

Coating the SPE-DEX 1000/3000 Extractor Water Inlet Valves

The gaskets sitting on the gray ball valve inside the valve assembly are made of PTFE. Due to the surface tension of water, and where the PTFE is not a very “wetable” surface, a phenomenon termed a Vapor Lock can occur. When this happens, water from the sample bottle does not flow down into the Disk Holder during the sample-processing step of the extraction method, even if the valve is fully open. If the sample does not flow down quick enough or does not flow at all, the Liquid Sensor will warm-up and trigger the system to advance to the next step, Air Dry the disk, and then to the Rinse steps. During the Rinse step, solvent shoots up into the bottle containing sample, which will break the Vapor Lock and cause an overflow. When replacing the ball valve gaskets, it is important to coat the valve with the ST-100 hydrophilic solution (PN: 165-0712). This solution will increase the “wettability” of the ball valve and PTFE gaskets, thus preventing a Vapor Lock. The coating does lose its effect over time with usage and will need recoating even if not replacing the gaskets. The following are instructions on how to use the solution to coat the valves.

Step 1) Place a strip of wide transparent tape over the opening of the valve. Refer to Figure 1. Make sure the tape is making a good seal around the top circumference of the valve by running your fingers around the top.

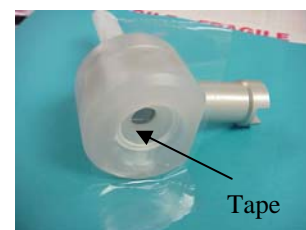


Figure 1

Step 2) Look into the valve opening and note the location of the rinse opening (tiny black spot). Turn the valve upside down

so that it sits flat on a table. Using another piece of tape, seal the opening on the solvent rod on the side where the valve rinse opening is located.

Step 3) Turn the aluminum shaft to the horizontal position such that the ball valve would be in the fully open position. Refer to Figure 2.

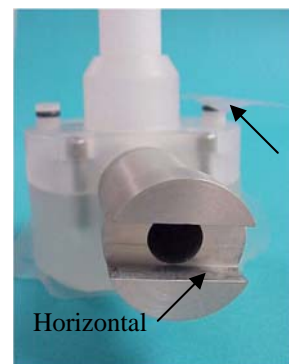


Figure 2

Step 4) Pour the ST-100 solution through the opening of the down tube. Refer to Figure 3. Fill the down tube $\frac{3}{4}$ of the way. Turn the aluminum shaft to the vertical (closed position) and then back to the horizontal (open position). Do this two or three times to remove air pockets.

Step 5) Once the air pockets have been removed, turn the aluminum shaft 45 degrees, enough to open the valve about $\frac{1}{4}$ of the way. Refer to Figure 4.

Step 6) Leave the valve soak in this position. For best results allow the valve to soak overnight.

Step 7) After the soaking has been complete, discard the solution, remove the tape from the valve, and flush the valve under running water, while turning the aluminum shaft from

the open to the closed position several times. Run a purge on the extractor using the treated valve before using for the extraction of samples.



Figure 3

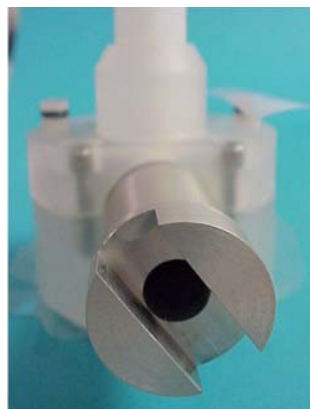


Figure 4