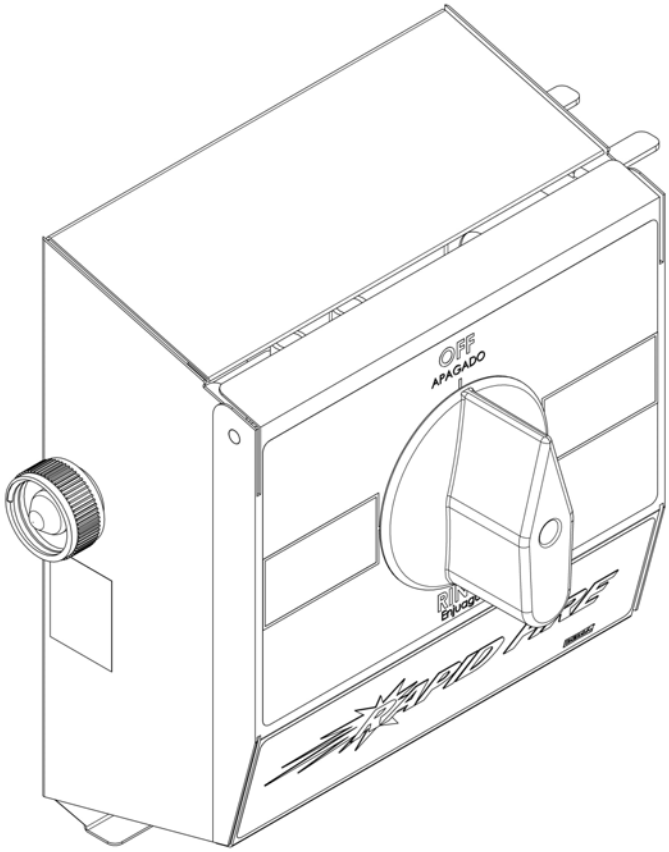
RAPID FIRE

Premium Spray & Foam Dispenser



Installation and Setup Guide

The RAPID FIRE is a spray system designed with a single knob to control OFF, RINSE and up to (2) two chemicals using a single chemically resistant plastic injector. RAPID FIRE dispensers can be used in any application where a chemical product must be sprayed or foamed without the use of compressed air or a high pressure pump. City water pressure and optional spray gun and foam wand attachments create the correct amount of pressure and foam for cleaning in food service applications such as supermarket meat rooms, deli areas, and seafood departments.

Warnings

All installations must conform to local plumbing codes and use approved backflow prevention devices. A 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.

ALWAYS WEAR PROTECTIVE CLOTHING AND EYEWEAR WHEN WORKING WITH CHEMICAL PRODUCTS.

Parts Check List

All parts are applicable per model number as shown. Not all parts or quantities are included in every model.

PARTS (Part Number)	**6300**	**6300-2**	**6300-3**	**6300-4**	**6300-5**	**6310**	**6300E**	**6300H**	**6310E**	**6300EH**
Red Hose - ½"I.D. x 25' (44-3RG)		1	1	1	1					
Black Hose - ½"I.D. x 6' (44-3-6)		1	1	1	1					
Blue Gun & Wand (40-14QD/292QD)		1		1						
Gray Gun & Wand (28-1QD & 292GQD)			1		1					
Backflow Preventer * (44-89-112)				1	1					
Metering Tip Kit (100-15K)	1	1	1	1	1	1	1	1	1	1
Tubing And Foot Valve Assembly (100-16V-6)	2	2	2	2	2	1	2	2	1	2
Ceramic Weight (61-107-2)	2	2	2	2	2	1	2	2	1	2
Screw & Anchor Kit (66-54)	1	1	1	1	1	1	1	1	1	1
Hose Clamp Kit (66-231)	1	1	1	1	1	1	1	1	1	1
Hose Rack (44-6)		1	1	1	1			1		1

***** *ASSE 1012 approved constant pressure backflow preventer.*

Installation and Servicing

WARNING: INSTALLATION OF DEMA PRODUCTS MUST MEET ALL APPLICABLE PLUMBING CODES AND REGULATIONS ESTABLISHED BY NATIONAL, CITY, COUNTY, PARISH, PROVINCIAL OR OTHER AGENCIES. IT IS POSSIBLE THAT PLUMBING CODES AND REGULATIONS REQUIRE THAT A CERTIFIED INSTALLATION CONTRACTOR OR ENGINEER PERFORM THE PLUMBING INSTALLATION.

