A Remotely-Controlled Electron Gun for a 200 keV Electrostatic Accelerator

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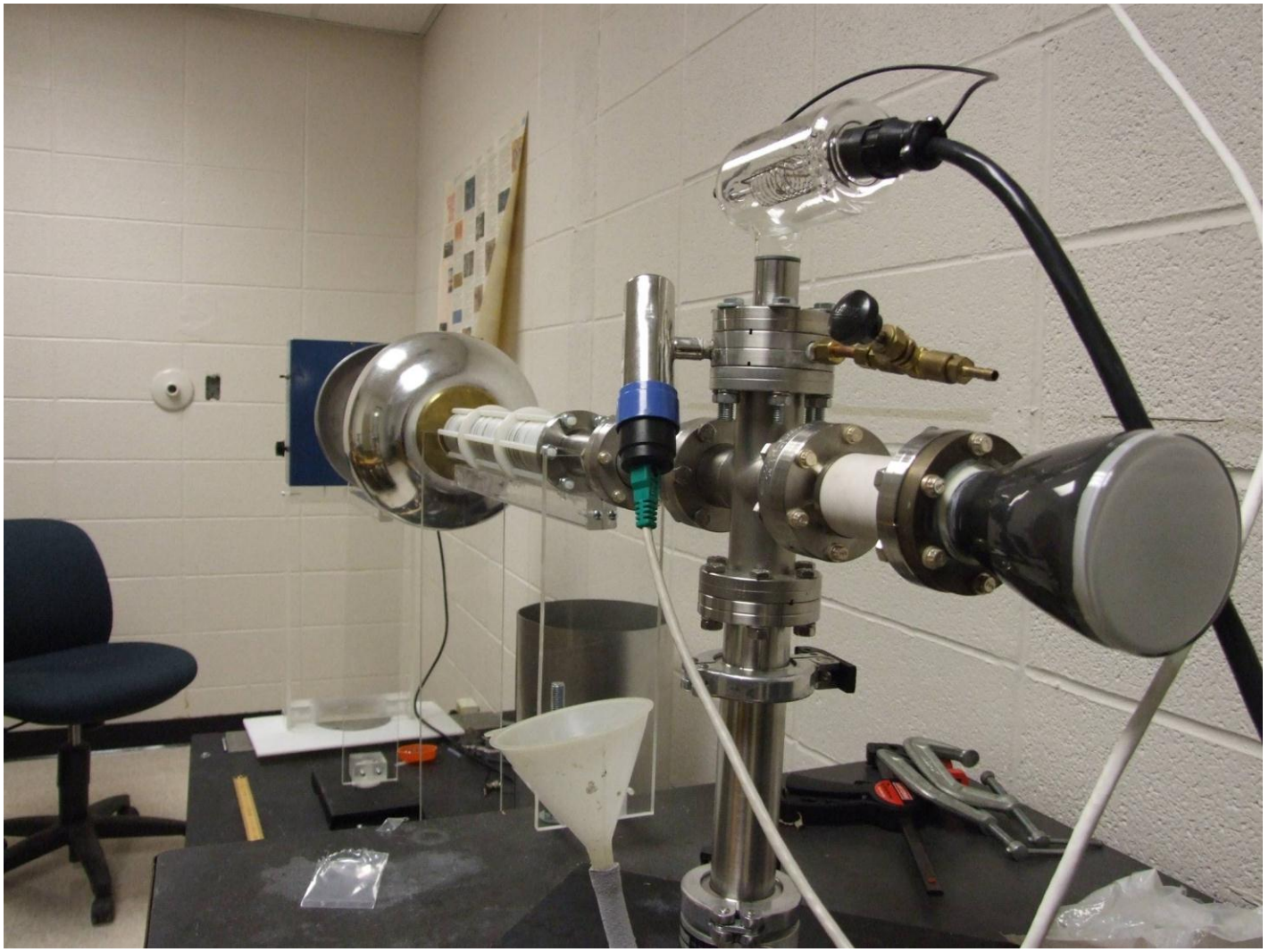
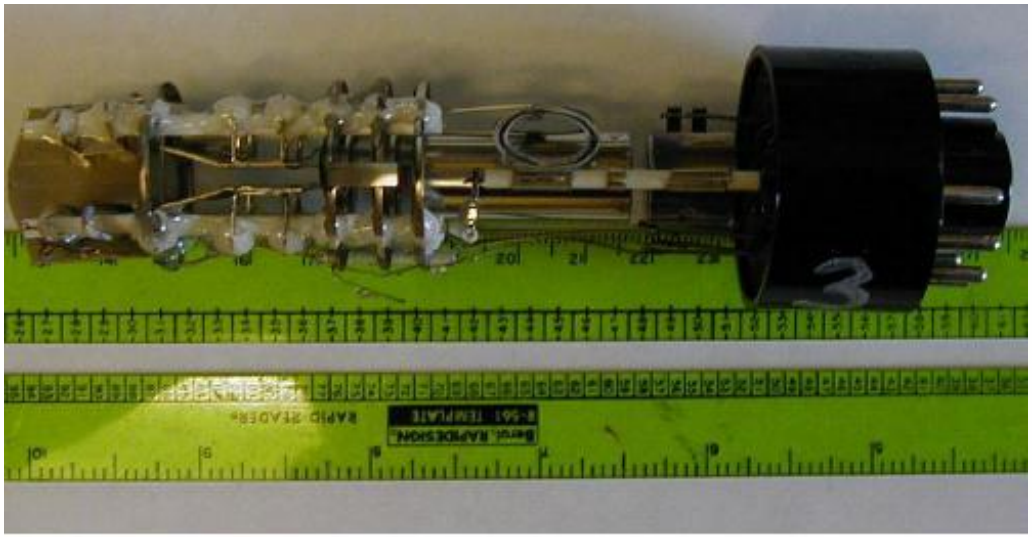
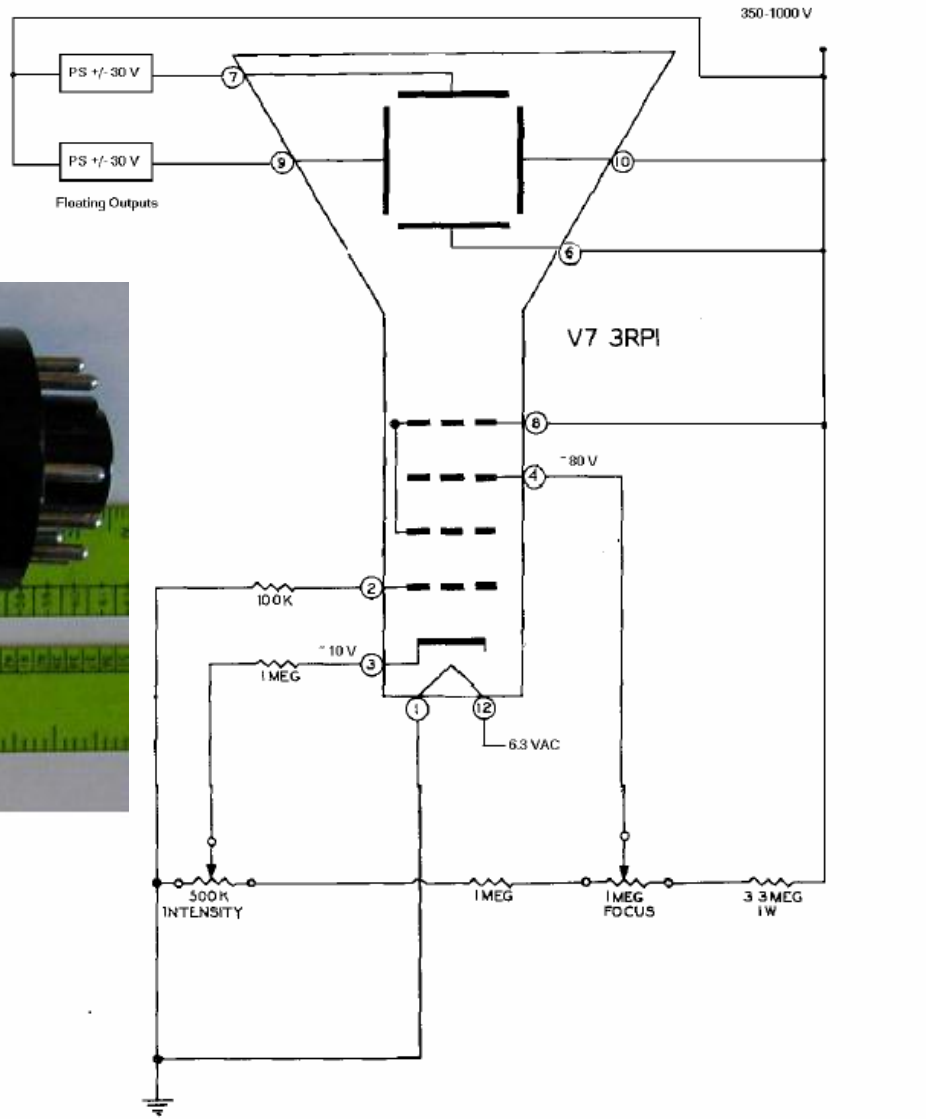
Overview of Electrostatic Accelerator

