DEMA 651AG SINGLE-FEED
INSTALLATION INSTRUCTIONS

I. PARTS:

A. Dispenser assembly
B. 1 pc. 9/16 in. I.D. X 6 ft. vinyl outlet tubing (4 GPM proportioner only).
C. 1 pc. 3/8 in. O.D. X 8 ft. vinyl supply tubing, foot valve & ceramic weight.
D. 4 pc. #10 pan head 3/4 in. long mounting screw.
E. 4 pc. 7/8 in. long plastic mounting anchor.
F. 1 pc. Metering tip kit.

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

A. Mounting and Water Supply:
Locate mounting holes on a permanent surface above sink. Drill holes about 1" deep and insert mounting anchors. Mount the unit using screws inserted through the keyholes in the case. Secure unit by inserting screws into the lower 2 holes. The unit needs to be mounted high enough that the sink does not interfere with the outlet tube, putting a strain on the proportioner.

The water inlet is equipped with a female garden hose adapter to permit connection to the right hand side of the unit. The water supply can be attached to the left side of the unit by interchanging the plug in the left-hand side with the garden hose adapter. **Note: The water supply pressure should not exceed 150 psi.**

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.** Insert the end with the foot valve of the 8 ft long, 3/8 in. O.D. vinyl tube 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. Slide the ceramic weight over the 3/8 in. O.D. tubing and down to the foot valve.

C. Outlet:
For the 4 GPM proportioner outlet: Cut a piece of the 9/16 in. I.D. outlet tubing into the desired length and attach to the proportioner outlet. **Note: To insure priming, do not cut tubing to less than 18 in.**

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

Outlet tube may be anchored to the wall or faucet to prevent damage to the proportioner.

D. Injection Adjustment:
WARNING: USE CARE WHEN HANDLING HAZARDOUS CHEMICALS.

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.

Note: 1 cps (centipoise) is equal to the viscosity of water, 75 cps is approximately equal to the viscosity of 10 weight motor oil, and 200 cps is approximately equal to the viscosity of many dishwashing detergents.

III. OPERATION:

The model 651AG is activated by turning the on-off ball valve fully counter-clockwise. 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.**

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TABLE 1
164BAG (1 GPM FLOW RATE PROPORTIONER - 1/4" BARB AND 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	1.25	102-1	0.90	142-1	0.60	213-1
Orange	1.70	75-1	1.20	107-1	0.80	160-1
Turquoise	2.15	60-1	1.55	83-1	1.10	116-1
Pink	3.00	43-1	2.00	64-1	1.50	85-1
Light Blue*	3.90	33-1	2.75	47-1	1.80	71-1
Brown	4.55	28-1	3.00	43-1	2.00	64-1
Red	5.80	22-1	3.60	36-1	2.30	56-1
White	7.00	18-1	4.45	29-1	2.70	47-1
Green	7.90	16-1	5.00	26-1	3.00	43-1
Blue	9.80	13-1	5.75	22-1	3.30	39-1
Yellow	14.80	9-1	7.35	17-1	3.55	36-1
Black	20.15	6-1	8.50	15-1	3.70	35-1
Purple	27.80	5-1	9.80	13-1	3.80	34-1
Gray	31.60	4-1	10.50	12-1	3.90	33-1
No Tip	35.70	3.6-1	11.80	11-1	4.50	28-1

***Metering tip color was formerly clear.**
Note: Special tips and proportioners are available to achieve higher and lower dilutions.
All dilutions were based on 1 GPM flow at 40 psi of water pressure.

TABLE 2
(163BAG - 4 GPM FLOW RATE PROPORTIONER, 1/4" BARB AND 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	0.30	427-1	0.20	640-1	0.15	853-1
Orange	0.40	320-1	0.30	427-1	0.25	512-1
Turquoise	0.50	256-1	0.40	320-1	0.30	427-1
Pink	0.75	170-1	0.50	256-1	0.40	320-1
Light Blue*	1.00	128-1	0.70	183-1	0.45	284-1
Brown	1.12	114-1	0.80	160-1	0.50	256-1
Red	1.50	85-1	0.90	142-1	0.60	213-1
White	1.75	73-1	1.10	116-1	0.70	183-1
Green	2.00	64-1	1.25	102-1	0.80	160-1
Blue	2.50	51-1	1.50	85-1	0.85	151-1
Yellow	3.75	34-1	1.85	69-1	0.90	142-1
Black	5.00	26-1	2.00	64-1	0.95	135-1
Purple	8.50	15-1	2.50	51-1	0.98	131-1
Gray	11.50	11-1	2.70	47-1	1.00	128-1
None	16.25	8-1	3.00	43-1	1.20	107-1

***Metering tip color was formerly clear.**
Note: Special tips and proportioners are available to achieve higher and lower dilutions.
All dilutions were based on 4 GPM flow at 40 psi of water pressure.

Leaner dilutions can be achieved by ordering DEMA ultra lean metering tip kit, part no. 100-15KU or capillary 44-61P.

