



**PATRIOT JR.**<sup>TM</sup>

**AMPED  
EQUIPMENT**



**OPERATORS MANUAL  
2022**



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# PATRIOT JR. OPERATING MANUAL

The following manual is intended as a guide to aid in the initial assembly of the Patriot Jr.™ (PJR), regular setup and installation of 15-gallon drums, operation procedures for dispensing adhesive, and a checklist for short-term or long-term shutdown. For more information, visit the Patriot Jr. website at [www.patriotjr.com](http://www.patriotjr.com).



## Brand New PJR Setup:

1. If not already installed, mount the PJR Reactor onto the PJR Cart. **MAKE SURE ALL CLIPS AND HOLD-DOWNS ARE SECURE.**
2. Connect fluid hoses to the pump and the gun. Ensure hoses are connected properly according to PJR directions and videos.



3. If using the Vee-Air One SP gun, mount the air compressor onto the bottom rack of the PJR cart. The air compressor will sit below the PJR reactor. **MAKE SURE ALL CLIPS AND HOLD-DOWNS ARE SECURE.**



## 15 Gallon Drum Setup:

1. Ensure the storage compartment located on the backside (drum side) of the PJR is closed and in a locked position.



2. With the help of another person, carefully stand the PJR Cart in the upright position. **DO NOT ATTEMPT with only one person.**



3. Carefully open the 15 Gal drums and connect the PJR fittings. **USE WHITE LITHIUM GREASE AT EVERY CONNECTION BEFORE FITTINGS ARE INSTALLED.**

- a. The large bung fitting connects to the desiccant dryer.
- b. The small bung fitting connects the drum to the machine.



4. Using the color-coded labels located on the backside (or drum side) of the PJR, place each drum in a vertical position next to the PJR cart. Ensure each drum corresponds with the proper A-side + B-side.



5. Once all fittings have been installed and are absent of air/fluid leaks, you may then carefully place the drums onto the drum rack while PJR Cart is in its vertical position.

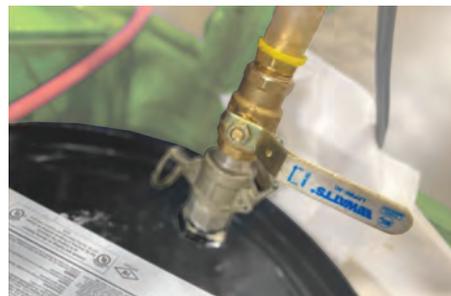
**\*NOTE: Once the A+B Sides have been designated, DO NOT CROSS-CONTAMINATE WITH OPPOSITE CHEMICAL AT ANY TIME.**

6. Secure drums firmly to the cart using the provided ratchet straps. Make sure drum straps are in the **locked position** before proceeding to the next step.



7. Connect corresponding cam lock fitting to A+B drums and ensure vent pipes remain capped.

- a. **DOUBLE CHECK ALL FITTINGS AND CLIPS** to ensure everything is secure and tightened.
- b. **DOUBLE CHECK FLUID VALVES** to ensure they are in the closed position.



8. With the help of another person, pull the PJR Cart down from the upright position. Pull the PJR Cart all the way down so that the drums are parallel to the deck. Ensure both the wheels and rear legs are firmly on the deck.



## Switching out 15 Gallon Drums:

1. Ensure all fluid valves are closed and machine has been properly powered down.
2. Ensure drums are strapped to the cart and the storage compartment is closed and in a locked position.
3. With the help of another person, carefully stand the PJR Cart in an upright position. **DO NOT ATTEMPT** with only one person.
4. Remove the ratchet straps from the drums.
5. Remove the PJR fittings from the used drums and install bung caps into the bung holes.
6. To install new drums onto the PJR cart, refer to steps 4-8 from the Drum Setup.

