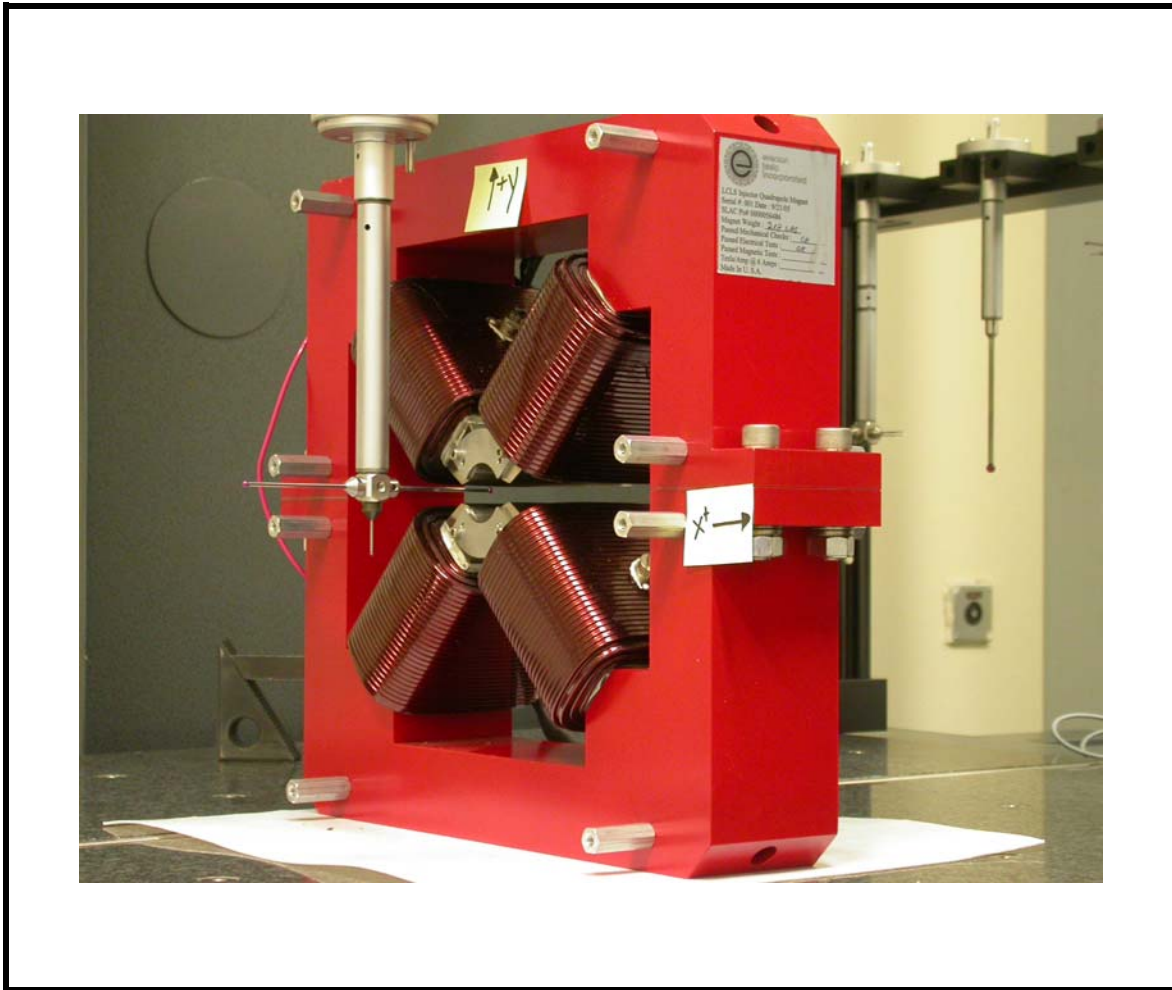


# LCLS Injector Quadrupole Magnet FIDUCIALIZATION REPORT



Inspector:	Keith Caban
Responsible Engineer:	Roger Carr
Date:	Monday, October 03, 2005
Work Order/Charge No.:	N/A
Serial Number	000408

