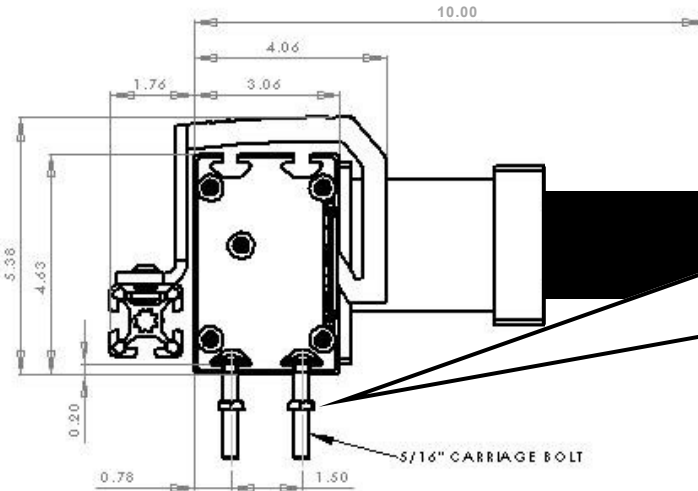


RAZORGAGE

QUICK START GUIDE - 10/13/23



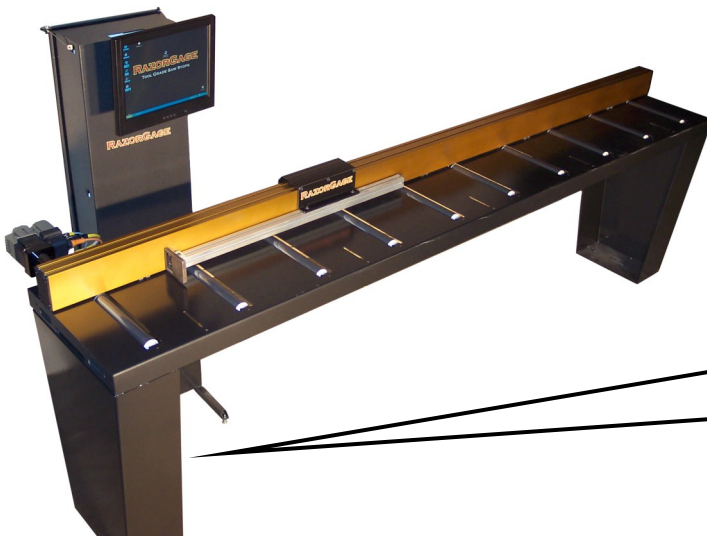
Mount the RazorGage to Your Own Table



If you are mounting the RazorGage RG3 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.

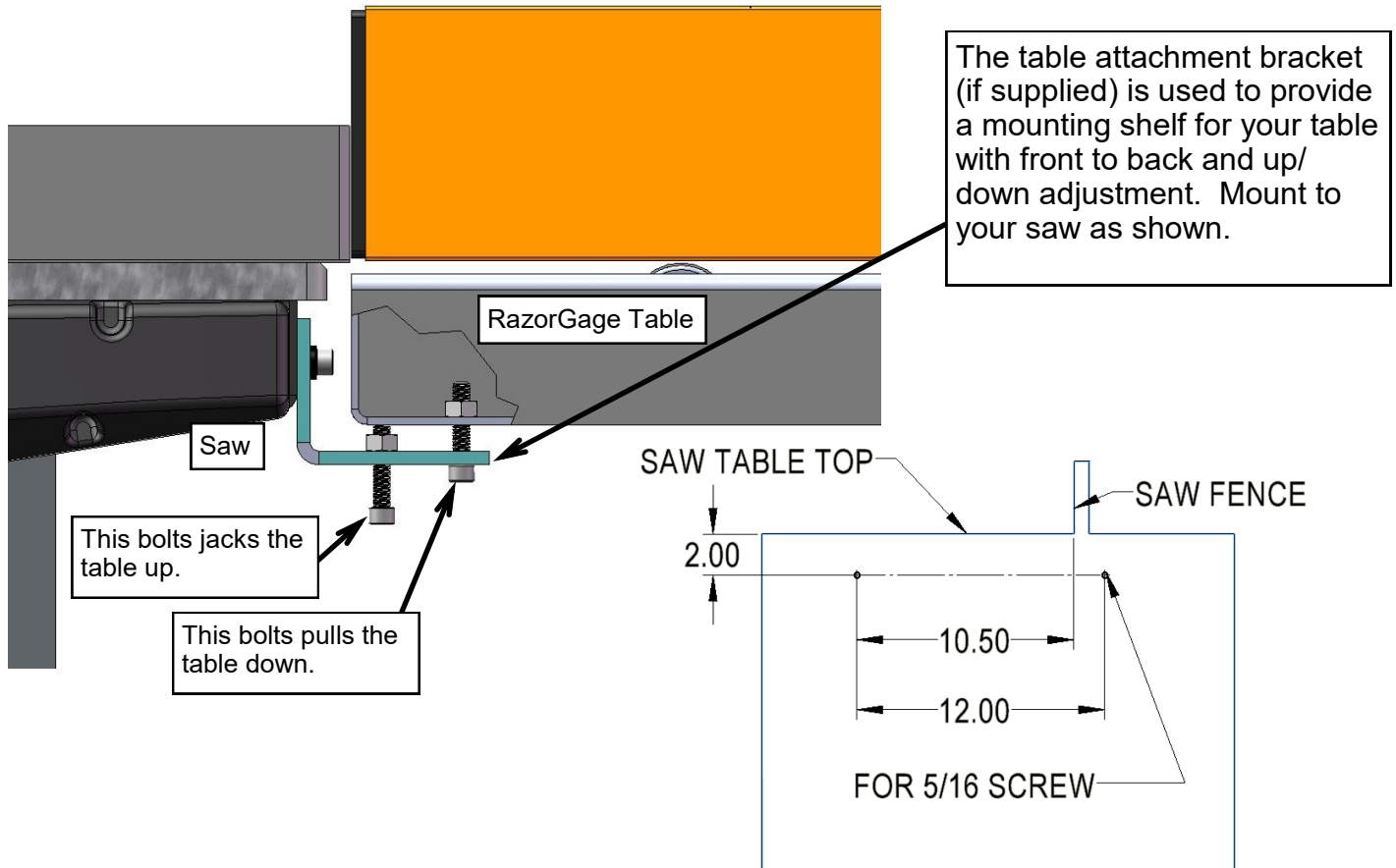
Mount the RazorGage to a Table Provided by RazorGage

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.

