

DEMA SINGLE-FEED

MODEL: 651GAP, 651GAP-1 & 651GAP-1M



INSTALLATION INSTRUCTIONS

The Model 651GAP is designed to dispense one product into a kitchen sink with the turn of a ball valve.

I. PARTS:

| ITEM | DESCRIPTION | QTY. |
|------|--|------|
| A | Dispenser Assembly | 1 |
| B | ½" ID X 6' Long Vinyl Outlet Tubing (For 4 GPM Station Only) | 1 |
| C | ¼" ID X 8' Long Vinyl Supply Tubing | 1 |
| D | Foot Valve | 1 |
| E | Ceramic Weight | 1 |
| F | #10 Screws & Anchor Kit | 1 |
| G | Metering Tip Kit | 1 |

II. INSTALLATION: (See Figure 1 for setup diagram)

| | |
|---|---|
| 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>WARNING: Installations must conform to all local and national plumbing codes and use approved backflow prevention and pressure relief devices where required.</p> <p>ALWAYS DISCONNECT DISPENSER FROM WATER SOURCE WHEN DISPENSER IS NOT IN USE.</p> |
|  | Always read MSDS for all chemicals used and follow personal protective guidelines. |

A. Mounting and Water Supply:

Locate mounting holes on a permanent surface above sink. The unit needs to be mounted high enough that the sink does not interfere with the outlet tube, putting a strain on the proportioner. Drill all holes into the drywall using a ¼" diameter bit for use with the included #10 screw & anchor set. (If mounting dispenser to wood and you do not plan to use the anchors, drill 1/8" diameter holes 1" deep.) 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 unit by inserting the screw heads through the keyhole slots and tighten the screws. Secure unit by inserting screws into the lower 2 holes.

The water inlet is equipped with a female garden hose fitting (with strainer washer) for attaching a water supply hose. The water inlet may be removed to permit direct connection to a 1/4" NPT pipe. The unit is designed so water can be supplied to either side by interchanging the pipe plug with the water inlet assembly.

Note: Apply pipe dope, hand tighten, then turn 1-½ times with a wrench. Do not over tighten.

B. Chemical Supply:

Place the chemical container in a convenient location not more than 6 ft. below the dispensing unit. **Note: greater lifts will reduce injection capacities.** Slip a ceramic weight over the chemical supply tubing and insert the foot valve end of the tubing into the chemical container. Cut the vinyl tube to any convenient length that will allow the tube to extend from the bottom of the chemical container to the proportioner inlet barb. Install the other end of the tubing by pushing tubing over proportioner inlet barb.

C. Outlet Tubing:

For the 4 GPM proportioner outlet: Cut a piece of the ½" I.D. outlet tubing to the desired length and attach to the proportioner outlet barb. **Do not force tubing onto the larger barbs on the proportioner. Note: Outlet tube may be anchored to the wall or faucet to prevent damage to the proportioner.**

Caution: To prevent continuous siphoning, the outlet of the discharge tubing should not be below the level of chemical in the container.

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D. Injection Adjustment:

Chemical feed rates are controlled by metering tips screwed into the proportioner barb. Use Table 1 for 1 GPM proportioner and Table 2 for 4 GPM proportioner as a guide for tip selection.

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, FOR ¼" 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 |

TABLE 2
4 GPM FLOW RATE PROPORTIONER, FOR ¼" 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.

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III. OPERATION:

The model 651GAP is activated by turning the on-off ball valve fully counterclockwise. When the desired amount of chemical water solution has been obtained turn the ball valve fully clockwise. **Note: Do not use ball valve to throttle chemical water flow rate; this will result in inconsistent induction rates.**

IV. 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 thereafter.
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 supply vessel or hang up outlet tube after use.

D. Valve Malfunction:

Check that the button moves freely in & out 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 hole) in the diaphragm convolution are clear to allow the valve to close.

