

Lafferty Equipment Manufacturing, LLC Installation & Operation Instructions

Model # BLU46 • Low Volume Ultimate Wash System 2.5

REQUIREMENTS

Chemical Concentrate

Water

Temperature	up to 160°F
Pressure	40 - 125 PSI
Flow	Foam: 0.4 GPM @ 40 PSI Rinse: 4.0 GPM @ 40 PSI
Supply Line	1/2" x 10'

Hose

Discharge	1/2" x 25'
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Nozzle

Foam	#10 Bullet Airless Foam Nozzle
Spray/Rinse	Garden Hose Gun

OPTIONS

Stainless Steel Hose Racks

Small Stainless Steel Hose Rack	# 224145
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Stainless Steel Jug Racks

1 Gallon Round/Square	# 224200
1 Gallon Round/Square Locking	# 224200-L

Safe Flow Lid™ for 1 Gallon Jugs

Lid, Suction Tube, and Strainer	# 709101
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**WARNING! READ ALL
INSTRUCTIONS BEFORE
USING EQUIPMENT!**



OVERVIEW

The Blue Mule Ultimate Wash System 2.5 is a LOW VOLUME wash system for diluting and applying 1 or 2 chemicals as foam or spray, and for rinsing. This venturi injection system draws concentrated chemical from any sized container, mixes it with water and projects the accurately diluted solution through the discharge hose. Use the ball valves to switch between products or dilution ratios and simply close the chemical ball valve and open the rinse valve to spray fresh water. Use the foam nozzle to apply wet, clinging foam or remove the nozzle and spray chemical and rinse using only the garden hose gun. This heavy-duty and easy-to-use system will outperform and outlast the competition through superior design and materials.

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

TO APPLY CHEMICAL

- CAUTION- NEVER OPEN THE INLET VALVES WITHOUT HOLDING THE NOZZLE! Open only one inlet ball valve at a time.
1. Screw the foam wand onto the end of the trigger gun.
 2. Completely open one chemical pickup ball valve, then open the inlet ball valve to begin applying the chemical solution.
 3. Make final metering tip adjustments based on what product is being used and the "cleaning" results.
 4. When finished applying, close the inlet ball valve as well as the Chemical Pickup ball valve
 5. Repeat steps 1-4 for the other chemical
 6. When finished, ALWAYS close all of the ball valves.

TO RINSE

1. Unscrew the foam nozzle from the trigger gun (for a softer rinse leave the foam wand on)
2. Open the Rinse ball valve on the unit and adjust the pressure to suit by partially opening/closing the valve.
3. You can fully open the Rinse ball valve and gently squeeze the trigger to vary the rinse pressure
4. When finished rinsing close the rinse ball valve.

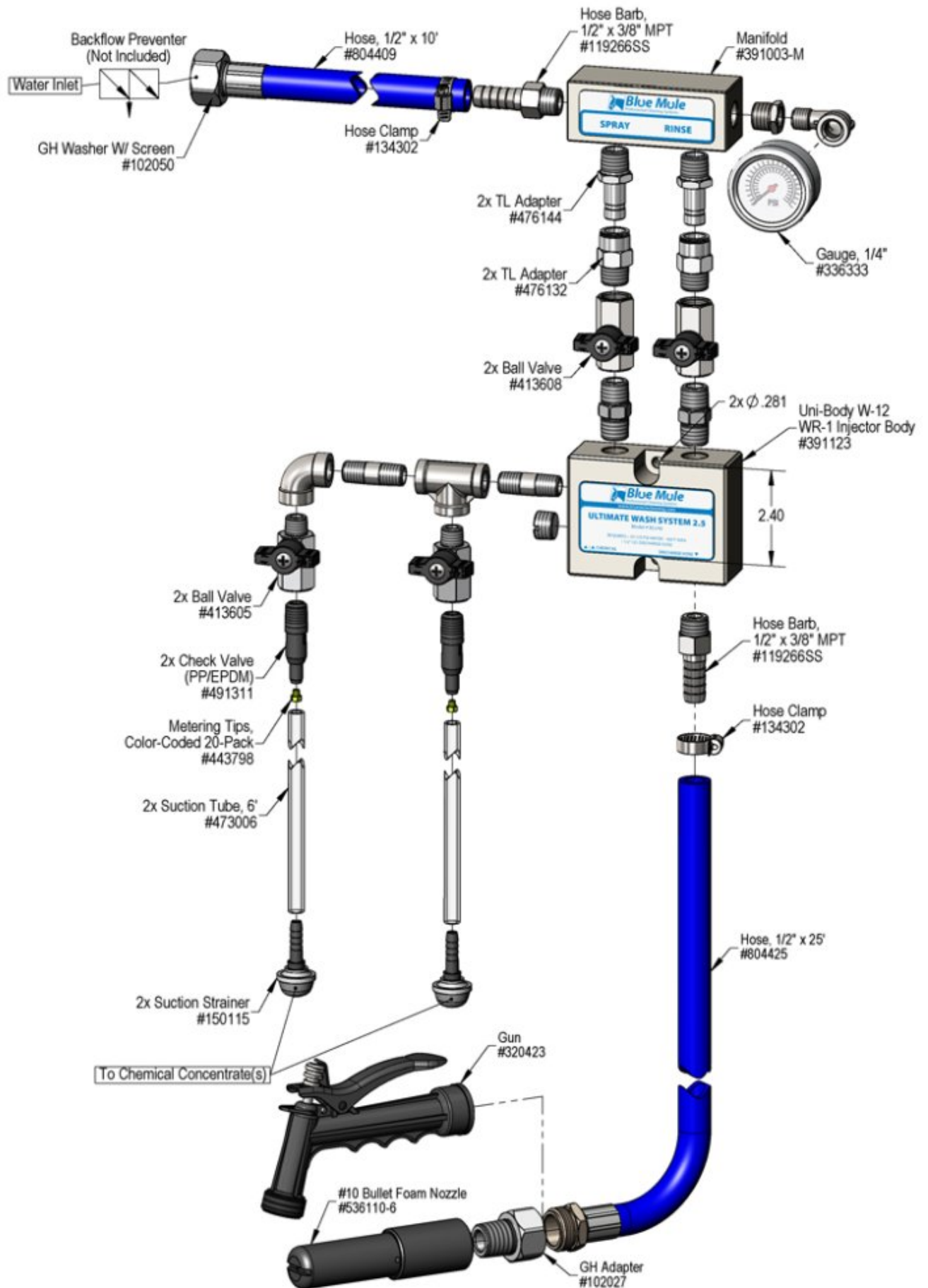
CHEMICAL COMPATIBILITY NOTE: The check valves on this unit are EPDM, which is compatible with a wide range of shampoos, conditioners, and other detergents. Some oil based or citrus scented products may be chemically incompatible with EPDM and cause the internal components to swell and stop drawing chemical. If this occurs, please contact us to discuss alternate check valve materials.

