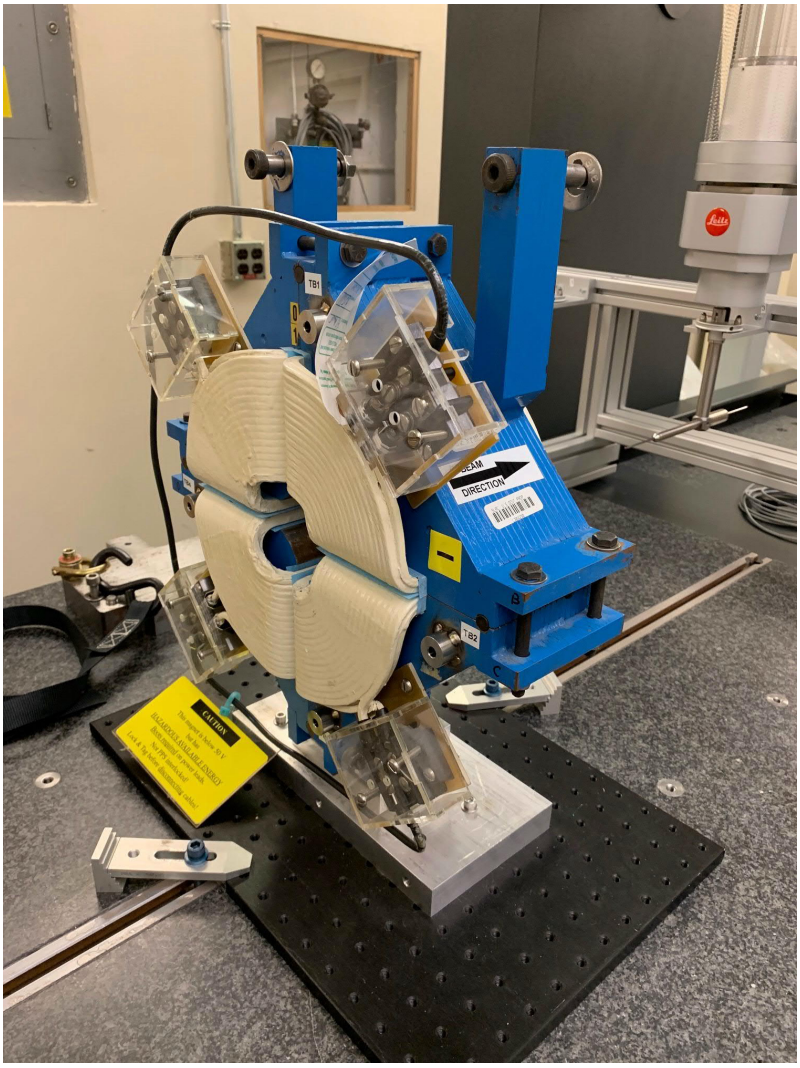
LCLS II 2Q4 Fiducialization Report



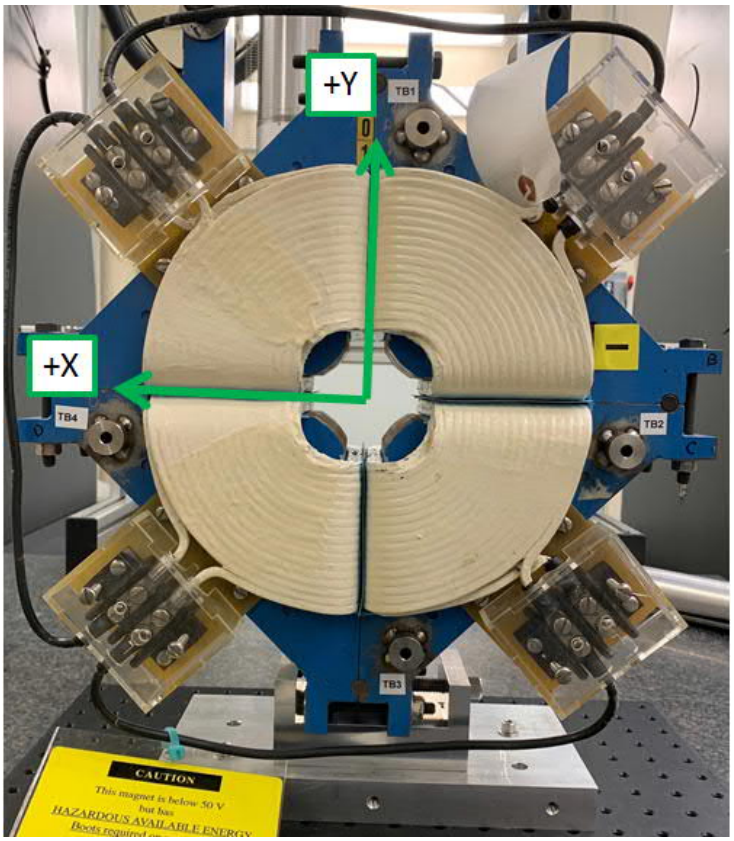
Inspector : K. Caban
Engineer : J. Amann
Drawing No. : SA-344-112-01
Barcode # : 4229
Mfg. S/N : #35