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IV. SERVICING:

CAUTION: TURN OFF WATER SUPPLY BEFORE SERVICING.

A. Proportioner fails to draw chemical:
   1. Proportioner outlet tubing cut too short for priming. Pinch outlet tube to create backpressure, 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 pressure.

B. Proportioner stops drawing chemical:
   1. Inspect foot valve for dried chemical or dirt. Soak in hot water to clean.
   2. Proportioner inlet clogged with dried chemical. Remove metering top and try injecting in hot water. If there is no suction, remove proportioner and soak in hot water to clear interior passages.

C. Air gap proportioner fails to draw chemical:
   1. Is correct tubing attached? The 1 GPM proportioner must have the skinny 7" long (3/16" I.D.) tubing.
   2. Is the nozzle on the top of the air gap in correctly? The bottom of the nozzle is flat. This is the part you can see as you look up through the air gap window.
   3. Is the stream of water tight (0°) as it crosses the air gap? If not, you may have hard water scale build-up on the bottom of the nozzle. SOAK THE NOZZLE IN PHOSPHORIC ACID, LIME SCALE REMOVER OR REPLACE NOZZLE.
   4. Does the priming pin on the outlet of the 4 GPM air gap have excessive hard waterscale and chemical residue build-up on it? CLEAN WITH THE BLADE OF A KNIFE OR SOAK IN LIME SCALE REMOVER.

D. Air gap proportioner is leaking out of vents:
   Is the correct tubing attached? The 1 GPM and 4 GPM outlet tubing has a 9/16" ID. It is imperative that this diameter be used, not the ½" ID tubing.

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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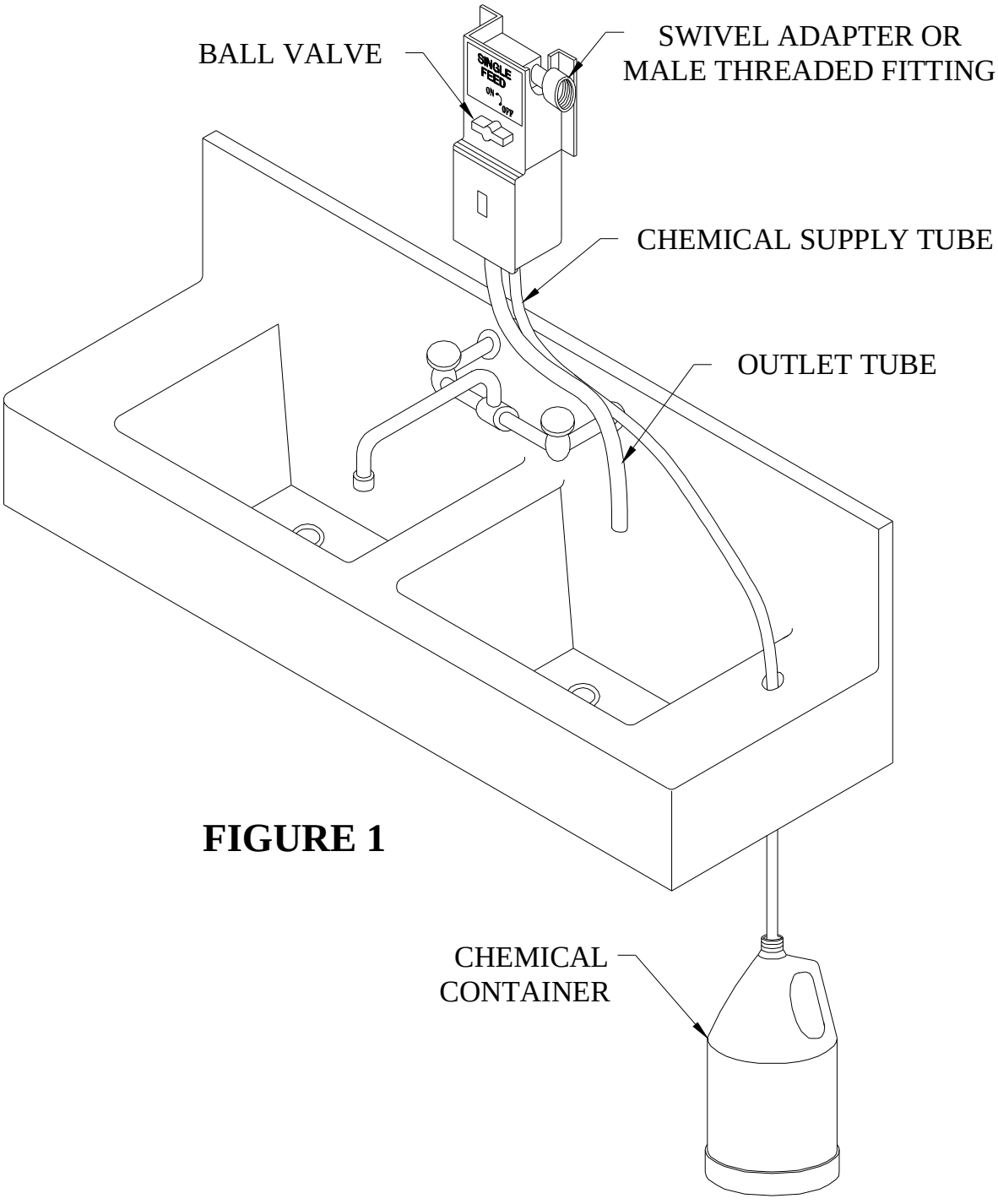

