Humidity control setup 2015.02.27

* See attached PDF file for FSV setup and humidity sensor setup
* Work for both N2 and dry air
* Use 0-2.6V to control FSV proportional valve. FSV seems to fail when >3V.
* Use FSV TTL signal for fast shutter on/off control. It can be used to save gas by shutting off both valves and keep the humidity/oxygen levels (run the attached matlab code scpt\_humidity\_control.m on a separate matlab)
* FSV Wet valve setup



* FSV Dry valve setup: for negative control, use a register (Reg. 78) to invert the control voltage. Can also use negative KP values without the register for negative control.







* Softglue setup for FSV TTL signals





* Humidity sensor setup. The sensor is mounted next to the sample.





* Additional temperature sensor was mounted (with fabric tape) on top of the copper heat block to control the sample temperature.
* Bstop3 height is about 5-7 mm above the sample stage surface
* Oxygen sensor is in the chamber
* Humidity, oxygen level, and sample temperatures are written into spec file and pillog