



BEAVERSTATE DENTAL SYSTEMS

Service Manual

A-250

2 HP Auto Beneath Shelf

Doctor's System

Installation

1. Remove the unit from the shipping carton and place near the desired mounting location.
2. Mark 4 hole locations under the shelf and pre-drill holes for the mounting screws.
3. Align the drilled holes with the holes on the unit chassis. Insert four #6 screws (not included) and fasten the unit securely to the underside of the shelf.



NOTE

This unit requires a regulated air and water supply. Filters are highly recommended.

4. Install optional master valve assemblies, with filter and regulator, onto the manual shut-off valves. (Pressures are preset at the factory: 80 psi air, 40 psi water).
5. Connect the supply tubings to the appropriate air and water supply lines.

Final Adjustments

Check air pressure, adjust to 80 psi if necessary.
Check water pressure, adjust to 40 psi if necessary.
Test handpieces for proper function.
Test syringe for proper pressure and function.

Operation

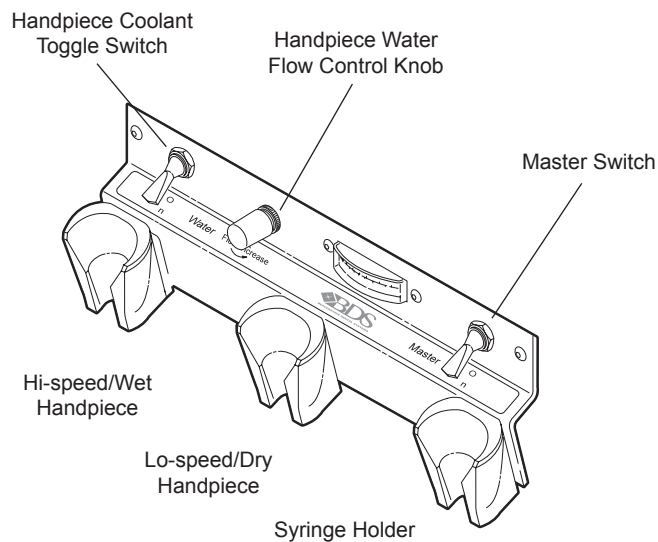
1. Turn on the master switch located on the right side of the faceplate. The handpiece is automatically activated when lifted from the holder.
2. Depress the foot control to activate each handpiece. Pressure is shown on the gauge for the handpiece being used.
3. Individual handpiece pressure adjustments are located on the flow control block inside the control head. Access to the flow control is provided through the hole on the left side of the chassis. To adjust the pressure to each handpiece:
 - a. Turn adjustment screw *clockwise* to decrease the handpiece pressure.
 - b. Turn adjustment screw *counter-clockwise* to increase the handpiece pressure.



CAUTION

When adjusting the handpiece pressure, do not over-tighten the screws. Damage may result.

4. Handpiece coolant water can be turned on or off with the toggle switch located on the left side of the faceplate.
5. Water coolant flow adjustment is located to the right of the water coolant toggle switch.



Control Panel A-250

Troubleshooting

Symptom Handpiece lacks power.

Possible Causes

- A. Improper supply pressure from compressor (80 psi).
- B. Check handpiece pressure adjustment on unit.
- C. Air filter may be plugged.
- D. Pinched supply tubing.
- E. Defective handpiece gasket at connection with tubing.
- F. Defective handpiece.

Symptom Water coolant does not shut off when foot control is released.

Possible Causes

- A. Adjust air pressure to 80 psi—water pressure to 40 psi.
- B. Foot control is not exhausting.
- C. Defective water relay valve.

Symptom More than one handpiece is operating.

Possible Causes

- A. Handpiece is not all the way in the holder.
- B. Improper adjustment on pilot valve in the handpiece holder.
- C. Defective shuttle valve to gauge.

Symptom Insufficient water coolant.

Possible Causes

- A. Adjust coolant flow valve.
- B. Water filter may be plugged.
- C. Handpiece may be plugged.
- D. Pinched supply tubing.
- E. Improper adjustment of water relay valve.

