

Notes from 3/20/2024 meeting in [lite blue](#). Updates and new data, pics, notes, etc. should be added to <https://dcc.ligo.org/LIGO-E2300382>

- Drawing of chamber <https://dcc.ligo.org/LIGO-D2300014> . This links to the SolidWorks solid models and sub-assembly prints of the basic chamber. Note that the new chambers are identical to the existing (no additional ports or other changes). Port locations are identical and match the holes in the Grieve oven wall.
- SOW <https://dcc.ligo.org/LIGO-C2300133>
- Current configuration (legacy) <https://dcc.ligo.org/LIGO-E2300307> also see <https://dcc.ligo.org/LIGO-E2300382>
- Configuration google sheet https://docs.google.com/spreadsheets/d/1aVIGjU1qUR9gbzFVAa79Qz9thsBOOAzc_MH7uVtk92U/edit#gid=0
- Inspection LLO <https://dcc.ligo.org/LIGO-G2400273> (Maty) Both LLO and LHO new ovens visual inspection turned up similar findings: Welding quality overall was satisfactory, shelf tabs were installed then moved. Door flange and domed lid look good. Overall QA acceptable.
- Inspection LHO <https://dcc.ligo.org/LIGO-T2400069> (Janos) Both LLO and LHO new ovens visual inspection turned up similar findings: Welding quality overall was satisfactory, shelf tabs were installed then moved. Door flange and domed lid look good. Dome has a patch where the spinning arbor was poked thru (not an error, part of manufacturing). Janos mentioned that the 27" flange bolt holes are pretty close to the seal groove at a few locations but should not affect sealing. This is common on wire seal flanges but maybe aa slight tolerance buildup?
- Weld DCN <https://dcc.ligo.org/LIGO-E2300417> (skip length, etc.) Updated weld callout after getting feedback from vendor. No issue other than the 6" flange skip welds were missed.
- Feedback from Ancorp re leak testing (hopefully). Update: Leak certs received but were not serialized so other than "confirmation of LT", the certs are worthless. Link here: https://dcc.ligo.org/DocDB/0186/D2300014/002/doc_20240314090454.pdf This seems to be an industry problem, not isolated to this vendor (same thing happened on ion pump baffles, with different vendor).
- Review configuration by site. DCC link <https://dcc.ligo.org/LIGO-E2300307>. Synopsis is LLO oven piping is all attached to side of oven, the 6" CFF port on top of the oven is blanked off so no climbing on oven is required. LHO oven uses a combination of side and top ports. Reviewers concluded that the site configurations can stay as-is (do not need to be matched) but should be consistent at site.
- Preferred configuration, include upgrades like appendage ion pumps for the quadrupole. Your chance to petition the group! [Cal leaks will be attached so they are](#)

not differentially pumped, will improve cal factor. Will be located behind a bakable valve on the 6" top port. Janos considering hi-temp bake jackets on external plumbing (Ebara). Both sites have solenoid safety valves, LLO has UPS electrical, LHO will add to their system. Both sites have tip dust filter in/out!

- PID (plumbing and instrumentation diagram) and TC placement. Not sure about this but Adam volunteered to head this up. Sites to red-line their prints.
- Gaskets. Existing vendor (LLO) vs commercial/catalog. See below. Scott's group is having issues getting below $e-8$ tl/s leak rate using machine-shop made gaskets. FYI, commercial gaskets are about \$300 ea. CIT has stock of MDC gaskets will send a few to each site for leak testing. Industry is backordered.
- Order of swap to keep C&B viable. Do we try 1 swap/site or just one swap (site TBD) as pathfinder. 1swap/site decided but only after successful leak testing. Oven swap will contaminate C&B area with dust so operating chambers will need to be sealed.
- Temp cycle to wear-in chamber?
- Torque per Ancorp (look familiar?). See snip below. 140 N-m ~ 104 ft-lb.
- When we converge on a (vacuum/plumbing) design create DCC SolidWorks configuration print.
- Molflow model?