



# **Service Manual**

## **A-300**

**3 HP Automatic Control Head**

## Installation

1. This control head has been designed to mount to any of our control mount brackets.

## Operation

1. Turn on the master switch located on the left side of the control head.
2. The handpiece is automatically activated when lifted from the holder.
3. Depress the foot control to activate each handpiece. Pressure is shown on the gauge for the handpiece being used.
4. Individual handpiece pressure adjustments are located on the autoblock inside the control head. 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.



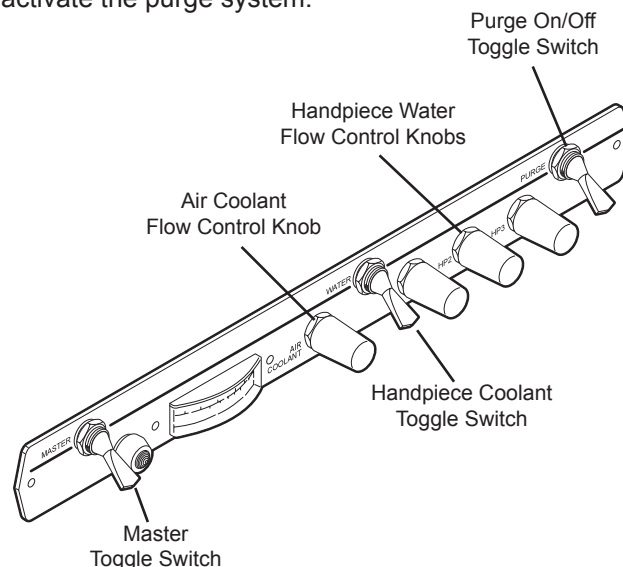
### CAUTION

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

5. Activate the water spray to the handpiece by flipping the toggle for the water located in the center of the control head.
6. Water coolant flow adjustments are located to the right of the water coolant toggle switch.

## Handpiece Purge

The purge switch, located on the right side of the control head, flushes fresh water through the water coolant system. Guidelines from the Center for Disease Control (CDC) recommends that each handpiece be flushed (purged) 20 to 30 seconds between patients and several minutes at the beginning of each day. Handpieces must be removed from the holder to activate the purge system.



Control Panel A-300

# Troubleshooting

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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.

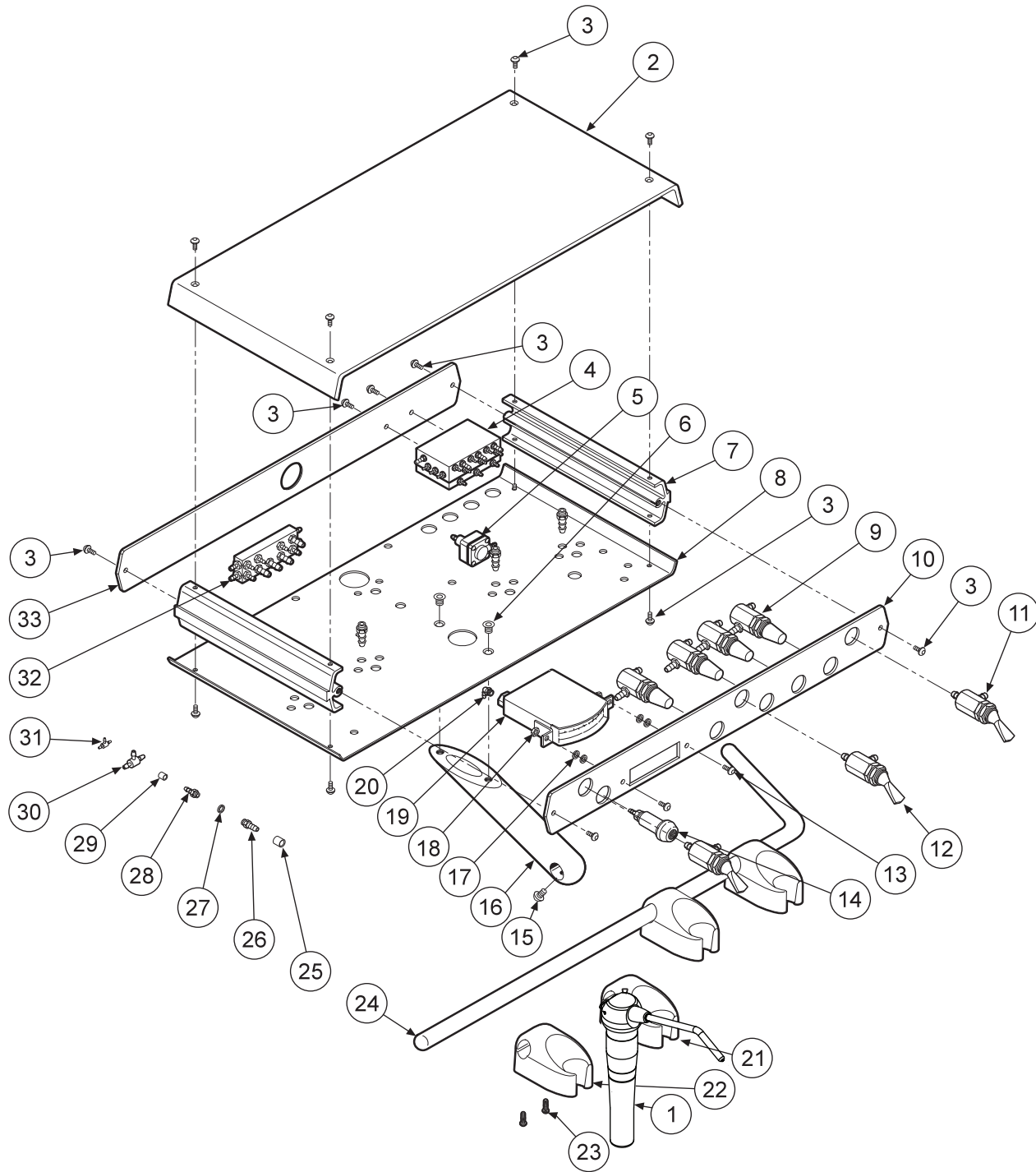
- Possible Causes
- A. Adjust coolant flow valve.
  - B. Water filter may be plugged.
  - C. Handpiece may be plugged.
  - D. Pinched supply tubing.
  - E. Improper adjustment of water relay valve.

