

LAFFERTY EQUIPMENT MANUFACTURING, INC. Installation & Operation Instructions

- Model # 972306 • 1-Way Acid LC Foamer Complete**
- Model # 972307 • 2-Way Acid LC Foamer Complete**
- Model # 972308 • 3-Way Acid LC Foamer Complete**

REQUIREMENTS

Water:	US	S.I.
Supply line:	1/2 in (min.)	12.7 mm (min.)
Temp. range:	ambient to 160°F	ambient to 70°C
Pressure range:	40 to 100 psi	2.8 to 6.9 bar
Flow range:	1.2 to 1.8 gpm	4.5 to 6.8 lpm
Compressed Air:		
Flow:	up to 4 cfm	up to 113 lpm
Hose:		
ID:	3/4 in	19.1 mm
Length:	40 ft	12.2 m
Nozzle(s):		
Type / Size:	50250 (fan)	



OPTIONS

Stainless Steel Accessories:

224150 Hose Rack, Large

Jug Racks:

# 224200	1 gallon, Round (6 3/4 in ID)	3.8 liter, Round (171 mm ID)
# 224205	1 gallon, Square (6 3/8 in x 6 3/4 in)	3.8 liter, Square (162 mm x 171 mm)
# 224210	2 1/2 gallon (8 1/2 in x 10 1/2 in)	9.5 liter (216 mm x 267 mm)
# 224215	5 gallon (12 in x 12 in)	19 liter (305 mm x 305 mm)

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**READ ALL
INSTRUCTIONS BEFORE
USING EQUIPMENT!**



Principles of Operation

These are water driven compressed air assisted venturi foamers that will siphon up to 3 corrosive chemical concentrates from any sized container, providing up to 21 dilution ratios using the supplied metering tips. They generate powerful clinging foam and project it onto any surface for cleaning, aluminum trailer brightening, concrete removal, or application of any corrosive chemical.



Safety & Operational Precautions

- Manufacturer assumes no liability for the use or misuse of this unit.
- Backflow Prevention: If you are connecting to a potable water supply, be sure to follow all local codes for backflow prevention.
- Wear protective clothing, gloves and eyewear when working with chemicals.
- Always direct the discharge away from people and electrical devices.
- If water pressure exceeds 100 PSI, remove the discharge ball valve.
- Turn off all incoming ball valves when unit is not in use.
- Follow the chemical manufacturer's safe handling instructions.
- Use only chemicals that are compatible when mixed.

TO INSTALL *(Refer to diagram, next page. Do not turn on during installation.)*

1. **Mount the unit** above chemical supply to prevent siphoning and connect the discharge hose assembly as shown in the diagram.
2. **Set the dilution ratio.** To achieve the strongest possible chemical dilution ratio, do not use a metering tip. For weaker ratios you must select a metering tip for each chemical check valve.

How to Select the Correct Metering Tip - See chemical label for dilution ratio recommendation or consult your chemical supplier.

The dilution ratios provided in the Metering Tip Selection Chart, at right, are based on water-thin chemical.

Due to varying chemical viscosities, you may need to increase/ decrease the metering tip size.

3. **Install metering tip** if applicable into chemical check valve. Push the chemical tube over the check valve and immerse the chemical strainer into your chemical concentrate.
4. **Connect water supply.** If you are connecting to a potable water supply, be sure to follow all local codes for backflow prevention.
5. **Connect air supply.**

TO OPERATE

1. Direct the discharge in a safe direction, then open the water and air valves to make the final air and chemical ratio adjustments.
2. On 2-Way and 3-Way models, open the appropriate chemical ball valve. *Open only one chemical ball valve at a time.*
3. WAIT SEVERAL SECONDS for foam output to stabilize. Air pressure adjustment is the most important element of operation. Keeping air pressure to a minimum will prevent water pressure fluctuations from affecting foamer performance and yield a STRONGER chemical to water ratio. Medium wet foam will give the best cleaning results! Dry foam will not clean as well and the concentration WILL be weaker.

To adjust foam quality, pull out adjustment knob on air regulator and turn it very slightly clockwise for dryer foam and counterclockwise for wetter foam. Use the least amount of air pressure necessary to achieve good foam quality. Wait several seconds to see the results of EACH adjustment. Once properly adjusted the air should not have to be adjusted again. If the flow of foam surges, the air pressure is too high. Slightly turn the air regulator counterclockwise. When foam is the desired consistency, push-lock the air regulator. Foam surging can also indicate too small of a metering tip has been selected; select larger one.

4. When foaming is completed, close the discharge ball valve, return to the unit and close all incoming ball valves. Briefly re-open the discharge ball valve to relieve pressure in the hose.

