

AFCO Installation & Operation Instructions

Model #AF 982150 • Gemini™ Model 150 Mixing Station

REQUIREMENTS

Chemical Concentrate

Water

Temperature	up to 160°F
Pressure	35 - 125 PSI
Flow	7 GPM @ 40 PSI
Supply Line	3/4"

OPTIONS

Stainless Steel Jug Racks

Jug Rack, SS, 1 Gallon, Round/Square	# 224200
Jug Rack, SS, 2 1/2 Gallon	# 224210
Jug Rack, SS, 5 Gallon	# 224215

Lid & Suction Hose for 1 & 5 Gallon Pails

Pail Lid Suction Hose Assembly	# 709101
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Alternate Check Valves - Viton Standard

Check Valve, Chemical, PP(W), 1/4" (EPDM)	# 491401
Check Valve, Viscous Chemical, PP, 1/2" HB (EPDM)	# 491403

WEIGHT & DIMENSIONS

Shipping Weight: 8 lbs.

Shipping Dimensions: 15" x 15" x 5"



<http://www.afcocare.com>

**READ ALL
INSTRUCTIONS BEFORE
USING EQUIPMENT!**

Overview

The Gemini™ Model 150 Mixing Station is a unique, 7 GPM @ 40 PSI high-volume chemical proportioner that will simultaneously dilute and blend two chemical concentrates into one accurately diluted solution and quickly dispense it into larger containers and equipment. The unique Gemini™ "double venturi" injection system incorporates two completely separated venturis in one injector body and uses city water pressure (25 - 125 PSI) to draw and blend 2 chemical concentrates into the water stream independently so that the chemicals never mix until they are diluted. Dilution ratios are controlled independently with precision metering tips. Ball valve activation allows for hands-free dispensing.



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.)

If you are connecting to a potable water supply follow all local codes for backflow prevention.

1. Mount the unit to a suitable surface above the chemical supply to prevent siphoning.
2. Connect the discharge hose(s) as shown in the diagram.
3. Flush any new plumbing of debris before connecting water.
4. Connect water supply. If water piping is older, or has known contaminants, install a water filter.

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" $GPM \times 128 \div \text{dilution ratio} = \text{chemical oz. per minute (match to tip color)}$
- 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 hose 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	
		Left Pick-up	Right Pick-up
Brown	.56	1600:1	1600:1
Clear	.88	1018:1	1018:1
Bright Purple	1.38	649:1	649:1
White	2.15	417:1	417:1
Pink	2.93	306:1	306:1
Corn Yellow	3.84	233:1	233:1
Dark Green	4.88	184:1	184:1
Orange	5.77	155:1	155:1
Gray	6.01	149:1	149:1
Light Green	7.01	128:1	128:1
Med. Green	8.06	111:1	111:1
Clear Pink	9.43	95:1	95:1
Yellow Green	11.50	78:1	78:1
Burgundy	11.93	75:1	75:1
Pale Pink	13.87	65:1	65:1
Light Blue	15.14	59:1	59:1
Dark Purple	17.88	50:1	50:1
Navy Blue	25.36	35:1	35:1
Clear Aqua	28.60	31:1	31:1
Black	50.00	18:1	18:1
No Tip Ratio Up To:		6.1:1	8.5:1

