Ebara Pad Change

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Process Procedure

Steps:

\*Record USED TIME\*

1. Determine pad required. Most polishes use the VP5000XY pad (LEFT), except the resist polish which uses the VP6000 pad. Contact sector lead if another pad stack is to be used.
2. Put tool in maintenance mode for Polishing Unit L. This will allow the other side to run while you change the pad.
3. Lift spray bar: pull and hold out black knob on base of the spray bar and lift. The bar should lock into place in the upright position.
4. Lifting the spray bar will FAULT the tool. Silence alarm by pressing BUZZER RESET button.
5. Wipe down the spray bar and the shroud with a damp blue wipe. (Be sure that is it damp, a dry blue wipe will put flake nanoparticles into the air.
6. Lower the shroud surrounding the polishing table with the bar on the front facing side of the table.
7. Rinse the head and pad with the DI water gun that is hanging on the back of the tool.
8. Dry the old polishing pad with blue wipes. This will make removing and disposing of the old pad neater.
9. (Pat head dry with blue wipe)
10. Use the plastic pad removing tool to **carefully** (DO NOT DAMAGE POLISHING TABLE) pull up an edge of the old pad. This will form the handhold used to remove the pad.
11. **Rotate the polishing table such that the handhold is away from you. Prior to the next step, consider moving the slurries out of the way such that you can stand as close to the window as possible.**
12. **Grab the handhold with both hands and carefully peel back the old pad until it is removed.**
13. **If the table is covered with adhesive residue spots, remove these by sticking the adhesive side of the pad on these locations and removing the pad repeatedly.**
14. Fold the old pad in half and place in the pad waste bag on the right side of the tool.
15. Clean the shroud and other locations with wet blue wipes as needed.
16. Clean the platen with IPA (10% in water).
17. Cover the conditioner (on the left side) opening to avoid water spraying onto the pad. This water would cause poor adhesion of the new pad to the platen.
18. Get a new pad from the shelves on the right side of the tool. If there are no pads, the stock is in the large drawers in the 1st floor office.
19. Peel back about 4" of backing on pad to be mounted, fold this backing, and align on the polishing table. This should allow you to carefully place the pad before pressing the exposed adhesive onto the platen.
20. Once aligned, push the roller back and forth across pad to promote adhesion. Double check alignment before continuing.
21. Carefully pull back more of the backing, rolling the newly exposed areas onto the platen as you go until all backing is removed.
22. Take roller and smooth the whole pad on the table, ensuring that there are no air bubbles (popping noises indicate air bubbles) or bumps. If so, remove pad and try again or use roller to push air bubbles out from under the pad.
23. Return the tools used for this pad change (pad removing tool, roller).
24. Wet the pad with the DI water hose.
25. Raise the shroud surrounding the polishing table.
26. Pull out black knob on spray bar and lower back into the dispense position. The metal sensor on the spray bar should touch the metal piece on the shroud.
27. (Press FAULT RESET button)
28. (RIGHT SIDE ONLY: From main menu, select USED TIME. Record TABLE (Polishing) Process Wafer Real Value, Table (Polishing) Used Time Real Value, and Table (Dress) Used Time in file EBARA RIGHT SIDE MONITOR DATA.ODS on Ebara computer.
29. ***From main menu, select USED TIME and reset TABLE (Polishing) Process Wafer Real Value, Table (Polishing) Used Time Real Value, and Table (Dress) Used Time.)***
30. From MAIN MENU, select AUTO START, then HP RESET.  **\*\*\* WAIT UNTIL RESET IS COMPLETE BEFORE PROCEEDING. \*\*\***
31. **The tool will fault the right side (wafer in carrier). HP RESET again.**
32. **The tool will sometimes fault the left side (wafer in carrier).**
33. Ensure there are at least enough dummy wafers ready for processing in the tool before proceeding.
34. Select cassette number that cassette is in.
35. Follow steps 20-23 for right side break-in / qualification. Follow steps 24-34 for left side break-in / qualification.
36. ***Select cassette wafer is in, then enter*** recipe 416 (PAD BREAKIN), set step 5 time to 60s, ***and number of wafers to 1***.
37. Select START.
38. ***Select cassette wafers are in, then enter*** recipe 419 (D112 Polish), ***set step 5 time to 60s, and number of wafers to 3.***
39. After wafers are run, run a pre measured HDP (HOX) oxide wafer for 60 seconds using recipe 419 step 5, measure when completed, determine rate, and compare to previous results. If results are comparable, processing may proceed. If not, either run a second monitor wafer or contact appropriate sector lead personnel. If an HDP oxide wafer is not available, a TEOS (TOX) oxide wafer may be used instead. **End of procedure for right side pad change.**
40. Place 25 "used" copper blankets in cassette with yellow box on it and place in tool.
41. Press FAULT RESET button.
42. Select AUTO START, then HP RESET if required. **\*\*\* WAIT UNTIL RESET IS COMPLETE BEFORE PROCEEDING. \*\*\***
43. Select USED TIME and reset POLISH TABLE to 0. Record carrier used count, dresser used time, and pad used (0) on Copper Spreadsheet.
44. Place cassette with the 25 copper dummy/setup wafers in it in a station.
45. Select cassette number that cassette is in.
46. Enter BREAKIN or B/I as lot ID.
47. Enter 25 for number of wafers.
48. Select recipe ***370***, and in recipe step 5 select 30s polish time
49. Select START.

After wafers are run, run a blanket copper and M2 monitor wafer to check copper polish rate and copper polish uniformity. Also run an oxide blanket for qualification of oxide rate as well. If results are comparable to previous qualifications, then the left side is ready to run.  **End of procedure for left side pad change.**

Qualifying Ebara Left

Run:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Wafer Type | # | Recipe | Step | Time(sec) | Slurry |
| Break-In | 2 | 402 | 5 | 60 | CSL |
| Seasoning | 10 | 403 | 5 | 30 | CSL |
| M2 | 1 | 370 | 5 | 120 | CSL |
| CUB | 1 | 370 | 5 | 60 | CSL |
| Warm Up (Slurry Change) | 2 | 371 | 6 | 60 | CuC |
| HOX | 1 | 371 | 6 | 60 | CuC |