9 Jan 2013

Modified Magnetron Experiment/

Hot Cathode

/__ Used Oil Diffusion Pump

/__ 0.1 Micron or 1E-4 torr

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- Was testing my 2nd CVC Ion Gauge Controller GIC 110A/

/__ used tungsten heater type ion gauge tube because diffusion doesn't have an oil trap

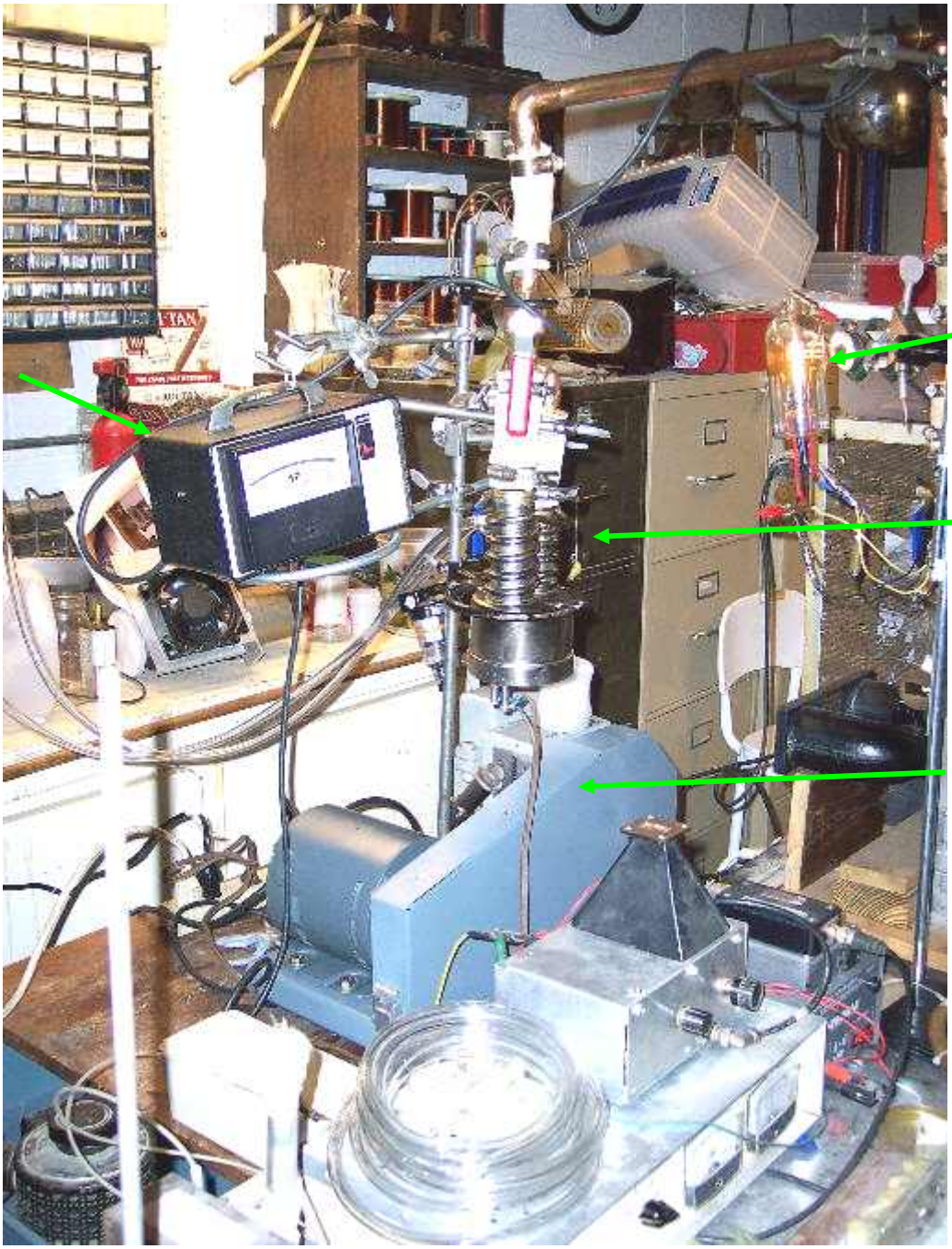
/__ with magnetron system valve closed to remaining system I was able to get at best 0.06 Micron or 6E-5 torr

/__ My 2nd ion gauge agrees with my 1st ion gauge; decided to open vacuum valve to magnetron

/__ at best can get down to 0.1 Micron with magnetron heater operating; When the heater is turned off can get lower pressure; the heater out gasses a lot even though it has been operated in vacuum for hours.

