

Installation
Operation
Maintenance
Troubleshooting
Version Dec/17



1440 Euro Style

Congratulations!

All of us at Summit Dental Systems want you to know that your 1440 Euro Style 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



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Important Information

Technical Specifications

Factory Pre-set Air Regulator Pressure: 80 PSI
 Factory Pre-set Water Regulator Pressure: 40 PSI
 Syringe: Triple
 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
 Attention, consult accompanying operation instructions.		 Company Address 2005-06	

European Authorized Representative



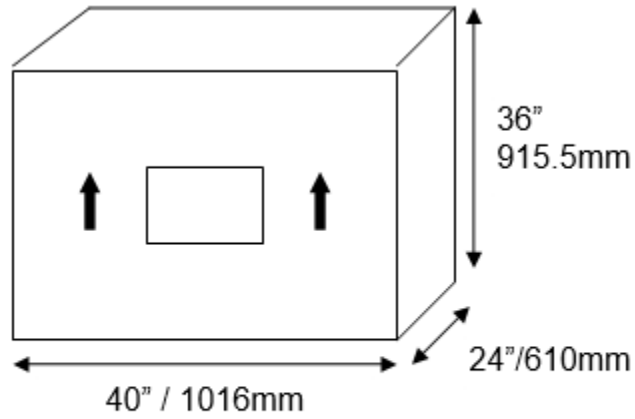
MT Promedt Consulting GmbH
Altenhofstrasse 80
D-66386 St. Ingbert, Germany
Phone: +49 (0)6894-581020
Fax: +49 (0)6894-581021

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

Shipping Information

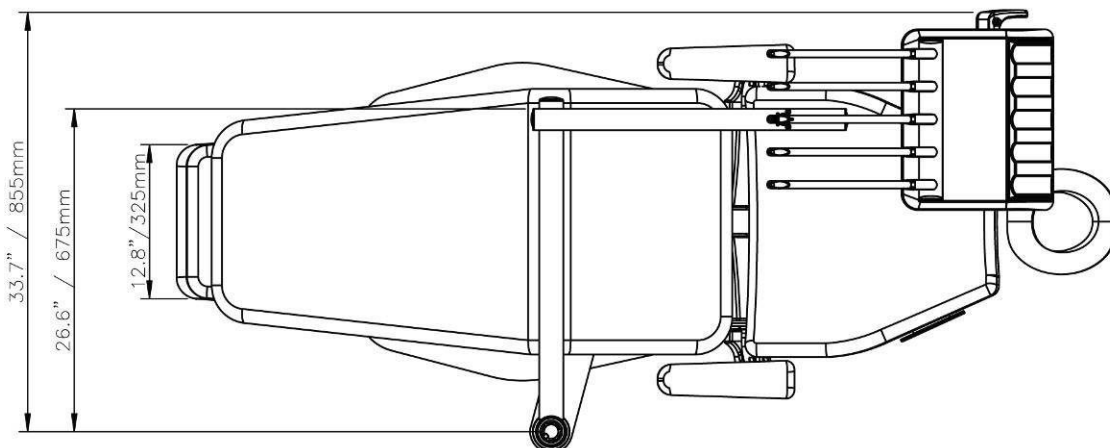
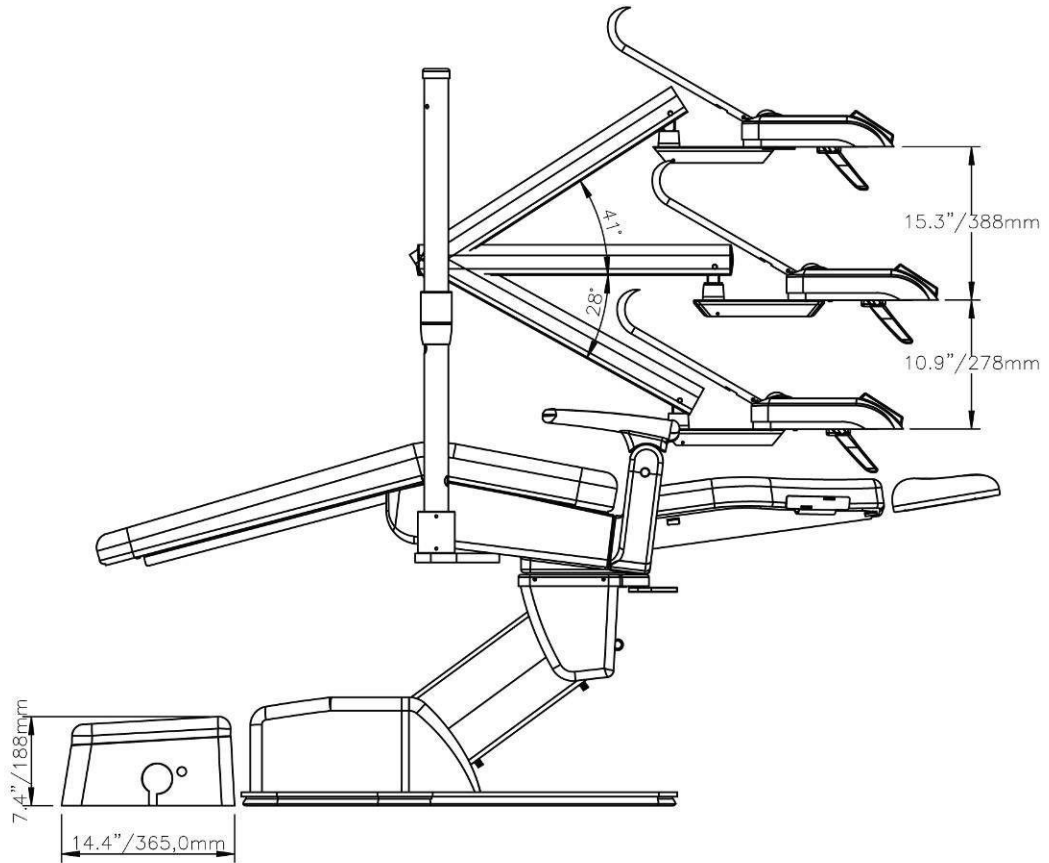


Shipping Weight: 55 lb / 20kg

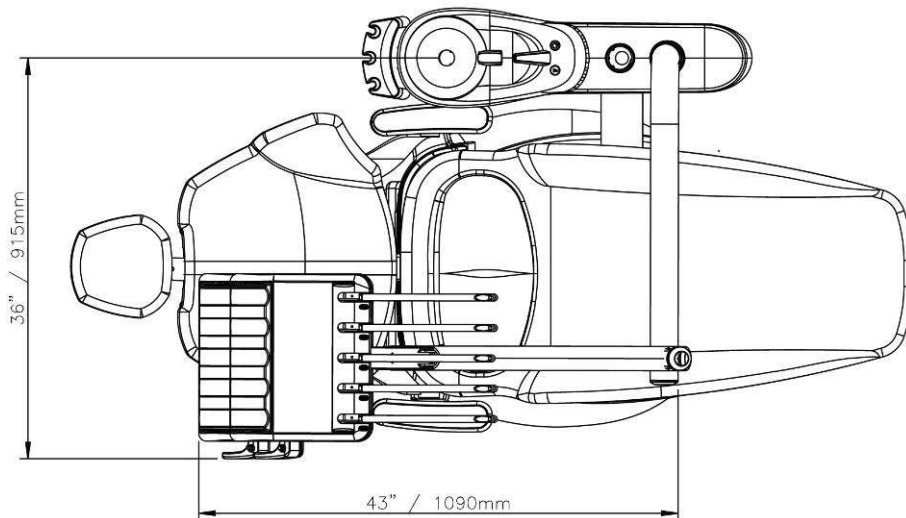
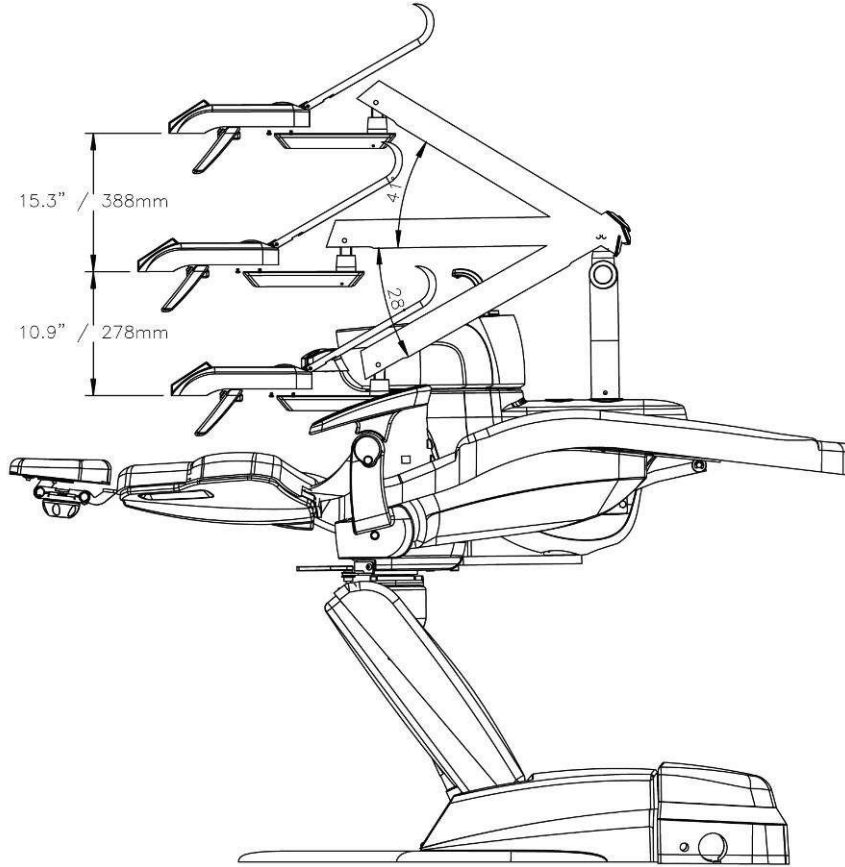
Dimensions

