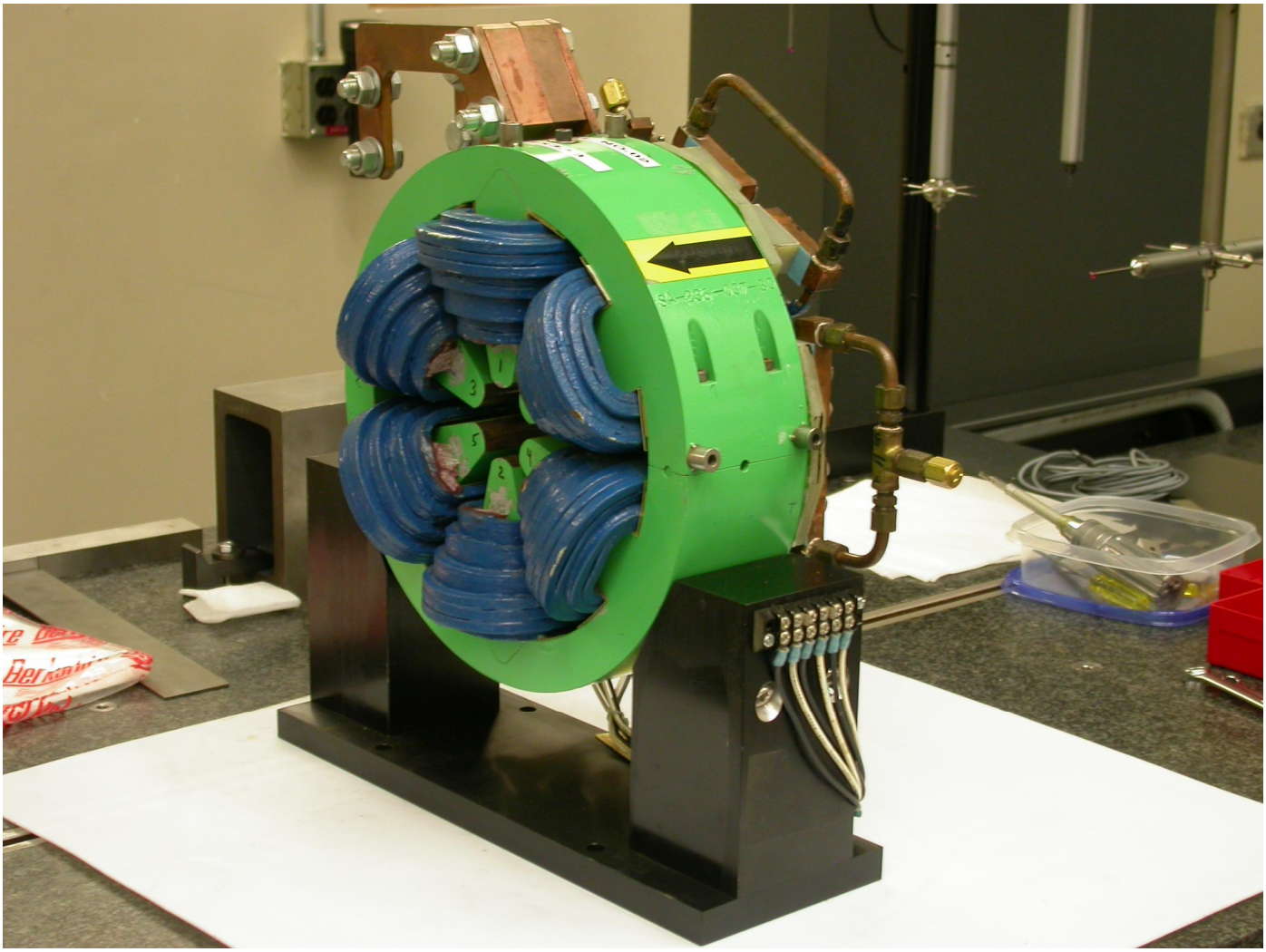
AFT2 REFURBISHED SEXTUPOLE MAGNET FIDUCIALIZATION REPORT



Inspector:	Keith Caban
Responsible Engineer:	Cherrill Spencer
Date:	Wednesday, August 20, 2008
Work Order/Charge No.:	1111143
Serial Number:	03
URL of Fiducial Report:	http://www-group.slac.stanford.edu/met/Quality/FIDUCIAL REPORTS/CHERRILL SPENCER/AFT2-SEXTUPOLE-03.PDF

