

LCLS II 2Q4W Fiducialization Report



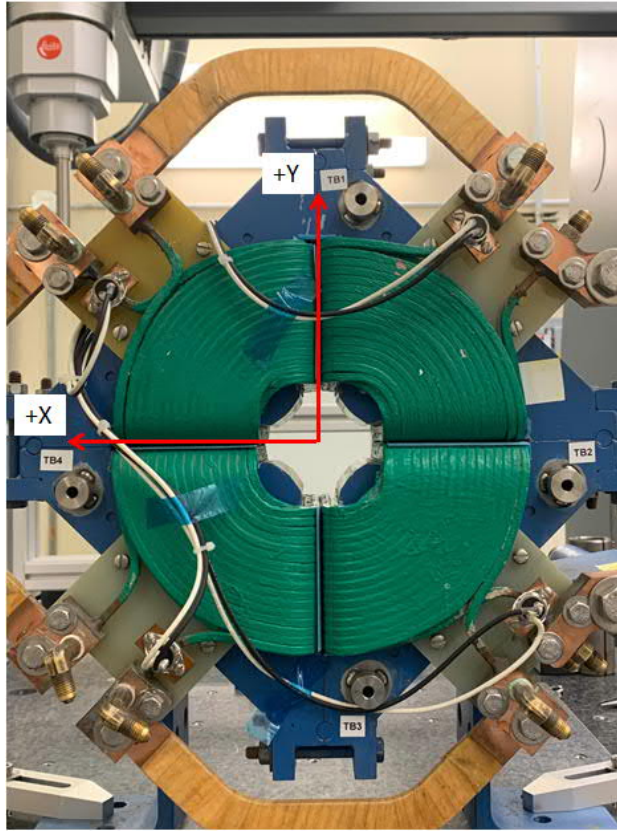
Inspector : K. Caban
Engineer : J. Amann
Drawing No. : SA-344-112-08
Barcode # : 4231
Mfg. S/N : #10

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



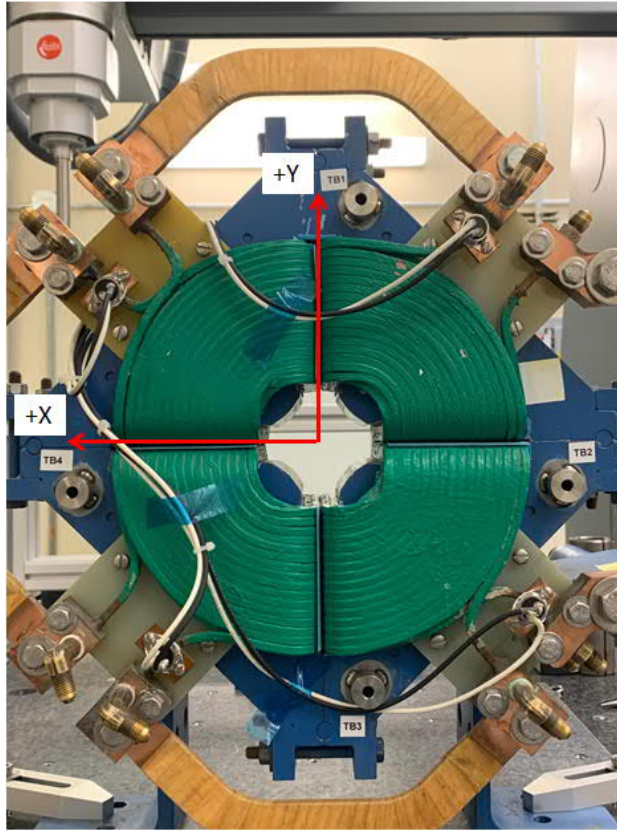
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	-0.9972	5.5002	-3.4377
TB 2	-5.5025	-0.9983	-3.4378
TB 3	-1.0013	-5.5009	-3.4402
TB 4	5.5049	-1.0074	-3.4426

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

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Tooling Ball Locations



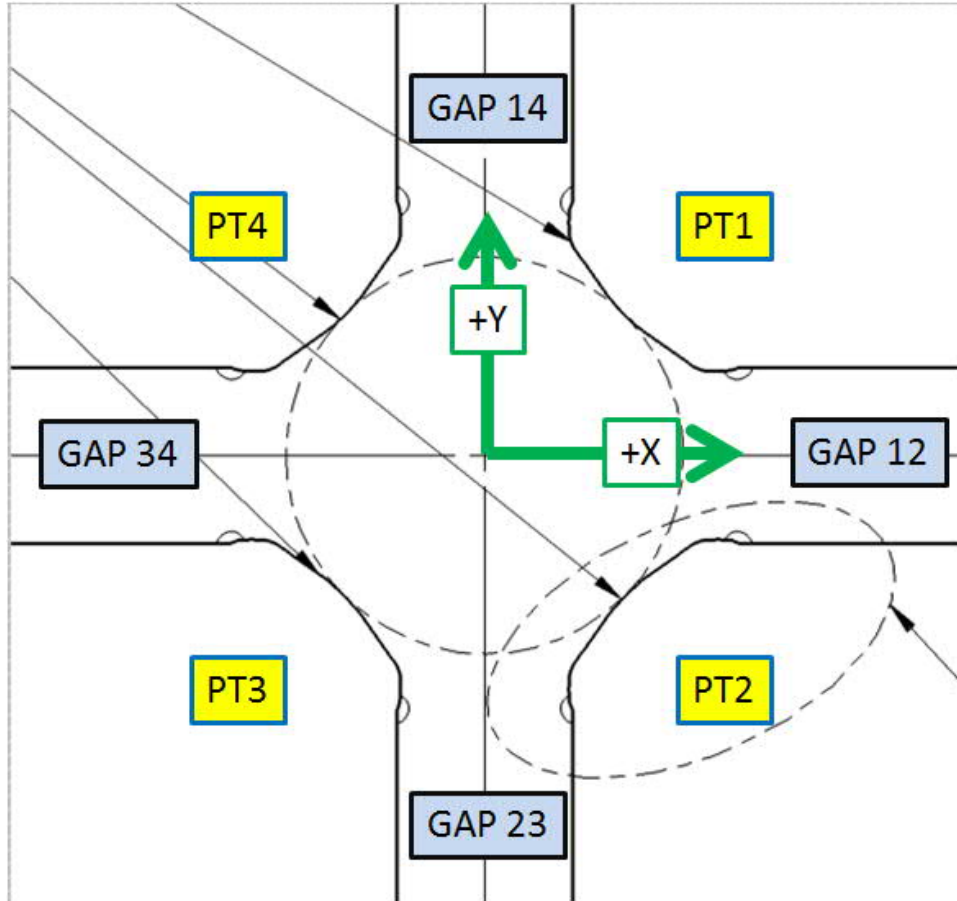
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	-0.9977	5.5015	-2.7494
TB 2	-5.5015	-0.9957	-2.7501
TB 3	-1.0012	-5.4981	-2.7527
TB 4	5.5033	-1.0049	-2.7550