General Dimensions

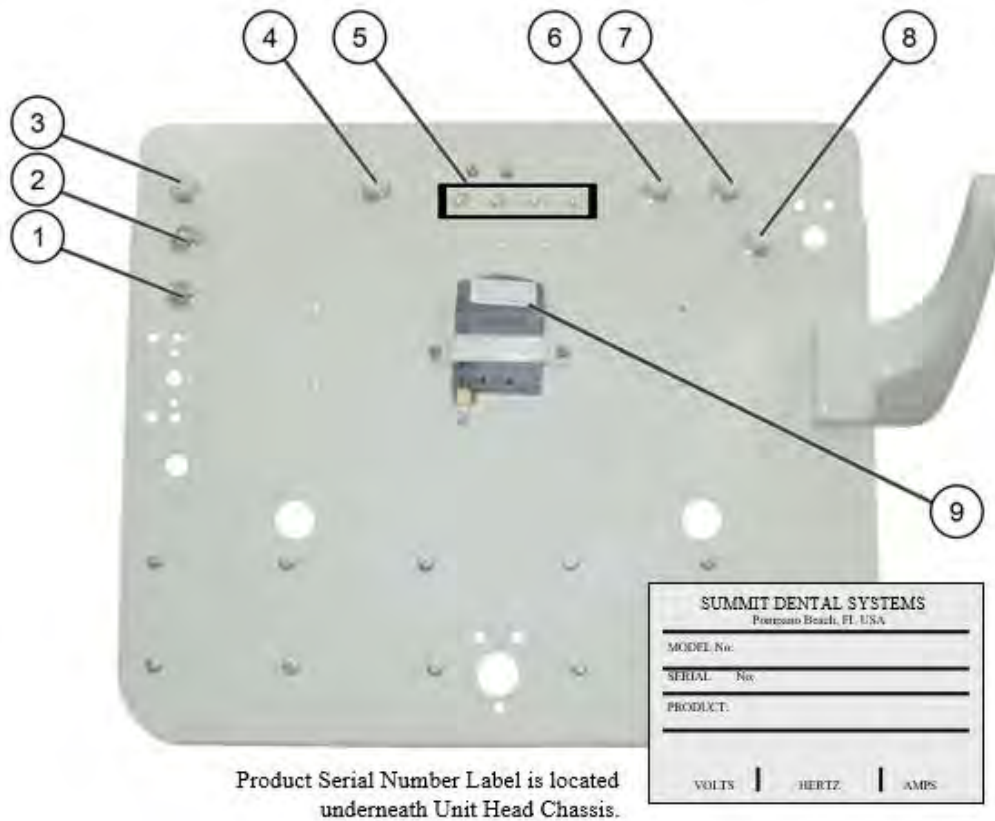
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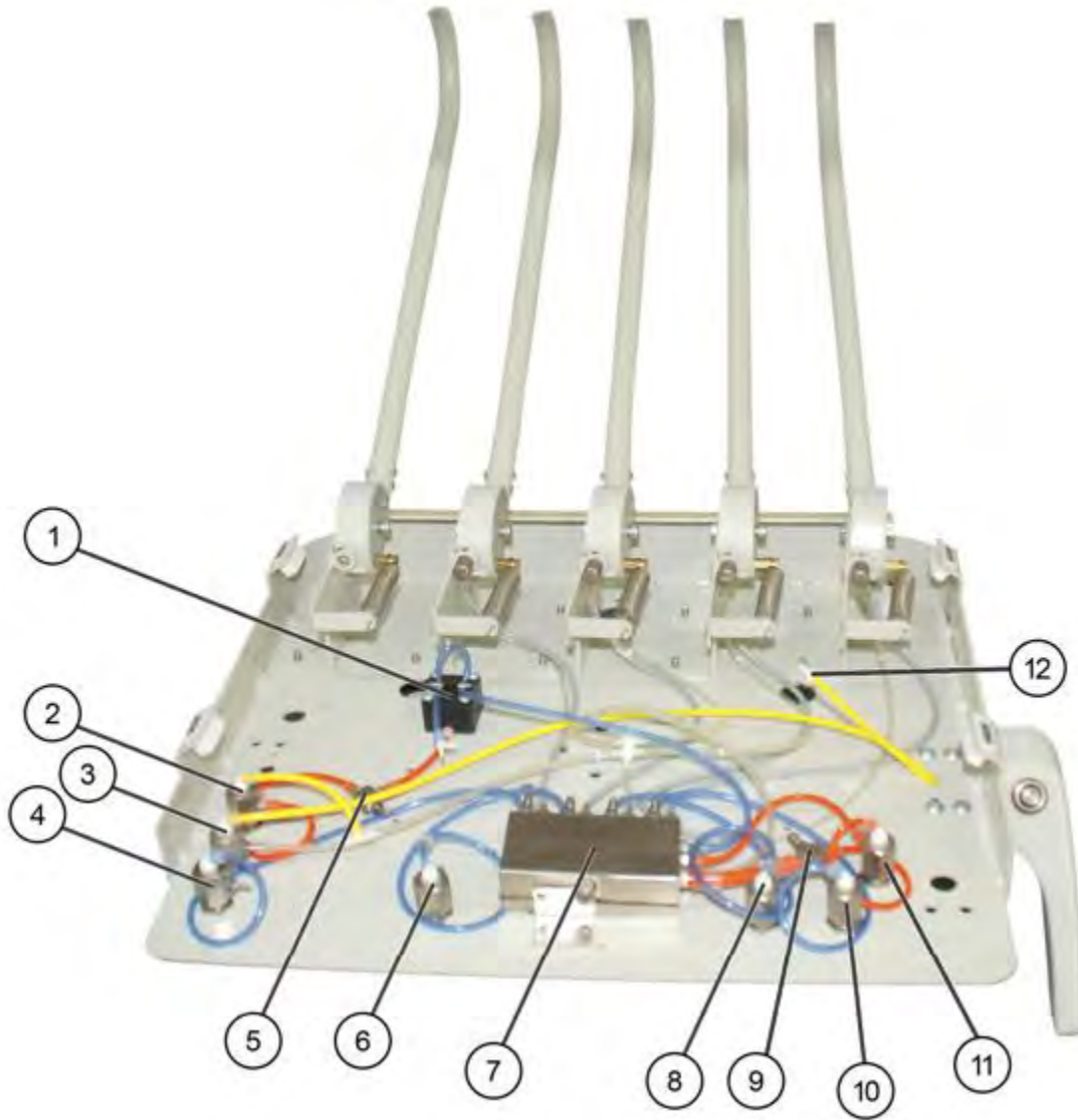
Operator's Instructions



- | | |
|-------------------------------------|---|
| 1. Handpiece Tubing Flush Switch | Remove handpieces from holders and activate the switch to flush handpieces. |
| 2. 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. |
| 3, 4, 6 & 7. Water Coolant Flow | Controls the flow of water coolant to handpieces. Turn Control counter-clockwise to increase, and clockwise to decrease or to fully cease for low-speeds. |
| 5. Air Adjustment Screw | Controls the flow of air coolant to handpieces. Turn counter-clockwise to increase, and clockwise to decrease. |
| 8. Air Collant | Adjusts the drive air pressure to the handpiece selector. Turn clockwise to decrease pressure, and counter-clockwise to increase pressure. |
| 9. Handpiece Pressure Gauge | Indicates pressure adjusted by the Drive-Air Control Knob. Avoid exceeding the manufacturer's recommended handpiece pressure. |

CAUTION: When adjusting the handpiece pressure, do not over-tighten the screws. This may result in unnecessary damage to the handpiece control block. Do not attempt to adjust the height of the flex arm without releasing the air-brake valve. Failure to release the air-brake valve may cause damage.

Flow Diagram



Item	Description	Part #	Item	Description	Part #
1	Water Relay	5-020-0043	7	Quad Block	5-020-0390
2	Purge On/Off mom 3 way	5-070-0052	8	Flow Control NV*	5-070-0054
3	Master On/Off	5-070-0051	9	4 Way Cross	5-070-0005
4	Flow Control NV*	5-070-0054	10	Flow Control NV*	5-070-0054
5	Shuttle Valve	5-020-0007	11	Air Coolant NV*	5-070-0054
6	Flow Control NV*	5-070-0054	12	Tee - Air Break Connection	5-020-0032

NV* = Needle Valve

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
- D. Bad pilot valve on Foot Control.

3. More than one handpiece is operating.

- A. Whip Arm not all the way back.
- B. Improper adjustment of Pilot Valve on Whip Arm cam.
- 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. Whip Arm not all the way back.
- D. Bad diaphragm.

