

# Fiducials for QFC Std. Vac. Chamber

QFC005

Date:

7/31/01

Chamber:

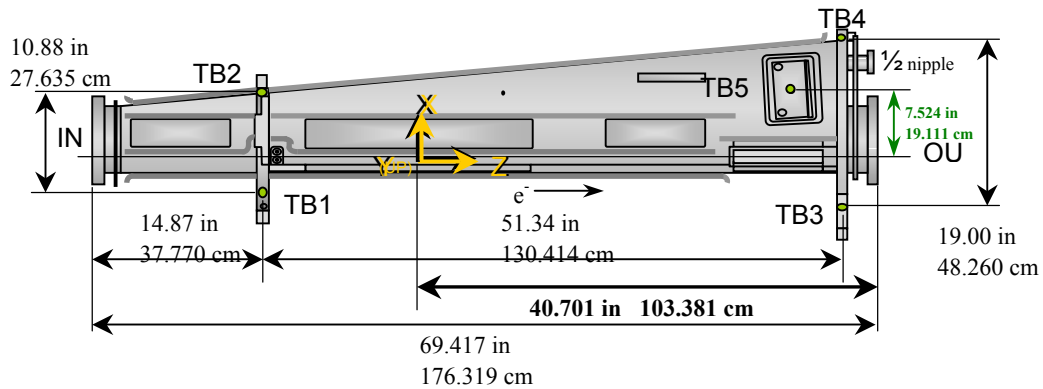
QFC005

Operator(s):

H. Imfeld  
M. Rogers

Notes:

Trav. St #1200: 7/17/01; #1280: 7/17/01. TBs 6 an 7 were not on original chamber



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

Fiducial	Z	X	Y
TB1	-13.982	-3.430	4.384
TB2	-13.985	7.271	4.395
TB3	37.427	-5.499	4.404
TB4	37.544	13.281	2.989
TB5	33.419	7.576	2.080
TB6	13.382	2.659	2.343
TB7	13.455	2.564	-2.317

TB5 <sub>x</sub> Absorber Check	
Measured	7.576
Nominal	7.524
Difference	0.052

STATUS: **OK**  
< 0.100 in

Source: **US Step**

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

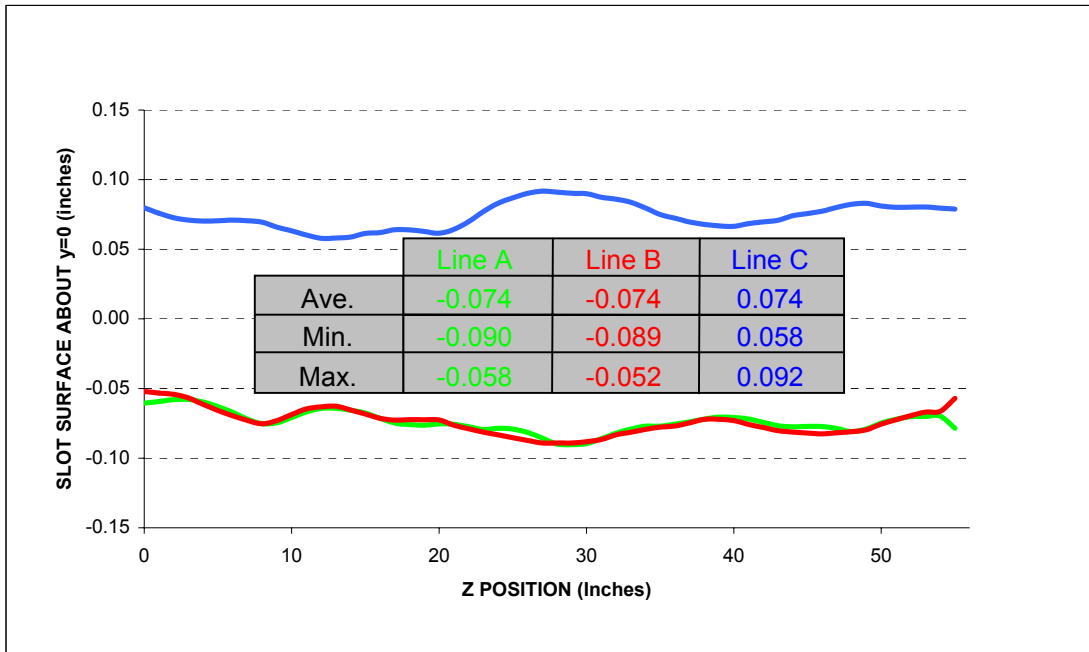
## Flange Positions: (inches)

