



# Alpha1 Testing Status

Nemo

May 13, 2020

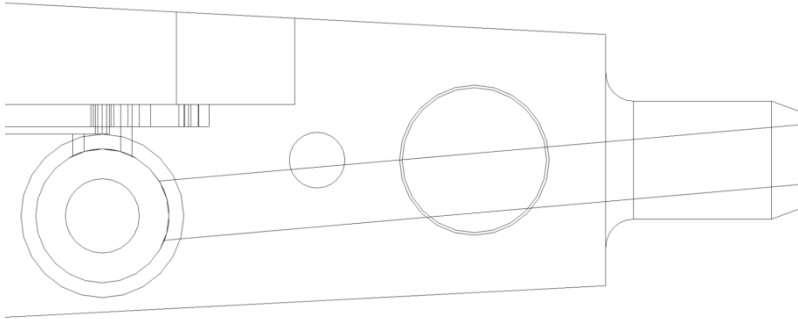


- Angled SLA
- Protocol sequence notes
- Changes for Alpha 2
- To Dos
- Next Steps

# Angled SLA



- No longer shears o-rings
- Functional, but sticky



# Protocol Sequence Notes



- No leaks, check valve holds with 9.95lbf/in spring
- Puck O-ring produces stronger seal than plastic spacer. Wet filter is better at sealing than previously expected (e.g. 1 stroke with 0.22 $\mu$ m filter pressurized puck top to 20psi. Puck bottom read a slow, steady increase 0-5psi over 30min)
- Conical syringe bore designed to funnel bubbles still catches on edge
- Shared channels may pose issues for Lysate recovery bubbling
- Heating from seek to hold: 25s @52°C



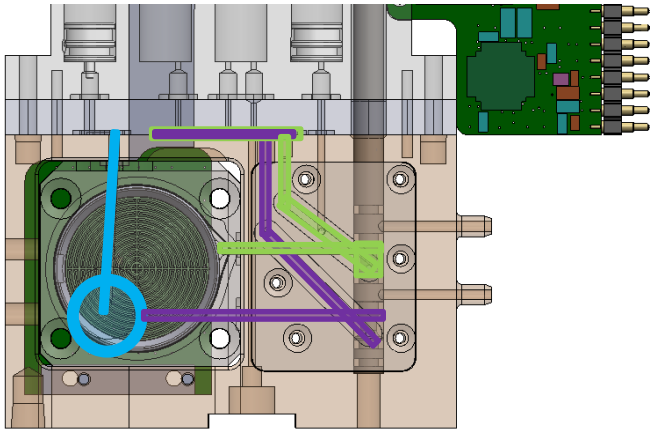
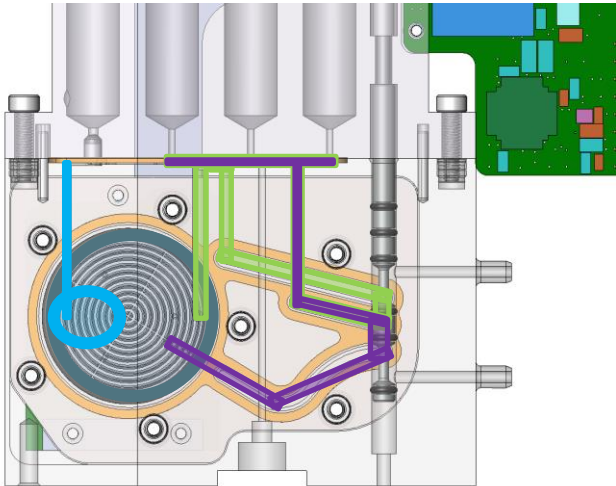
5  $\mu$ m filter, Function evac

# Protocol Sequence Notes

Updated volumes (subject to change)



|                    | Puck w/ -020 o-ring no filter | Puck + air hole | To Puck Top | From Puck Bottom |
|--------------------|-------------------------------|-----------------|-------------|------------------|
| LnG5 Volume (mm^3) | 846                           | 927             | 228         | 147              |
| LnG0 Volume (mm^3) | 932                           | 984             | 134         | 136              |

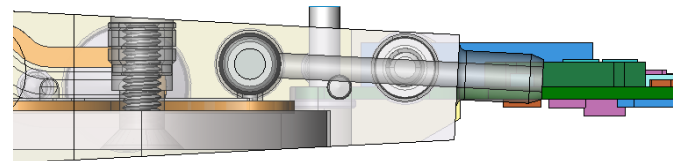
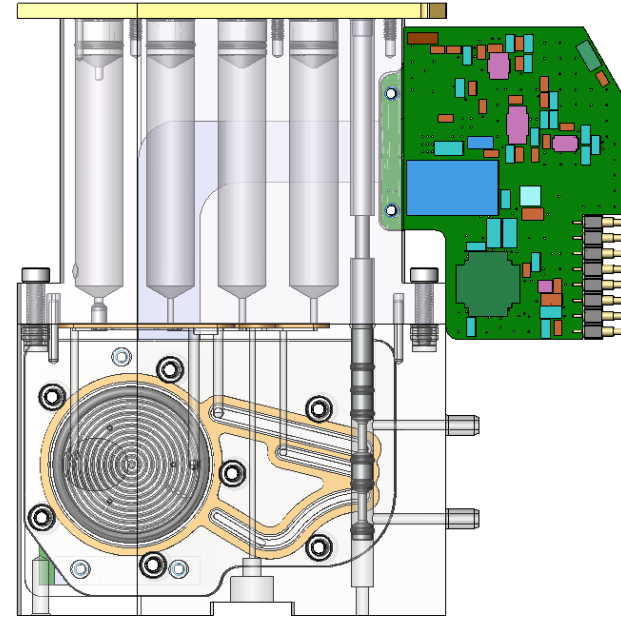


# Alpha 2 changes



## What do we want?

- CAD changes
  - Angled water in/out ports
  - Resized plungers
  - Adjusted angled hole in cartridge cover
  - Lined up heater pad
  - Spring installation window
  - ??
- Desire for multiple sizes to evaluate tolerances
- Pressure testing?
- How many?





- Adjust protocols per Alpha 1
  - Ensure evac over all filters
  - Reduce bubbling
  - Note: Alpha 1 geometry will change, no need to fine tune parameters
- Pitch/Roll Testing - ensure proper lysis delivery over  $\pm 40^\circ$  pitch,  $\pm 5^\circ$  roll
- Temperature Testing
  - Ti
  - Ni coated Brass
  - SS 316
- Alpha 2 adjustments
- Who and When?