# Lafferty Equipment Manufacturing, LLC
# Installation & Operation Instructions

## Model # 975296 · Portable WR-2 Spray / Rinse / Sanitize W/ Pistol Grip Gun

## REQUIREMENTS

**Chemical Concentrate**

**Water**

| | |
|---|---|
| Temperature | up to 160°F |
| Pressure | 35 to 125 PSI |
| Flow | 4 GPM @ 40 PSI |
| Supply Line | 1/2" |

**Hose**

| | |
|---|---|
| Spray | 1/2" ID x 50' |
| Rinse | 1/2" ID x 50' |
| Sanitize | 1/2" ID x 50' |

**Nozzle**

| | |
|---|---|
| Spray | 2550 |
| Rinse | 2550 |
| Sanitize | 2550 |

## OPTIONS

**5 Gallon Pail**

| | |
|---|---|
| Pail, 5 Gallon Round W/ Suction Stem | # 709105 |

**Safe Flow Lid™ for 1 Gallon Jugs**

| | |
|---|---|
| Lid, Suction Tube, and Strainer | # 709101 |

**Square Jug Rack Conversion**

Specify Round or Square Jug Racks at time of order

**Alternate Check Valve - EPDM Standard**

| | |
|---|---|
| Check Valve, Chemical, PP/Viton, 1/4" | # 491315 |

## WEIGHT & DIMENSIONS

**Single Package**

| | |
|---|---|
| Shipping Weight | 64 lbs. |
| Shipping Dimensions | 26" x 24" x 48" |




Lafferty EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

www.laffertyequipment.com
501-851-2820

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

## OVERVIEW

The Portable WR-2 Spray / Rinse / Sanitize System is a combination chemical spray and sanitizer applicator featuring a rinse mode and an all stainless steel cart assembly. This venturi injection system uses standard city water pressure (35 - 125 PSI) to draw and blend chemical concentrates into the water stream to create accurately diluted solutions. The solutions are projected through the discharge hose, pistol grip gun and recessed fan nozzle as a uniform spray.

## 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)

1. Place a container of chemical concentrate in the jug rack(s).
2. Connect the hose(s) as shown in the diagram.
3. To prevent blocking the small water jets in the injector flush any new plumbing of debris before connecting water.
4. Connect water supply. If water piping is older or has known contaminants, install a water filter.

**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 is closed or pointed in a safe direction before turning inlet valve on. Discharge can be shut off at any time during operation but should not be left off for long periods of time with the inlet valve on.**

**OPEN ONLY ONE INLET WATER BALL VALVE AT A TIME**

**TO SPRAY**

1. With pistol grip gun in hand and the discharge ball valve closed, open the spray ball valve.
2. Open the discharge ball valve to begin application.
3. Make final metering tip adjustments based on results.
4. When finished, close the discharge ball valve return to the unit and close the spray ball valve.
5. Briefly open discharge ball valve to relieve pressure in the hose.

**TO RINSE**

1. With pistol grip gun in hand and the discharge ball valve closed, open the rinse ball valve.
2. Open the discharge ball valve to begin application.
3. When finished, close the discharge ball valve, return to the unit and close the rinse ball valve.
4. Briefly open discharge ball valve to relieve pressure in the hose.

**TO SANITIZE**

1. With pistol grip gun in hand and the discharge ball valve closed, open the sanitize ball valve.
2. Open the discharge ball valve to begin application.
3. Make final metering tip adjustments based on results.
4. When finished, close the discharge ball valve, return to the unit and close the sanitize ball valve.
5. Briefly open discharge ball valve to relieve pressure in the hose.