Flange	Z	X	Y	Source
IN	-28.636	1.829	0.029	US
OUT	40.701	1.852	0.027	DS
NIP	N/A	10.530	0.008	DS

Source: **US Step**

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

**Fiducialization Step: (Traveler Step # 1380: 07/31/01)**



QFC005

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

Fiducial	Z	X	Y	Downstream Flanges	
TB1	-13.982	-3.434	4.386	OUT	NIP
TB2	-13.988	7.275	4.394	Z	41.451 N/A in
TB3	37.430	-5.513	4.403	X	1.842 10.530 in
TB4	37.543	13.279	2.989	Y	0.026 0.008 in
TB5	33.419	7.578	2.081		
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	Status
			Meas.	Actual		
OUT	-11.63	-6.72	11.469	9.969	9.970	OK
NIP	N/A	N/A	4.218	2.718	2.730	OK ??
	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**

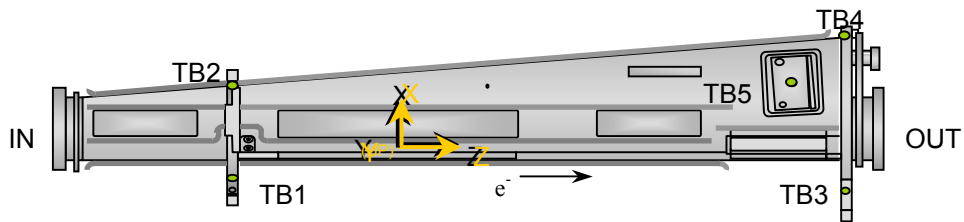
Fiducial	Delta Z	Delta X	Delta Y
TB1	0.000	0.004	-0.001
TB2	0.003	-0.005	0.002
TB3	-0.003	<b>0.014</b>	0.001
TB4	0.001	0.002	0.000
TB5	0.000	-0.001	-0.001
TB6	<b>13.382</b>	<b>2.659</b>	<b>2.343</b>
TB7	<b>13.455</b>	<b>2.564</b>	<b>-2.317</b>

inches          inches          inches

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

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

Global: **UPDATE**



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

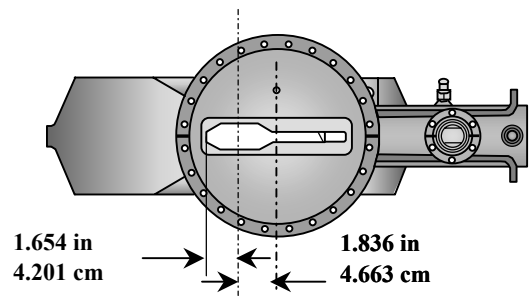
Flange	X	Y	Diameter
OUT			
New:	1.852	<b>0.027</b>	11.471 in
Delta:	<b>0.010</b>	0.001	0.002 in

Diameter:

**UPDATE**

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

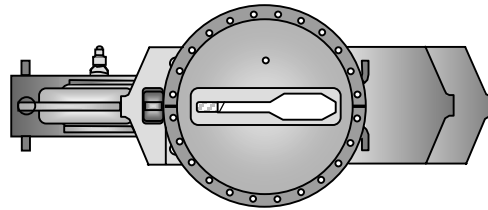
**Description:**  
Difference between current and previous fiducial values and diameter. If the current diameter is acceptable, only then will the corresponding X and Y vals be updated if either exceed the tolerance.



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

QFC005  
Status

<b>Step 3: Upstream Flange Values</b>					
<b>Flange IN</b>		<b>Flange IN</b>			
-29.386	Z	7.30	0.51	mrad	
1.829	X	<b>Yaw</b>	<b>Pitch</b>		
<b>0.029</b>	Y				
inches		Meas.	Actual	Nominal Diameter	
<b>Diameter</b>		11.475	9.975	9.970	<b>OK</b>
		±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.					



QFC005  
Status

<b>Step 4: QFC Chamber Length</b>				
<b>Length with SMR</b>		<b>Length</b>		<b>Nominal Length</b>
70.837	inches	69.337	inches	69.417
				<b>OK</b>
<b>Description:</b>				
Length should be between nominal value and nominal value - 0.125 in.				