Metering Tip Selection		
Metering Tip Color	Oz. per Min.	EXAMPLE: Dilution Ratio @ 50 PSI
Brown	.62	310:1
Clear	.91	211:1
Bright Purple	1.7	116:1
White	2.3	85:1
Pink	3.3	58:1
Corn Yellow	4.0	48:1
Dark Green	5.0	38:1
Orange	6.0	32:1
Gray	6.8	28:1
Light Green	8.1	24:1
Med. Green	9.1	21:1
Clear Pink	11.9	16:1
Yellow Green	13.4	14:1
Burgundy	15.3	13:1
Pale Pink	16.9	11:1
Light Blue	18.0	11:1
Dark Purple	22.5	9:1
Navy Blue	33.1	6:1
Clear Aqua	39.3	5:1
Black	—	—
No Tip	—	3:1

The dilution ratios provided above are approximate values. Your actual dilution ratio may be higher or lower due to variation in chemical viscosity.

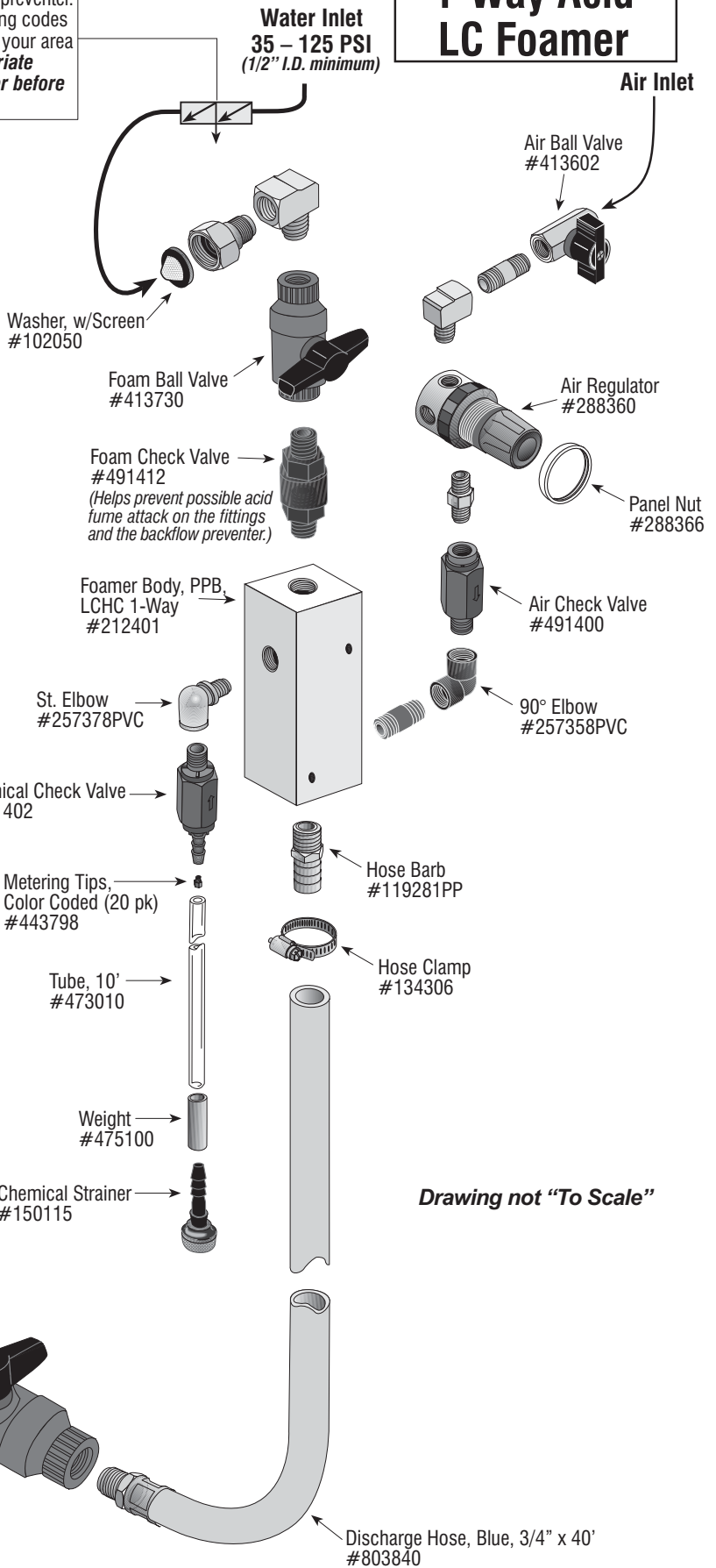
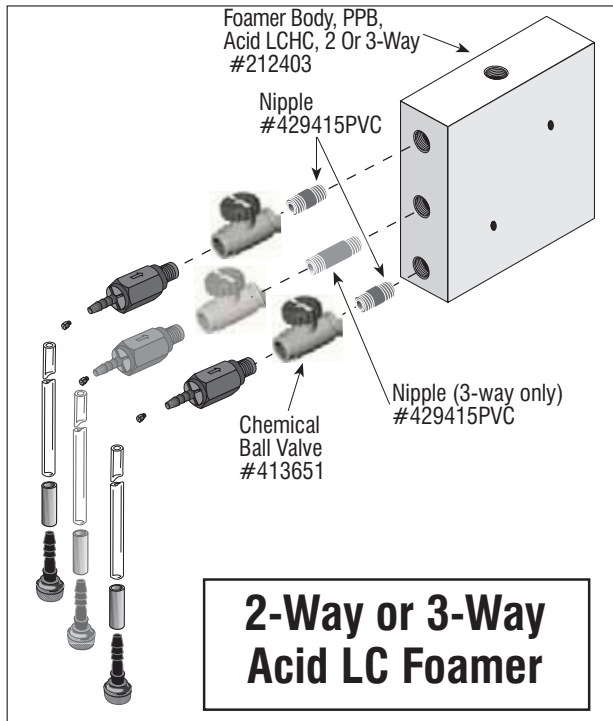
Metering Tip Selection Formula	
(GPM x 128)	See chart below for GPM and convert to oz. per min.
÷	
Dilution Ratio	20:1, 30:1, etc.
=	
Oz. per Min.	Match to nearest number in chart above.

