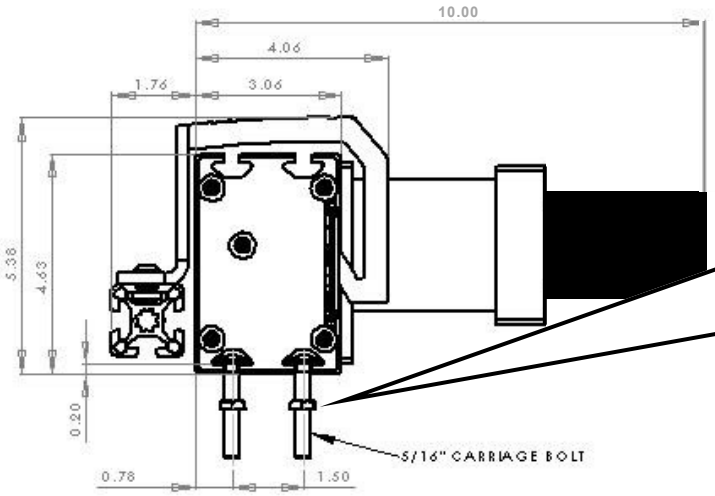
RazorGage

QUICK START GUIDE (ST)

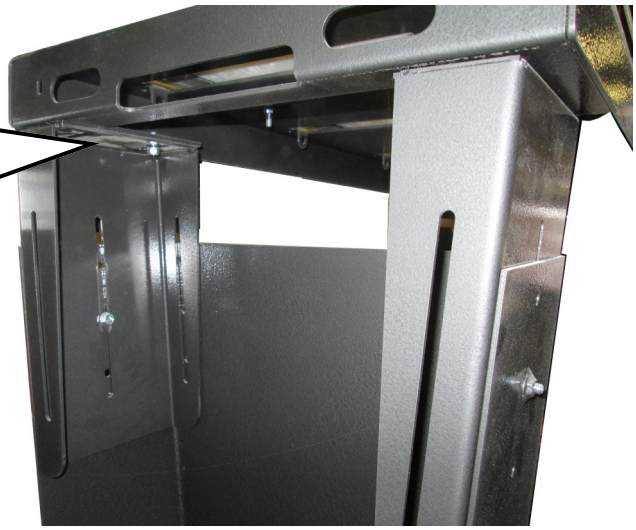
Mount the RazorGage to Your Own Table

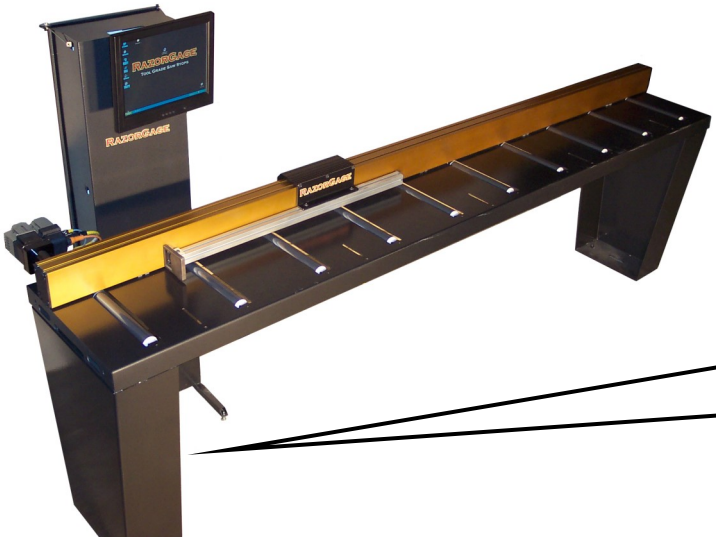


If you are mounting the RazorGage ST to your own table, use the dimensions at left to help you plan. You may use the 5/16” carriage bolts provided with the RazorGage to bolt the RazorGage to your table. The head of the carriage bolt fits in the T Slots as shown.

