

# Carvin Bolt-On Neck Guitar Kit Instructions

The components in this kit are the same as those used in Carvin's high quality custom shop guitars. All holes are drilled, making it a simple step by step process to assemble your Bolt guitar. Before you start assembling your guitar, check the component check list to make sure that you got everything. It's also a good idea to read the complete instructions before getting started. Have fun!

## KIT COMPONENT CHECK LIST:

BN bolt-on neck  
C6C (or) Sperzel tuning keys  
AB6 fixed bridge body (or) AB6T tremolo routed body  
FT6 fixed bridge (or) CWC tremolo  
AG1W assembled pickguard  
JP6C jackplate  
NP6C neckplate  
E2C strap buttons  
Copper foil shielding tape  
Carvin strings: 1 set 942  
TR1 truss rod adjusting wrench

## TOOLS REQUIRED FOR ASSEMBLY

Screwdriver with a good quality #1 phillips tip  
Screwdriver with a good quality #2 phillips tip  
Small adjustable wrench for tightening tuning keys  
Hammer for pounding in tremolo studs or string eyelet's for FT6 fixed bridge  
Wire cutters for cutting strings

## TUNG OIL (or) GLOSS FINISH

A tung oil finish is by far the easiest method for a novice to achieve his own high quality finish with a minimum of equipment and experience. If you decide to go with a gloss finish, we recommend that you use lacquer as opposed to polyurethane, because lacquer is easier to spray, has faster drying time and reduces dust problems. Lacquer also sands easier between coats and polishes easier. There are several good books, including the "Guitar Player Repair Guide" available in the Carvin catalog with instructions on how to do your own gloss finish.

## MATERIALS FOR YOUR TUNG OIL FINISH

At Carvin we have used and experimented with most brands of tung oil finishes and have found Minwax brand to be the best in every respect. One pint is enough to do a couple of guitars and is available at Home Depot or most home improvement type hardware stores for under \$10. You will also need about 6 sheets of extra fine sand paper (between 220 and 320 grit), a 1" paint brush, about 4 pads of extra fine steel wool (0000), a few small rags and a small bottle of furniture oil (Old English red oil or lemon oil).

## SANDING

Before you start applying the tung oil, you should first thoroughly sand the rounded edges smooth on the top and bottom of the body, so that there are no imperfections. You can do the same for the neck. Before applying the tung oil, blow the fine sanding dust off of the body and neck or use a tack rag to remove the dust.

## APPLYING THE TUNG OIL

Pour a small portion of the tung oil into a small clean container. Immediately replace the cap on the can of tung oil so that the tung oil does not go bad. Take a 1" wide paint brush and apply the tung oil into all of the interior routed holes on the body, including the neck pocket. Now brush the tung oil onto the entire remaining surface of the body and neck. It is not necessary to coat the ebony fingerboard,

although it won't hurt it. If you apply the tung oil onto the fingerboard, wipe off as much of the excess as possible within 5 minutes before it starts to dry. Wipe off the excess on the complete neck or body within 10 minutes. Now let the neck or body dry for at least 5 hours before recoating with more tung oil. You can hang the neck up to dry with a piece of wire through one of the tuning key holes. To hang the body to dry, run a piece of wire or string through one of the neck bolt holes. After the neck or body dries inspect it for sanding imperfections before applying another coat. Sand any imperfections out now with 320 grit sand paper. When applying your 2nd, 3rd, and final 4th coat, it is not necessary to apply tung oil into the neck cavity or control cavity. If you wish, you can also apply these coats with a small rag instead of a brush. Apply these coats on fairly heavy, so that they penetrate into the wood pores, but always wipe off the excess within 10 minutes. It is best not to rush the tung oil process. At Carvin, we apply 2 coats of tung oil the first day and 2 coats the next day about 6 hours apart. On the 3rd day you can steel wool your finish to perfection. Rub hard using 0000 grade steel wool on the top and bottom of the body, but don't rub too hard on the sharp edges and corners, because you will rub through the tung oil finish. If you do rub through, you can easily recoat this area and lightly rub it with steel wool after the tung oil dries. After you have inspected your complete neck and body for imperfections, you can wipe on a thin film of (Old English) furniture oil and wipe off the excess. The furniture oil will bring out a nice sheen in the wood and give your guitar a smooth sexy feel.