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

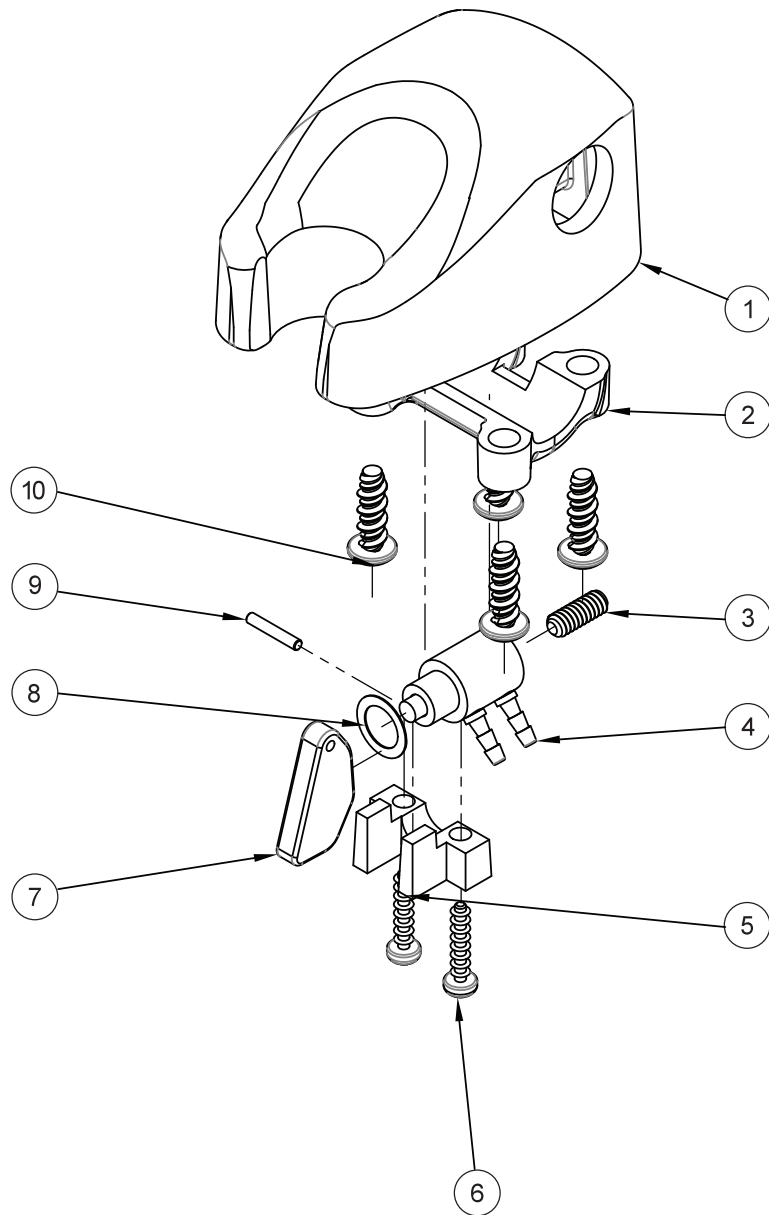
- Possible Causes
- A. Water pressure too high.
  - B. Air pressure too low.
  - C. Handpiece holder out of adjustment.

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.