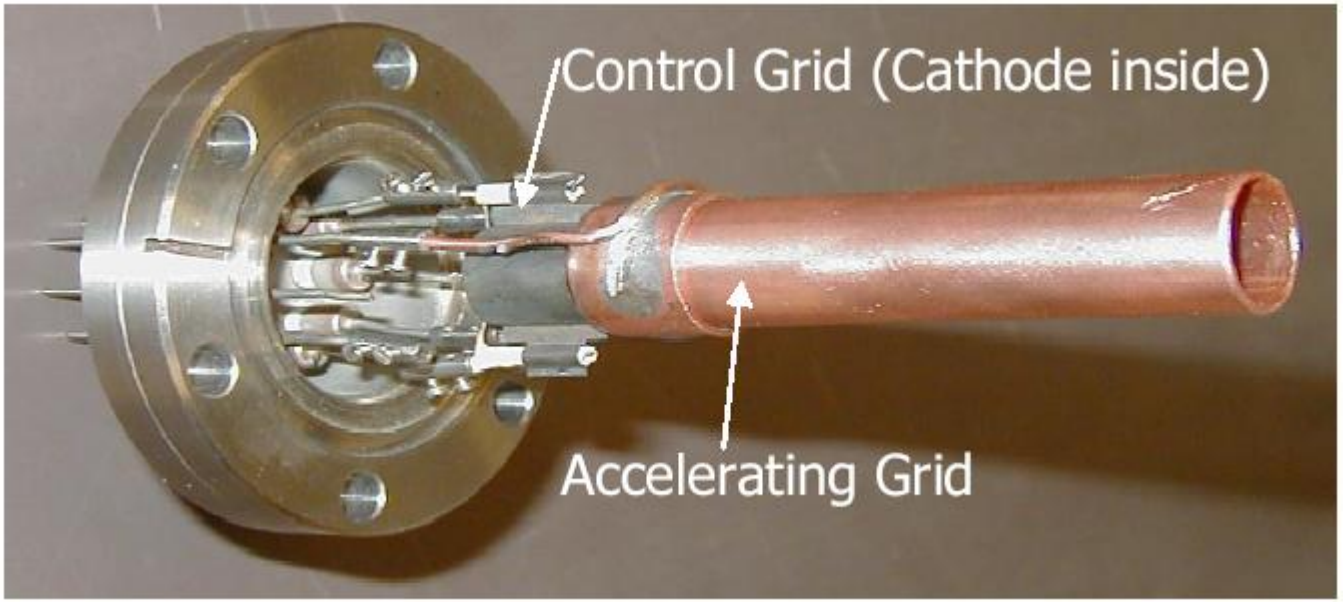


RCA 3RP1 Cathode Ray Tube

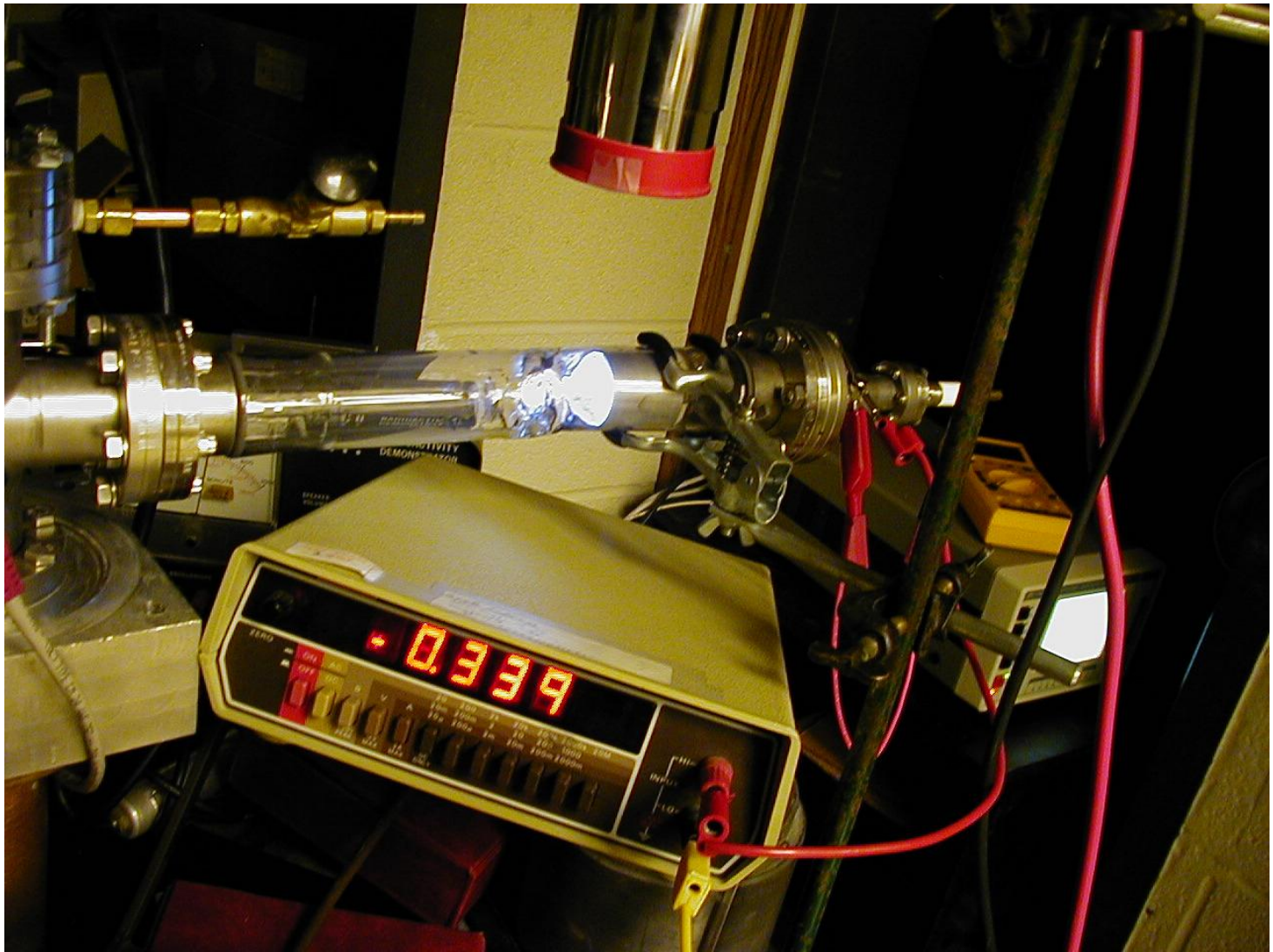




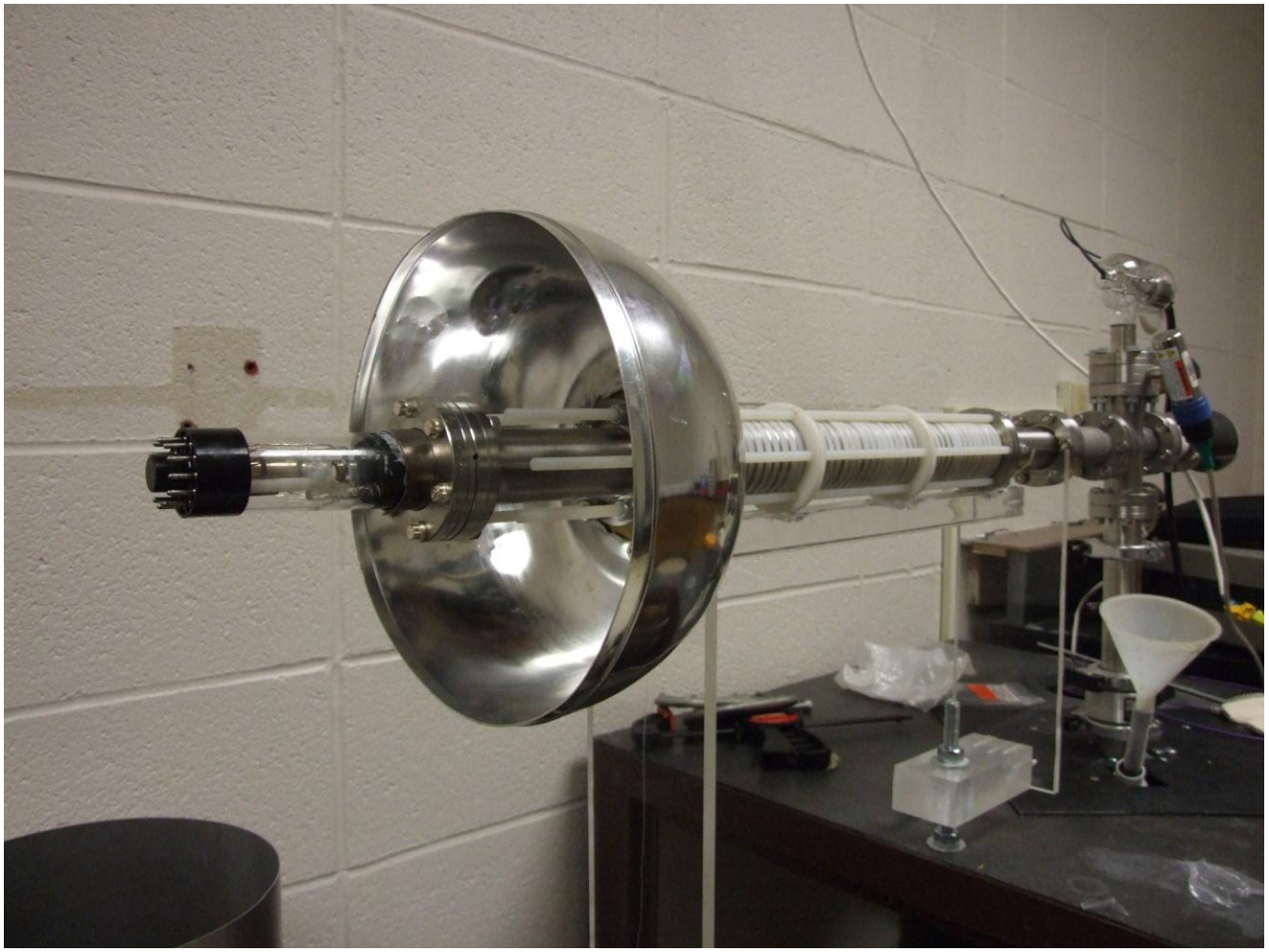
