Maton Neck Adjustment

How to adjust the truss rod on a Maton acoustic guitar

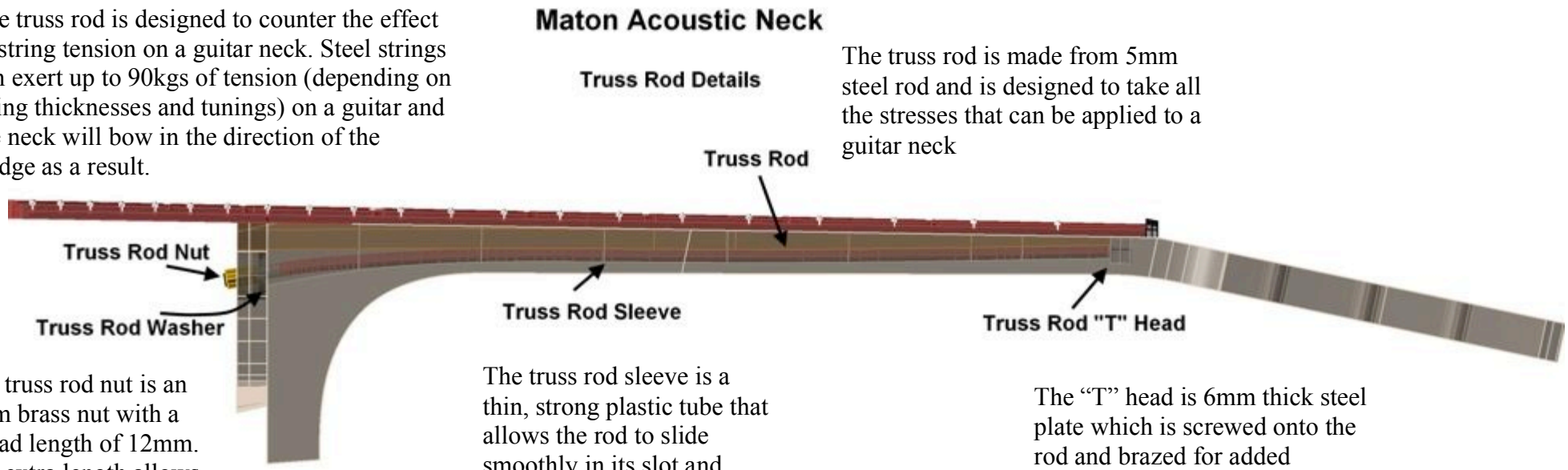
This guide was created as a resource for those people asking for information on how to adjust the truss rod on a Maton guitar.
It is not a technical manual, nor is it intended to replace the skills of a trained luthier or guitar repairer.
It takes years of experience to fully understand the mysteries of a guitar neck and setup and for optimum results we thoroughly recommend the services of a qualified, authorised repairer / setup technician. However, if you use the information below, and proceed carefully, you will be able to adjust a Maton neck so that it performs reasonably well, and with some practice you should be able to "tweak" the neck as your guitar goes through subtle changes due to climatic changes or changes in string tension.

Guitars do most of their movement when they are brand new and the woods in the neck are adjusting to string tension. Therefore it is common for a new guitar to need one or two truss rod adjustments in the first few months of their life. These adjustments usually consist of tightening the truss rod to counter neck bow. Once this settling period is over a Maton neck will stabilise and need very few adjustments from then on.

Truss rod adjustments are also often needed if the guitar has a low action and is used for different tunings (eg: DADGAD or "open G"). It is advisable for players who move between tunings to have their guitar set up a little higher than standard so that notes do not "buzz out" when the guitar is down tuned. Guitars that are set up with a very low action and move through a variety of climates (eg: a touring guitar player) can require adjustment from time to time to maintain optimum playability and it is advisable for a travelling musician to carry a truss rod adjuster at all times.

Anatomy of a Maton guitar neck

The truss rod is designed to counter the effect of string tension on a guitar neck. Steel strings can exert up to 90kgs of tension (depending on string thicknesses and tunings) on a guitar and the neck will bow in the direction of the bridge as a result.



