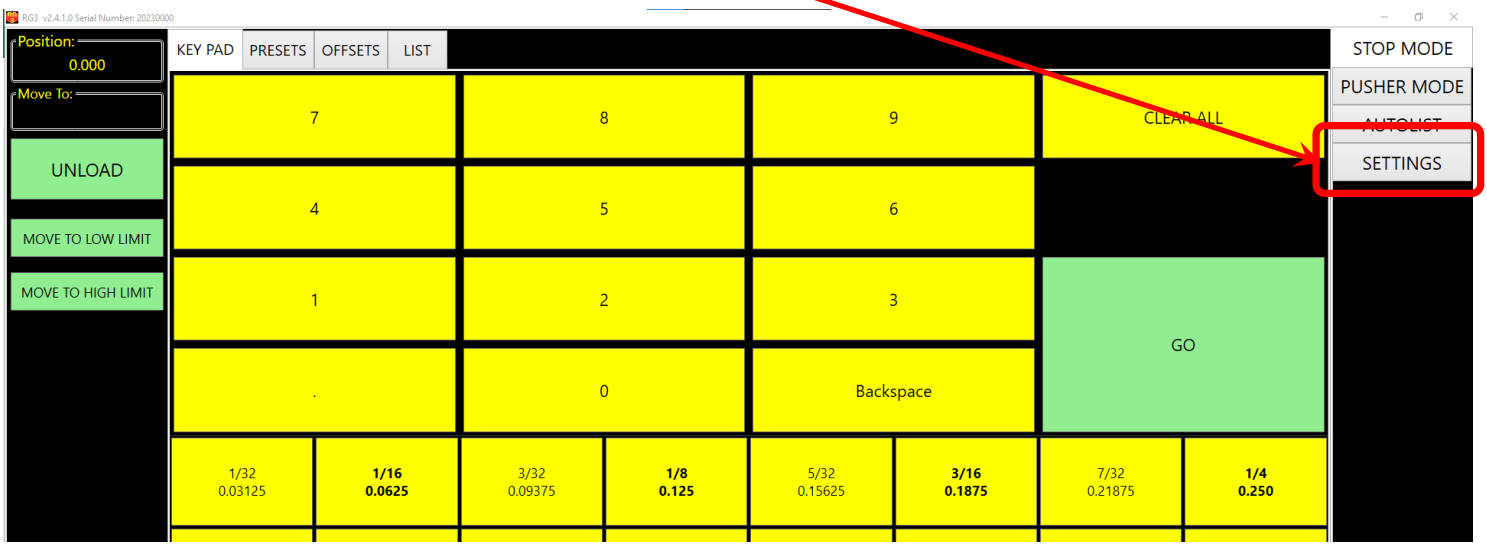
RAZORGAGE
PRECISION SIMPLIFIED

Change Home Offset and Scale in RG3 Software

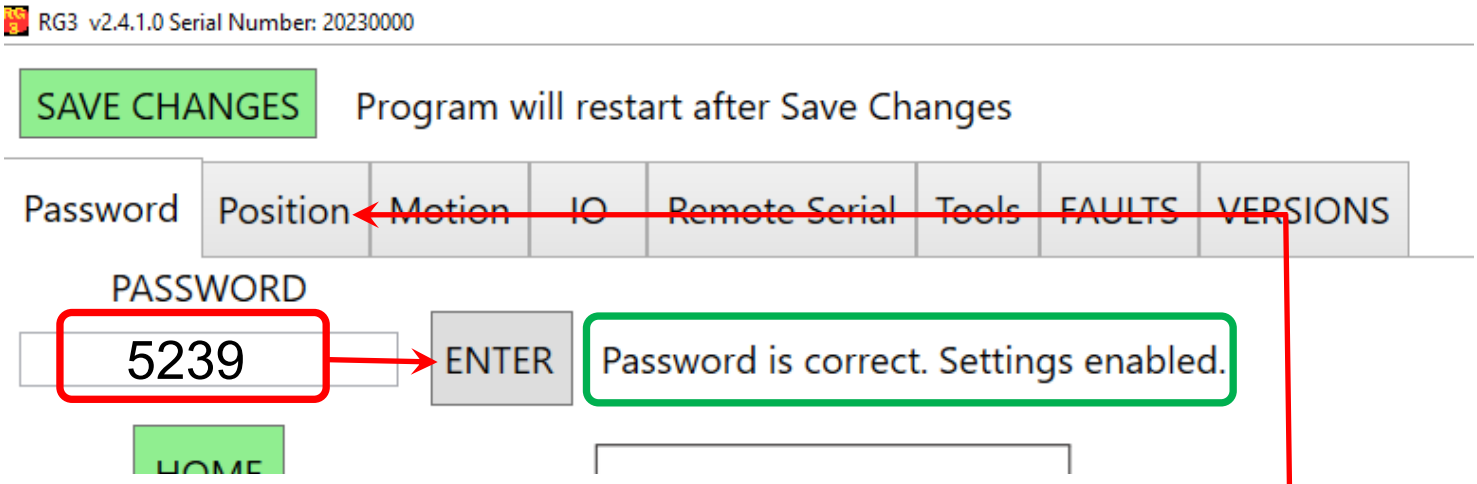
11/5/2025

To calibrate a linear positioning system you must calibrate a HOME OFFSET parameter and a SCALE parameter. HOME OFFSET is the distance from the HOME position to the near side of the saw blade (or the centerline of a drill or punch). On RG3, SCALE represents the number of inches (or millimeters) the carriage is advanced with one revolution of the drive pulley. The pulley on an RG3 has 5mm pitch with 30 teeth so the circumference around the pitch diameter is 150mm or 5.905515 inches. That's the theoretical exact. Various real world factors affect that number so we need to take measurements to determine the SCALE that will actually yield accurate positioning at long distances. The error in the SCALE parameter is multiplied with every rotation of the pulley so the longer the distance traveled, the more times the SCALE error is reproduced, and the larger the positional error.

To get to the calibration settings, click the SETTINGS tab.



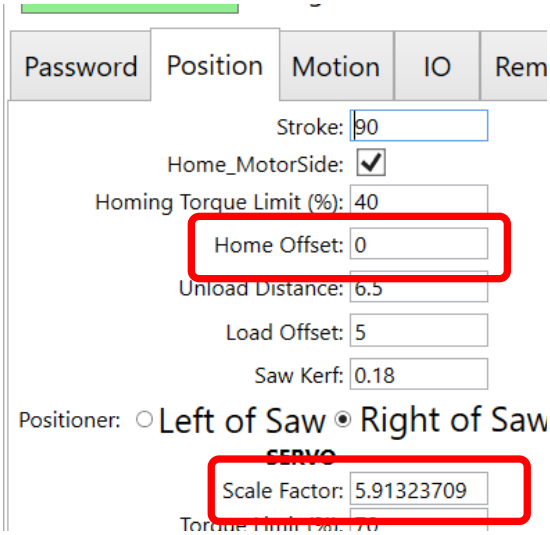
Type 5239 in the PASSWORD field and press ENTER. If you typed it correctly it will say "Password is correct. Settings Enabled" to the right of the ENTER key.



Once the password has enabled the settings, click the POSITION tab.

The POSITION tab displays the HOME OFFSET & SCALE parameters. There are instructions on the right side of the screen that explain how to set the HOME OFFSET (Short Part Accuracy) and the SCALE (Long Part Accuracy).

When you are done, be sure to press SAVE CHANGES!



Home Offset Calculator (Short Part Accuracy)

Step 1) Square the end of a piece of clean stock & enter a target position that will move the stop to cut a short piece. Ideally the setup part will be less than 6" so that you can measure it with a 6" caliper. Otherwise cut the shortest piece you can. Put the squared end of the stock against the stop and make a cut.

Step 2) Enter the target position you entered for the short setup part. The last target entered has been prefilled for your convenience. If the last target entered is not the one used to cut the setup part, enter the correct target position.

Target Position: 5.123

Step 3) Measure the setup part with calipers and enter the measurement.

Measured:

CALCULATE HOME OFFSET

NEW OFFSET: USE-SAVE CHANGES

Scale Factor Calculator (Long Part Accuracy)

Step 1) DO NOT CALCULATE SCALE UNTIL SHORT PARTS ARE ACCURATE. Square the end of a piece of clean stock & enter a target position that will move the stop to cut the longest piece possible. Put the squared end of the stock against the stop and make a cut.

Step 2) Enter the target position you entered for the long setup part. The last target entered has been prefilled for your convenience. If the last target entered is not the one used to cut the setup part, enter the correct target position.

Target Position: 5.123

Step 3) Measure the long setup part as accurately as possible and enter the measurement.

Measured:

CALCULATE SCALE FACTOR

NEW SCALE FACTOR: USE-SAVE CHANGES