

## **DAD-3240 Setup Instructions**

1. Enable the tool in Coral.
2. Turn on the compressed air; the yellow handle should be vertical. Turn on the water chiller, normal readings are 19.5 deg. C & 20-30 PSI. Turn on the dicing saw, turn the key to “Power On - Start” and release it, wait for the system to initialize (about 60 seconds).
3. Press “System Initial” on the Main Menu, wait for the message “Initialization Completed”
4. To install a blade, press “Blade Maintenance” – F4
5. Press “Blade Replacement” – F1
  - a. Install the blade on to the spindle hub:
    - i. Open the left hand door to gain access to the blade.
    - ii. Remove the front spray nozzle
    - iii. Remove the outer threaded washer with the round gripper tool
    - iv. Wipe down the spindle, spacer, blade and or the blade flange with Propanol.
    - v. Place the blade on the chuck using the black 3-prong gripper tool. Also, for hubbed blades use the spacer, for Thermocarbon blades remove the spacer.
    - vi. Replace and tighten the outer threaded washer with the round gripper tool by hand. If the spin rotates, make sure “F12 – Spindle Lock” is ON. Leave the gripper tool in place
    - vii. Insert the T handle torque wrench into the gripper tool. Make SURE! to insert the torque wrench parallel to the axis of the spindle. Turn the torque wrench to tighten clockwise “1 click”, remove it and the gripper tool from the spindle
    - viii. Install the front spray nozzle
    - ix. Close the left hand door
6. Select the blade using one of the following steps. Step “b” will give a list of user blades.
  - a. “Used Blade List” – F7, this is for blades previously entered in the system & have been used in a previous dicing operation. Select the used blade then press “OK” – F6. Make sure the blade data is correct and that “Used” is displayed under New/Used, press “Enter”.
  - b. “User Blade” – F5, This is for blades previously entered in the system & are new or have been used. Select the blade then press “OK” – F6. Make sure the blade data is correct and that “New” or “Used” is displayed under New/Used, press “Enter”.
  - c. “Disco Blade” – F11, This contains a list of some of the blades Disco manufactures that can be selected for a dicing operation. Select the desired blade and press “OK” – F6.
  - d. To add a blade that is not in the system
    - i. Make sure you are at screen 4.1, “Blade Replacement”
    - ii. Do not put in an entry into the “Lot ID”
    - iii. Use the “123” & “qwe” keypads to enter the blade data, when finished, press “Enter” to set the data
    - iv. Toggle the keypads to display the single function keys to the left
    - v. Press F1 to save the data, then press Exit
    - vi. Press “User Blade” – F5
    - vii. Press “User Entry” – F4, the blade data should now appear in the system
    - viii. Press “Exit”

- ix. Follow the steps in “b.” to enter this as the selected blade.
  - e. Press “Exit” as necessary to get back to the Main Menu.
7. Perform a Non-Contact Setup, i.e. measure the edge of the blade
    - a. Press “Spindle” & “Cutting Water” to turn both on. Wait 5 minutes for temp stabilization.
    - b. Press “Blade Maintenance” – F4 on the Main Menu
    - c. Press “Blade Setup” – F3 on the Blade Maintenance Menu
    - d. Press “Contact Setup” – F1
    - e. Press “Non-Contact Setup” – F2
    - f. Press “Start”, this should do a non-contact setup
    - g. After Setup is complete, press “Exit” to get back to the main menu
    - h. Press “Spindle” to turn it off.
  8. Prepare your wafer on the 12” metal ring and blue tape.
    - a. Put blue sticky tape onto the round metal frame.
    - b. Pull the tape away from the metal frame, stretch it slightly and press it to the metal frame.
    - c. Remove the excess tape from around the frame.
    - d. Turn the wafer over on a clean-room wipe and remember its orientation.
    - e. Place the metal frame over the wafer with the sticky side towards the back of the wafer.
    - f. Tap the center of the frame/sticky tape onto the wafer.
    - g. Using the silicone stopper and starting at the center of the wafer, gently press the tape down onto the wafer while moving the stopper from the center to the edges.
    - h. Press out any bubbles between the tape and wafer
  9. Perform a Hairline Adjustment on the blue tape: This will align the blade cut to the center hairline on the screen image. The hairline adjustment will be done on the ring with your sample.
    - a. Open the right hand door and place the ring with only the tape on it, close the right hand door, press “C/T Vacuum” to hold the ring/tape in place.
    - b. From the main menu select “Blade Maintenance” – F4
    - c. Select “Hairline Alignment” – F5
    - d. Enter the working parameters.
      - i. Work Shape: Square
      - ii. Work Size: 10mm
      - iii. Work Thickness: 0mm
      - iv. Tape Thickness: 0.075mm
      - v. Blade Height: 0.025 mm
      - vi. Spindle Speed: 20,000 RPM
      - vii. Feed Speed: 10 mm/s
    - e. Move to a location away from your sample where the test cut is to be performed. *This location should be at the back of the ring and away from your sample (NOT AT THE FRONT!), then press “Enter” to fix the location. (Picking a location at the back of the ring will prevent error conditions with the Z-axis if the sample is thick and the spindle touches it while trying to do the Hairline Alignment.)*
    - f. Adjust the initial light level: Direct + 25%, Oblique + 20%

- g. Press “Focus” – F9 and hold for 2 seconds, this should start the autofocus on the image. If it does not increase the Direct Light by 5% and try the process again and/or move the chuck table slightly.
- h. When in focus and at a desired location, press “Enter” then “Start”, this should cut a single line.
- i. Change to high magnification view if not already there.
- j. Align the cut on the blue tape with the center hairline using the position controls and hairline width controls.
- k. Press “Hairline ADJ” – F12. If you get an error message saying that the adjustment is > 0.05 mm, Press F12 again and repeat the Hairline Adjustment process.
- l. The blade cut and the hairline should now be aligned.
- m. If the tool asks for a direction and you to press the Y up arrow to set the axis direction, do a quick touch to the Y up arrow so as not to move the chuck.
- n. Press “Exit” until you are back at the main menu