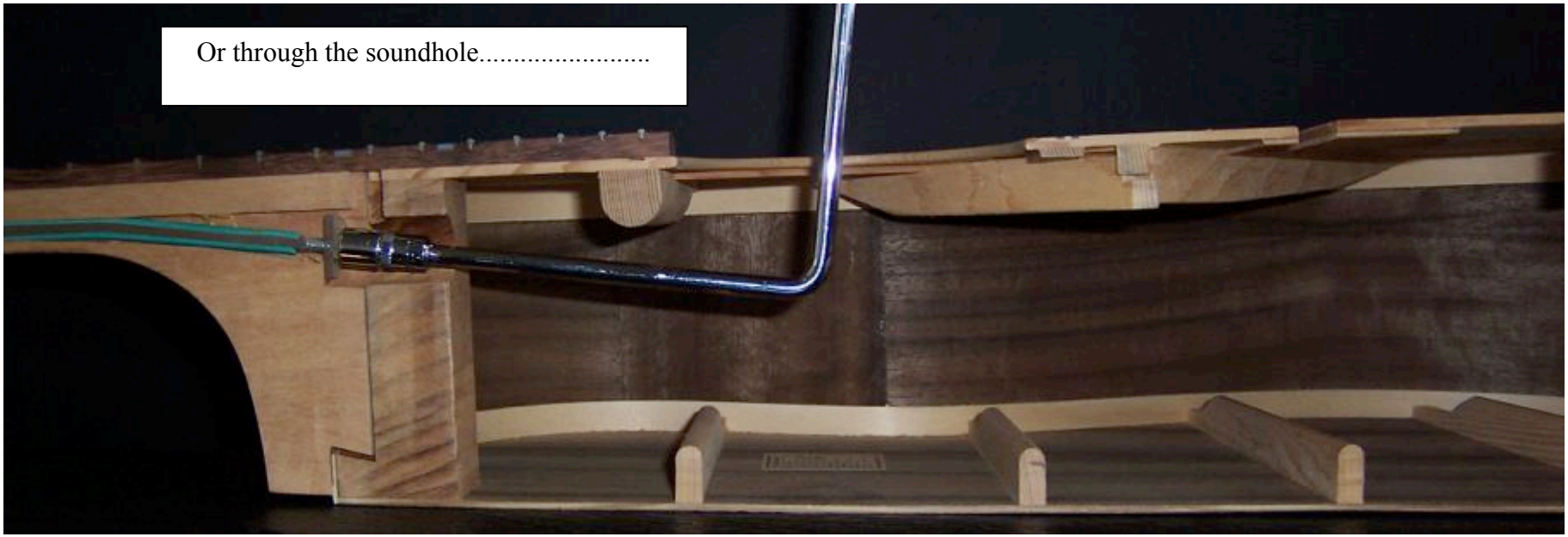
The truss rod is made from 5mm steel rod and is designed to take all the stresses that can be applied to a guitar neck

The truss rod nut is an 8mm brass nut with a thread length of 12mm. The extra length allows great tension to be applied, while the brass is self lubricating. The washer is 2mm thick which provides a solid wall for the nut to act on the rod

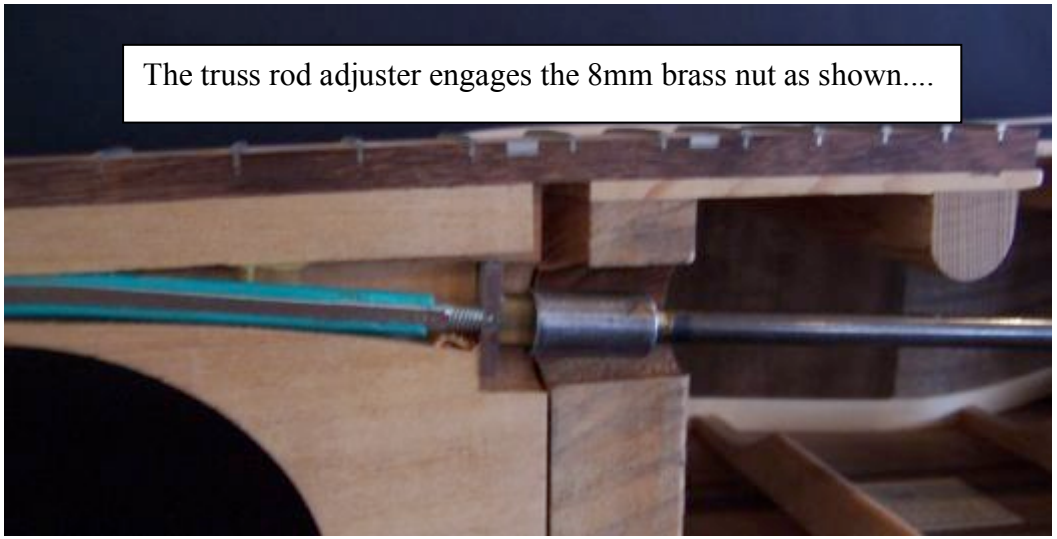
The truss rod sleeve is a thin, strong plastic tube that allows the rod to slide smoothly in its slot and prevents the rod from vibrating.

The “T” head is 6mm thick steel plate which is screwed onto the rod and brazed for added strength.

How is the neck adjusted?



Maton truss rod adjusters are available from your dealer...