Symptom Water coolant is running from handpiece while in the holder.

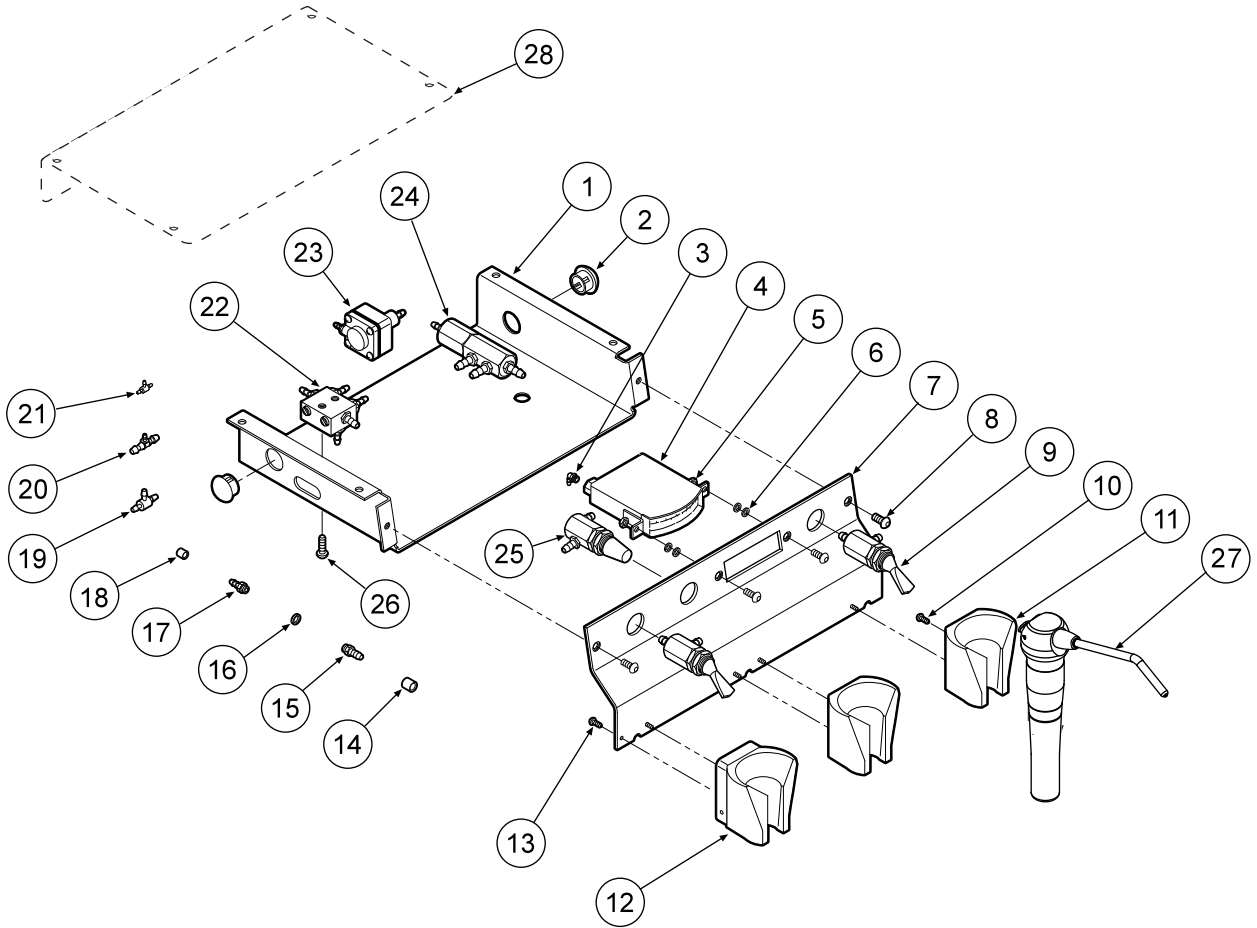
Possible Causes

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

Symptom Water coolant is running continuously.

