

# DEMA 681GAP-2 BLEND CENTER INSTALLATION INSTRUCTIONS

**1. PARTS:**

- |                          |                         |                     |
|--------------------------|-------------------------|---------------------|
| A. Blend Center Assembly | B. Vinyl Supply Tubing  | C. Ceramic Weight   |
| D. Vinyl Outlet Tubing   | E. Screw and Anchor Kit | F. Label Card       |
|                          |                         | G. Metering Tip Kit |

**2. INSTALLATION: Note: All installations must conform to local plumbing codes and use 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.**

- A. Mounting and water supply:** Drill all of the holes into the drywall using a 1/4" diameter bit for use with the included #10 screw and anchor set. (If mounting the Blend Center to wood and you do not plan to use the included anchors, drill 1/8" diameter holes.) Insert the anchors into drilled holes and hammer them into the wall until they are flush with face of wall. Assemble all of the #10 screws with a Phillips screwdriver into the anchors so the screw heads are sticking out of the wall approximately 1/8". Mount the Blend Center by inserting the screw heads through the keyhole slots in the base and tightening the screws. The water inlet is equipped with a female garden hose fitting (with strainer washer) for attaching a water supply hose. The fittings 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. WARNING: Do not use Teflon® tape to seal internal plastic threads as the extra thickness of the tape may cause the plastic to crack. Use a non-welding liquid sealant instead.**
- B. Pressure Indicating Tee Installation:** Screw female quick disconnect to faucet and attach pressure indicating tee to female quick disconnect. Attach female end of reinforced hose to male threads of tee, then attach the male end to the female garden hose fitting at the water inlet of the Blend Center (See Figure 3). Water supply should not exceed 125 psi and water temperature must not exceed 160°F.
- C. 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 the vinyl supply tubing. Insert the vinyl supply tubing with the foot valve and ceramic weight end into the chemical container. Cut the vinyl tube to any convenient length that will allow tube to extend from the bottom of the chemical container to the proportioner inlet barb. (See Figure 1). Gummed labels are provided for product labeling.
- D. Outlet:** For the 4 GPM proportioner, cut the 1/2" I.D. outlet tubing to the desired length and attach tubing to the proportioner outlet barbs. **Note: Do not force tubing onto larger barbs on the proportioner.**
- E. Chemical injection adjustment: WARNING: USE CARE WHEN HANDLING HAZARDOUS CHEMICALS.**  
Chemical feed rates are controlled by metering tips screwed into the proportioners' barbs. Select a tip using Table 1, 2, 3, or 4.

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 FLOW RATE PROPORTIONER, 1/4" I.D. TUBING**

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

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**TABLE 2 - 4 GPM FLOW RATE PROPORTIONER, 1/4" I.D. TUBING**

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	387-1	0.26	500-1	0.12	1090-1
Orange	0.42	307-1	0.32	430-1	0.17	735-1
Turquoise	0.51	251-1	0.34	382-1	0.19	676-1
Pink	0.78	165-1	0.56	230-1	0.3	422-1
Light Blue*	0.87	147-1	0.67	192-1	0.33	391-1
Brown	0.99	129-1	0.74	174-1	0.37	345-1
Red	1.37	93-1	0.91	141-1	0.44	289-1
White	1.52	84-1	1.04	123-1	0.48	264-1
Green	1.72	74-1	1.22	105-1	0.52	244-1
Blue	2.13	60-1	1.27	101-1	0.54	239-1
Yellow	3.05	42-1	1.71	75-1	0.56	229-1
Black	4.50	28-1	1.96	65-1	0.57	224-1
Purple	7.75	17-1	2.4	53-1	0.59	217-1
Gray	9.86	13-1	2.54	50-1	0.63	204-1
No Tip	19.63	7-1	3.16	40-1	0.67	190-1

**NOTE: \*Metering tip color was formerly clear. All induction rates are based on a water pressure of 40 psi. Leaner dilutions can be achieved by ordering DEMA ultra lean tip kit 100-15KU or capillary tip 44-61P.**

