



Mayones Guitars & Basses

since 1982



ELECTRIC BASS GUITAR USER'S MANUAL

DEAR BASS PLAYER!

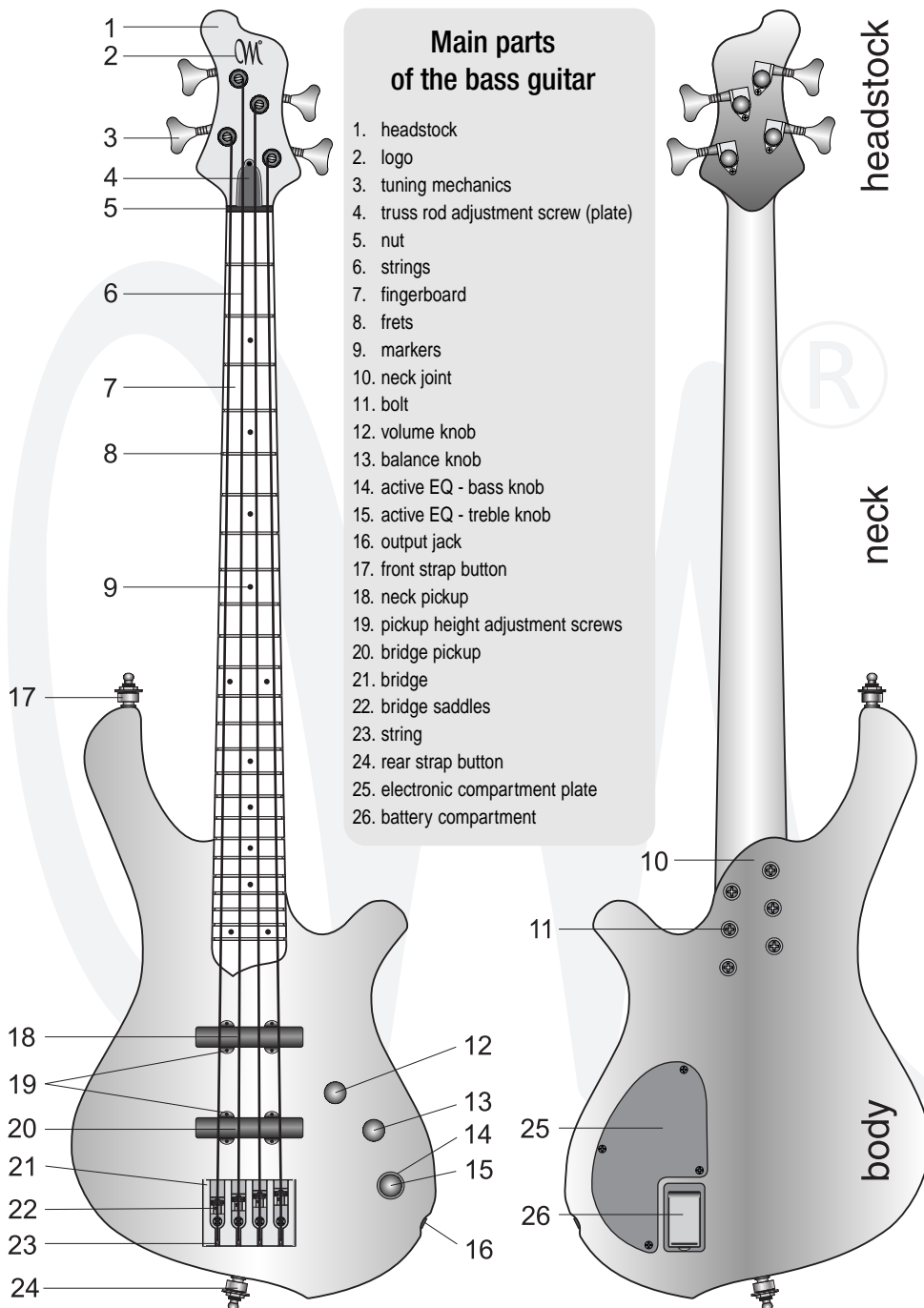
Thank you for purchasing an electric bass of our production. We are convinced that you have made a good choice and that your new instrument will help you in developing your musical talent. We would like to help you in achieving this goal. This is why we would like you to familiarise yourself with a number of maintenance rules.