Mount the RazorGage to a Table Provided by RazorGage

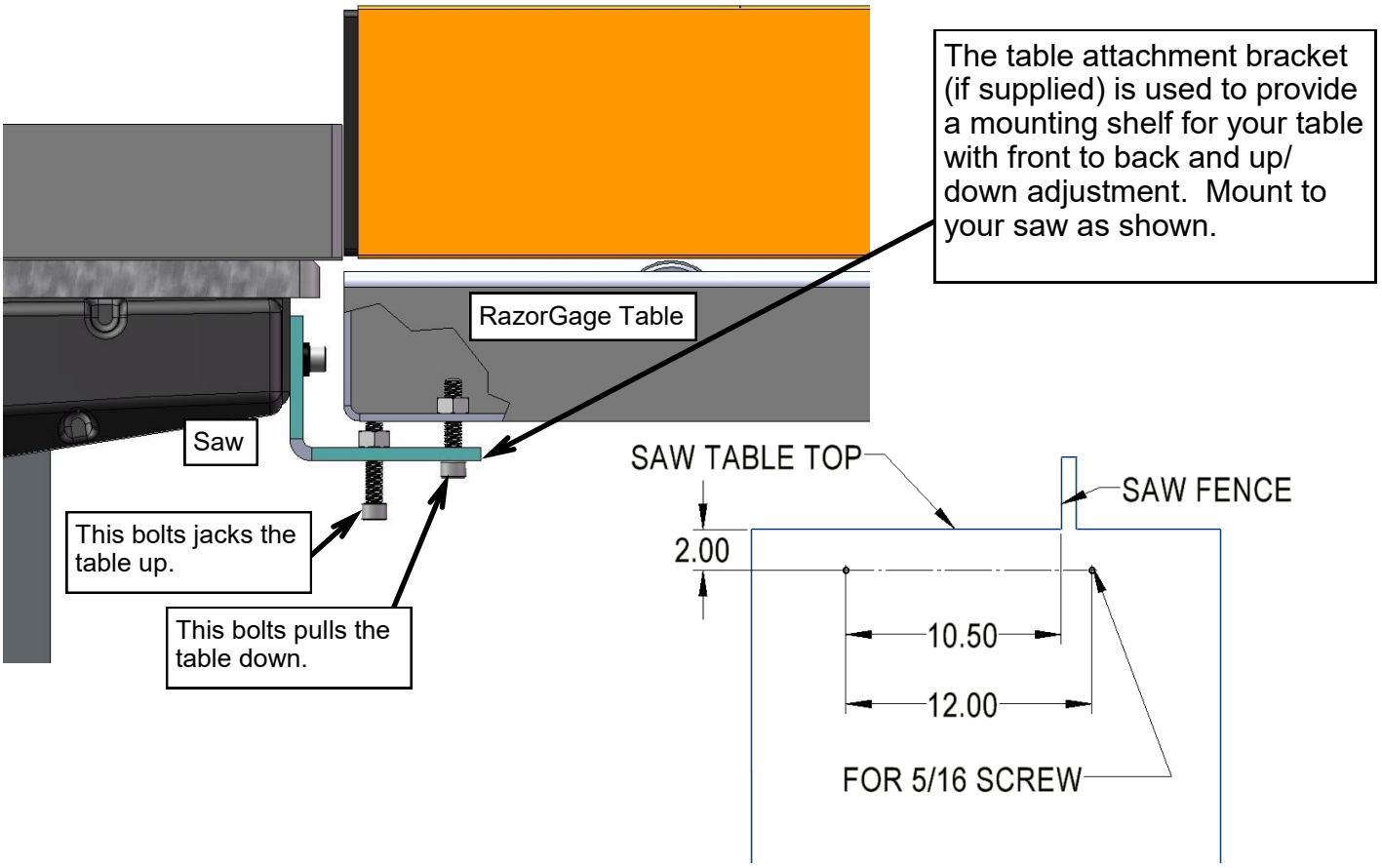
Mount the leg(s) to the RazorGage table with the bolts provided then mount the RazorGage to the table with the carriage bolts provided. The RazorGage can mount over the rollers or behind the rollers depending on your application. Use the 1/4” shims provided to space the unit above the rollers.