**Table 3 - 1 GPM FLOW RATE PROPORTIONER, 3/8" I.D. TUBING**

Metering Tip Color	Injection Rates For Viscosities Shown					
	1 cps		75 cps		200 cps	
	Oz/Gal	Ratio	Oz/Gal	Ratio	Oz/Gal	Ratio
Clear	2.28	56-1	0.63	204-1	0.44	292-1
Purple	2.98	43-1	1.22	105-1	0.76	168-1
Yellow	5.18	25-1	2.51	51-1	2.01	64-1
Green	6.37	20-1	4.22	30-1	3.14	41-1
Pink	8.76	15-1	5.59	23-1	4.17	31-1
Turquoise	12.01	11-1	8.44	15-1	6.12	21-1
Black	15.16	8-1	9.93	13-1	7.09	18-1
Gray	18.97	7-1	12.55	10-1	8.73	15-1
Red	25.38	6-1	15.84	8-1	10.07	13-1
Blue	28.24	5-1	17.92	7-1	11.7	11-1
Brown	36.99	4-1	21.31	6-1	12.04	10.5-1
White	45.52	3-1	25.26	5-1	12.67	10-1
Orange	53.31	2.5-1	28.44	4.5-1	13.14	9.75-1
Light Blue**	60.27	2.25-1	30.5	4-1	13.51	9.5-1
Tan**	72.94	2-1	33.4	3.75-1	14	9-1
No Tip	77.90	1.75-1	35.85	3.5-1	14.5	8.75-1

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**Table 4 - 4GPM FLOW RATE PROPORTIONER, 3/8" I.D. TUBING**

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

**\*\* 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 a 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 back pressure 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 close.

# DEMA 681GAP-2 BLEND CENTER INSTALLATION INSTRUCTIONS

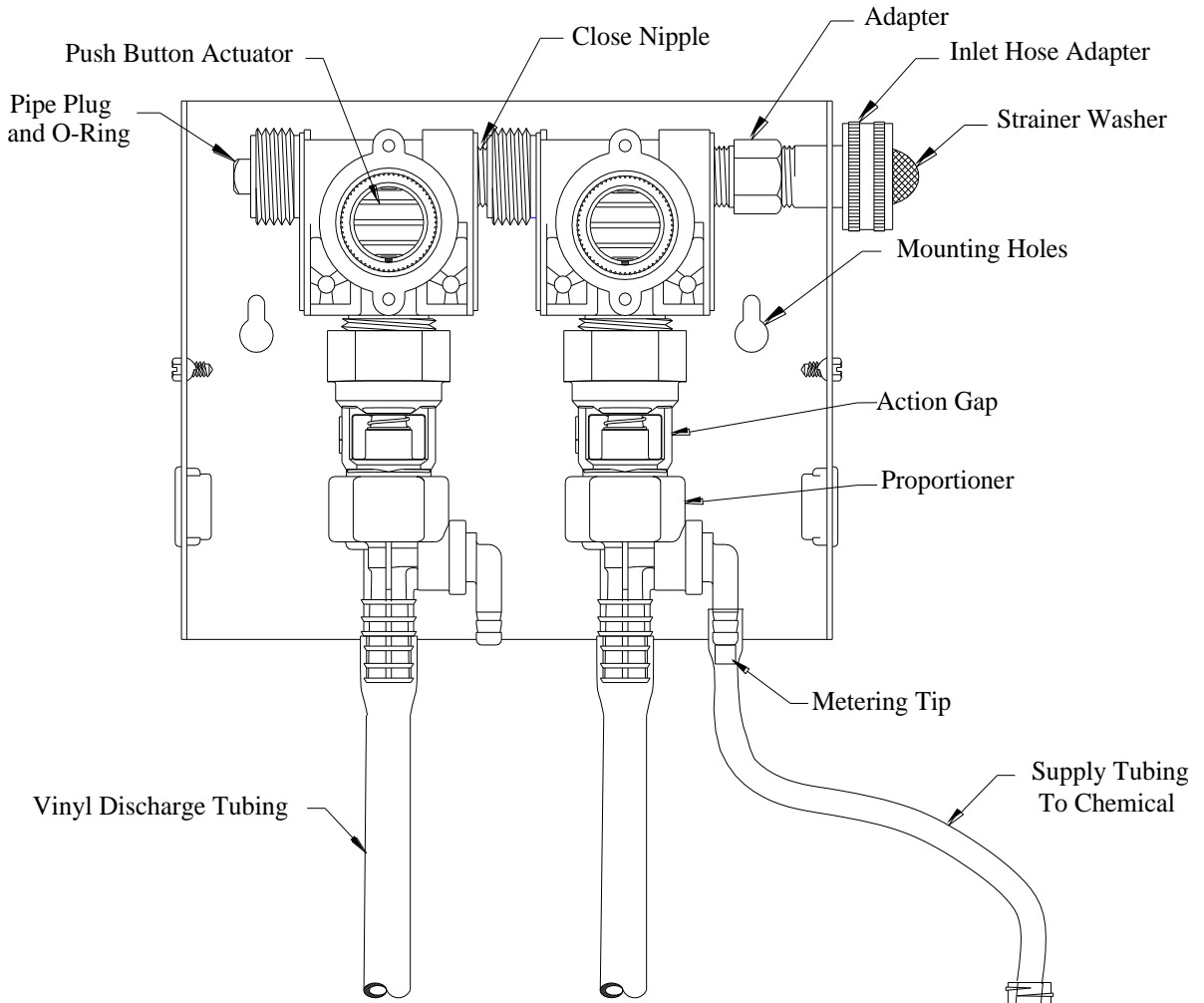
**CAUTION:** When servicing unit, be sure that replacement parts have been installed according to the drawing.