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Maintenance and operation.

1. Use only good quality strings, preferably from a single set. For bass guitar strings, it is especially important to choose the correct scale length. Only the sets of strings with the scale length corresponding to your instrument should be bought.
2. The way you wind the strings around the tuning keys is crucial for the instrument to stay in tune. Remember to read the chapter explaining this procedure.
3. In order to work correctly, the bridge has to be correctly adjusted. It is the bridge that determines if the instrument is tuned well. It also determines the overall comfort of playing.
4. Setting up the proper neck relief and the action of the strings is very important to achieve good comfort of playing. These procedures need to be performed each time the gauge of the strings is changed.
5. In order for a string to hold its pitch well, its intonation has to be adjusted. A separate chapter is devoted to this procedure.
6. It is recommended to change the strings after 50-70 hours of operation. After this period most strings tend to lose their bright sound and stop holding their pitch.
7. It is advised to clean the instrument, particularly the strings, after each period of playing it. Suitable products are available in good music shops.
8. When transporting the instrument, a gig bag or a hardshell case should be used in order to prevent damage caused by mechanical shock or the temperature change.
9. A guitar is a delicate instrument. The finish is vulnerable to scratches, fractures and even chipping. Take good care of your instrument and use it according to the goal it was built for.
10. Protect your instrument from low and high temperature, and also from humidity.
11. Do not expose the instrument to direct sunlight for long periods of time. Do not leave your instrument close to heating devices, nor in a car on a hot day.
12. Avoid sudden changes of temperature or humidity. In winter, after bringing a chilled instrument into a heated room, leave it for a few hours in its case, until it has returned to room temperature.
13. Clean the strings and lacquer surfaces with a dry, delicate cotton cloth. For thorough cleaning, use only specialized products (Guitar Polish and String Cleaner). Instruments with natural finish should be conserved with special products based on natural oils.
14. Make sure all parts of the instrument are cleaned regularly.

Attention: *Disregard of the above rules may result in loss of warranty.*

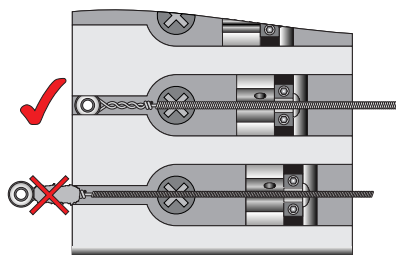


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Winding the strings on tuning keys

Depending on the construction of the bridge, install the ball in the slot of the bridge, pull the string through the hole in the body, or install the ball in its proper place in the bridge.

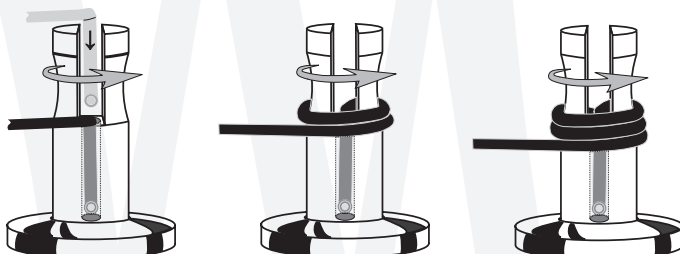
The ball should hold tightly to the slot in the bridge, and its axis should be perpendicular to the axis of the slot. If the string fails to completely go through the slot (if it is blocked by the thick part of the winding by the ball), check the size of the slot and the quality of the winding. If the winding is too thick, it is possible to slightly unwind it. Another solution is using strings that are unwound next to the ball.



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Next, stretch the string and cut it more or less 10cm behind the tuning key's post. The headstock side of the string is often finished with loosened winding and a plastic thread, which ensures the string's stability on the tuning key. One should not cut this part of the string off entirely, except for situations when the string is obviously too long (e.g. When the tuning keys are in a 2+2 or 3+1 combination.)

Insert the end of the string in the opening in the slot of the tuning key (older type) or simply in the slot (newer type). You can bend the last 1-2 cm of the string by 90 degrees. Next, paying attention for the string to cling tightly to the edge of the slot, wind the string on the key in the way that it clings to the key's surface. The following windings should be placed lower than the original. They should cling to each other, but the string should not cross itself. All the strings should be wound in the same way (on single-sided headstocks) which facilitates tuning the instrument.