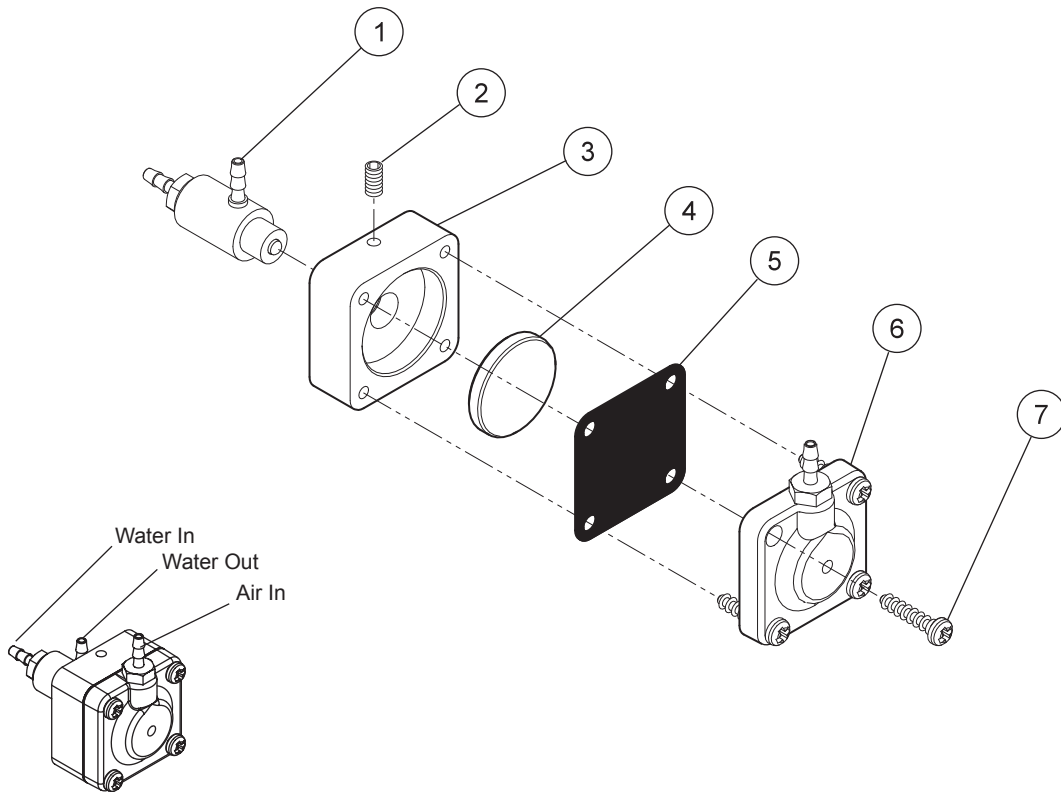
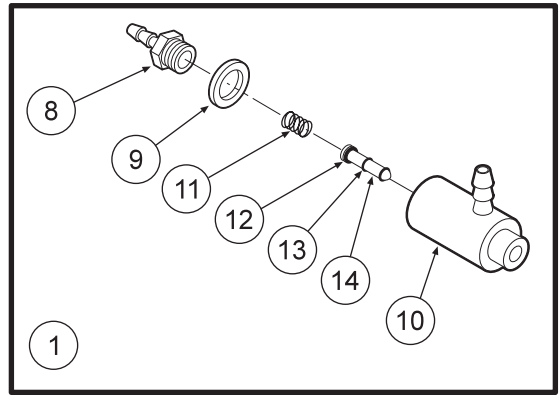
Possible Causes

- A. Purge switch is on (on applicable systems).
- B. Water pressure too high.
- C. Handpiece holder out of adjustment.
- D. Defective water relay valve.



