# Lafferty Equipment Manufacturing, LLC
# Installation & Operation Instructions

## Model # 973650SS · 315 SS Sanitizer

## REQUIREMENTS

**Chemical Concentrate**

**Water**

| | |
|---|---|
| Temperature | up to 180°F |
| Pressure | 35 to 125 PSI |
| Flow | 4 GPM @ 40 PSI |
| Supply Line | 1/2" |
| **Hose** | 1/2" ID x 50' |
| **Nozzle** | 40100 |

## OPTIONS

| | |
|---|---|
| **Stainless Steel Hose Racks** | |
| Large Stainless Steel Hose Rack | # 224150 |
| **Stainless Steel Jug Racks** | |
| 2 ½ Gal. (8 ½" x 10 ½") | # 224210 |
| 5 Gallon (12" x 12") Round/Square | # 224215 |
| **Safe Flow Lid™ for 1 Gallon Jugs** | |
| Lid, Suction Tube, and Strainer | # 709101 |
| **Stainless Steel Sanitize Wand (Upgrade)** | |
| Convert PP Wand to SS (New Units) | # 536603-X |






Lafferty® EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

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

## OVERVIEW

The 315 SS Sanitizer is a stainless steel venturi injection system, suitable for use with PAA, that uses standard city water pressure (35 - 125 PSI) to draw and blend chemical concentrate into the water stream (4 GPM @ 40 PSI). The solution is then projected through the discharge hose and fan nozzle. Equipped with a stainless steel check valve with Kalrez seals. Precision PVDF metering tips create the lean ratios required for no-rinse sanitizing in food plants.

## SAFETY & OPERATIONAL PRECAUTIONS

- **When connecting to a potable water supply follow all local codes for backflow prevention.**
- **WARNING: Severe damage to your facility, or contamination of your potable water supply, can occur without proper 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 safety goggles when working with chemicals.
- Always direct the discharge away from people and electrical devices.
- For pressures over 100 PSI, remove the discharge valve or lower pressure.
- Never leave inlet ball valves on when unit is not in use.
- Follow the chemical manufacturer's safe handling instructions.
- NEVER mix chemicals without first consulting chemical manufacturer.

## TO INSTALL (REFER TO DIAGRAM ON NEXT PAGE)

**If you are connecting to a potable water supply follow all local codes for backflow prevention.**

1. Mount the unit to a suitable surface above the chemical supply to prevent siphoning.
2. Connect hose(s) as shown in the diagram.
3. Flush any new plumbing of debris before connecting water.
4. Connect water supply. Install a water filter if water piping is older or has known contaminants.

**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 discharge ball valve is closed or pointed in a safe direction before turning water on. Ball valve can be shut off at any time during operation but should not be left unattended for long periods of time.**

1. Open the inlet ball valve then open the discharge ball valve to begin application.
2. Make final metering tip adjustments based on application results.
3. When application is completed, close the discharge ball valve, return to the unit and close the inlet ball valve. Re-open the discharge ball valve to relieve pressure in hose then close the discharge ball valve. If applicable rinse the work surface before solution dries.