Previous Electron Gun



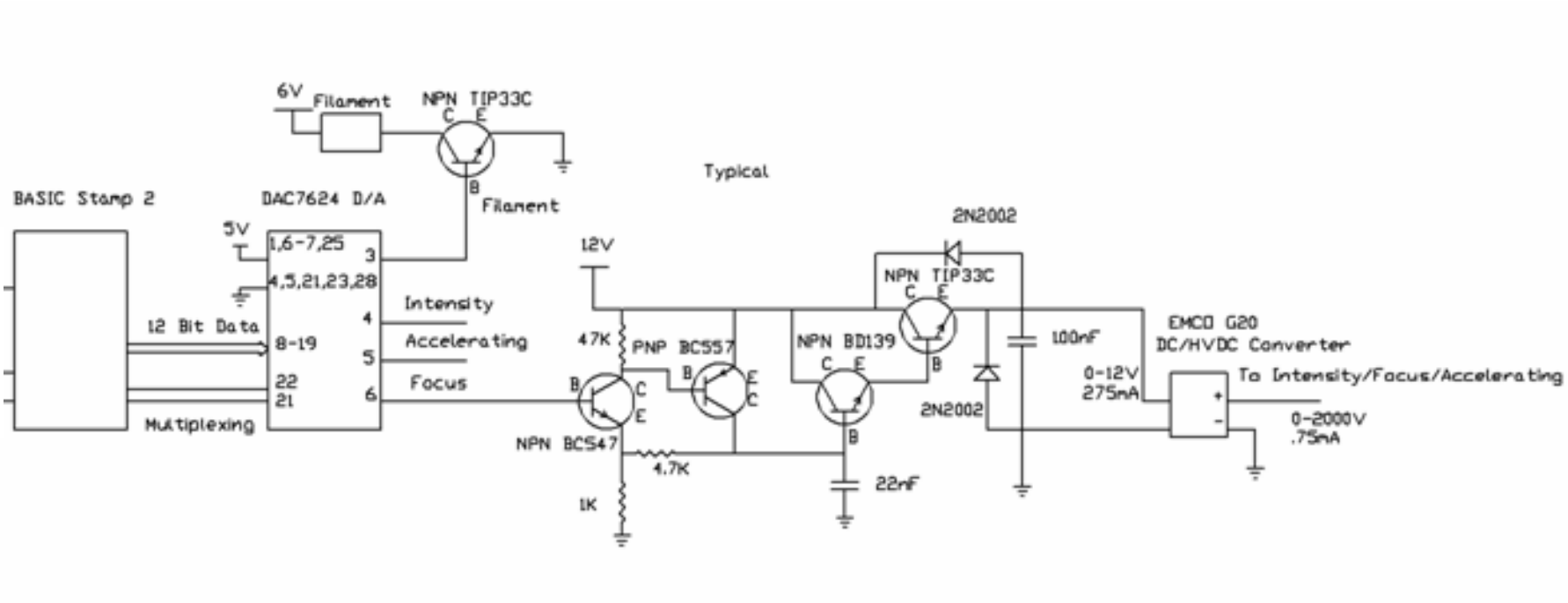
Problems with Previous Electron Gun



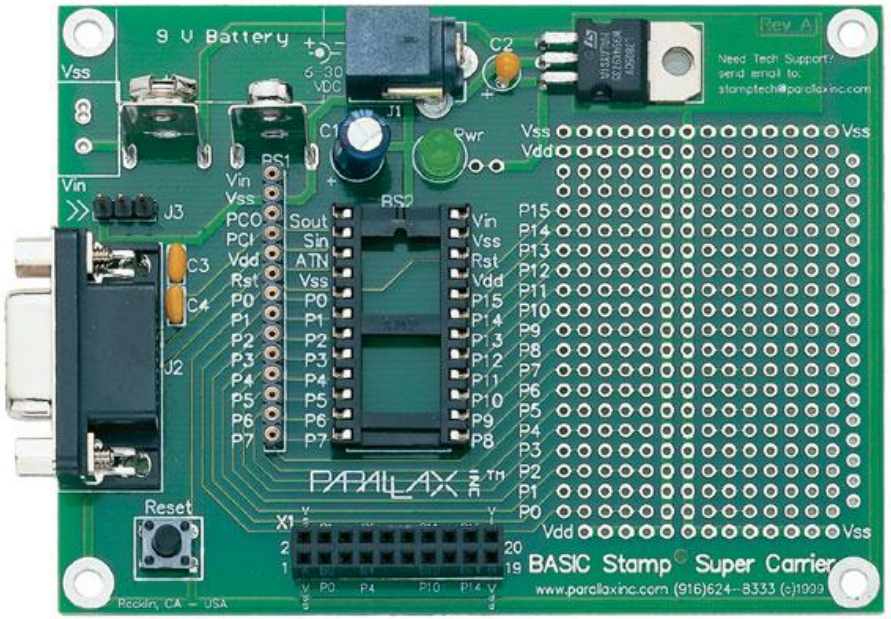
Current Electron Gun