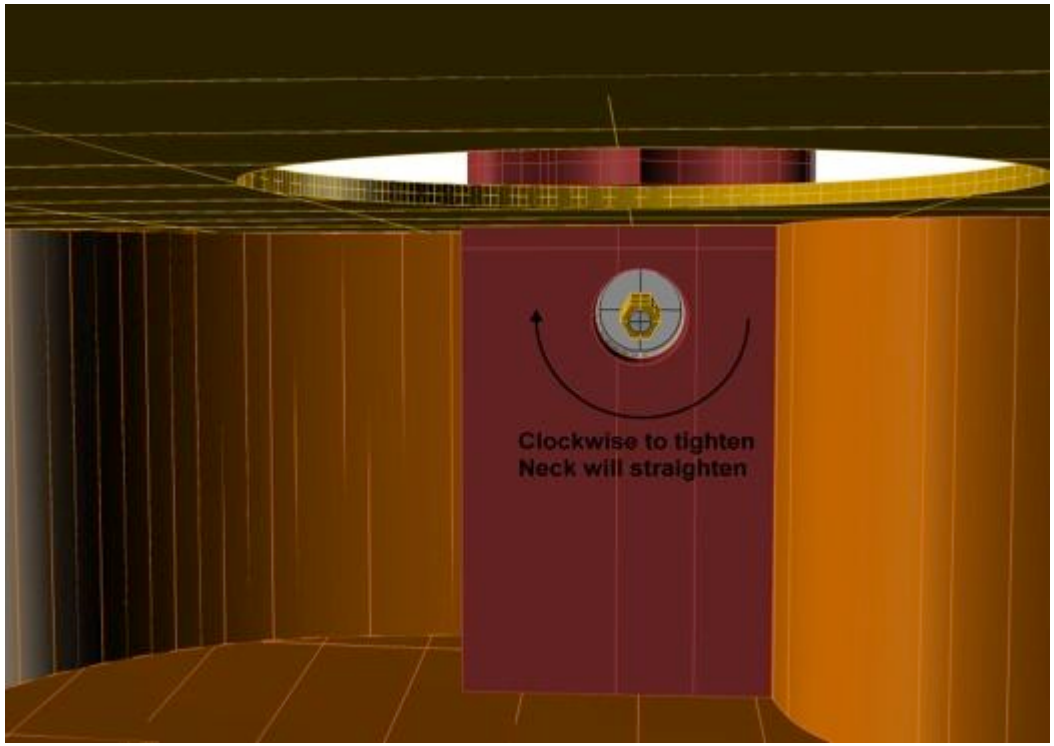


What if the adjuster doesn't fit over the nut?

Usually fitting the truss rod adjuster over the nut is simple, however if the fit seems hard to achieve try rotating a few degrees and try pushing the adjuster on again. Sometimes it may be necessary to change the angle of approach in order to fit over the nut.

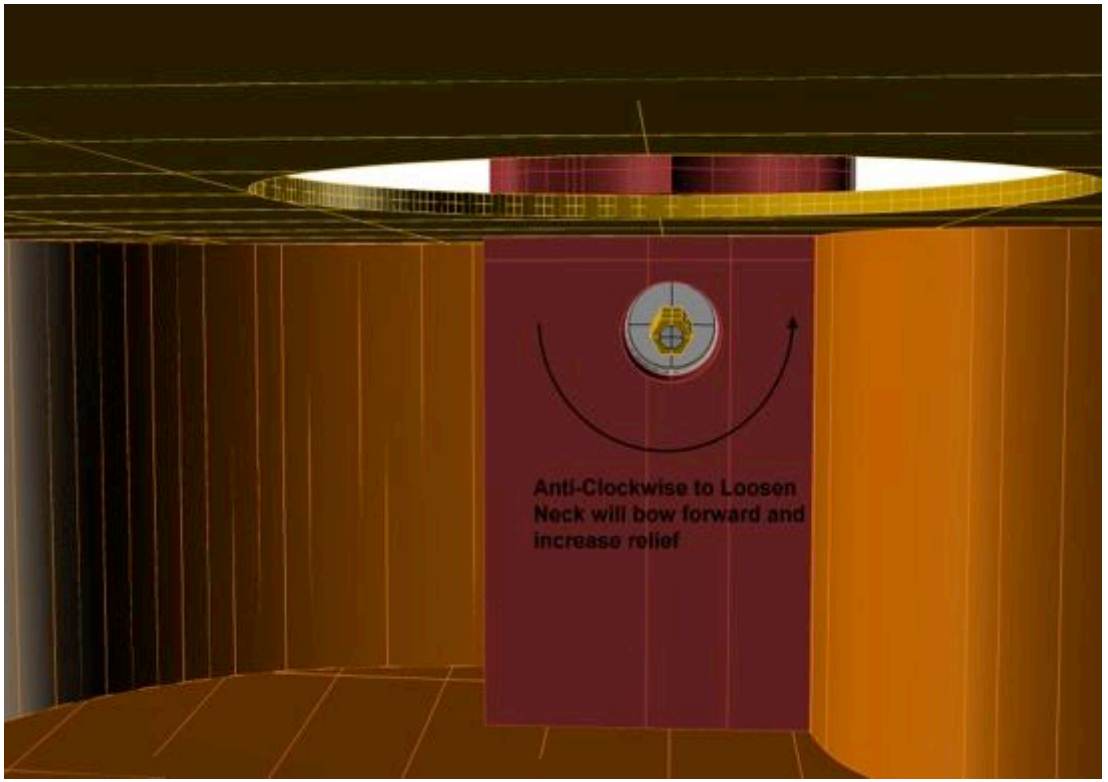
Which way do I turn to tighten the rod?

Turn nut clockwise to tighten truss rod.
The neck will straighten as the pressure increases. This will lower the action, but as the strings get closer to the frets the risk of fret buzz will increase. The standard method is to tighten the rod until some notes start to buzz (usually the "G" note on the third fret of the 6th string), and then loosen the rod (by turning anti-clockwise) slightly until the buzz disappears.



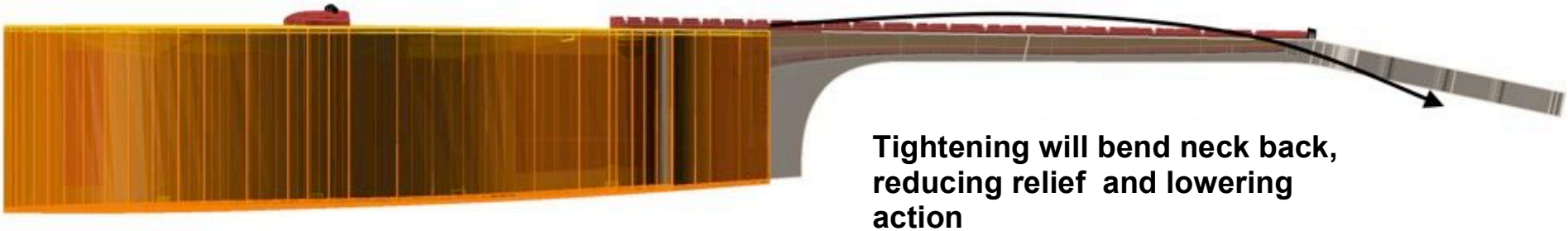
Which way do I turn to loosen the rod?

Turn nut anti-clockwise to loosen truss rod.
The neck will bow forward as string tension works on the neck.
It is a common mistake to keep loosening the rod to try and eliminate fret buzz. There is a point beyond which this strategy no longer works as an excessively bowed neck will actually increase fret buzz.



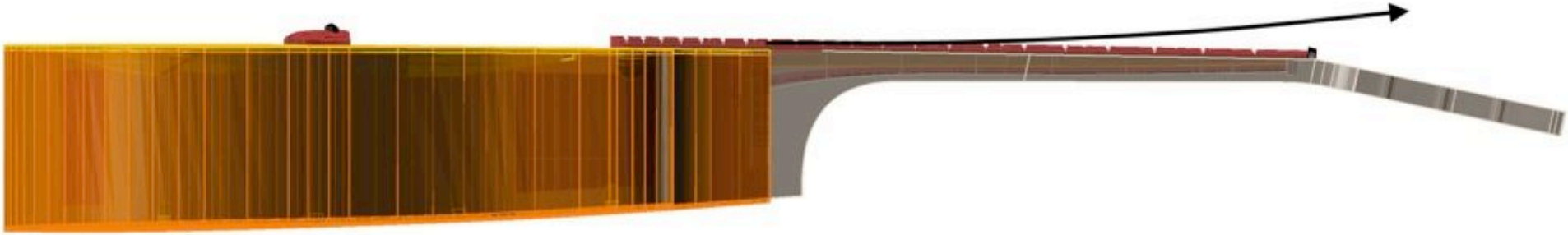
How many turns are necessary?

Once the truss rod is engaged (nut is firm against the washer) a fraction of a turn is usually all that is required to make the necessary correction. When a guitar is new it may take several weeks for the neck to fully respond to string tension (especially if the fingerboard is made out of ebony) so the truss rod may not be engaged properly. In this situation tighten the rod until you visually see the neck straighten (watch for movement at the headstock) and adjust until there is zero relief in the neck (the neck is absolutely straight). Then loosen the rod slightly to achieve desired relief.

