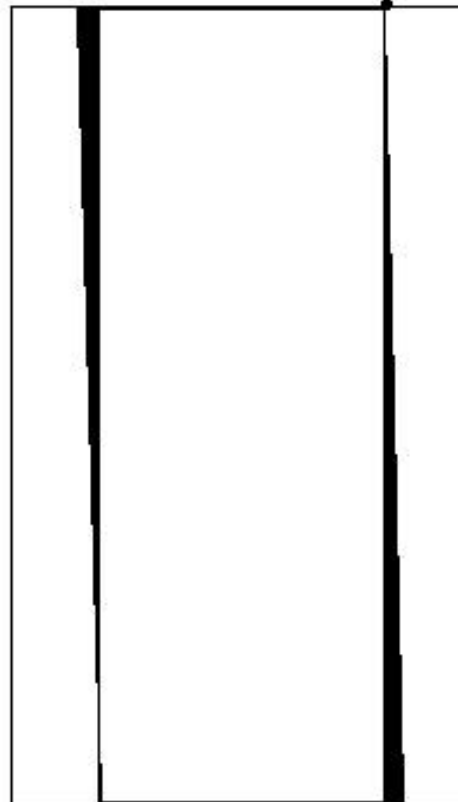
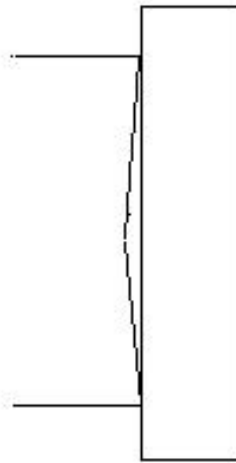


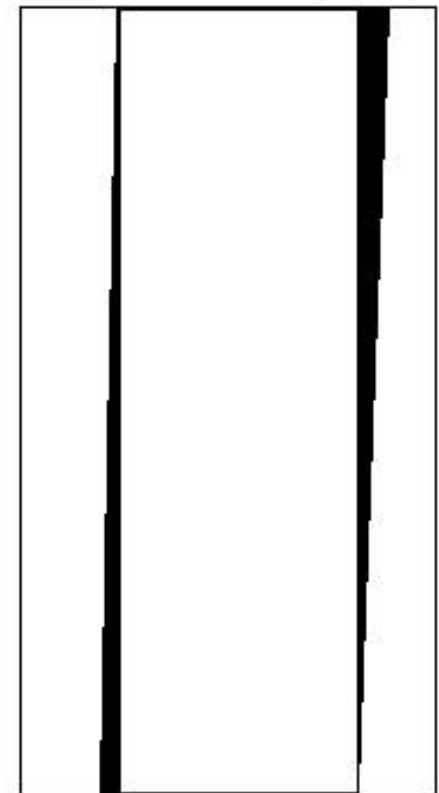
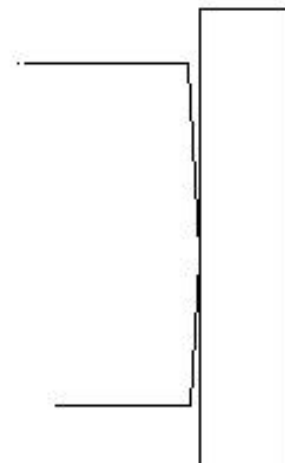
The first thing you need to do is determine what part of the dovetail is off. Most important thing to check for is that the headstock side is perpendicular to the bed. The check for that is to face as large a piece of material as you can get in the chuck. Make sure the saddle is clamped in position using the lead screw and half nuts or a saddle clamp of some kind. Center drill about a 1/8" hole in the piece to keep any nubs caused by the tool height being off from interfering with the measurement. Take fine passes to get as smooth a finish as possible. Lay a straight edge across the piece and check that it lays flat across the faced piece. If the dovetail is not perpendicular to the bed it will be either convex or concave. That will tell you how much and what direction the dovetail is off. The surface should be flat or at most .001-.002 concave.

If the surface is either convex or concave both sides of the dovetails will have to be modified. If it is flat but the cross slide sticks on one end or the other then just the tailstock side of the dovetail will have to be modified.

For mine I made a scraper by grinding the end of a triangular file flat to use as a scraper. Tape one edge of the file to protect the bottom surface of the saddle. Start on the headstock side of the saddle and make the required correction, then do the tailstock side. Measure across a pair of rods held in the dovetails to determine when the 2 sides are again parallel. Don't worry about smoothness at this time, take another face cut and make sure the error has been removed. To lap the surface of the dovetails I cut strips of 320 wet/dry sandpaper to the width that would fit in the dovetail. Starting on the headstock side, with a little wd-40 as a lube I slid the cross-slide back and forth until I had a smooth surface. Repeat on the tailstock side to get the dovetails parallel. Repeating as necessary and using finer grits of sandpaper you should be able to get very smooth action on your cross slide. After the dovetail on the saddle is lapped you may also want to use the same method with sandpaper in the dovetails but the cutting edge on the cross slide or gib to lap those surfaces too.



Turning concave remove dark areas of dovetails



Turning convex remove dark areas of dovetail