

LCLS II 2Q4W Fiducialization Report



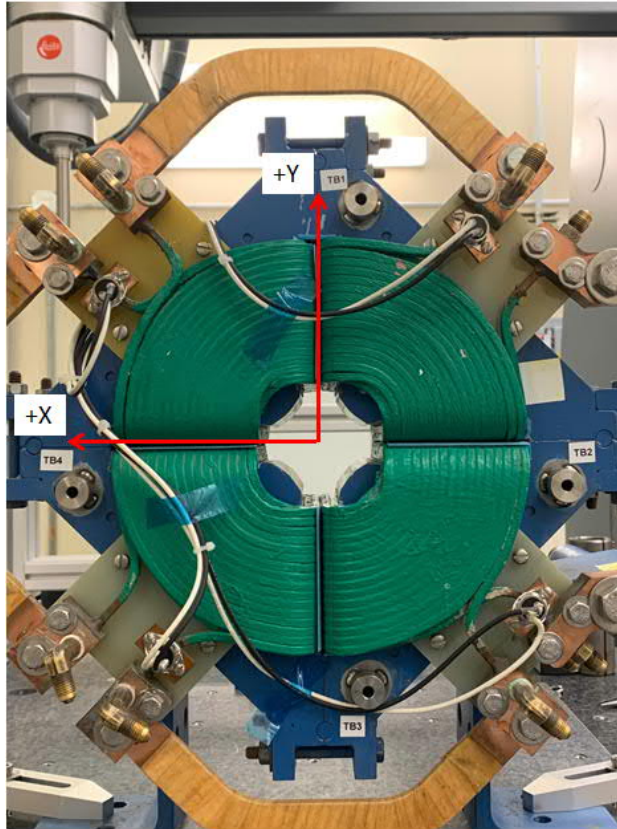
Inspector : K. Caban
Engineer : J. Amann
Drawing No. : SA-344-112-08
Barcode # : 4236
Mfg. S/N : #03

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



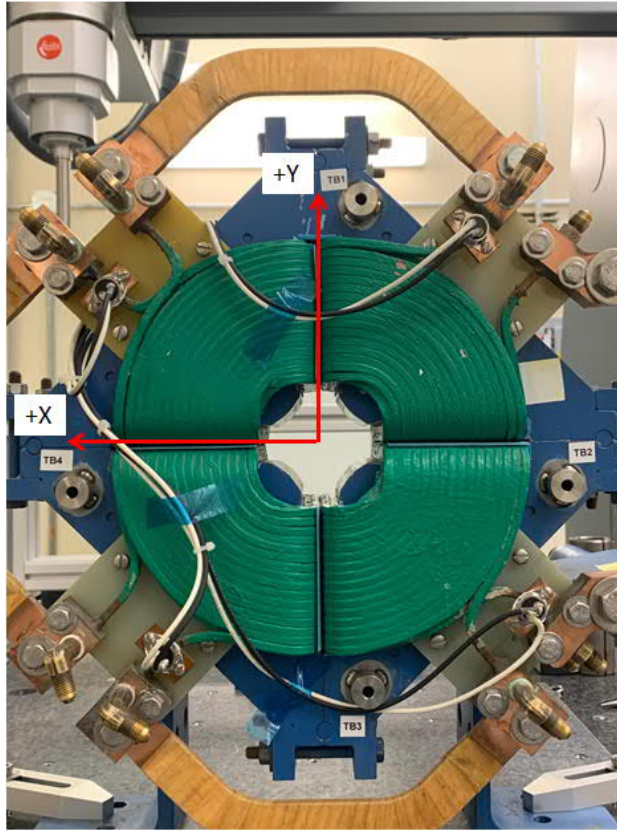
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	-0.9844	5.4979	-3.4397
TB 2	-5.5467	-0.9969	-3.4393
TB 3	-1.0189	-5.4911	-3.4440
TB 4	5.4352	-1.0021	-3.4411

