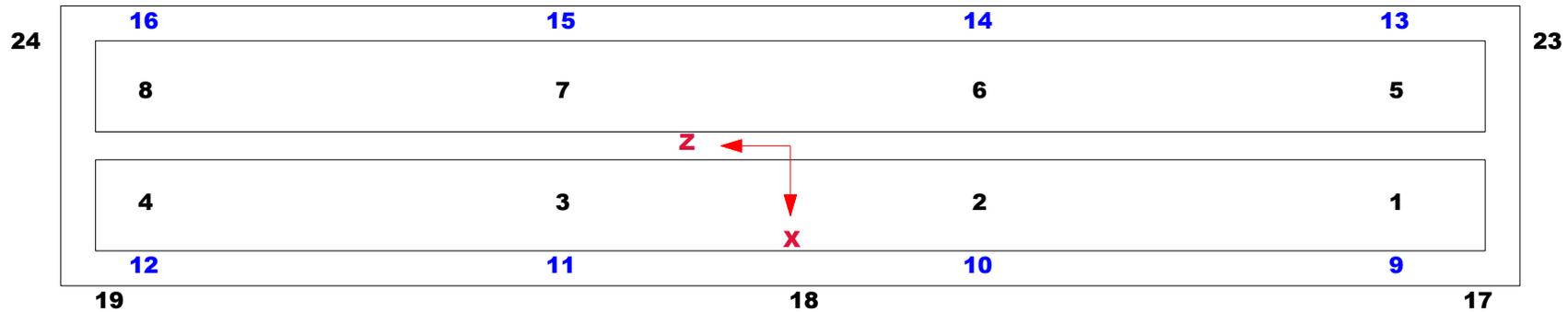


**.5in Tooling Ball Center Coordinates**

Name	X Corr.	Y Corr.	Z Corr.
TB 9	430.052	0.283	-1489.084
TB 10	430.095	0.010	-523.718
TB 11	430.021	-0.009	524.261
TB 12	429.948	0.025	1489.588
TB 13	-430.094	0.343	-1489.171
TB 14	-429.751	0.316	-523.683
TB 15	-429.701	0.167	523.781
TB 16	-429.993	0.847	1489.192

**1.5in Tooling Ball Center Coordinates**

Name	X Corr.	Y Corr.	Z Corr.
TB 1	98.352	136.102	-1665.353
TB 2	98.217	135.979	-555.449
TB 3	98.069	135.936	556.352
TB 4	98.086	135.938	1666.195
TB 5	-98.401	136.099	-1666.070
TB 6	-97.885	135.936	-555.990
TB 7	-97.912	135.899	556.189
TB 8	-98.079	135.931	1666.041
TB 17	470.996	-228.580	-1585.973
TB 18	474.064	-226.822	83.815
TB 19	473.196	-230.349	1575.110
TB 23	-406.400	-228.259	-1710.933
TB 24	-404.448	-228.275	1704.389



