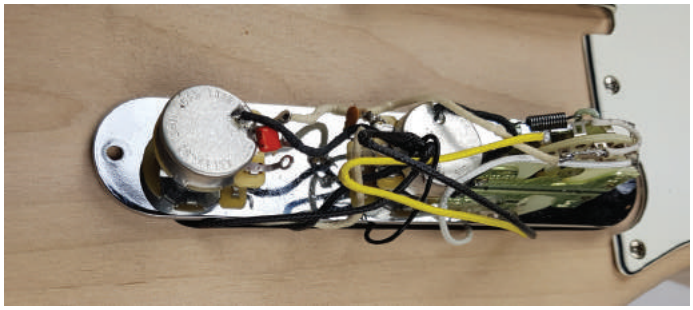
Wilkinson® by HMI®

Assembly Instructions
MTE 22 MM / MR models
Welcome to the wonderful world of guitar building!



This Kit Features Genuine Wilkinson Hardware, Tuners and Pickups. CTS pots and CRL switches.

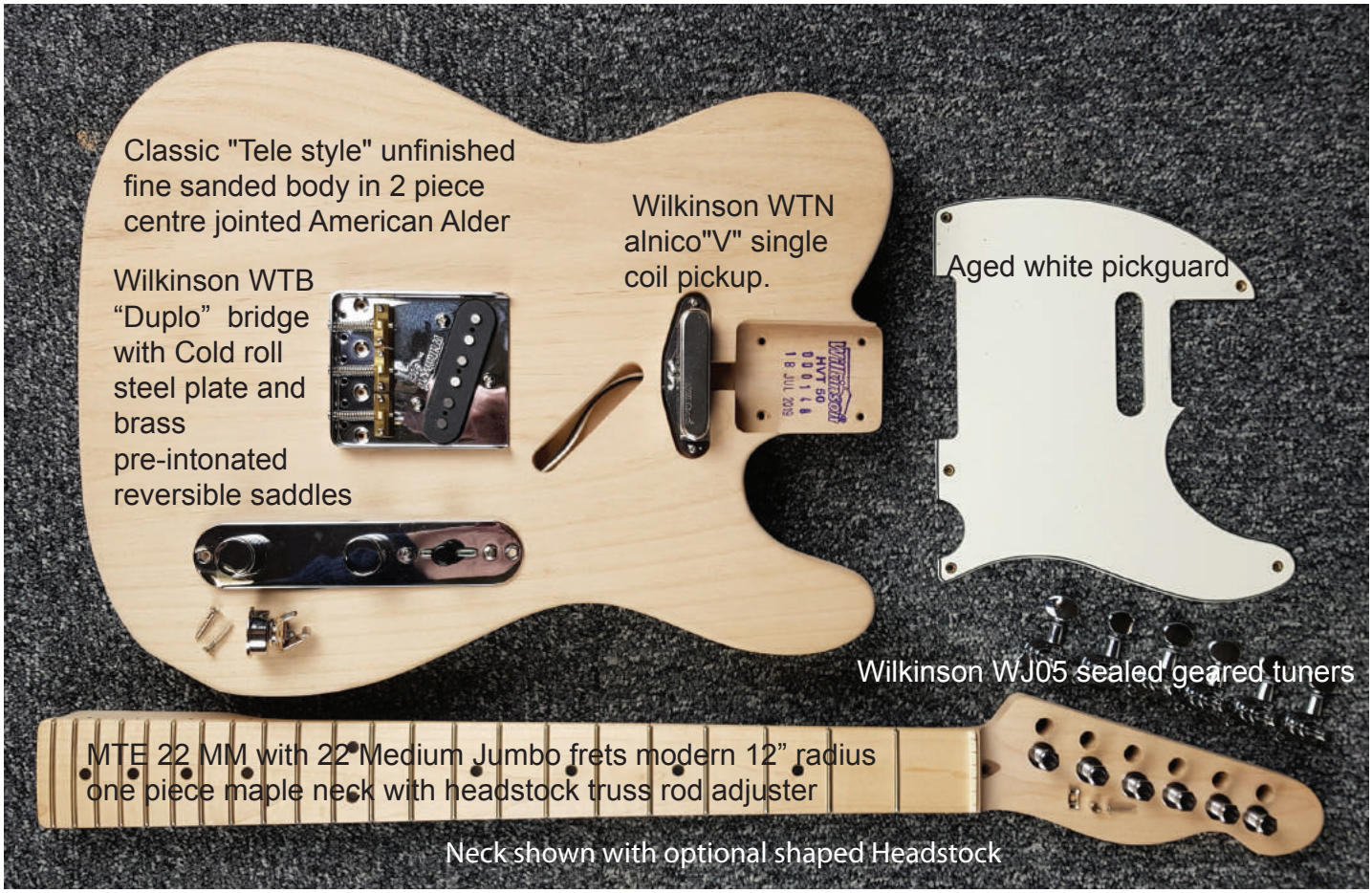
Whether you are a first time builder or Professional Luthier this kit will give you a top quality "Custom Shop Grade" Great sounding, Great playing instrument.

