



Clean Water Made Easy

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J-PRO-22 Pump Proportional Feed Citric Acid Installation & Start-Up Guide



J-PRO-22 Proportional Citric Acid Installation Guide

Thank you for purchasing a Clean Water System!

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

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 DAMAGE CLOTHING AND 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.

Watch Installation Video on Youtube

<https://youtu.be/uMd0Zqi0ddw>



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

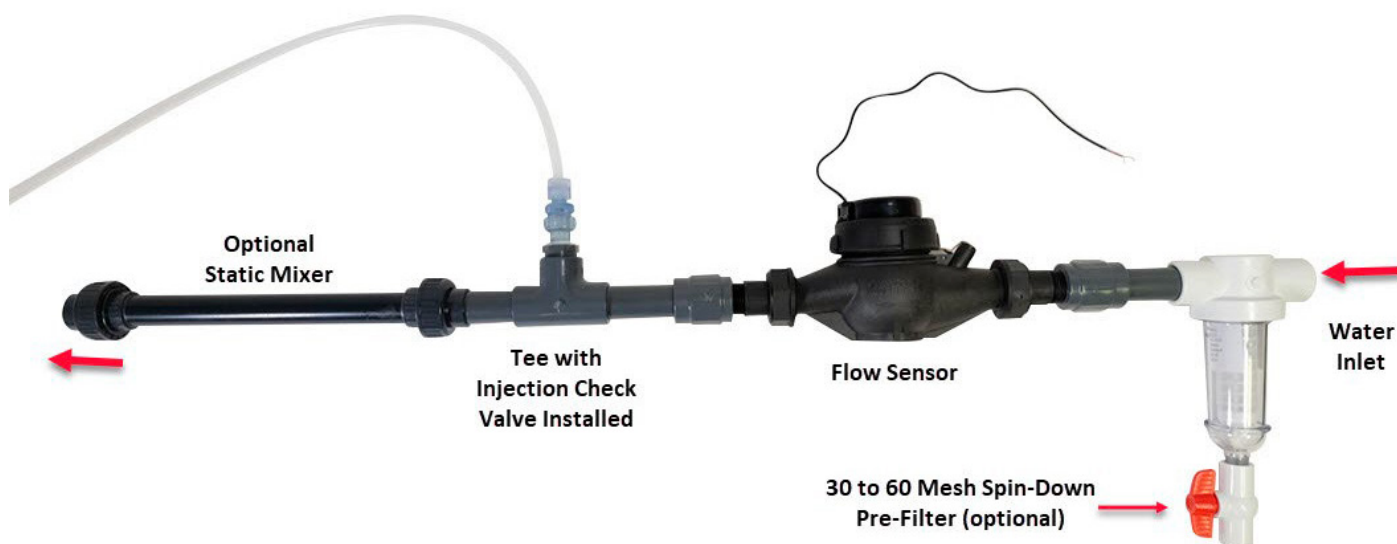
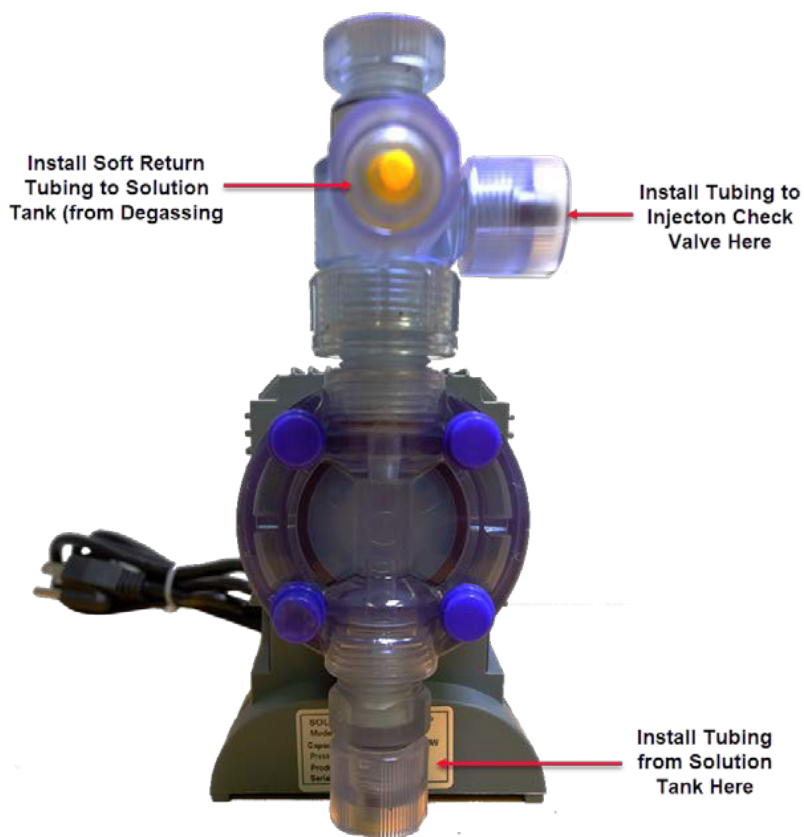
Pre-Installation

