.5in Tooling Ball Center Coordinates

Name	X Corr.	Y Corr.	Z Corr.
TB 9	430.503	0.022	-1488.336
TB 10	431.183	0.004	-522.114
TB 11	430.606	0.625	524.414
TB 12	430.273	-0.503	1489.300
TB 13	-430.136	-0.182	-1489.583
TB 14	-430.160	-0.204	-523.893
TB 15	-430.135	-0.087	524.224
TB 16	-430.075	-0.012	1489.151

1.5in Tooling Ball Center Coordinates

Name	X Corr.	Y Corr.	Z Corr.
TB 1	98.702	136.068	-1665.784
TB 2	98.448	135.992	-555.850
TB 3	98.713	135.901	556.432
TB 4	98.717	135.811	1666.061
TB 5	-98.560	136.108	-1665.852
TB 6	-98.368	136.163	-556.224
TB 7	-98.729	136.168	555.947
TB 8	-98.421	136.124	1666.071
TB 17	473.926	-229.414	-1582.598
TB 18	472.560	-229.352	85.412
TB 19	472.357	-229.898	1579.619
TB 23	-404.026	-228.003	-1710.335
TB 24	-404.303	-228.756	1707.658
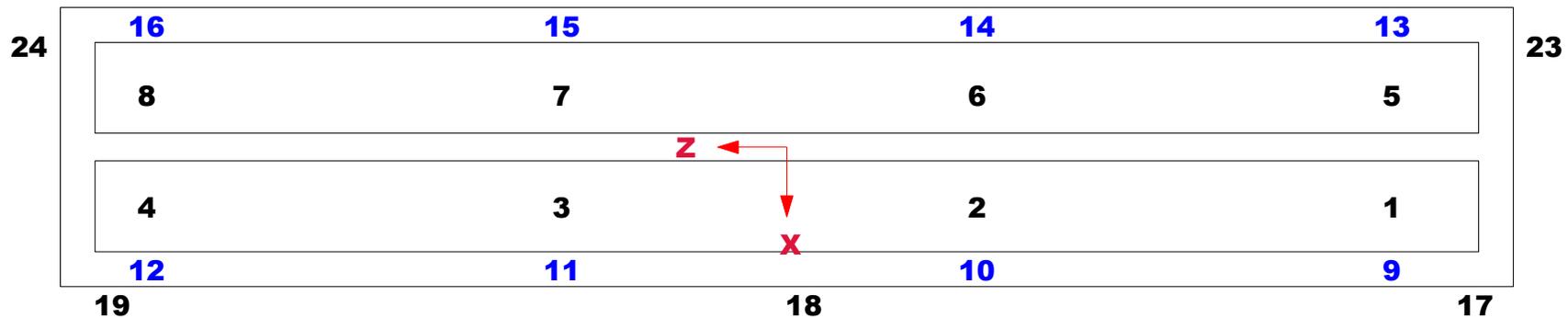
Grider centerline in reference to Pointed Magnets

Dimensions in MM, Angles in Milliradians

SLAC
NATIONAL ACCELERATOR LABORATORY
METROLOGY

HGVPU - **Fiducialization at 9mm Gap, Tooling Balls**

US Full	:	8.999	DS Full	:	8.9999
Nominal Gap :	9.000	US Wall Half :	4.4997	DS Wall Half :	4.4999
Nom. Taper :	0.000	US Aisle Half :	4.4999	DS Aisle Half :	4.4997

S/N	: HXU_013
Date	: 29-JUL-2020
Data Set	: 0001
Run	: FINAL
Cam Pos.	: B

PM 2

Up Stream

Z Center = -1842.285

-91.201
-91.201

Y1

91.673
91.673

Y2

+

-91.779
-91.779

X1
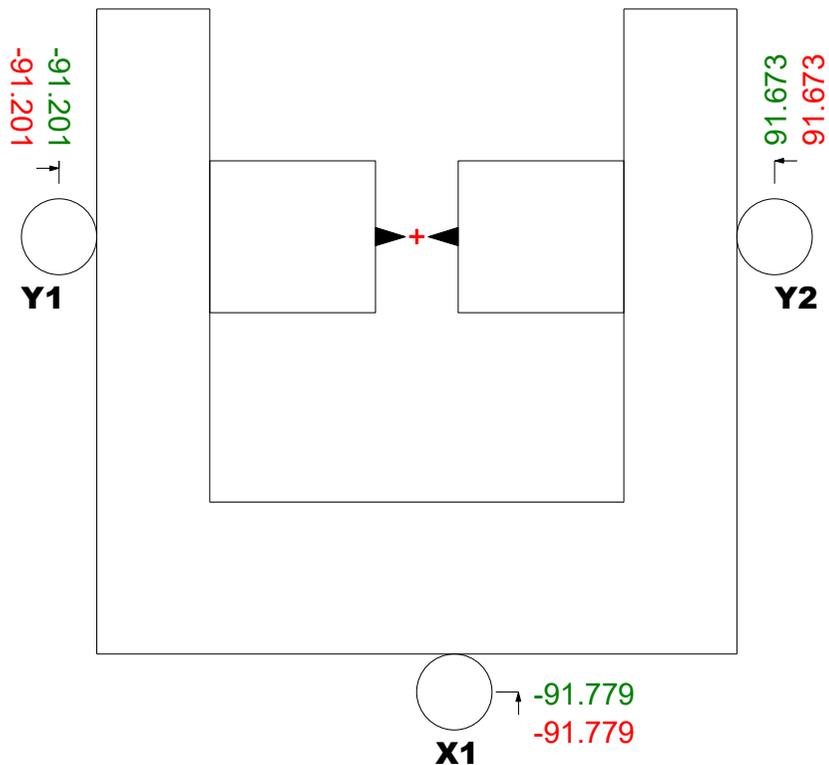
PM 3

Down Stream

Z Center = 1842.383

-91.940
-91.940

Y1

90.907
90.907

Y2

+

-91.695
-91.695

X1
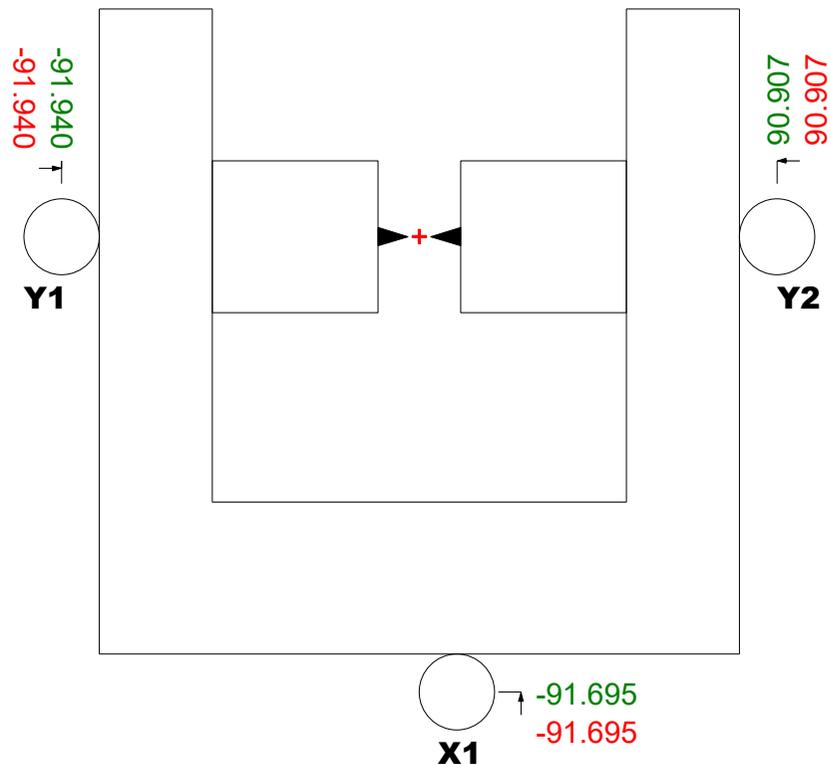
Red values are in Girder Coordinate System, includes Roll component from Girder
Green values are in End Magnet Coordinate System
Grider centerline in reference to Pointed Magnets

Dimensions in MM, Angles in Milliradians

<table>
<tr><td colspan="2" rowspan="3">SLAC
NATIONAL ACCELERATOR LABORATORY
METROLOGY</td><td colspan="4">HGVPU - Fiducialization, Pointed End Magnet Values</td><td colspan="2">S/N : HXU_013</td></tr>
<tr><td></td><td></td><td></td><td></td><td colspan="2">Date : 29-JUL-2020</td></tr>
<tr><td></td><td>US Full :</td><td>8.999</td><td>DS Full : 8.9999</td><td colspan="2">Data Set : 0001</td></tr>
<tr><td></td><td>Nominal Gap :</td><td>9.000</td><td>US Wall Half :</td><td>4.4997</td><td>DS Wall Half : 4.4999</td><td colspan="2">Run : FINAL</td></tr>
<tr><td></td><td>Nom. Taper :</td><td>0.000</td><td>US Aisle Half :</td><td>4.4999</td><td>DS Aisle Half : 4.4997</td><td colspan="2">Cam Pos. : B</td></tr>
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