



BLUE DIPOLE - ECHO 7 EXP. (3D4 MAGNET) FIDUCIALIZATION REPORT

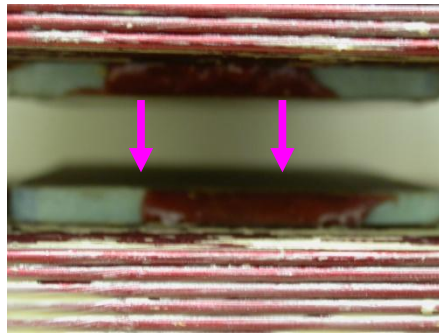


Inspector: Keith Caban
Customer: Dieter Walz
Date: Tuesday, September 08, 2009
Work Order/Charge No.: 09-3008
Serial Number: #2 (Re-fiducialized and to increase gap width)
Stamped Drwg. #: AD-234-309-91
URL of Fiducial Report: [\\Web002\www-group\met\Quality\FIDUCIAL REPORTS\BLUE-DIPOLE FFTB STEERING MAGNET\AD-234-309-91 SN-2\(re-do\).pdf](\\Web002\www-group\met\Quality\FIDUCIAL REPORTS\BLUE-DIPOLE FFTB STEERING MAGNET\AD-234-309-91 SN-2(re-do).pdf)

Part Set-up – Coordinate System Set-up

Planar Alignment

- Plane along bottom pole plane.

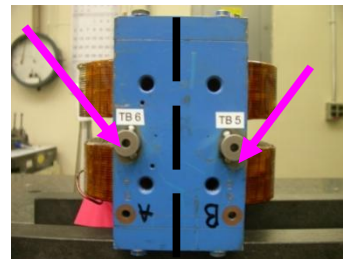


Spatial Alignment

- Plane of +Z face of magnet

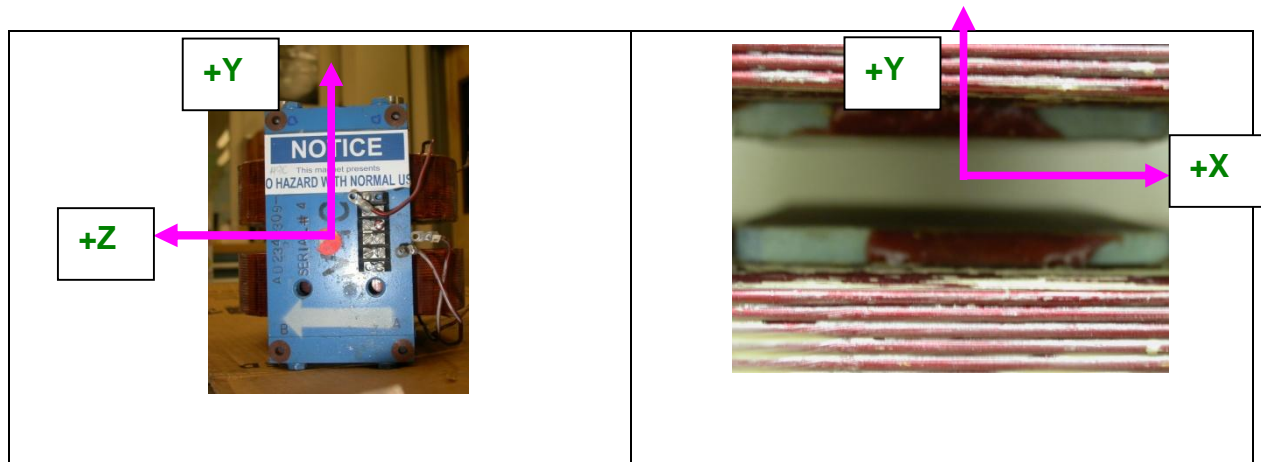
“Z” Zero

- Mid-Plane of the magnet. (see dashed planar alignment above)

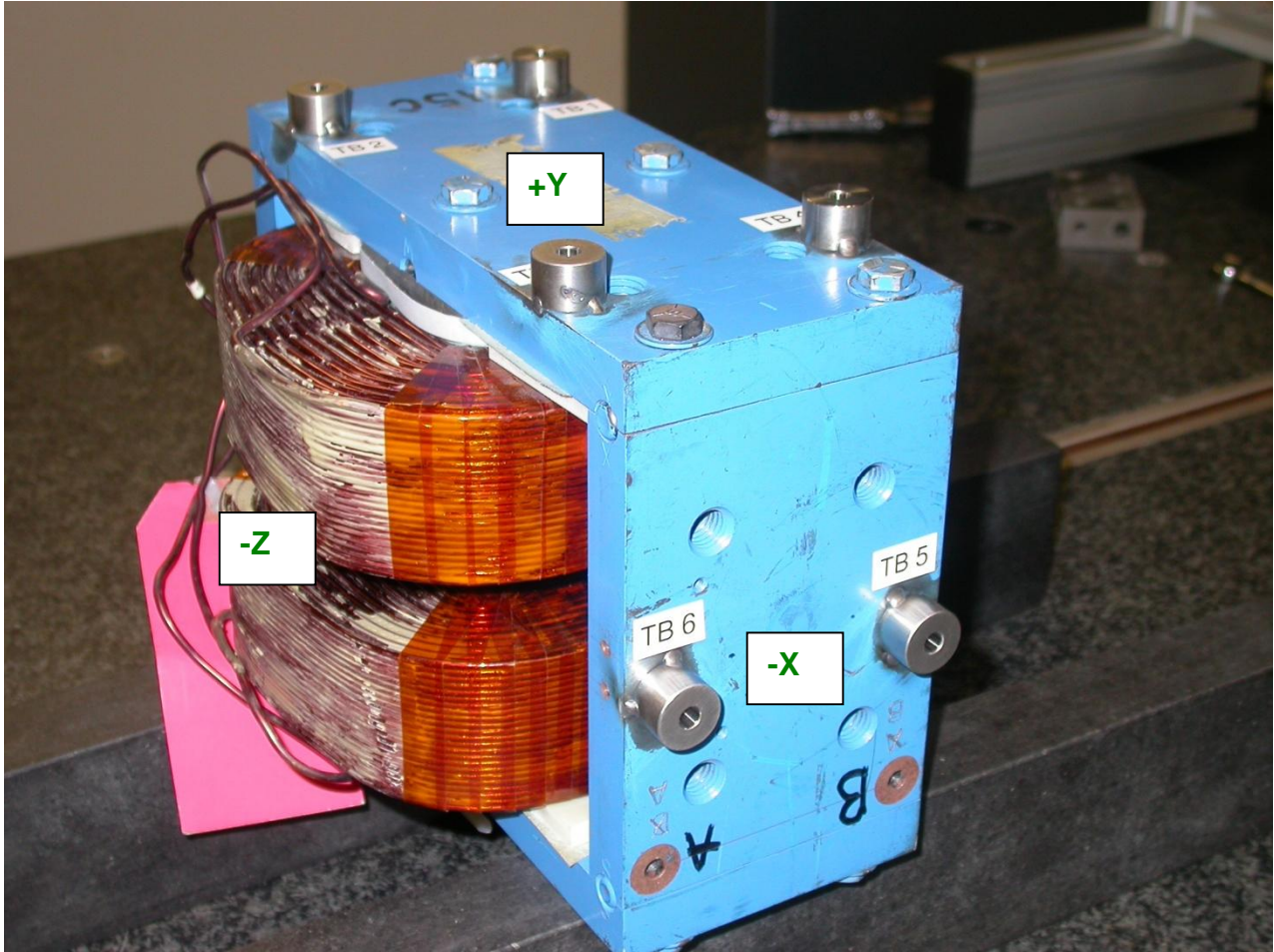


“X” & “Y” Zero

- X zero is created by the symmetry point of the outer ends of the magnet where TB 5 & 6 are and opposite where the terminal strip is located.
- Symmetry plane of the pole planes
 - This creates Y- zero



