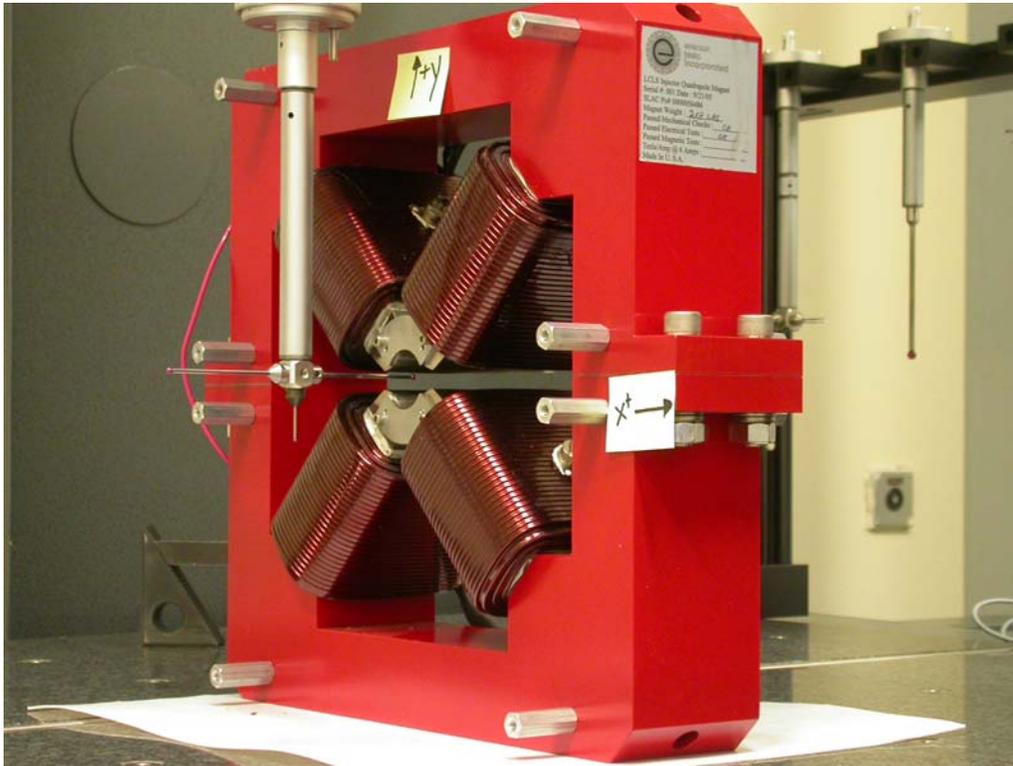# LCLS Injector Quadrupole Magnet
FIDUCIALIZATION REPORT

Inspector: Keith Caban
Responsible Engineer: Roger Carr
Date: Tuesday, July 11, 2006
Work Order/Charge No.:   92-4215-8
Serial Number   000424

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)
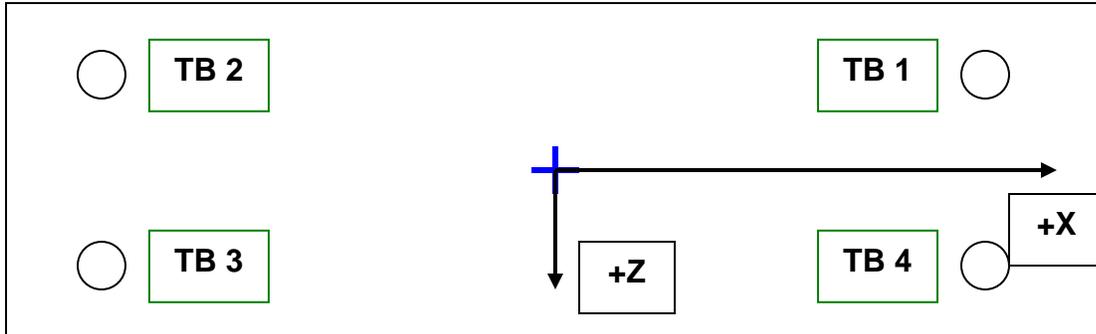