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

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Pole Tip Gap Measurements



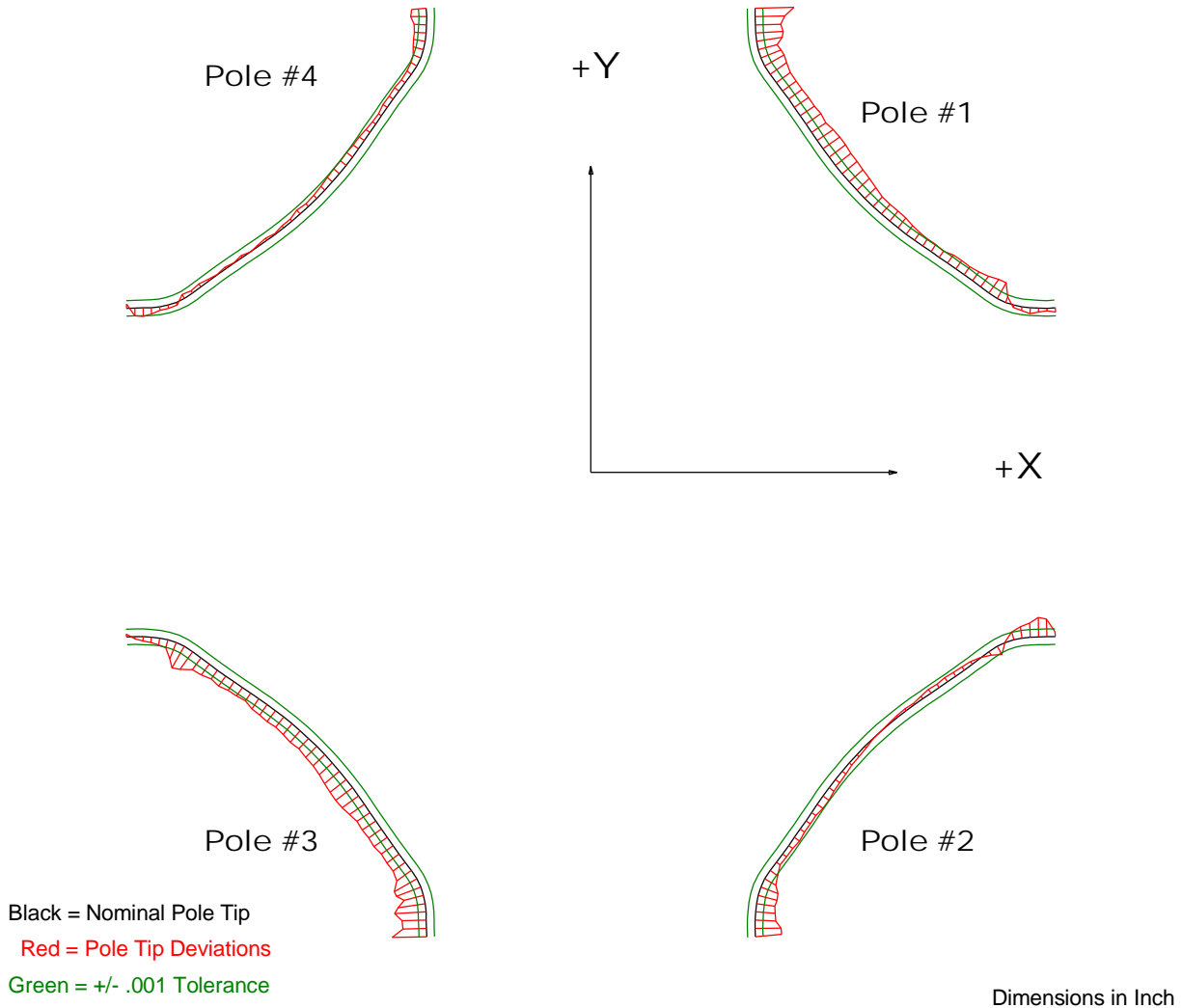
	Nominal Distance	Downstream Pole End	Upstream Pole End
PT Distance 1-3	2.026	2.03	2.0269
PT Distance 2-4	2.026	2.0268	2.0281
Gap 1-2	0.8602	0.856	0.8567
Gap 2-3	0.8602	0.8645	0.8639
Gap 3-4	0.8602	0.8579	0.8561
Gap 1-4	0.8602	0.8588	0.8645

Dimensions in Inch

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Composite Best-fit of Pole Tips, Downstream



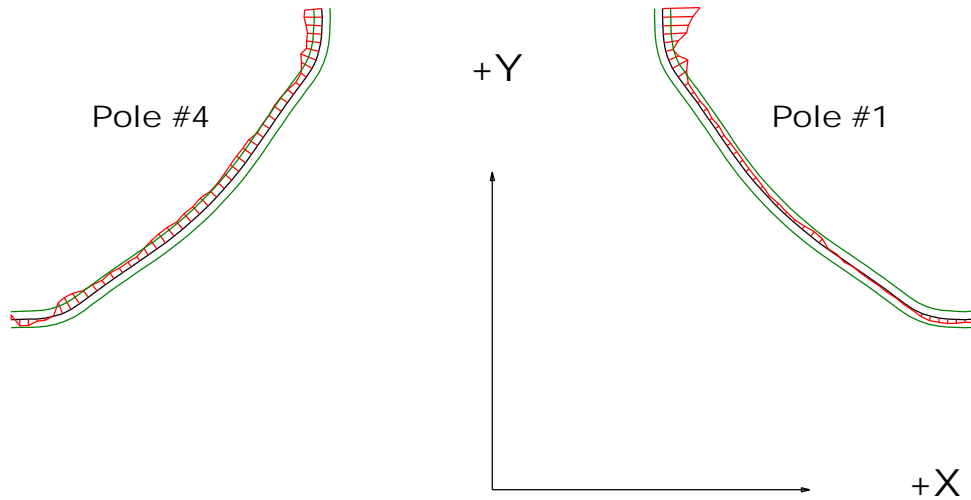
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.005	-0.0034	-0.0044	-0.0021
Max. Dev.	0.0008	0.0025	0.0004	0.0011

