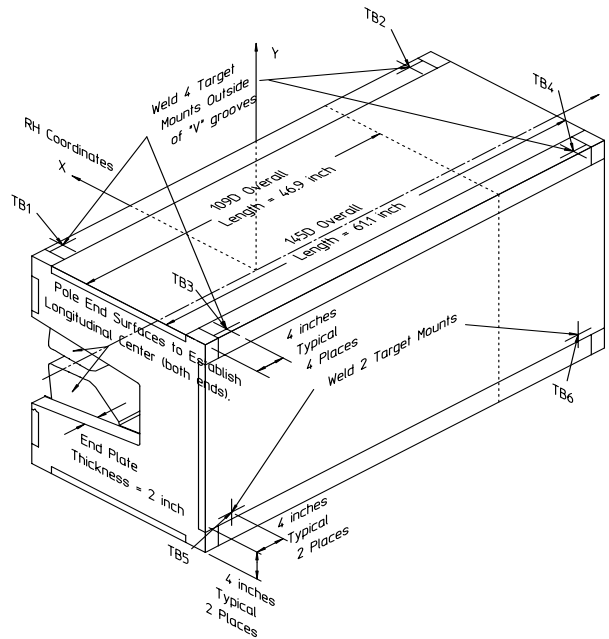


Gradient Dipole Magnet Checks	145D05
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Date: <input style="width: 80%;" type="text" value="5/22/01"/>	Magnet: <input style="width: 80%;" type="text" value="145D05"/>	Operators: <input style="width: 80%;" type="text" value="M. Rogers"/> <input style="width: 80%;" type="text" value="H. Imfeld"/>
Notes: <div style="border: 1px solid black; padding: 5px; min-height: 40px;"> <p style="color: red; margin: 0;">Magnetic vs. Mechanical offset NOT applied (June 2002)</p> </div>		



Magnetic Fiducial Coordinates: (inches)

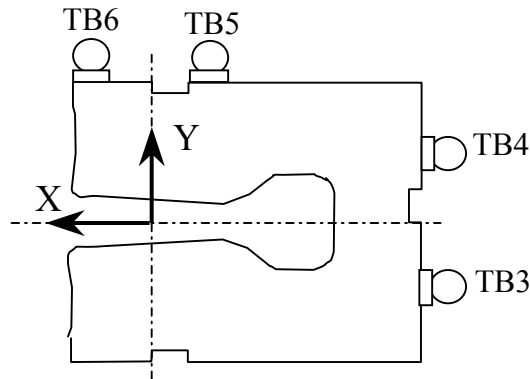
Fiducial	Z	X	Y	
TB1	-26.6690	3.4286	17.0104	Offset: <input style="width: 80%;" type="text" value="0.0085"/> inches
TB2	26.5508	3.4506	17.0072	
TB3	-26.5519	-22.4210	17.0047	
TB4	26.5317	-22.3904	17.0065	
TB5	-26.4874	-24.2620	-11.4550	
TB6	26.4945	-24.2567	-11.4848	

Description:
 Fiducial values based on the x-offset of the mechanical center line to the magnetic.

Downstream Garage Mechanical Check:

145D05
Status

Horizontal (X) 0.060 mm	Vertical (Y) -0.087 mm	X-value: Y-value:	OK OK
<p>Description: How much does the Z-axis from the US garage miss the center of the DS garage?</p>			

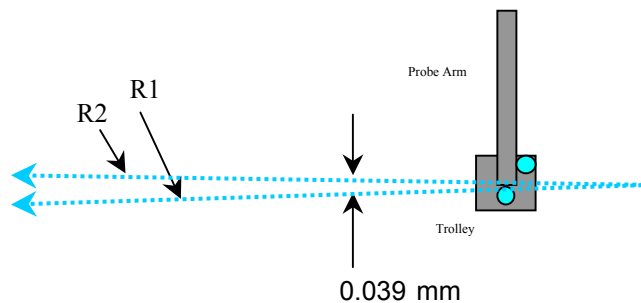


Trolley Checks:

145D05
Status

<u>Trolley Distance</u>			
3D Distance R1 2801.177 mm	3D Distance R2 2801.131 mm	R2 - R1 (mm) -0.046	OK
<p>Description: Travel distance for trolley target points should be similar. If not, trolley (rails) may be skewed.</p>			

