

# Lafferty Equipment Manufacturing, LLC Installation & Operation Instructions

## Model # 976651 · Satellite Entryway MV Foam Sanitizer

### REQUIREMENTS

#### Chemical Concentrate

#### Water

Temperature	up to 160°F
Pressure	35 to 125 PSI
Flow	2.45 GPM @ 40 PSI
Supply Line	1/2"

#### Compressed Air

up to 4 CFM

#### Hose

1" ID x 10'

#### Nozzle

MV Entryway Spreader

### OPTIONS

#### Stainless Steel Jug Racks

2 ½ Gallon (8 ½" x 10 ½")	# 224210
5 Gallon Round/Square Locking (12" x 12")	# 224214
5 Gallon Round/Square (12" x 12")	# 224215

#### Regulate the Operation of Multiple Satellite Entryway Foam Sanitizers

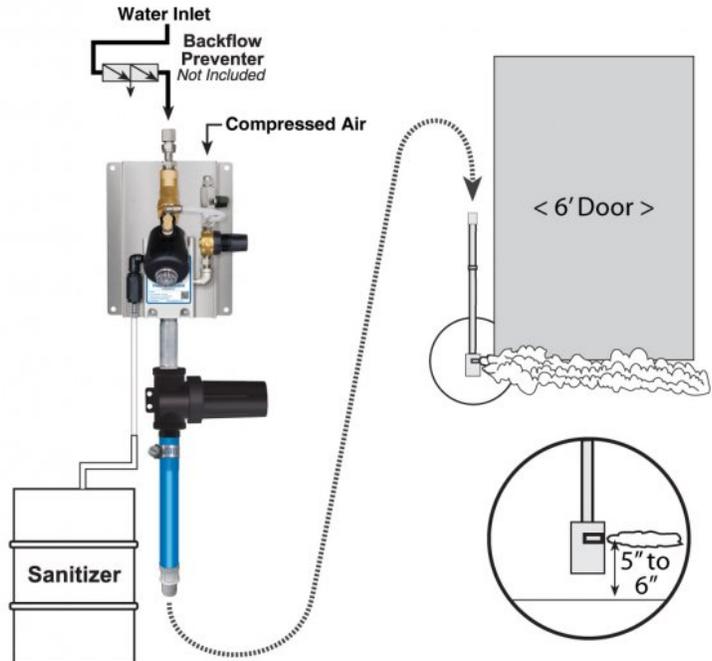
Timed Entryway Satellite Controller (120V)	# 976625
Timed Entryway Satellite Controller (24V)	# 976625-24V
PLC Jazz Entryway Satellite Controller (120V)	# 976630
PLC Jazz Entryway Satellite Controller (24V)	# 976630-24V

#### Dual Pick-up Assembly

Entryway Dual Chemical Pick-up Assembly	# 976012
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#### Alternate Chemical Check Valve - Viton Standard

Check Valve, Chemical, PP(W), 1/4" (EPDM)	# 491401
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**Lafferty**  
EQUIPMENT MANUFACTURING LLC  
CFS TECHNOLOGIES

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**WARNING! READ ALL  
INSTRUCTIONS BEFORE  
USING EQUIPMENT!**

### OVERVIEW

The Satellite Entryway MV Foam Sanitizer is an automated foam applicator for projecting sanitizing chemicals on to floors of 6' wide double doors to prevent cross contamination. When activated, this venturi injection system uses city water pressure (35 - 125 PSI) to draw and blend chemical concentrate 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. Foam is then projected through the discharge hose and Spreader™ nozzle. Up to 10 Satellite units are activated and operated by compressed air from a timed Entryway Satellite Controller - no electrical connection is required at the entryway location. All units will activate and deactivate at the same time.

**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)**

Illustration on Page 1 shows overall system setup.

Run a common 1/2" ID compressed air supply line from the Satellite Controller to each Satellite . The size of the airline may need to be 3/4" depending on the distance and number of Satellite Entryway Foamers being installed. You will need up to 4 CFM at 60 PSI per station. If in doubt, **oversize** the airline. You can use short 3/8" tubing to connect the main airline to each Satellite.

1. Install foam enhancer to entryway foamer discharge. The arrow on the foam enhancer should point UP - opposite the flow direction.
2. Mount the Satellite to a suitable surface above chemical supply to prevent siphoning
3. Connect the unit to the spreader nozzle using only the provided 10' hose, or extend the discharge using hose or piping that matches the ID of the provided hose (hose ID is very important). Use as few elbows as possible. Minimum length of the total hose/pipe between unit and nozzle is 10'.
4. Mount the spreader nozzle slot several inches off the ground (refer to Page 1 illustration for details)
5. Connect water supply
6. Connect airline from the Satellite Controller to the unit and close the air ball valve.

**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**

**Testing & Adjustment**

The Satellite Entryway Foam Sanitizer is equipped with an air ball valve. While testing and adjusting the unit, or in case of an emergency, the unit can be shut off by closing the air ball valve completely. The unit will not operate when the air ball valve is closed, regardless of the central Satellite Controller settings. **Do not use the air ball valve to control air flow.** This ball valve must be fully open for the unit to operate correctly.

**Recommended Testing Procedure** — You can temporarily, directly connect a separate compressed air supply to the unit.

1. Final metering tip/chemical dilution and air adjustments will now have to be made.
2. Open the air ball valve completely to activate the unit.
3. Wait a few seconds and observe foam consistency.
  - Use the least amount of air needed to achieve good foam quality to prevent solution pressure fluctuations from affecting performance. Air pressure must be kept lower than solution pressure.
  - 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 each adjustment
  - You may also have to try different dilution and air settings until foam consistency is acceptable. Once this is set and desired foam consistency is achieved push lock the knob. You are ready to start.

**Testing Procedure when unit is connected to a Timed or PLC Jazz Satellite Controller:**

1. Follow the instructions below for the Controller model you have installed.
  - **Timed Entryway Satellite Controller** — The timer is preset to run for 60 seconds to allow for final adjustments. Turn on power to the Controller then follow steps 2 and 3 under Recommended Testing Procedure, above.
  - **PLC Jazz Entryway Satellite Controller** — Turn off air to any additional satellite units that are connected to the controller. Follow the Jazz Controller instructions to set the system to Manual Operation (page 4) for several minutes then follow steps 2 and 3 under Recommended Testing Procedure, above.
2. When testing is complete, close the air ball valve at the unit. Follow the Controller instruction manual to re-set the Controller for standard operation.
3. Re-open the air ball valve at all units to allow activation by the Timed or PLC Jazz Controller.

**METERING TIP SELECTION**

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 40 PSI
Brown	0.56	560:1
Clear	0.88	356:1
Bright Purple	1.38	227:1
White	2.15	146:1
Pink	2.93	107:1
Corn Yellow	3.84	82:1
Dark Green	4.88	64:1
Orange	5.77	54:1
Gray	6.01	52:1
Light Green	7.01	45:1
Med. Green	8.06	39:1
Clear Pink	9.43	33:1
Yellow Green	11.50	27:1
Burgundy	11.93	26:1
Pale Pink	13.87	23:1
Light Blue	15.14	21:1
Dark Purple	17.88	18:1
Navy Blue	25.36	12:1
Clear Aqua	28.60	11:1
Black	50.00	6:1
No Tip Ratio Up To:		6:1

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

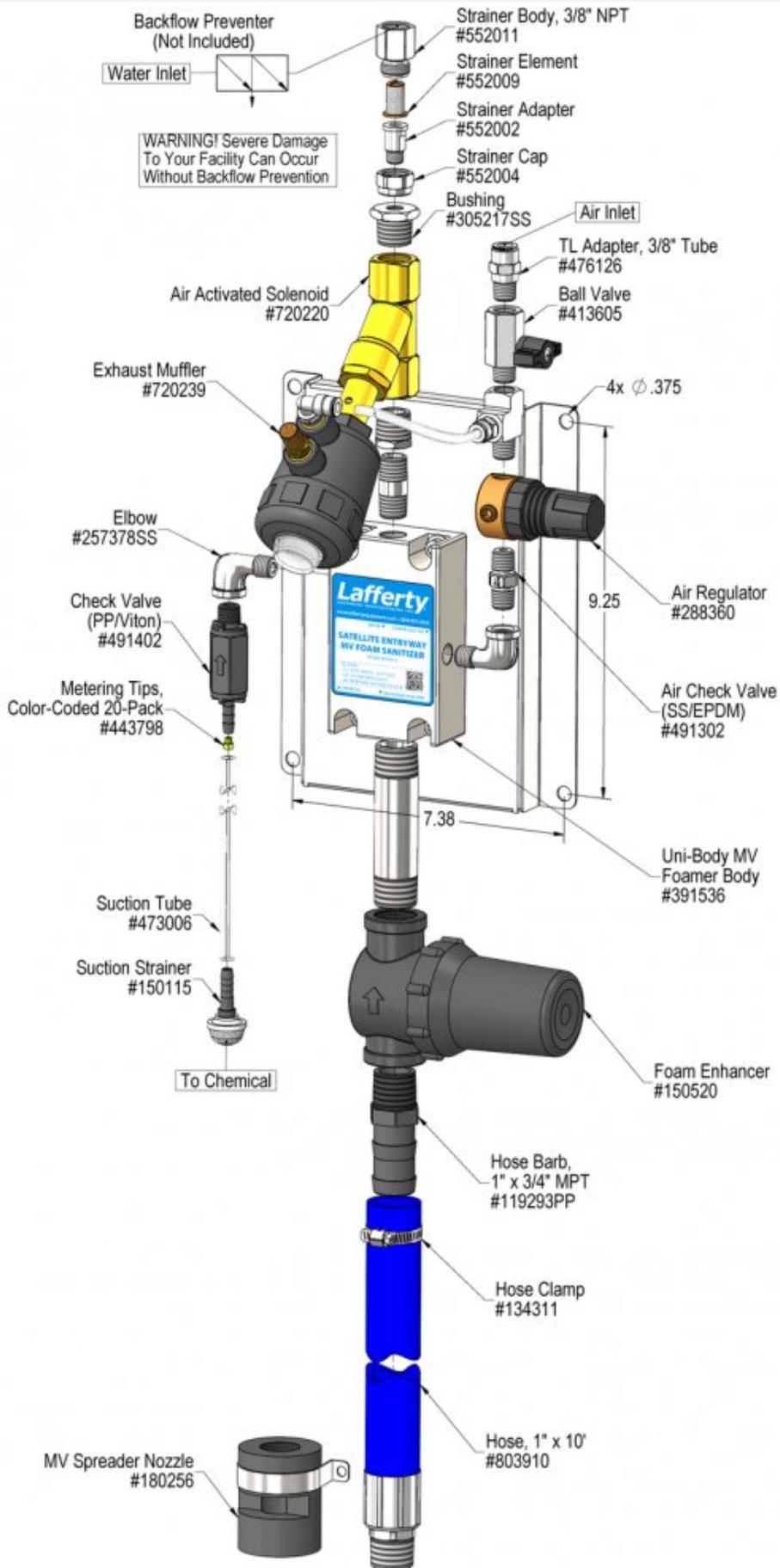
**FORMULA**

**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
35	2.29
40	2.45
50	2.74
60	3.00
70	3.24
80	3.46
90	3.68
100	3.87
110	4.06
120	4.24
125	4.33



## Troubleshooting Guide

Problem	Possible Cause / Solution	
	Startup	Maintenance
A) Foamer will not draw chemical.	1, 7, 8, 9, 10	13, 14, 15, 16, 17, 19, 20
B) Foam surges.	1, 2, 3, 4, 6, 7, 8, 9, 10	13, 14, 15, 16, 17, 19, 20
C) Foam output too wet.	2, 3, 4, 6, 7, 8, 9, 10	13, 14, 15, 16, 17, 18, 19, 20
D) Foam output too dry.	1, 5	17
E) Doesn't come on when switch is turned on.	11,12	
F) Comes on and runs continuously.	11	
G) Comes on but no water through solenoid.	10	19
H) Air or solution backing up into water line.		21

Possible Cause / Solution	
Startup	Maintenance
<p><b>1. Air pressure too high</b></p> <ul style="list-style-type: none"> <li>◦ Adjust air regulator slowly counterclockwise until output stabilizes.</li> </ul> <p><b>2. Air adjustment too low</b></p> <ul style="list-style-type: none"> <li>◦ Adjust air regulator very slowly clockwise.</li> </ul> <p><b>3. Use of an oiler in the airline will cause poor foam quality</b></p> <ul style="list-style-type: none"> <li>◦ Use only clean, dry air.</li> </ul> <p><b>4. Not enough chemical - metering tip too small</b></p> <ul style="list-style-type: none"> <li>◦ Install larger metering tip.</li> </ul> <p><b>5. No metering tip installed or metering tip too large</b></p> <ul style="list-style-type: none"> <li>◦ Install smaller metering tip.</li> </ul> <p><b>6. Improper chemical</b></p> <ul style="list-style-type: none"> <li>◦ Ensure product is recommended for foaming and/or the application.</li> </ul> <p><b>7. Chemical tube not immersed in chemical or chemical depleted</b></p> <ul style="list-style-type: none"> <li>◦ Immerse tube or replenish</li> </ul> <p><b>8. Foam hose kinked or hose/plumbing too short or wrong size</b></p> <ul style="list-style-type: none"> <li>◦ (See REQUIREMENTS on page 1)</li> </ul> <p><b>9. Water pressure too low or water volume too low/inlet piping too small</b></p> <ul style="list-style-type: none"> <li>◦ Increase water pressure or water volume. (See REQUIREMENTS on page 1)</li> </ul> <p><b>10. No water to the unit</b></p> <ul style="list-style-type: none"> <li>◦ Ensure that the water supply is not shut off to the unit.</li> </ul> <p><b>11. Timer failed/Controller not set properly or malfunctioned</b></p> <ul style="list-style-type: none"> <li>◦ Replace timer. See Controller manual.</li> </ul> <p><b>12. May have electrical problems</b></p> <ul style="list-style-type: none"> <li>◦ Ensure circuit breaker (5 Amp) has not been tripped.</li> <li>◦ Have a qualified electrician check electrical connections.</li> </ul>	<p><b>13. Chemical check valve stuck or failed</b></p> <ul style="list-style-type: none"> <li>◦ Clean or replace.</li> </ul> <p><b>14. Chemical strainer or metering tip partially blocked</b></p> <ul style="list-style-type: none"> <li>◦ Clean or replace chemical strainer and/or metering tip.</li> </ul> <p><b>15. Chemical tube stretched out where tube slides over check valve or pin hole/cut in chemical tube (sucking air in)</b></p> <ul style="list-style-type: none"> <li>◦ Cut off end of tube or replace tube.</li> </ul> <p><b>16. Vacuum leak in chemical pick-up connections</b></p> <ul style="list-style-type: none"> <li>◦ Tighten the connections.</li> </ul> <p><b>17. Air regulator failed allowing too much air or not enough air</b></p> <ul style="list-style-type: none"> <li>◦ Clean or replace.</li> </ul> <p><b>18. Air check valve or air solenoid clogged or failed</b></p> <ul style="list-style-type: none"> <li>◦ Clean or replace.</li> </ul> <p><b>19. Water solenoid clogged or failed</b></p> <ul style="list-style-type: none"> <li>◦ Clean or replace the water solenoid.</li> </ul> <p><b>20. Chemical build-up may have formed in the body, causing poor or no chemical pick-up</b></p> <ul style="list-style-type: none"> <li>◦ 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.</li> </ul> <p><b>21. No backflow preventer installed</b></p> <ul style="list-style-type: none"> <li>◦ Install appropriate backflow preventer into water line.</li> </ul>

**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.

