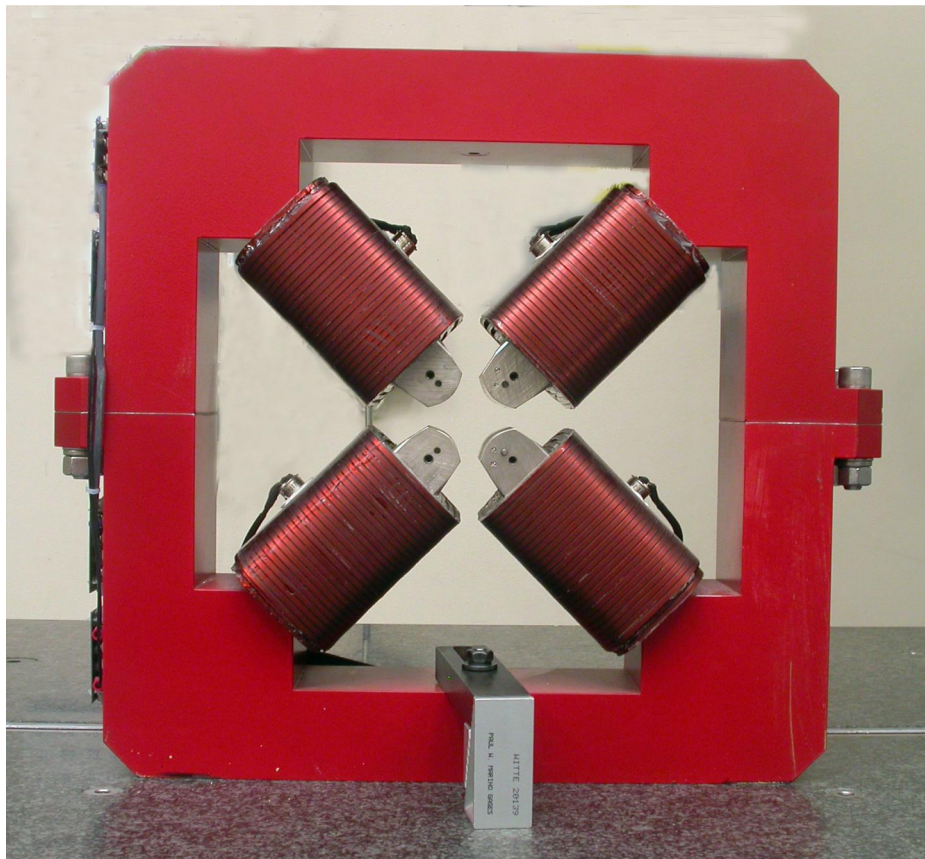


FACET II Magnet Fiducialization Report

1.26Q3.5 Quadrupole Magnet



Inspector : K. Caban

Engineer : M. JOHANSSON

Drawing No. : SA-380-309-12 R1

Barcode No.: 1.26Q3.5-179607-041

Mfg. S/N : 041

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 .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.

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.

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Tooling Ball Locations



Tooling Ball	X Coord.	Y Coord.	Z Coord.
TB 1	6.5016	8.8798	-1.2523
TB 2	6.5011	8.8812	1.2449
TB 3	-6.4980	8.8825	1.2480
TB 4	-6.4994	8.8798	-1.2489
TB A	6.5017	8.1921	-1.2522
TB B	6.5023	8.1929	1.2473
TB C	-6.4985	8.1923	1.2509
TB D	-6.4989	8.1921	-1.2486

Tooling Ball Locations (1-4) are 1 inch above unpainted surface pads
 Tooling Ball Locations (A-D) are 5/16 inch above unpainted surface pads

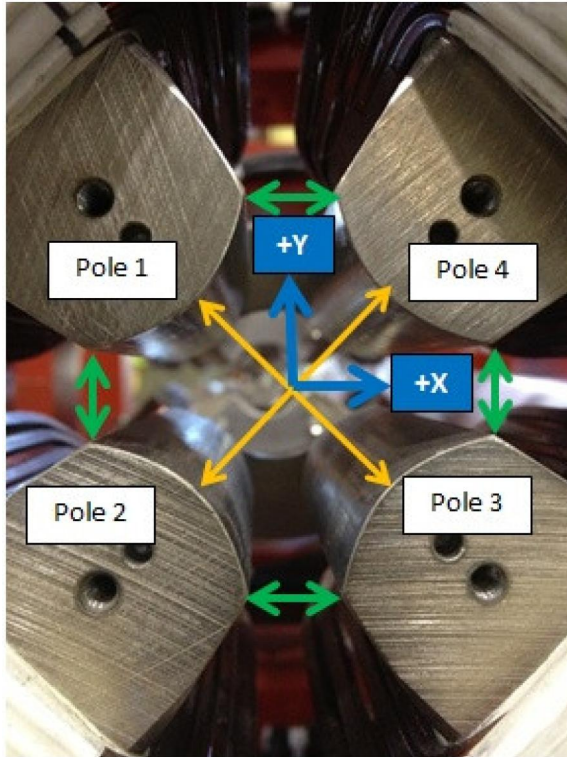
Dimensions in Inch

Barcode # : 1.26Q3.5-179607-041

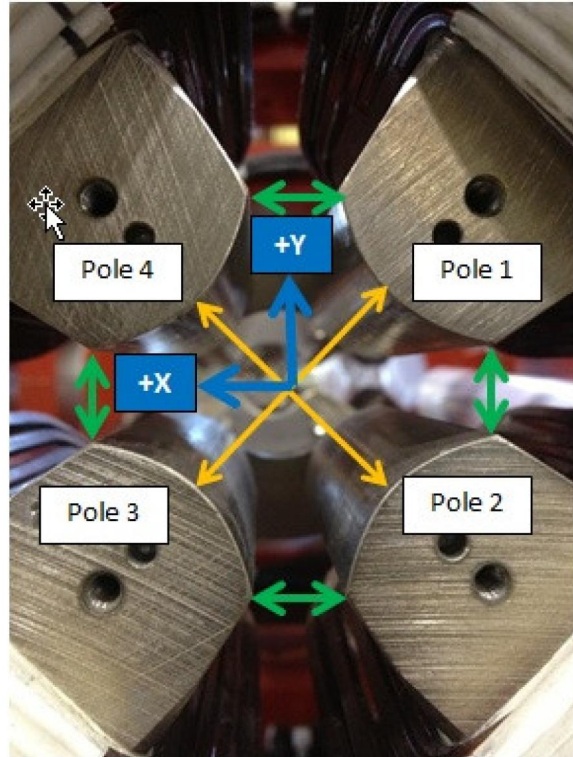
Mfg. S/N : 041

Pole Tip Gap Measurements

Pole Tips View from Downstream



Pole Tips View from Upstream



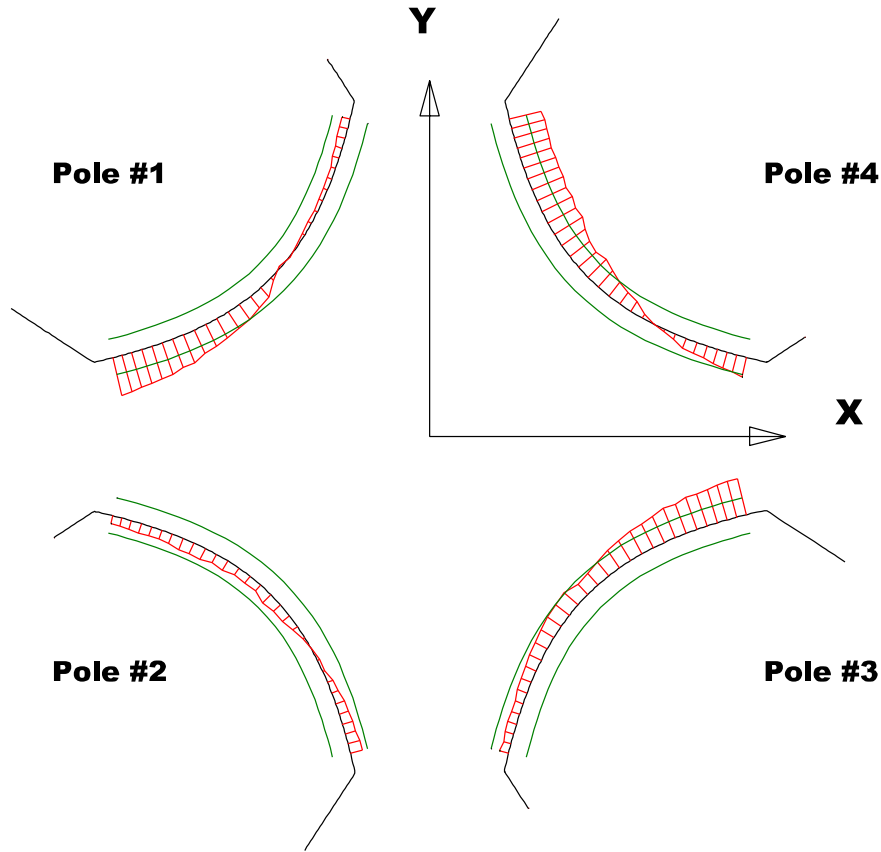
	Nominal Distance	Downstream Pole Ends	Upstream Pole Ends
Pole Tip Distance 1-3	1.260	1.25893	1.25928
Pole Tip Distance 2-4	1.260	1.26207	1.26202
Gap 1-2	.422	0.42068	0.42316
