

Supplies:

Elegoo Mega2560 R3

Adafruit 2.8" tft capacitive touch shield (part ID 1947)

Nema 23 Stepper 4.2A 425oz.in

FMD2740C Stepper Driver

1 Normally Open limit switch

Explanation:

This project is to partially automate a DW735 dewalt planer.

- Menu 1: This is the first screen when turned on. When "Zero" button is pressed. The stepper motor rotates the stepper motor clockwise until limit switch is pressed. The screen shows menu 2 now.
- Menu 2: When "Select Height" button is pressed, the screen will show Menu 3.
- Menu 3: This is to select the height of the board in inches. 1in, 2in, 3in, 4in, and 5in rotate the stepper motor counter clockwise until height is reached (details for rotation below) then screen shows Menu 4.
 - 6in button rotates the stepper motor counter clockwise until height is reached, then screen shows Menu 5.
- Menu 4: This is to select the height of the board in fractions. After button is pressed, the stepper rotates counter clockwise to raise to that level, then screen shows Menu 5.
- Menu 5: -1/32in and -1/16in buttons rotate the stepper clockwise to lower by respective distance. Height readout is showing what height I am at in inches (example: 2.03125). +.25in and +.50in rotate the stepper motor counter clockwise to raise by respective distance. Zero button makes screen show Menu 6.
- Menu 6: An "are you sure you want to exit" page. "No" button takes me back to Menu 5 where I left off. "Yes" button erases all data and takes me back to Menu 1.

Extra Information:

The stepper motor is 400 steps per revolution.

The planer is 1/16" of up and down movement per one revolution.

I have also attached a pdf of background color and text color for menus.

It is very important to have an accurate height readout on Menu 5. If buttons on Menu 5 are used, it must be reflected in the height readout.

I have the sketch kind of hobbled together right now. I have sent you that as well. Currently each press of a button requires a "double click" which I dislike, but I can't figure out what is causing that.

Also, I would rather the visual aspects of the menu be separate in their own void areas (void drawZero, void drawSelectheight, void drawFirstheight, etc). This will help me understand the areas where I'm missing something.

Let me know if you have any questions! Thanks.