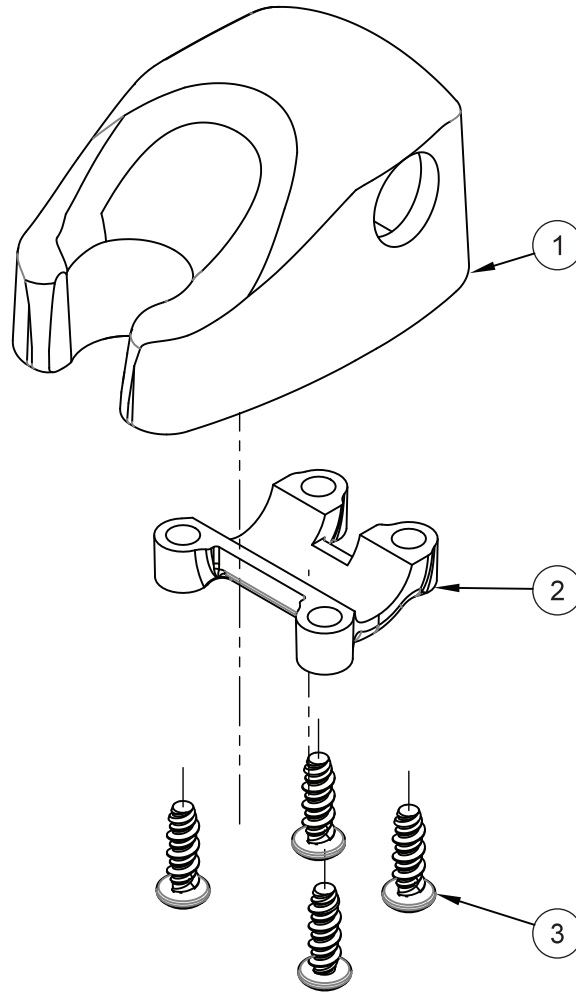


ITEM	PART DESCRIPTION	PART NUMBER	QTY	ITEM	PART DESCRIPTION	PART NUMBER	QTY	ITEM	PART DESCRIPTION	PART NUMBER	QTY
1	Syringe.....	113-400	1	12	3-Way Toggle Valve.....	120-000	2	23	Screw, #8 x 1/2".....	001-018	8
2	Cover.....	107-033	1	13	Screw 6-32 x 3/8".....	001-134	2	24	Holder Bar.....	107-006	1
3	Screw, 6-32 x 1/4".....	001-133	14	14	Indicator.....	026-020	1	25	Ferrule, 1/4".....	117-008	1
4	Automatic Handpiece Block.....	125-030	1	15	Screw, 10-32 x 3/8".....	001-166	1	26	Barb, 10-32 x 1/16".....	022-010	1
5	Water Relay Valve.....	123-000	1	16	Holder Bar Mount.....	107-007	1	27	Plastic Washer, 1/4".....	003-001	1
6	Screw, 10-32 x 1/4".....	001-088	2	17	Washer, Flat, #6.....	003-032	4	28	Barb, 10-32 x 1/8".....	022-009	1
7	End Caps.....	107-036	2	18	Nut, 6-32.....	002-004	2	29	Ferrule, 1/8".....	117-007	1
8	Chassis.....	107-032	1	19	Gauge.....	026-003	1	30	Shuttle Valve.....	014-012	1
9	Needle Flow Valve.....	121-000	4	20	Plastic Elbow, 1/16".....	022-039	1	31	Plastic Tee, 1/16".....	022-033	1
10	Faceplate.....	107-034	1	21	Automatic Holder.....	122-200	3	32	Handpiece Manifold.....	023-003	1
11	Momentary Valve.....	120-005	1	22	Syringe Holder.....	141-200	1	33	Backplate.....	107-035	1

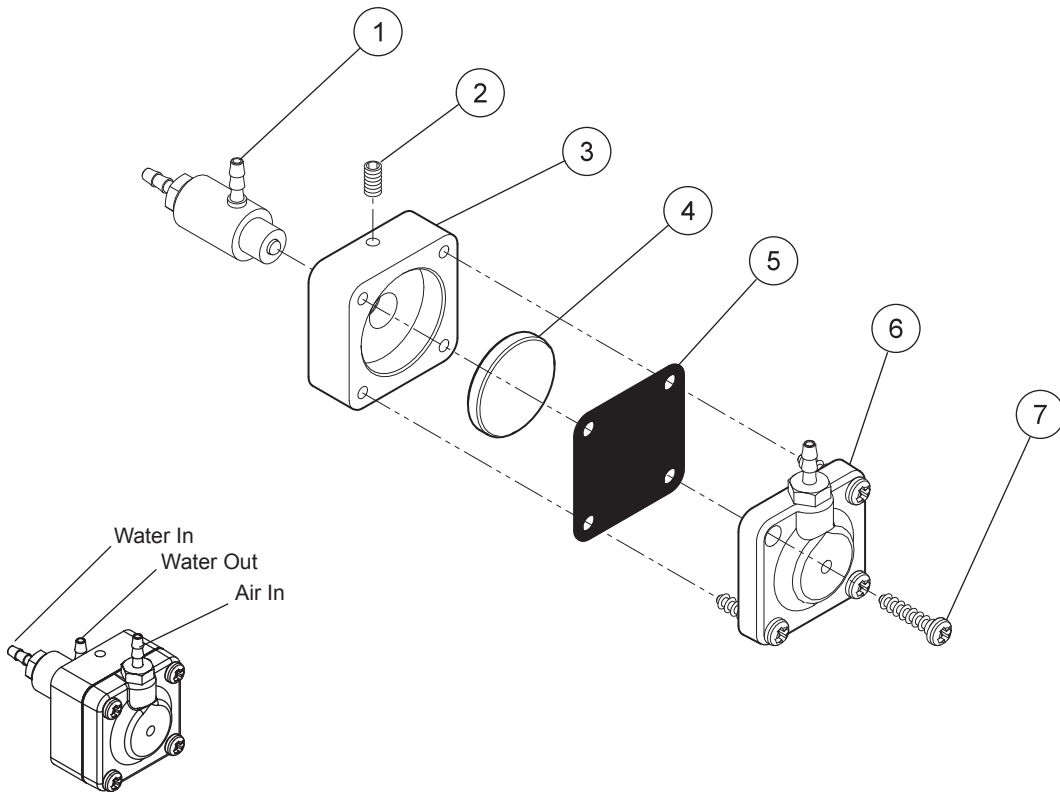
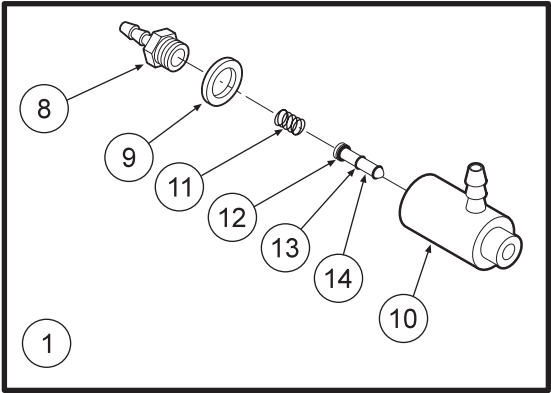


