Note: If you are entering lengths and angles on the Main Screen and expecting parts to be the correct length then it's time to regroup. The Main Screen is only to be used for moving the two axes (saw and positioner) to positions used typically in calibration. No math is done on that screen to create a part of correct length. The only screens that will create angle ended parts or correct length is the MANUAL PARTS SCREEN or the AUTOLIST SCREEN. If parts cut using those screens are inaccurate then continue on with this document. If you are using the MANUAL PARTS SCREEN or AUTOLIST then make sure that the width parameter (entered manually on the MANUAL PARTS SCREEN and pulled from the cutlist in AUTOLIST) is equal to the actual width of the stock. If the width entered is not the same as the actual width then lengths will be off.

Because accuracy on angle cutting saws is affected by so many parameters, I have found that the shortest path to success is to start at the beginning as if the machine had never been calibrated. Don't get excited. This is much easier than it sounds. With just a few simple tests we can very quickly arrive at the problem. Here are the steps:

Step 1) Using the MANUAL PARTS SCREEN, cut 10 short parts (5 to 10 inches for example) with leading and trailing edge angles set to 90. After the first part is cut, measure the angle to make sure we have an accurate 90 degrees. If the angle is not accurate stop and calibrate the angles (see the Anglemaster Software Manual on our website.) If the angle is accurate, continue cutting the parts. Number the parts as they come out of the machine, measure them, and write the measurements on the parts. If these parts are all basically the same length, then we have repeatability. If they are all off by the same amount then we need to adjust the kerf. If they are all consistent and accurate then we know that the RG1 scale factor and kerf are all properly calibrated. If the parts are off by random amounts then the most likely problem is that the table on which the RazorGage positioner is mounted is not firmly attached to the saw. If this is not the case then the stock may be floating away from the pusher as it decelerates, the gearbox input coupling may be loose, the belt may be loose, or the clamps may be jostling the part before the saw comes up.

Step 2) If all parts in step one were accurate, use the MANUAL PARTS SCREEN to cut 3 long parts (120" or longer). If these are repeatable but are not the correct length then the RG1 SCALE FACTOR needs to be calibrated. If these parts are all accurate then RG1 settings are all good.

Step 3) If steps 1 and 2 did not reveal any problems then we will now focus on the angle saw. We will now use the MAIN SCREEN to cut some parts. Keep in mind that with the exception of a 90 degree part, lengths will not be the same as the POSITION entered on the screen. That's OK for this test. First set the angle to 90 degrees and find some stock that clamps well and is not too wide and not too complex. Flat stock, 2" wide by 1/4" thick would be great but rectangular tubing, is fine too. We just want stock that is unlikely to shift when clamping and sawing and which is easy to measure accurately when cut at an angle. We're going to cut three parts approximately 10" long with the saw set at 90 degrees. Don't worry about the length of these parts because we're going to re-cut them. The main goal here is to have three relatively short parts with nice square ends from which we'll cut our test parts. Once these three parts are squared up, get a sharpie and label one 45, the next 90, and the third 135. Make a mark along the edge that will be put against the fence so we know how it was oriented on the saw after we make the cuts. Set the positioning stop to 5". Longer is ok if your positioner doesn't come in that close. Set the blade to 45 degrees and take the part labeled 45 against the stop, adjust the clamps, and cut one end at a 45 degree angle. DO NOT MOVE THE POSITIONING STOP. Move the blade to 90 degrees and repeat the above process with the part labeled 90. DO NOT MOVE THE POSITIONING STOP. Move the blade to 135 and cut the part labeled 135. Now measure the angle of the 45 degree and 135 degree parts. You should have already confirmed at step one that the 90 degree parts are square. If the angles are not accurate, refer to the ANGLEMASTER SOFTWARE MANUAL for instructions on how to calibrate the angle. If the angles are accurate then clidk AUTOLIST - SETTINGS - PIVOT POINT - CALIBRATE. The three parts you cut are the parts needed to calibrate the pivot point. Follow the instructions on the screen to take the measurements needed and enter them in the appropriate boxes. See the ANGLEMASTER SOFTWARE MANUAL for help. Note that the measurements are taken on the side of the part that is against the fence. That means that the 45 degree part will be measured along the short edge, not to the point. The 90 degree part and the 135 degree part are measured across flats and from flat to point respectively. Press CALCULATE to calculate the pivot point offsets. Take a look at the calculated offsets to make sure that they are not outlandish. If they look reasonable then click USE OFFSETS. If you did everything right then your parts will now be accurate.