



Clean Water Made Easy

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J-PRO-22

PVDF Citric Acid

Installation & Start-Up Guide



J-PRO-22 Citric Acid Installation & Start-Up Guide

Thank you for purchasing a Clean Water System! With proper installation and a little routine maintenance, your system will be providing treated water for many years.

Please review this start-up guide entirely before beginning to install your system and follow the steps outlined for best results.

Citric Acid is ordered separately and not included in same box as pump.

Specifications:

Pumps 0.1 to 22 gallons of solution per day

Injects into line pressures up to 110 PSI

Dual voltage. 110V or 220V, works on either voltage.

Uses maximum 22 watts of power.

Dimensions:

5-gallon model: 10" x 10" x 15". Height including pump is 26"

15-gallon model: 14.5" wide x 24", height including pump is 35".

35-gallon model: 18" wide x 33", height including pump is 44".

CITRIC ACID CAN IRRITATE SKIN AND EYES


USE RUBBER GLOVES AND EYE PROTECTION WHEN HANDLING.

NOTE ABOUT 220V INSTALLATIONS: This pump is dual voltage right out of the box and works on 110v OR 220v.

If you plan to install to run on 220v-240v, we recommend cutting off plug and either hard-wiring to 220v circuit OR installing a 220v plug-end.

This pump is intended for indoor use, or for outdoors if protected from sunlight and freezing.

Questions?

 **Call us toll-free:** 1-888-600-5426 or 1-831-462-8500

 **Email us:** support@cleanwaterstore.com

 **See more information on our website:** www.cleanwaterstore.com/resources

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J-Pro-22 Metering Pump Warranty and Returns

Your pump comes with a 1 Year Warranty from date of delivery.

If your pump fails under warranty, please call or email our office to obtain a Returns Good Authorization Number before sending us back the pump for repair or replacement under the warranty. No returns can be accepted without an RGA number.

The Warranty covers repair and/or replacement of the metering pump but not shipping costs.

While defects are rare, we do our best to respond to warranty returns fast as we can. Please allow 3 to 5 business days after pump has been returned for your pump to be repaired or a new one supplied under the warranty agreement.

Shipping charges are not covered under warranty. Any expedited shipping (overnight, 2-day, etc.) is the customer's responsibility.

Conditions Not Covered by the Warranty

Power surges or outages that cause pump failure are not covered under warranty.

Surge protection is strongly recommended. If a pump is returned for warranty replacement and the cause of failure is determined to be from a voltage spike, the pump does not qualify for replacement. This is the leading cause of failure. Pump failure during, or because of, power failure is not covered under warranty.

This pump is intended for indoor use only. The pump must never be exposed to freezing temperatures, direct sunlight, or rain. If the cause of failure is determined to be from exposure to any of these environments, the pump does not qualify for replacement and will not be covered under warranty.

For Returns Contact Clean Water Systems & Stores Inc. 2806-A Soquel Ave Santa Cruz, CA 95062831-462-8500 support@cleanwaterstore.com