ITEM	PART DESCRIPTION	PART NUMBER	QTY
1	Molded Body.....	122-201	1
2	Clamp .....	122-104	1
3	Set Screw, 6-32 x 3/8".....	005-012	1
4	Valve Cartridge.....	122-031	1
5	Molded Clip.....	122-102	1
6	Screw, 4 x 1/2".....	001-019	2
7	Handpiece Actuator Lever.....	122-103	1
8	Washer.....	003-004	1
9	Pin, 1/16"x3/8" Dowel.....	009-010	1
10	Screw, 8-18 x 1/2".....	001-267	4

**MOLDED IC AUTOMATIC HOLDER**  
122-100

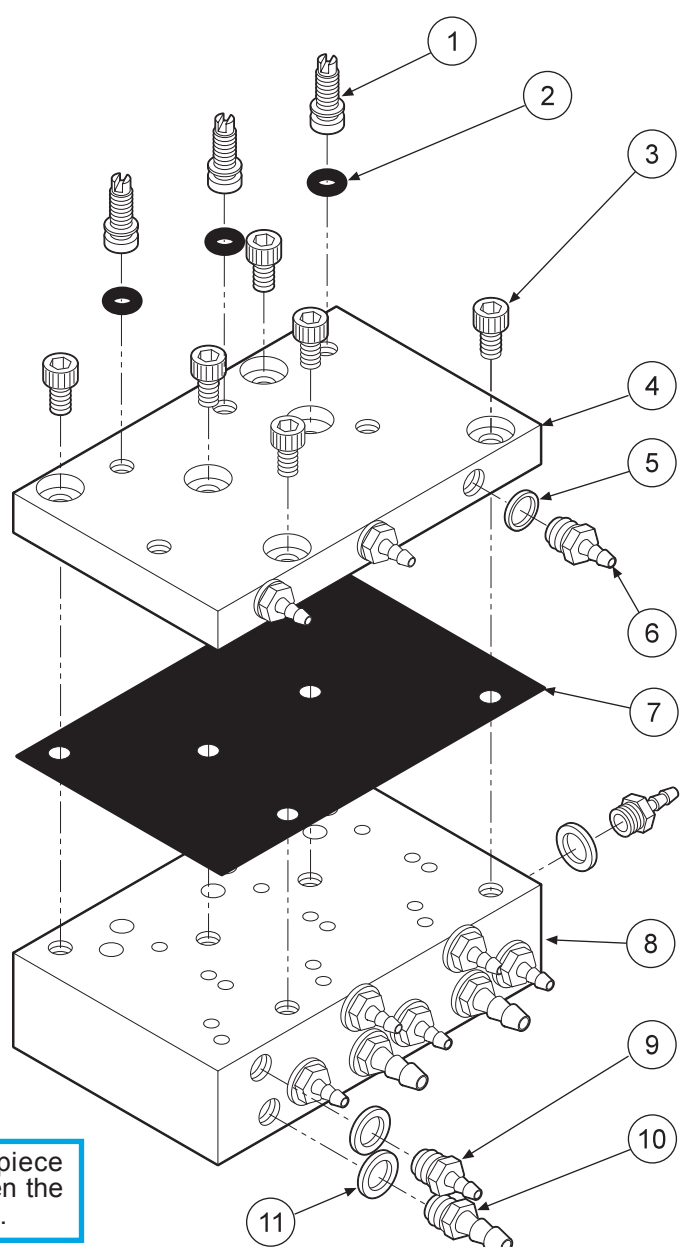



ITEM	PART DESCRIPTION	PART NUMBER	QTY
1	Molded Body.....	141-201	1
2	Clamp .....	122-204	1
3	Screw, 8-32 x 1/2" .....	001-267	4



