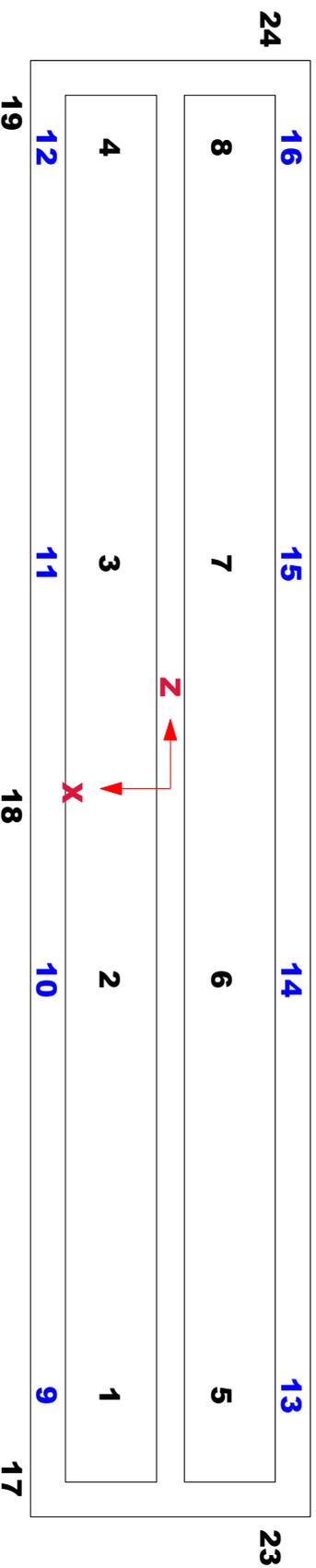


**.5in Tooling Ball Center Coordinates**

Name	X Corr.	Y Corr.	Z Corr.
TB 9	430.395	-0.570	-1489.209
TB 10	430.534	-0.896	-523.395
TB 11	430.483	-0.847	523.840
TB 12	430.563	-1.104	1488.679
TB 13	-430.233	-0.624	-1489.041
TB 14	-430.201	-0.203	-524.137
TB 15	-430.464	-0.727	524.769
TB 16	-430.186	-0.298	1489.807

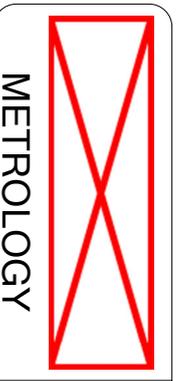
**1.5in Tooling Ball Center Coordinates**

Name	X Corr.	Y Corr.	Z Corr.
TB 1	98.634	136.030	-1665.673
TB 2	98.281	136.092	-556.015
TB 3	98.669	136.055	555.877
TB 4	98.314	136.022	1666.115
TB 5	-98.046	135.804	-1666.353
TB 6	-98.145	135.895	-556.404
TB 7	-98.321	135.890	555.502
TB 8	-98.480	135.762	1665.732
TB 17	473.412	-229.610	-1584.546
TB 18	473.597	-227.160	85.196
TB 19	472.880	-228.337	1579.220
TB 23	-404.550	-229.810	-1711.338
TB 24	-405.740	-228.331	1706.722



**Gridler centerline in reference to Pointed Magnets**

Dimensions in MM, Angles in Milliradians



METROLOGY

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

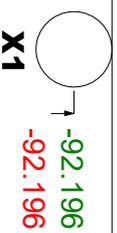
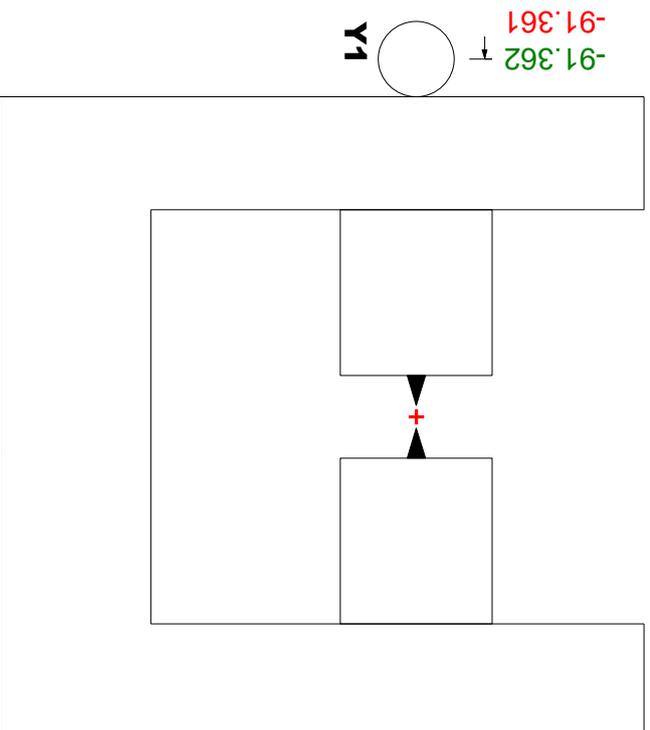
Nominal Gap :	9.000	US Full :	9.000	DS Full :	8.9999
Nom. Taper :	0.000	US Wall Half :	4.5000	DS Wall Half :	4.4983
		US Aisle Half :	4.4983	DS Aisle Half :	4.5000

S/N	: HXU_011
Date	: 26-OCT-2021
Data Set	: 0004
Run	: FINAL
Cam Pos.	: B

## PM 2

### Up Stream

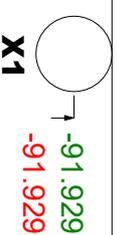
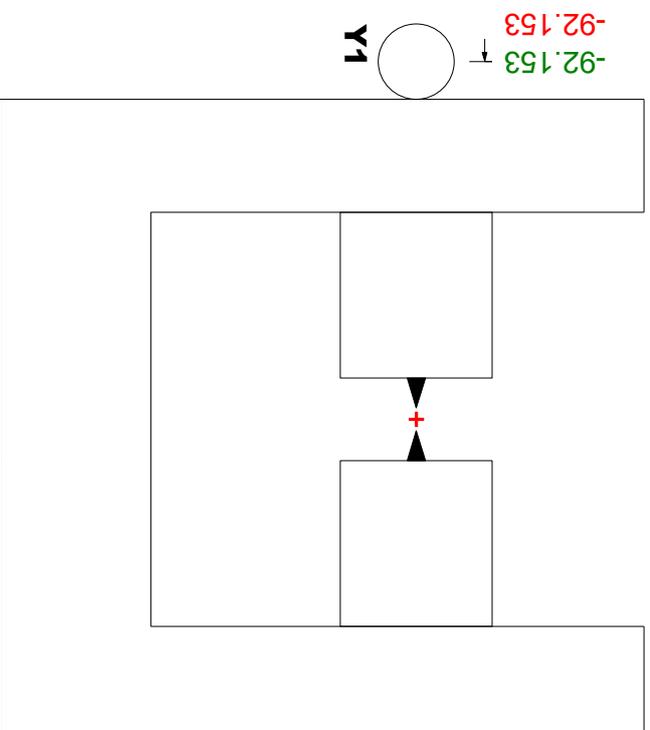
Z Center = -1842.382



## PM 3

### Down Stream

Z Center = 1842.341



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



METROLOGY

## 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 :	4.5000	DS Wall Half :	4.4983
		US Aisle Half :	4.4983	DS Aisle Half :	4.5000

S/N	: HXU_011
Date	: 26-OCT-2021
Data Set	: 0004
Run	: FINAL
Cam Pos.	: B