

## Using the Damper Underlever Setting Jig . . . . . ©2001 Bill Spurlock

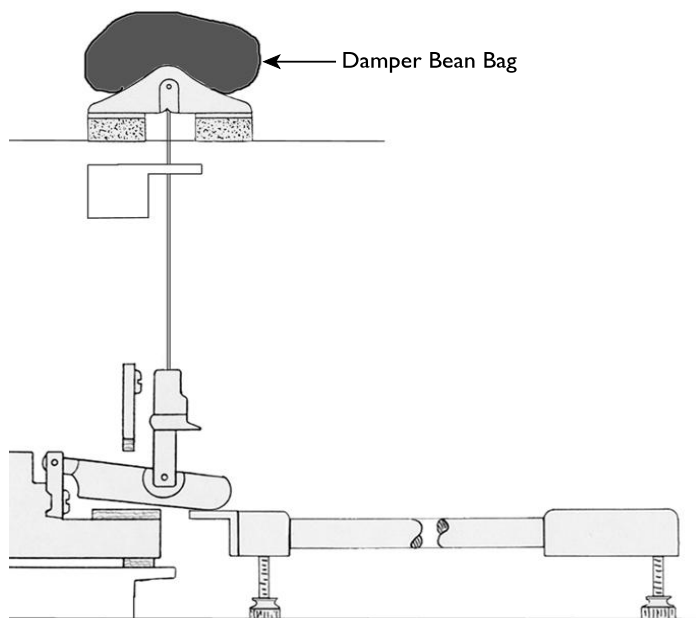
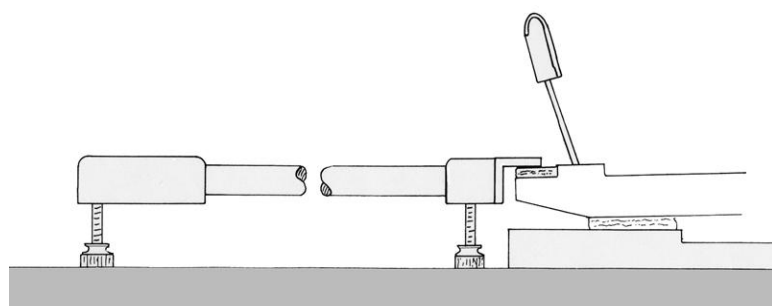
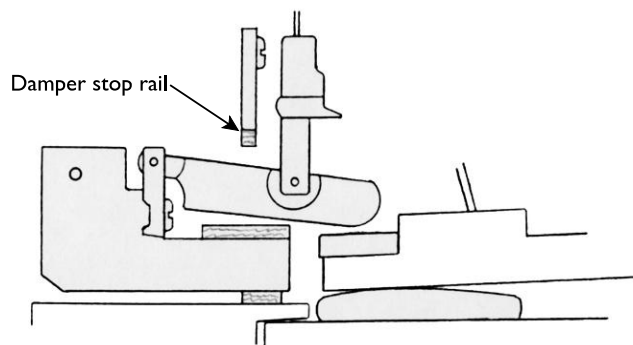
### Theory

For correct damper regulation all underlevers must be in a straight line. Technicians will often peel or shim key end felts to achieve uniform damper lift with the key, and shim damper lift tray felt or adjust damper capstans to get even lift with the pedal. However, the damper stop rail *cannot* be adjusted separately for individual damper levers. And unless the damper levers are very even in height, the stop rail will have to be set high enough to clear the highest levers, which will leave it too far above the remaining levers, causing that annoying damper thump to be felt through those keys.

Carefully adjusting all damper levers to an even height in the first place will automatically give you even damper lift with the key and the pedal (assuming felts are in good condition), as well as even sostenuto and stop rail adjustment.

### Adjusting the Jig Height

Damper lever height determines damper timing with the keys (usually  $\frac{1}{3}$  to  $\frac{1}{2}$  hammer travel). If the undersides of the levers are  $\frac{1}{8}$ " higher than the key end felts at rest, timing will be approx. correct. So, you can set the initial height of the jig so the underside of the  $\frac{1}{8}$ " thick aluminum rail is level with the tops of the key end felts as shown at right. Make sure both ends of the jig are the same height, then set a couple of sample damper levers using the jig. Check timing of these samples with the action in the piano, using a  $\frac{7}{8}$ " gauge held against the underside of the strings, playing the sample keys so the hammers bump the gauge. Fine adjust jig height as needed, and you are ready to install/adjust all dampers.



### Use the Damper Bean Bag for Highest Accuracy

You will get a more even lever height and less tendency for damper heads to rotate as screws are tightened by weighting the damper heads as you adjust them. This seats the felt to the strings, simulating the height that the damper heads will assume once the weight of the levers is pulling down on them.

Just lay our Damper Bean Bag on the damper heads, and move it along as you proceed to tighten the damper set screws. As a double check, remove the Bean Bag. The levers will rise just off the jig. Tap each lever lightly against the jig to check for an even wink.

Tip: to further reduce damper rotation problems, tighten screws just lightly first, straighten any rotated heads, then do a final tightening.