Gap 2-3	.422	0.42049	0.41742
Gap 3-4	.422	0.41694	0.42045
Gap 4-1	.422	0.42502	0.42141

Dimensions in Inch

Barcode # : 1.26Q3.5-179607-041

Mfg. S/N : 041

Composite Best-fit of Pole Tips, Downstream



Black = Nominal Pole Tip

Red = Pole Tip Deviations

Green = +/- .001 Tolerance

Dimensions in Inch

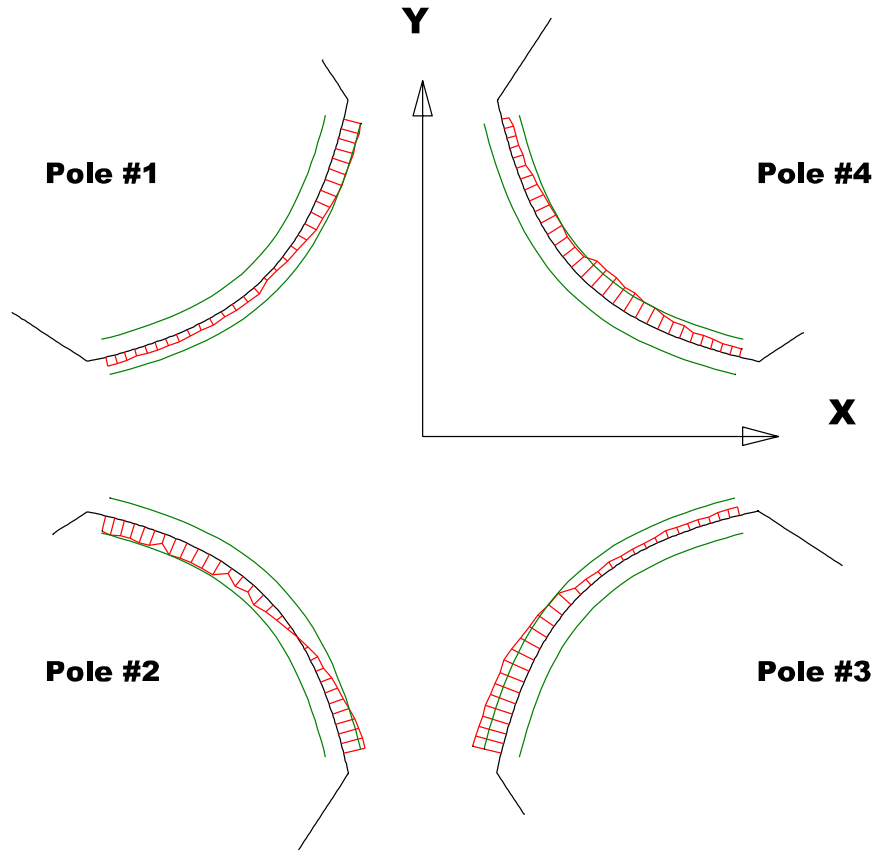
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	-0.00049	-0.00067	0.00042	-0.00191
Max. Dev.	0.00218	0.0007	0.0021	0.00113