/__ When the vacuum system was pumped down to 0.1 or less Micron the thermal couple gauge was finally correctly calibrated to its zero pressure point.

Photos of experiment =>> following pgs


TC gauge
Ion gauge tube
Diffusion pump
Roughing pump

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Ion gauge connecting wires to controller

Magnetron system cutoff valve (not visible in photo) approximately located here

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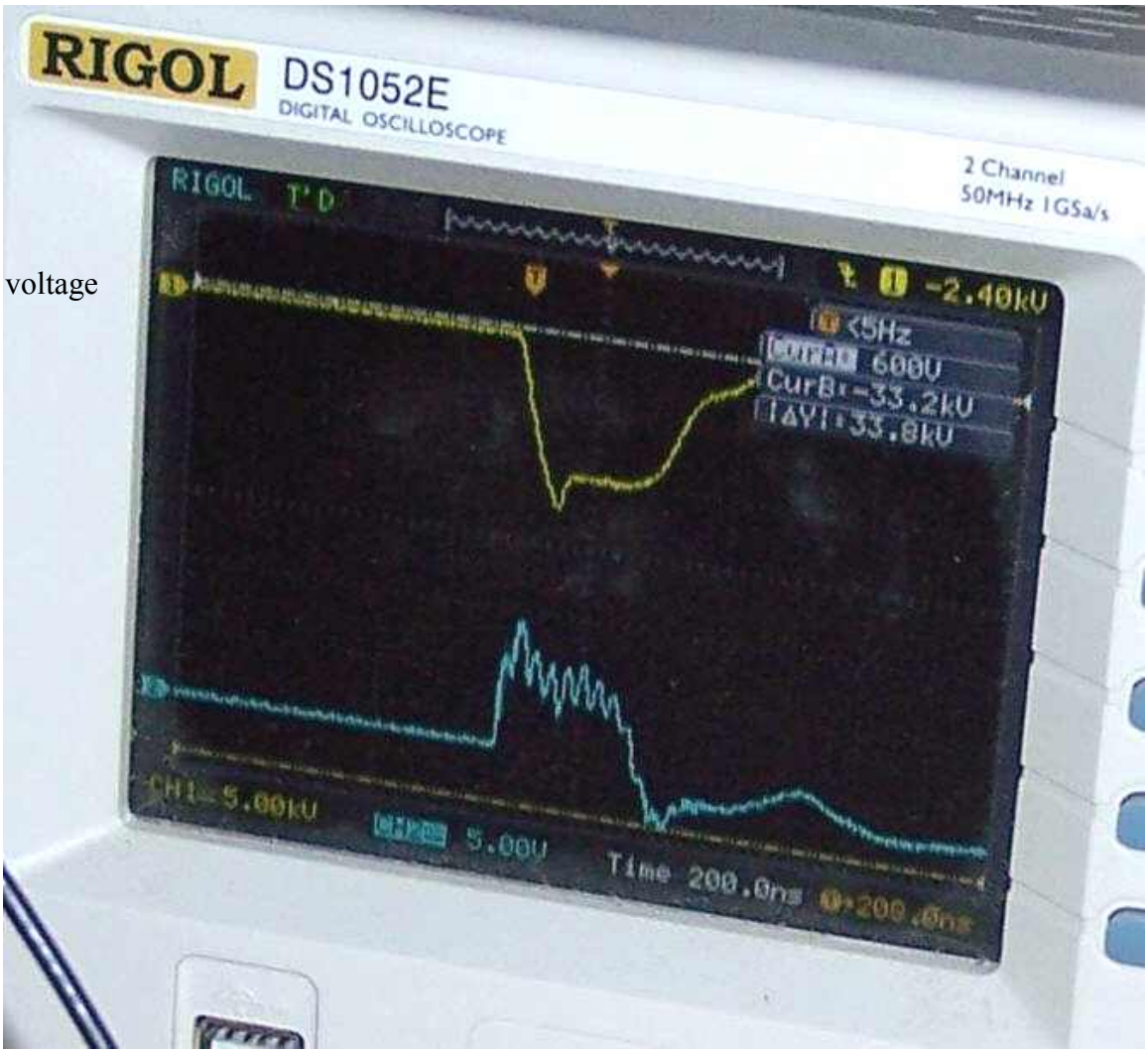
Magnetron monitor

Peak cathode voltage



Peak current

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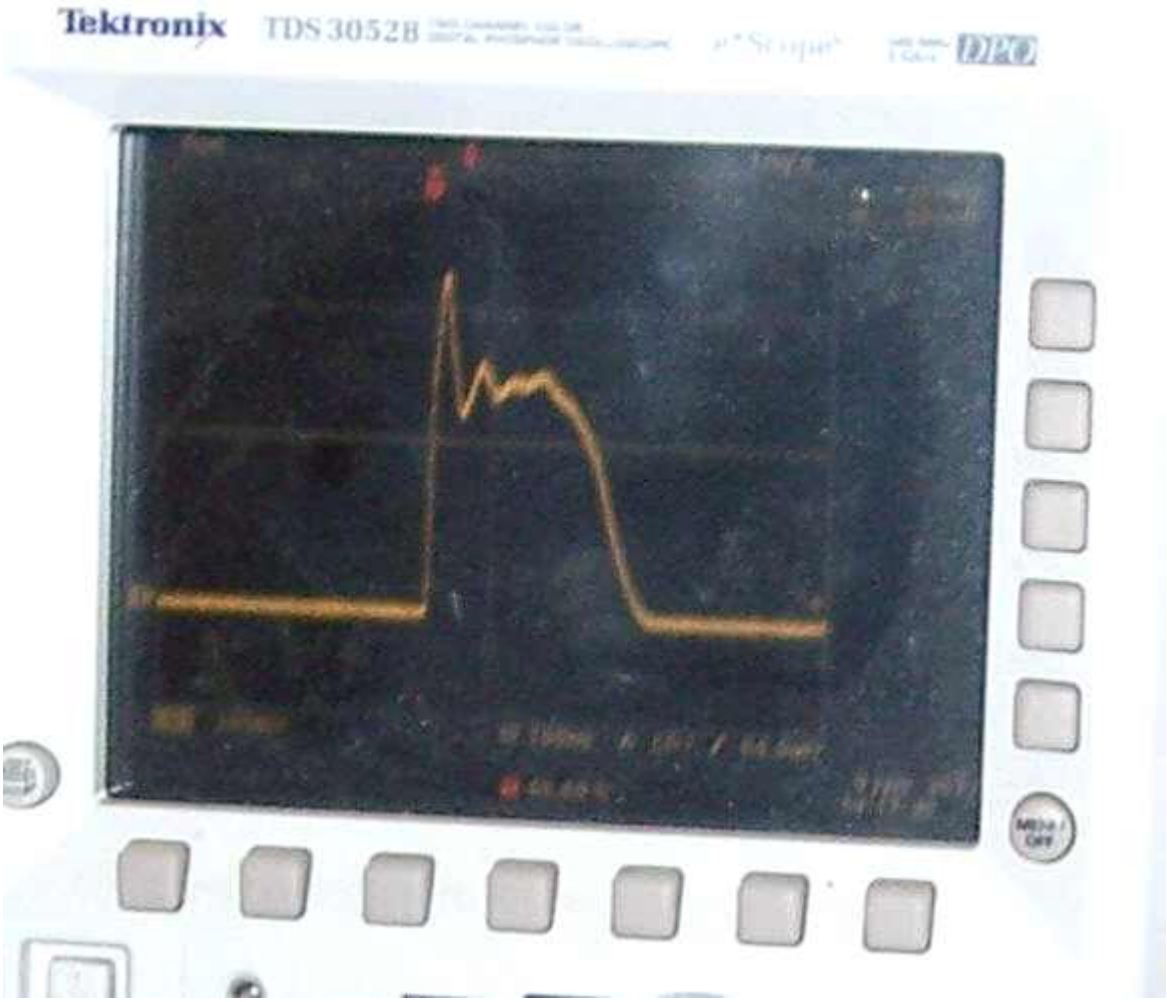
Ion Gauge Controller

/__ although the electrometer is set to 10-6 the value read (~ 10E-6) is divided by 10(=> 0.1 micron) because I have the ion gauge electron current set to 1 ma.

RF monitor



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