

BL 4  
Tank / Comb Mask, BPM, Slit

9-2-08  
MP JM

Y

<u>1</u>	<u>2</u>	<u>3</u>
21.707	21.707	21.707
<u>- .011</u>	<u>+ .001</u>	<u>+ .034</u>
21.718	21.706	21.673
1	1	1
20.718	20.706	20.673
20.730 +14	20.738 -34	20.658 +15
20.724	<u>20.710 -4</u>	20.666
<u>20.719 -1</u>		<u>20.673 0</u>

HBL13510	HRL5087
574.70569	574.70230
575.7911	575.7911
-42.733	-42.866
6.687	6.827
57.750	57.750
21.704	21.711
21.707	

X

<u>5</u>	<u>6</u>
29.528	29.528
<u>0.</u>	<u>+ .016</u>
29.528	29.512
1	1
28.528	28.512
28.545	28.470
<u>28.528 0</u>	28.464
	28.475 +37
	<u>28.480 +32</u> OK DVR

BL4  
Comb Mask

9-2-08  
MP JM

Y

<u>1</u>	<u>3</u>
21.707	21.707
<u>3.996</u>	<u>4.039</u>
17.711	17.668
<u>1</u>	<u>1</u>
16.711	16.668
16.732 - 21	16.682 - 14
<u>16.711</u> ✗	<u>16.668</u> ✗

X

<u>4</u>	<u>5</u>	<u>1</u>
29.528	29.528	29.528
<u>15.120</u>	<u>15.054</u>	<u>13.867</u>
14.408	14.474	15.661
<u>1</u>	<u>1</u>	<u>1</u>
13.408	13.474	14.661
13.400 + 8	13.477 - 3	14.653 + 8
13.408 ✗	13.472 + 2	14.657 + 4
<u>13.405 + 3</u>	<u>13.473 + 1</u>	<u>14.654 + 7</u>

BL 4 -1  
upper Vert slit

9-2-08  
MP Jm

Y

B	C	D
21.707	21.707	21.707
<u>20.068</u>	<u>20.032</u>	<u>20.081</u>
1.639	1.675	1.626
<u>1</u>	<u>1</u>	<u>1</u>
.639	.675	.626
.633 +6	.661 +14	.605 +21
.628	.657 +18	.602
.637 +2	<u>.662 +13</u>	.612 +14
.637		.618
<u>.628 +11</u>		<u>.617 +9</u>
<u>.639</u> by motor		

X

A	C
29.528	29.528
<u>-2.692</u>	<u>-2.637</u>
32.220	32.165
<u>1</u>	<u>1</u>
31.220	31.165
	<u>31.070</u> +95 OK DVK

BL 4 BPM

9-2-08  
MP JMc

Y

<u>1</u>	<u>2</u>	<u>3</u>
21.707	21.707	21.707
<u>-1.949</u>	<u>-1.928</u>	<u>-1.967</u>
23.656	23.635	23.674
<u>1</u>	<u>1</u>	<u>19.371</u>
22.656	22.635	4.303
22.648 <sup>+8</sup>	22.623 <sup>+12</sup>	4.286 <sup>+17</sup>
<u>22.656</u> ✗	<u>22.632</u> +3	<u>4.303</u> ✗

X

<u>3</u>	<u>4</u>
29.528	29.528
<u>7.869</u>	<u>.374</u>
21.659	29.154
<u>1</u>	<u>19.371</u>
20.659	9.783
20.688 <sup>-29</sup>	9.820 <sup>-37</sup>
20.679 <sup>-20</sup>	9.780 <sup>+3</sup>
20.649 <sup>+10</sup>	<u>9.781</u> +2
<u>20.656</u> +3	

BL 4-1  
Bottom Vert Slit

9-3-08  
MP JM

Y

<u>B</u>	<u>C</u>	<u>D</u>
- 21.211	- 21.211	- 21.211
<u>- 20.111</u>	<u>- 20.057</u>	<u>- 20.103</u>
- 1.100	- 1.154	- 1.108
<u>1</u>	<u>1</u>	<u>1</u>
- .100	- .154	- .108
.117 +17	.168 +14	.113 +5
<del>.116 +16</del>	<u>.170 +16</u>	.118 +10
<u>.118 +18</u>		<u>.123 +15</u>

HBL13510  
- 42.733  
19.772  
1.75  
- 21.211

.103  
.107 By motor

X

<u>A</u>	<u>C</u>
29.528	29.528
<u>- 2.711</u>	<u>- 2.728</u>
32.239	32.256
	<u>1</u>
	31.256
	<u>31.268 -12</u>

BL 4  
4-3 Bottom Vert Slit

9-3-08  
MP JM

Y

B  
-20.885  
-30.670  

---

9.785  
|  
8.785

C  
-20.885  
-30.676  

---

9.791  
|  
8.791

D  
-20.885  
-30.684  

---

9.799  
|  
8.799

8.445.346 | 8.455.344 no roll

8.799 by motor

HBL13515  
-41.918  
19.283  
1.75  
-20.885 HI

4-3 BL4  
Top vertical slit  
long arm

9-3-08  
MP Jm

Y

<u>B</u>	<u>C</u>	<u>D</u>
24.645	24.645	24.645
<u>28.236</u>	<u>28.258</u>	<u>28.273</u>
-3.591	3.613	-3.628
1	1	1
2.591	2.613	2.628
2.684 +93	2.706 +93	2.728 +100

HBL13515  
574.72639  
575.7911  
-41.918  
8.813  
57.750  
24.645

2.611 by motor

X

A                  C  
3.270                  5.352

BL 4  
4-2 Top Vert Slit

long arm

9-3-08  
MP JMc

Y

$\begin{array}{r} \underline{B} \\ 24.944 \\ 28.564 \\ - 3.620 \\ \hline 2.620 \\ \boxed{2.685 + 65} \end{array}$	$\begin{array}{r} \underline{C} \\ 24.944 \\ 28.582 \\ - 3.638 \\ \hline 2.638 \\ \boxed{2.697 + 59} \end{array}$	$\begin{array}{r} \underline{D} \\ 24.944 \\ 28.582 \\ \hline 2.638 \\ \boxed{2.698 + 60} \end{array}$	$\begin{array}{r} HBL3515 \\ - 41.918 \\ 9.112 \\ \hline 57.750 \\ \hline 24.944 \end{array}$
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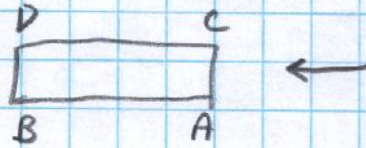
2.638 by motor

X

$\frac{C}{-2.076}$

BL 4  
4-3 Mirror Tilt Plate

9-3-08  
MA JM



HBL 13515  
-41.918  
5.599  
57.750  
21.431

Y

A	B	D
21.431	21.431	21.431
16.870	16.876	16.935
4.561	4.555	4.496
3.561	3.555	3.496
3.376 +.185	3.741 -.186	3.659 -.163

BL4  
4-3 top slit

9-3-08  
MP JM

Y

<u>B</u>	<u>C</u>	<u>D</u>	
21.431	21.431	21.431	Hz from 4-3 mirror
<u>15.247</u>	<u>15.222</u>	<u>15.267</u>	
6.184	6.209	6.164	
1	1	1	
5.184	5.209	5.164	
<u>5.194 -10</u>	<u>5.215 -6</u>	<u>5.176 -12</u>	
		5.166 by motor	

BL4  
4-2 Bottom Vert Slit

9-3-08  
mp JML

Y

$$\begin{array}{r} \text{B} \\ - 20.882 \\ - 30.360 \\ \hline 9.478 \\ \hline 1 \\ \hline 8.478 \end{array}$$

$$\begin{array}{r} \text{C} \\ - 20.882 \\ - 30.390 \\ \hline 9.508 \end{array}$$

$$\begin{array}{r} \text{D} \\ - 20.882 \\ - 30.368 \\ \hline 9.486 \end{array}$$

