

LAFFERTY EQUIPMENT MANUFACTURING, INC.

Installation & Operation Instructions

REQUIREMENTS

Water:

Pressure range..... 35 to 125 PSI

Temp. range..... Ambient to 160° F

Nozzle 2520 (W-20)

..... 2550 (W-50)

..... 40150 (W-100)

Hose:

I.D. 1/2" ONLY

Standard Length 50'

OPTIONS

All Stainless Steel Accessories

- Hose Rack # 224150
- Jug Racks
 - 1 Gallon
 - Round # 224200
 - Square # 224205
 - 2 ½ Gallon # 224210
 - 8 ½" x 10 ½" (inside dimensions)
 - 5 Gallon # 224215
 - 12" x 12" (inside dimensions)

Uni-Body Spray-Alls

Model # 975020, W-20 Uni-Body Spray-All Complete

Model # 975050, W-50 Uni-Body Spray-All Complete

Model # 975070, W-100 Uni-Body Spray-All Complete



www.LaffertyEquipment.com

501-851-2820



Safety & Operational Precautions

SAFETY PRECAUTIONS

- **Backflow prevention:** Follow all local codes for preventing backflow into the water supply before installing / operating equipment.
- **Mounting:** Mount unit above chemical supply level to prevent siphoning.
- **Personal Safety**
 - Wear protective clothing, gloves and eyewear when working with chemicals.
 - Always direct the discharge away from people and electrical devices.
 - **Turn off** all ball valves when unit is not in use.

- **For pressures over 100 PSI,** remove the discharge ball valve.
- Follow the chemical manufacturer's safe handling instructions.
- **Regular equipment maintenance** should include checking all hoses, tubes, clamps and connections. (See also, *Preventive Maintenance, page 4.*)

OPERATIONAL PRECAUTIONS

- **Do not substitute nozzle or hose sizes.** (See "Requirements.") The unit **will not** work properly with smaller nozzles or hose sizes.

TO INSTALL *(Refer to Diagram, Next Page.)*

Read all Safety and Operational Precautions on page 1.

Backflow prevention: Follow all local codes for preventing backflow into the water supply before installing / operating equipment.

1. **Mount the unit** above chemical level to prevent siphoning.
2. **Connect water supply and hose assembly to the unit** as shown in the diagram.
3. To set the dilution ratio you must install the correct metering tip.

How to Select the Correct Metering Tip

- A. The dilution ratios provided in the *Metering Tip Selection Chart*, at right, are based on water-thin chemical with a water pressure of 40 PSI. Use the *Metering Tip Selection Formula* if you have water pressure other than 40 PSI.
 - B. Due to varying chemical viscosities, you may need to increase the metering tip size.
 - C. For the strongest possible chemical dilution ratio, do not install a metering tip.
4. **Select and install metering tip into chemical check valve.** Push the chemical tube over the check valve and into the chemical container.

| Metering Tip Selection Chart | | | | |
|------------------------------|--------------|-------------------|-------------------|-------------------|
| Metering Tip Color | Oz. per Min. | Model 20 | Model 50 | Model 100 |
| | | 40 PSI .84 GPM | 40 PSI 2.1 GPM | 40 PSI 3.8 GPM |
| Brown | .84 | 128:1 | 320:1 | 571:1 |
| Clear | 1.16 | 93:1 | 232:1 | 414:1 |
| Bright Purple | 1.4 | 77:1 | 192:1 | 343:1 |
| White | 2.0 | 54:1 | 134:1 | 240:1 |
| Pink | 2.7 | 40:1 | 100:1 | 178:1 |
| Corn Yellow | 3.4 | 32:1 | 79:1 | 141:1 |
| Dark Green | 4.0 | 27:1 | 67:1 | 120:1 |
| Orange | 5.3 | 20:1 | 51:1 | 91:1 |
| Gray | 6.1 | 15:1 | 44:1 | 79:1 |
| Light Green | 7.0 | 13:1 | 38:1 | 69:1 |
| Med. Green | 8.5 | 12:1 | 32:1 | 56:1 |
| Clear Pink | 9.2 | 9.6:1 | 29:1 | 52:1 |
| Yellow Green | 11.2 | 8.6:1 | 24:1 | 43:1 |
| Burgundy | 12.5 | 8.3:1 | 22:1 | 38:1 |
| Pale Pink | 12.9 | 8.1:1 | 21:1 | 37:1 |
| Light Blue | 14.2 | 8.1:1 | 19:1 | 34:1 |
| Dark Purple | 17.6 | 8.1:1 | 15:1 | 27:1 |
| Navy Blue | 21.4 | 8.1:1 | 13:1 | 22:1 |
| Clear Aqua | 30.2 | 8.1:1 | 8.9:1 | 16:1 |
| Black | 40.4 | 8.1:1 | 8.7:1 | 12:1 |
| No Tip | | 8.1:1 | 8.7:1 | 8.6:1 |

The dilution ratios provided above are approximate values. Your actual dilution ratio may be higher or lower due to variation in chemical viscosity.

