

**Fiducials for BM2 Std. Vac. Chamber**

**BM2014**

Date:

12/4/02

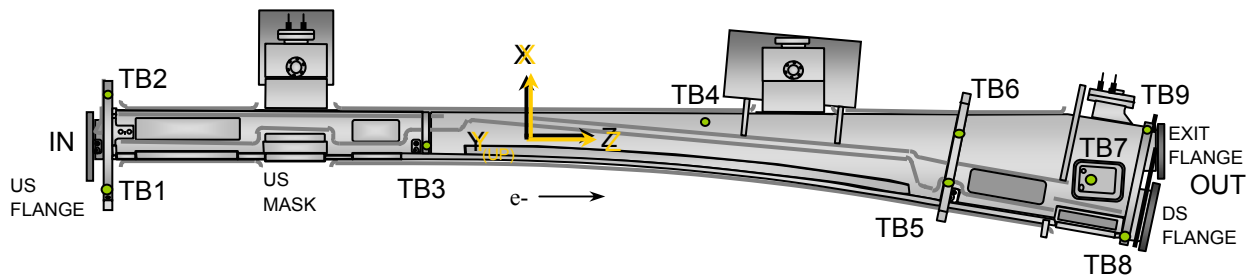
Chamber:

BM2014

Operator(s):

F. Gaudreault  
L. Griffin

Notes:



**Fiducial Coordinates for BM2 Standard Vacuum Chamber: (inches)**

Fiducial	Z	X	Y
TB1	-77.159	-6.281	4.379
TB2	-77.228	7.228	4.375
TB3	-34.847	0.062	4.371
TB4	0.321	4.048	2.375
TB5	34.443	-4.783	4.358
TB6	35.780	2.413	4.372
TB7	53.877	-4.290	2.422
TB8	58.057	-12.381	2.951
TB9	60.954	2.975	2.957

**Nominal Deltas For H1 Absorber (TB7)**

Z	X	Y
53.877	-4.290	2.422
53.933	-4.302	2.408
-0.056	0.012	0.014

inches      inches      inches

Source

**FINAL**

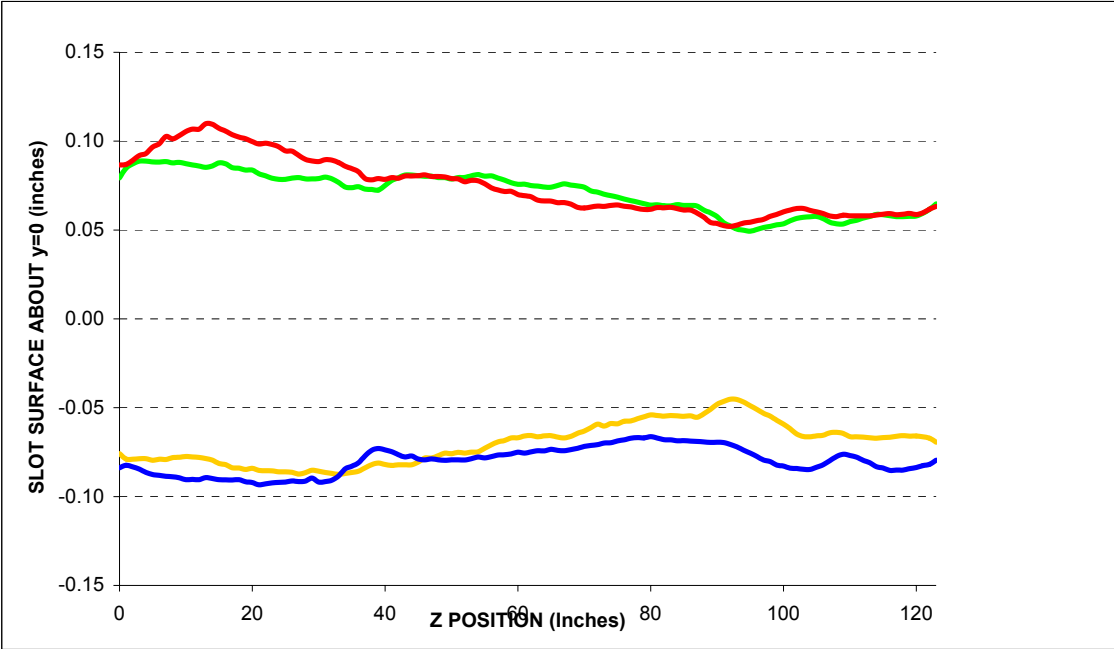
**Description:**

Fiducial vals based on established chamber datum. Source="Final" indicates final data.

**Fiducialization Step: (Traveler Step # 1380)**

Slot Calibration	
Ideal	0.511
Meas.	
Delta	-----

Inverted Mouse Slot Calibration	
Ideal	0.511
Meas.	
Delta	-----



BM2014

**Step 1: Heights for BM2 Std. Vac. Chamber**

Fiducial	Y
TB1	4.380
TB2	4.375
TB3	4.370
TB4	2.370
TB5	4.357
TB6	4.373

inches

**Description:**  
 Fiducial heights of the six tooling balls are based on leveled datum as defined by outside surface measurements. (L1 through L5)

US Flange Position

**Step 2: UpStream Flange Postion**

-2.570	Measured
-2.667	Nominal
<b>0.097</b>	<b>Delta</b>

inches

US PIN TOP	Z	X	Y
Measured	-80.232	0.007	2.282
Nominal	-80.229	0.000	2.282
<b>Difference</b> (inches)	-0.003	<b>0.007</b>	<b>-0.001</b>

US PIN BOTTOM	Z	X	Y
Measured	-80.224	0.006	-2.282
Nominal	-80.229	0.000	-2.282
<b>Difference</b> (inches)	0.005	<b>0.006</b>	<b>0.000</b>

