

# Fiducials for QFC Std. Vac. Chamber

QFC007

Date:

8/6/01

Chamber:

QFC007

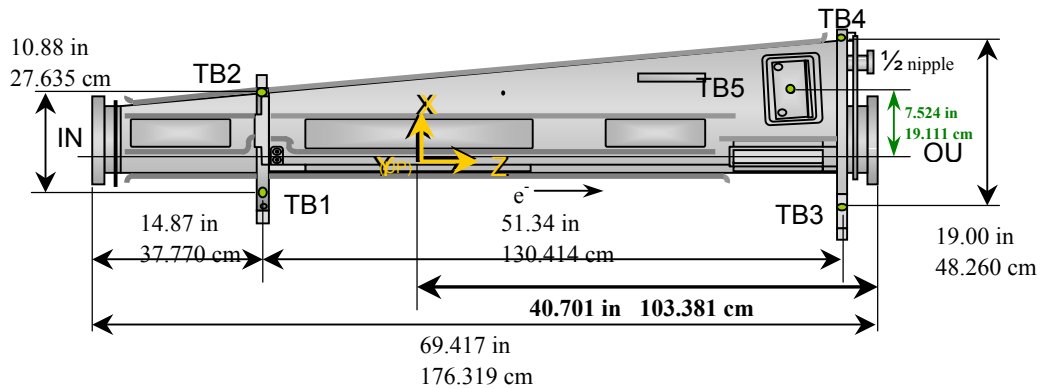
Operator(s):

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F. Gaudreault

Notes:

Trav. St #1200: 7/27/01; #1280: 8/1/01. TBs 6 and 7 were not on original chamber



## Fiducial Coordinates for QFC Standard Vacuum Chamber: (inches)

Fiducial	Z	X	Y
TB1	-13.889	-3.352	4.419
TB2	-13.949	7.316	4.366
TB3	37.458	-5.507	4.409
TB4	37.542	13.309	2.966
TB5	33.442	7.595	2.076
TB6	13.427	2.547	2.344
TB7	13.389	2.595	-2.313

TB5 <sub>x</sub> Absorber Check	
Measured	7.595
Nominal	7.524
Difference	0.071

STATUS: **OK**  
< 0.100 in

Source: **US Step**

**Description:**  
Fid. vals based on internal chamber datum. Source="US Step" indicates final data unless rechecked.

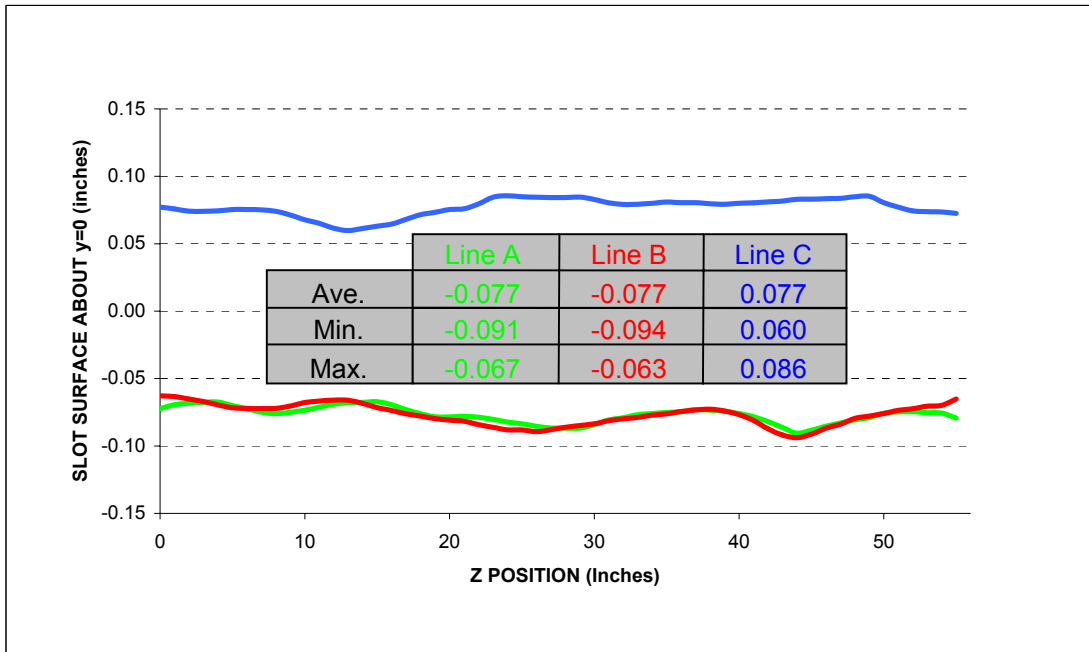
## Flange Positions: (inches)

Flange	Z	X	Y	Source
IN	-28.634	1.822	-0.005	US
OUT	40.701	1.841	0.017	DS
NIP	N/A	10.521	-0.011	DS

Source: **US Step**

**Description:**  
Flange values based on scans of flange surfaces and referenced to internal chamber datum.

**Fiducialization Step: (Traveler Step # 1380: 08/06/01)**



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**Step 1: Fiducial and Flange Coordinates for QFC Std. Vac. Chamber**

