LCLS II 2Q10 Fiducialization Report

Inspector : K. Caban

Engineer : J. Amann

Drawing No. : SA-344-113-30

Barcode # : 4214

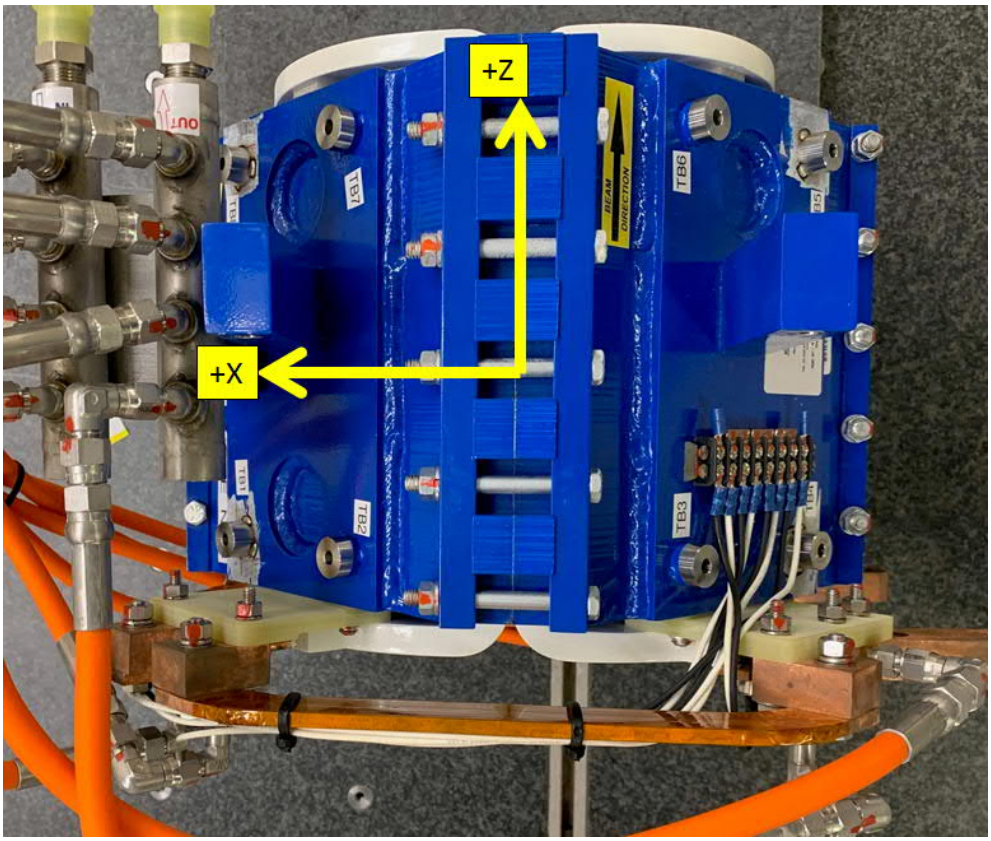
Mfg. S/N : MFG SN 01

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	6.5226	3.9764	-3.7381
TB 2	3.9784	6.4673	-3.7333
TB 3	-3.9747	6.4709	-3.7427
TB 4	-6.4948	4.0193	-3.7262
TB 5	-6.5295	3.9926	3.7218
TB 6	-3.9755	6.4740	3.7403
TB 7	3.9700	6.4742	3.7386
TB 8	6.5206	3.9787	3.7101

