

keyway  mechanical support, longer leak path

spacers are Al plate,
not rubber.

PC board potting procedure

rough surface
is good (EDM)

HPS fixture:
(multiple under boards)



LSST:
(single narrow board)



Board prep

- 1 - Mask area above and below glue area with kapton tape (1/16" to 1/8" into potted area on both sides). *so you only abrade the area you care about*
- 2 - Use gray abrasive to lightly roughen surface.
- 3 - Remove kapton mask and clean board surface.
- 4 - Seal edges /holes with hysol 9396 cut with 5% ethanol (by weight) *so you don't get leaks through the G-10*
- 5 - Wiring and potting of soldering joints (if applicable).
- 6 - Make sure boards are clean.
- 7 - Wrap 1/2" Teflon tape (with over-lap at one end) at the same height as the tooling (just below the potting area).
- 8 - Pull plugs /any odd bits and mask with pink tape.

Fixture prep

- 1 - Check fixture for correct orientation (blocks etc.-). *blocks are tapered so you can pull them out later*
- 2 - Check condition of teflon tape on fixture.
- 3 - Check orientation of boards
 - A - Clean cables on inside.
 - (HV - Clean side 2 cables)
 - (Low voltage - Clean side SP1 and "HPS front end board low voltage "sign)
 - (Signal boards - optical transducers sockets on the outside)
- 4 - Set boards in fixture - Set correct height .
 - A - For the signal boards use the height fixture + base plate .

B - For the LV +HV use the height fixture (No base plate). For the HV & LV it is necessary to use the 4 full length PEEK standoffs + the aluminum on the vacuum side. Standoffs are installed on each side of the height fixture.

C - All wire bundles overhead must be supported & spaced properly to not influence boards perpendicularity. All wire bundles below must go through cut out in table and be kept clean.

D - Clamp in place, 1st the long rods 2nd the flat bars to make sure everything thing is flat.

E - Run very small bead of silicone to seal glue area - Let cure (Water + Time)
RTV

F - Remove from height fixture (Hold down screws + 1 set of PEEK spacers)

Flange prep

- 1 - Tape flange with Teflon tape from the fixture side (Non vacuum) and cut out openings.
 - 2 - Tape off other side of flange (Vacuum side) with pink/kapton tape for drips. Cut holes.
- so drips/spreading of epoxy can be peeled off with scraper*

Potting prep

- 1 - Set flange on frame (2 end plates + 4 Al spacers) over hole in table. Vacuum side down. Pass wire bundles/boards through slots in flange (support wire bundles above). Align and screw down fixture + stiffeners with Teflon pipe tape on 1/4 x20 screws.

NOTES -

Used Hot blocks in the past - Need to think/look at a hot block setup (split oven ect.) Or check out heater tape setup on flange.

- 2 - Lift whole (flange/clamp block/wire bundles /boards) assembly and turn 180; and set back down on frame/turntable. Support overhead wire. Center. Check for level.

- 3 - Have enough warm glue and nozzles to pot boards.

- 4 - Nozzles should have hose clamps. Check nozzle length and cut if necessary.

- 5 - Mark top and remove top of glue - Check mix is OK by pumping out some. Mount nozzle.

- 6 - Start pumping glue at the back (farthest away). Pump into bottom of joint and keep nozzle in glue to avoid bubbles. *handi-sep is filling the gap below the Keyway "shelf"*

- 7 - When filled check for bubbles - use vibrator.

- 8 - Do heat *insulating foam box + hoe several bricks, holds here overnight for 1st stage cure*

9 – Cover with foil and let stand 24 hrs.2-3 days would be best .

10 –Reinstall plugs and add standoff and strain relief system.

11 – Leak check.

12 – Add cable ends and do electrical check.

