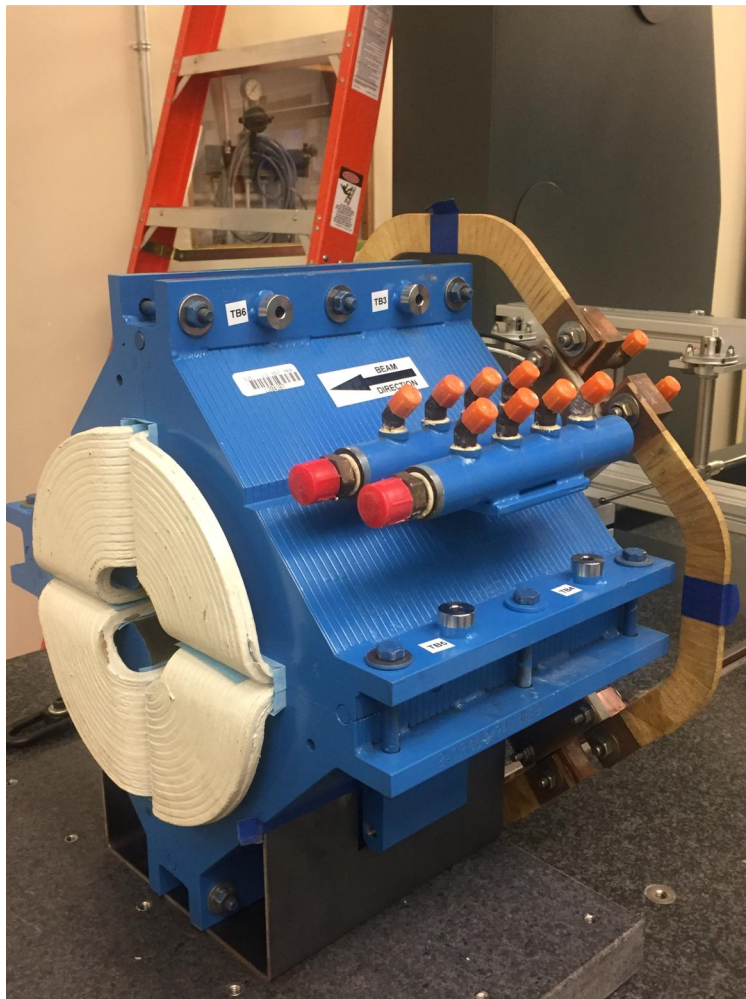


LCLS II 2Q10 Fiducialization Report



Inspector : K. Caban
Engineer : J. Amann
Drawing No. : SA-344-113-21
Barcode # : 4208
Mfg. S/N :

Coordinate System Setup

Spatial Alignment

The Spatial Alignment of the magnet is created through a composite best-fit of the pole tips. Each pole tip scanned 0.150 inch inboard from the upstream magnet face and the downstream magnet face. A composite best-fit of the upstream poles and the downstream poles is made with the nominal pole tip shape and location. An axis is created through the two best-fit centerpoints. This axis is the spatial alignment of the magnet and defines the Z axis.

Planar Alignment

The Planar Alignment of the magnet is the created by averaging the rotations of the composite best-fits of the upstream pole tips and downstream pole tips. This direction defines the Y and X directions of the magnet.

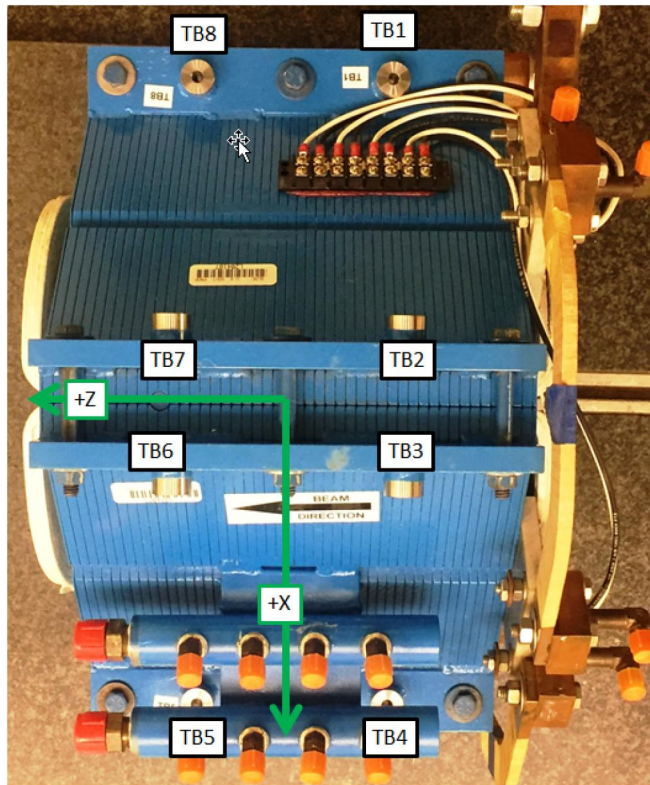
Coordinate Origins

The origins of the magnet coordinate system are as follows. The XY origin lies on the axis of spatial alignment. The Z origin is the intersection of the mid-plane between the upstream and downstream magnet faces and the Z axis.

Barcode # : 4208

Mfg. S/N :

Tooling Ball Locations



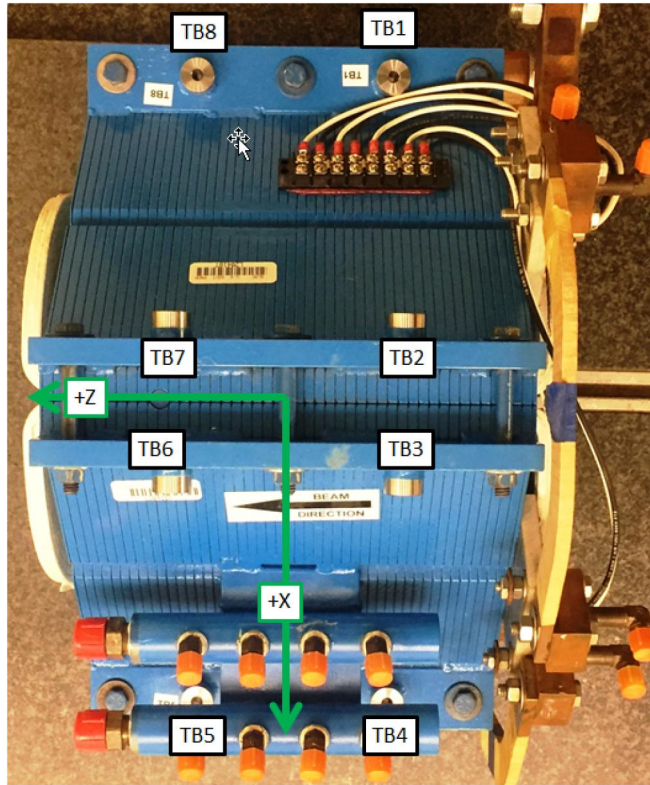
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	-7.0695	2.6950	-2.1699
TB 2	-2.6949	7.0533	-2.1849
TB 3	2.6747	7.0573	-2.1778
TB 4	7.0448	2.6835	-2.1723
TB 5	7.0466	2.6785	2.1722
TB 6	2.6697	7.0583	2.1800
TB 7	-2.6879	7.0467	2.1684
TB 8	-7.0612	2.6776	2.1771

Tooling Ball Locations are 1 inch above Tooling Ball Adapter Plane
Dimensions in Inch

Barcode # : 4208

Mfg. S/N :

