Lafferty Equipment Manufacturing, LLC
Installation & Operation Instructions

Model # 935105 · Bullet Foamer

REQUIREMENTS

Chemical Concentrate
Static Tank of Water

Compressed Air	up to 3 CFM @ 60 PSI
Hose	3/8" ID x 50'
Nozzle	#10 Bullet Airless Foam

OPTIONS

Stainless Steel Hose Racks

Large Stainless Steel Hose Rack	# 224150

Stainless Steel Jug Racks Available

For Stronger Ratios or Viscous Chemicals

1/2" Chemical Pick-up Assembly (Viton)	# 491404-A
1/2" Chemical Pick-up Assembly (EPDM)	# 491403-A

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

Lafferty EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

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WARNING! READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

OVERVIEW

The Bullet™ Foamer is a low volume foam applicator that is ideal for applying foaming chemicals to close-up surfaces and hard to reach areas. A Flojet air-operated, double-diaphragm pump draws ready-to-use chemical from one static tank or blends water and chemical concentrate from two static tanks to create a wide range of dilution ratios. The solution is then projected through the discharge hose, extended wand and Bullet™ nozzle which draws in atmospheric air to create wet, clinging foam. This unique nozzle can be adjusted to project a wide or narrow foam pattern.

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.

- **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. With foam wand in hand open the inlet ball valve.
2. Open the discharge ball valve to begin application.
3. To switch to a wide or narrow pattern turn the Bullet nozzle clockwise 1/4 turns.
4. Make final metering tip adjustments based on application results.
5. When foaming is completed, close the discharge ball valve then close the inlet ball valve.
6. Briefly re-open the discharge ball valve to relieve pressure in hose. Rinse the work surface before foam dries.

METERING TIP SELECTION

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 40 PSI
Brown	0.56	229:1
Clear	0.88	145:1
Bright Purple	1.38	93:1
White	2.15	60:1
Pink	2.93	44:1
Corn Yellow	3.84	33:1
Dark Green	4.88	26:1
Orange	5.77	22:1
Gray	6.01	21:1
Light Green	7.01	18:1
Med. Green	8.06	16:1
Clear Pink	9.43	14:1
Yellow Green	11.50	11:1
Burgundy	11.93	11:1
Pale Pink	13.87	9:1
Light Blue	15.14	8:1
Dark Purple	17.88	7:1
Navy Blue	25.36	5:1
Clear Aqua	28.60	4:1
Black	50.00	3:1
No Tip Ratio Up To:		1:1

