

Erratic pressures in the HPLC system

More than once we have been told by HPLC users, that there is an erratic pressure on their system, usually thinking that this symptom comes from the column. This type of symptom always has its origin in the HPLC pumping system.

Here are some causes and solutions to the problem:

1. **Dirty check valves:** disassemble and place them for a few minutes in an ultrasonic bath with Methanol. Install them in the system — without mounting the column — and pump 50 ml of methanol. If you do not solve the problem, you must replace the valves.
2. **Clogged solvent filter:** you can also use the ultrasonic bath, but you will rarely avoid replacing it with a new one.
3. **Worn piston retainer or damaged piston:** replace the retainer and place the piston in an ultrasonic bath with Methanol. If, after sonication, you notice it is "scratched", replace it.
4. **Air bubbles in the system:** the easiest method is to spray helium for a few minutes in the eluent flasks; since the diffusibility of helium in liquids is much higher than air gases, they will be "dislodged" quickly. Alternatively, sonicate the eluents and pump the system at a pressure of 1000 psi (75 bar) or higher for at least half an hour.