CLEAN WATER STORE

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J-PRO-22 110V – 230V Dual Voltage

Chlorinator Installation & Start-Up Guide

J-PRO-22 110V – 230V Dual Voltage Chlorinator Installation & Startup 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.

This pump is intended for indoor use only, protect from sunlight and freezing.
Do not expose to temperatures over 110F.

CHLORINE CAN DAMAGE CLOTHING AND IRRITATE SKIN and EYES. USE RUBBER GLOVES AND EYE PROTECTION WHEN HANDLING.

USE ONLY PURIFIED OR SOFTENED WATER TO MAKE UP CHLORINE SOLUTION, NOT RAW WELL WATER.

USE CHLORINE POWDER OR BLEACH CERTIFIED FOR DRINKING WATER, NOT LAUNDRY BLEACH.

NOTE ABOUT 220V INSTALLATIONS: pump is dual voltage 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 only, protect from sunlight and freezing.

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”.

For assistance call: 1-831-462-8500

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TO WATCH INSTALLATION VIDEO

with your smartphone camera to view it online

Or click this link to view it online

https://www.cleanwaterstore.com/JPRO22

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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 notshipping 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.

If the water supply and its continuous chlorination are critical, a back-up chlorinator pump should be on hand. Shipping charges are not covered under warranty. A flat fee of $9.95 each way will be charged for ground shipping (continental US). 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.

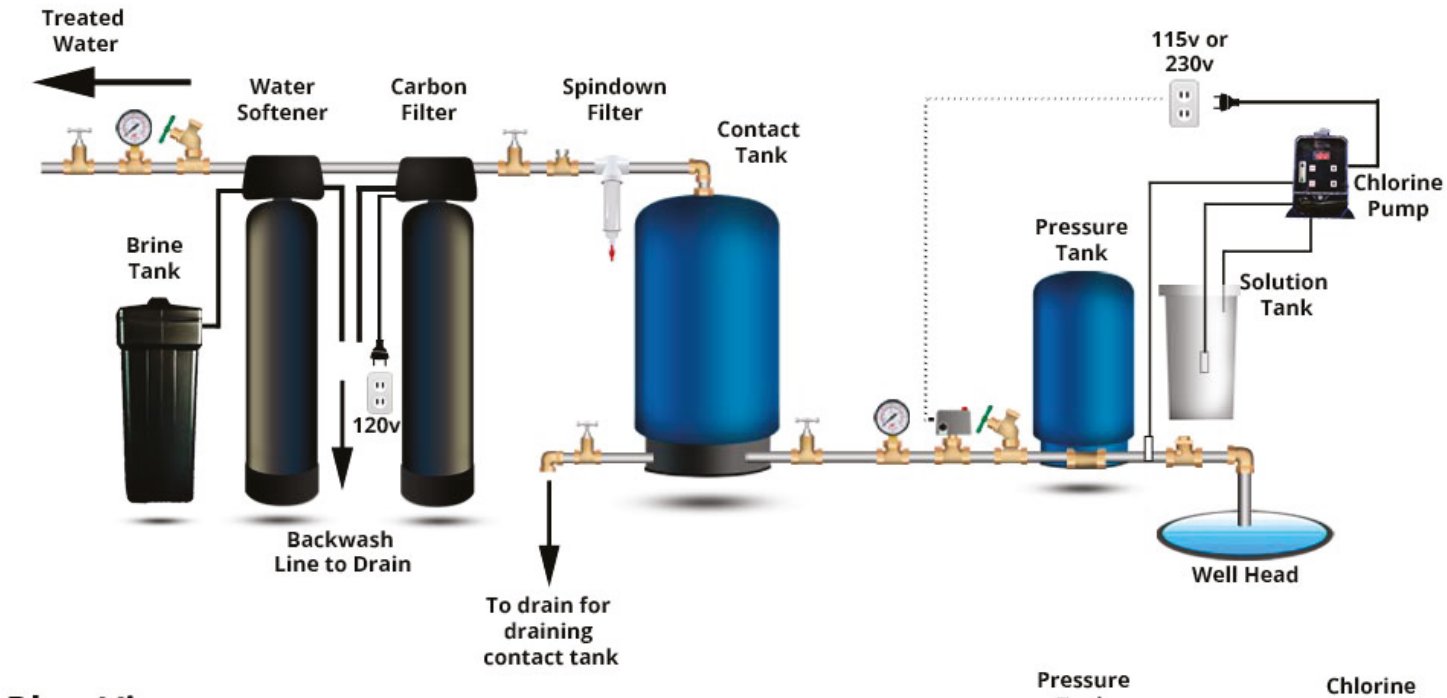
This pump is intended for indoor use only. The pump must never be exposed to freezing temperatures, direct sunlight, or rain. If the cause of failure is determined to be from exposure to any of these environments, the pump does not qualify for replacement and will not be covered under warranty.

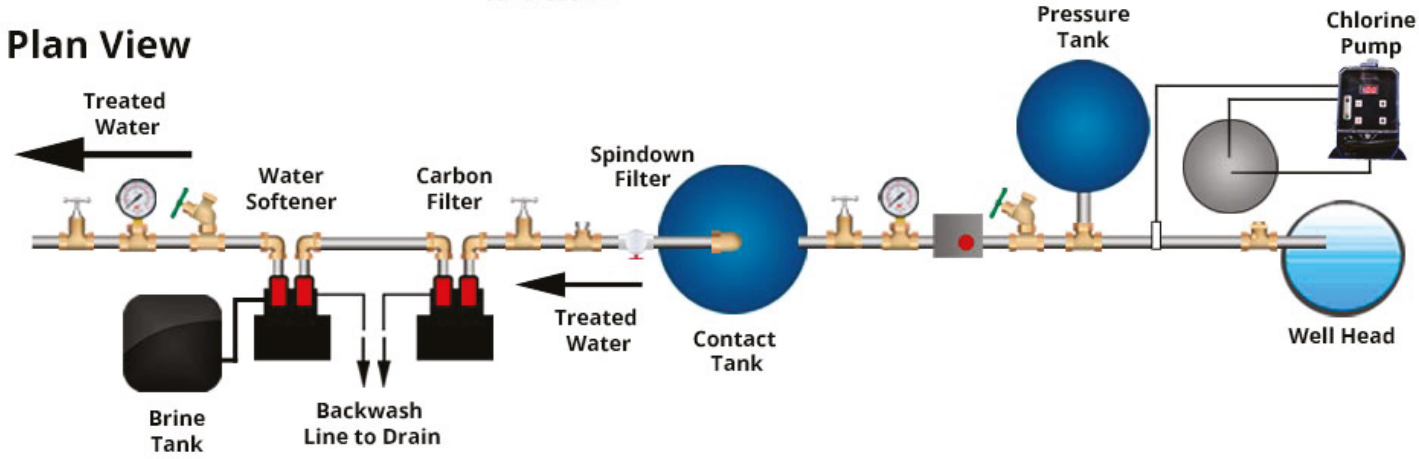
For Returns Contact Clean Water Systems & Stores Inc. 2806-A Soquel Ave Santa Cruz, CA 95062831- 462-8500 support@cleanwaterstore.com

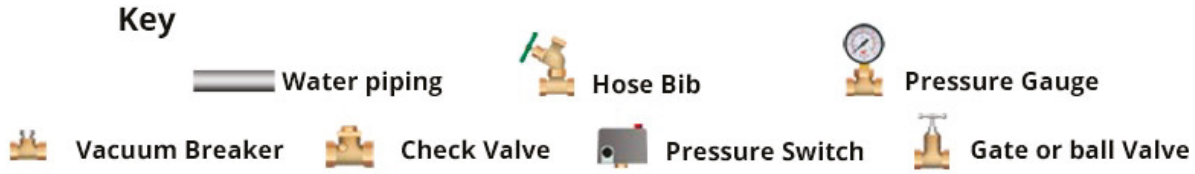
Pre-Installation

1. Review your packing list and make sure you have received all the parts beforebeginning 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 chlorination system on a dry level spot where it won't be exposed to freezing temperatures or direct sunlight. Maximum line pressure is 100 PSI.

Typical Installation (Diagram)







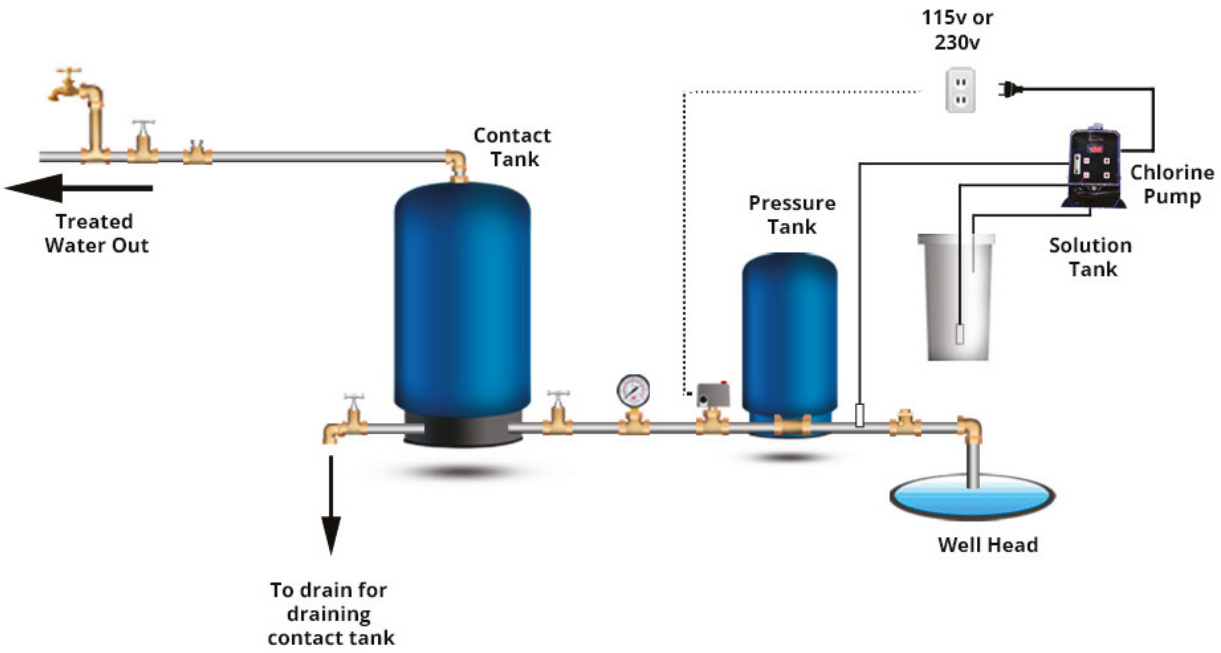
How To Set Up Your Chlorine Pump To Turn on Automatically