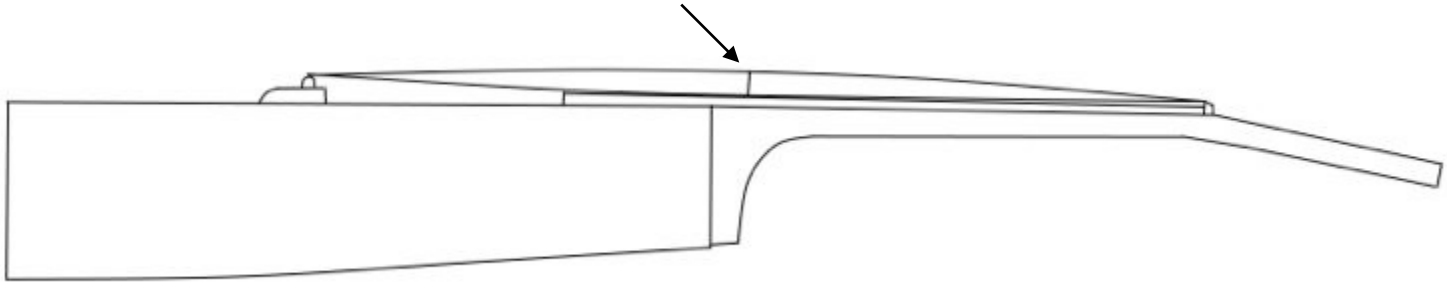


Tightening will bend neck back, reducing relief and lowering action

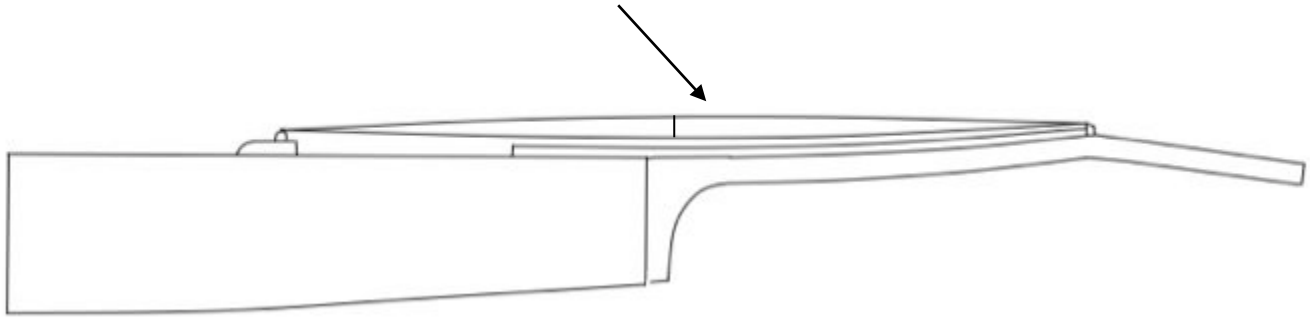
Loosening will allow neck to bow forward increasing relief and raising action



Straight neck – very little clearance at point of greatest string movement



Neck with relief – greater clearance for string movement



What is neck relief?

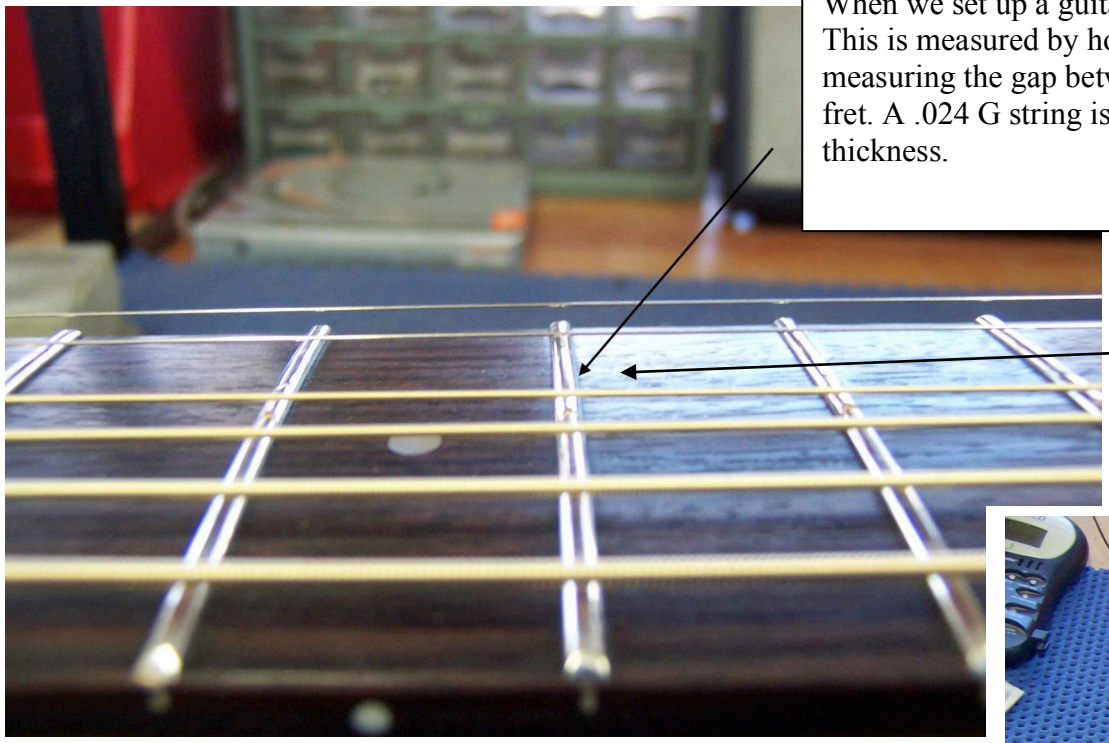
When a guitar string is plucked it vibrates in an elliptical manner which means that its greatest amplitude of vibration (widest point of vibration) is half way along the string's length. In order for the string to vibrate without buzzing against the frets it is necessary for the frets to be clear of the string's vibrating area. One way to achieve this is to have a straight neck and increase the distance between the frets and string as the string gets closer to the body. Unfortunately this makes it increasingly difficult to press the strings down to the fingerboard and so limits the playability of the guitar in the higher regions of the fingerboard.