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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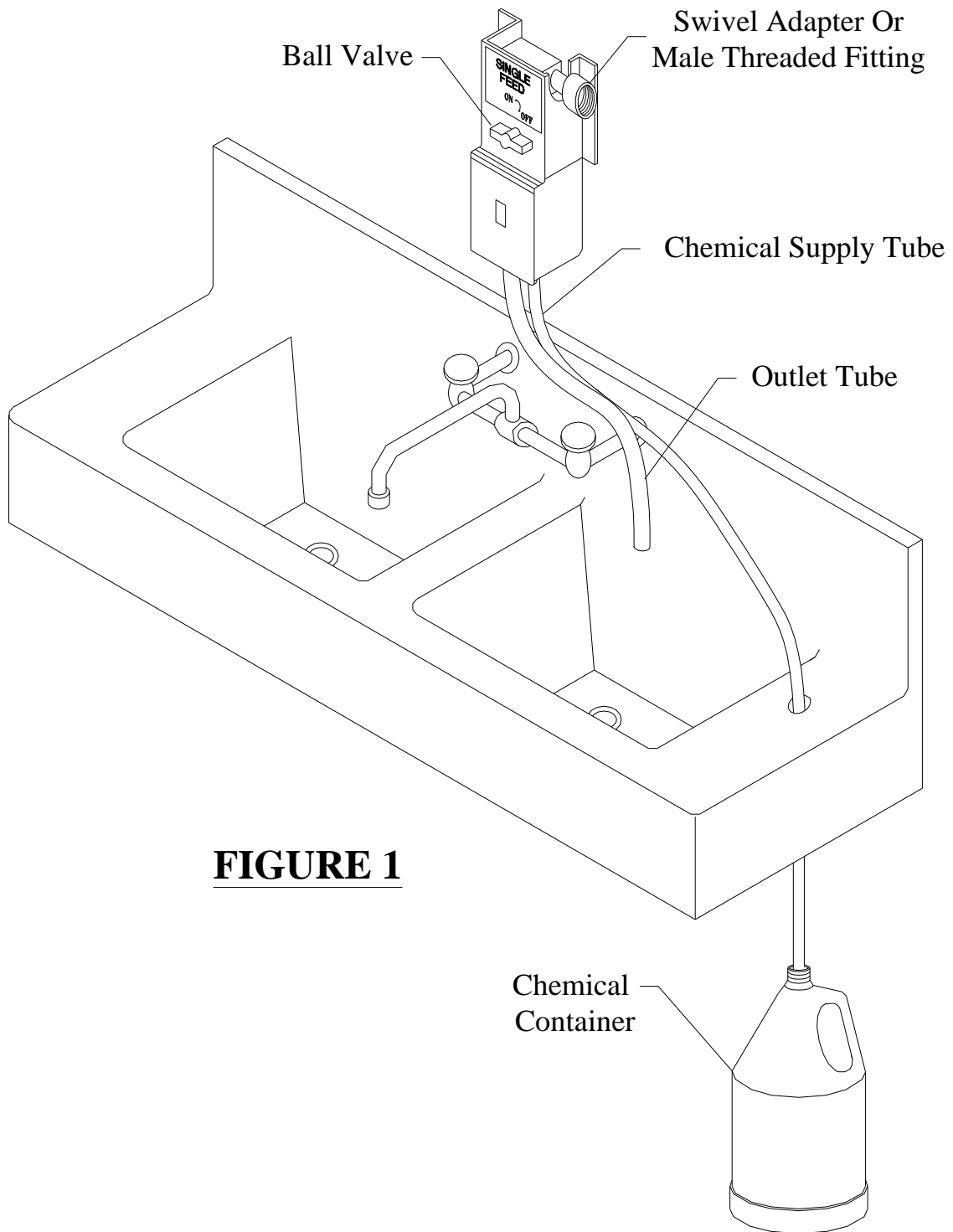
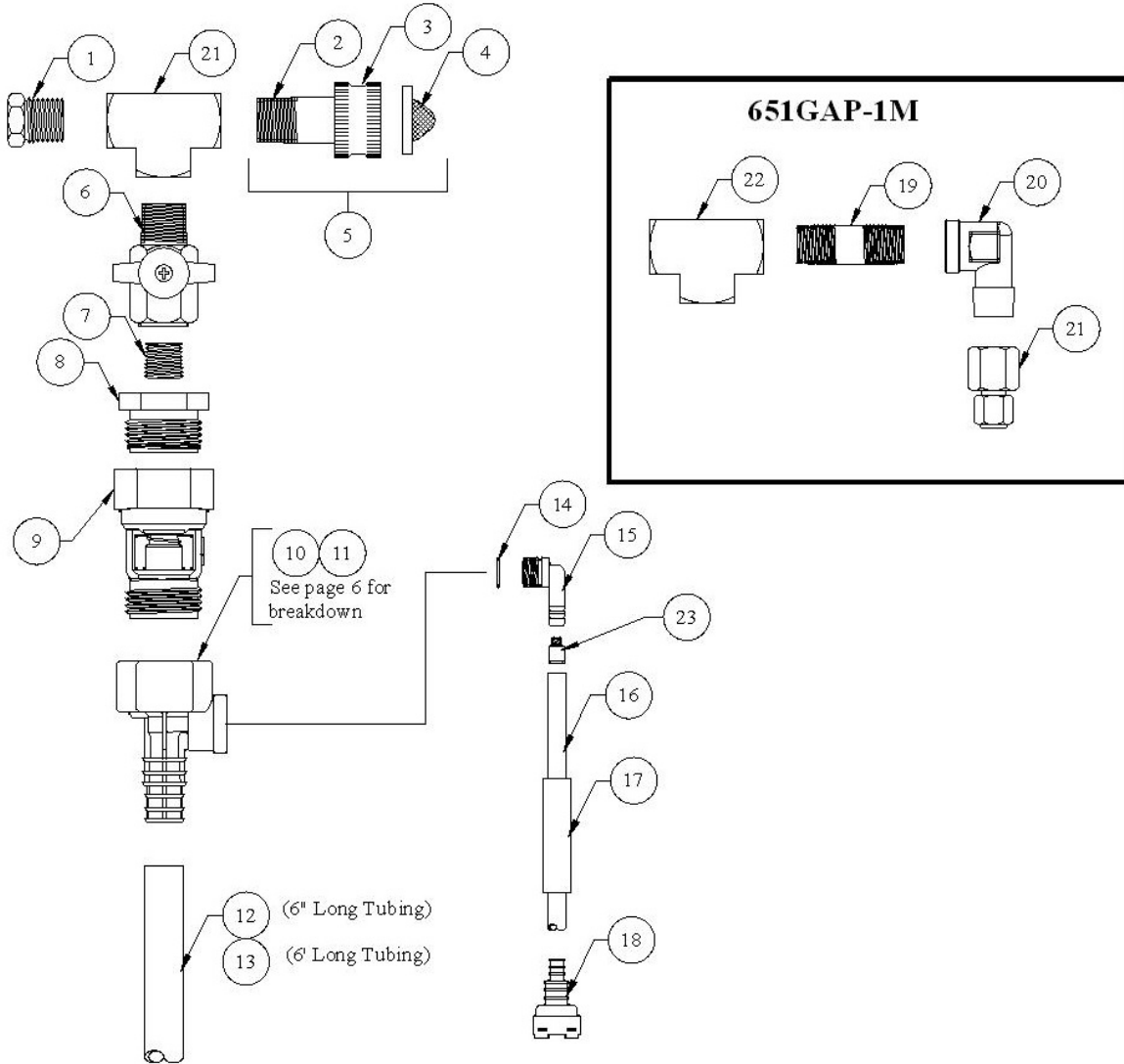


