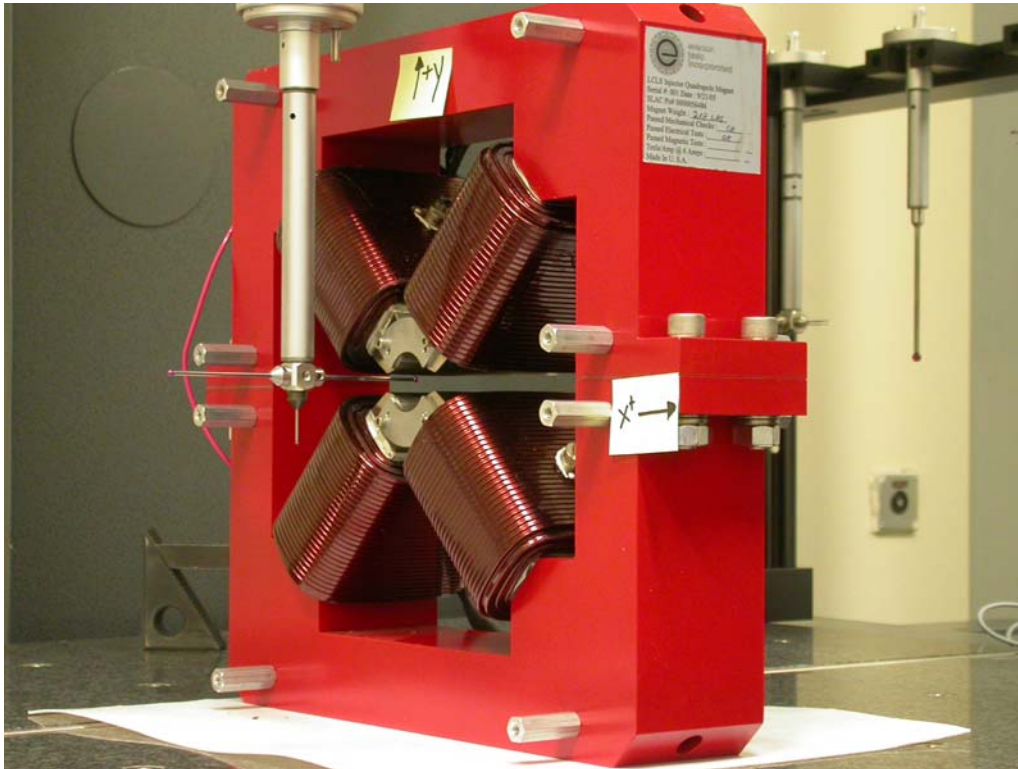


# LCLS Injector Quadrupole Magnet FIDUCIALIZATION REPORT



Inspector:	Keith Caban
Responsible Engineer:	Roger Carr
Date:	Friday, June 02, 2006
Work Order/Charge No.:	92-4215-8
Serial Number	000388

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

### Planar Alignment

- Mid-Plane of the magnet

### Spatial Alignment

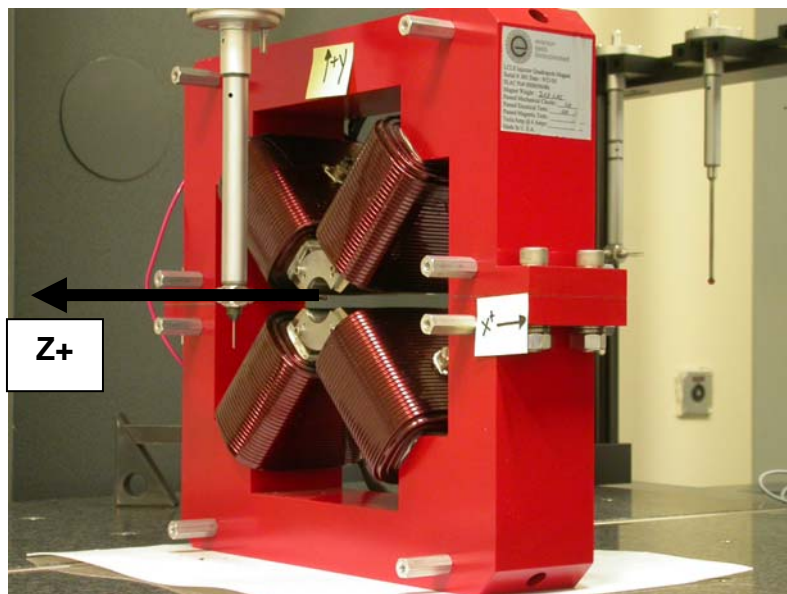
- A line on the top part of the magnet
  - +X goes towards (Magnet Info Label)