Overview of Control Circuit



BASIC Stamp 2 Microcontroller

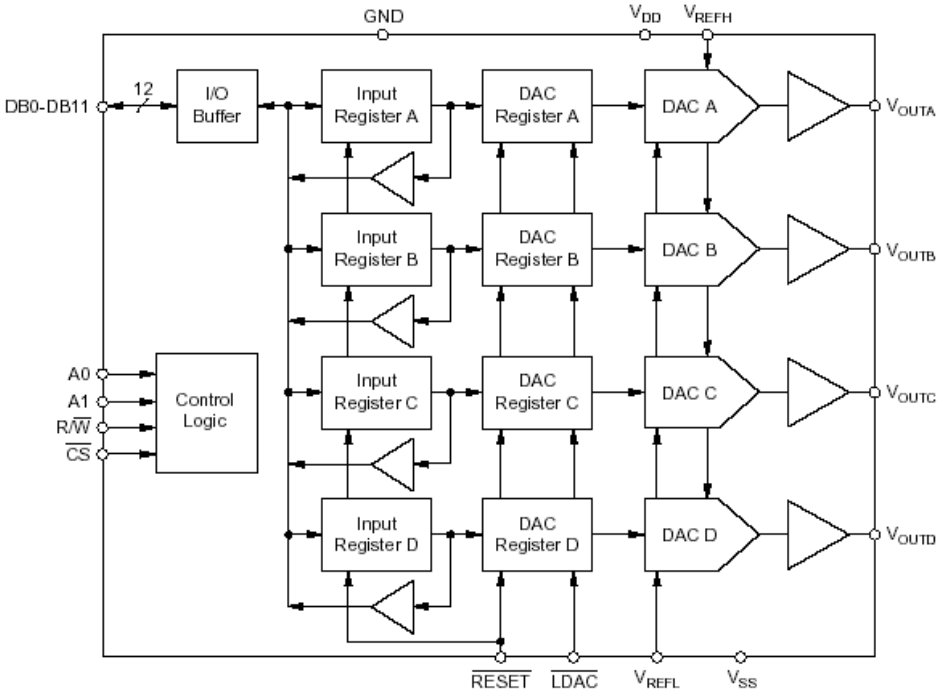


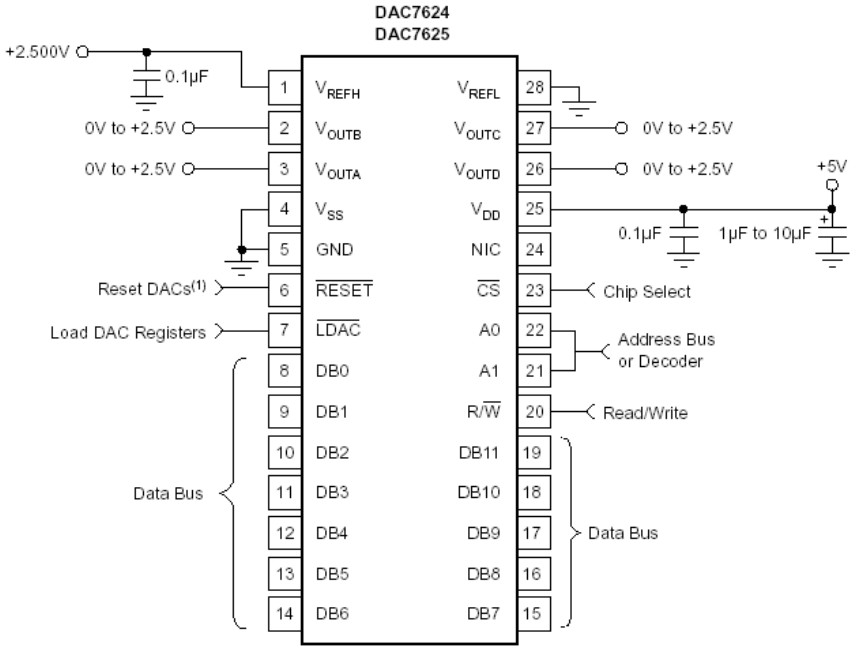
