

Compliant Parallel Arm Mechanism Equipment List and 3D Printing Settings

Ultimaker Cura slicer software was used to setup the corresponding filament setting as well as slice the STL file into G-code for the 3D printer.

The parallel spring mechanism was 3D printed using PETG filament since it provides both flexibility and rigidity. The PETG Cura setting used to 3D printing the parallel spring mechanism is as followed:

- Standard Quality (0.2mm)
- Infill density (40%) and infill pattern (Grid)
- Printing temperature (240 C) and build plate temperature (80 C)
- Printing speed (18.0 mm/s) and initial layer speed (15mm/s)
- Support enabled, support density (10%), and support pattern (Grid)
- Build plate Adhesion type (Raft with 2.0mm Raft Extra Margin) (if needed)

Any setting not specified above was left as default.

Parallel Spring Mechanism-Accelerometer schematic

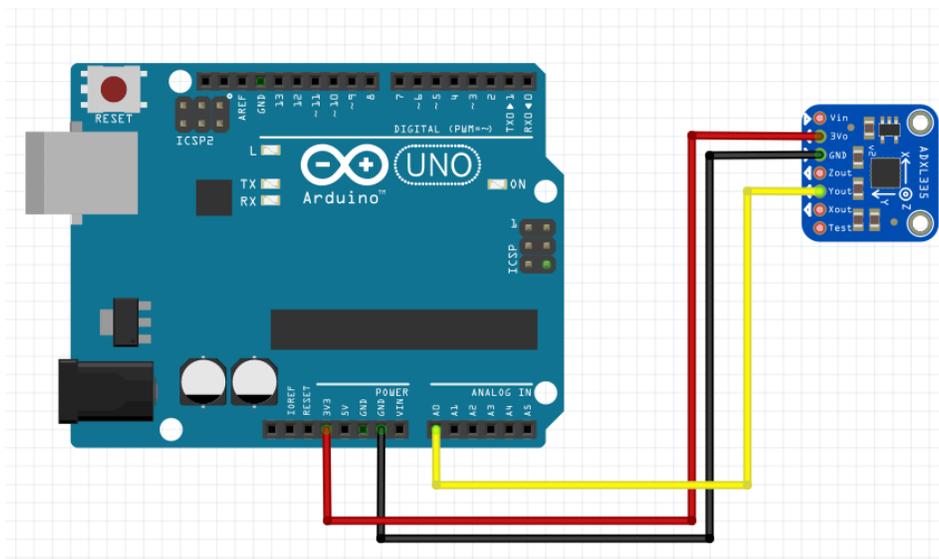


Figure 1: ADXL 335 Schematic

An ADXL 335 was used for the parallel spring mechanism to collect the acceleration data once the mechanism is displaced. The pin out for the sensor is shown above in the figure 1.