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

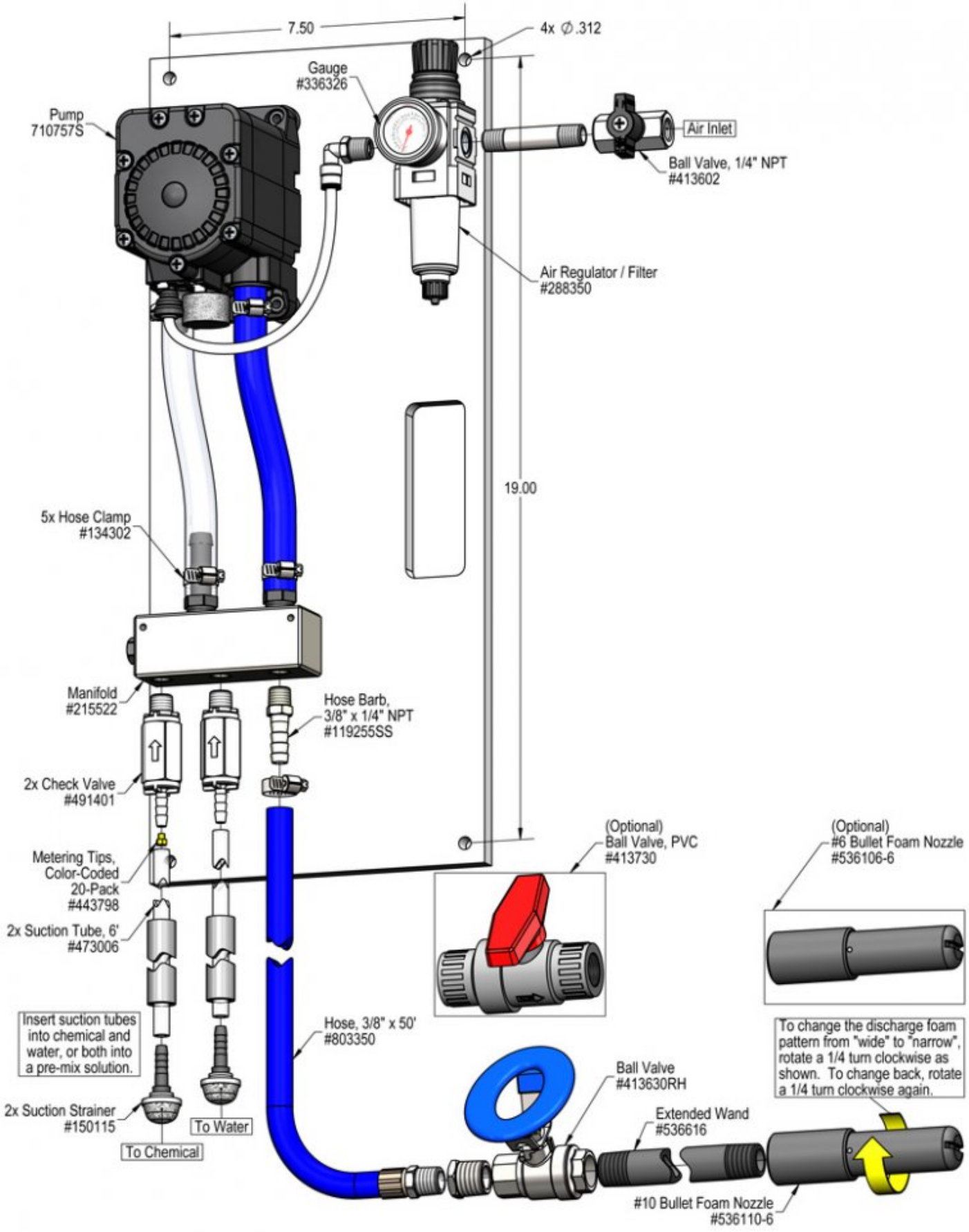
FORMULA

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

PSI	GPM
40	1.00
50	1.12
60	1.22
70	1.32
80	1.41


7.50
4x ⌀.312
Gauge
#336326
Pump
710757S
Air Inlet
Ball Valve, 1/4" NPT
#413602
Air Regulator / Filter
#288350
19.00
5x Hose Clamp
#134302
Manifold
#215522
Hose Barb,
3/8" x 1/4" NPT
#119255SS
2x Check Valve
#491401
Metering Tips,
Color-Coded
20-Pack
#443798
2x Suction Tube, 6'
#473006
Insert suction tubes into chemical and water, or both into a pre-mix solution.
2x Suction Strainer
#150115
To Water
To Chemical
(Optional)
Ball Valve, PVC
#413730
Hose, 3/8" x 50'
#803350
Ball Valve
#413630RH
Extended Wand
#536616
#10 Bullet Foam Nozzle
#536110-6
(Optional)
#6 Bullet Foam Nozzle
#536106-6
To change the discharge foam pattern from "wide" to "narrow", rotate a 1/4 turn clockwise as shown. To change back, rotate a 1/4 turn clockwise again.

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
B) Pump runs too fast with no output.	1, 4	9, 10, 11, 12, 13, 14
C) Unit will not draw chemical.	1, 3, 4, 8	9, 10, 11,13
D) Poor foam quality or cleaning results.	5, 6	9, 10, 11,12

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 the solution plenty of time to fill the hose and reach the end.
3. **Discharge hose kinked**
4. **Suction tube not immersed / Chemical depleted**
   - Fully immerse tube
   - Replenish chemical
5. **Dilution too weak**
   - Install larger metering tip.
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.

Maintenance

8. **Foam output too wet**
   - Ensure air pressure is at least 60 PSI.
9. **Suction tube blocked or stretched out where tube slides over hose barb or pin hole/cut in tube (sucking air in)**
   - Cut off end of tube or replace tube.
10. **Vacuum leak in solution pick-up connections (sucking air in)**
    - Check and tighten suction connections.
11. **Chemical strainer stopped up**
    - Clean strainer or replace if missing.
12. **Bullet Airless foam nozzle clogged**
    - Clean/flush out with hot water, soak in a de-scaling acid or replace.
13. **Air regulator / Air filter clogged or failed**
    - Clean or replace
14. **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.
15. **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.