Lafferty Equipment Manufacturing, LLC
Installation & Operation Instructions

Model # 918117-LB · Lock Box 2-Way HPSS Foamer

REQUIREMENTS

Chemical Concentrate	
Water	
Temperature	up to 180°F
Pressure	400 to 1000 PSI
Flow	2.0 GPM @ 700 PSI
Supply Line	3/8"
Compressed Air	up to 5 CFM
Hose	1/2" ID x 50'
Nozzle	50250

OPTIONS

Stainless Steel Hose Racks	
Large Stainless Steel Hose Rack	# 224150
Stainless Steel Jug Racks	
2 ½ Gal. (8 ½" x 10 ½")	# 224210
5 Gallon (12" x 12") Round/Square	# 224215
Safe Flow Lid™ for 1 Gallon Jugs	
Lid, Suction Tube, and Strainer	# 709101
Optional Zero Degree Foam Nozzle (For Increased Range)	
Nozzle, NPB, 1/2" - 00200	# 180144



Lafferty® EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

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WARNING! READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

OVERVIEW

The Lock Box 2-Way HPSS Foamer is a 2 GPM @ 700 PSI foam applicator for projecting 2 foaming chemicals on to any surface up close or at a distance. This model features a stainless steel, locking enclosure. This stainless steel venturi injection system uses high water pressure (400 - 1000 PSI) to draw and blend chemical concentrates into the water stream to create an accurately diluted solution. Rich, clinging foam is created by injecting compressed air into the solution to greatly increase volume and coverage ability. The foam is then projected through the discharge hose and fan nozzle at distances up to 13 feet. Adjust the ball valves to apply the 2 chemicals separately or together.

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.
- Follow the chemical manufacturer's safe handling instructions.
- Do not put a discharge ball valve on this unit or kink the hose to stop the flow of foam.

TO INSTALL (REFER TO DIAGRAM ON NEXT PAGE)

1. Mount the unit to a suitable surface above the chemical supply to prevent siphoning.
2. Connect the discharge hose.
3. When connecting to a potable water supply follow all local codes for backflow prevention.
4. Connect water supply. To prevent blocking the small water jets in the foamer body, flush any new plumbing of debris before connecting. If water piping is older and has known contaminants, install a filter.
5. Connect air supply. If air line is older and has known contaminants install a filter.

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

- For the strongest dilution ratio do NOT install a colored metering tip.
- The dilution 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 suction tube in the chemical concentrate.
- If necessary, cut suction tube(s) to length before attaching suction strainer.

TO OPERATE

Always make sure the wand is in hand and pointed in a safe direction before turning water and air on. DO NOT kink the hose to stop foam flow, return to the unit and close the water and air ball valves

1. Final chemical dilution and air adjustments will now have to be made.
2. With wand in hand, open one chemical ball valve, the water ball valve, and the air ball valve.
    - Wait a few seconds and observe foam consistency.
    - Use the least amount of air needed to achieve good foam quality.
    - To adjust the foam consistency turn the needle valve knob slightly counterclockwise for dryer foam and clockwise for wetter foam.
    - 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 you are ready to start application.
3. When foaming is completed return to the unit and close the water and air ball valves. Do NOT kink the hose to stop foam flow.
4. Rinse the work surface before foam dries.

METERING TIP SELECTION

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 700 PSI
Brown	0.56	454:1
Clear	0.88	289:1
Bright Purple	1.38	184:1
White	2.15	118:1
Pink	2.93	87:1
Corn Yellow	3.84	66:1
Dark Green	4.88	52:1
Orange	5.77	44:1
Gray	6.01	42:1
Light Green	7.01	36:1
Med. Green	8.06	32:1
Clear Pink	9.43	27:1
Yellow Green	11.50	22:1
Burgundy	11.93	21:1
Pale Pink	13.87	18:1
Light Blue	15.14	17:1
Dark Purple	17.88	14:1
Navy Blue	25.36	10:1
Clear Aqua	28.60	9:1
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.

