

Fiducials for QFC Std. Vac. Chamber

QFC014

Date:

11/19/01

Chamber:

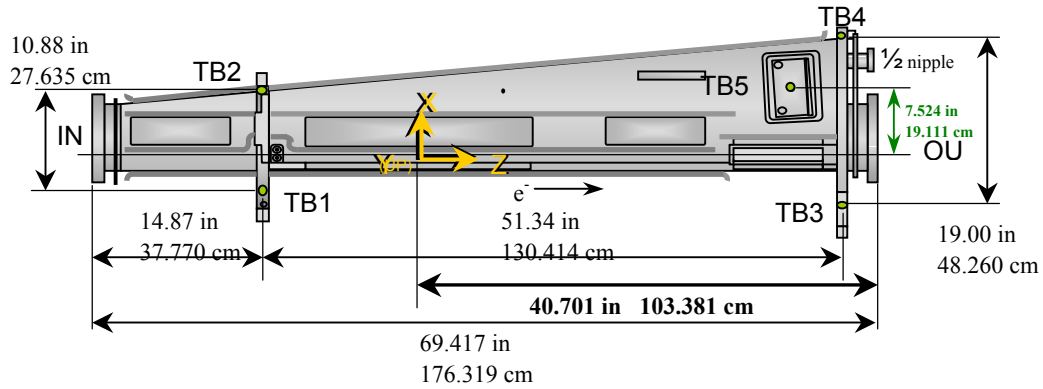
QFC014

Operator(s):

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Notes:

Traveler Step #1200: 8/27/01; #1280: 8/30/01; Step #1380 and #1465 below



Fiducial Coordinates for QFC Standard Vacuum Chamber: (inches)

Fiducial	Z	X	Y
TB1	-13.803	-3.137	4.413
TB2	-13.866	7.307	4.374
TB3	37.433	-5.195	4.421
TB4	37.545	13.310	2.928
TB5	33.425	7.563	2.057
TB6	13.412	2.588	2.384
TB7	13.442	2.595	-2.349

TB5 _x Absorber Check	
Measured	7.563
Nominal	7.524
Difference	0.039

STATUS: **OK**
< 0.100 in

Source: **US Step**

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

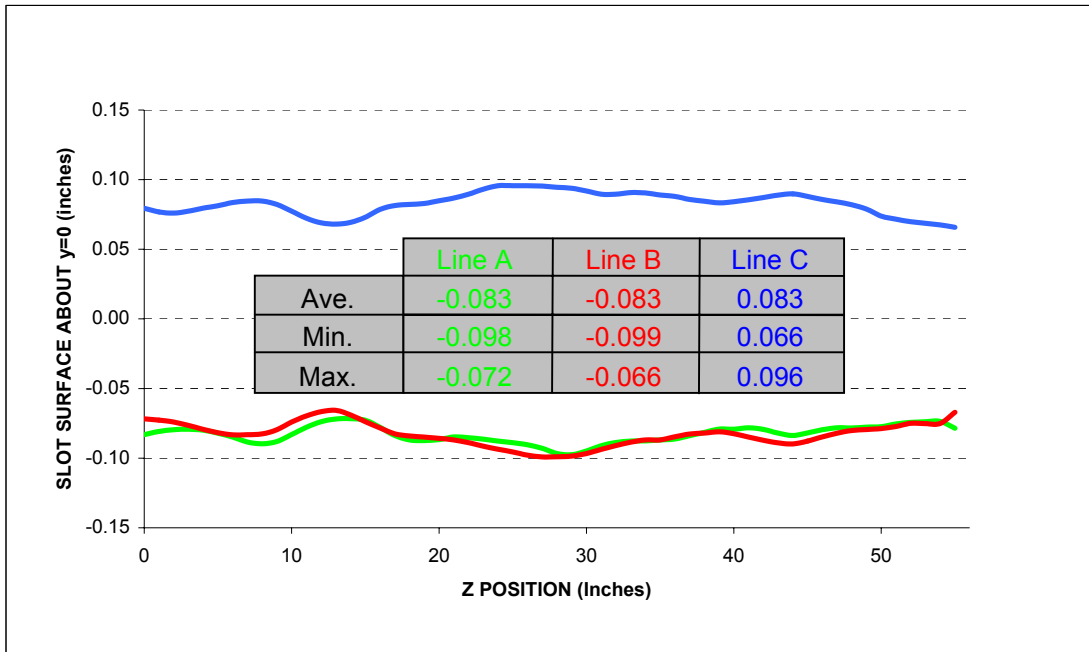
Flange Positions: (inches)