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

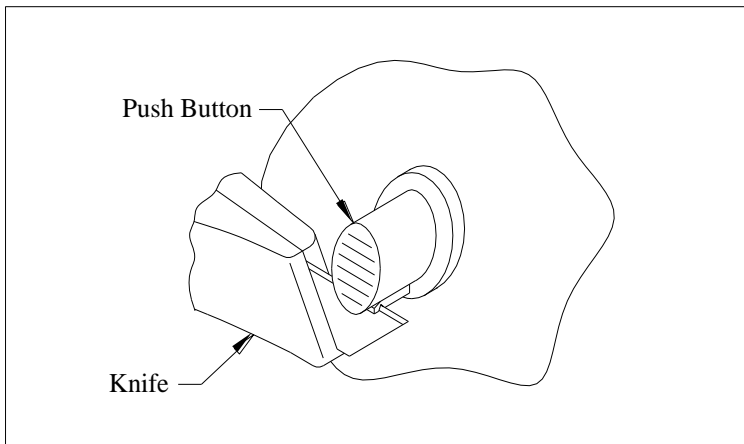
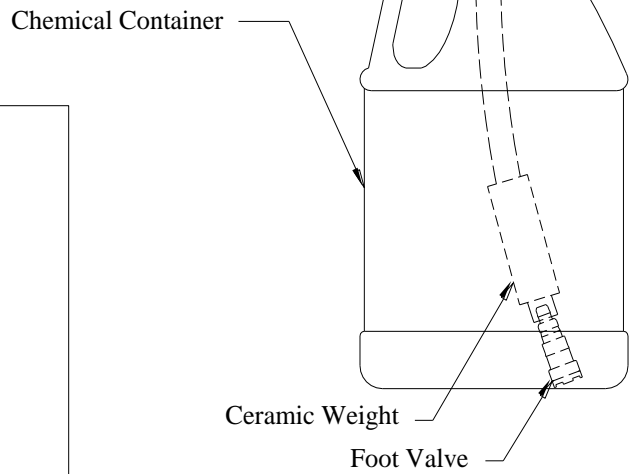
**WARRANTY:** DEMA products are warranted against defective material and workmanship under normal use and service for one year from the date of manufacture. This limited warranty does not apply to any products which have a normal life shorter than one year or failure and damage caused by chemicals, corrosion, 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.

