

14th August 2013

MICE Survey

MICE-NOTE-DET-421

Survey of the GVA scintillator detector, proton absorber and the beamstopSurvey carried out by John Palin TECH/ECT/Technical Systems (DL) 14th August 2013

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Sign convention

All Dimensions are in mm, where:-

X = looking along the beam line from the datum position at the dipole magnet D2 towards the ISIS machine, + Positive is traveling from upstream to downstream.

Note that the **X** axis is at an angle of 29.6° (i.e. 180°-150.4°) to the X axis applicable to the major part of the Beamline and MICE Hall.

Y = across the beam line. + Positive is in the south direction, – Negative is in the north direction.

Z = in the vertical direction with the beam height at Zero, + Positive is above the beam line, - Negative is below the beam line.

GVA1

GVA 1 is the scintillator detector immediately upstream of D2, estimated as 12 mm thick (includes the black tape). The original marks are on the sides (out of view) and have been associated with labels A, B and C. Point D is the pencil cross on the downstream face:

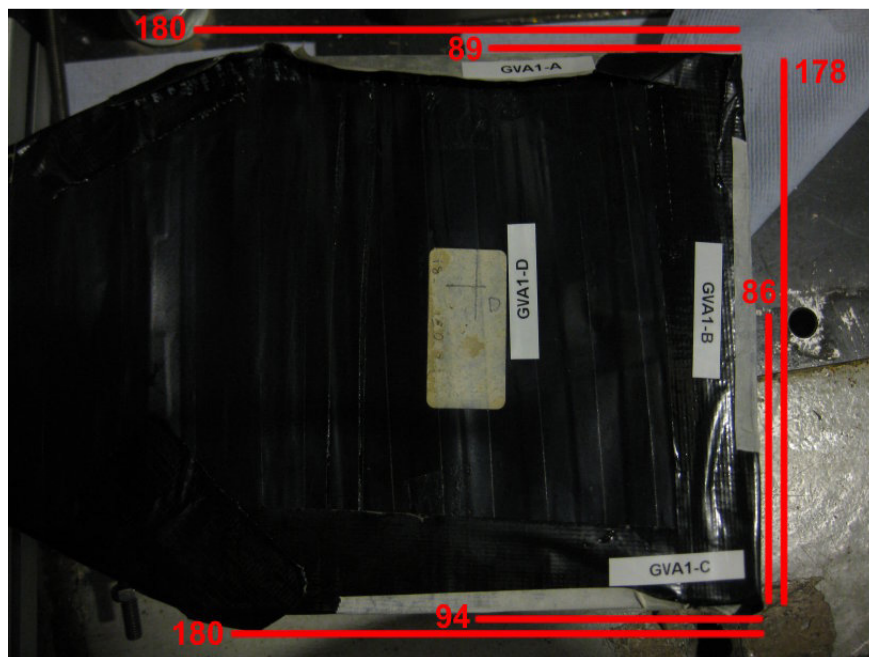


The surveyor has taken a string of points along the edges of the downstream face, at each of A, B and C, so the mid-plane (i.e. the original marks) is 6 mm upstream of the values given below.

Scintillator GVA1	X (mm)
A Top	-740.773
B Middle	-745.844
C Bottom	-745.533

The original marks are

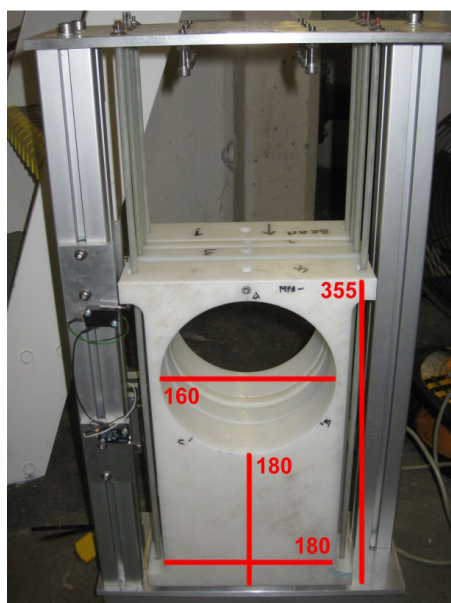
located as shown below:



Refer to eLog entry 2404.

Manual Proton Absorbers

The proton absorbers are located just downstream of the Decay Solenoid. The view is of the downstream face (of the 49 mm absorber):



The aperture is 160 mm diameter and the vertical travel is 165 mm. Note that there are 3 locations marked around the aperture: MPA-A, MPA-B and MPA-C.

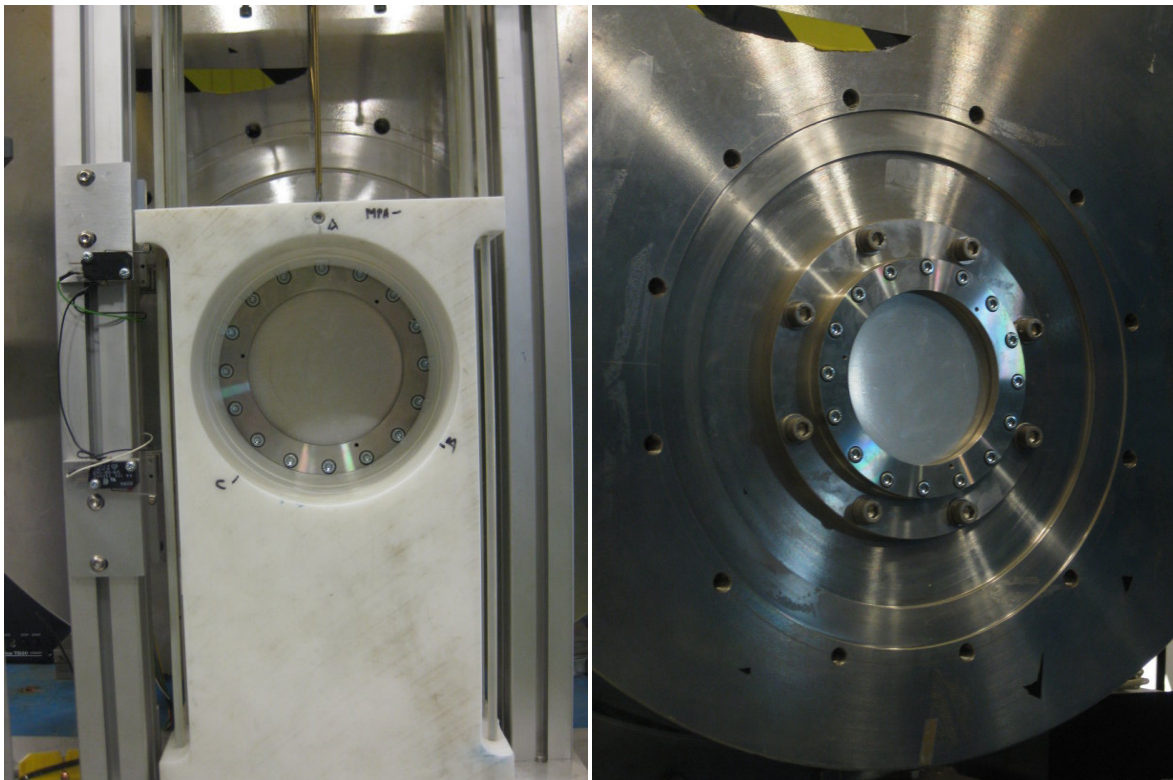
The surveyor has located the centre of the aperture (downstream face) from points around its circumference:

MPA Aperture	X	Y	Z
Centre	-803.079	-2.957	0.585

Refer to eLog entry 2405.

Decay Solenoid Vacuum Vessel

The endcap of the DS vacuum vessel has a small window which is believed to be co-axial with the coils and beam:

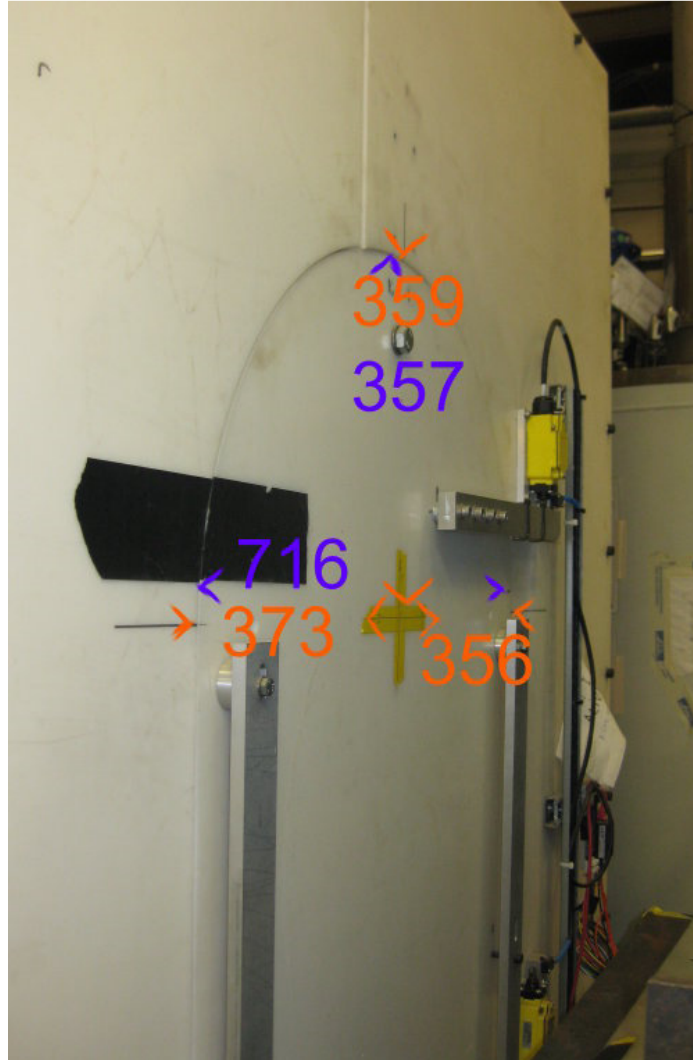


The surveyor has located the centre of the window from arbitrary points around its circumference:

Vessel	X	Y	Z
Beam/Centre	-968.11	-0.287	1.919

Moving Beamstop

The surveyor has marked the nominal position of the muon beam centre on to the face of the moving beamstop (on yellow tape):



This has been extended as a set of “cross-hairs” on the static surround. The plug movement had been found to be 553 mm.

The position of the downstream face of the BEAM STOP at muon beam centre is 8537.294 mm along the beam line from the datum position at D2.

Refer to eLog entry 2273.