As the string length gets shorter due to holding the string against a fret, so the amplitude of vibration decreases. Therefore, the higher up the fingerboard we play a note; the less clearance is required for the string to vibrate cleanly. So, if we can produce the correct amount of clearance for the open string and reduce the clearance as the vibrating length shortens, we can achieve a result which is both easy to play and produces a clean, buzz free sound. This is achieved with a gentle curve from the nut to around the 10^{th} fret which is tangential to a straight line from the 10^{th} fret to the end of the fingerboard.

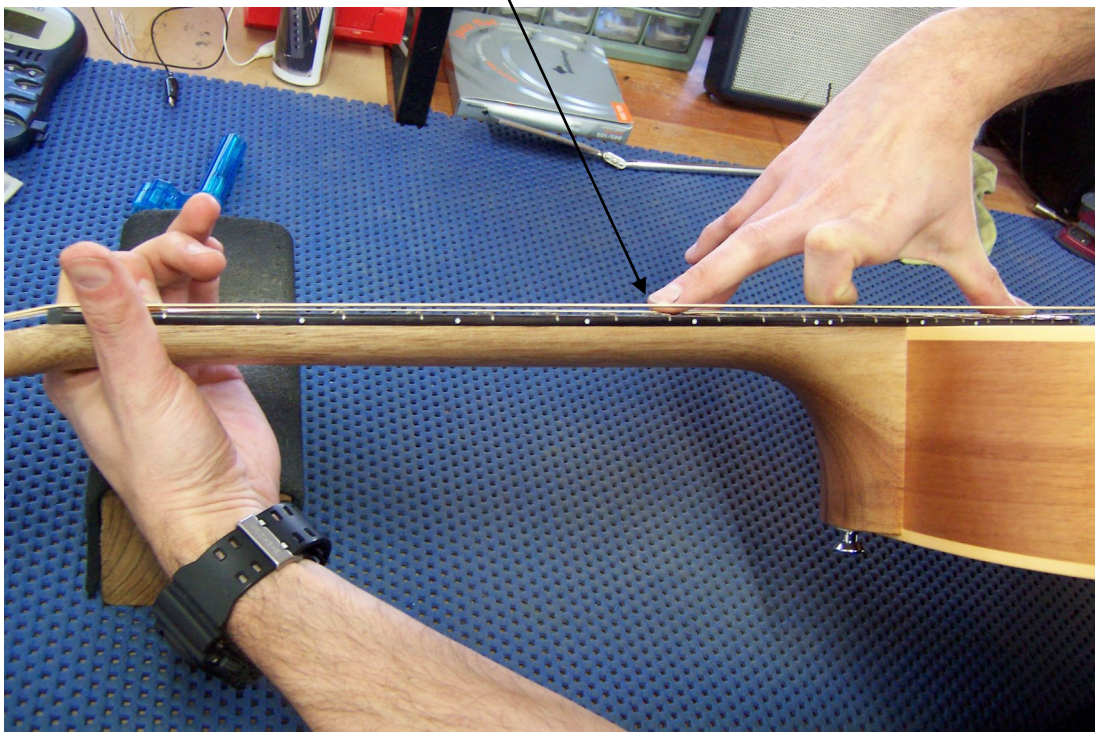
This curve is called "neck relief"

Maton

How much relief is correct?
When we set up a guitar at the Maton factory the relief is set at 0.3mm. This is measured by holding the "G" string at the first and last frets and measuring the gap between the bottom of the string and the top of the 8th fret. A .024 G string is 0.6mm thick so the gap should be half the string thickness.



