

LCLS II 2Q10 Fiducialization Report



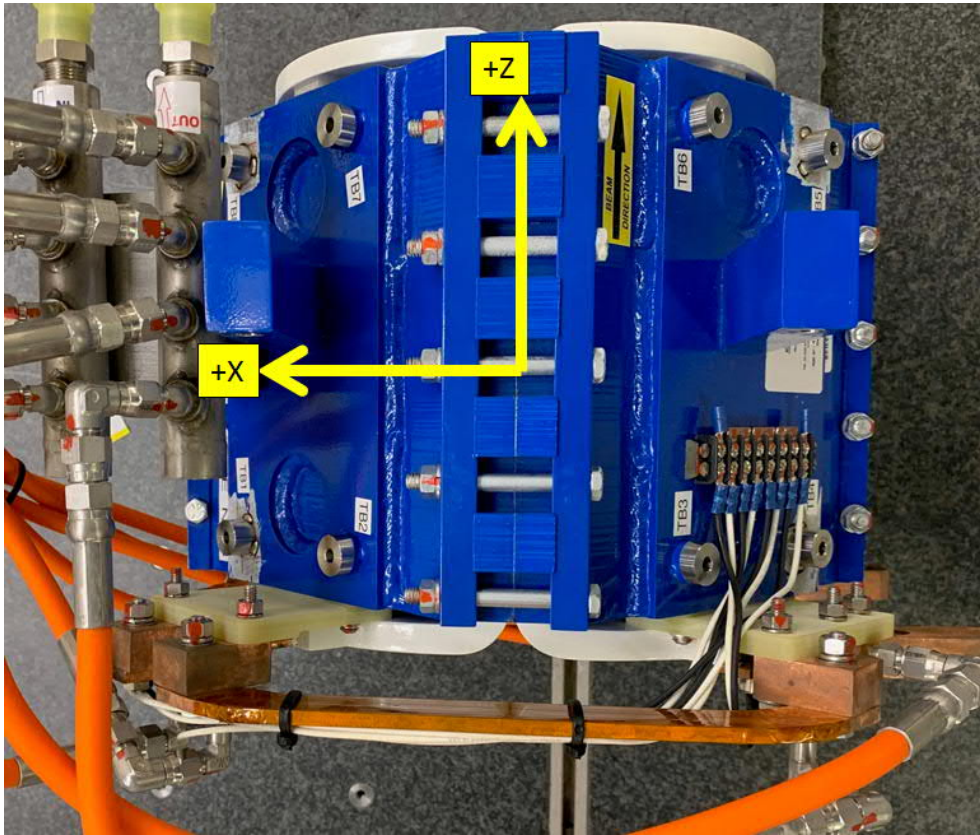
Inspector : K. Caban
Engineer : J. Amann
Drawing No. : SA-344-113-30
Barcode # : 4222
Mfg. S/N : MFG SN 11

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.