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Mfg. S/N : 041

Composite Best-fit of Pole Tips, Upstream



Black = Nominal Pole Tip

Red = Pole Tip Deviations

Green = +/- .001 Tolerance

Dimensions in Inch

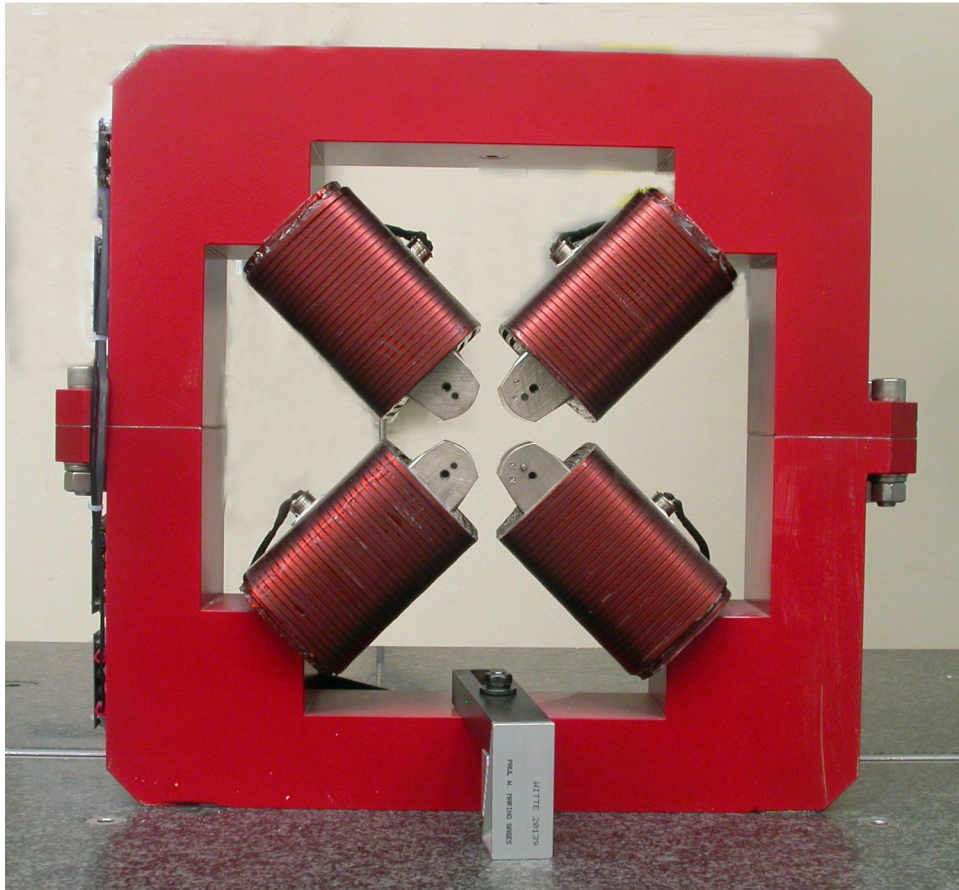
Pole Tip Deviations

Pole Tip	#1	#2	#3	#4
Min. Dev.	0.00022	-0.00099	0.00029	-0.00131
Max. Dev.	0.00107	0.00125	0.00166	-0.00041

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Angle of the Composite Pole Tip Best-Fit In Relation to Tooling Ball Plane



Angle in Decimal Degrees ° = -0.00263

Angle in Milliradians = -0.04592

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