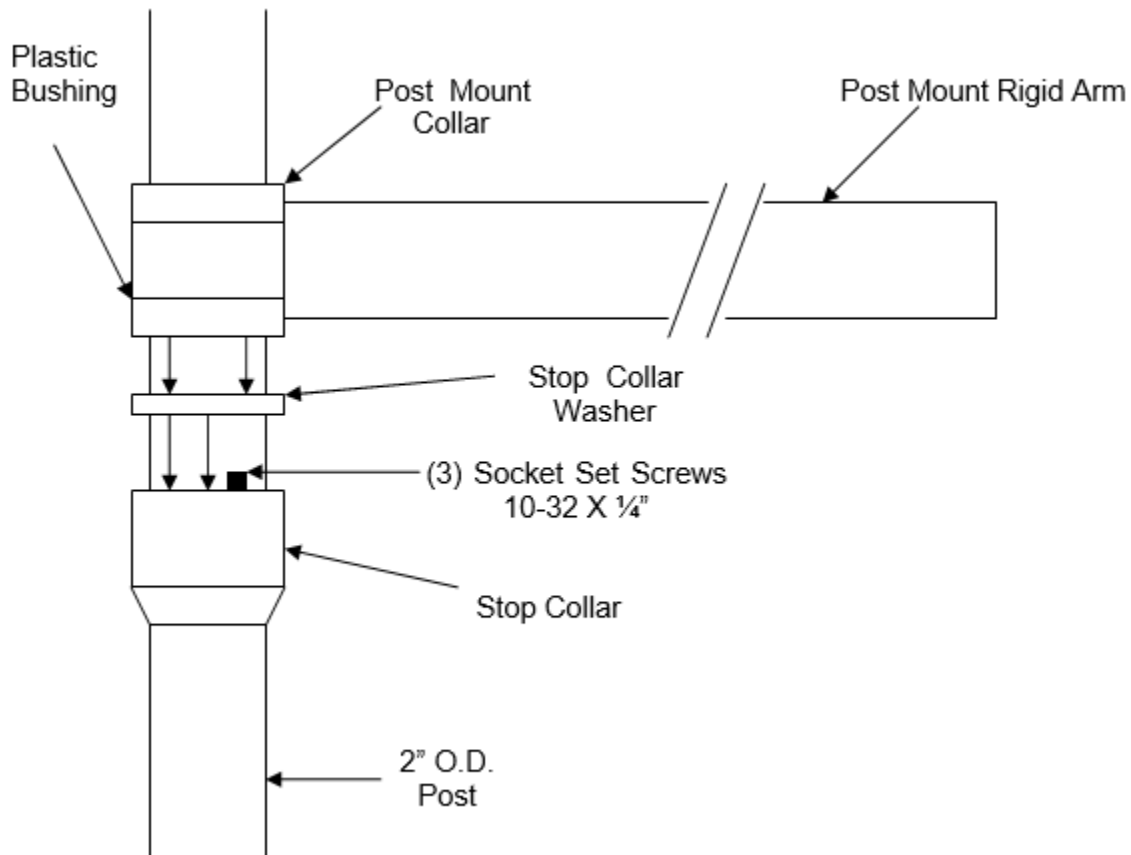
6. Water coolant is running continuously.

- A. Purge switch is on (on applicable systems).
- B. Water pressure is too high.
- C. Whip Arm not all the way back.
- D. Improper adjustment of water relay.
- E. Pilot valve adjustment on Whip Arm cam.
- F. Pilot valve on Wet/Dry Foot Control bad or stuck.

Installation Instructions

Mounting Unit to Post

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1. Slide the Stop Collar down the post to desired height and tighten the (3) Socket Set Screws with a 1/4" 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.

Euro Unit to Daytona Cuspidor

Installation Instructions

Preparation

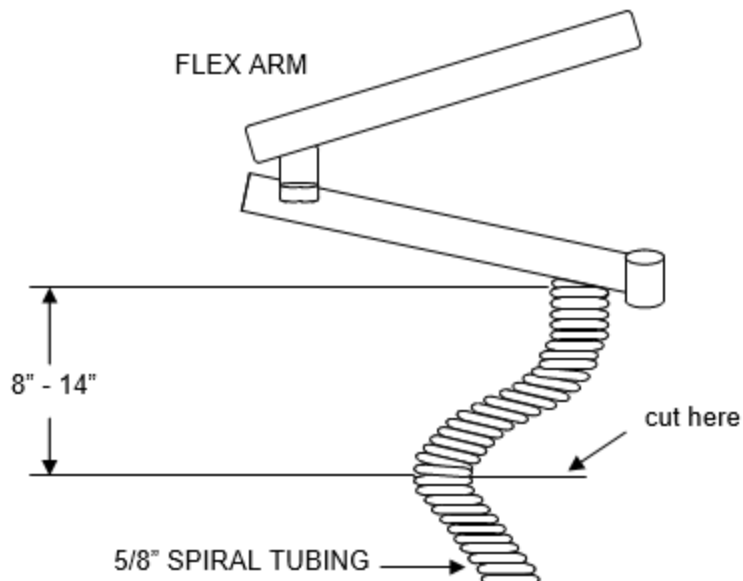
The cuspidor should be mounted in the desired location on the post.

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" to 14" 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 $\frac{1}{2}$ " 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.

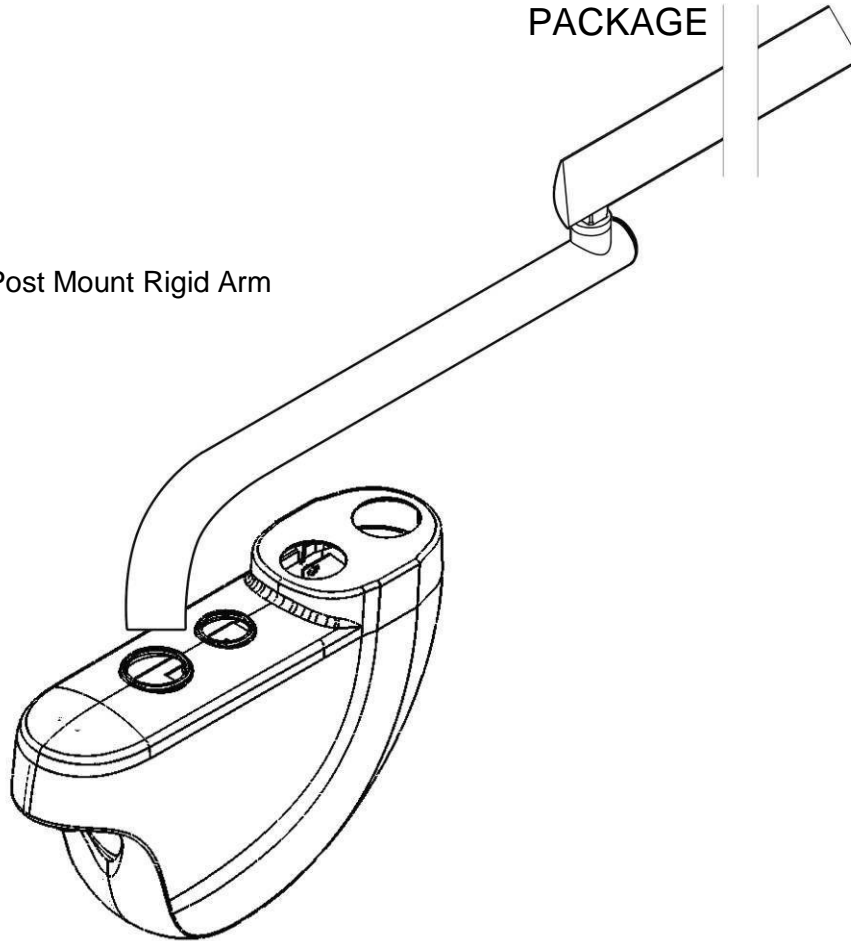
(Note): If the on/off water coolant toggle is located on the foot control, connect the 1/8" gray tubing from the foot control to the 1/8" orange tubing from the unit.

Mounting Unit to Post

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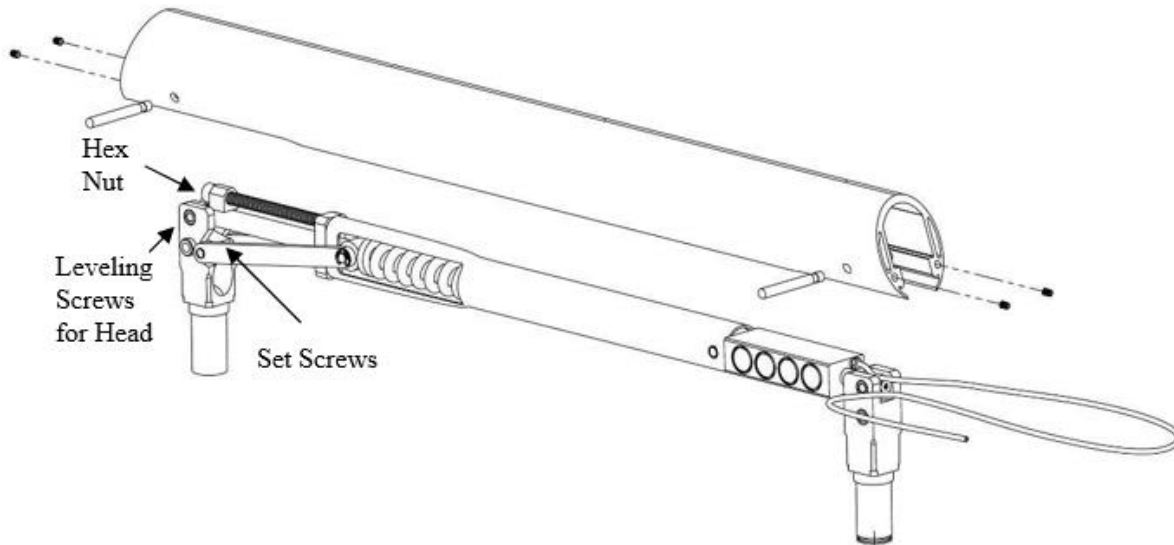
Post Mount Rigid Arm