Metering Tip Selection Formula

$$(\text{GPM} \times 128) \div \text{Dilution Ratio} = \text{Oz. per Min.}$$

| | | |
|--|------------------------|--|
| ↑ See chart below for GPM and convert to oz. per min. | ↑ 256:1, 30:1, etc. | ↑ Match to nearest number in the chart above. |
|--|------------------------|--|

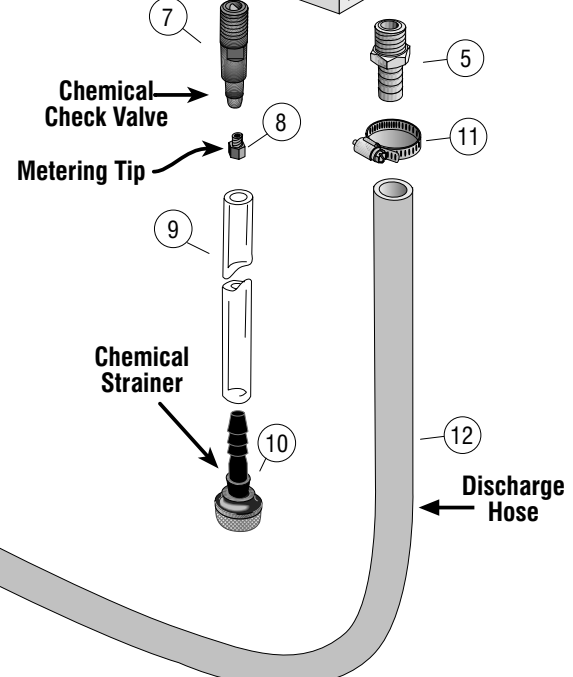
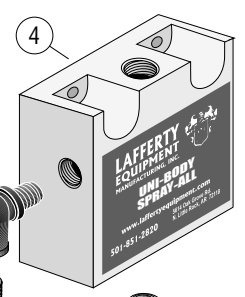
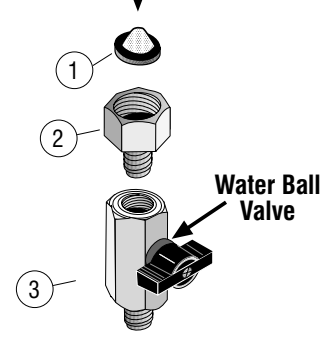
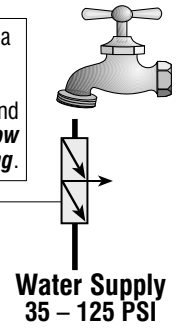
Water Flow Rate Chart

| Water Pressure | Model 20 | Model 50 | Model 100 |
|----------------|--------------------------|----------|-----------|
| PSI | Gallons Per Minute (GPM) | | |
| 40 | .84 | 2.10 | 3.75 |
| 50 | .91 | 2.28 | 4.10 |
| 60 | 1.00 | 2.49 | 4.40 |
| 70 | 1.12 | 2.67 | 4.75 |
| 80 | 1.15 | 2.80 | 5.10 |
| 90 | 1.19 | 3.00 | 5.65 |
| 100 | 1.22 | 3.20 | 6.20 |

⚠ Always turn off water when unit is not in use.

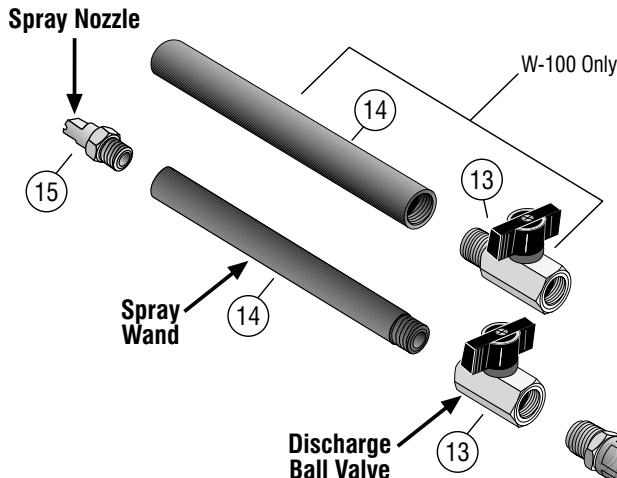
| CALL # | QTY. | PART # | DESCRIPTION |
|-----------|------|--------|--|
| | 1 | 102050 | WASHER, VINYL, GH, W/SCREEN |
| | 1 | 102023 | ADAPTER, NPB, FGH X 3/8" MPT |
| | 1 | 413612 | BALL VALVE, NPB, 3/8" FMB |
| W-20 | 4 | 391020 | 3/8" UNI-BODY W-20PP INJECTOR BODY |
| W-50 | | 391050 | 3/8" UNI-BODY W-50PP INJECTOR BODY |
| W-100 | | 391100 | 3/8" UNI-BODY W-150PP INJECTOR BODY |
| | 5 | 119266 | HOSE BARB, NPB, 1/2" X 3/8" MPT |
| | 1 | 257379 | ELBOW, ST., PP, 1/4" |
| | 1 | 491311 | CHECK VALVE, CHEMICAL, PP/VITON, 1/4" |
| | 1 | 443798 | METERING TIPS-COLOR CODED (20) |
| | 1 | 473006 | TUBE, CHEMICAL, 1/4" X 6' |
| | 1 | 150115 | STRAINER, CHEMICAL, HASTELLOY, 1/4" |
| | 1 | 134302 | HOSE CLAMP, 1/2" |
| | 1 | 803650 | HOSE, BLUE, 1/2" x 50', 1/2" MPT (One End) |
| W-20/W-50 | 13 | 413608 | BALL VALVE, NPB, 3/8" FFB |
| W-100 | | 413617 | BALL VALVE, NPB, 1/2" FMB |
| W-20/W-50 | 14 | 536608 | WAND, PP, 14", 3/8" MPT x 1/4" FPT |
| W-100 | | 536603 | WAND, PP, 14", 1/2" FPT x 1/2" FPT |
| W-20 | 15 | 180131 | NOZZLE, SS, 1/4" - 2520 |
| W-50 | | 180137 | NOZZLE, SS, 1/4" - 2550 |
| W-100 | | 180149 | NOZZLE, NPB, 1/2" - 40150 |

