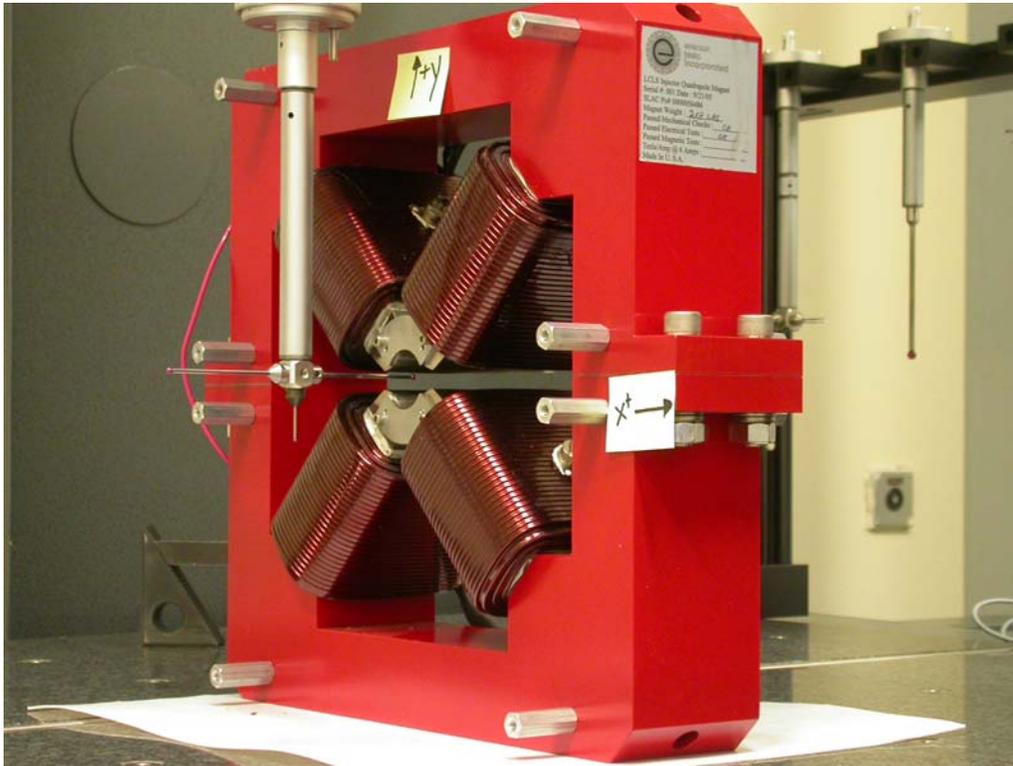# LCLS Injector Quadrupole Magnet
FIDUCIALIZATION REPORT

Inspector: Keith Caban
Responsible Engineer: Roger Carr
Date: Wednesday, May 31, 2006
Work Order/Charge No.:   92-4215-8
Serial Number   000380

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)
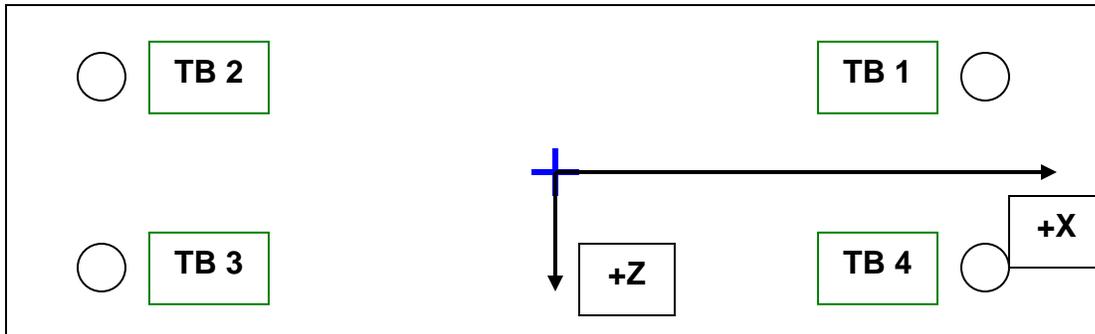