Tooling Ball Locations



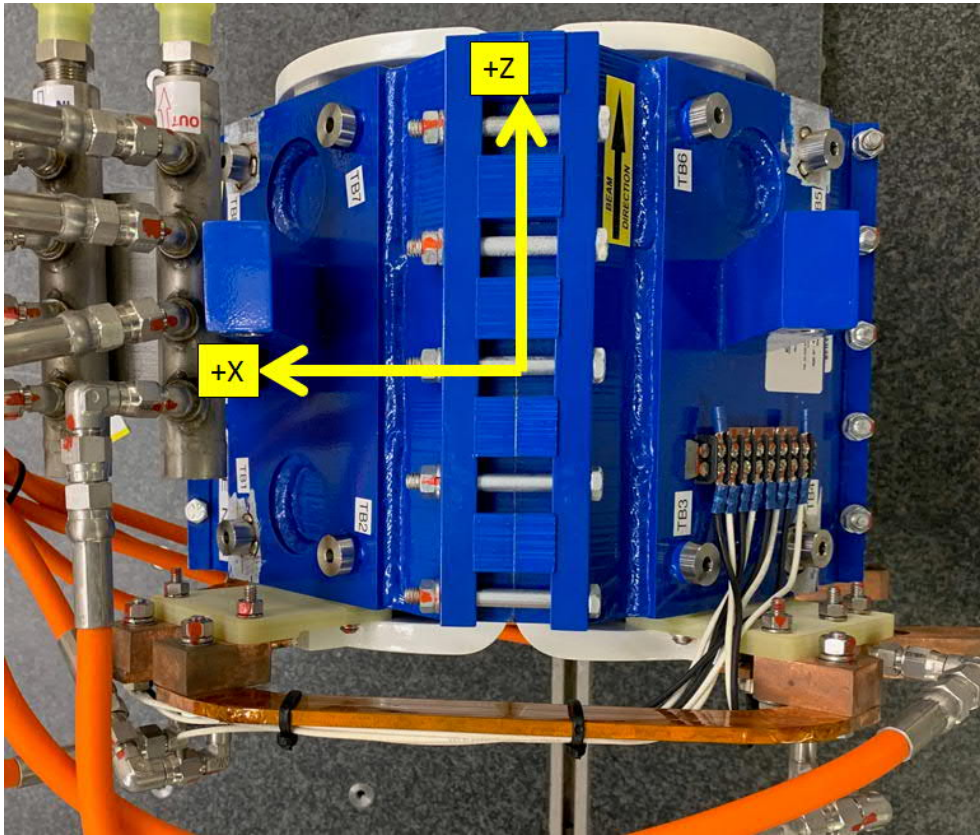
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	6.4801	4.0052	-3.7673
TB 2	3.9677	6.4713	-3.7503
TB 3	-3.9834	6.4680	-3.7548
TB 4	-6.5310	3.9553	-3.7222
TB 5	-6.5258	3.9592	3.7418
TB 6	-3.9858	6.4722	3.7389
TB 7	3.9449	6.4902	3.7428
TB 8	6.4932	3.9974	3.7094

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

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Tooling Ball Locations



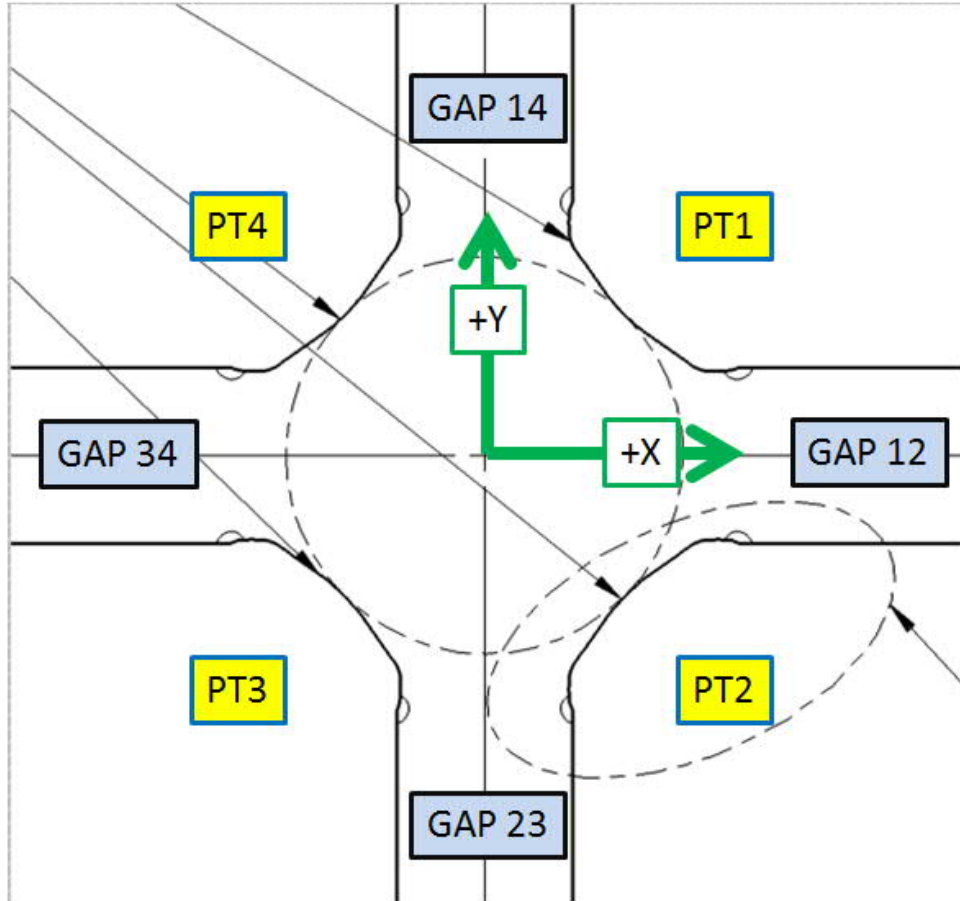
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	5.9943	3.5185	-3.7657
TB 2	3.4821	5.9847	-3.7508
TB 3	-3.4968	5.9821	-3.7545
TB 4	-6.0429	3.4714	-3.7244
TB 5	-6.0383	3.4745	3.7428
TB 6	-3.4992	5.9864	3.7394
TB 7	3.4587	6.0034	3.7426
TB 8	6.0058	3.5128	3.7066