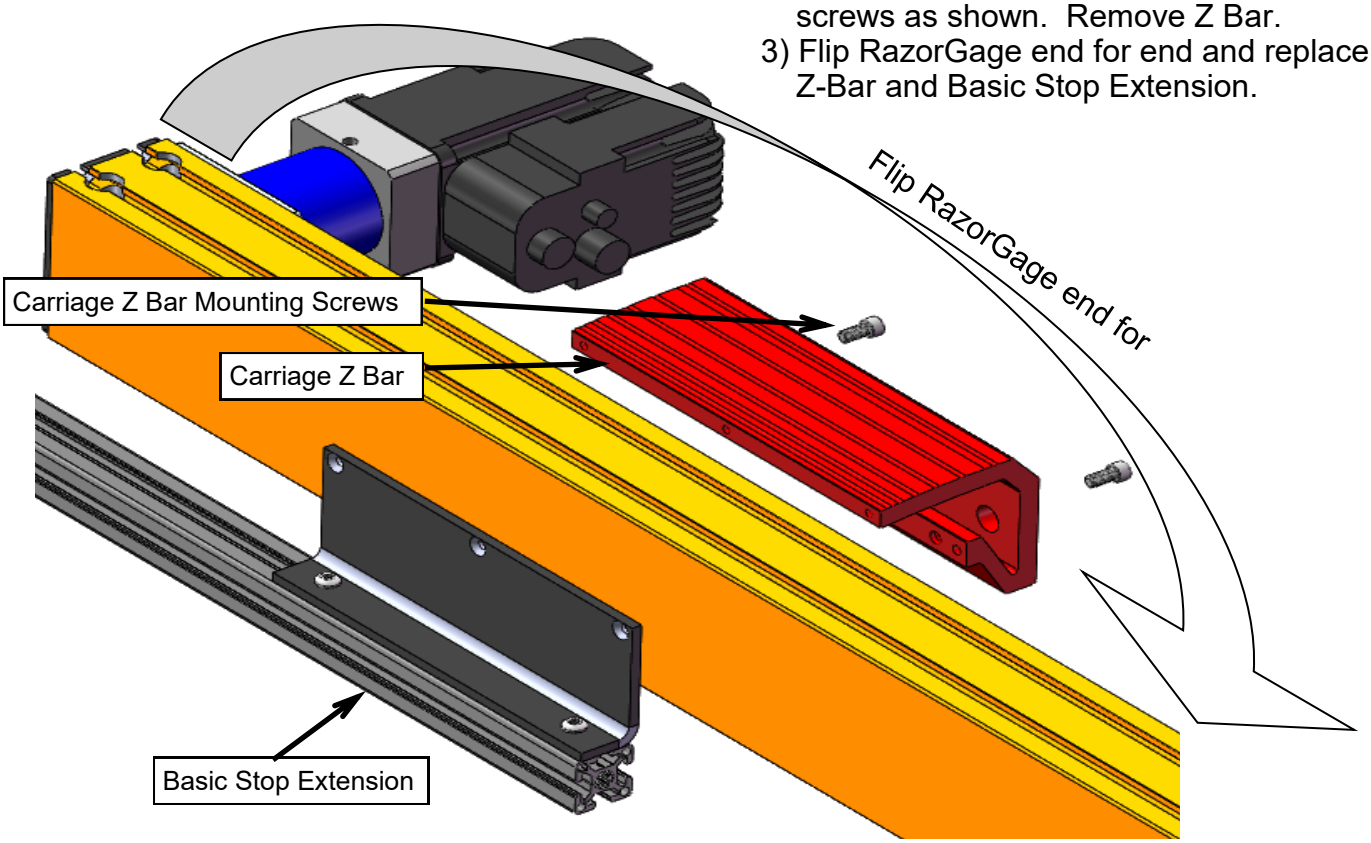
The table shown here is freestanding but unless you specifically ordered an extra leg, your RazorGage will only have one leg per table. The motor end is usually attached to the saw as shown on the next page.

Table Attachment Bracket



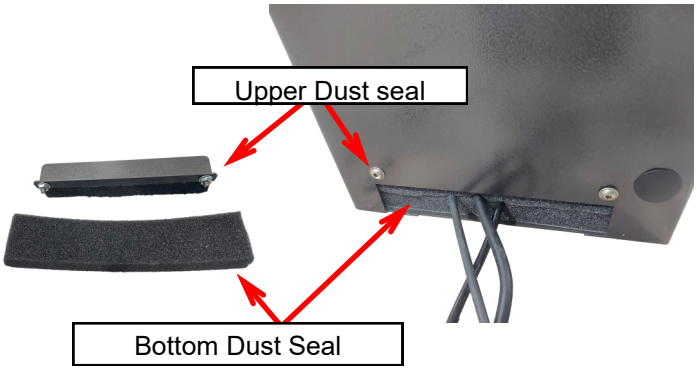
Changing the Hand of Your RazorGage

1) Remove Basic Stop Extension
2) Lift upper dust seal and extend allen wrench through holes in carriage Z-Bar to remove two screws as shown. Remove Z Bar.
3) Flip RazorGage end for end and replace Z-Bar and Basic Stop Extension.



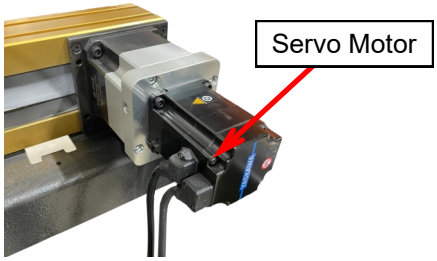
Mid-Tower Setup

1) Attach the Support Skis to the bottom of the Mid-Tower.(not pictured).
2) Peal adhesive backing off and attach Bottom Dust Seal to the bottom of the Mid-Tower as shown.
3) Using the supplied bolts and nuts, attach the Upper Dust Seal inside the enclosure to the back, at the bottom of the Mid-Tower.