Spray-All supplied without a backflow preventer. Check local plumbing codes for requirements in your area and **install appropriate backflow preventer before operating.**



Drawing not "To Scale"

For proper operation, use **ONLY** the nozzle supplied with your Uni-Body Spray-All.



For pressures over 100 PSI, remove the discharge ball valve.

Troubleshooting Guide

Uni-Body Spray-Alls Complete

| PROBLEM | Possible Cause / Solution Categories | |
|--|--------------------------------------|---------------------|
| | WATER | CHEMICAL |
| A) Unit will not draw chemical. | 1, 2, 3, 4, 5 | 7, 8, 9, 10, 11, 14 |
| B) Water flowing into chemical container. | | 7 |
| C) Using too much chemical. | | 12 |
| D) Spray does not clean/perform properly. | | 13 |
| E) Chemical solution backing up into water line. | 6 | |

Possible Cause / Solution

| WATER | CHEMICAL |
|--|--|
| <p>1. Water pressure too low or water temperature too high</p> <ul style="list-style-type: none"> • Increase water pressure or decrease water temperature. | <p>7. Chemical check valve stuck or clogged</p> <ul style="list-style-type: none"> • Clean or replace. |
| <p>2. Water ball valve or discharge ball valve not completely open</p> <ul style="list-style-type: none"> • Completely open the water and discharge ball valves. | <p>8. Chemical tube not immersed in chemical or chemical depleted</p> <ul style="list-style-type: none"> • Immerse tube or replenish. |
| <p>3. Water strainer screen clogged</p> <ul style="list-style-type: none"> • Clean the water strainer screen. [See diagram, pg. 3.] | <p>9. Chemical strainer or metering tip blocked</p> <ul style="list-style-type: none"> • Clean or replace chemical strainer and/or metering tip. |
| <p>4. Discharge hose wrong size or kinked; must be 1/2" I.D. and 50' standard length</p> <ul style="list-style-type: none"> • Straighten the hose. | <p>10. Chemical tube stretched out where tube slides over check valve or pin hole/cut in chemical tube (sucking air in)</p> <ul style="list-style-type: none"> • Cut off end of tube or replace tube. |
| <p>5. Nozzle size too small</p> <ul style="list-style-type: none"> • Use only the supplied nozzle. [Nozzle size must match injector – see diagram, page 3.] | <p>11. Vacuum leak in chemical pick-up connections</p> <ul style="list-style-type: none"> • Tighten the connection(s). |
| <p>6. No backflow preventer installed</p> <ul style="list-style-type: none"> • Install appropriate backflow preventer onto water line. | <p>12. Dilution too strong</p> <ul style="list-style-type: none"> • Install smaller metering tip. |
| | <p>13. Dilution too weak</p> <ul style="list-style-type: none"> • Install larger metering tip. |
| | <p>14. Chemical build-up may have formed in the injector body causing poor or no chemical pick-up</p> <ul style="list-style-type: none"> • Follow Preventive Maintenance instructions below, using hot water. <p>In extreme cases, carefully remove fittings and soak <i>entire</i> injector body in descaling acid.</p> |

PREVENTIVE MAINTENANCE: When the unit will be out of service for extended periods, remove chemical tube from chemical concentrate and place in water. Completely open the water and discharge ball valves for a few seconds to flush chemical and help prevent chemical build-up. Check and/or clean chemical strainer; replace if missing.