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

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Pole Tip Gap Measurements



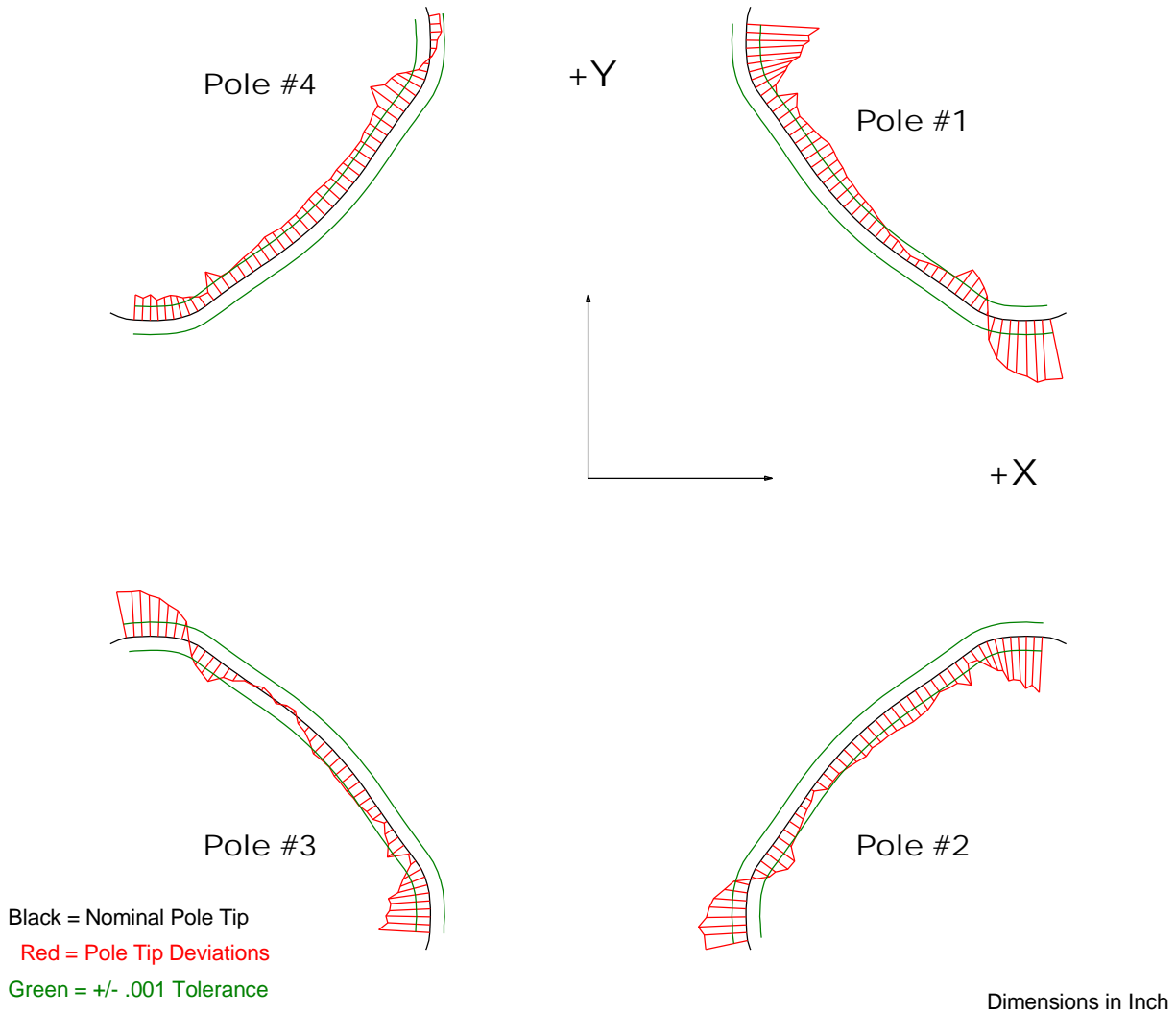
	Nominal Distance	Downstream Pole End	Upstream Pole End
PT Distance 1-3	2.026	2.02856	2.02673
PT Distance 2-4	2.026	2.02912	2.03063
Gap 1-2	0.8602	0.86155	0.85707
Gap 2-3	0.8602	0.85834	0.85866
Gap 3-4	0.8602	0.85655	0.85659
Gap 1-4	0.8602	0.86205	0.86202

