Lafferty Equipment Manufacturing, LLC
Installation & Operation Instructions

Model # 935160 · Lock Box Precision Foamer

REQUIREMENTS

Chemical Concentrate
Water to Fill Tank

Compressed Air	up to 1.5 CFM
Hose	1/2" ID x 50'

OPTIONS

Stainless Steel Hose Racks

Large Stainless Steel Hose Rack	# 224150

Alternate Seal Materials - Santoprene Standard

Viton Upgrade: Flojet Air Pump & Check Valves	# 710756
Kalrez Upgrade: Flojet Air Pump & Check Valves	# 710755

Alternate Chemical Check Valve - EPDM Standard

Check Valve, Chemical, PP, 1/4" (Viton)	# 491402

Alternate Air Check Valve - EPDM Standard

Check Valve, Air, SS, 1/4" MM (Viton / Hast)	# 491306

Angled Nozzle Adapters

Elbow, St., 90°, 316SS, 1/4″	# 257379SS
Elbow, St., 45°, NPB, 1/4″	# 257604

WEIGHT & DIMENSIONS

Single Package

Shipping Weight	33 lbs.
Shipping Dimensions	27" x 19" x 9"



(Trigger gun and wand are not to scale in relation to the main unit)

Lafferty EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

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WARNING! READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

OVERVIEW

The Lock Box Precision Foamer is a low volume foam applicator that is ideal for jobs where precision application and tight control of over spray are required. This model features a stainless steel enclosure. An air-operated, double-diaphragm FloJet Pump draws ready-to-use chemical from one static tank or blends water and chemical concentrate from two static tanks. 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, trigger gun and fan nozzle.

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 use d-Limonene or other chemicals that are not compatible with the Santoprene diaphragms.
- Viton upgrade is available.

TO INSTALL (REFER TO DIAGRAM ON NEXT PAGE)

The unit has been tested and air pressure preset at the optimum setting of 60 PSI. Test "as is" before adjusting air pressure. Do not exceed 80 PSI.

1. Mount the unit above chemical and water containers.
2. Connect the discharge hose assembly.

Note: If pre-diluted chemical solution is to be used, immerse both the chemical and water suction strainers in the chemical solution. Or remove one check valve and install a plug in the port.

- **If pre-diluted chemical is being used immerse both pick up tubes in solution and skip to: To Operate**
- **To set the chemical dilution ratio for mixing on the fly, thread one of the color coded metering tips into one chemical check valve. See chemical labels for dilution ratio recommendation or consult your chemical supplier.** (See tip selection chart)
- For the strongest dilution ratio, do NOT install a colored metering tip or in some cases you will install a tip in the water side if strong dilution ratios are required.
- 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.
- Select and thread the tip color that is closest to your desired chemical strength into the tip holder as a starting place. Start out with a larger tip than you think you will need to make sure you have enough chemical to foam.
- Application results and foam texture and cleaning results will ultimately determine final tip color.
- Once metering tip is installed, push the chemical tube over the check valve barb and place the strainer in the chemical concentrate.
- Push the second tube on the other check valve barb and place the strainer in a static tank of water. Do NOT pressurize the tube.

TO OPERATE

1. Direct the discharge in a safe direction, open the air ball valve and pull the trigger.
2. Make final metering tip adjustments based on application results.
3. Allow several seconds for the pump to prime and fill the hose, hold the trigger till foam begins to appear. Observe foam quality. NOTE: The longer the hose the longer it will take for foaming to begin
4. To adjust the foam quality slightly adjust the air needle valve. (Note: Opening the air needle valve more than one full turn will not have any effect. Normally 1/4 turn clockwise is more than enough.) Turn counterclockwise for dryer foam, clockwise for wetter foam. Wet foam will clean and cling to the surface longer!
5. When foaming is completed:
    - Release the trigger.
    - Return to the unit and close the air inlet ball valve.
    - Briefly depress the trigger to relieve pressure in the hose.

If unit will be out of service for a long period, follow Preventive Maintenance steps at bottom of page 4.