1. Slide Beauty Collar onto Post Mount 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 and Head Leveling

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Spring Tension Adjustment

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

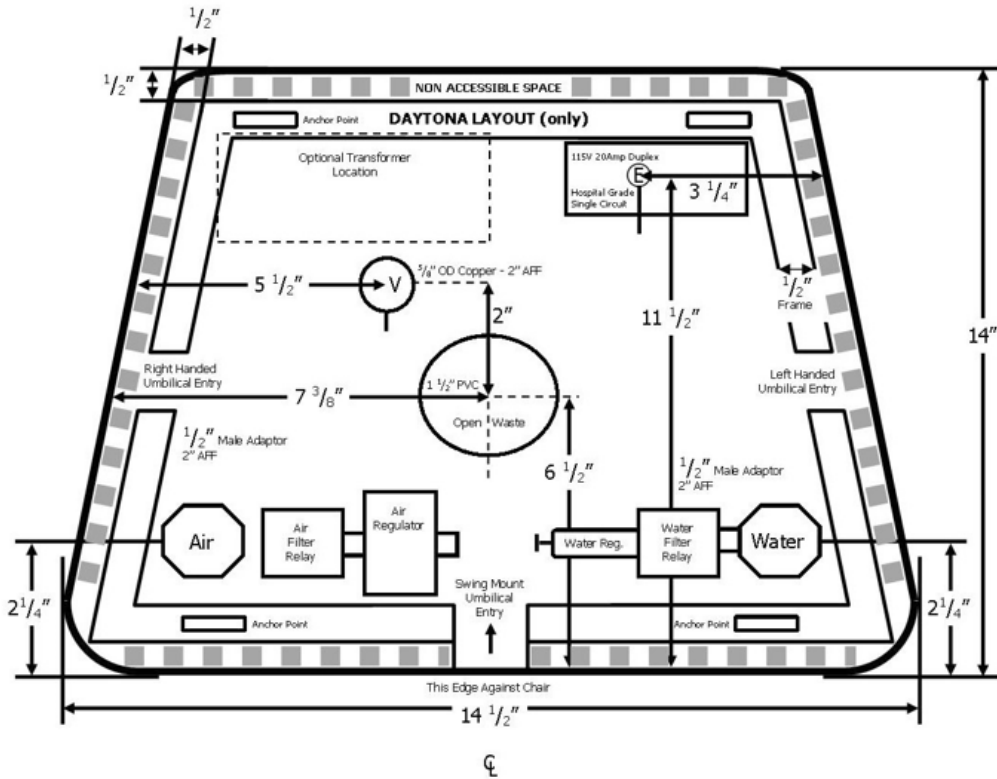
To Level Unit Head

1. Loosen set screw in bottom of rod.
2. Turn leveling screw clockwise to raise or counter-clockwise to lower.
3. Tighten set screw.
4. Replace end caps.

Utility Center Plumbing Layout

Not to Scale

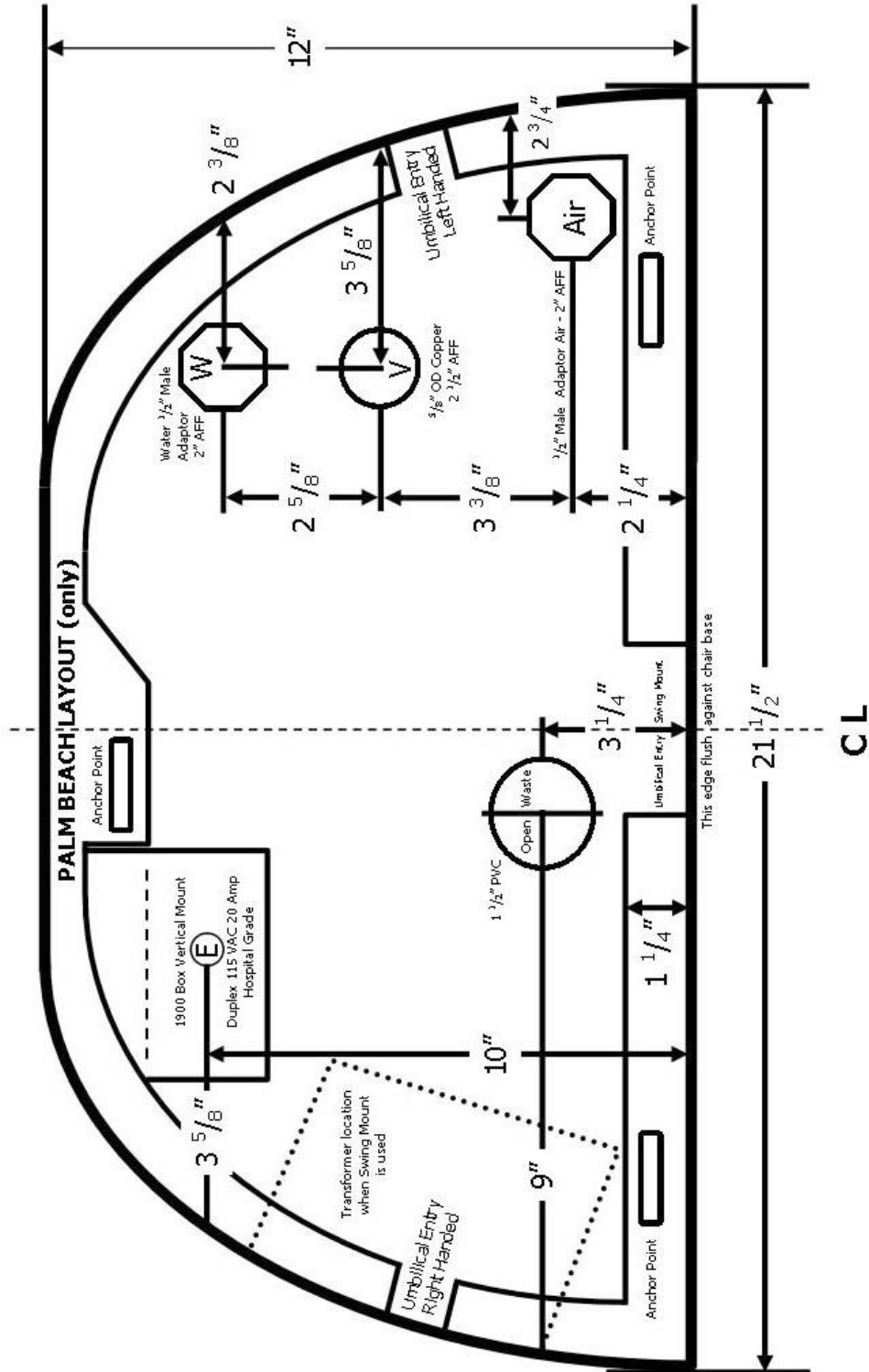
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- Electrical - 115 volt service 20 amp single circuit, hospital grade duplex vertical mount.
- See local codes /NEC section 517 paragraph C. Patient care area
- AIR - 1/2" male adaptor 2" AFF
- Water - 1/2" male adaptor 2" AFF
- Vacuum 5/8" O.D. copper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

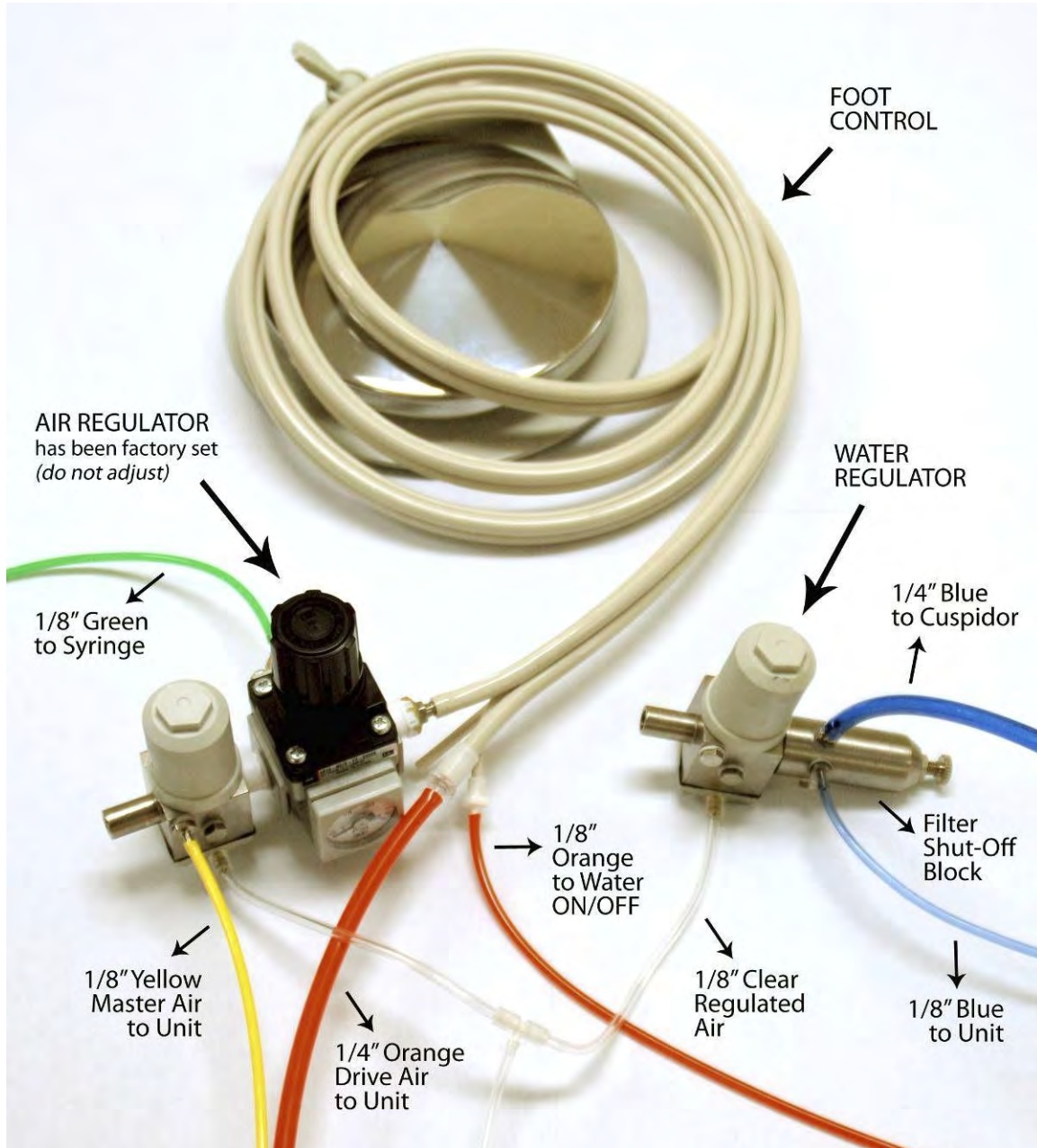
Utility Center Plumbing Layout
 Not to Scale