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	-0.9896	5.4982	-3.4303
TB 2	-5.5124	-0.9864	-3.4388
TB 3	-1.0161	-5.4949	-3.4398
TB 4	5.5047	-1.0195	-3.4414

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

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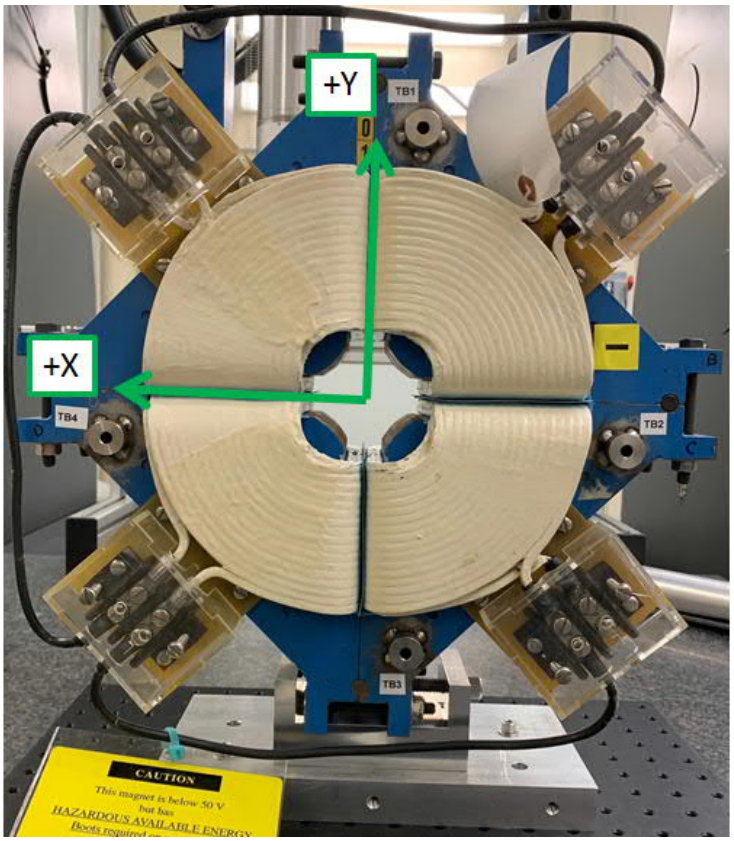
Tooling Ball Locations



Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	-0.9888	5.5003	-2.7422
TB 2	-5.5109	-0.9848	-2.7502
TB 3	-1.0156	-5.4921	-2.7524
TB 4	5.5038	-1.0173	-2.7533

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

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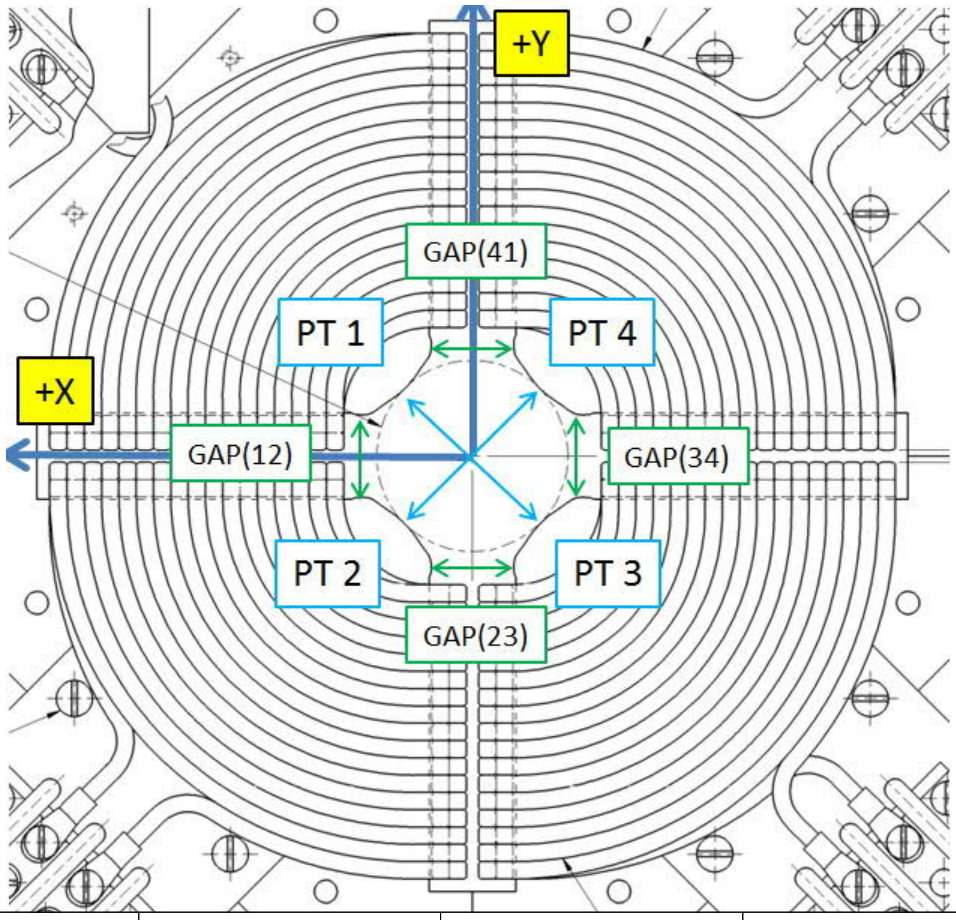
Pole Tip Gap Measurements



	Nominal Distance	Downstream Pole End	Upstream Pole End
PT Distance 1-3	2.086	2.0916	2.0893
PT Distance 2-4	2.086	2.0938	2.0911
Gap 1-2	0.900	0.8948	0.8947
Gap 2-3	0.900	0.9172	0.9149
Gap 3-4	0.900	0.8947	0.8875
Gap 1-4	0.900	0.9209	0.9133

Dimensions in Inch

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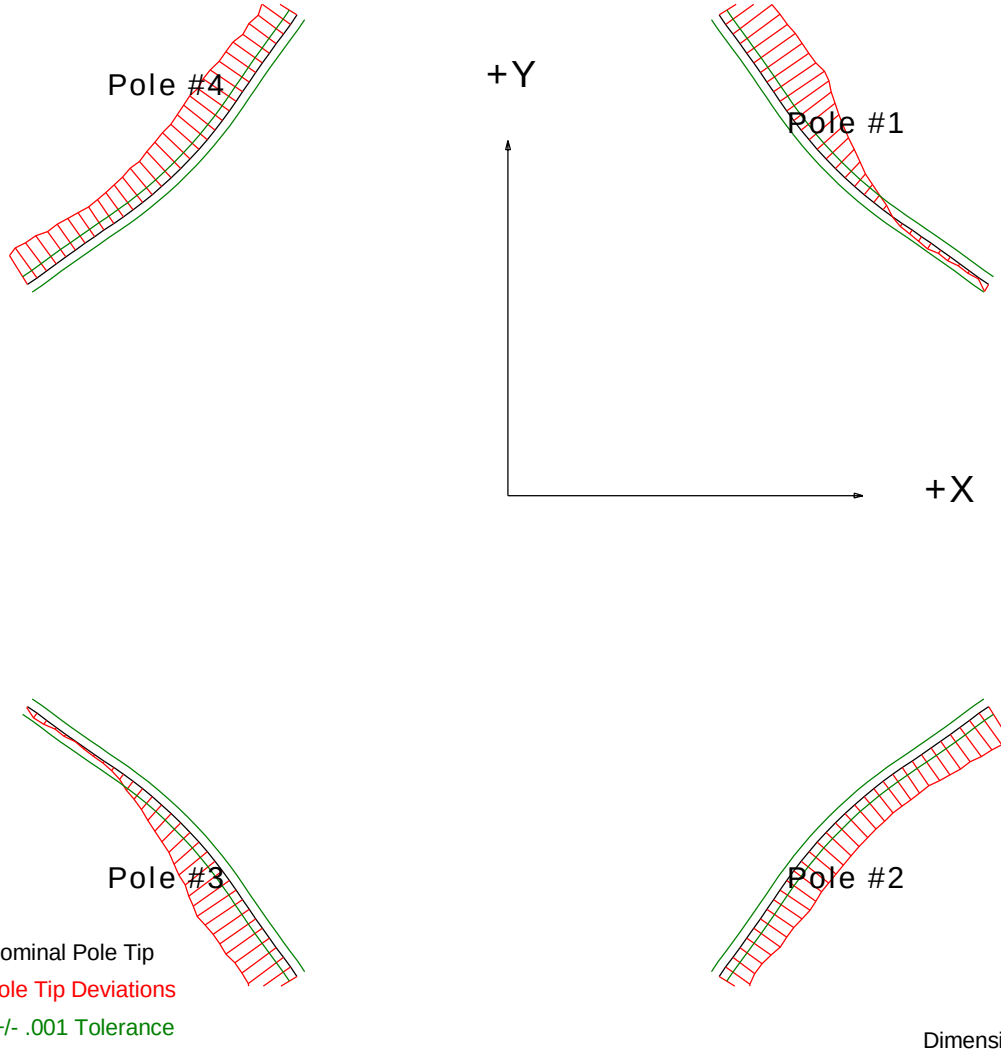
Composite Best-fit of Pole Tips, Downstream



