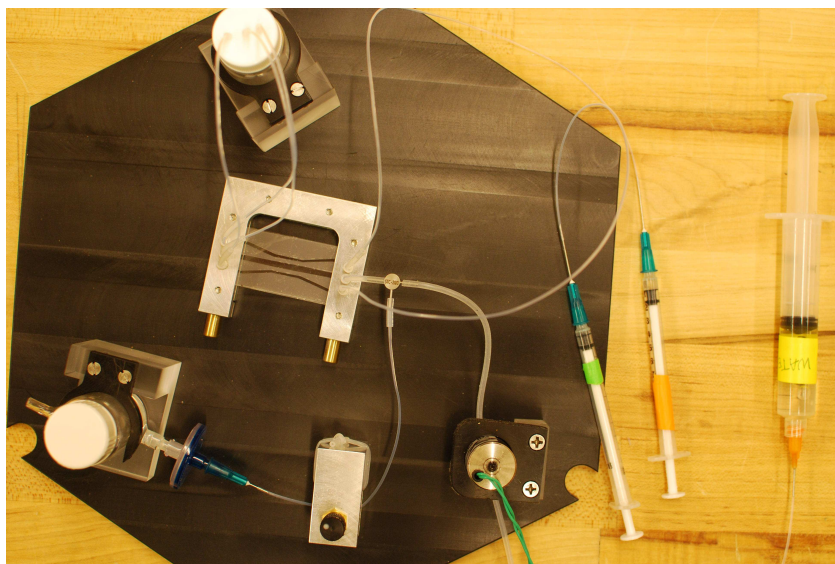
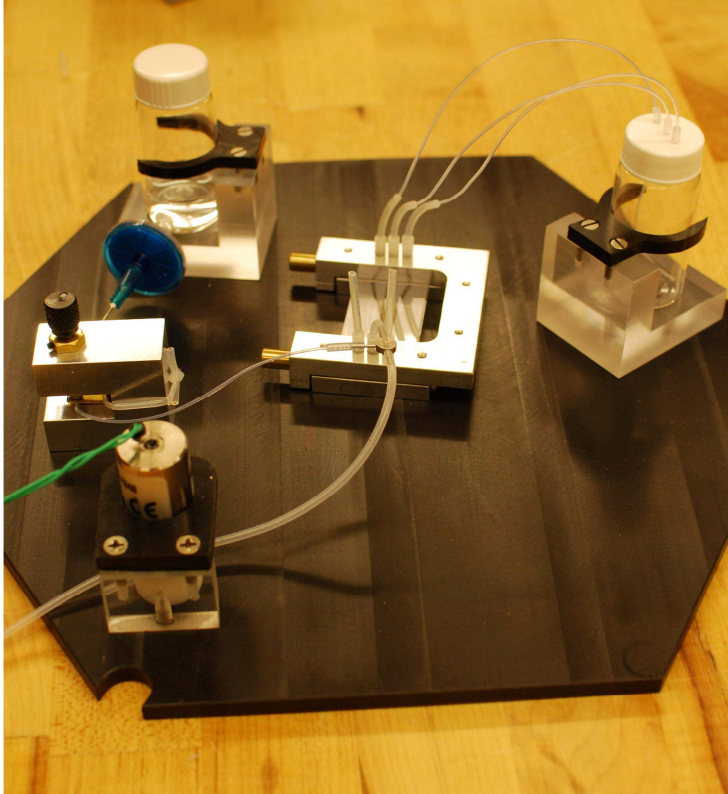