METERING TIP SELECTION

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 40 PSI
Brown	0.56	154.4:1
Clear	0.88	97.9:1
Bright Purple	1.38	62.1:1
White	2.15	39.5:1
Pink	2.93	28.7:1
Corn Yellow	3.84	21.7:1
Dark Green	4.88	16.8:1
Orange	5.77	14.1:1
Gray	6.01	13.5:1
Light Green	7.01	11.4:1
Med. Green	8.06	9.8:1
Clear Pink	9.43	8.2:1
Yellow Green	11.50	6.6:1
Burgundy	11.93	6.3:1
Pale Pink	13.87	5.3:1
Light Blue	15.14	4.7:1
Dark Purple	17.88	3.9:1
Navy Blue	25.36	2.4:1
Clear Aqua	28.60	2.0:1
Black	50.00	-
No Tip		1:1

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

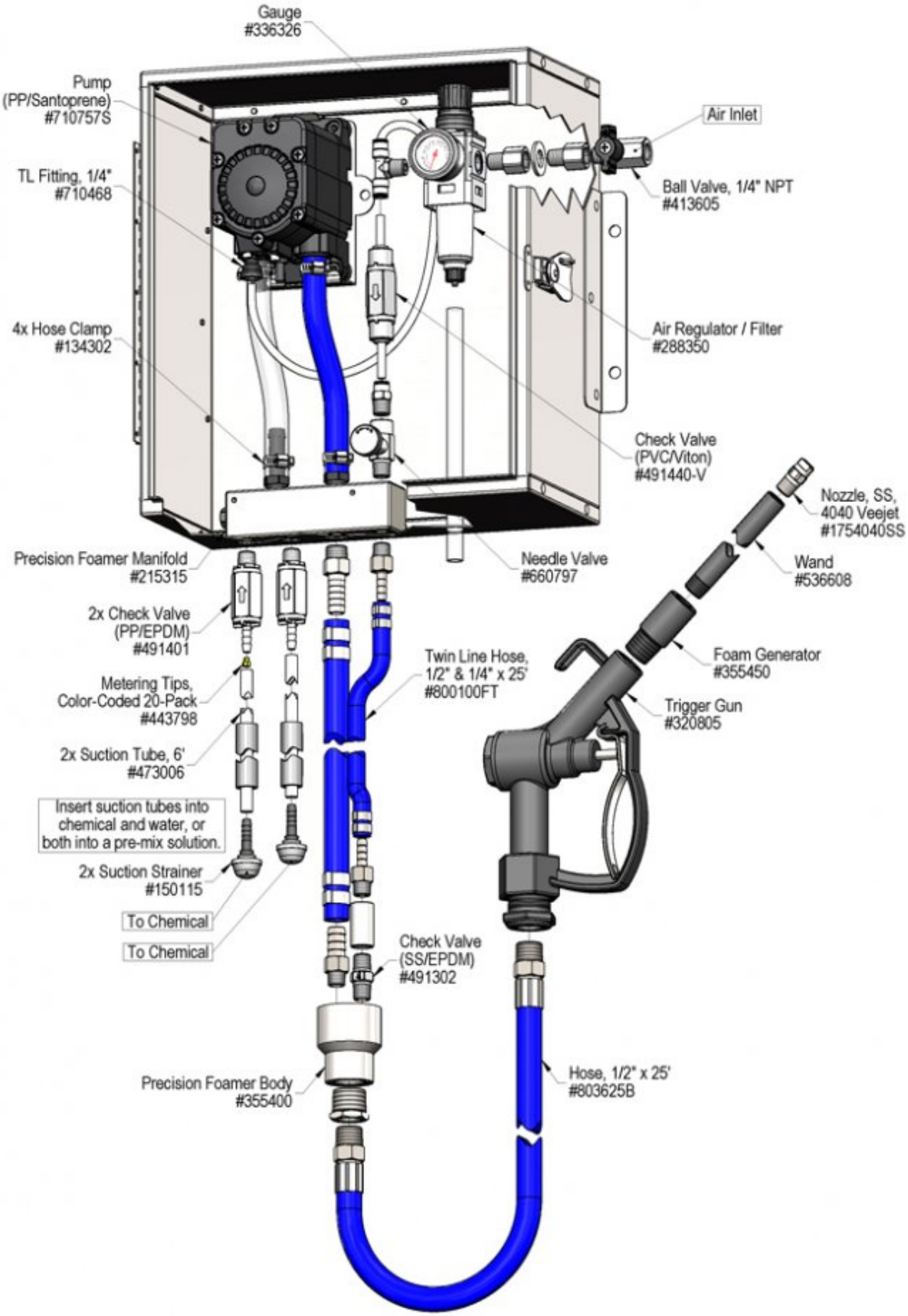
FORMULA

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

Pressure	Flow Rate
PSI	**GPM**
60	.68


Gauge
#336326
Pump
(PP/Santoprene)
#710757S
TL Fitting, 1/4"
#710468
4x Hose Clamp
#134302
Air Inlet
Ball Valve, 1/4" NPT
#413605
Air Regulator / Filter
#288350
Check Valve
(PVC/Viton)
#491440-V
Nozzle, SS,
4040 Veejet
#1754040SS
Wand
#536608
Foam Generator
#355450
Trigger Gun
#320805
Precision Foamer Manifold
#215315
Needle Valve
#660797
2x Check Valve
(PP/EPDM)
#491401
Metering Tips,
Color-Coded 20-Pack
#443798
2x Suction Tube, 6'
#473006
Twin Line Hose,
1/2" & 1/4" x 25'
#800100FT
Insert suction tubes into
chemical and water, or
both into a pre-mix solution.
2x Suction Strainer
#150115
To Chemical
To Chemical
Check Valve
(SS/EPDM)
#491302
Precision Foamer Body
#355400
Hose, 1/2" x 25'
#803625B

Troubleshooting Guide

Problem	Possible Cause / Solution	
	Startup	Maintenance
A) Air pump will not run/will not pump.	1, 2, 3, 4, 7	9, 12, 13, 14, 15, 16
B) Pump runs too fast with no output.	1, 4	9, 10, 11, 12, 13, 14, 15
C) Unit will not draw chemical.	1, 3, 4	9, 10, 11, 12, 13, 15
D) Cleaning results not acceptable	5, 6, 8	9, 10, 11,12,15,16

Possible Cause / Solution

Startup

1. **Air pressure too high or too low (60 PSI factory set)**
   - Open air ball valve fully.
   - Adjust the air regulator clockwise to increase pressure or counterclockwise to decrease