Tooling Ball Measurements/Locations



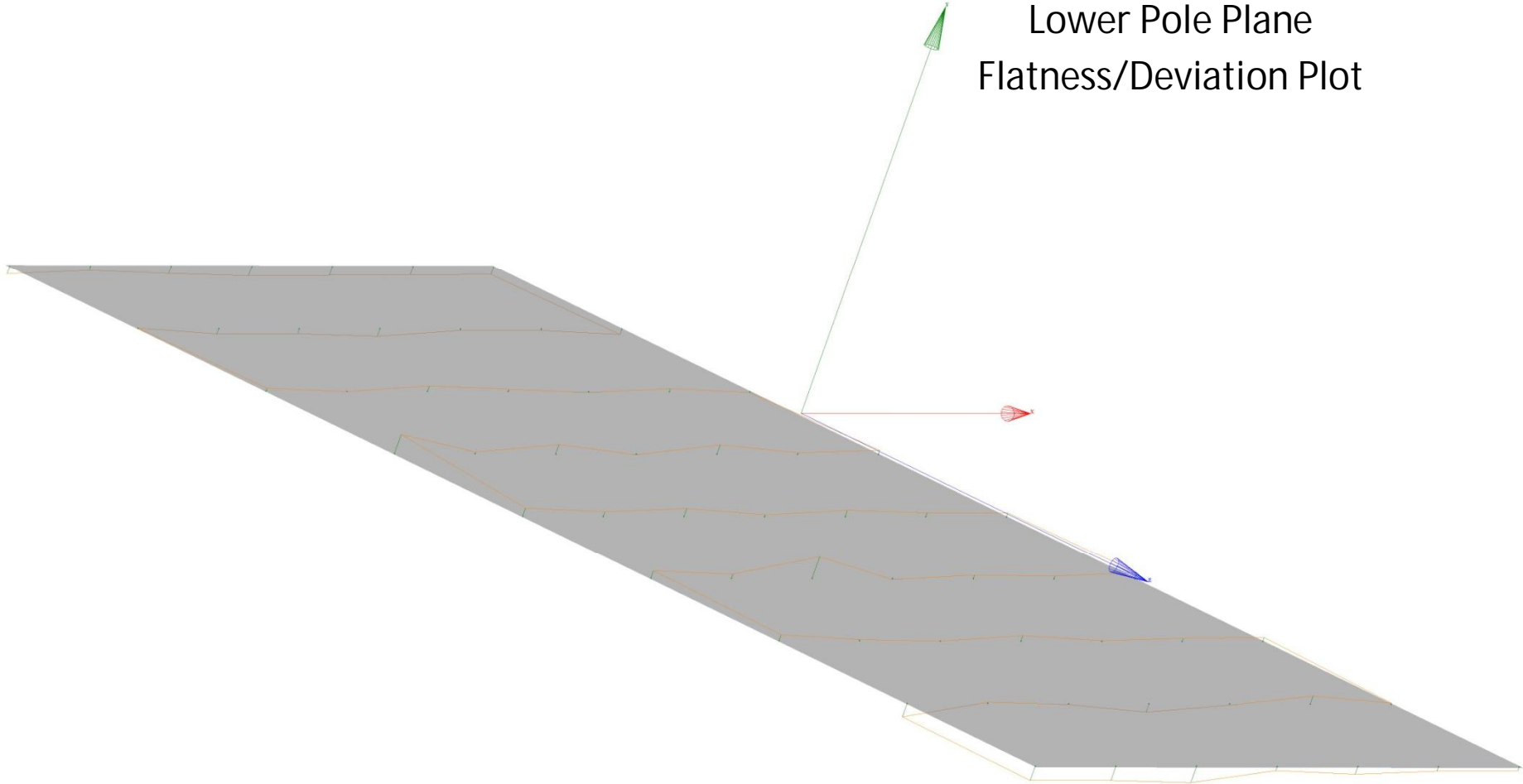
Projected cylinder into 1" offset plane

Tooling Ball	Form	n	X	Y	Z	b
TB 1	0.00022	0.25041	3.48630	5.04045	1.63347	0.00017
TB 2	0.00015	0.25044	3.47951	5.03968	-1.63307	0.00008
TB 3	0.00010	0.25044	-3.50208	5.03953	-1.60682	0.00032
TB 4	0.00017	0.25044	-3.50122	5.03821	1.64560	0.00094
TB 5	0.00019	0.25045	-6.24075	-0.00149	1.63219	0.00024
TB 6	0.00024	0.25037	-6.24668	-0.00035	-1.62382	0.00027

Pole Tip Distance/Gaps (at location X, Z)

