

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

**BM2016**

Date:

11/8/02

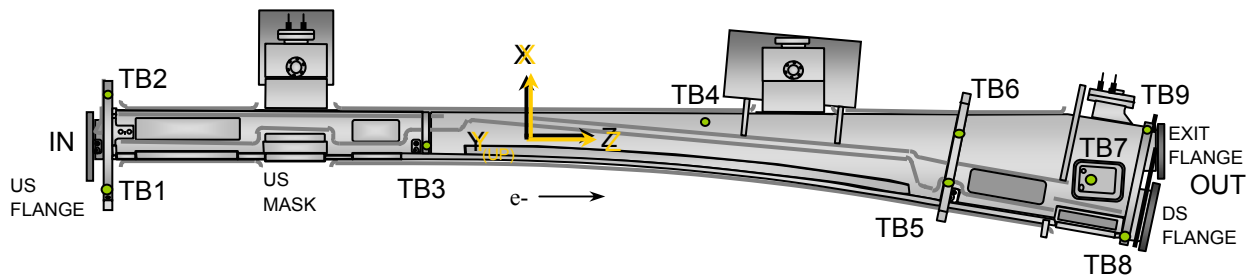
Chamber:

BM2016

Operator(s):

F. Gaudreault  
L. Griffin

Notes:



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

Fiducial	Z	X	Y
TB1	-77.159	-6.222	4.373
TB2	-77.216	7.229	4.391
TB3	-34.895	-0.027	4.364
TB4	0.342	3.795	2.391
TB5	34.514	-4.640	4.393
TB6	35.775	2.413	4.393
TB7	53.883	-4.264	2.408
TB8	58.034	-12.401	2.953
TB9	60.995	3.028	2.931

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

Z	X	Y
53.883	-4.264	2.408
53.933	-4.302	2.408
-0.050	0.038	0.000

inches      inches      inches

Source

**FINAL**

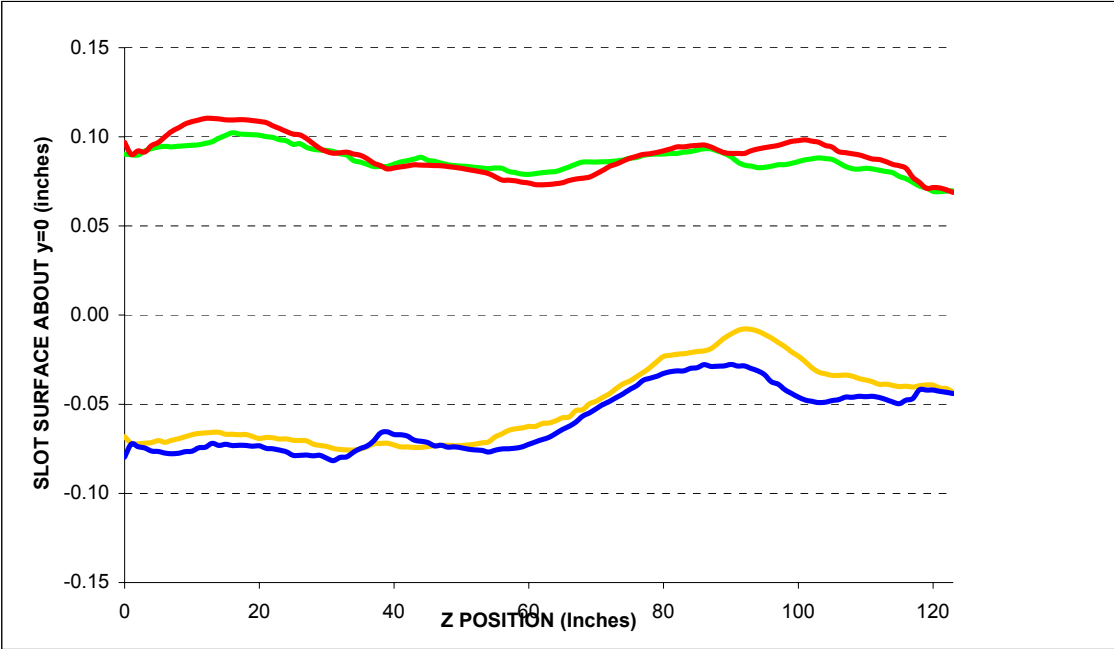
**Description:**

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	-----



BM2016

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

Fiducial	Y
TB1	4.373
TB2	4.391
TB3	4.363
TB4	2.381
TB5	4.393
TB6	4.393

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**

US MASK X-Position	
-2.579	Measured
-2.667	Nominal
<b>0.088</b>	<b>Delta</b>

inches

US PIN TOP	Z	X	Y
Measured	-80.230	0.002	2.292
Nominal	-80.229	0.000	2.282
Difference (inches)	-0.001	<b>0.002</b>	<b>0.010</b>