The table below shows the commonly used scale types. Simply put, the scale of a string is the part of the string between the nut and the bridge saddle.

Name	The scale	The length of the wound string
1. Extra Long Scale	35 ~ 36" (889 ~ 915 mm)	38" (~965 mm)
2. Long Scale Plus	34 ~ 35" (864 ~ 889 mm)	38" (~965 mm)
3. Long Scale (Standard)	34" (864 mm)	36,5" (~927 mm)
4. Medium Scale	32 ~ 33" (813 ~ 838 mm)	34,5" (~876 mm)
5. Short Scale	30 ~ 31" (762 ~ 787 mm)	32,5" (~826 mm)

Buying a set of strings of shorter scale may result in the plastic thread going beyond the nut, or in strings being too short to install in the tuning key. Buying a set which is too long may result in a lot of trouble with installing them, because the string may still be too thick at the key.

Attention: the best tone will be achieved by exchanging the whole set of strings. It is recommended to change the strings after 50-70 hours of operation. After this period most strings tend to lose their bright sound and stop to hold the pitch well.

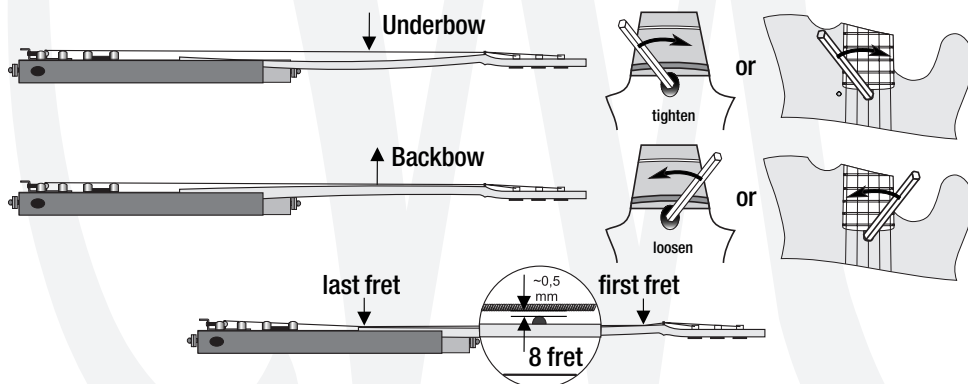
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Neck relief

Setting up a proper neck relief is achieved by loosening or tightening the truss rod which is built in the axis of the neck. The truss rod adjustment screw is placed either in an opening next to the nut or at the heel of the neck. We check the neck relief by fretting the string on the first and last fret simultaneously. With the relief set up correctly, the height of the string above the 8th fret should measure about 0,5 mm.

If the string is higher (concave neck), one should tighten the adjustment screw.

If the string is lower (convex neck), one should loosen the adjustment screw.



The Allen wrench's movement should be gradual and delicate. After each turn of the key, never greater than 90 degrees, check the height of the string above the 8th fret and the string fretted at the first and last fret.

The 5- and 6-string basses' necks often have two independent truss rods. They help in precisely setting up the relief, however the procedure should be performed very carefully. It is important to pay attention on gradual tightening and loosening both truss rods in order to achieve the same relief for all the strings.

Attention: this procedure needs to be performed each time the strings are changed.

Adjusting the bridge - string action

After installing the strings, tuning the instrument initially, and setting up the neck relief, we can adjust their strings' height over the frets.

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The height of each saddle is usually set up by adjusting two, three or four screws at the sides of the saddle (A). Many saddles are equipped with a screw (B) which locks their position and prevents them from falling off during string change or in case of a string breaking. This screw should be loosened before changing the position of such a saddle (this is also important when adjusting intonation).

The saddles should be positioned in a slight curve - the difference between the inner and outer saddles should be close to 1 mm. This is caused by the necessity of the saddles to follow the radius of the fingerboard.

The height of the string over the 12th fret depends on personal preferences of the musician. A standard string action for a 4-string bass is: 2.5 mm for the G1 string and 3.5 mm for the E4 string.