Tooling Ball Locations



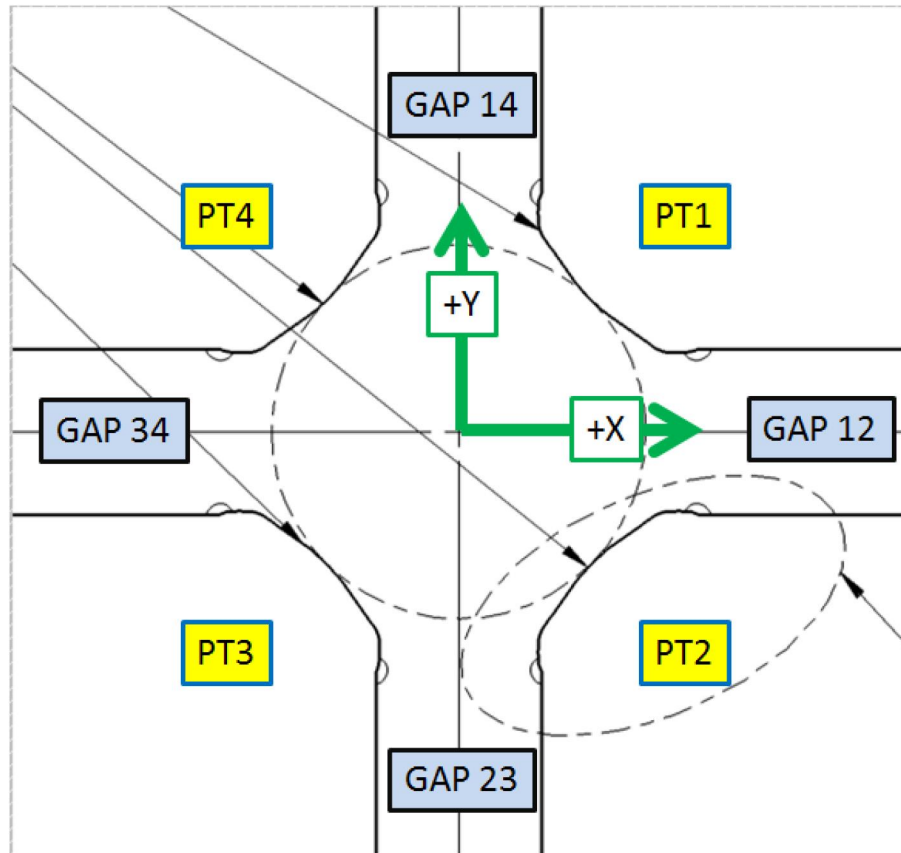
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	-7.0672	2.0072	-2.1718
TB 2	-2.0070	7.0559	-2.1849
TB 3	1.9872	7.0597	-2.1759
TB 4	7.0444	1.9965	-2.1728
TB 5	7.0462	1.9925	2.1729
TB 6	1.9827	7.0568	2.1806
TB 7	-1.9994	7.0528	2.1655
TB 8	-7.0568	1.9901	2.1754

Tooling Ball Locations are 5/16 inch above Tooling Ball Adapter Plane
Dimensions in Inch

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Mfg. S/N :