## NOW LETS BOLT THIS THING TOGETHER

For proper guitar assembly, follow the steps in the order that they are listed below.

## CARVIN TUNING KEYS

The large tuning key holes going through the headstock are 13/32" and the little holes on the rear on the headstock are drilled 1/16". To install the Carvin tuners, place one tuner into one of the 13/32" holes on the rear of the headstock and finger tighten a washer and nut on the top of the tuning key. Finish installing the 5 remaining tuners. Now line up the small holes in the tuners with the 1/16" drilled holes on the rear of the headstock. Screw in the small #2 x 3/8" long wood screws into the 1/16" holes using a #1 phillips head screw driver. Finish by tightening the nuts with a 10mm socket or small adjustable wrench.

## SPERZEL LOCKING TUNING KEYS

As with the Carvin tuners the large holes going through the headstock are 13/32", but the little holes on the rear of the headstock are drilled 7/64" for the Sperzel alignment pins. Assemble the tuners onto the neck. Slip the alignment pin on the tuning key housing into the drilled 7/64" hole on the back of the headstock. Install the washer and nut on top of the headstock and tighten the nuts with a 7/16" socket or small adjustable Crescent type wrench. Do the same for the rest of the Sperzel tuners.

## STRAP BUTTONS

Use a #2 phillips head screwdriver to install the 2 strap buttons to the body. Make sure that you start the screws straight into the 7/64" drilled

holes. Do not over tighten the screws. Just snug them up to the body.

## **COPPER FOIL SHIELDING**

Line the control portion of the pickguard cavity with the self adhesive copper foil. Be careful that you do not cut your fingers with the edges of the copper foil. Stick the large contoured piece of copper foil on the bottom of the control area first. Then adhere the 1 1/2" wide x 11" long foil onto the sides of the control area. Fold a portion of the side wall foil onto the top of the body. This will make contact with the aluminum foil underneath the pickguard. Make sure that you press the foil tightly onto the wood. At Carvin we use the end of a piece of 3/8" wooden dowel to press the copper down. If the foil peels away from the wood and contacts the components, it may cause a short in your guitar.

## **TREMOLO STUD & SPRING CLAW INSTALLATION (for GK1T tremolo guitars)**

To install the tremolo studs, leave the threaded stainless steel studs screwed into the brass inserts while you pound them into the two predrilled holes on top of the body. Tape the head of the hammer to protect the top of the stainless steel studs and gently pound them in until the top of the brass insert is slightly below the surface of the body. Adjust the stainless steel posts so that they are sticking out of the body 3/8" high. Now you can install the spring claw. Turn the body upside down. The claw hooks must face up toward you. Feed the black colored ground wire that's attached to the spring claw through the drilled hole that goes from the rear tremolo spring cavity into the control cavity. Feed it through the copper shielding foil that lines the control cavity after you have pierced the copper foil with a sharp object. Using the #2 phillips head screw driver, screw the two #8 x 1 5/8" phillips head screws into the two angle drilled holes in the upper portion of the rear tremolo cavity. Screw the screws into the wood, leaving 3/4" of the screws sticking out of the body.