   - Do not exceed 90 PSI. Higher pressure will cause permanent damage to the air pump.
2. **Discharge hose is long.**
   - Give it plenty of time to fill the hose and reach the end.
3. **Discharge hose kinked**
4. **Suction tube(s) not immersed / Chemical or water depleted**
   - Fully immerse both tubes
   - Replenish chemical
5. **Dilution too weak**
   - Adjust dilution to be stronger. *See page 2, How to Set & Adjust Dilution Ratios*
6. **Improper chemical**
   - Ensure product is recommended for foaming and/or the application.
7. **Ice particles from condensation in air line — Air pump can periodically "freeze up" (stall) due to ice particles in the pump's exhaust (depending on air humidity & other factors)**
   - WAIT several seconds to allow the ice particles to melt and blow out, at which time the pump will automatically resume pumping.
8. **Soil has hardened on surface**
   - Always rinse foam before it dries.

Maintenance

9. **Foam output too dry, not cleaning**
   - Turn foam consistency knob slightly clockwise. Wet foam cleans better.
10. **Suction tube(s) blocked or stretched out where tube slides over hose barb or pin hole/cut in tube (sucking air in)**
    - Clean strainers. (Replace if missing.)
    - Cut off end of tube or replace tube.
11. **Vacuum leak in solution pick-up connections (sucking air in)**
    - Check and tighten suction connections.
12. **Water and/or chemical check valve stuck or clogged**
    - Clean or replace.
13. **Foam generator or foamer body clogged up with dried chemical**
    - Clean/flush out with hot water, soak in a de-scaling acid or replace foam generator.
14. **Air regulator / Air filter clogged or failed**
    - Clean or replace
15. **Problem with air pump**
    - Refer to air pump instruction manual.
    - https://www.xylem.com/en-us/brands/Flojet/flojet-products/g57-air-operated-double-diaphragm-pump
    - Replace pump.
16. **Use of an oiler in the airline will cause poor performance or cause pump to stall and cause damage.**

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.