

Installation
Operation
Maintenance
Troubleshooting
Version Dec/17



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Congratulations!

All of us at Summit Dental Systems want you to know that your 1402 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.

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

European Authorized Representative



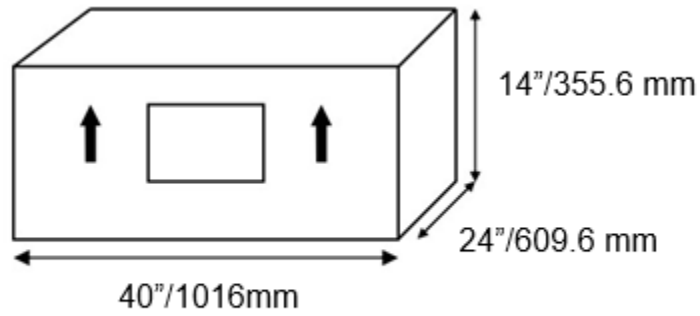
MT Promedt Consulting
 GmbH Altenhofstrasse 80
 D-66386 St. Ingbert,
 Germany
 Phone: +49 (0)6894-581020
 Fax: +49 (0)6894-581021

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).

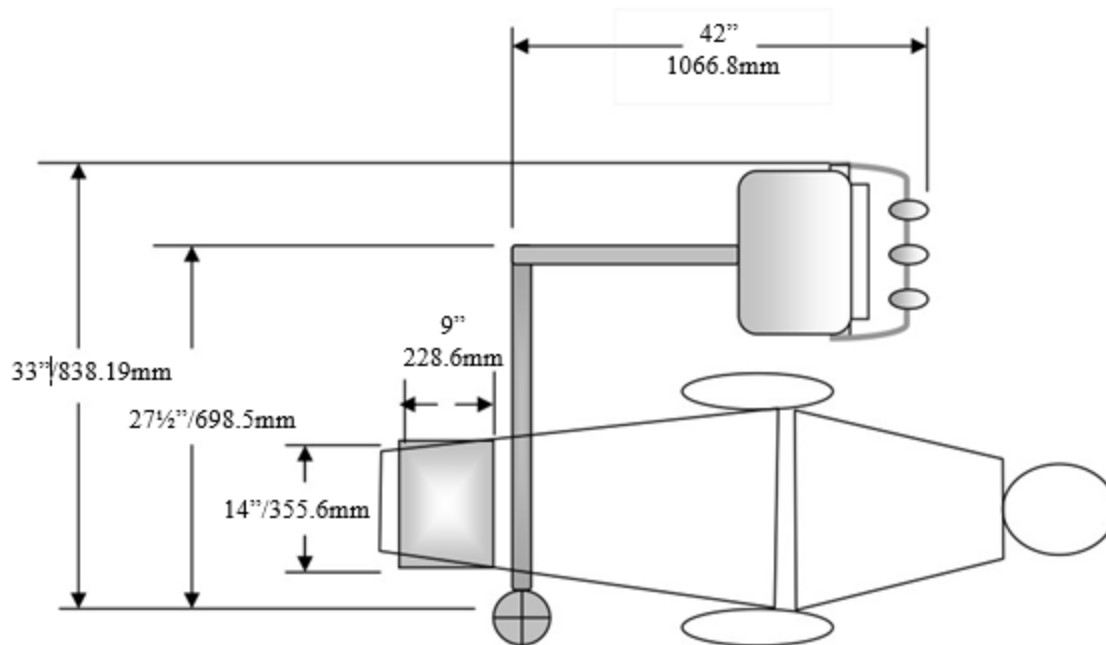
Weight & Dimensions

Shipping Information



Shipping Weight: 41 lb/18.60 Kg

General Dimensions

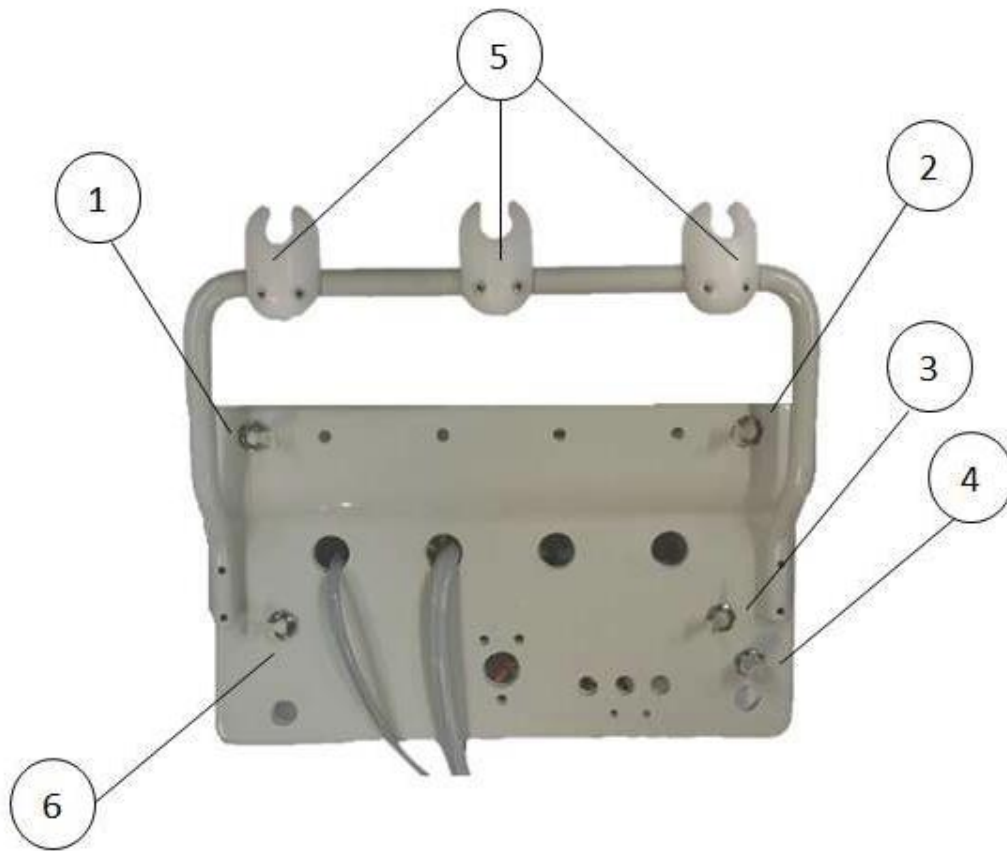


Operator's Instructions

1. Turn the Master On/Off toggle to the 'On' position. It is located under the left side edge of the control head (see pictures on the next page for location of the controls).
2. The handpieces are automatically activated when removed from their hanger.
3. Depress the Foot Control to operate the activated handpiece. Pressure is shown on the gauge for the handpiece being used.
 - **NOTE:** Individual handpiece pressure adjustments are located at the bottom rear of the control head.
To adjust the pressure to each handpiece, turn the adjustment screw clockwise to decrease pressure or counter-clockwise to increase pressure.
4. To activate water spray, turn the Water On/Off Toggle to the 'On' position. It is located on the right side edge under the control head. Flow adjustment to the 'wet' handpieces is controlled by the controls labeled 'Flow Control'.
5. To release the air lock of the unit arm, activate the momentary toggle valve and adjust the height of the flex arm to desired position. When desired position is achieved, release the momentary toggle switch to lock the height of the flex arm.

