



Jefferson Lab Alignment Group

Data Transmittal

TO: Matt Poelker, Phil Adderley

DATE: 22 Mar 2006

FROM: R. Schwartz, J. Dahlberg

Checked:

: DT_L1050

DETAILS:

Below are the results of the recent load-lock gun survey located in the injector test cave. Two surveys were performed, the first, to align the gun relative to the existing beam line, and the second, to align the internal components of the gun. The coordinate system for the gun alignment was centered on the bending magnet and rotated about the vertical axis 15 degrees from the downstream beam line. The second survey was established using a local coordinate system off the end flanges and holding the top flange as X = 0 for rotation. For each survey, a right-handed coordinate system was established with a +X to the beam left, a +Z downstream, and a +Y being up. A +yaw value is counter clockwise (ccw) looking from above and a +pitch value is ccw looking from the beam right side. Units are in millimeters and degrees.

LOAD-LOCK GUN RELATIVE TO DOWNSTREAM BEAM LINE

COMPONENT	X	Y	Z
Upstream flange	-0.19	0.51	-1974.88
Downstream flange	-0.04	0.32	-1588.22
Top flange	-2.40	228.25	-1800.97

LOAD-LOCK GUN INTERNAL COMPONENTS

COMPONENT	X	Y	Pitch angle	Yaw angle
Cathode Support	0.13	0.80	0.00	0.09°
Electrode	0.18	0.44		
Anode Support	-0.03	0.25	0.04°	0.01°
Prep chamber upst flange	5.60	1.94		
Prep chamber dnst flange	0.69	0.87		