### “Z” Zero

- Mid-Plane of the magnet

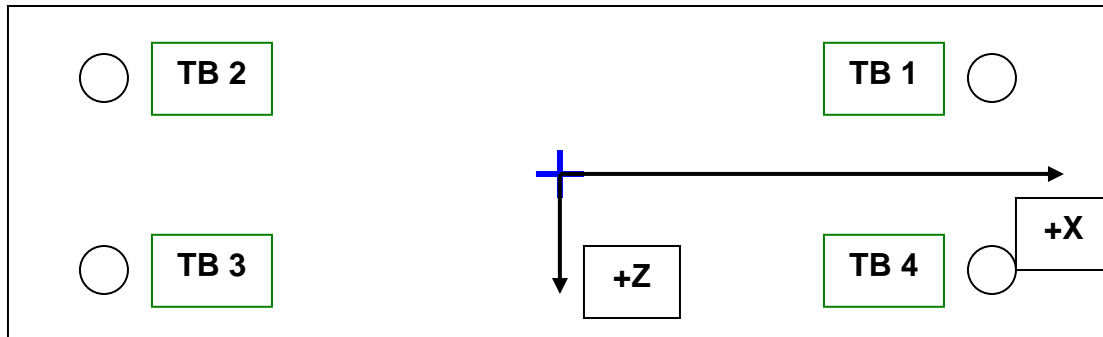
### “X” & “Y” Zero

- 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
<b>TB 1</b>	0.00052	0.49772	6.50031	8.87874	-1.25084
<b>TB 2</b>	0.00042	0.49832	-6.49879	8.87880	-1.25050
<b>TB 3</b>	0.00007	0.49995	-6.49831	8.87873	1.25050
<b>TB 4</b>	0.00019	0.49857	6.49902	8.87904	1.24955

## Additional Requested Measurements

View From +Z

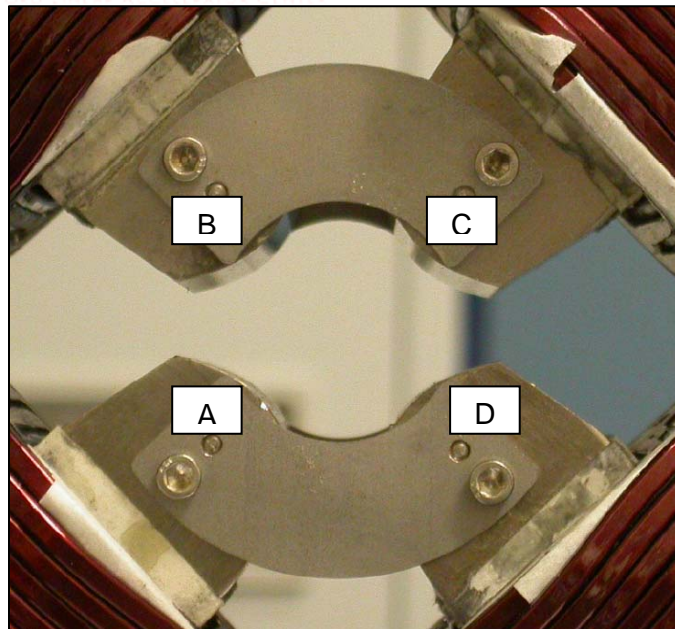
Tangent Point Straightness

- A. 0.00025
- B. 0.00013
- C. 0.00024
- D. 0.00024

Parallelism to Beamline

- A. 0.00018
- B. 0.00041
- C. 0.00026
- D. 0.00022

Distance of opposite Tangent Axis



**A-C = 1.25844 (0.62921, 0.62923)**

**B-D = 1.25917 (0.62971, 0.62945)**