

Vacuum Pump Oil Change SOP

Edwards RV12 Rotary Vane Oil Based Vacuum Pumps

General Notes

- Oil should be checked and changed if needed every time a regeneration is run (typically ~4-6 months).
 - If oil is darkened/discolored, it should be drained and refilled as described below.
 - If the oil color is ok, but the level in the sight glass has dropped below the max fill line, it can simply be topped off.
- Both pumps should have their mode selector dial turned fully clockwise to the "High Vacuum" (small drops) setting (as opposed to "High Throughput").
- Both pumps have their gas ballast set to "0" (no gas ballast) since we don't deal with many condensable vapors (e.g., water), but they could potentially be increased to "1" (low ballast) if gas bubbles and/or oil darkening become problematic.
 - Gas ballast adjustment is accomplished by loosening and removing the 3 screws on top of the gas ballast selector, rotating the top plate so that the correct number of divots (0, 1, or 2) aligns with the divot on the lower cylinder, then retightening the screws.

Oil Change Procedure

- Ensure both glovebox antechambers are closed and neither being evacuated nor refilled (so that the isolation valves to the vacuum pumps are closed).
 - It's probably best if the antechambers are filled with Ar (as opposed to under vacuum) to prevent any chance of sucking oil back up into them.
- Crack the inlet tube on each vacuum pump at the KF-25 flange to relieve/bleed the vacuum.
 - This step is key to avoid damaging the pumps and/or sucking oil back up into the system.
- After breaking the inlet vacuum, turn off each pump's power switch, then unplug the pumps from the electrical outlet.
- Let the pumps cool for a few hours.
- Set each pump up on a surface (e.g., rolling cart), remove its tray (2 screws go through the pump base, while 2 are slotted to let it slide off), and position a funnel and waste container below it.
- Open one or both filling ports for air.
- Slowly open the drain valve on each pump and let all the oil drain out (~30 minutes).
 - Optional cleaning procedures:
 - Remove the sight glass (and cover piece holding it in place), wipe clean, and replace.
 - Rinse/fill each pump with cleaning solution.
- Replace the drain plugs and refill each pump via either fill port until the max fill line in sight glass is reached.
- Tighten the fill port caps.

- Check the mode and gas ballast selector settings (see above)
- Plug in and turn on the vacuum pumps, then monitor them for ~10 minutes to make sure everything's working properly.



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