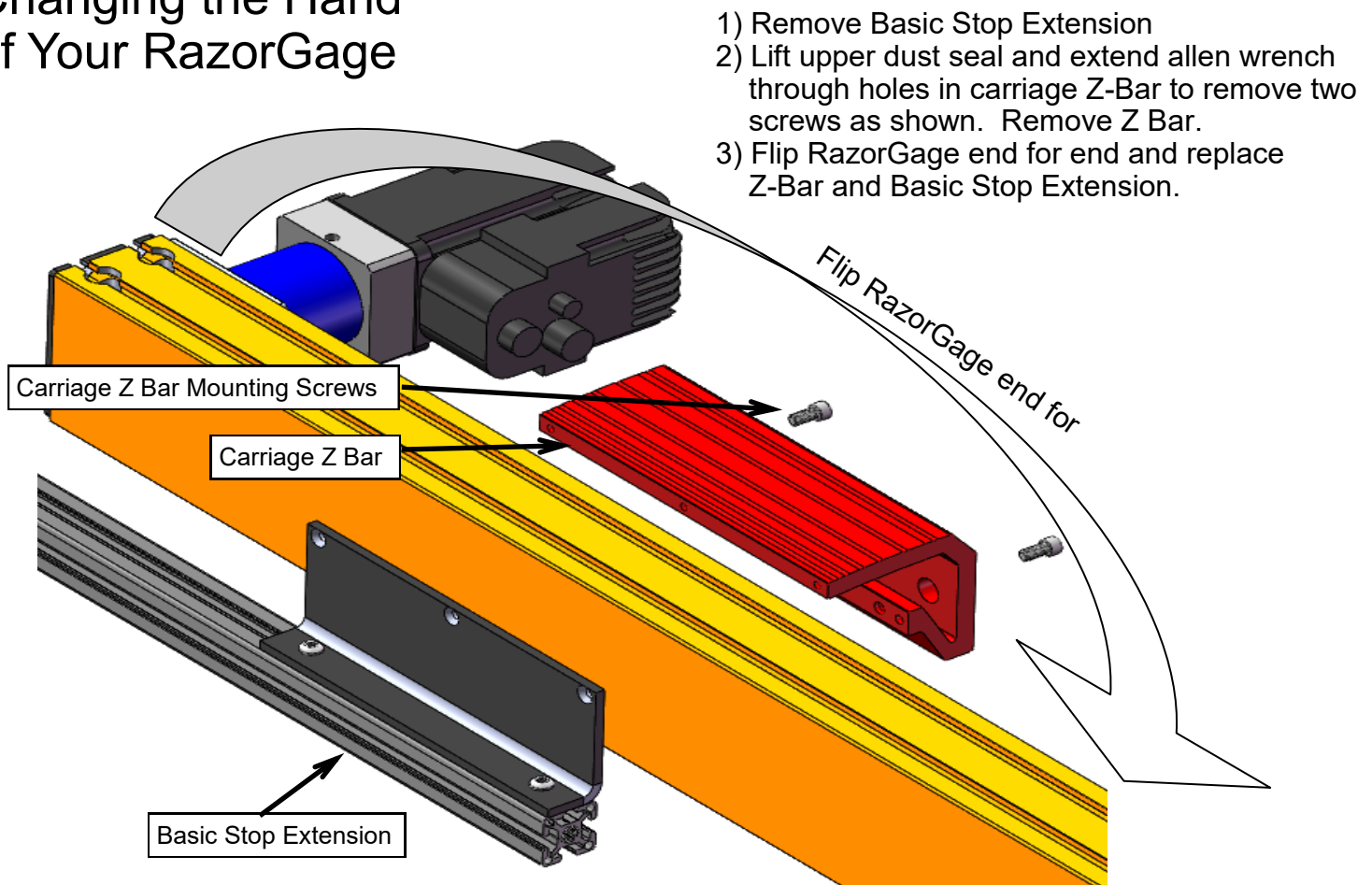


The table shown here is freestanding but unless you specifically ordered an extra leg, your RazorGage will only have one leg per table. The motor end is usually attached to the saw as shown on the next page.

Table Attachment Bracket



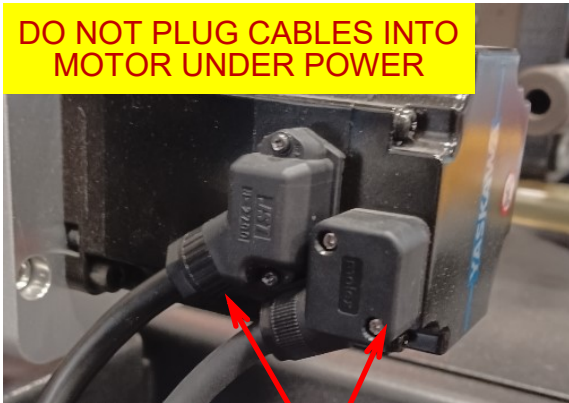
Changing the Hand of Your RazorGage



Mid-Tower Setup

Connect the cables from the Tower to the Servo Motor

DO NOT PLUG CABLES INTO MOTOR UNDER POWER



Orient cables this way.

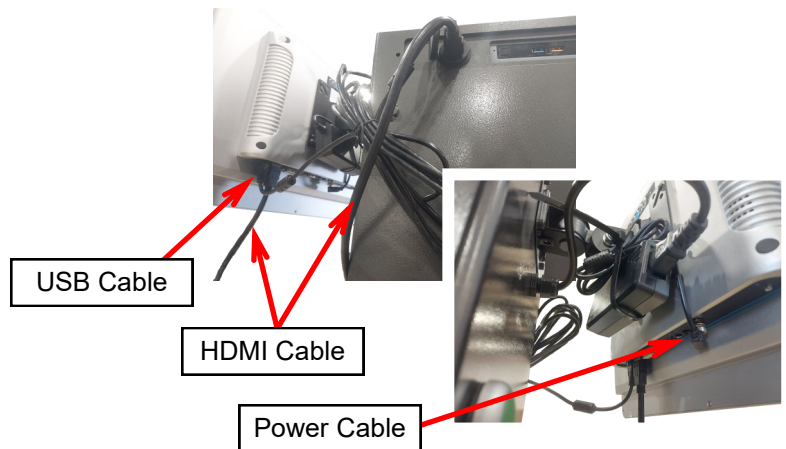
Attach the Support Skis to the bottom of the Tower Enclosure.



Mounting the Touchscreen & Cable



Mount the Touchscreen Monitor to the Mid-Tower using the supplied bracket.



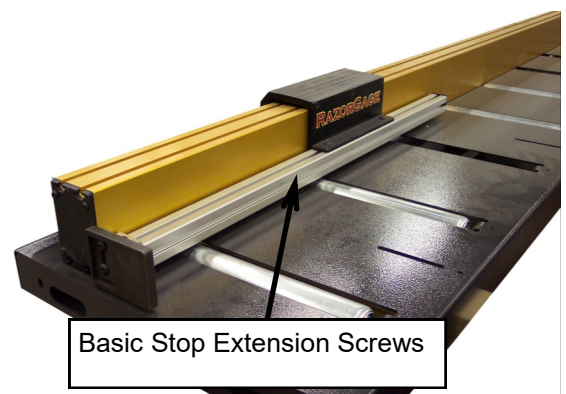
USB Cable

HDMI Cable

Power Cable

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.



Basic Stop Extension Screws

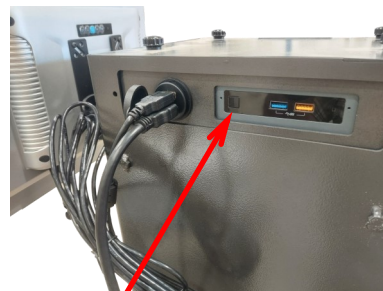
Next, power up your RazorGage.

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



RazorGage Power

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

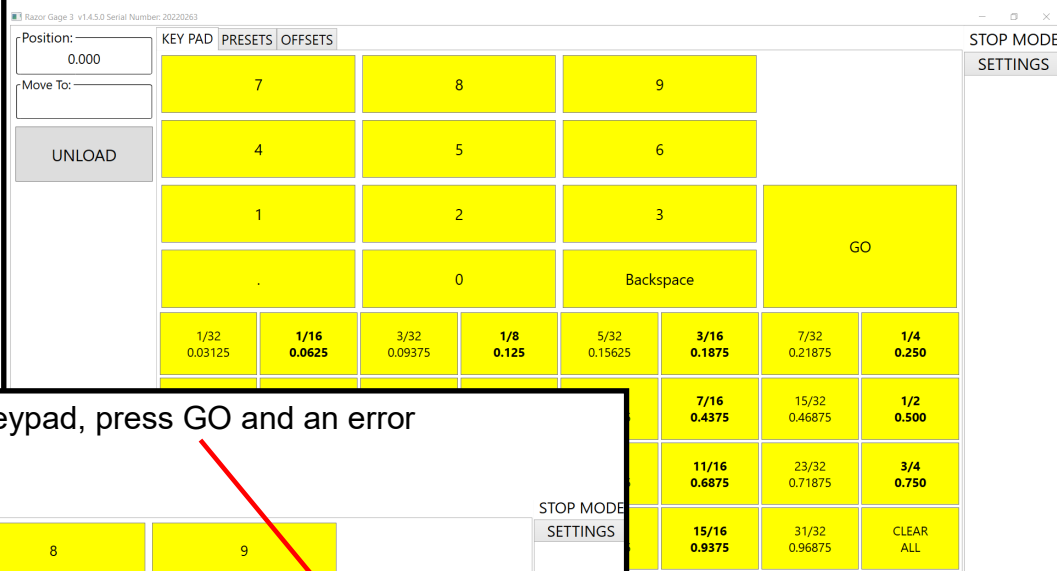


PC Power

Starting the Software



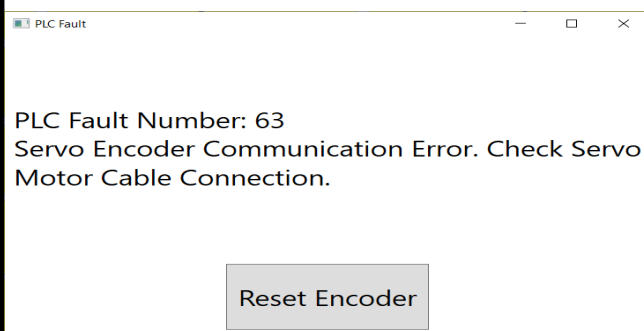
Step 1: Open the software on the desktop and the Keypad Screen will appear with no errors showing.



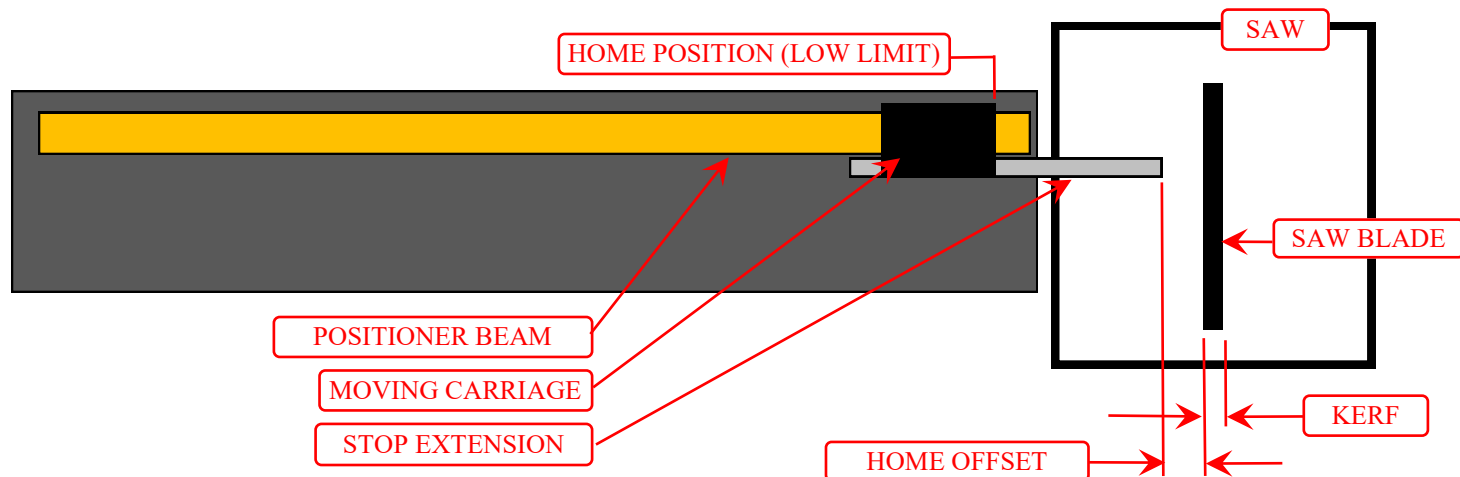
Step 2: Input 10 on the keypad, press GO and an error will show up.



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 Procedure

STOP MODE SETTINGS

Step 1

GO

1/4 0.250

1/2 0.500

3/4 0.750

CLEAR ALL

Step 2

Step 3

Step 4 Press the enter key.

Step 5

Step 6 Next Page

RG3 v1.6.2.0 Serial Number: 20220000

SAVE CHANGES Program will restart after

Position

PASSWORD 5239

ENTER

HOME

MOVE TO LOW LIMIT

MOVE TO HIGH LIMIT

Reset Fault

Reset Encoder

Break-In

5 Break in Time (min)

Do Break In

Calibration (continued)

SAVE CHANGES Program will restart after Save Changes

Password Position Motion IO Remote Serial FAULTS

Stroke: 72
Home_MotorSide: ☒
Homing Torque Limit: 40
Home Offset: 0.377
Unload Distance: 10
Load Offset: 5
Saw Kerf: 0.25
Positioner: ☒ Left of Saw ☐ Right of Saw
SERVO
Scale Factor: 5.91126632
Torque Limit: 50
Reverse Scale Direction: ☐
Position Error: 0.188

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

Measured:

CALCULATE HOME OFFSET

NEW OFFSET:

USE-SAVE CHANGES

Step 6
Follow
Instructions for
Home Offset

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

Step 7
Follow
Instructions for
Scale Factor

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

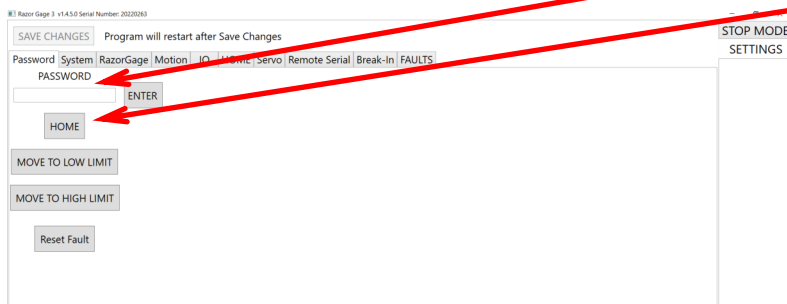
If the RazorGage does not move after first startup, you will have to execute the following steps to correct this issue.

Step 1: Close the software

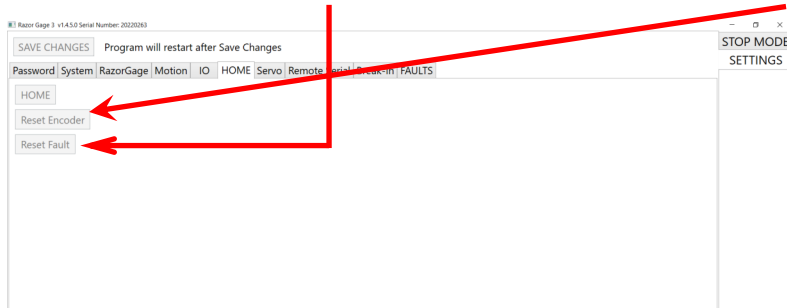
Step 2: Re-open the software on the desktop. Click the “Settings” tab to open Settings.



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”.

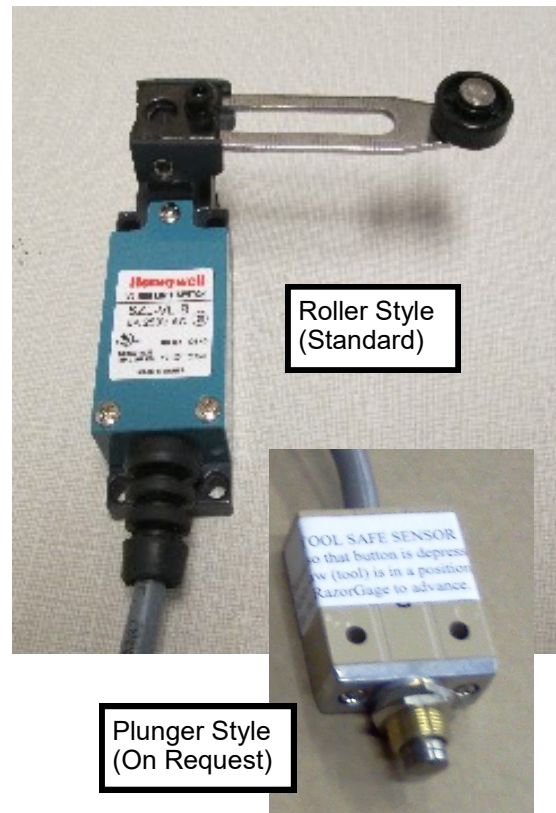


Step 5: After 50 seconds the gage will home and they can continue with calibration and any other setup procedures.

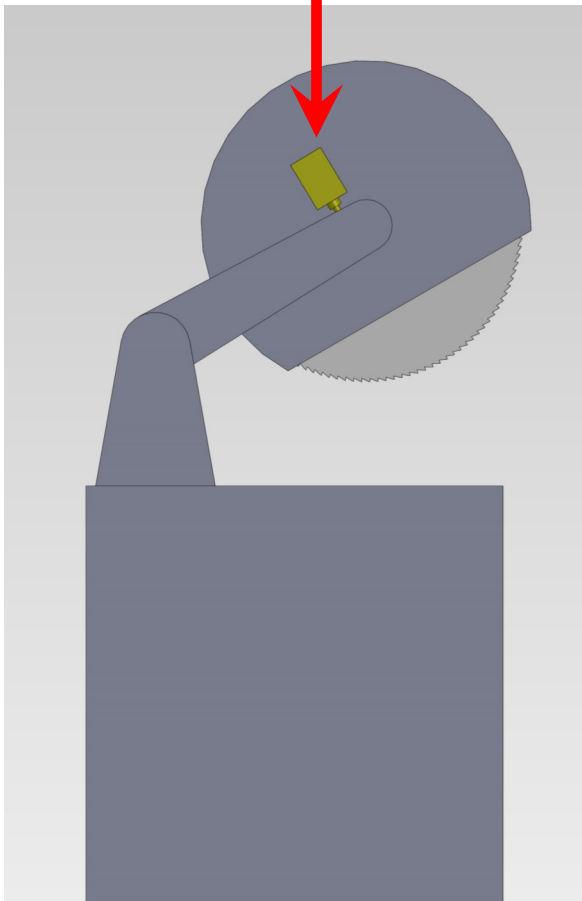
Tool Safe Sensor

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.