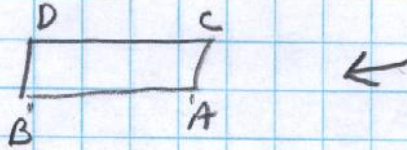
$$\begin{array}{r} \text{HBL13515} \\ - 41.918 \\ 19.286 \\ 1.750 \\ \hline 20.882 \end{array}$$

$$\begin{array}{r} 1 \\ \hline 8.508 \\ \hline 8.496 + 12 \end{array} \quad \begin{array}{r} 1 \\ \hline 8.486 \\ \hline 8.466 + 20 \end{array}$$

8.512 by motor

BL 4  
4-1 MØ Mirror Tilt Plate

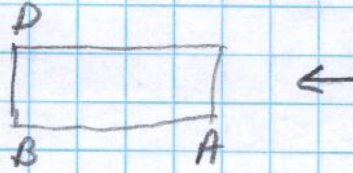
9-3-08  
MP JM



71	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	HBL13515 -41.918
	-20.885	-20.885		-20.885	
	-16.880	-16.912	-16.839	-16.873	
	-4.005	3.973		4.012	
	1	.125 shank		1	
	-3.005	3.848		-3.012	
	3.027 +22	3.891 +43		3.059 +47	
	3.005	3.848			

BL 4  
4-2 mØ Mirror Tilt Plate

9-3-08  
mp JMc



4

$$\begin{array}{r} \text{A} \\ -20.337 \\ -16.843 \\ \hline 3.494 \end{array}$$

$$\begin{array}{r} \text{B} \\ -20.337 \\ -16.812 \\ \hline 3.525 \end{array}$$

$$\begin{array}{r} \text{D} \\ -20.337 \\ -16.813 \\ \hline 3.524 \end{array}$$

$$\begin{array}{r} \text{HBL13515} \\ -41.918 \\ 19.831 \\ \hline 1.75 \\ -20.337 \end{array}$$

$$\begin{array}{r} 1 \\ -2.494 \\ \hline 2.489 \end{array} \quad -0.005$$

$$\begin{array}{r} 1 \\ -2.525 \\ \hline 2.609 \end{array} \quad +0.084$$

$$\begin{array}{r} 1 \\ -2.524 \\ \hline 2.611 \end{array} \quad +0.087$$

left as is

BL 4-1 Mono Slit  
upper Vert

9-4-08  
MP JMc

Y

<u>B</u>	<u>C</u>	<u>D</u>
21.612	21.612	21.612
<u>15.263</u>	<u>15.219</u>	<u>15.256</u>
6.349	6.393	6.356
1	1	1
<u>5.349</u>	<u>5.393</u>	<u>5.356</u>
5.228 .123	5.283 ±.110	5.240 ±.116
5.345 +4		5.357 -1
<u>5.347</u>		

with motor

BL4F22	BL4F18
574.73883	574.72891
575.7911	
-41.428	-41.819
10.626	11.010
40.750	40.750
9.948	9.941
	<u>9.945</u>