Pole Tip Gap Measurements



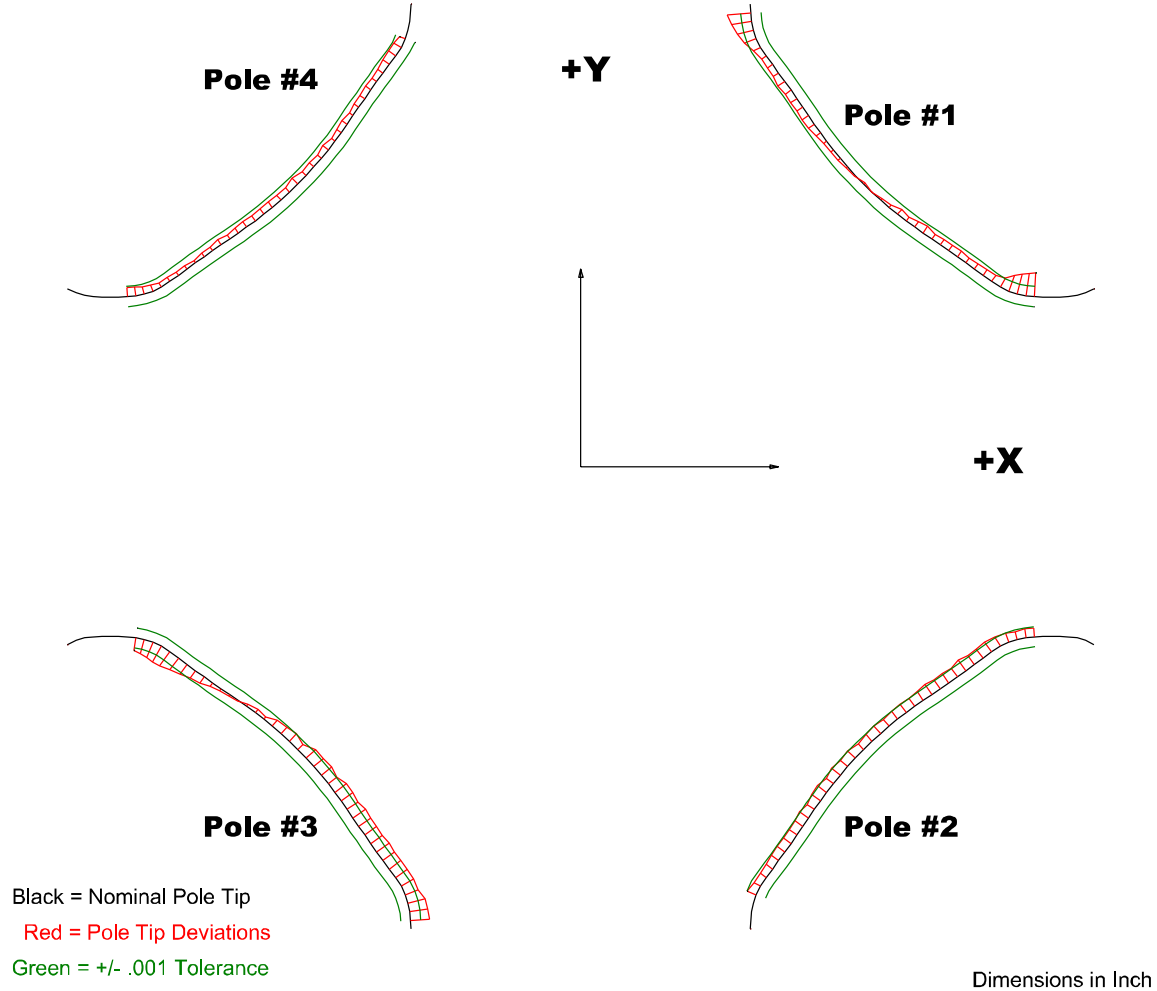
	Nominal Distance	Downstream Pole End	Upstream Pole End
PT Distance 1-3	2.026	2.02547	2.02562
PT Distance 2-4	2.026	2.02594	2.02601
Gap 1-2	0.8602	0.85819	0.86488
Gap 2-3	0.8602	0.87079	0.86289
Gap 3-4	0.8602	0.86291	0.86023
Gap 1-4	0.8602	0.86708	0.86111

Dimensions in Inch

Barcode # : 4208

Mfg. S/N :

Composite Best-fit of Pole Tips, Downstream



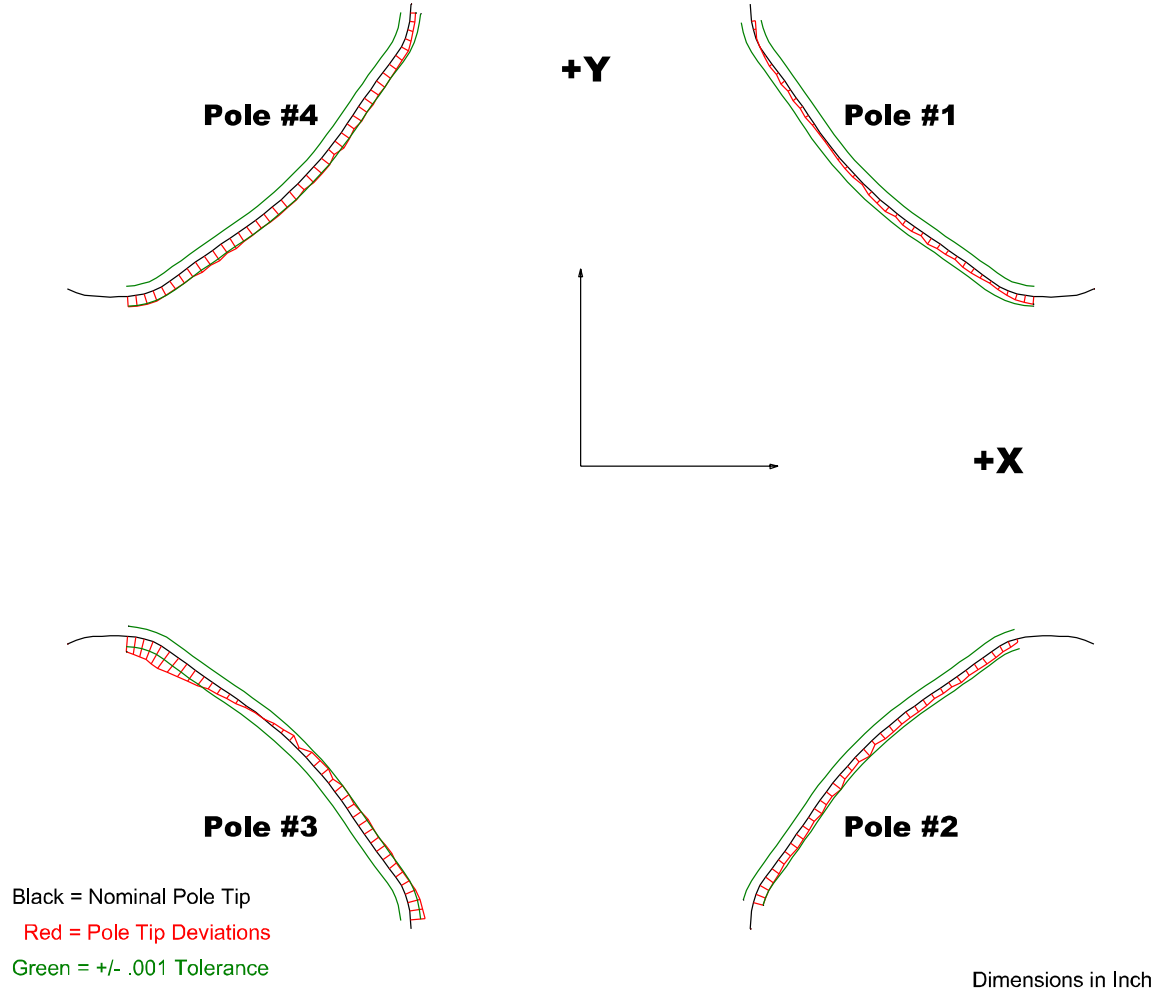
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.00238	0.0007	-0.00183	-0.00091
Max. Dev.	0.00236	0.00132	0.00187	-0.00026

Barcode # : 4208

Mfg. S/N :

