

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

**BM2010**

Date:

12/2/02

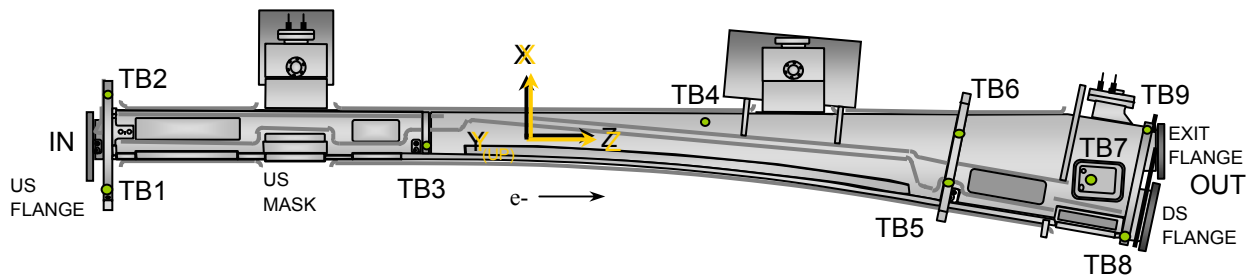
Chamber:

BM2010

Operator(s):

F. Gaudreault  
C. Banuelos

Notes:



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

Fiducial	Z	X	Y
TB1	-77.127	-6.218	4.387
TB2	-77.244	7.223	4.402
TB3	-34.861	0.138	4.385
TB4	0.381	3.986	2.363
TB5	34.426	-4.633	4.370
TB6	35.795	2.424	4.371
TB7	53.834	-4.256	2.462
TB8	58.038	-12.408	2.952
TB9	60.929	2.966	2.966

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

Z	X	Y
53.834	-4.256	2.462
53.933	-4.302	2.408
-0.099	0.046	0.054

inches      inches      inches

Source

**FINAL**

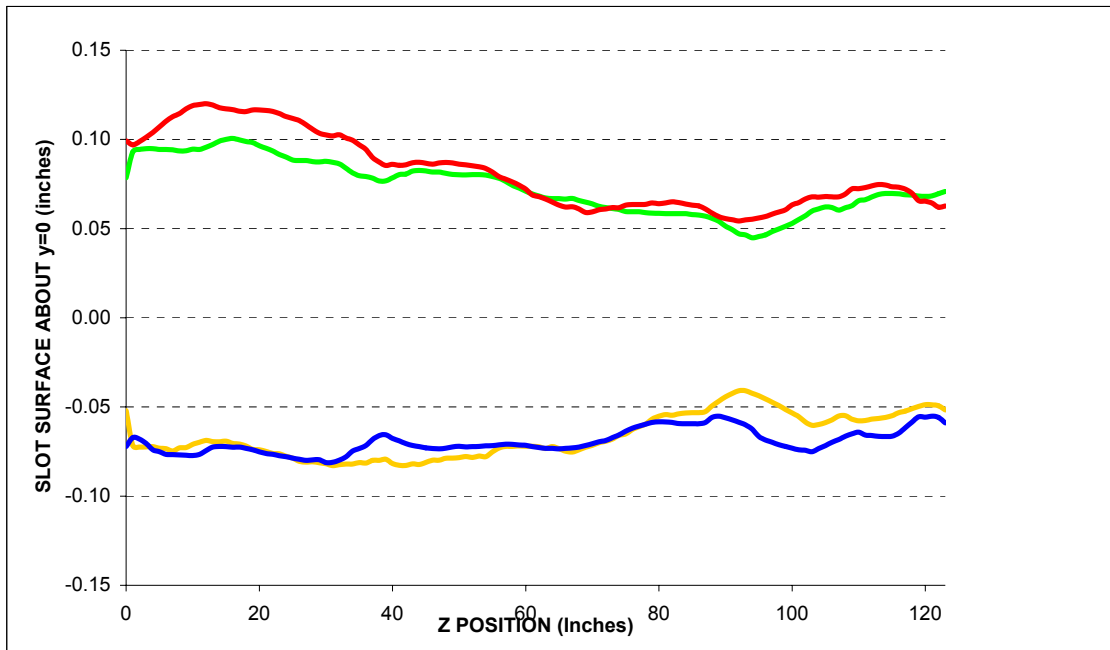
**Description:**

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	-----



BM2010

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

Fiducial	Y
TB1	4.374
TB2	4.366
TB3	4.375
TB4	2.372
TB5	4.380
TB6	4.389

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 Position**

**US MASK X-Position**

-2.541	Measured
-2.667	Nominal
<b>0.126</b>	<b>Delta</b>

inches

US PIN TOP	Z	X	Y
Measured	-80.232	0.003	2.290
Nominal	-80.229	0.000	2.282
<b>Difference</b> (inches)	-0.003	<b>0.003</b>	<b>0.008</b>

