



Jefferson Lab Alignment Group

Data Transmittal

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FROM: Kelly Tremblay

Checked:

: B1712

DETAILS:

data: fiduc\hallb\torus\mapper probe\160422a

The Hall B Torus magnet mapper probe holder was inspected/fiducialized on the 22nd of April, 2016. The coordinate system was established by measuring the plane of the bottom half of the probe holder. This established the x/z plane and the direction of the y axis. The end planes were then established using the upstream and downstream circular faces to establish the origin. Circularity was checked when the 2 halves were bolted together. The results appear below. All length units are millimeters and angles are degrees.

Coordinates of the probe center points:

Probe	x	y	z	delta Z	Delta z*
Upstream	-0.18	-0.06	-92.13	49.74	99.95
Mid	0.01	-0.03	-42.39	50.21	
Downstream	0.05	-0.25	7.82		

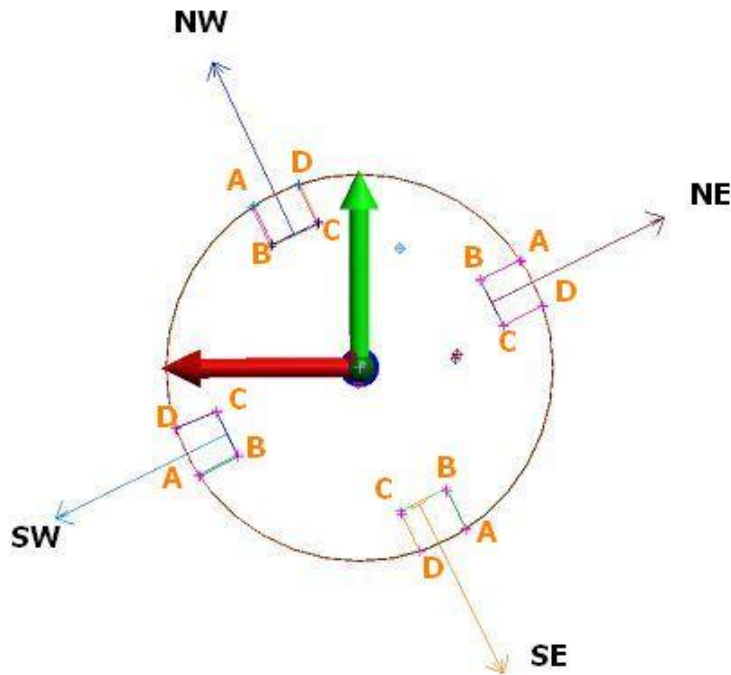
Delta Z is the distance between adjacent probes. Delta z* is the distance upstream to downstream probes.

Design and measured values are shown below. Design values are from the sketches by R. Fair.

Position	Design	Found	Deltas
Upstream Probe Z	195.00	193.21	-1.79
Mid Probe Z	146.00	144.26	-1.74
DownStream Probe Z	95.00	93.59	-1.41
Holder Radius	24.70	24.76	0.05
Overall Length	200.00	199.75	-0.25

The four slots were measured also. They are identified by their positions as shown below: The angles shown are calculated from the positive z/y plane, rotated about the Z axis.

(Looking downstream from upstream).



NW								
Upstream					Downstream			
Pt	X	Y	Z		Pt	X	Y	Z
A	13.72	20.60	-99.92		A	13.45	20.78	99.87
B	11.33	15.58	-99.91		B	11.09	15.79	99.87
C	5.34	18.39	-99.91		C	5.18	18.55	99.87
D	7.82	23.48	-99.92		D	7.62	23.55	99.86
Angle from main plane/+ Y Axis							-25.04°	

NE								
Upstream					Downstream			
Pt	X	Y	Z		Pt	X	Y	Z
A	-23.48	7.82	-99.89		A	-23.48	7.84	99.86
B	-18.35	5.22	-99.89		B	-18.44	5.29	99.86
C	-15.46	11.13	-99.90		C	-15.55	11.21	99.86
D	-20.66	13.63	-99.90		D	-20.64	13.65	99.86
Angle from main plane / + Y Axis							64.00°	

SE								
Upstream					Downstream			
Pt	X	Y	Z		Pt	X	Y	Z
A	-13.49	-20.75	-99.84		A	-13.55	-20.71	99.88
B	-11.10	-15.81	-99.85		B	-11.06	-15.56	99.88
C	-5.28	-18.66	-99.84		C	-5.18	-18.45	99.89
D	-7.62	-23.55	-99.83		D	-7.62	-23.55	99.89
Angle from main plane / + Y Axis							153.89°	

SW								
Upstream					Downstream			
Pt	X	Y	Z		Pt	X	Y	Z
A	20.62	-13.70	99.89		A	20.55	-13.80	-99.85
B	15.54	-11.11	99.89		B	15.61	-11.27	-99.85
C	18.26	-5.58	99.89		C	18.40	-5.57	-99.86
D	23.53	-7.69	99.89		D	23.55	-7.63	-99.86
Angle from main plane / + Y Axis							-116.14°	