

LCLS II 2Q10 Fiducialization Report



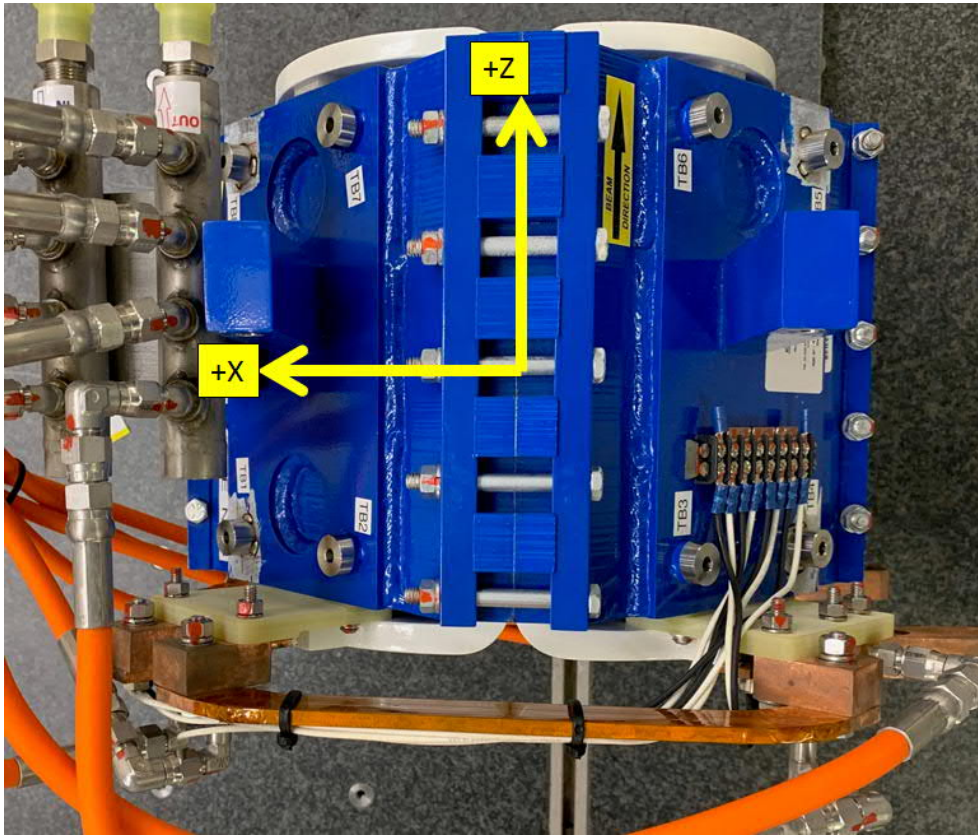
Inspector : K. Caban
Engineer : J. Amann
Drawing No. : SA-344-113-30
Barcode # : 4220
Mfg. S/N : MFG SN 10