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 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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Installation Over-View Steps

1. Install the Flow Sensor horizontally with the display facing up in a location where it is easy to connect with the J-PRO-22 pump and electrical outlet.
2. Install the Citric Acid injection valve (included with your order) after the flow sensor into a tee in your pipe.
3. Install flow sensor and injection valve after existing pressure tank (if you have a pressure tank).
4. Connect the flow sensor cable to the Citric Acid Pump cable, follow steps below in this guide to set the pump to automatic.
5. Plug the JPRO-22 into a wall outlet and follow steps later in this guide to program and set pump.
6. Now, when there is water flowing through the Flow Sensor, the JPRO-22 pump will pump Citric Acid solution based on the flow of water.

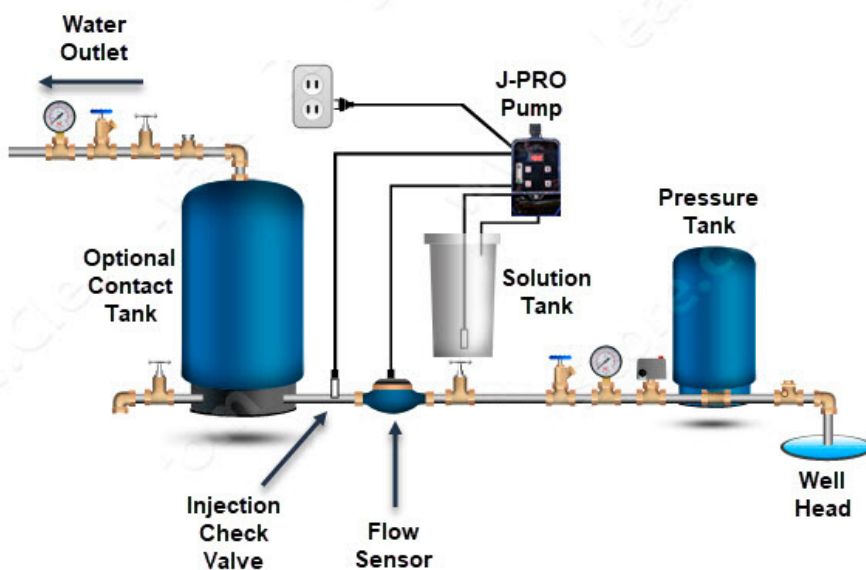


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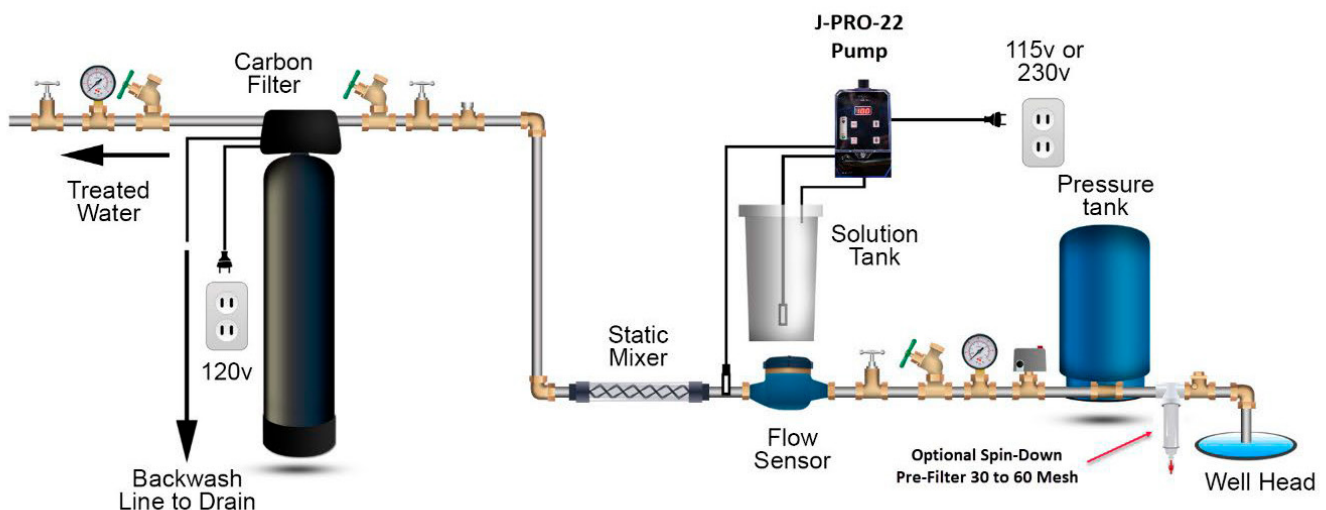
How Your Citric Acid Injection System Works