## Part Set-up – Coordinate System Set-up

### Planar Alignment

- Mid-Plane of the magnet

### Spatial Alignment

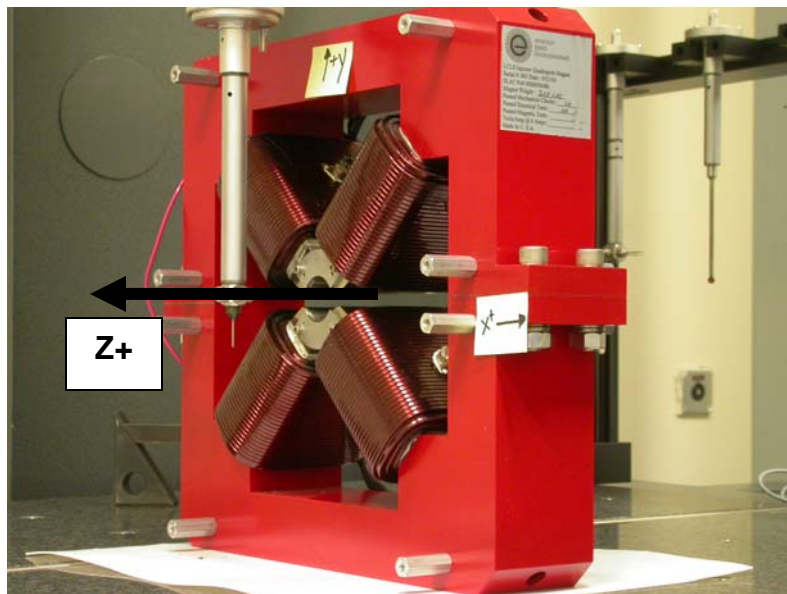
- A line on the top part of the magnet
  - +X goes towards (Magnet Info Label)

### “Z” Zero

- Mid-Plane of the magnet

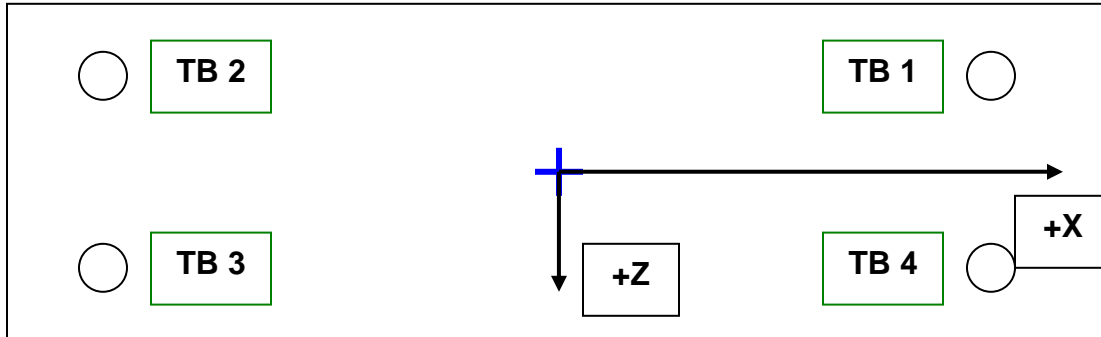
### “X” & “Y” Zero

- On both ends
  - Tangent point of each radii (4 on each end, 8 total).
    - Create a line between diagonal tangent points creates 2 lines.
      - Intersect the lines.
        - Creates a point on each end.
- Create a line of these 2 end points
  - This is the “X” & “Y” Zero, and Beamline or” Z” Axis.



## Tooling Ball Measurements/Locations

Top of magnet; view from "+Y"



Tooling Ball	FORM	DIAMETER	X	Y	Z
TB 1	0.00077	0.49549	6.50043	8.87843	-1.24861
TB 2	0.00045	0.49802	-6.49959	8.87643	-1.24936
TB 3	0.00049	0.49688	-6.50041	8.87714	1.25042
TB 4	0.00066	0.49616	6.50140	8.87805	1.25143

## Additional Requested Measurements

View From +Z

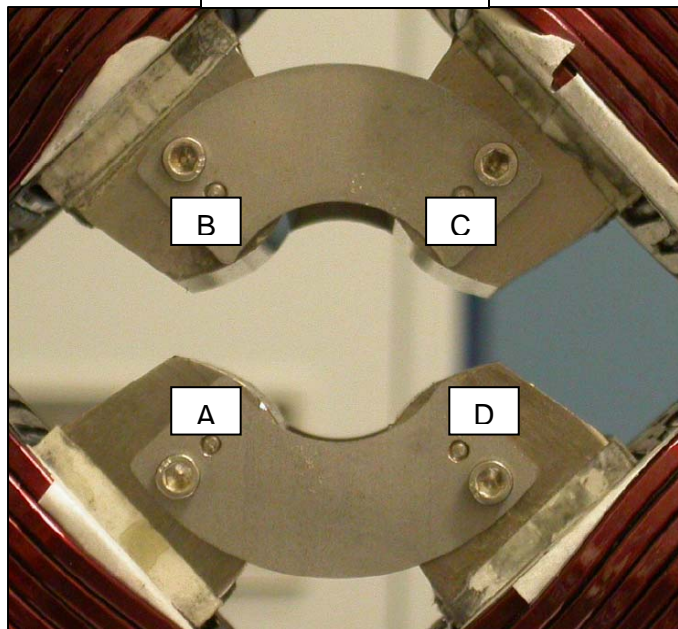
Tangent Point Straightness

- A. 0.00025
- B. 0.00021
- C. 0.00032
- D. 0.00049

Parallelism to Beamline

- A. 0.00114
- B. 0.00064
- C. 0.00129
- D. 0.00049

Distance of opposite Tangent Axis



A-C = 1.26016 (0.63009, 0.63007)

B-D = 1.25877 (0.62945, 0.62932)

### Profile of Pole Comparisons