US PIN BOTTOM	Z	X	Y
Measured	-80.226	0.004	-2.271
Nominal	-80.229	0.000	-2.282
<b>Difference</b> (inches)	0.003	<b>0.004</b>	<b>0.011</b>

US Inner Chamber	Z	X	Y
Measured	N/A	-1.404	0.024
Nominal	N/A	-1.404	0.000
<b>Difference</b> (inches)	N/A	<b>0.000</b>	0.024

US Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	-80.763	0.003	0.000
Nominal	-80.763	0.000	0.000
<b>Difference</b> (inches)	<b>0.000</b>	<b>0.003</b>	<b>0.000</b>

inches          inches          inches

US Flange Attitude		
	yaw	pitch
Measured	7.3	-1.1
Nominal	0.0	0.0
<b>Difference</b>	<b>7.3</b>	-1.1

mrad          mrad

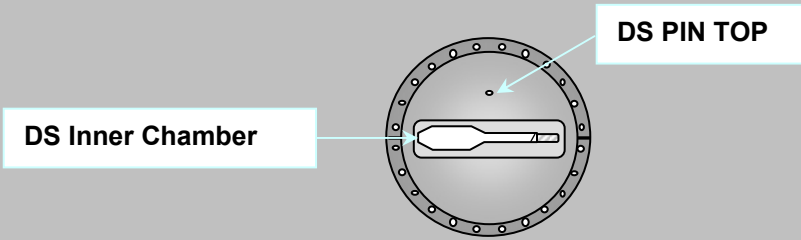
US Flange Diameter	
	DIA
Measured	11.471
Nominal	11.500
<b>Difference</b>	<b>-0.029</b>

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	62.746	1.822	2.295
Nominal	62.859	1.836	2.282
Difference (inches)	-0.113	<b>-0.014</b>	<b>0.013</b>

DS Inner Chamber	Z	X	Y
Measured	N/A	-1.414	0.008
Nominal	N/A	-1.404	0.000
Difference (inches)	N/A	<b>-0.010</b>	<b>0.008</b>

DS Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	63.289	1.828	0.010
Nominal	63.393	1.836	0.000
Difference (inches)	<b>-0.104</b>	<b>-0.008</b>	<b>0.010</b>
	inches	inches	inches

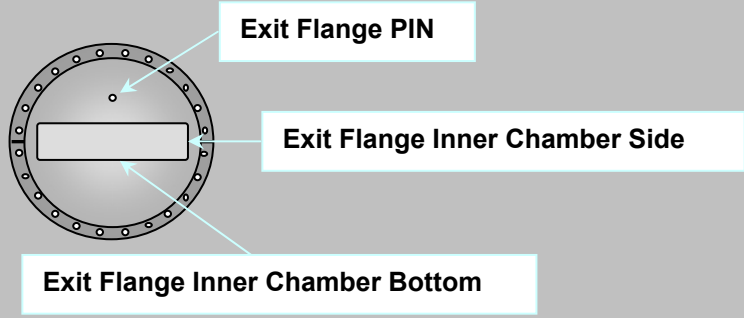
DS Flange Attitude		
	yaw	pitch
Measured	-3.6	-6.0
Nominal	0.0	0.0
Difference	<b>-3.6</b>	<b>-6.0</b>
	mrad	mrad

DS Flange Diameter	
	DIA
Measured	11.473
Nominal	11.500
Difference	<b>-0.027</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	63.321	0.012	1.805
Nominal	63.422	0.000	1.782
Difference (inches)	-0.101	<b>0.012</b>	<b>0.023</b>

EXIT FLANGE Inner Chamber Side	Z	X	Y
Measured	N/A	2.458	0.048
Nominal	N/A	2.453	0.000
Difference (inches)	N/A	<b>0.005</b>	0.048

EXIT FLANGE Inner Chamber Bottom	Z	X	Y
Measured	N/A	-0.110	-0.197
Nominal	N/A	0.000	-0.219
Difference (inches)	N/A	-0.110	<b>0.022</b>

EXIT Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	63.876	0.003	0.016
Nominal	63.956	0.000	0.000
Difference (inches)	<b>-0.080</b>	<b>0.003</b>	<b>0.016</b>
	inches	inches	inches

EXIT FLANGE Attitude		
	yaw	pitch
Measured	0.0	-8.1
Nominal	0.0	0.0
Difference	0.0	<b>-8.1</b>
	mrاد	mrاد

EXIT FLANGE Diameter	
	DIA
Measured	9.473
Nominal	9.500
Difference	<b>-0.027</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	-77.127	-6.218	4.387
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inches      inches      inches

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Fiducial values based on established chamber datum.