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

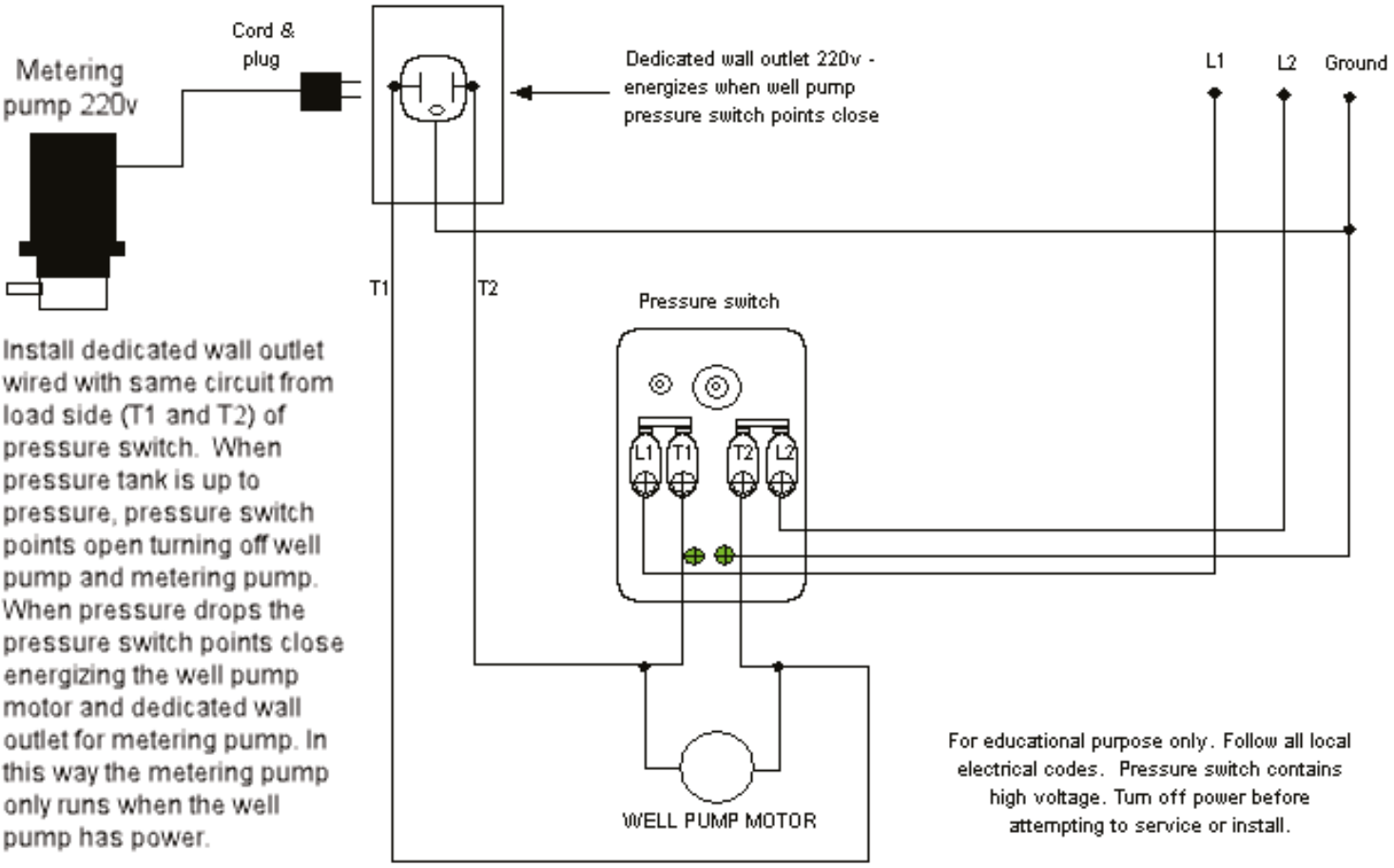
Right out of the box, this is a dual-voltage (110/220) pump and uses a maximum of 22 watts power. There are several ways to wire the pump such that it triggers when there is water flow.