Flange	Z	X	Y	Source
IN	-28.635	1.848	0.002	US
OUT	40.701	1.835	0.007	DS
NIP	N/A	10.522	-0.056	DS

Source: **US Step**

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

Fiducialization Step: (Traveler Step # 1380: 11/08/01, 11/09/01, 11/11/01)



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

Fiducial	Z	X	Y	Downstream Flanges			
TB1	-13.800	-3.135	4.426	OUT	NIP		
TB2	-13.871	7.308	4.368				
TB3	37.438	-5.199	4.419	Z	41.451	N/A	in
TB4	37.541	13.312	2.936	X	1.835	10.522	in
TB5	33.423	7.563	2.059	Y	-0.003	-0.056	in
TB6	13.411	2.588	2.381	Nominals:		Xout	Yout
TB7	13.444	2.593	-2.359			1.836	0.000
	inches	inches	inches				

Description:
Fiducial values based on internal chamber datum. Flange OUT X and Y values checked ± 0.020 in.

Status

Step 2: Downstream Flange Check

Flange	Yaw	Pitch	Diameter		Nominal Diameter	
			Meas.	Actual		
OUT	-8.25	-3.09	11.467	9.967	9.970	OK
NIP	N/A	N/A	4.228	2.728	2.730	OK
	mrad	mrad	inches		± 0.015 in	

Description:
Yaw -6 to -13 mrad. Pitch ± 3 mrad. Diameter difference ± 0.015 in

Step 1: Change in Fiducial Values Check

Fiducial	Delta Z	Delta X	Delta Y
TB1	-0.003	-0.001	-0.013
TB2	0.005	-0.002	0.007
TB3	-0.005	0.004	0.002
TB4	0.003	-0.003	-0.008
TB5	0.002	0.000	-0.001
TB6	0.001	0.001	0.003
TB7	-0.002	0.001	0.010

inches inches inches

DELTA Y?

DELTA Y?

OK

DELTA Y?

OK

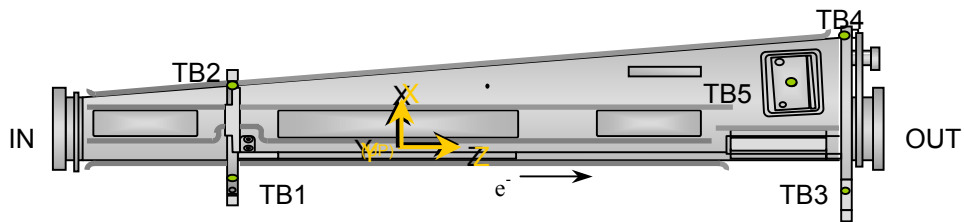
OK

DELTA Y?

±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:	1.835	0.007	11.467 in
Delta:	0.000	0.010	0.000 in

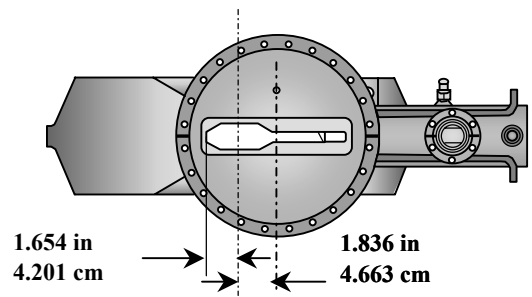
Diameter:

UPDATE

X and Y: ±0.006 in

Diameter: ±0.015 in

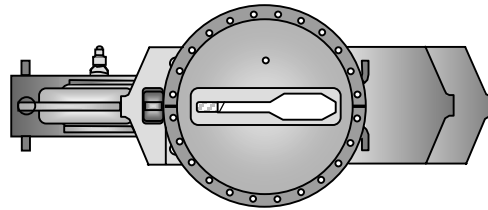
Description:
Difference between current and previous fiducial values and diameter. If the current diameter is acceptable, only then will the corresponding X and Y vals be updated if either exceed the tolerance.



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

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Step 3: Upstream Flange Values					
Flange IN		Flange IN			
-29.385	Z	8.24	-1.78	mrad	
1.848	X	Yaw	Pitch		
0.002	Y				
inches		Meas.	Actual	Nominal Diameter	
Diameter		11.465	9.965	9.970	OK
		in		±0.015 in	
Description:					
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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Step 4: QFC Chamber Length					
Length with SMR		Length		Nominal Length	
70.836	inches	69.336	inches	69.417	OK
Description:					
Length should be between nominal value and nominal value - 0.125 in.					

