



User Manual

for Kritz 4 & 5 Strings Bases

*"The master always considers himself as a student...
That's the only way to be a good master."*

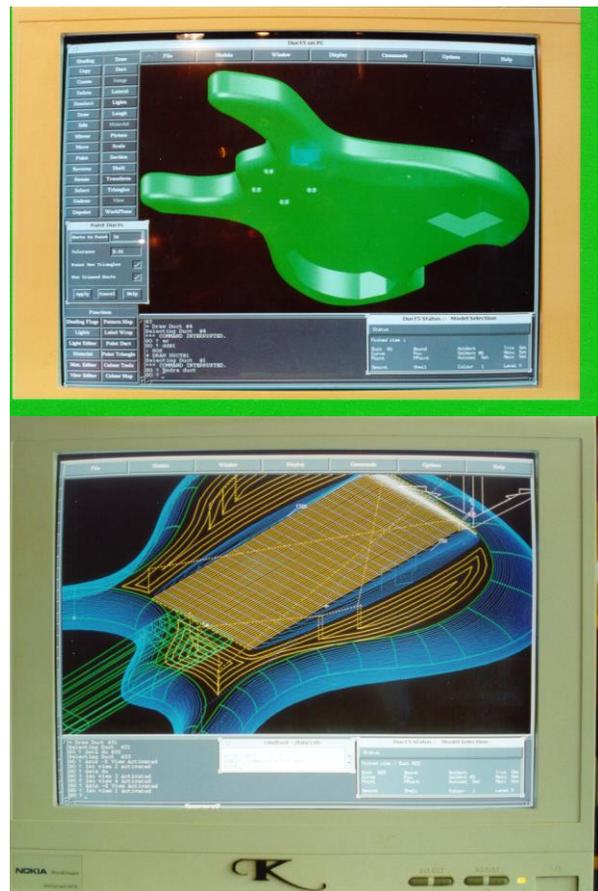
Dear Customer,
May I personally congratulate you on the purchase of your Kritz guitar. That you have made the right choice is obvious. We pride ourselves on building the best guitars in the world and at a price for which you can get a serial model from any other brand. The care and skill with which your instrument is built is unique. It is a pleasure to know that you use our instruments as many do. Thank you!



Technique and quality

We strongly recommend that you go through this manual before you unpack the bass. You will find that you have, perhaps without realizing it, acquired a large chunk of hi-tech and guitar building knowledge. The exceptionally wide sound spectrum, the long sustain, the tonal stability and the easy tuning are advantages that, once tasted, you will consider a must for ever. This has been achieved during the many searches we have done for you. Indeed, we went so far as to make it necessary to use a good guitar amplifier to hear the full sound of a Kritz bass.

For the sake of faithful reproduction of the lowest strings, it is highly recommended that "on stage" for the low, at least use 38 cm diameter speakers. Do not be fooled, this is and remains a minimum diameter for a full bass reproduction. Smaller speakers are flawed and can only partially reproduce larger sound waves. Also in-line the bass gives you excellent results. Test it out: try the bass on a good hi-fi system or directly on a mixing desk (! Adjust the input sensitivity with a transfo: guitar to microphone input). Turning up the high, middle or low will pleasantly surprise you. The higher dynamics on the output of a Kritz bass guitar will also noticeably increase the efficiency of your current amplifier.

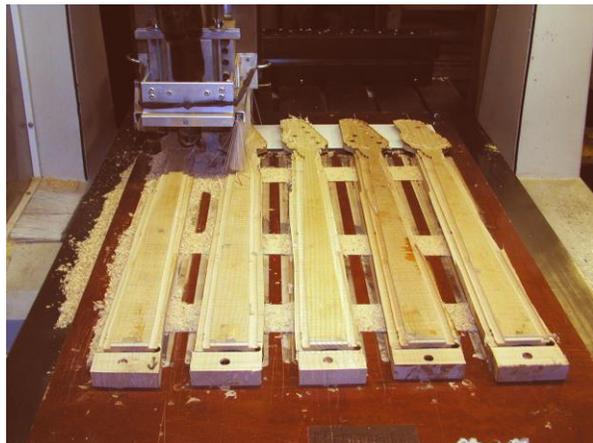


The hi-tech 4Everneck is an invention realized by Fritz and Alexander Valcke (Kritz). It is one of our patented designs. The idea came during the search for a wooden guitar/bass neck that had to be completely stable. In this way, all tuning problems as well

as dead spots could be eliminated without having to change the sound. This search was accompanied by many tests. Thanks to investments in hi-tech 3D systems that can simulate vibrations and stresses digitally and visually via the computer, a fairly good approximation of the ideal bass neck could be worked out. The musician's wishes were especially taken into consideration. The result is the creation of a guitar and bass neck made of more than 90% wood, with a minimum of carbon reinforcement inside.

The advantages are:

- Exceptional wide sound spectrum
- Tight as metal with a longer sustain.
- more harmonics
- consists of 93% wood - only 7% is carbon (models from 2000 on)
- possibility of using new woods
wood = new sounds
- no trussrod = no cavities under the fingerboard
= no dead spots
- fingerboard with nulfret for tone purity and low action
- stable and permanently straight for an optimal reliable playing comfort - low weight
good balance of the instrument
- insensitive to "on-stage" temperatures
- fewer tuning problems due to the great stability
- Creation of own sound by application of soft or hard woods



The 4Everneck does not include a trussrod. The neck is completely solid and does not need to be adjusted. It is an important step in the new technological evolution of the bass guitar. There is no turning back. We never thought it wise to work iron rods or cavities into a neck.

The 4Everneck is a wooden neck made with the utmost care and precision, using the latest techniques. It is the solution to many tuning and tone problems that keep popping up on other guitars. The inaccuracy of ordinary necks is such a big problem that almost all manufacturers and users think it is logical that necks need to be tuned. Nothing could be further from the truth. The 4Everneck is carbon reinforced inside and over its entire surface. This method of making the necks is unique in the world. We developed through 3D techniques a method to give the wooden neck a permanent shape. In normal use, the neck has a strength that surpasses ordinary wooden necks by a hundred times. You can combine string sets with strings between 45 and 130 without any problem.

Maintenance

Clean the guitar with Kritz GP guitar polish and a fine towel or polishing wipes. This polish is finer than hand polished and will not leave scratches or satin marks on the finish. Finger sweat contains salt and is aggressive. Strings therefore will rust quite quickly. Always clean the strings immediately after playing with a non-watting towel (cotton). This removes the sweat from the strings. If the strings do rust you will lose some of the clarity of sound, as the vibrations are then obstructed by the irregular string thickness.

A lacquered fretboard (Bird-Eye or maple) is maintained with the usual Kritz guitar polish. An unpainted fingerboard (ebony and rosewood) will be affected by sweat and dirt without maintenance. Molds can affect the wood fiber surface of the fingerboard. This leads to cavities in the fingerboard.

The famous hollows that people think are caused by the scratching of fingernails. We have developed a product called Kritz FBO fingerboard oil. It is a non-aggressive product with a fine structure that penetrates into the

fingerboard. The molds have no chance to develop and the fingerboard remains beautiful. The product also removes scratches and feeds the fretboard.

This allows the fingerboard to retain its suppleness and reduce the number of cracks. Kritz oil protects the fingerboard from climatic humidity.

Replacing strings



Bass Guitar Strings

This Package Contains:

The rich sound of the Kritz, Bassguitar strings gives your guitar a nice, clear bass sound and a high fidelity response. This superlight stringset, in combination with a Kritzbass (4Everneck, and Liftop technology), will give you the ultimate playing comfort. You won't believe your fingers!

Kritz Guitars Meirestraat 6 9770 Kruishoutem
Tel: +32(0)93837707 Fax: +32(0)93830160
e-mail: info@kritz.com www.kritz.com

Replace your strings on a regular basis. Dirty strings on a bass quickly produce an unclear sound. You can feel free to replace, before or during a performance, a single string because a Kritz bass guitar neck moves almost not at all.

Important: some strings stretch a bit during the first few hours that they are under tension. So it's best to test out for yourself which available sets/labels do or do not have this. It is important to always turn the string up (counter clockwise) when tuning. If the string sounds too high, turn it under the tone again and start again. Tuning by turning down can cause snags on the nut or nulfret. While playing, the snag may suddenly dissipate and the string will detune again.

Choosing string sets

Important: Not all strings fit on a Kritz bass guitar

As with elements, some manufacturers developed string sets that can reduce the lack of sustain on regular guitars. This makes such sets popular.

They are made of lighter metals and contain a thin core with a thicker winding. As a result, they vibrate longer. Because our instrument necks optimize sustain, these strings are doubly responsive (resulting in excessive string travel). These strings can NOT be used on a Kritz bass. They lead to fret buzz all over the place. The bass guitar becomes unplayable.

You can recognize them by their low stiffness and their (usually) dark color.

The theory around manufacturing strings is very complex and would drive us too far here. Trying them out is the message. Some hints, however, so as not to drive you to expense. It is advisable to use strings that can optimally reproduce the sound spectrum offered.

We recommend the use of normal strings. Combinations between 40 and 130 are possible:

If you tune in a different tone you should adjust the relevant string thickness, this is to maintain the correct string tension and avoid fret buzz. Strings that are too thick are again not good. They have an incorrect string tension. The correct string tension also gives you more playing comfort and less painful fingertips.

Playing Techniques

Because this is a precision instrument, you will hear all sounds much more clearly than with a normal bass. It is therefore important that the guitar is tuned accurately. To play in tune you should not press the strings too hard. By pressing the strings hard you will vary the pitch. Think about this in the beginning. After a while you will get used to pressing "softly". If you press the strings too hard with the left hand (right hand for lefties) there is a chance that the guitar will play out of tune, especially with chords.

Try to play the key softly and give the power with the right hand. You will be able to play quite a bit faster. Persist... it is a habit. Slapping is also easy on a Kritz due to the application of hammerfrets on the two thickest strings. Playing is very easy because of the thin asymmetrical neck. The neck follows the shape of the hand between your thumb and index finger. New possibilities abound to develop new techniques through your thumb, at the top of the neck.

Repairs

Some people carry the guitar for maintenance to an unauthorized guitar shop. Because they are not informed about our new techniques, they usually treat the neck like a normal neck. As soon as they discover that there is no adjustment possibility they will suggest to adjust the frets. Never allow this! Notify the repairman that it is a carbon reinforced neck with a complex radius. Ask him to explain the reinforced 4Everneck, the complex radius and the KIC system. Have them at least contact us if he cannot give a clear explanation. We produce (as of March 2001) keys with an accuracy where the "crowntop" (point of contact of the fret wire with the string) very precisely follows the calculated ComplexRadius™ surface. One to three fret corrections are allowed upon inspection. More is "rejected." So be careful about just re-sharpening the frets. It is usually fatal and cancels the warranty. Re-fretting with the updated moulding techniques is then the only solution to get back your familiar playing comfort.

Tuning the guitar

Some "low-budget" tuning instruments take only a very short fragment of the full tone as a reference. The readout is then sometimes different for each keystroke. Especially the B string of a five string bass is difficult to read by the tuning instrument. Always set your tuning key to the "bass guitar" position if provided. Your practiced ear is still the best tuning instrument. Therefore, always tune by harmonic vibration comparison (flageolets).

The Kritzbass easily reproduces the harmonics, without a keynote.

Also know that we hear higher tones slightly lower compared to the lowest, due to an error margin in our ear (cochlea) and our brain. This is a natural phenomenon. This is why the strings at the 12th fret are compensated (raised setting). For this, see: "changing string height"

To tune, proceed as follows: first, set all the strings approximately right. Tune the G with your tuner exactly to the middle position (440). Then use flageolets to tune the D with the G (slightly damp the strings: D at 5 and G at 7 and listen until there are no more differences in vibration).

Tip: playing the flageolets is sometimes difficult if you don't know exactly how to do it. Activate the string closer to the bridge and the keynote will disappear more easily when damping.

Now do the same thing sequentially: A with D to tune A and E with A to tune E.

For 5 string basses:

If the B string won't show itself, you can tune it by pressing it in the 5th square and setting it to an E. Remember that new strings stretch a bit. So it is best to check again later.

Tip: Remember that thinner strings play easier, but they don't sound as good and thinner bass strings rattle faster. See: "choosing string sets"

Adjustment of the 4Everhals

The materials used (Wood, carbon, various resins, etc...) as well as the joining techniques form a neck with a uni-resonance, which is not deformable under normal conditions.

Guitars built up to 2001:

These necks contain an adjustment screw (this is not a neck pin arrangement because our necks do not contain a trussrod) that can, under strict conditions, trim the neck via an internal cable system. You or your local repair shop cannot do this yourself.

Only a thermal treatment and targeted tension adjustment make the adjustment possible. This adjustment is rarely necessary. It is done during the adjustment in our workshop.

Any attempt to twist the sealed arrangement located in the neck pickup pocket, by unauthorized persons, can lead to an internal break in the internal neck tuning mechanics. The neck will then bend more forward, it will produce multiple resonances and even have side noises or dead spots (like a regular neck). This is irreparable and greatly reduces the quality of the bass guitar. Adjustment of the 4everneck (only necessary when used under climatic conditions more extreme than -10°C or +40°C) can only be done in our workshop by means of pre-tensioning, with our machines or by people trained by us such as authorized dealers (outside the Benelux). If you break the seal, all warranty on the bass guitar is voided. Usually, in case of internal breakage, a new neck must be installed.

Guitars built from 2001 onwards

As of February 2001, we are applying a new reinforcement technique. The neck becomes so stiff that no regulation is required. This system has been realized by Kritz through the use of new composite materials. They connect both wood and carbon, diolene and kevlar, in a way that is difficult to break. We therefore immediately recognized that the possibility of trimming the neck had become unnecessary from this point on.

Autoflex protection of the neck

Through proper positioning and the precise application of the amount of Hi-tech reinforcement, an "autoflex" safety system has been developed. It allows the neck under the influence of unusually high stress to first partially deflect instead of immediately cracking.

The electronics

A kritz bass contains several electronic controls, such as volume and tone. Tone controls are: Bass Middle and High. Each tone control has a middle position. The middle position can be felt with a click. This position is the neutral mid tone position. Turning clockwise amplifies the frequencies involved. Conversely, you reduce the frequencies.

The volume knob can be pulled out on some versions (Basslines). This adds extra coloration for slapping. The adjustment of this coloring is done via trimpots on the circuit board, inside the control pocket at the back. See also accompanying circuit board information.

The bass contains electrical components that are fragile. Humidity, dust and dirt is a major enemy to these components. The metal pole pieces of the elements may show rust marks due to humidity. Volume and tone controls as well as switches will interfere if left in these conditions for long periods. Consult us or your repairman to deal with these failures. If you are familiar with electronics, you can treat the potentiometers and switches yourself with the appropriate contact spray

The hand-wound Kritz elements:

As of February 2002, our basses are also equipped with our own hand-wound bass pickups.



Our pickups deserve special attention. Therefore, we tell a little more about them.

F. Valcke:

The story starts years back (1976) when I kept noticing that most series guitars did not sound as bright as you could normally expect from a metal string. This was the year Kritz was founded, then a recording studio. With this in my mind, I was already looking for wider sounding pickups at the time. 10 years later I still wasn't satisfied because I knew, with my experience as a studio engineer that a bass guitar could have more high output which I

heard through. You know "clean" or "glassy" or "brilliant", "transparent", "crispy" or "clear". All names that refer to this high output. The modern lamp amplifiers are designed in such a way that they let all the incoming frequencies back out as well. Even large speakers have not escaped evolution. But even through such a cabinet I found my high insufficient. It had to be sought in the instrument and its recording system. So I went on the research tour again. The result of a brief study of this problem pointed in two directions: String vibration behavior due to the guitar wood type and the pickup elements.

The guitar wood type:

Comparative examination of some 20 guitars quickly gave us the result that the density of the wood gave a significant frequency shift: wood with a high specific mass (600 to 1400 kg/m³) gives less volume to bass and more volume to treble. Wood with a low specific mass (200 to 500 kg/m³) gives more bass and less high. The overall bandwidth remained virtually the same, it just shifted.

Because bass builders strive for a good hi-fi sound (and bass sounds give the impression of contributing a lot to "sound") one quickly tends to accentuate the low. Resulting in less high. Who doesn't know them the popular basses made of mahogany, alder, linden, poplar, swamp ash.... all trees that float like a feather, but certainly don't carry the high in them. For us it was obvious that this was the cause. But there was more.

Because of interference and ringing, one often limits the frequency range of the elements.

One only has to choose the number of windings and the base material wisely.

Believe me, two plates pressed from cardboard (coilframe) and some melted wax and away comes the feedback... and... the high. The frame made of harder plastic that everyone uses today gave a better result than what one could do in the sixties, but this high again drifted away by waxing the thing (dipping the element in melted wax to make the windings tighter).

To make a long story short, we developed from these experiences an element that consists of completely fireproof, hard material (top and bottom plates, wire varnish,

connections and soaking product). Where everyone's ordinary plastic pickup melts together like a rag, we start by making our elements sound solid. In this we go very far. The result is: a transparent pickup that has the same anti-feedback properties as any normal element but with a few kilos more height.

Maintenance of the elements:

Depending on your choice, we have Kritz or other elements built into your bass. They offer a possibility of different timbres due to the individual development of the electronics. Above all keep the elements free of dust. The adjustment of the pickups is done by turning the (spring loaded) screws on the side or at the bottom of the pickup.

A Kritz pickup is a high dynamic element. Some bass amplifiers are designed for guitars with low dynamics. If you do not want distortion on such an amplifier the volume has to be turned down a bit. You may have to move the pickups further away from the strings because of this. Turn the screws counter-clockwise to lower the pickups. Modern amplifiers often have a possibility to plug in "active" or "passive". Use the active circuit for your bass. If desired, we can place a trim pot inside that limits the volume of your Kritz guitar.



The Kritzwood fretless fingerboards and bridges

While visiting festivals, concerts and performances of pop and rock bands, it is often noticed that the bass sound at open air concerts is sometimes a problem.

Too woolly, ringing sounds and undefined tones frustrate many bass players.

Approaching such a performance from a distance, one notices that the bass is too loud. In fact, you hear the bass first and usually it doesn't sound in tune. Some notes are extremely loud, other notes you barely hear. Usually the musician has a hard time hearing himself. This is usually why musicians changed guitars or amplifiers over and over again without obtaining the sound they were looking for. So what is going on anyway?

The experience that could be gained at Kritz during the development of the Human guitar made it a lot easier for them to isolate and solve the flaws of the current electric basses. A major issue here was the problem with the neck. With the bass, a uni-resonant neck is essential to achieve good sound quality. With the fretless bass, the lack of the metal (the frets) is a weak spot. The fretboard comes into contact with the vibrating string. This contact should not be dampened. Here the application of the new composite Kritzwood as a fingerboard was very useful. Kritzwood is a composite material with multidirectional wood fiber structure, based on graphite and phenol. Kritzwood is harder than any other type of wood and can be compared to the hardness of light metal. This property significantly improves the sound and the sustain without affecting the wood tone. Kritzwood is scratch free and increases the life span of the fingerboard ten times.

Research has worked wonders here.

Thanks to specially developed software programs, Kritz can simulate a vibration and its resonances on a fictitious instrument via computer. Density, E-modulus, shape and mass flow are important elements here. From the test results Kritz was able to deduce that the bridge has a major influence on the sound quality, the tonal character and the sustain of a bass.

The conclusion was that the ideal bridge should not have a greater mass than the body underneath it, to achieve an optimally flat, and volume-compatible sound. So basically a maximum, not higher than the specific gravity of wood between 400 and 600 kg/m³. This cannot be realized with metal. The only possibility was: to use a different material in the manufacture of the bridge. Again, Kritzwood was a good solution as a material that was sufficiently strong. We were therefore forced to develop our own bridge. It was first applied to the fretless bass⁵. This was not easy and took quite some time. The bridge has the strength of metal and has only a fraction of the weight of an ordinary metal bass bridge. The result is amazing. You can feel the sound across the entire bass body. It is as if the bridge does not exist for the vibrations. All positions on the fingerboard are equal in tone volume, tone width and sustain. We found to our great surprise that the tonal instability, (the phenomenon where the sound floats because with thick, long strings the string tension varies during vibration) was 65% gone. This was a blessing because a separate research program had been planned for this problem. After the completion of this project, they compared the new bass with a conventional bass. The difference is remarkable more so the difference is even laughable. "A sound of cardboard... the old one" suggested the bystanders. With a lighter amplifier and without all kinds of additional sound equipment you get a noticeably better result. More volume with less watts!

An additional advantage is that the wide sound spectrum now allows the fretless bass to be used as a fretted bass. Two in one and very good for your wallet. You do have to make sure that on the (fretted) bass you place the fingers on the fret marks otherwise you sound "in between". But even this in between is sometimes very effective and necessary in more classical works. In any case, quite a first in the bass world! What is Kritz doing here with his Smilefrets? Nothing at all. Indeed on a fretless bass there are no frets, so no Smilefrets™ either.



Transporting and stocking the instrument

It is recommended that the instrument not be stored in extremely cold areas. If this does happen, do not open the case until after it has remained in the warmer environment for quite some time. Freezing temperatures will cause the wood to shrink whereby the harder lacquer surface will crack. When heated, the wood will expand back. "Craquelure" effect is the result. The hardware will also corrode faster in these conditions.

Changing the string height

If you drastically change the string height or string thickness you must adjust the intonation saddles. The intonation is adjusted by our people both by ear and chromatically. It follows the tonal pattern of a piano. It is highly recommended that you speak to a professional to do this. This will guarantee a tonally correct interplay with other instruments. Nevertheless, we give you a method to do it yourself. We cannot insist enough that the guitar is factory set and will not change on its own. If the guitar suddenly sounds wrong: retune it first. The saddle blocks in the bridge can be turned forwards or backwards. Adjusting the blocks forward (towards the neck) raises the pitch at 12th fret position relative to the open string (0 position).

Setting the pitch metric (440 Hz system) with a tuning instrument is not correct!

Our brains hear higher tones slightly lower than the metric values that appear on the measuring instrument. This is due to the complicated construction of our hearing system. Therefore, a compensation is needed for the high. Other instruments, with multiple octaves, such as a piano are also compensated in this way.

!!>>It is unnecessary to do the following operations if nothing has been changed on the bass guitar.<<!!

Important:

Use a good quality tuning instrument to check or adjust the following settings. Please note that the fine-tuning cannot be done with an ordinary tuning instrument and thus requires a well-trained ear and a lot of experience. Please note: A bass guitar is tuned perfectly if (correctly tuned) it does not vibrate with each other when striking the 4 strings in a chord. You hear one tone for all the strings.

Adjusting intonation:

Proceed as follows to re-tune the guitar with your tuning instrument:
Always double check !

Setting

- G string loose : tune correctly - needle in G Position.
- high G 12th fret : adjust block G +2 commas higher
- D string loose : correct tuning - needle in D position
- D string 12th fret : adjust block-saddle D +1. comma higher
- A string loose : correct tuning - needle in A position
- A string 12th fret : tune block saddle A +0.5 comma higher De snaren E en lage B (bij 5 snarenbas) worden exact ingesteld op de middenstand (440) van het steminstrument, zowel voor de open, losse snaren als voor de 12 e fretpositie

Important: The control options on a bridge are sometimes limited. Especially with large string heights.

The Kritzwood bridge contains 4 or 5 block saddles. By removing the spring behind the saddle you can adjust a few millimeters more.

We also have shorter saddles in stock. They allow you to set the intonation even more backwards.

Problems or questions about intonation? You can always consult us for free via E-mail.



Tuning and maintenance of the guitar

Maybe you bought the bass second hand and sometimes it will be disordered and poorly maintained. We think this is unfortunate but it happens. Details then make the difference.

Measuring is knowing:

When it comes to tuning you should consider the guitar purely as a technical fact. Emotions and extreme good/bad thoughts about the instrument are meaningless. Give yourself time to get used to the guitar. If you do change something, do it in steps. Change one thing and take time to assess your change. Also dare to take a step back when in doubt. Also be aware that we are humans who are in a different mood from day to day. In the evening, after a long day of work, your hearing is usually tired. Sometimes you may find it difficult to tune a guitar. Never wrench in such a case.... you can't do it anyway. Waiting is then the only good friend. Bring yourself up to speed on tuning, it's a complex thing. Omdat men soms overdrijft of te veeleisend is, nog dit:

Unnecessary tweaking of the guitar:

In the search for perfection, some people already work on the new guitar immediately after purchase. We completely tune every guitar ourselves. Electronics, hardware, tone etc... everything is checked. This takes a lot of time. The authorized dealer (only outside the Benelux) where you buy the guitar, or we, will gladly adjust the string height to your liking at the time of purchase. The individual tuning to your hand, cannot be done before the moment of sale because this is personal. A guitar properly tuned is very personal. Don't overdo it. Without realizing it, you are trying to copy the previous guitar (and sometimes the mistakes) onto the new one. Sometimes one knows an adviser, friend or builder who demonstrates his knowledge on the subject. Our technological changes are usually uncharted territory for these people. They are sometimes annoyed by this and have a feeling of being left behind. Consequently, they usually begin by criticizing. The technology in our guitars is mainly inside. It is only slightly visible, if at all. What some people tried out on ordinary guitars with a trussrod is no longer applicable to our instruments. Be very careful with the good advice of these "miracle doctors". Under no circumstances let them "improve" your new Kritz instrument. There is a point at which your Kritz is tuned to its best. Going beyond that then becomes "less good" again. Miracle guitars, for example, where there is no fret buzz to be heard while the strings are almost resting on the frets do not exist! It always remains a compromise. Practice is usually a better solution than wasting time on an all-important minor detail. Finally, if the adventure with "the expert" goes wrong, you end up with your manufacturer and this along with reality and cost. The guitar is a metric, without mysteries. Don't be guided by impressions, prejudices or brand names. A golden rule: measuring is knowing! You bought our technology with full confidence.... Believe in yourself and keep it that way, and you will always stay one step ahead!

Be aware that the realization of all that beauty took a lot of energy and time. This is to the benefit of the musician's artistic abilities.

We hope that with this comprehensive guide with instructions, we have been able to partially eliminate the annoyance that customers sometimes suggest.

Comments or questions? We will help on-line if requested: E-mail : Info@kritz.com



After-sales service:

Kritz works for professional musicians. They live by and for their work. We understand this very well. If you have a problem, don't hesitate to contact us. You will get all the advice "on-line" and we will find a solution to your problem. During a repair (from factory), you will have a replacement guitar at your disposal. You are never alone during your studio or internship work. Kritz lives with... with the musician. See you at some concert or other...

Fritz & Alexander Valcke
Kritz Guitars
www.kritz.com