Fiducial	Z	X	Y	Downstream Flanges	
TB1	-13.887	-3.351	4.415	OUT	NIP
TB2	-13.951	7.316	4.369	Z	41.451   N/A in
TB3	37.428	-5.519	4.411	X	1.833   10.521 in
TB4	37.543	13.308	2.963	Y	0.020   -0.011 in
TB5	33.442	7.595	2.076		
TB6	0.000	0.000	0.000		
TB7	0.000	0.000	0.000		
	inches	inches	inches	Nominals:	Xout: 1.836   Yout: 0.000

**Description:**  
Fiducial values based on internal chamber datum. Flange OUT X and Y values checked  $\pm 0.020$  in.

Status

**Step 2: Downstream Flange Check**

Flange	Yaw	Pitch	Diameter		Nominal Diameter	
			Meas.	Actual		
OUT	-8.37	-2.26	11.467	9.967	9.970	OK
NIP	N/A	N/A			2.730	PENDING ??
	mrad	mrad	inches			$\pm 0.015$ in

**Description:**  
Yaw -6 to -13 mrad. Pitch  $\pm 3$  mrad. Diameter difference  $\pm 0.015$  in

**Step 1: Change in Fiducial Values Check**

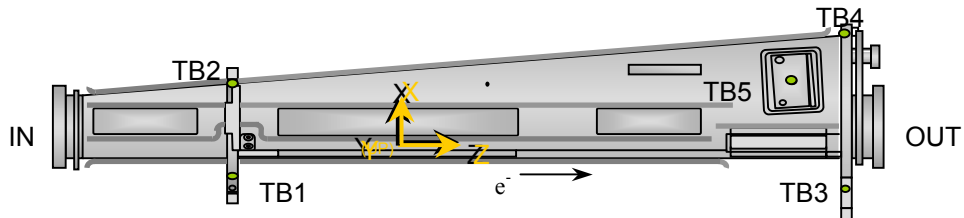
Fiducial	Delta Z	Delta X	Delta Y
TB1	-0.002	-0.001	0.004
TB2	0.002	0.000	-0.004
TB3	<b>0.031</b>	<b>0.011</b>	-0.002
TB4	-0.001	0.001	0.002
TB5	0.000	-0.001	0.000
TB6	<b>13.427</b>	<b>2.547</b>	<b>2.344</b>
TB7	<b>13.389</b>	<b>2.595</b>	<b>-2.313</b>

inches          inches          inches

**Description:**  
Difference between current and previous fiducial values.

Global: **UPDATE**

OK  
OK  
**DELTA Z?**  
OK  
OK  
**DELTA Z?**  
**DELTA Z?**  
±0.006 in



**Step 2: Change in Downstream Flange Check**

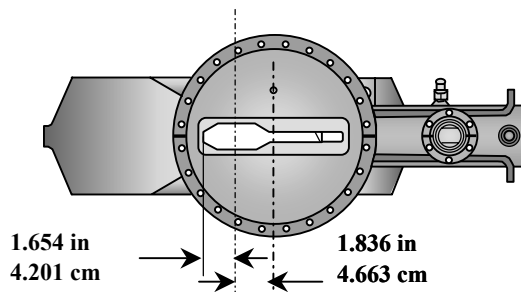
Flange	X	Y	Diameter
OUT			
New:	1.841	0.017	11.468 in
Delta:	<b>0.007</b>	-0.003	0.001 in

**Description:**  
Difference between current and previous fiducial values and diameter. If the current diameter is acceptable, only then will the corresponding X and Y vals be updated if either exceed the tolerance.

Diameter:

**UPDATE**

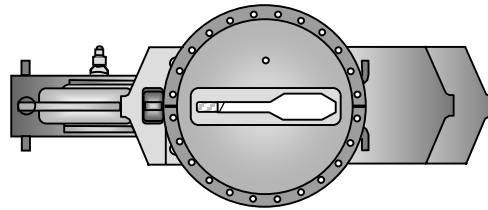
X and Y: ±0.006 in  
Diameter: ±0.015 in



Final "Upstream Flange" Step (#1465 continued):

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<b>Step 3: Upstream Flange Values</b>					
<b>Flange IN</b>		<b>Flange IN</b>			
-29.384	Z	6.32	-3.20	mrad	
1.822	X	<b>Yaw</b>	<b>Pitch</b>		
-0.005	Y				
inches		Meas.	Actual	Nominal Diameter	
<b>Diameter</b>		11.470	9.970	9.970	OK
		in		±0.015 in	
<b>Description:</b>					
Location and orientation of Flange IN (upstream) plus its measured diameter.					
Flange IN X and Y values are also checked ±0.020 in. Yaw 5 to 9 mrad. Pitch ±3 mrad.					



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<b>Step 4: QFC Chamber Length</b>					
<b>Length with SMR</b>		<b>Length</b>		<b>Nominal Length</b>	
70.835	inches	69.335	inches	69.417	OK
<b>Description:</b>					
Length should be between nominal value and nominal value - 0.125 in.					