8th Fret



Hold the "G" string at the first and last frets as pictured. Check relief by depressing the string in the middle. There should be a gap of approximately half the string width between the bottom of the string and the top of the fret.

If this is too difficult use your right thumb to hold the string down anywhere past the 14th fret. This will still give you a reasonable measurement for relief.

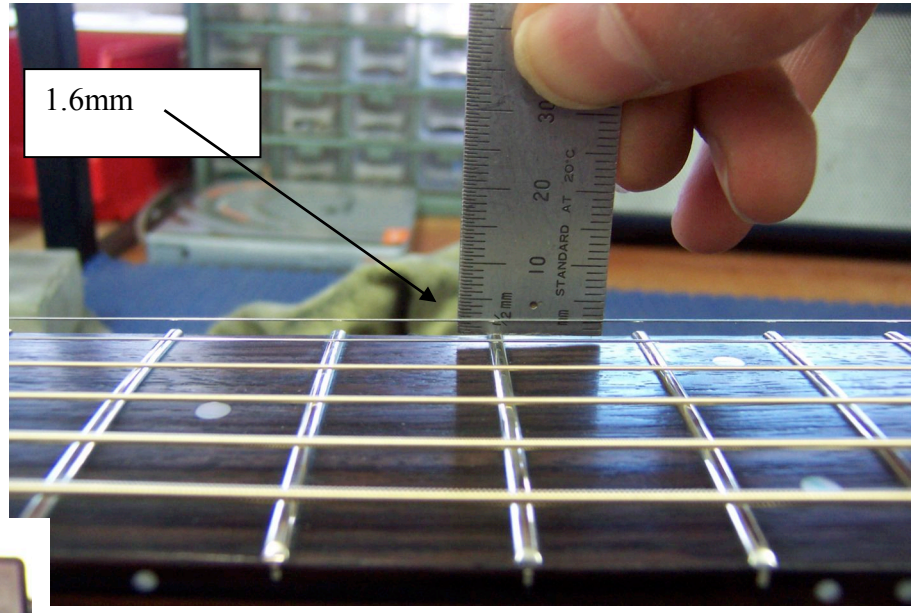
Note – This is best done in playing position as the relief may change a little if the guitar is laying flat on its back.

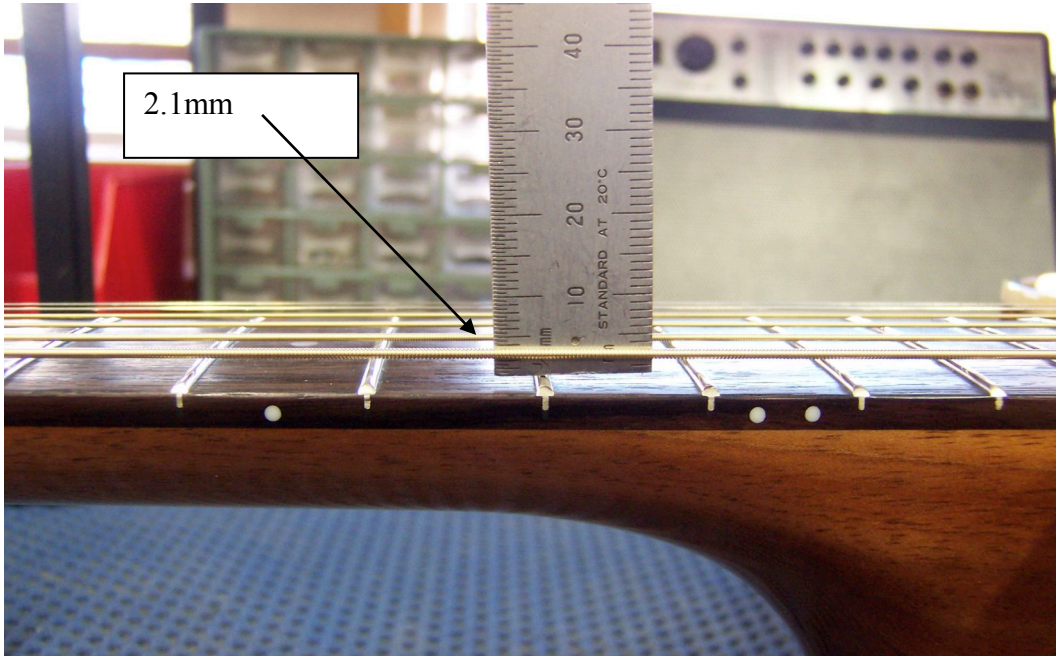
What are Maton's standard action heights?

Measuring at the 10th fret the standard distances are:

- 1.6mm at the 1st string
- 2.1mm at the 6th string

Distance is measured from the bottom of the string to the top of the fret.





