

Date:

11/7/02

Chamber:

BM2017

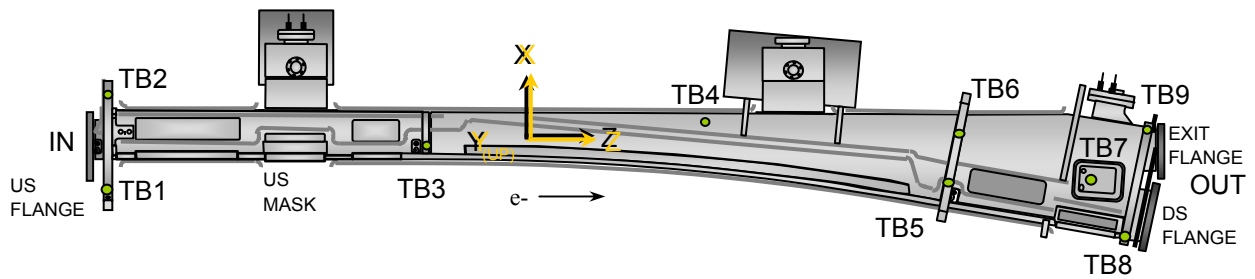
Operator(s):

F. Gaudreault  
L. Griffin

Notes:

Upstream flange setting 0.030 in. low. Exit flange pitch large (16 mrad) and high.

Final Survey 1/30/03 HI & LG



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

Fiducial	Z	X	Y
TB1	-77.147	-6.239	4.375
TB2	-77.245	7.236	4.359
TB3	-34.842	0.109	4.378
TB4	0.374	3.892	2.361
TB5	34.478	-4.722	4.367
TB6	35.836	2.485	4.378
TB7	53.891	-4.278	2.414
TB8	57.980	-12.395	2.942
TB9	60.932	3.018	2.957

Nominal Deltas For H1 Absorber (TB7)		
Z	X	Y
53.891	-4.278	2.414
53.933	-4.302	2.408
-0.042	0.024	0.006

inches      inches      inches

Source **FINAL**

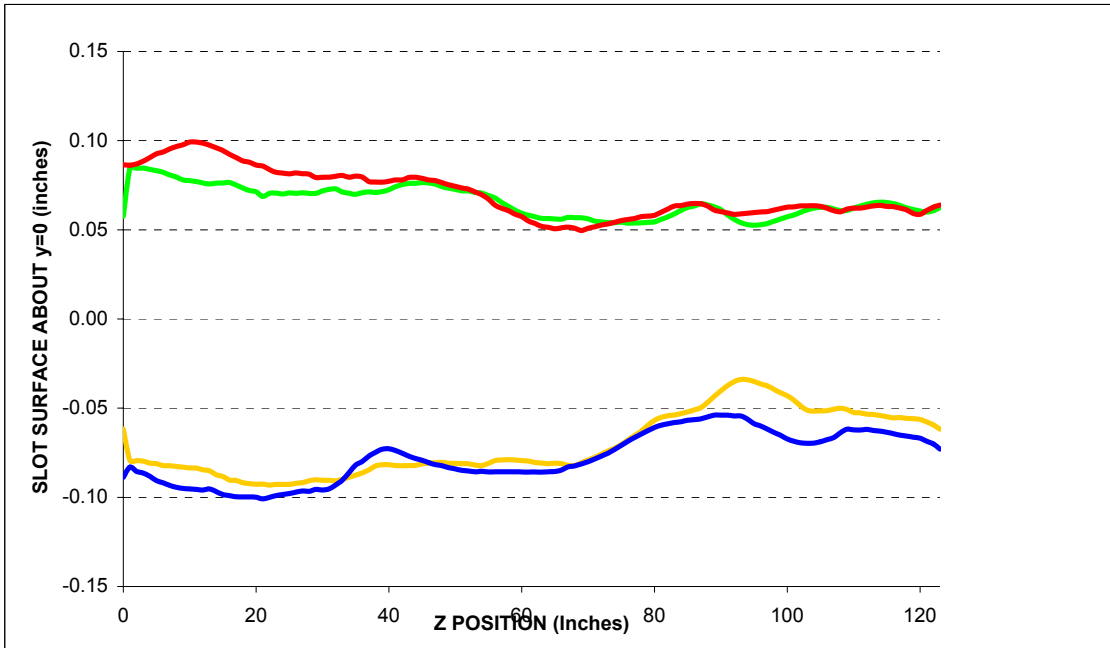
**Description:**

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	-----

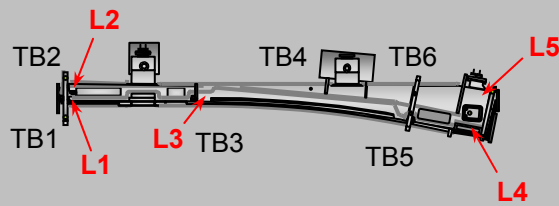


BM2017

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

Fiducial	Y
TB1	4.376
TB2	4.358
TB3	4.377
TB4	2.351
TB5	4.366
TB6	4.379

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**

-2.571	Measured
-2.667	Nominal
<b>0.096</b>	<b>Delta</b>

inches

US PIN TOP	Z	X	Y
Measured	-80.242	0.007	2.249
Nominal	-80.229	0.000	2.282
<b>Difference</b> (inches)	-0.013	<b>0.007</b>	<b>-0.033</b>