## **NECK & NECK PLATE INSTALLATION**

Install the neck onto the body. Gently slide the neck into the neck pocket of the body. Do not force the neck into the neck pocket or you can actually break the wood on the treble side of the neck pocket. If you painted your body, you may have excess paint build up in your neck pocket. If so take a file or medium grit piece of sand paper and wrap it around a small flat piece of wood. Now carefully remove some of the paint or wood from the inside edges of the neck pocket. Check the fit of the neck frequently so that you don't remove too much material. When the neck fits perfectly into the neck pocket, carefully turn the guitar and neck upside down on a table with a soft towel on it. Take the NP6 neck plate and set it on the body. Carvin waxes the threads of the Four #8 x 1 3/4" wood screws so that they are easier to screw into the hard maple neck. Its important to use a #2 phillips head screw driver with a good tip to prevent rounding out the phillips head screws. Press down hard on the screwdriver while you are securely screwing the screws down. Turn the guitar over and check the fit of the neck. If the neck is not snug against the bass side of the pocket, you can slightly loosen the four neck screws and pull the neck over to one side or the other to get the proper alignment. Now tighten the four neck screws while you are pulling the neck to one side or the other.

## **FT6 FIXED BRIDGE (for GK1 fixed bridge guitars)**

First turn the guitar upside down onto the soft towel to install the 6 press in string eyelet's into the rear of the guitar. Pound one eyelet in at a time with a heavy plastic headed hammer or use a metal

hammer, but first put a piece of masking tape on the head of the hammer to prevent scratching or damaging the eyelets. Just pound the eyelets in so that the collar of the eyelet is flush with the surface. Now you can turn the guitar over to install the bridge. Before installing the bridge, run the extra 8" long piece of black colored ground wire through the angled hole leading to the control cavity. Before feeding the ground wire, first take a sharp object and pierce the copper shielding foil that lines the control cavity. The bare end of the ground wire should lay on top of the guitar body. Now lay the bridge carefully onto the end of the bare wire and screw the bridge firmly onto the body with a #2 tip phillips head screw driver. Use the five #5 x 5/8" long wood screws.

## **JACK PLATE**

Feed the jack wires through the 1/4" hole running from the jack cavity to the main control cavity. Before feeding the two jack wires to the main control cavity, take a sharp object and pierce the copper shielding foil lining the control cavity, so that you can feed the wires through. Screw in the two #4 x 1/2" wood screws until the plate is snug to the body. Use the #1 tip phillips head screwdriver for this.

## **PICKGUARD WIRING & INSTALLATION**

See Diagram 1. AG1 assembly for 3 single coil.

See Diagram 2. AG2 assembly for two single coils & 1 humbucker.

## **TREMOLO (for GK1T tremolo guitars)**

Set the tremolo into the tremolo cavity and place the tremolo knife edges into the notched area toward the top of the 2 threaded stainless steel pivot posts. Now turn the guitar upside down while you are holding the tremolo in place. Install the 3 tremolo springs one at a time by hooking the loop end of the spring onto the center claw. Stretch the spring with your fingers and insert the other end of the spring into the center hole in the tremolo block. Now insert the 2 remaining springs onto the outside spring claws and into the outside tremolo block holes. Some players using lighter gauge strings prefer to use only two tremolo springs instead of three. In this case remove the middle spring.

## **STRING IT UP**

Feed your low E string through the rear of the guitar until the ball end of the string comes to a stop. Feed the string through the tuning key hole and use a wire cutter to cut off the excess. Cut the string about 2" longer than the string post for standard Carvin tuners and 1" longer for Sperzel locking tuners. See your maintenance instruction sheet for other tips on stringing your guitar up and making final neck and fixed bridge adjustments. See the Wilkenson tremolo instructions for more information on stringing up and adjusting your tremolo equipped guitar. After you have made the proper adjustments, you can install the rear tremolo cover plate.

## **CHECKING THE ELECTRONICS**

Plug your newly assembled guitar into an amp and make sure that everything is working properly. Now you can adjust the height of your pickups with a phillips head screw driver. Depending on how loud you want your pickups to sound you should adjust your pickups so that the top of the coils are between 1/8" AND 3/16" away from the strings. At Carvin we generally adjust the neck pickup 3/16" away from the strings, the middle pickup a little closer at 5/32" away and the bridge pickup closer yet at 1/8" for single coil pickups or 5/32" away for humbucking pickups. See you in Riffsville!