2 kByte Memory

~4000 instructions/sec

16 I/O Pins

Burr-Brown DAC7625

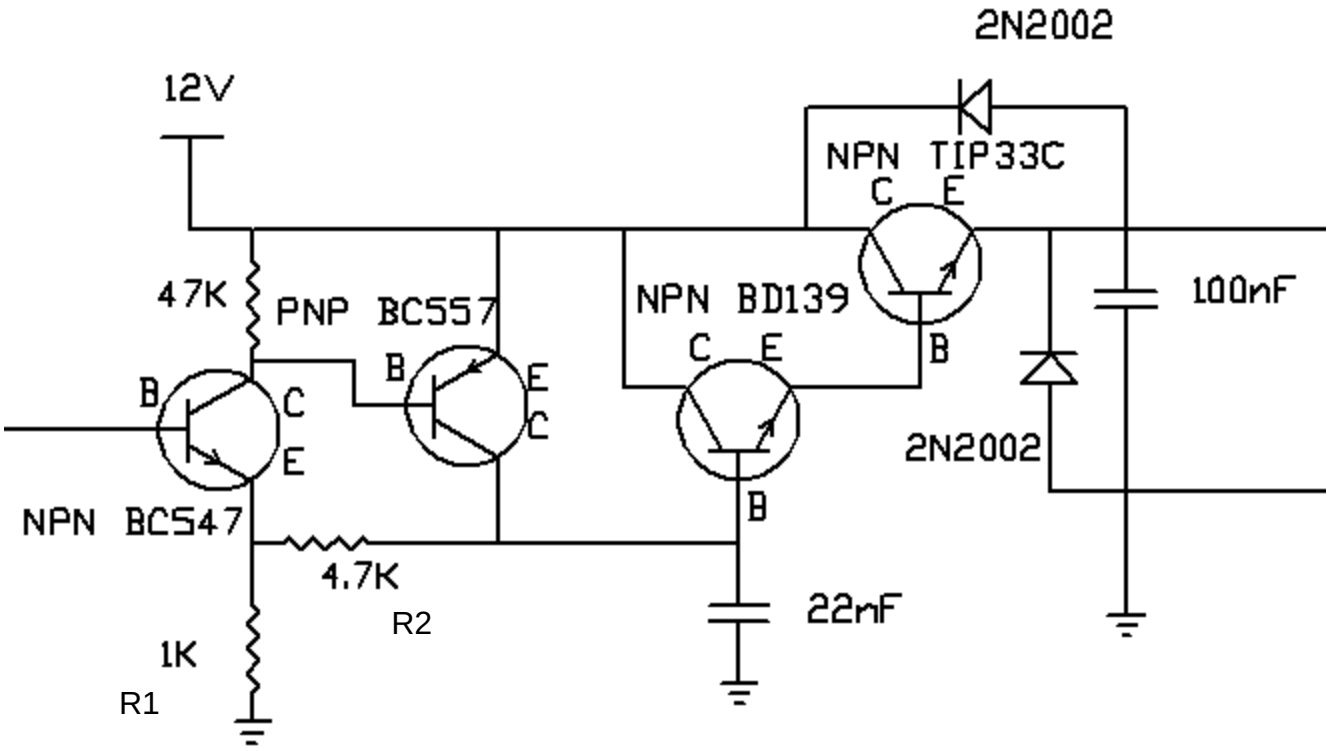




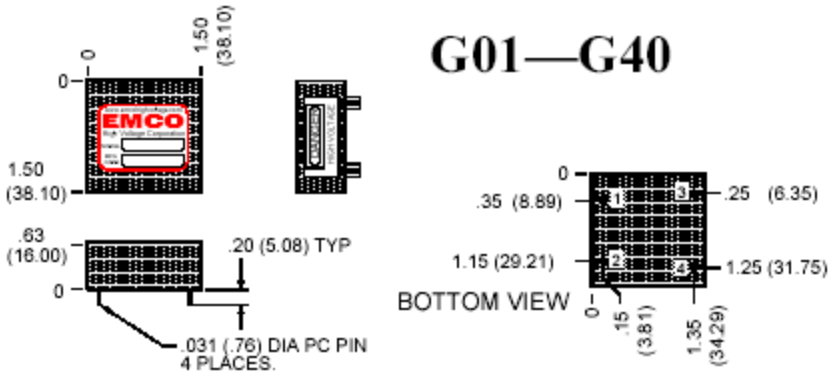
Output 0-2.5V

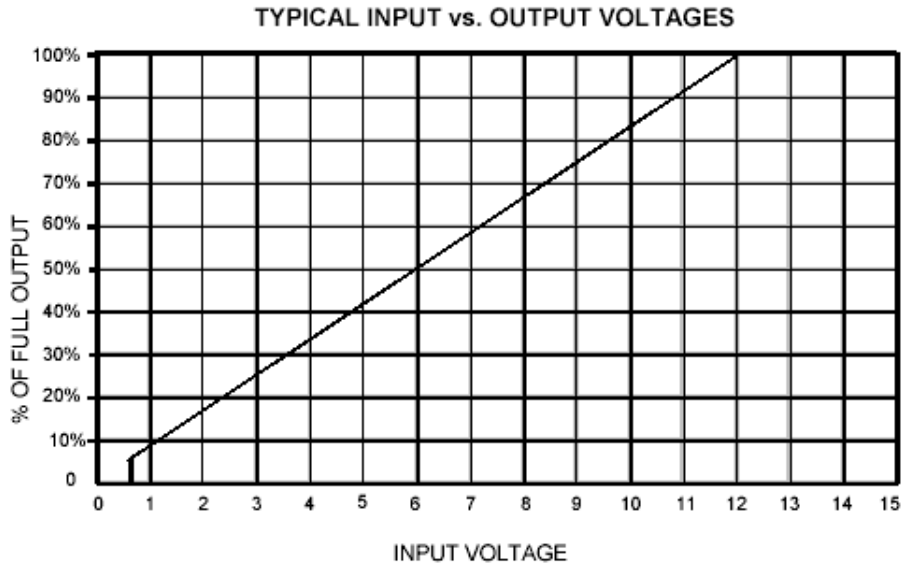
1.25 mA

Transistor Amplification Circuit



EMCO G20 HVDC Converter

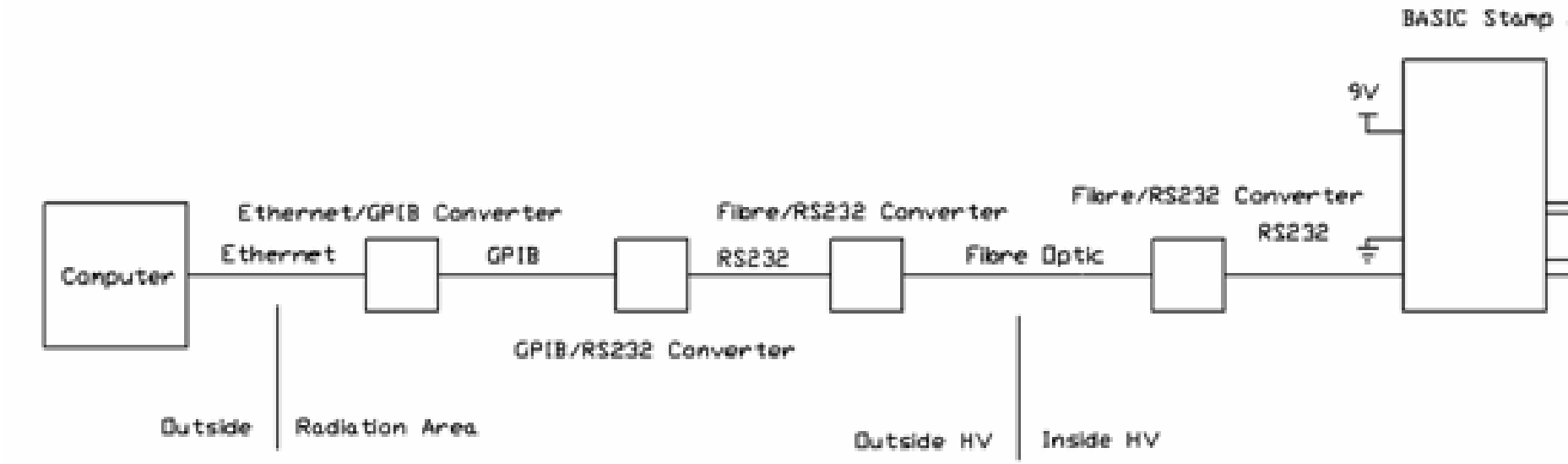