CAUTION: Do not attempt to adjust the height of the flex are without releasing the air-brake valve. Failure to release the air-brake valve may cause damage.

Controls on Bottom of Delivery Unit



MANUAL

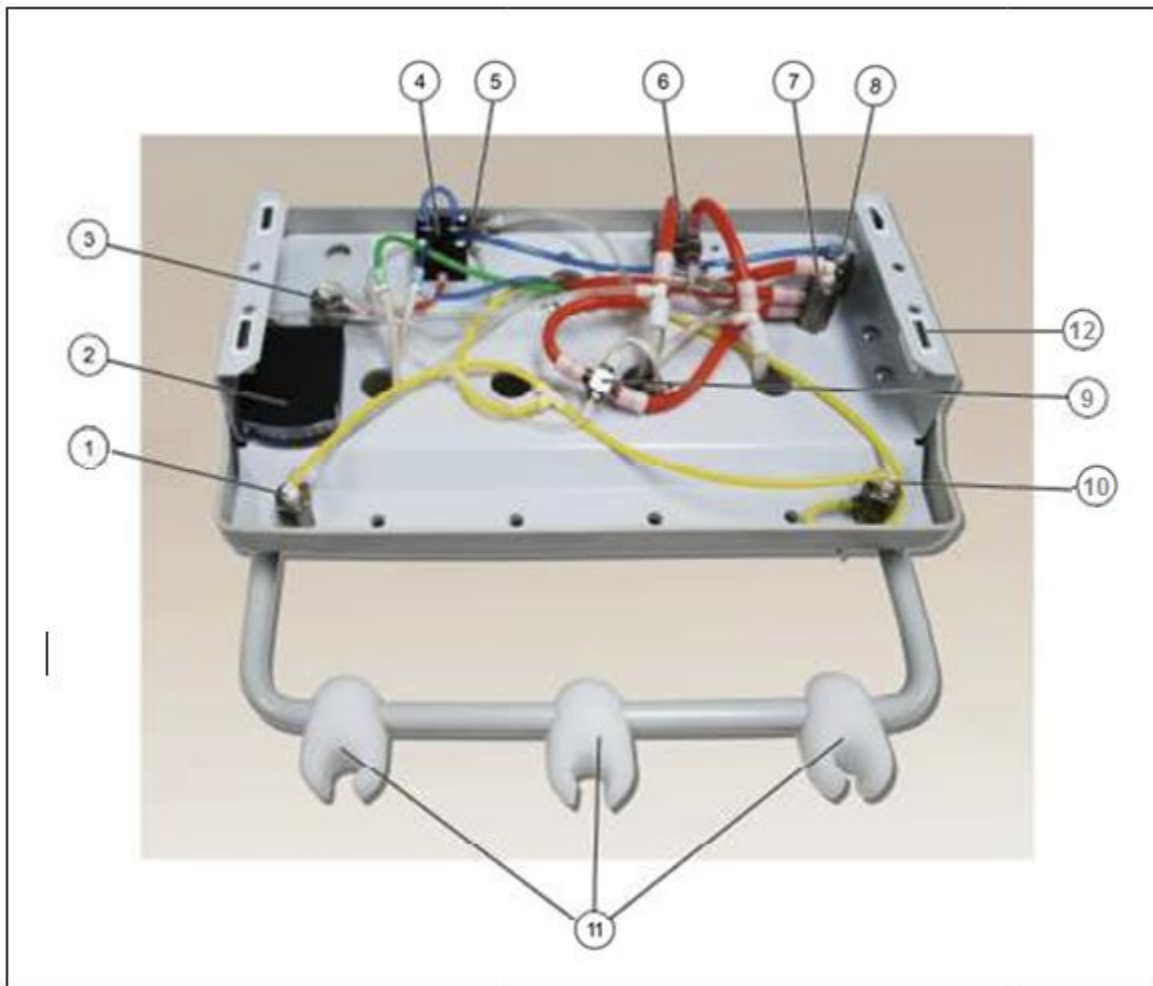
Item	Description	Part #
1	Master On/Off 3-Way	5-070-0051
2	3-Way Momentary Valve - Air Brake 3-Way N/O	5-070-0092
3	3-Way Valve - Water Selector	5-070-0051
4	Flow Control Needle Valve	5-070-0054
5	Egg Syringe Holder	5-020-0285
6	Valve Routing, Handpiece selection 2 way	5-020-0135



