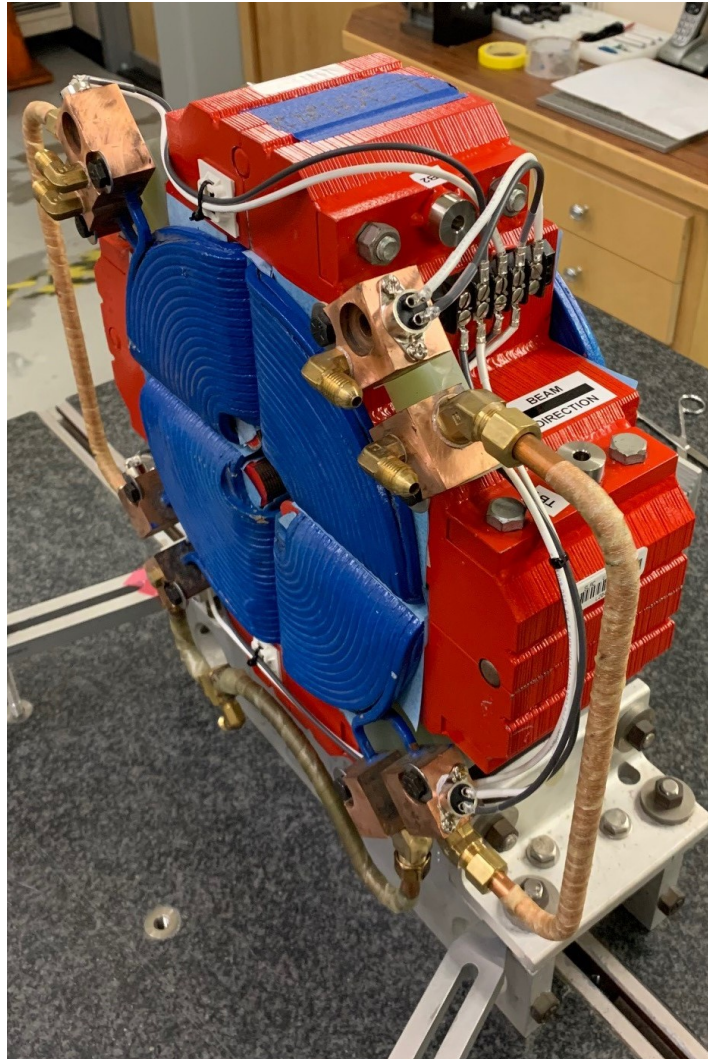


LCLS II 1.085Q4.31 Fiducialization Report



Inspector : K. Caban
Engineer : E. Kraft
Drawing No. : SA-902-675-01
Barcode # :L204243
Mfg. S/N :

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 0.100 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.

Planar Alignment

The Planar Alignment of the magnet is the created by averaging the rotations of the composite best-fits of the upstream pole tips and downstream pole tips. This direction defines the Y and X directions of the magnet.