## Daily Startup and Dispensing Procedures:

1. Apply a small amount of pump lube to each piston on the A-Side and B-Side pumps.



3. Plug the PJR Reactor chord into your power source. **DO NOT USE IDLE CONTROL** if using a generator.

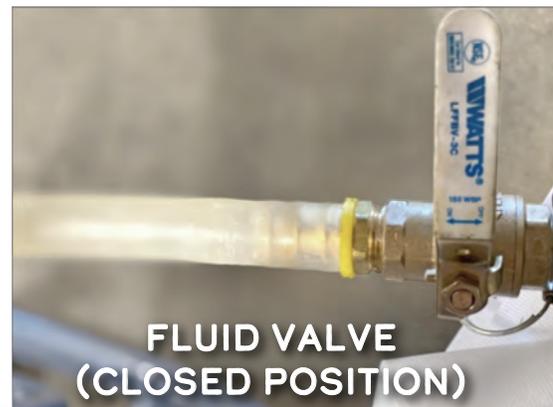


4. Remove the tape on the top and the bottom sides of each desiccant drier. Install a desiccant drier into the vent fittings on each drum.

5. Before turning on the PJR machine, ensure that both recirculation valves are completely closed.



6. Completely open both fluid valves leading from the drums. You should see A- and B-side materials fill up the clear tubing prior to the next step.



7. Turn the orange power switch to "on".
8. Without using a mixing tip, open valves on the gun and set the flow dial to either 0.3 or 0.6 This will start pulling material and filling up the pump, hose, and gun.



9. Check for two equal streams of A-side and B-side chemical to visibly flow from the gun.
10. Once fluids are flowing evenly with no air pockets, close the fluid valves on the gun and turn the safety to "On".  
*Apply white lithium grease to the threads on a NEW Static Mixing Tip and install the mixer tip onto the V-Manifold gun.*

### 11. Bead Application

- a. With gun valves closed, turn the flow dial to 0.9 - 1.5



- b. Release the safety and open fluid valves on the gun to begin applying adhesive
- c. Ensure the adhesive is dispensed at a minimum 1/2" - 3/4" wet bead and proper spacing is followed.



12. **Splatter Application:** The equipment settings listed below must be followed for approved splatter application.

- a. PJR Flow Dial Setting: 400



- b. Air Compressor Pressure: 80psi
- c. Air Setting on Gun: 0.5 setting or 1/8 turn.
- d. Manifold on Gun: 100% open



*NOTE: Pressure may need to be adjusted depending on temperature of material.*

**Splatter Pattern Application (continued..)**



- 13. When you have reached a stopping point, ensure gun is pointed in a safe direction and close any open fluid or air valves on the gun.
- 14. Once valves are closed, discard the used static mixing tip and replace with a new one.

**Short-Term Shutdown Checklist**

(Overnight/Lunch Break)

- 1. Ensure you have reached a proper stopping point and the gun valves are closed.
- 2. Turn down the fluid dial to it's "off" position, turn off the power switch, and unplug the power chord on the PJR.



- 3. Apply a new static mixing tip and apply white lithium grease through the grease fittings on the gun. Fill mixing tip with about 2"-3" of grease.



- 4. Close both fluid valves leading from the drums to the pump.
- 5. Remove desiccant driers from the drums. Apply tape to the top of each drier and cover with a plastic bag as needed.
- 6. Add caps back on the vent tube top. Remember to use white lithium grease on all fittings.



- 7. Apply a small amount of pump lube to each piston.
- 8. Wrap up hose and gun and protect all equipment with the provided green PJR cover. Secure as needed.

## Long-Term Shutdown Checklist

(2 weeks or longer)

The following steps are to be completed at the end of each job or when the PJR will not be used for 14 days or longer.

1. Ensure the gun valves are closed and the machine has been shut down properly.
2. Close both fluid valves leading from the drums to the pump.
3. Remove desiccant driers from the drums. Apply tape to the top of each drier and cover with a plastic bag as needed.
4. Add caps and plugs back on the vent tube top. Remember to use white lithium grease on all fittings.
5. With the help of another person, carefully stand the PJR Cart in an upright position. **DO NOT ATTEMPT** with only one person.
6. Disconnect inlet hoses from the drums. Ensure fitting on the drum has been properly plugged/capped.



7. Using the open end of the additional set of connector hoses provided, connect the appropriate hose to the A- and B-side inlet camlocks.

8. Place A-side hose into a container of ISO Flush.



9. Place B-side hose into a container of ISO Flush.



10. Using an empty trash receptacle, open both fluid valves from the drums and both fluid valves on the gun.

11. Turn on power and set flow dial to "circulate" and allow flush to run through pump, hose, and gun until clear fluid is observed.



12. Once clear fluid is observed, close fluid valves on the gun AND from the drums.

13. Turn fluid dial down to "off".

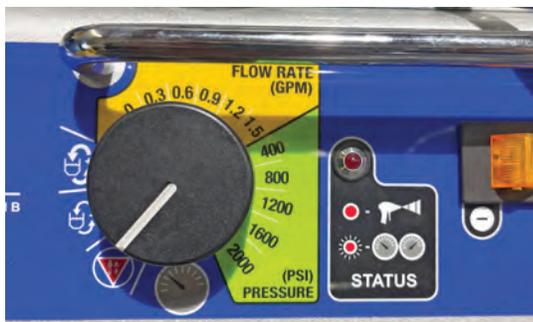
14. Pull the flush hoses from the ISO Flush containers and insert hoses into new containers of Surf-A-Lube.

15. Using a trash receptacle, open both fluid valves from the drums and both fluid valves on the gun.

16. Turn flow dial to "circulate" and allow lube to run through pump, hose, and gun until clear lube is present.

17. Once clear lube is observed, close fluid valves on the gun and from the drums.

18. Turn down the fluid dial to its "off" position, turn off the power switch, and unplug the power chord on the PJR.



19. Apply a new static mixing tip and apply white lithium grease through the grease fittings on the gun. Fill mixing tip with about 2"-3" of grease.

20. Disconnect additional connector hoses and install plugs/caps on cam locks.



21. Wrap up hose and gun and protect all equipment with the provided green PJR cover. Secure as needed.



## Prevention Tips

1. Use white lithium grease for all fittings, threads, and plugs/caps for static mixing tips. This helps prevent material buildup and seals all possible passages for air and moisture.
2. Apply pump lube before and after each use to both pistons.
3. Letter label or color-code fittings, desiccant driers, plugs/caps and containers. This helps ensure that fittings and accessories stay on their designated A- or B-side.
4. Ensure all openings have been plugged unless being vented properly.

\*Replace desiccant driers when needed.

Blue = Good to use  
Pink = Needs replaced

5. When in doubt, flush it out. Flushing your machine regularly and often will significantly increase the operating life of your PJR and reduce downtime on the jobsite.

## Troubleshooting

1. Proper storage of material is essential. Ensure the material temperature of adhesive is always kept between 70°F-90°F.
2. Ensure both passages on the gun are clear by using a 1/4" drill bit.
3. Ensure both fluid valves from the drum are in the "open" position.
4. Ensure both ends of the desiccant driers are completely open.
5. Ensure the Y-Screens are clear and free of debris or crystals. Clean or replace as needed.
6. Ensure hose assemblies from the drums are clear of debris or crystals. Replace if needed.
7. Ensure all fittings are completely secure and tightened with no fluid or air leaks.
8. Ensure hoses are free of all kinks and twists.
9. Ensure a new static mixing tip is being used after stopping for 30 seconds or longer.

## Controls and Indicators:

**Motor/Pump Control Function Knob**

**Status Codes**

**STATUS CODES**  
Number of Red Light Blinks

1. Pressure imbalance between A and B
2. Loss of pressure from setpoint
3. A pressure sensor failure
4. B pressure sensor failure
5. High motor amps
6. High motor temperature
7. No cycle switch input

