Solo FB Style DIY Electric Bass Guitar Kit

Assembly Manual
FBBK-1

V 1.02

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Thank you for purchasing a Solo DIY guitar kit. This unfinished guitar kit has everything for building an electric bass guitar – you will need only some basic tools and finishing supplies. All challenging wood cutting, drilling and shaping is already professionally done, as well as fret leveling and dressing.

1. CHECKLIST

Before you start working on your DIY guitar project, please check all the parts received in this kit

2. TOOLS AND MATERIALS NEEDED

You will need the following tools and materials:

1. Sand Paper (180, 240 and 320 grit)
2. Sanding Block
3. Soldering Iron & Solder
4. Masking Tape
5. Finishing Supplies
6. Screwdrivers
7. Power Drill

3. SAFETY MEASURES

Some woodworking skills are required to complete this project. Always be aware of the necessary safety precautions and follow them – be sure to use safety glasses and a dust mask when you are working with any tools. If you are a novice, you should look for help and guidance of a more experienced friend. And never forget that it's always better safe than sorry.

4. FINISHING THE BODY AND NECK

Before you start finishing the neck, please inspect the frets and the fingerboard. Even though all wood is kiln-dried it may still shrink a little so you may get sharp fret edges.
In this case you need to use a fine needle file (Emory boards for finger nails can be used instead) to remove all sharp edges: first make all fret edges flat with the fretboard edges on both sides, than use masking tape on the top of the fretboard to protect it, and work on each fret's edge to smooth it by slightly rounding it. Before removing the masking tape, consider polishing the frets with fine steel wool.

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STEP 1 – The body and neck have been coated with a poly resin sealant. They need to be sanded before finishing. DO NOT SAND THE FINGERBOARD.
For sanding both neck and body, use a flat sanding block for all flat surfaces and by hand for edges and rounded/curved surfaces. Start with 180 grit sandpaper, continue with 240 and finish with 320, always moving along the grain only. Before the final sanding, wipe the wood with a damp cloth and let it dry to raise the wood grain.

STEP 2 – There are many different ways to apply finish to your guitar. Do a little research to decide which type of finish you want to use. One good starting point is to review tutorials at the Project Guitar website: http://www.projectguitar.com/tut/tutorial5.htm

STEP 3 - For any type of spraying finish (lacquer or paint) you will need to mask three areas with masking tape: neck pocket on the body, neck's fingerboard and truss rod nut. Press the tape tightly to the wood, not allowing any gaps at the edges, to completely prevent the finish leaking to these areas.

STEP 4 - You will also need to make hangers for both the body and neck (if you want to apply any spraying finish). Make them from a strong metal wire (wire dress/coat hanger can be used for it).

STEP 5 – Apply the finish by following the manufacturer instructions. Remember that spraying the finish is not an easy process as it requires certain skill and experience – you might want to practice first on some scrap wood. Always remember your safety – work only in a well ventilated area, away from any open fire and wear a respirator mask and safety glasses.

STEP 6 – Final polishing for high gloss finishes can be done manually or using a power drill with a foam polishing pad. The finishing tools and materials are readily available in many automotive/hardware supplies stores.

TIP: Consider an oil rubbed finish (sometimes called "wipe-on oil finish") as a good and safe alternative. Tru-Oil® (known as a "Gun Stock Finish", based on Linseed Oil) or Waterlox® (Processed Tung Oil) is highly recommended. Oil finishing takes longer, but it is very safe and easy to apply and a high quality finish can be achieved, even by a novice.

5. ASSEMBLY

STEP 1 – Installing the Neck. Using the 4 screws supplied, the neck-plate and neck-plate cushion, install the neck to the guitar. Insert a screw through the neck-plate and cushion, guide it through the appropriate hole in the body and into the corresponding hole on the neck. Start to thread the screw into the neck enough that it holds. Repeat until you have all 4 screws threaded into the neck. Now you can proceed to drive these screws in until they are almost tight. Double check that the neck aligns with the bridge screw holes, and once satisfied, tighten all 4 screws to the neck.

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STEP 2 - Installing the Tuners. Organize all the parts for the tuners, in the order in which they will be installed. You will have 4 in a row, and the small flange with the screw-hole should face the middle of the headstock, and point toward the body of the guitar. There will be 4 tuners, 4 washers, 4 hex barrel nuts and 4 small screws. Once arranged, take the tuner and install through the headstock from the back, placing the washer over the post, and threading the hex barrel nut so that it is finger tight. Install all 4 tuners in the same fashion. Now flip the guitar over and align all the tuners so they are properly aligned. If the screws are pre-drilled, you can align each tuner to its respective hole, but if not...align all the tuners to your satisfaction and make a mark on the back of the headstock with a pencil or awl. Drill pilot holes for all the screws, install the screws and then tighten the hex barrel nuts with a wrench or socket.