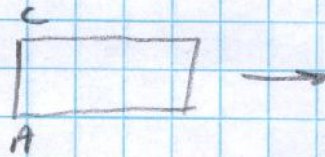
NI for Be Window

-41.428	-41.819
5.290	5.680
57.750	57.750
21.612	21.611

BL 4-3 Be Window

9-4-08  
MP JM

Y



A  
9.789

.811  
8.978

8.991 -13

8.983 -5

B  
9.789

.747  
9.042

C  
9.789

.807  
8.982

8.986 -4

8.979 +3

D  
9.789

.740  
9.049

9.063 -14

BL4F22

-41.428

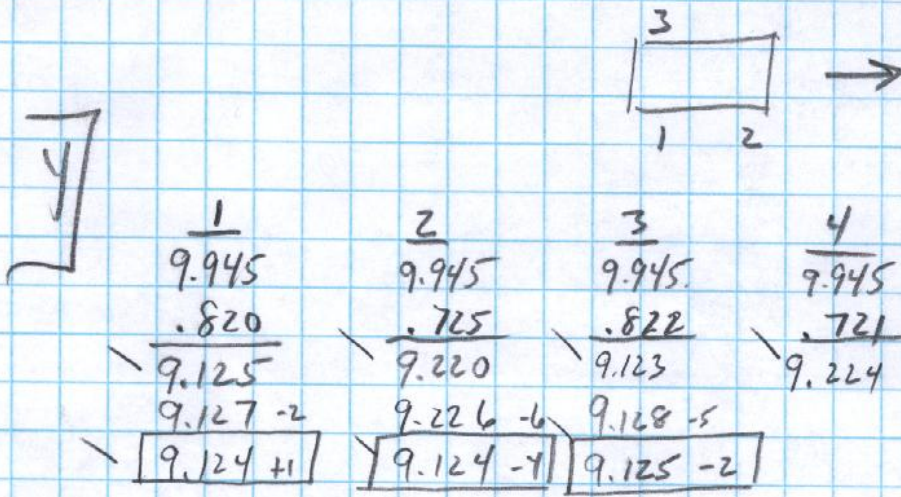
10.467

40.750

9.789

BL 4-1 Be Window

9.4-08  
mp Jm



Fiducials are on bottom of copper body,  
so, rotated 180°. Miked body at 1.635,  $\frac{1}{2}$  is .818  
Fiducial # 1 = .820

Pipe on 4-3

Dia 4.610  
R 2.305

BL 4F20  
574.73647

575.7911

-41.521

10.915

40.750

10.144

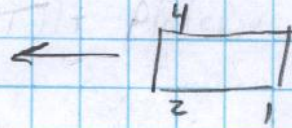
2.305  
7.839

7.610 .229

.436

BL 4-2-3 Mirror Tank

9-29-08  
MP JM



Y

1	2	4	
12.683	12.683	12.683	
9.167	9.152	9.168	
3.516	3.531	3.515	
2.516 S/R	2.531 S/R	2.515 S/R	
2.509 +7	2.520 +11	2.512 +3	Before
			After

no change

HBL13515	BL4F16
574.72639	574.71755
575.7911	575.7911
-41.918	-42.266
13.851	14.198
40.750	40.750
12.683	12.682

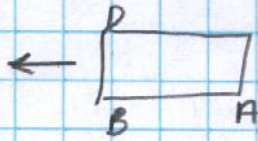
X

1	2	.75 X =
29.528	29.528	
9.998	10.002	
19.530	19.526	
18.530	18.526 S/R	
10" splice	10	
8.530 S/R	8.526 S/R	
8.544 -14	8.552 -26	Before
8.542 -12	8.546 -20	After

4/5 end moved to SSRL .006

B2 4-3 Mirror Tilt Plate

9-29-08  
MP JM



Y

A	B	D	
12.683	12.683	12.683	
16.870	16.876	16.935	
-4.187	-4.193	-4.252	
1	1	1	
-3.187 S/R	-3.193 S/R	-3.252 S/R	
3.373 +.186	3.013 -.180	3.094 -.158	Before
3.363 +.176	3.003 -.190	3.086 -.166	Afer ≈ down .010
3.388 +.201	3.030 -.163	3.099 .153	
3.414 +.227	3.055 -.138	3.110 -.142	
3.414 +.227	3.058 -.135	3.115 -.137	Final

roll

X

A	B	
29.528	29.528	
7.791	7.935	
21.737	21.593	
14	14	
7.737 S/R	7.593 S/R	
7.706 +31	7.554 +39	Before
7.697 +40	7.538 +55	After %s moved to SSRL .016
7.692 +45	7.507 +86	
7.688 +49	7.545 +48	Final



# BL4 Hutch Stopper

9-29-08  
MA JML

**Y**

<u>1</u>	<u>2</u>	<u>3</u>	
24.123	24.123	24.123	
<u>2.850</u>	<u>2.817</u>	<u>3.363</u>	
21.273	21.306	20.760	
1	1	1	.436
20.273	20.306	19.760	S/R
19.847 +.426	19.750 +.556	19.320 +.440	

wanted +.436 ↗

↓  
set Be Window Flange  
by pitching up.

