

Sector 2 – Alignment of LI02 QUAD 991
July 27, 2005 ROD AEG Report

Status Summary of July 20, 2005

The half-bottom part of the quad was aligned using a single line on the aisle side created with an alignment scope in jackpoint 3-1 and a target in jackpoint 2-9. It was not possible to set a second line on the wall side. A sight level was used to set the y and the roll of the quad by placing a blade on the split plane.

Preparation Work

- Verify calibration of the alignment scope used last Wednesday
- Identify action items to be performed in the field:
 - o Inspect bellows
 - o Perform similar measurements with the same alignment scope and sight level on the fully assembled quad.
 - o If the observations do not confirm the 2 to 3 mm misalignment in x, bring down an optical transit to create a different line and read the quad steel directly bypassing the alignment holes.

Today's Findings

- Visual inspection of the bellows showed a kink compatible with the problem.
- The alignment scope and the level measurements repeat: the quad appeared to be in the correct position and orientation. Two neighboring quads (821 and 901) were also checked.
- While setting an optical transit, it was found that 2 bolts holding the aisle side alignment holes in place with the quad were missing. After replacing and tightening the two bolts, the alignment scope read a 40 mil displacement in x. The quad was moved accordingly: 40 mils towards the aisle.
- The jig transit line was created using jackpoints 2-8 and 3-1 with verification on 2-9. The same three quads were read and 991 showed another 40 mil displacement in x. The alignment scope was used again to perform this move (and control the height and orientation).

Summary

- Quad LI02-991 was moved 80 mils towards the aisle.
- The alignment holes of this quad have been tagged-off to indicate that they should not be used in the future. The use of these fiducials as-is will not result in the correct positioning of the device relative to the beamline.