**Flow Rate (GPM)**: 0, 0.3, 0.6, 0.9, 1.2, 1.5

**Pressure (PSI)**: 400, 800, 1200, 1600, 2000

**Status Indicator**

**Power Switch**

	<b>Fast Recirc</b>	Fast recirculation speed.
	<b>Slow Recirc</b>	Slow recirculation speed.
	<b>Park</b>	Stops motor and automatically parks pumps.
	<b>Static Mix</b>	Use Flow Rate settings 1-5 to dispense polyurethane materials through a static mixer gun or V-Manifold.
	<b>Spray, Splatter Air-Purge</b>	Use Pressure psi settings 400-2000 psi (6-10) to spray 2-Part Adhesives + Air



## INSTRUCTIONS

1. Open drums and insert fittings. Fittings for drum should correspond to fitting on PJR Reactor. Be sure to set drums up to match stickers, labels and colors. Never change product once designated and used in lines and PJR Reactor.
  2. **MAKE SURE ALL CLIPS AND HOLD-DOWNS ARE SECURE ON REACTOR PUMP & CART.**
  3. Stand PJR Cart upright with the help of another person. **\*DO NOT ATTEMPT ON YOUR OWN\***
  4. Line up drums (jugs/bag-n-box) according to labels & fitting location. Small cam lock fittings should face the bottom of the cart.
  5. Make sure valves are closed and vents remain plugged.
  6. Secure drum straps into place. Make sure drum straps are in the locked position and the drums are firmly against the deck.
  7. Connect cam lock fittings to drums. Make sure all fittings are connected securely and are in the locked position.
  - \*PLEASE DOUBLE CHECK ALL FITTINGS AND CLIPS.**
  8. With the help of another person pull PJR Cart down and parallel to roof deck, ensuring that wheels and rear legs are securely on the roof surface.
  9. Place Generator in tray.
  10. Connect all hoses, and spray gun making sure that the hoses are in the proper place. Hose fittings will only fit in one way.
  11. Make sure all fittings are secure and firm.
  12. Start Generator and plugin PJR Reactor to power. Allow time to warm up. **DO NOT USE IDLE CONTROL!**  
***Generator should run at full throttle all the time to prevent damage to PJR Reactor.***
  13. Install Driers into vent fittings. It may be necessary to bleed lines into vent fittings first.
  14. Put Bleed valves in "spray" position, and turn dial to 0-0.3 with gun open.
  15. Make sure fluids are flowing through clear tubing.
  16. Run until even flow comes through end of gun. To prevent clogging at tip when in use, purge gun every 2-3 minutes, or as necessary so adhesive does not clog.
  17. Twist on a Static Mixing Nozzle Tip to your applicator gun & pull back manifold to begin spraying Static Bead.
- NOTE:** To change drums reverse procedure -> Reverse procedure & change one drum at a time to prevent "crossing" drums.

## SPRAYING VA1-SP & V-MANIFOLD:

- STEP 1:** Inject Lithium Grease into Both Grease-Ports of Static V-Manifold Applicator Gun.
- STEP 2:** Always Grease the Ports on the V-Manifold at the start of a new day of spraying.
- A.) Always Grease inside ALL Threads of VA1-SP Tip in addition to V-Manifold.
  - B.) Unscrew Air-Valve Knob and Grease the Air Valve-Stem Threads with White Lithium Grease.
  - C.) Grease the Port on top of VA1-SP Tip and the Mounting Threads where V-Manifold Gun attaches.
- STEP 3:** Slowly turn VA1-SP Air-Valve Knob and let air flow through the system while V-Manifold is still closed.
- A.) Slowly pull down the V-Manifold handle to get A+B product flowing through Static Mixing Nozzle.
  - B.) Begin feathering in your material & Adjust Pump Controls where Necessary.

## SPRAYING VA1-SP & V-MANIFOLD:

**SPLATTER PATTERN INSTRUCTIONS FOR VA1-SP:** If using a “stepped” or “pencil point-tipped” Static Mixing Nozzle, make sure you cut off a 1/2” of Mixing-Nozzle-Spray-Tip to apply a Splatter Pattern. When pausing spray application for 30-60 seconds at the end of a run hold VA1-SP gun down with Static Mixing Nozzle pointed at the ground, letting AIR ONLY flow through the VA1-SP. This will keep the Static Mixing Nozzle tip open ensuring clear passage for when you are ready to continue spraying a new run.

### PAUSING or STOPPING SPRAY APPLICATION for Lunch, End of Day or Extended Periods of Time:

- Let air flow through VA1-SP with manifold handle off to Air-Purge excess material for at least **20-30 seconds**.
- Inject 2” of White Lithium Grease into the threaded end of your Static-Mixing Nozzle and re-attach to keep the whole system air-tight. NOTE -> This is not to keep the Static Mixing Nozzle clean for re-use, it is to keep the entire PJR VA1-SP System “air-tight” and ready to continue spraying the next morning or after extended breaks.

**\*Always Use a Fresh NEW Static-Mixing Nozzle** after any extended breaks from spraying, or overnight downtime to ensure the best spray productivity, open flow control, and spray quality from your VA1-SP setup.

**\*Prior to Spraying After Overnight Down-Time or Extended Periods of Time:** Inspect VA1-SP Tip to ensure no quick cleaning is necessary. If there is a clog from A+B Material build-up within the VA1-SP Tip, use the Magnetic Hand Tool (included/attached to the side of your VA1-SP gun) or any Allen Key to quickly remove any “set” A+B Material that may have set in the tip after extended down time. This should NOT occur if you consistently follow all spray instructions, daily flushing, start-up and shutdown procedures adequately.

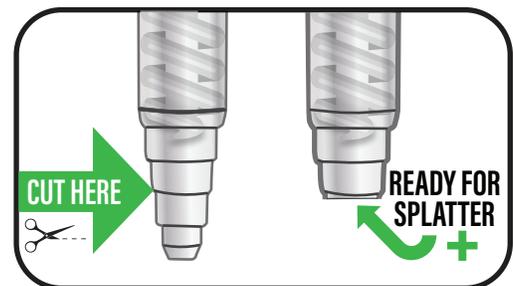
### Cleaning Blocked V-Manifold or VA1-SP Tip with Magnetic Cleaning Tool (any Allen Key will work as well):

Twist the Magnetic Hand Tool inside both thread ports of VA1-SP Tip, as well as Air-Valve by simply unscrewing Knob.

### SPRAY PATTERNS, AIR-PURGE, BEAD TIPS & REMINDERS:

#### • VA1-SP SPLATTER PATTERN:

- 1.) Cut the tip of Static Mixing Nozzle if “Stepped” or “Pencil-Pointed”
- 2.) Then, let air flow through tip only.
- 3.) Then, slowly begin “feathering in material.”



#### • AIR-PURGE CLEANING/KEEPING TIP + LINES FREE & CLEAR OF MATERIAL:

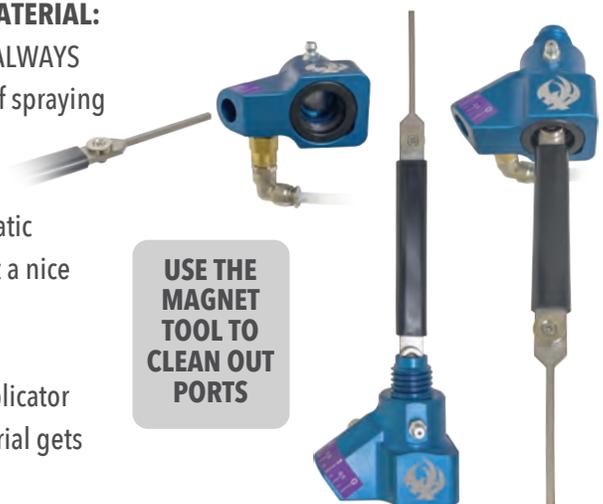
Hold VA1-SP with Static Mixing Nozzle Tip pointed toward the ground. ALWAYS let the air flow through the gun for 15-20 seconds before & after runs of spraying material to ensure that the Gun and A+B lines don't get clogged.

#### • FULL SPRAY PATTERN:

When using VA1-SP for Full Spray, use “stepped” or “pencil-pointed” Static Mixing Nozzle with more air-flow and low A+B material pressure to get a nice aerosolized type of full-spray pattern.

#### • STATIC BEAD:

Always remember to “SLOWLY” pull down on Manifold arm of your Applicator Gun to begin feathering in your A+B material, ensuring minimal material gets wasted or creates unnecessary messes on the job.



## PJR OVERNIGHT SHUT DOWN CHECKLIST

### Lunch breaks, Overnight, or 3-5 days

- 1.) Turn off rocker switch on pump. Unplug Unit.
- 2.) Turn down pressure knob to off position on pump.
- 3.) Open gun to relieve pressure in hoses.
- 4.) Close PJR VEE Manifold
- 5.) Grease gun to point of having 3" - 4" of grease in nozzle
- 6.) Turn off both ball valves at inlet hoses from drums.
- 7.) Take recirculation hoses out of vents and let hang down.
- 8.) Screw caps back on vent tubes.
- 9.) Cover Patriot Jr. with green stock cover provided.



### Vee-Air One SP & Fusion-AP Gun Overnight Shut Down Checklist:

- A) Turn off rocker switch on pump. Unplug Unit.
- B) Turn down pressure knob to off position on pump. (Shut off valves on gunblock)
- C) Allow air to blow through gun for 2 - 3 minutes. Trigger gun a few times to help clear tip.
- D) Shut off air compressor. Remove air line from gun. Remove cap from top of grease fitting on gun until it comes out of gun end. Replace cap.
- E) Store gun in a dry bag.
- F) Turn off both ball valves at inlet hoses from drums.
- G) Take recirculation hoses out of vents and let hang down.
- H) Screw caps back on vent tubes.

### Patriot Jr. Long Term Shut Down Checklist:

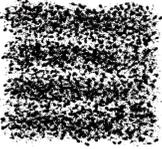
- Close inlet ball valves
- Disconnect inlet hoses from drums.
- Using the bag-in-a-box connector hoses, connect the appropriate hose to the A side inlet cam lock.
- Place hose into container of neutralizer .
- Open both ball valves inlet - allow B side to pump air through lines while flush is being pumped through A side.
- Have both residual materials left in hoses to be pumped into a container to discarded after foam has hardened.
- Once all materials have been purged from lines and neutralizer is present, allow the neutralizer to refill the same container from which you are pumping out of. Recirculate for approximately 10-15 minutes.
- Pull hose from container allowing neutralizer in hose to run back into container.
- Now insert same inlet lose into container of Dyna-lube.
- Flush out neutralizer until lube is present.
- Pump lube through system until it comes out gun.
- Leave air in B side.
- Close off inlet ball valves.
- Install dust caps and covers in cam locks.
- Turn off pump and close gun.
- Add grease into guns through grease nozzle inlets. (Fill 2" - 3" into tip)

**WATCH VEE-AIR ONE SP  
STARTUP INSTRUCTIONAL  
DEMO VIDEO HERE -->**



# USING THE VA1-SP

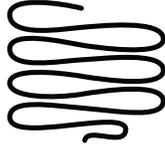
FULL SPRAY



SPLATTER



BEAD



AIR PURGE



### FOR AIR SPRAY PATTERNS:

IF USING COMPRESSED AIR & VEE-AIR ONE SP (VA1-SP) FOR SPLATTER PATTERN:

Cut the tip of Static Mixing Nozzle for Splatter-Spray, and then slowly begin "feathering in material."

### AIR-PURGE CLEANING/KEEPING TIP + LINES FREE & CLEAR OF MATERIAL:

Hold The VA1-SP with Static Mixing Nozzle-Tip pointed down toward the ground. ALWAYS let the air flow through the gun for 15-20 seconds before spraying material and after spraying material for another 15-20 seconds to ensure that the VA1-SP and A+B lines don't get clogged

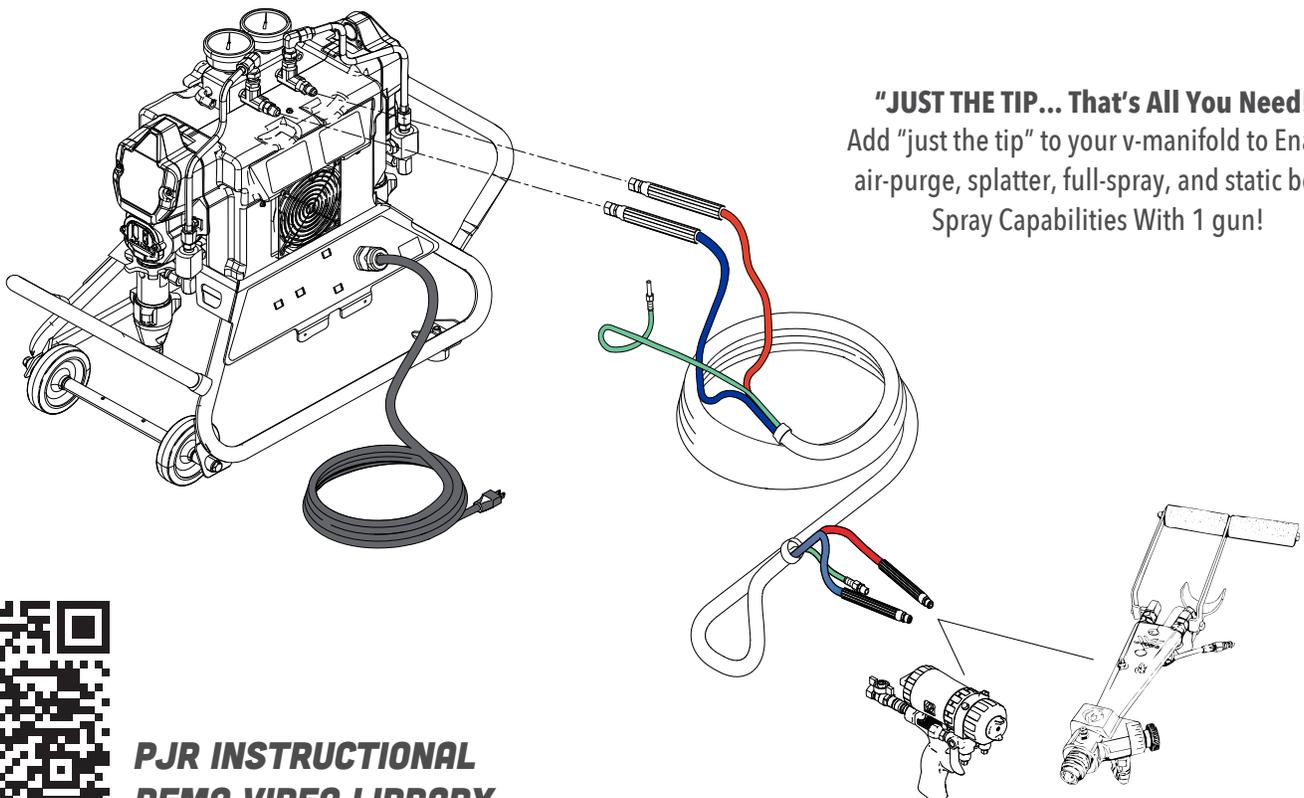
### Suggested PJR Applicator Tools

- VA1-SP: Splatter, Full Spray, Air-Purge, Bead
- V-Manifold: Static Bead
- GRACO Fusion PC: Full Spray
- GRACO Fusion AP: Splatter