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



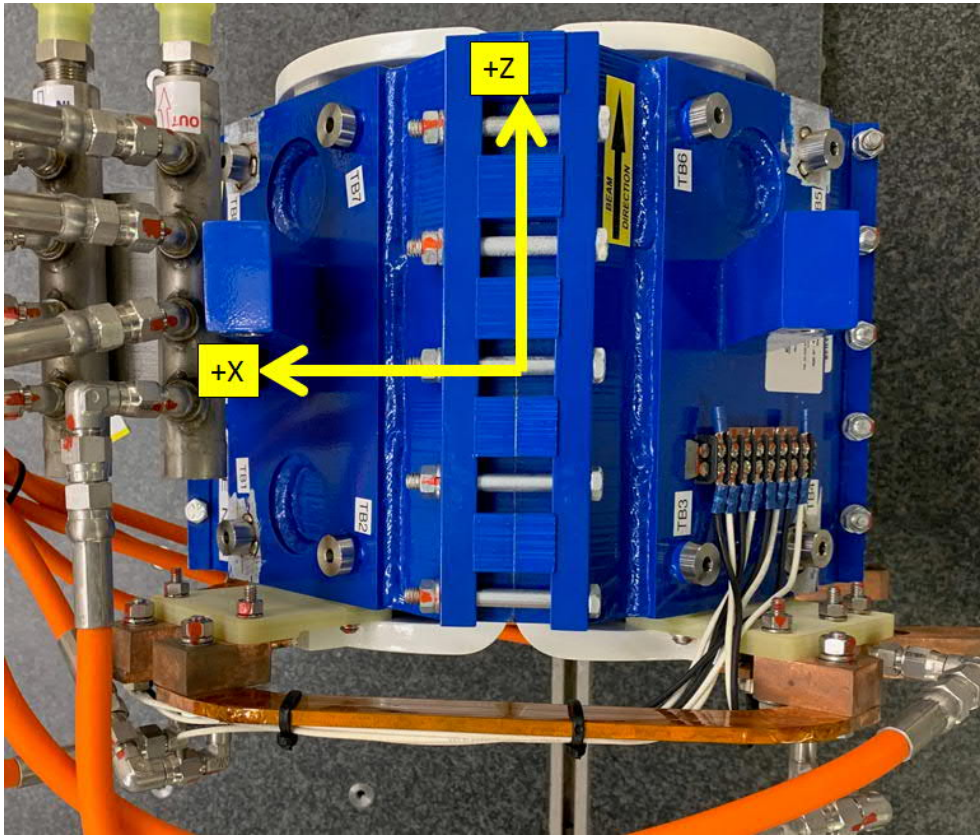
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	6.4916	3.9931	-3.7534
TB 2	3.9482	6.4871	-3.7456
TB 3	-3.9854	6.4609	-3.7391
TB 4	-6.5059	3.9781	-3.7417
TB 5	-6.5080	3.9671	3.7281
TB 6	-3.9681	6.4582	3.7439
TB 7	3.9565	6.4829	3.7308
TB 8	6.5021	3.9845	3.6979

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

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Tooling Ball Locations



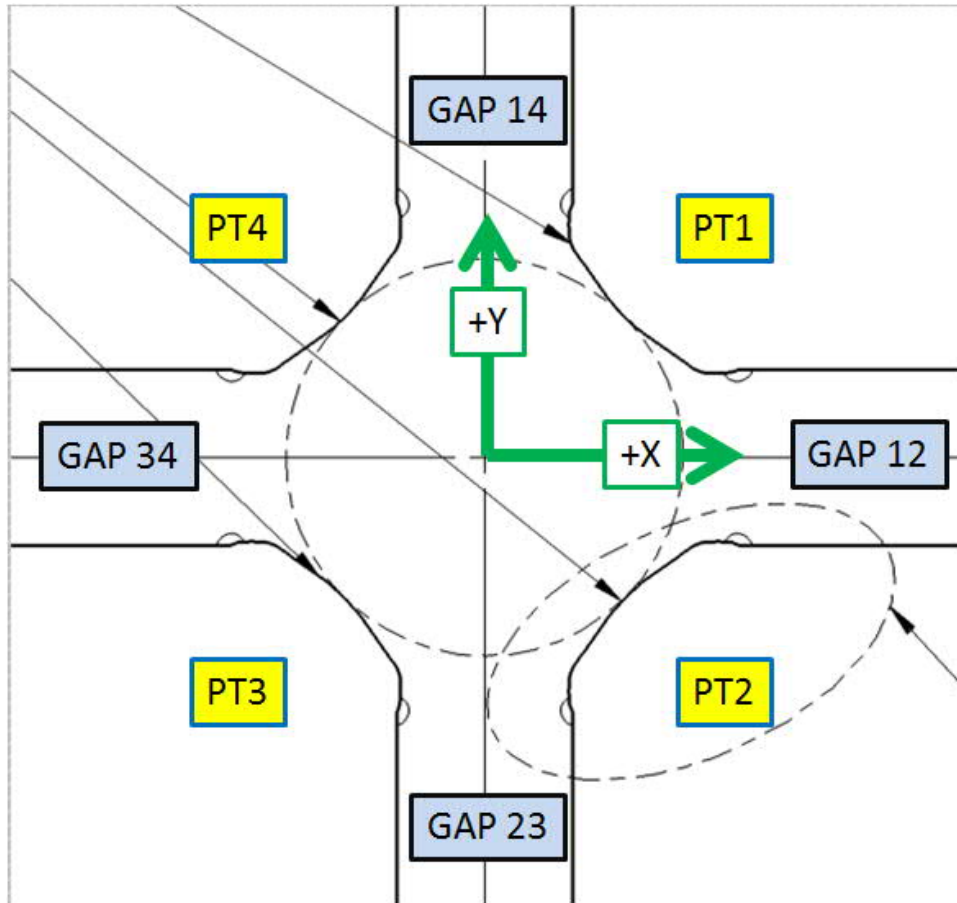
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	6.0045	3.5083	-3.7522
TB 2	3.4605	6.0001	-3.7452
TB 3	-3.4974	5.9768	-3.7412
TB 4	-6.0181	3.4895	-3.7454
TB 5	-6.0238	3.4792	3.7312
TB 6	-3.4820	5.9729	3.7428
TB 7	3.4684	5.9944	3.7318
TB 8	6.0139	3.4980	3.6993