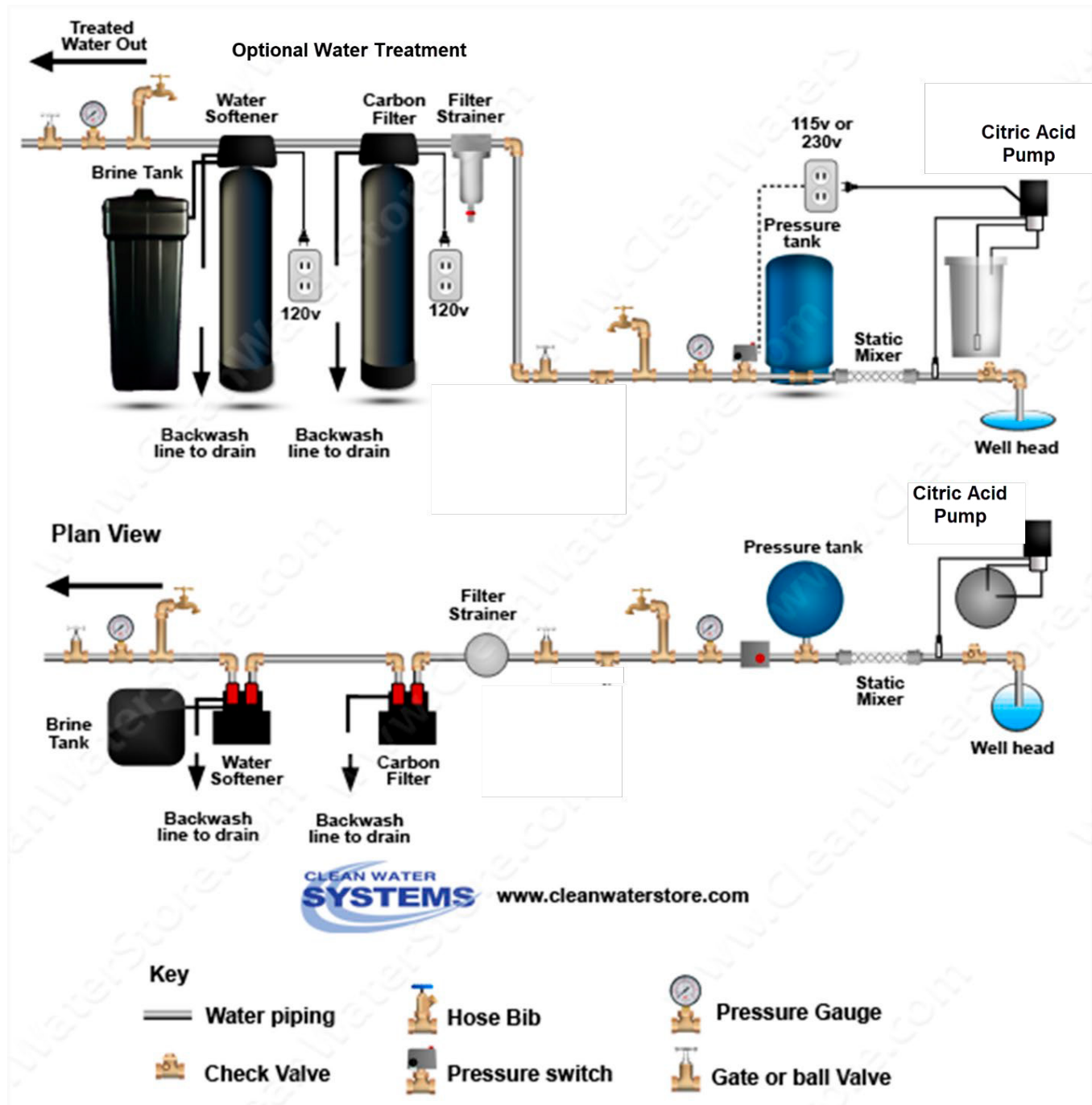
Pre-Installation

1. Review your packing list and make sure you have received all the parts before beginning installation.
2. If you turn off the water to the house and you have an electric water heater, shut off the power to the water heater before beginning installation in case water heater is accidentally drained.
3. Pick a suitable location for your Citric Acid injection system on a dry level spot where it won't be exposed to freezing temperatures or direct sunlight. Maximum line pressure is 100 PSI.
4. Get all plumbing parts together before beginning installation.

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Typical Installation Diagram

(with optional Static Mixer, Carbon Filter and Softener)



Static Mixers aid in the rapid mixing of the Citric Acid into the water. In some cases, a contact retention tank is recommended

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How To Set Up Your Citric Acid Pump To Turn On and Off Automatically

The pump is designed to pull Citric Acid solution out of a solution tank and pump a precise amount of Citric Acid into a pipeline under pressure.

