XR-56 Series Instruction Manual

For pump part numbers - LP5100 – LP-5101 – LP-5200 LP-5201

Thank you for purchasing the XR-56 pump series. The system is designed to require less maintenance and reduce operation costs. Following our installation guide will assist you in the proper installation with your safety our main goal. Please follow our suggested safety guidelines as well as your site protocol.

If you should have any questions during contact Jeneer Group at 770-817-7828

Section 1: Safety

Site safety is a high priority when using the XR-56 pumping system. The inherent designs of the pump being shorter and lighter in weight are a few examples of our goal in promoting site safety. The system uses a low voltage power supplied by the solar panel and battery. Please use proper pre-cautions when installing the system such as attaching the negative side of the battery terminal first during installation.

Do not attempt to circumvent any of the safety features designed into the XR-56 pumping systems

Safety Suggestions:

Always follow site safety protocol

Wear safety goggles or glasses to prevent accidental exposure of liquids or air pressure.

Wear protective gloves, boots and clothing when installing of removing pumps and hoses.

High Temperature – pumps and hoses can be extremely warm due to exposure to leachate. Use proper protection when handling the equipment.

Liquid Force main – Since this line is potentially under pressure slowly remove, turning yourself away and insuring others are a safe distance. Insure air pressure to the pump supply is turned off to prevent pumping while the line is being disconnected.

Pump Air Exhaust – During initial start-up it is not uncommon for leachate liquid to be expelled from the air exhaust line found on the underside of the quick exhaust valve. Be sure this line is directed away from personnel. If this condition persists it may be an indication there is a leak in the air line to the pump.

Disconnecting Hoses – Prior to removing air lines or fluid discharge connections turn off the main supply and bled lines of pressure.

Connecting Hoses – Prior to turning on supply air check the security of all connections.

Pump Disassembly – Prior to disassembly be sure the air supply pressure is removed or turned off to the pump.

Section 2: Equipment Un-Packing check list

Always check the shipment for any obvious damage prior to receiving the equipment from the shipping company.

The XR-56 pump system standard packaging is a master carton with three boxes. One box contains the XR-56 with the attached 75" sensor cable; the second box contains the solar panel, while the other contains the NEVA IV enclosure. Batteries are generally drop shipped.

Open the boxes and inspect each part for any damage.

Recommended testing procedure - While the XR-56 pump system goes through a rigorous testing procedure it is good practice to test the system prior to installation to confirm that damage has not occurred during shipping. See section 6 in the quick start guide.

1. Connect the sensor cable to the NEMA IV enclosure.
2. Connect the power cable from the NEMA IV enclosure to the battery – Connect the negative terminal first.
3. Push the LED on button the LED will illuminate
4. Move the float to the upper position and push the Pump On button.
5. Move the float to the bottom position and the LED will indicate a cycle count
6. Move the float to the top position and hold for 10 seconds.
7. Move the float to the bottom position and the LED will not count.
8. Move the float to the top position and push the pump on – move the float to the bottom position and the LED will indicate a count. This is testing the self-diagnosis of the pump

Should any of these conditions not be meet call Jeneer Group 770-817-7828

Section: 3 XR-56 Pump Installation

3.1 Installation using mounting kit LA5123

1. Connect (A) the two 5ft 1.5 inch OD thin wall mounting poles together using the provided connector securing with the attached screws.

2. Attach (B) angle tabs to the top of the Solar panel with the angle facing toward the face of the solar panel. Then attach the uni-strut channel to the tabs.

3. Using one of the (C) strut pipe clamps attach the solar panel to the top of the pole.

4. Attach the (D) two 4" aluminum uni-strut brackets to the well casing using the hose clamps. To provide optimum support space one near the bottom of the casing and the other towards to top.

5. Using two strut pipe clamps loosely secure the pole in the clamps. Rotate the pole with the Solar panel facing due South, level the pole and securely tighten the strut clamps.

6. Using (C) two strut pipe clamps attach the NEMA IV enclosure to the pole at eye level.

7. Attach the (F) battery bracket to the pole using the (G) PC series clamp at your desired height.

8. Set battery box onto bracket and install the battery inside the box.

3.2 XR-56 Pump Assessable and installation

1. Slide the pump body over the top O-ring being sure not to cut the O-ring. Insert check ball and check ball seat arch assembly over the bottom of the pump body. Insert the arch assembly bolts and tighten. . Attach the screen/dome assembly using the shorter bolt and properly tighten all the bolts. Note – a ½ in nut driver is included in the battery box for this process.