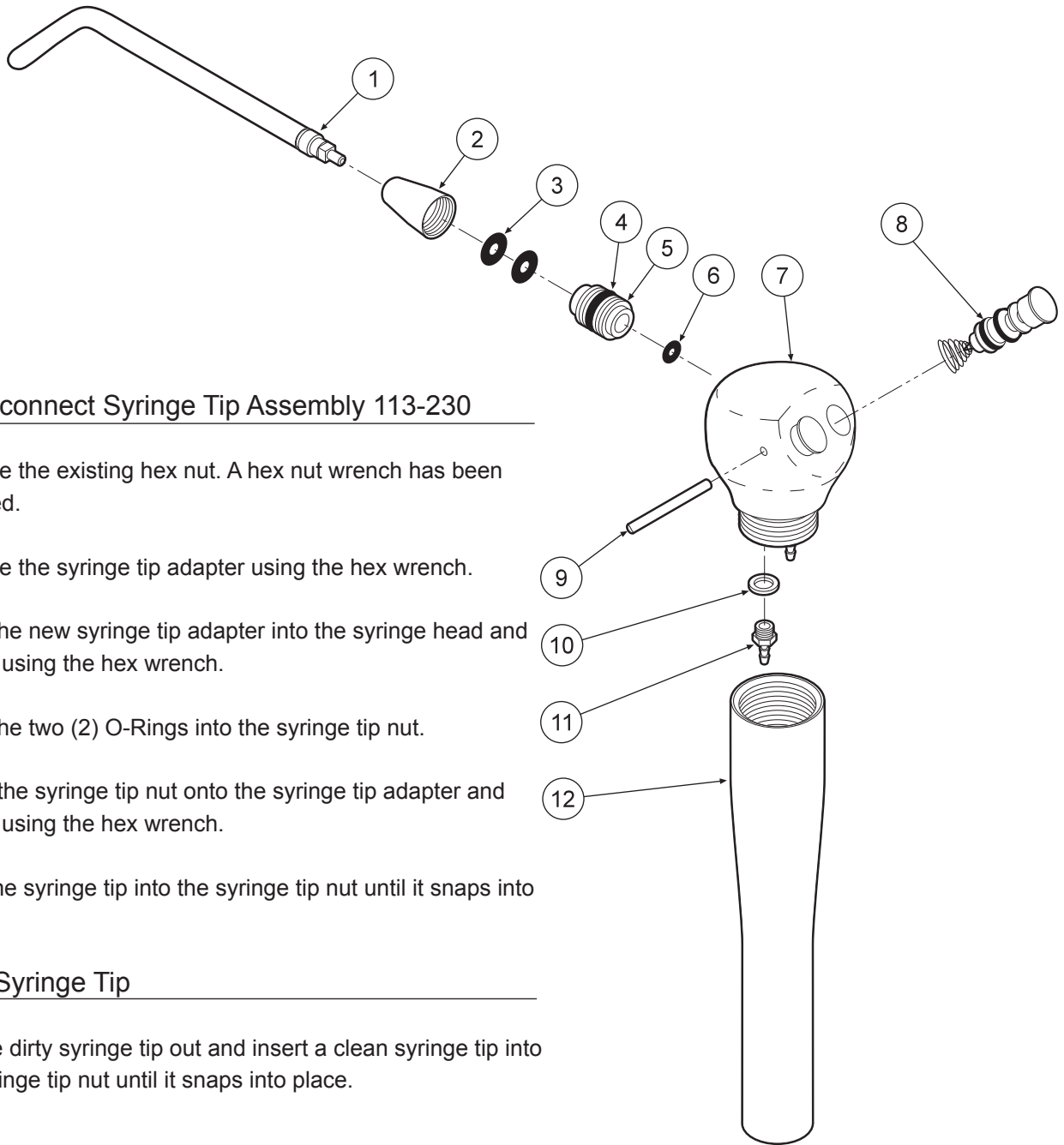
ITEM	PART DESCRIPTION	PART NUMBER	QTY	ITEM	PART DESCRIPTION	PART NUMBER	QTY	ITEM	PART DESCRIPTION	PART NUMBER	QTY
1	Chassis.....	101-014	1	11	Universal Handpiece Holder	141-006	2	20	Plastic Tee, 1/8"	022-049	1
2	Plug, 1/2".....	010-013	2	12	Automatic Handpiece Holder....	122-049	1	21	Plastic Tee, 1/16".....	022-033	1
3	Plastic Elbow, 1/16".....	022-039	1	13	Screw, 4" x 3/4"	001-063	2	22	Syringe Block	113-021	1
4	Gauge	026-003	1	14	Ferrule, 1/4".....	117-008		23	Water Relay.....	123-000	1
5	Nut, 6-32"	002-004	2	15	Barb, 10-32 x 1/16".....	022-010		24	Routing Valve.....	014-007	1
6	Washer, Flat, #6	003-032	4	16	Plastic Washer, 1/4".....	003-001	1	25	Needle Flow Valve	121-000	1
7	Faceplate	101-015	1	17	Barb, 10-32 x 1/16"	022-009	1	26	Screw, 10-32 x 3/8"	001-072	1
8	Screw, 6-32 x 1/4".....	001-133	4	18	Ferrule, 1/8".....	117-007	1	27	Syringe	113-400	1
9	3-Way Toggle Valve	120-002	2	19	Shuttle Valve.....	014-012	1	28	Optional Control Head Cover.....	101-016	1
10	Screw, 4" x 3/8"	001-135	2								

AUTOMATIC HANDPIECE CONTROL
2100
USED ON A-250/A-2500



Water Relay Valve 123-000

ITEM	PART DESCRIPTION	PART NUMBER	QTY
1	Cartridge Body Assembly.....	123-018	1
2	Set Screw, 4-40 x 5/8".....	005-028	1
3	Body.....	123-013	1
4	Piston.....	123-014	1
5	Diaphragm.....	127-031	1
6	Cap.....	123-012	1
7	Screw, #6 x 1/2".....	001-267	4
8	Barb, 10-32 x 1/16".....	022-009	1
9	Plastic Washer, 1/4".....	003-001	1
10	Valve Body.....	123-017	1
11	Spring.....	008-011	1
12	O-Ring, 002.....	017-502	1
13	O-Ring, 001.....	017-501	2
14	Stem.....	123-015	1



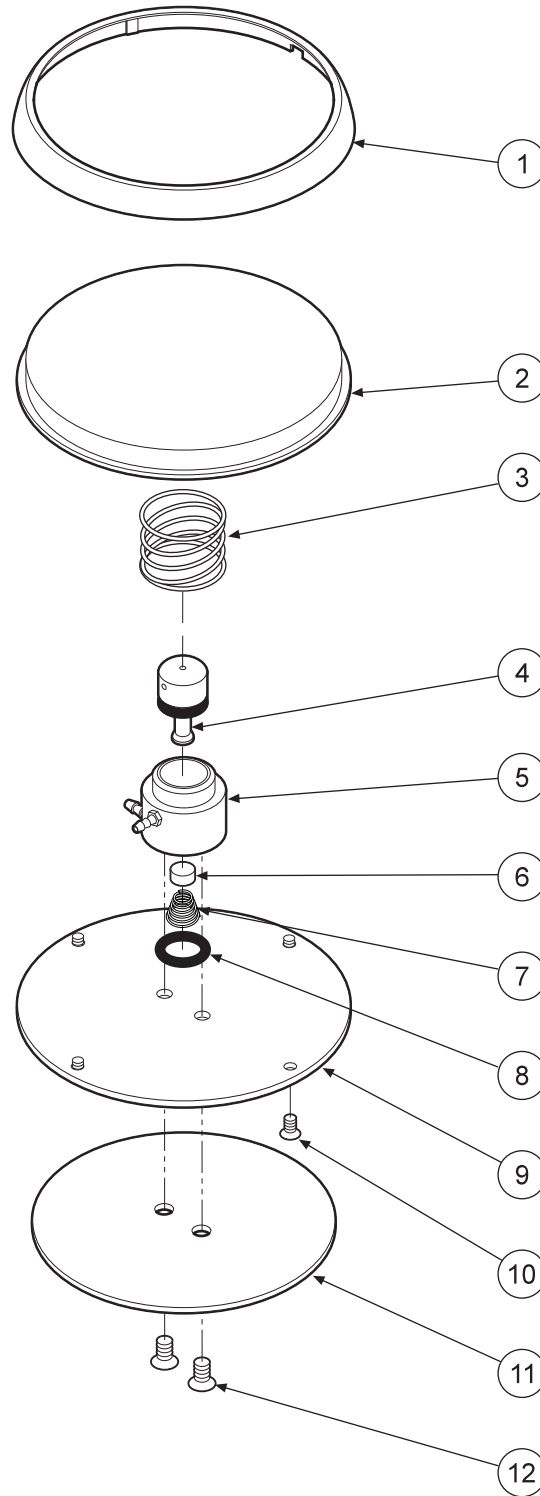
Quick-disconnect Syringe Tip Assembly 113-230

