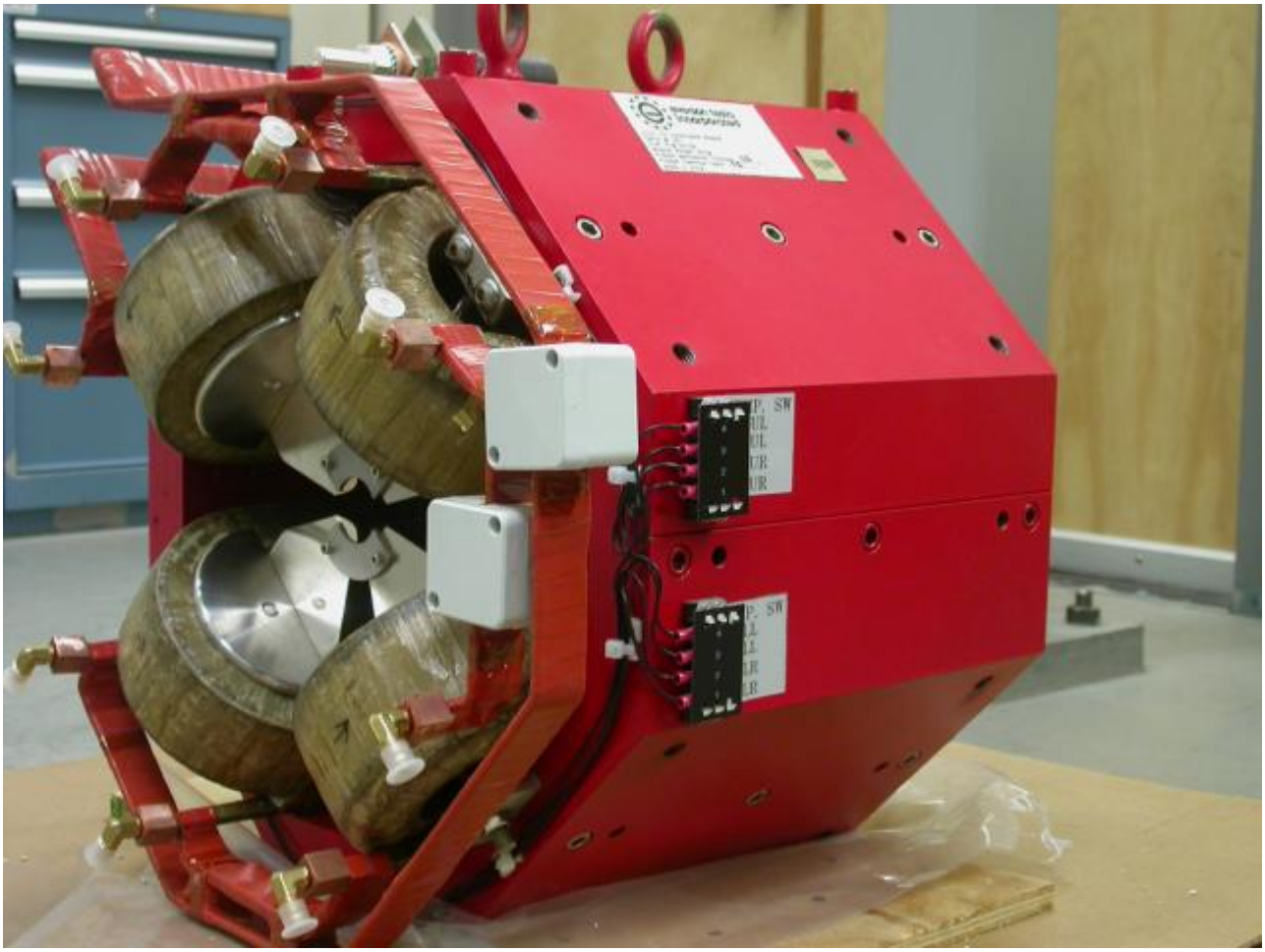
Linac Coherent Light Source
Stanford Linear Accelerator Center
Stanford Synchrotron Radiation Laboratory

LCLS 'Q150kG' LTU QUADRUPOLE MAGNET FIDUCIALIZATION REPORT



Inspector:	Keith Caban
Responsible Engineer:	Carl Rago
Date:	Monday, October 15, 2007
Work Order/Charge No.:	9242609
Serial Number:	SLAC – 002005 / SN 003
URL of Fiducial Report:	\\Web002\www-group\met\Quality\FIDUCIAL REPORTS\LCLS LTU Q150kG QUADS\002005.pdf

Part Set-up – Coordinate System Set-up

Spatial Alignment

- Geometric axis of the poles of the magnet.

