UCSB Assembly Plate Commissioning

This is a list of steps for commissioning a UCSB assembly plate after all the Teflon surfaces have been machined to their final heights:

1. Mount all module, hybrid and hybrid tool locating pins. Use pin guide tools to make sure pins are put in straight and to the right height. Module mounting pins should be a loose press fit and be secured with Locktite pin retaining compound.

2. Plumb assembly the plate, mount module clamps and plate locator blocks.

3. Vacuum check sensor pads, hybrid tool in both the supply and final assembly positions.

4. On the gantry, adjust the plate locator blocks so that the far right and far left module location pins are parallel to the gantry x axis. If this is the 2^{nd} or more assembly plate of the same module type, then far right and far left pin locations should match the "reference plate" to within +/- 40um in the gantry x axis and +/- 80um in the gantry y axis.

5. Measure assembly plate fiducials (2) and module pin locations (6) on the OGP three times. Average the 3 runs and convert locations to gantry coordinates.

6. Make new assembly plate parameter file for the gantry program. Insert the fiducial and pin locations measured in the previous step on the OGP.

7. Put hybrids on the assembly plate and record the hybrid and plate fiducial locations. Add these into the assembly plate parameter file.

8. Shim or trim module pin bushings so they are flush +/-.001 with surrounding Teflon block. TEC modules only.

9. Shim each hybrid tool to properly clamp the hybrid in the assembled position. Add shims until hybrid clamp o-rings just touch assembly plate.

10. Survey glue gaps for the sensors, thermistors and stiffeners. Shim or tape Teflon blocks to make necessary corrections.

11. On TEC R5 modules, check that recess for heat spreader is not too deep. Shim if necessary.

12. On new module types create new glue patterns for the sensor and hybrid glues. On additional plates for an existing module type, run glue program to check glue pattern.

13. Do first dry run of module assembly. Do final survey on ganty and OGP. Set-up OGP macros for the new assembly plate.

14. Do 2 more dry runs with one including glue dispensing. Use dry runs to calculate initial calibration corrections for the gantry. Add corrections to plate's parameters file.

15. Do final dry run with calibration corrections.

16. Make first modules on assembly plate.