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LHO HAM6 incursion procedure – Mar 09

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Distribution of this document:
LHO

This is an internal working note
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1. Required Equipment

2	Class B	Pan of tools
1		CDS laptop computer
1		Monitor
1		Box foil
1		Tripod and iris
1		Beamsan

1. Installation Goals

This document details modifications to the optical path on the SEI ISI in the HAM6 chamber at LHO. A summary list of tasks includes

1. Check for resonances in TT and OMC structures via tap tests
2. Move the OMC SUS 40mm in the +x direction to mitigate clipping
3. Make detailed position measurements of components on table.

2. Procedure:

1. Tap Tests: For each component record GPS time before test. Tap several times with clean implement. Tighten or loosen (record which) bolt, again note GPS time and tap again. Do for the following components:
 - a. TT0
 - b. TT1
 - c. TT2
 - d. OMC SUS
 - e. REFL steering mirror #1 (located inside OMC SUS)
 - f. REFL 95% #1 (first one outside OMC SUS)
 - g. REFL 95% #2 (puts beam on dump)
 - h. REFL beam dump
 - i. AFWFS 50/50

- j. AFWFS steering mirror
 - k. QPD1
 - l. QPD2
 - m. TRANS steering mirror
- 2. Lock ISI table
- 3. Measure TT1/TT2/aperture positions. Check with expected values.
- 4. Lock OMC with EQ stops
- 5. Remove 1 steering mirror, 2 beam dumps from inside of OMC SUS.
- 6. Place extra clamps for rails and end butt 4cm from OMC SUS (+x dir.)
- 7. Move OMC into end butt.
- 8. Clamp OMC with 12 dogs.
- 9. Replace beam dumps and REFL steering mirror (mirror to be aligned later).
- 10. Unlock OMC 1mm spacing of EQ stops, tighten lock nuts.
- 11. Align TT1 to send beam through aperture.
- 12. Place TT2 to align beam onto OMC.
- 13. Align OMC.
- 14. Tare TT2 Yaw/centering.
- 15. If TT1 has unacceptable bias ($>1V$). Freak out now.
- 16. Align REFL steering mirror (the one in the SUS)
- 17. Take out REFL 95% #2 and measure beam with beamscan.
- 18. If freaked out (see 15.) Tare TT1 yaw bias.
 - a. Beamscan again, move to correct mode matching. Iterate.
- 19. Place again REFL 95% #2. Align refl path (AFWFS), beam on beamdump. Beams out viewport.
- 20. Place new beamdump between TT1 and TT2 to block path onto DCPD beamsplitter
- 21. Unlock ISI, level.
- 22. Repeat Tap tests.
- 23. Check centering of OMC SUS OSEMs.
- 24. Take pictures.
- 25. Final check of alignments.
- 26. Put end door on.
- 27. Check beams coming out viewport. Tweak mirrors if not.
- 28. Theorists: did they get a look inside HAM6?
- 29. Exit checks: cf. E0900029-v1