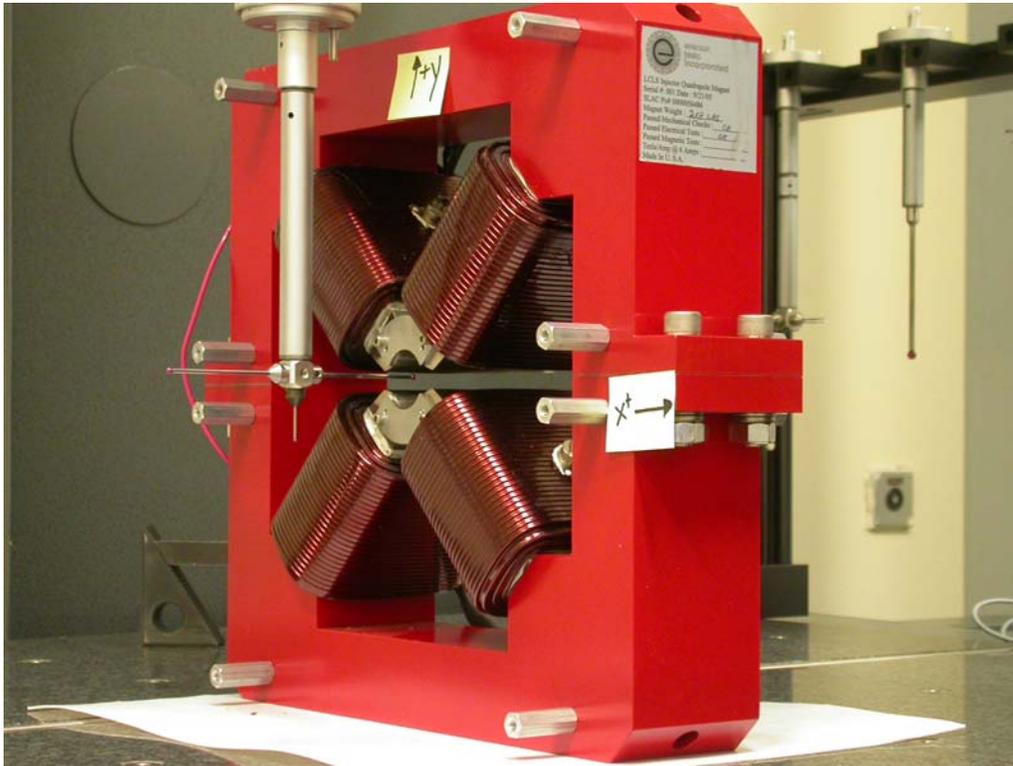# LCLS Injector Quadrupole Magnet
FIDUCIALIZATION REPORT

Inspector: Keith Caban
Responsible Engineer: Roger Carr
Date: Thursday, June 01, 2006
Work Order/Charge No.:   92-4215-8
Serial Number   000392

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)
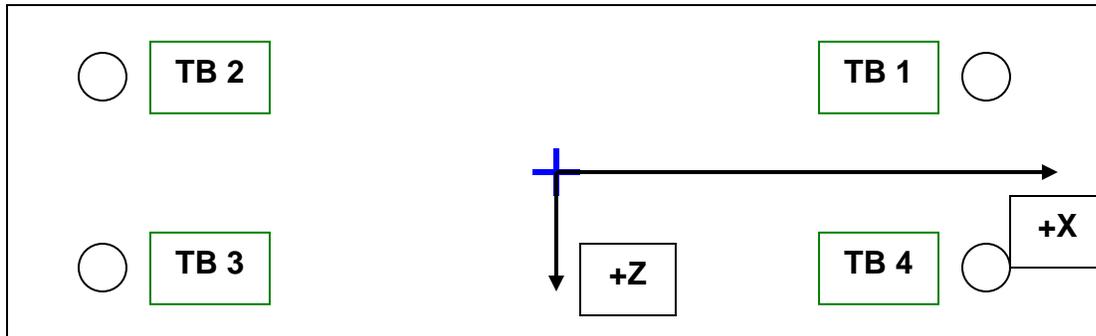
"Z" Zero