The well pump is controlled by your pressure switch. Choosing one of the ways outlined below, the chlorinator will be installed so that it powers up and injects chlorine 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 hot wires.



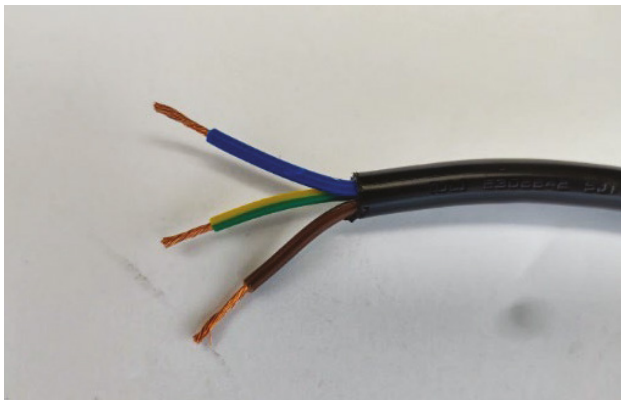
Wire To Pressure Switch Option



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.

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

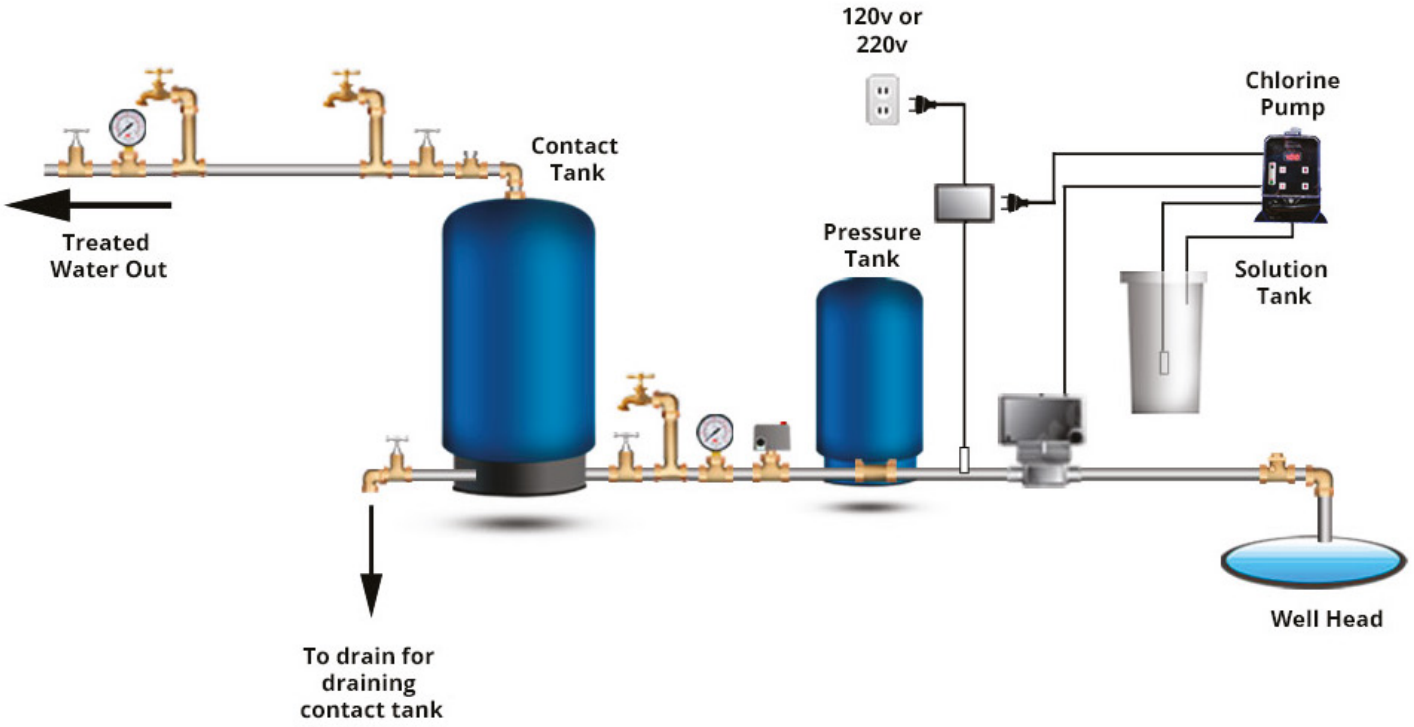
The J-Pro-22 is a dual voltage pump. It has a 110 volt- style plug but can run on 220v or 110v. It uses a maximum of 22 watts power when running.



Pre-wired Flow Switch Option

As an option to turn on and off the chlorinator pump, install a flow switch. No electrical wiring to do and any plumber, or person familiar with basic plumbing, can install it. This is an advantage in case the well pump motor fails but is still getting power, and allows the metering pump to pump only when there is flow of water.

