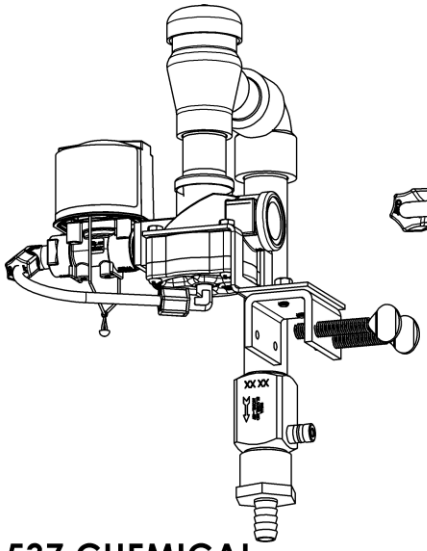
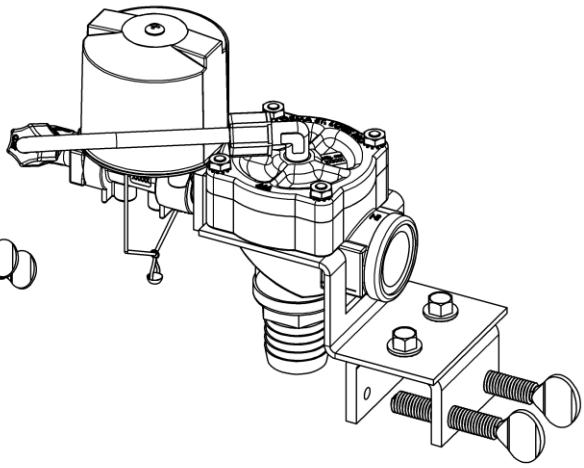
Sentinel
537 Series Float Valve's



537 CHEMICAL INJECTION SYSTEM



537 WATER FILL SYSTEM

Overview

The Sentinel 537 series float valve is designed to automatically fill and maintain fluid levels in reservoir's. Some models are equipped with high volume proportioners and integral backflow preventers, to inject chemicals into the reservoir at selected dilution rates.

Warnings

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 A CERTIFIED INSTALLATION CONTRACTOR OR ENGINEER TO PERFORM THE PLUMBING INSTALLATION.

ALWAYS TURN OFF THE WATER TO THE DISPENSER WHEN NOT IN USE.

READ ALL PRODUCT SAFETY DATA SHEETS (SDS) AND USE PERSONAL PROTECTIVE EQUIPMENT AS DIRECTED BEFORE INSTALLING OR DISPENSING ANY CHEMICAL FROM THIS DISPENSER.

Operational Requirements

	Minimum	Maximum
Water Pressure	20 psi (1.38 bar)	95 psi (6.55 bar)
Water Temperature	-	120ºF (49ºC)

*** Recommended water pressure is between 20 psi (1.38 bar) and 80 psi. (5.52 bar). If pressure exceeds 80 psi, it is recommended that a P/N 66.43 regulator is used.*

Installation and Servicing

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A. Valve:
Mount the valve to the tank wall by tightening the two thumb screws. We recommend using the additional leverage of pliers to firmly secure the bracket. Install a 3/4" NPT pipe fitting to the valve inlet with the preferred water connection. Attach vacuum breaker and injector as shown on Figure 3. Use Teflon tape or thread sealant on all pipe threads. The injector outlet must be equipped with the provided fill hose, or an optional pipe nipple that extends below the bottom of the float. This ensures injector priming and minimal foaming. **Fill hose/tube must curve away from float bottle.**

B. Float:
Remove the connector from the chain and run the chain through the open end of the lever (See Figure 4) until the top of the float is about 2" above the desired maximum level. Run the excess chain through the connector and snap it on the bead at the lever opening to hold the float in place. An extra piece of chain has been provided if more length is needed. **Float must travel without interference.**
Measure the tube stiffener to cover the chain and hanger clip. Cut tube stiffener to proper length. Attach the tube stiffener around the chain and hanger clip. Install the cable ties to top and bottom of the tube stiffener. Install a cable tie around hanger clip and wire. Excess cable ties ends may be cut off if so desired.