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

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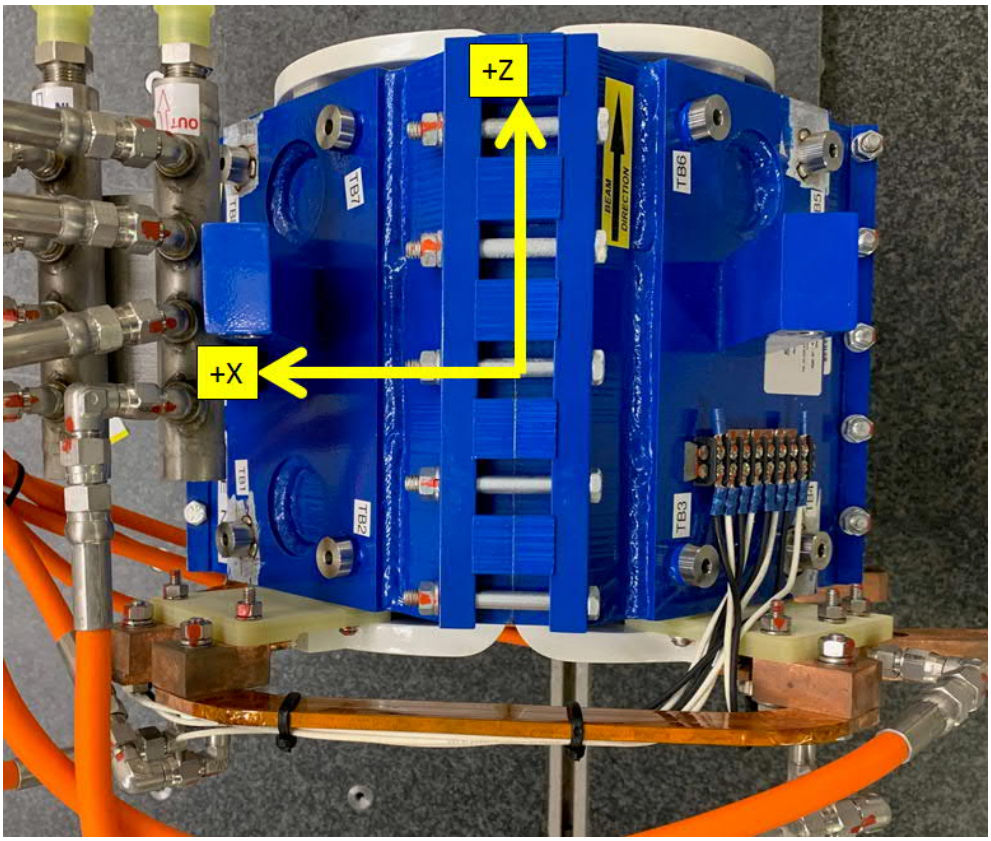

Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	6.0350	3.4921	-3.7394
TB 2	3.4914	5.9821	-3.7329
TB 3	-3.4881	5.9855	-3.7431
TB 4	-6.0093	3.5335	-3.7284
TB 5	-6.0361	3.5143	3.7199
TB 6	-3.4874	5.9859	3.7405
TB 7	3.4833	5.9889	3.7395
TB 8	6.0339	3.4934	3.7111

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

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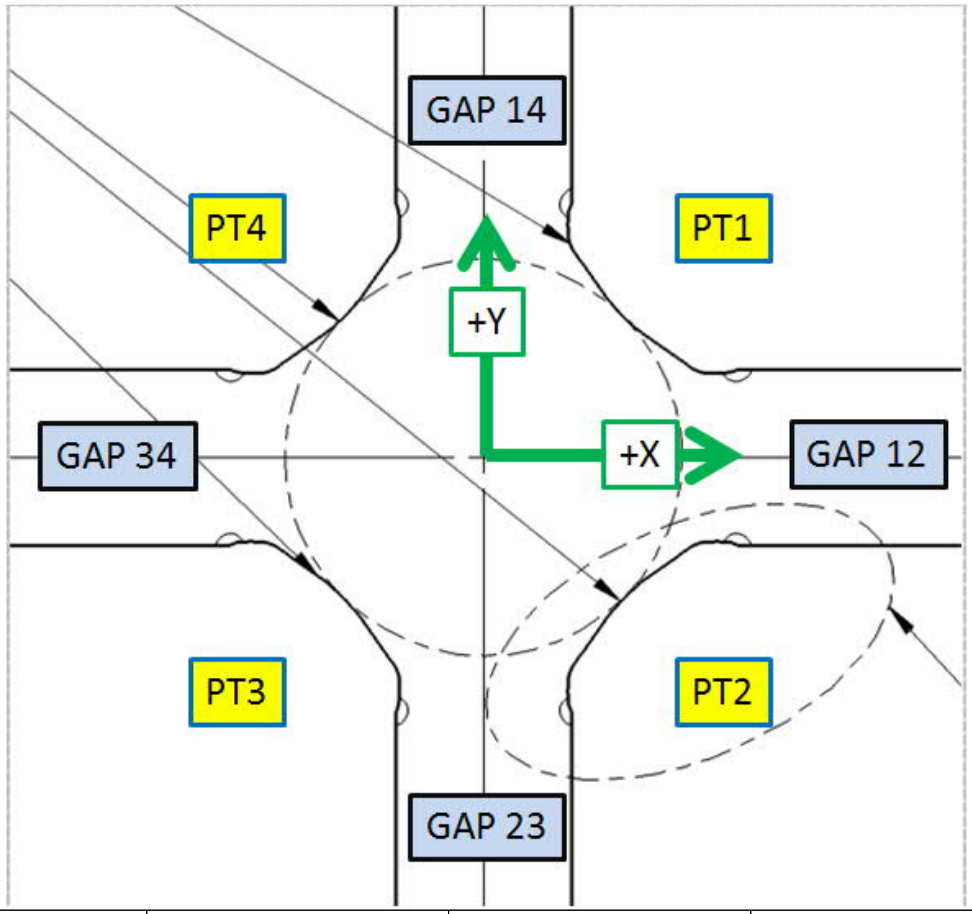
Pole Tip Gap Measurements



	Nominal Distance	Downstream Pole End	Upstream Pole End
PT Distance 1-3	2.026	2.02677	2.02714
PT Distance 2-4	2.026	2.02718	2.02693
Gap 1-2	0.8602	0.86029	0.86052
Gap 2-3	0.8602	0.85791	0.85792
Gap 3-4	0.8602	0.85574	0.85616
Gap 1-4	0.8602	0.85988	0.85836

Dimensions in Inch

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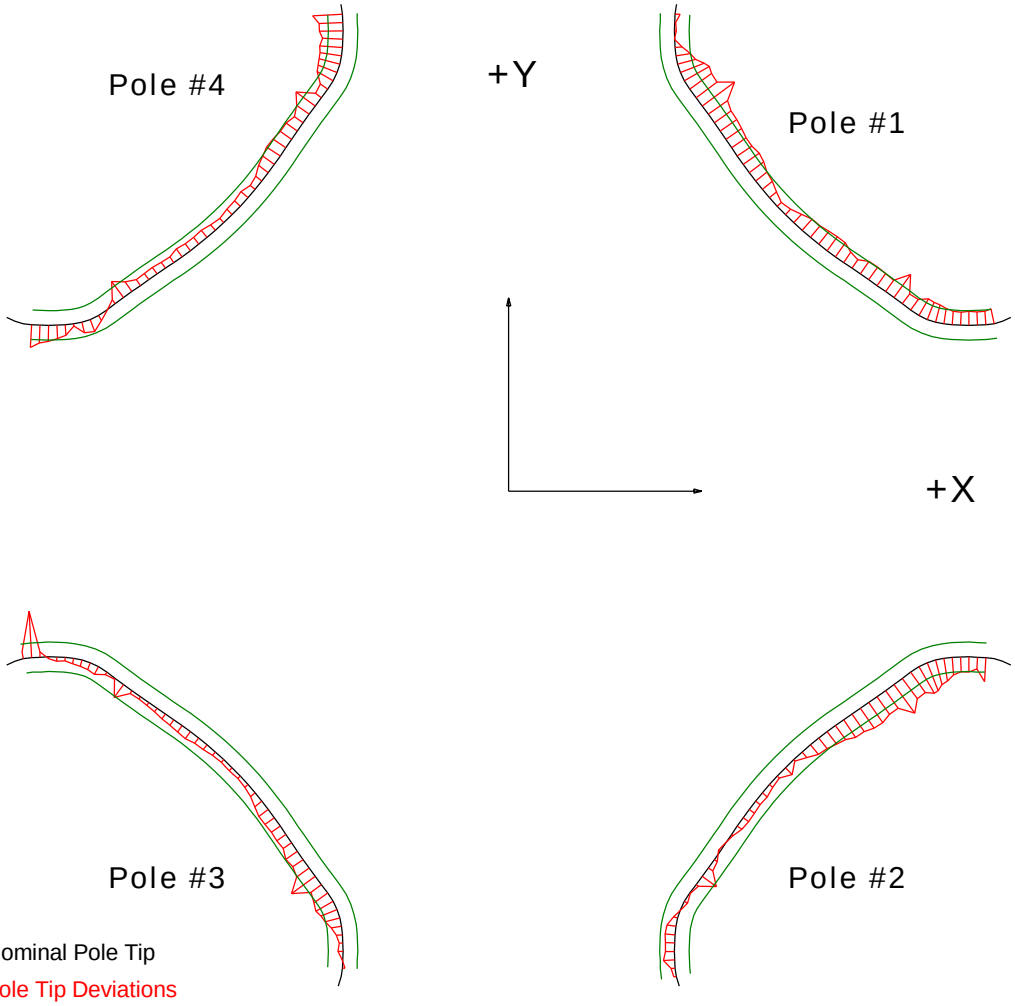
Composite Best-fit of Pole Tips, Downstream



Black = Nominal Pole Tip
Red = Pole Tip Deviations
Green = +/- .001 Tolerance

Dimensions in Inch

Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.00273	-0.0024	-0.002	-0.00202
Max. Dev.	0.00002	0.00077	0.00316	0.00156

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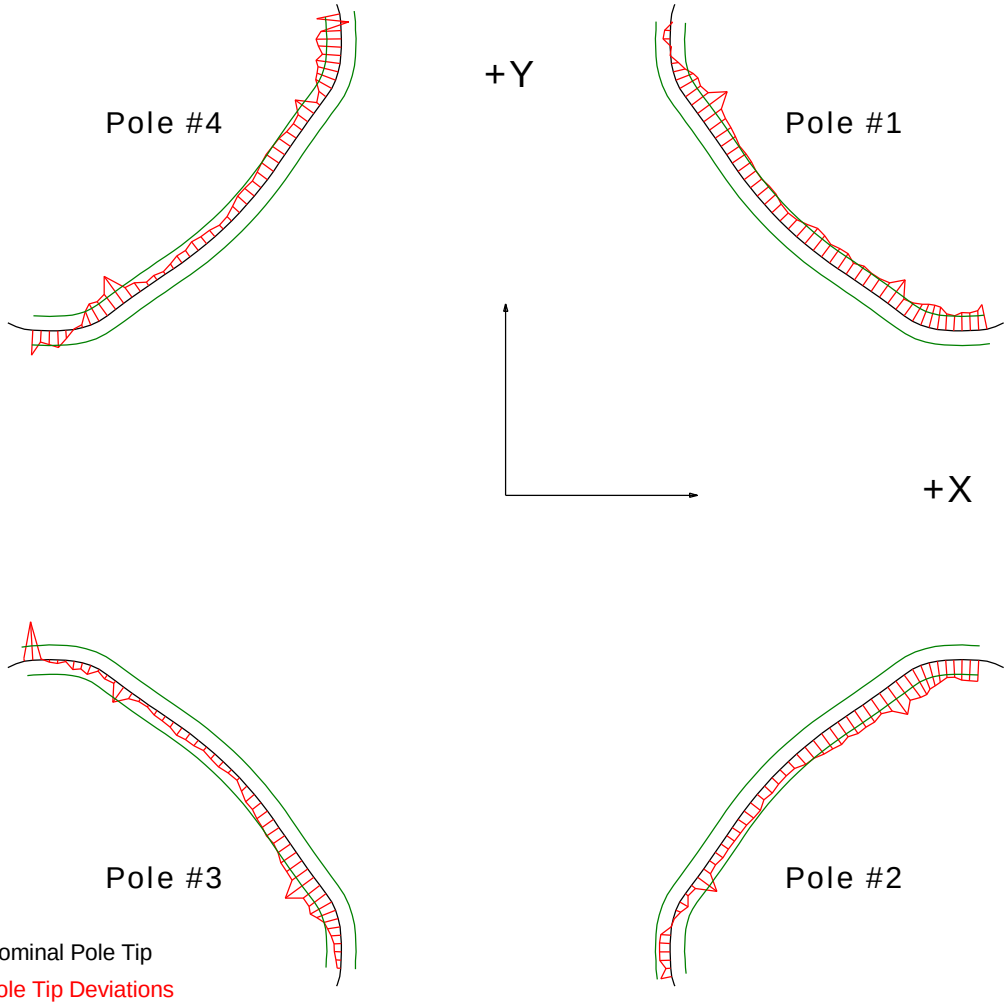
Composite Best-fit of Pole Tips, Upstream



Black = Nominal Pole Tip
Red = Pole Tip Deviations
Green = +/- .001 Tolerance

Dimensions in Inch

Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.0025	-0.00231	-0.00243	-0.00227
Max. Dev.	0.00048	0.00076	0.00265	0.0017

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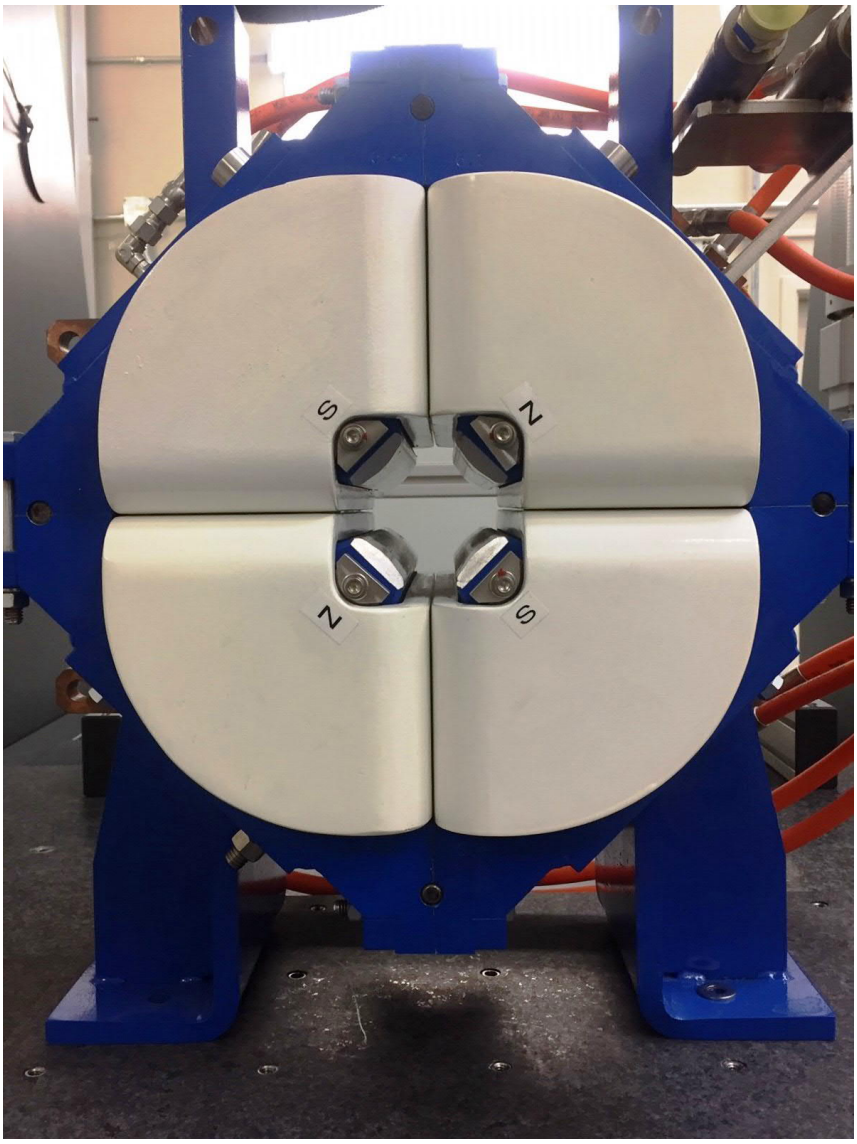
Angle of the Composite Pole Tip Best-Fit



in Decimal Degrees ° :