Headway PWM32 Spinner User Manual

Before using make sure of the following:

- The vacuum pump is on with the valve open and the aligner valve closed
- There is clean Aluminum foil in the bowl
- Do not use a vacuum chuck larger than your substrate. This will cause photoresist to enter the vacuum grooves (hard to clean up) and the vacuum lines.
- Be careful when dispensing liquids onto your substrate. Excess liquid on the vacuum chuck will be pulled down into the motor and damage it. DO NOT LET THIS HAPPEN!

1. Introduction

The Headway PWM32 spinner is a spin coating system used primarily for the spin coating of liquid polymer films and photoresist

The machine is equipped with a vacuum motor and a control box for setting spin conditions.

2. Operating Procedure

The following is a detailed outline of the general procedure to follow in using the PWM32.

2.1. Starting Up

Turn on the vacuum pump with the valve open and the aligner valve closed. Turn on the control box.

2.2. Running the System

Make sure you understand how to operate the system before using

1. A sequence of events (steps) combine to define a process (recipe).

2. A recipe is identified by a number 0 through 9 (10 possible).

3. A step within a recipe is identified by a number 1 through 9 (9 possible)

4. The system can be in one of 5 states. Each of these states is clearly displayed by word or action on the LCD display:

READY (to run a recipe) or

RUNNING (a recipe) or

REVIEWING (a recipe) or

PROGRAMMING (a recipe) or

ABORT (a running program)

The START switch becomes the RESET switch to return to READY, from the abort state. To return to the RADY, from REVIEWING or PROGRAMMING, press STEP and then 0, in sequence.

5. The currently selected recipe number is shown in the upper left-hand corner of the LCD display. Recipes are selected (in the READY state only) by pressing the function key labeled RECIPE, and then pressing the number of the recipe desired. The selected recipe number will be written to the LCD.

6. Below the recipe number in the LCD display, the active step (when a program is running) and number of the last step of the recipe is displayed. Example: 2-6 means the process is in the second step of a six-step process. If the process has not yet been started, then only the number of the last step is shown, preceded by a dash.

7. Every step has a timer that can be set by the process programmer. If the timer times out, it will terminate the step. It can be set anywhere between 0 and 999.9 seconds. Other events can be programmed to terminate the step, but the event must occur before the timer runs out. A step can be temporarily skipped by setting the timer to zero. The time remaining in the currently running step is always displayed in the LCD field marked TIME.

8. Once programmed, a single step cannot be erased. It can be skipped by setting its timer to zero, or all steps of a recipe can be erased by pressing the function keys RECIPE then CLEAR then (recipe #). The highest step becomes zero and the recipe can be reprogrammed.

9. Vacuum to the chuck can be managed automatically by the system or forced to stay on by the operator. The vacuum ON/AUTO function key is a toggle. A two character field at the left of the LCD display the current status: ON=manual, AU=automatic.

10. If a recipe is running a step, that STEP can be terminated and the recipe will move to the next step by pressing OFF or CLEAR.

11. The START/ABORT switch is a footswitch GREEN=Start, RED=ABORT

12. If the process is aborted, the start switch becomes the RESET switch.

13. While a recipe is running the speed of the spinner may be manually changed by pressing the STEP TERMINATE (increases speed) or the SYSTEMS PARAMETERS (decreases speed) button. However, the speed will return to the setpoint the next time the recipe is run.

14. The timer is not active until the set speed is reached

2.3 Programming recipes

1. All stored recipes should be clearly marked in this book and adequately described (e.g. time, speed, nominal photoresist thickness and photoresist type). Do not just overwrite dedicated recipes (0-5). Spots (6-9) are variable positions.

2. Layout the program on paper first

3. Decide the recipe number you wish to store and select it (READY then number). To clear a recipe hit RECIPE CLEAR and the number.

4. Select Step 1 by pressing STEP and then 1.

a) press SPEED/RAMP and enter desired parameters. SPEED/RAMP toggles between speed and acceleration. Hit ENTER or ON to confirm OFF or CLEAR acts as a backspace

b) Hit FUNCTION and hit the number (3-16) to view the different step functions.

c) Set the step terminators including step time. For example you can set the START button as a step terminator.

5. Select step 2 by pressing STEP and 2. Repeat programming sequences for all steps. When finished hit STEP and 0 to return the program to the ready state.

A recipe may be reviewed or modified by pressing STEP and the step number to be changed. This places you in the REVIEW state. Once anything is changed in the recipe the REVIEW mode automatically changes to the PROGRAM mode. To save changes hit STEP and 0.

2.4 Maintaining motor life

Be careful when dispensing liquids onto your substrate. Excess liquid on the vacuum chuck will be pulled down into the motor and damage it. DO NOT LET THIS HAPPEN!

2.5 Shutting down the System

1. Replace the aluminum foil. DO NOT LEAVE DIRTY FOIL IN THE BOWL!

2. Clean up any excess photoresist in the bowl/cover/sides of spinner with acetone.

3. Turn off the control box and the vacuum pump.

Last Edited 12/24

JDZ