US PIN BOTTOM	Z	X	Y
Measured	-80.214	0.006	-2.313
Nominal	-80.229	0.000	-2.282
<b>Difference</b> (inches)	0.015	<b>0.006</b>	<b>-0.031</b>

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

US Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	-80.763	0.005	-0.033
Nominal	-80.763	0.000	0.000
<b>Difference</b> (inches)	<b>0.000</b>	<b>0.005</b>	<b>-0.033</b>

inches      inches      inches

US Flange Attitude		
	yaw	pitch
Measured	7.7	-5.8
Nominal	0.0	0.0
<b>Difference</b>	<b>7.7</b>	<b>-5.8</b>

mrad      mrad

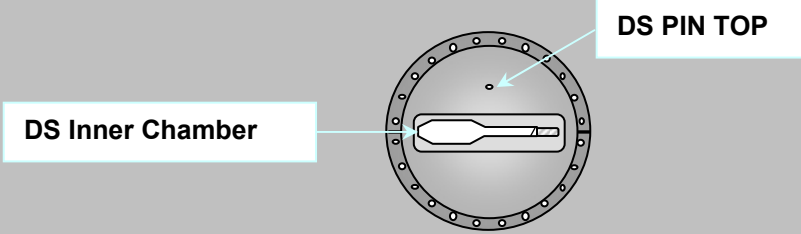
US Flange Diameter	
	DIA
Measured	11.467
Nominal	11.500
<b>Difference</b>	<b>-0.033</b>

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	62.750	1.815	2.298
Nominal	62.859	1.836	2.282
Difference (inches)	-0.109	<b>-0.021</b>	<b>0.015</b>

DS Inner Chamber	Z	X	Y
Measured	N/A	-1.419	0.039
Nominal	N/A	-1.404	0.000
Difference (inches)	N/A	<b>-0.015</b>	<b>0.039</b>

DS Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	63.296	1.831	0.012
Nominal	63.393	1.836	0.000
Difference (inches)	<b>-0.097</b>	<b>-0.005</b>	<b>0.012</b>
	inches	inches	inches

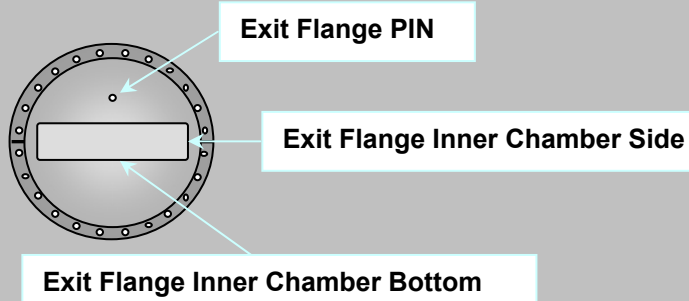
DS Flange Attitude		
	yaw	pitch
Measured	-4.8	-8.4
Nominal	0.0	0.0
Difference	<b>-4.8</b>	<b>-8.4</b>
	mrad	mrad

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	63.319	0.010	1.820
Nominal	63.422	0.000	1.782
Difference (inches)	-0.103	0.010	0.038

EXIT FLANGE Inner Chamber Side	Z	X	Y
Measured	N/A	2.454	-0.092
Nominal	N/A	2.453	0.000
Difference (inches)	N/A	0.001	-0.092

EXIT FLANGE Inner Chamber Bottom	Z	X	Y
Measured	N/A	0.219	-0.190
Nominal	N/A	0.000	-0.219
Difference (inches)	N/A	0.219	0.030

EXIT Flange Position	Plane	From Circle Fit	
	Z	X	Y
Measured	63.890	0.005	0.030
Nominal	63.956	0.000	0.000
Difference (inches)	-0.066	0.005	0.030
	inches	inches	inches

EXIT FLANGE Attitude		
	yaw	pitch
Measured	1.0	-16.8
Nominal	0.0	0.0
Difference	1.0	-16.8
	mrاد	mrاد

EXIT FLANGE Diameter	
	DIA
Measured	9.476
Nominal	9.500
Difference	-0.024
	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	-77.147	-6.239	4.375
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