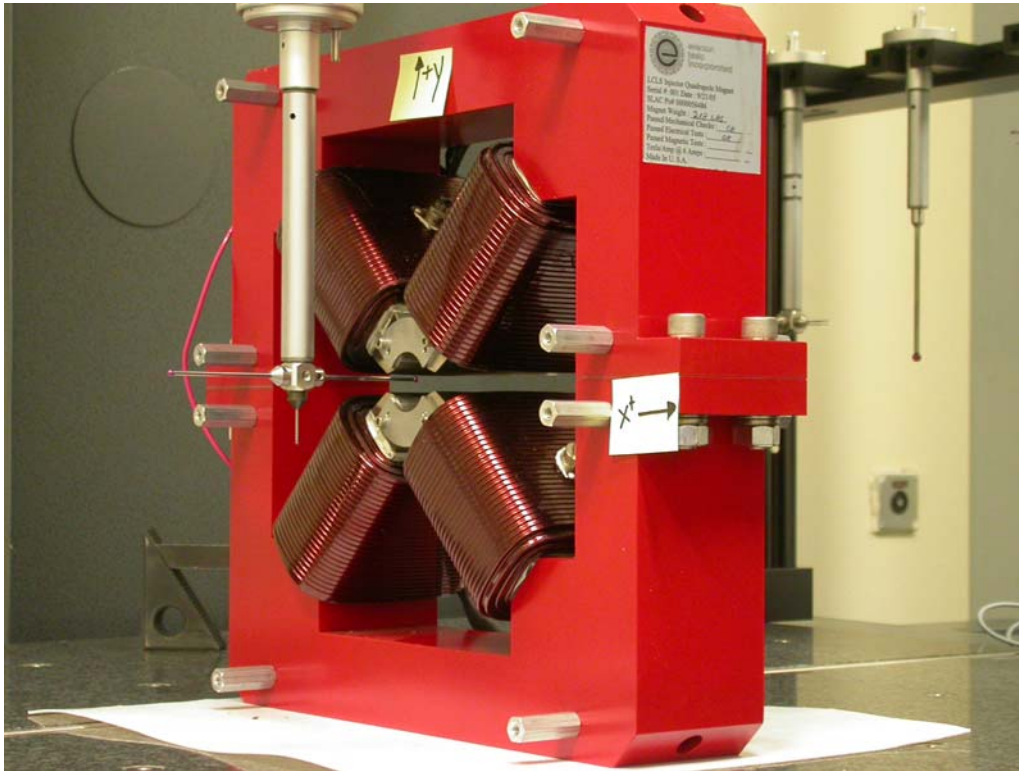


# LCLS Injector Quadrupole Magnet FIDUCIALIZATION REPORT



|                        |                           |
|------------------------|---------------------------|
| Inspector:             | Keith Caban               |
| Responsible Engineer:  | Roger Carr                |
| Date:                  | Thursday, August 17, 2006 |
| Work Order/Charge No.: | 92-4215-8                 |
| Serial Number          | 000383                    |

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

### Planar Alignment

- Mid-Plane of the magnet

### Spatial Alignment

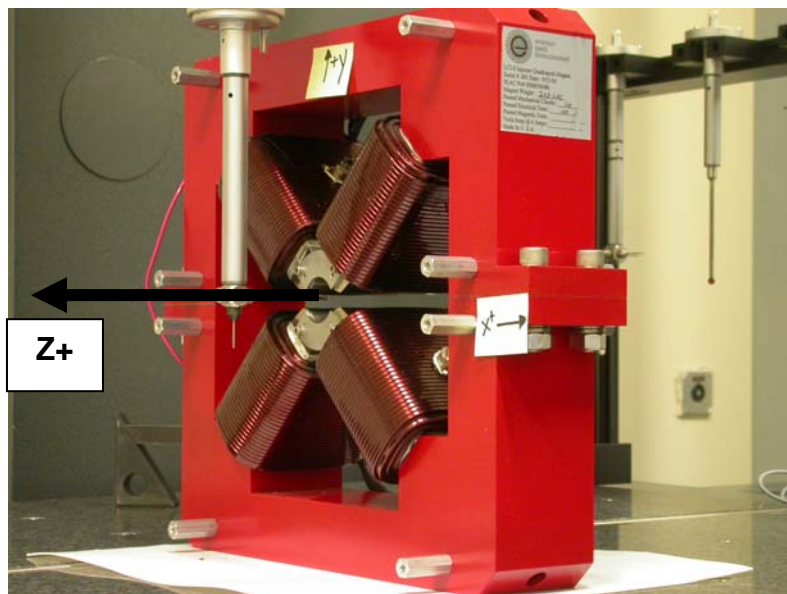
- A line on the top part of the magnet
  - +X goes towards (Magnet Info Label)

### “Z” Zero

- Mid-Plane of the magnet

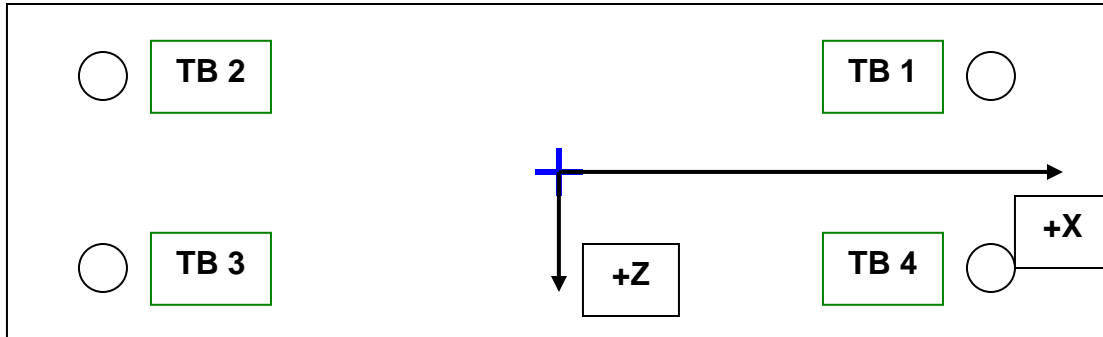
### “X” & “Y” Zero

- 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         | 0.00096 | 0.49535  | 6.50065  | 8.87767 | -1.25051 |
| TB 2         | 0.00049 | 0.49793  | -6.49896 | 8.87678 | -1.24943 |
| TB 3         | 0.00032 | 0.49870  | -6.49858 | 8.88167 | 1.25141  |
| TB 4         | 0.00062 | 0.49804  | 6.50165  | 8.87745 | 1.24871  |

## Additional Requested Measurements

View From +Z

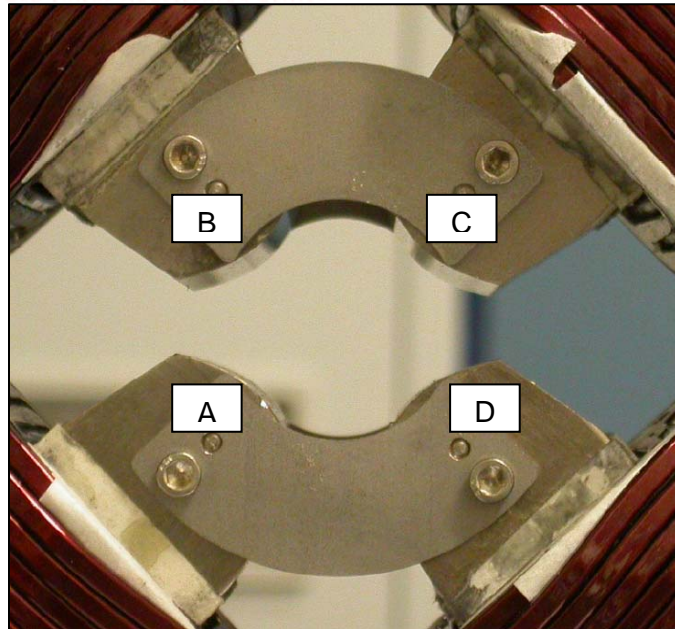
Tangent Point Straightness

- A. 0.00038
- B. 0.00027
- C. 0.00053
- D. 0.00037

Parallelism to Beamline

- A. 0.00045
- B. 0.00066
- C. 0.00057
- D. 0.00046

Distance of opposite Tangent Axis



A-C = 1.26003 (0.62994, 0.63009)

B-D = 1.25919 (0.62954, 0.62964)