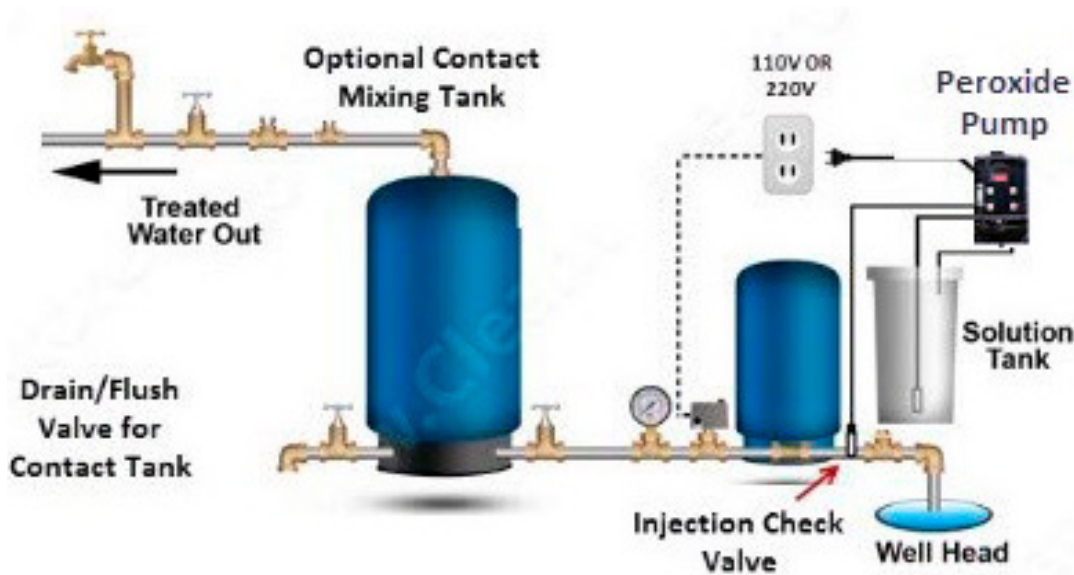
Right out of the box, this is a dual-voltage (110/220) pump. There are several ways to wire the pump such that it triggers when there is water flow.

The well pump is controlled by your pressure switch. Choosing one of the ways outlined below, the J-Pro-22 pump will be installed so that it powers up and injects Citric Acid solution when the well pump and motor are turned on via the pressure switch.



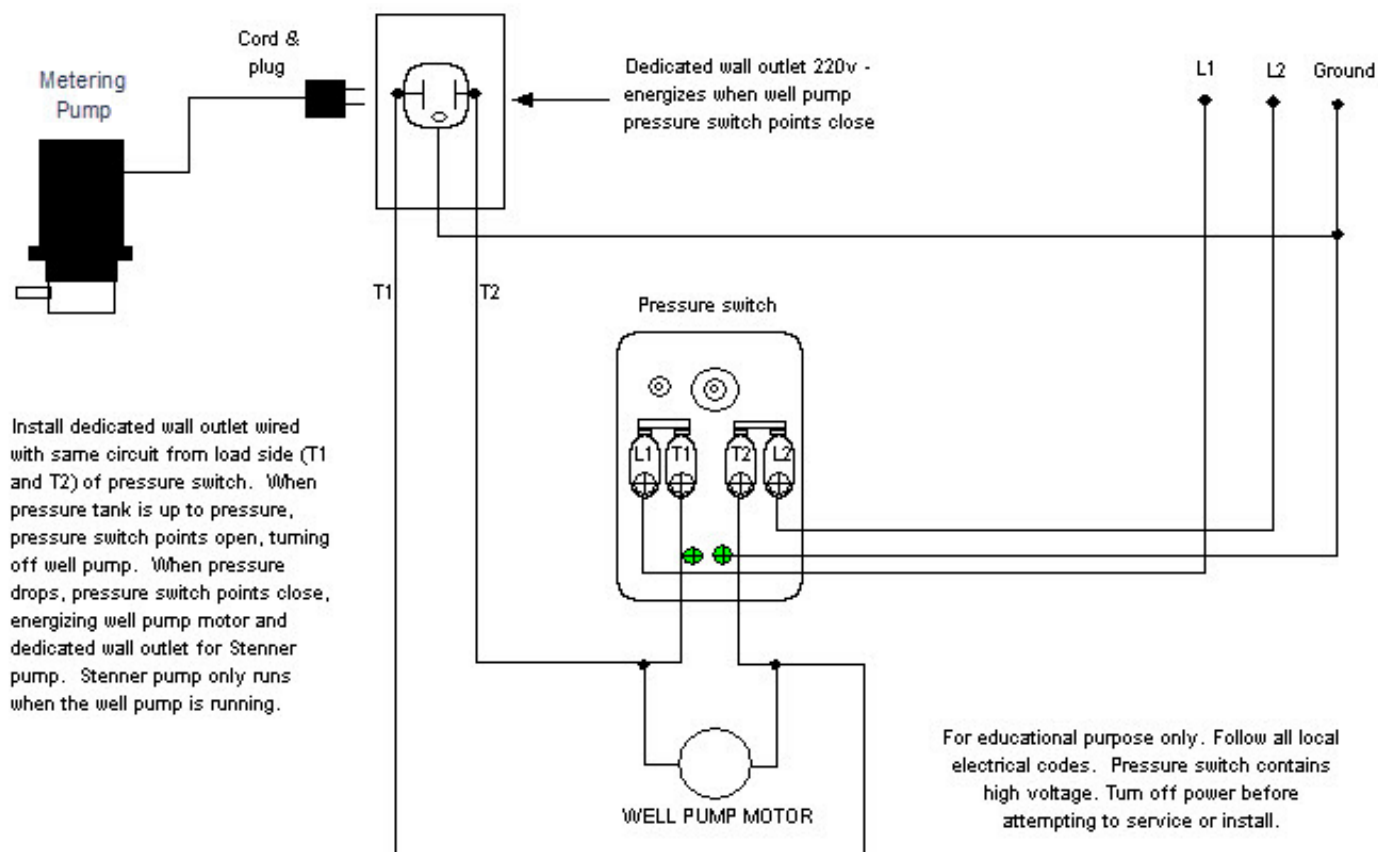
1. You can install a flow switch and plug the J-Pro22 into that.
2. You can wire it to your well pressure switch, using a dedicated electrical wall outlet.
3. You can cut the plug and wire direct to pressure switch. Note that the ground wire is yellow color, brown and blue are hot wires.