Part Set-up – Coordinate System Set-up

Spatial Alignment

- Geometric axis of the poles of the magnet using 6 scans of each sextupole pole tip on each side (Terminal and Non Terminal sides) creating 2 circles on the pole tips. One on each side where Positive Z is on the Terminal Side of the Magnet.

Planar Alignment

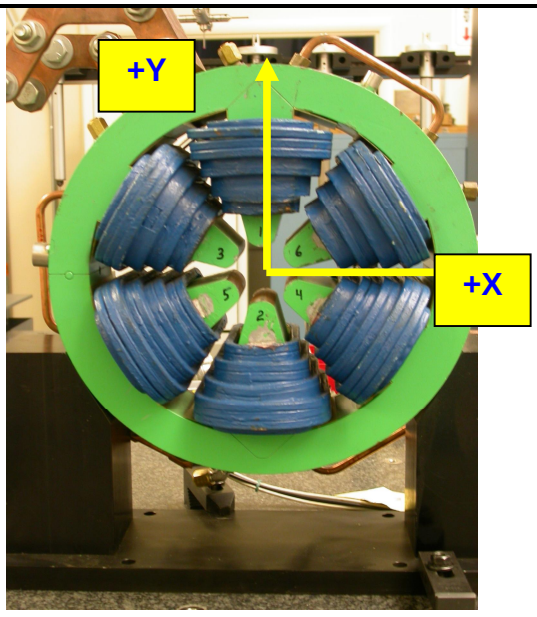
- Radial Pole tip #1's center and the geometric center of all poles to create an axis on the Terminal Side of the Magnet.

"Z" Zero

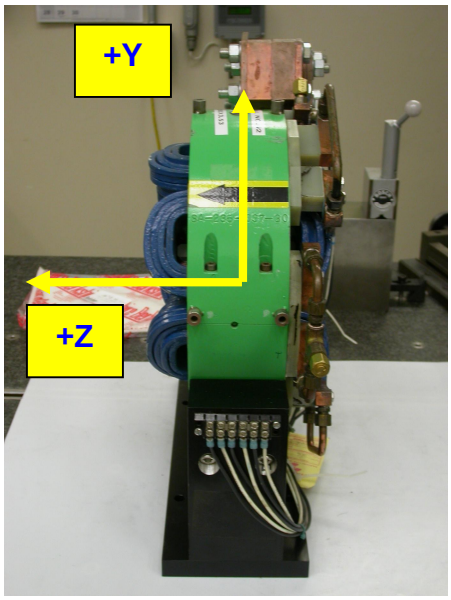
- Mid-plane of the magnet (middle of Terminal and Non Terminal ends).

"X" & "Y" Zero

- Geometric axis of the poles of the magnet.



Front View
(Looking from upstream side +Z)



Side View
(looking from +X side)

