**APPENDIX A**

**Abridged Tool Operation Instructions**

1. **Pre-etch Chamber Clean**
   1. Check the load lock. Make sure the Si clean/condition wafer inside is clean and correctly positioned.
   2. From the “System Pumping Screen,” use the “Process Menu” to navigate to the “Recipes” page.
   3. Load the appropriate chamber clean recipe for your intended etch process.
   4. Edit the “Step Time” of the chamber clean to 10 minutes. DO NOT CHANGE THE OTHER PARAMETERS!
   5. Press **Run** to run the Pre-etch Chamber Clean.
   6. After the process completes, accept the YELLOW ALERT and wait for it to return to the “System Pumping Screen.”
2. **Pre-etch Chamber Condition**
   1. From the “System Pumping Screen,” use the “Process Menu” to navigate to the “Recipes” page.
   2. Load your desired etch process.
   3. Edit the “Step Time” of the etch step to 10 minutes. DO NOT CHANGE THE OTHER PARAMETERS!
   4. Press **Run** to run the Chamber Condition.
   5. After the process completes, accept the YELLOW ALERT and wait for it to return to the “System Pumping Screen.”
3. **Wafer Load**
   1. On the “System Pumping Screen,” press **STOP** under “Cycling Loadlock Pumping.”
   2. Wait a few seconds and then press **VENT** under “Cycling Loadlock Pumping.”
   3. Wait until the “Vent Time Left” is under 90 seconds before opening the load lock.
   4. Replace the Si clean/condition wafer with your own. Make sure to position it properly
   5. Close the load lock door and press **STOP** under “Cycling Loadlock Pumping.”
   6. Wait a few seconds and then press **EVACUATE** under “Cycling Loadlock Pumping.”
4. **User Etch**
   1. From the “System Pumping Screen,” use the “Process Menu” to navigate to the “Recipes” page.
   2. Load your desired etch process.
   3. Edit the “Step Time” of the etch step to your desired time. DO NOT CHANGE THE OTHER PARAMETERS!
   4. Press **Run** to run the etch process.
   5. After the process completes, accept the YELLOW ALERT and wait for it to return to the “System Pumping Screen.”
5. **Wafer Unload**
   1. On the “System Pumping Screen,” press **STOP** under “Cycling Loadlock Pumping.”
   2. Wait a few seconds and then press **VENT** under “Cycling Loadlock Pumping.”
   3. Wait until the “Vent Time Left” is under 90 seconds before opening the load lock.
   4. Replace your wafer with a Si clean/condition wafer. Make sure to position it properly
   5. Close the load lock door and press **STOP** under “Cycling Loadlock Pumping.”
   6. Wait a few seconds and then press **EVACUATE** under “Cycling Loadlock Pumping.”
6. **Post-etch Chamber Clean**
   1. From the “System Pumping Screen,” use the “Process Menu” to navigate to the “Recipes” page.
   2. Load the appropriate chamber clean recipe for your intended etch process.
   3. Edit the “Step Time” of the chamber clean to the same amount as your etch time, or to 5 minutes if your etch was less than that. DO NOT CHANGE THE OTHER PARAMETERS!
   4. Press **Run** to run the Post-etch Chamber Clean.
   5. After the process completes, accept the YELLOW ALERT and wait for it to return to the “System Pumping Screen.”
   6. Fill out the log book
   7. Clean up after yourself and make sure everything is back where it belongs before you leave