"Z" Zero

- 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.
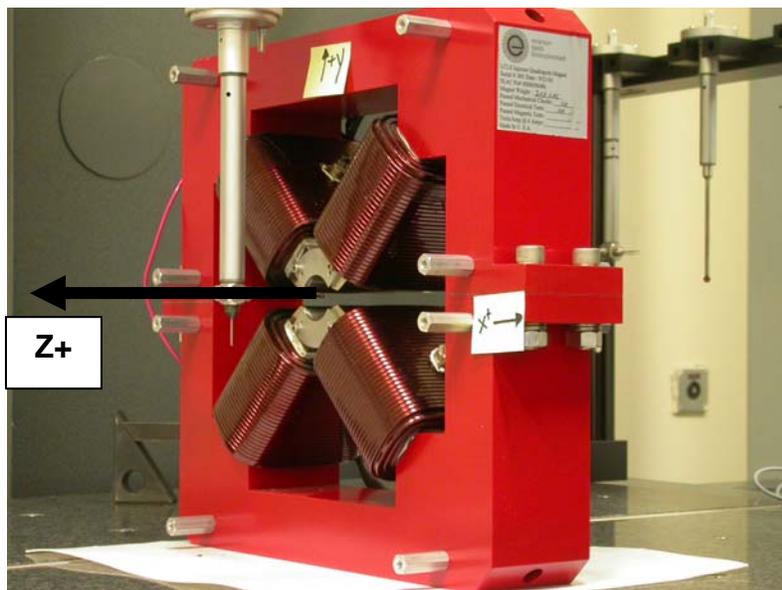
Tooling Ball Measurements/Locations

Top of magnet; view from "+Y"

Tooling Ball	FORM	DIAMETER	X	Y	Z
TB 1	0.00005	0.49965	6.50195	8.87652	-1.25002
TB 2	0.00031	0.49855	-6.49892	8.87650	-1.24980
TB 3	0.00021	0.49874	-6.49823	8.87659	1.24932
TB 4	0.00020	0.49842	6.50062	8.87735	1.25021

Additional Requested Measurements
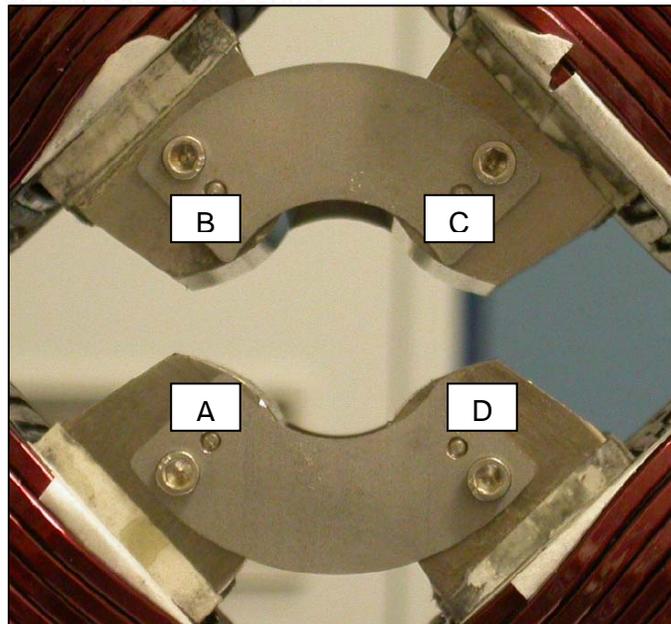
View From +Z

Tangent Point Straightness
- A. 0.00024
- B. 0.00023
- C. 0.00032
- D. 0.00027

Parallelism to Beamline
- A. 0.00020
- B. 0.00048
- C. 0.00066
- D. 0.00058

Distance of opposite Tangent Axis

A-C = 1.26014 (0.63004, 0.63010)
B-D = 1.25932 (0.62969, 0.62963)