

Adjusting the Action on Acoustic Guitars

By Randolph Walker

Action is the height of the strings above the frets. If the action is too high, the strings will be too hard to press down. It tires the hand muscles. It's no fun playing a guitar with action that's too high.

If you are mechanically inclined, below are instructions for adjusting the action. If you are uncomfortable doing this kind of work, take the guitar to a music store or a guitar professional. Don't try any of this for the first time on an heirloom Martin or Gibson guitar.

If you're not sure, ask me for advice.

The Truss Rod

Sometimes high action is caused by excessive neck warping. The neck on an acoustic guitar should have a very slight concave bowing, when viewed lengthwise, from the tuning pegs down toward the body of the guitar. Excessive neck bowing can be usually corrected (on steel string and electric guitars) by adjusting the truss rod with a hex wrench. (Classical guitars lack a truss rod and cannot be adjusted by amateurs.)

For acoustic guitars with the truss rod socket in the sound hole--set the guitar face up with neck pointing left. Insert the allen wrench with the handle pointing up.

To increase action/loosen the rod, pull the handle toward you. (When looking at socket thru the sound hole, you will be turning it counter clockwise.)

To lower action, flatten the neck and tighten the rod, push it away from you. (clockwise when looking into soundhole.)

Turn no more than 1/8 of a turn and check to see if the neck has changed any. Don't force it. If it won't turn, take it to a professional if necessary.

The Saddle

The second point where action can be adjusted is the saddle. The saddle is part of the bridge, the assembly on the body of the guitar into which the ball or ring end of the string is inserted. On an acoustic guitar, the saddle can usually be removed and filed down to lower the action.

Below: The bridge. The thin white piece is the saddle.



Measuring the Action

Measure the distance between the bottom of the low E and the top of the 12th fret. It should be $5/64$ or $6/64$ inch. The action at the high E string, 12th fret, can be $4/64$ or $5/64$. Stewart-MacDonald makes a guitar string gauge

If the action at the 12th fret is $10/64$ inch, we want to reduce it by $4/64$. To do this, we will need to lower the saddle $8/64$. (For every 2 units we lower at the saddle, the string is lowered 1 unit at the 12th fret, which is halfway between the saddle and the nut.)

Note that if the saddle is already very low, nearly flush to the bridge, it cannot be lowered any further. The strings have to press down on the saddle as they bend across it. Otherwise they will rattle and you will get poor tone.

Removing the Saddle

Loosen the tuning keys so the strings are slack, then pull out the end pins with a pair of pliers. Gently take the pliers and lift out the saddle, pulling from the end.

Using a straight edge, take a pencil and draw a horizontal line across the saddle at $8/64$ inch (or however much you want to reduce it) from the bottom. We are going to work on the bottom, not the top of the saddle where the strings cross it.

Put the saddle in a bench clamp (if you have one) and file it down. I used to use a sanding block, but found that a flat metal "bastard" file is much faster.

After filing it down to the desired size, put it back in the bridge, replace the end pins and tighten up the strings.

The Nut

Finally, the nut (plastic piece with string channels, between the first fret and the guitar head) sometimes is too high. Only on a couple of guitars, cheap ones, have I ever seen this to be a problem. If necessary, the nut can be removed and sanded down to lower the action. It's usually glued down but can be pried off. Sand it down on the bottom, rather than cutting down the grooves in which the strings rest.