Disco Dicing Saw Procedure

1. **Machine Idle**
   - **1.1.** Check logbook and verify there were no problems with the previous use. If there are any problems contact the super user.
   - **1.2.** Create an entry in the logbook
   - **1.3.** Put on a pair of nitrile gloves and safety glasses.

2. **Blade Installation**
   - **2.1.** Open water shroud and remove the blade guard
   - **2.2.** Remove the flange nut. **THIS IS A REVERSE THREAD!!**
   - **2.3.** Install user supplied hubbed blade
   - **2.4.** Install the reverse thread flange nut. **DO NOT OVERTIGHTEN FLANGE NUT!!**
   - **2.5.** Install blade guard and close water shroud

3. **Machine Initialization**
   - **3.1.** Clean wafer chuck with a wipe
   - **3.2.** Verify the compressed air is on and the pressure is 80-90 psi.

     COMPRESSED AIR SHOULD NEVER BE SHUT OFF
   - **3.3.** Turn on the water using the valve at the back of the system
   - **3.4.** Turn on the power breaker (on right side)

4. **Calibrate Blade Height:**
   - **4.1.** Turn on the **VACUUM**
   - **4.2.** Turn on the **SPINDLE** and allow it to come up to speed
   - **4.3.** Press **SET-UP**, the system will automatically set the blade height
   - **4.4.** While the system is automatically setting the blade height, be prepared to press the **EM STOP**, Emergency Machine Off, button, if system fails.
   - **4.5.** Turn off the **VACUUM**.

5. **Sample Load and Alignment**
   - **5.1.** Turn the illumination on to 1 using the control sitting on top of the system
   - **5.2.** Load the sample in the center of the chuck making sure to cover the vacuum grooves
   - **5.3.** Turn the **VACUUM** back on. The gauge should read in the green region
   - **5.4.** Align the sample
     - **5.4.1.** Activate the "**INDEX**" control
     - **5.4.2.** Utilizing the x and y arrows, find a saw street or horizontal feature on the monitor
     - **5.4.3.** Move the sample left and right and adjust the Theta control to align

6. **Setup Dicing Program**
   - **6.1.** Enter the program that will be used (Prog + number)
   - **6.2.** Navigating and editing parameters:
     - **6.2.1.** Use **SHIFT** to move between each parameter
     - **6.2.2.** Use **C/E** to erase field
     - **6.2.3.** Use **W** to write and save entry
   - **6.3.** Verify Channel
     - **6.3.1.** Channel 1 is normal
     - **6.3.2.** Channel 2 is 90° rotation of plate
   - **6.4.** Check units (mm or inch)
   - **6.5.** Set the cutting length - "**CUT/STRK**"
     - **6.5.1.** Enter 1 for block and then the length needed.

       Note: Add 10mm to the sample diameter.

6.5.1.1. Press W to write and save entry

6.5.2. Enter cutting speed, **CUT SPD**, using the "**+1 CUT SPD -1**" button. Typically 2.00 mm/sec

6.5.3. Set **Y-IND** for the distance between cuts

6.5.4. Set **Z-IND**. This is the distance from the chuck to the bottom of the blade.

7. Dicing

7.1. Verify the sample alignment to blade

7.1.1. Use the **INDEX** and arrows for gross adjustments

7.1.2. Use **JOG/SCA** and arrows for adjustments

7.1.3. Close shroud

7.2. Preforming a cut

7.2.1. Press **SEMI-AUTO** (Water should start to flow)

7.2.2. Press the up or down arrow. This determines the direction of the indexing.

7.2.3. During the last cut, press the **INDEX**. This will stop the dicing process after it completes the current cut.

Note: If control of the machine has been lost press Emergency Stop, turn off the power and restart the process over at Step 3.

8. Unload Sample

8.1. Turn off vacuum

8.2. Remove sample.

9. System Shutdown

9.1. Turn off Illumination.

9.2. Press **EM STOP** button

9.3. Turn off the power breaker (on right side)

9.4. Verify the compressed air is on and the pressure is 80-90 psi.

COMPRESSED AIR SHOULD NEVER BE SHUT OFF

9.5. Verify the spindle has stopped rotation

9.6. Turn off the water using the valve at the back of the system

10. Blade Removal

10.1. Open water shroud and remove the blade guard

10.2. Remove the flange nut. **THIS IS A REVERSE THREAD!!**

10.3. Remove user supplied hubbed blade

10.4. Loosely install the flange nut. **THIS IS A REVERSE THREAD!!**

10.5. Install blade guard and close water shroud