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Utility Center Tubing Diagram

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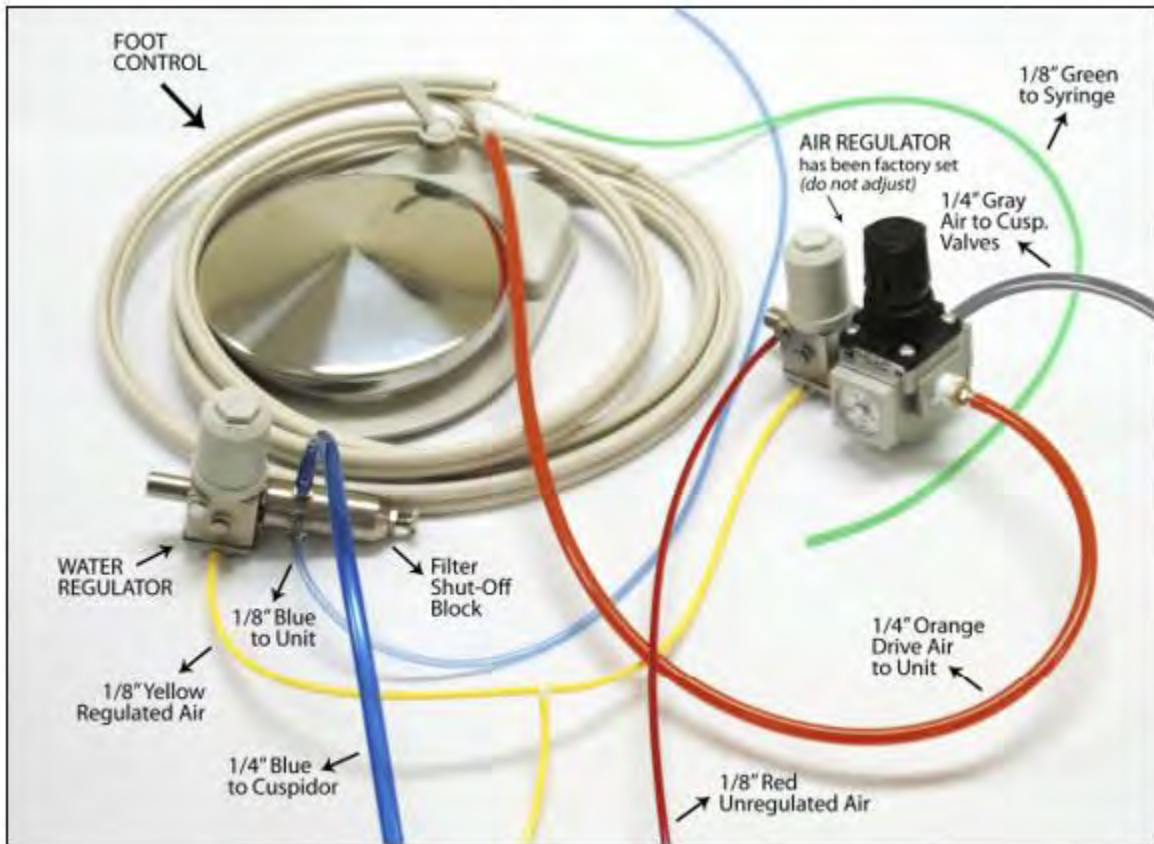


Water and Air Regulator Assembly

Description	Part #	Description	Part #
Wet & Dry Ft Ctrl Tubing, Sand 4H	5-020-0058	1/8" Blue Tubing	5-070-0090
Water Regulator	5-070-0103	1/8" Clear Tubing	5-070-0027
Filter Shut-Off Block	5-070-0102	1/4" Orange Tubing	5-070-0047
Air Regulator	5-070-0111	1/8" Green Tubing	5-070-0083
1/8" Yellow Tubing	5-070-0026	1/8" Orange Tubing	5-070-0123
		1/4" Blue Tubing	5-070-0049

Utility Center Tubing Diagram

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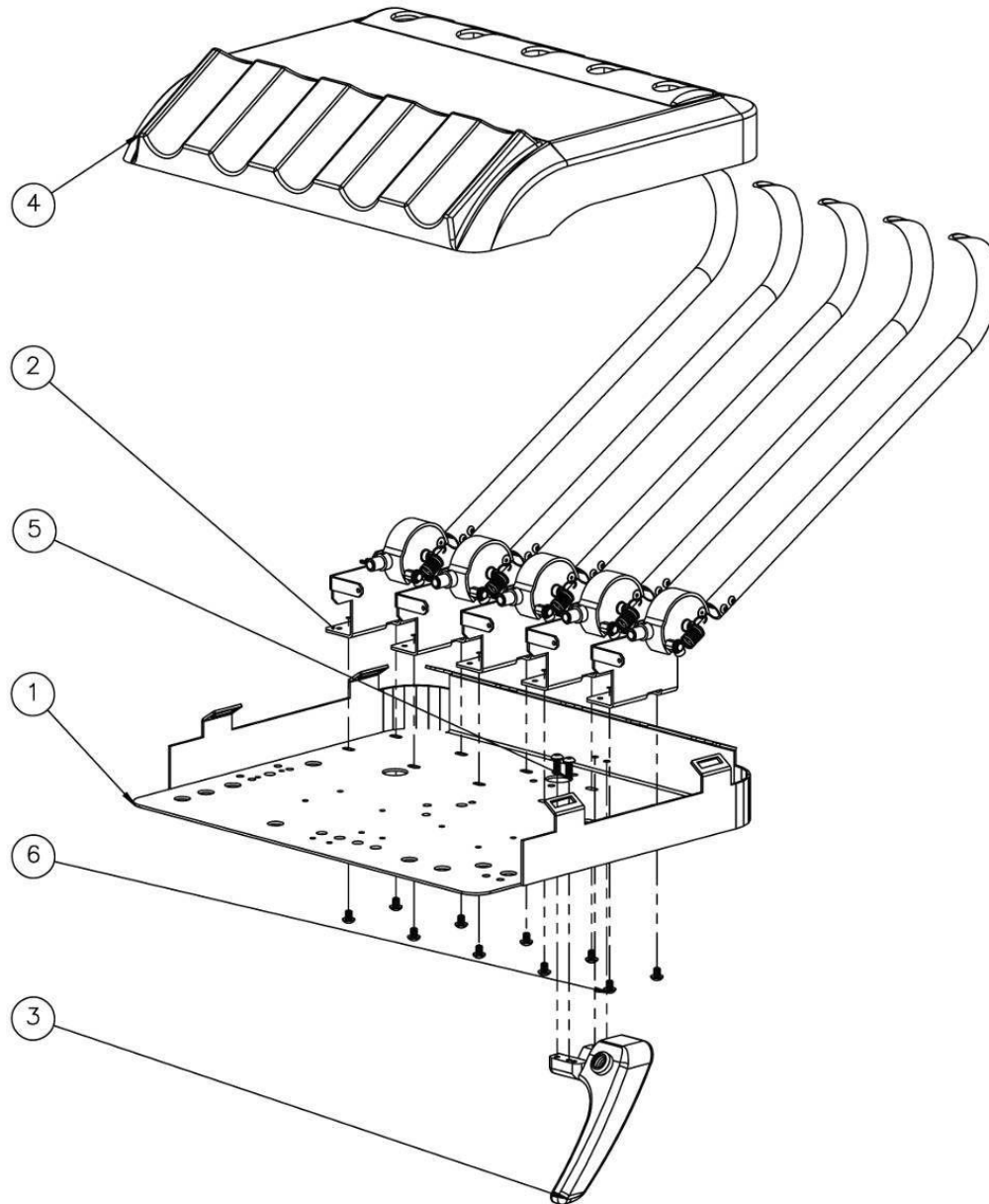
Water and Air Regulator Assembly

Description	Part #	Description	Part #
Wet & Dry Ft Ctrl	5-020-0058	1/4" Blue Tubing	5-070-0049
Tubing, Sand 4H	5-070-0025	1/8" Blue Tubing	5-070-0090
Water Regulator	5-070-0103	1/8" Clear Tubing	5-070-0027
Filter Shut-Off Block	5-070-0102	1/4" Orange Tubing	5-070-0047
Air Regulator	5-070-0111	1/8" Green Tubing	5-070-0083
1/4" Gray Tubing	5-070-0040	1/8" Yellow Tubing	5-070-0026

Parts List

Euro Style Unit Head Assembly

5-020-0165

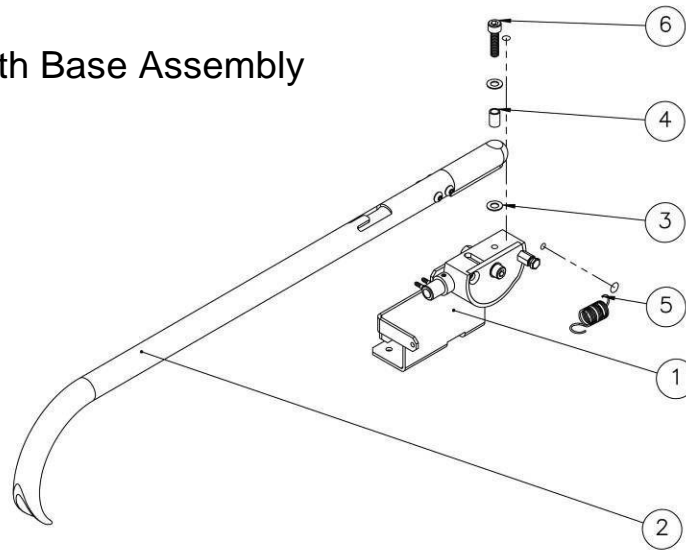


Item	Description	Part #	Item	Description	Part #
1	Chassis	2-020-0162	4	Plastic Cover	5-020-0164
2	Whip Arm Assy	3-020-0072	5	Screws 10-24 x 1/2	4-070-0012
3	Handle Assembly	3-020-0073	6	Screws 10-24 x 1/4	4-010-0094