US Inner Chamber	Z	X	Y
Measured	N/A	-1.404	-0.076
Nominal	N/A	-1.404	0.000
<b>Difference</b> (inches)	N/A	<b>0.000</b>	-0.076

US Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	-80.763	0.006	-0.010
Nominal	-80.763	0.000	0.000
<b>Difference</b> (inches)	<b>0.000</b>	<b>0.006</b>	<b>-0.010</b>

inches          inches          inches

US Flange Attitude		
	yaw	pitch
Measured	6.3	-1.9
Nominal	0.0	0.0
<b>Difference</b>	<b>6.3</b>	<b>-1.9</b>

mrad          mrad

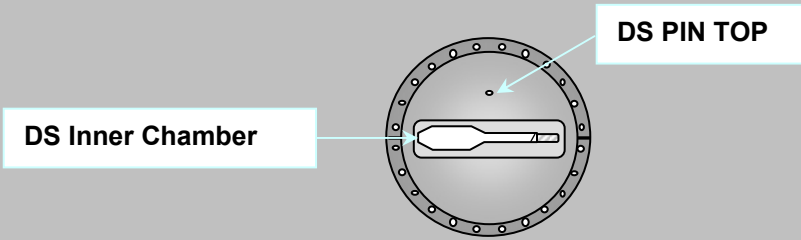
US Flange Diameter	
	DIA
Measured	11.469
Nominal	11.500
<b>Difference</b>	<b>-0.031</b>

inches

**Description:**  
 Measured vs. nominal values for US flange expressed in the FRAME FINAL coordinate system.  
 Tol +/- 10mils and +/- 3 mrad. Values in **BOLD** or **RED** are most critical.

DS Flange Position

**Step 3: DownStream Flange Position**



DS PIN TOP	Z	X	Y
Measured	62.753	1.825	2.295
Nominal	62.859	1.836	2.282
Difference (inches)	-0.106	<b>-0.011</b>	<b>0.013</b>

DS Inner Chamber	Z	X	Y
Measured	N/A	-1.421	-0.082
Nominal	N/A	-1.404	0.000
Difference (inches)	N/A	<b>-0.017</b>	<b>-0.082</b>

DS Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	63.298	1.824	0.008
Nominal	63.393	1.836	0.000
Difference (inches)	<b>-0.095</b>	<b>-0.012</b>	<b>0.008</b>
	inches	inches	inches

DS Flange Attitude		
	yaw	pitch
Measured	-4.0	-7.1
Nominal	0.0	0.0
Difference	<b>-4.0</b>	<b>-7.1</b>
	mrad	mrad

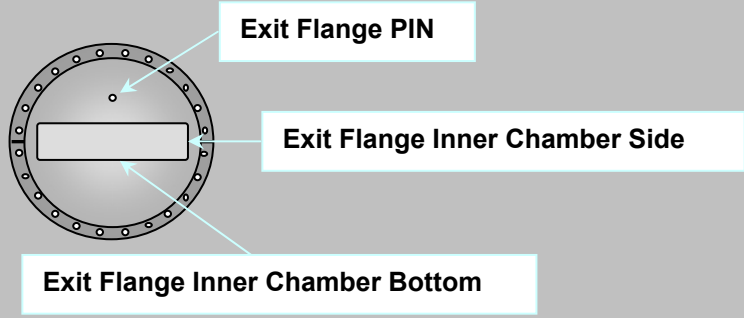
  

DS Flange Diameter	
	DIA
Measured	11.468
Nominal	11.500
Difference	<b>-0.032</b>
	inches

**Description:**  
 Meas. vs. nom. values for DS flange expressed in a ROTATED FRAME FINAL coordinate system (10.5882°). Tol +/- 10mils and +/- 3 mrad. Values in **BOLD** or **RED** are most critical.

Exit Port Flange Position (DownStream)

**Step 3: DownStream EXIT PORT Flange Position**



EXIT FLANGE PIN	Z	X	Y
Measured	63.332	0.013	1.806
Nominal	63.422	0.000	1.782
Difference (inches)	-0.090	<b>0.013</b>	<b>0.024</b>

EXIT FLANGE Inner Chamber Side	Z	X	Y
Measured	N/A	2.463	0.106
Nominal	N/A	2.453	0.000
Difference (inches)	N/A	<b>0.010</b>	0.106

EXIT FLANGE Inner Chamber Bottom	Z	X	Y
Measured	N/A	0.139	-0.199
Nominal	N/A	0.000	-0.219
Difference (inches)	N/A	0.139	<b>0.020</b>

EXIT Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	63.888	0.006	0.017
Nominal	63.956	0.000	0.000
Difference (inches)	<b>-0.068</b>	<b>0.006</b>	<b>0.017</b>
	inches	inches	inches

EXIT FLANGE Attitude		
	yaw	pitch
Measured	-0.3	-7.6
Nominal	0.0	0.0
Difference	-0.3	<b>-7.6</b>
	mrad	mrad

EXIT FLANGE Diameter	
	DIA
Measured	9.472
Nominal	9.500
Difference	<b>-0.028</b>
	inches

**Description:**

Meas. vs. nom. values for exit flange expressed in the FRAME FINAL coordinate system.  
 Tol +/- 10mils and +/- 3 mrad. Values in **BOLD** or **RED** are most critical.

Final Fiducial Coordinates for BM2 Standard Vacuum Chamber

**Final: Fiducial Coordinates for BM2 Std. Vac. Chamber**

Fiducial	Z	X	Y
TB1	-77.159	-6.281	4.379
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inches      inches      inches

**Description:**  
Fiducial values based on established chamber datum.