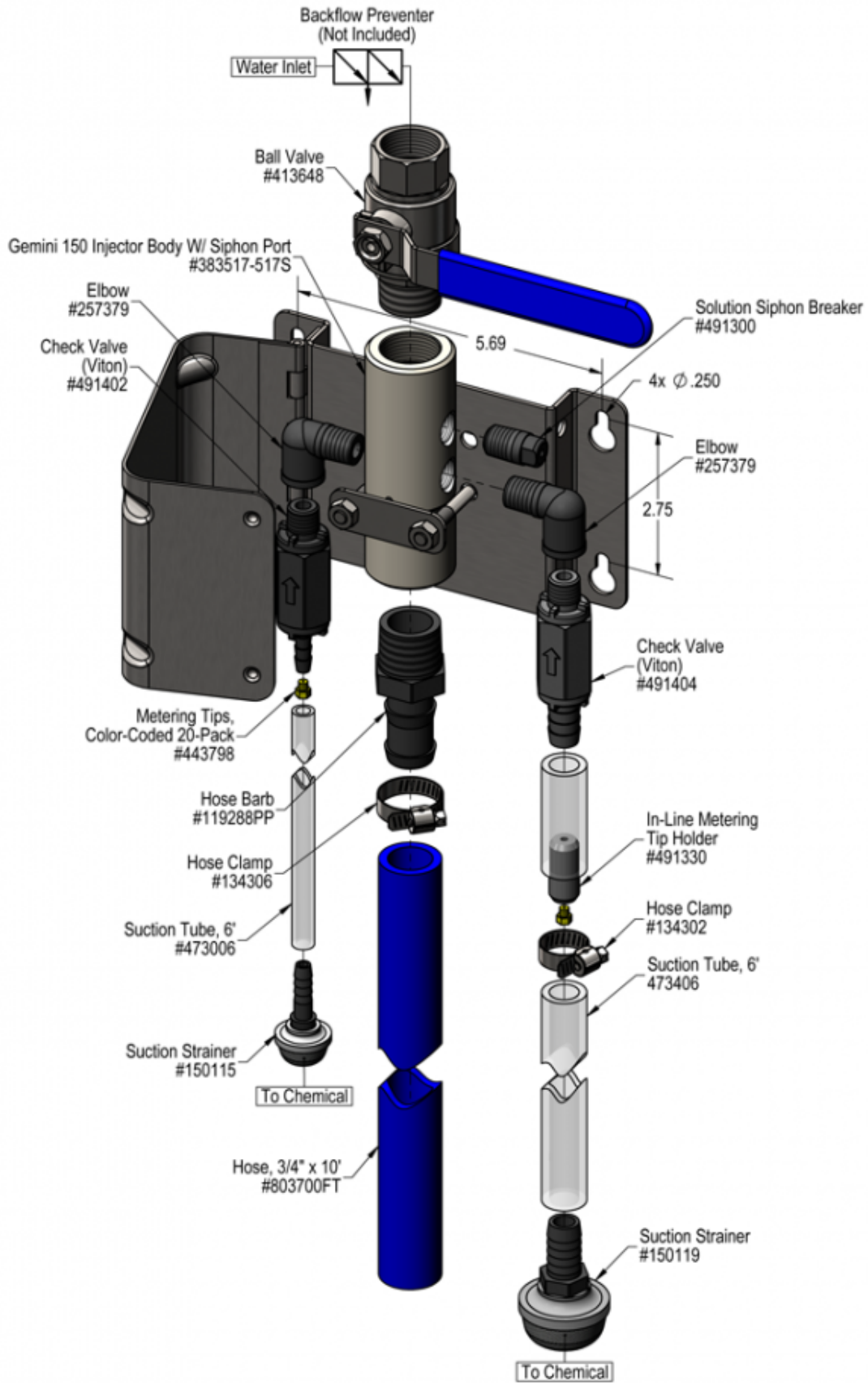
The dilution ratios above are approximate values. Due to chemical viscosity, actual dilution ratios may vary.

Metering Tip Selection Form

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

Flow Rate Chart

Pressure	Water Flow
PSI	GPM
40	7.00
50	7.83
60	8.57
70	9.26
80	9.90
90	10.50
100	11.07
110	11.61
120	12.12



Troubleshooting Guide

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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	Maintenance
<ol style="list-style-type: none"> 1. Water pressure too low or water temperature too high <ul style="list-style-type: none"> ◦ See requirements. 2. Ball valve not completely open <ul style="list-style-type: none"> ◦ Completely open the ball valve. 3. Chemical tube not immersed in chemical or chemical depleted <ul style="list-style-type: none"> ◦ Immerse tube or replenish. 4. Metering tip too small <ul style="list-style-type: none"> ◦ Install larger metering tip. 5. No metering tip installed or metering tip too large <ul style="list-style-type: none"> ◦ Install smaller metering tip. 	<ol style="list-style-type: none"> 6. 6. Water inlet strainer screen clogged <ul style="list-style-type: none"> ◦ Disconnect water and clean the screen. 7. Chemical strainer or metering tip partially blocked <ul style="list-style-type: none"> ◦ Clean or replace chemical strainer and/or metering tip. 8. Check valve stuck or failed <ul style="list-style-type: none"> ◦ Clean or replace. 9. Vacuum leak in chemical pick-up connections <ul style="list-style-type: none"> ◦ 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) <ul style="list-style-type: none"> ◦ 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 <ul style="list-style-type: none"> ◦ 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 <ul style="list-style-type: none"> ◦ 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.