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

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Tooling Ball Locations



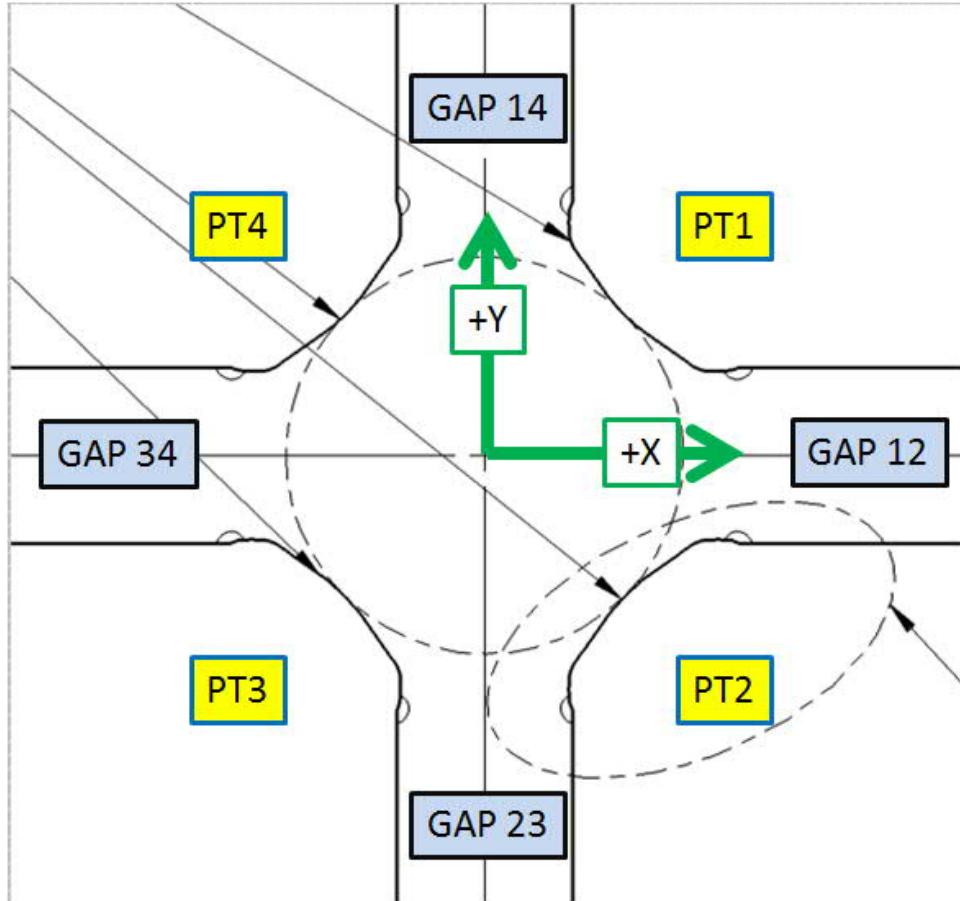
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	-0.9841	5.4980	-2.7515
TB 2	-5.5423	-0.9953	-2.7514
TB 3	-1.0178	-5.4884	-2.7558
TB 4	5.4316	-0.9998	-2.7534

