***To-Do***

**Mark**

- Finish solidwork model

**Shawn**

* Compute thermal transfer

(For all of these, assume max delta temp 75 F and - 100 F)

Convection

Use surface area of 2 cylinders

Conduction

Use physical contact surface area of pins

Radiation

(Ignore)

**Jimmy**

* Compute leak rate

[**https://www.engineersedge.com/fluid\_flow/oring\_leak\_rate\_13605.htm**](https://www.engineersedge.com/fluid_flow/oring_leak_rate_13605.htm)

**Leak Rate**: 1.475e-6 to 2.098e-6 cc/sec

Interior volume of Case: 19.190 cubic in = 314.468 cubic cm

Volume of the Caddy: 8.062 cubic in = 132.111 cubic cm

**Total volume of air**: 182.357 cubic cm

Volume of air lost over a year: 46.522 cubic cm

**Total Volume in Caddy After a Year**: 135.84 cc or 74.49% of original vol.

**Zach**

* Power budget calculations
* <https://www.hindawi.com/journals/ijae/2019/8916416/tab3/> (camera reference)