



J-PRO-22 110v – 230V Dual Voltage Soda Ash Pump 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.

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:

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".

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? For assistance call: 1-831-462-8500

Email us: support@cleanwaterstore.com



We recommend Pro Products pure NSF grade additive-free soda ash.

[Click Here for more info.](#)

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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.

If the water supply and a continuous Soda Ash is critical, a back-up 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 for pumps and valve control heads. Pump failure during, or because of, power failure is not covered under warranty.

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 Soda Ash 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.

How Your Soda Ash Pump Works

The pump is designed to pull a soda ash solution (soda ash powder mixed with warm distilled, soft or purified water) out of a solution tank and pump a precise amount of solution into a pipeline under pressure.

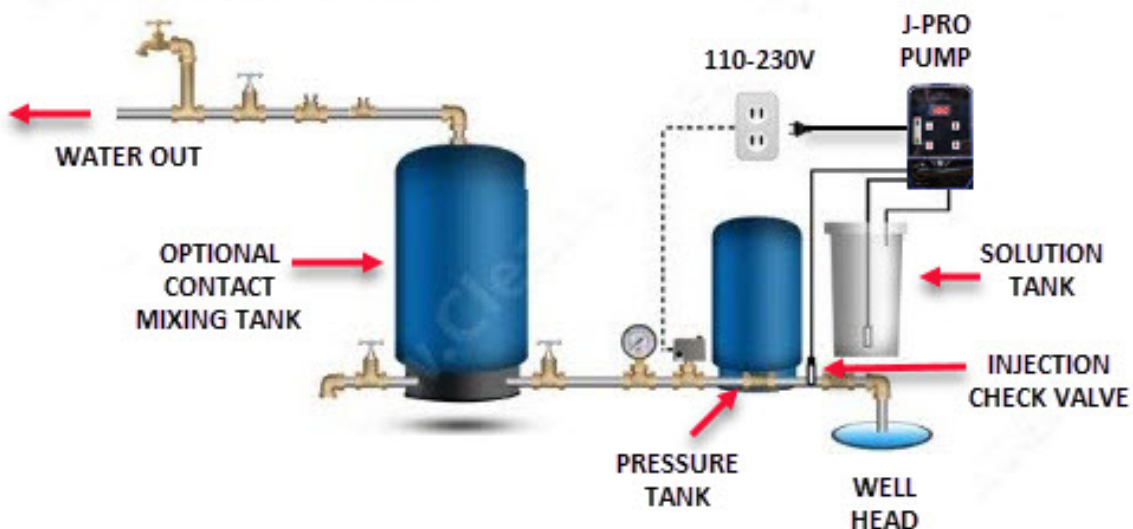


Right out of the box, this is a dual-voltage (110/220) pump. There are several ways to wire the pump such that it triggers when there is water flow.

The well pump is typically controlled by your pressure switch. Choosing one of the ways outlined below, the soda ash will be installed so that it powers up and injects soda ash 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 install it on a 110 volt or 220V pressure switch, using a dedicated electrical wall outlet.
3. If you have 220v, you can purchase an adapter that converts the 110- style plug into a 220 outlet, and wire a dedicated 220 outlet to the pressure switch, OR:
4. You can cut off the plug (this Does Not void the Warranty and is what we recommend if you are using it for 220V) and wire it directly to your 220V pressure switch. This last method should only be done by a qualified technician.

SODA ASH PUMP CONTROLLED BY WELL PUMP PRESSURE SWITCH

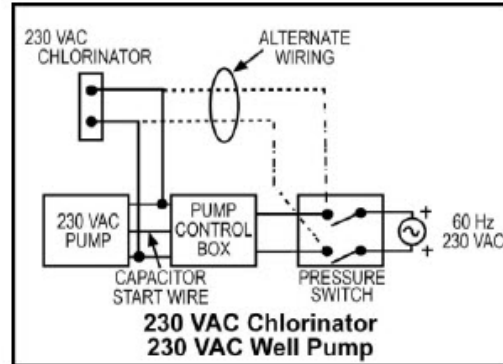


Wire To Pressure Switch Option

How To Wire to Your Well's Pressure Switch

Install a dedicated wall outlet that is wired in 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.



