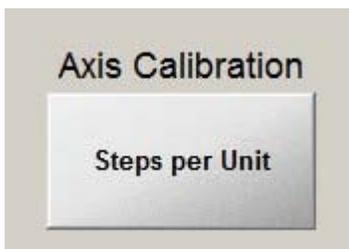# Calibrating X and Y Axis

Calibrating the axis will be necessary if one or both axes are not cutting the length that they are commanded. Follow these steps to calibrate the axis
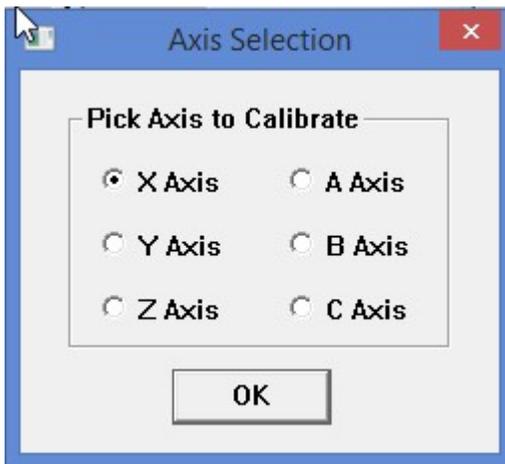
1. Jog X axis so the gantry is 10" from the end of the rail.

2. Press "Zero All" on the Program Run screen.

3. Go to the Settings screen and press the button labeled "Steps Per Unit" under Axis Calibration.

4. Select the axis you wish to calibrate and press OK.

5. Enter the distance you would like the X axis to move. The longer you move, the more accurate the calibration will be. 80 works well for a 4x8 machine and 100 works well for 5x10 and 6x12. Press OK.


6. If the axis is calibrated correctly, it will move to the distance you told it to move. Re-measure from the same points that you previously measured and note that measurement. The actual distance moved till be this measurement minus 10". If you told it to move 80" and you are now measuring 90.25", you moved 80.25".
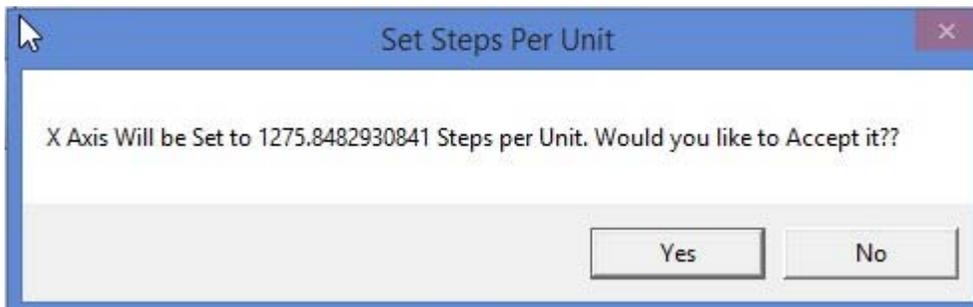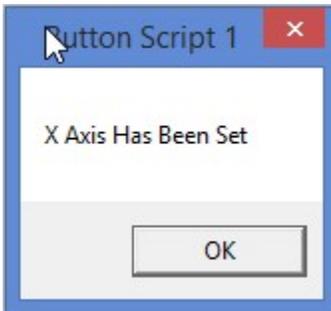
    See Photo on next page.

Enter the distance that the gantry actually moved. Again, this will be the measured distance minus 10".
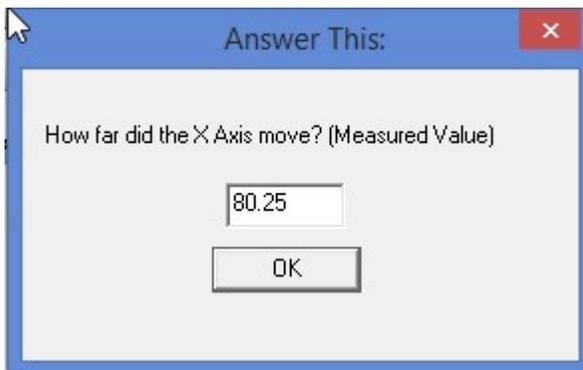
7. The system will now calculate the required number of steps per inch/mm to move exactly the distance commanded.

8. Mach3 confirms that the axis has been set.

9. Return to the Program Run screen and re-start Mach3. This writes the values to the Mach3 configuration. Once Mach3 has been restarted, you can repeat the same process on the Y axis. 3" works well as a starting point on the Y axis.

Repeat steps 2 – 6. 40" works well for a 4x8 machine. 50" works well for 5x10 and 6x12.

Your machine should now be calibrated. If you are still getting inaccurate motion, check set screws on belt pulleys and sprockets. It a set screw is loose, it will feel like backlash in the system and can cause inaccurate motion.