Wire to Pressure Switch Option



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Wire To Pressure Switch Option



You may cut off the 110-style plug and wire a 220-style plug, and then plug that into a dedicated 220- style wall outlet.

220v has two 110v wires. Wire one 110v to brown, and one 110v to blue. Green/yellow wire is ground.

Install a dedicated wall outlet that is wired to the pressure switch and powered up whenever the well pump turns on.

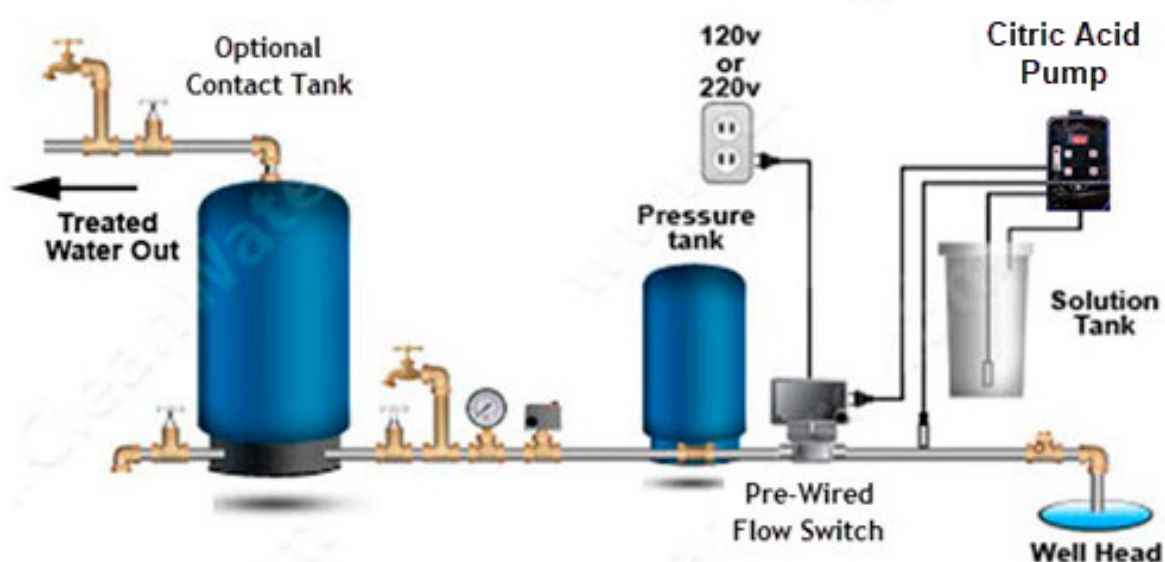
The J-Pro-22 is a dual voltage pump. It has a 110 volt- style plug but can run on 220v or 110v. It uses a maximum of 22 watts power when running.