Tooling Ball Locations for SN 03

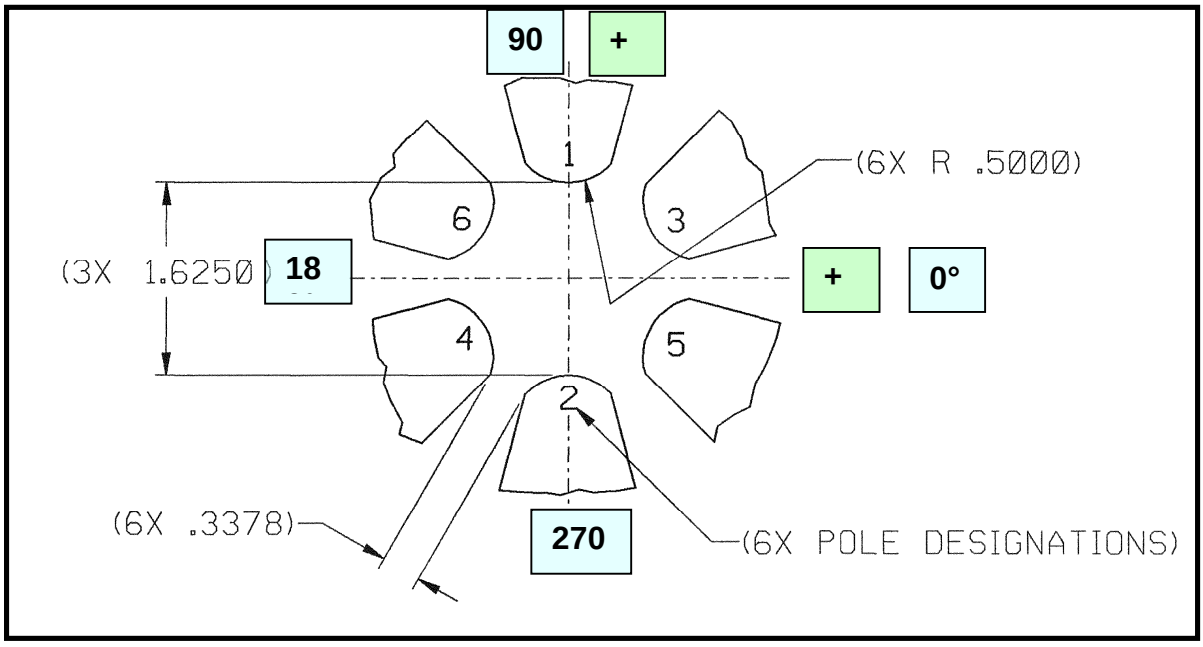
Used Standard ½" Tooling Balls w/ 1" extension

Magnet CSY (stated above)

TB	FORM	DIA	X	Y	Z
1	0.00007	0.49718	-7.67069	0.71867	-1.09528
2	0.00007	0.49666	-7.67316	0.66418	1.38705
3	0.00096	0.49621	3.72002	6.74363	-1.51311
4	0.00025	0.49856	3.72517	6.73786	1.51014
5	0.00049	0.49724	7.66913	0.74464	1.35778
6	0.00075	0.49595	7.67371	0.70824	-1.16086

Pole Tip Additional Data

Clocked to Pole 1

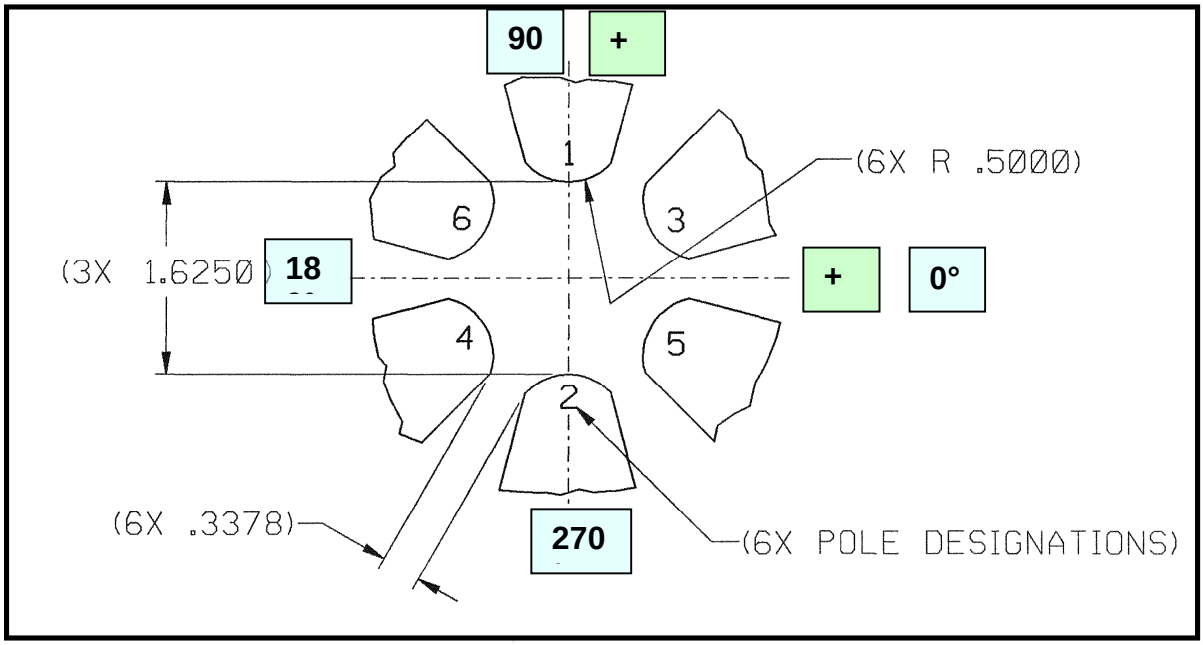


Terminal Side	Radial Distance (0.8125)	Actual Angle of Pole w.r.t CSY	Deviation Angle to Pole (act-nom)	Radians	Micro Radians	Pole Tip Distance (1.625)
Pole Tip 1	0.81184	90.00362	0.00362	0.00006	63	1.62449
Pole Tip 2	0.81096	269.97197	-0.02803	-0.00049	489	
Pole Tip 3	0.81062	29.88278	-0.11722	-0.00205	2046	1.62622
Pole Tip 4	0.81532	209.87938	-0.12062	-0.00211	2105	
Pole Tip 5	0.81601	329.98529	-0.01471	-0.00026	257	1.62662
Pole Tip 6	0.81265	149.96277	-0.03723	-0.00065	650	

Non Terminal Side	Radial Distance (0.8125)	Actual Angle of Pole w.r.t CSY	Deviation Angle to Pole (act-nom)	Radians	Micro Radians	Pole Tip Distance (1.625)
Pole Tip 1	0.81058	90.09540	0.09540	0.00167	1665	1.62178
Pole Tip 2	0.81243	269.82272	-0.17728	-0.00309	3094	
Pole Tip 3	0.81233	29.88402	-0.11598	-0.00202	2024	1.62580
Pole Tip 4	0.81337	209.89425	-0.10575	-0.00185	1846	
Pole Tip 5	0.81429	329.90135	-0.09865	-0.00172	1722	1.62662
Pole Tip 6	0.80936	150.06597	0.06597	0.00115	1151	

Gap Nominal (0.3378)	Terminal Side	Non Terminal Side
3-5	0.33669	0.33641
4-6	0.33674	0.33697

Clocked to Pole 3, rotated -30° nominally



Terminal Side	Radial Distance (0.8125)	Actual Angle of Pole w.r.t CSY	Deviation Angle to Pole (act-nom)	Radians	Micro Radians	Pole Tip Distance (1.625)
Pole Tip 1	0.81184	90.12085	0.12085	0.00211	2109	1.62449
Pole Tip 2	0.81096	270.08920	0.08920	0.00156	1557	
Pole Tip 3	0.81062	30.00000	0.00000	0.00000	0	1.62622
Pole Tip 4	0.81532	209.99661	-0.00339	-0.00006	59	
Pole Tip 5	0.81601	330.10251	0.10251	0.00179	1789	1.62662
Pole Tip 6	0.81265	150.08000	0.08000	0.00140	1396	

Non Terminal Side	Radial Distance (0.8125)	Actual Angle of Pole w.r.t CSY	Deviation Angle to Pole (act-nom)	Radians	Micro Radians	Pole Tip Distance (1.625)
Pole Tip 1	0.81058	90.21262	0.21262	0.00371	3711	1.62178
Pole Tip 2	0.81243	269.93994	-0.06006	-0.00105	1048	
Pole Tip 3	0.81233	30.00124	0.00124	0.00002	22	1.62580

Pole Tip 4	0.81337	210.01147	0.01147	0.00020	200	
Pole Tip 5	0.81429	330.01857	0.01857	0.00032	324	1.62662
Pole Tip 6	0.80936	150.18319	0.18319	0.00320	3197	

Gap Nominal (0.3378)	Terminal Side	Non Terminal Side
3-5	0.33669	0.33641
4-6	0.33674	0.33697