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

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Pole Tip Gap Measurements



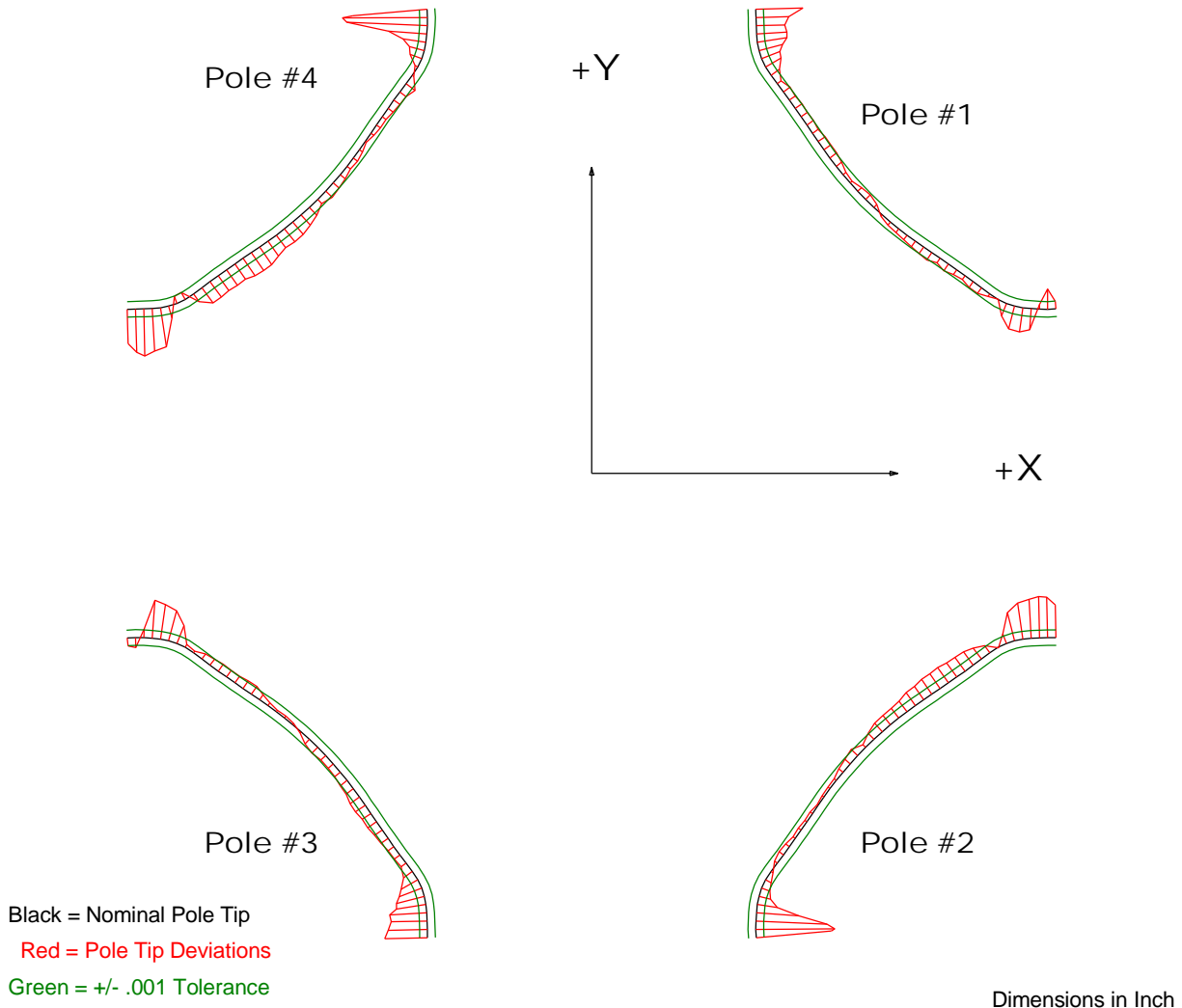
	Nominal Distance	Downstream Pole End	Upstream Pole End
PT Distance 1-3	2.026	2.0279	2.0281
PT Distance 2-4	2.026	2.0247	2.027
Gap 1-2	0.8602	0.8514	0.8508
Gap 2-3	0.8602	0.8694	0.8719
Gap 3-4	0.8602	0.8496	0.852
Gap 1-4	0.8602	0.8688	0.8668

Dimensions in Inch

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Composite Best-fit of Pole Tips, Downstream



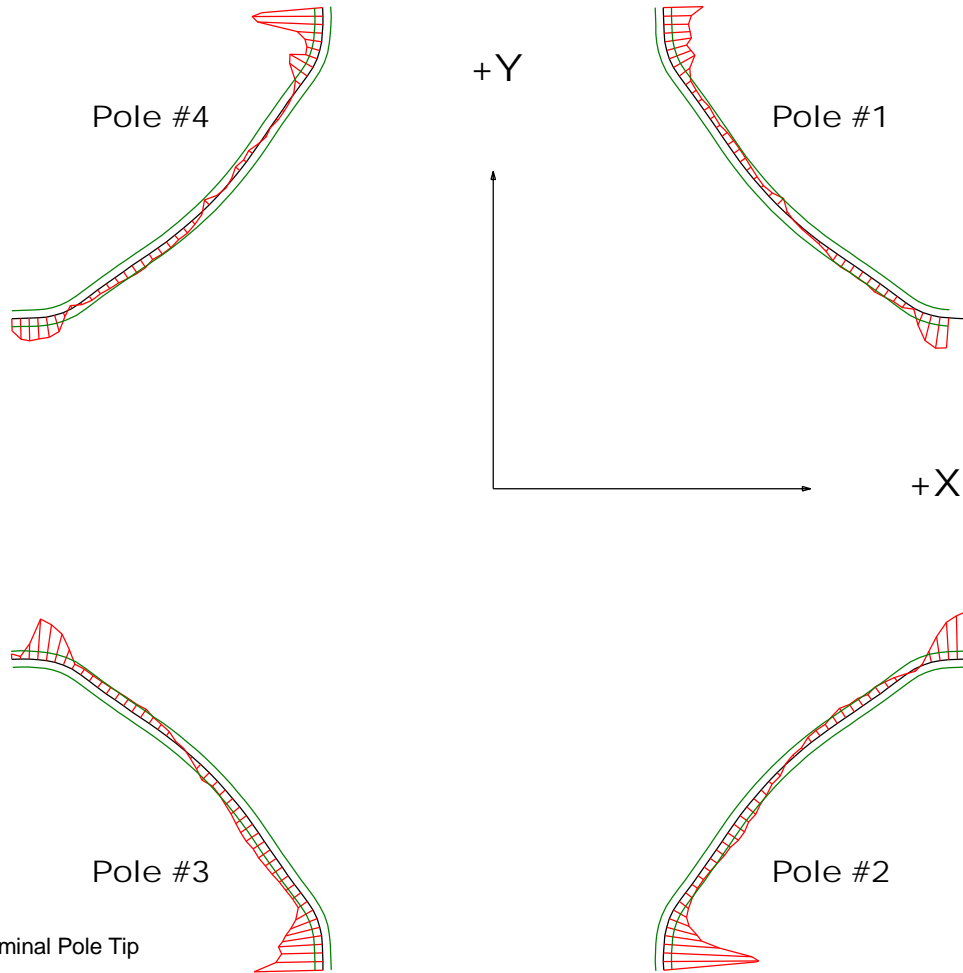
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.006	-0.0101	-0.0055	-0.0109
Max. Dev.	0.0031	0.0053	0.0049	0.0061