WARNING: WATER SUPPLY PRESSURE MUST NOT EXCEED 95 PSI AND WATER TEMPERATURE MUST NOT EXCEED 120°F (49°C). USE CARE WHEN HANDLING HAZARDOUS CHEMICALS.

CAUTION: TURN OFF WATER SUPPLY BEFORE SERVICING. WHEN SERVICING UNIT BE SURE THAT REPLACEMENT PARTS HAVE BEEN INSTALLED ACCORDING TO DRAWING.

Installation

- **MOUNTING AND WATER SUPPLY:**

  Mount in a convenient location using the screw and anchor kit provided

  The water inlet is equipped with a female garden hose fitting. The fitting may be removed to permit direct connection to 1/4" NPT pipe. If the fitting is removed so that a ¼" NPT connection is used then: five to seven [5-7] wraps of Teflon Pipe Tape must be applied before connection to the valve.

- **OUTLET CONNECTION:**

  Connect the discharge hose to the brass outlet garden hose fitting and squeeze the hose clamp around the hose. Locate the position for the mounting screw, and mount the hose clamp to the wall using the remaining screw and anchor. Spray guns, spray nozzles or foaming wands may be used on the hose outlet. We recommend spray nozzles of 6 GPM or higher (at 40 psi). When a spray gun or nozzle is used, hose lengths must not exceed those shown in [See Table 1]. Hoses, spray guns, and foam wands are available through DEMA. See the parts list on the last page for the various styles.

TABLE 1

Hose I.D.	3/8"	1/2"	5/8" (or larger)
Max. Length	15 ft.	50 ft.	100 ft.

- **CHEMICAL SUPPLY:**

*****WARNING: USE CARE WHEN HANDLING HAZARDOUS CHEMICALS*****

Place the chemical container(s) in a convenient location not more than six feet below the RAPID FIRE (greater distances will reduce injection capabilities). The top of the chemical product container should never be higher than the RAPID FIRE. Cut vinyl tubes to any convenient length that will allow the tubes to reach the bottom of the container(s). Remove the screw (22) and knob (21), raise the hinged cover, and push the other tubing ends over the chemical inlet barbs located on the sides of the injector. Place the tubing ends with the foot valves into the chemical containers.

Chemical Induction

The chemical induction is controlled by metering tips screwed into the hose barb(s) located on the sides of assembly. The feed rates can be changed by using different sizes of metering tips. To select the proper size of metering tip for the desired dilution ratio, refer to [Table 2] below.

TABLE 2

METERING TIP SELECTION CHART
FLUID DILUTION RATIOS WITH METERING TIP KIT (100-15K)