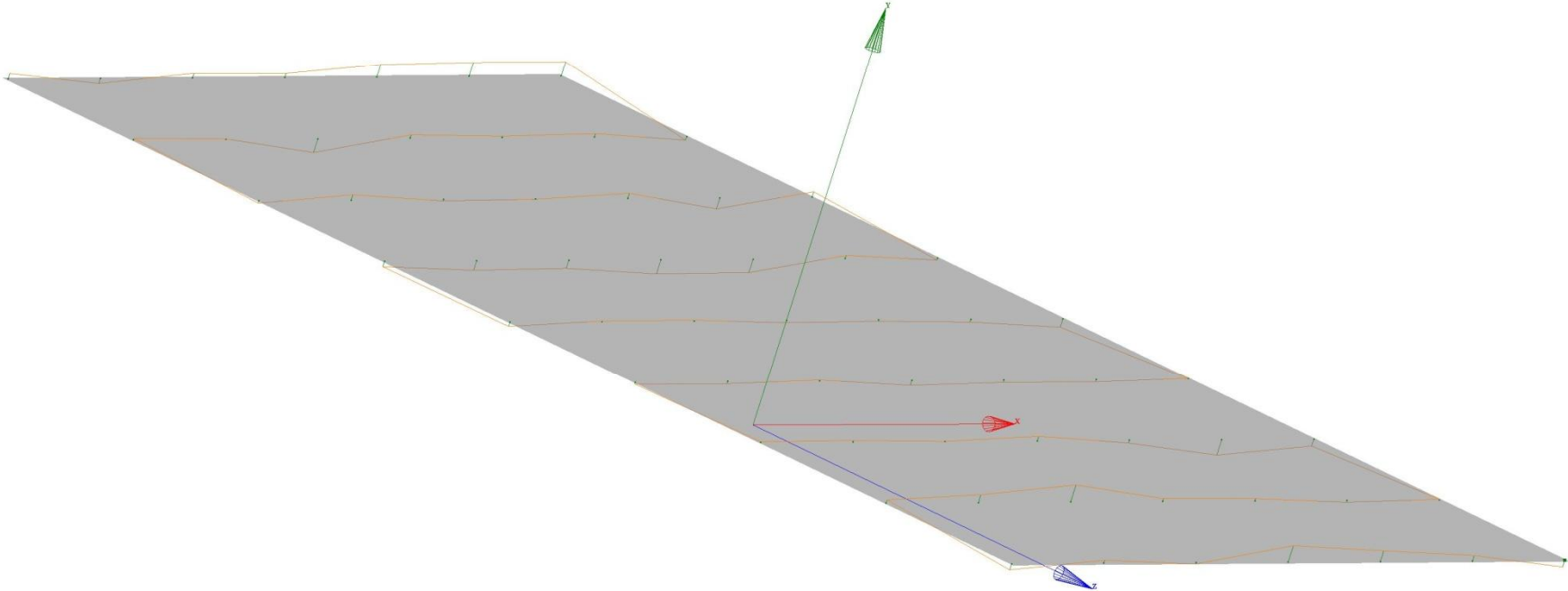
Station	Gap Distance	X	Z
1	0.60113	-1.125	-1.375
2	0.59819	1.125	-1.375
3	0.59913	0.000	0.000
4	0.60034	-1.125	1.375
5	0.59725	1.125	1.375
Avg. Gap	0.59921	-	-

Lower Pole Plane
Flatness/Deviation Plot



FLATNESS	MIN.	MAX.
0.00022	-0.00010	0.00012

Upper Pole Plane Flatness/Deviation Plot



FLATNESS	MIN.	MAX.
0.00018	-0.00010	0.00008

Quindos Measuring Report



3D-Application Center

Description	BLUE DIPOLE - FFTB S	Customer	D. WALZ
Drawing Number	AD-234-309-91	Serial Number	AD-234-309-91 SN-2
Remarks		Article Number	
Supplier	MAG MEAS	Delivery Date	
Delivery Note		Delivery Volume	
Lot Number		Lot Size	
Test Schedule		Sample Size	
Production Machine		Production Tool	
Production Date		Production Time	
Order	093008	Department	MET. QUALITY INSPEC
Inspector	kcaban	Inspection Date	08-SEP-2009, 09:46:03
Measuring Device	PMM 12 10 6 #496	Measuring Program	Quindos7 - V 7.1.9240-B
User Name	kcaban	WKP Name	BLUE_DIPOLE

Text	Eval.	Actual	Nominal	Up.To1.	Low.To1.	Act-Nom	Graphic
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DAT\$PLA_YN PLA

FORM	0.00022
MIN	-0.00010
MAX	0.00013

DAT\$PLA_YP PLA

FORM	0.00018
MIN	-0.00010
MAX	0.00009

PAR_POLES PLA

PARALL	0.00435
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DYAVG_P600 AXI

DY	0.59921	0.60000	-0.00079
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DY_P600(1) AXI

DY	0.60113	0.60000	0.00113
X	-1.12478		
Z	-1.37496		

DY_P600(2) AXI

DY	0.59819	0.60000	-0.00181
X	1.12520		
Z	-1.37495		

DY_P600(3) AXI

DY	0.59913	0.60000	-0.00087
X	0.00025		
Z	0.00002		

DY_P600(4) AXI

DY	0.60034	0.60000	0.00034
X	-1.12471		
Z	1.37498		

DY_P600(5) AXI

DY	0.59725	0.60000	-0.00275
X	1.12524		



Text	Eval.	Actual	Nominal	Up.To1.	Low.To1.	Act-Nom	Graphic
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Date: 08-Sep-09, 09:46:03			BLUE_DIPOLE			Page 2 of 3	
Text	Eval.	Actual	Nominal	Up.To1.	Low.To1.	Act-Nom	Graphic

DY_P600(5) AXI ◀
 Z 1.37507

!-----!
 ! TOOLING BALL DATA IN CNC\$CSY !
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TBA_PLA(1) PLA
 FORM 0.00007 0.00000 0.00007

TBA_CYL(1) CYL
 FORM 0.00022
 DM 0.25041 0.25000 0.00041

PLA_BORE(1) PLA
 SQRNES 0.00017 0.00000 0.00017

TB_CALC(1) POI
 X 3.48630
 Y 5.04045
 Z 1.63347

TBA_PLA(2) PLA
 FORM 0.00007 0.00000 0.00007

TBA_CYL(2) CYL
 FORM 0.00015
 DM 0.25044 0.25000 0.00044

PLA_BORE(2) PLA
 SQRNES 0.00008 0.00000 0.00008

TB_CALC(2) POI
 X 3.47951
 Y 5.03968
 Z -1.63307

TBA_PLA(3) PLA
 FORM 0.00018 0.00000 0.00018

TBA_CYL(3) CYL
 FORM 0.00010
 DM 0.25044 0.25000 0.00044

PLA_BORE(3) PLA
 SQRNES 0.00032 0.00000 0.00032

TB_CALC(3) POI
 X -3.50208
 Y 5.03953
 Z -1.60682

TBA_PLA(4) PLA
 FORM 0.00088 0.00000 0.00088

TBA_CYL(4) CYL
 FORM 0.00017
 DM 0.25044 0.25000 0.00044

Text	Eval.	Actual	Nominal	Up.To1.	Low.To1.	Act-Nom	Graphic
Date: 08-Sep-09, 09:46:03			BLUE_DIPOLE			Page 2 of 3	

Date: 08-Sep-09, 09:46:03			BLUE_DIPOLE			Page 3 of 3	
Text	Eval.	Actual	Nominal	Up.Tol.	Low.Tol.	Act-Nom	Graphic

PLA_BORE(4)		PLA		
SQRNES	0.00094	0.00000		0.00094

TB_CALC(4)		POI		
X	-3.50122			
Y	5.03821			
Z	1.64560			

TBA_PLA(5)		PLA		
FORM	0.00016	0.00000		0.00016

TBA_CYL(5)		CYL		
FORM	0.00019			
DM	0.25045	0.25000		0.00045

PLA_BORE(5)		PLA		
SQRNES	0.00024	0.00000		0.00024

TB_CALC(5)		POI		
X	-6.24075			
Y	-0.00149			
Z	1.63219			

TBA_PLA(6)		PLA		
FORM	0.00010	0.00000		0.00010

TBA_CYL(6)		CYL		
FORM	0.00024			
DM	0.25037	0.25000		0.00037

PLA_BORE(6)		PLA		
SQRNES	0.00027	0.00000		0.00027

TB_CALC(6)		POI		
X	-6.24668			
Y	-0.00035			
Z	-1.62382			

Text	Eval.	Actual	Nominal	Up.Tol.	Low.Tol.	Act-Nom	Graphic
Date: 08-Sep-09, 09:46:03			BLUE_DIPOLE			Page 3 of 3	