

How to Set Up Your Guitar— Truss Rod Adjustment

ACOUSTIC GUITAR CARE & MAINTENANCE



Learn to evaluate the setup of your guitar and adjust the relief in your guitar's neck.

- **Step-by-step instruction for checking action and neck relief**
- **How to properly adjust your truss rod**
- **Detailed photos and video**



How to Set Up Your Guitar— Truss Rod Adjustment

By Rick Turner

See video included in your download.



Truss Rod Tools

On most guitars, all you need to adjust a truss rod is either a nut driver or a hex-key allen wrench. Many manufacturers include a matching one with their guitars, but if yours came without one (or you've misplaced it), make sure you use the proper one so that you don't strip the nut. Here are some common sizes and the brands that they're typically used for.

NUT DRIVERS (hex-sided nuts)

¼ inch (Taylor, Guild, others)

⅜ inch (some less-famous American brands)

⅝ inch (Gibson, Gretsch, others)

ALLEN WRENCHES (hex-socket nuts)

US (Imperial) sizes: ⅛ inch, ⅜ inch,

⅝ inch, ⅞ inch

(Harmony, Kay, and numerous others—possibly some imports)

Metric sizes: 4 mm, 5 mm, 6 mm

(Martin is 5 mm)

Few things make an acoustic guitarist's day quite like playing a freshly set up guitar. Suddenly your ax feels like butter. Every string rings like a bell from the first fret up to the neck joint. And the simplest D chord sings like a symphony. You're reminded why you fell in love with your instrument in the first place.

I've done instrument diagnoses galore in my years as a guitar repairperson. And it's safe to say that 90 percent of the instruments—new or old—that come through my hands would sound better and be more satisfying to play with a good setup. A quick setup can unlock tone and playability that a guitar only hints at on the showroom floor. Or, it can put a road-weary instrument back in top performing shape.

Guitars are adjustable instruments, so you don't have to put up with an instrument that buzzes or is tough to play. Adjustments can—and should—be made periodically to suit your playing style and preferred string gauge. They should also be made to address the changing nature of wood and a guitar's reaction to string tension and climatic changes.

The definition of *setup* can encompass everything from a change of strings and action adjustment to a much more comprehensive job that corrects intonation, neck angle, saddle height, and more. In this guide, we'll take a look at how to evaluate the current setup of your guitar, and how to adjust its neck relief with the truss rod.

If you're comfortable changing your strings and doing other minor repairs, you can do a basic guitar setup yourself. While you may have to invest in a few simple tools, over the long haul, you can save a lot of dough doing it yourself instead of paying a luthier or guitar repairperson. Better yet, you'll understand the factors that are involved in making your guitar play and sound exactly the way you like.

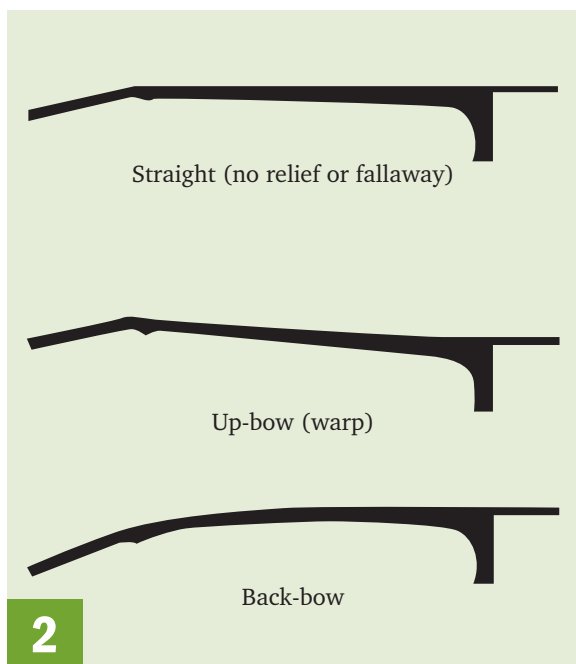
Evaluating the Guitar's Condition

The "patient" in these photos is an Art and Lutherie Folk Cedar model. It's not unlike many new instruments that adjust to string tension over several months and require a post-build setup. First, I'll check the overall condition of the guitar, looking for any issues that the customer may not know about that may affect playability or the structural integrity of the guitar. While evaluating the guitar's overall condition, I'll check the bridge glue joint, examine fret ends for separation from the slot, and tighten any tuner bushings and screws that have come loose.



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I'm "sighting the neck" for issues that might require work beyond the scope of a setup, like warpage (signs of torque along the width of the neck) or separation at the neck joint.



I'll also check the neck relief (the curvature along the length of the neck) to evaluate whether any adjustments are necessary or whether it has started to curve excessively to the point of bowing.



3

Here, I'm pressing down the low E string at the first and 13th frets. This enables me to evaluate the neck relief on the bass side of the fretboard. Look for clearance of around .020 inches between the bottom of the string and the top of the sixth fret on the bottom E.

Truss Rod Adjustment

A guitar's truss rod consists of one or two metal rods that are embedded into the neck. Although an adjustment will affect the guitar's action, its primary purpose is to set the neck's relief, meaning whether the neck is straight or has a varying degree of forward or backward bow. If the neck already has the desired amount of relief, then the truss rod is not the place to adjust any action issues.

If your guitar has a single-action truss rod, then you'll only have control over the amount of backward bow, with any forward movement either being built into the design of the neck or occurring from the pull of the strings. Many contemporary guitars use a double-action truss rod, which allows adjustment in both directions. Cranking clockwise will yield less relief, while loosening the truss rod counterclockwise will result in more relief.

In most cases, some neck relief is desirable to prevent buzz. Truss rod adjustments can be a delicate matter and most adjustments should be made in small increments of quarter turns and no more than a full turn. You can damage a neck with just a little too much of a turn, so if you have any doubts, don't do it. You're better off seeking the advice of a pro.

If you've adjusted your guitar's neck with the truss rod and it still appears that the action is not right, then it's time to look at making adjustment at the nut and/or saddle. You may want to check out the second part of this series of guides for a demonstration on how to go about this.



Access to the truss rod's adjustment nut will be either at the headstock—usually under a cover just above the nut—or at the end of the fingerboard, reachable through the soundhole. Depending on the guitar, you will either need a hex key or box wrench to perform the adjustment.



On this guitar, the neck had bowed forward just a little bit—as evidenced by the higher-than-ideal string measurement—which isn't uncommon on new guitars. So, I'm cranking the truss rod clockwise about $\frac{2}{3}$ of a turn with a hex key to flatten the neck and optimize the relief, or curve, along the length of the neck.



This is one in a series of **Acoustic Guitar Guides**, many with accompanying video and audio, that help you become a better guitarist, a smarter shopper, and a more informed owner and user of guitars and gear.

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