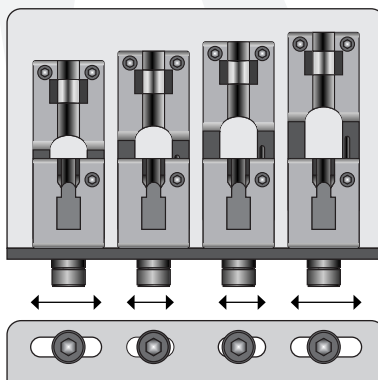
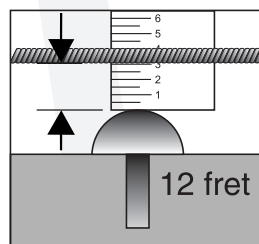
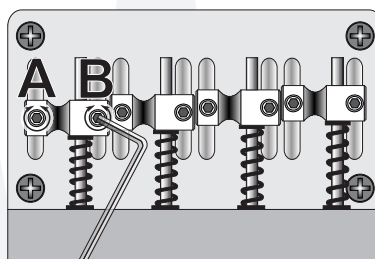
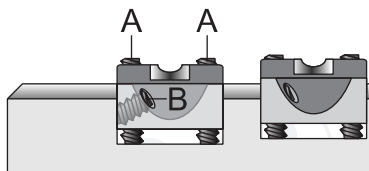
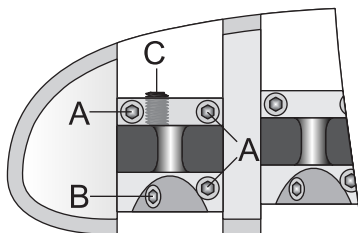
Setting the action too low results in strings buzzing against the frets and shorter sustain. Setting the action too high results in a decrease in comfort of playing. It also causes strings not to intonate properly because of the added tension during fretting.

The suggested height of the strings over the frets

	highest string	lowest string
4-string basses	2.0 mm (5/64")	2.8 mm (7/64")
5- and 6-string basses	2.0 mm (5/64")	3.2 mm (1/8")

Some bridges also allow to adjust the distance between adjacent strings. This distance should be identical between each string and the outer strings should be set far enough from the edges of the fingerboard not to slip away from it during playing.

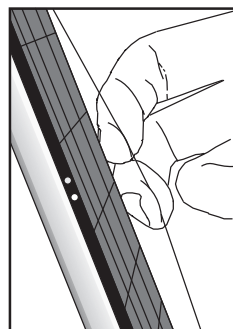
Before changing the string spacing, loosen the screw (C) locking the upper piece of the saddle. In some types of bridges, the string spacing adjustment is achieved by moving the entire saddle (e.g. Schaller 2000).



Stabilising the tuning

After each string has been changed, after tuning it to the desired pitch, hold it with your fingers above the 12th fret and pull it 1cm away from the fretboard for around 10 seconds. Retune the string and repeat this procedure until the last stretching will not cause a change in the pitch. After stabilising the tuning, adjust the intonation.

Attention: an electronic chromatic tuner will greatly facilitate all the procedures connected with tuning the instrument.



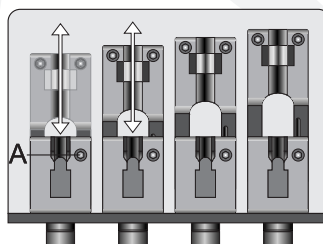
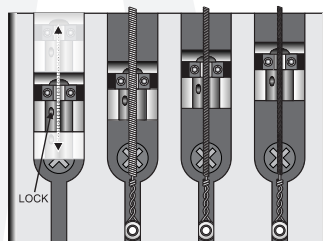
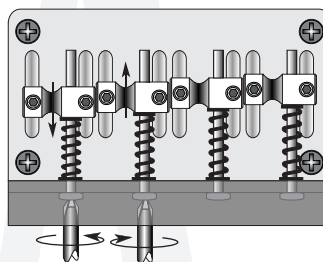
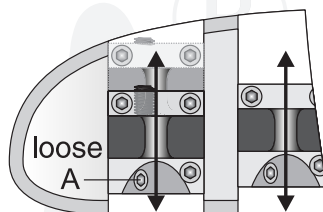
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Adjusting intonation

Adjusting the intonation is crucial to eliminating the error in the string pitch on certain frets. It consists of tuning the string exactly to the desired pitch and then fine tuning its bridge saddle to make the pitch at the 12th fret exactly an octave higher. If after tuning a string the pitch on the 12th fret is too low, the saddle of the bridge should be moved toward the front edge of the bridge (the scale should be shortened). If after tuning a string the pitch on the 12th fret is too high, the saddle of the bridge should be moved toward the rear edge of the bridge (the scale should be lengthened).