**Grider centerline in reference to Pointed Magnets**

Dimensions in MM, Angles in Milliradians



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

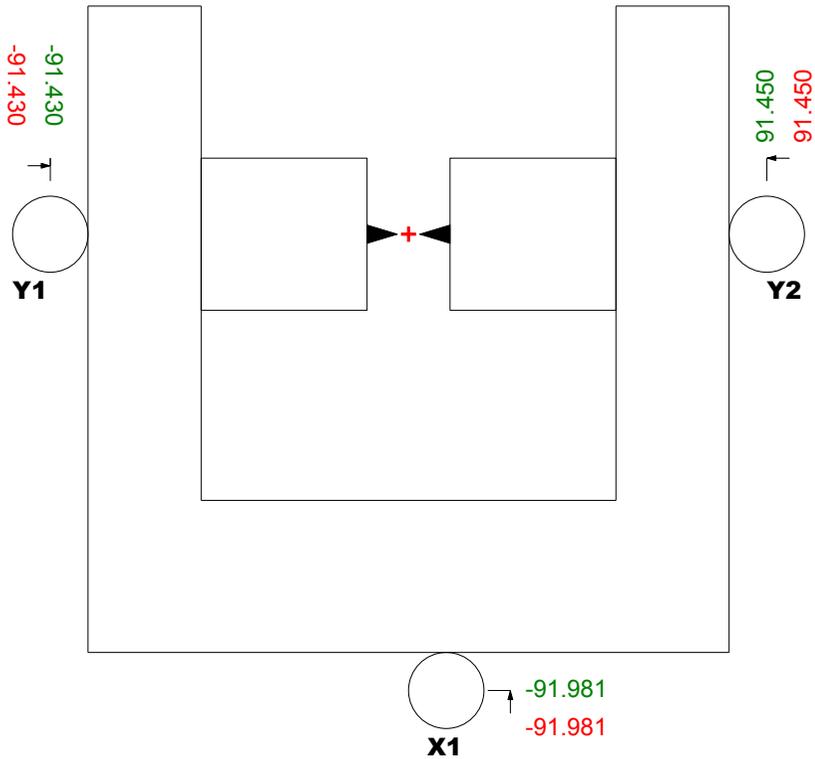
<b>Nominal Gap :</b>	<b>9.000</b>	<b>US Full :</b>	<b>9.000</b>	<b>DS Full :</b>	<b>8.9999</b>
<b>Nom. Taper :</b>	<b>0.000</b>	<b>US Wall Half :</b>	<b>4.4998</b>	<b>DS Wall Half :</b>	<b>4.4981</b>
		<b>US Aisle Half :</b>	<b>4.4989</b>	<b>DS Aisle Half :</b>	<b>4.5015</b>

<b>S/N</b>	<b>: HXU_004</b>
<b>Date</b>	<b>: 16-JUL-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

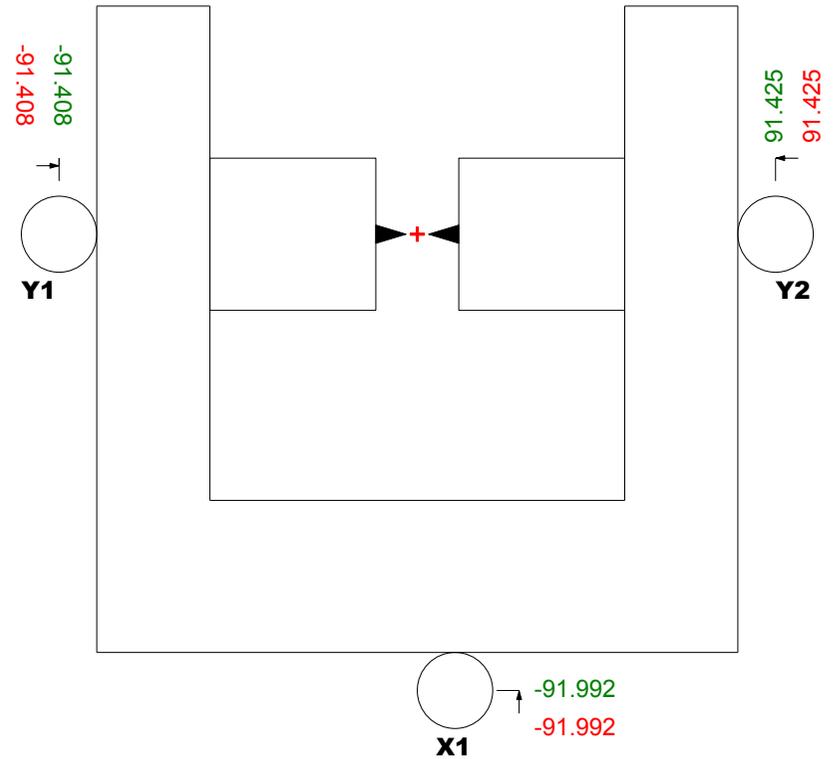
Z Center = -1842.155



## PM 3

### Down Stream

Z Center = 1842.345



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

Nominal Gap :	9.000	US Full :	9.000	DS Full :	8.9999
Nom. Taper :	0.000	US Wall Half :	4.4998	DS Wall Half :	4.4981
		US Aisle Half :	4.4989	DS Aisle Half :	4.5015

S/N	: HXU_004
Date	: 16-JUL-2019
Data Set	: 0001
Run	: FINAL
Cam Pos.	: B