Dimensions in Inch

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Composite Best-fit of Pole Tips, Downstream



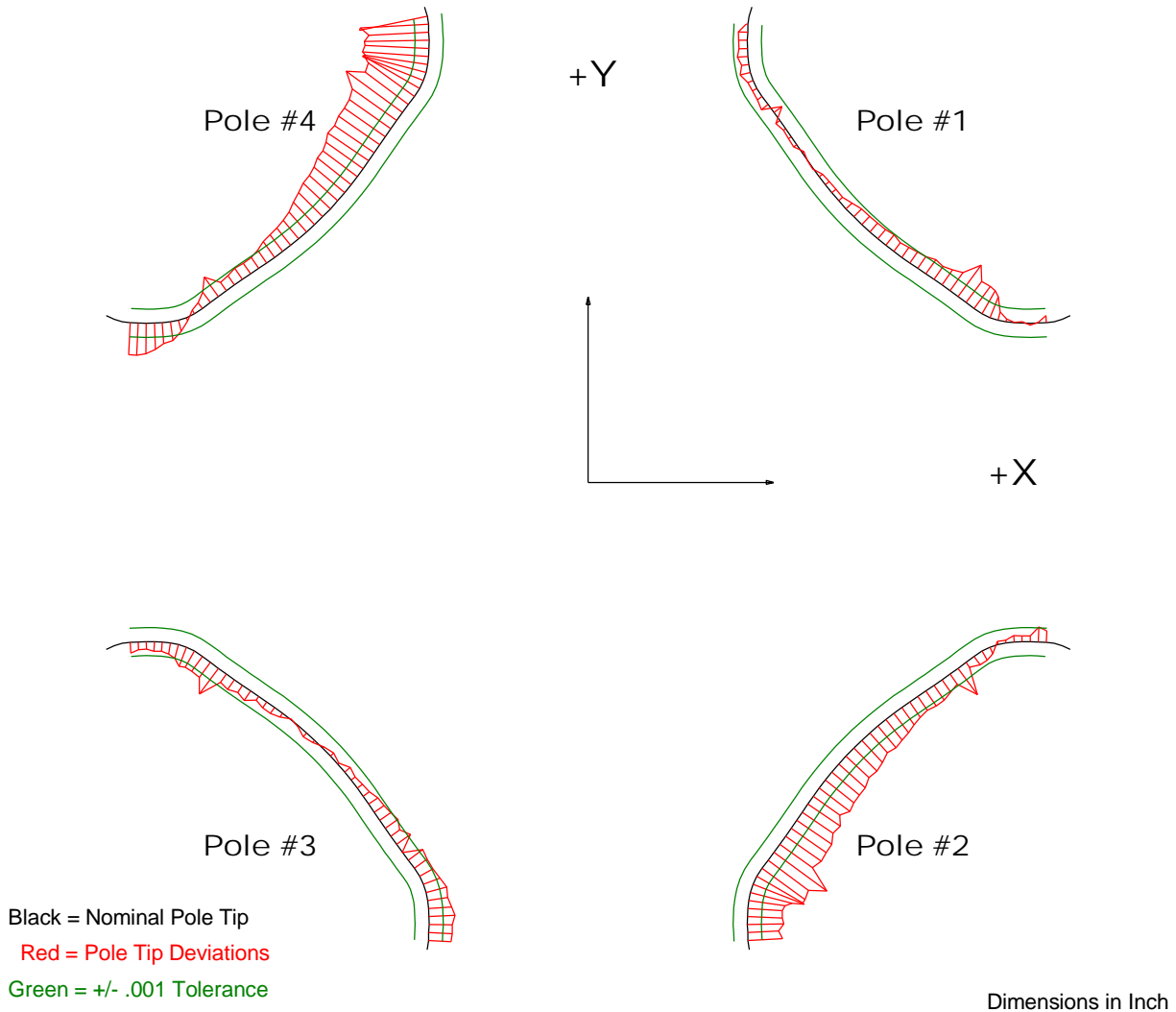
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.0052	-0.00397	-0.00365	-0.00297
Max. Dev.	0.00443	0.00343	0.00331	0.0008

