

For Standard (6) String Electric and Acoustic Guitars having a fretboard that <u>extends past</u> the nut.

These are guitars that typically have a headstock with all (6) tuners on-one-side, but not always.

<u>IMPORTANT NOTE</u>: Use (Setup Guide B) for Standard (6) String Electric and Acoustic Guitars having a fretboard that <u>ends</u> at the nut.

Patents: US 9,208,757 US 9,972,289

MADE IN USA



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With On-Board Micro-Tuners



The Guitar NutBuster[®] is an attachable and non-invasive Locking Tune Stabilizing System that's easy to use and offers significant control over the most common tuning problems.



Designed to be used on Standard (6) String Electric and Acoustic Guitars having a common (1-3/8", 1-13/32" or 1-7/16") High E String to Low E String Spread at the Nut. These are guitar models having a Total Nut Width of 1-11/16" (plus or minus 1/32").

(See "Specifications" for Complete Guitar Compatibility Details)

Congratulations and Thank You for purchasing the Guitar NutBuster® Tune Stabilizing System!

Proper setup and procedure by closely following this Setup Guide is key to gaining the most benefit and having the very best experience possible while using the Guitar NutBuster®.

The Guitar NutBuster® offers significant control over the most common tuning problems associated with a guitar's nut however the overall tune stabilizing success will also depend upon the quality and functionality of the guitars bridge hardware.

It is recommended to use a new set of guitar strings and the aid of a digital tuner during the installation.

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Twinsburg, OH 44087

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Intro



Preparing For Installation (Raising the Micro-Tuners)

Loosen and raise all (6) Micro-Tuners (do not remove) in order to open-up the string paths and allow adequate clearance for the new strings to easily pass through during installation.

1.



Blocked Micro-Tuner string paths.



(Blocked string paths) (Fig. 1)



Slightly raise Micro-Tuners by loosening. (Do Not Remove)



(Opened string path) (Fig.2)



Allow adequate clearance for the new strings to easily pass through during installation.



(Opened string paths) (Fig.3)





Preparing For Installation (Raising the Clamp Blocks)

Using the (2.5mm) Allen key provided, loosen and raise all (3) Clamp Blocks (do not remove) in order to open-up the string paths and allow adequate clearance for the new strings to easily pass through during installation. By patented design, the Clamp Blocks will automatically lift upward when loosened alleviating the need for them to ever be removed. Reset the Allen Key back onto its magnet holder when finished.



Blocked Clamp Block string paths.



(Blocked string paths) (Fig.4)



Use the Allen Key provided to slightly raise the Clamp Blocks by loosening. (Do Not Remove)



(Opened string path) (Fig.5)



Allow adequate clearance for the new strings to easily pass through during installation. Reset the Allen key onto its magnet holder when finished.



(Opened string paths) (Fig.6)



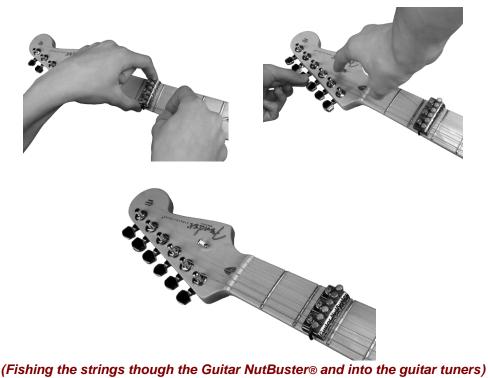
Initial Setup

The Guitar NutBuster® is installed by simply fishing the strings through it and into the guitar tuners during a normal string change routine. Begin by removing all of the old strings. It is recommended to use a new set of guitar strings and the aid of a digital tuner during installation.

This setup guide is for standard (6) string electric and acoustic guitars having a fretboard that <u>extends past</u> the nut. These are guitars that typically have a headstock with all (6) tuners onone-side, but not always.

<u>IMPORTANT NOTE</u>: Use (Setup Guide B) for Standard (6) String Electric and Acoustic Guitars having a fretboard that <u>ends</u> at the nut.

