

Instructions for Setting Up Auto Dispenses

When setting up automated pressurized dispense systems such as Cartridges, BSR, EBR, and DSD-1 syringes it's important to understand what variables are used to determine overall dispense volume, rate, and suck back control. There are three main variables that affect the dispense volume. The first is the pressure regulated from the dispense control box to the chemical reservoir. The second is the amount of time you program in software for the dispense step. Finally, the third is the tubing diameter and tip size that is used on the dispense nozzle output. The first parameter is set at the control box for any given dispense. You can choose from 1-100psi (We recommend ≤ 40 psi for common materials). Typically for low viscosity solutions users will adjust their pressure between 5-10 psi. If using high viscosity materials, your pressure may need to be in excess of 20 psi. The critical part of the pressure, is you want a good constant stream of material with no splattering or surging out of the dispense tip.

The next parameter that has to be decided is the tip size, each dispense system is sent with a dispense tip kit with several sizes and materials to use. First, pick a tip material that is compatible with your desired chemical and then determine output diameter. Again, for thinner materials a smaller diameter, (18-22ga) should be used and for thicker materials larger tips (14-18ga) should be utilized. Critical areas of this selection, are good suck back after a dispense step and steady stream as mentioned earlier.

The final variable in this equation is the dispense time. This is set-up in software, at the beginning of each spin dispense step. The first selection in each step is Nozzle #, if you want to dispense for that particular step, pick the correlating nozzle of your preferred dispense option. The corresponding time inserted for this recipe step will control the duration of the material flow. If wanting to perform a static dispense step, set the speed at 0 rpm's for the duration of the dispense step. Inversely if you prefer a dynamic dispense, the speed will normally be control to 50-200 rpm's. The diagnostics menu "Diag" can be used to optimize your dispense pressure and time to achieve the targeted dispense volume to be deposited on the wafer. If the dispense volume is not sufficient, increase the dispense step time and if there is excess, simply decrease the time.