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



J-P RO-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

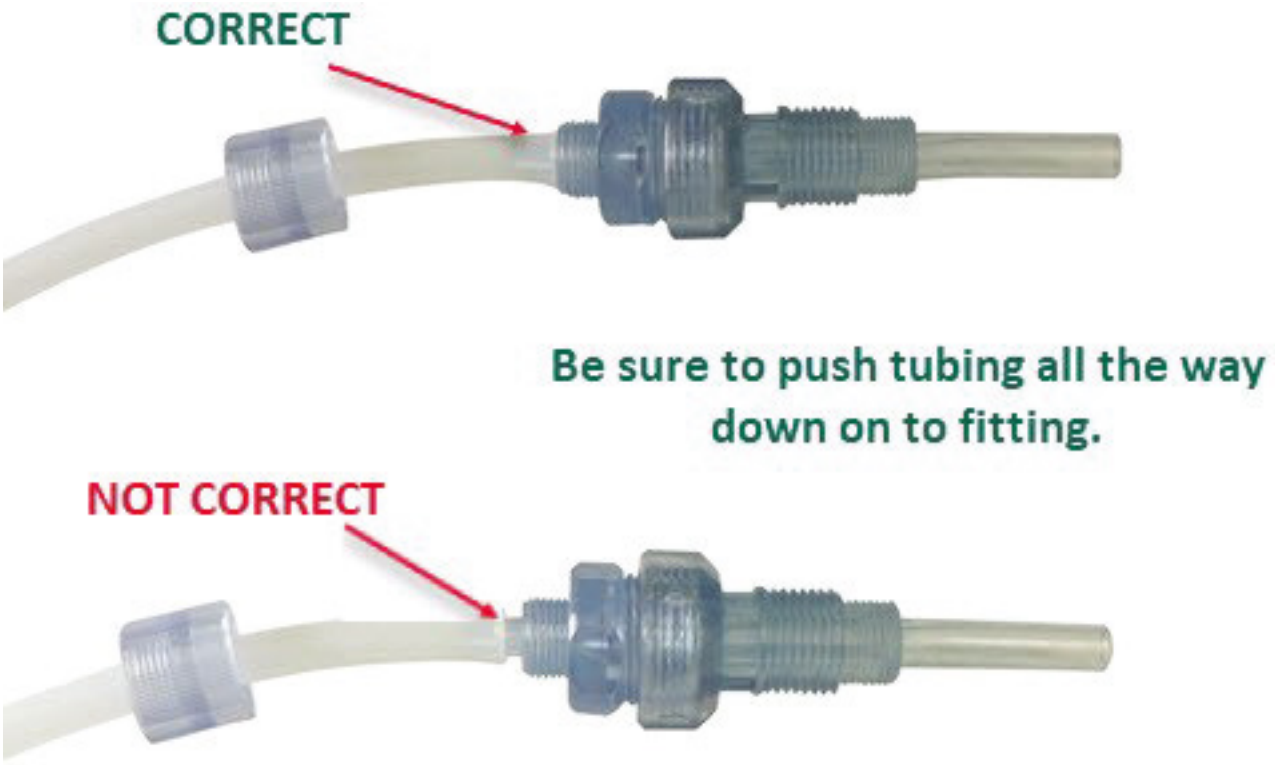
Place pump on tank. Mark where the anchor holes will be drilled. Drill pilot holes with a small drill bit so that the pump can be mounted on the tank with two wood or sheet metal screws. We recommend screwing them in after the pump has been primed and the tubing has been hooked up for easiest installation.

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

Mount Pump to 5 Gallon Solution tank

How to Connect Tubing & Fittings

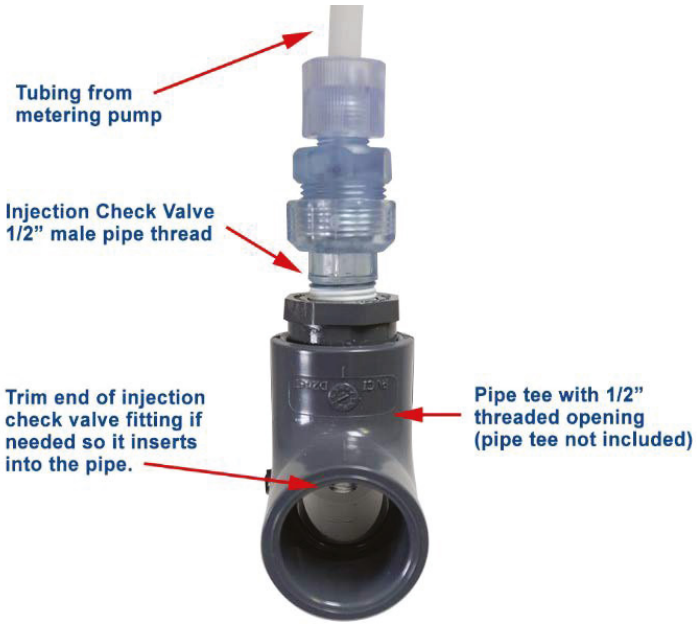
- Trim the end of the tubing square (cut with a new boxcutter blade).
- Slide the connector nut onto the tube.
- Push the tubing over the conical fitting until the tubing is flush against the end of the fitting.
- Screw the connector nut on, hand tight.
- Do not use Teflon tape/ paste on the tubing fitting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



Install Discharge Side Tubing

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

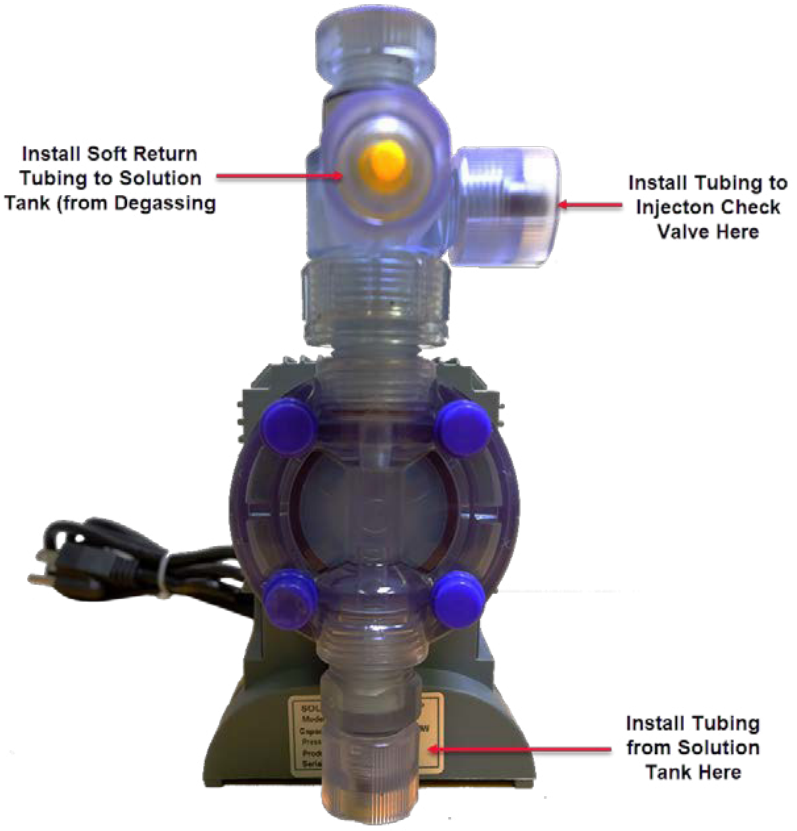
1. Shut off well pump or water supply and de-pressurize service pipe.
2. Install injection check valve by installing a pipe tee in your pipe that has a ½" NPT fitting, where you can screw in the injection check valve (included with your J-PRO-22 pump).
3. Wrap Teflon tape on the ½" pipe threads of the 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 chlorine squirts out) will be in the center of theservice 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.