### 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 |
| Clear Pink | 9.43 | 54:1 |
| No Tip Ratio Up To: | | 9:1 |

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

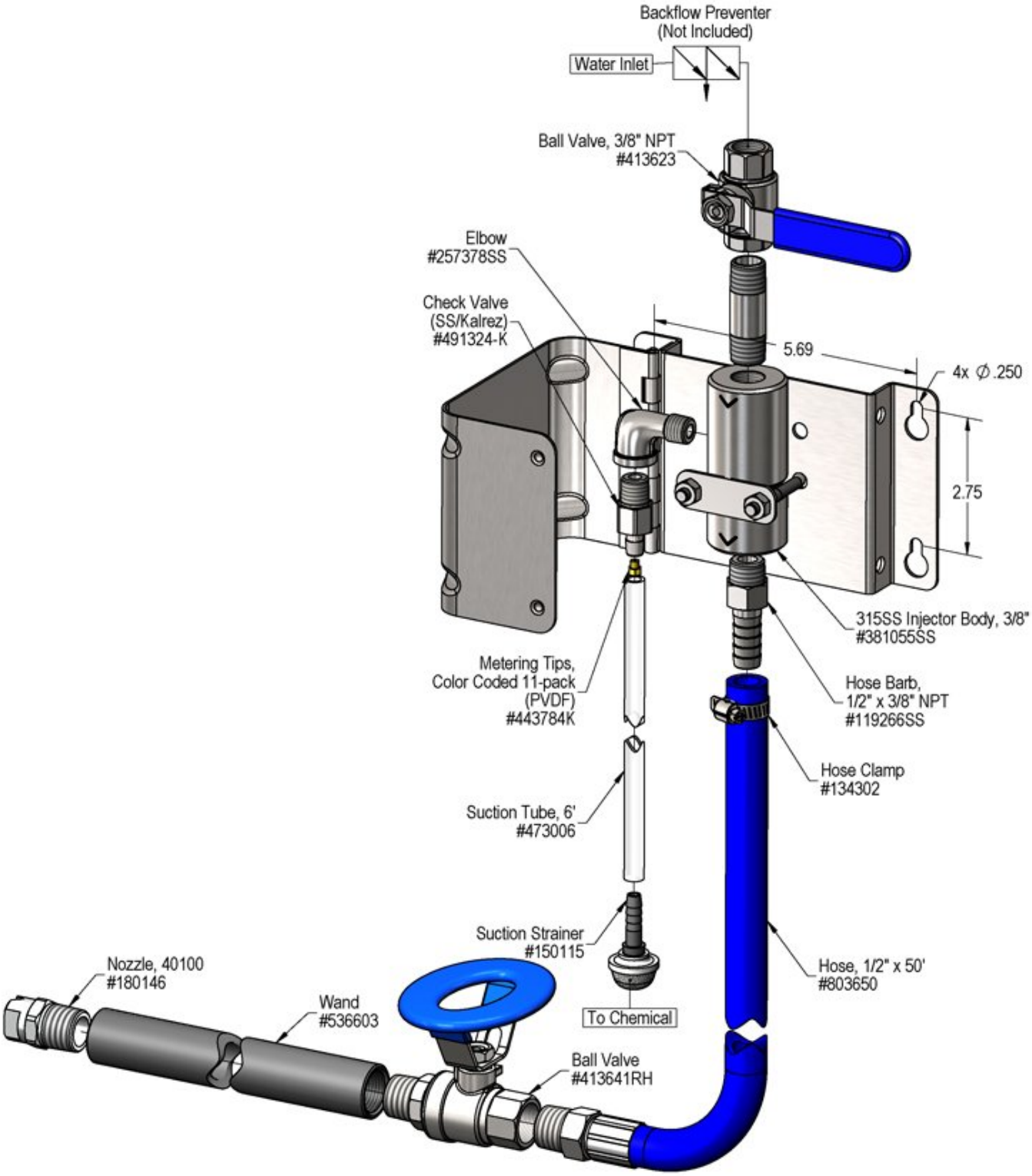
### FORMULA

**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 | 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 |


Backflow Preventer
(Not Included)
Water Inlet
Ball Valve, 3/8" NPT
#413623
Elbow
#257378SS
Check Valve
(SS/Kalrez)
#491324-K
5.69
4x Ø.250
2.75
315SS Injector Body, 3/8"
#381055SS
Metering Tips,
Color Coded 11-pack
(PVDF)
#443784K
Hose Barb,
1/2" x 3/8" NPT
#119266SS
Hose Clamp
#134302
Suction Tube, 6'
#473006
Suction Strainer
#150115
Hose, 1/2" x 50'
#803650
Nozzle, 40100
#180146
Wand
#536603
To Chemical
Ball Valve
#413641RH

# Troubleshooting Guide

| Problem | Possible Cause / Solution | |
|---|---|---|
| | Startup | Maintenance |
| A) Unit will not draw chemical | 1, 4, 5, 6, 7 | 8, 9, 10, 11, 12, 13, 14 |
| B) Dilution too weak | 2, 4, 5 | 8, 9, 10, 11, 12, 13, 14 |
| C) Dilution too strong | 3 | 14 |
| D) Water backing up into chemical container | | 8 |

## Possible Cause / Solution

### Startup

1. **Inlet or discharge ball valves not completely open**
   - Completely open both ball valves.
2. **Not enough chemical - metering tip too small**
   - Install larger metering tip.
3. **No metering tip installed or metering tip too large**
   - Install smaller metering tip.
4. **Chemical tube not immersed in chemical or chemical depleted**
   - Immerse tube or replenish.
5. **Discharge hose too long for available water pressure, kinked or wrong size**
   - Straighten the hose or replace hose.
6. **Nozzle size too small (SEE REQUIREMENTS)**
7. **Water pressure or water volume too low/inlet piping too small causing poor chemical pick up**
   - Increase water pressure or water volume

### Maintenance

8. **Chemical check valve stuck or failed**
   - Clean or replace.
9. **Chemical strainer or metering tip partially blocked**
   - Clean or replace chemical strainer and/or metering tip.
10. **Chemical tube stretched out or pin hole/cut in chemical tube**
    - Cut off end of tube or replace tube.
11. **Vacuum leak in chemical pick-up connections**
    - Tighten the connection.
12. **Water strainer clogged or missing/injector inlet orifice clogged**
    - Clean or replace strainer; check/clean inlet orifice for obstructions. DO NOT DRILL OUT.
13. **Hard water scale or chemical build-up may have formed in the injector body causing poor or no chemical pick-up**
    - Follow Preventive Maintenance instructions below, using hot water and/or de-scaling acid. When there is no draw at all, carefully remove fittings and soak entire injector body in de-scaling acid.
14. **More than one chemical ball valve is open**
    - 2-Way and 3-Way models only

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.