Composite Best-fit of Pole Tips, Upstream



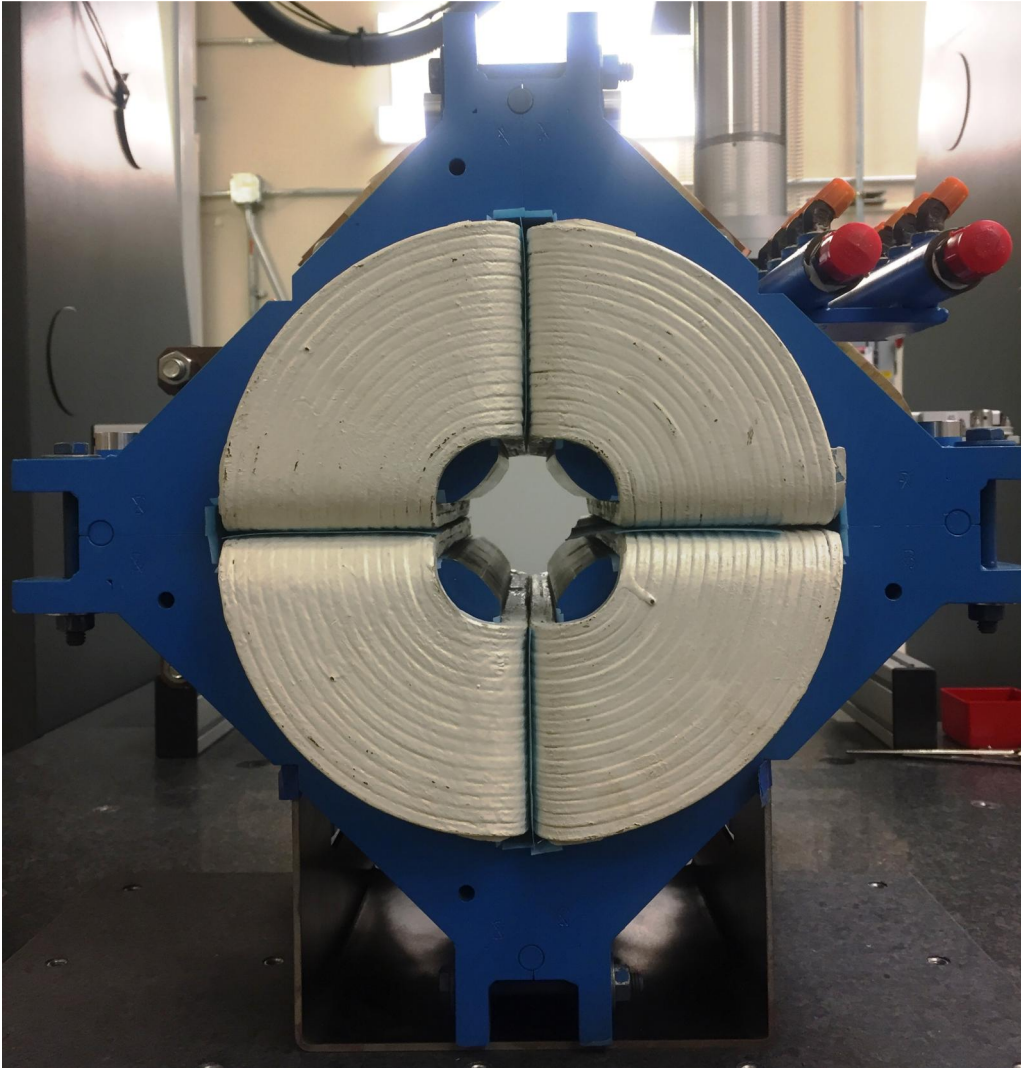
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.00037	-0.00106	-0.00212	0.00046
Max. Dev.	0.00081	-0.00031	0.00144	0.00124

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Mfg. S/N :

Angle of the Composite Pole Tip Best-Fit



in Decimal Degrees ° : 0.06259
Angle in Milliradians : 1.09238

Barcode # : 4208

Mfg. S/N :