

Operating Principles

When the Solinst Double Valve Pump (DVP) is placed in a well or borehole, water rises inside the pump and the twin tubes to static level. A Control Unit is used to supply compressed gas to the pump. During the drive cycle, the gas pushes down on the water column contained in the drive line tubing, closing the check valve at the base of the pump. This forces water up the sample line tubing.

A vent period, during which the gas is released, allows hydrostatic pressure to refill the pump and drive line with sample water. The top check valve prevents water in the sample line from falling back into the pump body. This pressurization and vent cycle is repeated manually or automatically as set by the timers on the Control Unit. The cycle may be regulated for purging or sampling.

Pump Operation

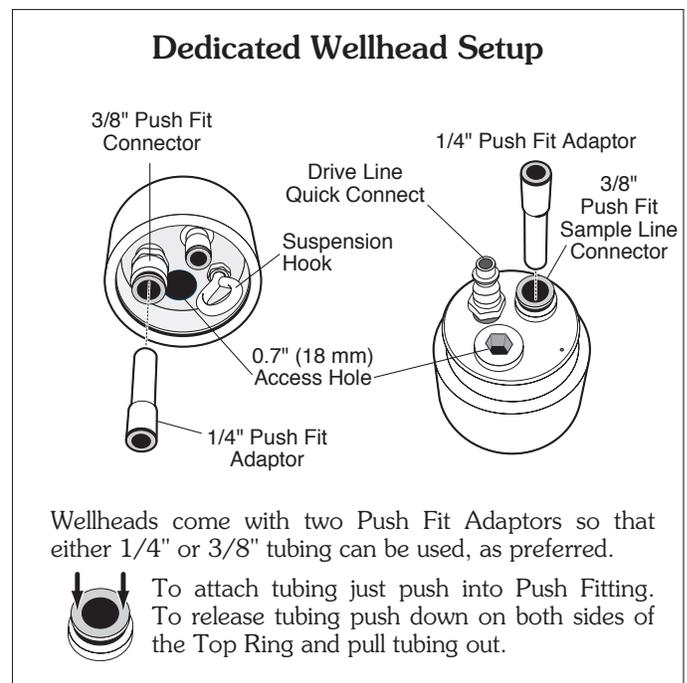
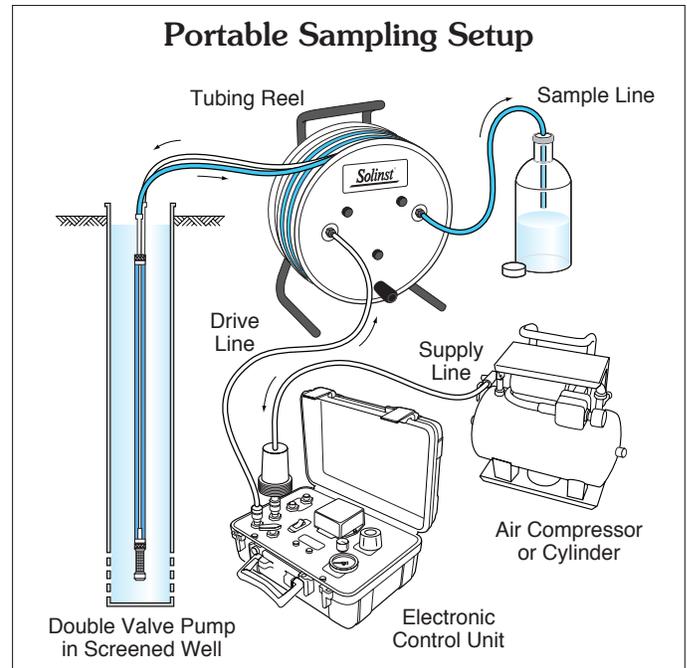
Portable: The Pump will be attached to skip-bonded, dual 1/4" OD LDPE tubing, mounted on a reel.

- Slip the double ear Oetiker clamps onto the drive and sample stems on the DVP. Push drive and sample tubing onto the stems and crimp both ears on each clamp to secure the tubing.
- Lower the assembled DVP into the well.
- Connect the supply line with the in-line dryer from the compressed gas source to the Control Unit. The drive line connects from the Control Unit to the reel.
- Attach a short (3 ft. or 1 m) length of 1/4" OD sample line to the sample connector on the reel.

Dedicated: The Pump will come with a roll of tubing to be cut to length, as required, for connection to a Wellhead.

- Cut the tubing to desired length. Slip the double ear Oetiker clamps onto the drive and sample stems on the DVP. Push drive and sample tubing onto the stems and crimp both ears on each clamp to secure the tubing.
- Attach the sample and drive lines to the appropriate Push Fittings on the underside of the Wellhead. (See diagram at right for use of Push Fittings).
- Lower the DVP into the well. Push the Wellhead firmly onto the riser casing.
- Attach a short (3 ft. or 1 m) length of 1/4" OD sample line to the sample line adaptor on the Wellhead.
- Connect the supply line with the in-line dryer from the compressed gas supply to the Control Unit. The drive line connects from the Control Unit to the top of the Wellhead.
- For detailed pumping instructions, please see the Solinst Model 466 Control Unit Operating Instructions.

- Note:**
- The maximum lift for stainless steel (SS) pumps is 500 ft. (150 m).
 - DO NOT** exceed an operating pressure of 250 psi.
 - The pump has been decontaminated before leaving Solinst however, you may wish to decontaminate your pump before use. The pump should be decontaminated between wells.
 - Refer to the operating instructions in the lid of the Solinst Model 466 Control Unit for detailed pumping instructions.