Stringing Up: It is recommended to attach all (6) new strings to the tailpiece/bridge prior to installation for guitars that require the strings to be fished through the guitar body. Temporarily placing the Guitar NutBuster® on the fretboard is very helpful during the initial installation. String up the guitar as normal while fishing them through the Guitar NutBuster® and into the guitar tuners. Keeping a slight tension on each string as they're installed will gently hold the Guitar NutBuster® in place until all (6) strings have been attached.

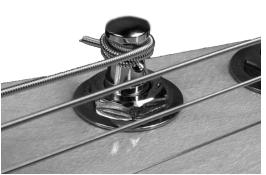


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(6) Tuners On-One-Side Headstocks: To ensure that the Guitar NutBuster® rests at an even and balanced operating angle once installed it is extremely important to guide the low "E" string windings <u>up and over</u> the cut string hole while winding onto its tuner post. This will help offset the radical angle of the low "E" string at the nut by raising its approach to be more in line and even with the other strings. One or two windings are most common but can vary based on the tuner post height. All remaining strings are strung up and wound onto the tuner posts in a downward direction as normal.

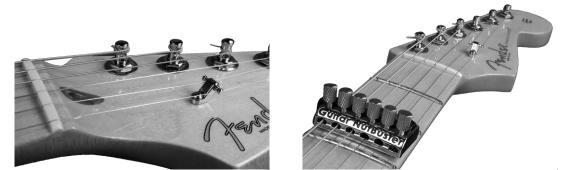
Note: This procedure may also be necessary for the "A" string depending on tuner post height and string angle off of the nut. This procedure might not be necessary on guitars having staggered height tuner posts nor is it needed on guitars having (3) tuners per-side.





(Guiding the low "E" string windings <u>up and over</u> the cut string hole) (Fig.8)

Even String Height: Having the strings exit the nut as evenly as possible will facilitate a balanced operating position for the Guitar NutBuster® which is extremely important to eliminate the chance of any string buzz at the nut with this setup.



(Having the strings exit the nut as evenly as possible will facilitate a balanced operating position) (Fig.9)

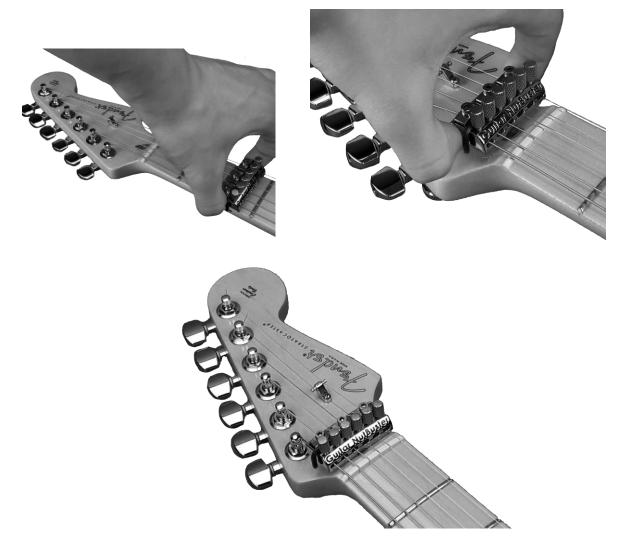




Sliding Into Position



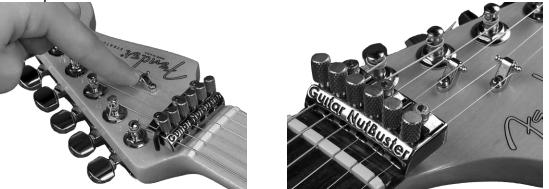
<u>Sliding Into Position</u>: With all strings now attached, hold the Guitar NutBuster® with one hand and pull upward to maintain some tension on the strings. With your other hand, slightly loosen each string just enough to safely <u>lift-up and slide</u> the Guitar NutBuster® down the neck and then carefully <u>up and over</u> the nut into its proper working position over the headstock. Once in place, slightly tighten each string back up to put some tension back on them.



<u>(Lift-up</u> and slide the Guitar NutBuster® down the neck and then carefully <u>up and over</u> the nut into its proper working position. Only if applicable, it may be necessary to remove one of the truss rod cover screws if it becomes in contact with the Guitar NutBuster® when properly positioned.) (Fig.10)

2

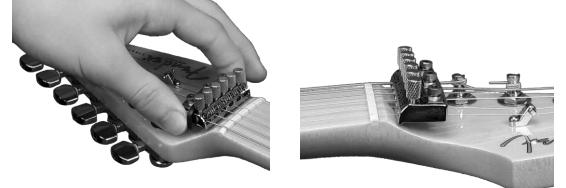
String Trees: If there is a high "E/B" string tree on the headstock, it will need to be put into use and engaged as normal. If there is an additional "D/G" string tree, it is recommended that it <u>not</u> be used or engaged allowing those strings to simply ride over the top.



(High "E/B" string tree is put into use and is engaged, additional string tree <u>is not</u> engaged with strings riding over the top) (Fig.11)

Proper Positioning: With this setup, the Guitar NutBuster® is suspended over the headstock, positioned straight and parallel with the nut having each string centered within the Micro-Tuners arched openings. Most importantly, it must be resting slightly away from and <u>cannot</u> be placed in direct contact with the guitar's neck or nut in order to function properly.

Note: A fretboard extending past the nut has a "tapered leading edge" at the beginning of the headstock. The Guitar NutBuster® can potentially get stuck and not function properly if it were to become in contact with the fretboard's "tapered leading edge".



(Suspended over the headstock, positioned straight and parallel with the nut and <u>not</u> in direct contact with the nut or neck, each string is centered within the Micro-Tuner arched openings) (Fig.12)



Lowering the Micro-Tuners and Clamp Blocks

The Guitar NutBuster® should be suspended on the strings and located in its proper setup position over the guitar neck headstock.



Slowly lower all (6) Micro-Tuners until they make contact with the string and then back off each one by 1/4 turn.



(Lower all (6) Micro-Tuners to within $\frac{1}{4}$ turn of contacting the strings)

(Fig.13)

Using the Allen key provided, slowly lower the Clamp Blocks until they become snug and then back them off only by 1/4 turn.



(Lower all (3) Clamp Blocks to within ¼ turn of being snug) (Fig.14)



At this point, the Guitar NutBuster® should still slide on the strings and is located in its proper position over the headstock with the Micro-Tuners and Clamp Blocks lowered to within 1/4 turn of being engaged.



(Located in its proper position over the headstock) (Fig. 15)





Stretching-Out the Strings and Initial Tune-Up

To avoid unnecessary tuning adjustments after the Guitar NutBuster® is put into use, it is highly recommended to <u>thoroughly</u> stretch-out strings and re-tune guitar as needed before proceeding.



(Thoroughly stretch-out strings and re-tune guitar as needed before proceeding)

(Fig.16)

<u>Final Positioning Check List</u>:

☑ The Guitar NutBuster® is suspended over the headstock, straight and parallel with the nut.

It is placed slightly away from the nut and <u>not</u> in direct contact with either the neck or nut.

- Z Each string is centered within the Micro-Tuner arched openings.
- \square The Micro-Tuners are lowered to within $\frac{1}{4}$ turn of being in contact with the strings.
- \square The Clamp Blocks are lowered to within ½ Allen Key turn of being snug.

Note: Having an even and balanced operating position is extremely important to eliminate the chance of any string buzz at the nut.



(Suspended over the headstock, positioned straight and parallel with the nut and <u>not</u> in direct contact with either the nut or neck, each string is centered within the Micro-Tuner arches) (Fig.17)





On-Board Micro-Tuners Initial Setup

The On-Board Micro-Tuners are used to conveniently make micro tuning adjustments after the strings have been clamped down and locked into position. To properly utilize the Micro-Tuners, they must always be engaged and in contact with the strings. A non-engaged or loose Micro-Tuner could potentially vibrate off the Guitar NutBuster® and become lost. Setting up the Micro-Tuners "usable range" requires that each string first be slightly detuned using the (headstock tuners) and then tuned back up to pitch using the (Micro-Tuners).

(1)

Micro-Tuner "Usable Range" Setup (Part 1):

The guitar should be in-tune with the Guitar NutBuster® suspended on the strings and located in its proper working position over the headstock. Using the guitar's headstock tuner, very slightly de-tune the low "E" string by only a few cents from its proper pitch.

Note: Over de-tuning will significantly reduce the Micro-Tuner's "Usable Range" once they're engaged.



(Use the guitar's headstock tuner to slightly de-tune the low "E" string from its proper pitch) (Fig. 18)

Micro-Tuner "Usable Range" Setup (Part 2):

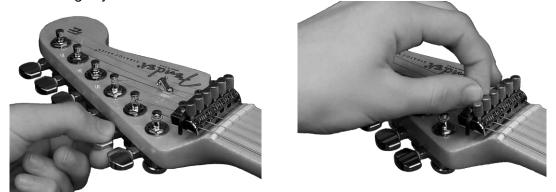
Slowly turn the low "E" Micro-Tuner clockwise until the string is engaged and is brought back up to pitch. This should be accomplished with less than 1/2 turn or may require a "reset" by repeating the de-tune adjustment as described in Micro-Tuner Setup (Part 1). Be sure to leave enough Micro-Tuner thread range for future fine-tuning adjustments.

Note: It is recommended to hold the Guitar NutBuster® from moving out of position with your other hand during this procedure.



(Use the Micro-Tuner to slightly tune the low "E" string back up to proper pitch) (Fig. 19)

Tuning Up: Repeat the process of slightly de-tuning using the headstock tuners and then bringing them back up to pitch using the Micro-Tuners for the remaining strings until all Micro-Tuners are engaged and the entire guitar is back in-tune. Always be sure to only de-tune the strings just enough to slightly use the Micro-Tuners to bring them back up to proper pitch. This will leave an optimum Micro-Tuner "Usable Range" for future fine-tuning adjustments.



(Repeat the process of slightly de-tuning each string using the headstock tuners and then bringing them back up to pitch using the Micro-Tuners for the remaining strings) (Fig.20)





Clamping Down/Tune Locking

The Clamping Down/Tune Locking feature combines and bands together the individual tension of each string to create a collective and unified tension forcing the strings to move in unison and return back to their clamped down/tune locked and "in tune" positions.

While holding the Guitar NutBuster® from moving with one hand.



(Hold the Guitar NutBuster® from moving with one hand) (Fig.21)

Use the Allen key provided to carefully tighten down each Clamp Block screw snug starting with the center Clamp Block. The Clamp Blocks are designed to achieve maximum clamping force against the string with very little tightening pressure required. Over tightening the Clamp Blocks can result in string breaking.



(Carefully tighten down each Clamp Block screw snug using the Allen Key provided)

(Fig.22)

Reset the Allen Key back onto its magnet holder to always have conveniently on hand for future use.



(Reset the Allen Key back onto its magnet holder) (Fig.23)





Tuning Start Point For (Tremolo Equipped Guitars)

IMPORTANT NOTE: Skip to Step 10 for Non-Tremolo Equipped Guitars.

Prior to any tuning adjustments being made on tremolo equipped guitars, the strings must first be assisted back to their tune locked natural resting position or "Tuning Start Point" by first performing the "Tremolo Reset Action".

<u>**Tuning Start Point</u>**: This is the natural resting position of the "in-tune" guitar strings and is the starting point of reference for all tuning adjustment decisions. It is very important that all tuning adjustments on tremolo equipped guitars <u>only</u> be made after the "Tremolo Reset Action" is performed. This will ensure that all tuning adjustments are justified and only made when the strings are in their tune locked and natural resting position to avoid any unnecessary adjustments that will cause further tuning issues. The "Tuning Start Point" can be instantly recalled by first performing the following "Tremolo Reset Action".</u>



<u>**Tremolo Reset Action</u>**: A simple downward tap on the Tremolo Bar creates a gentle "jolt" to the strings returning them back to their natural resting position and back in tune. In most cases, the guitar could spontaneously "sound" out of tune due to a stuck string or a variety of other common tuning problems along the string path. The "Tremolo Reset Action" is performed to counter act these variables by instantly returning the strings back to their tune locked and natural "in-tune" resting position. The "Tuning Reset Action" must be performed prior to making <u>any and all</u> tuning adjustments to ensure that the adjustment is actually needed and justified before it is made.</u>



(A downward tap on the Tremolo Bar creates a gentle "jolt" to the strings returning them back to their tune locked and natural "in-tune" resting position)

(Fig.24)



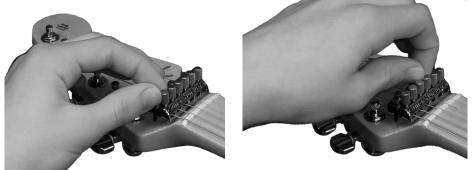
1



Final Tuning Adjustments

With the Guitar NutBuster® properly installed and clamped down into position, the guitar will need a final Micro-Tuner adjustment before it is ready for use.

<u>Micro Tuning Adjustments</u>: Use the On-Board Micro-Tuners for all fine-tuning adjustments. Due to space confinements, the On-Board Micro-Tuners have a limited usable range of use needing to be "reset" when they become harder to turn. To help offset this range it is recommended to also use the headstock tuners for subtle "global" tuning adjustments. Using the Micro-Tuners in combination with the headstock tuners will dramatically simplify the entire tuning maintenance experience. Over tightening the Micro-Tuners can result in string damage.



(Use the On-Board Micro-Tuners for all fine-tuning adjustments) (Fig.25)



<u>Micro-Tuner "Usable Range" Reset</u>: If a Micro-Tuner becomes too hard to tighten or use it will need the usable range to be reset. This can easily be accomplished most of the time by carefully using the headstock tuners to slightly drop the tuning enough to be able to loosen and reset the Micro-Tuners usable range.

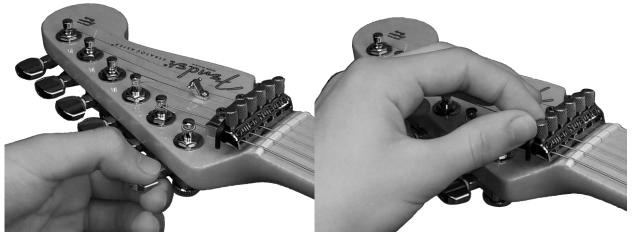
Note: In certain situations, the Clamp Block may need to be loosened up, the string tuning altered accordingly using the headstock tuner and then the clamp block is tightened back up. This will allow the Micro-Tuner to be re-adjusted and brought back within its usable range.



(Use the headstock tuners for subtle tuning adjustments to facilitate the Micro-Tuners and "reset" their usable range) (Fig.26)

3

<u>Global Tuning Adjustments</u>: Unlike traditional locking systems rendering the guitar tuners unusable when locked down, the Guitar NutBuster® is a floating and suspended system that actually moves during use. In most cases, a guitars tuning can be brought either sharp or flat "Globally" without the need to re-clamp the blocks to reset the Micro-Tuner ranges. The headstock tuners have a limited usable range once the Guitar NutBuster® has been clamped down and will need to be very carefully used for only subtle "Global" tuning adjustments to facilitate the Micro-Tuners. Gaining a feel for using the Micro-Tuners in conjunction with the guitar's headstock tuners will greatly assist in the overall tune maintenance experience and also help to alleviate the need for unclamping strings in order to "reset" an exhausted Micro-Tuner usable range.



(Use the headstock tuners for subtle "Global" tuning adjustments to facilitate the Micro-Tuners and "reset" their usable range) (Fig.27)

(4)

<u>Periodic Tuning Adjustments</u>: Keep in mind that guitar temperature and humidity exposures levels can play a significant role in potential tuning fluctuations. Depending on playing style, even thoroughly stretched-out strings will continue to give and stretch over time requiring periodic minor tuning adjustments to be made.

Trouble Shooting Guide

Proper setup and procedure by closely following this Setup Guide from beginning to end is key to gaining the most benefit and having the very best experience possible while using the Guitar NutBuster®. There are tips and suggestions throughout this Setup Guide that are critical for having the Guitar NutBuster® function properly on your guitar.

Most Common Setup Questions and Answers

Is your existing bridge hardware contributing to your tuning problems?

The Guitar NutBuster® offers significant control over the most common tuning problems that are associated with the guitar's nut however your overall tune stabilizing success <u>will also depend</u> <u>upon</u> the quality and functionality of your guitars bridge hardware. It is highly recommended to first make sure that your bridge hardware is setup and functioning properly before proceeding.

Are you making a lot of tuning adjustments?

To avoid unnecessary tuning adjustments after the Guitar NutBuster® is put into use, it is highly recommended to <u>thoroughly</u> stretch-out strings and re-tune guitar as needed before the clamp blocks are locked down. See (Fig. 16) on Page 8 for more details.

Is your High "E" string buzzing or lifting out of the nut?

To ensure that the Guitar NutBuster® rests at an even and balanced operating angle once installed it is extremely important to leave enough slack to guide the low "E" string winding <u>up</u> and over the cut string hole while winding onto its tuner post. This will help offset the radical angle of the low "E" string at the nut by raising its approach to be more in line and even with the other strings. One or two windings are most common but can vary based on the tuner post height This also applies when using staggered height or locking tuners. **See (Fig. 8) on Page 4** for more details.

Are you using your String Tree(s) properly?

If there is a high "E/B" string tree on the headstock, it will need to be put into use and engaged as normal. If there is an additional "D/G" string tree, it is recommended that it <u>not</u> be used or engaged allowing the "D/G" strings to simply ride over the top of that tree. See (Fig. 11) on Page 6 for more details.

Is the Guitar NutBustere in its Proper Position?

With this setup, the Guitar NutBuster® is suspended over the headstock, positioned straight and parallel with the nut having each string centered within the Micro-Tuners arched openings. <u>Most importantly</u>, it must be resting slightly away from and <u>cannot</u> be placed in direct contact with the guitar's neck or nut in order to function properly. **See (Fig. 12) on Page 6** for more details.

Did you Setup and engage the Micro-Tuners correctly?

The On-Board Micro-Tuners are used to conveniently make micro tuning adjustments after the strings have been clamped down and locked into position. To properly utilize the Micro-Tuners, they must always be engaged and in contact with the strings. A non-engaged or loose Micro-Tuner could potentially vibrate off the Guitar NutBuster® and become lost. Setting up the Micro-Tuners "usable range" requires that each string first be slightly detuned using the (headstock tuners) and then tuned back up to pitch using the (Micro-Tuners) after the clamp blocks are tightened. See (Step 7) starting on Page 9 for more details.

<u> Trouble Shooting Guide</u>

Is the Guitar NutBusterem making contact underneath with a truss rod cover screw?

Only if applicable and in rare instances it may be necessary to remove a truss rod cover screw if it comes into contact with the Guitar NutBuster® and is preventing proper positioning.

Are you tuning from your guitar's natural "Tuning Start Point" on (Tremolo Guitars)?

This is the natural resting position of the "in-tune" guitar strings and is the starting point of reference for all tuning adjustment decisions. It is extremely important that all tuning adjustments on tremolo equipped guitars <u>only</u> be made after the "Tremolo Reset Action" is performed. This will ensure that all tuning adjustments are justified and only made when the strings are in their tune locked and natural resting position to avoid any unnecessary adjustments that will cause further tuning issues. See (Step 9) on Page 12 for more details.

Are you performing the "Tremolo Reset Action" on (Tremolo Equipped Guitars)?

Prior to any tuning adjustments being made on tremolo equipped guitars, the strings <u>must first</u> <u>be</u> assisted back to their tune locked natural resting position or "Tuning Start Point" by first performing the "Tremolo Reset Action". A simple downward tap on the Tremolo Bar creates a gentle "jolt" to the strings returning them back to their natural resting position and back in tune. In most cases, the guitar could spontaneously "sound" out of tune due to a stuck string or a variety of other common tuning problems along the string path. The "Tremolo Reset Action" is performed to counter act these variables by instantly returning the strings back to their tune locked and natural "in-tune" resting position. The "Tuning Reset Action" must be performed prior to making <u>any and all</u> tuning adjustments to ensure that the adjustment is actually needed and justified before it is made. See (Fig. 24) on page 12 for more details.