BL4F22	BL4F18
574.73883	574.72891
575.7911	575.7911
-41.428	-41.819
7.807	8.186
57.750	57.750
24.129	24.117
	24.123

**X**

<u>3</u>	<u>4</u>
3.830	3.883

HRLS100	BL4F20
574.73526	574.73647
575.7911	575.7911
-41.569	-41.521
17.862	17.825
<u>40.750</u>	<u>40.750</u>
17.043	17.054
	17.048

Exit Flange Be Window

17.048	D 4.610
2.305	
14.743	
<u>.465</u>	Dwg
14.278	S/R
14.265	
14.278	✓

BL4-1 Fixed Graphite Filter

9-29-08  
MP JM

7

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
20.499	20.499	20.499	20.499
6.291	6.327	6.302	6.341
14.208	14.172	14.197	14.158
1	1	1	1
13.208 s/r	13.172 s/r	13.197 s/r	13.158 s/r
13.187 +21	13.144 +28	13.178 +19	13.141 +17
13.198 +10	13.153 +19	13.180 +17	13.140 +18
13.207 +1	13.166 +6	+17	13.144 +14
13.202 +6	13.170 +2	+17	13.158 <del>0</del>
13.206 +2	13.181 -9	13.184 +13	13.180 -22
13.212 -4			13.160 -2
13.206 +2	13.170 +2	13.194 +3	13.158 <del>0</del>
-3	-5	+1	-7

BL4F22	BL4F18
-41.428	-41.819
4.183	4.562
57.750	57.750
20.505	20.493
20.499 HI	

BL 4-1 Movable Graphite Filder

9-30-09  
MP JM

4

B

20.561

15.498

5.063

C

20.561

15.439

5.122

D

20.561

15.506

5.055

4.063 SR

4.080 -17

4.062 +1

4.122 SR

4.122 0

4.107 +15

4.055 SR

4.074 -9

4.058 -3

OK DVC

# BL 4-1 Mono Top Slit

9-30-08  
MP JM

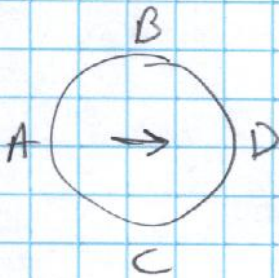
C  
O

B O O D →

Y

<u>B</u>	<u>C</u>	<u>D</u>
20.561	20.561	20.561
15.263	15.219	15.256
5.298	5.342	5.305
4.298 s/r	4.342 s/r	4.305 s/r
<u>4.293 +5</u>	<u>4.350 -8</u>	<u>4.307 -2</u>

BL4F22	BL4F18
-41.428	-41.819
4.245	4.625
57.750	57.750
20.561	20.556
-20.561	s/r



## A Fired Graphite filter

<u>D</u>	<u>20.561</u>	<u>B</u>	<u>C</u>
20.561	6.291	20.561	20.561
6.341	14.270	6.327	6.302
14.220	1	14.234	14.259
1	13.270 s/r	1	1
13.220 s/r	<u>13.273 -3</u>	13.234 s/r	13.259 s/r
<u>13.227 -7</u>		<u>13.239 -5</u>	<u>13.258 +1</u>

BL4-1 Mono

10-1-08  
MPJM

Y Mono

$$\begin{array}{r} \frac{0/s}{9.356} \\ \underline{.125} \\ 9.231 \text{ S/R} \\ \boxed{9.226 +5} \end{array}$$

$$\begin{array}{r} \frac{0/s}{9.356} \\ \underline{.125} \\ 9.231 \text{ S/R} \\ \boxed{9.246 -15} \end{array}$$