1. Remove the existing hex nut. A hex nut wrench has been provided.
2. Remove the syringe tip adapter using the hex wrench.
3. Insert the new syringe tip adapter into the syringe head and tighten using the hex wrench.
4. Place the two (2) O-Rings into the syringe tip nut.
5. Screw the syringe tip nut onto the syringe tip adapter and tighten using the hex wrench.
6. Push the syringe tip into the syringe tip nut until it snaps into place.

Replace Syringe Tip

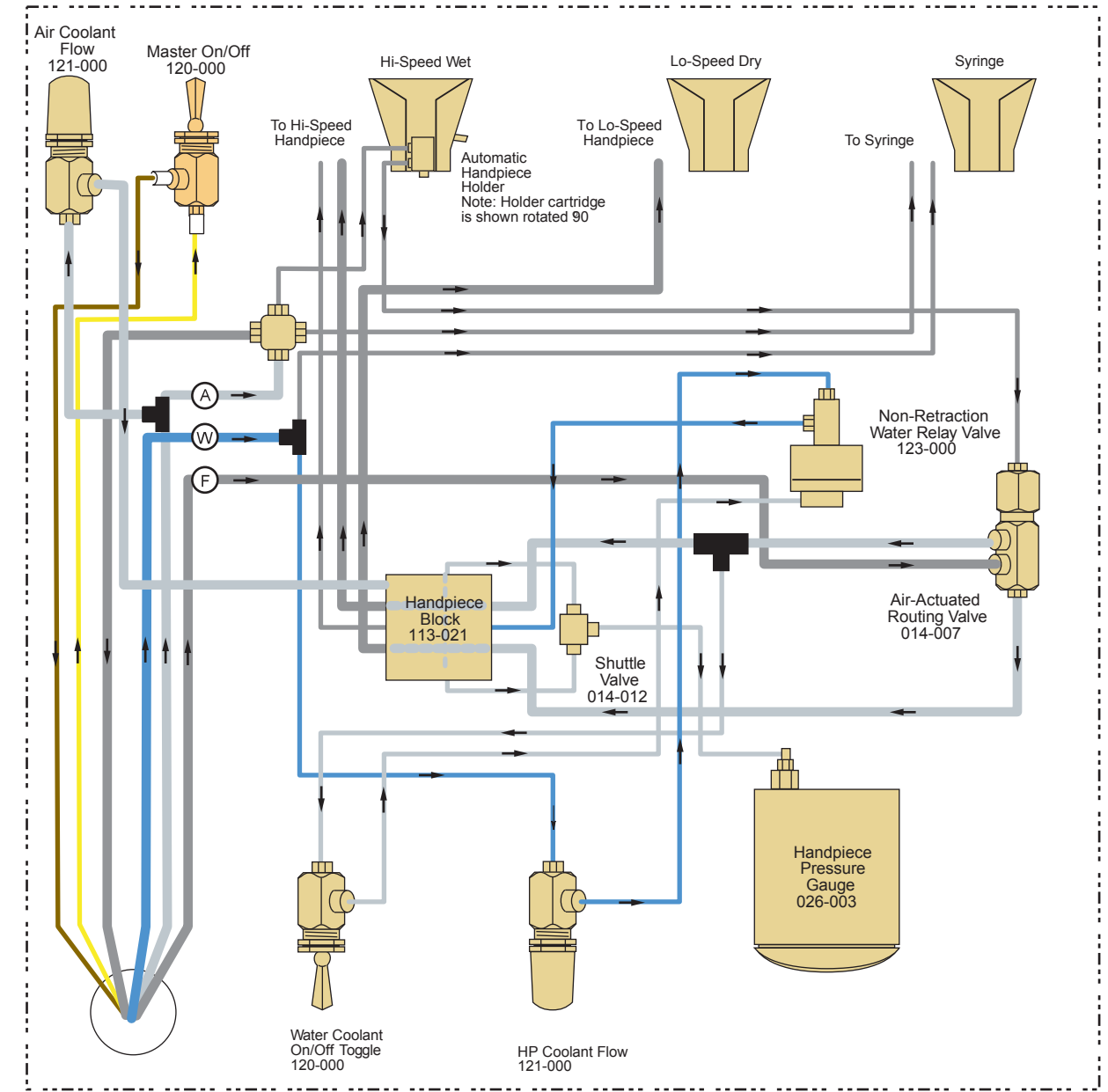
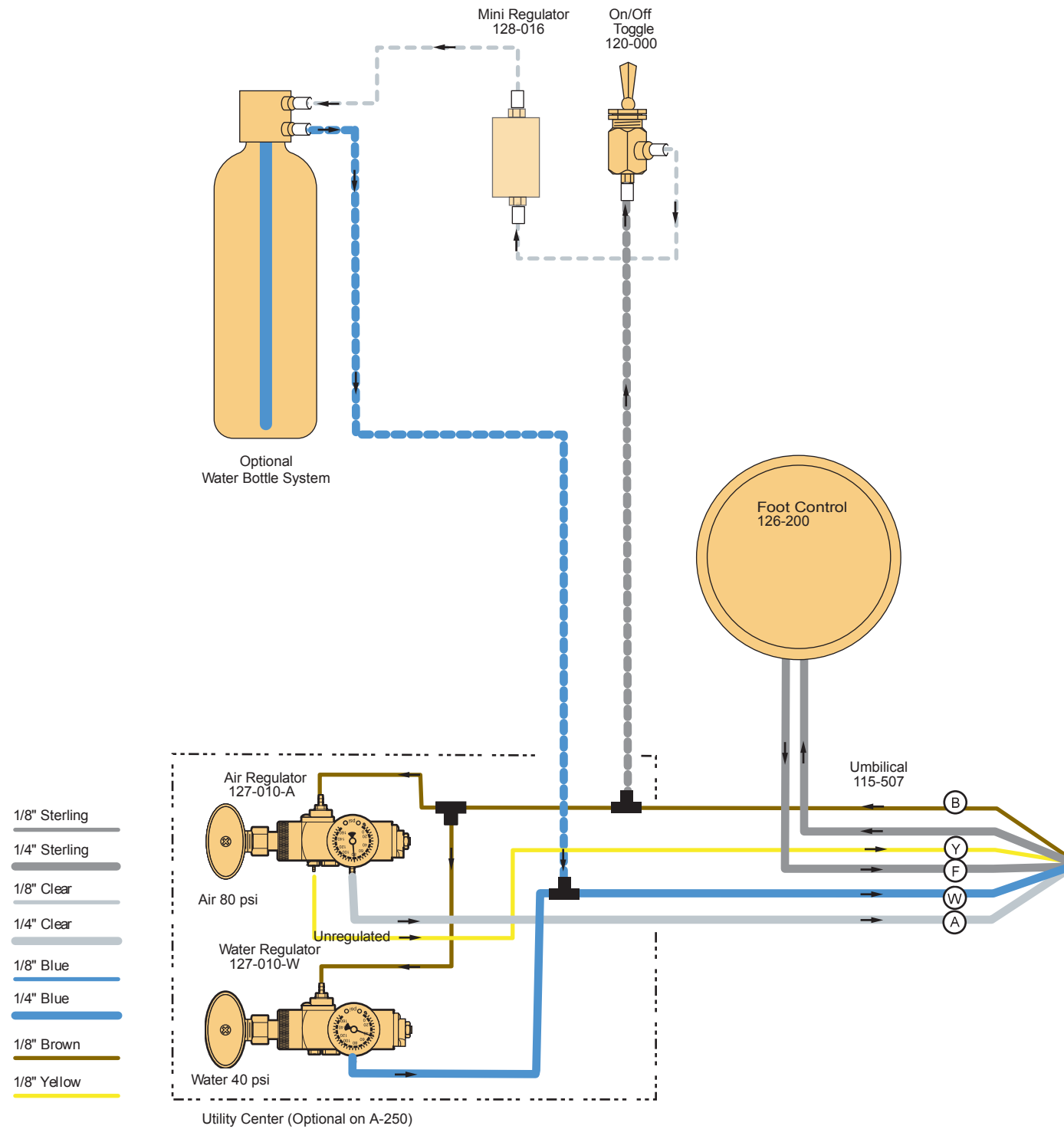
1. Pull the dirty syringe tip out and insert a clean syringe tip into the syringe tip nut until it snaps into place.