STEP 3 – Installing the Bridge. The FBBK-1 comes with a vintage style plate bridge which is fastened to the bass with 5 screws. Before installing the bridge itself, take the supplied red ground wire and strip about 3/8" - 1/2" of the insulation. Insert the opposite end of the wire through the hole in the surface of the bass adjacent to the pick-up cavity, and feed the wire through until only the bare copper is left on top. Continue to route this wire through the pick-up cavity and into the control cavity. The FBBK has a black bridge, so you will want to scrape the paint off the bottom of the bridge plate, so that the copper wire will be touching bare metal. Align the bridge and fasten using the 5 supplied screws.

STEP 4 – Wiring. The FBBK Bass, has two humbucking style pickups, and three potentiometers (Vol, Vol, Tone). Begin by feeding the pick-up wire for the neck pickup through the appropriate hole and into the control cavity. Both of the pickups are the very same in output, so you do not have to worry which is which. Place the supplied foam under the pickup and install the two hold-down screws. Proceed with the second pickup in the same manner, taking note in the control cavity which wire is connected to which pickup. Install the 3 potentiometers through the surface of the body making sure to not over tighten the nuts (over-tightening will damage the surface of the bass, and your finish!) Proceed to solder all the connections as per the diagram, making sure to connect the ground-wire from the bridge, and leaving the input jack wire inserted through the hole in the pickup cavity, to the outside of the guitar. Solder the two leads to the jack and again, mark the locations for the 2 screws to hold the input jack. Install the 2 screws and check all your connections. Remember, if you are not experienced in soldering, ask a friend or expert to assist you! Once you are satisfied that your electronics work properly, install the control cavity cover with the 4 screws supplied.

STEP 5 – Extras. Take a moment to ensure there are pilot holes for the truss rod cover and the strap pins. If not, locate and mark these screw locations and pre-drill as necessary. The strap pins can be installed now, but wait until you have completed your guitar set-up before installing the truss rod cover. Because the pick-guard is strictly cosmetic on this bass, you can align it using the supplied pilot holes and install the screws at any time during this assembly.

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STEP 6 – Installing the Strings. You are now ready to install your strings. Just before you start, it is a good idea to treat the fret-board with a light oil. This keeps the fret-board from shrinking and cracking, plus reduces discoloration and dirt from entering the pores in the wood. You can purchase fret-board oil, or you can use any light non-food oils, like tung oil or walnut oil or lemon oil.

The strings are numbered from the thinnest to the thickest from 1-4. (This means the top string when you are playing the guitar is the thickest and is number 4) In standard tuning the open notes are 1-G, 2-D, 3-A, 4-E. Starting with the E string, insert the bare end of the string through the appropriate hole in the back of the bridge, over the saddle and nut, and insert the wire through the hole in the shaft of the tuner. Winding the string onto the tuning post can be accomplished in various ways....you may already have your own preferred method, or you may defer to a friend or expert to show you the correct method. Having the proper number of winds on the tuning post helps to keep your strings from slipping and/or stretching, and therefore keeps your strings in tune. Remember though, that the diameter of bass strings can be much larger than those on guitar strings, so you may have less winds on the shaft of the tuner due to space restrictions. Repeat this process for all four strings. You will adjust the height of the bridge in the 'Set Up' section, and adjust the position of the saddles as well.

Once all the strings are installed and brought up to pitch using a tuner, you are ready to move on to 'Setting Up the Guitar'.

6. TUNING AND SETUP

Tuning a 4-string bass guitar:

The open strings of a regular bass guitar, from the thickest to thinnest, in standard tuning are:

- E (1st octave) – the thickest (or lowest sounding) string - is the 4th string
- A (1st octave) – is the 3rd
- D (2nd octave) – is the 2nd
- G (2nd octave) – the thinnest (or highest sounding) is the 1st string.

There are different methods to tune a guitar. Using a digital tuner is the easiest way. However, it is good to learn tuning (and checking the accuracy of tuning) by ear with natural harmonics, unisons, octaves etc.

Guitar playability and intonation depends on its setup, so you may want to spend some time mastering the necessary skills – be persistent in finding the optimal action (string height), neck relief and intonation throughout the entire neck.

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Adjusting Strings Height:

String height is adjusted by the bridge saddle screws (use included Allen key). Since the fretboard has a radius, the heights of all strings should also match it. Thicker strings need more room for vibration without "buzzing" (touching frets) and must be set up higher than thinner strings. Low action allows easier fretting and faster playing. Recommended measurements for electric bass guitar with low action:

For the 1st String (the thinnest) – height at the 1st fret: 0.020" – 0.024" (0.5 – 0.6mm);
at the 12th fret: .094" – .1" (2.4 – 2.6mm).
For the4th String (the thickest) – height at the 1st fret: 0.022" – 0.025" (0.55 – 0.64mm);
at the 12th fret: .094" – .0110" (2.6 – 2.8mm).

The height at the first fret can be adjusted by cutting deeper slots for strings at the nut. However, it needs a very precise job not to spoil the nut. If you are not sure that you can do it properly, stay with a factory pre-cut nut.

A higher string action makes the guitar harder to play, yet some musicians may prefer it.

Adjusting Neck Relief:

The truss rod compensates for string tension and allows adjusting the neck relief. You may need such adjustment due to changes of humidity and temperature (or if you switch strings to a different gauge). Lay a straight edge on the frets of a properly tuned guitar and measure the clearance at the 8th fret (alternatively you can put a capo on the first fret and press down 6th string at 16th fret – then the height of the string at the 8th fret will show you the clearance). Optimal relief for an electric guitar neck must be very small – around .014"- 024" (0.35 - 0.6mm). Turning the truss rod nut (with the included Allen key) clockwise will reduce neck relief and turning it counterclockwise will increase the relief. Be very careful with truss rod adjustments and never turn the nut more than ¼ of a turn at a time.

Adjusting Intonation:

The "speaking length" (or "working length") of each string can be adjusted by turning the saddle position adjustment screw. The best intonation can be achieved when the string fretted at the 12 fret sounds precisely an octave higher than the open string. If the fretted string sounds sharper you need to increase the working length of the string by moving the saddle away from the neck. If it sounds flat, you need to shorten the working length of the string by moving the saddle towards the neck. The alternative way to intonate your guitar is to compare a natural octave harmonic of
the open string (you can get it by touching the string exactly above the 12th and picking it) to the pitch of the string fretted at the 12th fret and adjusting the saddle position so that they sound the
same. This method is less accurate because the fretted string sounds a bit sharper due to the height of the string, and the higher the action, the sharper it gets.

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Adjusting Pickup Height:

Before adjusting the pickup height, make sure that both the volume and tone controls on your bass are set to the full ("10") position. Get your amp set to a medium/low volume and all tone controls to the middle. You will get a better picture of the pickup's tone change during its height adjustment with a clear sound.

There is no universal "optimal" pickup height position in a setup – it depends on playing style and personal preferences of a bass player. Remember: bringing a pickup closer to the strings makes it sound brighter, but bringing it too close will make the magnetic field of the pickup interfere with the vibration of a string which will, not only result in reduced sustain, but may also cause complex harmonics sound rather unpleasant. Moving a pickup too far from the strings will result in loss of its output signal and some higher frequencies. It's not necessary to maintain an even height of the pickup – you may find it more satisfactory sounding by setting it somewhat angled, depending on what you are looking for in the output sound.

There are a few mm of real usable range where you can find the pickup tone that you'll like the best.

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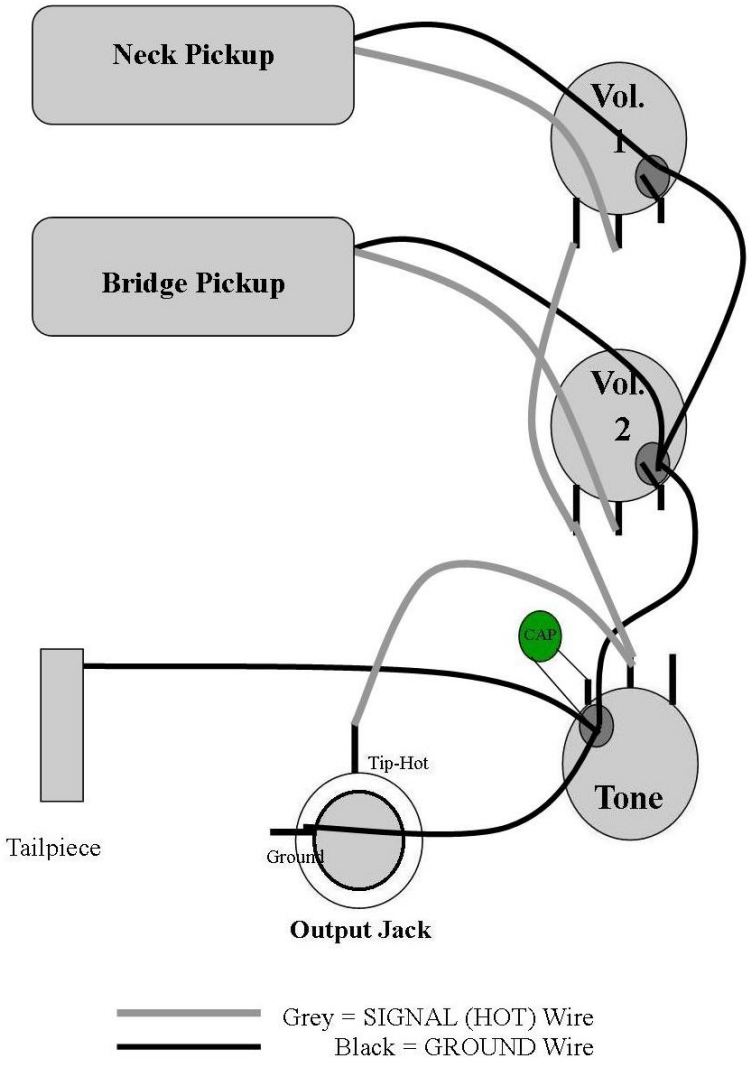
FBBK-1 Wiring Diagram



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