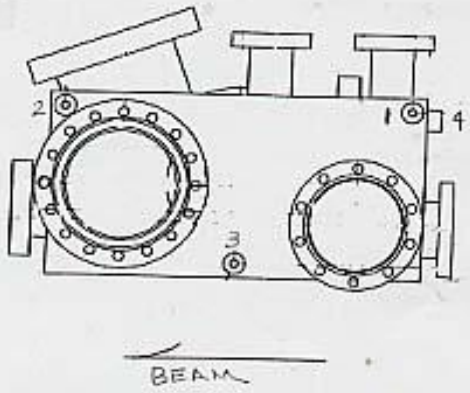
SSRL

BL 7-1 SLIT TANK

4-26-05



	X	Y	Z
1	-7.781	+4.771	680.768
2	-7.754	+4.882	692.719
3	-2.299	+3.948	686.736
4	-7.537	-1.818	678.821

* VALUES FROM WIGGLER LINE *

SSRL
BL 7-1 SLIT TANK
LAB DATA

4-22-05
J.M., F.G., L.G.

Check JM

(2) 14.604 u/s FACE OF TANK
1.230 to u/s FL. FACE
13,374
679.038 Z
665.664 LOS

14.604

1) 14.104
1.000
15.104
665.664
680.768

2) 9.436
17.619
27.055
665.664
692.719

3) 3.453
17.619
21.072
665.664
686.736

4) 12.157
1.—
13.157
665.664
678.821

SSRL

BL 7-1 SLIT TANK

LAB DATA

4-22-05

J.M., F.G., L.G.

(X) D/S (FAR) U/S (NEAR)

-4.053 ✓ -3.667 ✓

1.685 1.685 RAD

-5.738 ✓ -5.352 ✓

SIDE OF TANK
ΔZ = 6"

U/S 32.893 D/S 32.902

-5.738

-5.352

16.084 + 19.194 = 35.278

35.693

15.000 + 19.194 = 34.194

34.813

35.432 - 19.194 = 16.238 S/R

35.818 S/R ✓

- 41.170 LOS FROM WIGGLER LINE ✗

1) 32.389
1.000
33.389
41.170
-7.781 ✓

2) 32.416
1.000
33.416
41.170
-7.754 ✓

3) 37.871
1.000
38.871
41.170
-2.299

4) 32.633
1.000
33.633
41.170
-7.537 ✓

SSRL
BL 7-1 SLIT TANK
LAB DATA

4-22-05
J.M., F.G., L.G.

(Y) 12.620 READ
39.000 Splice
51.620
41.680 Bot. of FRAME TO B/L u/s
+9.940 HI ✓

3.370 ∅

FLANGES

u/s) 9.940
1.685 RAD.
8.255 S/R ✓
8.255
0

D/s) 9.940
1.685
8.255
.133 Pitch ✓
8.122 S/R ✓
8.122
∅

1) 4.169
1.000
5.169
9.940
+4.771 ✓

2) 4.058
1.000
5.058
9.940
+4.882 ✓

3) 4.992
1.000
5.992
9.940
+3.948 ✓

4) 10.758
1.000
11.758
9.940
-1.818 ✓

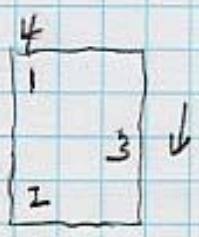
SSRL

BL 7-1 SLIT TANK

LAB DATA

4-22-05

F.G., J.M., L.G.



(X) 3.090
3.000
6.090 (-) SIDE OF FRAME TO SIDE OF TANK

SIDE OF TANK

u(s) 32.769 s/R
32.769
0

d(s) 32.769 s/R
32.770
+001

- 6.090
- 6.090
27.—
26.915
26.000
26.180
26.679 s/R
26.679 s/R
- 32.769 LOS

OFFSET
19.194

TANK FLANGES

u(s) 35.693

d(s) 16.084
19.194 OFFSET
35.278

Δ = .415
.438
+.023

.438 DRAWING
.386 TRAVELED
.052

Notes:

Alignment:

When installed, the 7-1 slit tank body theoretical centerline is parallel with the beam line 7 wiggler centerline in yaw. When installed, the 7-1 slit tank body theoretical centerline is pitched 9.0 mrad with the beam line 7 wiggler centerline. See assembly drawing SA 451-042-02. The 7-1 slit tank exit flange centerline is - .438 inches in X with respect to the 7-1 slit tank entrance flange centerline using the tank body as reference. The 7-1 carbon filter mounting flange centerline is - .08 inches in X with respect to the 7-1 slit tank entrance flange centerline. The carbon filter centerline is yawed –5.4 mrads with respect to the tank body centerline. The 7-1 horizontal slit is yawed 32° with respect to the beam line 7 wiggler center. See assembly drawing SA 451-042-03.

Fiducialize the tank such that the slit and carbon filter alignment tolerances listed below can be obtained upon installation and alignment of the tank in the beam line. Roll is to be removed from the slit and carbon filter. The slit must be capable of occluding the beam and of being withdrawn from the beam. Y position of the slit is set so that it is centered on beam centerline. See installation drawing ID 451-042-00.

Coordinate system: X,Y = 0 @ wiggler centerline. Y positive up, X positive towards SSRL.

Horizontal Slit tank alignment tolerances:

U/S to D/S FLANGE $\Delta X = .386$

X at entrance flange (Z=~~666.538~~ 679.038):	~~-3.697~~ -3.647 +/- 0.01"	
X at exit flange (Z=~~686.002~~):	~~-4.054~~ +/- 0.01"	4.054 − .438 = 3.616
Y Centered on 7-1	-4.053	
Z:	determined by mount	
Roll:	0 +/- 0.005 rad	3.697

Beam line 7-1 horizontal slits and carbon filter assembly

Pitch (to wiggler centerline):	9.0 +/- 0.05 mrad
Pitch (to tank body centerline):	0 +/- 0.05 mrad
Yaw of slit:	32° +/- 0.25 deg
Yaw of slit tank body:	0° +/- 0.25 deg

Travel for the slit should be approximately 2 inches.

Carbon filter alignment tolerances:

Y Centered on 7-1	
X at mounting flange to wiggler (Z=670.082):	-4.152 +/- 0.01"
Z:	determined by mount
Roll:	0 +/- 0.005 rad
Pitch (to the wiggler centerline):	9.0 +/- 0.005 mrad
Pitch (to tank body centerline):	0 +/- 0.005 mrad
Yaw:	-5.4 +/- 0.005 mrad

Deviations greater than those listed should be discussed with engineer.

→ Order of alignment for carbon filter:

Yaw, Y, pitch, X, Roll, (Z determined by the flange mount).

→ Order of alignment for slit:

Pitch/roll, Y, Yaw, X, (Z determined by the flange mount).

Alignment after installation in the beam line consists of moving the stopper tank to the fiducial values with tolerances as required to maintain alignment of the collimator and produce the alignment tolerances noted above.

5. Limits and Stops:

Set horizontal slit limit switches 0.01" before hard stops.