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.	-0.0086	-0.0043	-0.0072	-0.0049
Max. Dev.	0.0009	-0.003	0	-0.0031

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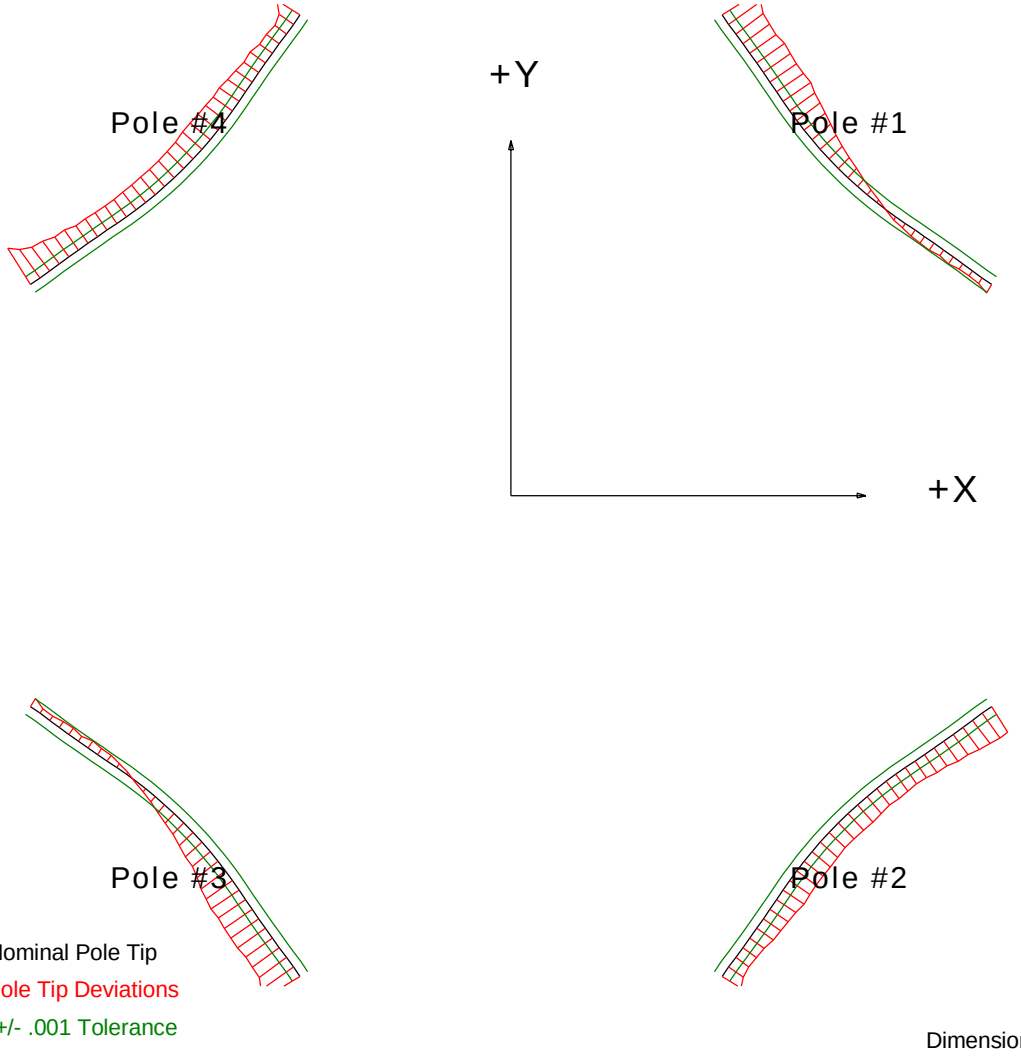
Composite Best-fit of Pole Tips, Upstream



