

# Lafferty Equipment Manufacturing, LLC Installation & Operation Instructions

## Model # 920108 · Pump Fed LC Foamer W/ Chemical Ball Valve

### REQUIREMENTS

#### Chemical Concentrate

#### Ready-to-Use Chemical Solution

Temperature	up to 160°F
Pressure	35 to 125 PSI
Flow	1.34 GPM @ 40 PSI
Supply Line	1/2"

#### Compressed Air

up to 3 CFM

#### Hose

3/4" ID x 50'

#### Nozzle

50250

### 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 Round/Square Locking (12" x 12")	# 224214
5 Gallon Round/Square (12" x 12")	# 224215

#### Stainless Steel Foam Wand (Upgrade)

Convert PP Wand to SS (New Units)	# 536603-X
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#### Safe Flow Lid™ for 1 Gallon Jugs

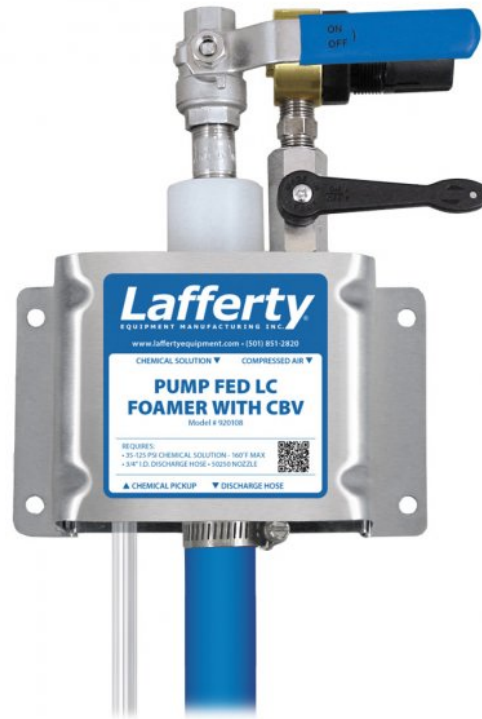
Lid, Suction Tube, and Strainer	# 709101
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#### Alternate Check Valves - EPDM Standard

Check Valve, Chemical, PP/Viton, 1/4"	# 491315
Check Valve, Air, SS/Viton, 1/4"	# 491306

#### Foam Solution Check Valves & Strainer

Check Valve, PP, 1/2" (EPDM)	# 491409
Check Valve, PP, 1/2" (Viton)	# 491411
Check Valve, 316SS, 1/2", MF (Teflon)	# 491348SS-T
Strainer, "Y", SS, 1/2" MF	# 150350-1



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501-851-2820

**WARNING! READ ALL  
INSTRUCTIONS BEFORE  
USING EQUIPMENT!**

### OVERVIEW

The Pump Fed LC Foamer with Chemical Ball Valve receives pressurized chemical from a user-supplied chemical pump and the venturi injection system draws a second chemical into the first to create an accurately blended two-chemical solution. Rich, clinging foam is created by injecting compressed air into the solution to greatly increase volume and coverage ability. A medium volume of foam is produced and projected through the discharge hose, wand and fan nozzle onto any surface at distances up to 12 feet.

SAFETY & OPERATIONAL PRECAUTIONS

- For proper performance do NOT modify, substitute nozzle, hose diameter or length.
- Manufacturer assumes no liability for the use or misuse of this unit.
- Wear protective clothing, gloves and eye-wear when working with chemicals.
- Always direct the discharge away from people and electrical devices.
- For pressures over 100 PSI, remove the discharge valve or lower pressure
- Follow the chemical manufacturer's safe handling instructions.
- Turn off solution supply and air when unit is not in use for extended periods.

TO INSTALL (REFER TO DIAGRAM ON NEXT PAGE)

**A check valve is required on the foamer solution inlet to prevent air from going back into the solution line. (See Options)**

1. Mount the unit to a suitable surface above the chemical supply to prevent siphoning.
2. Connect the discharge hose as shown in the diagram and close the ball valve.
3. Install a solution check valve on the foamer solution inlet and connect pre-mixed solution supply.
4. Connect chemical supply. To prevent blocking the small jets flush any new plumbing of debris before connecting. And/or install a strainer (see options) .
5. Connect air supply. If air line is older and has known contaminants install a filter.

**Set the chemical ratio by threading one of the color coded metering tips into each chemical check valve. See chemical labels for blending ratio recommendation or consult your chemical supplier.**

- To draw the maximum amount of chemical into the pressurized chemical supply do NOT install a colored metering tip. Ensure that the chemical ball valve is completely open.
- The blending ratios in the metering tip chart are based on water thin chemicals with a viscosity of 1CPS.
- Thicker chemicals will require a larger tip than the ratios shown in the chart.
- Application results will ultimately determine final tip color.
- Select the tip color that is closest to your desired chemical strength and thread it into the tip holder. **DO NOT OVER-TIGHTEN.**
- Push the chemical tube over the check valve barb and place the strainer in the chemical.

*Use a smaller metering tip or partially close the ball valve on the chemical pick-up assembly to reduce chemical drawn into the pressurized stream. Completely close the ball valve to apply only the incoming pressurized chemical.*

TO OPERATE

**Always make sure the discharge is closed or pointed in a safe direction before turning inlet valve on. Discharge can be shut off at any time during operation but should not be left off for long periods of time with the inlet valve on.**

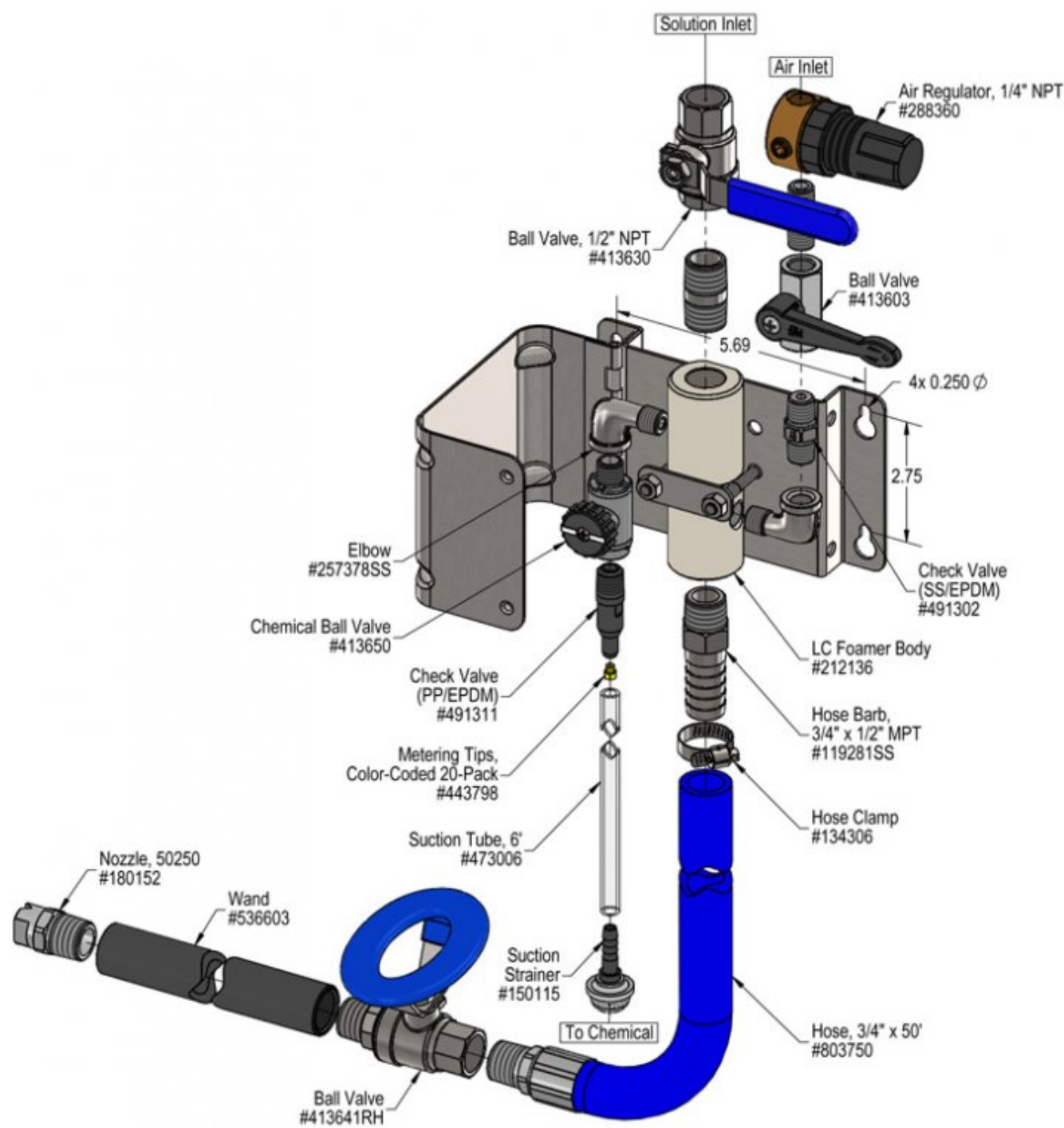
1. Make final metering tip adjustments based on application results.
2. With wand in hand open the chemical inlet ball valve, and the air ball valve.
3. Open the discharge ball valve.
  - Wait a few seconds and observe foam consistency.
  - Use the least amount of air needed to achieve good foam quality to prevent chemical pressure fluctuations from affecting performance. Air pressure must be kept lower than incoming chemical pressure.
  - To adjust the foam consistency pull out on the air regulator knob, turn slightly clockwise for dryer foam and counterclockwise for wetter foam. Wait a few seconds to see each adjustment.
  - Medium wet foam will give the best cleaning results! Dry foam will NOT clean as well!
  - You may also have to try different sized metering tips and air settings until foam consistency and cleaning results are acceptable. Once this is set and desired foam consistency is achieved push lock the knob on the air regulator. You are ready to start application.
4. When foaming is completed, close the discharge ball valve, return to the unit and close the chemical inlet and air ball valves. Briefly re-open the discharge ball valve to relieve pressure in the hose.
5. Rinse before the foam dries.

METERING TIP SELECTION

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 40 PSI
Brown	0.56	306:1
Clear	0.88	195:1
Bright Purple	1.38	124:1
White	2.15	80:1
Pink	2.93	59:1
Corn Yellow	3.84	45:1
Dark Green	4.88	35:1
Orange	5.77	30:1
Gray	6.01	29:1
Light Green	7.01	24:1
Med. Green	8.06	21:1
Clear Pink	9.43	18:1
Yellow Green	11.50	15:1
Burgundy	11.93	14:1
Pale Pink	13.87	12:1
Light Blue	15.14	11:1
Dark Purple	17.88	10:1
Navy Blue	25.36	7:1
Clear Aqua	28.60	—
Black	50.00	—
No Tip Ratio Up To:		6:1
The dilution ratios above are approximate values. Due to chemical viscosity, actual dilution ratios may vary.		
FORMULA		
GPM × 128 ÷ Desired Dilution Ratio = oz/min <ul style="list-style-type: none"> <li>• See Unit Flow Rates chart for GPM</li> <li>• Use 20 for 20:1 dilution ratio, 30 for 30:1, etc.</li> <li>• Match calculated ounces per minute (oz/min) to nearest oz/min in Metering Tip Selection chart.</li> </ul>		

UNIT FLOW RATES

PSI	GPM
35	1.25
40	1.34
50	1.50
60	1.64
70	1.77
80	1.90
90	2.01
100	2.12
110	2.22
120	2.32
125	2.37



## Troubleshooting Guide

Problem	Possible Cause / Solution	
	Startup	Maintenance
A) Foam surges and/or hose "bucks".	1, 2, 3, 4, 6, 7, 8, 9, 10	12, 13, 14, 15, 16, 18, 19
B) Foamer will not draw chemical.	1, 3, 4, 7, 8, 9	12, 13, 14, 15, 16, 18, 19
C) Foam too wet.	2, 3, 4, 6, 7, 8, 9, 10	13, 14, 15, 16, 18, 19
D) Foam does not clean properly (too dry).	1, 4, 6, 11	
E) Using too much chemical.	5	17
F) Chemical backing up into air line.		18
G) Incoming chemical backing up into chemical container.		20
H) Air/chemical solution backing up into incoming chemical supply.		

Possible Cause / Solution	
Startup	Maintenance
<b>1. Air pressure too high</b> <ul style="list-style-type: none"> <li>Adjust the air regulator slowly counterclockwise until output stabilizes.</li> </ul>	<b>12. Foamer inlet orifice clogged</b> <ul style="list-style-type: none"> <li>Check/clean inlet orifice for obstructions. DO NOT DRILL OUT. Install a filter.</li> </ul>
<b>2. Chemical pressure or volume too low/inlet piping too small causing poor chemical pick up</b> <ul style="list-style-type: none"> <li>Increase incoming chemical pressure or volume (SEE REQUIREMENTS).</li> </ul>	<b>13. 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>
<b>3. Inlet, discharge ball valve not completely open, or chemical ball valve not open</b> <ul style="list-style-type: none"> <li>Completely open the inlet, discharge, and chemical ball valves.</li> </ul>	<b>14. Chemical tube stretched out or pin hole/cut in chemical tube sucking air.</b> <ul style="list-style-type: none"> <li>Cut off end of tube or replace tube.</li> </ul>
<b>4. Not enough added chemical - metering tip too small</b> <ul style="list-style-type: none"> <li>Install larger metering tip</li> <li>Completely open chemical ball valve</li> </ul>	<b>15. Vacuum leak in chemical pick-up connections</b> <ul style="list-style-type: none"> <li>Tighten the connection.</li> </ul>
<b>5. Too much added chemical - metering tip not installed or too large</b> <ul style="list-style-type: none"> <li>Install smaller metering tip.</li> </ul>	<b>16. Air regulator failed allowing too much air or not enough air</b> <ul style="list-style-type: none"> <li>Clean or replace.</li> </ul>
<b>6. Improper chemical(s)</b> <ul style="list-style-type: none"> <li>Ensure product is recommended for foaming and the application.</li> </ul>	<b>17. Air check valve failed - Discharge ball valve left closed with inlet ball valves open</b> <ul style="list-style-type: none"> <li>Clean or replace.</li> </ul>
<b>7. Chemical tube not immersed in chemical or depleted</b> <ul style="list-style-type: none"> <li>Immerse tube or replenish.</li> </ul>	<b>18. Chemical check valve stuck or failed</b> <ul style="list-style-type: none"> <li>Clean or replace.</li> </ul>
<b>8. Discharge hose too long or wrong size or kinked</b> <ul style="list-style-type: none"> <li>Straighten the hose or replace hose with correct size and length.</li> <li>If a longer than the standard hose length provided is needed chemical pressure must be at or above 65 PSI for up to a 75' hose</li> </ul>	<b>19. Scale or chemical build-up may have formed in the foamer body causing poor or no chemical pick-up</b> <ul style="list-style-type: none"> <li>Follow Preventive Maintenance instructions below, using hot water or descaling acid. When there is no draw at all, carefully remove fittings and soak entire body in descaling acid.</li> </ul>
<b>9. Nozzle size too small</b> <ul style="list-style-type: none"> <li>Replace nozzle with correct size.</li> </ul>	<b>20. No check valve installed and/or inlet ball valve left on when not in use</b> <ul style="list-style-type: none"> <li>Install optional solution check valve (see OPTIONS, page 1).</li> </ul>
<b>10. Use of an oiler in the airline will cause poor foam quality</b> <ul style="list-style-type: none"> <li>Use only clean, dry air.</li> </ul>	
<b>11. Soil has hardened on surface, rinse foam before it dries</b> <ul style="list-style-type: none"> <li>Reapplication may be necessary.</li> </ul>	

**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.