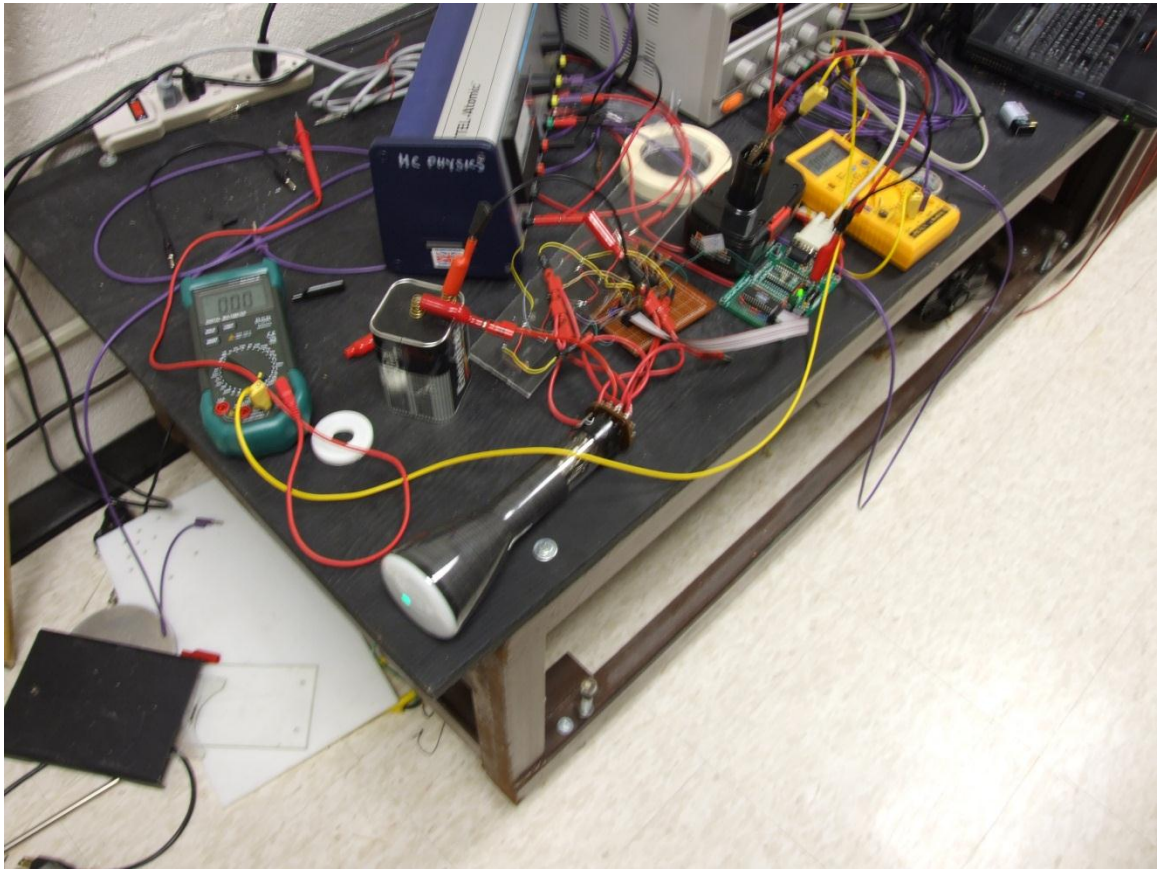
Max Input Current: 275 mA

Output 0-2000 V 0-0.75 mA

Terminal Interface



Completed Circuit



Results