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Composite Best-fit of Pole Tips, Upstream



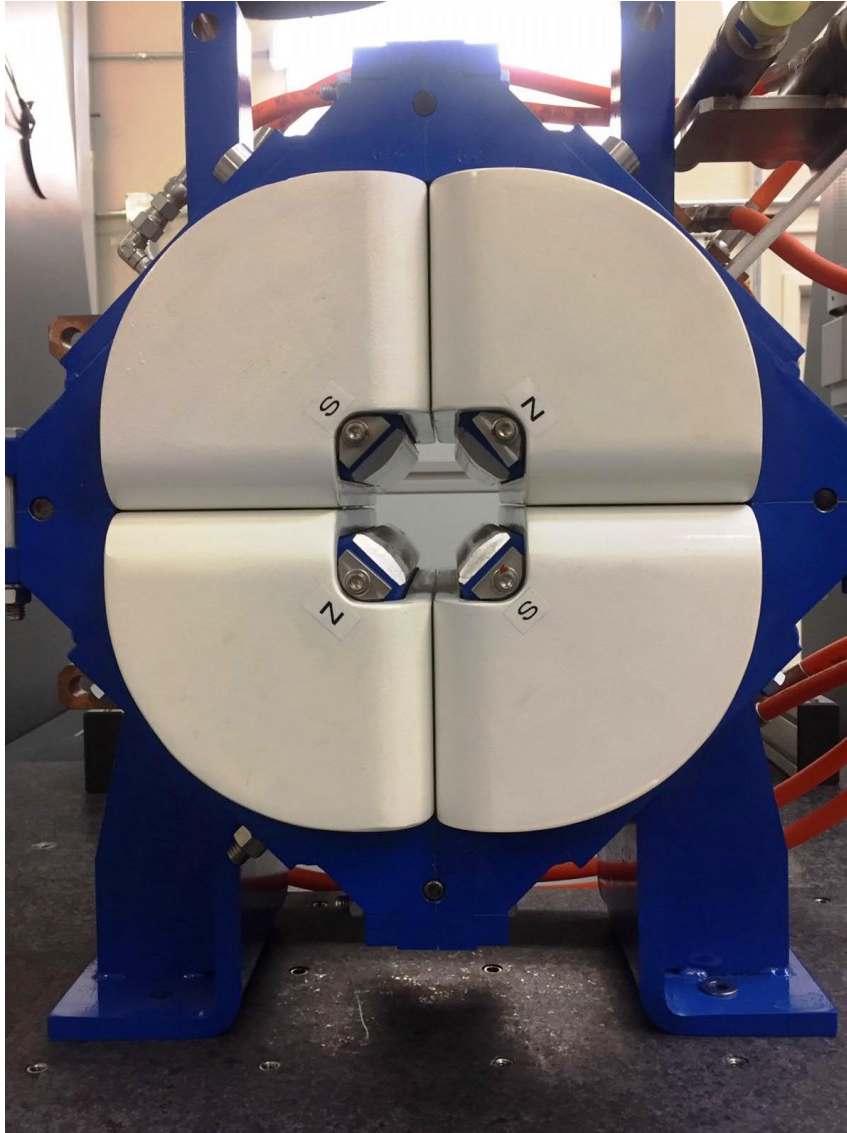
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.00276	-0.00464	-0.00226	-0.00492
Max. Dev.	0.00076	0.00107	0.00185	0.00229

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Angle of the Composite Pole Tip Best-Fit



in Decimal Degrees ° :