C. Chemical Concentrate:
A metering tip must be selected that will set the desired ratio of chemical to water. Table 1 lists the tips and the dilution rates in terms of oz/gal. After selecting a tip, screw it into the inlet barb of the injector (See Figure 3). Use the plastic tubing for connecting to the proportioner, first cutting to desired length and dropping the end with strainer/foot valve into the container. Push the other end of the supply tubing over the barb on the proportioner.
WARNING: USE CARE WHEN HANDLING HAZARDOUS CHEMICALS
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Operation

Turn on water to the unit. Open the ball valve. The valve will close when water reaches approximately 1-2 inches below the top of the float. The float valve will operate again when the water level drops approximately 4 inches. If using models with chemical proportioners, At least 20 PSI pressure must be available to induct chemical. As the tank fills, chemical concentrate will be drawn up through the plastic tubing and will mix with the incoming water

Metering Tip Kits

INDUCTION RATES BASED ON WATER THIN PRODUCTS (1 cps)
INDUCTION RATES VARY PRODUCT TO PRODUCT. FIELD TESTS ARE RECOMMENDED.

TABLE 1		
TIP COLOR	**RATIO**	**OZ/GAL**
Clear	1,828:1	0.07
Purple	1,280:1	0.1
Yellow	640:1	0.2
Green	427:1	0.3
Pink	320:1	0.4
Turquoise	213:1	0.6
Black	160:1	0.8
Gray	107:1	1.2
Red	85:1	1.5
Blue	64:1	2
Brown	56:1	2.3
White	46:1	2.8
Orange	35:1	3.7
None	14:1	9.4

Trouble Shooting

CAUTION: TURN OFF WATER SUPPLY BEFORE SERVICING.

A. Proportioner fails to draw chemical:
1. Proportioner outlet tubing cut too short or not attached. Pinch outlet tube to create back pressure, which will cause unit to prime. The foot valve will keep the inlet tube primed after initial use.
2. Insufficient water supply pressure. 15 psi is the minimum required water pressure.
3. Chemical inlet may be drawing air.

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 soak in hot water. If there is no suction, remove proportioner and soak in hot water to clear interior passages.
3. If there is a buildup of calcium carbonate (lime) inside the proportioner, soak component in a vinegar or D-Limonene solution.
4. Chemical inlet may be drawing air.

C. Proportioner continues drawing chemical after water valve closes:
1. Chemical supply is higher than bottom of discharge tube creating a natural siphon. Lower the supply container.

D. Valve malfunction:
1. Check that the wire moves freely up & down and that a "click" can be heard when the wire is pulled and released, indicating that the magnet is activating the plunger properly. To inspect internal parts, remove magnet housing and carefully pull off the enclosing tube so as not to drop the plunger, kick-off spring and spacer. Check the float valve assembly to verify the internal weight is free moving and not water logged.
2. Valve will not operate if pressure exceeds 150 psi.

