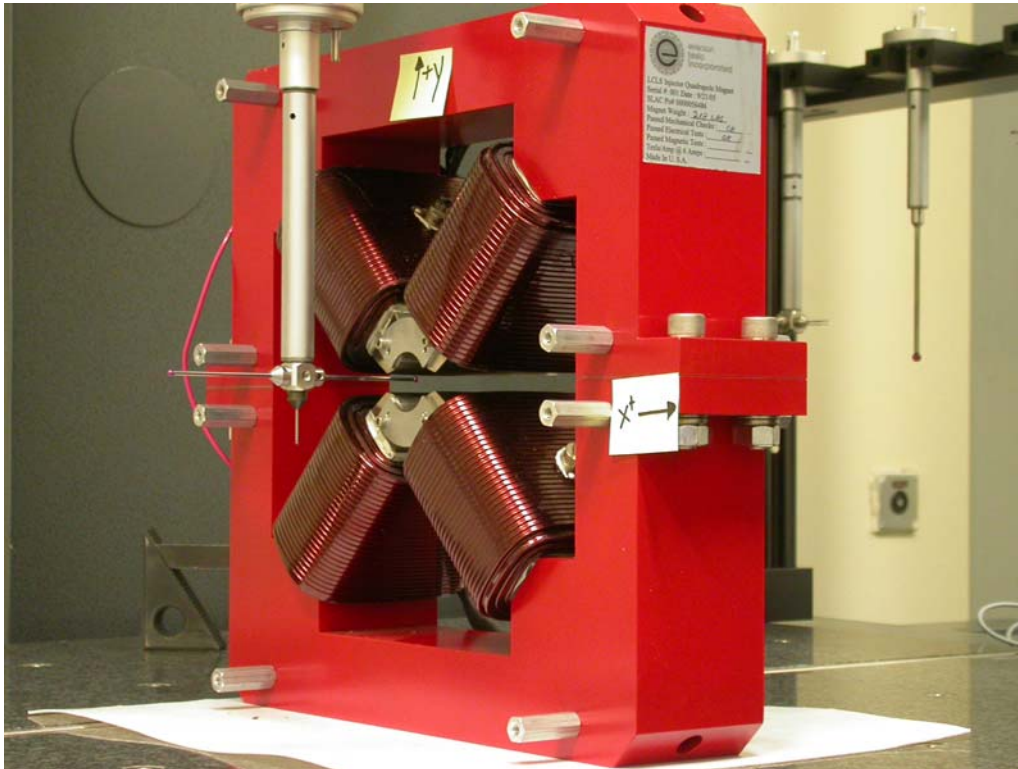


LCLS Injector Quadrupole Magnet FIDUCIALIZATION REPORT



| | |
|------------------------|------------------------|
| Inspector: | Keith Caban |
| Responsible Engineer: | Roger Carr |
| Date: | Tuesday, July 11, 2006 |
| Work Order/Charge No.: | 92-4215-8 |
| Serial Number | 000428 |

Part Set-up – Coordinate System Set-up

Planar Alignment

- Mid-Plane of the magnet

Spatial Alignment

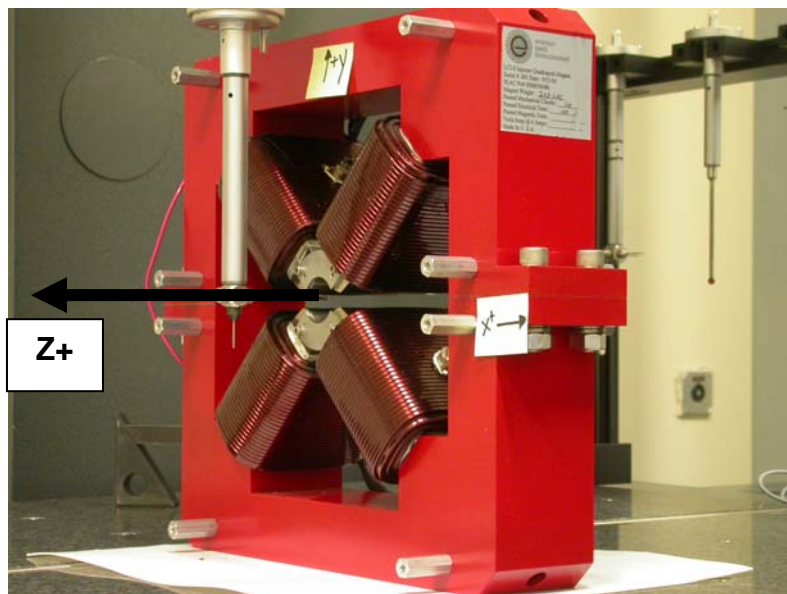
- A line on the top part of the magnet
 - +X goes towards (Magnet Info Label)

“Z” Zero

- Mid-Plane of the magnet

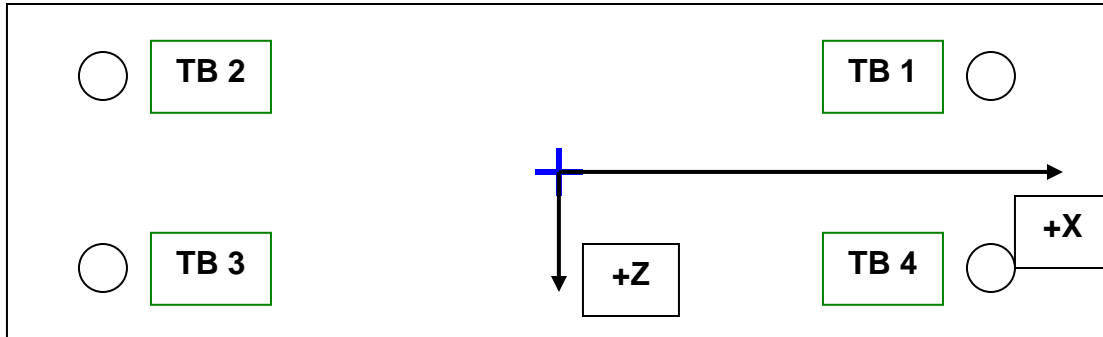
“X” & “Y” Zero

- 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 | 0.00156 | 0.49182 | 6.50166 | 8.88043 | -1.24926 |
| TB 2 | 0.00074 | 0.49528 | -6.49888 | 8.87853 | -1.24818 |
| TB 3 | 0.00049 | 0.49705 | -6.49947 | 8.87789 | 1.25166 |
| TB 4 | 0.00070 | 0.49624 | 6.49945 | 8.87898 | 1.25094 |

Additional Requested Measurements

View From +Z

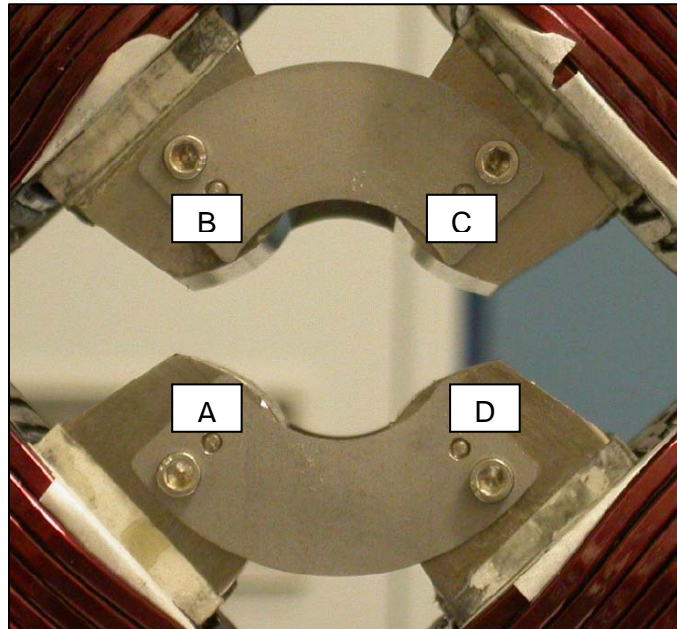
Tangent Point Straightness

- A. 0.00023
- B. 0.00014
- C. 0.00042
- D. 0.00019

Parallelism to Beamline

- A. 0.00032
- B. 0.00024
- C. 0.00034
- D. 0.00026

Distance of opposite Tangent Axis



A-C = 1.26017 (0.63011, 0.63006)

B-D = 1.25899 (0.62950, 0.62949)