	INJECTION RATES FOR VISCOSITIES SHOWN								
	1 cps			75 cps			200 cps		
	Oz/Gal	mL/L	Ratio	Oz/Gal	mL/L	Ratio	Oz/Gal	mL/L	Ratio
Tan	**0.40**	**3.11**	**320-1**	**0.25**	**1.95**	**512-1**	**0.20**	**1.56**	**640-1**
Orange	**0.50**	**3.89**	**256-1**	**0.35**	**2.72**	**366-1**	**0.25**	**1.95**	**512-1**
Turquoise	**0.70**	**5.45**	**183-1**	**0.50**	**3.89**	**256-1**	**0.35**	**2.72**	**366-1**
Pink	**0.95**	**7.39**	**135-1**	**0.65**	**5.06**	**197-1**	**0.45**	**3.50**	**284-1**
Clear	**1.30**	**10.12**	**98-1**	**0.80**	**6.23**	**160-1**	**0.55**	**4.28**	**233-1**
Brown	**1.50**	**11.68**	**85-1**	**0.90**	**7.01**	**142-1**	**0.60**	**4.67**	**213-1**
Red	**1.90**	**14.79**	**67-1**	**1.00**	**7.78**	**128-1**	**0.70**	**5.45**	**183-1**
White	**2.20**	**17.12**	**58-1**	**1.30**	**10.12**	**98-1**	**0.80**	**6.23**	**160-1**
Green	**2.60**	**20.24**	**49-1**	**1.50**	**11.68**	**85-1**	**0.90**	**7.01**	**142-1**
Blue	**3.20**	**24.91**	**40-1**	**1.75**	**13.62**	**73-1**	**1.00**	**7.78**	**128-1**
Yellow	**4.85**	**37.75**	**26-1**	**2.25**	**17.51**	**57-1**	**1.10**	**8.56**	**116-1**
Black	**6.50**	**50.60**	**20-1**	**2.40**	**18.68**	**53-1**	**1.15**	**8.95**	**111-1**
Purple	**9.20**	**71.61**	**14-1**	**2.70**	**21.02**	**47-1**	**1.20**	**9.34**	**107-1**
Gray	**10.40**	**80.95**	**12-1**	**2.85**	**22.18**	**45-1**	**1.25**	**9.73**	**102-1**
No Tip	**16.00**	**124.54**	**8-1**	**3.50**	**27.24**	**37-1**	**1.55**	**12.07**	**83-1**

******All injection ratios are based on 40 PSI inlet water pressure and a water flow rate of 2.7 GPM.******

Note: Leaner dilutions are available using DEMA metering tip kit #100-15KU or capillary tip #44-61P

Operation

The RAPID FIRE permits the operator to select either chemical or clear water rinse by turning the selector knob. When using a spray gun or foaming wand, make sure that the gun on the end of the hose is in the full open position when inducting chemical.

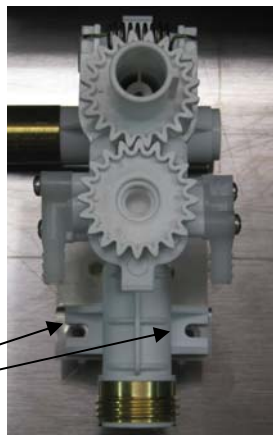
Troubleshooting

CAUTION: TURN OFF WATER SUPPLY BEFORE SERVICING

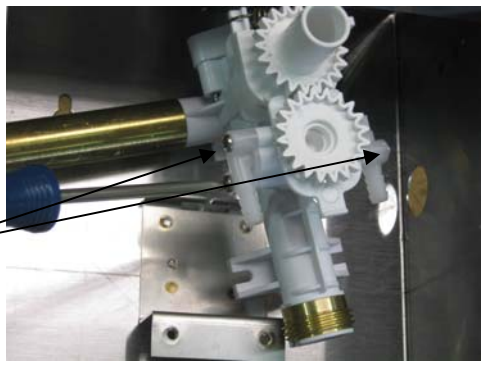
Symptom	Probable Cause	Remedy
Unit fails to draw chemical	1. The discharge hose is too long or is the inside diameter too small 2. Gun or nozzle is sized incorrectly 3. Metering tip is blocked 4. Chemical hoses are kinked 5. Spray gun is not fully open 6. Injector is clogged 7. Foot valve is clogged 8. Spray nozzle is clogged 9. Chemical seals are damaged 10. Chemical check valve seals are damaged	1. See Table 1 for proper sizing. 2. Refer to section 2 B and resize gun or nozzle accordingly 3. Remove tip and clean it 4. Replace hose 5. Adjust gun to fully open 6. Replace the injector 7. Remove foot valve and clean it. 8. Remove nozzle and clean it 9. Replace chemical seals (See steps on replacing chemical seals). 10. Replace check valve seals (See steps on replacing check valve seals)

- **STEPS ON REPLACING CHEMICAL SEALS**

1. Turn knob to the off position and remove both the screws and knob
2. Remove the (2) screws that mount the assembly to the bracket.

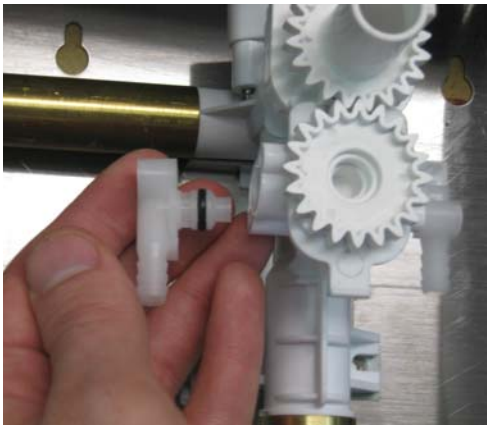


3. Remove the (2) two screws from each elbow.



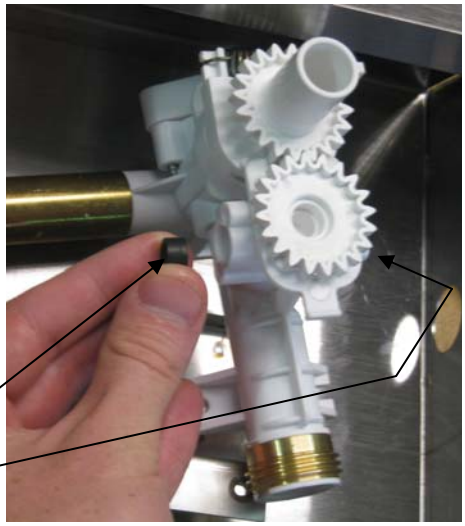
Troubleshooting Continued…

4. Remove both elbows from assembly.
   Make sure O-rings are still attached to elbows.



5. Remove both chemical seals from the same openings the elbows were removed from & replace with new seals that are coated in silicone grease.

6. Reassemble all parts listed in previous steps.

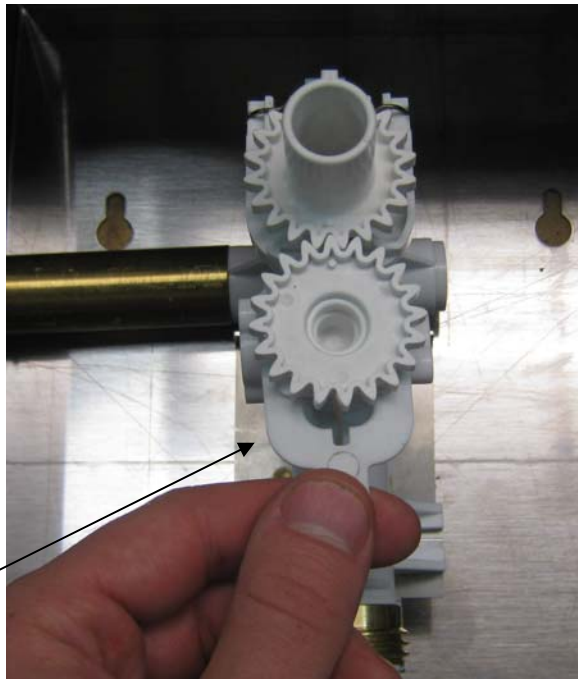


CHEMICAL SEALS
(USE A SMALL FLAT HEAD SCREW DRIVER TO HELP REMOVE THE SEALS)

