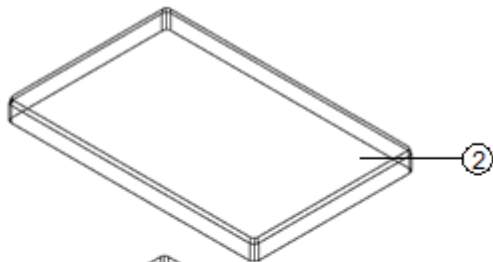
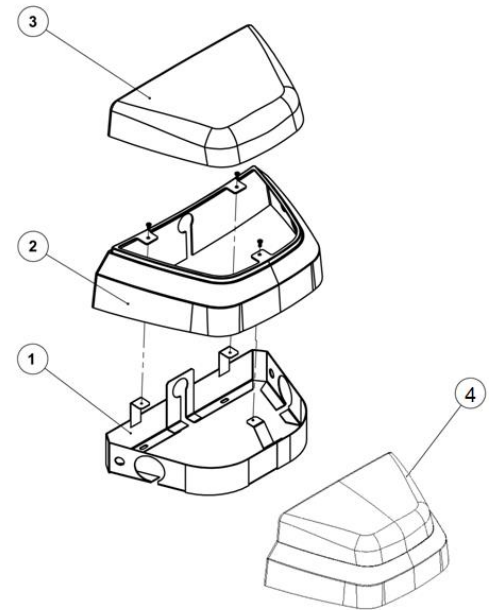
|   |                      |            |
|---|----------------------|------------|
| 1 | Junction Box chassis | 5-070-0004 |
| 2 | Junction Box Shell   | 5-070-0006 |
| 3 | Junction Box Cover   | 5-070-0007 |
| 4 | Screw 10-32 X 1/2    | 5-020-0078 |

### *Palm Beach*

**2-020-0155**

Item Description Part #

|   |                       |            |
|---|-----------------------|------------|
| 1 | Junction Box chassis  | 5-070-0061 |
| 2 | Junction Box Shell    | 5-070-0062 |
| 3 | Junction Box Cover    | 5-070-0063 |
| 4 | Junction Box Assembly | 2-020-0155 |



### J/B 1402/Carts

**3-020-0084**

Item Description Part #

|   |                       |            |
|---|-----------------------|------------|
| 1 | Junction Box chassis  | 5-070-0113 |
| 2 | Junction Box Cover    | 5-070-0114 |
| 3 | Junction Box Assembly | 3-020-0084 |

# WARRANTY

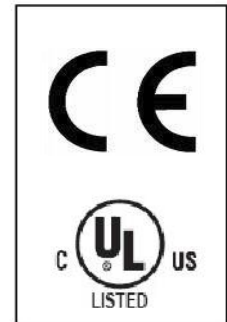
Summit Dental Systems (SDS) warrants its products against defects in materials or workmanship from the date of shipment to the Buyer as follows:

|  |                  |
|--|------------------|
| Summit Dental Systems (SDS) Equipment:                   | Warranty Period: |
| Chairs, Delivery Units, Cuspidors, Lights                | 5 Years          |
| Control Block Diaphragm (part of Delivery Unit)          | Lifetime         |
| All Upholstery, Stools, all Plastic Covers, and Cabinets | 1 Year           |

Summit Dental Systems' sole obligation under the warranty is to provide parts for repair, or at its option, to provide a replacement product (excluding all labor and shipping fees). "In any action,

BUYER'S remedies are limited to the warranty described above. BUYER shall not be permitted to claim lost profits, reliance, special, incidental, or consequential damages in any proceedings." The warranty does not cover damage from improper installation or maintenance, accident or misuse. The warranty does not cover damage resulting from the use of cleaning disinfecting or sterilization chemicals and processes. Failure to follow instructions provided in Summit Dental Systems' Operation and Installation Manuals (Owner's Guides) may void the warranty. In the event Warranty service must be performed to correct any defect, only an authorized Summit Dental System dealer may perform any and all warranty repairs. Any repairs by unauthorized dealers, technicians, or repairmen may void the warranty.

- In the case of a defective warranty item, a copy of the replacement invoice, model and serial number of the product under which it was replaced, and a description of symptoms of the defect must be returned with the part within 30 days of the replacement invoice date to Summit Dental Systems, 1280 SW 27<sup>th</sup> Ave Pompano Beach, FL 33069, USA, in order to receive credit. Any and all expenses for freight, labor to perform warranty service, and purchase of spare parts are the responsibility of the buyer. Any fraudulent claims made may void the warranty. Any additional warranty that may be provided by an authorized Summit Dental Systems dealer is the sole responsibility of said dealer.
- SDS reserves the right to make changes or improvements on any products without being required to modify existing equipment in a like manner.



Please complete and retain for your records the following Information:

In case of warranty part replacement/repair or when ordering a part, please call your authorized Summit Dental Systems dealer and have the following information available:

|               |                |
|---------------|----------------|
| Owners' Name: | Phone #:       |
| Model #:      | SDS Serial #:  |
| Dealer:       | Phone:         |
|               | Purchase Date: |



1280 SW 27<sup>th</sup> Ave - Pompano Beach - FL 33069

Toll Free: (800) 275-3368

[www.summitdental.com](http://www.summitdental.com)