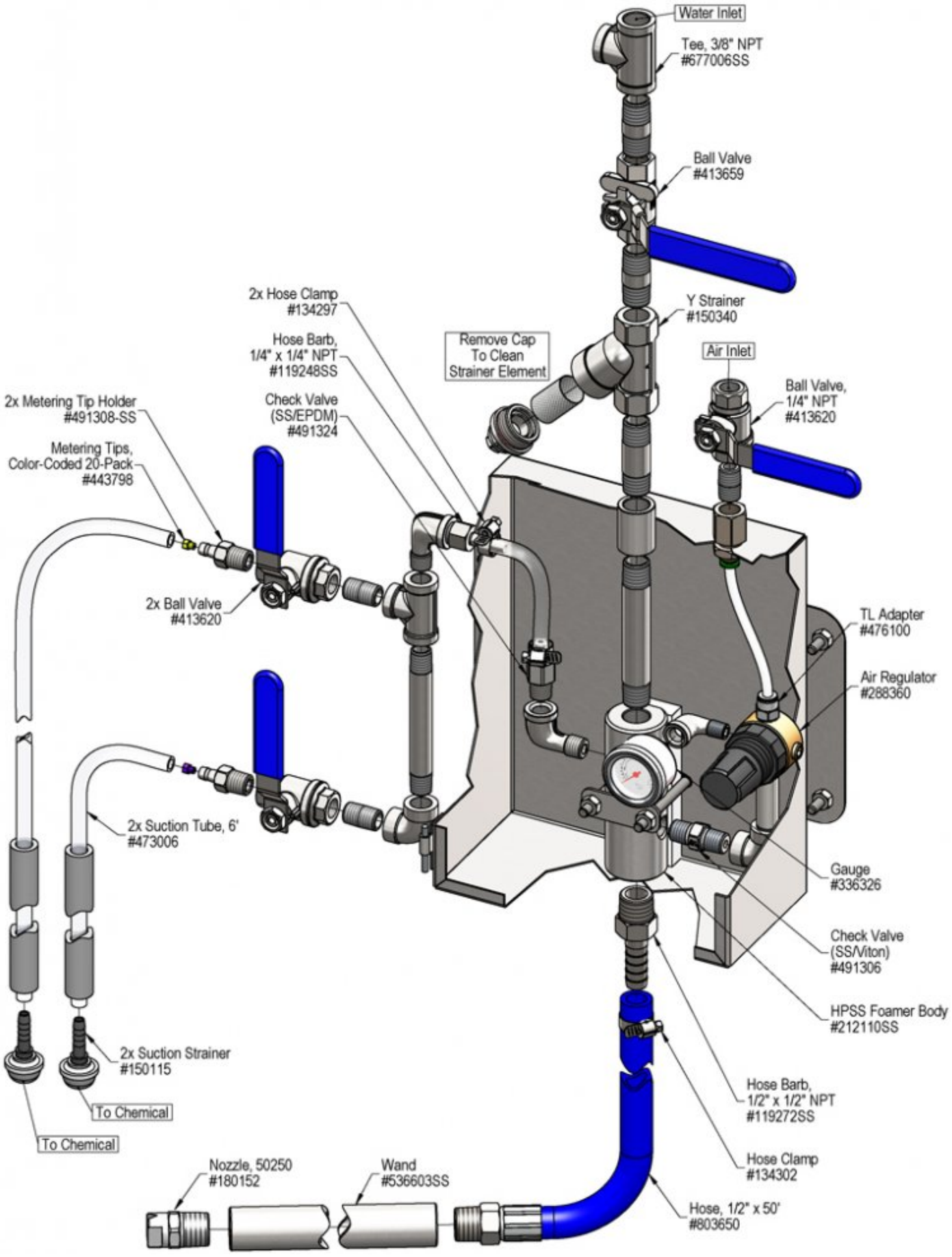
FORMULA

GPM × 128 ÷ Desired Dilution Ratio = oz/min

- *See Unit Flow Rates chart for GPM*
- *Use 20 for 20:1 dilution ratio, 30 for 30:1, etc.*
- *Match calculated ounces per minute (oz/min) to nearest oz/min in Metering Tip Selection chart.*

UNIT FLOW RATES

PSI	GPM
400	1.50
500	1.68
600	1.84
700	1.98
800	2.12
900	2.25
1000	2.37


Water Inlet
Tee, 3/8" NPT
#677006SS
Ball Valve
#413659
2x Hose Clamp
#134297
Y Strainer
#150340
Hose Barb,
1/4" x 1/4" NPT
#119248SS
Remove Cap
To Clean
Strainer Element
Air Inlet
Ball Valve,
1/4" NPT
#413620
2x Metering Tip Holder
#491308-SS
Check Valve
(SS/EPDM)
#491324
Metering Tips,
Color-Coded 20-Pack
#443798
2x Ball Valve
#413620
TL Adapter
#476100
Air Regulator
#288360
2x Suction Tube, 6'
#473006
Gauge
#336326
Check Valve
(SS/Viton)
#491306
HPSS Foamer Body
#212110SS
2x Suction Strainer
#150115
To Chemical
To Chemical
Hose Barb,
1/2" x 1/2" NPT
#119272SS
Hose Clamp
#134302
Nozzle, 50250
#180152
Wand
#536603SS
Hose, 1/2" x 50'
#803650

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, 10	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	
F) Water/chemical backing up into air line.		17
G) Water backing up into chemical container.		12

Possible Cause / Solution

Startup

1. **Air volume too high**
   - Adjust the needle valve slowly clockwise.
2. **Use of an oiler in the airline will cause poor foam quality**
   - Use only clean, dry air.
3. **Inlet ball valve not completely open**
   - Completely open the ball valve.
4. **Not enough chemical - metering tip too small**
   - Install larger metering tip.
   - Chemical Ball valves closed (2-Way)
5. **No metering tip installed or metering tip too large**
   - Install smaller metering tip.
6. **Improper chemical**
   - Ensure product is recommended for the application.
7. **Chemical tube not immersed or chemical depleted**
   - Immerse tube or replenish.
8. **Discharge hose too long or wrong size or kinked**
   - Straighten the hose or replace with correct hose.
9. **Nozzle size too small**
   - Replace with correct size nozzle.
10. **Water pressure or water volume too low/inlet piping too small causing poor chemical pick up**
    - Increase water pressure or water volume.
11. **Soil has hardened on surface**
    - Always rinse foam before it dries
    - Reapplication may be necessary.

Maintenance

12. **Chemical check valve stuck or failed**
    - Clean or replace.
13. **Chemical strainer or metering tip partially blocked**
    - Clean or replace chemical strainer and/or metering tip.
14. **Chemical tube stretched out or pin hole/cut in tube**
    - Cut off end of tube or replace tube.
15. **Vacuum leak in chemical pick-up connections**
    - Tighten the connection.
16. **Needle valve clogged not allowing enough air**
    - Clean or replace.
17. **Air check valve failed**
    - Replace.
18. **Water strainer element clogged or missing/foamer inlet orifice clogged**
    - Clean or replace strainer element; check/clean inlet orifice for obstructions. DO NOT DRILL OUT.
19. **Chemical build-up may have formed in the foamer body causing poor or no chemical pick-up**
    - Follow Preventive Maintenance instructions below, using hot water and/or descaling acid. When there is no draw at all, carefully remove fittings and soak entire foamer body in descaling acid.

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.