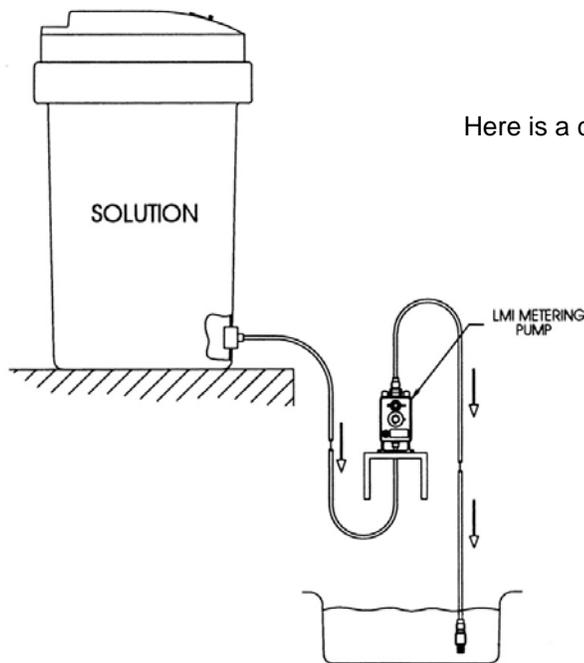


WHAT CAUSES A CHEMICAL PUMP TO SIPHON?

A chemical pump is siphoning when more of the fluid it is pumping is delivered than is either anticipated or desired. There are a number of ways that this can occur. For example, the discharge of a centrifugal pump can create a vacuum that draws chemical from the chemical pump. That can be a straight siphon, or it can cause an extended pump stroke by holding an injection check valve open beyond its normal stroke cycle.



The most common type of siphon is the natural siphon that occurs when a chemical level in its container is above the pump, and the injection point is below the pump. Fluids sit and move when under the influence of forces: mechanical forces like a pump, gravity or a vacuum, or surface tension forces like a pressure differential and molecular cohesion. In short, when kinetic energy is applied to a liquid it moves in response. And once a fluid is in motion, it tends to stay in motion.

We had a customer call us once claiming that a one gallon per hour pump was putting out two and a half gallons per hour — he wanted to know what was wrong with the pump. When we asked about the application, it turned out that he was pumping down two stories in a building. That's a major siphon! An adjustable back pressure valve solved this problem. Frequently, dirt or crystallized chemical will deposit in an injection check valve, allowing chemical to "leak" past the seal. If a siphon is detected (typically when a chemical level goes down too quickly or the treatment result is off), the injection check valve or diaphragm cavity are the first place to check. Some other ways to stop or prevent a siphon include a backflow preventer, an air gap or a vacuum breaker.