AFCO
Installation & Operation Instructions

Model #AF 985450 •5-Way Ball Valve Mixing Station

REQUIREMENTS

Water:

Temperature	up to 160°F
Pressure	25-125 PSI
Supply Line	1/2" Minimum

Flow:

High Flow (Black Injector)	4.0 - 7.3 GPM
Low Flow (White Injector)	1.9 - 3.4 GPM
Bottle Fill (Blue Injector)	0.6 - 1.0 GPM

OPTIONS

Stainless Steel Jug Racks

1 Gallon Round/Square	# 224200
1 Gallon Round/Square Locking	# 224200-L
2 ½ Gallon (8 ½" x 10 ½")	# 224210
5 Gallon (12" x 12")	# 224215
5 Gallon Round Locking	# 224216

Lid & Suction Hose for 1 & 5 Gallon Pails

Pail Lid Suction Hose Assembly	# 709101

Alternate Chemical Check Valve - EPDM Standard

Check Valve, Chemical, PP, 1/4" (Viton)	# 491402

WEIGHT & DIMENSIONS

Shipping Weight: 12 lbs.

Shipping Dimensions: 15" x 15" x 5"

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http://www.afcocare.com

READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

Overview

The 5-Way Ball Valve Mixing Station is a chemical proportioner for accurately diluting 5 chemical concentrates to required ratios and filling any sized container with diluted, ready-to-use chemical solutions. This venturi injection system uses standard city water pressure (35 - 125 PSI) to draw and blend chemical concentrate into the water stream to create an accurately diluted solution. Ball valve activation allows for hands-free dispensing. Available with separate flow rates for each ball valve to dispense into any sized container or equipment.

⚠ Safety & Operational Precautions

- For proper performance do NOT modify hose diameter or length.
- Do NOT attempt to install a discharge ball valve.
- Manufacturer assumes no liability for the use or misuse of this unit.
- When connecting to a potable water supply follow all local codes for backflow prevention.
- Wear protective clothing, gloves and eye wear when working with chemicals.
- Always direct the discharge away from people and electrical devices.
- Follow the chemical manufacturer's safe handling instructions.
- Never use chemical that if accidentally mixed could be dangerous.

TO INSTALL (REFER TO DIAGRAM, NEXT PAGE.)

1. **DO NOT MOUNT** until metering tips and all tubes are installed.
2. Once metering tips and tubes are installed mount to a suitable surface above the chemical.

Set the chemical dilution ratio by threading one of the color coded metering tip into each tip holder.
See chemical labels for dilution ratio recommendation or consult your chemical supplier.

- For the strongest dilution ratio do NOT install a colored metering tip.
- Select the tip color in the adjacent chart that is closest to your desired ratio and thread it into the tip holder. DO NOT OVER TIGHTEN.
- The dilution ratios in the metering tip chart are based on 40 PSI with the Mixing Station running and water thin chemicals with a viscosity of 1CPS.
- If your water pressure is other than 40 PSI use the "Metering Tip Selection Formula" GPM x 128 ÷ dilution ratio = chemical oz. per minute (match to tip color)
- Thicker chemicals will require a larger tip than the ratios shown in the chart.
- Application results will ultimately determine final tip color.
- Push the chemical tubes over the tip holders and place the strainer in the chemical concentrate.
- Push the discharge tubes completely over the barbs.

TO OPERATE

1. Hold the discharge tube inside the container to be filled, do not release it, and completely open the (appropriate) inlet ball valve.
2. When container is filled to the desired level, close the ball valve and keep the discharge tube in the container till it completely drains before removing it.
3. Make final metering tip adjustments based on application results. Try the next larger or smaller sized metering tip until the results are acceptable.

Metering Tip Selection Chart

Metering Tip Color	Oz. per Min.	Example: Dilution Ratio @ 40 PSI		
		High Flow	Low Flow	Bottle Fill
Brown	.56	1031:1	480:1	142:1
Clear	.88	656:1	305:1	90:1
Bright Purple	1.38	418:1	195:1	58:1
White	2.15	269:1	125:1	37:1
Pink	2.93	197:1	92:1	27:1
Corn Yellow	3.84	150:1	70:1	21:1
Dark Green	4.88	118:1	55:1	16:1
Orange	5.77	100:1	47:1	14:1
Gray	6.01	96:1	45:1	13:1
Light Green	7.01	82:1	38:1	11:1
Med. Green	8.06	72:1	33:1	10:1
Clear Pink	9.43	61:1	29:1	8:1
Yellow Green	11.50	50:1	23:1	7:1
Burgundy	11.93	48:1	23:1	7:1
Pale Pink	13.87	42:1	19:1	6:1
Light Blue	15.14	38:1	18:1	5:1
Dark Purple	17.88	32:1	15:1	4:1
Navy Blue	25.36	23:1	11:1	3:1
Clear Aqua	28.60	20:1	9:1	3:1
Black	50.00	12:1	5:1	—
No Tip Ratio Up To:		4.8:1	3.5:1	1.7:1

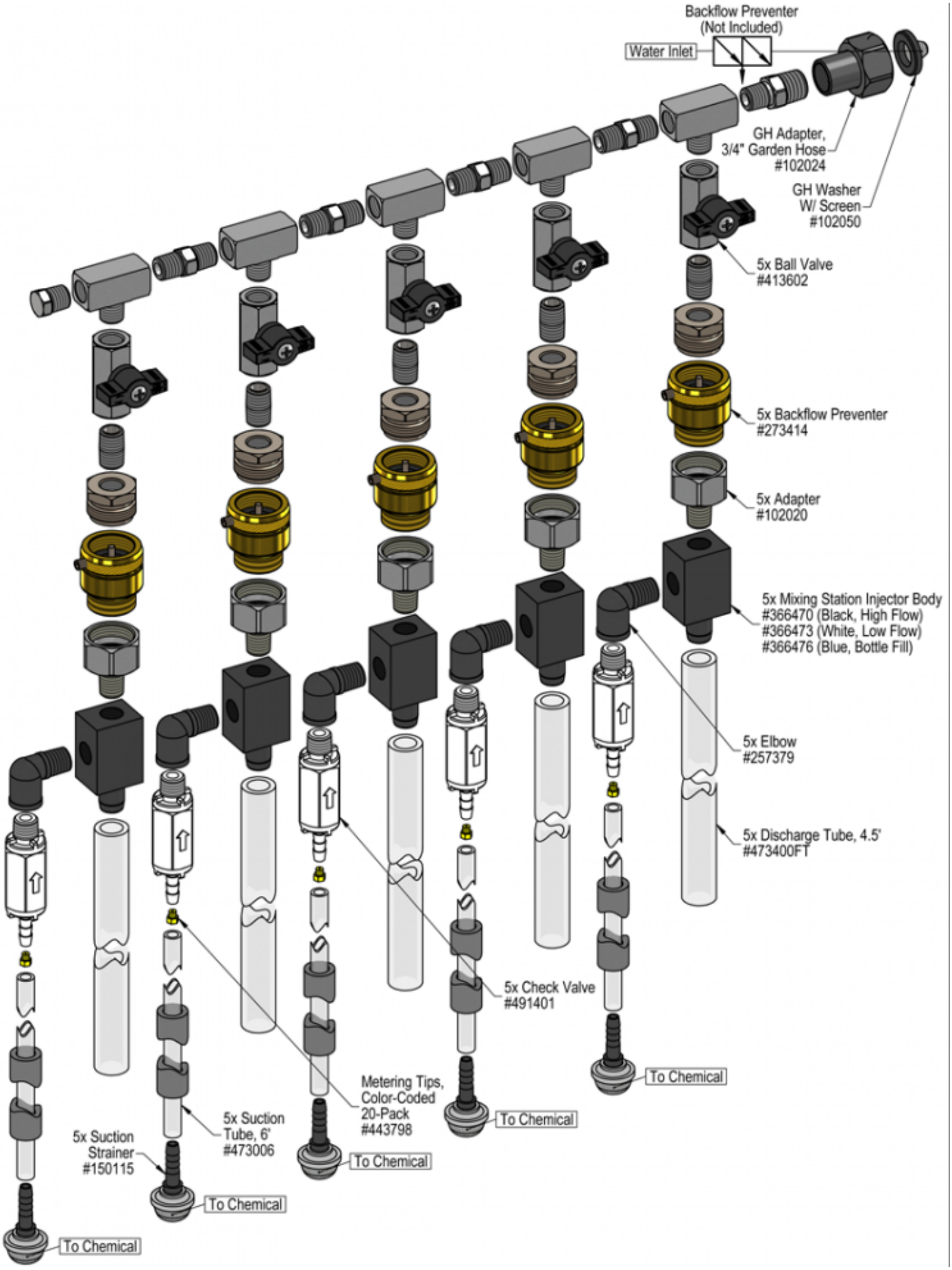
The dilution ratios above are approximate values. Due to chemical viscosity, actual dilution ratios may vary.

Metering Tip Selection Formula

(GPM x 128) / Dilution Ratio
= Oz. per Min

Flow Rate Chart

Pressure	Water Flow GPM		
PSI	High Flow	Low Flow	Bottle Fill
40	4.51	2.10	0.62
50	5.04	2.35	0.69
60	5.52	2.57	0.76
70	5.97	2.78	0.82
80	6.38	2.97	0.88
90	6.77	3.15	0.93
100	7.13	3.32	0.98
110	7.48	3.48	1.03
120	7.81	3.64	1.07


Backflow Preventer
(Not Included)
Water Inlet
GH Adapter,
3/4" Garden Hose
#102024
GH Washer
W/ Screen
#102050
5x Ball Valve
#413602
5x Backflow Preventer
#273414
5x Adapter
#102020
5x Mixing Station Injector Body
#366470 (Black, High Flow)
#366473 (White, Low Flow)
#366476 (Blue, Bottle Fill)
5x Elbow
#257379
5x Discharge Tube, 4.5"
#473400FT
5x Check Valve
#491401
Metering Tips,
Color-Coded
20-Pack
#443798
5x Suction
Tube, 6'
#473006
5x Suction
Strainer
#150115
To Chemical
To Chemical
To Chemical
To Chemical
To Chemical

Troubleshooting Guide

AF 985450 ● 5-Way Ball Valve Mixing Station

Problem	Possible Cause / Solution	
	Startup	Maintenance
A) Unit will not draw chemical.	1, 2, 3	6, 7, 8, 9, 10, 11
B) Dilution too weak.	4	11
C) Dilution too strong	5	
D) Water backing up into chemical container.		8
E) Backflow preventer constantly dripping / leaking.		12

Possible Cause / Solution

Startup

1. **Water pressure too low or water temperature too high**
   - See requirements.
2. **Ball valve not completely open**
   - Completely open the ball valve.
3. **Chemical tube not immersed in chemical or chemical depleted**
   - Immerse tube or replenish.
4. **Metering tip too small**
   - Install larger metering tip.
5. **No metering tip installed or metering tip too large**
   - Install smaller metering tip.

Maintenance

6. **6. Water inlet strainer screen clogged**
   - Disconnect water and clean the screen.
7. **Chemical strainer or metering tip partially blocked**
   - Clean or replace chemical strainer and/or metering tip.
8. **Check valve stuck or failed**
   - Clean or replace.
9. **Vacuum leak in chemical pick-up connections**
   - Tighten the connection.
10. **Chemical tube stretched out where tube slides over metering tip holder or pin hole/cut in chemical tube (sucking air in)**
    - Cut off end of tube or replace tube.
11. **Water scale or chemical build-up may have formed in the body causing poor or no chemical pick-up**
    - Follow Preventive Maintenance instructions below, using hotwater and/or descaling acid. When there is no draw at all carefully remove fittings and soak entire body in descaling acid.
12. **Backflow preventer failed or defective**
    - Replace backflow preventer.

PREVENTIVE MAINTENANCE: When the unit will be out of service for extended periods, place chemical tube(s) in water and flush the chemical out of the unit to help prevent chemical from drying out and causing build-up. Periodically check and clean chemical strainer and replace if missing.