A person who is qualified may (without voiding the warranty) cut off the plug, and wire it directly to the pressure switch terminals.

Avoid installing a dedicated wall outlet that looks like it is 110, but is actually 220.

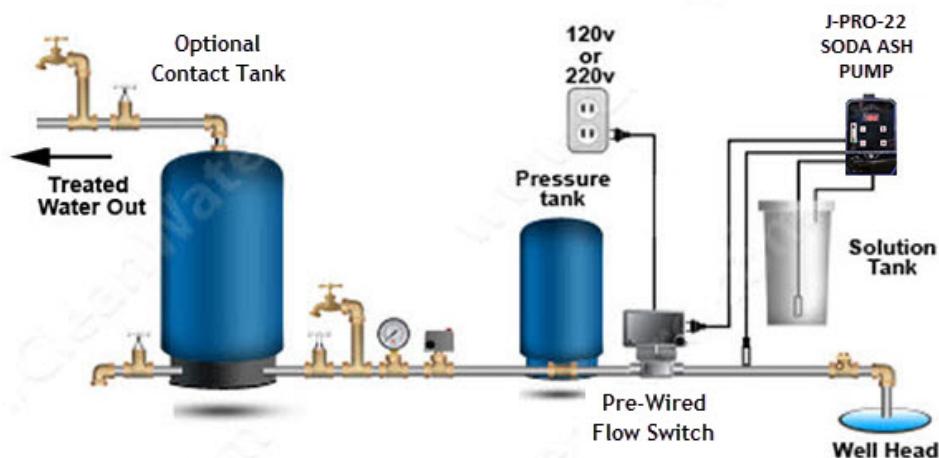
You may cut off the 110 style plug and wire a 220-style plug, and then plug that into a dedicated 220-style wall outlet.

Do not wire to Pump Capacitor Start Wire.

Use a Flow Switch Option

As an option to turn on and off the soda ash 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 soda ash pump into the electrical outlet on the flow switch. Whenever there is flow, the metering pump will then turn on.



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.



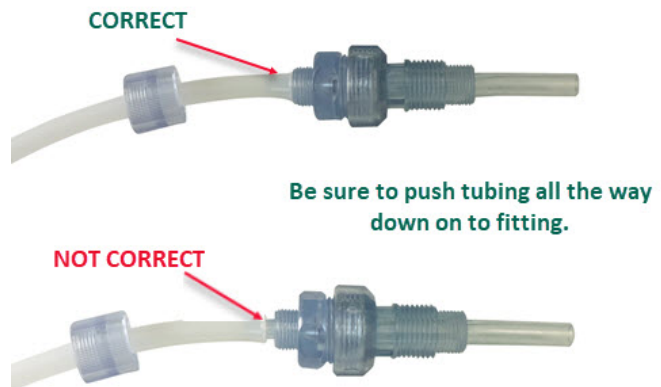
Mount Pump to Solution tank

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

- 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.



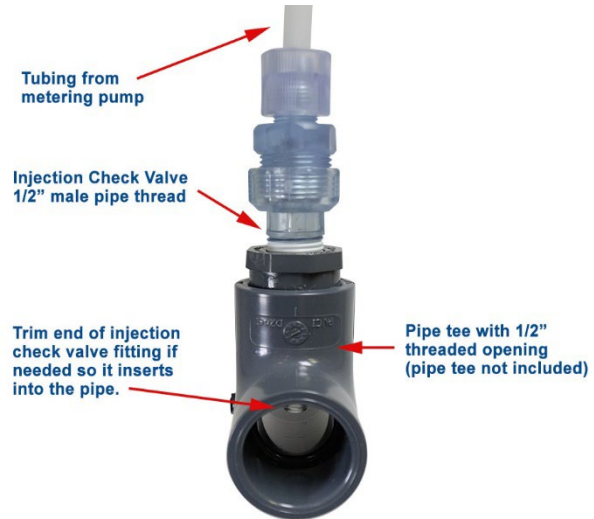
Use the harder/stiffer translucent tubing for connection from discharge-side (12 o'clock) to the injection check valve.