Water Flow Rate Chart	
Water Pressure	Water Flow Rate
PSI	GPM
40	1.3
50	1.5
60	1.6
70	1.7
80	1.9
90	2.0
100	2.1

⚠ Turn Off Inlet Ball Valves When Not In Use.

IMPORTANT: Unit supplied without a backflow preventer. Check local plumbing codes for requirements in your area and **install appropriate backflow preventer before operating.**

1-Way Acid LC Foamer



For proper operation, use ONLY the supplied nozzle or equivalent.

For pressures over 100 PSI, remove the discharge ball valve.

Troubleshooting Guide

Acid LC Foamers Complete

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

Possible Cause / Solution	
Startup	Maintenance
<ol style="list-style-type: none"> Air pressure too high <ul style="list-style-type: none"> Adjust the air regulator slowly counterclockwise until output stabilizes. Use of an oiler in the airline will cause poor foam quality <ul style="list-style-type: none"> Use only clean, dry air. Inlet ball valve or discharge ball valve not completely open <ul style="list-style-type: none"> Completely open the inlet and discharge ball valves. Not enough chemical - metering tip too small <ul style="list-style-type: none"> Install larger metering tip. No metering tip installed or metering tip too large <ul style="list-style-type: none"> Install smaller metering tip. Improper chemical <ul style="list-style-type: none"> Ensure product is recommended for foaming and/or the application. Chemical tube not immersed in chemical or chemical depleted <ul style="list-style-type: none"> Immerse tube or replenish. More than one chemical ball valve is open (2-Way and 3-Way models) 	<ol style="list-style-type: none"> Discharge hose too long or wrong size or kinked (See REQUIREMENTS on page 1) <ul style="list-style-type: none"> Straighten the hose - Replace hose with correct size. Nozzle size too small (See REQUIREMENTS on page 1) Water pressure or water volume too low/inlet piping too small <ul style="list-style-type: none"> Increase water pressure or water volume (See REQUIREMENTS on page 1). Soil has hardened on surface; always rinse foam before it dries <ul style="list-style-type: none"> Reapplication may be necessary. Chemical check valve stuck or failed <ul style="list-style-type: none"> Clean or replace. Chemical strainer or metering tip partially blocked <ul style="list-style-type: none"> Clean or replace chemical strainer and/or metering tip. Chemical tube stretched out or pin hole/cut in chemical tube (sucking air in) <ul style="list-style-type: none"> Cut off end of tube or replace tube. Vacuum leak in chemical pick-up connections <ul style="list-style-type: none"> Tighten the connection. Air regulator failed allowing too much air or not enough air <ul style="list-style-type: none"> Clean or replace. Air check valve failed <ul style="list-style-type: none"> Replace. Water strainer element clogged or missing; inlet orifice clogged <ul style="list-style-type: none"> Clean or replace strainer element. Check/clean inlet orifice for obstructions. DO NOT DRILL OUT. No backflow preventer installed and/or inlet ball valve left on when not in use <ul style="list-style-type: none"> Install appropriate backflow preventer into water line.

PREVENTIVE MAINTENANCE: When the unit will be out of service for extended periods, remove chemical tubes from chemical concentrates and place in water. Completely open the water ball valve and the discharge ball valve for several seconds to flush chemical and help prevent chemical build-up.