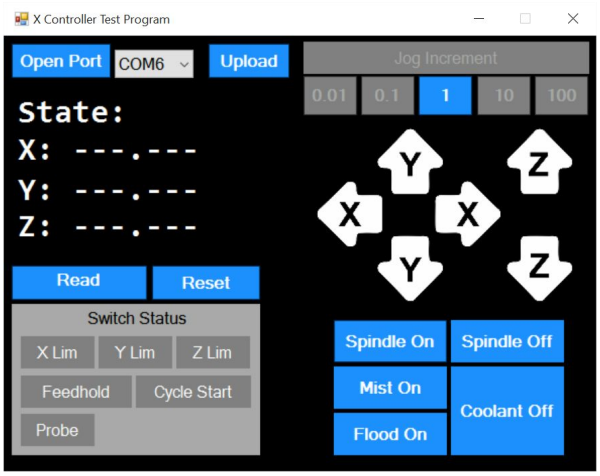
Firmware upload and test.

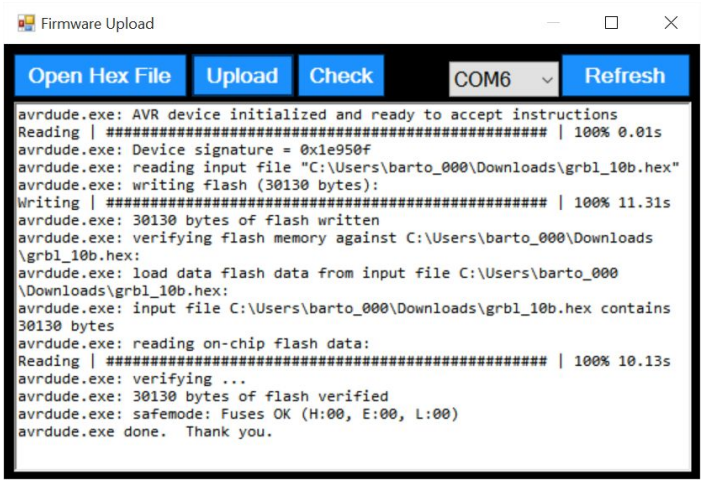
Use the X-Controller Test Program. You can get it here.
http://www.eng-serve.com/inv/XctlrTest/



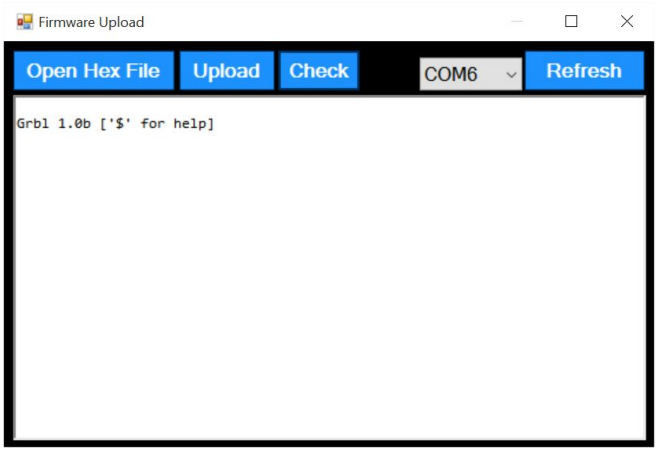
Firmware uploading.

- Plug in the X-Controller to AC Power (Be sure 120/240 switch inside is correct).
- Connect it to the test fixture.
- Connect to a Windows PC via USB.
- Turn on X-controller power switch
- Click on the **Upload** button to get to the upload screen.

- Select the correct com port from the list. **Refresh** the list if required.
- Click on the **Open Hex File** button. Browse to **grbl_1p0c.hex**
- Click the upload button. You should see text from the result in the text box. It takes about 30 seconds with a read, write and read phase.



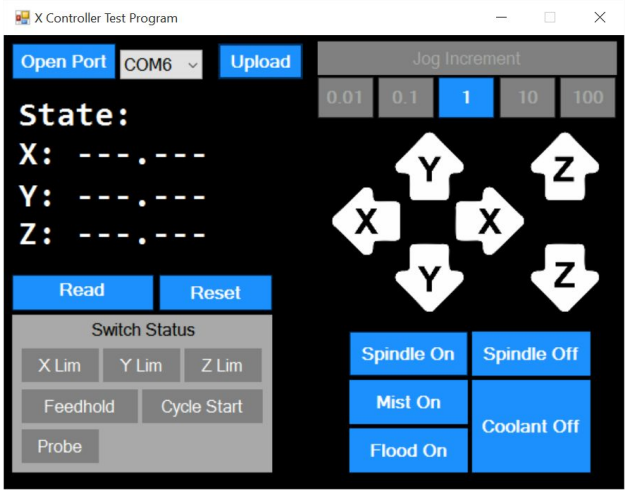
- After upload, click the **Check** button. It should verify the software and show a screen similar to this.



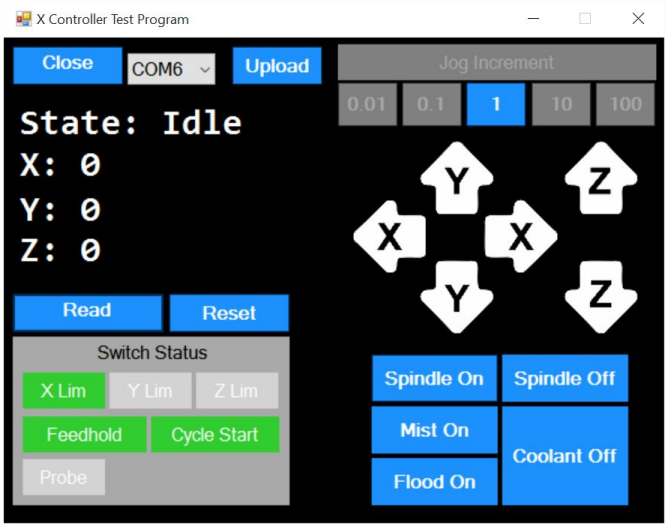
- Close this window using the “X” in the title bar.

Hardware Testing

- Click the Open Port button with the correct port selected.



- Click the **Read** button. This allows the program to check the status of the switches
- Click the limits switches and probe button on the test fixture. Click the First two buttons on the X-controller (Hold & Start). **Do not click** the third button (reset). You should see the status indicators to change from gray to green. The refresh rate is a slow, so you need the hold the button for at least ½ second.



- Use the arrow buttons to test all motors.
- Use the **Spindle On** and **Spindle Off** buttons. You should see LEDS on the test fixture turn on and off.
- Do the same for **Mist On** and **Flood On**. **Coolant Off** will turn both of those LEDS off.