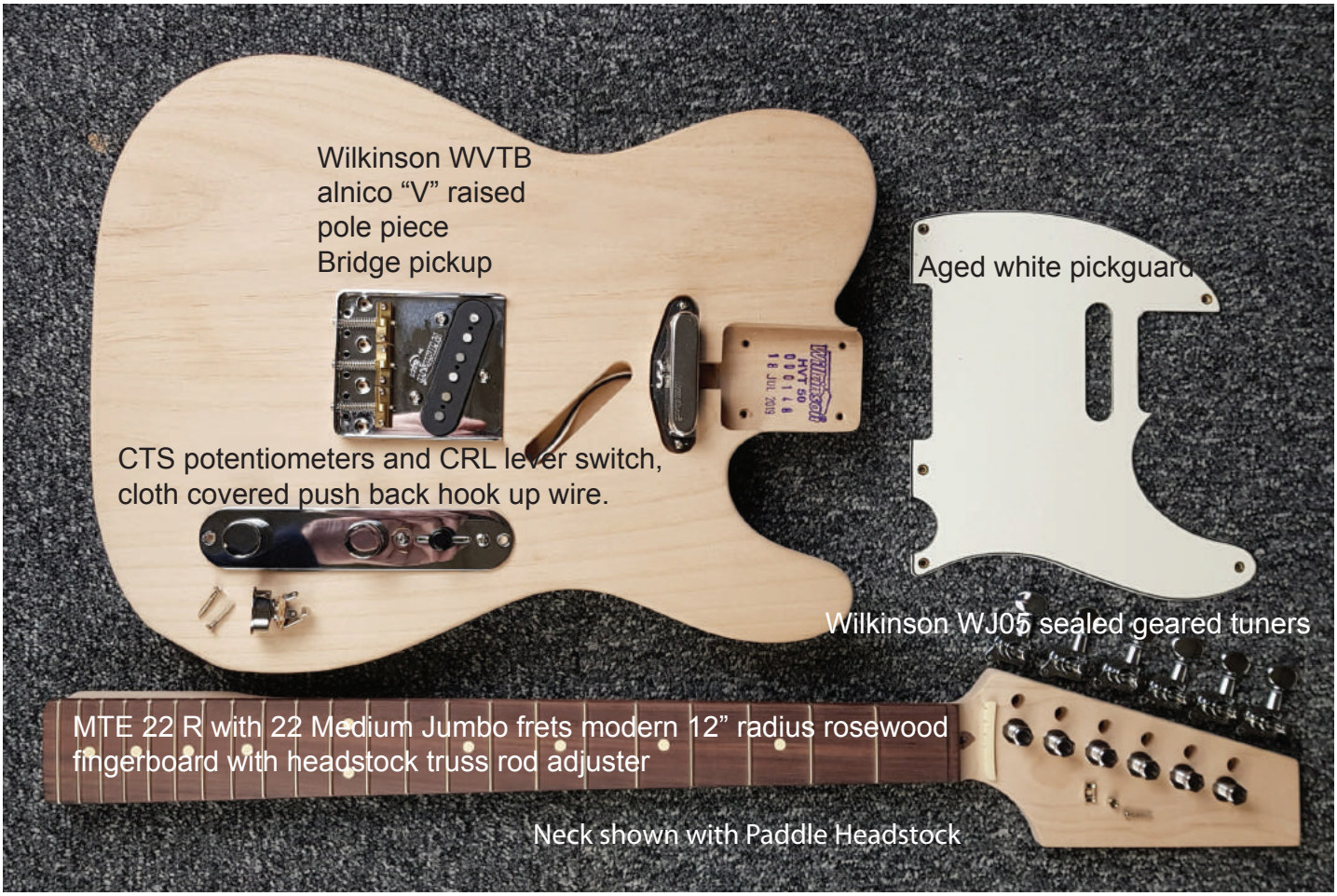
These are the tools and supplies we recommend for assembling this kit.
(Stew Mac item numbers are included where applicable.)

Electric hand drill or Bench Drill press
Small Hammer # 4895
ESP Multi Spanner # 1344
Phillips screwdrivers, size #1 & #2 (#3000)
Understring radius guages Item # 0353
Center punch or awl (#3000)
Clamp (#3721)
Soldering iron
Drill bits: 1/16" 5/64" 3/32" 7/64" 1/8" 11/64"

Nut-slotting files
0.010" width(#0821)
0.013" width (#0823)
0.020" width (#0828)
0.035" width (#0832)
0.042" width (#0833)
0.046" width (#5313

Parts included in your KIT





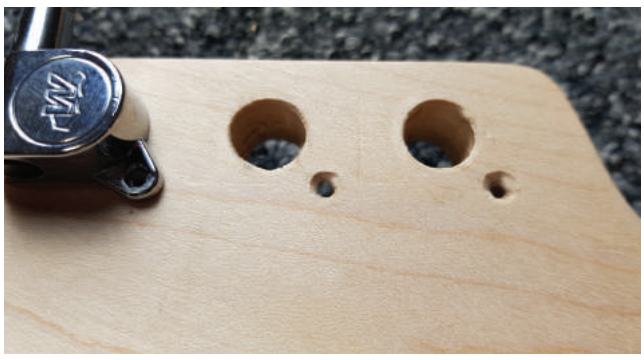
Assembling your guitar

During assembly, use a padded surface to protect the finish from scratches and dents.

Installing the tuners.

Lay out the tuners, using a ruler to make sure they're in line with one another and square to the edge of the peghead.

Mark out your mounting holes with a scribe or punch. Tuner mounting screws are very delicate, and will break off if forced into hard maple. Use a 5/64" drill bit to make pilot holes for the screws; if these holes are any smaller you risk shearing off the screw heads.



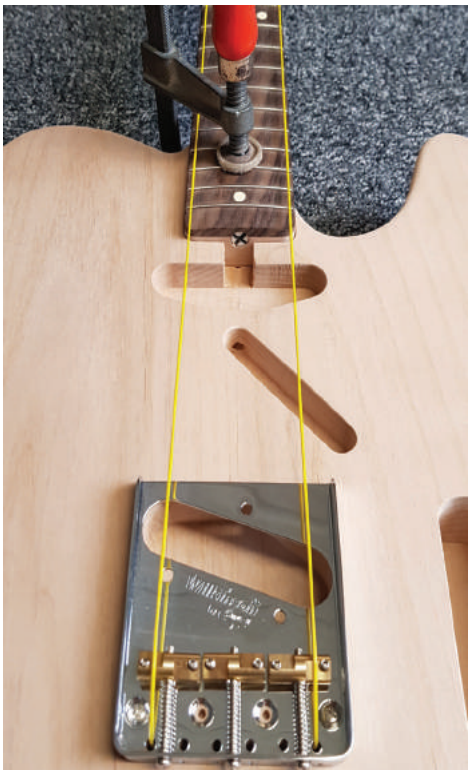
Lubricate the screw threads with the Wilkinson Slipstick provided in the kit. With the tuners in place, install the screws in the pilot holes with a #1 Phillips. Whenever you drill a hole be sure to countersink slightly larger than the screw diameter. this will reduce wood tearout and make for a clean assembly.

Install the string ferrules

Use the same method to install the string ferrules as you did the Tuner bushings. These can be tapped in place with a hammer using a small maple dowel to save damaging the face of the bushing, Alternatively if you have a small drill press then close the empty chuck and use this to press the bushing home.

