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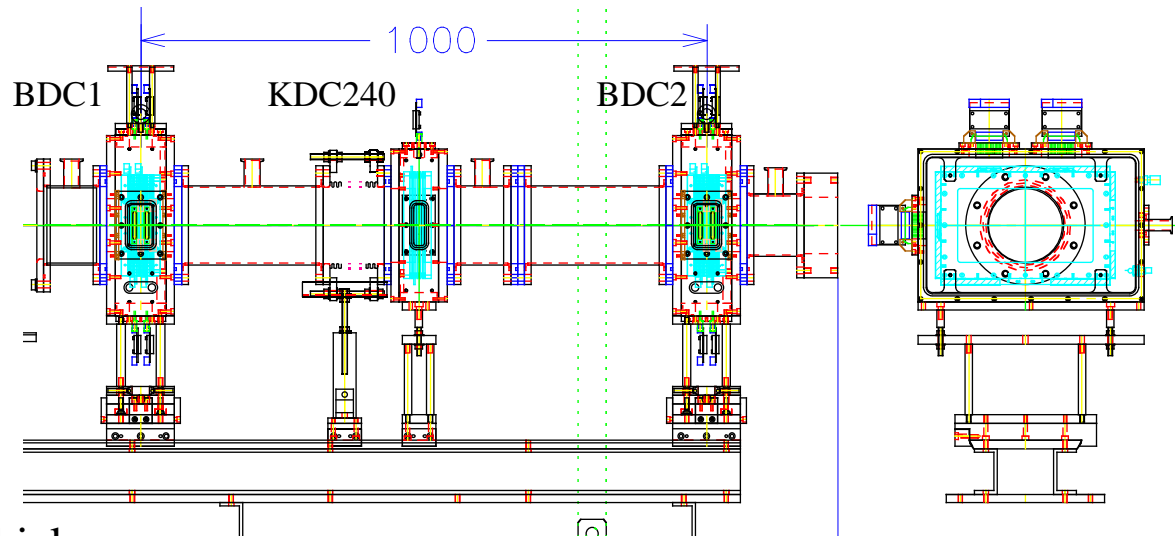
last report: 25-Sep-2015

Memo for 2015 fall runs (impact,s21)

- Standard detectors
 - gas detectors
 - KDC240
 - misc

- KDC240 installed between BDC1 & BDC1 : page2
- Gas flow/exchange
 - BDC1, KDC240, BDC2 : i-C₄H₁₀ low-pressure control at 50 torr checked : OK
 - FDC2 : He+ CH₄ (60%)+ 2-propanol (0.4%)
 - 9/17~10/7 (20 days) : $I \sim 0.35$ L/min, $V_{\text{tot}} \sim 5.2 \times V_{\text{FDC2}}$, ~ 1.8 bottles used
 - 10/7~12/6 (60 days) : $I \sim 0.16$ L/min, ~ 2.5 bottles necessary, $2.5 + 1.8 = 4.3 < 5$ bottles
 - ICF : P10
 - 9/17~10/7 (20 days) : $I \sim 0.15$ L/min, $V_{\text{tot}} \sim 11.2 \times V_{\text{ICF}}$, ~ 0.7 bottle used
 - 10/7~11/7 (30 days) : ~ 1 bottle necessary \rightarrow **need to buy one (two) more P10 bottle(s)**
- DAQ, Noise etc
 - BDC1,2, KDC, FDC1, FDC2 readouts tested with & without test pulse into ASD
 - all ASD channels (~ 2400 ch) alive
 - efficiency (accidental with noise) w/o pulser $< 0.05\%$ in the worse case : OK
 - **DAQ(FDC2-1)** : event mismatch with test pulse inputs, improved?
- ICB, ICF
 - usb control via raspberry-pi checked: gain, shaping time, pole zero,
 - shaping time : ICB (ST=1, 0.5 usec σ), ICF (ST=3, 2 usec σ)
 - ICB : **noise** still exists
 - HV (~ 750 V) applied for several days : OK

- parasite test of KDC240
 - installed between BDC1 & BDC2, distance (BDC1-BDC2) unchanged.
 - cathode chamber : effective area=240x130mm, #readout=32ch for X & 16ch for Y,



- material thickness
 - vacuum window (12um aramid x2), shield (12um Al-pp x2), strip cathode (4um Al-pp x2), common cathode (12um Al-pp, x1)
 - vacuum window tested up to 175 torr pressure difference, ~13 mm deformation
- bench test using β -rays : see report_20150710
 - $\epsilon(\text{CRM}) \sim 100\%$ for MIP(β) $P \geq 100$ torr
- i-C₄H₁₀ pressure
 - P= 50 torr during Impact exp.
 - P=100~150 torr will be OK for 100~200 MeV protons
- readout checked using test pulse input into ASD

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- Items to be checked/improved after power shutdown
 - SBT : thinner Al exit window (12um)
 - ICB : noise
 - ICF : noise after HODS is installed
 - FDC1 : pressure control
 - TED
 - pedestal for different gate width : 600~800 nsec
 - discriminator threshold & dynamic range
 - cosmic-ray data if possible
 - Guide rails for ICF, HODS & TED (?)