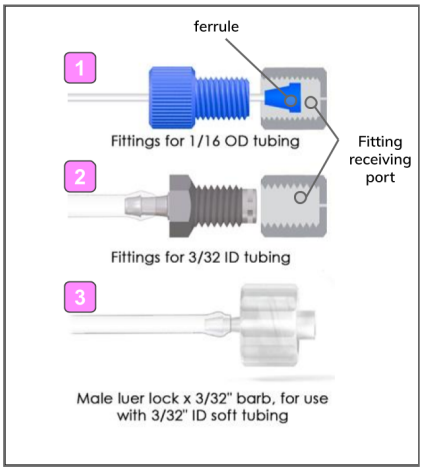
Learning the basics:

Getting rid of a pressure leak (OB1 noise) or a liquid leak (liquid spill)



Q: "What should I do if my OB1 starts making continuous noise when a steady pressure is applied to my microfluidic system?"

A: OB1 continuous noise can be disturbing. If, at any moment, the OB1 makes a continuous noise, this is a certain sign that a leak is present in your system (that the OB1 is continuously trying to compensate).

Leaks can cause valuable sample loss and decrease OB1 performance. Nobody wants that. The key to fittings holding pressure is the integrity of the sealing surfaces. The blue threaded fittings provided by Elveflow use compression fitting.
Tubing is inserted into the end of the fitting and into the ferrule, and the nut/screw is tightened, forcing the ferrule into the fitting receiving port. As the ferrule(s) moves axially into the fitting body, the body's angled shape radially compresses the end of the ferrule onto the outer diameter of the tubing. It is this radial compression that creates the leak tight seal between the fitting, ferrule, and tubing, and gives the compression fitting its name.
If you find a defective element, then it's a simple matter of replacing it, re-pressurizing your system, and going on your way. Unfortunately, not every leak is easily found, making it all the more difficult to resolve a persistent problem. Here are some steps you can take to identify and fix a leak.

You may start from the OB1 front pressure outlet, then check every component, using the following method:

1. Close the connection right after the element you would like to check. Close it with either a plug (e.g. calibration plug), your fingers, or clamp the tubing if required. ***You need to close the system right after the element you're about to check, to find out if it is defective.***
2. Apply a moderate pressure (e.g. 500mbar) pressure, check if any OB1 continuous noise can be heard.
3. Apply a 0mbar pressure, then:

    a. *if a noise was heard*, replace the defective fitting. Usually, the small blue cone-like ferrule is the part that need to be replaced, but it also happens that sometimes the fitting thread is damaged by ordinary handling (overtightening, bad installation) and needs to be replaced. Replace the defective element. Re-apply a 500mbar pressure and check for OB1 noise. No noise should be heard now.

    b. *if no noise was heard*, proceed to next fitting check without removing the one that worked from your previous test, and do so on the entire pressure line and flow path, and, of course, on every OB1 channel until the leak is fixed.