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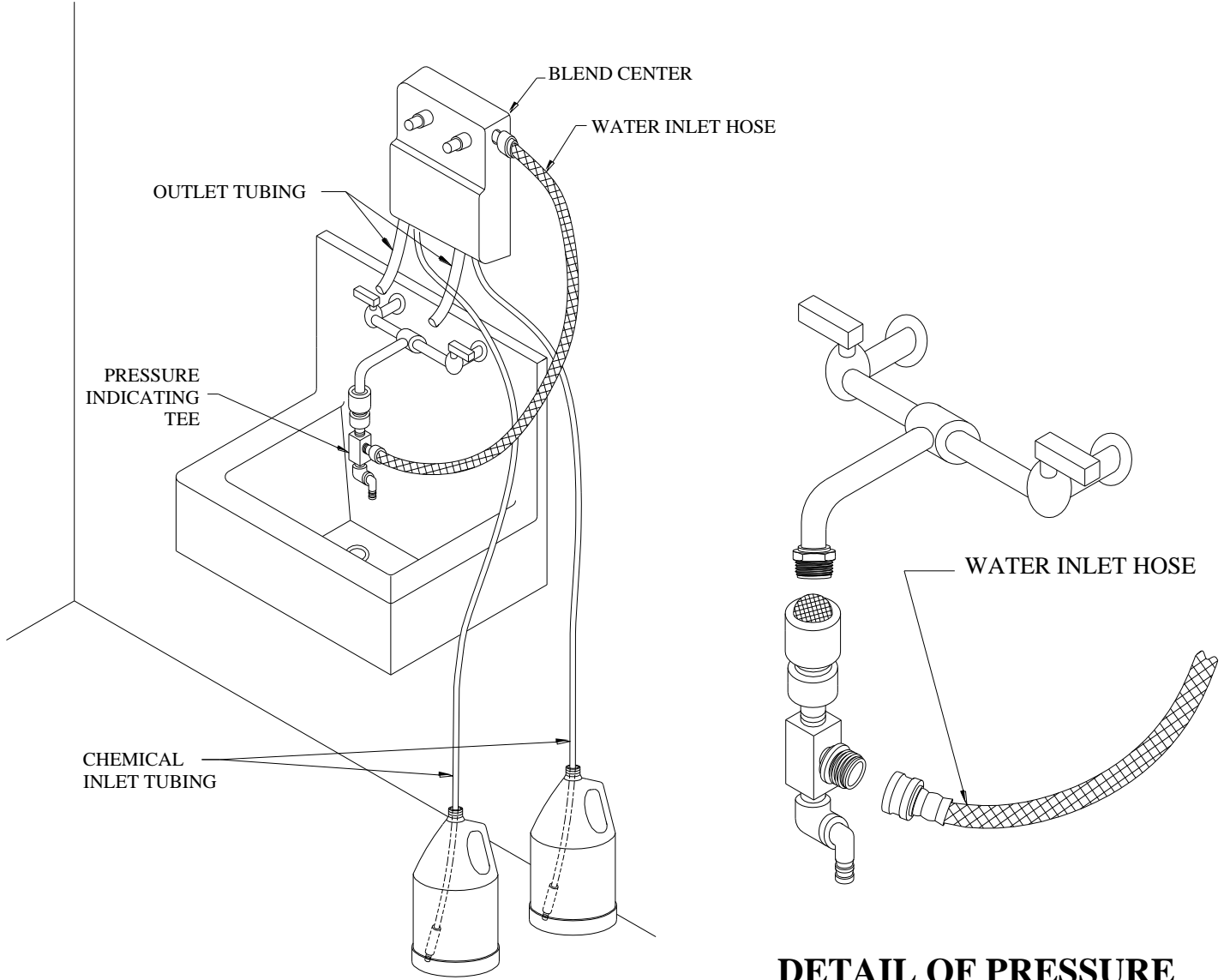
**FIGURE 1**