BTR

BL4F22

-41.428

10.037

40.750

9.359

BL4F18

-41.819

10.422

40.750

9.353

9.356 HI

.287

Burn Through Monitor

2.066

.287

1.779 S/R

1.814 -.035

BL4F22

-41.428

2.746

40.750

2.068 HI

BL4F18

-41.819

3.134

40.750

2.065

BL 4-3 Mono + BTM

10-1-08  
MP JM

Mono

u/s

o/s

14.028

14.028

.125

.125

13.903

13.903 s/R

13.901 +2

13.885 +18

+10

BL4F22

BL4F18

-41.428

-41.819

14.712

15.090

40.750

40.750

14.034

14.021

14.028

.276 BTM

4.409

.276

4.133 s/R

4.134 -1

BL4F22

BL4F18

-41.428

-41.819

5.092

5.472

40.750

40.750

4.414

4.403

4.409

# BL4-2 Mono Girder

10-3-08  
MP JM

(4)

u/s	u/s	
18.169	18.169	HI Dowel holes
<u>1</u>	<u>1</u>	
17.169 s/R	17.169 s/R	
17.153 +16	17.078 +91	
17.212 -43	<u>17.166 +3</u>	
<u>17.193 -24</u>		
↙ loose T/B		

	HRLS 095	BL4F20
	574.71339	574.73647
	575.7911	575.7911
HRLS100	-42.430	-41.521
18.169	2.850	1.939
57.750	57.750	57.750
1.980	18.170	18.168

Be

<u>1</u>	9.782
10.433	
.669	
<u>9.764</u> s/R	
<u>9.762 +2</u>	

BTM

10.433	
.197	
<u>10.236</u>	
.480	
<u>9.756</u> s/R	
<u>9.755 +1</u>	

HRLS100

-41.569
11.252
40.750
<u>10.433</u>

BTM

1/2 Fl B. ✓
10.433
<u>2.310</u>
8.123
8.117 +6

Roll

Mono X	Top	Bot
	12.701	12.719
	< 1mm	

BL 4-2 Movable Graphite Filter  
 Fixed " " " "  
 upper Vert Slit

10-3-08  
 MP JM

Movable Graphite Filter

B	C	D
22.085	22.085	22.085
15.524	15.463	15.492
6.561	6.622	6.593
5.561 s/r	5.622 s/r	5.593 s/r
5.601 -40	5.662 -40	5.632 -39
5.562 -1	5.623 -1	5.594 -1

C  
 B D ←

HRLS 095  
 -42.430  
 6.765  
 57.750  
 22.085

Fixed Graphite Filter

A	B	C	D
22.085	22.085	22.085	22.085
6.324	6.294	6.330	6.280
15.761	15.791	15.755	15.805
14.761 s/r	14.791 s/r	14.755 s/r	14.805 s/r
14.759 +2	14.785 +6	14.754 +1	14.807 +2

D C  
 B A ←

Vert. Slit

B	C	D
22.085	22.085	22.085
15.223	15.206	15.243
6.862	6.879	6.842
5.862	5.879	5.842 s/r
5.849 +13	5.860 +19	5.817 +25
5.870 -8	5.878 +1	5.835 +7

C  
 B D ←

BL 4-1 Mono ✓

10-3-08  
MP JM

Gun 1  $\frac{1}{2}$  Be Window  $\frac{1}{2}$  Mono

$$\begin{array}{r} 2 \\ \hline 5.946 \end{array}$$

$$\begin{array}{r} \div .725 \\ \hline 6.671 \end{array}$$

$$\begin{array}{r} 6.671 \\ \hline 6.675 - 4 \end{array} \quad \begin{array}{l} \text{3/R} \\ \text{2/R} \end{array}$$

on top  
5.226

$$\begin{array}{r} \frac{1}{2} \\ \hline 5.946 \text{ To T/B} \end{array}$$

$$\begin{array}{r} 1 \\ \hline 4.946 \end{array}$$

$$\begin{array}{r} 4.939 + 7 \\ \hline 4.933 + 13 \end{array}$$

Body of Copper  
1.475  
 $\frac{1}{2}$  .738

BL4F22

-41.428

6.628

40.75

5.950

BL4F18

-41.819

7.010

40.750

5.941

5.946

Gun 2  $\frac{1}{2}$

BTM

5.884

.287

5.597  $\frac{1}{2}$ R

5.632 -35

5.588

5.597  $\frac{1}{2}$

$\frac{1}{2}$  Mono

5.884 To T/B

1  
4.884

4.902 -18

4.872 +12

BL4F22

-41.428

6.566

40.750

5.888

5.884

BL4F18

-41.819

6.948

40.750

5.879