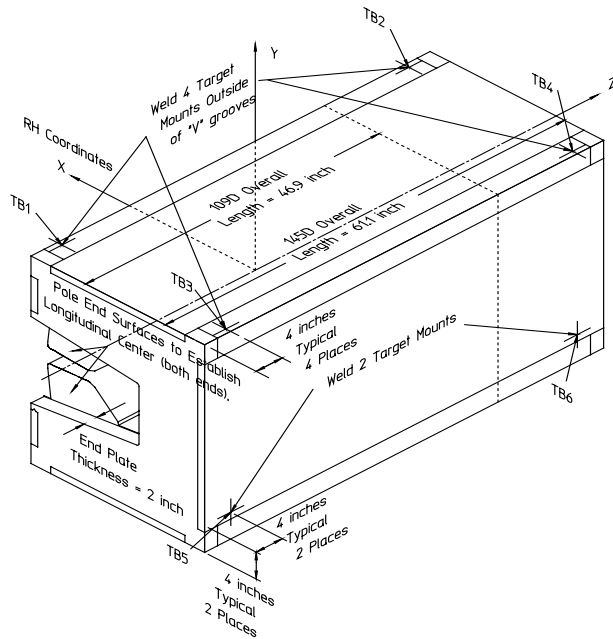


Gradient Dipole Magnet Checks	145D01
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Date: <input style="width: 90%;" type="text" value="11/29/01"/>	Magnet: <input style="width: 90%;" type="text" value="145D01"/>	Operators: <input style="width: 90%;" type="text" value="M. Rogers"/> <input style="width: 90%;" type="text" value="M. Gaydosh"/>
Notes: <div style="border: 1px solid black; height: 40px; margin-top: 5px;"></div>		



Magnetic Fiducial Coordinates: (inches)

Fiducial	Z	X	Y
TB1	-26.5459	3.4236	17.0063
TB2	26.5657	3.4404	16.9968
TB3	-26.5219	-22.4235	16.9955
TB4	26.5533	-22.4117	17.0035
TB5	-26.2257	-24.2488	-11.1019
TB6	26.4687	-24.2776	-11.4300

Offset:
 inches

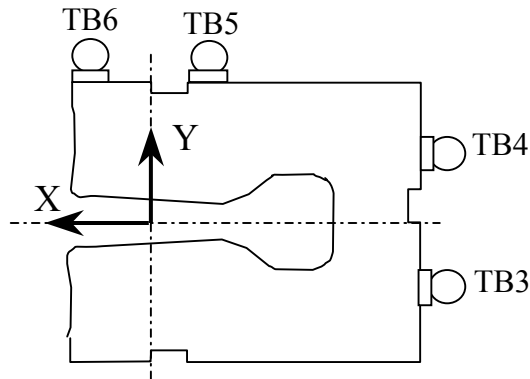
Description:

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

Downstream Garage Mechanical Check:

145D01
Status

Horizontal (X) 0.083 mm	Vertical (Y) -0.027 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>			

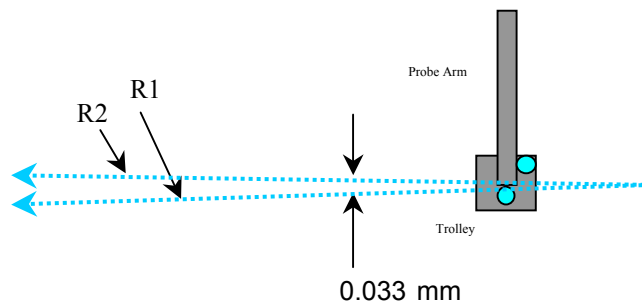


Trolley Checks:

145D01
Status

<u>Trolley Distance</u>			
3D Distance R1 2800.448 mm	3D Distance R2 2800.388 mm	R2 - R1 (mm) -0.060	OK
<p>Description: Travel distance for trolley target points should be similar. If not, trolley (rails) may be skewed.</p>			

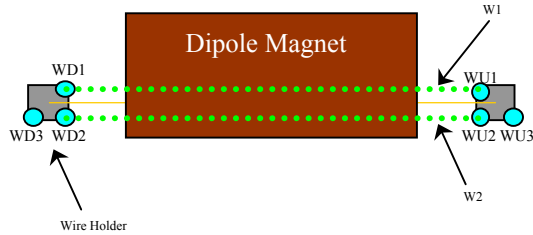
<u>Z-axis Vector</u>			
3D Angle Yaw 0.0237	Pitch 0.0162	Midpoint 3D Offset (mm) 0.033	OK
<p>Description: Angle between R1 and R2 vectors. The average of these two defines the Z-axis.</p>			



Wire Holder Position Checks:

145D01
Status

<u>Wire Holders' Yaw Check</u>			
3D Distance W1	3D Distance W2	W2 - W1 (mm)	
2382.987 mm	2382.559 mm	-0.428	OK
Description: Distance between wire holders for TB1 and TB2.			

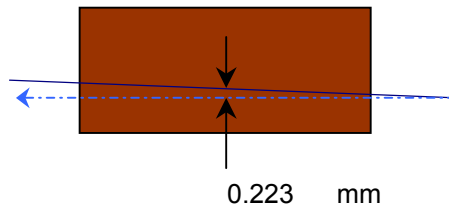


Wire Position Checks:

145D01
Status

<u>Wire Orientation</u>				
3D Angle	Yaw	Pitch	Midpoint 3D Offset (mm)	
0.0690	0.0439	-0.0533 mrad	0.082	Too Big?
Description: Orientation of wire with respect to Z-axis defining axis of dipole.				

