

Addendum to the Ruchardt Experiment

Instead of doing this experiment in our lovely lab room, you're doing it at your kitchen counter. Interesting times... Anyway, here are some adaptations you'll need to make.

- You're not using an oscilloscope. Instead, you've been provided with a National Instruments DAQ and some new software that Dr. Ayars banged together in a hurry.
- The basic idea is still the same, though: from the frequency and the decay constant you can figure out the ratio C_p/C_v for the gas in the cylinder.
- Unless you're extreeeeeeeeeme social distancing, the gas in the cylinder is almost entirely diatomic nitrogen and oxygen. The manual says to try some other gasses "from the department", but your best bet is to find some helium. Buy a balloon, maybe?
- Helium is tough because it leaks out of the syringe pretty fast. Good luck!
- Don't have a scale handy? The mass of the plunger/oscillator is:
 - Kit #1: 105.2g
 - Kit #2: 59.8g
- Please be careful with these. A fingerprint on the ground-glass plunger can seriously interfere with getting good results.