US PIN BOTTOM	Z	X	Y
Measured	-80.223	0.006	-2.272
Nominal	-80.229	0.000	-2.282
Difference (inches)	0.006	<b>0.006</b>	<b>0.010</b>

US Inner Chamber	Z	X	Y
Measured	N/A	-1.404	-0.013
Nominal	N/A	-1.404	0.000
Difference (inches)	N/A	<b>0.000</b>	-0.013

US Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	-80.763	0.006	0.005
Nominal	-80.763	0.000	0.000
Difference (inches)	<b>0.000</b>	<b>0.006</b>	<b>0.005</b>

inches          inches          inches

US Flange Attitude		
	yaw	pitch
Measured	6.4	-1.7
Nominal	<b>0.0</b>	<b>0.0</b>
Difference	<b>6.4</b>	-1.7

mrad          mrad

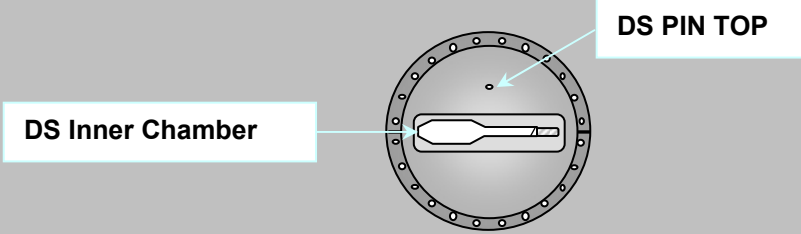
US Flange Diameter	
	DIA
Measured	11.470
Nominal	<b>11.500</b>
Difference	<b>-0.030</b>

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	1.835	2.279
Nominal	62.859	1.836	2.282
Difference (inches)	-0.113	-0.001	-0.003

DS Inner Chamber	Z	X	Y
Measured	N/A	-1.420	-0.038
Nominal	N/A	-1.404	0.000
Difference (inches)	N/A	-0.016	-0.038

DS Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	63.286	1.832	-0.002
Nominal	63.393	1.836	0.000
Difference (inches)	-0.108	-0.004	-0.002
	inches	inches	inches

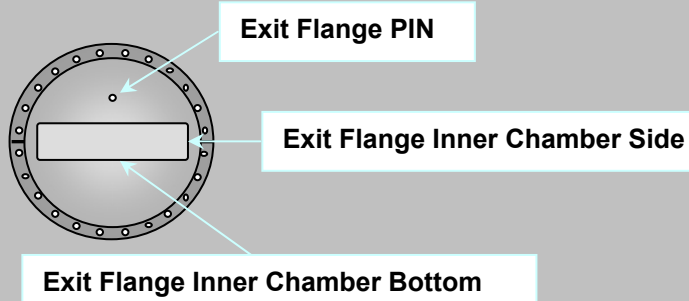
DS Flange Attitude		
	yaw	pitch
Measured	-4.6	-5.9
Nominal	0.0	0.0
Difference	-4.6	-5.9
	mrads	mrads

DS Flange Diameter	
	DIA
Measured	11.463
Nominal	11.500
Difference	-0.037
	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	63.350	0.013	1.750
Nominal	63.422	0.000	1.782
Difference (inches)	-0.072	<b>0.013</b>	<b>-0.032</b>

EXIT FLANGE Inner Chamber Side	Z	X	Y
Measured	N/A	2.464	0.089
Nominal	N/A	2.453	0.000
Difference (inches)	N/A	<b>0.011</b>	0.089

EXIT FLANGE Inner Chamber Bottom	Z	X	Y
Measured	N/A	-0.080	-0.253
Nominal	N/A	0.000	-0.219
Difference (inches)	N/A	-0.080	<b>-0.034</b>

EXIT Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	63.887	0.006	-0.033
Nominal	63.956	0.000	0.000
Difference (inches)	<b>-0.069</b>	<b>0.006</b>	<b>-0.033</b>
	inches	inches	inches

EXIT FLANGE Attitude		
	yaw	pitch
Measured	-1.7	2.1
Nominal	0.0	0.0
Difference	-1.7	2.1
	mrad	mrad

EXIT FLANGE Diameter	
	DIA
Measured	9.475
Nominal	9.500
Difference	<b>-0.025</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**

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TB1	-77.159	-6.222	4.373
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inches      inches      inches

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Fiducial values based on established chamber datum.