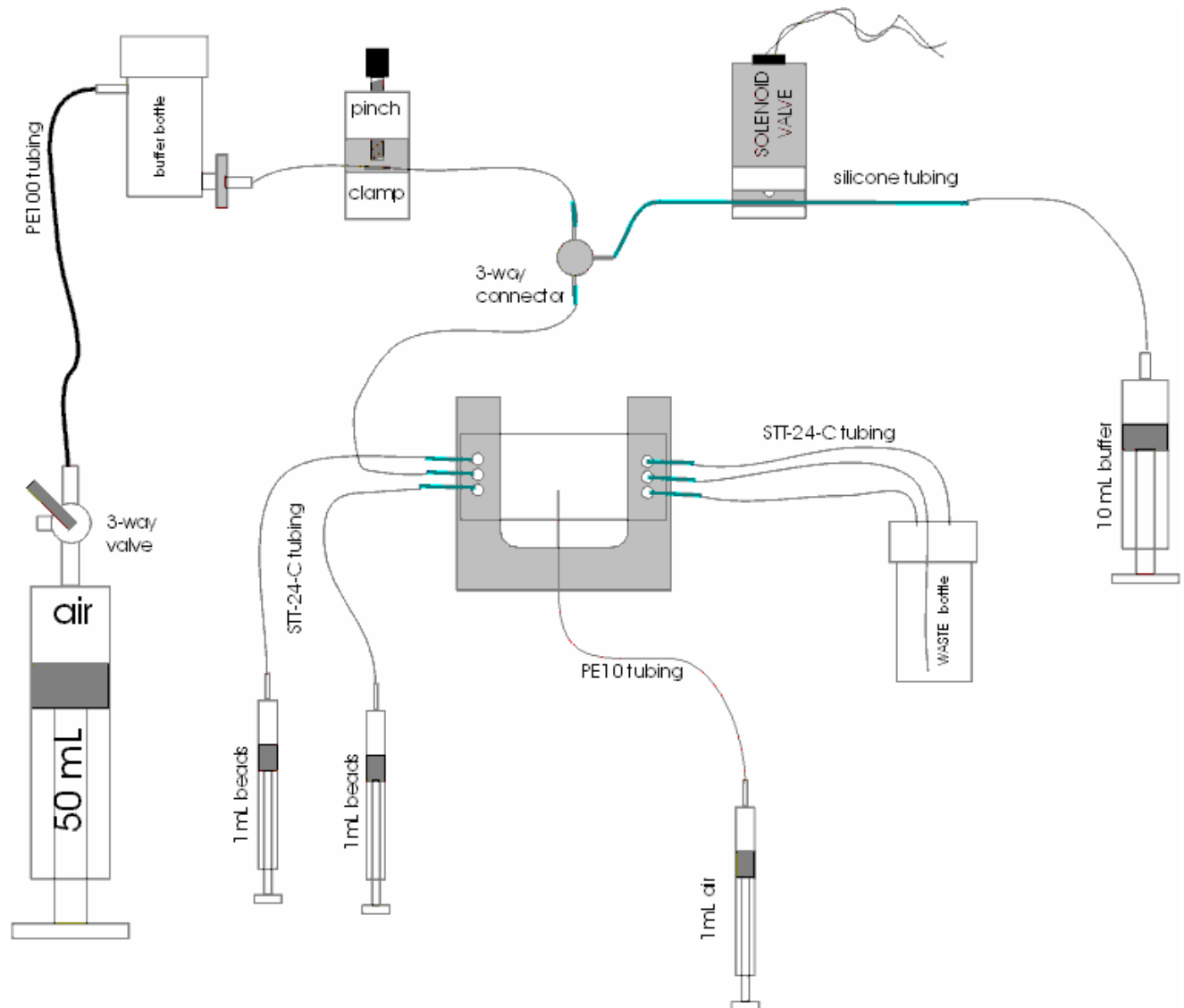
An improved fluidics setup that contains an electric solenoid valve for flushing buffer and also for knocking sticky beads off the pipette. The electric valve creates a shock wave in the fluid whenever it is activated, which is useful when trying to break some multiple tethers and also useful for admitting a big flow from an external buffer syringe.



Parts list:

Small Parts Incorporated: 3-way tube connector STC-20/3/01; 3-way Valve, luerLock, LSCP-300B ; blunt needles, 23-gauge , NE-233PL-C ; PTFE Tubing, 24-gauge, SST-24-C

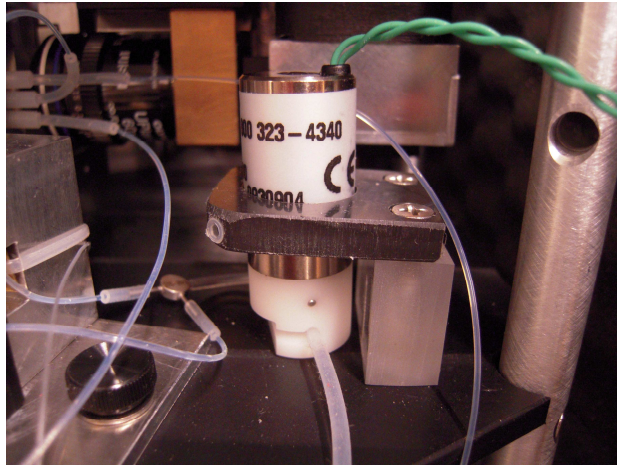
Cole Parmer: Pinch valve, 12VDC, 98302-00; Silicone rubber tubing, 1/32"IDx3/32"OD, EW-06422-01



