

Rheodyne Tech Tip 3: How to Find and Fix Common Leaks

Leaks cause valuable sample loss. Nobody wants that! The key to the valve holding pressure is the integrity of the sealing surfaces. If there is a scratch on the sealing surface or the needle seal in the rotor seal is damaged, a leak may appear. It is also important to realize what appears to be a leak can instead be a result of siphoning. The following are the three most common situations in which fluid leaks occur:

1. If fluid leaks out of the needle port only while loading the loop (i.e., while pushing down on the plunger of the syringe), the problem is most likely that the needle seal or the needle port fitting in the loop filler port is not gripping the syringe needle tightly enough to prevent leakage around the syringe needle. Tighten the needle seal grip by pushing down on the needle guide (see [Figure 1](#)) or replace the needle port fitting to make a tighter grip on the needle. The tightening reduces the hole diameter of the needle seal and port fitting.

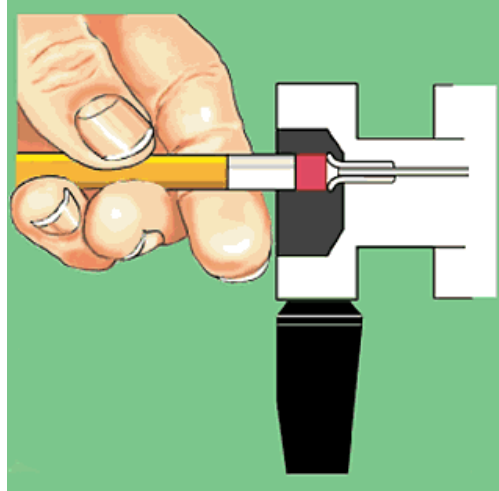


Figure 1. To reform the needle seal, push the eraser end of a pencil against the needle guide.

2. If fluid leaks continuously from the needle port or vent lines and/or from the stator-to-stator ring interface, the rotor seal and/or stator face assembly needs to be replaced. Scratches on the rotor seal or cracks in the stator face assembly allow mobile phase to escape and cause cross-port leakage. See [Rheodyne® Rotor Seals and Stators](#).

3. If fluid leaks from the needle port and/or vent lines but eventually stops, the cause is most likely siphoning and not a leak. Siphoning occurs if the vent lines are lower or higher than the needle port. Adjust the vent line (s) so that the outlet is at the same horizontal level as the needle port to prevent siphoning. See [Figure 2](#).

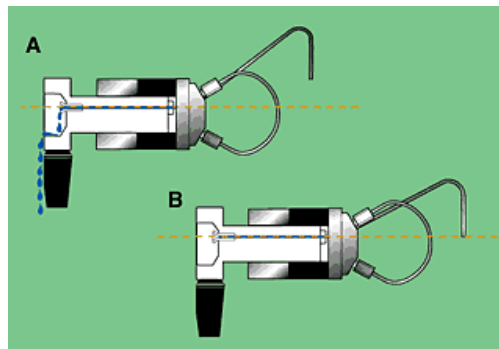


Figure 2. Needle port level compared to the level of vent line outlet:

- (A) Siphoning occurs when the vent line outlet is above the needle port level;**
- (B) Siphoning does not occur if the vent line outlet is the same horizontal level as the needle port.**

For other leakage or injection troubleshooting, refer to the [Rheodyne Troubleshooting Guide](#).