**FIGURE 2**

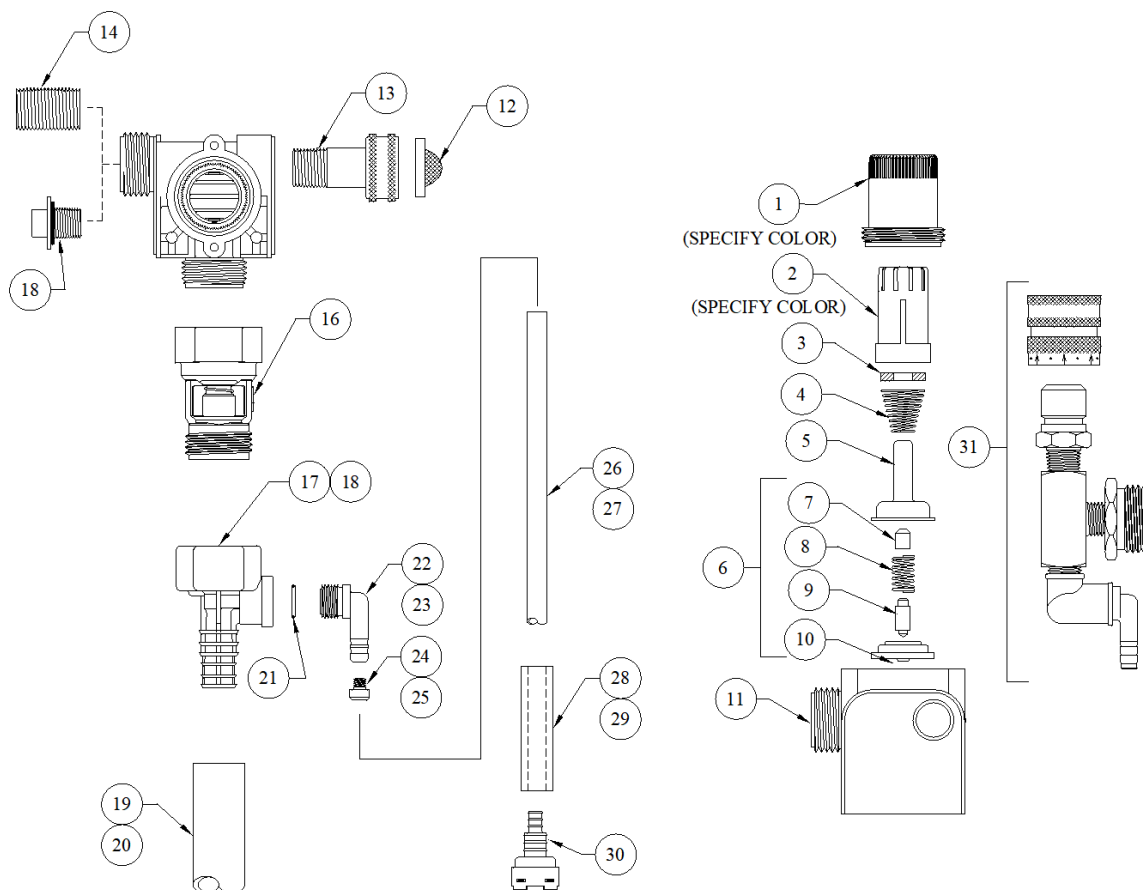
**DEMA 681GAP-2 BLEND CENTER  
INSTALLATION INSTRUCTIONS**

