

## When You Don't Trust Your Alignment Tool

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I've been in the millwright business for many years. In all that time, I never heard anyone blame a dial indicator for not getting repeatable alignment results. But I have heard mechanics blame a laser alignment tool for inconsistent results. And my response to them goes something like this:



When I miss a shot, I don't blame the rifle. When I miss a fish, I don't blame the rod. And when I miss a nail, I don't blame the hammer.

In each example, I either need to change what I'm doing wrong, or configure what I'm using to make it do what I want it to do.

Here are some common reasons for non-repeatability in shaft alignment.

### **Soft Foot**

If soft foot is not corrected prior to measuring for misalignment, every time the foot bolts are tightened, the motor may be sitting in a slightly different position. Fix it first.

### **Bad Input**

If you put in incorrect dimensions, you can't expect a laser alignment tool to give you accurate results. When in doubt, recheck your dimensions.

### **Backlash (looseness) in the coupling, or rotating in different directions each time**

If the relative angular positions of your lasers change while measuring, you will get errors in your result. Most good alignment tools will tell you the angular positions of the detectors. Make sure to keep them as close to the same as possible. Always roll the shafts in the same direction, preferably with rotation. This is especially true on machines with sleeve bearings.

### **Loose or moved detectors**

Make sure your lasers are mounted solidly to the shafts or hubs. Also, make sure not to bump them or move them during the alignment process. If you do, re-measure.

If you are not getting repeatable results, don't blame the tool until you know that you are doing your part. If you are, the odds are good that your alignment tool is doing its part!