This action is usually repeated a few times in order to achieve precise intonation. Retune the string after each repositioning of its saddle. When the intonation is set up properly, the saddles are usually positioned in a diagonal line. If they do not, or if the range of regulation appears too small, the problem is the strings being either too worn out or of bad quality. Because of different types of bridges and saddles, the saddle adjustment is achieved by different means.

Attention: retune the string after each repositioning of its saddle.

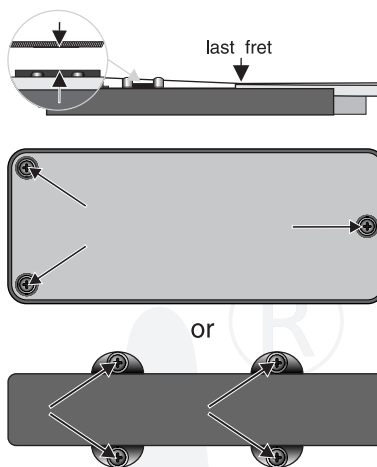


A - LOCK - an Allen screw locking the saddle's position (when the string's intonation is set up correctly) Before changing the saddle's position, loosen the screw a bit to enable the saddle to move freely.

The height of the strings over the pickups

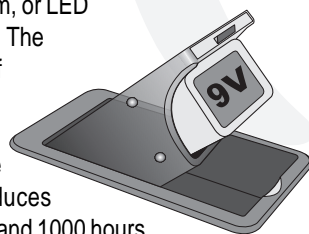
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The distance between the pickups and the strings is an important factor of the instrument's sound. This distance depends on the type of pickups and the type of strings used. It is checked by fretting the string on the last fret and measuring the distance between the surface of the pickup and the surface of the string. A standard height of the string over the bridge pickup for a 4-string bass is: 2.0 mm for the G1 string and 2.2 mm for the E4 string. For the neck pickup: 2.4 for the G1 string and 3.2 for the E4 string. When adjusting a 5- or 6-string bass - these heights should refer to the outer strings. The height of the pickups is usually regulated by adjusting the screws that attach them to the body of the instrument. When the pickups are installed in the pickguard, turning the screws clockwise will decrease the height and turning them counter-clockwise will increase the height. When the pickups are installed directly into the instrument's body, turning the screws clockwise will increase the height and turning them counter-clockwise will decrease the height. If the distance between the pickups and strings is too small, it may cause the strings to hit the pickups generating knocking or distorted sound. Pickups equipped with strong magnets may pull the string and cause difficulties in tuning. On the other hand, if the distance is too big, the instrument's signal will be weak and lacking in character. The noise level will also increase. If a pickup is equipped with adjustable pole pieces, it is possible to adjust the differences in volume between strings by determining the height of each pole piece. Setting up the distance between strings and pickups is a matter of personal preference and each musician should spend some time on finding the preferred measurements.



Battery replacement

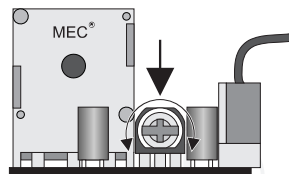
If a bass is equipped with active electronics, a preamp, a piezo system, or LED fret markers, they are usually powered by one or two 9V batteries. The battery compartment (or compartments) are located on the back of the instrument's body. Opening them does not require tools, however caution is advised in order not to break the delicate lid. The compartment's construction prevents putting the battery in the wrong way. The compartment is locked by gently pushing the lid back, which produces a distinct click. An alkaline battery life is estimated for between 300 and 1000 hours of usage. It is however advised to change it as soon as a considerable drop in output or distortion are experienced. This will be noticeable at first when playing harder, or with boosted EQ knobs.



To prolong battery life, remove the cable from the output jack when not using your instrument.

The Piezo System

Some bass guitars are equipped with Graph Tech saddles with built in piezo pickups. The pickup signal is led to the instrument's output jack after it has been amplified by a preamp powered by a single 9V battery. The preamp is located in the guitar's control cavity and attached to the piezo/magnetic signal mixing knob (Blender). The preamp enables adjusting the piezo pickup's output level to the output level of magnetic pickups (for the Blender's centre setting). It is achieved by adjusting a small PR-type control located on the piezo system's plate. Adjustment should be performed carefully, using a small screwdriver or a similar tool. When shipped from the factory, the piezo volume is set up to match the magnetic pickup's volume. It may require adjustment after changing strings or after changing the height of the magnetic pickups under the strings.



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Piezo pickups tend to carry much more high frequencies compared to magnetic pickups. In some instances, this may lead to signal distortion. In order to rectify the problem, it is advised to either:

- decrease the piezo system's output volume
- decrease the amplifier's input gain or
- adjust its EQ.

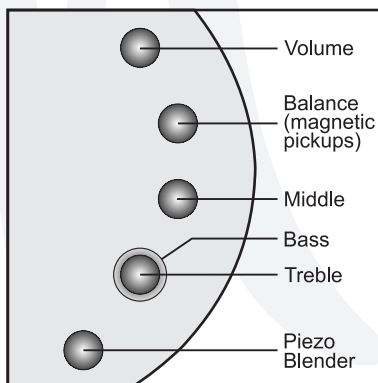
Signal distortion may be also caused by an empty battery. In this case, the battery should be replaced immediately, with attention to correct polarisation. The piezo system's battery is located in a special compartment placed at the back of the body, next to the control cavity. No tools are needed to open the compartment. The guitar's output jack also functions as a power switch. To prolong battery life, remove the plug from the output jack when not using your instrument.

Given the fragility of the saddles' construction and the fact that they are linked to the electronics with thin wires, it is advisable to use special caution while replacing strings and intonation and action adjustments. Use of superfluous force may cause damage to the piezo system.

Depending on pickup and electronics' configuration, there are a few different ways of controlling both piezo and magnetic signals.

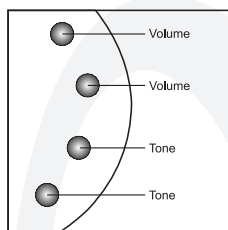
The piezo system is usually turned on by raising one of the knobs (push-pull) or with the help of an extra mini-switch.

To prolong battery life, remove the cable from the output jack when not using your instrument.

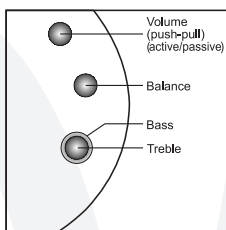


Electronics

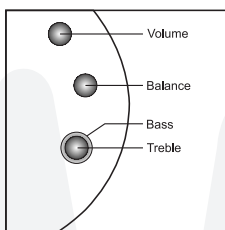
Apart from traditional bass guitar electronics system – passive pickups and tone knobs, Mayones bass guitars may be equipped with active pickups and/or a preamp with an active tone control. Depending on the solution used, active tone control enables the player to independently cut or boost low, mid and high frequencies of the sound. There are numerous options for the pickups and electronics' package. An extra piezo pickup may result in the instrument's tone to be shaped by a series of knobs and mini-switches. Some of the most common solutions for passive and active systems are presented below.



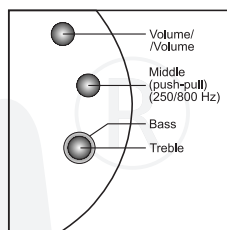
passive control



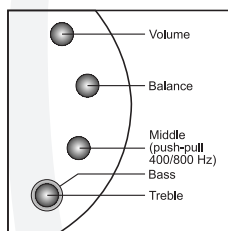
MEC BEC2



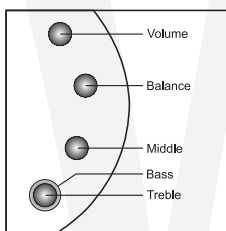
Aguilar OBP-1



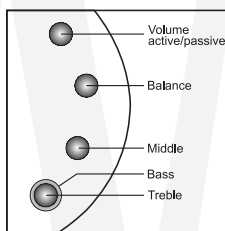
Bartolini HR-3.4



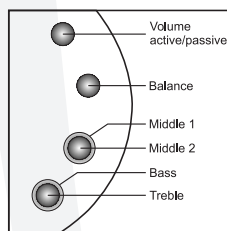
Bartolini HR-4.6



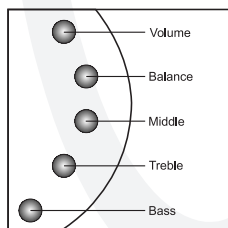
Aguilar OBP-3SK



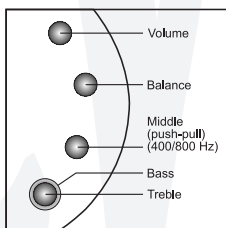
NOLL TCM 3



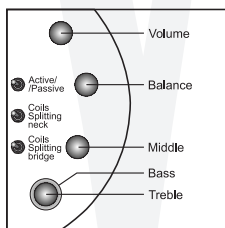
NOLL TCM 4XM



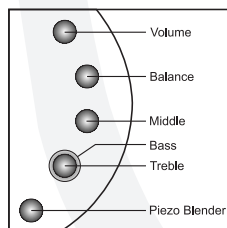
Aguilar OBP-3TK



Aguilar OBP-3SK/PP



Aguilar OBP-3SK + Coils Splitting



Aguilar OBP-3SK + Piezo

Volume - volume knob
 Balance - blend knob
 Tone - passive tone knob
 Bass - active EQ - bass knob
 Middle - active EQ - mid knob
 Treble - active EQ - treble knob
 Bridge - bridge pickup
 Neck - neck pickup

push-pull - a knob that can be raised and lowered thus activating a DPDT type switch. It can act as an active/passive switch, midrange bandwidth selector, coil splitter etc.

Active/Passive - an extra option enabling the player to turn the active preamp on or off.

Piezo Blender - piezo/magnetic signal blend knob.

Coil splitter - turns one of the pickup's coils off.

Cleaning

In order to preserve the aesthetic look and good technical shape, the instrument should be regularly cleaned and maintained. An instrument should be thoroughly cleaned after each playing session - especially the neck, strings and body. Attention should be given to wiping all sweat residue, which is the main cause of string and metal parts' corrosion. It also decreases the gloss of the finish. The best tool for wiping the sweat residue is a soft, dry cloth. As an option, some types of specifically formulated polish can be used, respectfully for finished, not finished and metal parts. These products should be handled with caution and their usefulness should be first checked on a small, less visible piece of surface. Products based on acids, alkalis, benzene, gasoline, alcohols, solvents and strong detergents, should not be used. We advise thorough cleaning and maintenance during each string change.



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Natural (wax and oil) finishes require different kinds of attention. Delicate cloths can be used for cleaning, but maintaining the the finish is achieved by using a specifically formulated polish based on natural oils. When using them, be sure to act according to the instructions on their containers.

Rosewood, ebony and other types of exotic wood occasionally require impregnating. The need for such an operation may be indicated by the wood looking more pale and mat. In order to facilitate impregnating, it is recommended to remove the strings and to wipe the fretboard with a soft brush. Next, after soaking a cloth with Lemon Oil (Fretboard Conditioner) rub it in the fretboard. This procedure should be repeated a few times with hour-long intervals. In the end, wipe the residue off with a dry cloth.

Other options

Due to the restricted volume of this User's Manual, an array of other options and technical solutions was not mentioned here. Among these are: Hipshot D-tuners, different bridge constructions, LED fret markers, or sophisticated electronics packages. If you encounter problems with your instrument, visit our technical support page at www.mayones.com, or contact us via email.



Mayones Guitars & Basses

since 1982



RoHS
Compliant

You will find more information on guitar operation and maintenance and solving basic problems on our website
www.mayones.com.

Mayones Guitars and Basses care constantly about the quality of their instruments and release their newer and upgraded versions, as well as search for the best possible building materials.

All parts of the instruments are RoHS compliant.

The company reserves the right to make changes without prior notice.

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