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.	-0.006	-0.0034	-0.0057	-0.0047
Max. Dev.	0.0011	-0.0018	0.0011	-0.0016

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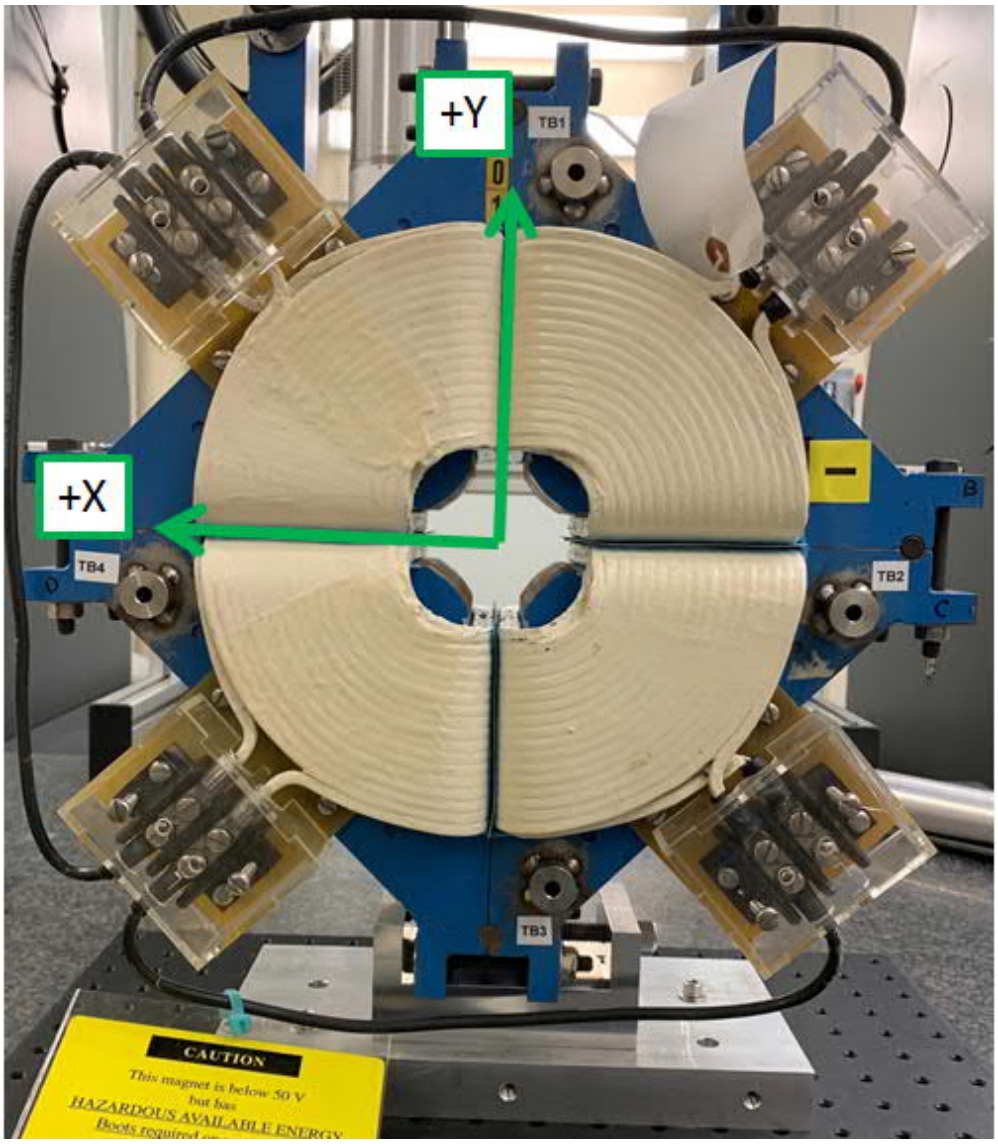
Angle of the Composite Pole Tip Best-Fit



in Decimal Degrees ° :