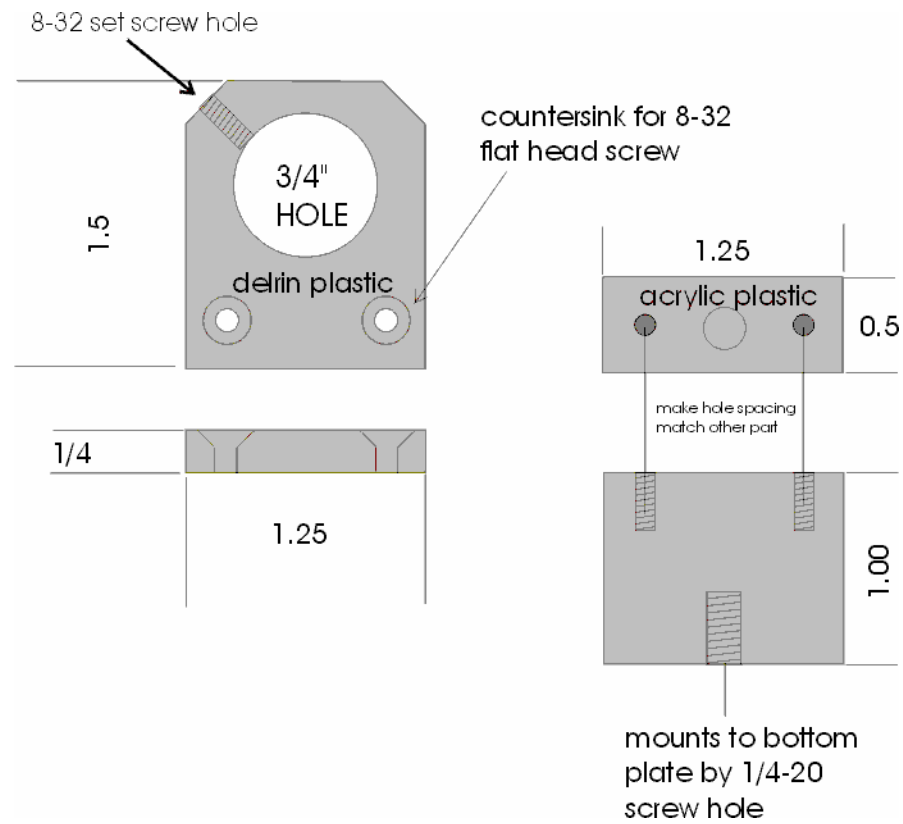
Needle size for PE-10 = 30 gauge

Needle size for PE-100 = 18 gauge

Needle size for PE-50 or STT-24-C = 23 gauge



Holder for solenoid valve



### Motorized Pinch-Clamp:

The purpose of the pinch clamp is to restrict liquid flow such that some moderate air pressure into the buffer bottle will create a controlled amount of liquid flow through the micro-chamber. That flow rate is controlled by how hard one pushes on the 50-mL syringe. The pinch clamp operates by flattening the STT-24-C Teflon tubing until it is almost closed. It is always necessary to adjust the pinch clamp *before* wrapping the instrument head in Saran wrap and before closing the sound-proof box, but it is irritating if the clamp needs to be re-adjusted by opening the box and wrappings again. An improvement can be made by installing a reversible DC motor which turns the pinch-clamp screw in response to computer keyboard commands. The motor is attached to the lower deck (Hexagon Base) by 2 screws and the shaft runs through a hole in the deck. The motor shaft connects by a piece of vinyl tubing onto the pinch-clamp handle (see photo). The motor speed and direction is controlled by the Motor Control Board where the drive voltage comes out conductors 31 and 32 of the motor-cable harness. Adjust the clamp setting by pressing the SHIFT key while also pressing the UP / DOWN arrows on the keyboard.

#### Parts list:

Motor, 12VDC, reversible, 10 RPM: made by Cramer sold by Digikey CRA202-ND

Shaft bushing to connect motor and vinyl tube, ID=3/16", OD=0.305", Length=3/8", 2-56 set screw

Vinyl tube, OD=1/2", ID=1/4", L= approx 1.8"

Requires Motor-Control circuit board ver.8 or later, Hexagon Base ver.6 or later, GUI program LT-8D or later, PIC firmware MotorControl\_8 or later

