Lafferty Equipment Manufacturing, LLC
Installation & Operation Instructions

Model # 975921 · Portable 5 Gallon Conveyor-Mate™ LV Foam System

REQUIREMENTS

Chemical Concentrate

Water

Temperature	up to 160°F
Pressure	35 to 125 PSI
Flow	0.65 GPM @ 40 PSI
Supply Line	1/2"
Compressed Air	up to 1.25 CFM
Nozzle	100 Spreader
Hose	3/4" ID x 5'

OPTIONS

Square Jug Rack Conversion
Specify Round or Square Jug Racks at time of order

Alternate Check Valves - EPDM Standard

Check Valve, Chemical, SS, Viton, 1/4"	# 491324-V
Check Valve, Air, SS, 1/4" MM (Viton / Hast)	# 491306

Lafferty EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

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WARNING! READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

OVERVIEW

The LV Conveyor-Mate™ is a portable foaming system designed specifically for Clean-In-Place foaming onto conveyor belts up to 32" wide. This venturi dilution system uses city water pressure (35 - 125 PSI) to accurately draw and blend chemical concentrate into the water stream. Compressed air is added to create rich clinging foam. The fully adjustable foam arm extends vertically and horizontally to virtually any position. The unique stainless steel Spreader Nozzle™ creates a wide foam pattern that can be adjusted and rotated to ensure optimal coverage at any angle.

SAFETY & OPERATIONAL PRECAUTIONS

- **When connecting to a potable water supply follow all local codes for backflow prevention.**
- 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.
- NEVER mix chemicals without first consulting chemical manufacturer.

TO INSTALL (REFER TO DIAGRAM ON NEXT PAGE)

1. Place a container of chemical concentrate in the jug rack.
2. See below for metering tip settings.
3. Push Conveyor-Mate to a suitable location for initial testing and lock front wheels.
4. Connect the water and compressed air supply as shown in the diagram.
5. Position foam arm(s)
    - Loosen L-bolts on arm(s) and lock at the desired horizontal and vertical positions for testing. Only adjust one position at a time.
    - Connect the hoses to the foam arm(s) as shown.

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

1. Completely open water and air ball valve(s).

NOTE: 2-arm units have 2 foamer bodies/arms/nozzles with independent activation ball valves. Installation and operation for 1 and 2-arm models is fundamentally the same.

2. Wait a few seconds for output to stabilize and observe foam consistency.
3. To adjust foam consistency, pull out on the air regulator knob. Turn slightly clockwise for dryer foam and counterclockwise for wetter foam. Wait a few seconds to see the result of each adjustment.
    - Use the least amount of air needed to achieve good foam quality to prevent water pressure fluctuations from affecting performance. Air pressure must be kept lower than water pressure.
    - 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 and desired foam consistency is achieved, push lock the knob on the air regulator. You are ready to start application.
4. Reposition cart beside the conveyor, lock front wheels, and adjust foam arms to position nozzle along center of belt.
5. Adjust position and orientation of foam arms and nozzles to achieve desired coverage.
    - *NOTE: Coverage width increases with distance from object being foamed.*
        - 6" distance = 12" coverage
        - 12" distance = 20" coverage
        - 24" distance = 32" coverage
    - TIP: If unable to achieve the desired distance from belt due to space constraints, angle the arm so the nozzle projects foam outward instead of straight down. Nozzles can be rotated if they cannot be positioned over belt center.
6. When foaming is complete:
    - Close water ball valves.
    - Allow hoses to empty.
    - Close air ball valves.
    - Disconnect hoses from foam arms.
    - Collapse foam arms and disconnect air and water supply. The unit is now ready to be moved.

METERING TIP SELECTION

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 40 PSI
Brown	0.56	149:1
Clear	0.88	95:1
Bright Purple	1.38	60:1
White	2.15	39:1
Pink	2.93	28:1
Corn Yellow	3.84	22:1
Dark Green	4.88	17:1
Orange	5.77	14:1
Gray	6.01	14:1
Light Green	7.01	12:1
Med. Green	8.06	10:1
Clear Pink	9.43	9:1
Yellow Green	11.50	7:1
Burgundy	11.93	7:1
Pale Pink	13.87	6:1
Light Blue	15.14	5:1
Dark Purple	17.88	—
Navy Blue	25.36	—
Clear Aqua	28.60	—
Black	50.00	—
No Tip Ratio Up To:		5:1

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

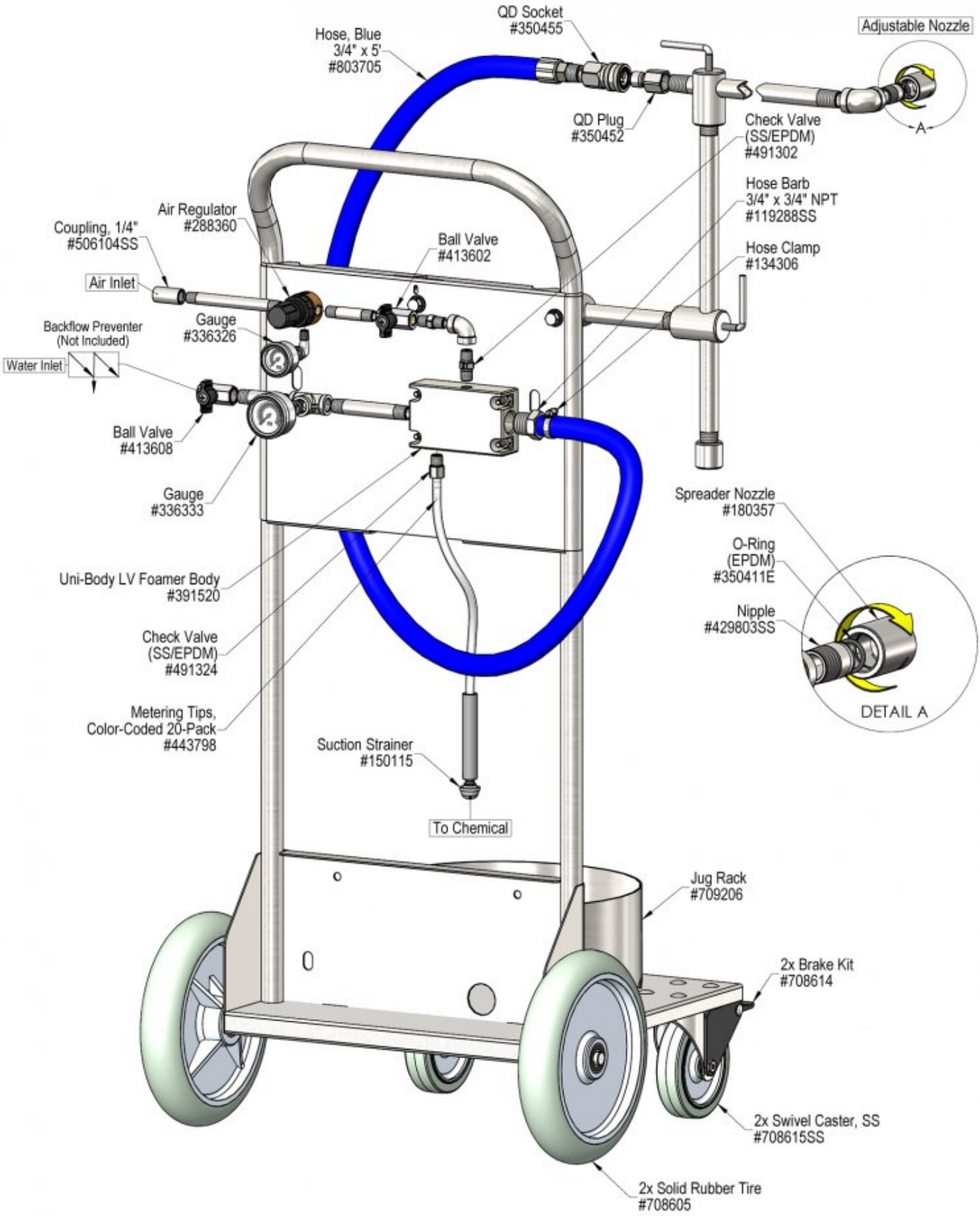
FORMULA

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
35	0.61
40	0.65
50	0.73
60	0.80
70	0.86
80	0.92
90	0.98
100	1.03
110	1.08
120	1.13
125	1.15


QD Socket
#350455
Hose, Blue
3/4" x 5'
#803705
Adjustable Nozzle
QD Plug
#350452
Check Valve
(SS/EPDM)
#491302
A
Hose Barb
3/4" x 3/4" NPT
#119288SS
Air Regulator
#288360
Coupling, 1/4"
#506104SS
Ball Valve
#413602
Hose Clamp
#134306
Air Inlet
Gauge
#336326
Backflow Preventer
(Not Included)
Water Inlet
Ball Valve
#413608
Gauge
#336333
Spreader Nozzle
#180357
O-Ring
(EPDM)
#350411E
Nipple
#429803SS
DETAIL A
Uni-Body LV Foamer Body
#391520
Check Valve
(SS/EPDM)
#491324
Metering Tips,
Color-Coded 20-Pack
#443798
Suction Strainer
#150115
To Chemical
Jug Rack
#709206
2x Brake Kit
#708614
2x Swivel Caster, SS
#708615SS
2x Solid Rubber Tire
#708605

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.		18
H) Air or chemical solution backing up into water line.		20

Possible Cause / Solution

Startup

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

Maintenance

12. **Foamer inlet orifice clogged**
    - Check/clean inlet orifice for obstructions. DO NOT DRILL OUT. Install a water filter.
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 chemical tube sucking air.**
    - Cut off end of tube or replace tube.
15. **Vacuum leak in chemical pick-up connections**
    - Tighten the connection.
16. **Air regulator failed allowing too much air or not enough air**
    - Clean or replace.
17. **Air check valve failed**
    - Clean or replace.
18. **Chemical check valve stuck or failed**
    - Clean or replace.
19. **Hard water scale or 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 or descaling acid. When there is no draw at all, carefully remove fittings and soak entire body in descaling acid.
20. **No backflow preventer installed and/or inlet ball valve left on when not in use**
    - Install appropriate backflow preventer into water line.

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.