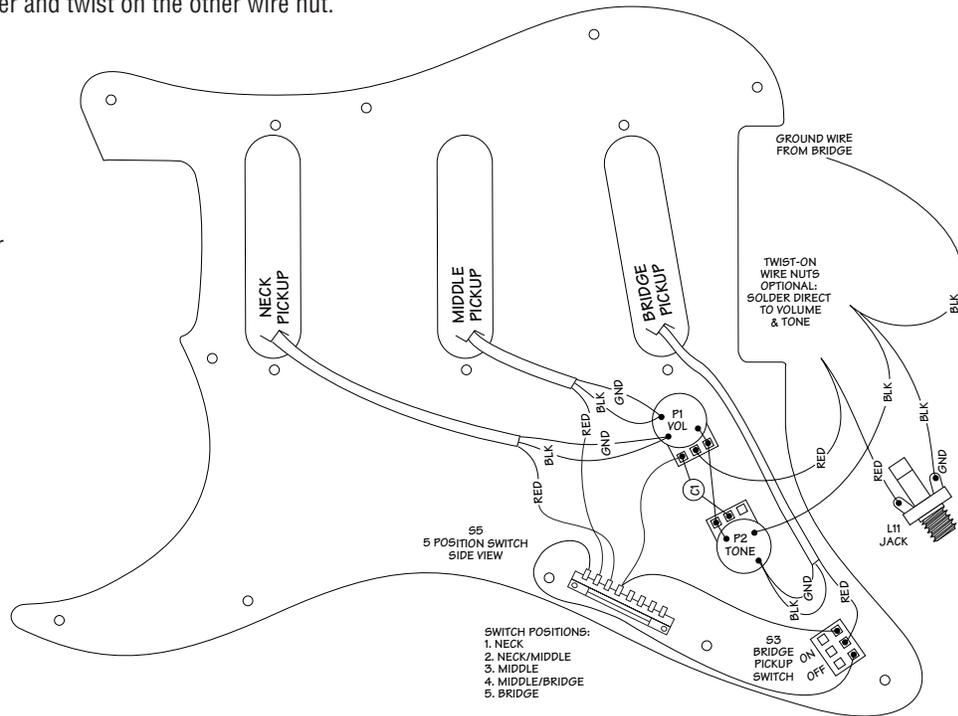
## PICKGUARD

Before you screw down the pickguard you must attach the black colored ground wire from the spring claw on the tremolo model (or) the black colored ground wire from under the FT6 fixed bridge. Use one of the 2 supplied wire nuts to attach the black colored ground wire coming from the jack cavity along with the black colored ground wire coming from the fixed bridge or tremolo to the 5' long black colored ground wire that is soldered to the back of the tone pot. Hold the ends of these three wires together and twist on the wire nut. Now take the red hot wire from the jack and connect it with the 5' long red wire coming from the center terminal of the volume pot. Hold the ends of these two wires together and twist on the other wire nut.

The wiring is now done, however, if you prefer you, can eliminate the wire nuts and solder directly to the potentiometers on the pickguard. Now slide the upper portion of the pickguard underneath the finger-board. Make sure that the wires underneath the pickguard fit inside the routed pockets of the body so that the pickguard fits flush and flat on the top of the body. After making sure none of the wires are sandwiched between the pickguard and the top of the body, use the #1 tip phillips head screw driver to screw down the pickguard with the eleven #4 x 1/2" wood screws.

### Diagram 1.

AG1 assembly  
3 single coil pickups  
with bridge On/Off switch  
which allows you to get the  
neck & bridge pickups together  
or all 3 pickups at once when  
its turned on.



### Diagram 2.

AG2 assembly  
2 single coil pickups  
1 humbucker  
Dual/Single coil switch

