

OPERATING PROCEDURE FOR THE ALUMINUM ANNEAL TUBE

Rev. 10/29/01

THIS TUBE IS ONLY FOR ALUMINUM ALLOYS ON SILICON WAFERS

START-UP

1. Open the **H₂/N₂ (Forming Gas)** cylinder in the chase.
2. Set the furnace to the desired temperature using the second dial from the left. There is a sheet of paper relating the dial set point to the furnace temperature
3. The **Nitrogen** gas flow is in Liters/minute.
The **Forming gas** flow is in cm³/min.
4. Turn **ON** the **Forming Gas** switch on the black switch box.
5. Pull the **AUTO/OFF** switch out and flip up to **AUTO** for **Forming Gas** on the Brown instrument.
6. Adjust the set point dial for **Forming Gas** on the Brown instrument to give you the desired gas flow.
7. Turn **OFF** the **Nitrogen** switch on the black switch box.
8. Pull the **AUTO/OFF** switch out and flip down to **OFF** for **Nitrogen** on the Brown instrument.
9. Wait 30 minutes for the tube to purge prior to loading your wafers.

LOADING YOUR WAFERS

1. Load the wafers using the quartzware that says **Metal Anneal Only**.
2. Place the pig onto the work surface in front of the furnace.
3. Using a short pull-rod, pull the wafer ladder part way out of the pig. Ensure that the ladder does not touch the table – let it bridge between the pig and a piece of quartz tube.
4. Load the wafers onto the ladder. Replace the ladder into the pig using a short pull rod.
5. Put on the "hot" gloves and remove the end cap from the tube the tube. Place the pig onto the front of the tube.
6. Using the pull rod, **SLOWLY** push the ladder out of the pig into the tube.

7. Remove the pig and **SLOWLY** push the ladder into the tube until there is approximately 8 inches of the pull rod sticking out.
8. Place the pull rod back into its holder. Replace the end cap onto the tube.
9. Manually time your anneal.

UNLOADING THE WAFERS

1. Put on the "hot" gloves and remove the end cap from the tube the tube.
2. Using the pull rod, **SLOWLY** push the ladder out of the pig into the front of the tube.
3. Place the pig onto the front of the tube.
4. Using the pull rod, **SLOWLY** pull the ladder out of the tube and into the pig.
5. Remove the pig from the tube and place the pig onto the work surface in front of the furnace.
6. Replace the end cap onto the tube.
7. Let the wafers cool for 10 minutes.
8. Using a short pull-rod, pull the wafer ladder part way out of the pig. Ensure that the ladder does not touch the table – let it bridge between the pig and a piece of quartz tube.
9. Unload the wafers from the ladder. Replace the ladder into the pig using a short pull rod.
10. Put the pig back in the place labeled **Metal Anneal Only**.

SHUT-DOWN

1. Turn **ON** the **Nitrogen** switch on the black switch box.
2. Pull the **AUTO/OFF** switch out and flip up to **AUTO** for **Nitrogen** on the Brown instrument.
3. Adjust the set point dial for **Nitrogen** on the Brown instrument to give you the desired gas flow.
4. Turn **OFF** the **Forming Gas** switch on the black switch box.
5. Pull the **AUTO/OFF** switch out and flip down to **OFF** for **Forming Gas** on the Brown instrument.