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



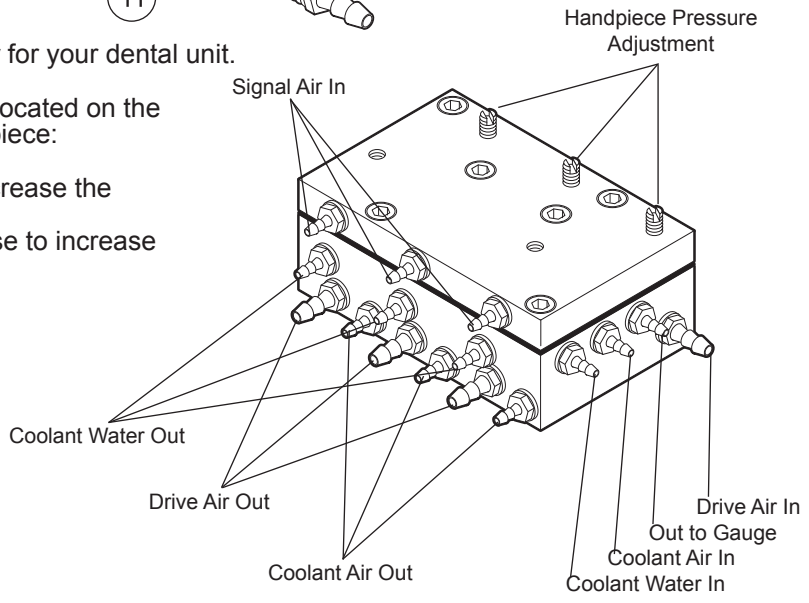
**CAUTION**  
 When adjusting the handpiece pressure, do not over-tighten the screws. Damage may result.

The automatic control block is the control center for your dental unit.

Individual handpiece pressure adjustments are located on the autoblock. To adjust the pressure to each handpiece:

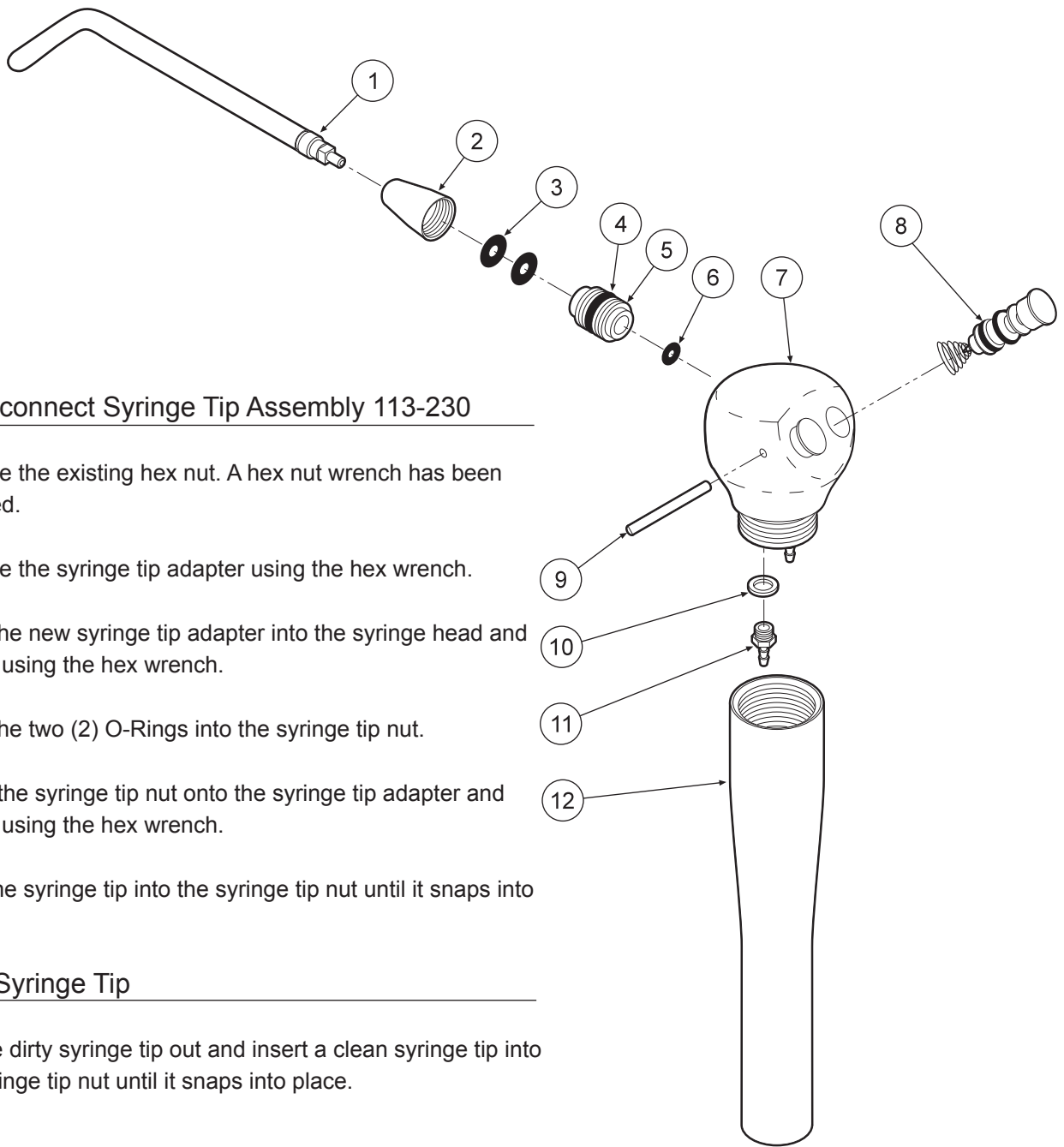
- a. Turn adjustment screw clockwise to decrease the handpiece pressure.
- b. Turn adjustment screw counter-clockwise to increase the handpiece pressure.

