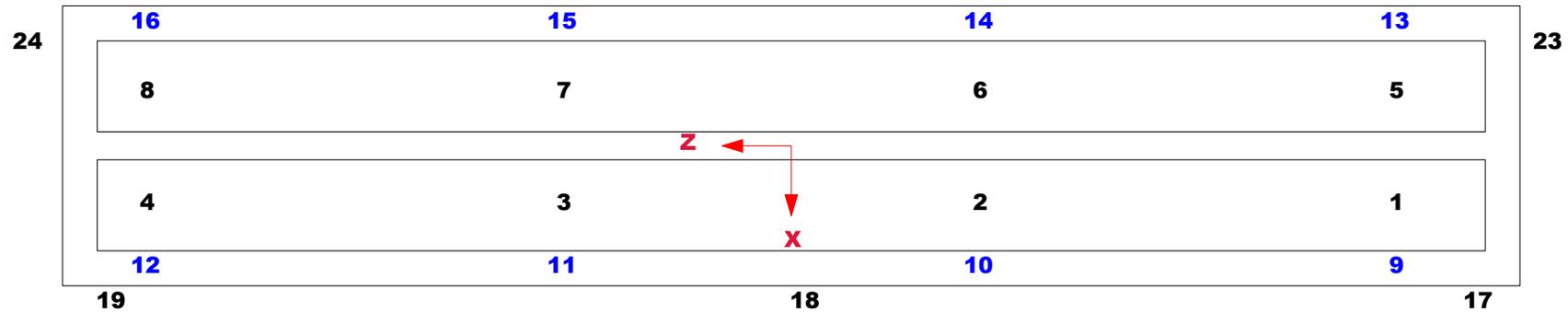


**.5in Tooling Ball Center Coordinates**

Name	X Corr.	Y Corr.	Z Corr.
TB 9	430.189	-0.569	-1489.289
TB 10	430.359	-0.536	-523.895
TB 11	430.236	-0.590	524.362
TB 12	430.277	-0.491	1489.787
TB 13	-430.076	-0.208	-1489.483
TB 14	-430.006	0.095	-524.396
TB 15	-429.923	-0.118	524.289
TB 16	-429.963	-0.329	1489.613

**1.5in Tooling Ball Center Coordinates**

Name	X Corr.	Y Corr.	Z Corr.
TB 1	98.615	135.590	-1665.445
TB 2	98.507	135.602	-555.473
TB 3	98.556	135.619	556.520
TB 4	98.866	135.651	1666.417
TB 5	-98.742	135.853	-1666.238
TB 6	-98.129	135.902	-556.258
TB 7	-98.484	135.933	555.520
TB 8	-98.096	135.855	1665.840
TB 17	471.588	-231.307	-1581.554
TB 18	471.351	-229.112	87.001
TB 19	471.539	-230.458	1579.745
TB 23	-405.339	-230.226	-1709.107
TB 24	-405.932	-231.312	1707.808



**Grider centerline in reference to Pointed Magnets**

Dimensions in MM, Angles in Milliradians



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

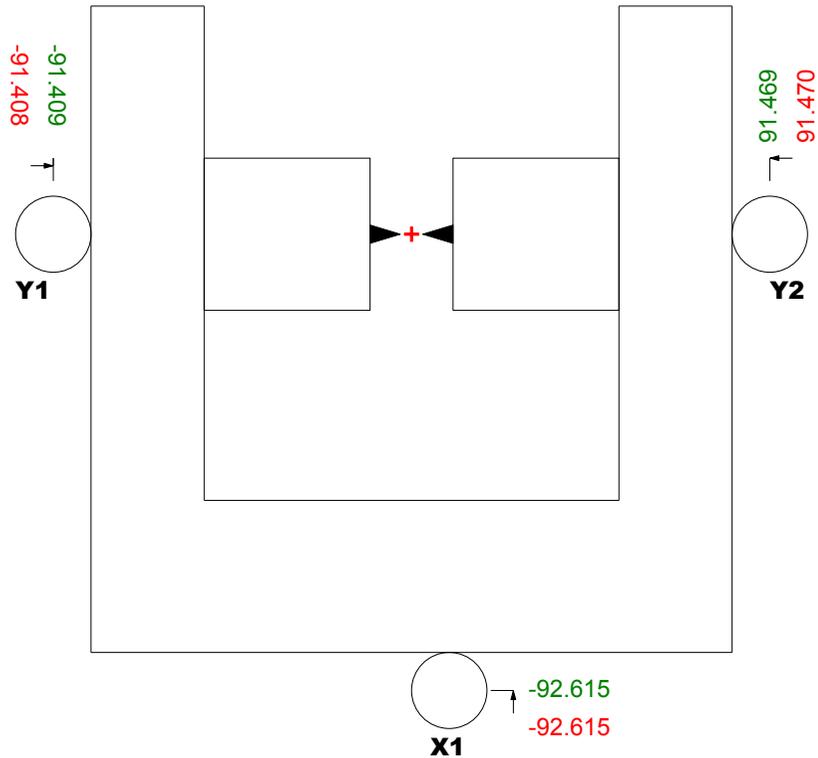
<b>Nominal Gap :</b>	<b>9.000</b>	<b>US Full :</b>	<b>9.000</b>	<b>DS Full :</b>	<b>9.0001</b>
<b>Nom. Taper :</b>	<b>0.000</b>	<b>US Wall Half :</b>	<b>4.4997</b>	<b>DS Wall Half :</b>	<b>4.4995</b>
		<b>US Aisle Half :</b>	<b>4.5003</b>	<b>DS Aisle Half :</b>	<b>4.4997</b>

<b>S/N</b>	<b>: HXU_029</b>
<b>Date</b>	<b>: 06-NOV-2019</b>
<b>Data Set</b>	<b>: 0001</b>
<b>Run</b>	<b>: FINAL</b>
<b>Cam Pos.</b>	<b>: B</b>

## PM 2

### Up Stream

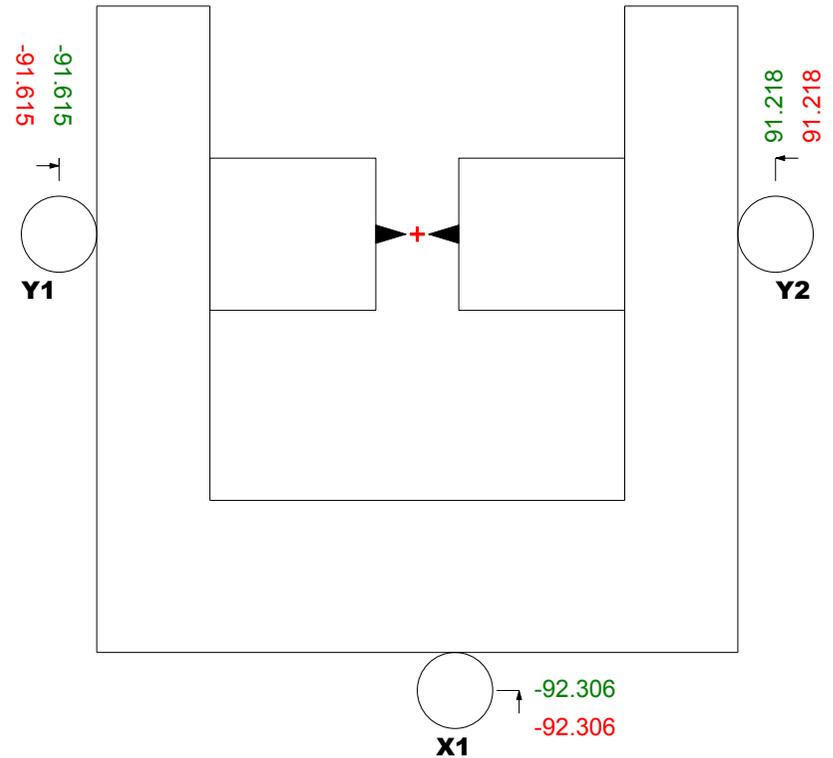
Z Center = -1842.089



## PM 3

### Down Stream

Z Center = 1842.491



Red values are in Girder Coordinate System, includes Roll component from Girder

Green values are in End Magnet Coordinate System

Girder centerline in reference to Pointed Magnets

Dimensions in MM, Angles in Milliradians



### HGVPU - Fiducialization, Pointed End Magnet Values

<b>Nominal Gap :</b>	<b>9.000</b>	<b>US Full :</b>	<b>9.000</b>	<b>DS Full :</b>	<b>9.0001</b>
<b>Nom. Taper :</b>	<b>0.000</b>	<b>US Wall Half :</b>	<b>4.4997</b>	<b>DS Wall Half :</b>	<b>4.4995</b>
		<b>US Aisle Half :</b>	<b>4.5003</b>	<b>DS Aisle Half :</b>	<b>4.4997</b>

<b>S/N</b>	<b>: HXU_029</b>
<b>Date</b>	<b>: 06-NOV-2019</b>
<b>Data Set</b>	<b>: 0001</b>
<b>Run</b>	<b>: FINAL</b>
<b>Cam Pos.</b>	<b>: B</b>