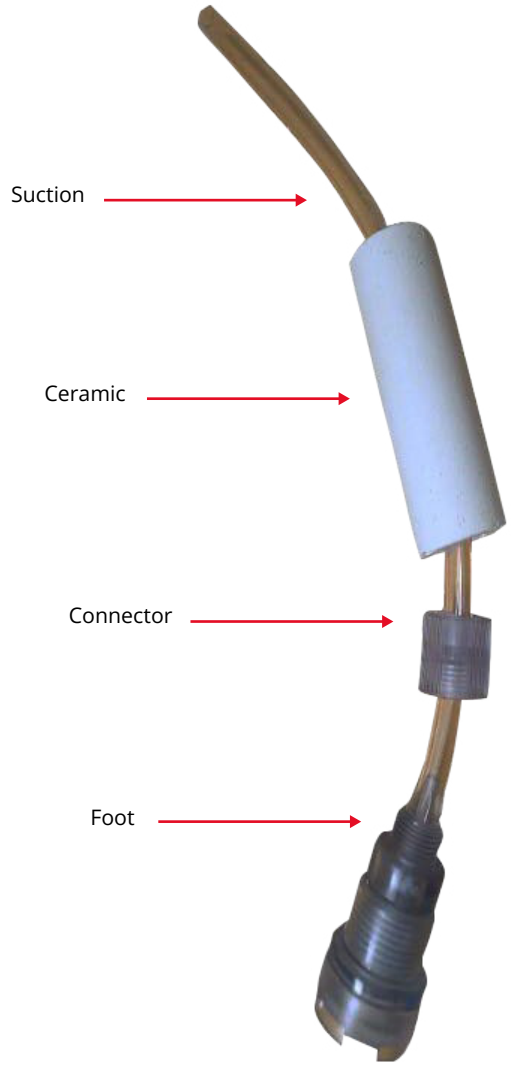


Install Suction Tubing from Pump to Solution Tank

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

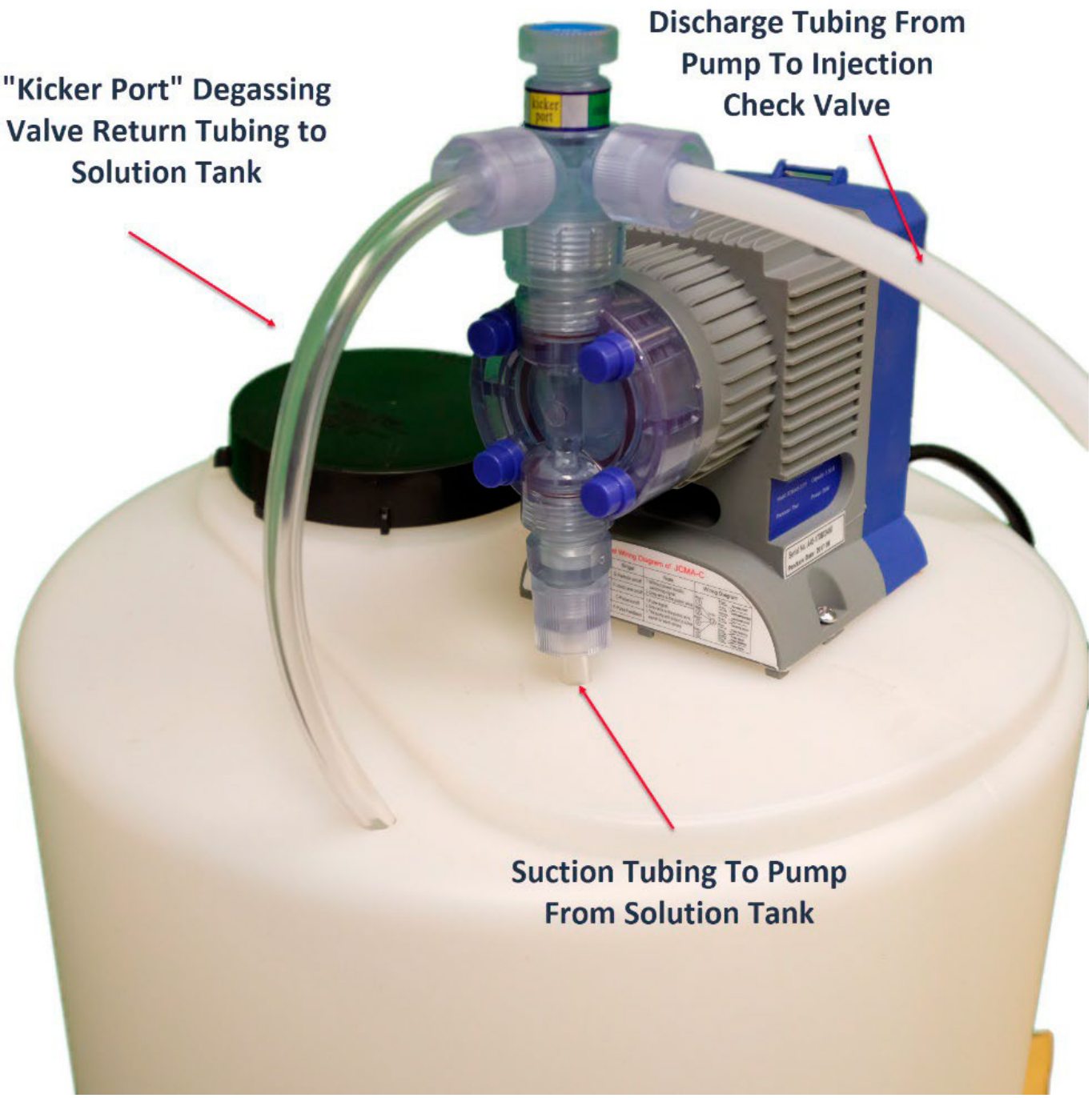
1. Measure the tubing from the outside of the solution tank to ensure it will be 2-3" from the bottom of the solution tank.
2. Do not allow weight to sit at the bottom of the tank. Connect tubing to the foot valve and put the ceramic weight on.
3. Run the tubing up through the hole and connect to the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





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”.



Prime & Start the Pump

1. Fill solution tank with 4 gallons of soft, distilled, or RO water, but don't add chlorine yet.
2. Connect the suction tubing to the foot valve and discharge tubing to your injectioncheck valve.
3. Connect the degassing prime valve tubing and route to the solution tank, above thewater line.
4. Open the degassing 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% 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. Allow to run for 10-15 minutes. Check for leaks.
9. After your chlorinator pump has been running for a few days, tighten 4 stainless steel bolts on the pump end.
10. Don't over-tighten, but it is recommended to re-tighten (once) and make sure these bolts are tight after pump has been running.

Program Pump and Adjust Speed Settings

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.

NOTE: Pump must be allowed to run for 15 seconds at the speed setting, after you change the speed. For example: say you change the speed to 70. Let run for at least 15 seconds before unplugging pump. The pump needs 15 seconds to SAVE the new setting.

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

About Chlorination

Chlorine is used for three main objectives:

1. Disinfection and inactivation of pathogens in water such as E. Coli.
2. Odor control: eliminates rotten-egg, metallic and other odors in water.
3. Oxidization of iron and manganese.