Note – the O-rings are lubricated with silicone based grease. During field assembly and disassembly be sure to lubricate the O-rings and insure they are free from debris. It is good practice to replace with new O-rings during every re-assessable.

2. Cut tubing to the desired pump installation depth. Slide the tubing through the well seal - Cut the 1" discharge tubing 4" shorter than the ½ OD air supply/exhaust line. Attach the tubing to the fluid discharge quick connect fitting and secure with the hose clamp. Push the quick connect fitting onto the pump discharge and secure by inserting the cable into the grove. Connect the air supply into the push to connect fitting until it completely seats. Pull to insure it is secure. Optional Barb fittings are available.

3. Slide the sensor cable through the well seal. Attach a safety cable to the cable hook on the XR-56 pump. Double check the security of all the connections and the pump is ready to be lowered into the well. Complete the fluid discharge to the force main at the well head.

4. Attach the well seal and properly tighten the seal glands to the well casing.

5. Attach the air supply/exhaust line ½ OD tubing to the ½" port in the quick connect valve. Check the security. Attach the sensor cable to the matching port on the bottom of the NEMA IV enclosure. The connector must lock in place.

6. Install the solar panel cable into the underside of the battery box and connect to the connector on the SunGard. Install the power cable from the NEMA IV enclosure through the underside of the battery box. Connect the negative leads (Black) form the power cable and SunGard to the negative terminal on the battery. Attach the power supply lead from the power cable (Red) and SunGard to the positive terminal on the battery.

6. Attach the main air supply line to the 3/8" push to connect Air In fitting on the NEMA IV enclosure. Turn on supply air pressure. Adjust the pressure on the filter regulator – generally .5 PSI per foot of head is sufficient.

7. Push the pump on button and the pump will be cycling.

3.3 Pump Operation in a Vacuum Application

1. The standard XR-56 is configured to vent the exhaust air through a quick exhaust valve outside the well casing. This minimizes the introduction of air into the well during the exhaust cycle that could potentially dilute the gas quality.

2. When a vacuum is applied inside the well casing the weight of the astrosphere or gas inside the pump is greater than the atmospheric pressure outside the well. This will result in a change of the activation point of the pump. Generally this formula (Z=inches of vacuum+ original activation point) = new activation point). In other words if 50" of vacuum are being applied to the well the new activation point will be 50" above the top of the pump.

3. This operation can be easily confirmed by turning off the vacuum to the well and allowing time for the well to equalize to the astrosphere pressure. Once this is completed the pump should begin to cycle more frequently. Consequently when the vacuum is reapplied the pump cycles will decrease.

4. The XR-56 can be configured to vent the exhaust air into the well to optimize drawdown and expose more of the screen. Kit LAXXX contains the two components necessary to complete this installation.

Section 4: System Maintenance

4.1 Solar Panel and Battery

1. It is important to position the solar panel due south and at the specified angle for your location. The solar panel clips included in the installation kit are set at 33 degrees. This is a good average angle for most applications. In extreme conditions with minimal solar charging the proper tilt angle will provide the optimum efficiency for your solar charging for your system. Consult Jeneer Group for these conditions.
2. Debris on the panel – Dust particulates can reduce the charging capability of the solar panel by up to 40% depending on the thickness of the layer. Routine cleaning is recommended. Snow cover will also decrease the charging of the system. In most cases the tilt angle will prevent build up. Remove when necessary,
3. Battery – The XR-56 uses premium a non-maintenance battery. Inspection of the terminal post is recommended for any corrosion. Install the battery above the expected snow cover in Northern Climates

4.2 NEMA IV Enclosure

1. The NEMA IV enclosure is designed for use in all outdoor environments. All hoses and connectors enter through the bottom of the assembly to add an increased level of protection. It is recommended to check the cable glands for tightness.

4.3 XR-56 Pump

1. The XR-56 pump is designed to minimize maintenance with a reduction of moving parts. The primary maintenance will be routine cleaning to remove any build-up on the pump body or float. The float should be free of any obstruction and move freely.

2. Pump cleaning – The pump can be completely disassembled by removing the bottom bolt on the domed screen assembly – remove the bolts on the bottom arch assembly – reinsert one of the bolts, hold the pump by the pump body and lightly tap the bolt onto a solid surface. This will dislodge the pump body from the top O-ring seal. Remove the pin from the bottom arch assembly and remove the float. The pump can be cleaned with a light acid/water mixture or other industrial grade cleaning solutions. Do not use any carbon steel brushes on the pump parts as this will leave carbon residue that can lead to corrosion. Install new O-rings, lightly grease with synthetic grease (LAXXXX O-ring replacement kit) and Reassemble the pump.

Section 5: System Trouble Shooting

Initial well Head check list

Listen for any air leaks
Listen for pump cycle (air exhausting for quick exhaust valve)
Touch fluid discharge line – it should feel warm indicating that the system is discharging liquid
Open control panel, activate LED on button and during a pump cycle you will see the counter advance

Pump not cycling

- Insure there is sufficient liquid above the pump
- Check air pressure on the filter regulator. Generally .5 PSI per foot of head is required to move the liquid to the surface.
- Check the "air/on air off" valve to be sure it is in the on position
- Push LED to insure the system has power – If there is not power change battery and check solar panel and connection to insure the panel is charging the battery properly.
- Push "Pump On button" The pump should begin to cycle – NOTE – the XR-56 pump has a self-diagnosis feature built into the system. The bottom sensor must be activated within 10 seconds of the top sensor being activated. When this does not occur the pump will go into shut- down mode preventing continuous a discharge of air. The system will check every four hours for compliance and begin normal operation if the system is in compliance.

Pump does not continue to cycle

Check well conditions –

- Is the water table above the pump actuation point? Take a liquid level measurement.
- Is the pump under vacuum? If so the actuation point will be raised by the amount of vacuum being applied to the well. Turn off vacuum to the well and if the pump begins cycling this will indicate proper operation.
- Excessive discharge pressure – Turn off force main valve, turn off pump, and disconnect the fluid discharge line (taking all precautions as force main may still be under pressure). Reactivate activate the pump and if it cycles properly this indicates a possible problem with the discharge line. Check fluid discharge line to be sure it is free of any blockage

I push the "Pump On" Button and it cycles for ten seconds but there is not a cycle count

- This is an indication that the bottom sensor is not being triggered by the float. The pump may discharge some liquid during this time as air is being supplied to the pump. This most likely indicated that the float is not moving freely within the pump due to build up indicating the need for cleaning.

Steps to remove the pump
NOTE – Always ware proper safety equipment

- Raise the pump above the water table
- Hold the “Pump On” Button for seven seconds – this will by-pass the valve operation supplying air to the pump for 30 seconds to empty the pump and the fluid discharge line.
- Turn off the air supply valve, remove well seal and remove the pump from the well.
- Using the nut driver that is housed in the battery box remove the three ½” bolts that hold the pump together.
- Pry the bottom check valve from the pump body
- Re-inset on of the ½ bolts into the arc assembly and gently tap the bolt head onto a hard surface. This will dislodge the pump head from the pump body.
- Inspect the float, pump body ID and the fluid tubes inside the pump for any build-up. If necessary clean the pump. The float can be removed by removing the cotter pin on the arch assembly.
- Reassembly the float; and with the air supply still in the off position, activate the LED On button and move the float up and down the center guide rod. As you move the float past the bottom position you will see the counter advance. Adjust the air pressure to 5-10 PSI and repeat move the float to the top and bottom positions. When in the top position the air supply should be turned on and in the bottom position it will turn off.
- To test the system off move the float to the top position and hold there for at least 10 seconds. The air supply should turn off. With the float still in the top position activate the “Pump On” button, air on should activate, move to the lower position and the air should turn off.

Contact factory if these conditions are not meet

Counter is rapidly advancing and not pumping

This is an indication of a short circuit in the system. Inspect the power cable connection into the bottom of the control module for corrosion. Disconnect the power supply from the battery and re-connect. If the problem continues disconnect the power and contact the factory.

LED does not illuminate

Check battery connections. Check battery voltage

Suggested Test Procedure prior to installation

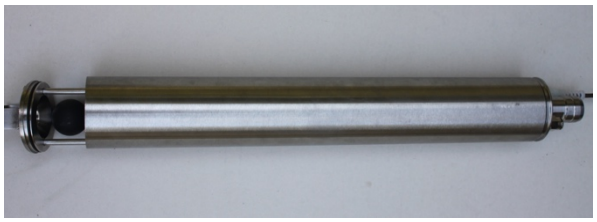
Attach the sensor cable to the control module – attach the negative lead to the battery (Black) attach the Res lead to the battery (red) push the Pump on and LED on button – slide float to top then bottom position – counter will advance – hold float to top position for 10 seconds – move to bottom position –counter will not advance – push Pump On and LED on and move float to top and bottom positions – counter will advance.



Assemble pump

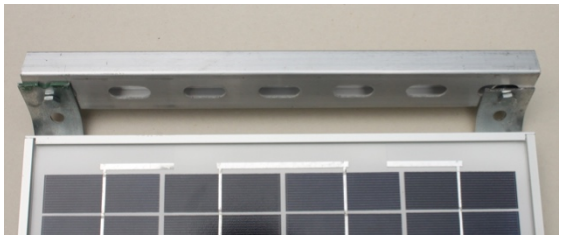
Lubricate and install the O-rings – slide pump body onto pump – install bottom check ball and set – insert bottom bolts and tighten – attach domed screen assembly and tighten.





Field Assembly using LA5123 installation kit

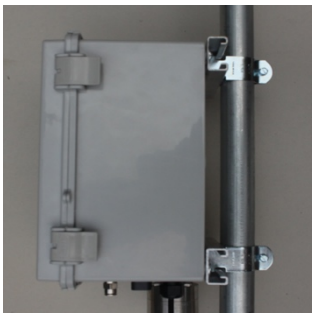
Pre field assembly - Open installation kit and attach the solar panel brackets to the solar panel using two of the 5/16 bolt with tabs facing towards the face of the solar panel. Attach the solar panel unistrut to the back of the solar panel brackets using two 5.16 bolts and washers.



Uisng one of the pole clamp brackets attach the solar panel to one of the 5’ poles

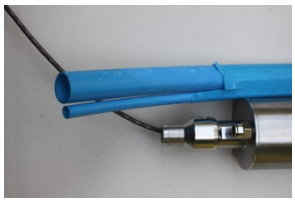
Field Assembly – Connect the two 5’ poles using the coupling and tighten the four screws. Using two hose clamps and the two of the 4” long uni-strut brackets attach these to the well casing. Attach the pole assembly to the uni-struts using two pole clamps.

Install battery bracket to the pole using C- pipe clamp – using two of the pole clamps attach the NEMA IV module to the pole.



Pump Installation

Measure well depth and cut hose to the desired depth – (Pump should be installed at least 1' from the bottom of the well. Cut the tubing jacket Connect the air supply line, measure the discharge tubing and cut. Slide hose clamp over the discharge hose and attach the hose to the quick connect fitting. Inset the locking cable through the groove, cut and pinch ends. Attach the safety cable to the pump eye hook.



Slide the tubing through the well seal – tighten gland seals and attach the safety cable to the well seal. Lower pump and attach well seal and well head. Attach the discharge line to the force main.

Attach the ½" OD air supply line to PTC fitting on the Quick Exhaust valve – Purge air supply line and attach the NEMA IV module. Turn on air supply and set regulator – (about .5 PSI per foot of head) – Attach the sensor cable to the port on the NEMA IV enclosure

Power Connection

Insert the cable from the solar panel and the cable from the NEMA IV enclosure through the bottom of the battery box - connect the solar panel leads to the SunGard leads – attach the two Negative (Black) leads to the Negative post on the battery – attach the two Positive (Red) leads to the Positive post on the battery –attach the battery cover and secure.




Start Pump

Check all connections - Push the Pump On button and the pump will begin cycling

Jeneergroup.com
770-817-7828

Section 7 Return Policy

1. All returns must be accompanied by a RGA issued by Jeneer Group. Contact Jeneer Group at 770-817-7828 to obtain a RGA. The RGA form can also be downloaded from www.jeneergroup.com and e-mailed to infor@jeneergroup.com

2. All returns must follow the procedure outline on the RGA form

Please contact Jeneer Group with any questions – 770-817-7828

E-mail at info@Jeneergroup.com