### METERING TIP SELECTION

| METERING TIP COLOR | OZ/MIN | DILUTION RATIO @ 40 PSI | | |
|---|---|---|---|---|
| | | SPRAY | RINSE | SANITIZE |
| Brown | 0.56 | 526:1 | — | 526:1 |
| Clear | 0.88 | 335:1 | — | 335:1 |
| Bright Purple | 1.38 | 213:1 | — | 213:1 |
| White | 2.15 | 137:1 | — | 137:1 |
| Pink | 2.93 | 100:1 | — | 100:1 |
| Corn Yellow | 3.84 | 77:1 | — | 77:1 |
| Dark Green | 4.88 | 60:1 | — | 60:1 |
| Orange | 5.77 | 51:1 | — | 51:1 |
| Gray | 6.01 | 49:1 | — | 49:1 |
| Light Green | 7.01 | 42:1 | — | 42:1 |
| Med. Green | 8.06 | 37:1 | — | 37:1 |
| Clear Pink | 9.43 | 31:1 | — | 31:1 |
| Yellow Green | 11.50 | 26:1 | — | 26:1 |
| Burgundy | 11.93 | 25:1 | — | 25:1 |
| Pale Pink | 13.87 | 21:1 | — | 21:1 |
| Light Blue | 15.14 | 19:1 | — | 19:1 |
| Dark Purple | 17.88 | 16:1 | — | 16:1 |
| Navy Blue | 25.36 | 12:1 | — | 12:1 |
| Clear Aqua | 28.60 | 10:1 | — | 10:1 |
| Black | 50.00 | — | — | — |
| No Tip Ratio Up To: | | 7:1 | — | 7:1 |

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

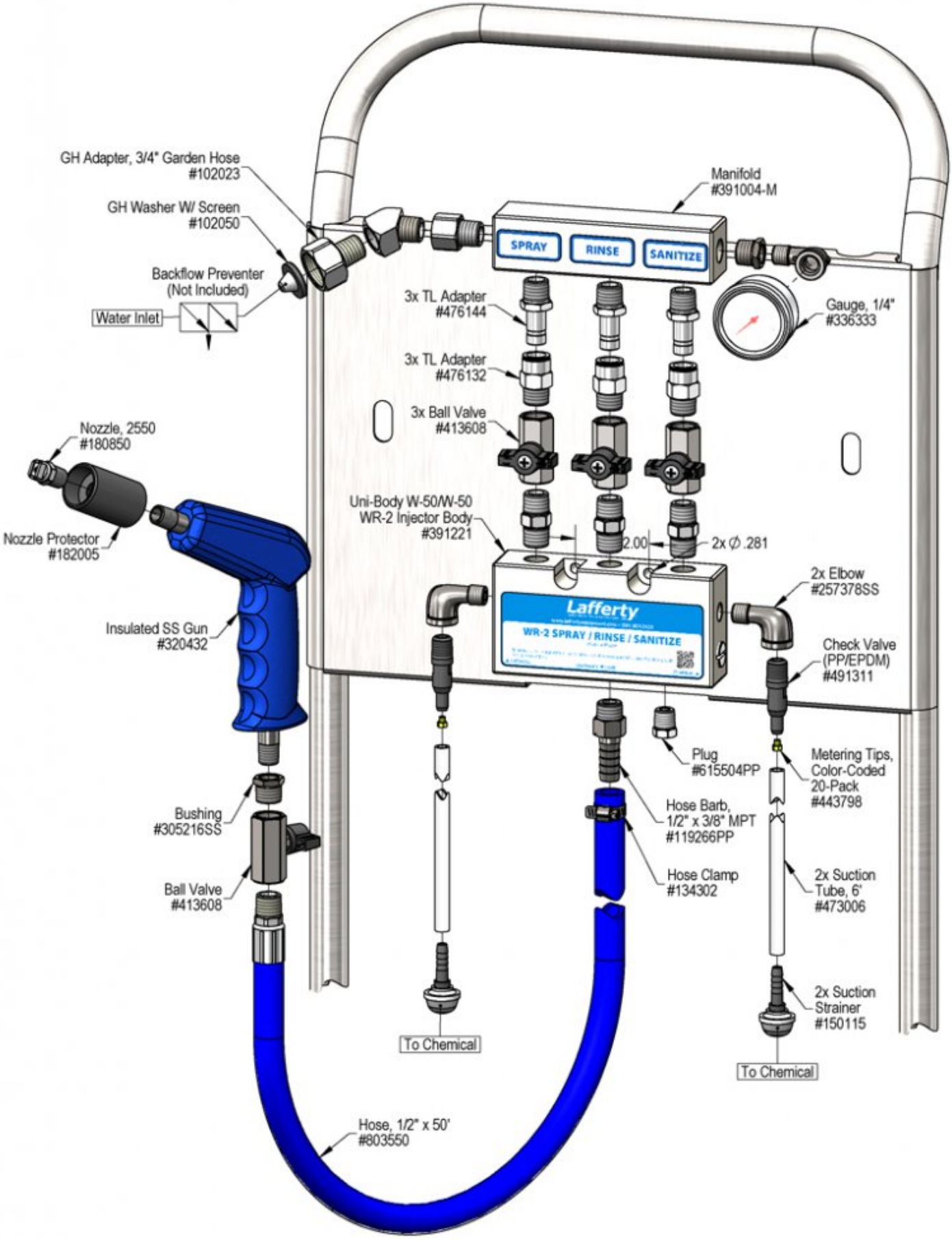
### FORMULA

**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 | | |
|---|---|---|---|
| | SPRAY | RINSE | SANITIZE |
| 35 | 2.15 | 3.74 | 2.15 |
| 40 | 2.30 | 4.00 | 2.30 |
| 50 | 2.57 | 4.47 | 2.57 |
| 60 | 2.82 | 4.90 | 2.82 |
| 70 | 3.04 | 5.29 | 3.04 |
| 80 | 3.25 | 5.66 | 3.25 |
| 90 | 3.45 | 6.00 | 3.45 |
| 100 | 3.64 | 6.32 | 3.64 |
| 110 | 3.81 | 6.63 | 3.81 |
| 120 | 3.98 | 6.93 | 3.98 |
| 125 | 4.07 | 7.07 | 4.07 |


GH Adapter, 3/4" Garden Hose
#102023
GH Washer W/ Screen
#102050
Backflow Preventer
(Not Included)
Water Inlet
Manifold
#391004-M
SPRAY
RINSE
SANITIZE
Gauge, 1/4"
#336333
3x TL Adapter
#476144
3x TL Adapter
#476132
3x Ball Valve
#413608
Nozzle, 2550
#180850
Nozzle Protector
#182005
Uni-Body W-50/W-50
WR-2 Injector Body
#391221
2.00
2x Ø .281
2x Elbow
#257378SS
Lafferty
WR-2 SPRAY / RINSE / SANITIZE
Check Valve
(PP/EPDM)
#491311
Insulated SS Gun
#320432
Plug
#615504PP
Metering Tips,
Color-Coded
20-Pack
#443798
Bushing
#305216SS
Hose Barb,
1/2" x 3/8" MPT
#119266PP
Ball Valve
#413608
Hose Clamp
#134302
2x Suction
Tube, 6'
#473006
2x Suction
Strainer
#150115
To Chemical
To Chemical
Hose, 1/2" x 50'
#803550

# Troubleshooting Guide

| Problem | Possible Cause / Solution | |
|---|---|---|
| | Startup | Maintenance |
| A) Unit will not draw chemical. | 1, 2, 3, 4, 5 | 9, 10, 11, 12, 13, 14, 15 |
| B) Using too much chemical. | 8 | |
| C) Spray does not clean / perform. | 6, 8 | 12, 14, 15 |
| D) Water back flowing into chemical | | 9 |
| E) Solution backing up into water line. | | 16 |

## Possible Cause / Solution

### Startup

1. **Water pressure too low**
   - Increase water pressure (35 psi minimum).
2. **Water ball valve or discharge ball valve not completely open**
   - Completely open the valves.
3. **More than one unit ball valve is open**
   - Open only one unit ball valve at a time.
4. **Nozzle size wrong, too small**
   - See requirements
5. **Chemical tube not immersed or chemical depleted**
   - Immerse or replenish chemical
6. **Improper chemical**
   - Ensure product is recommended for the application.
7. **No metering tip or tip too large**
   - Install a tip or install smaller size
8. **Dilution too weak**
   - Install larger metering tip.

### Maintenance

9. **Chemical check valve failed or clogged**
   - Clean or replace.
10. **Water inlet strainer screen clogged**
    - Clean screen or replace.
11. **Discharge too long, too small or kinked**
    - Straighten or replace hose with correct size.
12. **Metering tip blocked**
    - Clean or replace metering tip.
13. **Chemical tube stretched out where tube slides over check valve or pin hole/cut in chemical tube (sucking air in)**
    - Cut off end of tube or replace tube.
14. **Vacuum leak in chemical pick-up connection**
    - Tighten the connection.
15. **Chemical build-up or scale may have formed in the body causing poor or no chemical pick-up**
    - Remove fittings and soak entire body in de-scaling acid. Replace fittings being careful not to cross thread or over tighten.
16. **No backflow preventer installed**
    - Install appropriate backflow preventer onto 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.