Lining up the neck with the body and bridge.

Use a clamp to lightly hold the neck in place. Place a scrap of wood or soft faced clamp over the frets so they don't suffer any damage to their surface. Beware of over tightening the clamp as this could crush the frets and change/flatten the fret radius at this point of contact.



To align the neck and body I like to use a length of string/twine or thin hook up wire threaded through the E string ferrule holes in the body and then run the wire/ string up the neck through the nut to the E tuners to check alignment and make side-to-side adjustments to the neck as needed to make sure the strings ride even along both edges of the fretboard.
When you are happy with the alignment of the neck use the holes in the body to mark the hole locations in the heel of the neck. A scribe, nail, or transfer punch will make clean marks in the neck to show you where to drill. A 1/8" brad-point drill bit turned by hand works perfectly for making these marks.

Drill the neck mounting holes

It’s important that these holes are drilled square to the neck, so a drill press works best for this job. Use a 1/8" bit and drill the holes 11/16" deep. If you don’t have access to a drill press, use a drill guide to keep your hand drill squared up.

Install the neck pickup

Even the most experienced guitar builder can have difficulty getting the front pickup sitting correctly and parralel with the body front. To assist you with this we have drilled these two pickup screw holes at the same time as cnc machining the neck and pickup pockets.
Take care when installing these screws and keep them perpendicular and upright. Applying a small amount of “slipstick” the these screws will help with the task. Set the pickup hieght as shown before installing the pickguard

Install the pickguard

Line up the pickguard over the neck pickup and look for even spacing around the bridge. At this time you can also install the control plate, Keep the control plate parralel to the edge of the bridge and located in the pickguard cut-out. When you are happy with the posittionong mark the holes and drill for the screws always remembering to countersink the hole slighlty before installing the screws use a 3.32” drill for this.

Install the Strap Buttons.

Your body has already been drilled for the correct locations of these buttons. Use the screws provided with the kit. A little Wilkinson "Slipstick" on the screws will make installing these a breeze. Always countersink drilled holes slightly to stop any grain lift when installing screws.

Install the neck.

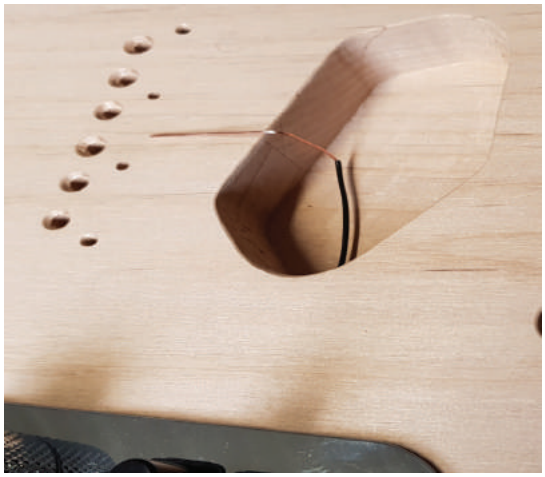
Enlarge the 4 screw holes in the body with 11/64" drill bit. The body holes are drilled intentionally small to allow the neck holes to be perfectly aligned. Before installing the neck it is essential that these body holes have clearance for the neck bolt/screws to pass through the body un-hindered. This is essential in order to facilitate a truly tight neck to body joint for maximum transfer of string resonance from the neck to the body. I also find that countersinking these holes slightly (under the neck plate) also helps provide the tightest neck to body joint as the countersunk screw head can be deeper than the countersinks of the neck plate. Use a #2 Phillips screwdriver to install the neck mounting screws through the neck mounting plate. Lubricate the 4 neck mounting screws with "Slipstick" Dry Lube. Tighten the screws to hold the neck in place.

Solder the output jack.

