Lafferty Equipment Manufacturing, LLC
Installation & Operation Instructions

Model # 976100 · Timed Air Pump Entryway Foam Sanitizer

REQUIREMENTS

Chemical Concentrate	
Temperature	up to 160°F
Pressure	20 to 60 PSI
Compressed Air	up to 7 CFM
Hose	3/4" ID x 10'
Nozzle	Entryway Spreader
Electric	120V

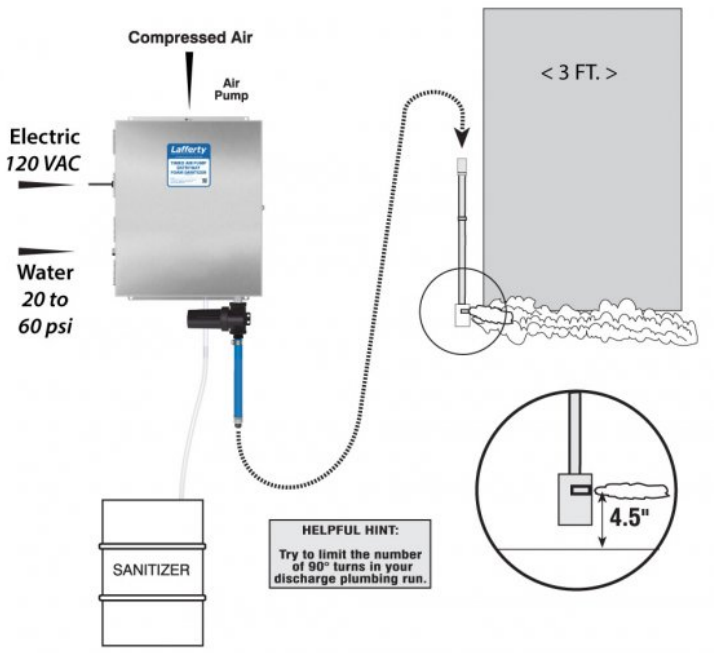
OPTIONS

Stainless Steel Jug Racks	
1 Gallon Round/Square	# 224200
1 Gallon Round/Square Locking	# 224200-L
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

Drum & Tote Stick Lengths & Seal Materials	
Drum Stick, 33" (Viton or EPDM)	# 491643 / 491643-E
Drum Stick, 48" (Viton or EPDM)	# 491648 / 491648-E
Drum Stick, 54" (Viton or EPDM)	# 491645 / 491645-E
Tote Stick, 33" (Viton or EPDM)	# 491653 / 491653-E
Tote Stick, 48" (Viton or EPDM)	# 491654 / 491654-E
Tote Stick, 54" (Viton or EPDM)	# 491656 / 491656-E

WEIGHT & DIMENSIONS

Single Package	
Shipping Weight	51 lbs.
Shipping Dimensions	34" x 29" x 11"



Lafferty® EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

www.laffertyequipment.com
501-851-2820

WARNING! READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

OVERVIEW

The Timed Air Pump Entryway Foam Sanitizer is an automated foam applicator for projecting sanitizing chemicals on to floors of 3' wide employee walk doors to prevent cross contamination. This system uses water pressure (20 - 60 PSI) to fill a small float tank. An air operated pump delivers the water at the appropriate pressure to a venturi injector which draws and blends 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. The system timer is user-programmable to meet the needs of any facility.

SAFETY & OPERATIONAL PRECAUTIONS

- **When connecting to a potable water supply follow all local codes for backflow prevention.**
- **See Additional Safety Precautions included with the Electrical Control Box Installation Information**
- **Always consider electrical shock hazard when working with and handling electrical equipment. If uncertain, consult an Electrician. Electrical wiring should only be done by a qualified Electrician.**
- For proper performance do NOT modify, substitute nozzle, hose diameter or electrical control box.
- 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.
- Disconnect electrical power to the control box prior to opening it.
- If the control box is connected to compressed air, the compressed air pressure should be kept to a maximum of 90 PSI.

TO INSTALL (REFER TO DIAGRAM ON NEXT PAGE)

Illustration on Page 1 shows overall system setup. Refer to companion instructions for control box upgrades.

1. Install foam enhancer to entryway foamer discharge. The arrow on the foam enhancer should point UP - opposite the flow direction.
2. Mount the unit 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 and compressed air to the unit.

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

TO TEST

1. Plug the power cord into a 120 VAC outlet.
2. The unit has been tested and the timer is preset to run for 60 seconds to allow for final adjustments. (ON TIME will activate first.) Open your water supply valve and allow the internal float tank to completely fill.
3. Turn on the air supply valve, and then turn on the power switch.
4. The unit will activate, the pump should be priming, the chemical will start to draw in a few seconds.
5. Final chemical dilution and air adjustments will now have to be made.
6. Wait a few seconds and observe foam consistency.
    - 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.
    - To adjust the 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 sized metering tips 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.