"Z" Zero

- 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.
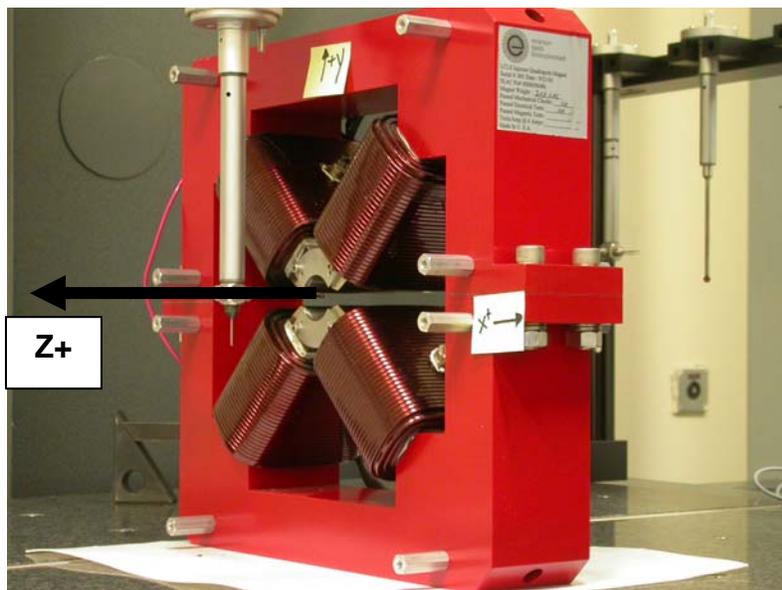
Tooling Ball Measurements/Locations

Top of magnet; view from "+Y"

Tooling Ball	FORM	DIAMETER	X	Y	Z
TB 1	0.00128	0.49660	6.50034	8.87827	-1.24867
TB 2	0.00049	0.49730	-6.49898	8.87731	-1.24881
TB 3	0.00006	0.50001	-6.49937	8.87599	1.24951
TB 4	0.00208	0.49441	6.50261	8.8793	1.25223

Additional Requested Measurements
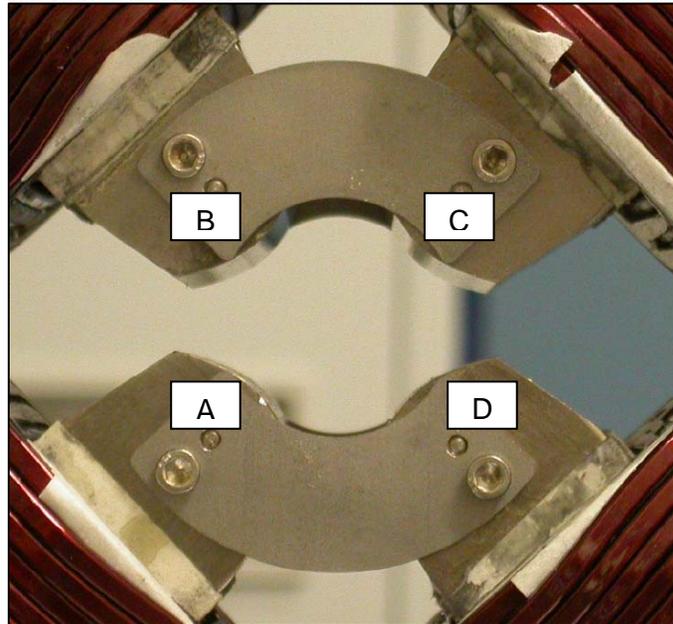
View From +Z

Tangent Point Straightness
- A. 0.00027
- B. 0.00009
- C. 0.00019
- D. 0.00032

Parallelism to Beamline
- A. 0.00020
- B. 0.00010
- C. 0.00029
- D. 0.00030

Distance of opposite Tangent Axis

A-C = 1.25995 (0.62989, 0.63006)
B-D = 1.25910 (0.62957, 0.62953)