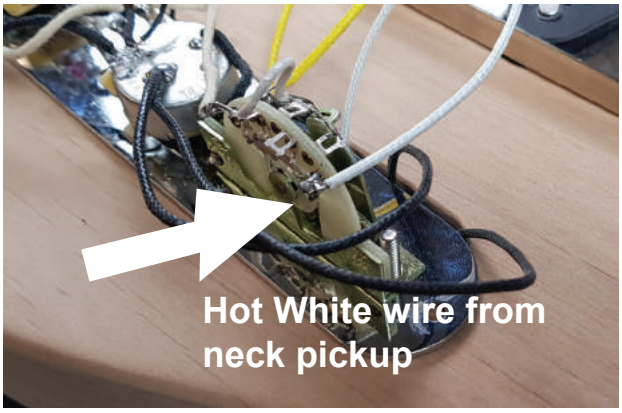
The two-strand hookup wire from the volume pot goes to the output jack. Thread the wire through the hole from pickup cavity into the jack cavity. Solder the white insulated wire to the jack's tip lug (the rounded lug). Solder the bare ground wire to the jack's sleeve lug (the square lug).

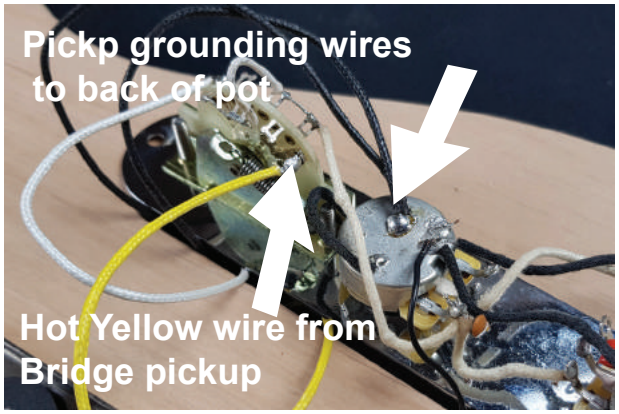
Soldering the string ground.

The remaining black lead wire is for the string ground. Feed this wire through the hole from the control cavity into the bridge pickup cavity. Remove about 3 inches of insulation and allow it to exit the back pof the pickup rout and on to the face of the guitar contacting the underside of the bridge. After installing the Bridge this wire will be trapped under the bridge plate grounding the electronics. install the jack Socket in the hole in the side of the guitar using the 2 screws provided with the socket



Wiring the pickups





Install the bridge with pickup

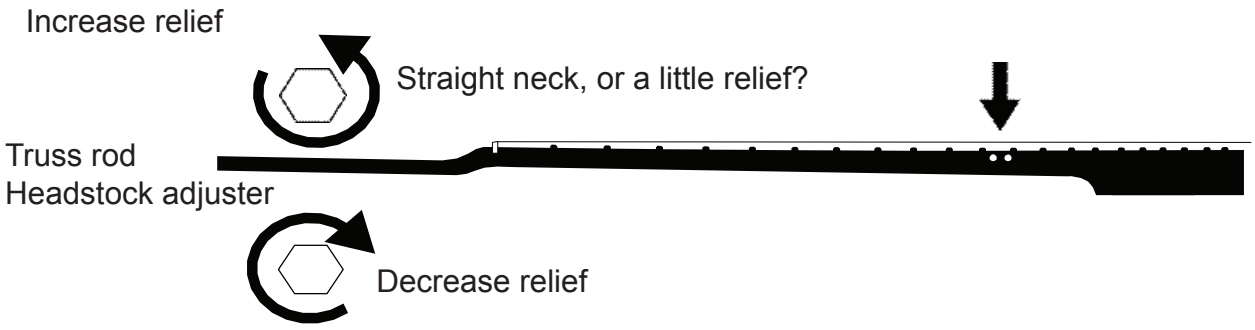
Drill the 4 bridge mounting holes deeper to accomodate the screws using a 1/8” drill . Mark the depth of the screw with tape on the drill after comparing the screw length. Countersink the hole slightly to avoid tearout when fitting the screws. Mount the pickup in the bridge and attach the assembly to the guitar. Lubricatring the screw with a small amount of Slipstick will make the assembly easier

Install the strings

String up your guitar with the strings supplied (or a set of you choice). I ususally install the supplied set first and do all the setup and adjustments, tuning etc...then when this is complete, re-string with a new set as this will give you the best sound as tuning and re-tuning stings many times can affect their tone.

After tuning to pitch adjust the truss rod before making the final adjustments to Saddle and nut height etc.. explained later in these instructions

Adjusting the Truss rod



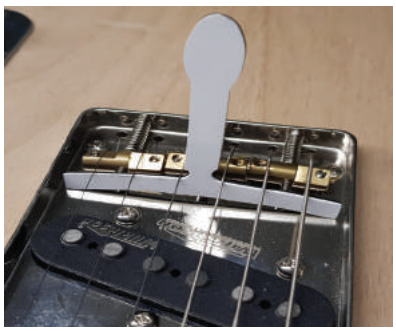
Neck relief refers to adjusting a neck so that it has a very slight upbow, rather than being perfectly straight. This relief allows a little more room for string vibration, reducing the chance of hitting the lower frets and causing fret buzz. Depending on your playing style, and how perfectly level your fret tops are, a neck should be anywhere from perfectly straight to having 0.012" of relief. This measurement refers to additional string height over the 12th fret, compared to a perfectly straight neck. A straight neck tends to play and sound better, but very few guitars end up with no relief at all, and several thousandths of an inch or more is perfectly normal.

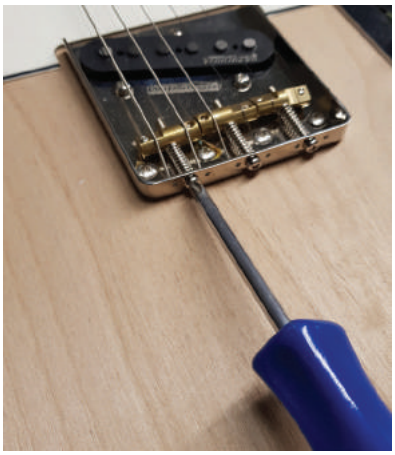
Set the action at the nut.

Lower your string nut slots for better playability using gauged nut files. Measure string height over the 1st fret, between the bottom of the string and the top of the fret. A comfortable medium action is: Unwound strings (G, B, E): 0.012" at the 1st fret, Wound strings (E,A,D): 0.020" at the 1st fret Use feeler gauges to measure the gap, or use guitar strings whose gauges match the measurement you're after. Stop when the string sits on your feeler gauge. Go slow and check your work frequently—it's easy to go too far in this step and ruin the nut.

Set the action at the bridge

Adjust the action at the bridge by raising or lowering the string saddles. Measure string height over the 12th fret between the bottom of the string and the top of the fret.
A good starting point is: High (unwound) E string: 1/16" at the 12th fret..Low (wound) E string: 5/64" at the 12th fret.
You can always go lower or higher depending on your playing style. After setting the two E strings, dial in the remaining strings to match the curve of the fretboard. Stew Mac 10" Radius guage included in the set # 0353 is ideal for this ..





Set the intonation

The last step is intonating the guitar by adjusting the string lengths at the bridge so the guitar plays in tune all the way up the neck. Your Kit model TE52 and TE 60 have WTB bridges with three saddles (two per string) these are pre-intonated per pair. Setting the Low E string will compensate for the A setting, the G string intonation will compensate for the D string. The HIgh E string when intonated will compensate for the B string. Using a strobe or other accurate tuner ...First tune the strings to pitch. Then, press the high E string lightly at the 12th fret using just enough pressure to sound the note. Check it with your tuner. If the note reads flat, the saddle needs to be adjusted forward towards the nut, shortening the length of the string If the note reads sharp, the saddle needs to be adjusted back away from the nut, increasing the string length.to set the intonation. Repeat this process for the G string and the Low E string Bridges supplied with the MTE kits are "Wilkinson" WTB "DUPLO" style. These are also a three saddle bridge but with the added feature of each saddle having a choice of intonation offsets per set of strings. These off sets are accessed by rotating the saddle on the intonation screw. Offset 1 is full travel. Off set 2 will redice this offset by 50%.this can help when using mixed or custom string guages.

Adjust the pickup height

Holding down the low E and high E strings at the 22nd fret, adjust the bass side of the pickups to 5/64" from the top of the pickup pole to the bottom of the low E string. Adjust the treble side to 1/16". Now Re-tune your guitar and check the action. Sight down the neck and check for any "overbow" (bending backwards) causing string buzz on an open string or Under bow on the neck causing a higher than necessary action in the middle of the neck when playing. Adjust the optimum action with the truss rod.

Your guitar is now be ready to play and ENJOY !!