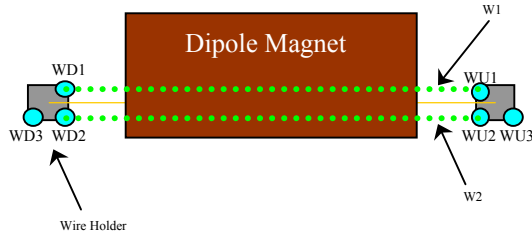
<u>Z-axis Vector</u>			
3D Angle 0.0276	Yaw 0.0169	Pitch 0.0218 mrad	Midpoint 3D Offset (mm) 0.039
<p>Description: Angle between R1 and R2 vectors. The average of these two defines the Z-axis.</p>			



Wire Holder Position Checks:

145D05
Status

<u>Wire Holders' Yaw Check</u>				
3D Distance W1	3D Distance W2		<u>W2 - W1 (mm)</u>	
2382.623 mm	2382.210 mm		-0.413	OK
Description: Distance between wire holders for TB1 and TB2.				

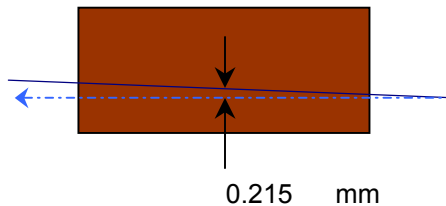


Wire Position Checks:

145D05
Status

<u>Wire Orientation</u>				
3D Angle	Yaw	Pitch	<u>Midpoint 3D Offset (mm)</u>	
0.0464	0.0042	-0.0462 mrad	0.055	OK
Description: Orientation of wire with respect to Z-axis defining axis of dipole.				

<u>Wire Offsets</u>				
US	Origin	DS	Origin Offset:	
0.210	0.215	0.220 mm		OK
Description: Offset distance from the mechanical center to the wire. (x-offsets only!)				



End Surface Orientation Check and Magnet Length:

145D05
Status

<u>End Surfaces</u>					
	3D Angle	Yaw	Pitch		
US:	0.5546	-0.4690	0.2959	mrad	
DS:	0.5955	-0.5780	0.1434		
				3D Offset (mm)	
				~ 0.372	OK
				~ 0.399	OK
Description:					
End surface orientation relative to reference frame.					
Note: 3D Offset based on average of width and height of the magnet side.					

<u>Length of Magnet</u>				
Distance with SMR	Distance			
1590.641 mm	1552.541 mm			LENGTH?
Description:				
Length of magnet along Z-axis. (Design vals: 1551.61 and 1189.10)				

Top Surface Orientation Check:

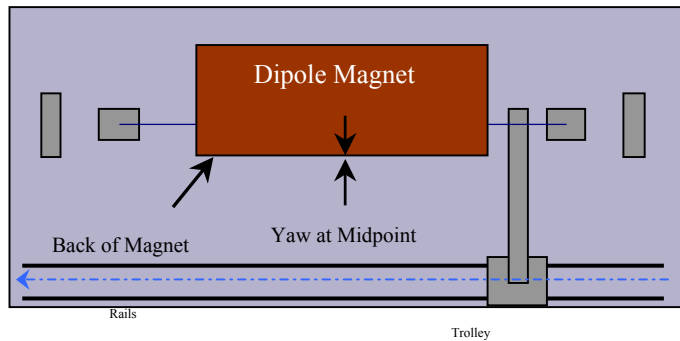
145D05
Status

<u>Top of Magnet</u>					
Height (Y-value) with 0.75"		Delta Y			
Corner 1	412.810 mm		0.104	Delta Y C1:	OK
Corner 2	412.774 mm		0.068	Delta Y C2:	OK
Corner 3	412.706 mm		0.000	Delta Y C3:	OK
Corner 4	412.823 mm		0.117	Delta Y C4:	OK
Dispersion:					
Corner 1	0.039 mm				
Corner 2	0.019 mm				
Corner 3	0.036 mm				
Corner 4	0.018 mm				
Overall	0.053 mm				
3D Angle	Roll	Pitch		Roll (mm)	
0.0692	0.0635	-0.0276	mrad	~ 0.034	OK
Twist:		Roll	Pitch	Pitch (mm)	
		0.2833	0.0985	~ -0.043	OK
		0.153	0.153	mm	
				Twist:	OK
Description:					
Top surface corner heights and average surface orientation values. (With 0.75" SMR offset.)					

Back Surface Orientation Check:

145D05
Status

<u>Back of Magnet</u>					
Horizontal (X-value)		Delta X			
US:	115.544	mm		0.000	
Origin:	115.581	mm		0.037	
DS:	115.618	mm		0.074	
3D Angle		Roll	Yaw		
	0.2387	-0.2327	0.0532	mrad	
				<u>Midpoint</u>	
				<u>Yaw in mm</u>	
				0.041	OK
Description:					
<i>Position of scanned half of back surface of magnet for yaw check. (With 0.75" SMR offset.)</i>					



**Gradient Magnet
Magnetic Measurements/Fiducialization Traveller**

Approval must be obtained before going on to the next procedure
or removing the magnet from the test stand.

Magnetic Measurements Approval by – Jack Tanabe or Nanyang Li

Fiducialization Approval by – Jack Tanabe or Tony King

Magnet Serial Number: 145D05

Capacitive System Alignment

Date _____, Operator _____

Fiducial Measurements

See Data Sheet on Next Page.

Approval:

Date: 5/22/01 Operator: M. Rogers

Water, Power and Interlock Connections.

Date _____, Operator _____

Measured Water Flow _____ gpm at $\Delta p =$ _____ psi

Maximum Conditioning Current: _____ Amps

Wire Magnetic Measurements

Currents _____

Summary File Name(s) _____

Date _____, Operator _____ Approval _____

Coil Magnetic Measurements: Required _____ Yes _____ No.

Currents _____

Summary File Name(s) _____

Date _____, Operator _____ Approval _____

**Gradient Magnet
Reduced Data Sheet**

Approval must be obtained before removing magnet from test stand.
Magnetic Measurements Approval by – Jack Tanabe or Tony King.

Magnet Serial Number: 145D05

Magnetic Measurements Operator: _____ Date: _____

Measured Magnetic Center Offset: 0.215 mm

Measured at:

Integrated Field: _____ T-m @ _____ Amps

Corrected to:

Integrated Field: XX.XXX T-m @ XXX.XXX Amps

Fiducialization:

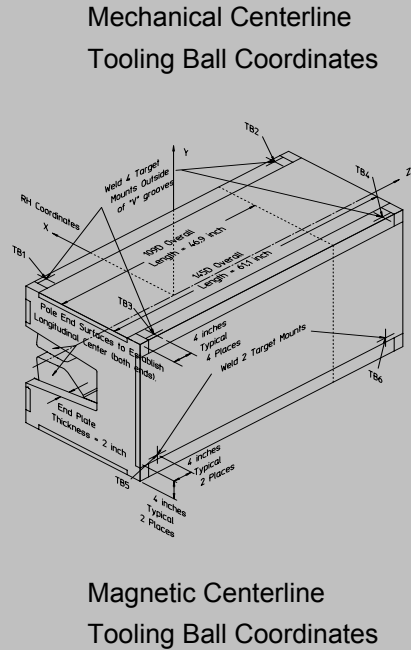
Operator(s): M. Rogers H. Imfeld

Date: 5/22/01

Temp: 20 deg. C

Fiducial - Measured	z mm	x mm	y mm
TB1	-677.393	87.087	432.064
TB2	674.390	87.644	431.982
TB3	-674.418	-569.493	431.919
TB4	673.906	-568.715	431.964
TB5	-672.781	-616.255	-290.956
TB6	672.960	-616.120	-291.714

Fiducial - Magnetic	z mm	x mm	y mm
TB1	-677.393	87.087	432.064
TB2	674.390	87.644	431.982
TB3	-674.418	-569.493	431.919
TB4	673.906	-568.715	431.964
TB5	-672.781	-616.255	-290.956
TB6	672.960	-616.120	-291.714



Check Measurements:

Corner	X _{measured} mm	X _{nominal} mm
C1	96.494	96.520
C2	96.568	96.520

incl. paint no paint

	Y _{measured} mm	Y _{nominal} mm
C1	393.760	393.700
C2	393.724	393.700
C3	393.656	393.700
C4	393.773	393.700

incl. paint no paint

Approval: