Gradient Dipole Magnet Checks	145D16

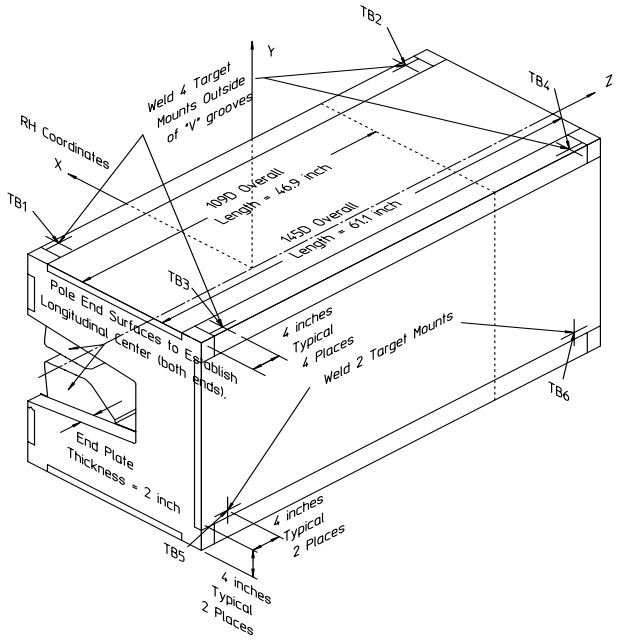
Date: 8/2/01

Magnet: 145D16

Operators: M. Gaydosh; F. Gaudreault

Notes:

Magnetic vs. Mechanical offset NOT applied (June 2002)



Magnetic Fiducial Coordinates: (inches)

Fiducial	Z	X	Y
TB1	-26.5988	3.4340	17.0088
TB2	26.5376	3.4542	17.0023
TB3	-26.5401	-22.4171	16.9964
TB4	26.5355	-22.4109	16.9970
TB5	-26.5279	-24.2600	-11.5560
TB6	26.4916	-24.2553	-11.4449

Offset: -0.0041 inches

Description:

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

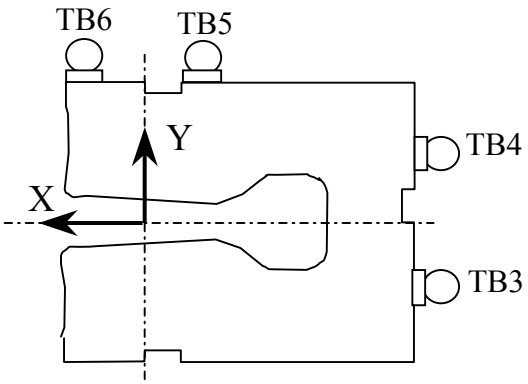
Downstream Garage Mechanical Check:

145D16 Status

Horizontal (X)	Vertical (Y)		
0.054 mm	-0.047 mm	X-value:	OK
		Y-value:	OK

Description:

How much does the Z-axis from the US garage miss the center of the DS garage?



Trolley Checks:

145D16 Status

Trolley Distance

3D Distance R1	3D Distance R2		
2800.185 mm	2800.133 mm	R2 - R1 (mm)	
		-0.052	OK

Description:

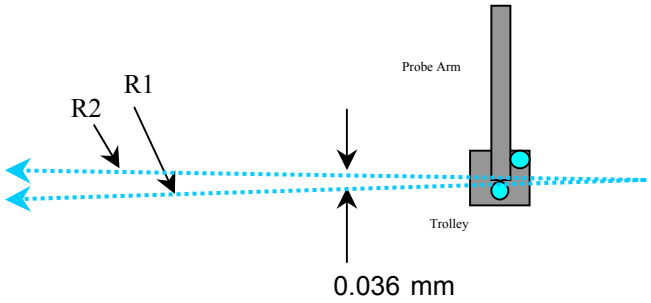
Travel distance for trolley target points should be similar. If not, trolley (rails) may be skewed.

Z-axis Vector

3D Angle	Yaw	Pitch		
0.0255	0.0170	-0.0190	mrad	Midpoint 3D Offset (mm)
				0.036 OK

Description:

Angle between R1 and R2 vectors. The average of these two defines the Z-axis.



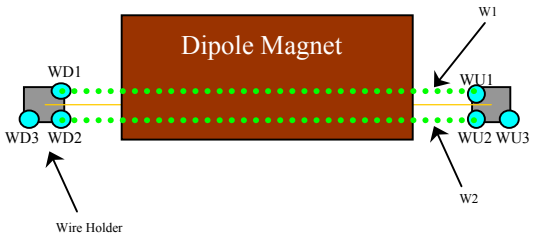
Wire Holder Position Checks:

145D16 Status

Wire Holders' Yaw Check				
3D Distance W1	3D Distance W2		W2 - W1 (mm)	
2383.589 mm	2383.128 mm		-0.461	OK

Description:

Distance between wire holders for TB1 and TB2.



Wire Position Checks:

145D16 Status

Wire Orientation				
3D Angle	Yaw	Pitch	Midpoint 3D Offset (mm)	
0.0531	0.0159	0.0507 mrad	0.063	OK

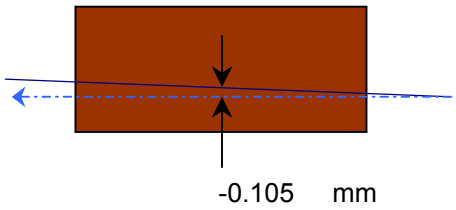
Description:

Orientation of wire with respect to Z-axis defining axis of dipole.

Wire Offsets				
US	Origin	DS	Origin Offset:	
-0.124	**-0.105**	-0.087 mm		OK

Description:

Offset distance from the mechanical center to the wire. (x-offsets only!)



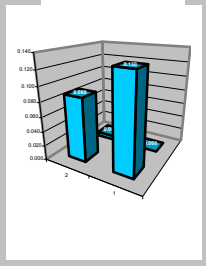
End Surface Orientation Check and Magnet Length: 145D16

						Status
End Surfaces						
	3D Angle	Yaw	Pitch		3D Offset (mm)	
US:	1.0285	-0.5408	-0.8748	mrad	~ 0.689	Too Big?
DS:	0.7350	-0.6108	-0.4088		~ 0.492	OK
Description:						
End surface orientation relative to reference frame.						
Note: 3D Offset based on average of width and height of the magnet side.						

Length of Magnet				
Distance **with SMR**	Distance			
1590.317 mm	1552.217 mm			LENGTH?
Description:	*Length of magnet along Z-axis. (Design vals: 1551.61 and 1189.10)*			

Top Surface Orientation Check: 145D16

						Status
Top of Magnet						
Height (Y-value) **with 0.75"**			Delta Y			
Corner 1	412.844	mm	0.130		Delta Y C1:	OK
Corner 2	412.802	mm	0.088		Delta Y C2:	OK
Corner 3	412.714	mm	0.000		Delta Y C3:	OK
Corner 4	412.720	mm	0.006		Delta Y C4:	OK
Dispersion:						
Corner 1	0.040	mm				
Corner 2	0.053	mm				
Corner 3	0.046	mm			Roll (mm)	
Corner 4	0.053	mm			~ 0.099	OK
Overall	0.050	mm				
3D Angle	Roll	Pitch			Pitch (mm)	
0.1833	0.1832	0.0067	mrad		~ 0.010	OK
Twist:	Roll	Pitch				
	0.0889	0.0309	mrad			
	0.048	0.048	mm		Twist:	OK
Description:						
Top surface corner heights and average surface orientation values. ***(With 0.75" SMR offset.)***						



Back Surface Orientation Check:

145D16
Status

Back of Magnet

Horizontal (X-value)			Delta X
US:	115.800	mm	0.065
Origin:	115.767	mm	0.032
DS:	115.735	mm	0.000

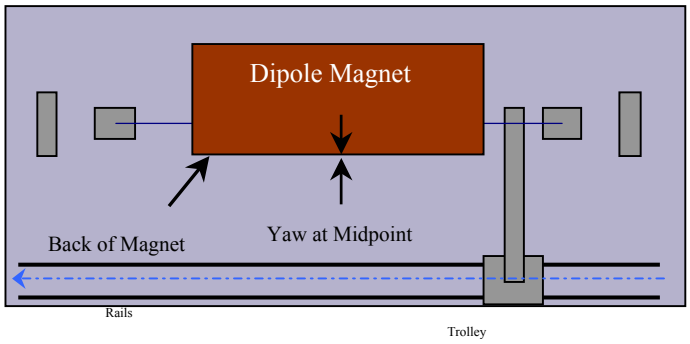
3D Angle	Roll	Yaw	
0.5717	0.5699	-0.0460	mrad

Midpoint
Yaw in mm
-0.036

OK

Description:

Position of scanned half of back surface of magnet for yaw check. ***(With 0.75" SMR offset.)***



Gradient Magnet
Magnetic Measurements/FiducializationTraveller

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: 145D16
Capacitive System Alignment
Date_____, Operator _____
Fiducial Measurements
See Data Sheet on Next Page. Approval:
Date: 8/2/01 Operator: M. Gaydosh
Water, Power and Interlock Connections.
Date_____, Operator _____
Measured Water Flow _____ gpm at Δp= _____ 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: 145D16

Magnetic Measurements Operator: _____ Date:_____

Measured Magnetic Center Offset: -0.105 mm

Measured at:

Integrated Field: _____ T-m @ _____ Amps

Corrected to:

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

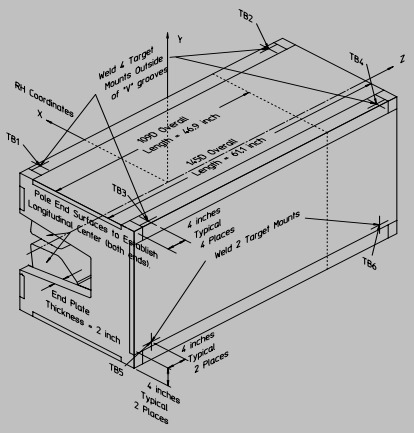
Fiducialization:

Operator(s): M. Gaydosh F. Gaudreault

Date: 8/2/01 Temp: 20 deg. C

Fiducial - Measured	z mm	x mm	y mm
TB1	-675.610	87.224	432.024
TB2	674.055	87.736	431.859
TB3	-674.119	-569.394	431.709
TB4	674.002	-569.237	431.725
TB5	-673.808	-616.203	-293.522
TB6	672.887	-616.084	-290.701

Mechanical Centerline
Tooling Ball Coordinates



Fiducial - Magnetic	z mm	x mm	y mm
TB1	-675.610	87.224	432.024
TB2	674.055	87.736	431.859
TB3	-674.119	-569.394	431.709
TB4	674.002	-569.237	431.725
TB5	-673.808	-616.203	-293.522
TB6	672.887	-616.084	-290.701

Magnetic Centerline
Tooling Ball Coordinates

Check Measurements:

Corner	$x_{measured}$ mm	$x_{nominal}$ mm
C1	96.750	96.520
C2	96.685	96.520
	incl. paint	no paint

	$y_{measured}$ mm	$y_{nominal}$ mm
C1	393.794	393.700
C2	393.752	393.700
C3	393.664	393.700
C4	393.670	393.700
	incl. paint	no paint

Approval: