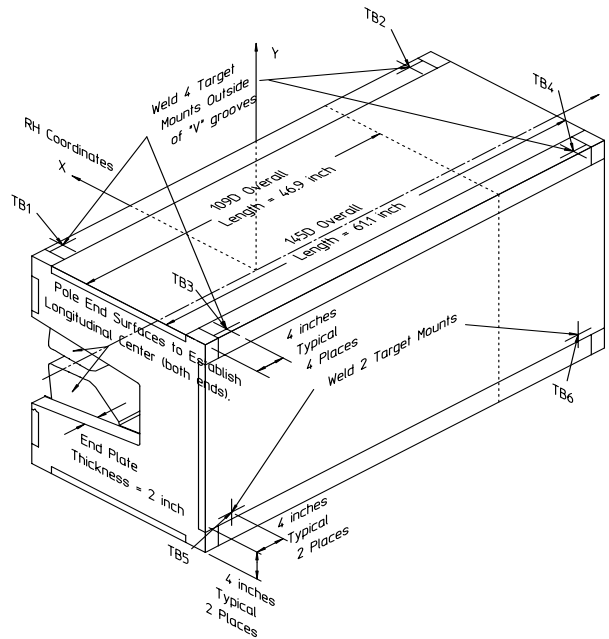


Gradient Dipole Magnet Checks	145D06
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Date: <input style="width: 80%;" type="text" value="6/5/01"/>	Magnet: <input style="width: 80%;" type="text" value="145D06"/>	Operators: <input style="width: 80%;" type="text" value="M. Rogers"/> <input style="width: 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	-26.5438	3.4244	17.0061
TB2	26.5728	3.4341	17.0066
TB3	-26.5421	-22.4159	16.9954
TB4	26.5361	-22.4105	17.0072
TB5	-26.3532	-24.2685	-11.6348
TB6	26.4533	-24.2745	-11.5877

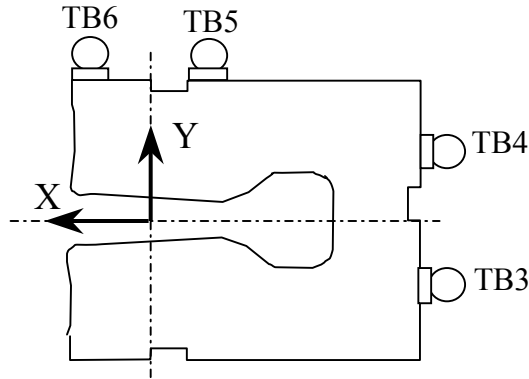
Offset: inches

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

Downstream Garage Mechanical Check:

145D06
Status

Horizontal (X) 0.079 mm	Vertical (Y) -0.089 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>			

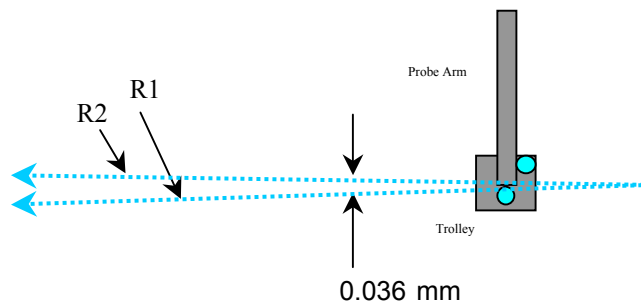


Trolley Checks:

145D06
Status

<u>Trolley Distance</u>			
3D Distance R1 2800.135 mm	3D Distance R2 2800.085 mm	R2 - R1 (mm) -0.050	OK
<p>Description: Travel distance for trolley target points should be similar. If not, trolley (rails) may be skewed.</p>			

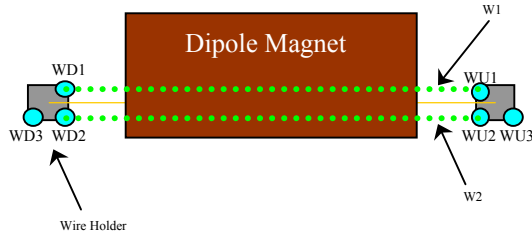
<u>Z-axis Vector</u>			
3D Angle 0.0260	Yaw 0.0146	Pitch 0.0215 mrad	Midpoint 3D Offset (mm) 0.036
<p>Description: Angle between R1 and R2 vectors. The average of these two defines the Z-axis.</p>			



Wire Holder Position Checks:

145D06
Status

<u>Wire Holders' Yaw Check</u>				
3D Distance W1	3D Distance W2		<u>W2 - W1 (mm)</u>	
2382.727 mm	2382.351 mm		-0.376	OK
Description: Distance between wire holders for TB1 and TB2.				

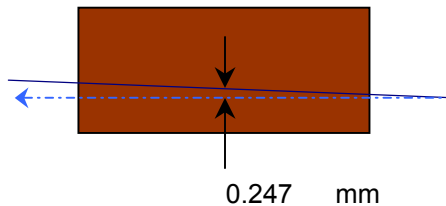


Wire Position Checks:

145D06
Status

<u>Wire Orientation</u>					
3D Angle	Yaw	Pitch		<u>Midpoint 3D Offset (mm)</u>	
0.0444	0.0008	-0.0444	mrad	0.053	OK
Description: Orientation of wire with respect to Z-axis defining axis of dipole.					

