



START-UP OPERATIONS

1. Turn on compressed air cylinder. Check that regulator is set to 60psi.
2. Turn on argon cylinder. Check that regulator is set to 30psi.
3. Turn on the computer.
4. Turn on the main power. Power switch is on the tall machine control cabinet.
5. Open the “AJA Computer Control” program on the computer.
6. Push the “on” button for the main chamber vacuum. The button is on the machine control cabinet.
7. Open the VAT valve. On the computer, click the “VAT” tab then click on “open”.

LOAD THE SUBSTRATE

1. Put on gloves.
2. Remove the lid from the Load Lock Chamber.
3. Remove the substrate holder.
4. Place the substrate under the clips on the holder and tighten the screws.
5. Place the holder on the ring of the transfer. The substrate will be facing down and the pins on the ring will fit into slots on the substrate holder.
6. Place the lid on the Load Lock chamber.
7. Push the “on” button for the load lock vacuum. The button is on the machine control cabinet.
8. Turn on the main chamber ion gauge. Press the “IG1” button on the display that says main chamber ion gauge.
9. Turn on the load lock ion gauge. Press the “gauge” button on the display that says load lock ion gauge. The ion gauge will not stay on unless the convectron gauge reads -3.
10. When the main chamber ion gauge and load lock ion gauge readings are the same, the substrate can be transferred.

TRANSFERRING THE HOLDER

1. Open the transfer gate valve. The ion gauges may go off, this is OK just turn them back on again.
2. Push the transfer into the main chamber with the transfer handle. Push slowly and steadily until the handle rests against the stop ring. DO NOT TWIST THE HANDLE, the holder could fall off the transfer.
3. While looking through the viewport, bring the hoist “in” using the pendant control.
4. Bring the hoist in until the screw on the hoist is in the socket on the holder. Be careful not to bring the hoist in so far that the transfer is bent.

5. Attach the holder to the hoist assembly. Turn the screw with the knob on top of the hoist assembly. Turn clockwise to attach the holder to the hoist. If the holder does not rise from the transfer, bring the hoist in a little. Repeat until the holder is securely fastened to the hoist.
6. Bring the hoist “out” until the holder is clear of the pins on the transfer.
7. Push the transfer out of the chamber.
8. Close the transfer gate valve. The valve will make a click when it is fully closed.

RUNNING THE SPUTTERING PROCESS

ALL THE FOLLOWING STEPS ARE COMPLETED ON THE COMPUTER

CONSTRUCT LAYERS

1. Click “Program Layers”
2. Enter the desired parameters. AJA Help on the Windows desktop can explain the parameter settings.
3. Name and Save the layer.
4. Repeat for as many layers as needed.

CONSTRUCT A PROCESS

1. Click “Program Processes”
2. Highlight the desired layer and click “add”.
3. Repeat until all desired layers are listed under Process.
4. Save the process list.

RUN THE PROCESS

1. Click on “Run Process”
2. Enter the process name file or select “browse”
3. Other information on the screen is NOT necessary.
4. Click “next”
5. When the main chamber has reached the desired vacuum (best is in the -7 range), follow the instructions on the screen to start.

UNLOADING THE SUBSTRATE

WAIT UNTIL THE PROCESS IS COMPLETED AND THE READING ON THE MAIN CHAMBER ION GAUGE AND THE LOAD LOCK ION GAUGE ARE THE SAME.

1. Open the transfer gate valve.
2. Push the transfer into the main chamber with the transfer handle. Push slowly and steadily until the handle rests against the stop ring. DO NOT TWIST THE HANDLE.
3. While looking through the viewport, bring the hoist “in” using the pendant control.

4. Bring the hoist in until the pins on the transfer ring are just in the slots on the substrate holder. Turn the screw with the knob on top of the hoist assembly to line the slots with the pins.
5. Release the holder from the hoist. Turn the screw with the knob on top of the hoist assembly counter-clockwise to release the holder. Turn the knob until the holder drops from the hoist.
6. Bring the hoist “out” until the holder is clear of the pins on the transfer.
7. Push the transfer out of the chamber.
8. Close the transfer gate valve. The valve will make a click when it is fully closed.

REMOVE THE SUBSTRATE

1. Push the “off” button for the load lock vacuum. The button is on the machine control cabinet.
2. Turn on Nitrogen cylinder. Setting is 15 psi.
3. Put on gloves.
4. Remove the lid from the Load Lock Chamber.
5. Turn off the nitrogen cylinder.
6. Remove the substrate holder.
7. Remove the substrate from under the clips on the holder and re-tighten the screws.
8. Place the holder on the ring of the transfer. The substrate side will be facing down and the pins on the ring will fit into slots on the substrate holder.
9. Place the lid on the Load Lock chamber.

SHUT-DOWN PROCEDURE

1. Close the VAT valve. On the computer, click the “VAT” tab. Click “close”
2. Push the “off” button for the main chamber vacuum. The button is on the machine control cabinet.
3. Close the computer control program. Close the open applications as with any windows application.
4. Turn off the main power. The switch is on the machine control cabinet.
5. Close all gas cylinders.