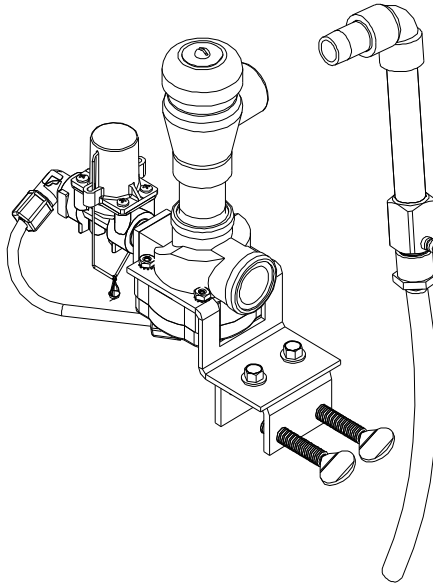


WATCH GUARD INSTALLATION INSTRUCTIONS MODEL 437P-21



Overview

The Watch Guard 437P-21 Series of float valves fills and maintains fluids in reservoirs. The units are equipped with high volume proportioners and integral backflow preventers, to inject chemicals into the reservoir at selected dilution rates.

Warnings



ALL ELECTRICAL POWER MUST BE TURNED OFF TO THE DISPENSER AND TO THE APPLIED MACHINE.



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.

Specifications

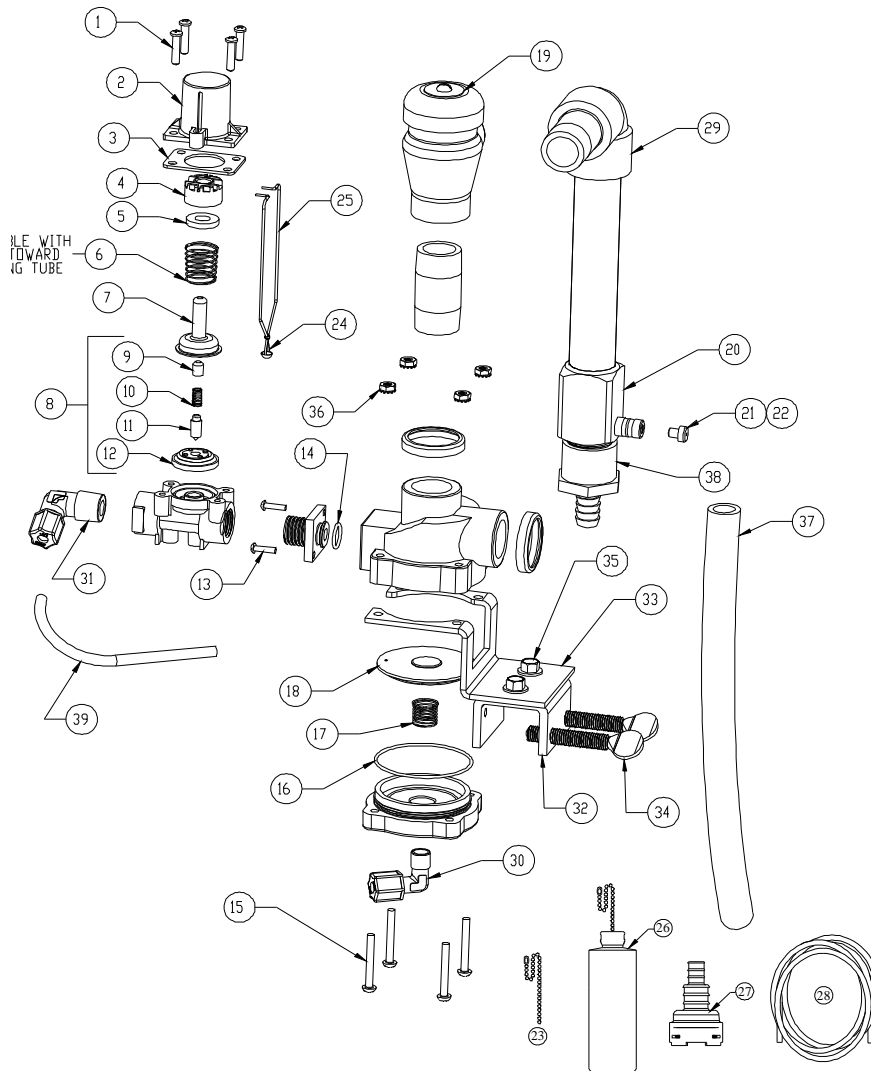
Packing List

- A. Valve Assembly
- B. Float
- C. Extra Piece of Chain
- D. Vacuum Breaker and Injector Assembly
- E. Plastic Tubing
- F. Metering Tip Kit (61-9K-FV)

Operational Requirements

- 150 PSI. Max./ 15 PSI. Min. Pressure
- 120 F Max./33 F Min. Temperature
- 22 GPM Max. Flow Rate @ 50 PSI.
- 10:1 Max./1,828:1 Min. Induction

Exploded View



Parts List

NO.	PART NO.	DESCRIPTION
1	44-116-1	Valve Cover Screws (4 Req'd)
2	35-44	Magnet Cover
3	35-37	Flange
4	35-43	Magnet Holder
5	63-35	Magnet
6	35-33	Magnet Spring
7	41-7-25	Enclosing Tube
8	63-87	Valve Repair Kit
9	63-37	Spacer
10	41-1-8	Kick-off Spring
11	63-38	Plunger
12	41-15-10	Diaphragm
13	58-60	Machine Screw (2 Req'd)
14	41-5-8	O-Ring
15	36-15-1	Valve Cover Screws (4 Req'd)
16	66-9	O-Ring
17	36-4	Closing Spring
18	36-23	Diaphragm Assembly
19	36-13	Vacuum Breaker

NO.	PART NO.	DESCRIPTION
20	36-21	Injector
21	61-9	Metering Tip (Specify Color)
22	61-9K-FV	Metering Tip Kit (13 Tips)
23	34-17	16" Chain w/Connector
24	35-12	Float Hanger Clip
25	35-42	Float Hanger Wire
26	35-18	Float Hanger Assembly
27	100-16V	Foot Valve
28	100-2L	Plastic Tubing 3/8" ID 8' Lg.
29	36-34-1	3/4" Pipe Elbow
30	59-60-6	1/8" NPT X 1/4" OD Fitting
31	59-60-7	3/8" NPT X 1/4" OD Fitting
32	-	U Bracket
33	-	Z Bracket
34	-	Thumbscrew
35	-	Flange Bolt
36	-	Hex Nuts
37	96-75-10	Fill Tube
38	66-119-61	Barb 3/4" FNPT x 3/4"
39	-	1/4" LDPE Tubing, 8"

Installation

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 Fig. 1. 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 (Fig. 2) 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.**