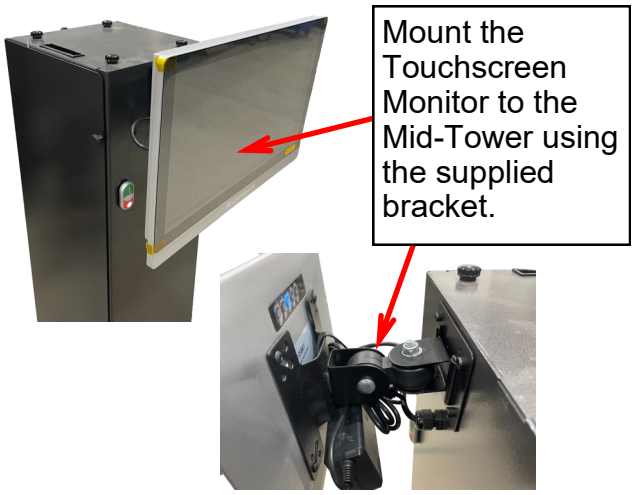


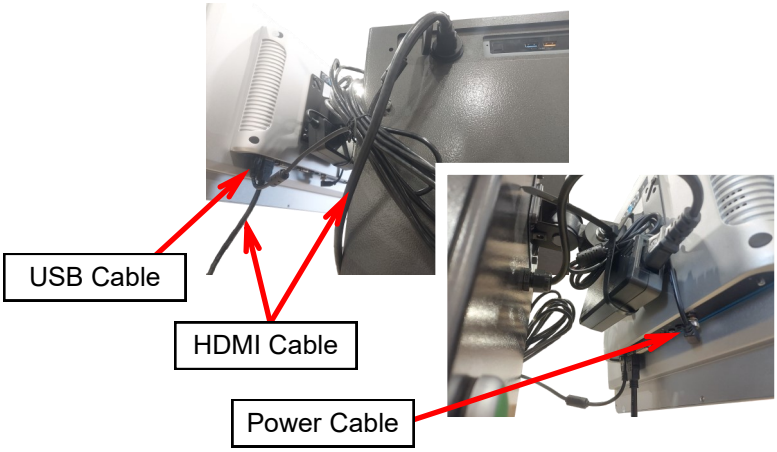
Connect the cables from the base of the Mid-Tower to the Servo Motor

NOTE: Do this WITHOUT the machine plugged into power.

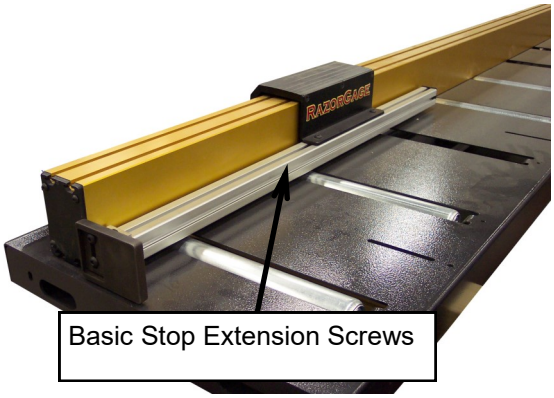


Mounting the Touchscreen & Cable Connections





Adjusting the Stop Extension

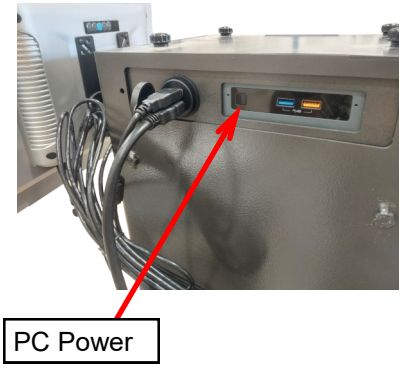


Once your RazorGage is securely mounted to your machine you will want to adjust the stop extension. Loosen the mounting screws on the Stop Extension and slide it away from the saw so that it won't hit your saw when you Home the machine. With the power off, push the moving carriage toward the motor end of the RazorGage until the carriage hits the internal hard stop. Now extend the stop extension toward the saw blade until it is as close as you want it to be. If you're using the RazorGage as a pusher you will want the stop extension to reach almost all the way to the blade so that your final trim cut doesn't result in much waste. If you're using the RazorGage as a stop then adjust the stop extension so that the distance from the cut to the stop face is less than the shortest part you want to be able to cut. Tighten the stop extension screws.

Next, power up your RazorGage.

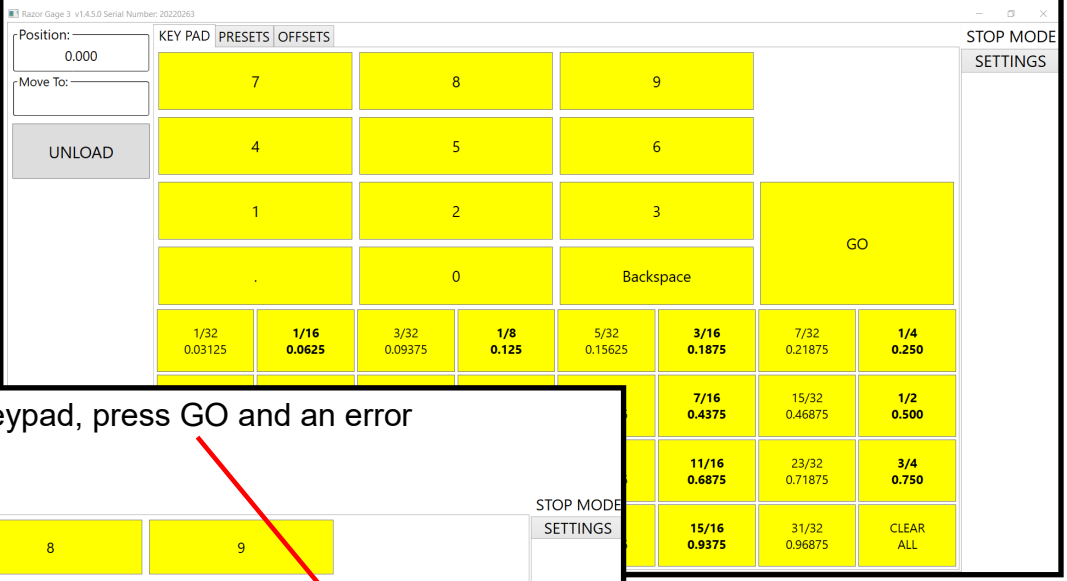
1. Plug the tower in and turn on the control power by pressing the green button on the front.

2. Turn on the PC by pressing the PC power button on the side.

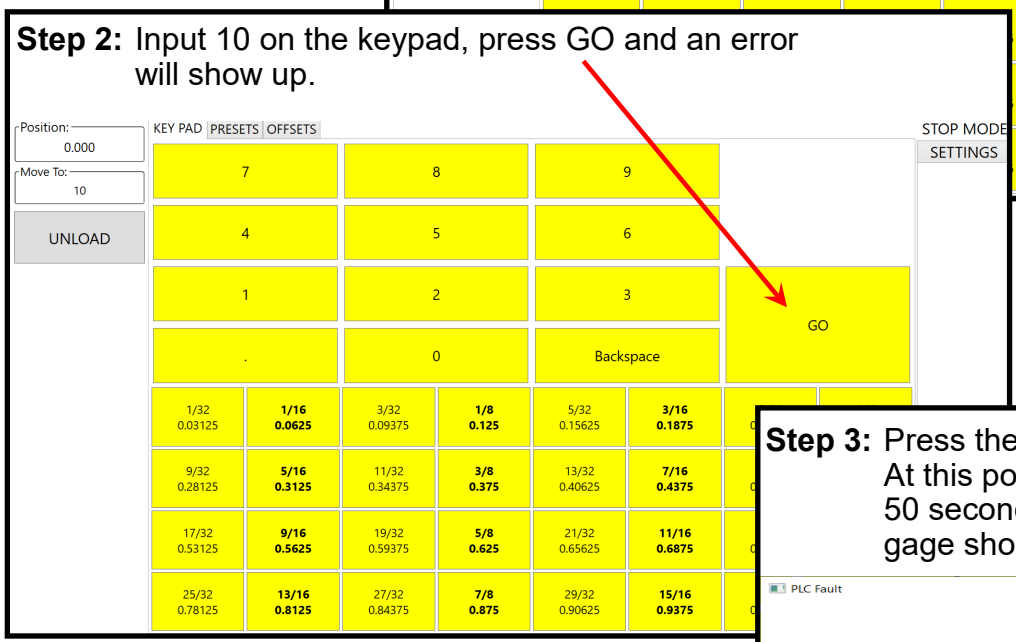


Starting the Software

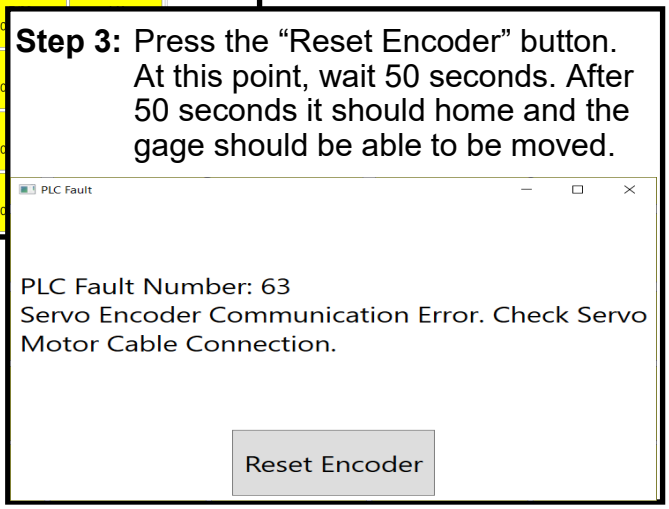
Step 1: Open the software on the desktop and the Keypad Screen will appear with no errors showing.



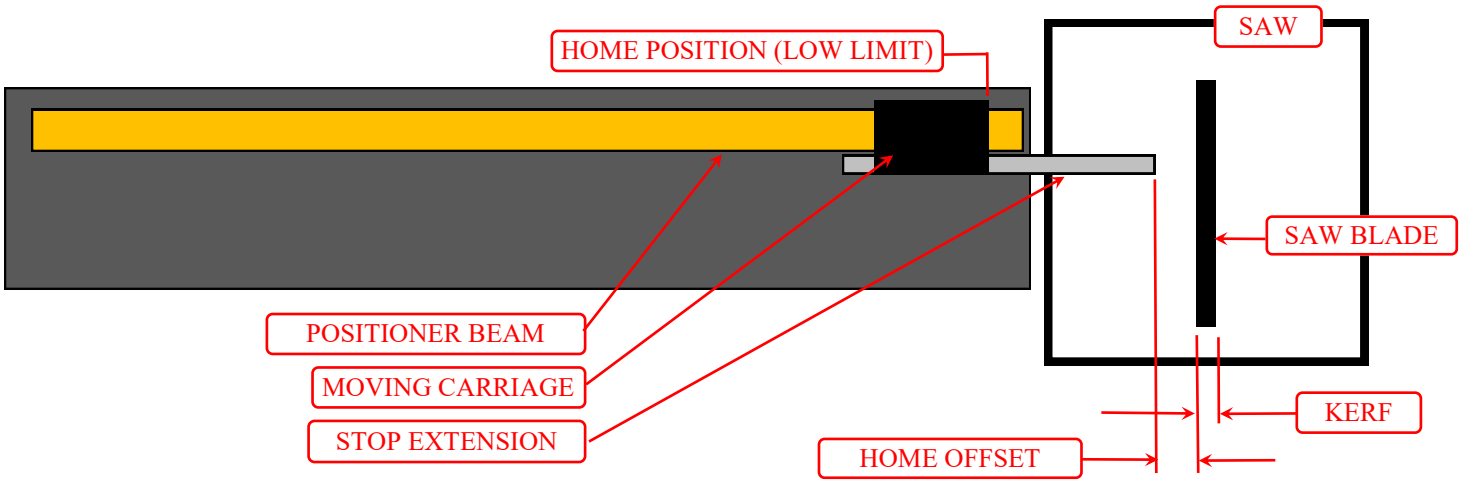
Step 2: Input 10 on the keypad, press GO and an error will show up.



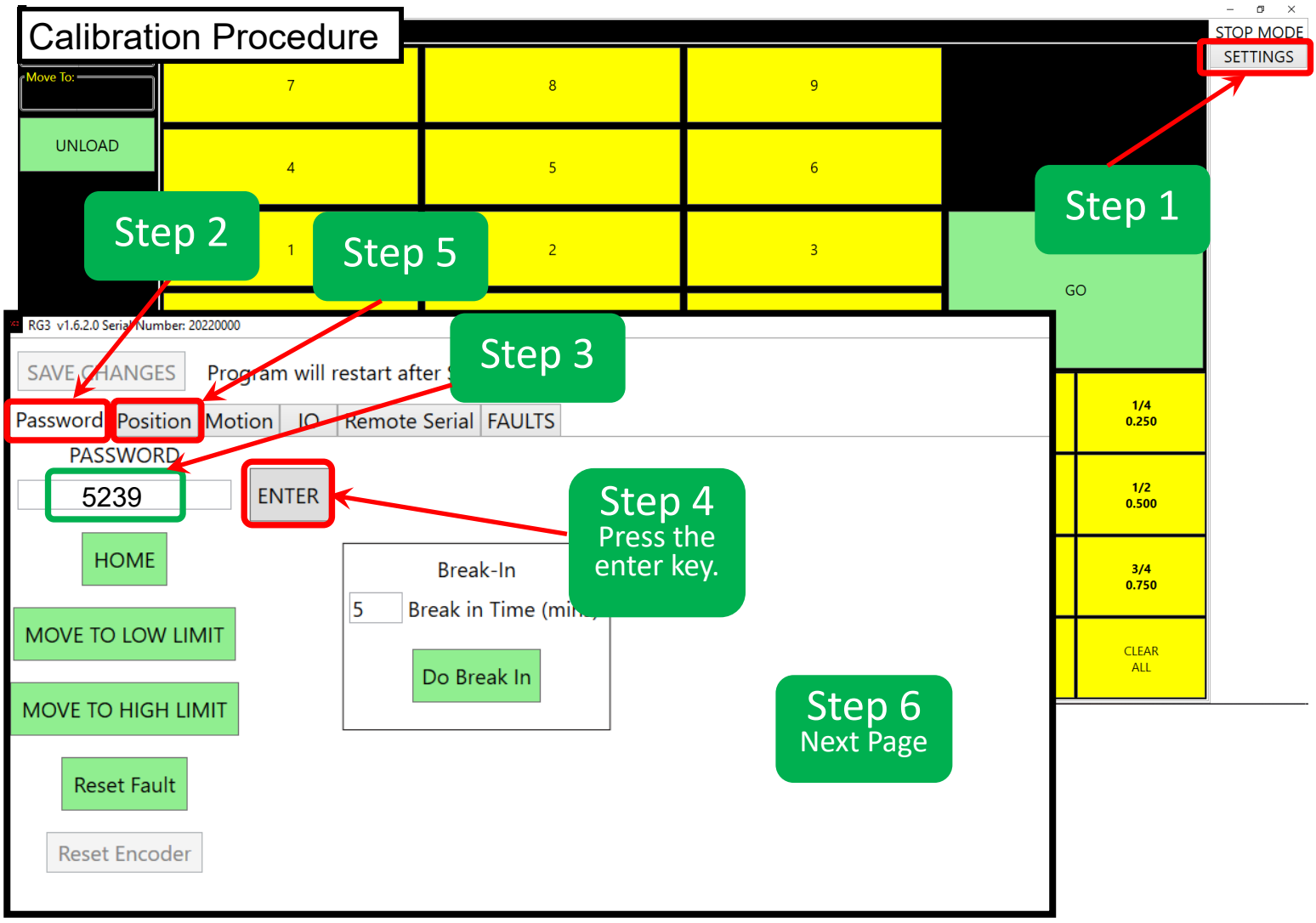
Step 3: Press the “Reset Encoder” button. At this point, wait 50 seconds. After 50 seconds it should home and the gage should be able to be moved.



Calibration



If you are using the RazorGage as a STOP (as opposed to a pusher) then there are two parameters that are important for accuracy. HOME OFFSET & SCALE FACTOR. When the positioner is at HOME (LOW LIMIT), the software needs to know where the saw blade is relative to the end of the stop extension. We call that distance the HOME OFFSET. When the HOME OFFSET is defined correctly, short parts will be accurate. To make sure long parts are accurate, we calibrate the SCALE FACTOR. The SCALE FACTOR represents the number of motor counts per inch of travel. Let's say that the current scale factor is 531. That means that the motion controller is going to assume that if it turns the motor until 531 counts are returned, the carriage has moved 1 inch. If the SCALE FACTOR is off by an amount that results in a .001" error, then a one inch part will only be off by .001", a 2 inch part will be off by .002", and a 100 inch part will be off by .100".



Calibration (continued)

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:

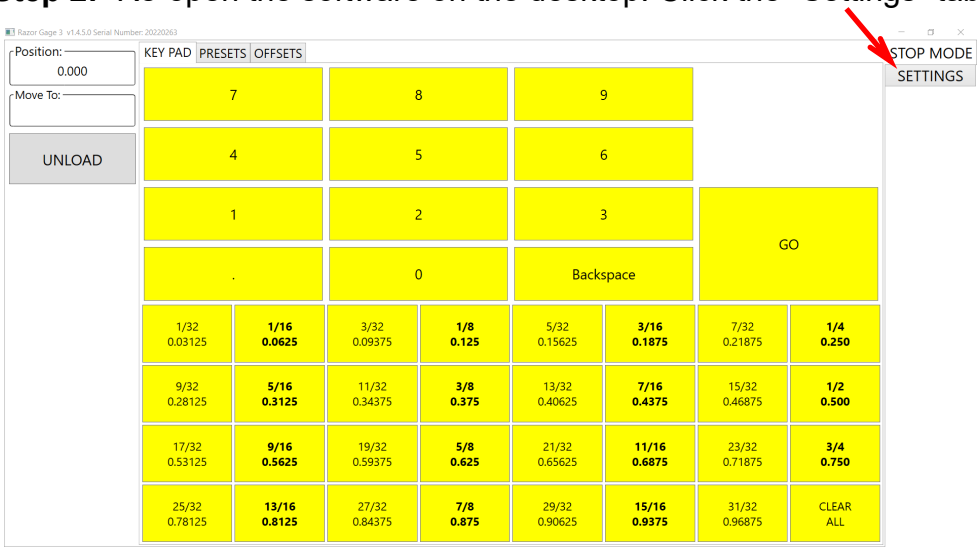
CALCULATE SCALE FACTOR

NEW SCALE FACTOR: USE-SAVE CHANGES

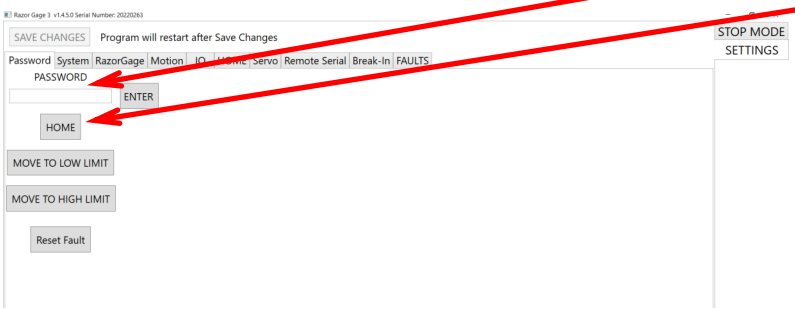
If the RazorGage does not move after first startup, you will have to execute the following steps to correct this issue.

Step 1: Close the software

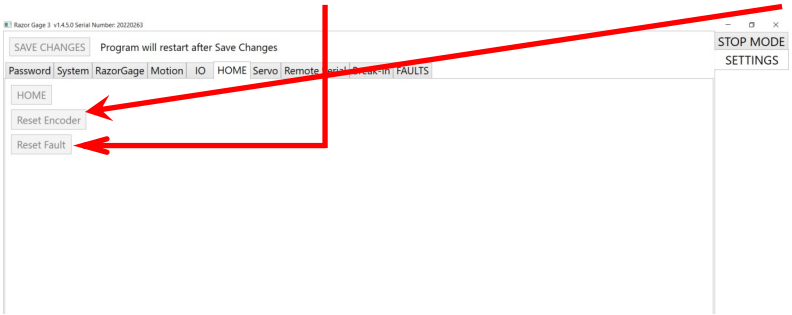
Step 2: Re-open the software on the desktop. Click the “Settings” tab to open Settings.



Step 3: In the Settings screen, enter password 5239 and click the “Home” tab.



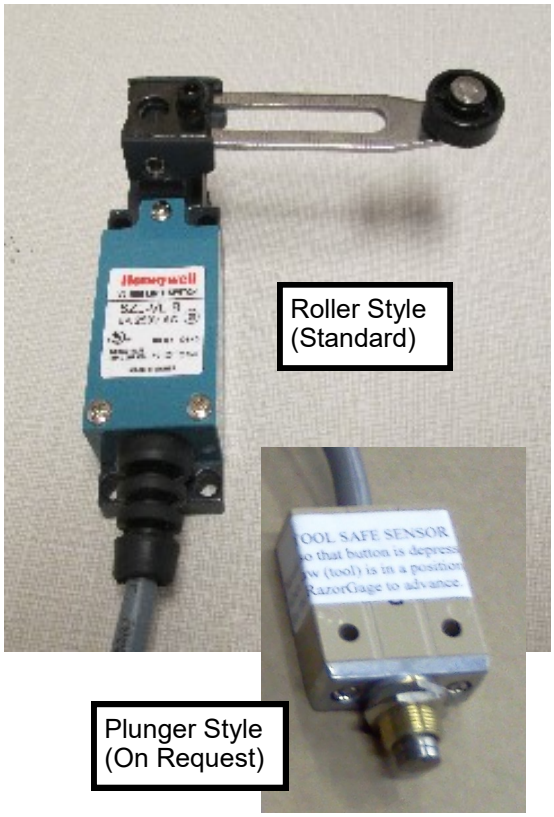
Step 4: Click on “Reset Faults” and then click on “Reset Encoder”.



Step 5: After 50 seconds the gage will home and they can continue with calibration and any other setup procedures.

Tool Safe Sensor

The Tool Safe Sensor is a limit switch to be installed on the user's saw, drill press, punch press, or whatever the processing tool may be, that, when depressed, indicates to the RazorGage software that the processing tooling is not in a position that favors movement of the pusher. The software then prohibits motion of the positioning carriage. The Tool Safe Sensor is also used to detect that the tool has completed a cycle. In certain software screens that allow semi-automatic to fully automatic operation, the RazorGage will automatically move to the next position after sensing that the Tool Safe Sensor has opened and closed within a certain timeframe. Since the RazorGage control is simply looking for a set of contacts to close, you may use a relay on your machine instead of the limit switch. The diagram on the next page shows how you can test the tool safe sensor. Contact the factory for more details.



Down Cut Saw - Switch detects that saw is up.

Up Cut Saw - Switch detects that saw is down.