ITEM	PART DESCRIPTION	PART NUMBER	QTY
1	Adjusting Stem.....	125-023	3
2	O-Ring, 021.....	017-021	3
3	Screw, 6-32 x 1/4".....	001-131	7
4	Cap.....	125-032	1
5	Plastic Washer, 8-32 x 1/16".....	003-030	3
6	Barb, 8-32 x 1/16".....	022-040	3
7	Diaphragm.....	125-016	1
8	Body.....	125-031	1
9	Barb, 10-32 x 1/16".....	022-009	9
10	Barb, 10-32 x 1/8".....	022-010	4
11	Plastic Washer, 1/4".....	003-001	13



**AUTOMATIC HANDPIECE CONTROL BLOCK**  
**125-030**





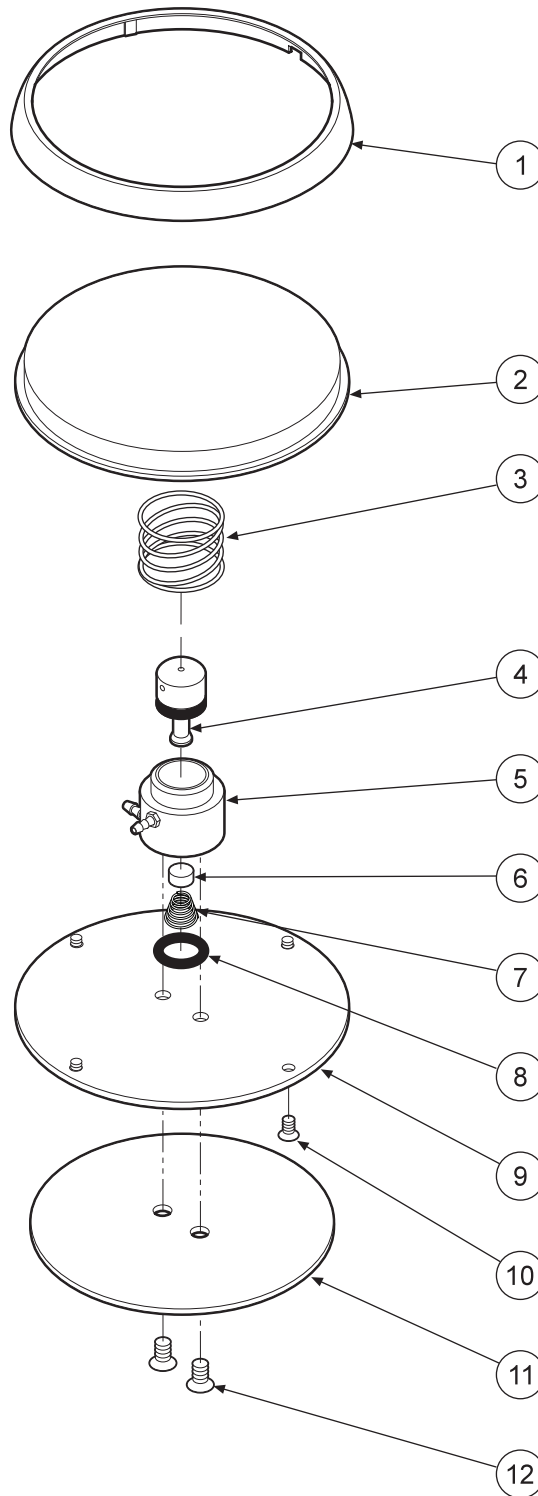
### Quick-disconnect Syringe Tip Assembly 113-230