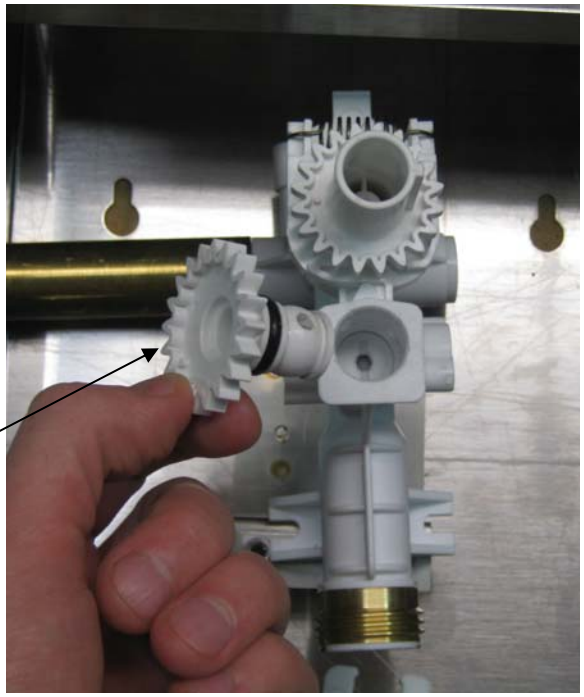
Troubleshooting Continued…

1. Refer back to the section above “Steps on replacing chemical seals” and perform steps 1-5.

2. Remove the Gear Retainer and then the Gear.

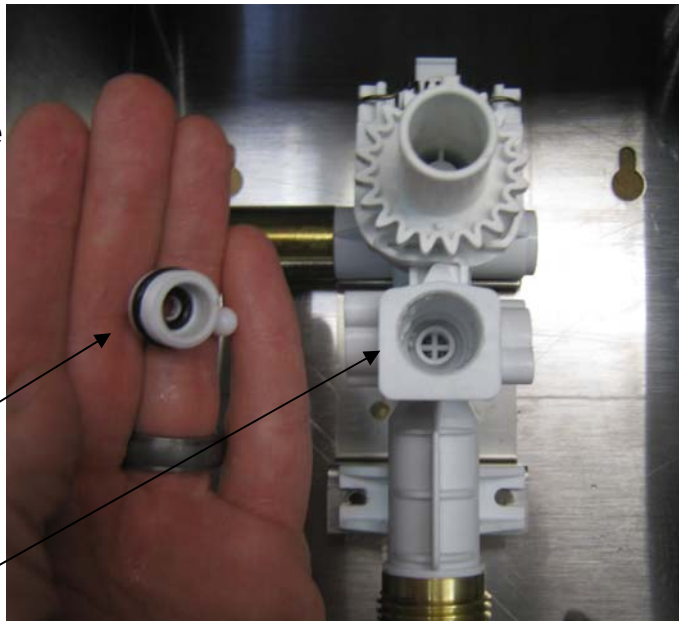


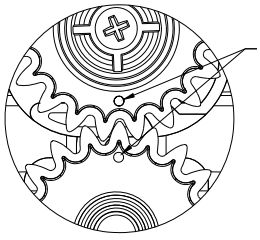
3. Remove the Gear.



Troubleshooting Continued…

4. Using a flat head screw driver, remove the check valve body and O-ring. You might have to tap on the side of the assembly to knock loose the check valve. Be careful not to lose the check ball or spring when removing the check valve body.