ITEM	PART DESCRIPTION	PART NUMBER	QTY
1	Syringe Tip	113-030	1
2	Syringe Tip Nut	113-402	1
3	O-Ring, 006	017-006	2
4	O-Ring, 228-040	017-023	1
5	Syringe Tip Adapter	113-227	1
6	O-Ring, 003	017-003	1
7	Syringe Head	113-405	1
8	Syringe Button Repair Kit	113-403	2
9	Pin, Syringe Cartridge	113-008	1
10	Plastic Washer, 8-32	003-030	2
11	Barb, 8-32 x 1/16"	022-040	2
12	Syringe Handle	113-236	1



ITEM	PART DESCRIPTION	PART NUMBER	QTY
1	Ring.....	126-202	1
2	Cover.....	126-201	1
3	Spring.....	008-005	1
4	Stem (Includes 017-012 o-ring).....	126-005	1
5	Body.....	126-004	1
6	Poppet.....	126-006	1
7	Spring.....	008-006	1
8	O-Ring, 013.....	017-013	1
9	Baseplate.....	126-003	1
10	Screw, 4-40 x 1/4".....	001-005	4
11	Rubber Pad.....	126-007	1
12	Screw, 6-32 x 1/4".....	001-004	2

2 Handpiece Automatic Control A-250



Junction Box
Circled letters indicate connection at Junction Box

(A) 1/4" Clear - Constant Air In	(W) 1/4" Blue - Water In
(B) 1/8" Brown - On/Off (flow out) to M.V.	(Y) 1/8" Yellow - On/Off (flow In) from M.
(F) 1/4" Gray - In From Foot Control	

WARRANTY

Beaverstate Dental warrants its product to be free of defects in material and workmanship for FIVE FULL YEARS from the date of purchase on all units. Auto-blocks and standard foot control (126-000) are covered by a LIFETIME warranty when factory installed as part of a complete dental system. Warranty is limited to repair or replacement by Beaverstate Dental. Products returned to the factory and determined to be defective will be repaired or replaced free of charge. The warranty does not cover light bulbs. Beaverstate Dental reserves the right to void all warranties if any product is installed by other than an authorized technician. Beaverstate's warranty does not cover damage to any surface finish, including but not limited to, discoloration or abrasion from cleaners, disinfectants or light sources. No claim for labor or consequential damages will be allowed. Return items must include a copy of the invoice or packing slip as proof of purchase.

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