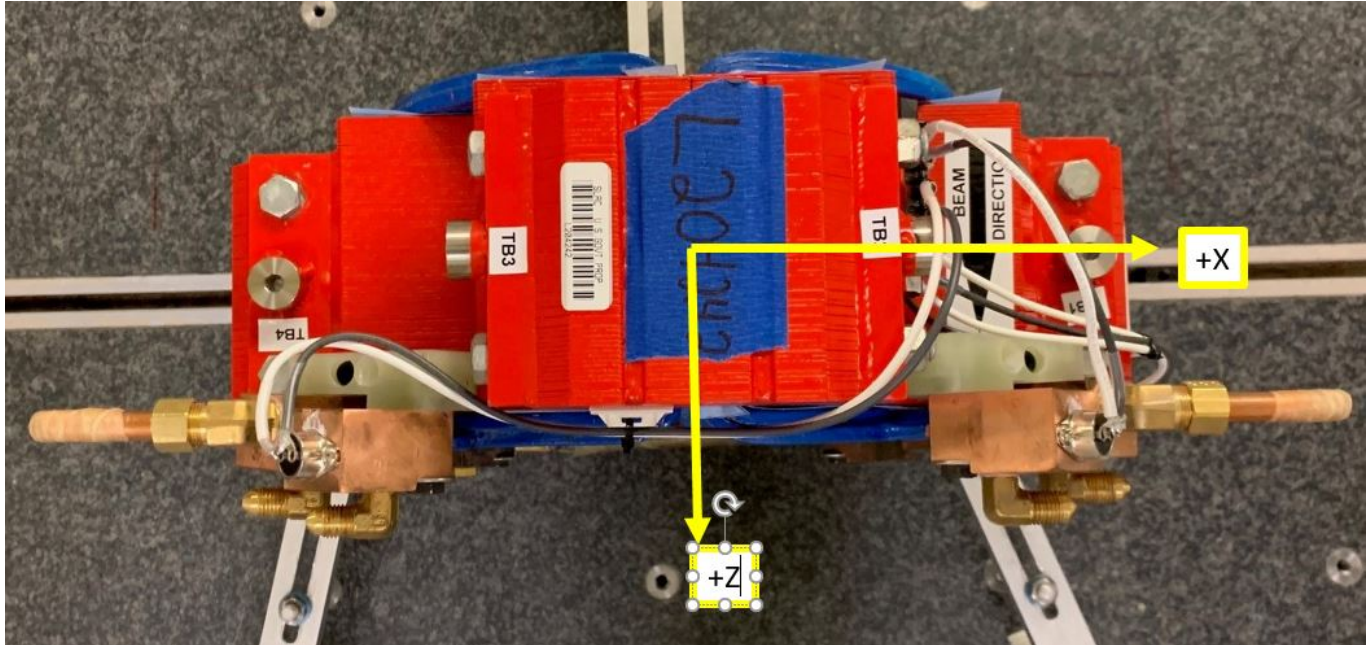
Coordinate Origins

The origins of the magnet coordinate system are as follows. The XY origin lies on the axis of spatial alignment. The Z origin is the intersection of the mid-plane between the upstream and downstream magnet faces and the Z axis. +Z Points towards Copper Tubing end.

Barcode # :L204243

Mfg. S/N :

Tooling Ball Locations



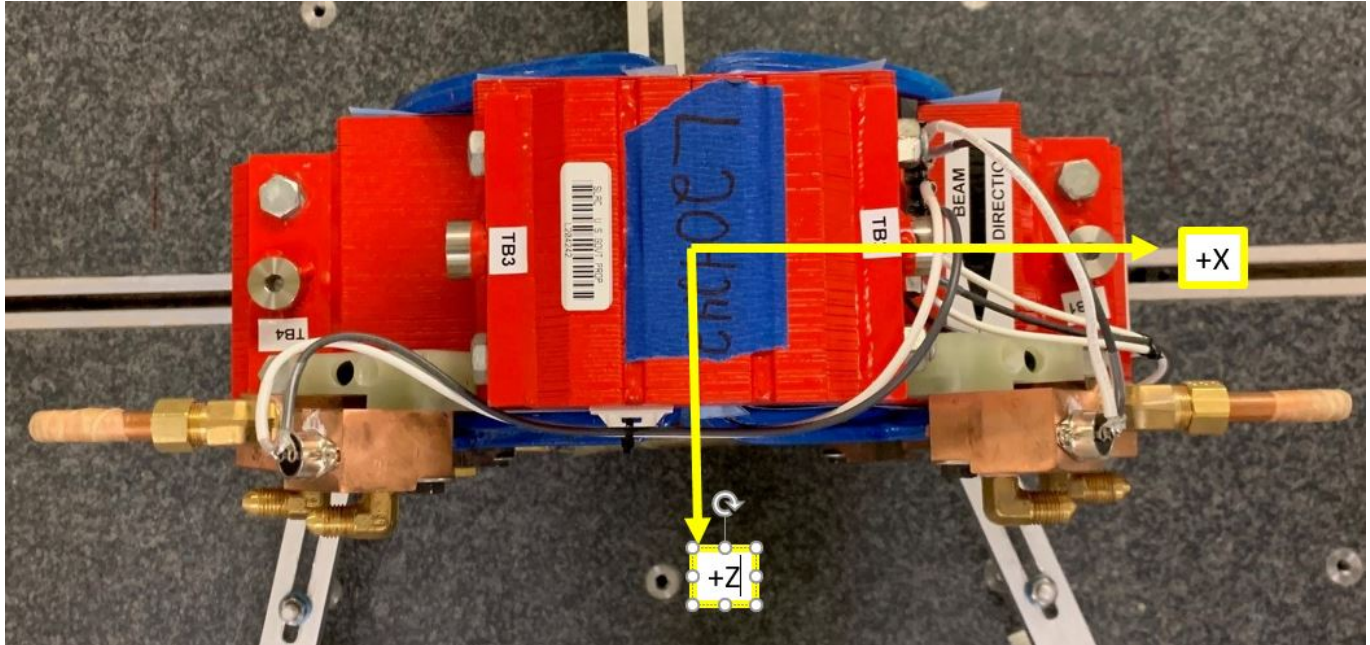
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	5.7909	4.0061	0.2110
TB 2	3.9901	5.8145	0.3139
TB 3	-4.0061	5.7954	0.1461
TB 4	-5.7854	3.9903	0.2962

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

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Mfg. S/N :

Tooling Ball Locations



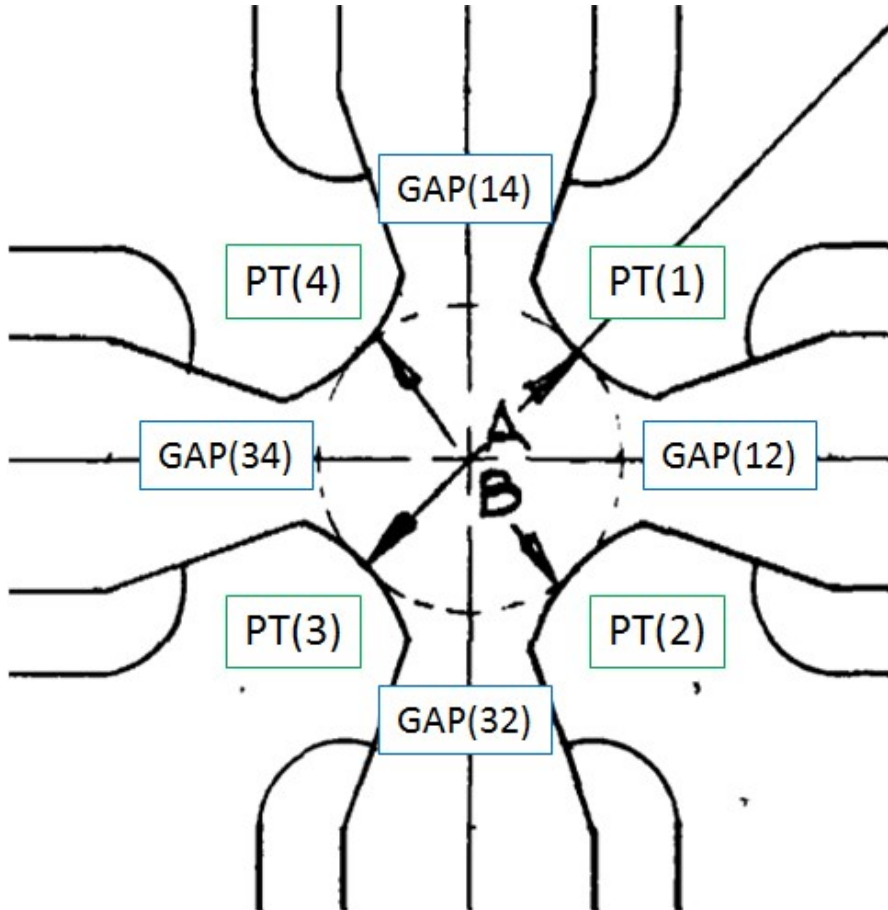
Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	5.7902	3.3186	0.2110
TB 2	3.3026	5.8133	0.3132
TB 3	-3.3186	5.7943	0.1471
TB 4	-5.7813	3.3028	0.2952