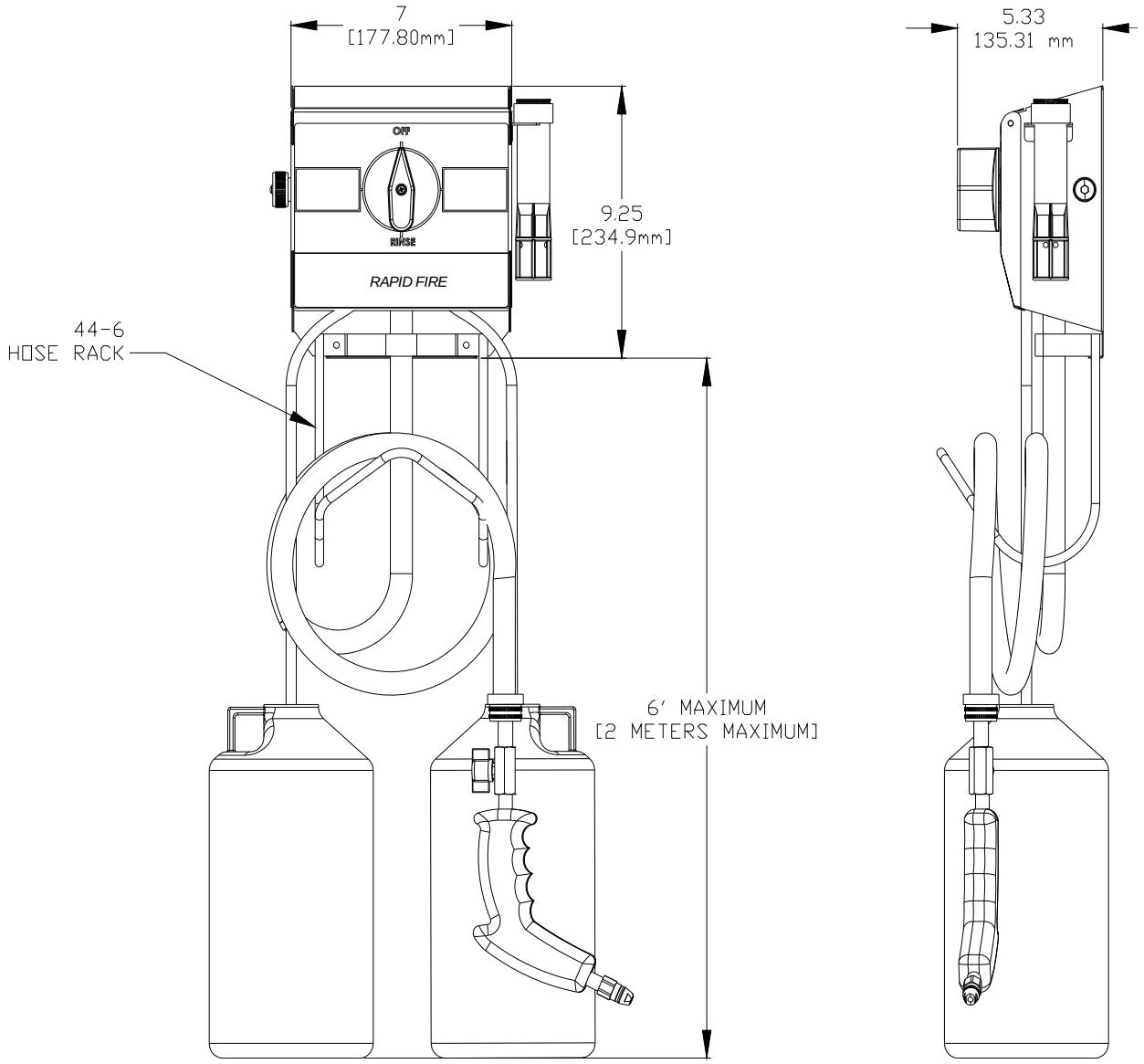
DETAIL A
SCALE 2:1

5. Replace both inner and outer O-rings on check valve body and reassemble all components from all steps listed above. Note that smaller diameter end of the spring goes against the ball. [See Detail A] for assembly of the driver gear.

