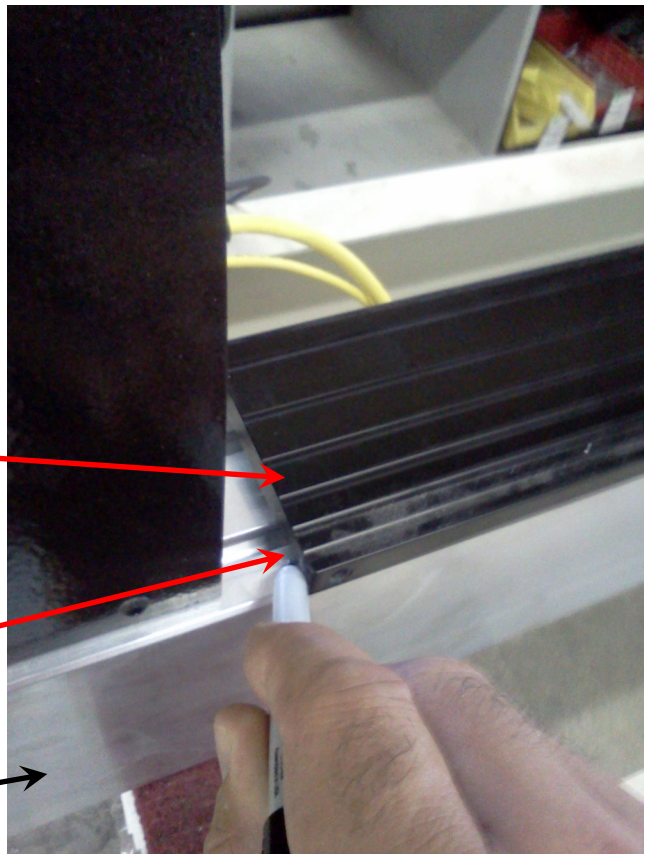
RAZORGAGE
POSITIONERS • SOFTWARE • SYSTEMS

TroubleShooting Accuracy Issues

Step 1) From the main screen press the SETUP SCREEN button in the upper right corner. If you have a RazorOptimal, just close the software and re-open it to HOME the positioner and then skip to Step 3.

Step 2) On the SETUP SCREEN near the lower left corner there is a button labeled HOME THE POSITIONER. Press that button to home the RazorGage.

Step 3) Using a sharpie or pocket knife use the edge of the black moving carriage bar as a guide to make an accurate mark on the RazorGage extrusion as shown in the picture at right. This mark will help us determine now and in the future if the RazorGage is repeatedly homing in the same place. Take your time to make a clean mark that is perfectly aligned with the edge of the moving carriage.

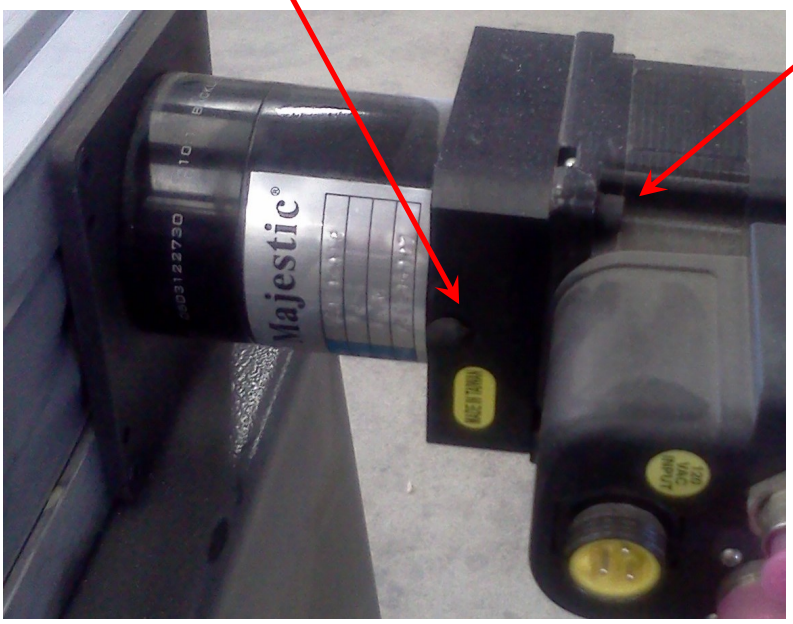


Step 4) Now that you've made your mark, use the same button we used before, HOME THE POSITIONER, or if RazorOptimal, re-start the software, to put the RazorGage through its homing cycle 10 times. After each homing cycle compare the edge of the carriage bar to the mark to make sure they are lined up exactly. If the carriage is not lined up with the mark after a homing cycle, record the distance from the mark to the carriage edge and proceed until you've finished the 10 homing cycles.

Step 5) If the RazorGage is homing in the same place every time when homing begins from the position the carriage is in after completing the Homing sequence, the next step is to move the RazorGage carriage to a position at least 24" away and start the Homing sequence from there. For RazorOptimals, click the SAW STOP button to make manual moves. Home the RazorGage 10 times with the homing sequence starting from a position at least 24" away from the final Home position. After each Homing sequence check to make sure the moving carriage bar is perfectly aligned with the mark you made earlier. To move the RazorGage carriage after homing is complete, go back to the Main Screen (or SAW STOP on RazorOptimal), enter a number such as 24 as a Target Position and press Enter. Then press the Setup Screen button and press Home the RazorGage (or restart the software on RazorOptimal). **If the RazorGage homes in EXACTLY the same place every time whether homing from close or far then skip to page 3**. Otherwise go to page 2,

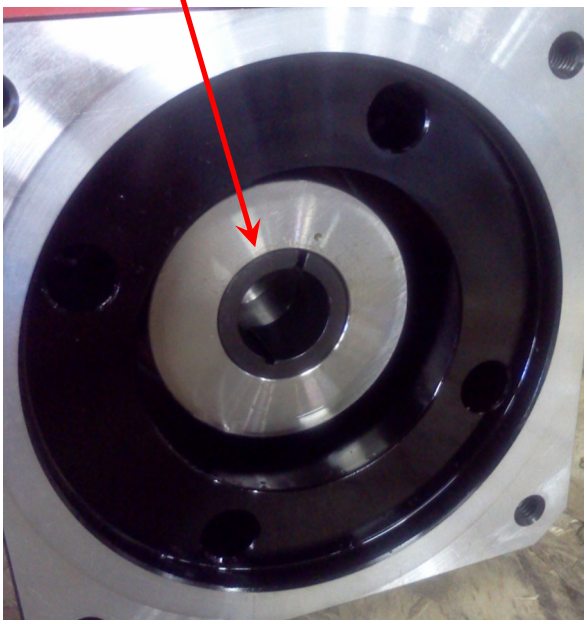
AS STATED ON THE PREVIOUS PAGE, DON'T DO THIS STEP IF THE POSITIONER HOMES IN THE SAME PLACE EVERY TIME.

Step 1) Remove Access Hole Plug & Push RazorGage Carriage VERY slowly until you see the set screw through the hole. Loosen



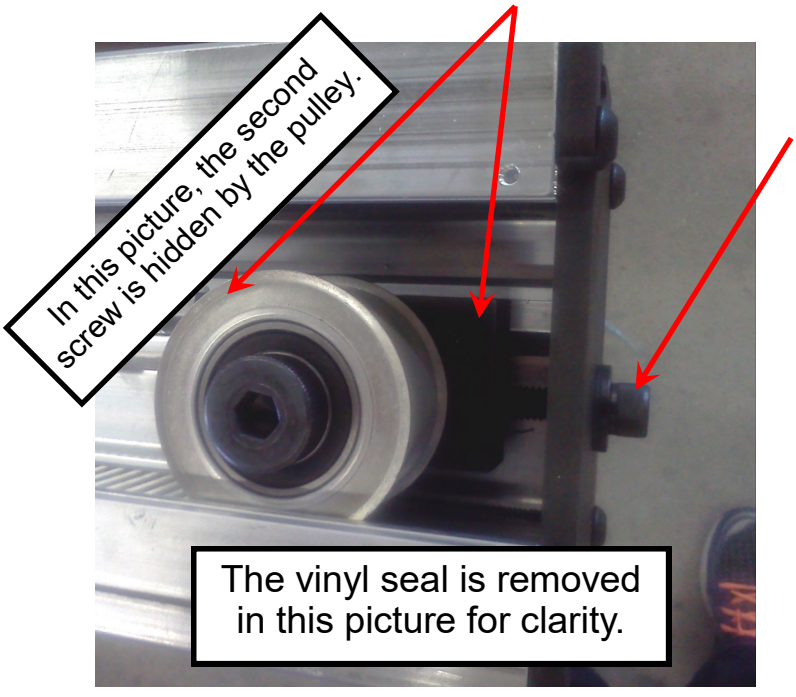
Step 2) Remove the four screws holding the MDrive Motor to the gearhead and remove the MDrive

Step 3) Look inside the gearhead to make sure the sleeve is in place and that the slot in the sleeve is not lined up with the set screw you loosened in step 1. If it is, rotate it inside the bore so that the slot is not aligned with the set screw.



Step 4) Put the MDrive back on the gearhead, re-install the four mounting screws, tighten the coupling set screw with an allen wrench and a 12" cheater pipe and replace the plug.

Step 5) On the IDLER end of the machine (this is the end opposite the motor) lift the vinyl seal and loosen the two screws holding the idler pulley block to the extrusion.



Step 5) Tighten the idler tension screw to make sure the belt is good and tight. To test your tension, re-tighten the two idler block screws and, using the touchscreen, set the speed to 40 and run the stop from one end to the other several times. If you get a stall error, the belt is too tight. Loosen the two idler block screws and relive some tension on the tension screw and repeat the test.

Check the Home Offset

For this step you will need a piece of stock that is square or rectangular in cross section so that it will lay flat on the saw bed and will not be prone to disruption when clamped. In this step we will be using the RazorGage as a STOP, not as a PUSHER so if, when the RazorGage is at the HOME position, the resulting part would be too short to clamp properly then this stock will need to be long enough to be clamped properly and longer than the length displayed when the RazorGage is at the HOME position. Preferably this length should be less than 6" so that you can measure the part with a 6" caliper. So if possible, cut the test part with the RazorGage at HOME. If this is not feasible, cut the shortest part possible. To cut the part, position the RazorGage either at HOME or at the shortest length possible for a good cut, slide the square end of your stock against the RazorGage stop, securely clamp the part and cycle the saw.

Record the CURRENT POSITION shown on the RazorGage screen HERE_____

Cut 5 parts without moving the stop and record the lengths here:

Part 1 Length_____

Part 2 Length_____

Part 2 Length_____

Part 4 Length_____

Part 5 Length_____

Send those values to steve.hoshor@tsiames.com or fax this sheet to 515-232-2953 along with your contact information so that we can contact you with the calculated HOME OFFSET. Don't proceed to page 4 until you receive a response.

After you receive the calculated HOME OFFSET, click SETUP SCREEN, type the password 90210, hit ENTER, type the new value into the HOME OFFSET parameter, and click SAVE CHANGES. Cut 5 more parts at the same length as the test part. If those parts are all accurate and repeatable, continue to page 4.

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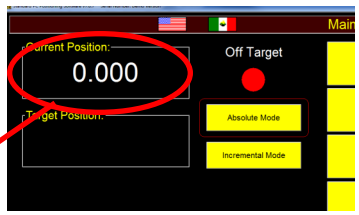
Measurements to test accuracy.



Step 1) Home the RazorGage & perform steps 2 through 4

Step 2) Write down the position shown in the Current Position box on the Main Screen here.

Current Position after HOME

Before proceeding to Step 3, see measuring tips on page 4.

Step 3) Using a measuring tape, measure from surface A to surface B as shown in **Fig 1** below.