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Use Pre-Wired Flow Switch Option

As an option to turn on and off the Citric Acid pump, install a flow switch. No electrical wiring to do and any plumber, or person familiar with basic plumbing, can install it.

Simply plumb the pre-wired flow switch into your service pipe. Plug the flow switch into a standard 120V wall outlet. Then, plug the Citric Acid pump into the electrical outlet on the flow switch. Whenever there is flow, the metering pump will then turn on.



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J-PRO-22 Installation Instructions

While you can mount the pump on a shelf above the solution tank, it is strongly advised to mount the pump directly on top of the solution tank. If the tubing from the foot valve to the suction side of the pump exceeds 60", the unit will not have enough lift force to stay primed.

Mount Pump to Solution tank

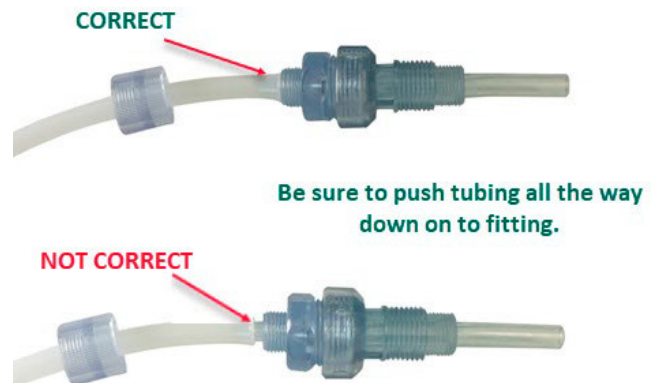
Place pump on tank. Mark where the anchor holes will be drilled. Drill pilot holes with a small drill bit so that the pump can be mounted on the tank with two wood or sheet metal screws. We recommend screwing them in after the pump has been primed and the tubing has been hooked up for easiest installation.

Mark the holes for the suction tube and the degassing valve return line and drill holes.



How to Connect Tubing & Fittings

- Trim the end of the tubing square (cut with a new box cutter blade).
- Slide the connector nut onto the tube.
- Push the tubing over the conical fitting until the tubing is flush against the end of the fitting.
- Screw the connector nut on, hand tight.
- Do not use Teflon tape/ paste on the tubing fitting connections.



Use the harder/stiffer translucent tubing for connection from discharge-side (12 o'clock) to the injection check valve.

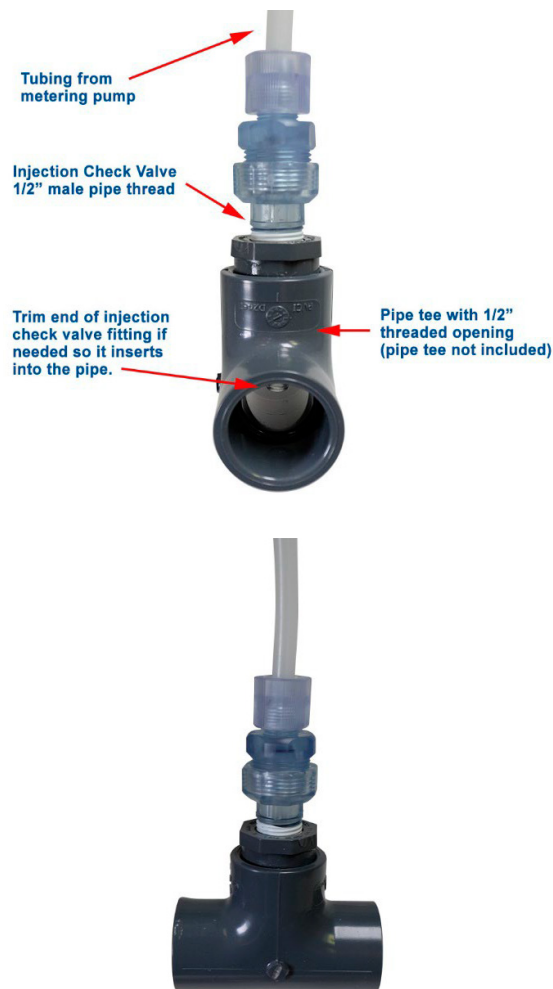
Use the softer clear tubing for the foot valve to suction-side (6 o'clock) connection.

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Install Discharge Side Tubing

This is the tubing that goes from the pump discharge (outlet) to injection check valve in pipe tee.

1. Shut off well pump or water supply and de-pressurize service pipe.
2. Install injection check valve by installing a pipe tee in your pipe that has a 1/2" NPT fitting, where you can screw in the injection check valve (included with your J-PRO-22 pump).
3. Wrap Teflon tape on the 1/2" pipe threads of the injection check valve and apply a light coating of white Teflon pipe paste and install into Tee fitting.
4. Trim the end of the injection check valve fitting so that the end (where the Citric Acid squirts out) will be in the center of the service pipe.
5. Make sure to install injection check valve in to pipe directly. If the end of the check valve is not in the service pipe, it will not work. Do not install a ball valve, or any length of pipe run, coming off the tee.
6. Using a hack saw or cutter, trim the end of the injection check valve if needed, so it inserts into the water pipe as shown.
7. Install tubing that came with your pump and connect pump to injection check valve.
8. Cut tubing to desired length with enough slack to avoid kinks.



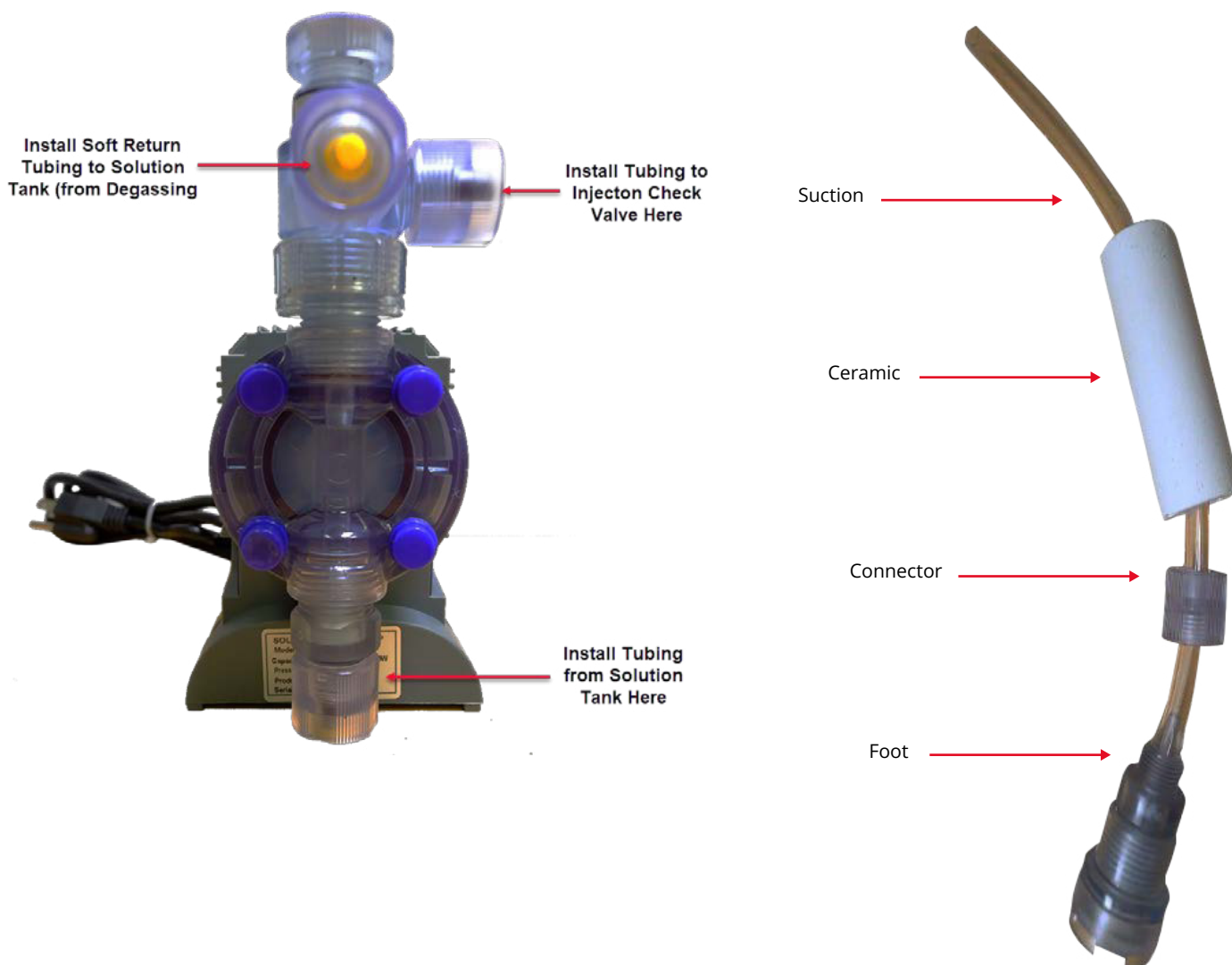
Injection check valve can be installed into PVC, copper or other piping.

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Install Suction Tubing from Pump to Solution Tank

Connect hard tubing from foot valve in Solution Tank to Inlet/ Suction side of metering pump

1. Measure the tubing from the outside of the solution tank to ensure it will be 2-3" from the bottom of the solution tank.
2. Do not allow weight to sit at the bottom of the tank. Connect tubing to the foot valve and put the ceramic weight on.
3. Run the tubing up through the hole and connect to the Inlet/ Suction side of pump.



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Connect Tubing from Degassing Port ("Kicker Port")

You can use the soft tubing for this run, connect tubing to the degassing port fitting (labeled on the pump as "Kicker Port") and pass tubing through the hole you drilled down into the tank 4-6".



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Prime & Start the Pump

1. Fill solution tank with 4 gallons of softened, distilled or RO water but don't add Citric Acid yet.
2. Connect the suction tubing to the foot valve and discharge tubing to your injection check valve.
3. Connect the degassing prime valve tubing and route to the solution tank, above the water line.
4. Open the degassing prime valve approximately one turn counterclockwise to open. This will allow the solution to be pumped back into the tank for fast priming.
5. Turn on the pump and set Speed to 100% to help prime the pump if not already displaying 100
6. You will quickly see water being pumped up the suction tubing and out of the degassing valve return line port.
7. Close the degassing port valve to allow liquid to pump out the discharge side. Open and close degassing valve as required to prime pump. Close degassing valve once pump is primed for normal operation.
8. Add 1 gallon of 7% Citric Acid to the 4 gallons of distilled water

Metering Pump Buttons

Out of the box, when you plug the unit in, the green Motor light is indicating the pump has power. It will be set at 100 and start pumping.

Press the Start/Stop button to stop the unit from pumping. The Up and Down arrows are to adjust the Speed of the pump, from 0-100.

The Set button and the Auto light indicator have no function on this model, they are for use with a flow meter.



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About Injecting Citric Acid

Citric Acid is commonly used to lower pH in water. The goal typically is to bring down to the 7 to 8 pH range.

How Much Citric Acid Should Be Injected?

For citric acid, a good starting point is 1 lb of citric acid (2 cups) dissolved in one gallon of soft or pure water. Warm water dissolves more rapidly.

1. Set the pump speed at 60.
2. Check pH and adjust speed to inject more or less citric acid solution.
3. If pH is too low (less than 7) add water to dilute solution or turn pump speed to lower setting.

Troubleshooting and Maintenance

Most problems occur with the connections, sometimes fittings are not assembled correctly, or they are over-tightened, or people use Teflon tape and paste on fittings that do not need it.

If the pump pumps in manual mode and makes a thumping sound, then it is working.