Disassembly

1. Unscrew and remove the Bottom Platen and Filter Stem from the Pump Body, being careful not to lose the Check Ball. Remove the Pump Body by unthreading it from the Top Retainer.
2. Remove the Valve Body from the Bottom Retainer on the Centre Rod (Riser), by pulling the two pieces apart. Be careful not to lose the Check Ball.
3. Remove the Bottom Platen from the Filter Retainer, and remove the Filter Mesh from the Filter Retainer.

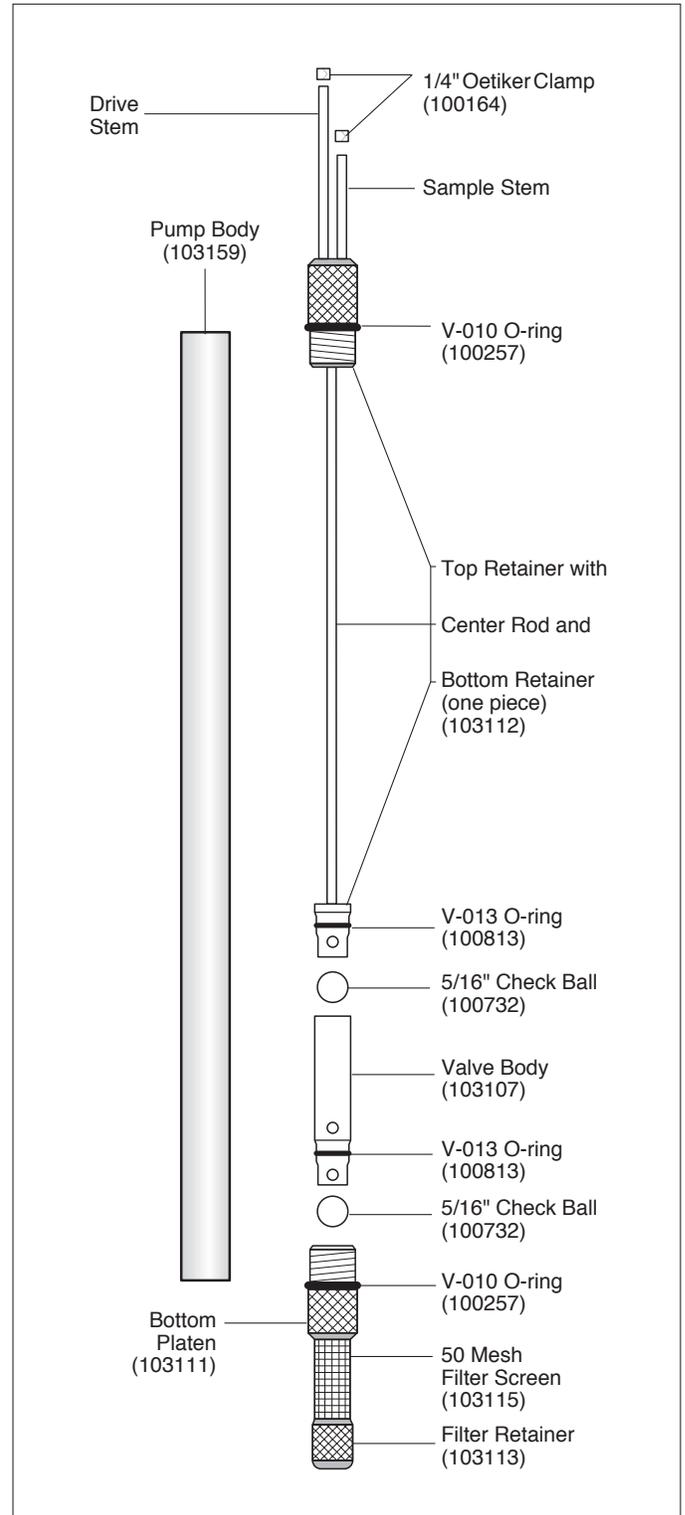
Decontamination

Note: 1. Always follow your local guidelines and standard protocols.
2. Do not use acetone on the O-rings.

1. Completely disassemble the pump.
2. Wash all pump components with phosphate-free soap or a mild detergent.
3. Rinse all components thoroughly with deionized water and dry.
4. Replace worn O-rings as necessary, and then reassemble.
5. The pump's interior can be cleaned without disassembling by flushing your cleaning solution up and through the pump's intake. With the pump's Filter and Filter Retainer removed, use a peristaltic pump connected to the Bottom Platen to push the cleaning solution through the pump. Then flush the interior with deionized water.

Reassembly

1. Slide the Filter Mesh over the Filter Retainer until seated.
2. Thread the Bottom Platen onto the Filter Retainer until the O-ring is seated and the parts are finger tight.
3. Insert a Teflon® Check Ball into the top of the Bottom Platen.
4. Insert a Teflon Check Ball into the top of the Valve Body.
5. Slide the Valve Body onto the Bottom Retainer until the O-ring seats firmly.
6. Slide the Pump Body over the Valve Body and Center Rod and thread onto the Top Retainer until the O-ring seats firmly.
7. Thread the Bottom Platen with Filter Retainer into the Pump Body until the O-ring properly seats.



5/8" Double Valve Pump

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