AUTOMATIC

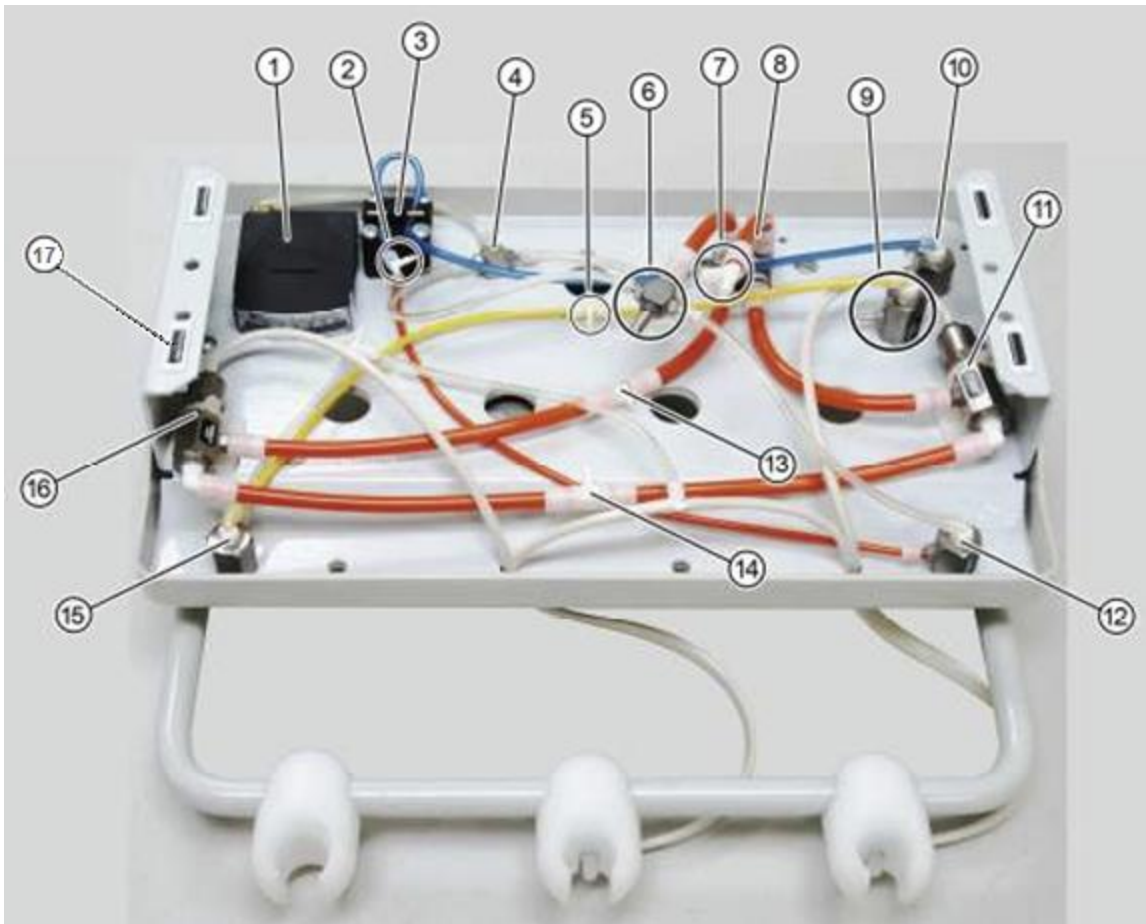
Item	Description	Part #
1	Master On/Off 3-Way	5-070-0051
2	3-Way Momentary Valve - Air Brake 3Way N/O	5-070-0092
3	Water Flow Control Needle Valve	5-070-0054
4	Egg Syringe Holder	5-020-0285
5	Egg Handpiece Holder with Pilot Valve	5-020-0286
6	3-Way Valve - Water Selector	5-070-0051

Flow Diagram



MANUAL

Item	Description	Part #
1	Master On/Off	5-070-0051
2	Flat Gauge	5-020-0008
3	Water Selector 3-Way Valve	5-070-0051
4	Pinch Relay	5-020-0043
5	Shuttle Valve	5-020-0007
6	Manifold Block 2 Port	5-020-0145
7	Handpiece Selector 2-Way Valve Routing Valve	5-020-0135
8	Water Flow Control Needle Valve	5-070-0054
9	4-Way Cross	5-070-0005
10	Air Brake 2-Way Momentary Valve	5-070-0092
11	Egg Syringe Holder	5-020-0285
12	Magnet Snap - In	4-020-0006
13	Magnet , Striker Plate 7/8 x 1/4 (not shown)	4-020-0010



AUTOMATIC

Item	Description	Part #
1	Flat Gauge	5-020-0008
2	1/16 x 1/16 x 1/16 Tee - Water to Syringe	4-070-0074
3	Water Relay	5-020-0043
4	Shuttle Valve	5-020-0007
5	1/16 x 1/16 x 1/16 Tee - Air in to the master	4-070-0074
6	4-Way Cross - Drive air HP #1	5-070-0005
7	¼ x ¼ x ¼ Tee - Drive air HP #2	5-030-0032
8	Manifold Block 2 Port	5-020-0145
9	Water selector 3 way valve	5-070-0051
10	Flow Control Needle Valve	5-070-0054
11	Pilot 2-Way Valve	5-070-0059
12	3-Way Momentary - Air brake	5-070-0092
13	¼ x 1/16 x ¼ Tee - HP #1	5-020-0052
14	¼ x ¼ x ¼ Tee - Drive air	5-030-0032
15	3-Way Valve Master On/Off	5-070-0051
16	Pilot 2-Way Valve	5-070-0059
17	Magnet, Snap-In	4-020-0006
18	Magnet, Striker Plate (not shown)	4-020-0010

Purging Your System

Daily Maintenance

Purging with air: At the end of every day, the lines should be purged with air to prevent the growth of biofilm.

1. Remove handpieces from tubing.
2. Empty the water bottle, then reinstall it (if water bottle is applicable, when using city water, turn off water from the source).
3. Hold the handpiece tubing and syringe over a pail. Turn the unit on, wait a few moments and then operate the flush toggle (if applicable), syringe and foot control until water is purged from the system.
4. Turn unit off.

Disinfecting the bottle (if applicable): Fill the bottle with 100 ml disinfectant solution, shake vigorously and let settle for 10 minutes. Shake again, and then rinse twice with water.

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 (if water bottle is applicable), replacing the water with cleaning solution (see Disinfectant Solution).
 - b. Remove handpieces from tubing and hold the handpiece tubing and syringe over a pail. Turn unit on, wait a few moments and then operate the flush toggle (if applicable), syringe and foot control until a continuous stream of solution is running through the system.
3. Allow the disinfectant to remain in the unit for at least 10 to 20 minutes and then flush the system again until all the solution is used up.
4. Purge the unit with air:
 - a. Hold the handpiece tubing and syringe over a pail. Turn the unit on, wait a few moments and then operate the flush toggle (if applicable), syringe and foot control until all solution is purged from the system.
 - b. 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 (if applicable). Replace with clean bottle and water.
 - b. Hold Remove handpieces from tubing and hold the handpiece tubing and syringe over a pail. Turn unit on, wait a few moments and then operate the flush toggle (if applicable), syringe and foot control until a continuous stream of solution is running through the system.

Disinfectant Solution: Use 100 ml (9 parts tap water & 1 part 5.25% Sodium hypochlorite (household bleach) of disinfectant solution for each application per week. Always use a fresh mixture every week.

Troubleshooting Guide

SYMPTOM

PROBABLE CAUSE

1. Handpiece Lacks Power

- A. Check 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 at connection with tubing.
- 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 in valve

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. Water filter may be plugged.
- C. Plugged handpiece.
- D. Kinked or pinched tubing.
- E. Improper adjustment of water relay.

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

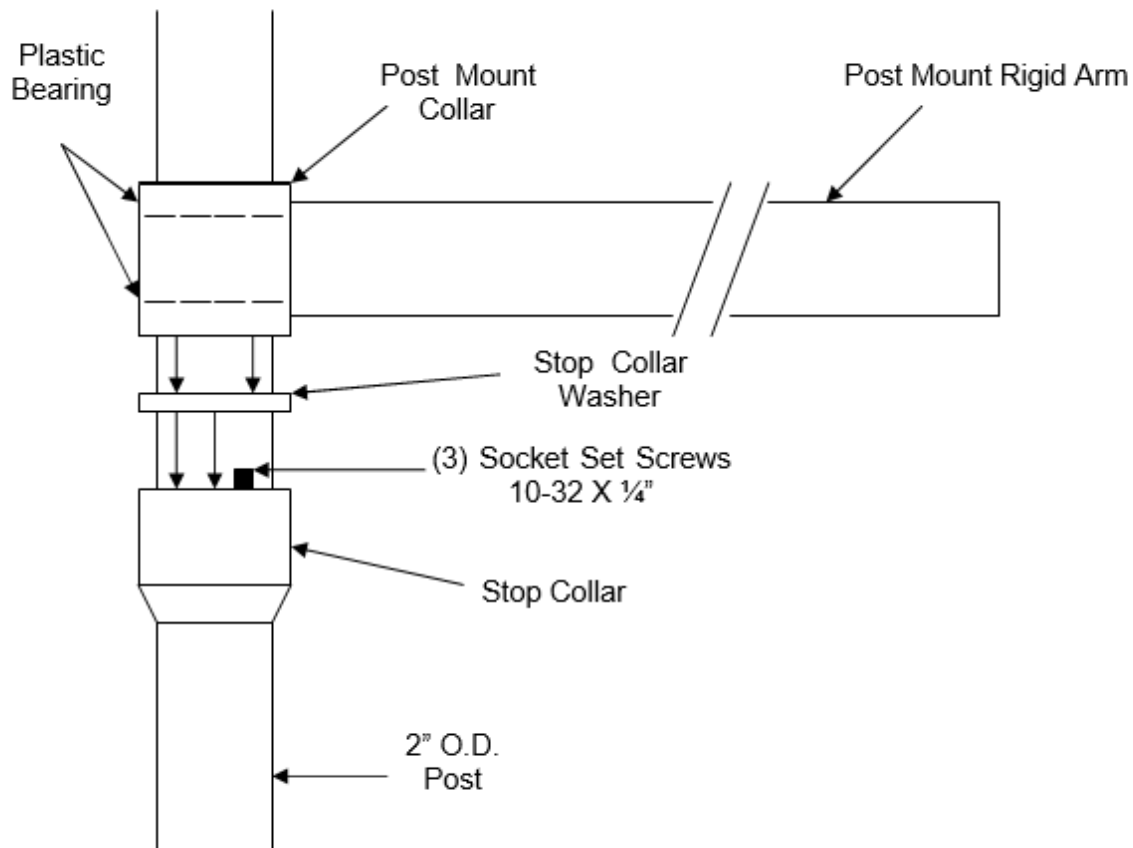
- A. Water pressure is too high.
- B. Air pressure is too low.
- C. Handpiece holder out of adjustment.

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. Improper adjustment of water relay.

Installation Instructions

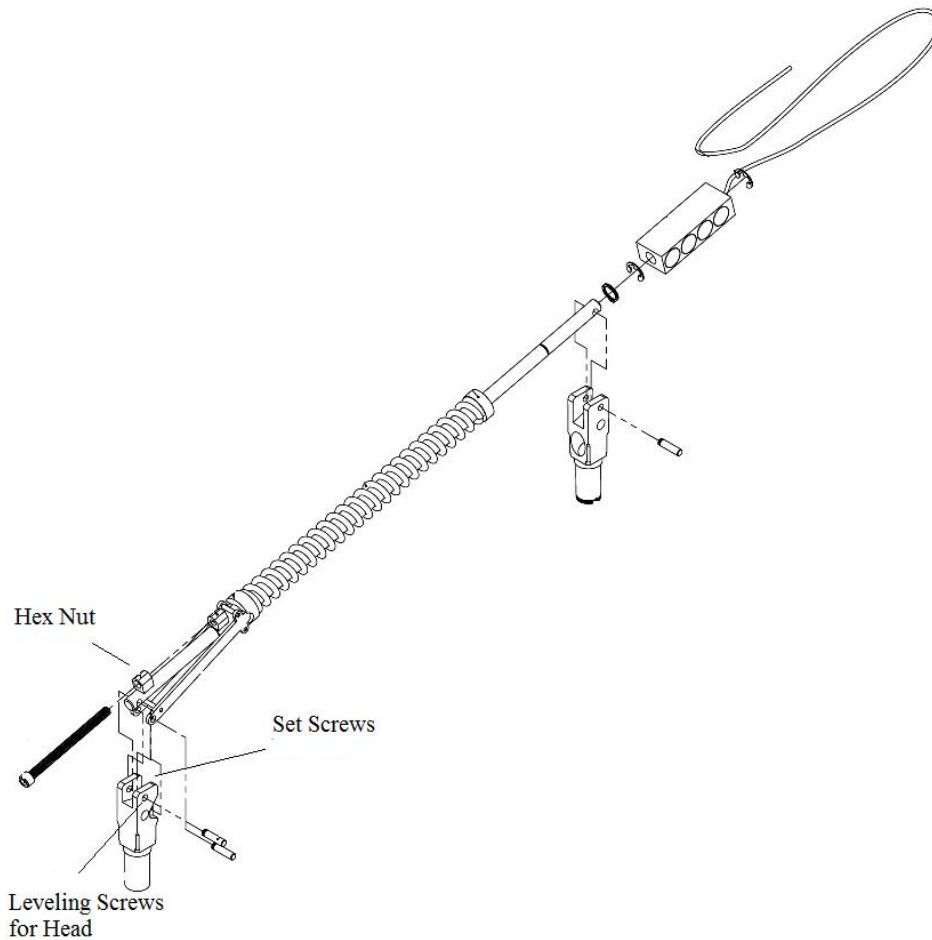
Mounting Unit to Post



1. Slide the Stop Collar down the post to desired height and tighten the (3) Socket Set Screws with a 3/32" Allen Key.
2. Slide the Stop Collar Washer down the post so it resets on top of the Stop Collar.
3. Slide the Rigid Arm of the unit down the post in a side-to-side motion.

Please Note: the Plastic Bearing Strips inside the Post Mount Collar must remain intact in their channels, while sliding the rigid arm down the post. If they are not intact or in their channels properly, the unit arm will not fit over the post properly, nor will the operator of the unit have proper fluid movement of the rigid arm.

Spring Tension Adjustment and Head Leveling



Spring Tension Adjustment

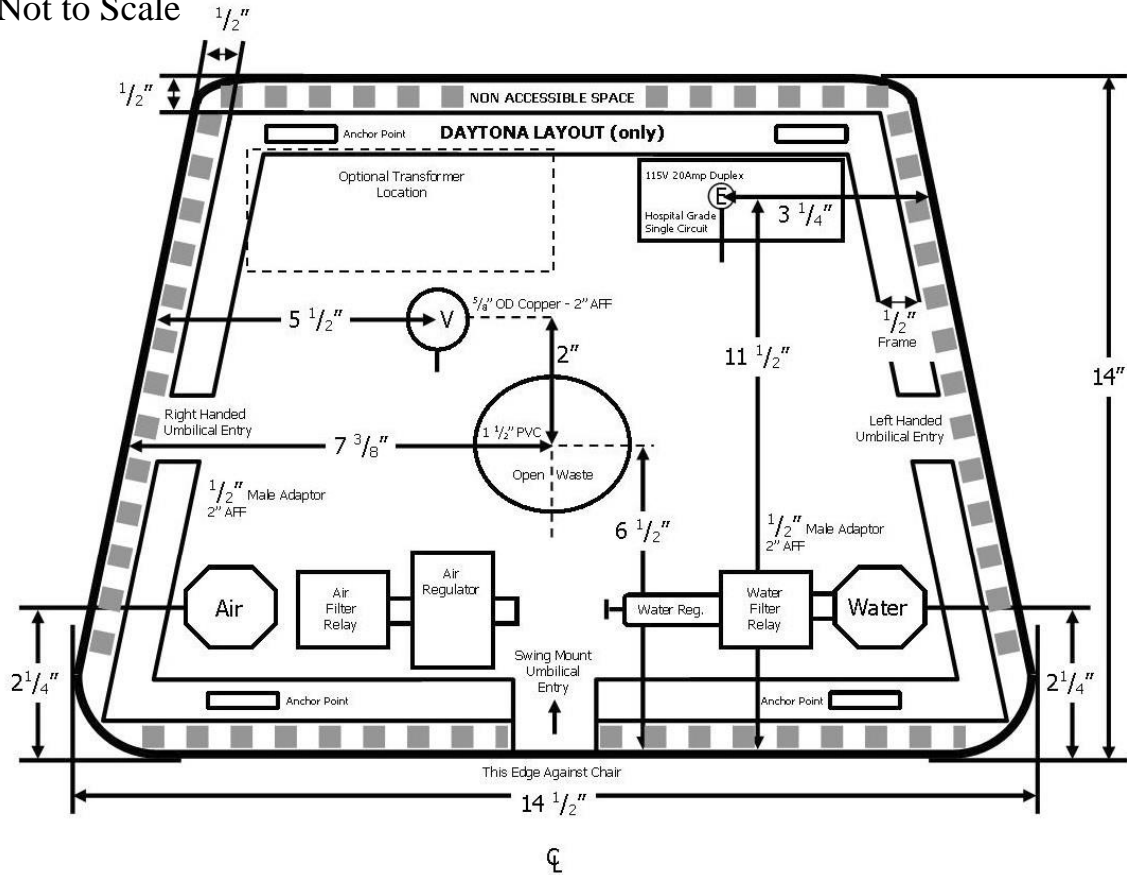
1. Remove rear cap from arm.
2. Using an allen wrench turn adjustment nut clockwise to tighten tension and counter clock wise to loosen tension.

To Level Unit Head

1. From the bottom of the control mount arm adjust the three set screws with an allen wrench, turning them clockwise to raise and counter-clockwise to lower.

Utility Center Plumbing Layout

Not to Scale



Electrical - 115 volt service 20 amp single circuit, hospital grade duplex vertical mount.
See local codes /NEC section 517 paragraph C. Patient care area
AIR - 1/2" male adaptor 2"AFF
Water - 1/2" male adaptor 2"AFF
Vacuum 5/8" O.D. copper 2"AFF
Waste - 1 1/2" PVC open drain 1"AFF

Description	Part #
Junction Box Assembly - Lt. Gray	2-020-3023

SDS Unit to Cuspidor Installation Instructions

Preparation

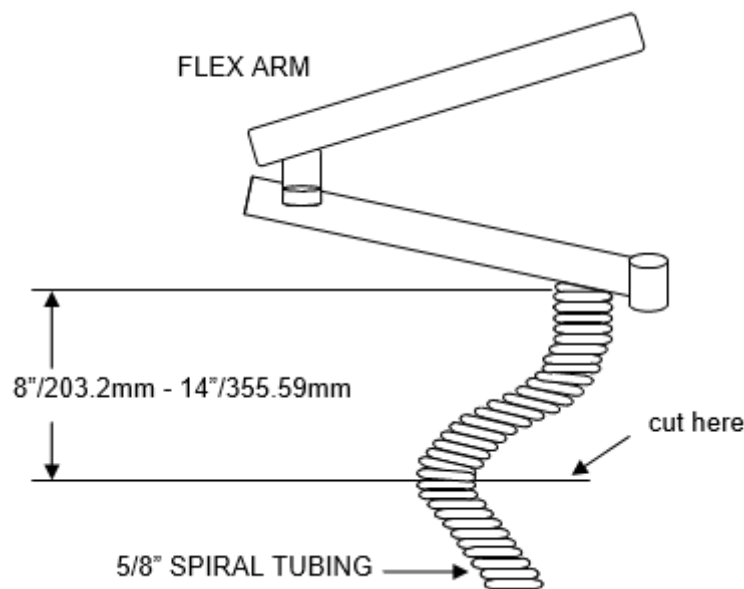
The cuspidor should be mounted in the desired location on the post.

The control flex arm should be mounted on the post at the desired height.

Shortening Arm Umbilical

To determine the length of the outer umbilical of the delivery unit, hold the umbilical up against the plastic grommet in the pass through hole located on the side of the cuspidor post mounted utility box. Allow enough length that the delivery unit arm can be moved freely without crimping the hose. Usually 8"/203.2mm to 14"/355.59mm from the point the umbilical exits the arm is sufficient (varies according to the height relationship of the delivery unit arm to the cuspidor post mounted utility box). Mark the appropriate length on the umbilical. Carefully cut **only** the outer umbilical at the desired length.

Insert the tubing and low voltage wire into the grommet and pass through hole of the cuspidor post mounted utility box until $\frac{1}{2}$ "/12.7mm of the outer umbilical is through to the inside of the pass through hole. Secure the umbilical on the inside of the pass through hole using the tie wrap provided.



Master On/Off Toggle Signal Connections

Connect the 1/8" yellow and 1/8" clear tubing from the unit to the plastic in line connectors located on the ends of the matching yellow and clear 1/8" tubing in the cuspidor umbilical.

Control Head Water And Air Lines

Connect the 1/4" blue tubing to the unregulated port on the water shut off valve.

Connect the 1/8" blue tubing from the unit to the water regulator.

Connect the 1/8" green tubing from the unit to the port, shown in the diagram, cut and install the 1/16" plastic "T" provided.

Locate the 1/8" gray tubing and connect to the 1/16" plastic "T" installed in the previous step.