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

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Pole Tip Gap Measurements



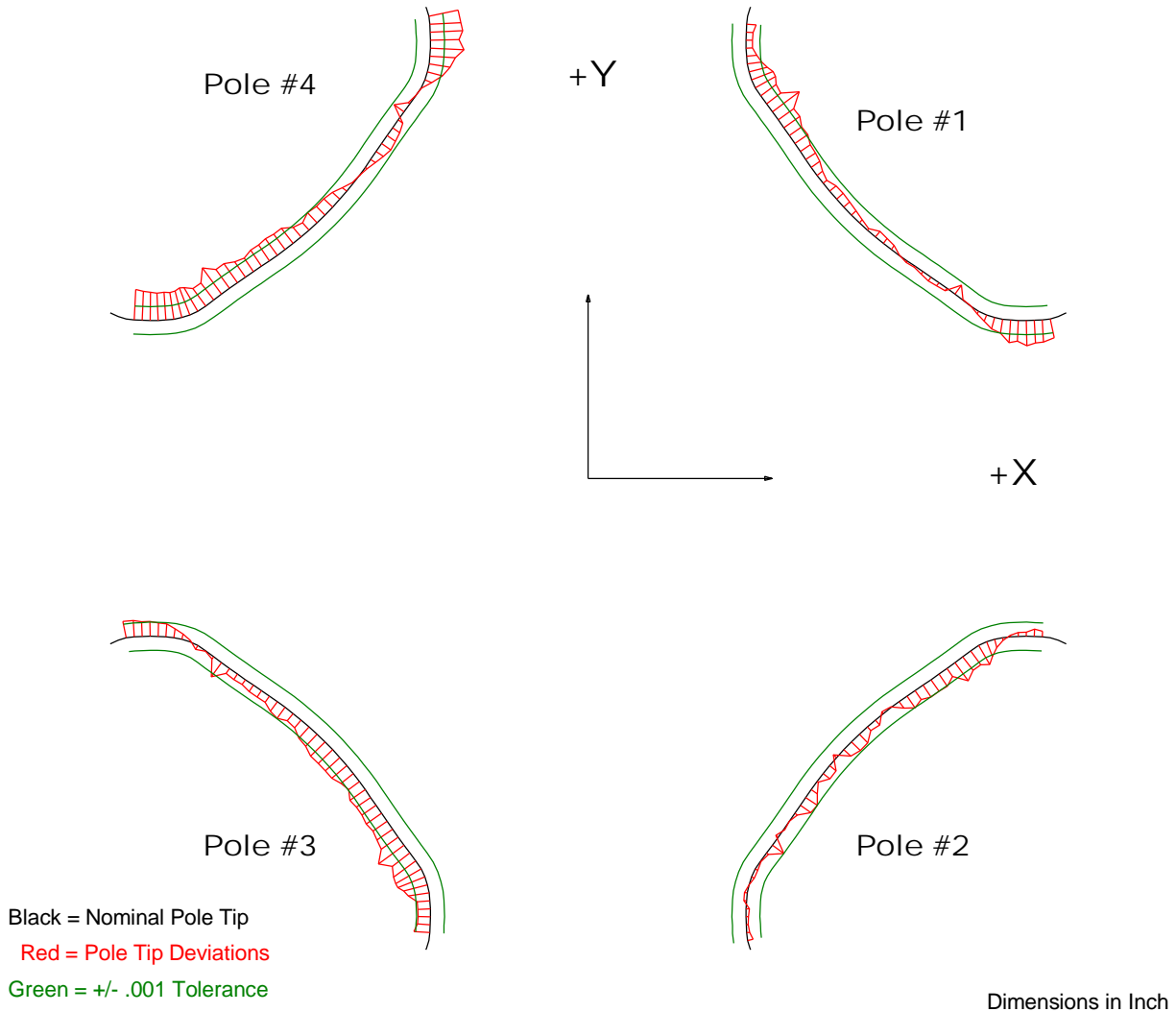
	Nominal Distance	Downstream Pole End	Upstream Pole End
PT Distance 1-3	2.026	2.02798	2.02693
PT Distance 2-4	2.026	2.02776	2.02735
Gap 1-2	0.8602	0.85861	0.85647
Gap 2-3	0.8602	0.85924	0.86021
Gap 3-4	0.8602	0.85909	0.85886
Gap 1-4	0.8602	0.85656	0.85779

Dimensions in Inch

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Composite Best-fit of Pole Tips, Downstream



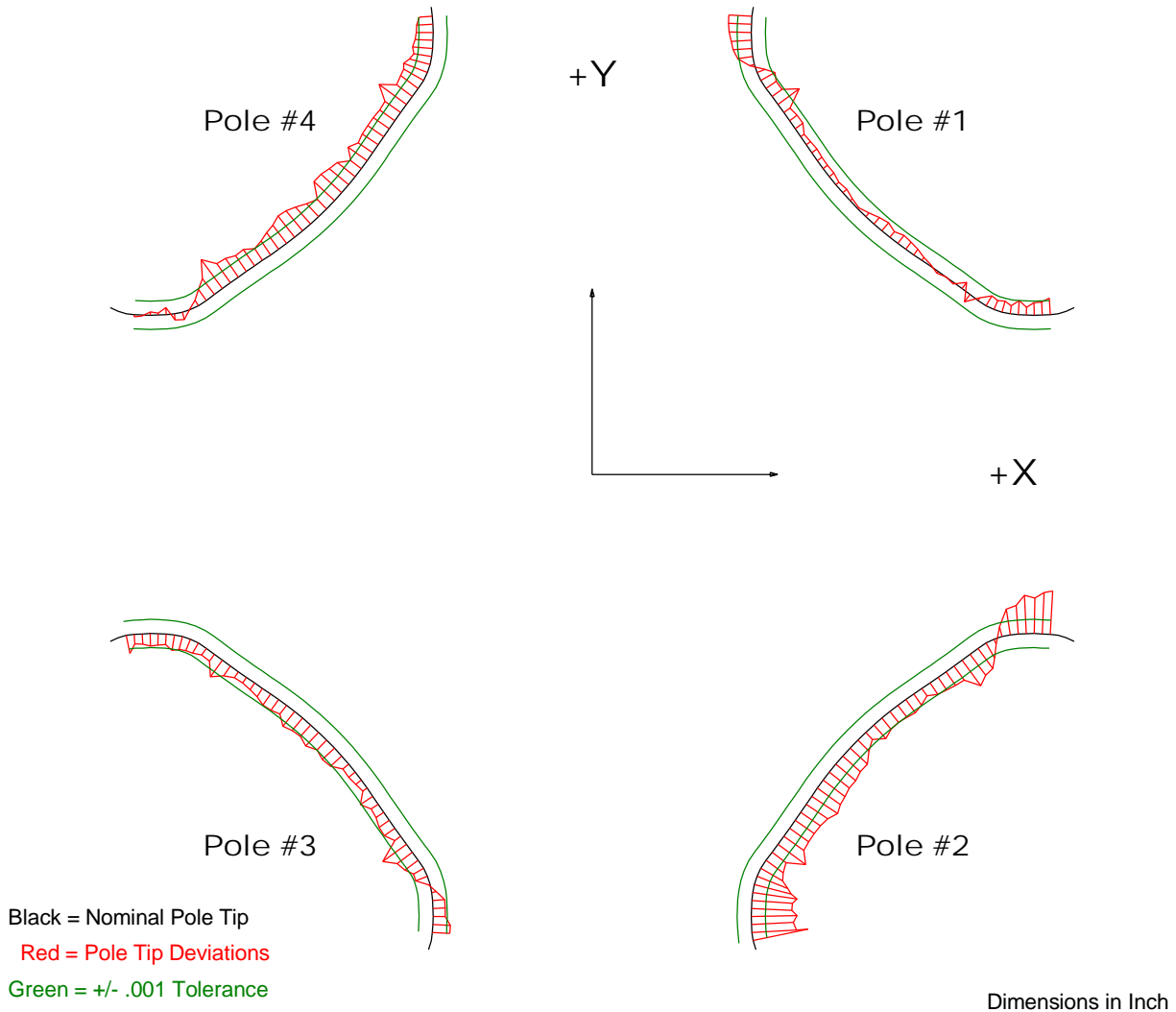
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.00238	-0.0016	-0.00227	-0.00233
Max. Dev.	0.0018	0.00052	0.0012	0.00241

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Composite Best-fit of Pole Tips, Upstream



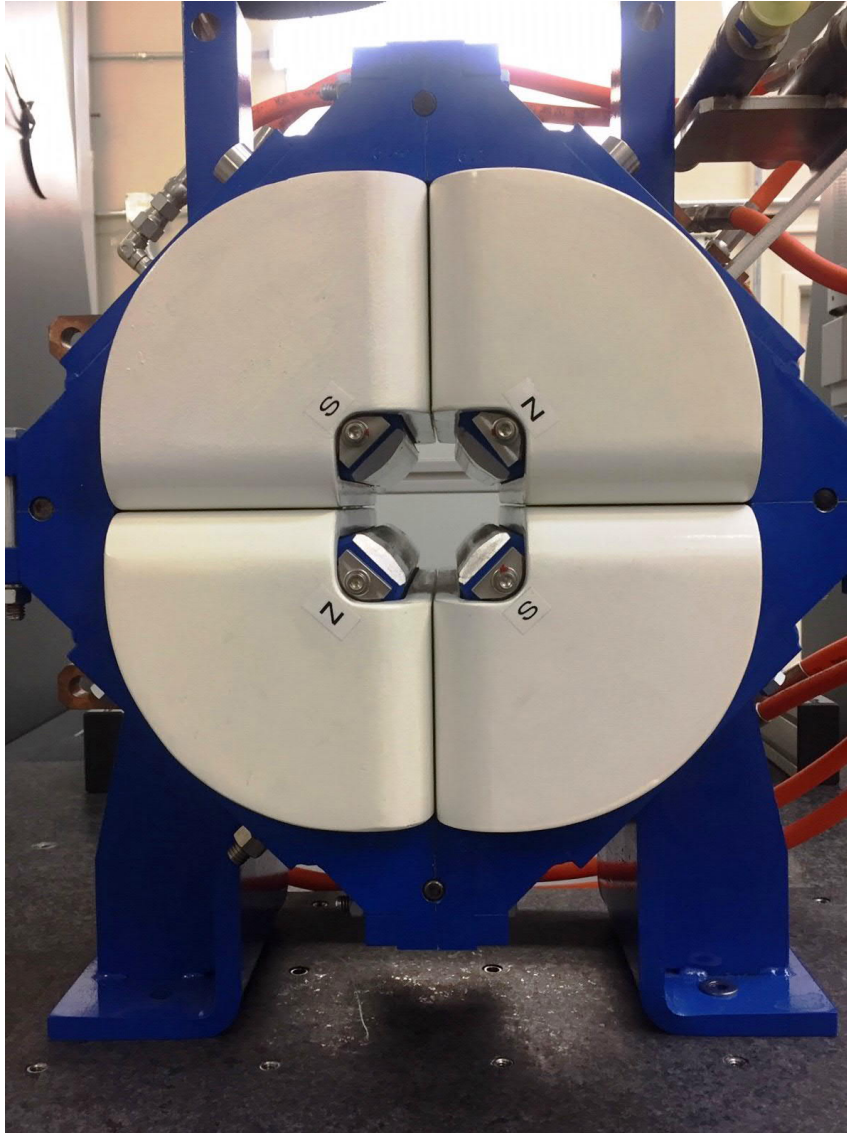
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.00187	-0.00398	-0.00207	-0.00252
Max. Dev.	0.00165	0.00307	0.00125	0.00053

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Angle of the Composite Pole Tip Best-Fit



in Decimal Degrees ° :