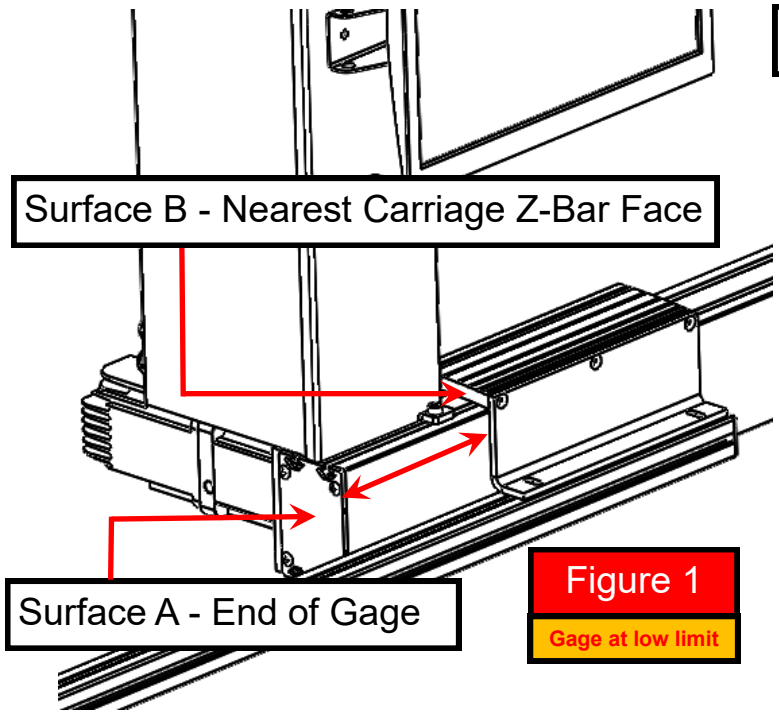


Figure 1
Gage at low limit

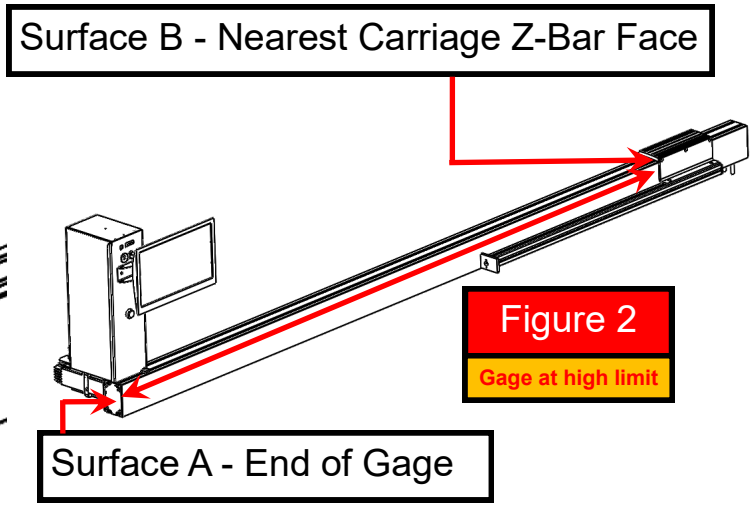


Figure 2
Gage at high limit

NOTE - Take extreme care to obtain the best measurements you can. The more accurate the measurements, the more accurate your RazorGage will be.

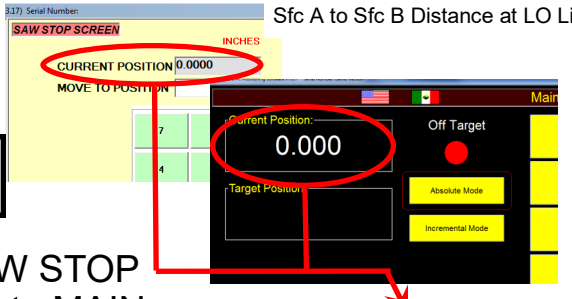
Step 4) Write down the measurement from the end of the gage (Surface A) to the nearest carriage z-bar face (Surface B) here.

Figure 1

Sfc A to Sfc B Distance at LO Limit

Step 5) Go to the Setup Screen and locate the SCALE value in the upper left area of the screen (RazorOptimal-MORE/PARAMETERS/MOTION). Record the scale value here.

Scale Factor



Step 6) Still from the Setup Screen (RazorOptimal-SAW STOP screen), press MOVE TO UPPER LIMIT. Now go back to MAIN SCREEN and record the CURRENT POSITION value here.

Current Position at HI Limit

Step 7) With the carriage at the UPPER LIMIT position measure from SURFACE A to SURFACE B as shown in **Fig.2** above and record the measurement here

Figure 2

Sfc A to Sfc B Distance at HI Limit

Step 8) Send values to steve.hoshor@tsiames.com or fax this worksheet to (515) 232-2953

RazorOptimal Only

If the RazorOptimal is producing inaccurate parts check the relationship between the pusher (flyswatter) and the material. If the overhanging tab on the flyswatter pusher plate presses down on the stock then you will get random inaccuracies as the pusher advances the material until such time as the stock is firmly against the pusher face. When the flyswatter drops down behind the stock there will be a gap between the pusher face and the end of the stock. This gap could be between 1/16” and 3/8”. As long as the overhanging stock retention tab is not touching the material, that gap will get closed and the pusher will be pushing directly on the end of the pusher right after it starts moving. If the retention tab is pressing down on the material then the friction between the tab and the material ends up being the means with which the pusher advances the material. As the pusher advances, the force to push the material randomly overcomes the friction between the tab and the stock allowing the material to gradually creep into the pusher until it’s finally against the pusher face. Every part made while the stock was creeping toward the pusher face will be inaccurate. That’s why it is VERY IMPORTANT to adjust the height of the flyswatter to maintain the 1/16” gap shown in the diagram below. Otherwise you will get random inaccuracy in your