Foot Control Connections

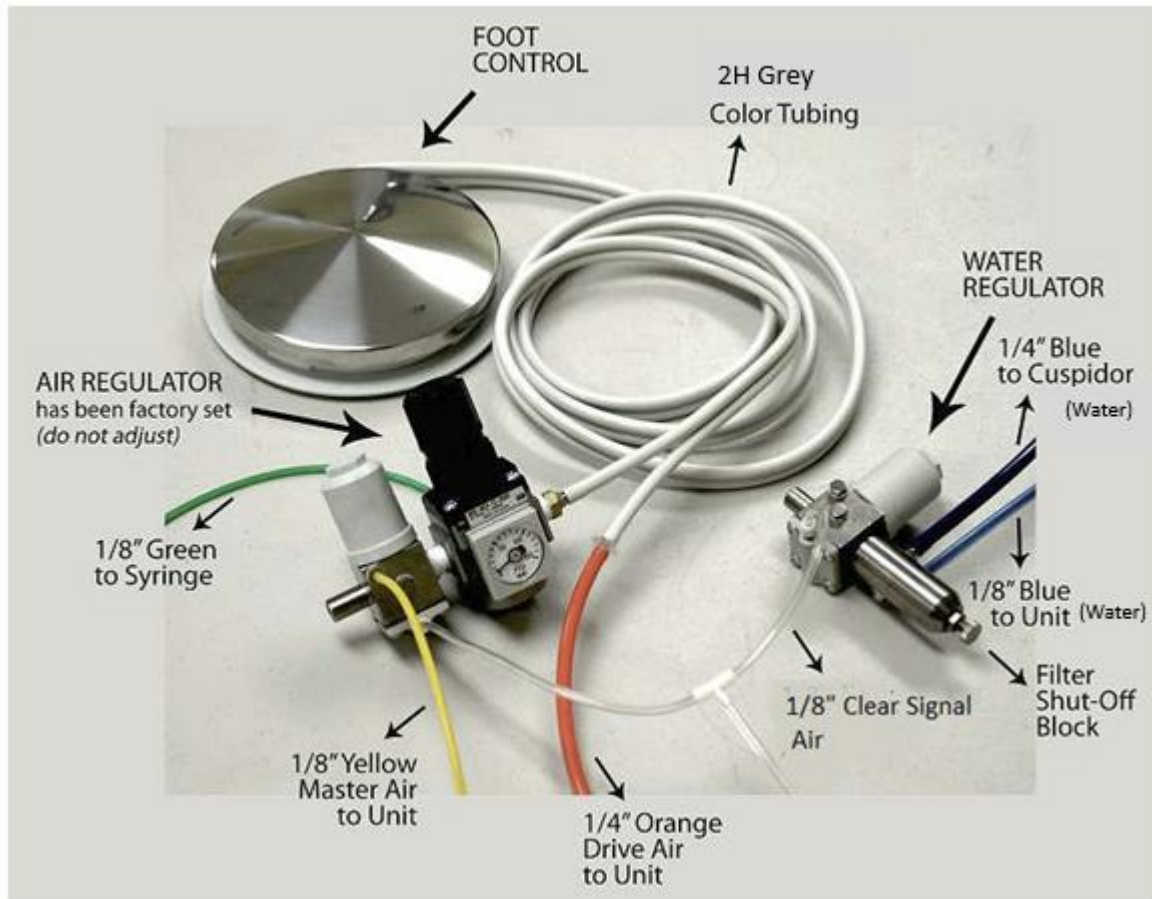
Outlet

Disconnect the foot control from the orange 1/4" tubing of the cut away portion of the umbilical. Leave the plastic 1/4" barbed in-line connector on the foot control tubing. Reconnect the free end of this barb to the 1/4" orange tubing from the unit.

Connect 1/8" orange tubing to purge tubing on wet & dry foot control.

(Note): If the on/off water coolant toggle is located on the foot control, connect the 1/8" gray or cream tubing from the foot control to the 1/8" orange tubing from the unit.

Utility Center Tubing Diagram



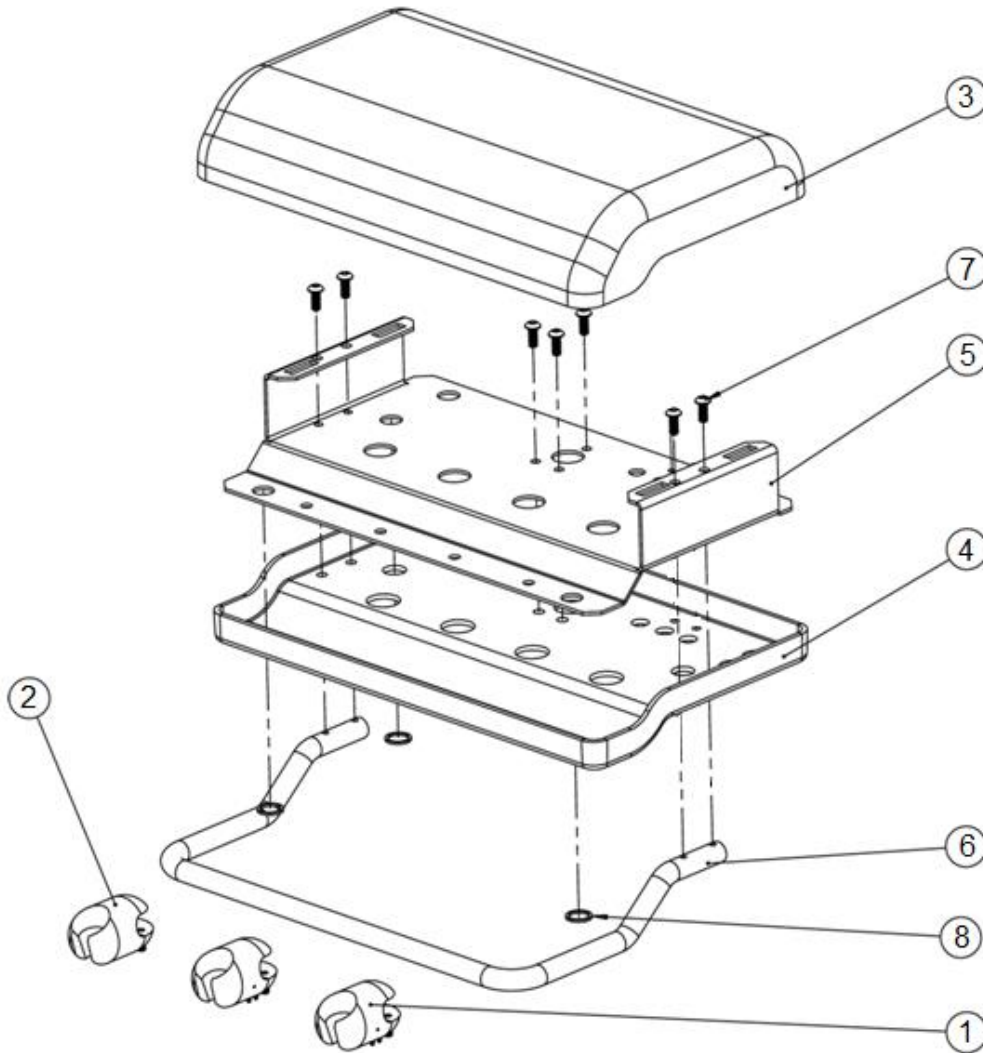
Water and Air Regulator Assembly

<u>Description</u>	<u>Part #</u>	<u>Description</u>	<u>Part #</u>
Standard Foot Control	5-020-0027	1/8" Blue Tubing	5-070-0090
Tubing, Grey 2H	5-070-0023	1/8" Clear Tubing	5-070-0027
Water Regulator	5-070-0103	1/4" Orange Tubing	5-070-0047
Filter Shut-Off Block	5-070-0102	1/8" Green Tubing	5-070-0083
Air Regulator	5-070-0111	1/4" Blue Tubing	5-070-0049
1/8" Yellow Tubing	5-070-0026		

Parts List

1402 Unit Head Assembly

Manual **3-020-1035**
Auto **3-020-1048**



Item	Description	Part #
1	Handpiece Egg holder with Valve	5-020-0286
2	Handpiece Egg holder	5-020-0285
3	Cover	2-020-0084
4	Base plastic cover	2-020-0086
5	Chassis	2-020-0088
6	Bar Holder	2-020-0089
7	Screw 10-24 x 1/2	4-070-0012
8	Washer	5-020-0235
	NOTE: Plastic tray	5-020-0005

** All item numbers for light gray color delivery unit*

Flex and Rigid Arm Assembly

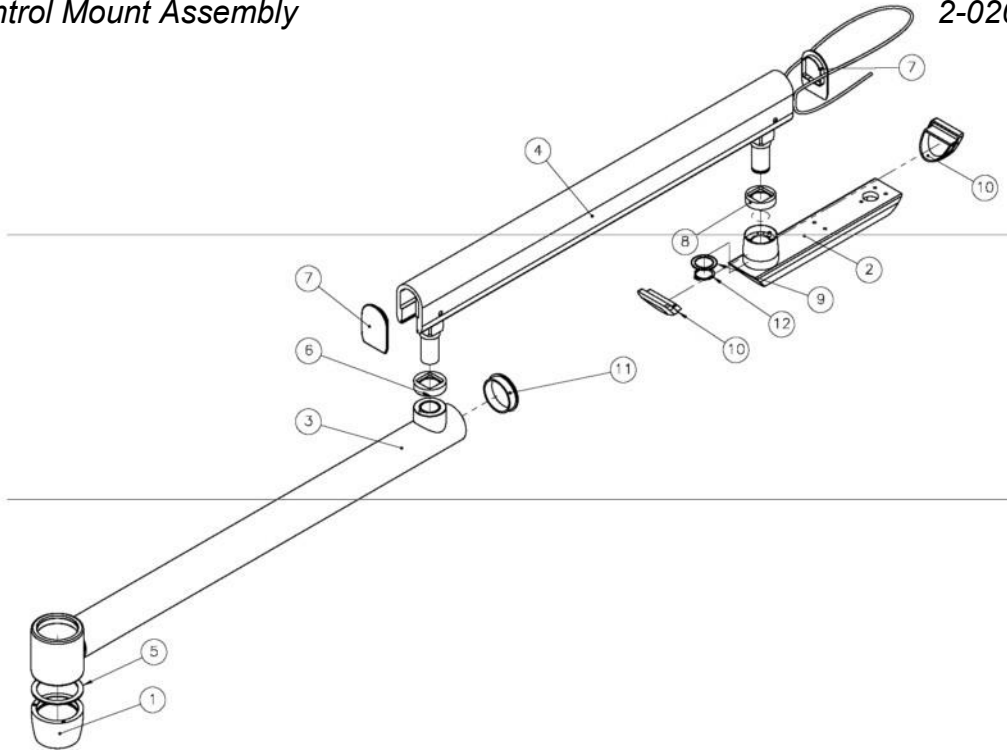
Flex Arm Assembly
Rigid Arm Assembly
Control Mount Assembly

3-020-1034

5-020-0016

5-020-0017

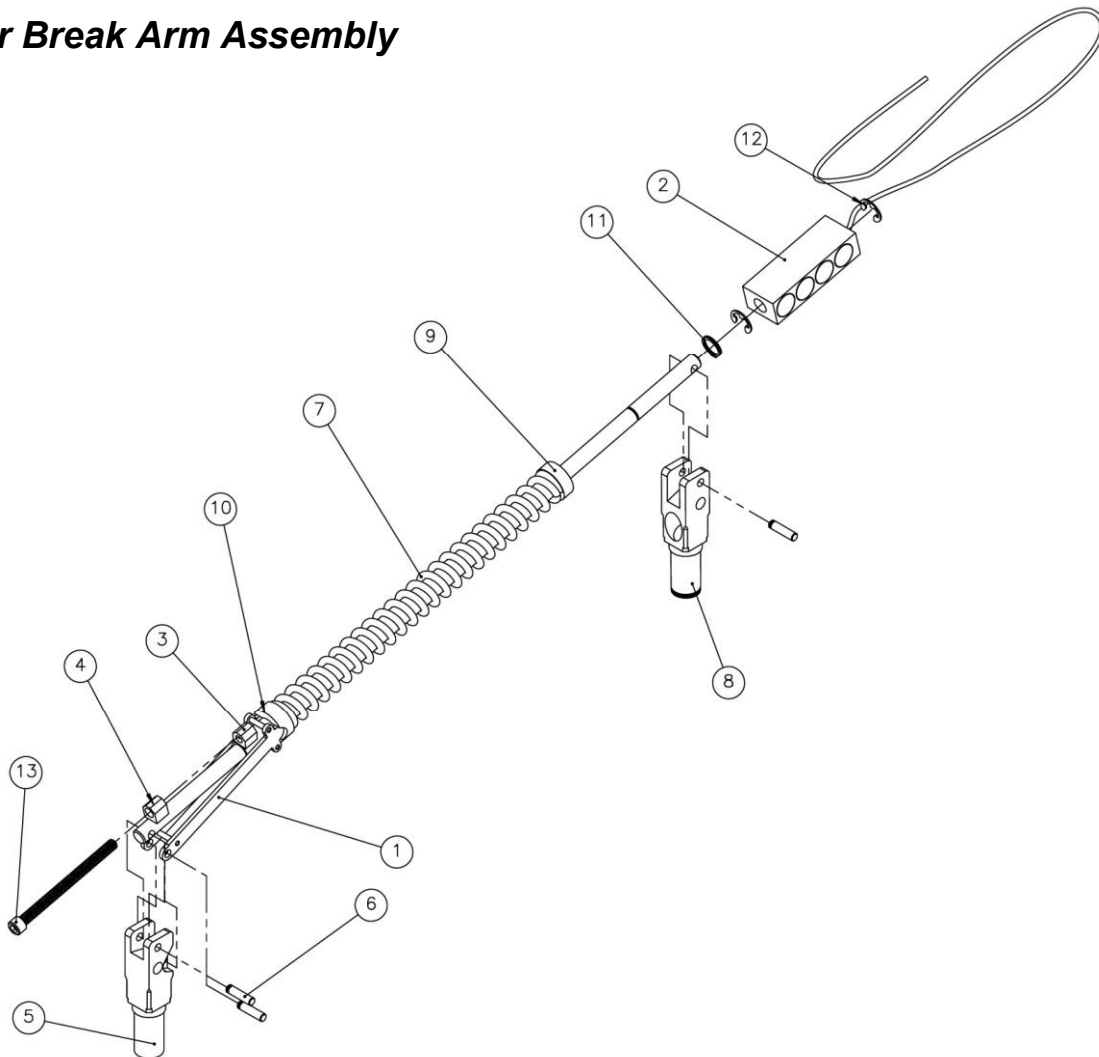
2-020-0031



Item	Description	Part #
1	Stop Collar	4-070-0002
2	Control Mount Arm	2-020-0031
3	Rigid Arm Post	5-020-0017
4	Flex Arm Assembly	5-020-0016
5	Stop Collar Ring	4-020-0005
6	Stop Ring 350 ⁰	2-020-0007
7	End Cap, Flex Arm	2-020-0009
8	Control Mount Stop Ring 180 ⁰	2-020-0076
9	Control Mount Washer	5-020-0128
10	End Cap, Control Mount Arm	2-020-0019
11	End Cap, Rigid Arm	2-020-0072
12	External Retaining Ring	2-020-0023

** All item numbers for light gray color delivery unit*

Air Break Arm Assembly



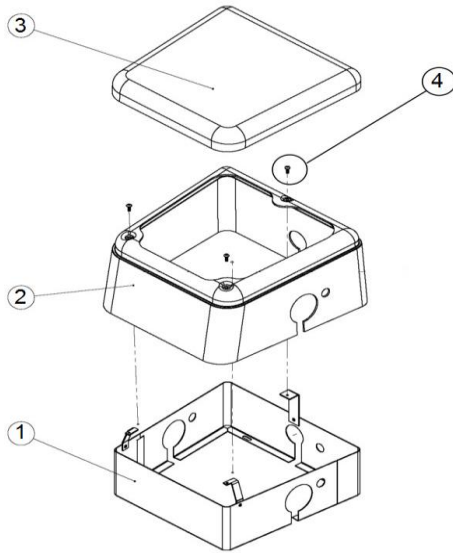
Item	Description	Part #
1	Tension Link	5-070-0213
2	Break	2-020-0055
3	Tension Holder	4-020-0018
4	Tension Adj. Nut	4-020-0019
5	Lower Knuckle	2-020-0054
6	Pin	5-020-0129
7	Spring	5-020-0133
8	Upper Knuckle	2-020-0053
9	Tension Ring	5-020-0131
10	Stopper	5-020-0134
11	Washer	5-020-0130
12	E-Clip	5-010-0015

Miscellaneous

<u>Description</u>	<u>Part #</u>
Standard Foot Control	5-020-0027
Foot Control with Cable Assembly	5-020-0024
Standard Syringe	5-070-0158
Standard Syringe with Cable Assembly	3-020-1031

** All item numbers for light gray color delivery unit*

Junction Box



DAYTONA

2-020-3023

<u>Item</u>	<u>Description</u>	<u>Part #</u>
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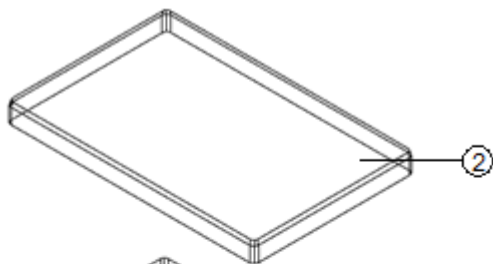
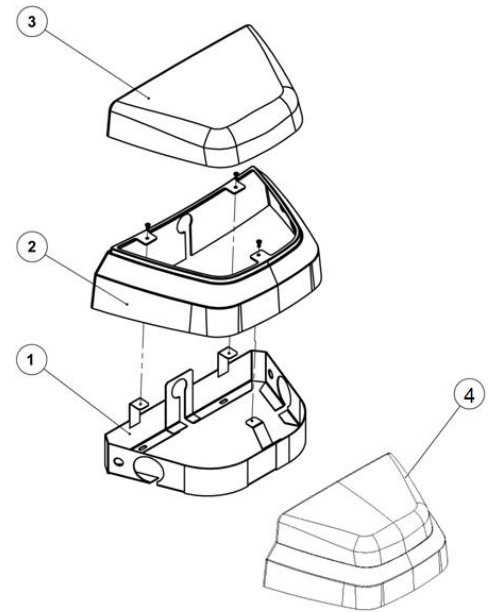
1	Junction Box chassis	5-070-0004
2	Junction Box Shell	5-070-0006
3	Junction Box Cover	5-070-0007
4	Screw 10-32 X 1/2	5-020-0078

Palm Beach

2-020-0155

<u>Item</u>	<u>Description</u>	<u>Part #</u>
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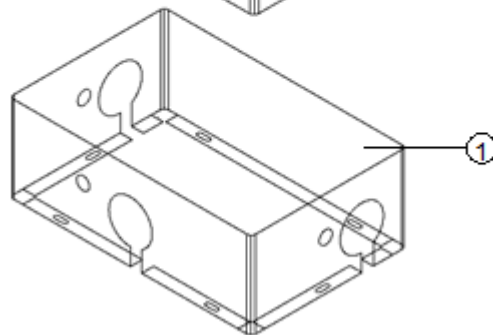
1	Junction Box chassis	5-070-0061
2	Junction Box Shell	5-070-0062
3	Junction Box Cover	5-070-0063
4	Junction Box Assembly	2-020-0155



J/B 1402/Carts 3-020-0084

<u>Item</u>	<u>Description</u>	<u>Part #</u>
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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:

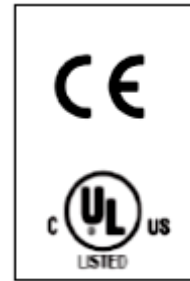
Chairs, Delivery Units, Cuspidors, Lights
 Control Block Diaphragm (part of Delivery Unit)
 All Upholstery, Stools, all Plastic Covers, and Cabinets

Warranty Period:

5 Years
 Lifetime
 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 27th 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 27th Ave - Pompano Beach - FL 33069

Toll Free: (800) 275-3368

www.summitdental.com