Lafferty Equipment Manufacturing, LLC
Installation & Operation Instructions

Model # 969827 · Model 21 Sprayer

REQUIREMENTS

Chemical Concentrate	
Water	
Temperature	up to 160°F
Pressure	20 - 100 PSI
Flow	0.84 GPM @ 40 PSI
Supply Line	1/2"
Nozzle	2520

OPTIONS

Stainless Steel Hose Racks	
Large Stainless Steel Hose Rack	# 224150
Small Stainless Steel Hose Rack	# 224145

WEIGHT & DIMENSIONS

Single Package	
Shipping Weight	3 lbs.
Shipping Dimensions	15" x 8" x 5"



Lafferty EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

www.laffertyequipment.com
501-851-2820

WARNING! READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

OVERVIEW

The Model 21 Sprayer is a low volume hose-end spray applicator for diluting and applying chemicals to any surface up close or at a distance. This unit uses standard city water pressure to draw chemical concentrate from a user-supplied container of chemical concentrate and blend it into the water stream. This accurately diluted solution is then projected through the recessed fan nozzle. This unit includes a machined polypropylene jug lid, threaded to fit 1 gallon jugs and the pull-up spout of many 5 gallon jugs for larger jobs that require extended spraying time. Quick disconnect the chemical assembly to rinse.

SAFETY & OPERATIONAL PRECAUTIONS

- **When connecting to a potable water supply follow all local codes for 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 eye wear when working with chemicals.
- Always direct the discharge away from people and electrical devices.
- 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. Connect garden hose gun to a standard garden hose.
2. Select and install metering tip. Do not over-tighten. Details below.
3. Cut a length of pick-up tube to suit the depth of your chemical container and affix the strainer to one end. Connect the other end of this piece to the hose barb on the underside of the jug lid.
4. Screw the jug lid onto your jug of chemical concentrate.
5. Connect pick-up tube from the hose barb on the top of the jug lid to the check valve on the airless foam wand (see diagram).

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SCAN QR CODE FOR
OVERVIEW & SETUP VIDEO
https://vimeo.com/515352837

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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

1. Connect garden hose gun to a standard garden hose.
2. Select and install metering tip.
3. Connect pick-up tube to the wand/nozzle and screw the jug lid onto your jug of chemical concentrate.
4. Hold the garden hose gun and direct the discharge in a safe direction. Pull the trigger to begin application.
5. Make final metering tip adjustments based on application results. Try the next larger sized metering tip until the results are acceptable. In some case when the chemical is extra thick you may have to dilute it *slightly*.
6. When application is complete, release the trigger.
7. To rinse, quick disconnect the gun from the wand/nozzle and rinse before the chemical dries.

NOTE: When not in use, ensure that the sprayer body remains above the chemical bottle to prevent siphoning. For example, when disconnecting the sprayer from the gun to rinse, place the sprayer body on a surface higher than the chemical bottle.

METERING TIP SELECTION

METERING TIP COLOR	OZ/MIN	DILUTION RATIO @ 40 PSI
Brown	0.56	192:1
Clear	0.88	122:1
Bright Purple	1.38	78:1
White	2.15	50:1
Pink	2.93	37:1
Corn Yellow	3.84	28:1
Dark Green	4.88	22:1
Orange	5.77	19:1
Gray	6.01	18:1
Light Green	7.01	15:1
Med. Green	8.06	13:1
Clear Pink	9.43	11:1
Yellow Green	11.50	9:1
Burgundy	11.93	9:1
Pale Pink	13.87	8:1
Light Blue	15.14	7:1
Dark Purple	17.88	6:1
Navy Blue	25.36	—
Clear Aqua	28.60	—
Black	50.00	—
No Tip Ratio Up To:		5:1

