Effects of Construction on Efficiency of a Multi-Stage Coil Gun

Wieland, John

Seitz, Robert

The purpose of this project was to test the efficiency of constructing a multi-stage coil gun. As a continuation of the single stage coil gun model produced last year, the goal was to determine if a multi stage coil gun could achieve higher velocities. The construction of the model itself to be fully operational was another purpose. We tested the velocities by using photo gates for the projectile to pass through. The projectile was a small magnetic steel ring. Using such a projectile allowed us a low mass while still presenting enough surface area to disrupt a laser. Tests of varying time delays between the first and second coil were conducted in order to determine overall velocities as well as calibration for most efficient firing. Twenty-five trials on 1-4 millisecond delays were conducted in order to account for an average.

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