



# Jefferson Lab Alignment Group

## Data Transmittal

**TO:** T. Whitlatch, T Carstens

**DATE:** 15 Apr 2013

**FROM:** Kelly Tremblay

**Checked:**

**# :** D1503

**DETAILS:**

Data: step2A\HALLD\Tagger\130412A

The Hall D Tagger magnet vacuum pipe was aligned April 11<sup>th</sup>, 2013. The table below shows the coordinates of ideal coordinates for various components and their asfound locations.

The first table shows the flange center results. The last columns in this table show the delta x/y's in millimeters in a beam following system. A +x means the found position is to the beam left and a positive y indicates the found position to be high from the ideal. Note that the position to the downstream dump flange is based on an ideal line from the exit beam of the tagger to the dump (as per optim beam line data).

The second table shows the results of the found location for the 2 coordinates given on a sketch supplied by Hall D staff. Similarly the last columns show the deltas but include z values. A positive Z indicates the found position is downstream of the ideal.

The third table fit the found tooling balls targets to an ideal location and additionally the rotation values for the targets. A positive yaw indicates a counter clockwise rotation about the y axis, a positive pitch indicates a clockwise rotation about the x axis and a positive roll indicates a clockwise rotation about the z axis. Angles are in degrees.

Flange Center Results											
	fnd z (m)	fnd x (m)	fnd y (m)		Ideal z (m)	Ideal x (m)	Ideal y (m)		z(bfs) mm	x(bfs) mm	y(bfs) mm
us flange	302.1162	80.5980	104.7015			80.6000	104.7000			-2.02	1.54
ds dump flange	312.3494	78.9071	104.6809			n/a	n/a			-41.49	-19.08
ds photon flange	309.0342	80.6008	104.6995			80.6000	104.7000			0.81	-0.50

Position based on values in sketch											
					z(ideal)m	x(ideal)m	y(ideal)m		z bfs	x bfs	y bfs
us_pol	302.2918	80.4701	104.6730		302.2919	80.4701	104.6730		-0.08	-0.01	0.07
ds_pol	308.4401	79.7698	104.6733		308.4400	79.7696	104.6729		0.13	0.24	0.36

Ideal location							
	z(bfs) mm	x(bfs) mm	y(bfs) mm		dYaw °	dPitch°	dRoll°
center	-0.02	0.06	0.21		0.00229	0.006303	0.008913



Beam Right Outer Surface of Vac Chamber				
	find z (m)	find x (m)	find y (m)	
BR_OVS_1	302.8544	80.0225	104.7878	
BR_OVS_2	302.8568	80.0230	104.6227	
BR_OVS_3	304.1655	79.8372	104.7864	
BR_OVS_4	304.1631	79.8386	104.6242	
BR_OVS_5	305.7348	79.6147	104.7813	
BR_OVS_6	305.7341	79.6160	104.6228	
BR_OVS_7	307.0970	79.4224	104.7686	
BR_OVS_8	307.0992	79.4235	104.6206	
BR_OVS_9	308.5692	79.2165	104.7695	
BR_OVS_10	308.5739	79.2171	104.6250	
BR_OVS_11	309.9885	79.0181	104.7723	
BR_OVS_12	309.9879	79.0178	104.6142	
BR_OVS_13	311.2432	78.8412	104.7611	
BR_OVS_14	311.2498	78.8397	104.6103	
BR_OVS_15	312.2014	78.7060	104.7523	
BR_OVS_16	312.2116	78.7045	104.6117	