Install the Flow Sensor horizontally with the display facing up in a location where it is easy to connect with the J-PRO-22 and electrical outlet. Attach meter cable to pump per instructions below. Whenever water flows through flow sensor, a precise amount of Citric Acid will be injected.

Example Installation with Optional Contact Tank



Example Installation with Optional Static Mixer & Spin-Down Pre-Filter



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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.

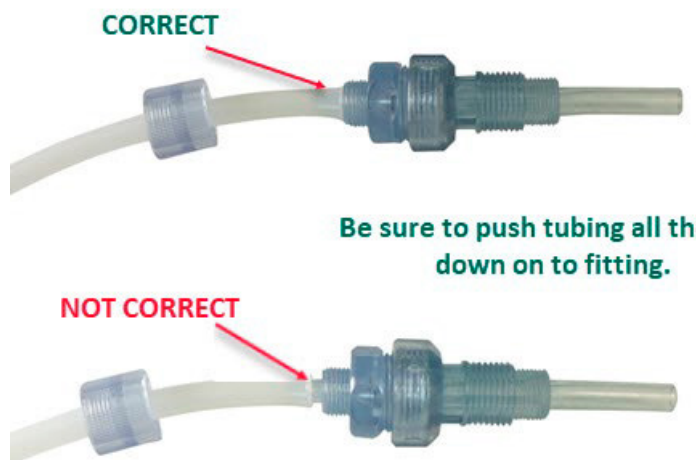
Mark the holes for the suction tube and the degassing return line and drill holes.



How to Connect Tubing & Fittings

Note: Warming tube ends with hot water or a hair dryer helps with tubing installation.

- 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.

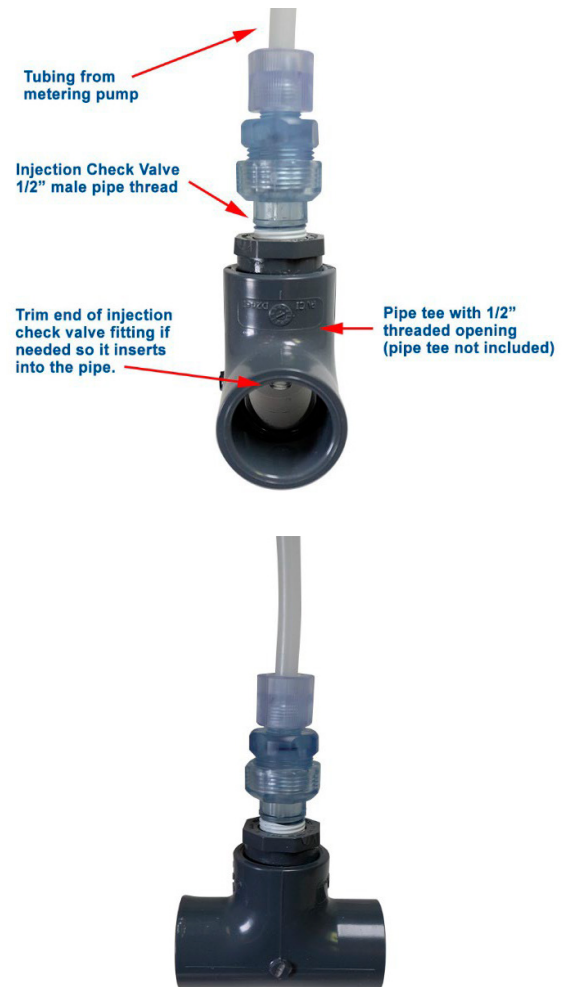
Use the softer clear tubing for the foot valve to suction-side (6 o'clock) connection.

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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 $\frac{1}{2}$ " NPT fitting, where you can screw in the injection check valve (included with your J-PRO-22 pump).
3. Wrap Teflon tape on the $\frac{1}{2}$ " 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 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.



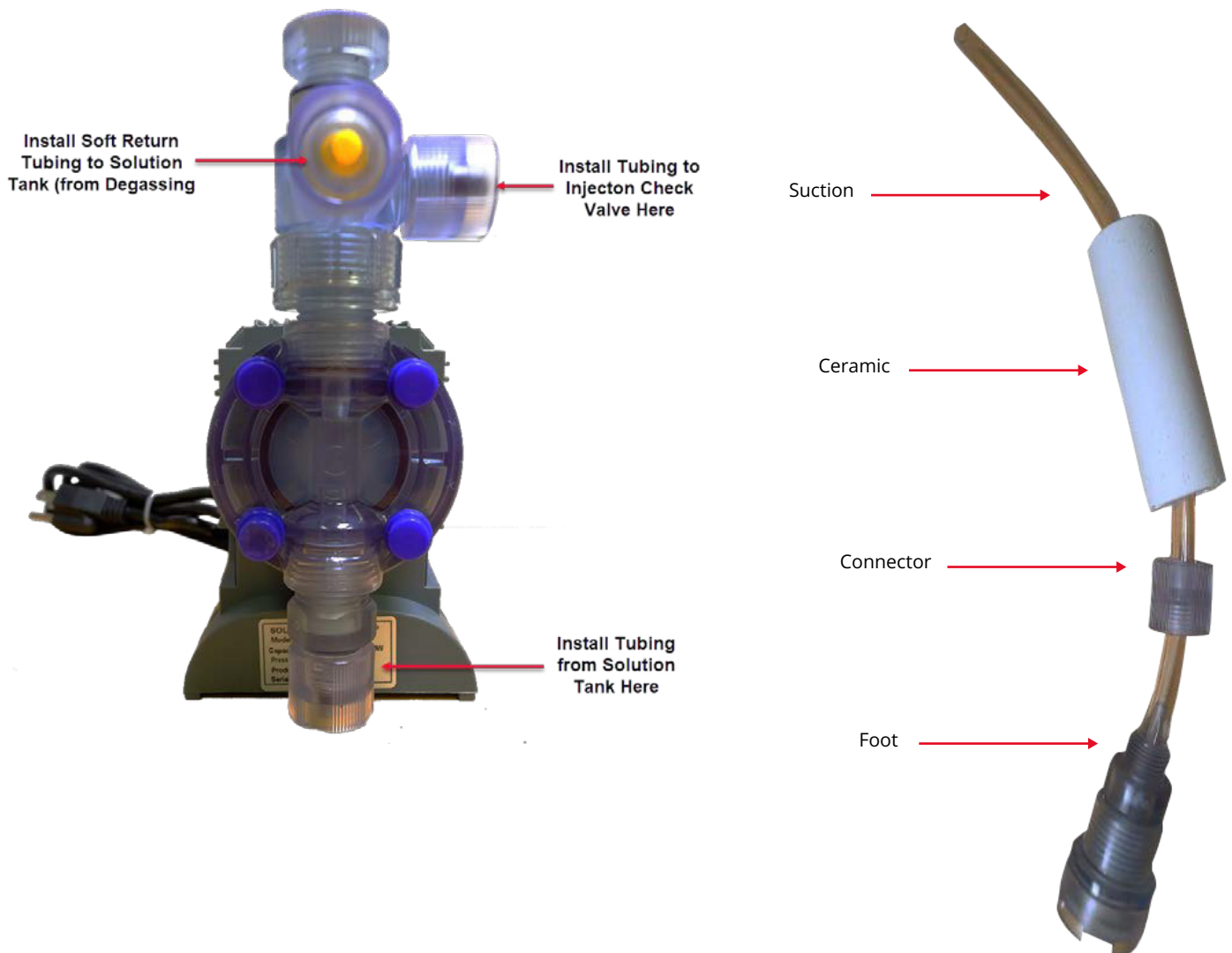
Injection check valve can be installed into PVC, copper or other piping.

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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")

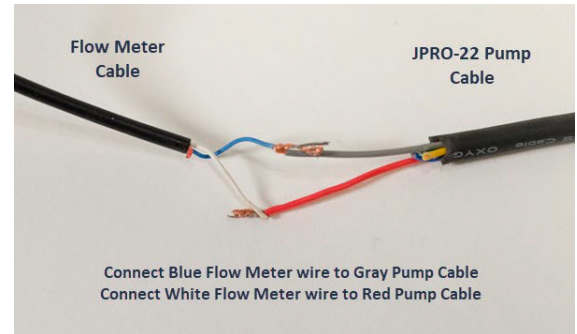
You can use the soft tubing for this run, connect tubing to the degassing port fitting (labeled on the pump as "Kicker Port") and pass tubing through the hole you drilled down into the tank 4-6".