* All item numbers for Lt. Gray color delivery unit

Whip Arm with Base Assembly

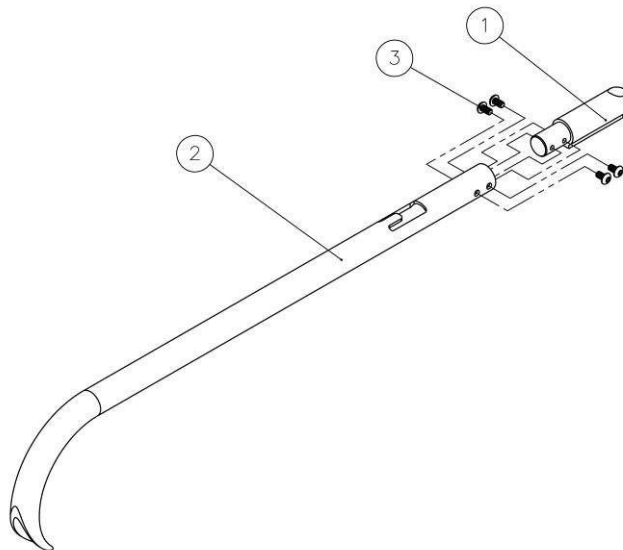
3-020-0072



Item	Description	Part #	Item	Description	Part #
1	Bracket	5-020-0287	4	Spacer	5-020-0048
2	Whip Arm	5-020-0661	5	Spring	5-020-0019
3	Washer	5-020-0087	6	Screw 10-24 x 3/4	4-010-1044

* All item numbers for Lt. Gray color delivery unit

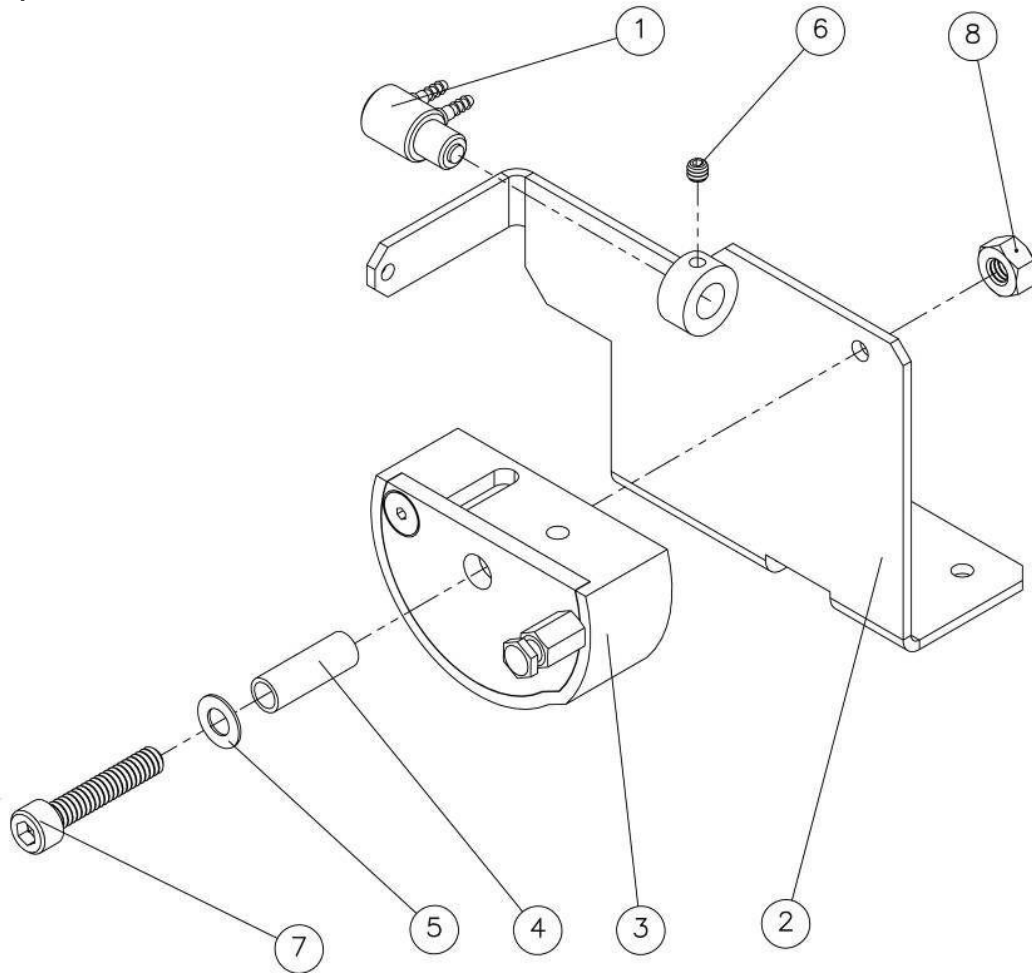
Whip Arm



Item	Description	Part #	Item	Description	Part #
1	Tip	2-020-0160	3	Screw 6-32 x 1/4	4-070-0136
2	Elbow	2-020-0159			

* All item numbers for Lt. Gray color delivery unit

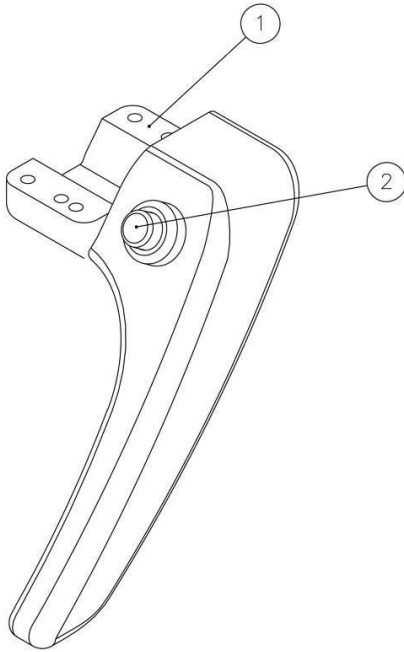
Whip Arm Base



Item	Description	Part #
1	Pilot Valve	5-020-0070
2	Bracket	5-020-0287
3	Half-Moon	2-020-0157
4	Spacer	5-020-0053
5	Washer	4-020-0022
6	Screw 6-32 x 1/8	4-070-0030
7	Screw 10-24 x 1	4-070-0019
8	Nut 10-24	4-070-0005

* All item numbers for Lt. Gray color delivery unit

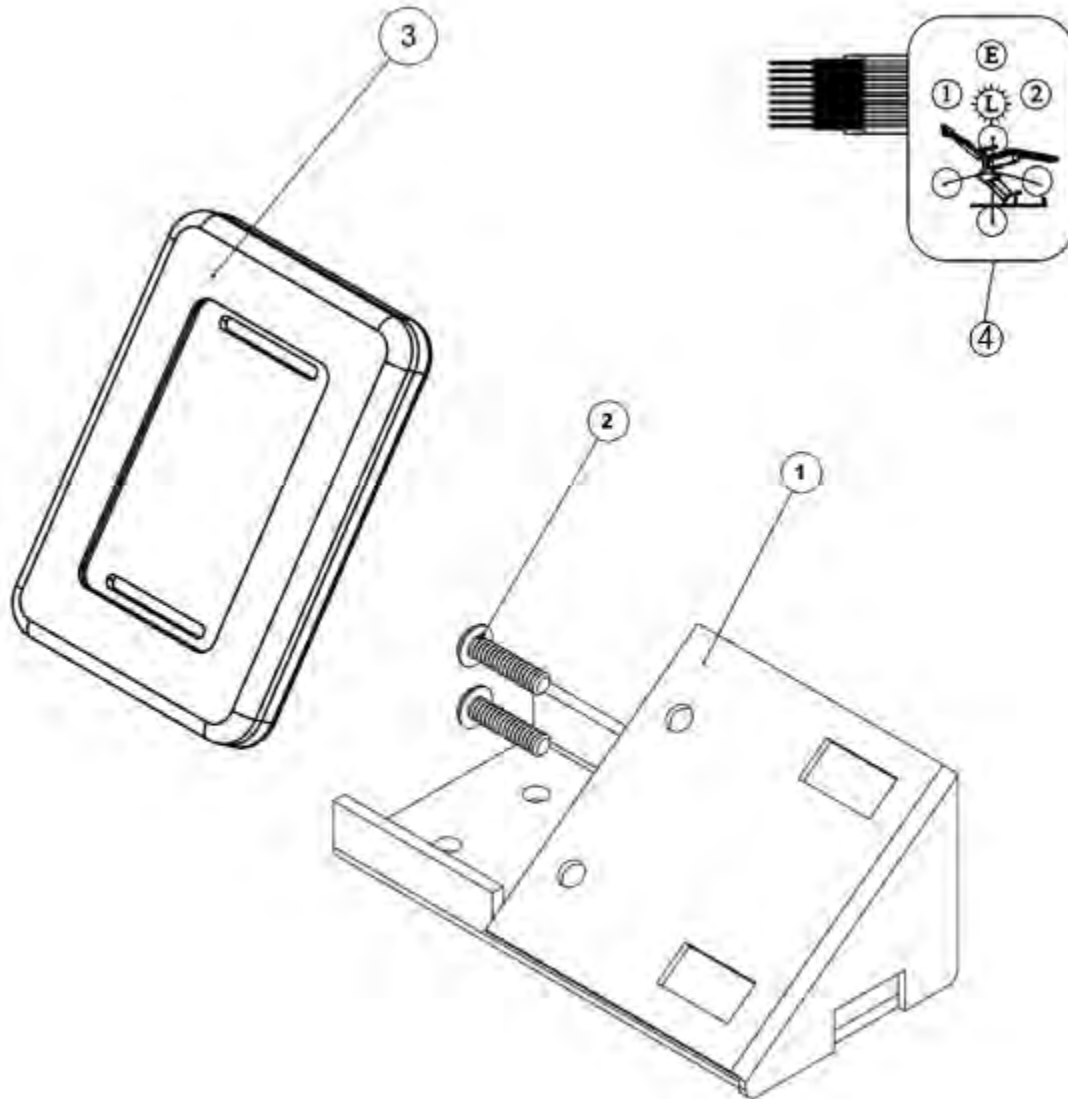
Air Break Handle Assembly with Valve 3-020-0073