METERING TIP SELECTION

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 40 PSI	
		SPRAY	RINSE
Brown	0.56	91:1	—
Clear	0.88	58:1	—
Bright Purple	1.38	37:1	—
White	2.15	24:1	—
Pink	2.93	17:1	—
Corn Yellow	3.84	13:1	—
Dark Green	4.88	10:1	—
Orange	5.77	9:1	—
Gray	6.01	9:1	—
Light Green	7.01	7:1	—
Med. Green	8.06	—	—
Clear Pink	9.43	—	—
Yellow Green	11.50	—	—
Burgundy	11.93	—	—
Pale Pink	13.87	—	—
Light Blue	15.14	—	—
Dark Purple	17.88	—	—
Navy Blue	25.36	—	—
Clear Aqua	28.60	—	—
Black	50.00	—	—
No Tip Ratio Up To:		7:1	—
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	
	SPRAY	RINSE
35	0.37	3.74
40	0.40	4.00
50	0.45	4.47
60	0.49	4.90
70	0.53	5.29
80	0.57	5.66
90	0.60	6.00
100	0.63	6.32
110	0.66	6.63
120	0.69	6.93
125	0.71	7.07



Troubleshooting Guide

Problem	Possible Cause / Solution	
	Startup	Maintenance
A) Unit will not draw chemical.	1, 2, 3, 4, 5	9, 11, 12, 13, 14, 15, 16
B) Using too much chemical.	7	
C) Foam/spray does not clean/perform.	6, 8	12, 13, 14, 16
D) Water back flowing into chemical		9
E) Solution backing up into water line.		10

Possible Cause / Solution	
Startup	Maintenance
1. Water pressure too low <ul style="list-style-type: none"> ◦ Increase water pressure (see requirements). 	9. Chemical check valve stuck or clogged <ul style="list-style-type: none"> ◦ Clean or replace.
2. Inlet ball valve or discharge ball valve not completely open <ul style="list-style-type: none"> ◦ Completely open one inlet and the discharge ball valves. ◦ (2-Way Units make sure one chemical ball valve is open) 	10. No backflow preventer installed <ul style="list-style-type: none"> ◦ Install appropriate backflow preventer onto water line.
3. More than one unit ball valve is open <ul style="list-style-type: none"> ◦ Open only one unit ball valve at a time. 	11. Airless Foam Wand blocked <ul style="list-style-type: none"> ◦ Dried chemical build-up may be obstructing flow through foam wand/nozzle. Remove fittings and soak the entire wand in de-scaling acid.
4. Discharge hose too long or kinked <ul style="list-style-type: none"> ◦ Straighten or shorten the hose. 	12. Metering tip blocked <ul style="list-style-type: none"> ◦ Clean or replace metering tip.
5. Chemical tube not immersed in chemical or chemical depleted <ul style="list-style-type: none"> ◦ Immerse or replenish chemical 	13. Chemical tube stretched out where tube slides over check valve or pin hole/cut in chemical tube <ul style="list-style-type: none"> ◦ Cut off end of tube or replace tube.
6. Improper chemical <ul style="list-style-type: none"> ◦ Ensure product is recommended for foaming and/or the application. 	14. Vacuum leak in chemical pick-up connection <ul style="list-style-type: none"> ◦ Tighten the connection.
7. Dilution too strong even with smallest metering tip <ul style="list-style-type: none"> ◦ Some weak dilutions at lower water pressures are impossible to achieve with a metering tip. Pre-dilute your chemical until desired dilution ratio is achieved. 	15. Water inlet strainer screen clogged <ul style="list-style-type: none"> ◦ Clean screen or replace.
8. Dilution too weak <ul style="list-style-type: none"> ◦ Install larger metering tip. 	16. Chemical build-up or scale may have formed in the body causing poor or no chemical pick-up <ul style="list-style-type: none"> ◦ Remove fittings and soak entire body in de-scaling acid. Replace fittings being careful not to cross thread or over tighten.

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.