- 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.
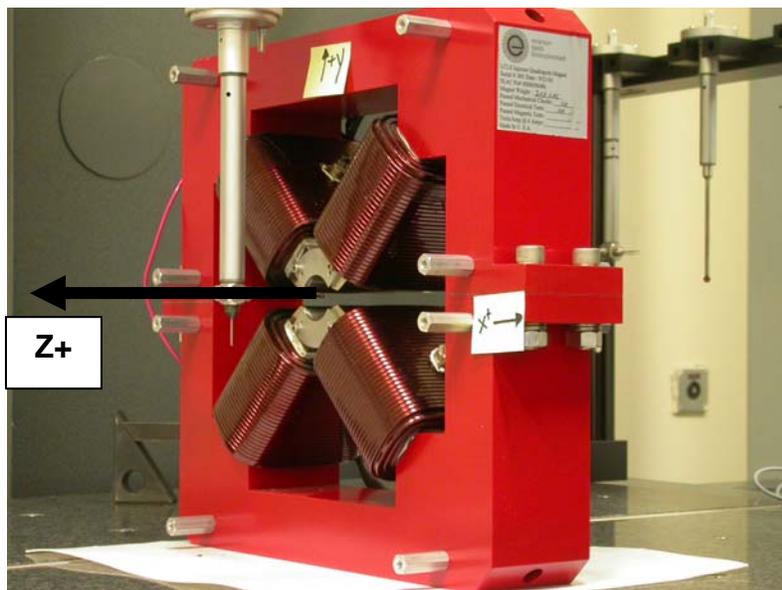
Tooling Ball Measurements/Locations

Top of magnet; view from "+Y"

Tooling Ball	FORM	DIAMETER	X	Y	Z
TB 1	0.00059	0.49678	6.49881	9.37655	-1.24800
TB 2	0.00138	0.49657	-6.49983	9.37797	-1.24908
TB 3	0.00026	0.49886	-6.49995	9.37722	1.24974
TB 4	0.00071	0.49662	6.49852	9.37716	1.24964

Additional Requested Measurements

View From +Z

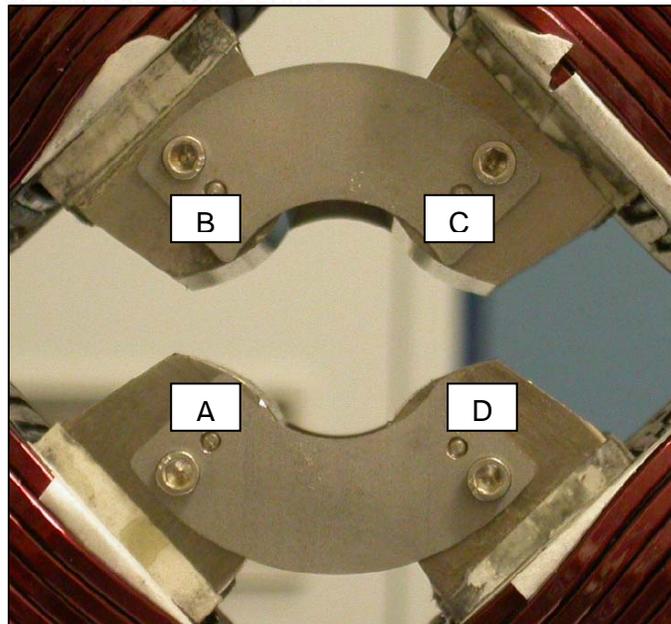Tangent Point Straightness
A. 0.00021
B. 0.00017
C. 0.00011
D. 0.00018

Parallelism to Beamline
A. 0.00019
B. 0.00022
C. 0.00036
D. 0.00023

Distance of opposite Tangent Axis

A-C = 1.25992 (0.62985, 0.63006)
B-D = 1.25899 (0.62956, 0.62943)