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

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 soda ash solution squirts out) will be in the center of the service pipe.
5. **Make sure to install injection check valve in to pipe directly.** See images to right.
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.

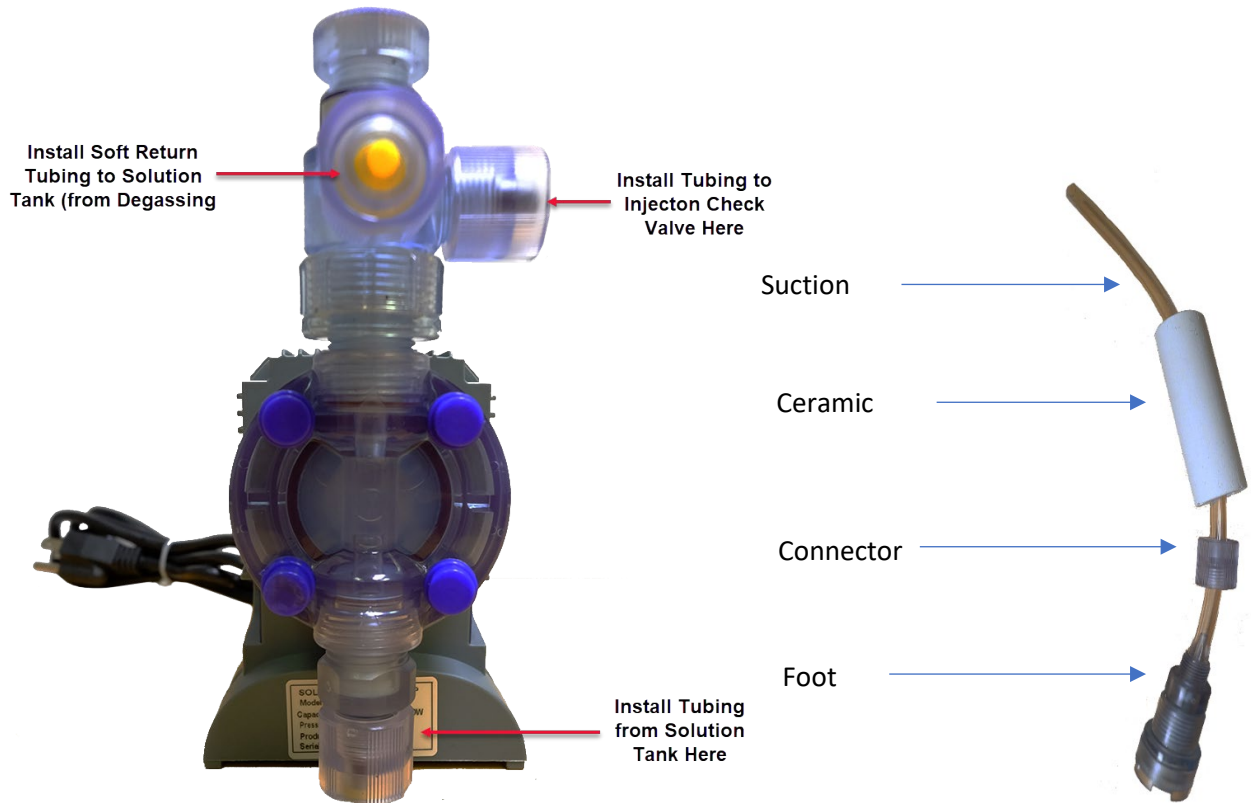


Injection check valve can be installed into PVC, copper or other piping.

Install Suction Tubing from Pump to Solution Tank

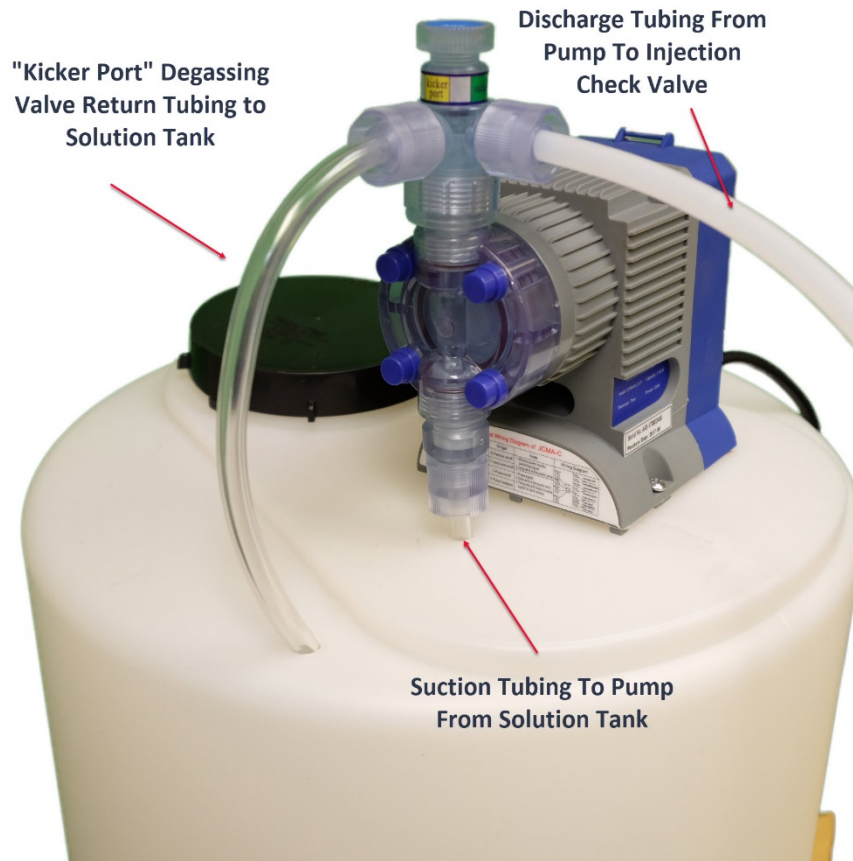
Connect hard tubing from foot valve in Solution Tank to Inlet/ Suction side of metering pump

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



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 3 gallons of soft, distilled, or RO water, but don't add soda ash 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 two turns counter-clock-wise to open it up. This will allow the solution to be pumped back into the tank for faster priming.
5. Turn on the pump and set Speed to 100% if not already displaying 100.
6. You will quickly see water being pumped out the degassing valve return line port.
7. Close the degassing port valve until liquid starts pumping out the discharge side.
8. Allow to run for 10-15 minutes. Check for leaks.
9. After your soda ash 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.

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.



How to Select Soda Ash Solution Strength and Pump Setting

The goal of a properly functioning soda ash injection system is to have a pH of between 7.0 and 8.0 in the piping system.

This can be accomplished by adjusting the soda ash solution strength and setting the J-PRO pump output, from 10 – 100. A speed setting of 100 will be the maximum output of the pump.

Determine Your Flow Rate in Gallons Per Minute

This refers to the well water flow rate, of the pipe you are injecting the soda ash solution into. Typically, you would be injecting before your well pressure tank.

1. Open any hose bib or faucet until pump turns on.
2. Close hose bib or faucet and let pump fill up pressure tank until it turns off.
3. Using a 1 or 5 gal. bucket, open faucet, collect and measure all water discharged until pump turns on.
4. When pump turns on, immediately close faucet and start timing pump cycle.
5. When pump turns off, record pump cycle time to refill pressure tank in seconds.
6. Divide the number of gallons collected in Step 3 by the number of seconds in Step 5.
7. Multiply the answer from Step 6 by 60.
8. The answer in Step 7 is the average pumping capacity of the pump in gallons per minute (GPM).

How Much Soda Ash Solution Should Be Injected?

Generally, you want to inject 100 to 200 mg of soda ash solution for each liter of water (mg/L).

Milligrams per liter is the same as saying parts per million (PPM).

Mix Up the Soda Ash Solution

Soda ash is a powder (sodium carbonate) that is mixed with water to form a saturated solution. You can make the solution stronger or weaker.

To start out, mix 4 lbs. (or measure 8 cups) of soda ash powder in 2 gallons of very warm or hot (not boiling though) softened, distilled or purified water and stir vigorously to mix.

Add that to the 3 gallons you already have in your solution tank.

After start-up of system and to replenish soda ash solution mix 8 cups of soda ash powder per 5 gallons of warm water and stir vigorously.

Use warm or hot water (but not boiling water) to mix up solution. This will do a better job at dissolving the soda ash powder into the water.

Use purified water or softened water to make up the solution.

It is best to use purified distilled or reverse osmosis or bottled water, or clean softened water to make up your solution. If your untreated well water is soft water and is very low in total dissolved solids and other minerals, it might be OK to use the untreated water to make up the solution.

NOTE: Some soda ash will drop out of solution and settle to bottom of solution tank. This is normal.

Set the J-PRO Soda Ash Pump Output

Begin by setting the J-PRO pump to 50 using the up or down arrows. This is 50% of its total output.

If you find the pH is fine (you want a pH of between 7 and 8 usually) then you don't have to change the speed. Otherwise if the pH is still too low, then you can first try turning up the Soda Ash pump speed setting to 90 or 100.

Formula for Calculating Soda Ash Injection

For most residential soda ash applications, using the J-PRO-22 Soda Ash Pump will inject a proper amount of soda ash solution to raise the pH to the 7.0 to 8.0 pH range.

The J-PRO-22 pump has a maximum output of 22 gallons of soda ash solution pumped in a 24-hour period.

Generally, you want to inject about 100 to 200 ppm of the saturated soda ash solution into the water, to raise the pH to the 7.0 to 8.0 range.

Example Calculation

For example, say it was set up to inject it into your pipe before the pressure tank, and your well water pumps can pump at 10 gallons per minute.

You will use 4 lbs. (8 cups) of soda ash powder dissolved into 5 gallons of water. Water weighs 8.34 lbs., so 5 gallons of water weighs 41.7 or about 42 lbs. So that makes your solution a 10% solution, which is the same as saying 100,000 parts per million.

Say you had 10 gallons per minute and wanted to inject 100 ppm of soda ash.

$100 \text{ PPM} \times 10 \text{ GPM} \times 1440 \text{ (minutes in a day)} \text{ divided by the solution strength of } 100,000 = 14.4 \text{ gallons per day.}$

Since your J-PRO pump can pump soda ash solution at 22 gallons per day, divide 14.4 by 22 which equals .65 or 65%. So, in this scenario, set the J-PRO pump speed setting at 65.

Note your water may not need 100 ppm of the 10% soda ash solution, it might only need 50 ppm to bring up the pH to the 7.0 – 8.0 range, but you will be able to know immediately after turning on the system by checking the pH.

Where to Buy Soda Ash?

We recommend Pro Products pure NSF grade additive-free soda ash. [Click Here for more info.](#)

Or Visit www.CleanWaterStore.com

Can I use pool soda ash?

Yes, you can, if its certified for drinking water and has no additives. Often pool supply stores sell the soda ash in 50 lb. bags at a good price.

Our soda ash is in a resealable 5-gallon bucket and is NSF certified for drinking water.

NOTE: there is also a type of soda ash available that is for certified for drinking water, but has phosphate additives in it, which helps keep the injection check valve cleaner. However, this is not suitable if you have water treatment systems such as iron filters or reverse osmosis system as the phosphate additive can foul the water treatment filter media.



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 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>

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 grey 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, and then close it until the point when it starts pumping.
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 the pH 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 soda ash solution tank and discard 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 soda ash solution.

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

NOTE: when mixing up the soda ash 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

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.



P7007540 Diaphragm Replacement



P7007570 Foot Valve



P7007550 Injection Check Valve