YES LP-III Vapor Prime Oven Instructions

Log In

Log into the CAC system to activate the "**YES**" oven.

Set the Thumbwheel

Set the thumbwheel to the desired process number.

Process Number	Process
0	HMDS Vapor Prime
1	Chamber Purge

*****NOTE: DO NOT ADJUST THE TEMPERATURE FROM 150ºC!!*****

Place Substrates in the Oven

Place your wafers in the appropriate holder for your wafer size. There is glassware available for 3", 100mm, and 150mm wafers. For other size or shape substrates, lay your substrates flat on the glassware or aluminum foil. Open the oven door and place the wafers/substrates on the top shelf. Close the door, making sure that the latch is securely in place.

Start Process

Press the **RUN** key followed by the **START** button. The tool should start to pump down and begin the process. Wait and observe the pressure drop below 650 Torr to ensure that the process begins normally. Note the run time for your process and be sure to be at the tool when the process finishes. The tool may abort several minutes into the run if there is a problem. Check on the tool several minutes before the tool finishes to be sure that it completes normally. When the Process is done, the amber **COMPLETE** light will flash and an alarm will sound. These will both turn off by themselves in several minutes or you can press the **RESET** button, located below the **COMPLETE** light.

NOTE: Even though the oven is purged after a process and there are no chemical fumes, the oven surfaces will evolve a small amount of ammonia. For this reason, please keep your face away from the door when opening the oven.

Remove your substrates. Make sure you latch the door closed. You may leave the glassware on the table below the oven for the next user.

Log Out

Log out of the CAC system.

Process Recipes

Vapor Priming

(Process #0)
In vapor priming, the substrate is first dehydrated using vacuum and heat. It is then exposed to HMDS (hexamethyldisilazane) vapor to create a monolayer of HMDS on the surface to improve resist adhesion. Generally you should resist coat your wafers within 1 – 2 days of vapor priming. There is no need to clean the wafer if you need to vapor prime again. Generally you will need to prime your surface again if you solvent strip your wafer.

Purge

(Process #1)
This process is used to purge and vent the oven. This process is typically used by staff to purge the system after the HMDS flask is refilled. It can be run at the end of an aborted process to assure the oven is completely purged or if the cycle is terminated in mid-process.

Oven Program

0 = HMDS Vapor Prime
1 = N2 Purge

Inputs: A = start button, B = Baratron setpoint 1, C = 2 or 3 on thumbwheel, D = Baratron setpoint 2, E = 1 or 3 on thumbwheel

Outputs: O0 = Signal Tone, O1 = Nitrogen, O2 = Vacuum, O3 = Chemical

Step	Func/Data	Output	Comments
01	IF A>03	-	**KEY LOCK SEQUENCE** System is running,
02	GOTO 01	-	waiting for the start button
03	IF E>35	-	Program 1 = Purge cycle
04	GO TO 05	-	**Program 0** = Vapor Prime
05	M02:00	2	Vacuum 2 min.
06	IF B>30	2	If above setpoint 1, abort to step 30
07	M02:00	1	N2 2 min.
08	IF B>09	1	If above setpoint 1, continue
09	M02:00	2	vacuum 2 min.
10	IF B>30	2	I If above setpoint 1, abort to step 30
11	M010:00	1	10 min. N2 purge
12	IF B>13	1	If above setpoint 1, continue
13	M03:00	2	Vacuum 3 min.
14	IF D>30	2	If above setpoint 2, abort to step 30
15	L=150	3	Loop signal begins
16	S=02:00	3	2 seconds HMDS
17	IF D>30	3	If above setpoint 2, abort to step 30

18	L>16	3	Loop back to step 16
19	M00:30	2	30 secs. vacuum
20	M00:30	1	30 secs. N2
21	M00:30	2	30 secs. vacuum
22	M02:30	1	2.5 min. N2
23	M01:00	0	Complete alarm
24	GO TO 00	-	**Reset**
30	S00:10	0,1	**Abort** alarm and N2 purge
31	S00:10	1	N2 purge
32	GO TO 30	1	Loop alarm and N2 purge
35	M02:00	2	**Program 1** - 2 min. vacuum
36	M00:30	1	30 secs. N2
37	M01:30	2	1.5 min. vacuum
38	M00:30	2&3	30 secs. Vacuum to chamber and HMDS flask
39	GOTO 19	-	Purge cycle

Functions:

S00.00	Seconds an output stays on (up to 99.99 sec)
M00:00	Minutes an output stays on (up to 99:99 min)
1-100:00	Hours an output stays on (up to 99:99 hours)
IF ?>00	If a positive signal from input A, B, C, D or E than GOTO step 00
GOTO 00	GOTO step 00
L=0000	Do the following step until L> is encountered 0000 times
L>0	GOTO step 0 and subtract 1 from the L loop