Do you have a Micro-Tuner that is out of "Usable Range" and needs to be reset?

If a Micro-Tuner becomes too hard to tighten or use it will need the usable range to be reset. This can easily be accomplished most of the time by carefully using the headstock tuners to slightly drop the tuning enough to be able to loosen and reset the Micro-Tuners usable range. **See (Fig. 26) on Page 13** for more details.

Are you using the "Global Tuning" procedure to simplify your tuning adjustments?

Unlike traditional locking systems rendering the guitar tuners unusable when locked down, the Guitar NutBuster® is a floating and suspended system that actually moves during use. In most cases, a guitars tuning can be brought either sharp or flat "Globally" without the need to reclamp the blocks to reset the Micro-Tuner ranges. The headstock tuners have a limited usable range once the Guitar NutBuster® has been clamped down and will need to be very carefully used for only subtle "Global" tuning adjustments to facilitate the Micro-Tuners. Gaining a feel for using the Micro-Tuners in conjunction with the guitar's headstock tuners will greatly assist in the overall tune maintenance experience and also help to alleviate the need for unclamping strings in order to "reset" an exhausted Micro-Tuner usable range. See (Fig. 27) on Page 14.

Why do I have to make Periodic Tuning Adjustments?

Keep in mind that guitar temperature and humidity exposure levels can play a significant role in potential tuning fluctuations. Depending on playing style, even thoroughly stretched-out strings will continue to give and stretch over time requiring periodic minor tuning adjustments to be made.

Specifications Model Numbers: (GNB-001-6) and (GNB-001-6-Bullet) (1 ³⁄₄" L) x (3/4" W) x (5/8" H) Size: 2.2 oz. Solid Tool Steel Construction. Weight: String Gauge Limit: Accepts all string gauges up to .075" in thickness. Works with both Right and Left-Handed Guitars. Users: **Compatibility**: The Guitar NutBuster® is extremely versatile and is designed to be used on Standard (6) String Electric & Acoustic Guitars having a common (1-3/8", 1-13/32" or 1-7/16") Low E string to High E string spread at the nut. This basically covers the vast majority of guitar models available having a Total Nut Width of 1-11/16" (plus or minus 1/32"). (Please don't hesitate to contact us with any questions or concerns for using the Guitar NutBuster® on your particular guitar model.) Manufacturing: The Guitar NutBuster® is proudly designed, manufactured and assembled to the highest quality and standards in the USA. Important Notes: Proper setup and procedure by closely following this Setup Guide is key to gaining the most benefit and having the very best experience possible while using the Guitar NutBuster®.

<u>Limited Warranty</u>: The Guitar NutBuster® comes with a one-year limited warranty against manufacturer defects and will be repaired or replaced at our discretion.

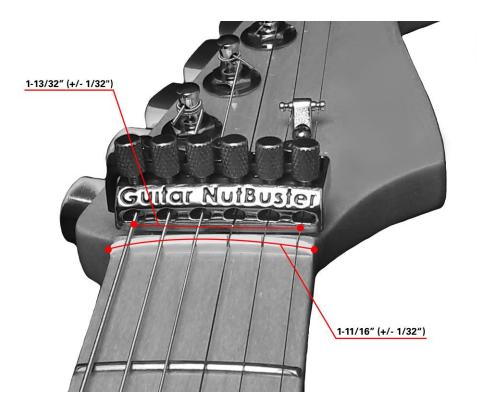


<u>Compatibility</u>

<u>Compatibility</u>: The Guitar NutBuster® is extremely versatile and is designed to be used on Standard 6-String Electric & Acoustic Guitars having a common (1-3/8", 1-13/32" or 1-7/16") Low E string to High E string spread at the nut. This basically covers the vast majority of common guitar models available having a Total Nut Width of 1-11/16" (plus or minus 1/32").

* Works with Both Right and Left-Handed Guitars *

(Please don't hesitate to contact us with any compatibility questions or concerns for using the Guitar NutBuster® on your particular guitar model.)



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