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

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Mfg. S/N :

Pole Tip Gap Measurements



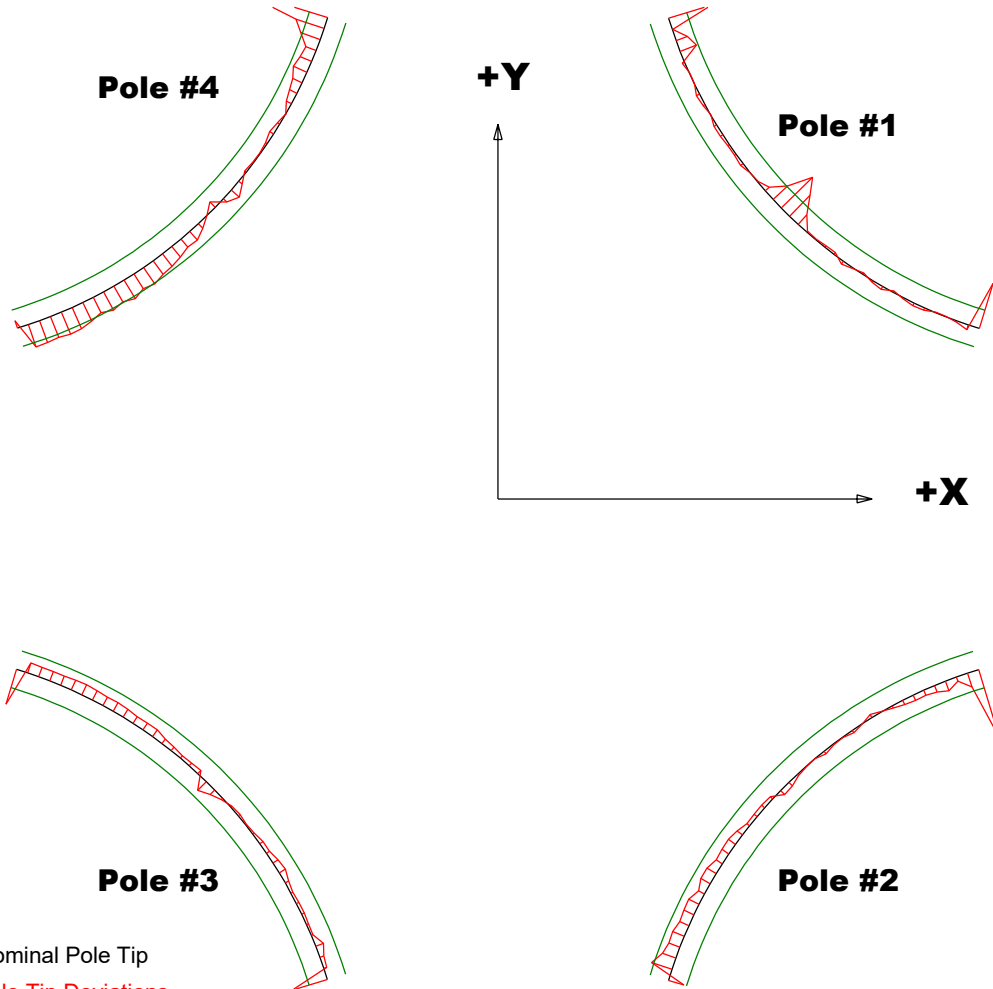
	Nominal Distance	Downstream Pole End	Upstream Pole End
PT Distance 1-3(A)	1.085	1.0867	1.0893
PT Distance 2-4(B)	1.085	1.0854	1.0865
Gap 1-2	0.4546	0.4605	0.4566
Gap 2-3	0.4546	0.4447	0.4495
Gap 3-4	0.4546	0.4568	0.4599
Gap 4-1	0.4546	0.4623	0.4635

Dimensions in Inch

Barcode # :L204243

Mfg. S/N :

Composite Best-fit of Pole Tips, Downstream



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

Dimensions in Inch

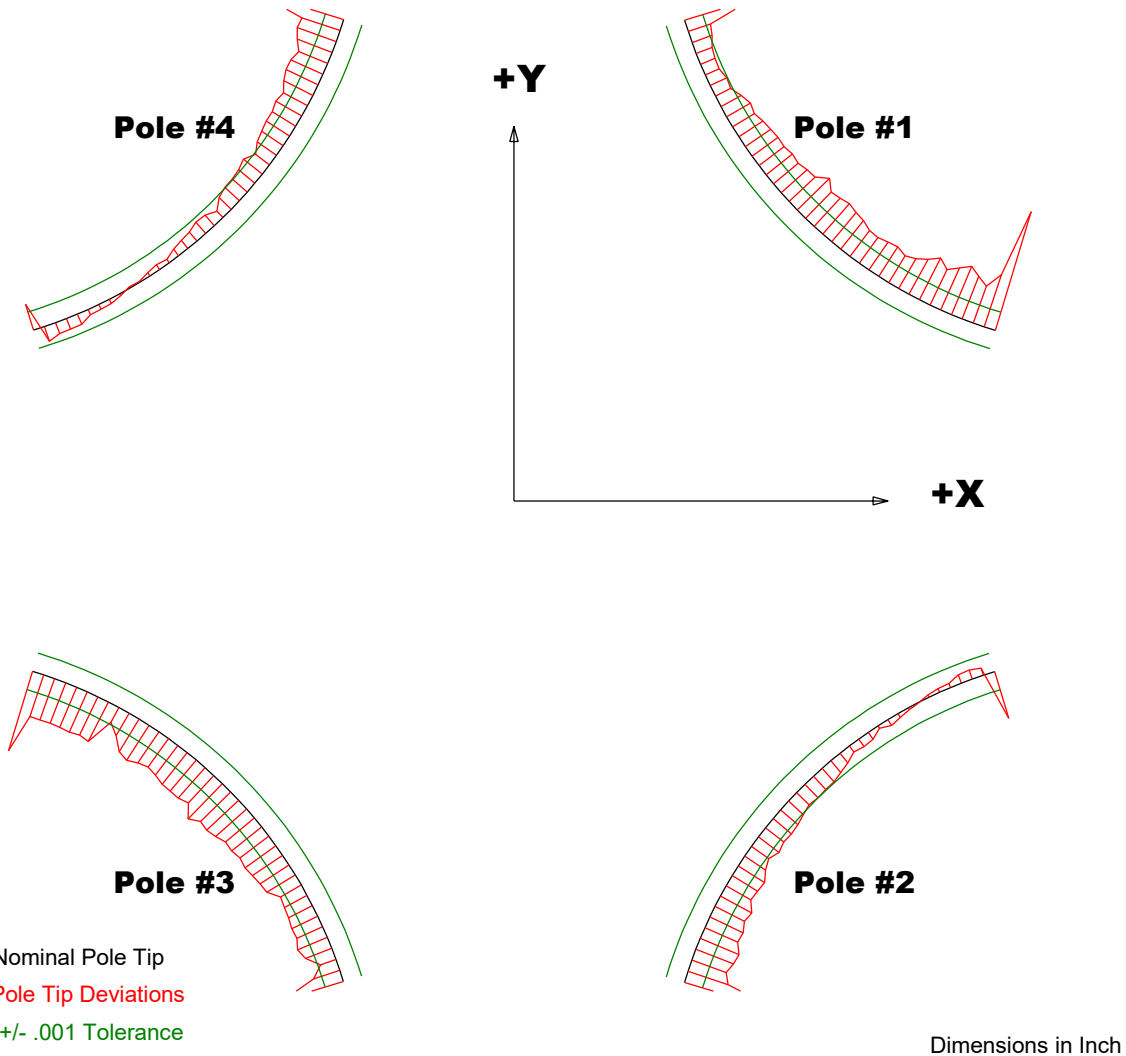
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.0025	-0.0037	-0.0019	-0.0048
Max. Dev.	0.0003	0.0011	0.0006	0.0012

Barcode # :L204243

Mfg. S/N :