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

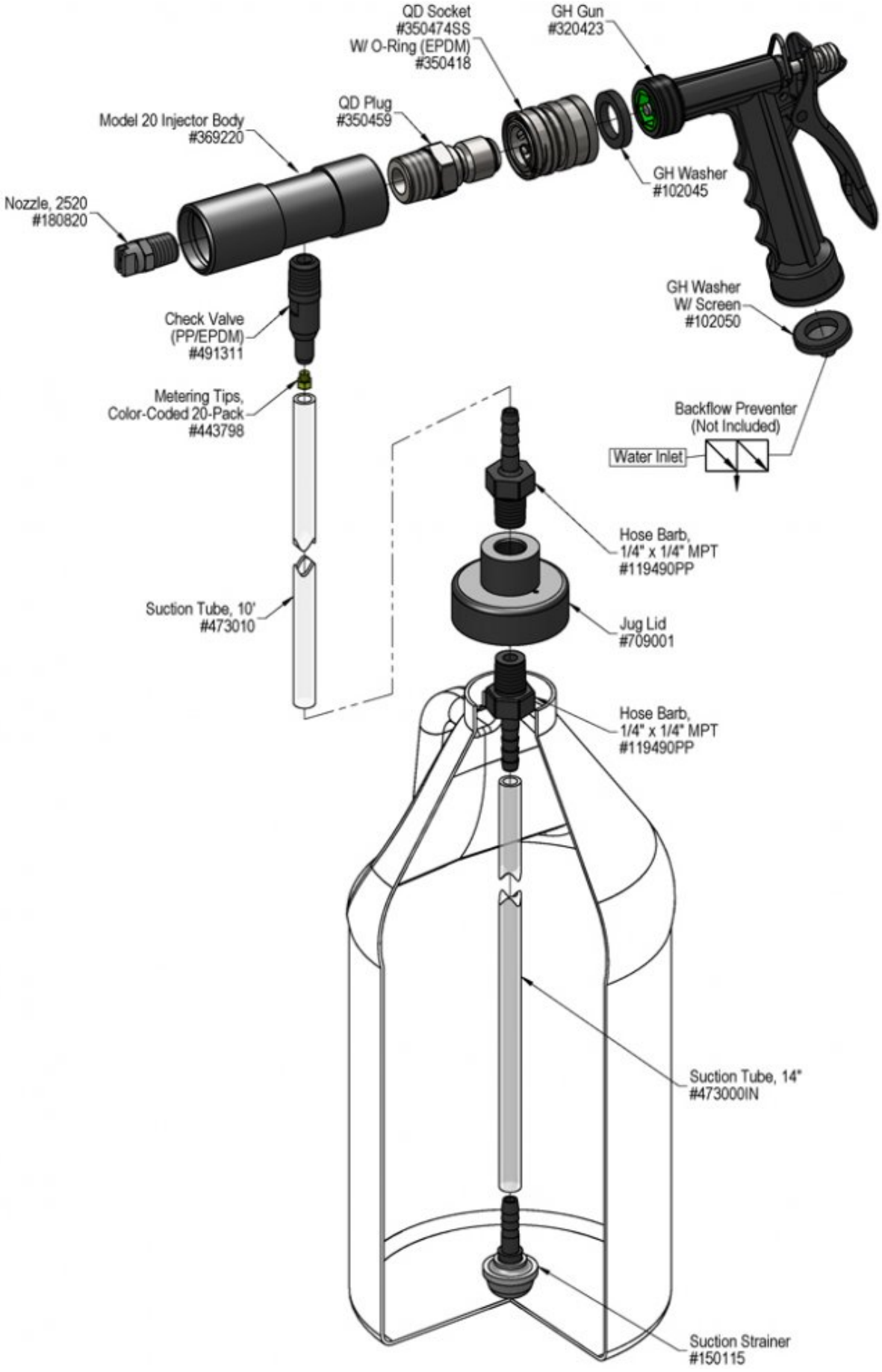
FORMULA

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	0.79
40	0.84
50	0.94
60	1.03
70	1.11
80	1.19
90	1.26
100	1.33


QD Socket
#350474SS
W/ O-Ring (EPDM)
#350418
GH Gun
#320423
QD Plug
#350459
Model 20 Injector Body
#369220
GH Washer
#102045
Nozzle, 2520
#180820
GH Washer
W/ Screen
#102050
Check Valve
(PP/EPDM)
#491311
Backflow Preventer
(Not Included)
Water Inlet
Metering Tips,
Color-Coded 20-Pack
#443798
Hose Barb,
1/4" x 1/4" MPT
#119490PP
Suction Tube, 10'
#473010
Jug Lid
#709001
Hose Barb,
1/4" x 1/4" MPT
#119490PP
Suction Tube, 14"
#473000IN
Suction Strainer
#150115

Troubleshooting Guide

Problem	Possible Cause / Solution	
	Startup	Maintenance
A) Unit will not draw chemical	1, 5, 6, 7	9, 10, 11, 12, 13, 14
B) Chemical does not clean properly	2, 4, 5, 7, 8	9, 10, 11, 12, 13, 14
C) Using too much chemical	3	

Possible Cause / Solution

Startup

1. **Chemical tube is not installed**
   - Ensure chemical tube is on.
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. **Improper chemical**
   - Ensure product is recommended for the application.
5. **Chemical tube not immersed in chemical or chemical depleted**
   - Immerse tube or replenish.
6. **Water supply hose kinked**
   - Straighten the hose.
7. **Water pressure or water volume too low causing poor chemical pick up**
   - Increase water pressure or water volume
8. **Soil has hardened on surface; always rinse before it dries**
   - Reapplication may be necessary.

Maintenance

9. **Metering tip partially blocked**
   - Clean or replace metering tip.
10. **Chemical tube stretched out or chemical tube is not on**
    - 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 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 body in de-scaling acid.

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.