FIGURE 1

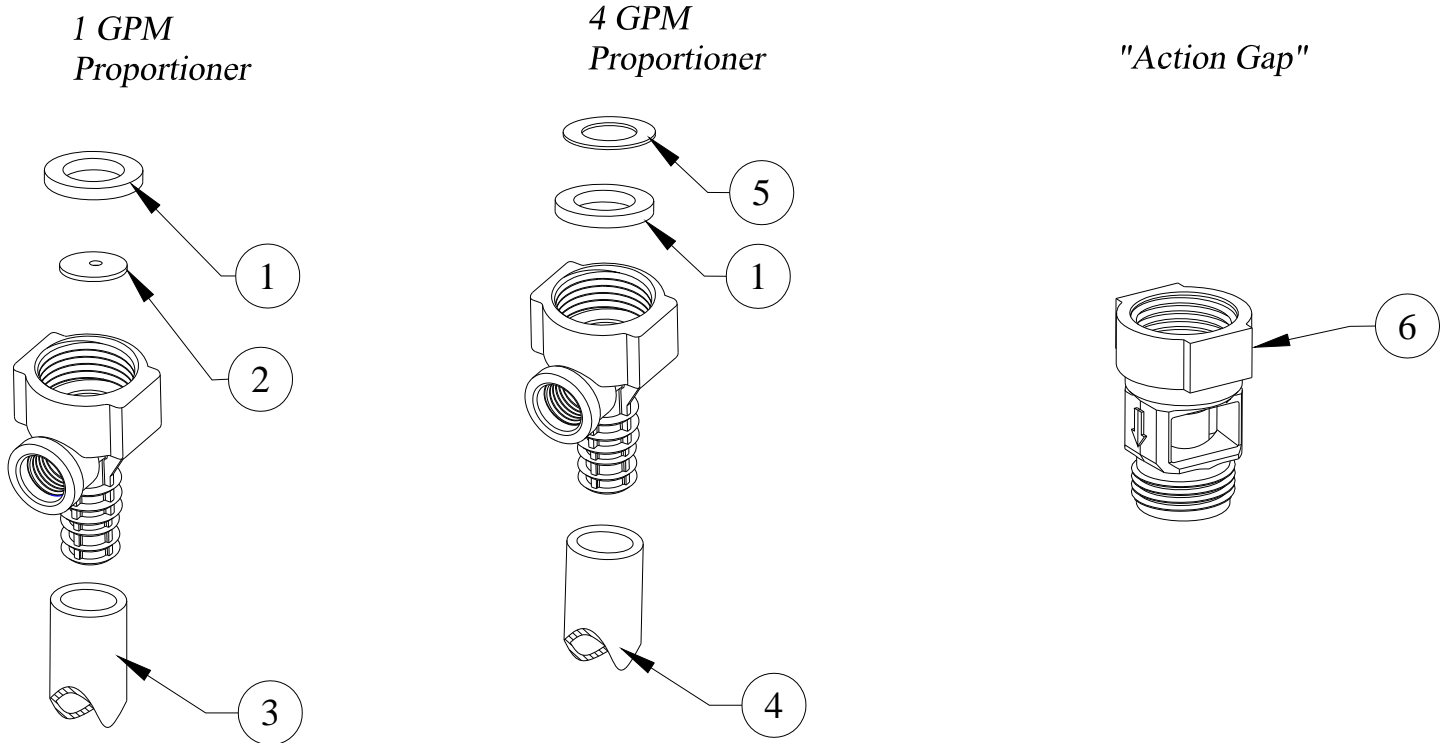
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| NO. | PART NO. | DESCRIPTION |
|-----|-----------|---|
| 1 | 65-4 | Plug 1/4" NPT |
| 2 | 65-17-2 | Swivel Adapter 1/4" NPT X Hex Broach |
| 3 | 65-10 | Hose Coupling |
| 4 | 100-38 | Strainer Washer |
| 5 | 65-5 | Swivel Adapter Kit GHFT X 1/4" NPT |
| 6 | 65-7 | 1/4" Ball Valve |
| 7 | 25-137-6U | 1/4" NPT Nipple |
| 8 | 65-31-3U | Adapter, G.H. X 1/4" NPT |
| 9 | 16-30 | Action Gap Assembly |
| 10 | 61-22-3 | 4 GPM Proportioner (1/4" Barb) – 651GAP |
| 11 | 61-99-2 | 1 GPM Proportioner (1/4" Barb) – 651GAP-1 |

| NO. | PART NO. | DESCRIPTION |
|-----|------------|---|
| 12 | 16-3-6 | 1/2" ID X 6" Lg. Vinyl Outlet Tube (1 GPM Only) |
| 13 | 61-21 | 1/2" ID X 6' Lg. Vinyl Outlet Tube (4 GPM Only) |
| 14 | 63-78 | O-Ring |
| 15 | 63-79 | Inlet Barb (1/4" Barb) |
| 16 | 100-12 | 1/4" ID X 8' Lg. Vinyl Supply Tubing |
| 17 | 61-107-2 | Ceramic Weight (1/4" Tube) |
| 18 | 100-16E | Foot Valve |
| 19 | 25-137-12U | Pipe Nipple |
| 20 | 61-121 | Elbow 1/4" St. Plated. |
| 21 | 25-51-12 | Compression Fitting |
| 22 | 65-30-1 | Tee, 1/4" NPT Pipe Thread |
| 23 | 100-15K | Metering Tip Kit (14 Sizes) (1/4" Barb) |

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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 |