TIMER ADJUSTMENT

1. CAUTION! UNPLUG THE POWER CORD! Then open control box and adjust the timer. The ON TIME dip switches control how long the foam will be applied. The OFF TIME dip switches control how long the unit will stay off between foam applications. Add up the seconds for each activated dip switch to arrive at the desired duration of the ON cycle. Usually 8-10 seconds is sufficient to foam the floor (longer plumbing runs will require a longer application cycle). Add up the minutes for each activated dip switch to arrive at the desired duration of the OFF cycle. Set your OFF TIME to maintain the foam's presence according to your flow (anywhere from 6 to 15 minutes).
2. Close control box and plug in the power cord. Turn on the power switch. The unit will now function according to the timer settings. (ON TIME will activate first.)

- Note: The unit will run 24 hours a day unless the power switch is manually turned off.
- For extra foam at any time, press and hold the lower end (Momentary control) of the door switch. (See Switch Settings, below.)

SWITCH SETTINGS

- Automatic control – Top of switch is depressed. Green light glows.

METERING TIP SELECTION

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 60 PSI
Brown	0.56	375:1
Clear	0.88	239:1
Bright Purple	1.38	152:1
White	2.15	98:1
Pink	2.93	72:1
Corn Yellow	3.84	55:1
Dark Green	4.88	43:1
Orange	5.77	36:1
Gray	6.01	35:1
Light Green	7.01	30:1
Med. Green	8.06	26:1
Clear Pink	9.43	22:1
Yellow Green	11.50	18:1
Burgundy	11.93	18:1
Pale Pink	13.87	15:1
Light Blue	15.14	14:1
Dark Purple	17.88	12:1
Navy Blue	25.36	8:1
Clear Aqua	28.60	7:1
Black	50.00	—
No Tip Ratio Up To:		6:1

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

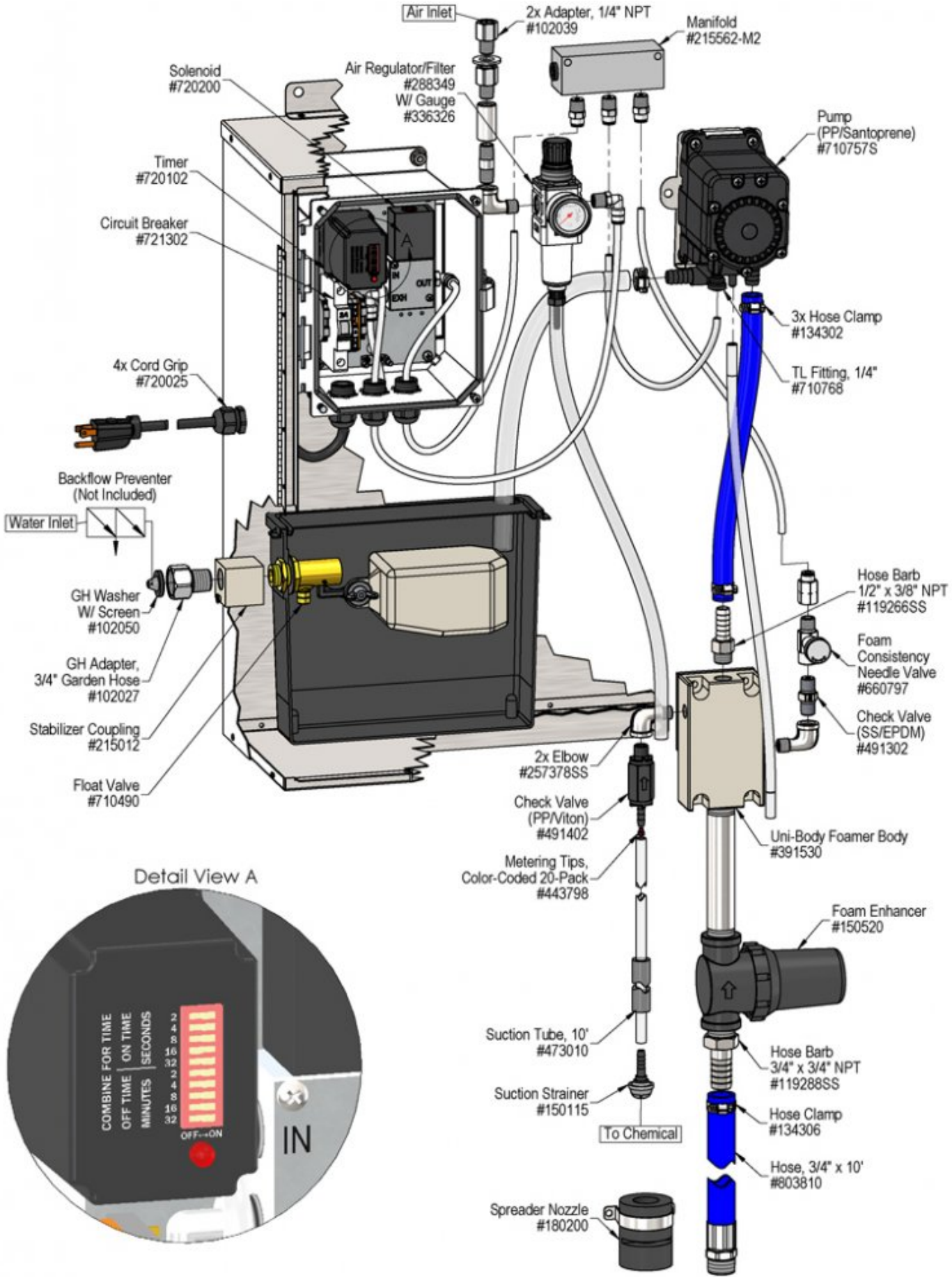
FORMULA

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
60	1.64


Air Inlet
2x Adapter, 1/4" NPT
#102039
Manifold
#215562-M2
Solenoid
#720200
Air Regulator/Filter
#288349
W/ Gauge
#336326
Pump
(PP/Santoprene)
#710757S
Timer
#720102
Circuit Breaker
#721302
3x Hose Clamp
#134302
4x Cord Grip
#720025
TL Fitting, 1/4"
#710768
Backflow Preventer
(Not Included)
Water Inlet
Hose Barb
1/2" x 3/8" NPT
#119266SS
GH Washer
W/ Screen
#102050
Foam
Consistency
Needle Valve
#660797
GH Adapter,
3/4" Garden Hose
#102027
Check Valve
(SS/EPDM)
#491302
Stabilizer Coupling
#215012
2x Elbow
#257378SS
Float Valve
#710490
Check Valve
(PP/Viton)
#491402
Uni-Body Foamer Body
#391530
Metering Tips,
Color-Coded 20-Pack
#443798
Detail View A
Foam Enhancer
#150520
COMBINE FOR TIME
OFF TIME
ON TIME
MINUTES
SECONDS
OFF ON
IN
Suction Tube, 10'
#473010
Hose Barb
3/4" x 3/4" NPT
#119288SS
Suction Strainer
#150115
Hose Clamp
#134306
To Chemical
Hose, 3/4" x 10'
#803810
Spreader Nozzle
#180200

Troubleshooting Guide

Problem	Possible Cause / Solution	
	Startup	Maintenance
A) Air pump will not pump or runs with no output.	1, 2, 4, 7	8, 9, 12, 13
B) Foam surges.	1, 2, 3, 4, 5, 6	9
C) Foam output too wet.	1, 2, 3, 4, 5, 6	9
D) Foam output too dry.	2	
E) Unit doesn't come on when switch is turned on.		12, 13
F) Unit comes on and runs continuously.		12, 13

Possible Cause / Solution

Startup

1. **Water or air inlet ball valve partially closed or air pressure too low.**
   - Completely open water and air inlet ball valves, air pressure should be set at 80 PSI.
2. **Foam consistency needle valve open too much**
   - Adjust the needle valve slowly clockwise until foam stabilizes. Turn round handle slightly clockwise for wetter foam; open counterclockwise for dryer foam. Open a maximum of 1 turn.
3. **Discharge hose/pipe too long or wrong size**
   - MUST use at least 10' of 3/4" hose or pipe. 25' is ideal, 40' maximum.
4. **Chemical tube not completely immersed in chemical or container empty**
   - Immerse tube or replenish chemical.
5. **Dilution too weak**
   - Keep trying the next larger metering tip untill results are achieved.
6. **Improper chemical**
   - Ensure product is recommended for foaming.
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. **Solution strainer blocked**
   - Clean or replace
9. **Air regulator failed**
   - Clean or replace
10. **Nozzle has been changed or missing**
    - See REQUIREMENTS.
11. **Problem with air pump**
    - Refer to air pump instruction manual. Replace pump.
12. **May have electrical problems**
    - Have a qualified electrician check for problems.
13. **Timers not set properly or malfunctioned**
    - See TIMER ADJUSTMENT on page 2 or replace timers.

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.