When chlorine is added to water, the water has a “demand” for chlorine. When that demand is satisfied, any additional amount of chlorine added is called the “free residual”. As long as you have a free residual of 0.2 ppm or higher, that water has enough chlorine, no more needs to be added.

To treat for coliform bacteria, the water must have a minimum amount of contact time typically ten minutes or more with the chlorine, and a free residual detected. For odor, iron and manganese, only a couple of minutes are needed.

What Type of Bleach To Use

- We recommend using NSF Certified Chlorine Powder which has no additivesor contaminants
- Do not use household laundry bleach, as it contains additives
- You can use liquid bleach such as 10% pool chlorine if it is free of additives
- To use chlorine powder: add 1 oz powder to 1 gallon of warm soft or purified water to make up solution.

Each ounce of chlorine powder added to one gallon of water makes approximately a 1% or 10,000 PPM chlorine solution. Note – not all granules will dissolve, it is normal for some settling to occur.

Add the Chlorine: How Much Chlorine to Add to Water

1. Once the pump is primed and pumping with water, add 5 Oz of Chlorine powder (or ½ gallon of 10% to 12% Liquid Pool Chlorine to the solution tank, and fill with purified or softened water to the five-gallon mark (you started out with 4 gallons from theinstructions previous).
2. Set the pump speed at 50. If your well pump pumps between 5 and 15 gallons per minute, this will give you an applied chlorine dosage of 2 to 10 PPM. See below for more infoand formula.
3. If you have a contact tank after the chlorinator, start drawing water through the system, injecting chlorine.
4. Start testing for a free residual after the contact tank.

5. The color spectrum for the chlorine free residual test kit that comes with your system goes from a pale yellow (0.2 – 0.5 PPM) to a bright yellow (1.5 – 3.0 PPM) and then orange and red, too much residual chlorine, above 4.0 ppm.
6. If you get too much chlorine you can turn down the speed of the pump or make the chlorine solution more diluted.
7. Once you are in the yellow spectrum, use the up and down arrows to adjust the speed setting, until you are measuring 0.2- 1.0 ppm residual. Usually, values 0.5 and below are too low to smell the chlorine, that is often ideal depending on the application.

Formula for Calculating Solution Strength and Settings

Note: mg/L is the same as Parts Per Million. 12% chlorine is the same as saying 120,000 PPM of chlorine. 5% household bleach is 50,000 PPM chlorine.

Start with a solution strength of 10,000 PPM (1 Oz of Chlorine Granules per Gallon of Purified Water)

How many parts per million of chlorine should I inject?

Apply 1.0 PPM of chlorine for every 1 PPM of iron; 2 PPM of chlorine for every 1 PPM of Hydrogen Sulfide and/or Manganese.

The simple formula is: Flow Rate in Gallons Per Minute GPM x Parts Per Million of Applied Dosage x 1440 Minutes in One Day = Gallons Per 24 Hour Period of Chlorine.

Example: Assume you wanted to apply 5.0 PPM of chlorine to your well water. You have a solution strength of 10,000 PPM chlorine solution strength. You know your well pump flow rate is 12 GPM.

5.0 PPM x 12 GPM x 1440 Divided by 10000 = 8.6 Gallons Per Day

What this mean is approximately 8.6 gallons of the chlorine solution will be pumped for every 24 hours your well pump runs. Your well pump does not run 24 hours each day however.

Another way to look at it, you might use 0.36 gallons (less than half a gallon) of chlorine solution, for every hour your well pump runs.

Therefore, you need a chlorinator pump that can pump 8.6 gallons in 24 hours. The JPRO-22 pump pumps 22 gallons per 24 hours. So, 22 divided by 8.6 - .39 or 39%.

Set the JPRO-22 speed to 40%, which will turn it into a 8.6 Gallon Per Day Pump. You can later turn it up or down to dial in the chlorine residual, and/or change the solution strengthas needed.

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. If the pump is making a thumping sound in manual mode,it is working.

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Watch How-To Videos On Our YouTube Channel

https://www.youtube.com/cleanwaterstore

Priming Problems

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

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.

Sometimes, as mentioned earlier in the guide, it is because the four Allen head bolts on the grey pump head have loosened, and need to be tightened, do not over-tighten.

If the solution has filled 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 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 free-chlorine 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 chlorine solution tank and discard chlorine 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 chlorine solution. Remove the suction from the water and allow the pump to pump dry. Pump is ready to store.

Sound Deadening The Pump

Q. My J-PRO Pump is too loud! What can I do to quiet it?

A. To quiet your pump you can use some sound proofing. You can build a small box and use some Styrofoam or low cost sound proofing panels available from Amazon or Wish. You can also use a small Styrofoam cooler, plastic box or other box with Styrofoam or other similar packing material. Simply by enclosing it in box without sound proofing also helps to deaden the sound. We have had some customers use empty kitty litter plastic containers, 5 gallon buckets, or other wood or plastic containers to enclose the pump to help deaden the sound.

NOTE: when diluting the bleach, 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

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

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