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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

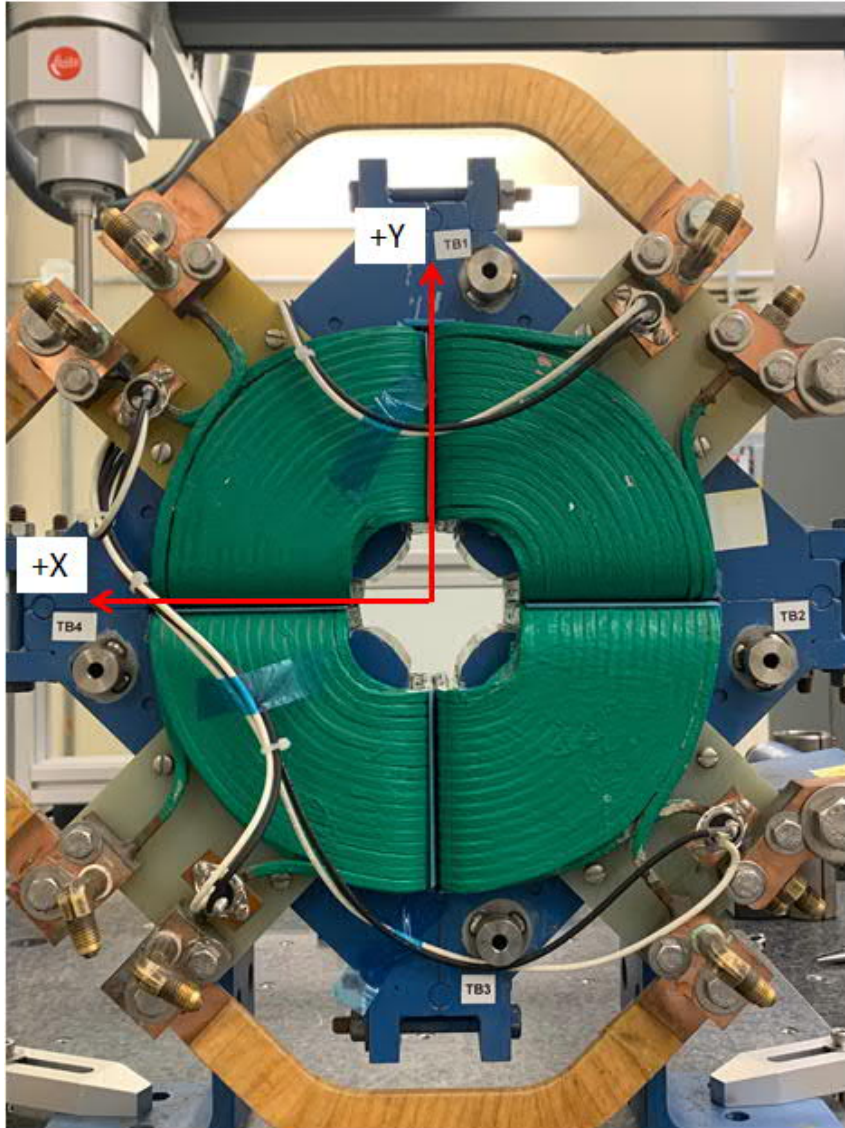
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.0047	-0.0032	-0.0036	-0.0022
Max. Dev.	0.0006	0.0016	0.0017	0.0008

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Angle of the Composite Pole Tip Best-Fit



in Decimal Degrees ° :