

Lafferty Equipment Manufacturing, LLC Installation & Operation Instructions

Model # 976831 · Timed Trench Foam Sanitizer

REQUIREMENTS

Chemical Concentrate

Water

Temperature	up to 160°F
Pressure	35 to 125 PSI
Flow	4 GPM @ 40 PSI
Supply Line	3/4"

Compressed Air

up to 4 CFM

Nozzle

Custom Foam Bar(s)

Hose

1" ID (Not Included)

Electrical Rating

~ 110/120V, 50/60Hz, 20W

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

Optional Foam Bars and Hoses

Hose, Blue, 1" x 1' (By Foot)	# 803900FT
Custom Length Foam Bars Available Upon Inquiry	

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

Alternate Chemical Check Valve - Viton Standard

Check Valve, Chemical, PP(W), 1/4" (EPDM)	# 491401
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501-851-2820

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

OVERVIEW

The Timed Trench Foam Sanitizer is an automated system for creating rich, thick foam sanitizer at regular, timed intervals, and feeding it to a foam bar located in the trench drain that needs to be sanitized. This venturi foamer uses city water pressure (35 - 125 PSI) to draw and blend chemical concentrate into the water stream and creates a wide range of dilution ratios. Rich, clinging foam is created by injecting compressed air into the solution to greatly expand volume and coverage ability. The system timer is user-programmable to meet the needs of any facility. Custom foam bars (sold separately) accommodate trench drains from 10' to 48' in length.

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)

1. Mount the unit to a suitable surface above the chemical supply to prevent siphoning.
2. Connect the discharge hose.
3. When connecting to a potable water supply follow all local codes for backflow prevention.
4. Connect water supply. To prevent blocking the small water jets in the foamer body, flush any new plumbing of debris before connecting. If water piping is older and has known contaminants, install a filter.
5. Connect air supply. If air line is older and has known contaminants install a filter.
6. When installing the foam bar in the trench, be certain that the bar is not resting on the bottom of the trench. The trench foam bar should be suspended above the bottom of the trench.

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

Always make sure the foam bar is connected 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 turn off water and air supplies

1. Make final metering tip adjustments based on foam quality and cleaning results.
2. With foam bar connected, activate water and air supplies.
 - 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.
 - Medium wet foam will give the best cleaning results! Dry foam will NOT clean as well!
 - Once desired metering tip and foam consistency is achieved, push lock the knob. You are ready to start application.
3. When foaming is completed close the water and air ball valves. Do NOT kink the hose to stop foam flow. Rinse the work surface before foam dries.

SWITCH SETTINGS (On front of Control Box)

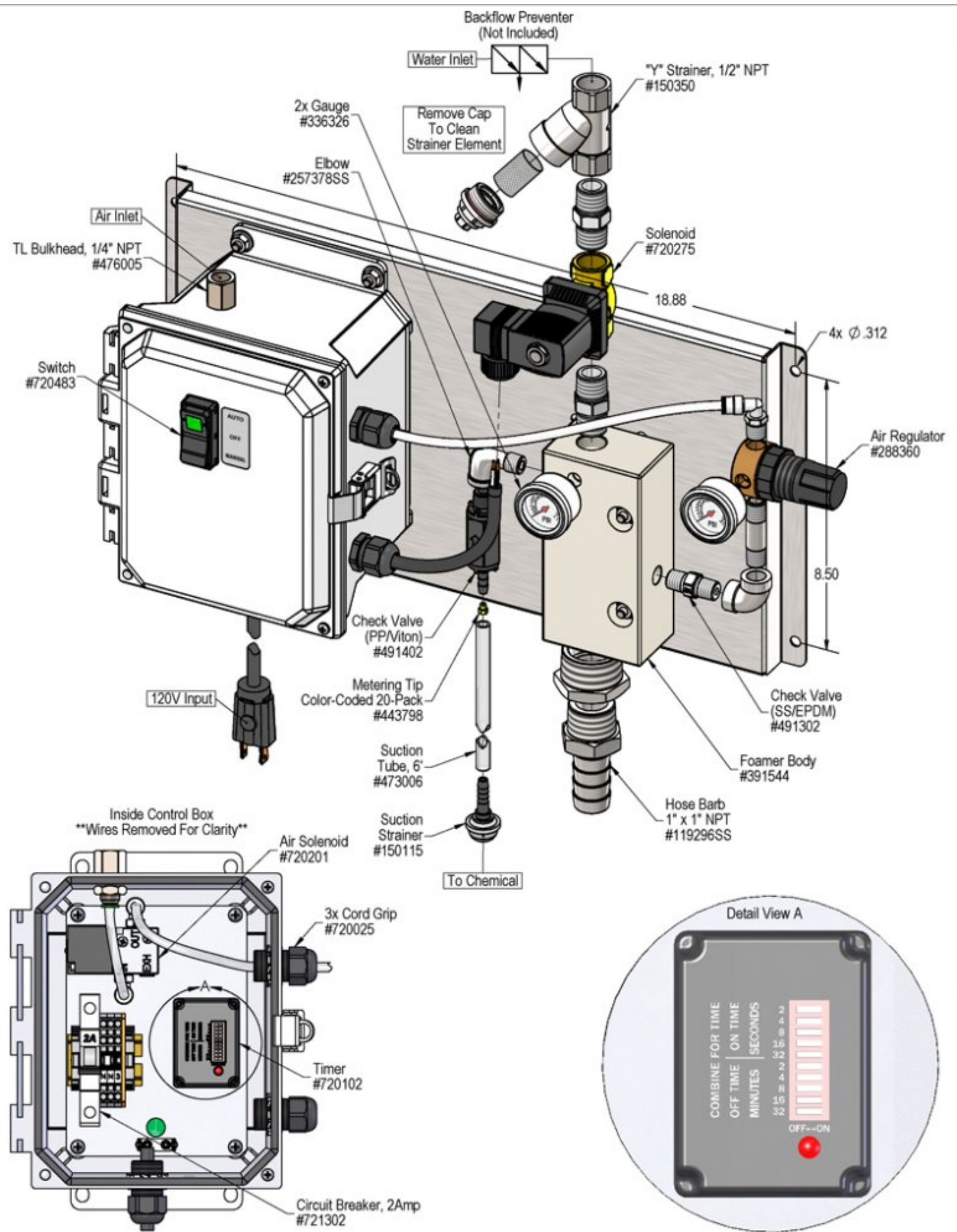
- **Automatic control (AUTO)** – Top of switch is depressed. Green light glows. The unit will function according to the timer settings.
- **OFF** – Switch is in middle position; Green light is off.
- **Momentary control (MANUAL)** – Press bottom of switch. Unit is active only while switch is pressed. Green light is off. When released, the switch returns to the OFF position.

METERING TIP SELECTION

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 40 PSI
Brown	0.56	914:1
Clear	0.88	582:1
Bright Purple	1.38	371:1
White	2.15	238:1
Pink	2.93	175:1
Corn Yellow	3.84	133:1
Dark Green	4.88	105:1
Orange	5.77	89:1
Gray	6.01	85:1
Light Green	7.01	73:1
Med. Green	8.06	64:1
Clear Pink	9.43	54:1
Yellow Green	11.50	45:1
Burgundy	11.93	43:1
Pale Pink	13.87	37:1
Light Blue	15.14	34:1
Dark Purple	17.88	29:1
Navy Blue	25.36	20:1
Clear Aqua	28.60	18:1
Black	50.00	10:1
No Tip Ratio Up To:		6:1
The dilution ratios above are approximate values. Due to chemical viscosity, actual dilution ratios may vary.		
FORMULA		
$GPM \times 128 \div \text{Desired Dilution Ratio} = \text{oz/min}$ <ul style="list-style-type: none"> • 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	3.74
40	4.00
50	4.47
60	4.90
70	5.29
80	5.66
90	6.00
100	6.32
110	6.63
120	6.93
125	7.07



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	Maintenance
1. Air pressure too high <ul style="list-style-type: none"> Adjust the air regulator slowly counterclockwise until output stabilizes. 	12. Foamer inlet orifice clogged <ul style="list-style-type: none"> Check/clean inlet orifice for obstructions. DO NOT DRILL OUT. Install a water filter.
2. Water pressure or water volume too low/inlet piping too small causing poor chemical pick up <ul style="list-style-type: none"> Increase water pressure or water volume - SEE REQUIREMENTS. 	13. Chemical strainer or metering tip partially blocked <ul style="list-style-type: none"> Clean or replace chemical strainer and/or metering tip.
3. Inlet ball valve not completely open, <ul style="list-style-type: none"> Completely open the inlet ball valve. 	14. Chemical tube stretched out or pin hole/cut in chemical tube sucking air. <ul style="list-style-type: none"> Cut off end of tube or replace tube.
4. Not enough chemical - metering tip too small <ul style="list-style-type: none"> Install larger metering tip. 	15. Vacuum leak in chemical pick-up connections <ul style="list-style-type: none"> Tighten the connection.
5. No metering tip installed or metering tip too large <ul style="list-style-type: none"> Install smaller metering tip. 	16. Air regulator failed allowing too much air or not enough air <ul style="list-style-type: none"> Clean or replace.
6. Improper chemical <ul style="list-style-type: none"> Ensure product is recommended for foaming and the application. 	17. Air check valve failed <ul style="list-style-type: none"> Clean or replace.
7. Chemical tube not immersed in chemical or chemical depleted <ul style="list-style-type: none"> Immerse tube or replenish. 	18. Chemical check valve stuck or failed <ul style="list-style-type: none"> Clean or replace.
8. Discharge hose too long or wrong size or kinked <ul style="list-style-type: none"> Straighten the hose or replace hose with correct size and length. 	19. Hard water scale or chemical build-up may have formed in the foamer body causing poor or no chemical pick-up <ul style="list-style-type: none"> 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.
9. Incorrect nozzle(s) <ul style="list-style-type: none"> Use only included or recommended nozzle(s) - SEE REQUIREMENTS. 	20. No backflow preventer installed and/or inlet ball valve left on when not in use <ul style="list-style-type: none"> Install appropriate backflow preventer into water line.
10. Use of an oiler in the airline will cause poor foam quality <ul style="list-style-type: none"> Use only clean, dry air. 	
11. Soil has hardened on surface, rinse foam before it dries <ul style="list-style-type: none"> Reapplication may be necessary. 	

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.