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

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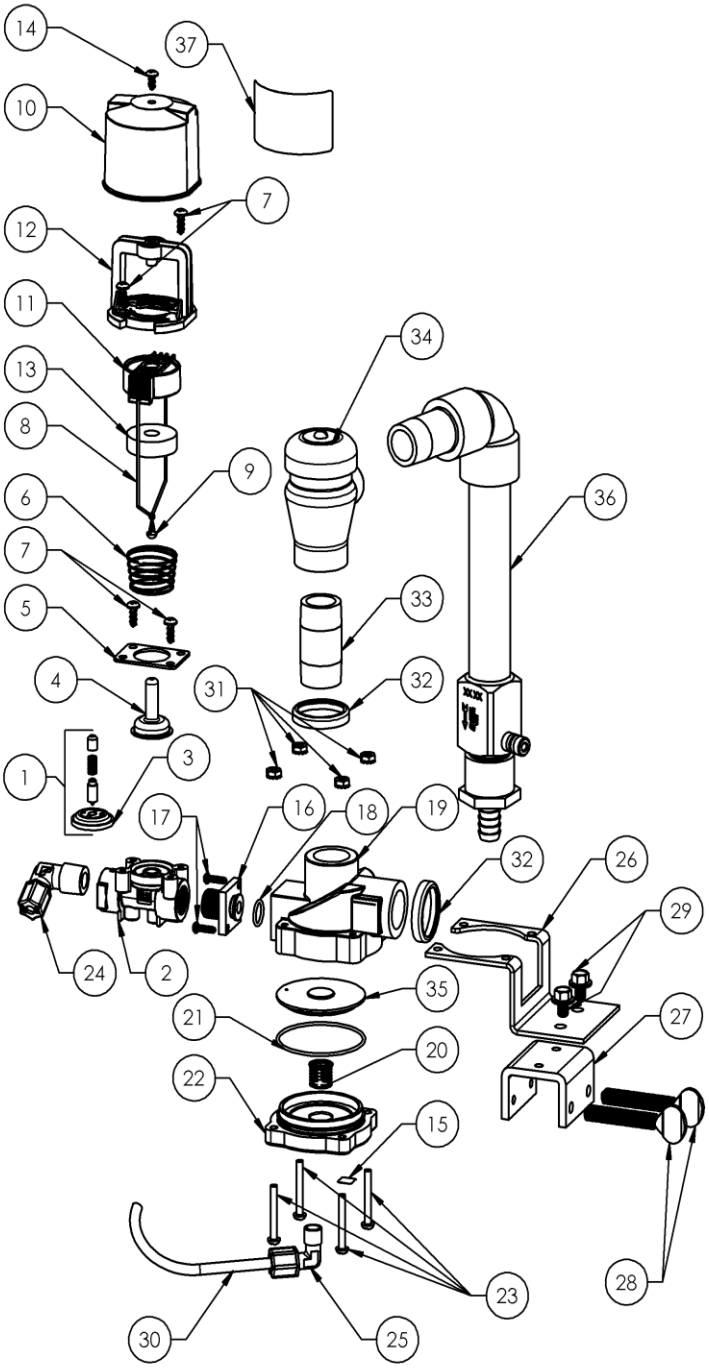

ITEM NO.	QTY.	DEMA NO.	DESCRIPTION
1	1	63-87	VALVE REPAIR KIT
2	1	35-46	VALVE BODY
3	1	41-15-10	1-1/16" DIAPHRAGM
4	1	41-7-25	ENCLOSING TUBE
5	1	35-37	FLANGE
6	1	27925-1	SPRING, 540 FLOAT VALVE
7	4	44-116-1	#8 HI-LO SCREW X 1/2" LONG
8	1	27926-1	540 FLOAT VALVE HANGER
9	1	35-12	FLOAT HANGER CLIP
10	1	27929-1	540 FLOAT VALVE COVER
11	1	27927-1	540 FLOAT VALVE MAGNET HOLDER
12	1	27928-1	540 FLOAT VALVE HOUSING
13	1	41860-1	MAGNET RING
14	1	44-116-2	#8 HI-LO SCREW X 3/8" LONG
15	2	L1452	DATE LABEL
16	1	23-968-1	ADAPTER
17	2	58-60	#6 X 1/2"HI-LO SCREW, SS
18	1	41-5-8	O-RING
19	1	22-818-3	MOLDED VALVE BODY
20	1	36-4	CLOSING SPRING
21	1	66-9	O-RING - VITON
22	1	36-27-3	LID
23	4	36-15-1	SCREW, 8-32 X 1.33 LONG, PHILLIPS
24	1	59-60-7	1/4 X 3/8 NPT JACO 90° ELBOW
25	1	59-60-6	1/4 X 1/8 NPT JACO 90° ELBOW
26	1	43-3	Z BRACKET, WATER DOZER
27	1	35-50	U BRACKET
28	2	35-51	THUMBSCREW 5/16" X 2"
29	2	35-53	FLANGE BOLT
30	1	25-68-7	LDPE TUBE FOR ASSY.
31	4	36-32-1	#8-32 HEX NUT W/ LOCK WASHER, (KEPS)
32	2	4-112-3	FILTER SCREEN RING
33	2	36-31-1	3/4" X 2" NIPPLE
34	1	36-13	SIPHON BREAKER
35	1	36-23	DIAPHRAGM ASSEMBLY
36	1	26-933-1	INJECTOR ASSEMBLY
37	1	L2360	LABEL

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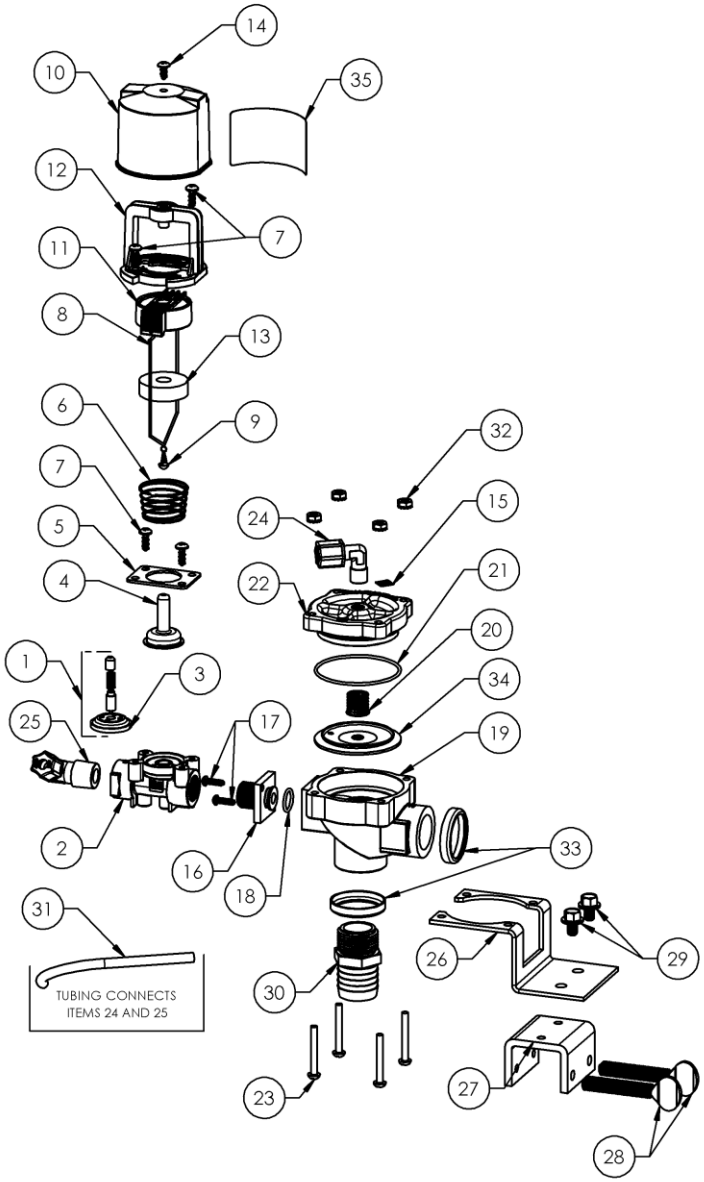

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Replacement Parts:

METERING TIP KITS AVAILABLE	
61-9K	3/8" METERING TIP KIT
TUBING AND FOOT VALVE ASSEMBLIES	
100-16E-4	TUBING AND FOOT VALVE ASSEMBLY, 3/8" X 8' LONG, EPDM
100-16V-17	TUBING AND FOOT VALVE ASSEMBLY, 3/8" X 8' LONG, VITON
CERAMIC WEIGHT	
61-107	3/8" CERAMIC WEIGHT

Warranty

Merchandise Returns

No merchandise will be returned for credit without DEMA'S written permission. Returned merchandise authorization number is required in advance of return.

Product 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 that have a normal life shorter than one year or failure and damage caused by chemicals, corrosion, physical abuse, or misapplication. Rubber and synthetic rubber parts such as "O"-rings, diaphragms, PVC 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 is 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 must be granted in advance of returned units for repair or replacement (See "Merchandise Returns" above).