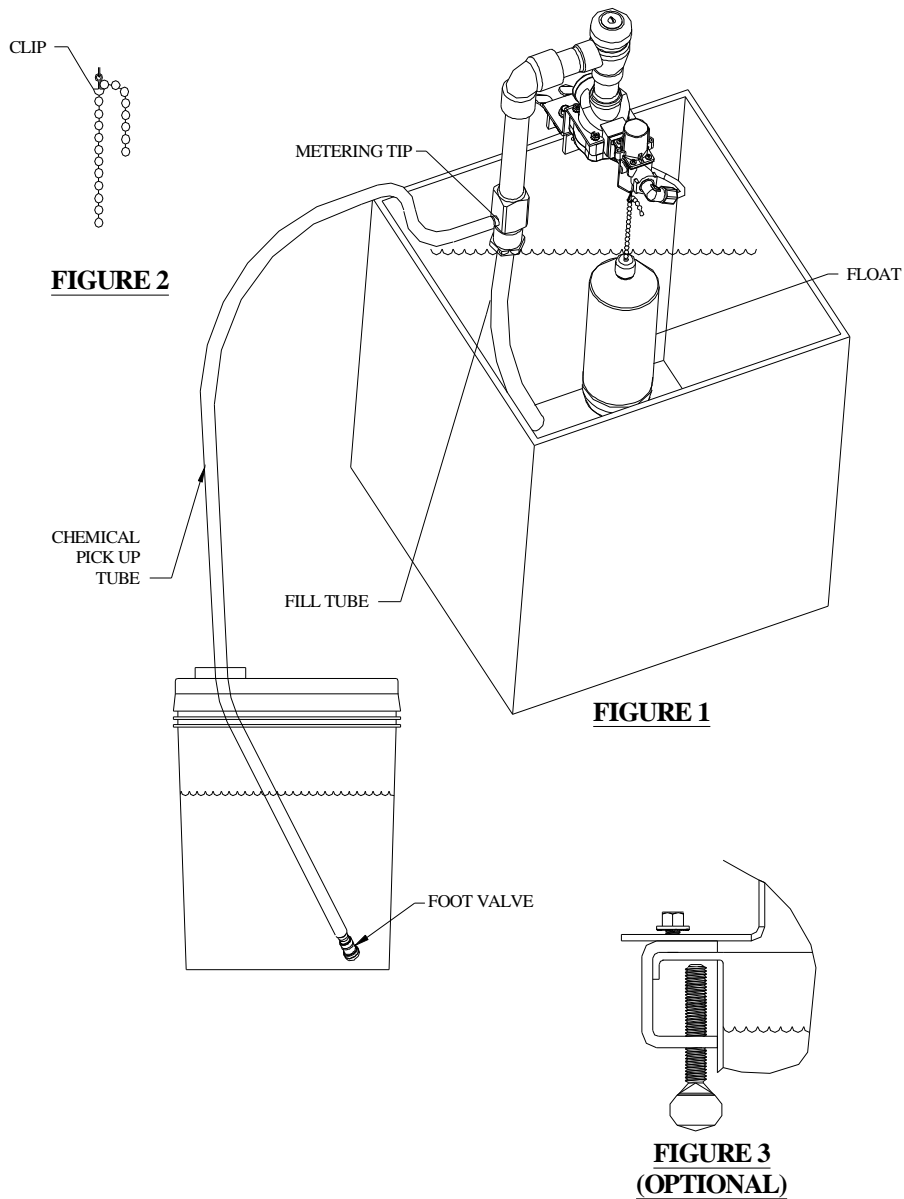
C. Chemical Concentrate: A metering tip must be selected that will set the desired ratio of chemical to water. Table 1 lists the tips and the dilution rates in terms of oz/gal. After selecting a tip, screw it into the inlet barb of the injector (See Fig. 1). Use the plastic tubing for connecting to the 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

Operation

Turn on the main water valve. At least 15 psi water pressure must be available to operate the level control. As the tank fills, chemical concentrate will be drawn up through the plastic supply tubing and mix with the incoming water. When the fluid level reaches about 2" below the top of the float, the valve will shut. When the tank level drops several inches, the valve will turn on again. Water flow is 22 GPM at 50 psi pressure.

Operation Illustration



Induction Metering Tips

TABLE 1		
TIP COLOR	RATIO	OZ/GAL
Translucent	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

This data was established inducting water, (1CPS) a 40 PSI inlet pressure

Troubleshooting

CAUTION: TURN OFF WATER SUPPLY BEFORE SERVICING.

- A. If valve fails to open, check that water supply does not exceed 150 psi. If valve fails to open or close, check for free movement of pull wire. Remove plastic cover to check for free movement of magnet pack. To inspect the pilot valve diaphragm and plunger, remove magnets from enclosing tube. Unscrew the four screws on the enclosing tube assembly and lift off bracket and tube. Inspect parts for dirt or lime deposits in the diaphragm pilot and bleed holes or around the plunger. To inspect the main valve diaphragm, unscrew the screws on the top cover and lift off. Make sure bleed hole is not clogged.
- B. If unit fails to induct chemicals, confirm that the water pressure is at least 15 psi. The injector must be primed and the outlet hose must be at least 1 foot long if the valve outlet tubing is above water.
- C. If the unit stops inducting, the foot strainer or detergent passage might be clogged. Remove and soak in hot water.

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

Warranty

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.