Lafferty Equipment Manufacturing, LLC
Installation & Operation Instructions

Model # 975223 · 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

Stainless Steel Hose Racks

Large Stainless Steel Hose Rack	# 224150

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

Safe Flow Lid™ for 1 Gallon Jugs

Lid, Suction Tube, and Strainer	# 709101

Alternate Check Valve - EPDM Standard

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



Lafferty EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

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WARNING! READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

OVERVIEW

The WR-2 Spray / Rinse / Sanitize System is a combination chemical spray and sanitizer applicator with a rinse mode. 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)

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 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.

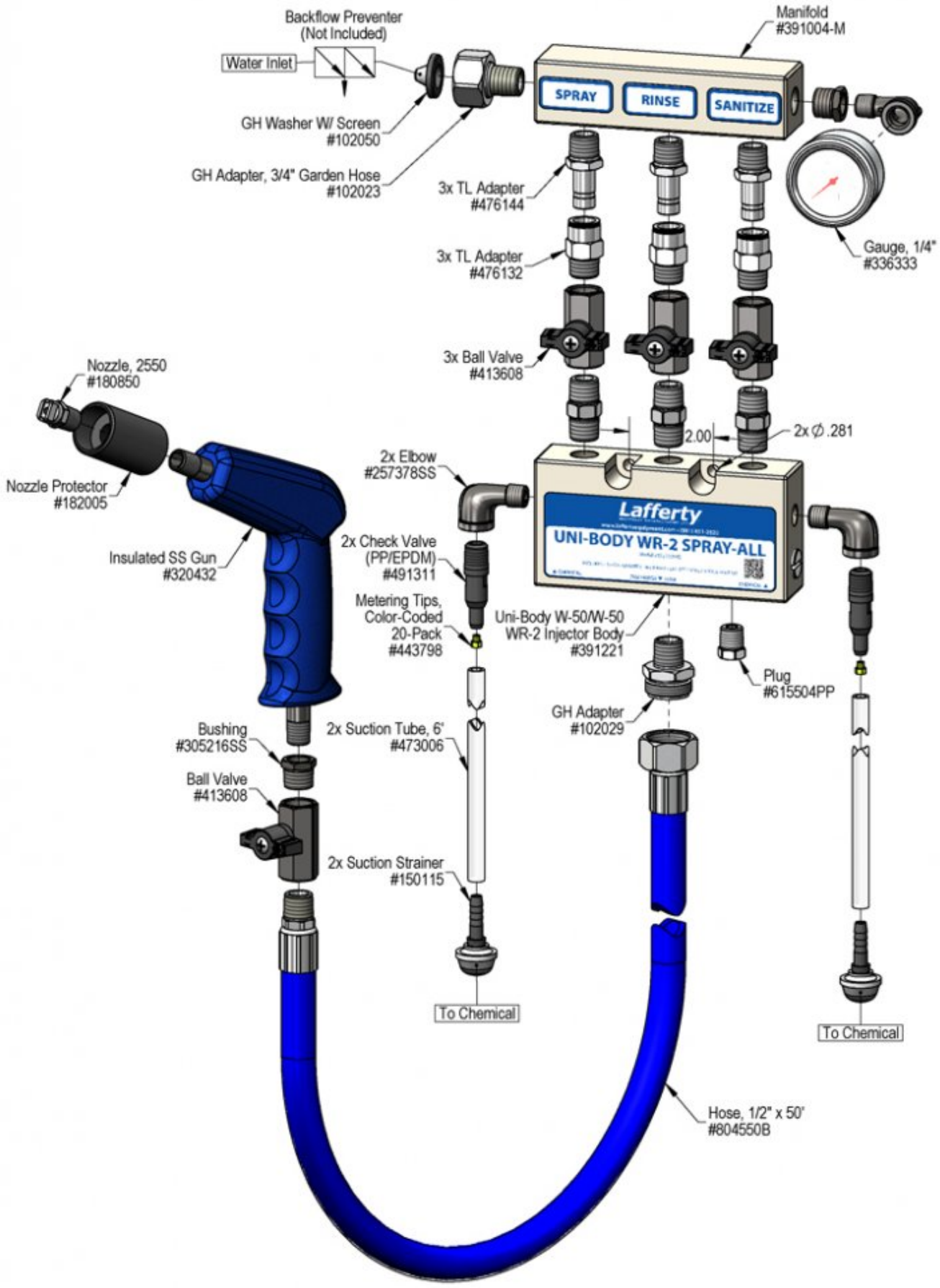
FORMULA

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


Backflow Preventer
(Not Included)
Water Inlet
GH Washer W/ Screen
#102050
GH Adapter, 3/4" Garden Hose
#102023
Manifold
#391004-M
SPRAY
RINSE
SANITIZE
3x TL Adapter
#476144
3x TL Adapter
#476132
3x Ball Valve
#413608
Gauge, 1/4"
#336333
2.00
2x Ø .281
Nozzle, 2550
#180850
Nozzle Protector
#182005
Insulated SS Gun
#320432
2x Elbow
#257378SS
2x Check Valve
(PP/EPDM)
#491311
Metering Tips,
Color-Coded
20-Pack
#443798
Lafferty
UNI-BODY WR-2 SPRAY-ALL
Uni-Body W-50/W-50
WR-2 Injector Body
#391221
Plug
#615504PP
GH Adapter
#102029
Bushing
#305216SS
Ball Valve
#413608
2x Suction Tube, 6'
#473006
2x Suction Strainer
#150115
To Chemical
To Chemical
Hose, 1/2" x 50'
#804550B

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.