<u>Wire Offsets</u>				
US	Origin	DS	Origin Offset:	
0.170	0.223	0.275 mm		OK
Description: Offset distance from the mechanical center to the wire. (x-offsets only!)				



End Surface Orientation Check and Magnet Length:

145D01
Status

<u>End Surfaces</u>					
	3D Angle	Yaw	Pitch		
US:	1.1399	-0.0472	1.1389	mrad	
DS:	1.0306	-0.6760	0.7780		
				3D Offset (mm)	
				~ 0.764	Too Big?
				~ 0.691	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		
1590.306 mm	1552.206 mm		LENGTH?
Description:			
Length of magnet along Z-axis. (Design vals: 1551.61 and 1189.10)			

Top Surface Orientation Check:

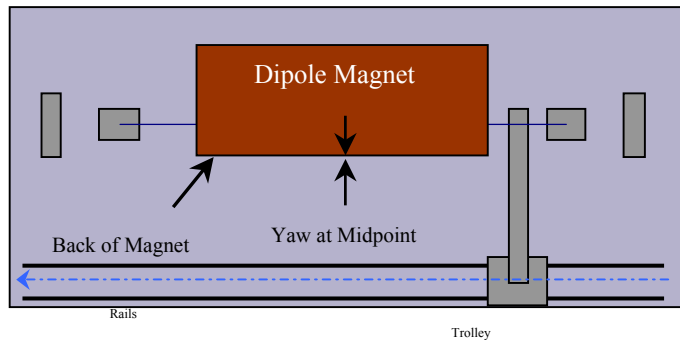
145D01
Status

<u>Top of Magnet</u>					
Height (Y-value) with 0.75"		Delta Y			
Corner 1	412.717 mm		0.243	Delta Y C1:	OK
Corner 2	412.658 mm		0.184	Delta Y C2:	OK
Corner 3	412.474 mm		0.000	Delta Y C3:	OK
Corner 4	412.781 mm		0.307	Delta Y C4:	Too Big?
Dispersion:					
Corner 1	0.024 mm				
Corner 2	0.029 mm				
Corner 3	0.024 mm				
Corner 4	0.022 mm				
Overall	0.094 mm				
3D Angle	Roll	Pitch		Roll (mm)	
0.1559	0.1347	-0.0784	mrad	~ 0.073	OK
				Pitch (mm)	
				~ -0.122	OK
Twist:	Roll	Pitch		Twist:	Too Big?
	0.6778	0.2358	mrad		
	0.366	0.366	mm		
Description:					
Top surface corner heights and average surface orientation values. (With 0.75" SMR offset.)					

Back Surface Orientation Check:

145D01
Status

<u>Back of Magnet</u>					
Horizontal (X-value)			Delta X		
US:	115.671	mm	0.000		
Origin:	115.712	mm	0.041		
DS:	115.753	mm	0.082		
3D Angle Roll			Yaw		
	0.2765	0.2701	0.0588	mrad	
				Midpoint Yaw in mm	
				0.046	OK
Description:					
Position of scanned half of back surface of magnet for yaw check. (With 0.75" SMR offset.)					



**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: 145D01

Capacitive System Alignment

Date _____, Operator _____

Fiducial Measurements

See Data Sheet on Next Page.

Approval:

Date: 11/29/01 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: 145D01

Magnetic Measurements Operator: _____ Date: _____

Measured Magnetic Center Offset: 0.223 mm

Measured at:

Integrated Field: _____ T-m @ _____ Amps

Corrected to:

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

Fiducialization:

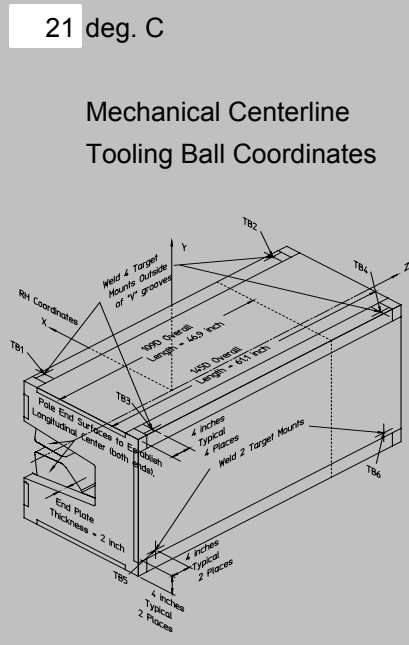
Operator(s): M. Rogers M. Gaydosh

Date: 11/29/01

Temp: 21 deg. C

Fiducial - Measured	z mm	x mm	y mm
TB1	-674.266	87.182	431.961
TB2	674.769	87.608	431.719
TB3	-673.657	-569.333	431.686
TB4	674.453	-569.033	431.890
TB5	-666.133	-615.697	-281.987
TB6	672.306	-616.428	-290.323

Fiducial - Magnetic	z mm	x mm	y mm
TB1	-674.266	86.959	431.961
TB2	674.769	87.385	431.719
TB3	-673.657	-569.556	431.686
TB4	674.453	-569.256	431.890
TB5	-666.133	-615.920	-281.987
TB6	672.306	-616.651	-290.323



Check Measurements:

Corner	X _{measured} mm	X _{nominal} mm
C1	96.621	96.520
C2	96.703	96.520

incl. paint no paint

	Y _{measured} mm	Y _{nominal} mm
C1	393.667	393.700
C2	393.608	393.700
C3	393.424	393.700
C4	393.731	393.700

incl. paint no paint

Approval: