

Setting Guitar Intonation Using Your Peterson Tuner

Before you attempt to tune any stringed instrument, the intonation should be checked and, if necessary, adjusted to the correct position. If you've never used a Peterson tuner before, then it is almost certain that your instrument is not yet correctly intonated and will not sound its best until you address it. Now that you have a Peterson, you can achieve professional quality results with the help of the tips below, and the intonation will be the best it can be on your instrument.

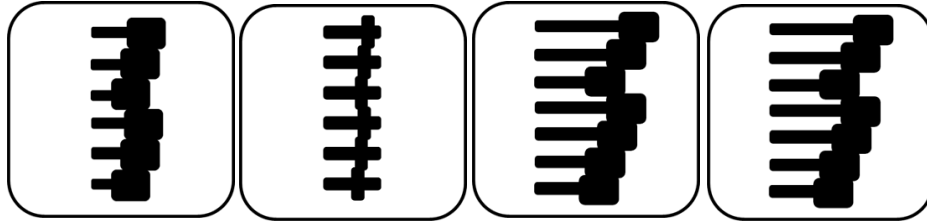
You'll need your Peterson tuner, a short guitar cord, a small screwdriver and a set of new strings. Before starting, find a surface upon which to lay your guitar that is free of any objects which could damage your instrument and cover it with a towel or similar soft material.



Remember to tune the guitar in the position in which you would normally play it (i.e. around your neck, supported by a strap), but adjust the bridge of the guitar after laying it on a flat surface. If you tune the guitar while it's laying flat, gravity will affect the tension of the neck and skew the results. If you adjust the bridge while the guitar is hanging from a strap on your shoulder, there is a risk that the guitar's finish will be damaged by the screwdriver.

If possible, take the opportunity to clean the fingerboard after the old strings have been removed. New strings will stay clean and sound good a lot longer if the fingerboard is free of grime and dirt.

6-String/6-Saddle & 7-String/7- Saddle Electric Guitar Intonation Procedure:



Example: Fender™ & Squier™ Stratocaster, Gibson™ L5, G&L™ ASAT, PRS™, Gretsch™, Schecter™, Danelectro™, Ibanez™, Jackson™, Kramer™, Gibson & Epiphone Les Paul, Les Paul Jr., SG, ES335, Byrdland, Fender Mustang, Guild™, Rickenbacker™, Godin™

After deciding on string gauge, setting string height (nut & bridge), neck relief, and all other factors that affect the guitar's intonation considerably, the individual string lengths need to be adjusted. For this task, use Equal temperament. (Located in the Sweetener menu.)

- Lower the pickups away from the strings to avoid "doubling" and electromagnetic pull.
- Lay the guitar flat on a bench to adjust it, but always check the intonation with the instrument in the playing position, as the readings will be visibly (and later audibly) different. You should always aim to freeze or "cage" the image on the tuner display; the less movement the more accurate the results.

A common technique in setting the intonation is the 12th fret & flageolet comparison method. In this method, the flageolet, or "harmonic" of the 12th fret, is compared to the fretted string at the 12th fret, and saddle position is adjusted as follows:

- If the fretted note is flat compared to the flageolet note, move the bridge saddle forward to shorten the string.
- If the fretted note is sharp compared to the flageolet note, move the bridge saddle back to lengthen the string.
- Adjust until both fretted note and flageolet are identical in pitch.
- Repeat for all strings.

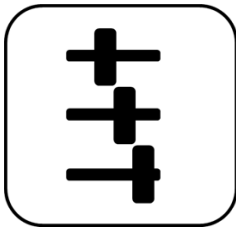
While the above is a common system, it is not always the most satisfactory.

One popular alternative is to use a strobe tuner to adjust each string so that it is in tune at two points that are set one octave apart from each other on the fret board.

Using the 5th and 17th fret as an example:

- Tune a string at the 5th fret.
- Check the string at the 17th. If sharp, move the saddle back, thus lengthening the string. If flat, shorten the string by moving the saddle forward. Remember to fret the string using the pressure that you would normally apply while playing.
- Keep repeating this process until each string is in tune as much as possible at both the 5th and 17th frets.

This method takes time and has to be repeated if you change string gauges but yields very satisfactory results if properly executed.



6-String/3-Saddle Electric Guitar Intonation Procedure:

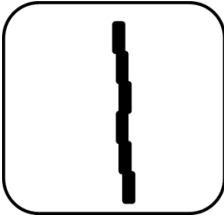
Example: Fender & Squier Telecaster, Fender Duo-Sonic & Musicmaster

Since only three of the six strings on a 3-saddle bridge can be correctly intonated, a compromise is inevitable. Here are two methods:

Intonate the second, fourth and sixth strings only. Tune all strings to pitch, then fret the second string at the 12th fret and observe the display on your Peterson tuner;

- If the fretted note is flat compared to the unfretted open string's pitch, move the bridge saddle forward to shorten the string.
- If the fretted note is sharp compared to the unfretted open string's pitch, move the bridge saddle back to lengthen the string.
- Adjust until both fretted note and open string are identical in pitch.
- Repeat for 4th and 6th strings.

If required, you can also adjust the second saddle to be slightly forward to allow for the gauge difference between third and fourth strings in the case of an unwound third string.

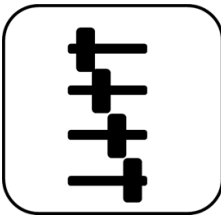


Floating Non-Adjustable Bridge Intonation:

Example: Gibson L7, ES-150

Intonate a fixed saddle bridge by intonating the 1st and 6th string as described above. Carefully adjusting the position of the bridge ends accordingly.

Tune all strings up to pitch, fret the first string at the 12th fret, and observe the display on your Peterson tuner. If the tuner indicates a flat note, the bridge must be moved forward (towards the neck). If it indicates a sharp note, the bridge should be moved back (away from the neck). Although it slows down the procedure, all strings should be slackened to avoid damage before moving the bridge. When one end of a fixed bridge is moved, movement may also occur on the other end. Use a piece of tape to mark the position of one end before moving the other.



4-String Electric Bass Guitar:

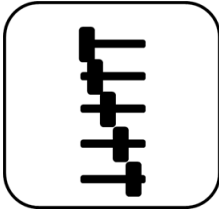
Example: Fender Precision, Jazz & Mustang basses, Gibson Thunderbird bass, Rickenbacker 4000 series basses

- Lay the bass flat on a bench to adjust it, but always check the intonation with the instrument in the playing position, as the readings will be visibly (and later audibly) different. You should always aim to freeze or “cage” the image on the tuner display; the less movement the more accurate the results.

A common technique in setting the intonation is the 12th fret & flageolet comparison method. In this method, the flageolet or “harmonic” of the 12th fret is compared to the fretted string at the 12th fret, and saddle position is adjusted as follows:

- If the fretted note is flat compared to the flageolet note, move the bridge saddle forward to shorten the string.
- If the fretted note is sharp compared to the flageolet note, move the bridge saddle back to lengthen the string.

- Adjust until both the fretted note and flageolet are identical in pitch.
- Repeat for all strings.



5-String Electric Bass Guitar:

Example: Fender Precision & Jazz basses, Musicman Stingray 5

- Lay the bass flat on a bench to adjust it, but always check the intonation with the instrument in the playing position, as the readings will be visibly (and later audibly) different. You should always aim to freeze or “cage” the image on the tuner display; the less movement the more accurate the results.

A common technique in setting the intonation is the 12th fret & flageolet comparison method. In this method, the flageolet or “harmonic” of the 12th fret is compared to the fretted string at the 12th fret, and saddle position is adjusted as follows:

- If the fretted note is flat compared to the flageolet note, move the bridge saddle forward to shorten the string.
- If the fretted note is sharp compared to the flageolet note, move the bridge saddle back to lengthen the string.
- Adjust until both fretted note and flageolet are identical in pitch.
- Repeat for all strings.

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