<u>Wire Offsets</u>					
US	Origin	DS		Origin Offset:	
0.246	0.247	0.248	mm		OK
Description: Offset distance from the mechanical center to the wire. (x-offsets only!)					



End Surface Orientation Check and Magnet Length:

145D06
Status

<u>End Surfaces</u>					
	3D Angle	Yaw	Pitch		
US:	1.8753	-1.0432	1.5583	mrad	
DS:	1.9053	-1.1781	1.4975		
				3D Offset (mm)	
				~ 1.256	Too Big?
				~ 1.277	Too Big?
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		
1590.597 mm	1552.497 mm		LENGTH?
Description:			
Length of magnet along Z-axis. (Design vals: 1551.61 and 1189.10)			

Top Surface Orientation Check:

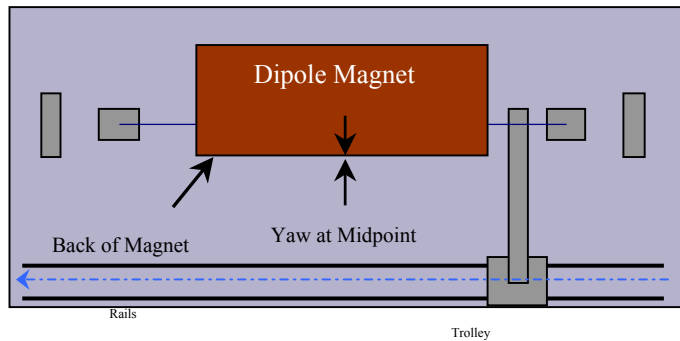
145D06
Status

<u>Top of Magnet</u>					
Height (Y-value) with 0.75"		Delta Y			
Corner 1	412.707 mm		0.076	Delta Y C1:	OK
Corner 2	412.762 mm		0.131	Delta Y C2:	OK
Corner 3	412.631 mm		0.000	Delta Y C3:	OK
Corner 4	412.681 mm		0.050	Delta Y C4:	OK
Dispersion:					
Corner 1	0.011 mm				
Corner 2	0.006 mm				
Corner 3	0.014 mm				
Corner 4	0.012 mm				
Overall	0.024 mm				
3D Angle	Roll	Pitch		Roll (mm)	
0.1382	0.1345	-0.0318	mrad	~ 0.073	OK
Twist:		Roll	Pitch	Pitch (mm)	
		-0.0093	-0.0032	~ -0.049	OK
		-0.005	-0.005	mm	
				Twist:	OK
Description:					
Top surface corner heights and average surface orientation values. (With 0.75" SMR offset.)					

Back Surface Orientation Check:

145D06
Status

<u>Back of Magnet</u>					
Horizontal (X-value)		Delta X			
US:	115.614	mm	0.000		
Origin:	115.615	mm	0.001		
DS:	115.616	mm	0.002		
3D Angle	Roll	Yaw		<u>Midpoint</u>	
0.0647	0.0647	0.0014 mrad		<u>Yaw in mm</u>	
				0.001	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: 145D06

Capacitive System Alignment

Date _____, Operator _____

Fiducial Measurements

See Data Sheet on Next Page.

Approval:

Date: 6/5/01 Operator: M. Rogers

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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: 145D06

Magnetic Measurements Operator: _____ Date: _____

Measured Magnetic Center Offset: 0.247 mm

Measured at:

Integrated Field: _____ T-m @ _____ Amps

Corrected to:

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

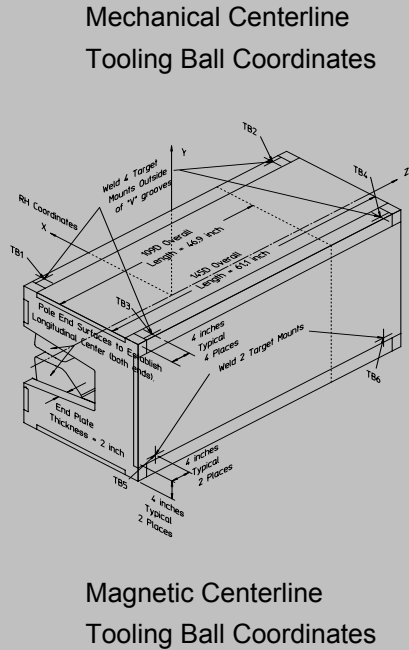
Fiducialization:

Operator(s): M. Rogers H. Imfeld

Date: 6/5/01 Temp: 22.7 deg. C

Fiducial - Measured	z mm	x mm	y mm
TB1	-674.212	86.980	431.954
TB2	674.950	87.225	431.967
TB3	-674.170	-569.364	431.684
TB4	674.017	-569.226	431.983
TB5	-669.372	-616.419	-295.523
TB6	671.914	-616.573	-294.328

Fiducial - Magnetic	z mm	x mm	y mm
TB1	-674.212	86.980	431.954
TB2	674.950	87.225	431.967
TB3	-674.170	-569.364	431.684
TB4	674.017	-569.226	431.983
TB5	-669.372	-616.419	-295.523
TB6	671.914	-616.573	-294.328



Check Measurements:

Corner	X _{measured} mm	X _{nominal} mm
C1	96.564	96.520
C2	96.566	96.520

incl. paint no paint

	Y _{measured} mm	Y _{nominal} mm
C1	393.657	393.700
C2	393.712	393.700
C3	393.581	393.700
C4	393.631	393.700

incl. paint no paint

Approval: