Instruction

This Instruction covers several types of BYGuitar DIY kits, can only be a guideline to get started with your electric guitar / bass kit. Pictures and descriptions can deviate from the kit you ordered but the basic instructions for all types are equivalent.

Your electric guitar or electric bass should be a unique instrument therefore you will have a lot of possibilities to influence design, painting and sound.

Please read these instructions carefully before beginning in order to have a complete overview of the project. There are five steps that you will follow to complete your DIY guitar kit.

1. **Check and Identify Parts**
2. **Finishing the Body**
3. **Finishing Headstock and Neck**
4. **Assembling the Guitar (see individual appendices)**
5. **Setup (see individual appendices)**

1.) CHECK AND IDENTIFY PARTS

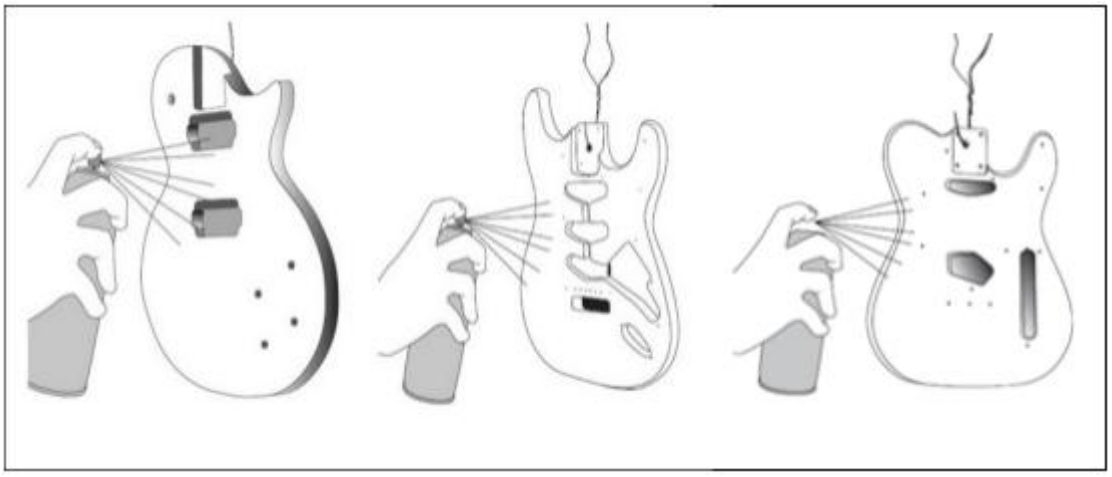
See appendix for download links to your specific DIY kit. You will find list of parts that are included with your kit and information for electronic assembly (schematics). Please check carefully contents of pack. If you loose or damage parts during assembly you may order replacements from your local music shop or directly from us. All parts are common guitar/bass parts.

2.) FINISHING THE BODY AND NECK

The overall tone and playing characteristics of the instrument will be affected by type of finish you choose, a high quality finish is a real source of pride to the builder. Both the neck and body of your electric guitar/bass kit have been sealed, sanded and are ready for final finishing. We recommend to check and resand the parts with # 400 / # 600 sand paper. If you want to go for a natural oil or wax finish please check body and neck for glue marks. If there is any glue mark sand properly, these marks will be seen very clearly with oil/wax finish.

2.1.) FINISHING THE BODY

First you will need to decide whether you would like a natural finish or a colored finish on the body.



2.2.）COLOR COAT

For the color coat your first step is a shop that specializes in automotive products. The acrylic lacquer made by the automotive industry is particularly well suited to your needs. In addition to provide a full range of color choices, acrylic lacquer is extremely durable and resistant to cracking.

Choose your color from the many available shades（including metallic options）used for automobile touch up work. A spray can will make your job much easier and will produce fine results. Hang the body as shown in above. Begin each spray stroke in the air on one side of the body and continue until you reach the air on the other side. Overlap each stroke by one half, and every other stroke spray crosswise, then length wise. This technique will provide an even color distribution.

Although lacquer dries quickly, and successive coats may be sprayed in a short period of time, attempts to spray too much in one coat can result in runs or bubbles in the finish. Spraying should not be attempted on excessively humid or rainy days. One or two coats of color should be enough, but you will achieve the best results if you spray several very thin layers. It should not be necessary to sand between coats unless there are drips, runs or bug feet to be leveled. All exposed surfaces should be dead level and have a nice satin gloss. Please note that several thin layers of color will end up at a much better result. After each layer let the color dry for minimum two hours. For final finish the color should at least dry one week.

2.3) CLEAR COAT

The clear lacquer topcoat is also available at most car parts store. If you have applied a color coat, it is advisable to select the same brand of clear lacquer to assure compatibility. The clear coat is applied to the body using the same technique as described for the color coat. Two or three coats of clear should be adequate. For best results the body finish should be allowed to harden for one week before the final rub

out and polish. Note: The Bindery on the guitar body must be taped off to prevent overspray from the finish. To avoid runs and drips, hold can 30cm from surface. From best results follow directions on spray can.

Please note the remarks for oil/wax finish above. To achieve good results it is mandatory to do a proper job in preparing and sanding the body and neck.

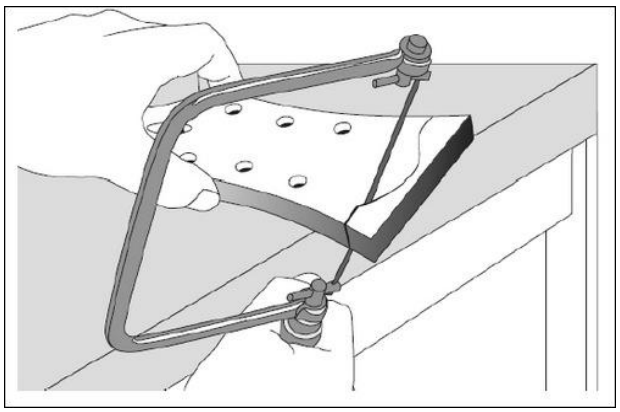
3.) FINISHING HEADSTOCK AND NECK

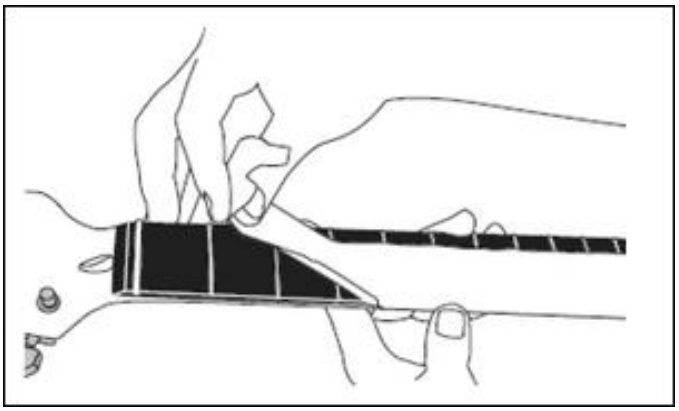
3.1.) HEADSTOCK

The headstock of the guitar/bass kit has been untreated, so here is a chance to express your individuality and make a guitar that is truly your own.

First, decide on the shape that you would like to use and draw the outline on the top of the headstock. Using a hand saw or simple coping saw, cut out the shape of your headstock. A half round file should be used to level the top edge of the headstock. Finally, the edge should be sanded smooth with fine #400/#600 sandpaper.

Note: Some headstock shapes are protected by trademark restrictions and we do not recommend that you use them.





3.2.) NECK

Before application of finish, the fingerboard should be masked off to prevent finish from adhering to the fretted surface (see Figure 3). A screw can be inserted temporarily in one of the four holes at the heel which will later be used for attaching the neck to the body. Secure a wire or cord to that screw so that the neck can be hung during spraying.

Spray all exposed surfaces evenly. The neck of your Guitar kit has been sealed so it should not be necessary to sand between coats unless runs, orange peel or drips

appear. Use the same procedure that you followed on the body . again, two or three coats should do the job. The face of the headstock is traditionally finished black. Final rub out and polishing takes place about one week later when the lacquer has cured.

3.3) FINAL SANDING AND POLISHING

After allowing the lacquered surfaces to dry and harden for at least on week, sand lightly with non-loading #600 (or higher) sandpaper. During sanding be sure to place firm material behind the sandpaper. A large rubber eraser or block of cork works fine. The eraser is flexible enough to sand the gradual curves but is stiff enough to prevent the sharper edges (of the headstock, for example) from being rounded off. Be sure to sand with the grain of the wood.

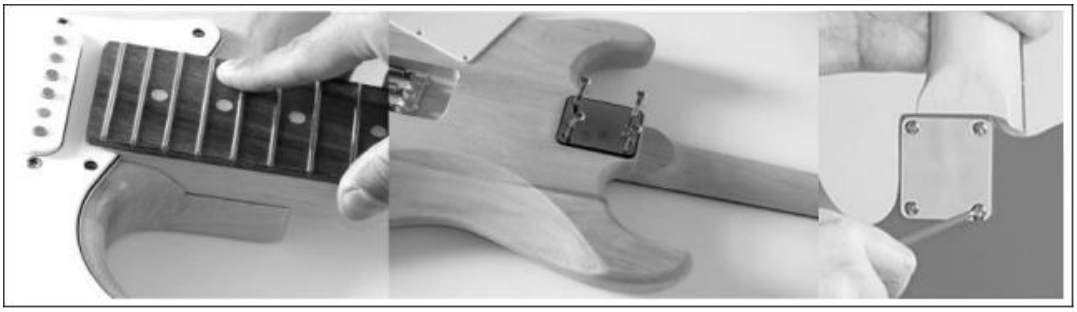
All sanded surfaces should now be a bit dull, indicating that the finish is flat and level. Now repeat the sanding process with very fine #1000 sandpaper (water resistant), using water and a small amount of dishwashing detergent as a lubricant. This will remove any sanding marks left by the previous step and leave all surfaces a dull gloss.

The finish may now be rubbed out using a medium grade automotive rubbing compound. The compound should be used sparingly with fairly good pressure at first. As a high gloss develops, pressure should be diminished. An extra fine grade of polishing compound (such as Mirror Glaze H-7) may be used to get that final bit of gloss.

4.) ASSEMBLING THE GUITAR

4.1.) NECK-BODY JOINT

Joint the neck to the body using the four large screws provided. The neck plate acts as a large washer and covers the locator holes on the back of the body.



4.2.) ELECTRIC ASSEMBLING

For some kits with pickguards like Strat, Tele or Jazz Bass , the electronics is completely pre-assembled, you only have to solder the pickups and output jack. Please refer to below link to download wiring diagram:
http://www.byguitars.com/support/Wiring/

For other kits (Single cut, SG, etc.) please follow instructions below

4.3.) PICKUP SWITCH

Push the threaded shaft through the 12.5 mm hole on the guitar top. Turn the body over and slip on the selector switch plate. Now slip the washer on the protruding shaft and loosely screw on the nut. Look at the switch mechanism inside the cavity. All of the attached wires should be facing the bottom of the guitar. Run the wires from the switch through the hole between the selector switch cavity and neck position pickup cavity. Then, run the same wires through the hole from the neck pickup cavity to the bridge pickup cavity and on to the control cavity.

4.4.) NECK POSITION PICKUP

The cavity for the neck position humbucking pickup is located on the upper part of the body closest to the neck pocket. As you look into the cavity you will notice that a hole has been drilled that connects the cavity for the neck position pickup to the cavity that will house the bridge position pickup. Notice also that the Neck Position Pickup has a thinner mounting ring than the Bridge Position Pickup. Run the Black wire attached to the neck position pickup into the hole from the neck cavity to the bridge pickup cavity. This is same hole that the wires coming from the selector switch have been run through. Use the four 16mm screws to attach the neck position pickup to the body.

4.5.) BRIDGE POSITION PICKUP

There is a hole connecting the bridge position cavity to the control cavity. The black wire from the neck position pickup should run through that hole into the control cavity. The red wire that is attached to the bridge position pickup is now pushed through that same hole emerging into the control cavity also. Attach the bridge position humbucking pickup to the body with four 16mm screws.

4.6.) VOLUME AND TONE CONTROLS

There are 2 sets of volume and tone controls for this guitar. Each set of 1 volume and 1 tone potentiometers are assigned to a separate pickup. As you play the guitar, the volume and tone pots sit next to each other. The volume is on the left side and the tone control is on the right side. The top 2 controls are for the neck pickup. The

second row of controls are for the bridge pickup. Install the volume and tone controls in the first row of 8mm holes, then install the volume and tone controls in the bottom row of 8mm holes.

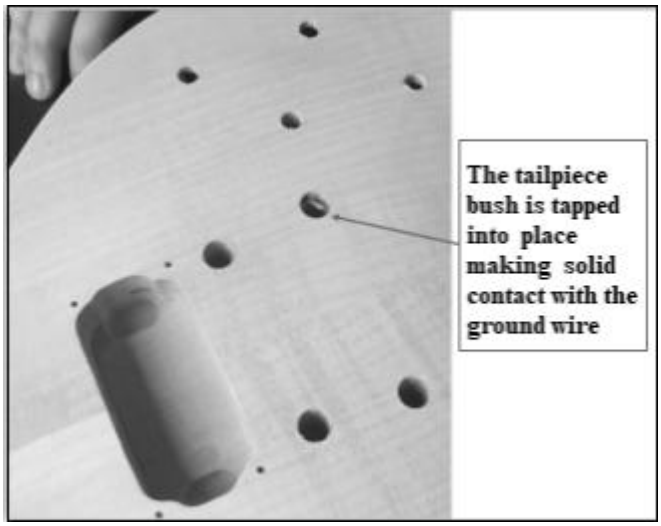
4.7.) CONNECTING CIRCUITS

The cavity for the controls on the back of the body should now resemble a spaghetti factory. The wiring is color coded to simplify connections. Take the wiring harness and slide a piece of shrink tubing on each wire and connect black to black, white to white, red to red, yellow to yellow etc. Carefully slide the shrink tube over the connection and heat the tubing with a match to insulate the connections.

4.8.) THE TAILPIECE

Take a look at the bridge and tailpiece hardware and distinguish the difference between the bridge studs and the tailpiece studs. The tailpiece studs have a much larger set screw.

Install the tailpiece first. Separate the tailpiece mounting parts from the threaded bushings. These bushings must be driven in place in the two holes closest to the rear of the guitar body. It will be necessary to ground the electronic circuitry to the tailpiece. The control cavity is at the back of the guitar body. On the inside wall of this cavity you will see a small 3.5mm hole. Run the stripped end of the blue ground wire (attached to the neck pickup volume control) through this hole until it emerges in the hole drilled for the tailpiece bushing. Form the naked wire into a loop, wrap it around the bushing and tap the bushing tightly into the hole. This will ground the circuit.



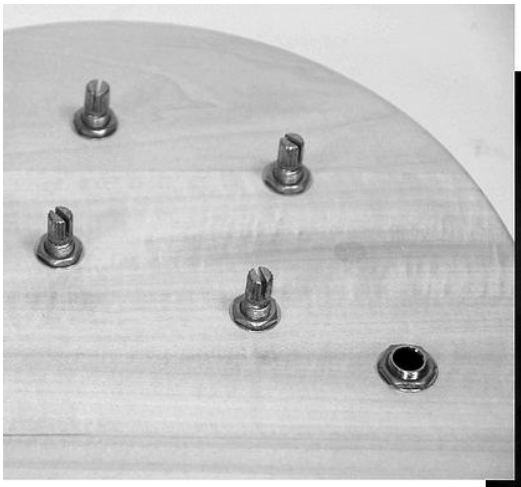
Installing the tailpiece bushing may be done with a plastic headed mallet or place a small piece of wood on top of the bushing to prevent damage and top the bushing in place with an ordinary hammer. Now screw the tailpiece mounting screws back into

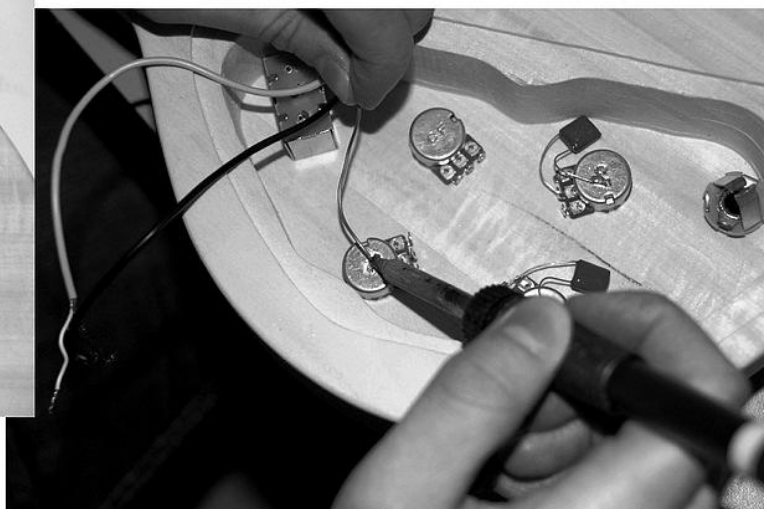
the bushings.

4.9) OUTPUT JACK

The output jack is attached to the neck pickup tone control pot by a grounding wire. Find the wire running from the pickup selector switch and attach it to the green wire on the output jack. Push the output jack and its wire through the 22mm hole that has been drilled between the control cavity and the edge of the body.

Attach the output jack plate to the output jack using the washer and nut provided. Screw the output jack plate to the body with the two 9.5mm screws provided.

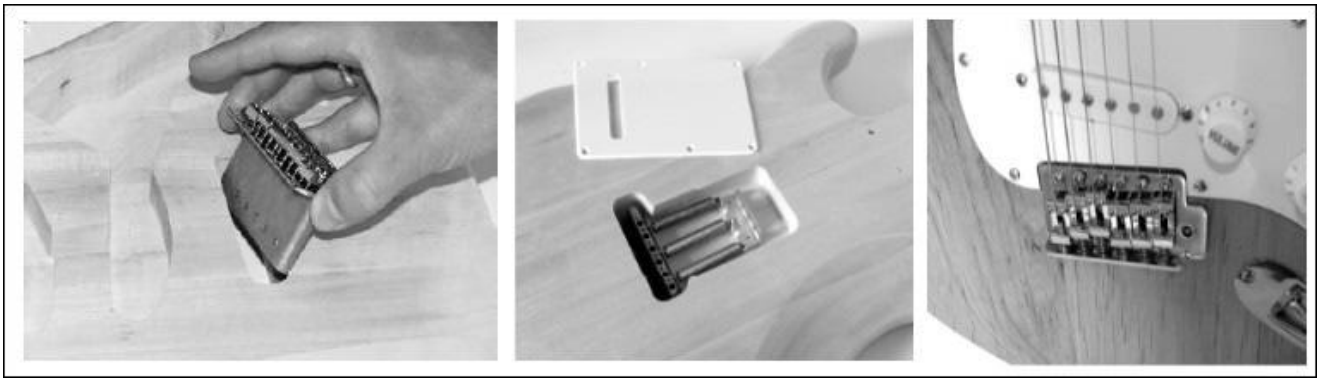




4.10) MOUNTING THE BRIDGE

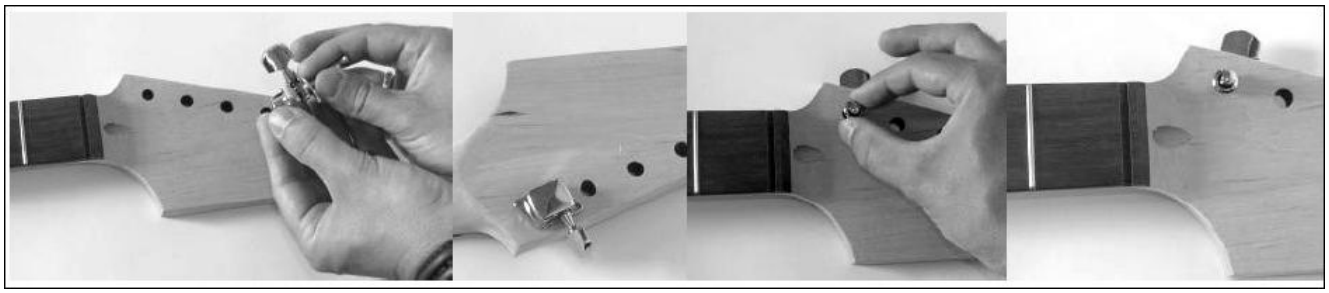
LP-style: tap the bridge bushing into place and screw in the bridge mounting studs. Attach the bridge.

Strat-style: mount tremolo bridge block with 6 screws, head of screws should be 2mm over base plate of tremolo. mount spring claw and engage springs in claw and tremolo block.



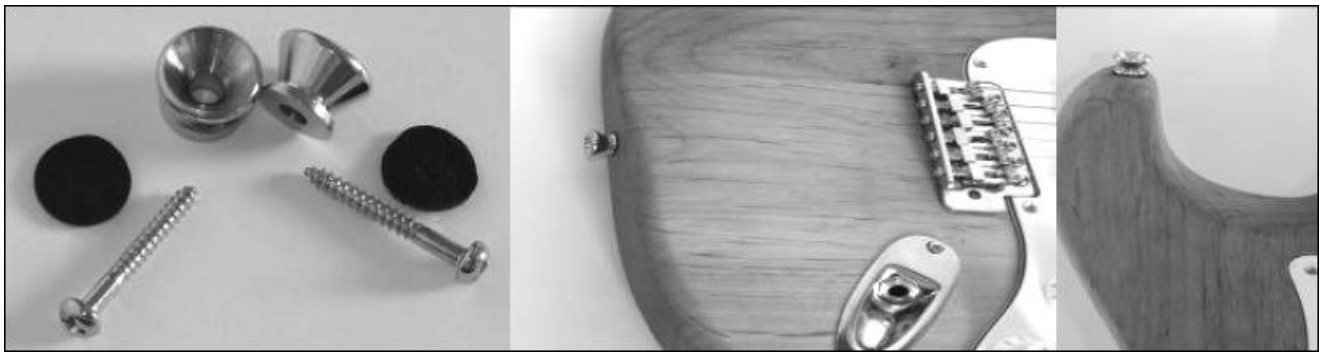
4.10.) TUNERS

Attach the six (four for bass kit) tuning machines to the headstock of the guitar putting a washer beneath each threaded bushing. A small set screw is put in place to prevent the tuner from rotating. Put on the strings and tune to pitch.



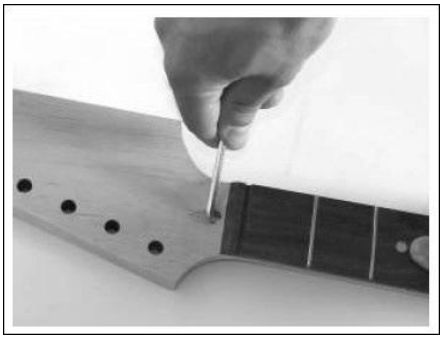
4.11.) STRAP KNOBS

Attach the strap knobs like shown below.



5.) SET UP

5.1.) TRUSS ROD ADJUSTMENT



The adjustable truss rod in the neck of your Guitar kit has been adjusted and should not require any change. If the neck should develop a dip or hollow spot over time it can be removed by

tightening the truss rod adjustment nut that protrudes from the base of the headstock just above the nut. A “back bow” or “hog-back” can be removed by loosening the nut. Great care should be taken with truss rod adjustments where as little as 1/4 of a turn can vastly alter the shape of a neck. A broken truss rod of course means a costly replacement.

5.2.) STRING HEIGHT

Refer to the height of the strings above the frets. If the action is too low, the strings will buzz on the frets. If it is too high the guitar will be difficult to play.

5.3.) ACTION AT THE NUT

Setting the string action that is right for you starts at the string nut. The slots at the string nut should already be close to perfection but you might want to make some adjustment.

Push the sixth (fourth for bass) string down between second and third fret. The space between the top of the first fret and the bottom of the string should be about in list below. If the gap is wider you should deepen the slot with a small needle file until it is correct. DO NOT FILE TOO DEEP! If the slot is too deep you can fill the slots with a mixture of white plastic sanding dust and crazy glue and then reshape the slot.

Repeat this same procedure for the other five (three) strings. The action at the nut is either right or wrong; it is not a matter of personal preference.

Now adjust the height of the strings over the 12th fret. Adjustments to the string action are made by raising or lowering the bridge with the thumbwheel height adjusters (LP) or by adjusting the single brackets (Tele, Strat-style, JB-Bass). Following is a chart to assist you. This action adjustment is a matter of personal preference. There should be a gradual increase in height from the first to the sixth (forth) string.

Recommended
String settings

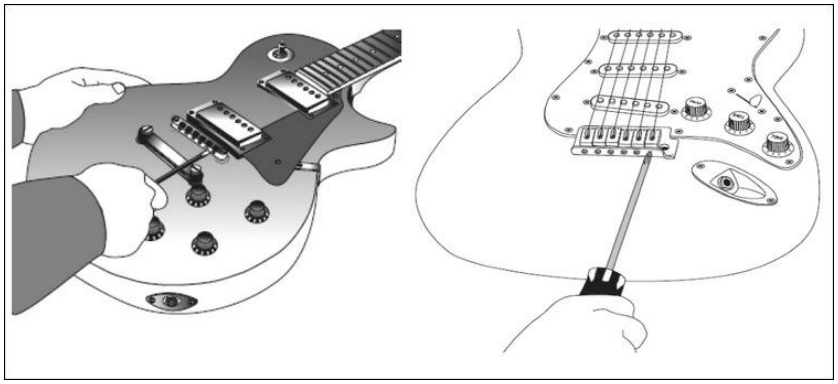
E-guitar E-Gitarre	E-6 string	E-1 string
12th fret 12. Bund	1.5 - 2.0 mm	1.0 - 1.5 mm

Bass guitar E-Bass	E string	G string
12th fret 12. Bund	2.5 - 3.0 mm	3.0 - 3.5 mm

Action can also be adjusted by changing the angle of the neck. This can be done by inserting small shims between the neck and the body to increase or decrease the neck angle.

5.4.) INTONATION

The saddles on the bridge can be adjusted to compensate for the pitch modification that occurs when the string is stretched as it is fretted. This adjustment is made by tightening or loosening the set screws at the rear of the bridge.



Start by tuning your guitar and sounding a harmonic chime directly above the twelfth fret on the sixth string. Now fret the sixth string at the twelfth fret and compare that pitch to the harmonic. If the fretted note is higher than the harmonic pitch tighten the set screw to lengthen the string . If the fretted note is lower than the harmonic, loosen the set screw to shorten the string length. When the harmonic and the fretted note sound the same note, the saddle is at the correct position. Repeat this procedure for the other five strings. To set up intonation properly you can use an electronic tuner.

5.5.) PICKUP HEIGHT

Each pickup is adjustable in height with 2 screws. Finding the best combination of tone and volume will require some experimentation. A good place to start is to adjust the pickup height so that the first string is about 3mm over the pickup pole and the sixth string is about 5mm over its pole.

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