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



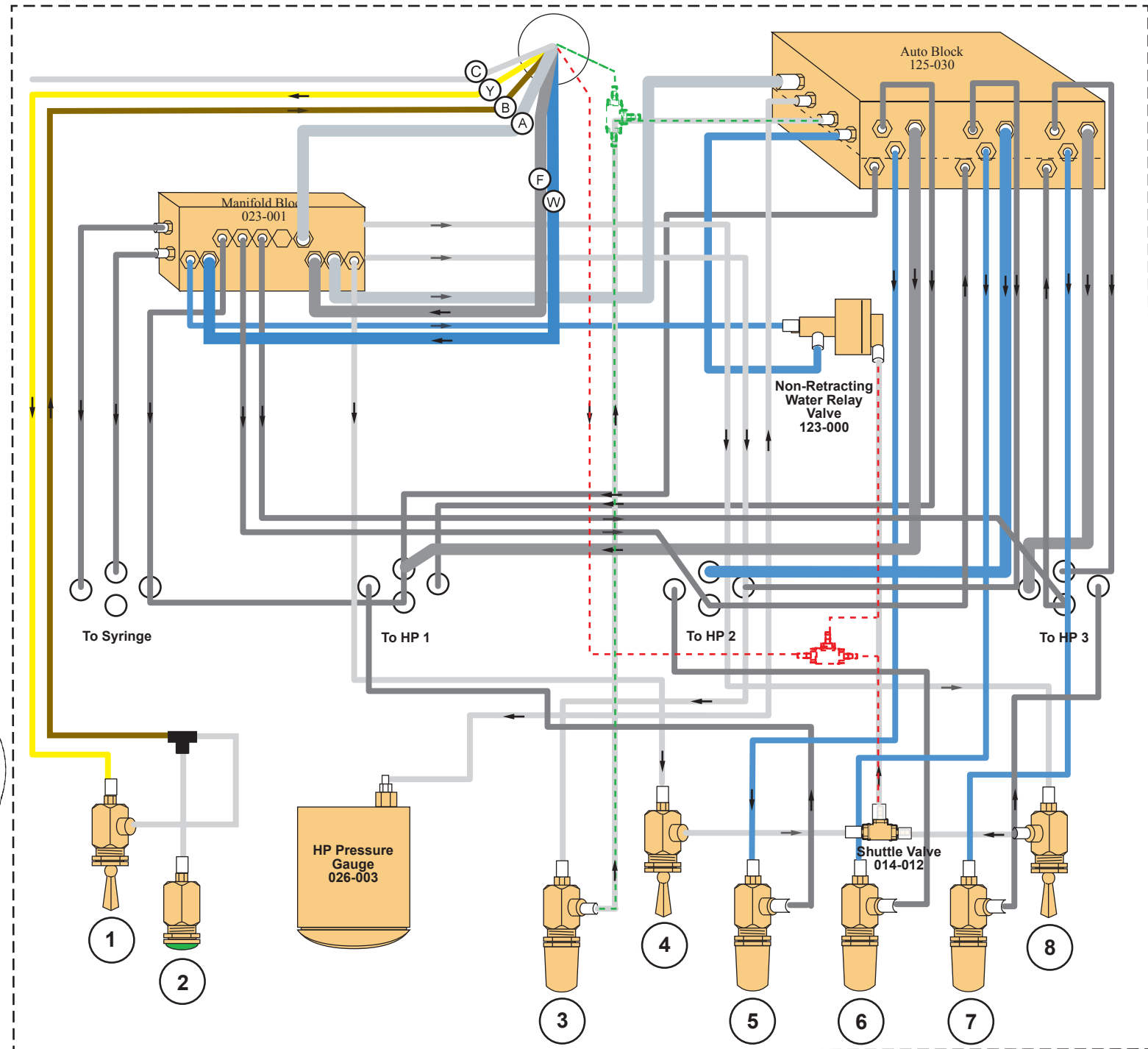
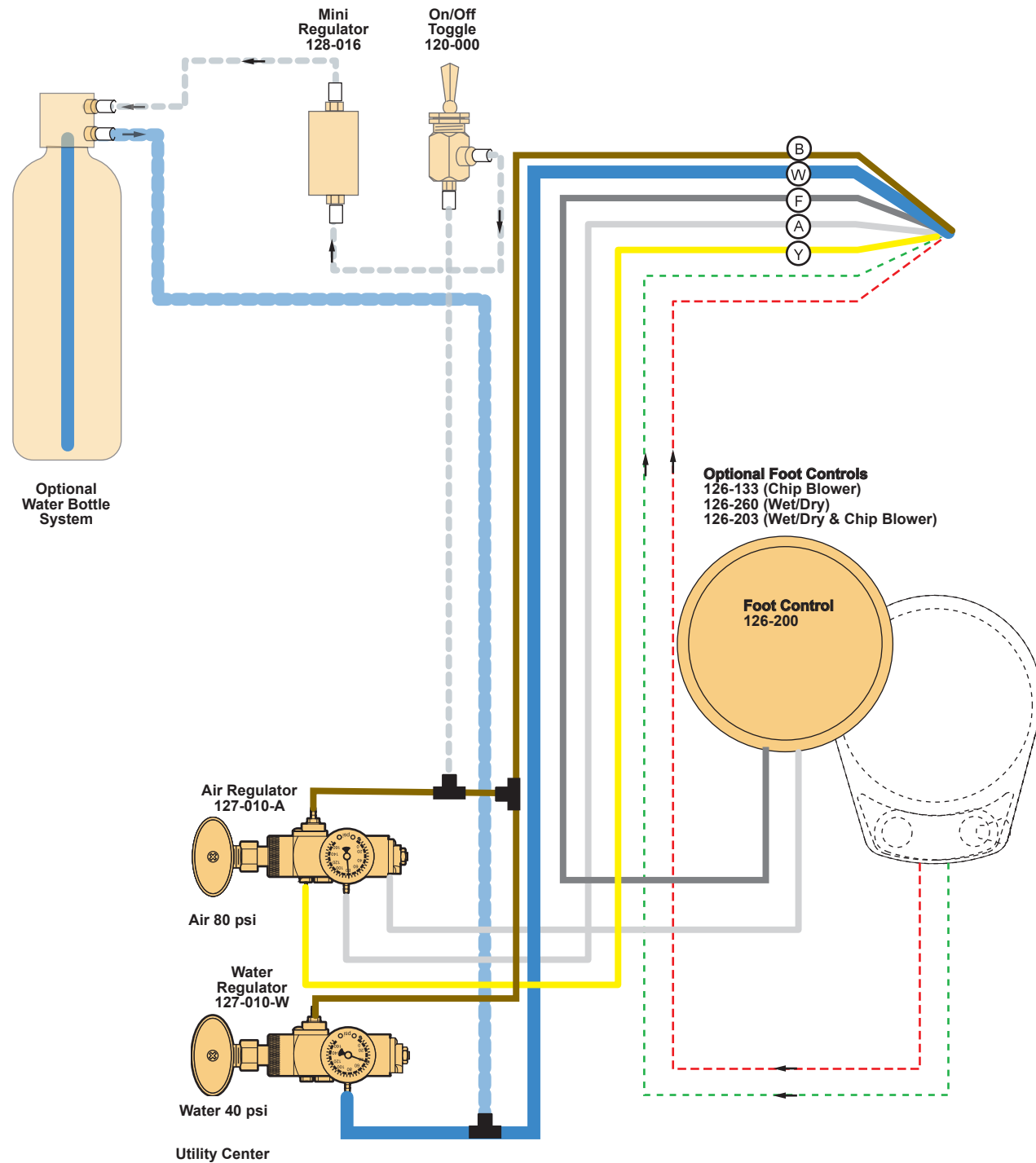
ITEM	PART DESCRIPTION	PART NUMBER	QTY
1	Ring.....	126-202	1
2	Cover.....	126-201	1
3	Spring.....	008-005	1
4	Stem (Includes 017-012 o-ring).....	126-005	1
5	Body.....	126-004	1
6	Poppet.....	126-006	1
7	Spring.....	008-006	1
8	O-Ring, 013.....	017-013	1
9	Baseplate.....	126-003	1
10	Screw, 4-40 x 1/4".....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

**FOOT CONTROL**  
126-200





# 3 Handpiece Automatic A-300



- Tee
- 1** Master On/Off Toggle 120-005
- 2** On/Off Indicator 026-020
- 3** Air Coolant Flow 121-000
- 4** Water Coolant On/Off Toggle 120-000
- 5** HP coolant Flow 121-000
- 6** HP coolant Flow 121-000
- 7** Water Coolant Flow 121-000
- 8** Purge On/Off Toggle 120-005

- Chip Air Option** (dashed green line)
- Wet Dry Option** (dashed red line)
- 1/8" Gray
  - 1/4" Gray
  - 1/8" Clear
  - 1/4" Clear
  - 1/8" Blue
  - 1/4" Blue
  - 1/8" Brown
  - 1/8" Yellow

**Unit Head**

BEAVERSTATE DENTAL, INC.  
115 S. ELLIOTT RD.  
NEWBERG, OR 97132 USA  
800-237-2303 503-538-8756  
503-538-2845 FAX  
Revision Date: 10-10-17

Syringe Handpiece 1 Handpiece 2 Handpiece 3

**Junction Box**  
Circled letters indicate connection at Junction Box

<b>A</b> 1/4" Clear - Constant Air In	<b>F</b> 1/4" Gray - In From Foot Control
<b>B</b> 1/8" Brown - On/Off (flow out) to M.V.	<b>W</b> 1/4" Blue - Water In
<b>C</b> 1/8" Clear - Foot control option 126-153	<b>Y</b> 1/8" Yellow - On/Off (flow In) from M.V.

## WARRANTY

BDS warrants its product to be free of defects in material and workmanship for SEVEN FULL YEARS from the date of purchase on all units. Auto-blocks and standard foot controls are covered by a LIFETIME warranty when factory installed as part of a complete dental system. Upholstery has a TWO YEAR warranty and does not cover normal wear, stains, cuts or tears. Our LED lights have a FIVE year Warranty and our halogen light has a ONE year Warranty. Operator chair motors feature a TEN year warranty. All warranty is limited to repair or replacement by BDS. Products returned to the factory and determined to be defective will be repaired or replaced free of charge at discretion of BDS. The warranty does not cover light bulbs, electrical components and trimmed or installed tubing. BDS reserves the right to void all warranties if any product is installed by other than an authorized technician. BDS' 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.

**Beaverstate Dental Inc.  
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