FIGURE 1

DEMA 651AG SINGLE-FEED
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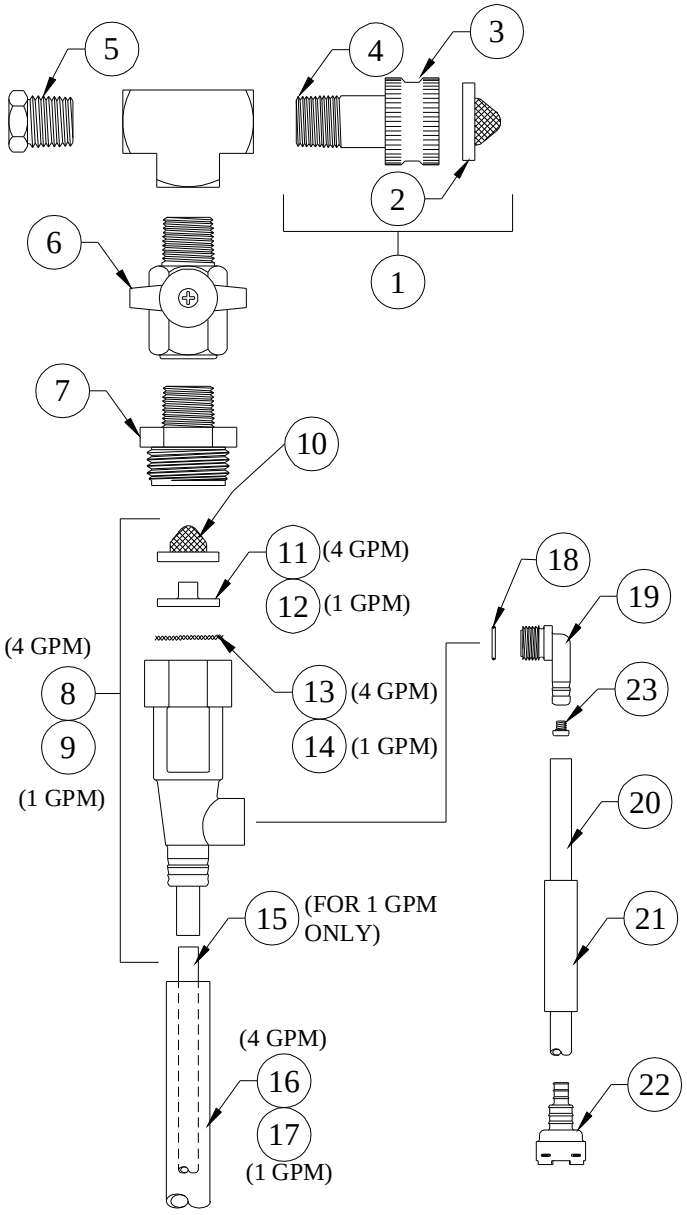

NO.	PART NO.	DESCRIPTION
1.	65-11	Swivel Adapter Kit
2.	100-38	Strainer Washer
3.	65-10	Hose Coupling
4.	65-9	Garden Hose Adapter Stem
5.	65-6	Plug
6.	65-7	1/4" Ball Valve
7.	65-8	Adapter
8.	61-22BAG	4 GPM Proportioner (1/4" Barb)
9.	61-32BAG	1 GPM Proportioner (1/4" Barb)
10.	100-59	Strainer Washer
11.	63-73	Nozzle (4 GPM)

NO.	PART NO.	DESCRIPTION
12.	63-74-2	Nozzle (1 GPM)
13.	63-76	Screen (4 GPM)
14.	63-77	Screen (1 GPM)
15.	63-82	Vinyl Tube (3/16 I.D. X 7" Lg.)
16.	63-83	Vinyl Tube (9/16 I.D. X 6' Lg.)
17.	63-140	Vinyl Tube' (9/16 I.D. X 4" Lg.)
18.	63-78	O-Ring
19.	63-79	Inlet Barb (1/4" Barb)
20.	100-12	Vinyl Tube (1/4" I.D. X 8' Lg.)
21.	61-107-2	Ceramic Weight (1/4" Tube)
22.*	100-16E-	Foot Valve

ACCESSORIES

NO.	PART NO.	DESCRIPTION
23.	100-15K	Metering Tip Kit-14 Sizes (1/4" Barb)

***Foot Valve also available with silicone (100-16S-) or Viton (100-16V-) rubber seals. Please specify material when ordering.**