Lafferty Equipment Manufacturing, LLC
Installation & Operation Instructions

Model # 912143 · BPSS Foam / Rinse / BPSS Foam Hose Drop Station

REQUIREMENTS

Chemical Concentrate

Water

Temperature	up to 180°F
Pressure	125 to 350 PSI
Flow	13.4 GPM @ 250 PSI
Supply Line	3/4"
Compressed Air	up to 4 CFM

Hose

Foam	3/4" ID x 50'
Rinse	1/2" ID x 50'
Foam	3/4" ID x 50'

Nozzle

Foam	65300
Rinse	Trigger Gun, 1/2"
Foam	65300

OPTIONS

Stainless Steel Hose Racks

Large Stainless Steel Hose Rack	# 224150

Stainless Steel Jug Racks

Jug Rack, SS, 1 Gallon, Round/Square	# 224200
Jug Rack, SS, 2 1/2 Gallon	# 224210
Jug Rack, SS, 5 Gallon, Round/Square	# 224215

Safe Flow Lid™ for 1 Gallon Jugs

Lid, Suction Tube, and Strainer	# 709101

Alternate Check Valves - EPDM Standard

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

WEIGHT & DIMENSIONS

Single Package

Shipping Weight	56 lbs.
Shipping Dimensions	28" x 28" x 8"

Lafferty EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

www.laffertyequipment.com
501-851-2820

WARNING! READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

OVERVIEW

The BPSS Foam / Rinse / BPSS Foam Hose Drop Station is a combination system that applies one chemical as foam, rinses, and applies a second chemical as foam. This venturi injection system uses boosted water pressure (125 - 350 PSI) to draw and blend chemical concentrates into the water streams to create accurately diluted solutions using precision metering tips to control chemical usage. Rich, clinging foam is created by injecting compressed air into the foaming solution to greatly increase volume and coverage ability. The foaming solution is then projected through the foam hose and fan nozzle at distances up to 13 feet. Rinse at full pressure using the adjustable spray pattern trigger gun.

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 hoses as shown in the diagram and close the inlet ball valves.
3. Flush any new plumbing of debris.
4. Connect water supply.
5. Connect compressed air supply. If piping 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 FOAM

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 the water ball valve, and the air ball valve.
    - Wait a few seconds and observe foam consistency.
    - 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! Very 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. Rinse the work surface before foam dries.

TO RINSE

1. Open the inlet ball valve then pull the trigger to begin rinsing.
2. When rinsing is complete, release trigger, return to the unit and close the inlet ball valve. Pull trigger to relieve pressure in hose.

METERING TIP SELECTION

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 250 PSI		
		FOAM	RINSE	FOAM
Brown	0.56	679:1	—	679:1
Clear	0.88	432:1	—	432:1
Bright Purple	1.38	275:1	—	275:1
White	2.15	177:1	—	177:1
Pink	2.93	130:1	—	130:1
Corn Yellow	3.84	99:1	—	99:1
Dark Green	4.88	78:1	—	78:1
Orange	5.77	66:1	—	66:1
Gray	6.01	63:1	—	63:1
Light Green	7.01	54:1	—	54:1
Med. Green	8.06	47:1	—	47:1
Clear Pink	9.43	40:1	—	40:1
Yellow Green	11.50	33:1	—	33:1
Burgundy	11.93	32:1	—	32:1
Pale Pink	13.87	27:1	—	27:1
Light Blue	15.14	25:1	—	25:1
Dark Purple	17.88	21:1	—	21:1
Navy Blue	25.36	15:1	—	15:1
Clear Aqua	28.60	13:1	—	13:1
Black	50.00	8:1	—	8:1
No Tip Ratio Up To:		6:1	—	6:1

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

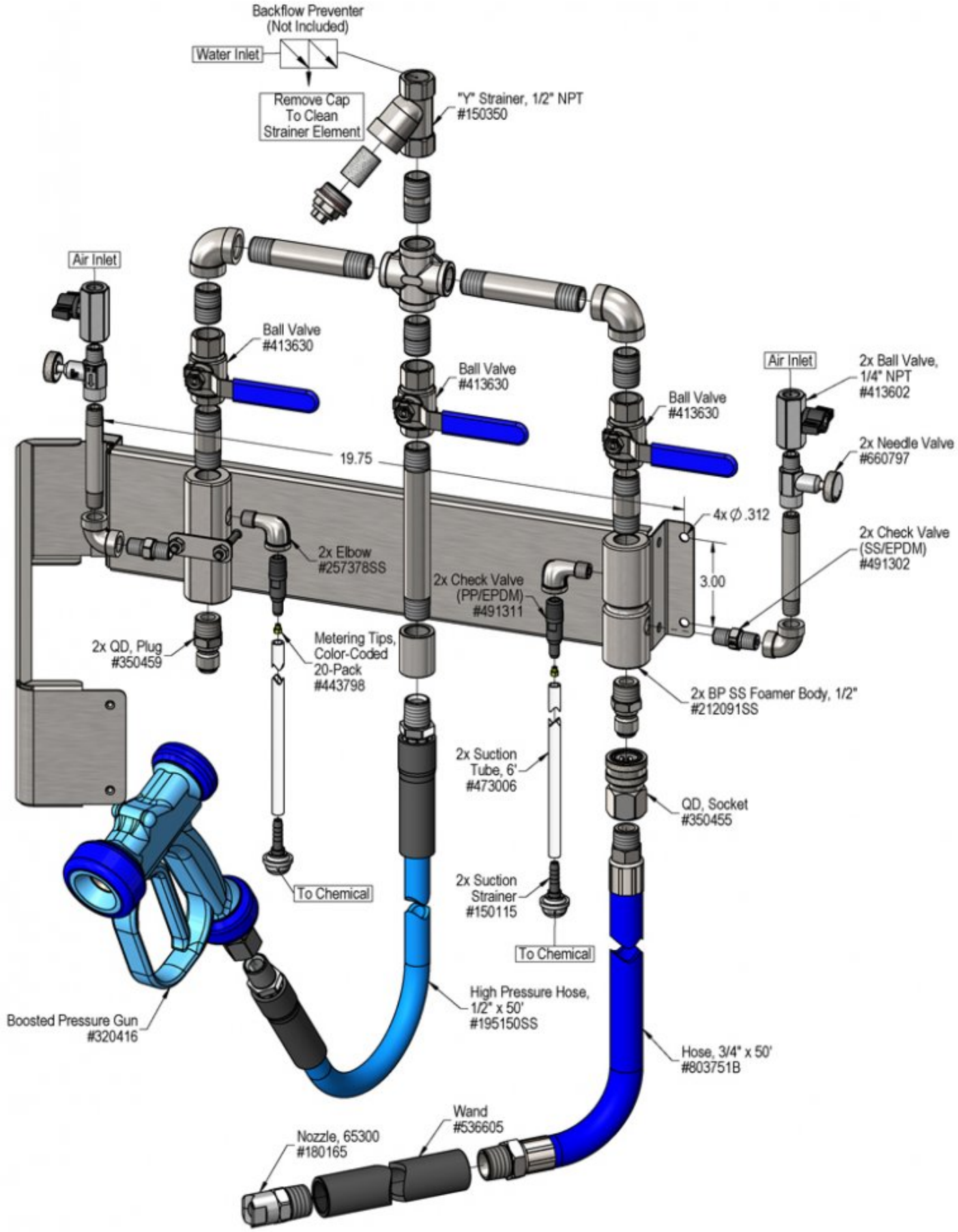
FORMULA

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		
	FOAM	RINSE	FOAM
125	2.10	9.49	2.10
150	2.30	10.40	2.30
200	2.66	12.01	2.66
250	2.97	13.43	2.97
300	3.25	14.71	3.25
350	3.51	15.89	3.51


Backflow Preventer
(Not Included)
Water Inlet
Remove Cap
To Clean
Strainer Element
"Y" Strainer, 1/2" NPT
#150350
Air Inlet
Ball Valve
#413630
Ball Valve
#413630
Ball Valve
#413630
Air Inlet
2x Ball Valve,
1/4" NPT
#413602
2x Needle Valve
#660797
19.75
4x Ø .312
3.00
2x Elbow
#257378SS
2x Check Valve
(PP/EPDM)
#491311
2x Check Valve
(SS/EPDM)
#491302
2x QD, Plug
#350459
Metering Tips,
Color-Coded
20-Pack
#443798
2x BP SS Foamer Body, 1/2"
#212091SS
2x Suction
Tube, 6'
#473006
QD, Socket
#350455
To Chemical
2x Suction
Strainer
#150115
To Chemical
High Pressure Hose,
1/2" x 50'
#195150SS
Boosted Pressure Gun
#320416
Hose, 3/4" x 50'
#803751B
Wand
#536605
Nozzle, 65300
#180165

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.