

# DEMA BLEND CENTER

## MODEL: 681GAP.2P & 681GAP.3P SERIES

### INSTALLATION INSTRUCTION



1. **PARTS:**

- |                                                                                                                                            |                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>A. Multi-Blend Center Assembly<br/>         C. Ceramic Weight<br/>         E. #10 Screw/Anchor Kit<br/>         G. Metering Tip Kit</p> | <p>B. 1/4" IDx8' Long vinyl supply tubing and foot valve assembly<br/>         D. 1/2" IDx6' Long Vinyl outlet tubing (4 GPM only)<br/>         F. Label Card</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|

\* Quantities vary depending on the model of the Blend Center.

2. **INSTALLATION:** Note: All installations must conform to local plumbing codes and use the approved backflow preventers. Pressure indicating tee is to be installed with existing faucets according to local plumbing codes in the state of Wisconsin and any other state that requires the use of a pressure indicating tee.

**WARNING:** Water supply should not exceed 125 psi and water temperature must not exceed 150°F.

This product is designed only to be used as described in this instruction sheet. Adhere to all warnings and cautions identified in this document.	
	<p><b>WARNING:</b> Installations must conform to all local and national plumbing codes and use approved backflow prevention and pressure relief devices where required.</p> <p><b>ALWAYS DISCONNECT DISPENSER FROM WATER SOURCE WHEN DISPENSER IS NOT IN USE.</b></p>
	<p>Always read SDS for all chemicals used and follow personal protective guidelines.</p>

A. **Mounting and water supply:**

Remove the two cover retaining screws and the cover from the blend center assembly. Mount the unit in position on the wall and locate the position for the two screws in the outer most holes in the valve bodies (see Fig. 1 for mounting hole locations). Drill the two holes into the drywall using 1/4" diameter bit for use with the #10 screw and plastic anchor kit. (If mounting the blend center to wood and not planning to use the included anchors, drill 1/8" diameter holes.) Mount the unit to the wall and replace the cover and screws. The water inlet is equipped with a female garden hose fitting (with strainer washer) for attaching a water supply hose. The fitting may be removed to permit direct connection to a 3/8" NPT pipe. The unit is designed so water can be supplied to either side by interchanging the pipe plug and the female hose fitting. **Note: Apply pipe dope, hand tighten, and then turn 1-1/2 times with a wrench. DO NOT OVER TIGHTEN.**

B. **Chemical supply:**

Place the chemical containers in a convenient location not more than 6 feet below the blend center (greater lifts will reduce injection capacities). Slip a ceramic weight over a vinyl supply tube against the foot valve. Insert the vinyl supply tubing with the ceramic weight and foot valve ends into the chemical containers. Cut the vinyl tubes to any convenient length that will allow them to extend from the bottom of the chemical container to the proportioner inlet barbs. (See Figure 1) Gummed labels are provided for product labeling.

- C. **Outlet:** Attach the 6' long vinyl outlet tubing to 4 gpm proportioner. Cut tubing to length if necessary. **Note: Do not force outlet tubing onto the larger barbs on the proportioner.**

- D. **Chemical injection adjustment:** **WARNING: USE CARE WHEN HANDLING HAZARDOUS CHEMICALS.** Chemical feed rates are controlled by metering tips screwed into the proportioner barbs. Select a tip using Table 1 or 2.

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1 cps (centipoise) is equal to the viscosity of water.  
 75 cps is approximately equal to the viscosity of 10 weight motor oil.  
 200 cps is approximately equal to the viscosity of most dishwashing detergents.

**TABLE 1 - (1 GPM PROPORTIONER & ¼" INLET BARB)**

Metering Tip Color	Injection Rates for Viscosities Shown					
	1 cps		75 cps		200 cps	
	Oz/Gal	Ratio	Oz/Gal	Ratio	Oz/Gal	Ratio
Tan	1.03	125-1	0.76	168-1	0.38	333-1
Orange	1.24	103-1	0.98	130-1	0.53	241-1
Turquoise	1.43	89-1	1.07	119-1	0.61	211-1
Pink	2.47	52-1	1.58	81-1	0.92	139-1
Light Blue*	3.05	42-1	2.1	61-1	1.06	121-1
Brown	3.48	37-1	2.31	55-1	1.15	111-1
Red	4.38	29-1	2.83	45-1	1.23	104-1
White	5.33	24-1	3.1	42-1	1.37	93-1
Green	6.38	20-1	3.63	35-1	1.4	91-1
Blue	6.77	19-1	3.78	34-1	1.45	88-1
Yellow	9.90	13-1	5.1	25-1	1.48	86-1
Black	15.00	9-1	6.54	20-1	1.53	84-1
Purple	24.94	5-1	7.28	18-1	1.57	82-1
Gray	35.94	4-1	8.5	15-1	1.64	78-1
No Tip	73.21	2-1	9.35	14-1	1.87	69-1

**TABLE 2 - (4 GPM PROPORTIONER & ¼" INLET BARB)**

Metering Tip Color	Injection Rates for Viscosities Shown					
	1 cps		75 cps		200 cps	
	Oz/Gal	Ratio	Oz/Gal	Ratio	Oz/Gal	Ratio
Tan	0.33	387.17-1	0.26	499.68-1	0.12	1089.59-1
Orange	0.42	307.29-1	0.32	400.43-1	0.17	734.82-1
Turquoise	0.51	251.3-1	0.34	381.33-1	0.19	676.07-1
Pink	0.78	164.53-1	0.56	229.7-1	0.30	422.70-1
Light Blue*	0.87	147.12-1	0.67	191.59-1	0.33	390.98-1
Brown	0.99	128.65-1	0.74	173.55-1	0.37	345.23-1
Red	1.37	93.35-1	0.91	141.28-1	0.44	288.82-1
White	1.52	84.44-1	1.04	122.92-1	0.48	264.40-1
Green	1.72	74.25-1	1.22	104.98-1	0.52	243.91-1
Blue	2.13	60.03-1	1.27	101.05-1	0.54	239.14-1
Yellow	3.05	42.03-1	1.71	75.04-1	0.56	228.75-1
Black	4.50	28.42-1	1.96	65.17-1	0.57	223.98-1
Purple	7.75	16.51-1	2.40	53.29-1	0.59	216.68-1
Gray	9.86	12.99-1	2.54	50.31-1	0.63	204.05-1
No Tip	19.63	6.52-1	3.16	40.49-1	0.67	189.74-1

**Leaner dilutions are available using DEMA tip kit #100-15KU or capillary tip #44-61P. (\*) Metering tip color was formerly clear. All induction rates are based on a water pressure of 40 psi.**

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**Table 3 - 4 GPM FLOW RATE PROPORTIONER, 3/8" INLET BARB**

Metering Tip Color	Injection Rates for Viscosities Shown					
	1 cps		75 cps		200 cps	
	Oz/Gal	Ratio	Oz/Gal	Ratio	Oz/Gal	Ratio
Clear	0.30	430-1	0.22	592-1	0.13	864-1
Purple	0.48	265-1	0.32	406-1	0.24	524-1
Yellow	1.28	100-1	0.82	157-1	0.6	212-1
Green	1.67	77-1	1.29	99-1	1	128-1
Pink	2.36	54-1	1.65	77-1	1.25	103-1
Turquoise	3.76	34-1	2.55	50-1	1.85	69-1
Black	4.47	29-1	3.03	42-1	2.12	60-1
Gray	5.53	23-1	3.67	35-1	2.58	50-1
Red	7.00	18-1	4.79	27-1	2.79	46-1
Blue	8.78	15-1	5.39	24-1	3.06	42-1
Brown	10.95	12-1	6.49	20-1	3.35	38-1
White	14.19	9-1	7.08	18-1	3.46	37-1
Orange	17.58	7-1	7.91	16-1	3.71	35-1
Light Blue**	21.75	6-1	8.66	15-1	3.9	33-1
Tan**	27.98	5-1	9.15	14-1	4.11	31-1
No Tip	33.15	4-1	10.54	12-1	4.52	28-1

**Note: All induction rates are based on a water pressure of 40 psi.**

**\*\* These tips are not included in the standard tip pack.**

### 3. **OPERATION:**

The Blend Center is now ready for use. Depressing a push button opens the valve, allowing water to flow through the chemical proportioner that mixes chemical at the desired rate. The buttons are spring loaded to prevent accidental overflow if unattended but may be converted to locking buttons by cutting off the tab at the notch. (See Figure 2) Pushing the button and turning it 1/4 turn clockwise at the end of its travel allows the valve to lock on. This makes it unnecessary for the attendant to hold the button in while filling large containers. Turning the button in a counterclockwise direction will release it, allowing the valve to shut off.

### 4. **SERVICING: CAUTION: TURN OFF WATER SUPPLY BEFORE SERVICING.**

#### **A. Proportioner fails to draw chemical:**

1. Pinch outlet tube to create backpressure which will cause unit to prime. The foot valve will keep the inlet tube primed.
2. Insufficient water supply pressure. 20 PSI is the minimum allowable.

#### **B. Proportioner stops drawing chemical:**

1. Inspect foot valve for dried chemical or dirt. Soak in hot water to clean.
2. Proportioner metering tip clogged with dried chemical. Remove tip and try injecting in hot water. If there is no suction, remove proportioner and soak in hot water to clear interior passages.
3. Inspect proportioner to ensure that there are no mineral deposit build-ups on the nozzle. If so, soak proportioner body in deliming solution. (Remove all parts attached to proportioner before soaking in deliming solution.) Note: Use care when handling hazardous chemicals.

#### **C. Proportioner continues to draw chemical after water valve closes:**

Chemical supply is higher than bottom of discharge tube creating a natural siphon. Lower the chemical supply or hang up outlet tubing after use.

#### **D. Valve malfunction:**

Check that the button moves freely up & down and that a "click" can be heard when the button is pushed and released, indicating that the magnet is activating the plunger properly. Remove cover to inspect internal parts. Unscrew magnet housing and carefully pull off the enclosing tube so as not to drop the plunger, kick-off spring, and spacer. Check for dirt or damage impending plunger and kick-off spring movement. Inspect the diaphragm, making sure the two small pin holes (bleed holes) in the diaphragm convolution are clear to allow the valve to

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close.

**CAUTION:** When servicing unit, be sure that replacement parts have been installed according to drawing.

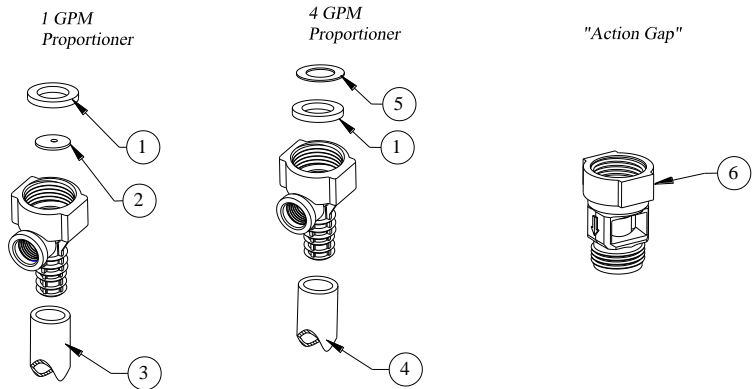
**RETURNS:** NO MERCHANDISE MAY BE RETURNED FOR CREDIT WITHOUT DEMA'S WRITTEN PERMISSION. RETURN MERCHANDISE AUTHORIZATION NUMBER REQUIRED IN ADVANCE OF RETURN.

**WARRANTY:** DEMA products are warranted against defective material and workmanship under normal use and service for one year from the date of manufacture. This limited warranty does not apply to any products which have a normal life shorter than one year or failure and damage caused by chemicals, corrosion, improper voltage supply, physical abuse, or misapplication. Rubber and synthetic rubber parts such as "O"- rings, diaphragms, squeeze tubing and gaskets are considered expendable and are not covered under warranty. This warranty is extended only to the original buyer of DEMA products. If products are altered or repaired without prior approval of DEMA, this warranty will be void.

Defective units or parts should be returned to the factory with transportation prepaid. If inspection shows them to be defective, they will be repaired or replaced without charge, F.O.B. factory. DEMA assumes no liability for damages. Return merchandise authorization number, to return units for repair or replacement, must be granted in advance of return.

#### PROPORTIONER AND ACTION GAP BREAKDOWN

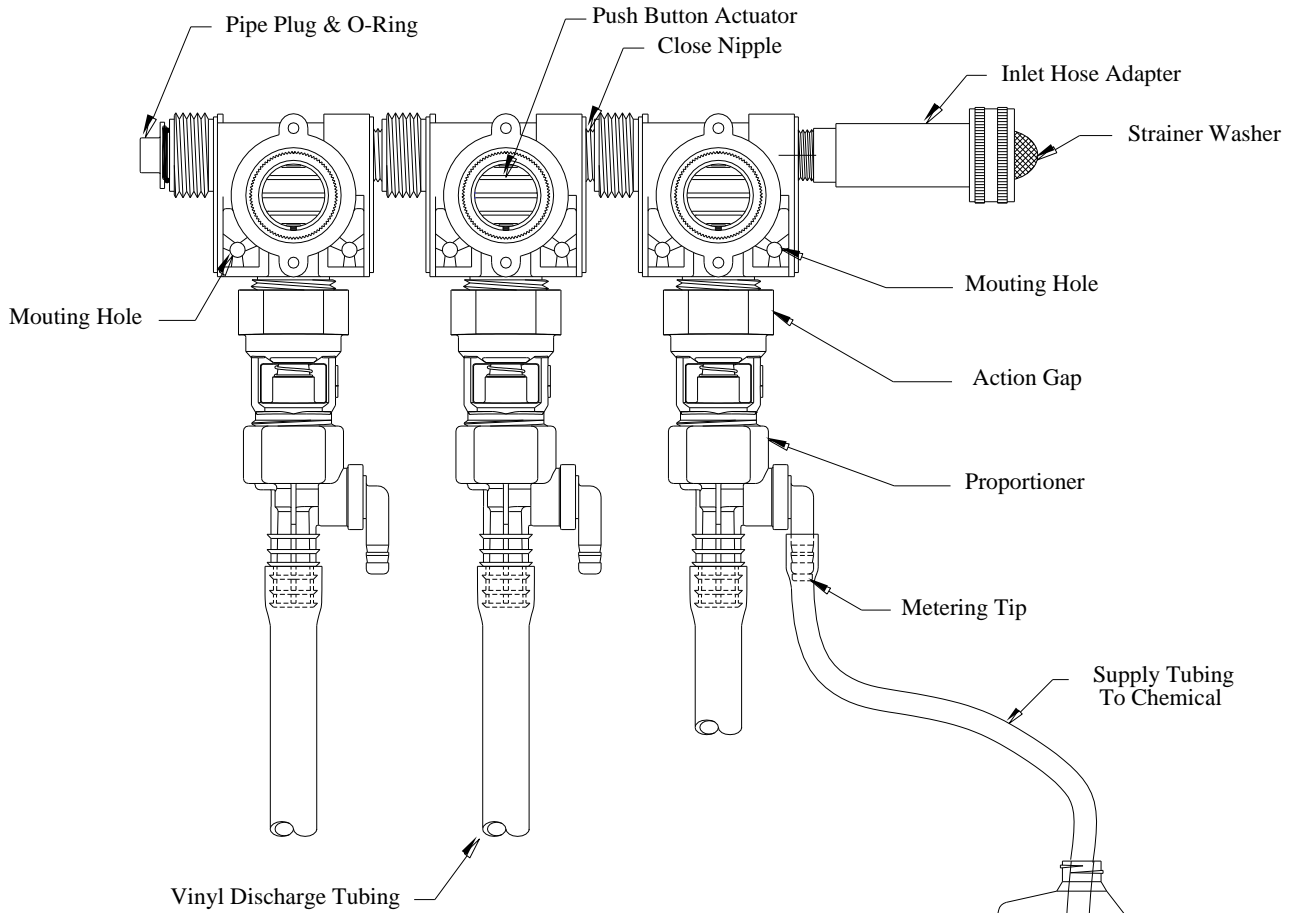
NO.	PART NO.	DESCRIPTION
1	150-6	Rubber Washer
2	61-36	Flow Disk
3	16-3-6	1/2" I.D. x 6" Lg. Vinyl Outlet Tube (1 GPM Only)
4	61-21	1/2" I.D. x 6' Lg. Vinyl Outlet Tube (4 GPM Only)
5	63-89-1	Rubber Washer (1/32" Thick)
6	16-30	Action Gap Assembly



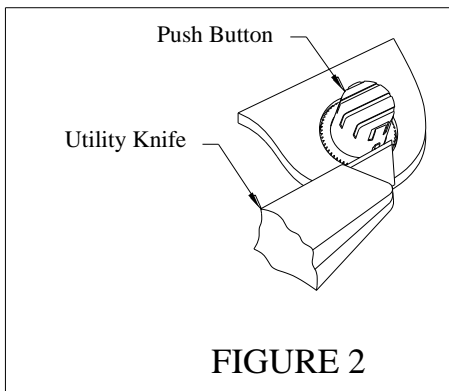
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**FIGURE 1**



**FIGURE 2**

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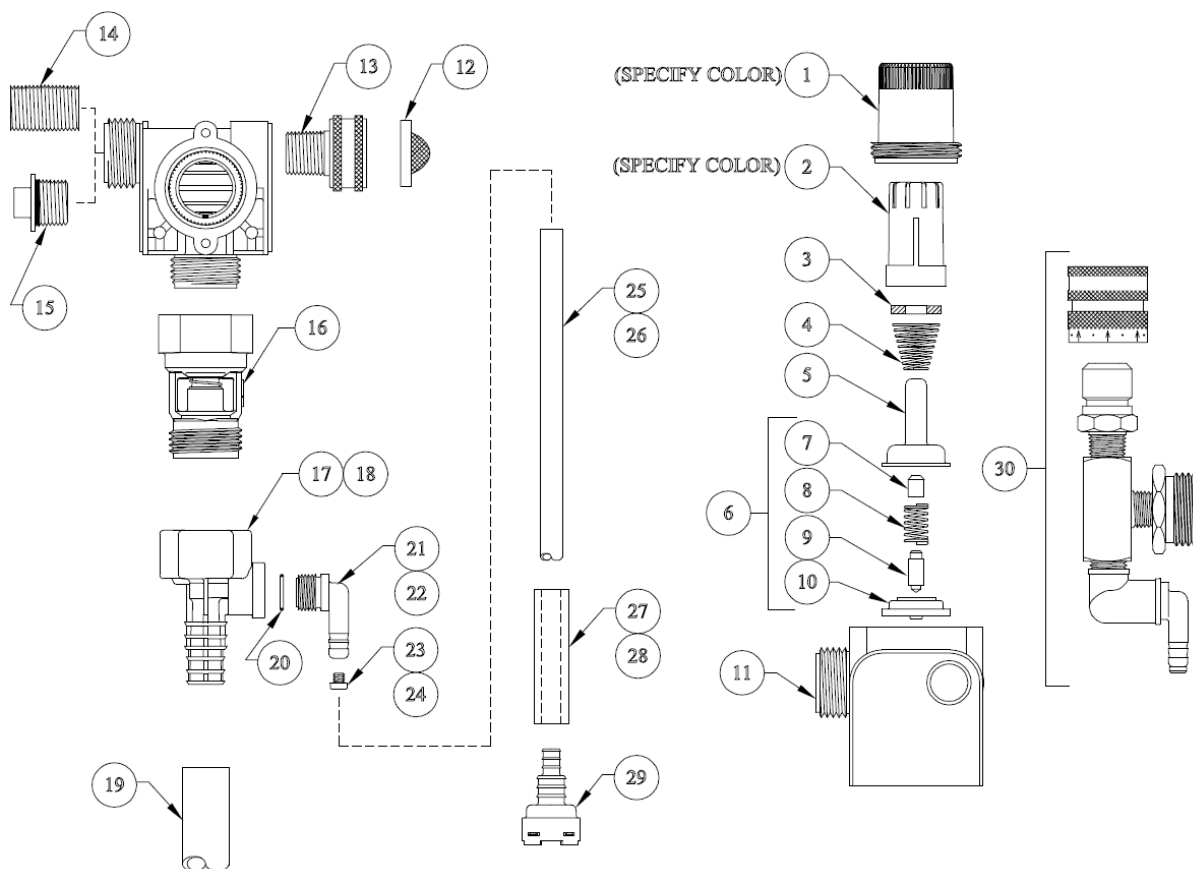
**ALL INFORMATION CONTAINED IN THIS DOCUMENT IS RELEVANT TO DEMA'S 681 BLEND CENTERS REGARDLESS OF QUANTITIES SHOWN FOR STATION SET UP**

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NO.	PART NO.	DESCRIPTION
1	66-139	MAGNET HOUSING
2	66-140	PUSH BUTTON
3	63-35	MAGNET
4	63-36	SPRING
5	41-7-25	ENCLOSING TUBE
6	63-87	VALVE REPAIR KIT
7	63-37	SPACER
8	41-1-8	KICKOFF SPRING
9	63-38	PLUNGER
10	41-15-10	DIAPHRAGM, EP
11	63-39	VALVE BODY
12	100-38	STRAINER WASHER
13	93-44	PIPE TO GARDEN HOSE ADAPTOR
14	66-31	CLOSE NIPPLE
15	66-153	PIPE PLUG ASSY
16	16-30	ACTION GAP ASSY
17	61-22GAP-2	4 GPM PROPORTIONER (WHITE)
18	61-99GAP-	1 GPM PROPORTIONER

NO.	PART NO	DESCRIPTION
	2	(GREEN)
19	61-21	½" ID X 6' LONG VINYL OUTLET TUBE (4 GPM)
20	16-3-6	1/3" ID X 6' LONG VINYL OUTLET TUBE (1 GPM)
21	63-78	O-RING EP
22	63-79	INLET BARB (1/4")
23	63-80	INLET BARB (3/8")
24	100-15K	METERING TIP KIT (1/4" BARB)
25	61-9K	METERING TIP KIT (3/8" BARB)
26	100-12	¼" ID X 8' LONG VINYL SUPPLY TUBING
27	61-107-2	CERAMIC WEIGHT FOR ¼" TUBING
28	61-107	CERAMIC WEIGHT FOR 3/8" TUBING
29	100-16E-1	FOOT VALVE
30	68-6-QD2	PRESSURE INDICATING TEE
31	61-25-2	FRESH WATER OUTLET KIT