



# Jefferson Lab Alignment Group

## Data Transmittal

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**DATE :** Jul 23, 2003

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**#** A879r

### DETAILS:

Below are the results of the Hall A target, collimator, and sieve slit survey performed prior to the July 2003 run. The deltas shown represent the offset from ideal (in millimeters and degrees). A positive X indicates the target is to the beam left, positive Y is up, and positive Z is downstream. A positive pitch is counter-clockwise looking from the beam right, and a positive yaw is clockwise looking from above.

TARGET CELL	Del Z	Del X	Del Y	Pitch	Yaw
Tgt. cell warm	-0.98	0.25	0.01	0.08	-0.12
Ref. Tgt. cell warm	0.15	-0.32	105.06	0.04	0.11

The coordinates for the collimator blocks are based on the pre-determined location relative to the tooling balls, which were used for positioning into beam line. The blocks should always be slid into position till they hit the alignment pins, and then rotated clockwise slightly. This will reduce the repeatability error resulting from undersized pin diameters.

TARGET COLLIMATOR BLOCKS	Del Z	Del X
BRS6U upstream beam left corner.	29.15	-13.80
BRS6U downstream beam left corner.	59.07	-17.95
BRS6D upstream beam right corner.	417.43	-36.95
BRS6D downstream beam right corner.	447.52	-39.44

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The ideal X values for the slits and large aperture **have been re-calculated** using the as found distance of the slit from the nominal He3 target, i.e. (Dist x sin 6°). For the reported locations and deltas the Z axis runs along the main Hall A beamline, not the 6° line. The survey was performed while the small hole slit was in place, and as a result, the large hole slit location is a calculated position using the fiducial data. This predicted location relies on the repeatability of the slit holder when it is attached to the slit box. A 12.7mm vertical correction is also applied for the large hole shim plate.

**HADRON SEPTUM SIEVE SLITS AND LARGE APERTURE AT 6°**

	Z	X	Y
As set (small hole)	795.44	-83.47	1.99
Revised Ideal		-83.60	0.00
Delta		+0.13	1.99
Predicted as-set (large hole)	795.14	-83.93	-10.58
Revised Ideal		-83.58	-12.70 (shim cor.)
Delta		-0.35	2.12
As set (large aperture)	828.49	-88.08	-2.11
Revised Ideal		-87.09	0.00
Delta		-0.99	-2.11