**PRESSURE INDICATING TEE INSTALLATION**



**DETAIL OF PRESSURE  
INDICATING TEE**

# DEMA 681GAP-2 BLEND CENTER INSTALLATION INSTRUCTIONS

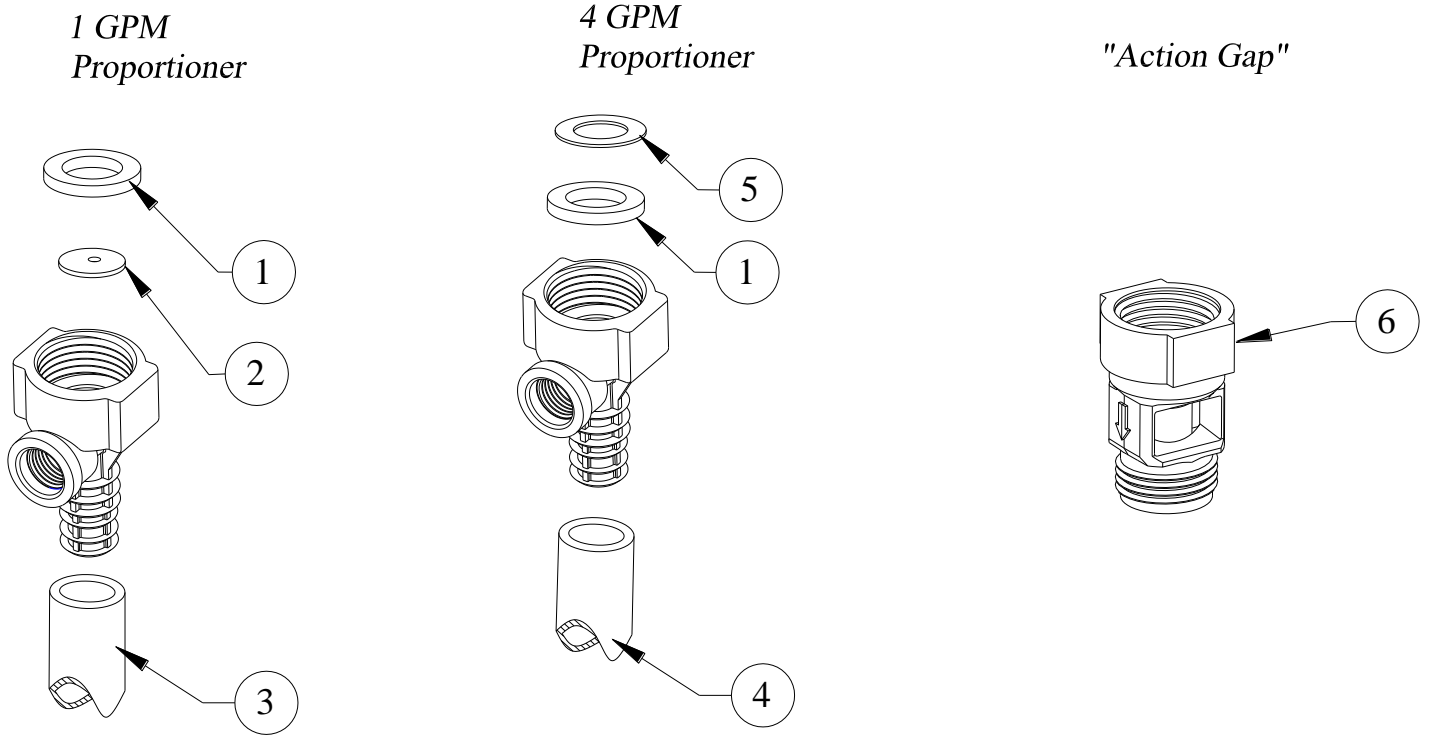


NO.	PART NO.	DESCRIPTION
1	66-139	MAGNET HOUSING
2	66-140	PUSH BUTTON
3	63-35	MAGNET
4	63-36	SPRING
5	41-7-25	ENCLOSING TUBE
6	63-87	VALVE REPAIR KIT
7	63-37	SPACER
8	41-1-8	KICKOFF SPRING
9	63-38	PLUNGER
10	41-15-10	DIAPHRAGM, EP
11	63-39	VALVE BODY
12	100-38	STRAINER WASHER
13	93-44	PIPE TO GARDEN 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-2	1 GPM PROPORTIONER (GREEN)

NO.	PART NO	DESCRIPTION
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	100-12L	3/8" ID X 8' LONG VINYL SUPPLY TUBING
28	61-107-2	CERAMIC WEIGHT FOR ¼" TUBING
29	61-107	CERAMIC WEIGHT FOR 3/8" TUBING
30	100-16E-1	FOOT VALVE
31	68-6-QD2	PRESSURE INDICATING TEE

# DEMA 681GAP-2 BLEND CENTER INSTALLATION INSTRUCTIONS

## 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