Composite Best-fit of Pole Tips, Upstream



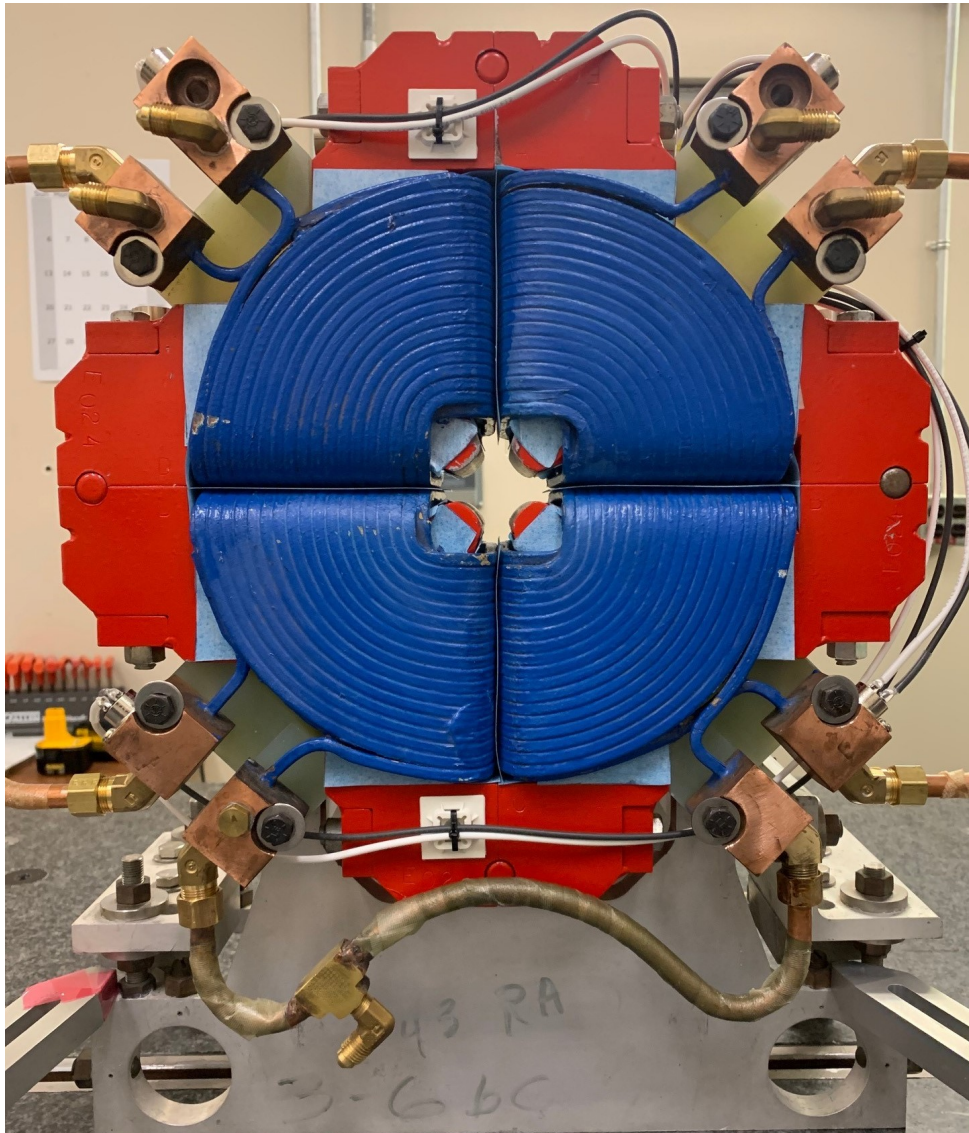
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.0065	-0.0051	-0.0044	-0.0046
Max. Dev.	-0.0008	0.0005	-0.0009	0.0008

Barcode # :L204243

Mfg. S/N :

Angle of the Composite Pole Tip Best-Fit



Angle in Decimal Degrees ° :-0.07635

Angle in Milliradians :-1.33247

Barcode # :L204243

Mfg. S/N :