

# NUANCE SOLUTIONS FLOAT VALVE WITH PROPORTIONER

## INSTALLATION INSTRUCTIONS FOR:



### 1. PARTS:

ITEM	DESCRIPTION	QTY.
A.	Valve Assembly	1
B.	Proportioner with Backflow Preventer	1
C.	1/4" ID X 8' Long Vinyl Supply Tubing & Foot Valve Assembly	1
D.	Float and Chain	1
E.	Mounting Bracket	1
F.	Ceramic Weight	1
G.	1/2" ID X 3' Long Vinyl Discharge Tubing	1
H.	Model 903 Foot Valve (Model 440-24 Only)	1
I.	Metering Tip Kit (61-9k for 440-23T) (100-15K for 440-23BT)	1
J.	Large Lt. Blue & Tan Metering Tips (For 440-24)	1
K.	Bracket Mounting Screws	2

### 2. INSTALLATION:

#### A. Valve Bracket and Proportioner Assembly:

Attach mounting bracket to valve assembly with two (2) screws provided. Screw siphon breaker and proportioner to valve outlet, then mount bracket to tank as shown in figure #1. Either attach a garden hose to the valve assembly or mount the valve assembly directly to a 1/4 NPT pipe line by removing the inlet garden hose adapter. Apply pipe dope, hand tighten, and then turn with a wrench until tight. **DO NOT OVER TIGHTEN.** The plastic discharge tubing is supplied and must be used. The pipe or hose outlet should be below the bottom of the float.

**WARNING: Do not use Teflon® tape to seal internal plastic threads as the extra thickness of the tape may cause the plastic to crack. Use a non-welding liquid sealant instead.**

#### B. Float:

Run chain through the clip on the pull wire until the top of the float is about 1 or 2 inches above the desired maximum water level (with pull wire in "up" position). Snap the bead into the clip to hold the chain in place. Excess chain may be cut off if so desired (see Figure #1).

#### C. Chemical Supply:

Place the chemical container in a convenient location not more than 6 feet below the valve, (greater lifts will reduce injection capacities). Insert the end with the foot valve of the 8 foot vinyl tubing into the chemical container. Slip the ceramic weight over the chemical intake tubing and then cut the tubing to any convenient length that will allow it to extend from the bottom of the chemical container to the proportioner inlet barb (See Figure #1).

### 3. OPERATION:

Turn on the main water valve. At least 15 PSI pressure must be available to operate the proportioner. As the tank fills, chemical concentrate will be drawn up through the plastic tubing and mixed with the incoming water. When the fluid level in the tank reaches 1 to 2 inches below the top of the float the valve will close. When the tank levels drops about 4 inches the valve will open again.

### 4. CHEMICAL INJECTION ADJUSTMENTS:

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

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Metering tips are used to control chemical feed rates. Tables 1, 2, & 3 show the dilution ratios for various chemical viscosities. For very viscous products the induction rate can be increased by substituting 1/2" ID inlet tubing. (Leave a short piece of 3/8" ID tubing on proportioner and foot valve barbs as bushings.)

**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**

### 5. SERVICING:

**CAUTION: TURN OFF WATER SUPPLY BEFORE SERVICING.**

#### **A. Proportioner fails to draw chemical:**

1. Proportioner outlet tubing cut too short for priming 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 thereafter.
2. Insufficient water supply pressure. 15 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. If there is a buildup of calcium carbonate (lime) inside the proportioner then soaking it in a delimeing solution or vinegar will restore it to working order.

#### **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 container or hang up outlet tube after use.

#### **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 for dirt or damage impeding plunger and kick-off spring movement. Inspect the diaphragm, making sure the two small pin holes (bleed holes) in the diaphragm convolution are clear to allow the valve to close.
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**

**\* Note: All induction rates are based on a water pressure of 40 psi.**

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## INSTALLATION INSTRUCTIONS FOR:



**Table 1**  
**DUAL DRAW DISPENSER (white proportioner with 1/4" hose barb)**

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
Clear	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

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## INSTALLATION INSTRUCTIONS FOR:



**Table 2**  
**DUAL DRAW DISPENSER (white proportioner with 3/8" hose barb)**

Metering Tip Color	Injection Rates For Viscosities Shown					
	1 cps		75 cps		200 cps	
	Oz/Gal	Ratio	Oz/Gal	Ratio	Oz/Gal	Ratio
Clear	0.30	430-1	0.22	592-1	0.13	864-1
Purple	0.48	265-1	0.32	406-1	0.24	524-1
Yellow	1.28	100-1	0.82	157-1	0.6	212-1
Green	1.67	77-1	1.29	99-1	1	128-1
Pink	2.36	54-1	1.65	77-1	1.25	103-1
Turquoise	3.76	34-1	2.55	50-1	1.85	69-1
Black	4.47	29-1	3.03	42-1	2.12	60-1
Gray	5.53	23-1	3.67	35-1	2.58	50-1
Red	7.00	18-1	4.79	27-1	2.79	46-1
Blue	8.78	15-1	5.39	24-1	3.06	42-1
Brown	10.95	12-1	6.49	20-1	3.35	38-1
White	14.19	9-1	7.08	18-1	3.46	37-1
Orange	17.58	7-1	7.91	16-1	3.71	35-1
Light Blue*	21.75	6-1	8.66	15-1	3.9	33-1
Tan*	27.98	5-1	9.15	14-1	4.11	31-1
No Tip	33.15	4-1	10.54	12-1	4.52	28-1

**Table 3**  
**DUAL DRAW DISPENSER (blue proportioner with 3/8" hose barb)**

Metering Tip Color	Injection Rates For Viscosities Shown					
	1 cps		75 cps		200 cps	
	Oz/Gal	Ratio	Oz/Gal	Ratio	Oz/Gal	Ratio
Clear	0.66	195-1	.027	470-1	.14	903-1
Purple	1.01	127-1	.041	315-1	.33	393-1
Yellow	1.53	83-1	1.03	124-1	.86	148-1
Green	2.52	51-1	1.64	78-1	1.44	89-1
Pink	3.53	36-1	2.04	63-1	2.09	61-1
Turquoise	5.73	22-1	3.24	40-1	2.92	44-1
Black	6.72	19-1	3.88	33-1	3.34	38-1
Gray	8.95	14-1	4.98	26-1	4.04	32-1
Red	12.34	10-1	6.22	21-1	4.67	27-1
Blue	14.00	9-1	7.28	18-1	4.99	26-1
Brown	18.68	7-1	9.02	14-1	5.35	24-1
White	24.45	5-1	10.35	12-1	5.53	23-1
Orange	30.97	4-1	11.86	11-1	5.88	22-1
Light Blue*	38.26	3-1	13.31	10-1	6.22	21-1
Tan*	53.96	2.5-1	15.21	8-1	6.49	20-1
No Tip	66.07	2-1	18.61	7-1	7.07	18-1

\* These tips are not included in the standard tip pack.

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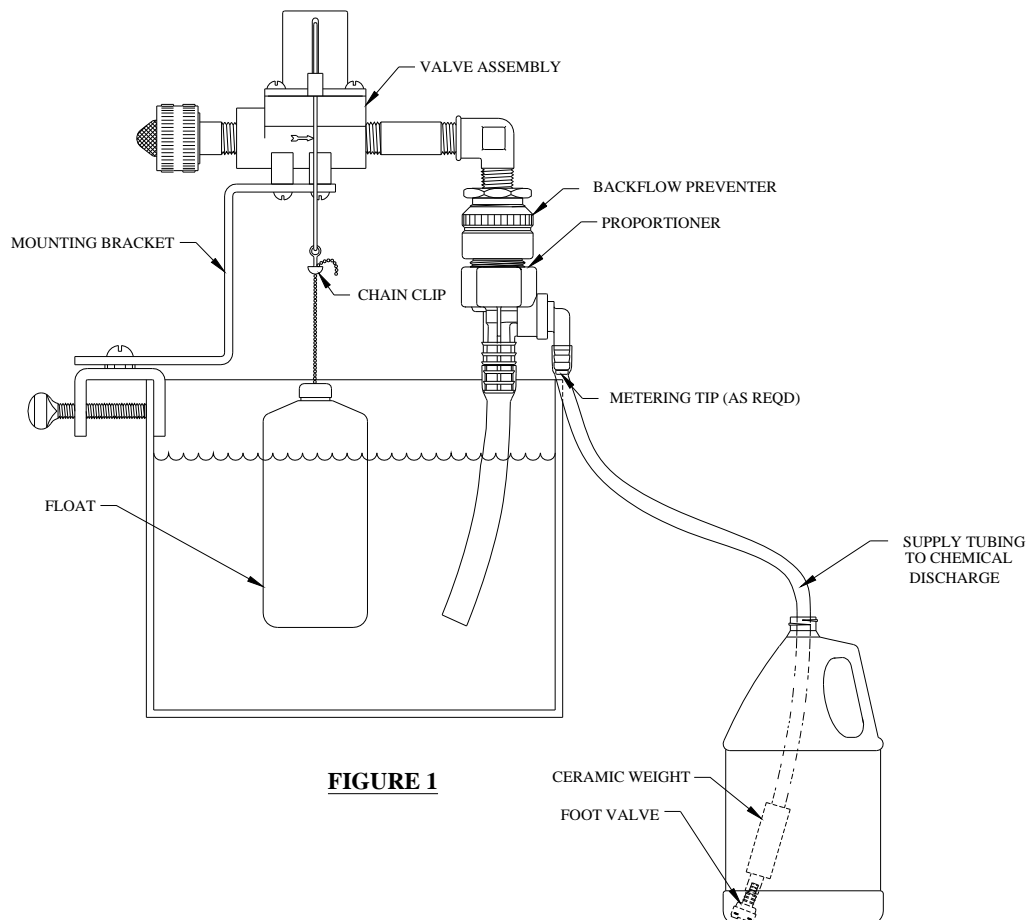


**RETURNS:** NO MERCHANDISE MAY BE RETURNED FOR CREDIT WITHOUT NUANCE SOLUTIONS'S WRITTEN PERMISSION. RETURN MERCHANDISE AUTHORIZATION NUMBER REQUIRED IN ADVANCE OF RETURN.

**WARRANTY:** NUANCE SOLUTIONS 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 NUANCE SOLUTIONS products. If products are altered or repaired without prior approval of NUANCE SOLUTIONS, 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.

## LIQUID PROPORTIONING LEVEL CONTROL



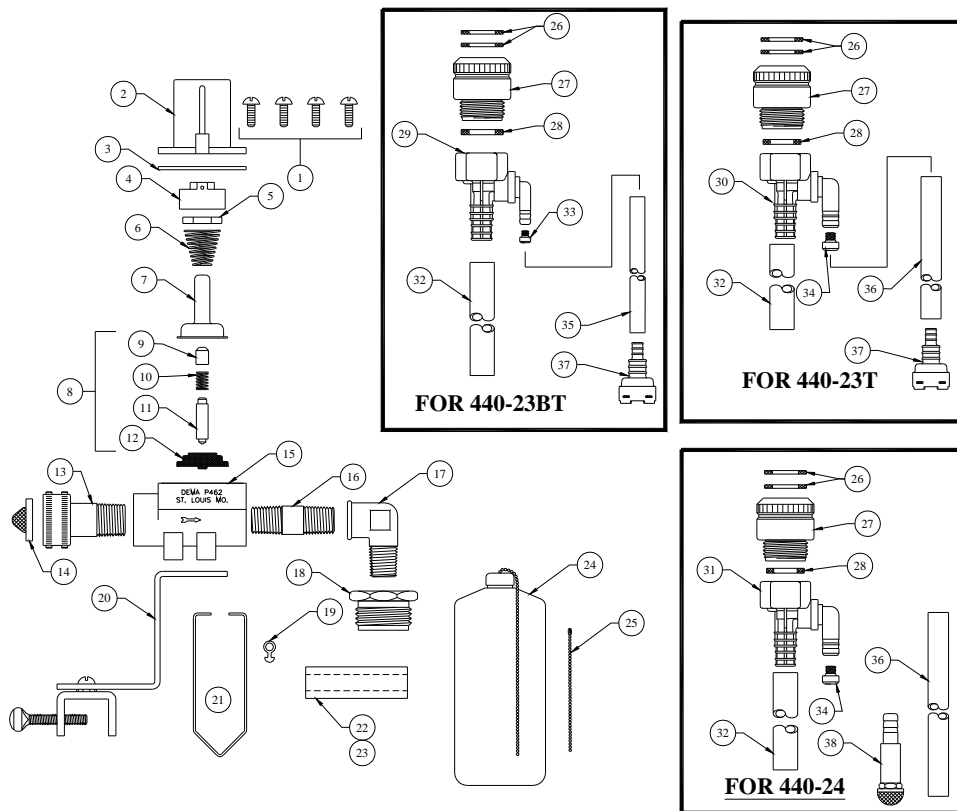
**FIGURE 1**

# NUANCE SOLUTIONS FLOAT VALVE WITH PROPORTIONER

## INSTALLATION INSTRUCTIONS FOR:



NUANCE SOLUTIONS 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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## INSTALLATION INSTRUCTIONS FOR:



NO.	PART NO.	DESCRIPTION
1	44-116-1	Screws
2	35-44	Magnet Housing
3	35-37	Flange
4	35-43	Magnet Holder
5	63-35	Magnet
6	35-33	Spring
7	41-7-25	Enclosing Tube
8	63-87	Valve Repair Kit
9	63-37	Spacer
10	41-1-8	Spring
11	63-38	Plunger
12	41-15-5	Diaphragm
13	63-120	Inlet Hose Adapter
14	100-38	Inlet Washer Screen
15	35-36	Valve Body
16	25-78	Pipe Nipple 1/4" x 2" plated
17	61-121-2	Elbow Brass
18	61-122-2	Adapter (MGHT x 1/4" FNPT)
19	35-12	Float Hanger Clip
20	35-34	Mounting Bracket Assembly
21	35-42	Float Hanger Wire

NO.	PART NO.	DESCRIPTION
22	61-107-5	Ceramic Weight (For 3/8" Tube)
23	61-107-4	Ceramic Weight (For 1/4" Tube)
24	35-18	Float Assembly
25	34-17	16" Chain w/Connector
26	100-3	Rubber Washer
27	16-30	Action Gap Backflow Preventor
28	100-3	Rubber Washer
29	61-22-3	4 GPM (1/4" Barb) White Proportioner (440-23BT)
30	61-22-2	4 GPM (3/8" Barb) White Proportioner (440-23T)
31	163CH	4 GPM (3/8" Barb) Blue Proportioner (440-24)
32	16-3	3' Discharge Tubing
33	100-15	Metering Tip (Specify Color)
34	61-9	Metering Tip (Specify Color)
35	100-12	8' Plastic Tubing (7/32" ID)
36	100-12L	8' Plastic Tubing (3/8" ID)
*37	100-16E-	Foot Valve
38	903	Foot Valve

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

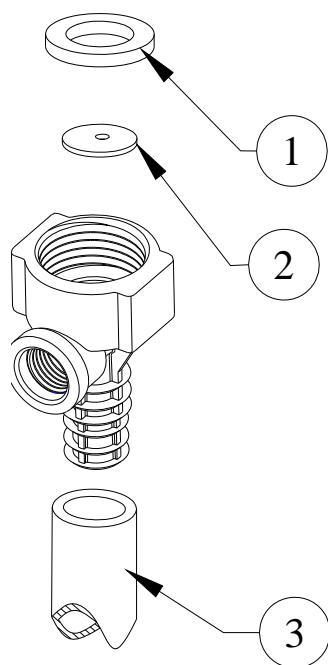
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## INSTALLATION INSTRUCTIONS FOR:

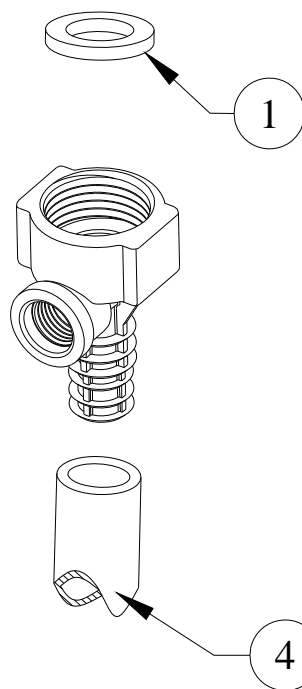


### PROPORTIONER BREAKDOWN

1 GPM  
Proportioner



4 GPM  
Proportioner



NO.	PART NO.	DESCRIPTION
1	150-6	Rubber Washer
2	61-36	Flow Disc
3	16-3-6	½" ID X 6" Lg. Vinyl Outlet Tube (1 GPM Only)
4	16-21	½" ID X 6' Lg. Vinyl Outlet Tube (4 GPM Only)