### VEE-AIR ONE SP AIR-PURGE SPRAY GUN

*\*USE One Gun for All Your 2-Part Spray Needs\**

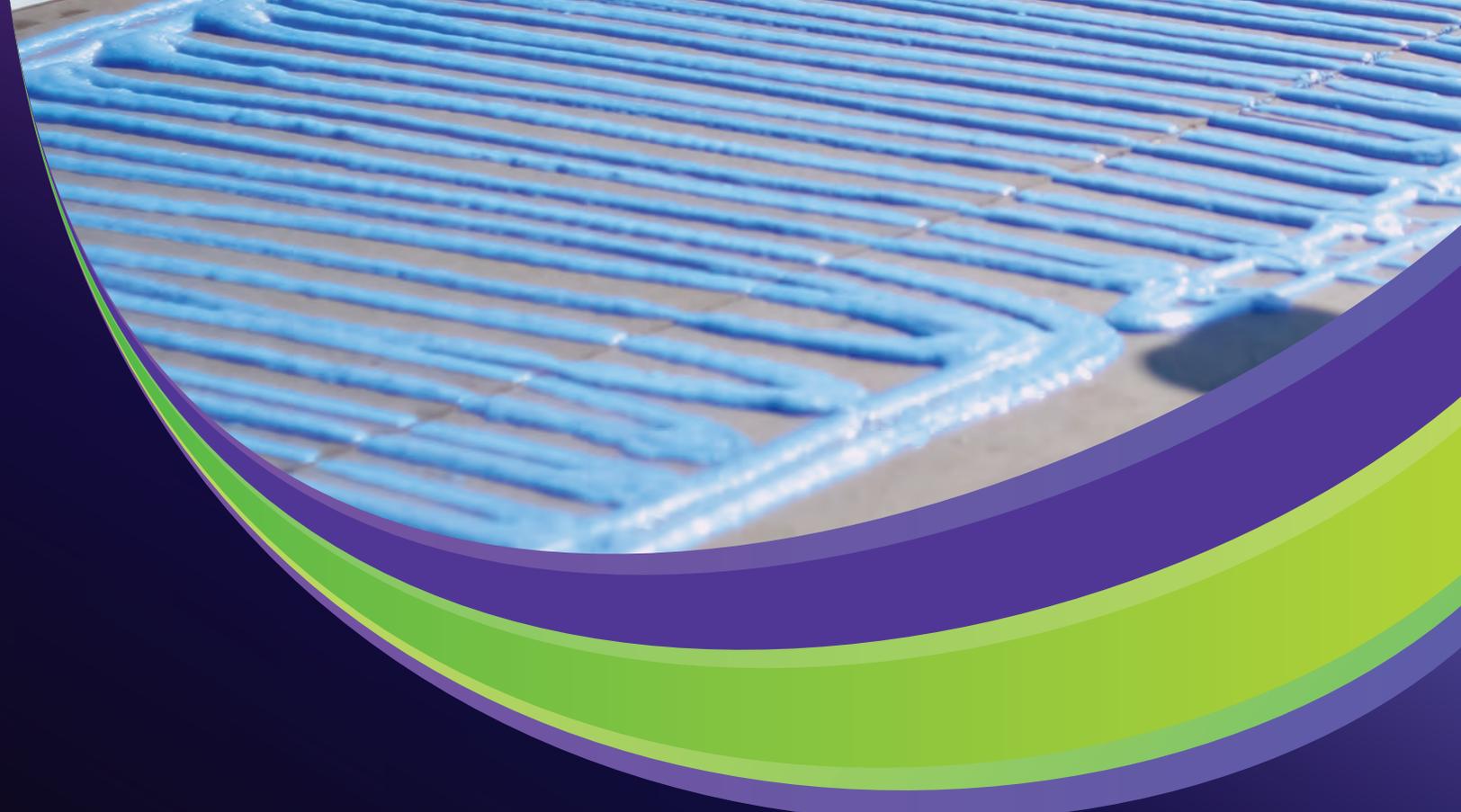
- ANY Spray Pattern: Bead, Full Spray, Splatter, Air-Purge
- VA1-SP = Only Self-Cleaning 2-Part Adhesive Gun
- COST 50% Less Than The GRACO Fusion AP
- MADE IN The USA by AMPED EQUIPMENT



**"JUST THE TIP... That's All You Need!"**  
 Add "just the tip" to your v-manifold to Enable air-purge, splatter, full-spray, and static bead Spray Capabilities With 1 gun!



**PJR INSTRUCTIONAL  
 DEMO VIDEO LIBRARY**



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***SUPERCHARGE YOUR SPRAY PRODUCTIVITY***

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