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Connect the Cables (wiring) for the J-PRO-22 Pump

1. Flow Meter Cable WHITE wire Connects to Pump Cable RED wire (trim back, disregard other color wires)
2. Flow Meter Cable BLUE wire connects to Pump Cable GRAY wire. (trim back, disregard other color wires)
3. Solder or connect the wires with wire nuts, or electrical tape and then seal with shrink wrap or electrical tape.



Prime & Start the Pump with Water First

1. Add 4 gallons of distilled or purified or softened to solution tank.
2. Adjust the 2FV "kicker port" (which is the Degassing Valve) so it is open approximately ½ to 1 turn counter-clockwise.
3. Plug the pump in to electrical outlet.
4. Pump will be in Manual Mode, with the % at 100%
5. "Motor" light will be Green. "Auto" light will be off.
6. Press the ON-OFF button, pump will start pumping.
7. You will quickly see water being pumped up the suction tube and out the degassing tube.
8. After the pump is primed, close the degassing valve. The valve shall remained closed for normal operation.
9. After the pump has been in operation for an hour or so, you should check the liquid end of the pump (back end) and re-tighten the four stainless steel Allen-head screws on the head in a crisscross fashion. **Take care not to overtighten as you may damage the pump.**

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Program and Pump Settings

NOTE: When making programming changes to the pump, you must wait at least 15 seconds for the updated changes to be stored in the memory. Making additional changes or shutting off power to the pump prior to this waiting period will default back to the original settings.

When first plugged in, pump display will read "100" and be in Manual (non-pulse) mode. "MOTOR" light will be green.

1. Press and hold the SET button for several seconds until "AUTO" light turns green.
2. Now press and hold both the SET button and UP Arrow button for a moment and release.
3. Using UP Arrow button only, adjust to 6, which gives you six pump strokes for each gallon of water flowing through the flow meter. If you get into negative numbers, you must scroll the down arrow key to zero in order to scroll up to positive numbers.
4. After you have selected the number of strokes per gallon, press and release the Set button to confirm the setting.
5. Finally press the ON-OFF button once, and now your pump is in automatic mode.

Note: Check to see if pump is operating correctly by running the water and comparing pump actuations vs. programmed strokes per gallon of water flowing through the meter.

During Auto mode, numbers appearing on the readout have no meaning or direct correlation to amount of solution being injected.

Later you can adjust it higher (or lower) depending on the desired chlorine residual. For more information on that, see example calculations below.

How to Select the Citric Acid Solution Strength and Pump Setting

- The goal of a properly functioning Citric Acid injection system is to reduce the pH of your water 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.

Pulses Per Gallon setting on pump: Set to 6 to start.

Test the pH, and then either turn up the pump if the pH is not low enough, or add another 1/2 gallon of water if it is too low.

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Troubleshooting and Maintenance

Most problems occur with the connections, it can sometimes be hard to push the tubing onto the cones, sometimes fittings are over-tightened, or people use Teflon tape and paste on fittings that do not need it.

Remember, above all, if the pump pumps in manual mode (makes a ka-thunk, ka-thunk sound), **then it works.**

Is pH too Low? Too much Citric Acid?

Adjust the strokes per gallon down to 1 or 2, and/or make the Citric Acid solution more diluted by adding more distilled water.

If you cannot get it to prime, it is either because a fitting is too loose, too tight, or not installed correctly.

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.

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.

If the solution has filled up the tubing, but it is not discharging, make sure the de-gas is opened, and then close it until the point when it starts pumping.

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.

If this does not work, remove the discharge-to-injection check valve tubing from the outlet fitting, and see if it strokes 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.

Winterizing: do not let the J-PRO-22 Pump or tubing freeze. If you need to winterize, drain the Citric Acid 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-22 Pump is free of any Citric Acid solution. Remove the suction from the water and allow the pump to pump dry. Pump is ready to store.

NOTE: when diluting the Citric Acid, use only distilled water, water from a reverse osmosis system, or at least softened water. Do not use untreated well water.

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Need Assistance?

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

 **Or email us:** support@cleanwaterstore.com

Spare Parts

These installation parts are included with initial order, but you may wish to have spares on hand, or replace the injection check valve, foot valve or diaphragm later.



P7007550
Injection
Check Valve



P7007540
Diaphragm
Replacement



P7007570
Foot Valve

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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