Planar Alignment

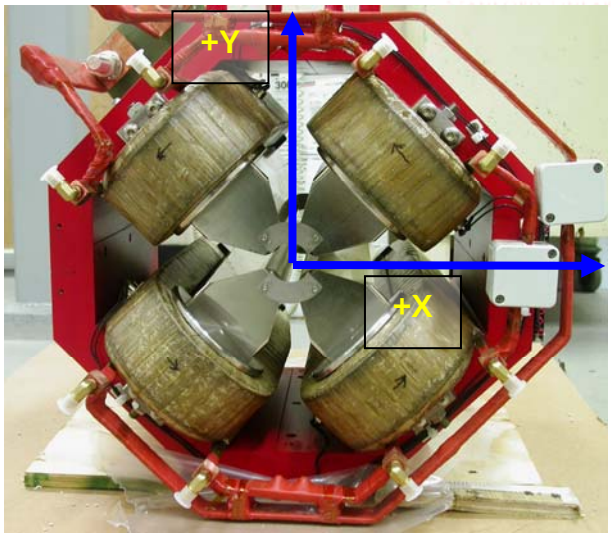
- Plane on top of magnet where tooling ball sockets are welded to.

“Z” Zero

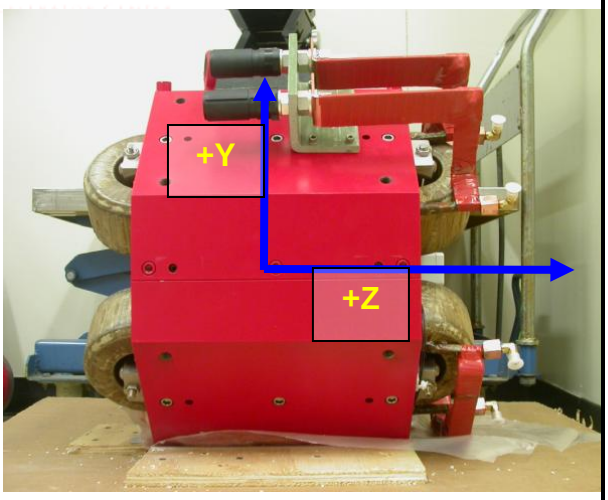
- Mid-plane of the magnet (middle of upstream and downstream ends).

“X” & “Y” Zero

- Geometric axis of the poles of the magnet.

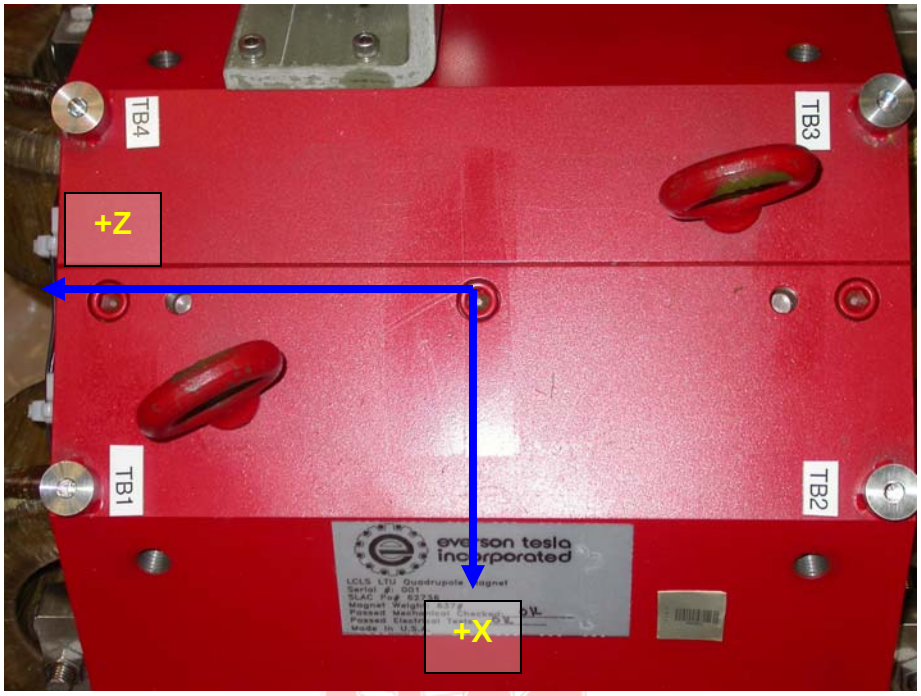


Front View



Side View

Tooling Ball Measurements/Locations



Tooling Balls Measured with ½" Tooling Ball Socket

Tooling Ball	FORM	Sph. Dia.	X	Y	Z
TB 1	0.00015	0.49921	2.67108	10.20995	5.61026
TB 2	0.00034	0.49731	2.66666	10.21056	-5.60586
TB 3	0.00017	0.49886	-2.64816	10.21056	-5.60586
TB 4	0.00005	0.49983	-2.64802	10.21108	5.61057

Tooling Ball Adapter Cylinder Projected 1" Offset to the Tooling Ball Adapter Plane

Tooling Ball	Cyl. Dia.	X	Y	Z
Proj. TB 1	0.25007	2.66994	10.20920	5.60989
Proj. TB 2	0.25019	2.66557	10.20855	-5.60745
Proj. TB 3	0.25002	-2.64683	10.21026	-5.60878
Proj. TB 4	0.25003	-2.64759	10.21007	5.60952

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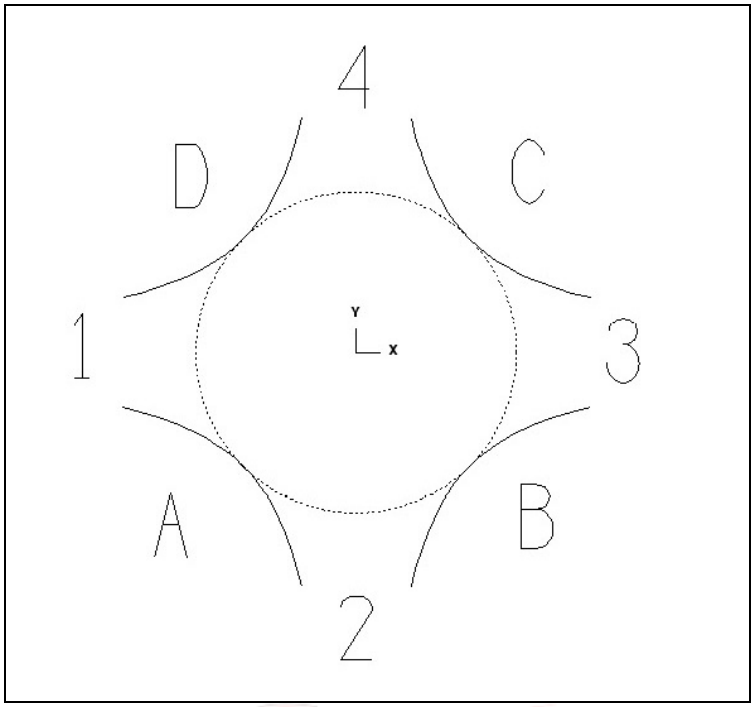
Pole Data
*Data looking from Downstream End



Side	Pole Diameter	Pole Dist A-C	Pole Dist B-D	Gap 1	Gap 2	Gap 3	Gap 4
Downstream End (+Z)	1.25806	1.25894	1.25956	0.43868	0.44004	0.43129	0.43457
Upstream End (-Z)	1.25867	1.25866	1.25901	0.43516	0.43393	0.43500	0.43441