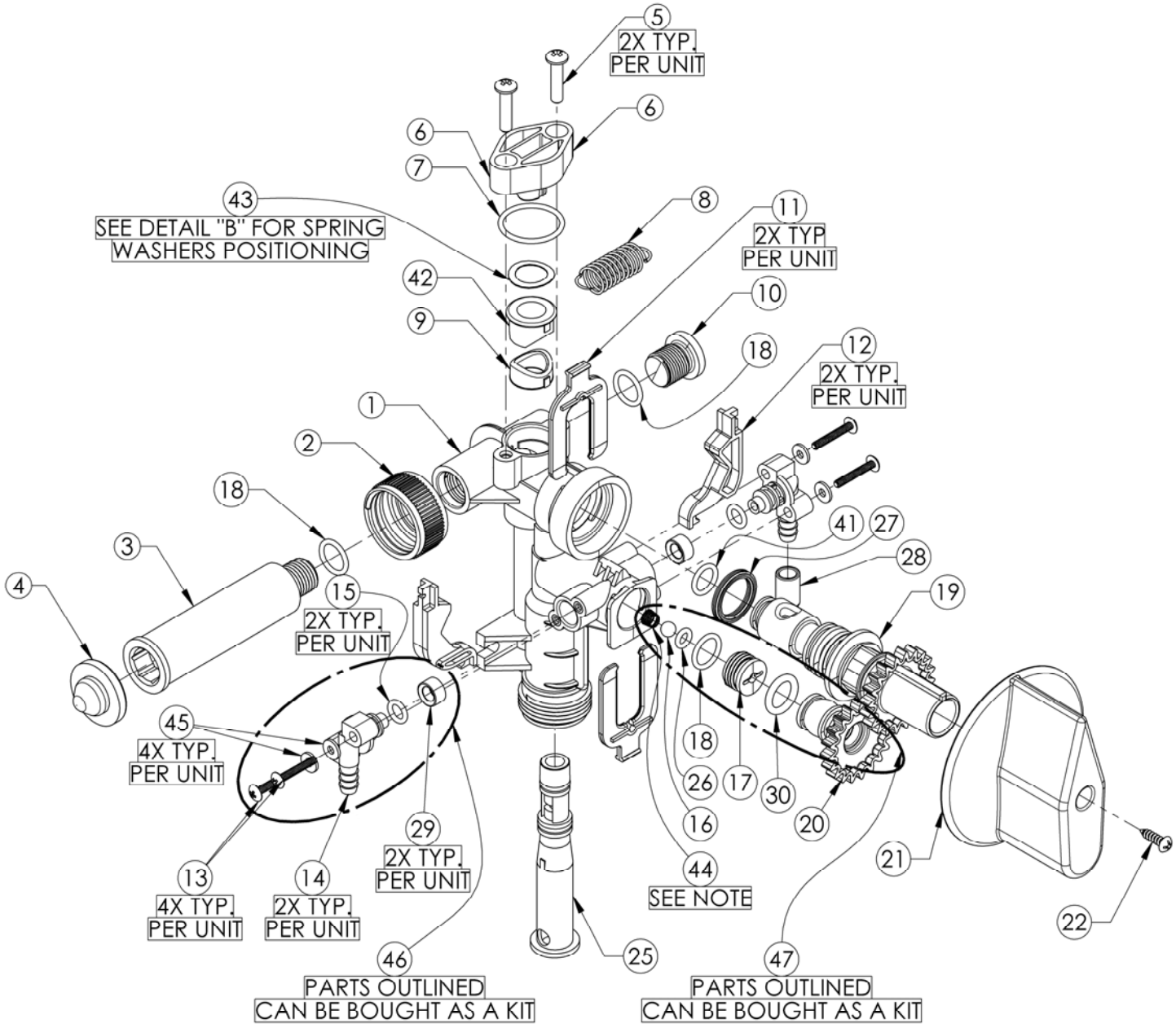
CAUTION: WHEN SERVICING UNIT BE SURE THAT REPLACEMENT PARTS HAVE BEEN INSTALLED ACCORDING TO THE DRAWING.

Overall Dimensions

Weight: 2.5 lb. (1.14 kg.):

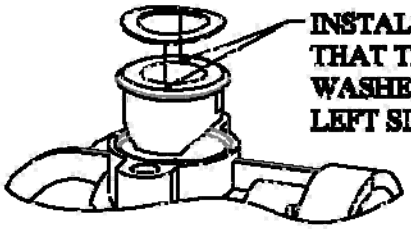


Parts



COVER & CASE NOT SHOWN IN EXPLODED VIEW FOR CLARITY

NOTE:
THE SMALL DIAMETER END OF THE SPRING (ITEM #44) GOES AGAINST THE BALL



INSTALL (ITEM 43) SPRING WASHER SO THAT THE ROUNDED SURFACE OF THE WASHER TOUCHES AT RIGHT AND LEFT SIDES OF (ITEM 42) WATER SEAL.

