Lafferty Equipment Manufacturing, LLC
Installation & Operation Instructions

Model # 977890 · RADAR™ EP-LM Spray System

REQUIREMENTS

Chemical Concentrate

Water

Temperature	up to 160°F
Pressure	35 to 125 PSI
Supply Line	1/2"
Hose	3/4" ID x 40'
Nozzle	#180193SS
Electric	120V / 20A

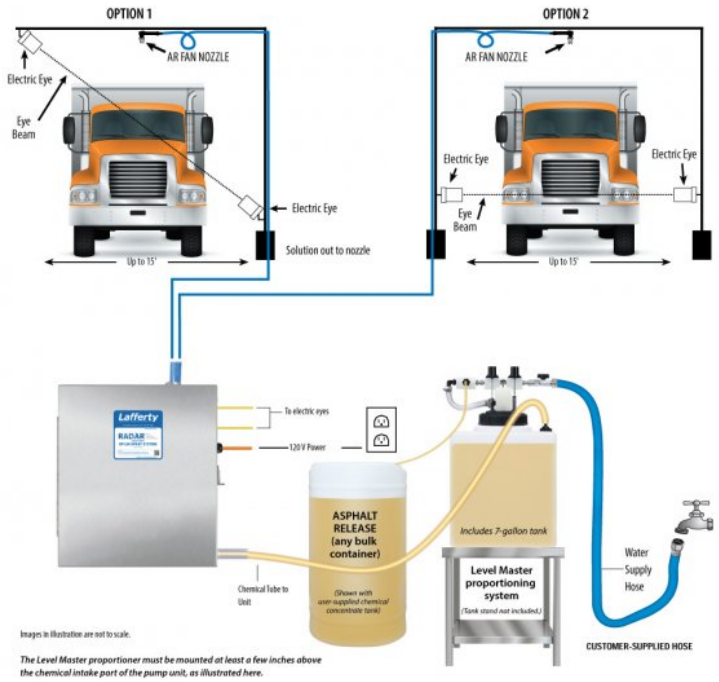
See Separate Instructions for:

Level Master™	989304

OPTIONS

Drum & Tote Stick Lengths & Seal Materials

Drum Stick, 33" (Viton or EPDM)	# 491643 / 491643-E
Drum Stick, 48" (Viton or EPDM)	# 491648 / 491648-E
Drum Stick, 54" (Viton or EPDM)	# 491645 / 491645-E
Tote Stick, 33" (Viton or EPDM)	# 491653 / 491653-E
Tote Stick, 48" (Viton or EPDM)	# 491654 / 491654-E
Tote Stick, 54" (Viton or EPDM)	# 491656 / 491656-E



RADAR™ RAPID DRIVE THRU ASPHALT RELEASE

Lafferty® EQUIPMENT MANUFACTURING LLC

CFS TECHNOLOGIES

www.laffertyequipment.com
501-851-2820

WARNING! READ ALL INSTRUCTIONS BEFORE USING EQUIPMENT!

OVERVIEW

The *RADAR*™ EP-LM Spray System is an electric eye activated, asphalt release applicator that mounts to a user-supplied drive-though arch for spraying asphalt truck beds. This system uses an electric pump to draw ready-to-use chemical solution from the included 7 Gallon Level Master™ tank which maintains a constant supply of solution. When a truck breaks the electric eye's line-of-sight, a delay timer allows the driver to position the truck under the spray nozzle before spraying begins and a run timer applies release agent for a pre-set time or until the vehicle leaves the spraying area, whichever is first.

SAFETY & OPERATIONAL PRECAUTIONS

- **See Additional Safety Instructions included with the Electrical Control Box**
- **Always consider electrical shock hazard when working with and handling electrical equipment. If uncertain, consult an Electrician. Electrical wiring should only be done by a qualified Electrician per Local and State Electrical Codes.**
- 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.
- Operate the electric pump according to the limitations specified on the data label.
- Do not use with flammable or hazardous fluids not compatible with stainless steel.

TO INSTALL (REFER TO DIAGRAM ON NEXT PAGE)

1. Mount the unit to a solid, secure surface within 15' of the drive lane. This is a centrifugal pump that needs a flooded suction and will need to be primed the first time it is used and each time it runs dry. Mount close to and not higher than the Level Master, it needs to gravity feed to the pump.
2. Do NOT connect to electricity yet.
3. Construct the mounting arch, then mount the nozzle assembly and electric eyes as shown in the illustration on page 1. To prevent dripping after each cycle leave a loop in the hose to make the nozzle higher than the bottom of the loop.
4. Position the electric eyes so that they are pointed toward each other, creating a "beam." (You may want to use a string to "line up" the eyes.) The electric eye housing brackets have pre-drilled holes for angled mounting against level surfaces.
    - The Receiver should never be aimed at the sun and should therefore be mounted pointing down, if mounting Option 1 is chosen.
    - Both the Receiver and the Emitter have a red LED. When they are aligned only the Emitter red light is lit. When they are out of alignment both the Emitter and Receiver red lights are lit.
5. Wire tie the cords securely to the arch.
6. Connect the 3/4" suction tube to the hose barb. Secure all tubes with the clamps – do not over-tighten. Immerse suction tube into a container of water for initial testing.
7. Make sure the system is not plugged in to a power source. Remove control box cover. The box contains two timers (Delay & Override).
   Delay Timer: This timer allows you to set the time to the approximate number of seconds needed from the time the truck breaks the "beam" of the electric eyes until the truck bed is positioned underneath the nozzle. Set the timer by pushing the combination of dip switches that will equal the total number of seconds you need for the delay.
   Override Timer: This timer controls the maximum amount of time the sprayer will operate for. Set the timer by pushing the combination of dip switches that equal the total number of seconds you need the system to spray. *Note: if the truck exits before this time has elapsed, the spray will stop. Set the run time for the longest truck that will use the system.*
8. Replace the control box cover.
9. Plug power cord into 120 VAC outlet on dedicated 20A breaker.

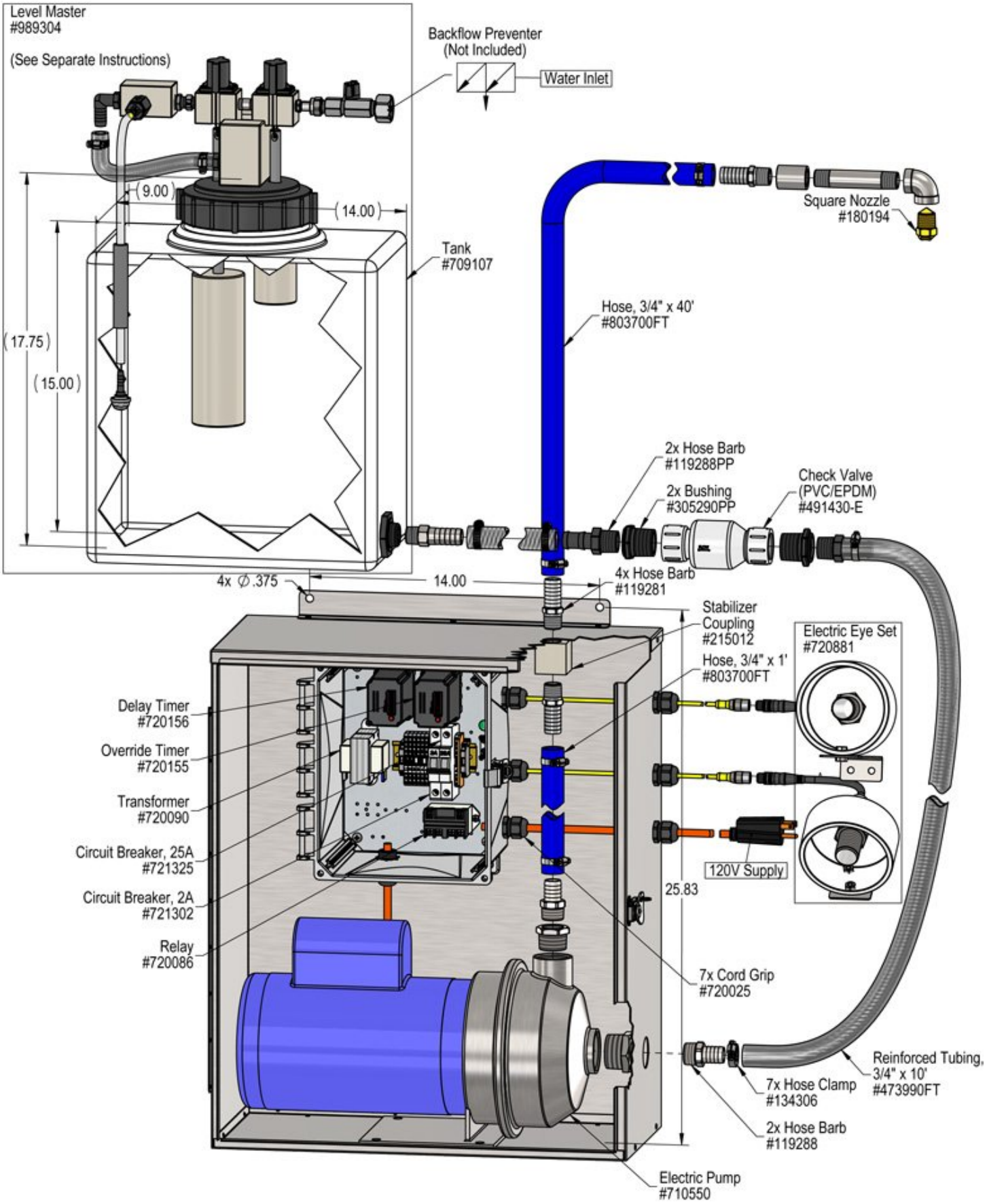
TO TEST

1. The pump may take a few seconds to prime, fill the suction tube with water to help the pump prime the first time.
2. Perform "test runs" with water only and make any necessary timer adjustments, and any nozzle and electric eye position adjustments.
3. Once the electronic beam is restored, the system automatically shuts off. Make sure to position the electric eyes so that any gap between the cab and truck bed does not cause the system to shut off.
4. After several successful test runs have been made you are ready to operate.
5. Set up the Level Master and connect the suction tube to the Level Master. (see separate instructions)

TO OPERATE

Once adjustments have been made to timers and chemical dilution:

1. Drive the first truck through and make any last adjustments as needed.
2. The unit is ready for operation.


Level Master
#989304
(See Separate Instructions)
Backflow Preventer
(Not Included)
Water Inlet
9.00
14.00
17.75
15.00
Tank
#709107
Square Nozzle
#180194
Hose, 3/4" x 40'
#803700FT
2x Hose Barb
#119288PP
2x Bushing
#305290PP
Check Valve
(PVC/EPDM)
#491430-E
4x Ø.375
14.00
4x Hose Barb
#119281
Stabilizer
Coupling
#215012
Electric Eye Set
#720881
Hose, 3/4" x 1'
#803700FT
Delay Timer
#720156
Override Timer
#720155
Transformer
#720090
Circuit Breaker, 25A
#721325
Circuit Breaker, 2A
#721302
Relay
#720086
120V Supply
25.83
7x Cord Grip
#720025
Reinforced Tubing,
3/4" x 10'
#473990FT
7x Hose Clamp
#134306
2x Hose Barb
#119288
Electric Pump
#710550

Troubleshooting Guide

Problem	Possible Cause / Solution	
	Startup	Maintenance
A) Pump will not run or pump.	1,2,3,4,5	7,8,9
B) Pump runs with no output.	2,3	7,8,9
C) Unit will not draw chemical.	2,3,6	
D) Suction tube will not stay primed.	8	9
E) Unit comes on and runs continuously.	4,5	
G) Asphalt continues to stick to truck.		9

Possible Cause / Solution

Startup

1. **Problem with pump.**
   - Refer to pump manual.
2. **Suction hose not immersed or connected to chemical solution or depleted.**
   - Immerse tube, tighten connection or replenish.
3. **Discharge hose kinked.**
4. **Timer not set properly or malfunctioned.**
   - See Timer Adjustment on page 2 or replace timer.
5. **Electrical problems or sensor out of position.**
   - Have a qualified electrician check electrical connections.
   - Ensure circuit breaker in control box has not been tripped.
   - Ensure main outlet breaker has not been tripped. See requirements.
   - Adjust sensor placement.
6. **Pump above chemical tank**
   - Chemical tank must be above pump to gravity feed chemical into pump.

Maintenance

7. **Chemical strainer blocked or chemical concentration too weak or empty.**
   - Clean or replace chemical strainer.
   - Increase chemical concentration.
   - Replenish chemical supply
8. **Vacuum leak in suction hose.**
   - Tighten the clamps and check the barbs.
9. **Check valve stuck or failed**
   - Clean or replace.

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.