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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

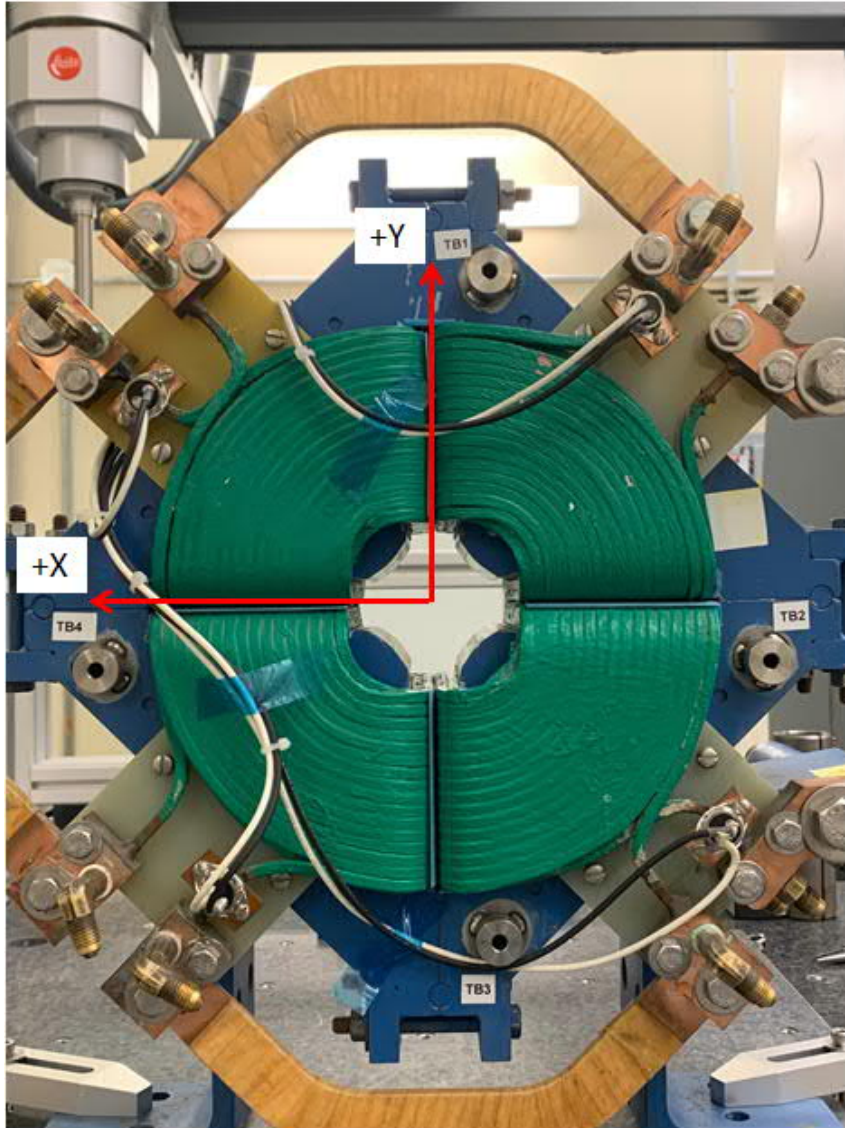
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.005	-0.0118	-0.0086	-0.0088
Max. Dev.	0.0039	0.0058	0.0051	0.0028

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Angle of the Composite Pole Tip Best-Fit



in Decimal Degrees ° :