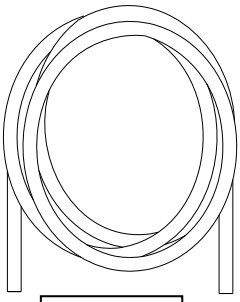
DETAIL B

Parts Continued…

ITEM NO.	QTY	DEMA NO.	DESCRIPTION
1	1	63-1	Valve Body
2	1	65-10	Coupling
3	1	66-93	Inlet
4	1	100-38	Strainer Washer
5	2	44-116-5	#8 HI-LO Screw x 5/8” Lg.
6	1	63-21	Water Seal Retainer
7	1	63-22	O-Ring
8	1	63-9	Extension Spring
9	1	66-93-8	Water Seal
10	1	63-11	Plug
11	2	63-12	Gear Retainer
12	2	63-13	Detent
13	4	40-974-1	SCREW, 4-40 X 3/4" TRUSS HEAD
14	2	63-14	Elbow
15	2	63-4	O-Ring
16	1	24-24P-7	Ball (.2188 Dia.)
17	1	63-15	Check Valve Body
18	3	63-7	O-Ring
19	1	63-23	Drive Gear, Machined, Top Gear
20	1	63-17	Driven Gear, Bottom Gear
21	1	63-18	Knob
22	1	58-60	#6 HI-LO Screw X ½” Lg.
25	1	20-1M-10RF 20-1M-11RF 20-1M-12RF	Injector 2.7 GPM Color, (White) Injector 2.7 GPM Color, (Natural(Gray)) Injector 2.7 GPM Color, (Black)
26	1	63-3	O-Ring
27	1	63-26	Quad Ring
28*	1	63-19	Cap
29	2	66-93-7	Chemical Seal
30	1	57-10-51A	O-Ring
41	1	25-29VA	O-Ring
42	1	63-24	Water Seal
43	1	63-25	Spring Washer
44	1	63-10	Spring
45	4	40-975-1	Washers
46	1	41-363-1	Kit, Internal Parts, Metering Tip Elbow, Rapid Fire
47	1	41-364-1	Kit, Internal Parts, Driven Gear Bottom, Rapid Fire

***** For 6310

Parts Continued…

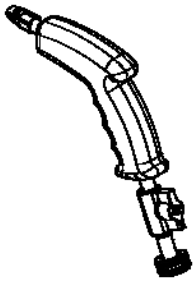


ITEM 31

ITEM 32

ITEM 33

ITEM 34



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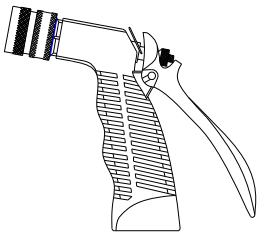
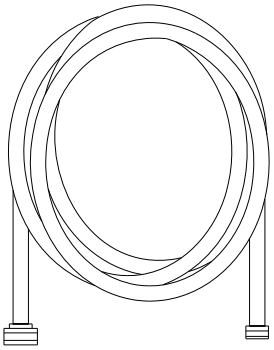
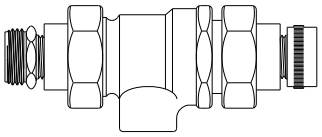


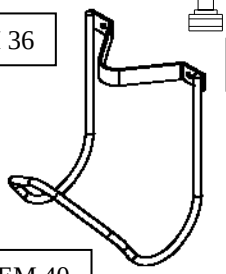
ITEM 36



ITEM 37 & 38



ITEM 39



ITEM 40

ITEM NO.	DEMA NO.	DESCRIPTION
31	100-12	Vinyl Tubing ¼"I.D. x 8'LONG
32	61-107-2	Ceramic Weight ¼"I.D.
33	100-16V	Foot Valve Assembly
34	292QD 292GQD	Wand (for 1/4 turn valve gun #33) Wand (for trigger handle gun #34)
35	40-14QD	Spray gun (Blue Handle)
36	28-1QD	Spray gun w/ Quick Disconnect
37	44-3-6	Hose Assy. Black ½"I.D. x 6' LONG
38	44-3RG	Hose Assy. Red ½"I.D. x 25' lg.
39	44-89-112	Backflow Assy. w/ Garden Hose Fittings
40	44-6	Hose Rack

Return Policy

No merchandise may be returned for credit without DEMA Engineering Company's written permission. Return Merchandise Authorization (RMA) 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 products that 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 parts such as "O"-rings, diaphragms, squeeze-tubes 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.