Watch How-To Videos on Our YouTube Channel

<https://www.youtube.com/cleanwaterstore>

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Priming Problems

1. If you cannot get it to prime, it is either because a fitting is too loose, too tight, or not installed correctly.
2. While the pump is running (usually, on Manual), observe if the fluid is coming up the tube- if you see the water going up and down in the tubing, this indicates the foot valve is not tight, or you installed the pump too high above the solution tank, or you mounted the pump improperly.
3. Sometimes, as mentioned earlier in the guide, it is because the four Allen head bolts on the pump head have loosened, and need to be tightened, do not over-tighten.
4. If the solution has filled the tubing, but it is not discharging, make sure the de-gas is opened for priming. After it is pumping and solution is coming out the degass tee make sure to close it all the way for normal service operation.
5. The tubing going from the outlet/discharge to injection check valve will twitch and move at the same time the pump triggers, that is how you can confirm you are pumping solution.
6. If this does not work, remove the discharge-to-injection check valve tubing from the outlet fitting, and see if it squirts out of the top- if it does, this indicates that the problem is in the injection check valve, or that you are trying to pump against greater than 100 psi.

Maintenance Tips

Check Citric Acid residual at least once per month and adjust the J-PRO-22Pump and/or solution strength if needed.

Winterizing: do not let the J-PRO-22Pump or tubing freeze. If you need to winterize, drain the solution tank and discard Citric Acid solution.

Place the suction of the pump into a bucket of clean water and allow the pump to run until the J-PRO-22Pump is free of any Citric Acid solution.

Remove the suction tubing from the water and allow the pump to pump dry. Pump is ready to store.

NOTE: when making your citric acid solution, use only distilled water, water from a reverse osmosis system, or at least softened water. Do not use untreated well water.

Need Assistance?

 **Call us at 831-462-8500**

 **or email support@cleanwaterstore.com**

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Troubleshooting Tips	Solutions
Pump not priming	Ensure the suction line is correctly connected and free from leaks. The foot valve should be submerged in the solution.
	Make sure tubing is pushed the conical fitting until the tubing is flush against the end of the fitting and fittings are tightened.
Pump not injecting solution (chlorine, peroxide, soda ash, citric acid etc)	Verify the injection check valve is correctly installed and not obstructed.
Pump losing prime	Inspect if the solution tank is empty or if the foot valve is obstructed.
Pump making loud noise	Pump does make a “ka-thunk” rapping noise when pumping, this is normal. Consider soundproofing the pump with a wooden or styrofoam enclosure. A rapping or clicking noise is common when the pump is operating.
Not sure if my JPRO-22 pump is actually pumping solution	Listen for a “ka-thunk” sound when pump is running. If the pump is primed and pumping you will notice the discharge tubing slightly twitching and jerking.
	Mark the solution level on the solution tank with a piece of tape. Check again in 1 to 2 days to see if the level has changed.
Pump sounds like it's pumping but solution is not going down	Open the priming valve on top of the pump to discharge the solution back into the solution tank. If it starts pumping, it might have lost its prime.
	Diaphragm might be worn or torn. Replace diaphragm. For residential use diaphragms typically last 2 to 4 years before requiring replacement.
Solution can pump out through the priming valve but won't pump into the actual piping	Ensure the injection check valve is clean and not plugged up.
No sound coming from pump. No lights on control panel when plugged in or powered up	The pump will need to be replaced. Ensure the pump is not exposed to power surges.
Entire solution tank empties each day	This could be due to a vacuum being pulled on the JPRO-22 and your water line sucking solution out of the solution tank. This is not a pump issue. It's often caused by a faulty check valve in the well causing water to run back down the well and creating a vacuum on the injection check valve.
Pump failure due to power surges or outages	Power surges or outages that cause pump failure are not covered under warranty. Surge protection is strongly recommended.
Pump failure due to exposure to freezing temperatures, direct sunlight, or rain	If the cause of failure is determined to be from exposure to any of these environments, the pump does not qualify for replacement and will not be covered under warranty.
Pump leaking from front end (liquid end) of pump	Replace diaphragm and oring set. If pump is several years old the pump head may also need to be replaced