



Inseto

PLASMA ETCH WIN-PLASMA RUNNING A SEQUENCE

ADVANCED TECHNOLOGY FOR
RESEARCH & INDUSTRY

KNOWLEDGE BASE FACT
SHEET

- SCOPE: How to run a sequence in the Plasma Etch Win-Plasma Application.

This document presumes the user is familiar with the Low Pressure Plasma process and the Plasma Etch Inc. Equipment.

1. Check and release the EMO if engaged.
2. Set the power circuit breaker to the On (Up) position.
3. Press the 'Start' button on the front panel to power up the system.
4. Open the 'Win-Plasma' Application on your Windows PC.
5. Open the 'Sequence' tab from the main screen; this will allow you to open the load in any sequence made within the main directory.
6. Press 'Load' to accept the sequence.
7. The 'Process Sequence' box within the main screen will update with the Sequence name and details of its parameter variables.
8. Double-check that the loaded sequence variables (as below) are correct:
 - I. **Time (Minutes)** - Time that Plasma is present in the Sequence.
 - II. **RF (Watts)** - Unit of power demanded from the RF Generator.
 - III. **Gas 1**- Selection of process gas; refer to rear panel of machine to check which process gas inputs in to which gas line.
 - IV. **Flow 1 (sccm)** - Flow demand of Gas 1 selection.
9. From the main screen open the 'Power' tab.
10. Using the on screen switches, enable power to all of the switches available.
11. Exit and close back to the main screen.
12. The system is now ready to start the loaded Plasma Cycle.
13. There are a few main commands in the 'Commands' tab from the main screen. These are:
 - I. **Plasma** - The Plasma process will run from start to finish automatically following the sequence loaded into the main screen. Upon completion of the plasma cycle the user will be informed through the screen, light tower and/or buzzer.
 - II. **Cycle Off** - The Cycle Off command brings the chamber back to atmosphere for the process of loading/unloading.
 - III. **Standby** - When the system is not immediately, it should be placed in standby mode. Depending on the type of vacuum pump installed, the N2 gas purge lines to a 'wet' pump will be enabled to 'clean' the vacuum pump oil.
 - IV. **Shutdown** - This command will begin the shutdown procedure for the system. The pump, temp control and RF isolators will be disabled in a safe sequence.
 - V. **Plasma Time** - If the Plasma process is running it can be changed mid-cycle with this command. It can be shortened or extended. It is the only sequence variable that can be edited in process.
 - VI. **Silence Alarm** - If an Alarm state is present on the machine and the buzzer is wished to be turned off, this feature will silence the audible alarm. The last alarm state is displayed on the main screen.
 - VII. **Quick Stop** - When the plasma cycle is running this command will stop the plasma counter immediately. The chamber will then continue through the rest of the cycle such as purge and cycle off.
14. To begin a cycle, make sure the chamber door is closed and that all gas lines are present at the correct pressures to the rear of the machine.
15. From the 'Commands' tab, confirm the start of a sequence with the 'Plasma' command.
16. The Plasma process will run from start to finish automatically following the sequence loaded into the main screen. Upon completion of the plasma cycle the user will be informed through the screen, light tower and/or buzzer.
 - I. The Vacuum Pump engages and begins to evacuate the chamber.
 - II. Once the 'Vacuum set-point' has been reached the system will go into 'Gas Stabilisation'.

- III. The 'Gas Stabilisation' allows the gases to stabilise for a period.
 - IV. After the process gasses are stabilised, the RF power is enabled. The Wattage is determined by the loaded sequence.
 - V. Inside the Chamber a Plasma Glow will be seen and the Plasma process timer will start. This is determined by time in the loaded sequence.
 - VI. Once the 'Plasma time' is completed, the RF power is removed and the plasma glow will disappear from the chamber as the process gas valves are closed. The vacuum pump will be isolated from the chamber.
 - VII. Chamber Vent Valve is opened for the period. This time dilutes any contaminants or harmful elements in the chamber before being evacuated by the vacuum pump again.
 - VIII. After completion of the 'Purge Vent' the chamber is evacuated by the pump until the 'Vacuum set-point' is reached again.
 - IX. The process is complete
 - X. The next step depends on whether the 'Auto Cycle Off' cue is enabled or disabled. If it is 'On' the chamber will vent to Atmospheric pressure using the 'Atmospheric Vent' period determined in the setup menu. If it is 'Off' the 'Cycle Off' cue will need to be initiated using the commands menu.
17. The process is complete. You will be back at the main screen of Win-Plasma with options to begin a new sequence cycle or shutdown the machine.
 18. To shut down the system, use the 'Shutdown' command from the 'Commands' tab.
 19. Wait for all timers to finish, you will notice the machine remove power from the RF, Pump & Temp controller.
 20. To close the Win-Plasma Application, click on the PE icon on the bottom of the main screen.
 21. You will be prompted to confirm to close Application.
 22. Power down the Windows PC.
 23. Turn off the chamber with the main power isolator on the rear of the machine and isolate gas lines.

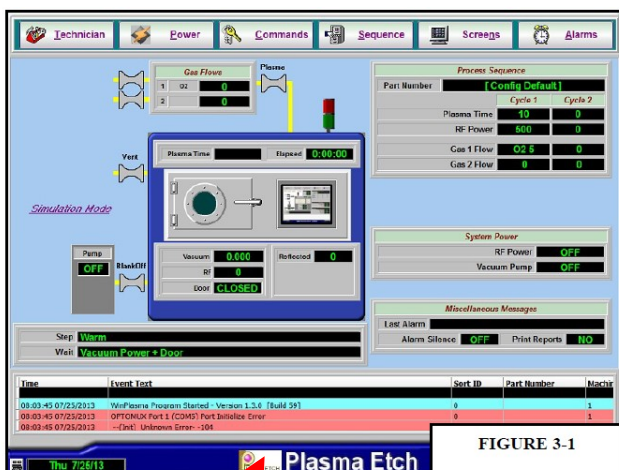


FIGURE 3-1