Are you in tune?

This seemingly obvious question is often overlooked. If the guitar is tuned down a semi tone the chances of fret buzz are much higher, similarly if the guitar is tuned up a semi tone the action will be stiff and hard to play. Make sure the guitar is tuned to ***concert pitch*** using an electronic tuner ***before*** making any adjustments to the truss rod.

FAQ – Troubleshooting

Question / Problem	Answer / Solution
Can all action / buzzing problems be fixed by adjusting the truss rod?	No – Neck relief is just one of several issues that directly affect the way a guitar plays and sounds. Other issues such as saddle height, saddle shape, nut height and shape, fret wear and string quality play an equally important role. The truss rod should be used to tension the neck to the correct relief only. Any other action related issues should be dealt with at the nut and saddle.
What is the maximum effective relief measurement?	Maton sets its relief at 0.3mm. Heavy strummers may want more relief to avoid fret buzzes and in this situation relief of up to 0.6 – 0.7mm is quite acceptable. Relief at greater levels than this can actually cause fret buzz as well as intonation problems (due to excessive string stretch), not to mention making it very uncomfortable for a player to form chord shapes. If a higher action is desired the saddle should be replaced with a taller saddle. Unless you are experienced at this it is better to have this done by an authorised repairer.
What are Maton's standard action specs?	1.6mm at the 1st string and 2.1mm at the 6th string. These measurements are taken between the bottom of the string and top of the 10th fret (see pictures).
One string still buzzes even though all the other strings sound fine.	Sometimes a string will be "out of balance" due to wear and tear, kinking, twisting or a manufacturing fault. In this situation the string will always buzz until it is replaced. Unless all the strings are new it is best to replace the whole set.
One or two notes continue to buzz despite neck adjustments.	This may be due to frets that are worn, improperly seated or high. These issues should be dealt with by an authorised repairer as this is a complex area that requires expertise.
Is it possible to break the truss rod through over tightening?	Maton truss rods are designed to withstand many times the pressure that can be exerted by tightening so it is unlikely one would break. It is much more likely that the brass nut would strip its thread or that the wood in the neck will crush and compress. In any case, if the truss rod is working correctly it should take minimal pressure to straighten the neck. If the truss rod seems stiff or the neck is not responding to adjustment it is best to have the guitar inspected by an authorised repairer before trying any further adjustment.
The buzzing happens on open strings only and doesn't seem to respond to neck adjustments.	The saddle slots are probably too deep resulting in the 1st fret acting like a "high fret". The nut should be replaced by an authorised repairer.
Although the action is set at the right height and the neck relief is correct, there is still buzzing and notes "pinging out" higher up the neck.	The finger board has moved a little in response to string tension and climatic variations. This should be attended to by an authorised repairer.

Tools you will need

Maton Long Truss Rod Adjuster

Most technicians prefer to use the long adjuster as it allows fine adjustment of the truss rod while the guitar is tuned to concert pitch and in the playing position. You will need a 3/16” Allen key to undo the endpin for truss rod access. The down side to this adjuster is it won’t fit in a guitar case.

Or

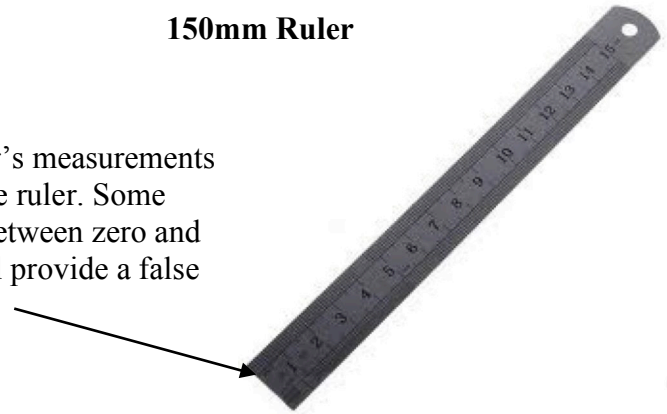
Maton Soundhole Truss Rod Adjuster

The soundhole adjuster is a more portable option for adjusting the truss rod. It fits into the pocket of most guitar cases and is easy to carry in any bag.
When using this adjuster be careful not to damage the strings as you rotate the tool. Stretching the strings out of the way of the rod is usually enough clearance. Loosening the strings makes tightening easier but changes the tension on the neck which is not helpful for fine adjustments.

3/16” Allen Key

150mm Ruler

Make sure the ruler’s measurements start at the tip of the ruler. Some rulers have a gap between zero and the edge which will provide a false measurement



Metric vs Imperial

For those not used to metric here are some approximate conversions.

- 0.3mm is approx 0.0120”
- 1.6mm is approx 0.0630” or 1/16”
- 2.1mm is approx 0.0830”