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

* All item numbers for Lt. Gray color delivery unit

Touch Pad Assembly (Optional)

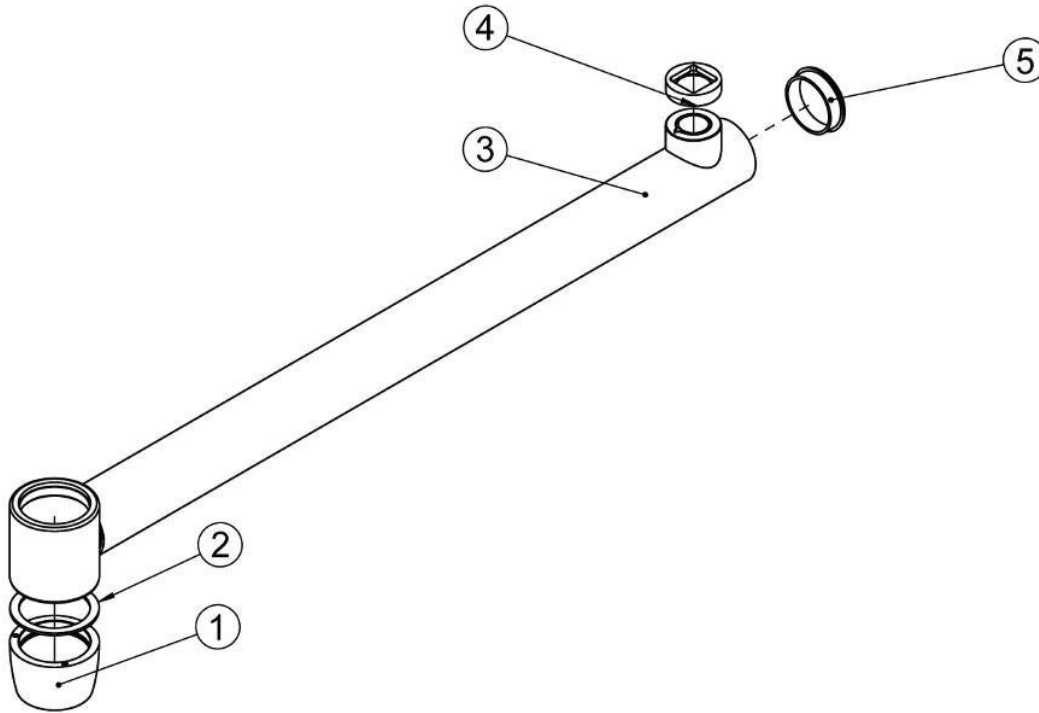


Item	Description	Part #
1	Bracket	2-020-0168
2	Screw 10-24 x 3/4"	4-010-1044
3	Housing	5-020-0170
4	Membrane, Pad	7-020-0004

* All item numbers for Lt. Gray color delivery unit

Rigid Arm

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Item	Description	Part #
1	Stop Collar	2-020-0002
2	Stop Collar Ring	4-020-0005
3	Rigid Arm Post	5-020-0017
4	Stop Ring 350o	2-020-0007
5	End Cap	2-020-0072

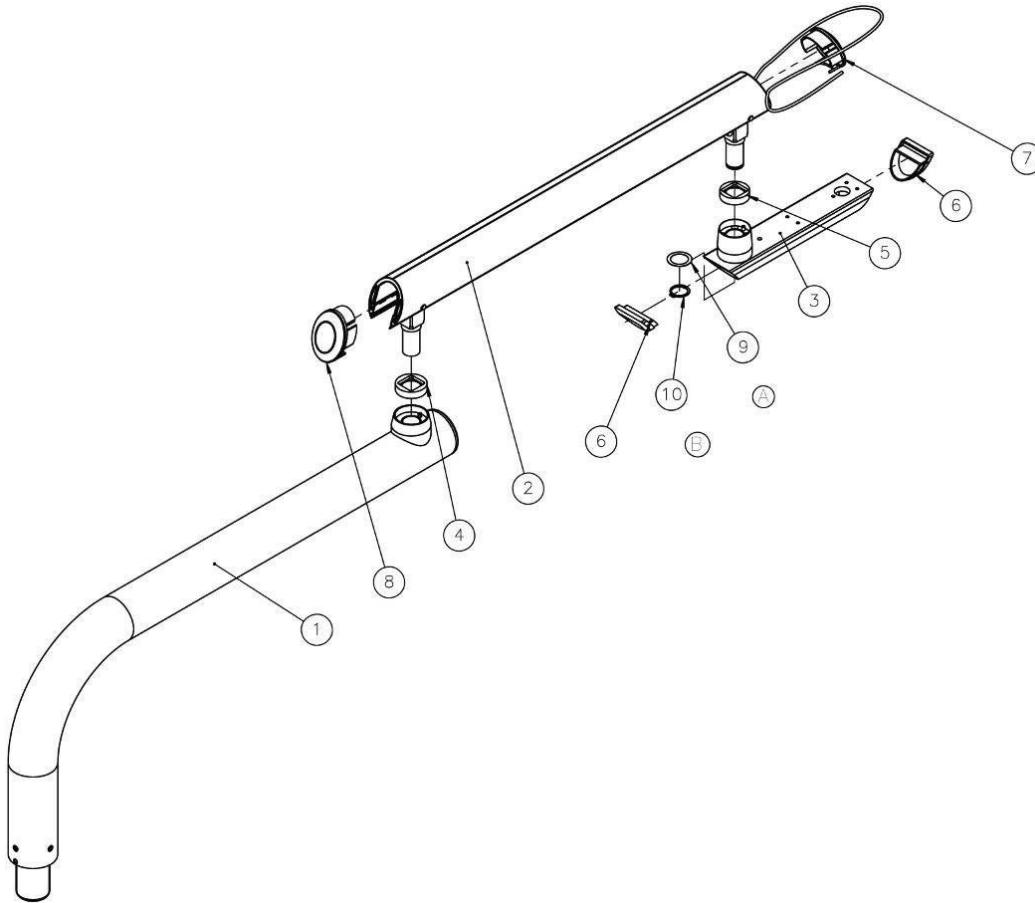
* All item numbers for Lt. Gray color delivery unit

Flex and Rigid Arm Assembly

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3-020-0076

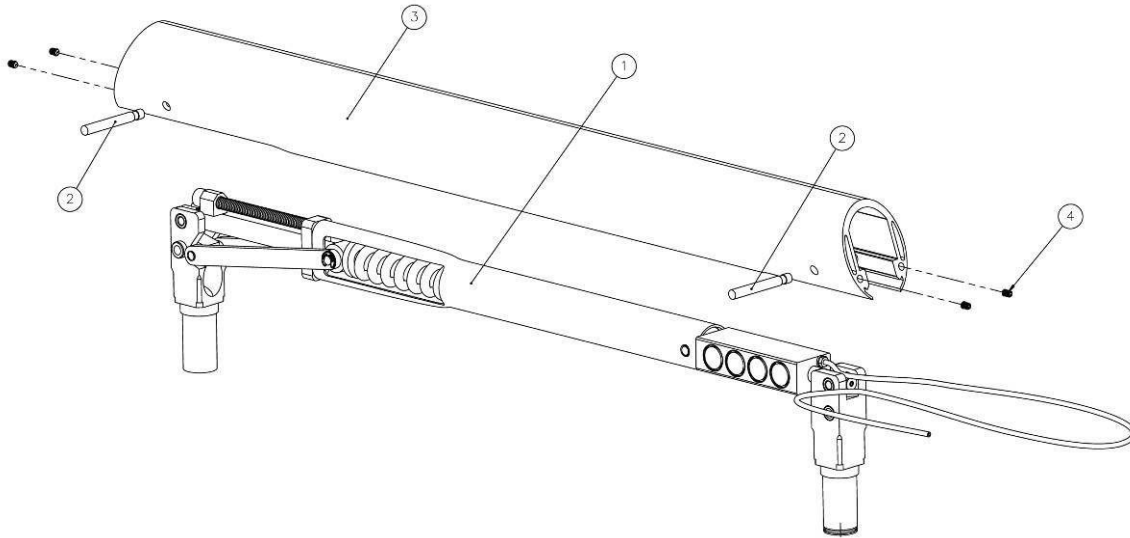


Item	Description	Part #
1	Rigid Arm Assy	2-020-0062
2	Flex Arm Assy	2-020-0067
3	Control Mount Head	2-020-0031
4	Stop Ring 350o	2-020-0007
5	Stop Ring 180o	2-020-0076
6	Ctrl Mount End Cap	2-020-0019
7	Flex Arm End Cap	5-020-1032
8	End Cap with Groove	5-020-1031
9	Washer	5-020-0128
10	Retaining Ring	2-020-0023

* All item numbers for Lt. Gray color delivery unit

Flex Arm Assembly

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2-020-0067

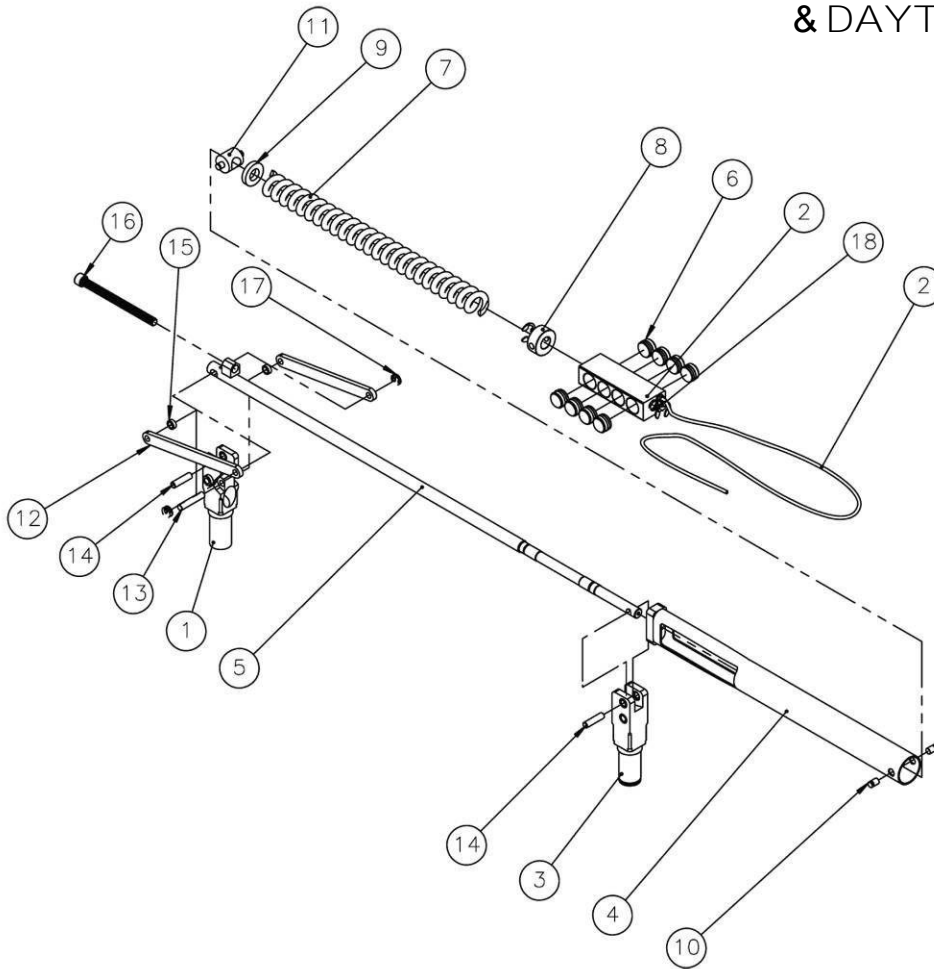


Item	Description	Part #
1	Air Break Assy	5-020-1040
2	Pin	4-070-0134
3	Flex Arm Cover	5-020-1071
4	Screw 8-32 x ¼	4-070-0140

* All item numbers for Lt. Gray color delivery unit

Air Break Arm Assembly

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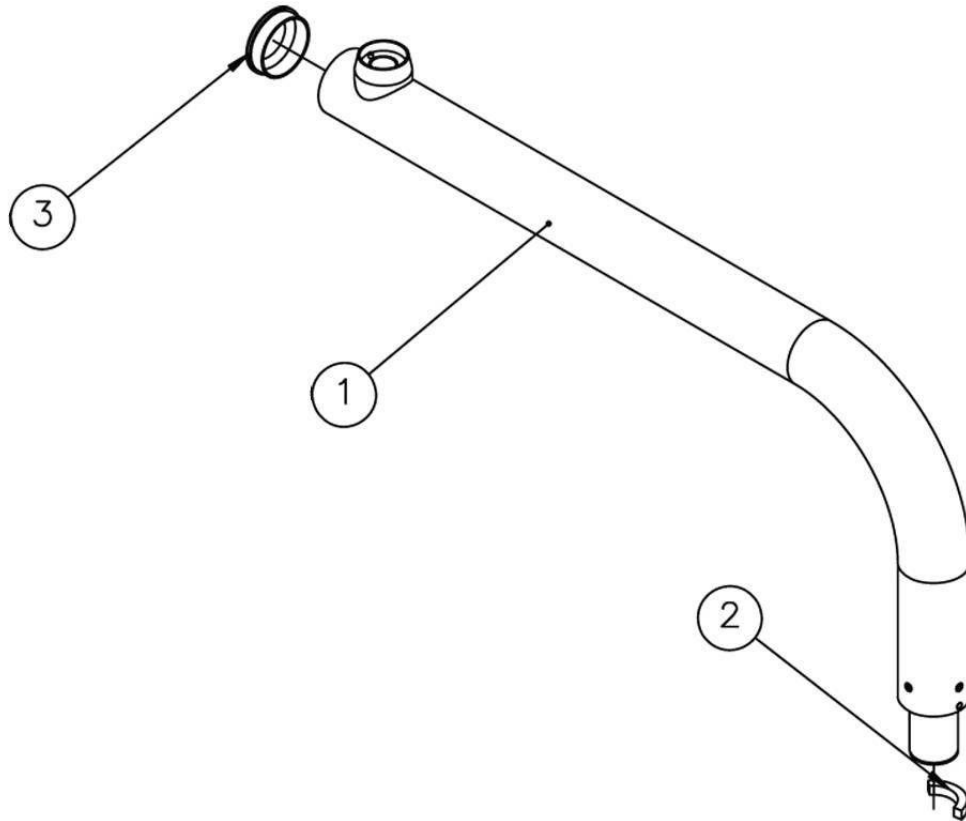


Item	Description	Part #	Item	Description	Part #
1	Lower Knuckle	2-020-0041	10	Pin, Chassis	4-070-0131
2	Break	5-020-0100	11	Tension Adj. Nut	5-020-0101
3	Upper Knuckle	2-020-0042	12	Tension Link	2-020-0045
4	Chassis	2-020-0043	13	Pin, Tension Link	5-020-0083
5	Rod	5-020-0077	14	Pin, Knuckle	5-020-0084
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	5-010-0015
9	Washer	4-070-0120	18	Nipple	5-020-0102

* All item numbers for Lt. Gray color delivery uni

Rigid Arm Assembly

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

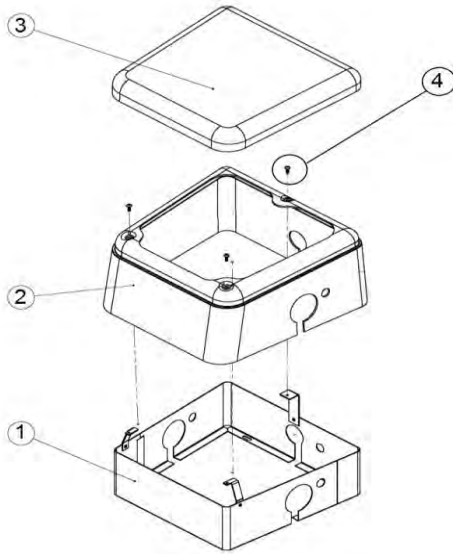
* All item numbers for Lt. Gray color delivery unit

Miscellaneous

Description	Part #
Wet & Dry Foot Control	5-020-0158
Foot Control with Cable Assembly	3-020-1032
Continental Syringe	5-070-0158
Continental Syringe with Cable Assembly	3-020-1031
Spare Parts for Syringe	
O-Ring 10,78x1,26	4-070-0036
O-Ring 2,84x2,62	4-070-0009
O-Ring 1,15x1,00	4-070-0021
O-Ring 4,47x1,78	4-070-0024
O-Ring 1,07x1,27	4-070-0039
O-Ring 1,42x1,62	4-070-0041
Air Button	5-020-0268
Water Button	5-020-0269

* All item numbers for Lt. Gray color delivery unit

Junction Box



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2-020-3023

Item Description Part #

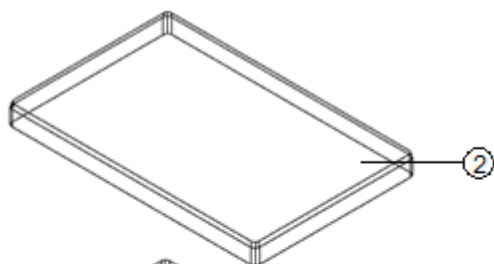
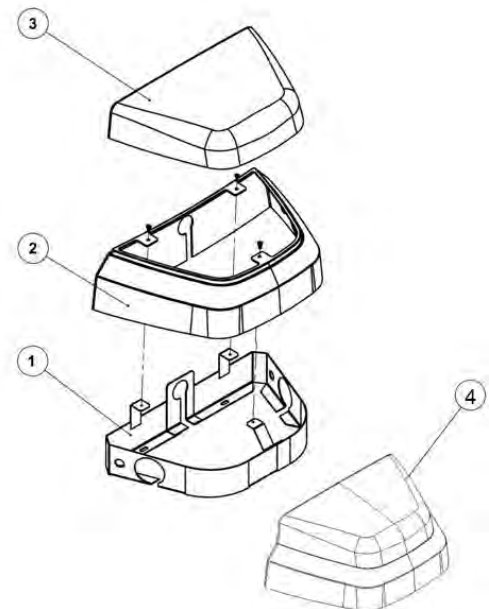
1	Junction Box chassis	5-070-0004
2	Junction Box Shell	5-070-0006
3	Junction Box Cover	5-070-0007
4	Screw 10-32 X 1/2	5-020-0078

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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

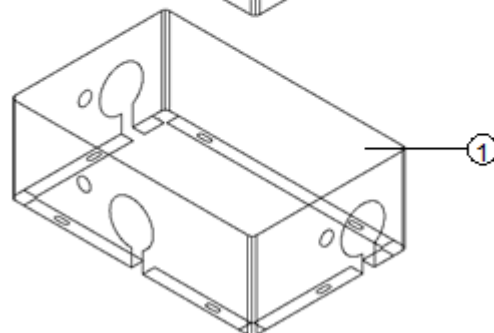


J/B 1402/Carts

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



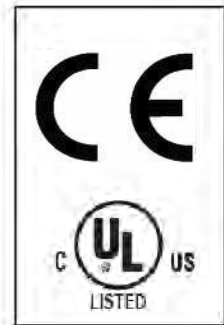
WARRANTY

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)	Lifeti
me	
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 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