

# Lafferty Equipment Manufacturing, Inc. Installation & Operation Instructions

## Model #981100 • 1-Way Push Lever Mixing Station

### REQUIREMENTS

#### Water

Temperature.....up to 160°F  
Supply Line.....1/2" Minimum  
Pressure.....35-125 PSI

#### Flow:

High Flow.....3.8 - 6.0 GPM  
Low Flow.....1.5 - 2.4 GPM  
Bottle Fill.....0.6 - 1.0 GPM

### OPTIONS

#### Stainless Steel Jug Racks

1 Gallon Round ..... # 224200  
1 Gallon Square ..... # 224205  
2 ½ Gallon (8 ½" x 10 ½") ..... # 224210  
5 Gallon (12" x 12") ..... # 224215  
5 Gallon Round Locking ..... # 224216

#### Optional Flow Rates

High Flow (Black).....#366470  
Low Flow (White).....#366473  
Bottle Fill (Blue).....#366476



**READ ALL  
INSTRUCTIONS BEFORE  
USING EQUIPMENT!**

[www.LaffertyEquipment.com](http://www.LaffertyEquipment.com)  
501-851-2820

## Principles of Operation

Lafferty Mixing Stations are water-driven venturi proportioners that accurately dilute chemical concentrates to required ratios and fill any size container with diluted, ready to use (RTU) chemical solution. Dilution ratios are set with metering tips.



# 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.

**Set the chemical dilution ratio by installing a metering tip into each chemical check valve. See chemical labels for dilution ratio recommendation or consult your chemical supplier.**

- Install a metering tip in each tip holder.
- The dilution ratios in the metering tip chart are based on chemical with a viscosity of 1CPS.
- For water pressure other than the example, use the Metering Tip Selection Formula.
- Due to varying chemical viscosity and applications, you may need to increase/decrease the tip sizes to get the best result.
- Once metering tips are selected and installed, push the chemical tubes over the tip holders.
- Push the discharge tubes completely over the barbs.

## TO OPERATE

1. Once metering tips are installed connect the chemical and discharge tubes as shown in the diagram.
2. Mount the unit to a suitable surface above the chemical supply to prevent siphoning.
3. To prevent blocking the small water jets in the injector flush any new plumbing of debris before connecting. If water piping is older and has known contaminants install a water filter.
4. Connect water supply.
5. Immerse the chemical strainers into your chemical concentrates.
6. Hold the discharge tube inside the container to be filled, do not release it, completely depress the push lever.
7. When container is filled to the desired level, release the lever and keep the discharge tube in the container till it completely drains before removing it.
8. Make final metering tip adjustments based on application results. Try the next larger 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	869:1	343:1	137:1
Clear	.88	553:1	218:1	87:1
Bright Purple	1.38	352:1	139:1	56:1
White	2.15	226:1	89:1	36:1
Pink	2.93	166:1	66:1	26:1
Corn Yellow	3.84	127:1	50:1	20:1
Dark Green	4.88	100:1	39:1	16:1
Orange	5.77	84:1	33:1	13:1
Gray	6.01	81:1	32:1	13:1
Light Green	7.01	69:1	27:1	11:1
Med. Green	8.06	60:1	24:1	10:1
Clear Pink	9.43	52:1	20:1	8:1
Yellow Green	11.50	42:1	17:1	7:1
Burgundy	11.93	41:1	16:1	6:1
Pale Pink	13.87	35:1	14:1	6:1
Light Blue	15.14	32:1	13:1	5:1
Dark Purple	17.88	27:1	11:1	4:1
Navy Blue	25.36	19:1	8:1	3:1
Clear Aqua	28.60	17:1	7:1	3:1
Black	45.00	11:1	4:1	—
No Tip Ratio Up To:		4.9:1	2.5:1	2.4:1

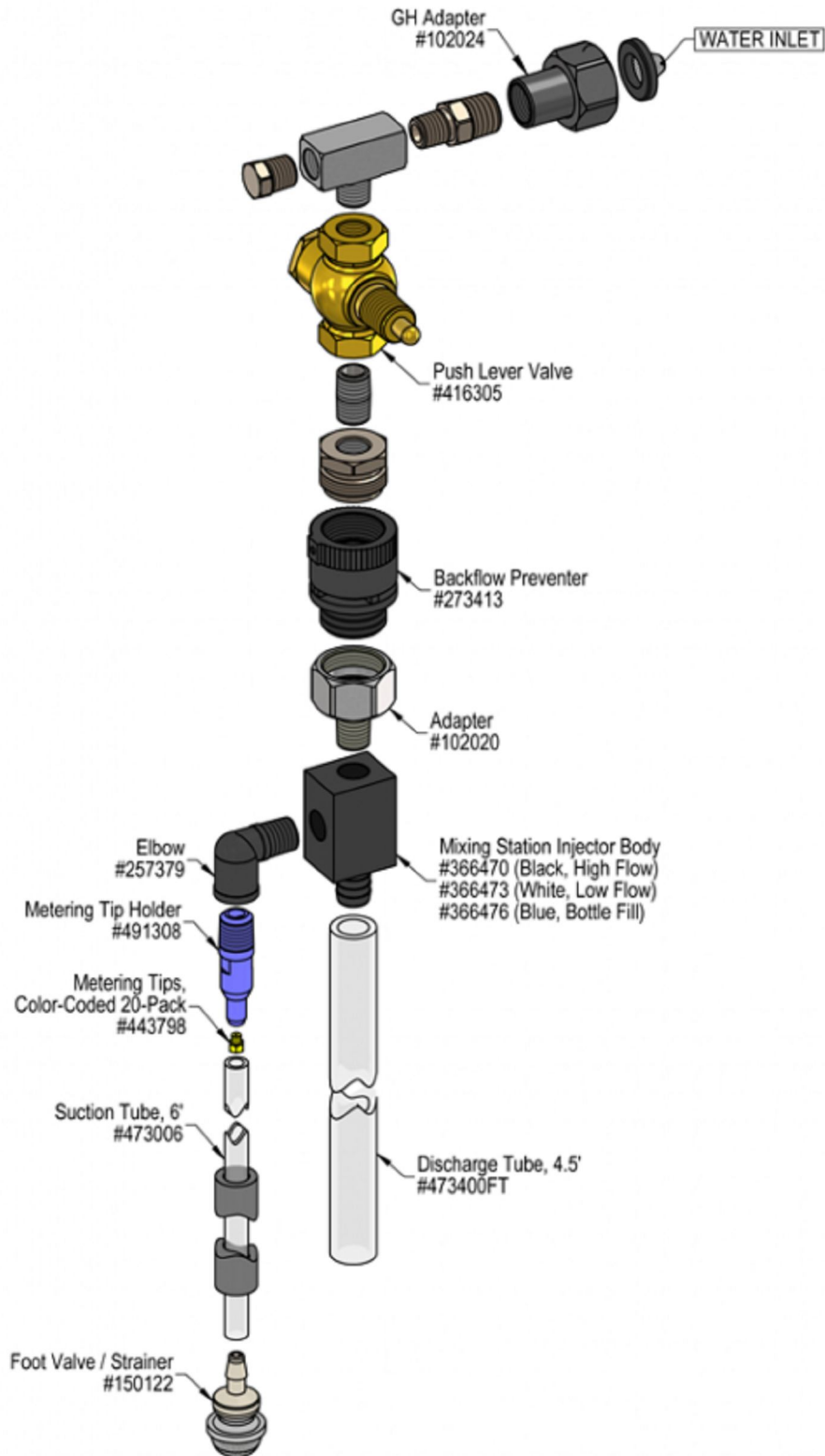
The dilution ratios above are approximate values. Due to chemical viscosity, actual dilution ratios may vary.

### Metering Tip Selection Formula

$$\frac{\text{(GPM x 128)} / \text{Dilution Ratio}}{\text{= Oz. per Min}}$$

### Flow Rate Chart

Pressure PSI	Water Flow GPM		
	High Flow	Low Flow	Bottle Fill
40	3.80	1.50	0.60
50	4.25	1.68	0.67
60	4.65	1.84	0.73
70	5.03	1.98	0.79
80	5.37	2.12	0.85
90	5.70	2.25	0.90
100	6.01	2.37	0.95



# Troubleshooting Guide

## Model #981100 • 1-Way Push Lever 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	Maintenance
<ol style="list-style-type: none"> <li>1. <b>1. Water pressure too low or water temperature too high</b> <ul style="list-style-type: none"> <li>○ 35 PSI water pressure minimum.</li> </ul> </li> <li>2. <b>Push lever not completely depressed</b> <ul style="list-style-type: none"> <li>○ Completely depress the push lever</li> </ul> </li> <li>3. <b>Chemical tube not immersed in chemical or chemical depleted</b> <ul style="list-style-type: none"> <li>○ Immerse tube or replenish.</li> </ul> </li> <li>4. <b>Metering tip too small</b> <ul style="list-style-type: none"> <li>○ Install larger metering tip.</li> </ul> </li> <li>5. <b>No metering tip installed or metering tip too large</b> <ul style="list-style-type: none"> <li>○ Install smaller metering tip.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>6. <b>Water inlet strainer screen clogged</b> <ul style="list-style-type: none"> <li>○ Disconnect water and clean the screen.</li> </ul> </li> <li>7. <b>Chemical strainer or metering tip partially blocked</b> <ul style="list-style-type: none"> <li>○ Clean or replace chemical strainer and/or metering tip.</li> </ul> </li> <li>8. <b>Foot valve stuck or failed</b> <ul style="list-style-type: none"> <li>○ Clean or replace.</li> </ul> </li> <li>9. <b>Vacuum leak in chemical pick-up connections</b> <ul style="list-style-type: none"> <li>○ Tighten the connection.</li> </ul> </li> <li>10. <b>Chemical tube stretched out where it slides over metering tip holder or pin hole/cut in chemical tube (sucking air in)</b> <ul style="list-style-type: none"> <li>○ Cut off end of tube or replace tube.</li> </ul> </li> <li>11. <b>Water scale or chemical build-up may have formed in the body causing poor or no chemical pick-up</b> <ul style="list-style-type: none"> <li>○ 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.</li> </ul> </li> <li>12. <b>Backflow preventer failed or defective</b> <ul style="list-style-type: none"> <li>○ Replace backflow preventer.</li> </ul> </li> </ol>

**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.

