Sheet #i-5282 Updated 01/21

StewMac®

T-STYLE GUITAR KIT

Assembly Instructions

Welcome to guitar building! If you're a first-time builder, this kit is a great way to start. You'll have fun and learn a lot.

This simple kit is an excellent entry into electric guitar assembly. It can be built with basic tools. You'll learn to cut the peghead shape, attach the neck, and apply a finish. After you build it, we'll show you how to set it up to play tip-top.

***Exact parts and materials may vary.**

Table of contents

Tools and supplies

These are the tools and supplies we recommend for assembling this kit. StewMac item numbers are included where applicable.

Tools

Electric hand drill
Foam sanding block (#3701 or 3699)
Fretting hammer (#4895)
Phillips screwdrivers, size #1 & #2 (#3000)
Center punch or awl (#3000)
Drill bits:
- 1/16" (#1710)
- 5/64" (#1712)
- 3/32" (#1714)
- 1/8" aircraft extension bit (#4840)

10mm nut driver (#5890) or wrench (#3691)
Nut-slotting files:
- 0.013" width (#0823)
- 0.020" width (#0828)
- 0.035" width (#0832)

Saw for peghead: bandsaw, jigsaw or coping saw
14" radius sanding block (#0419)
Fret crowning file (#1602)
Razor knife (#4878)
Ruler (#4905)
Straightedge (#3849)
Cam clamp (#3721)
Soldering iron (#0502 or 0515)

Supplies

Sandpaper: 150, 220, 320, 400 grits (#5562)
Light Duty 3M Scotch-Brite Pad (#7445)
or 0000 steel wool
Naphtha solvent (#0775)
Gloves
Blue permanent marker
Masking tape (#1604)
Double-stick tape (#1689)
Solder (#0505 or #0505-LF)

Finishing supplies

There are many finishes and application methods to choose from. We use ColorTone Aerosol Guitar Lacquers because they're easy to use and you can get a beautiful nitrocellulose finish without investing in spray equipment. For the butterscotch finish pictured, we used:

ColorTone Waterbase Grain Filler, Neutral (#0220-N)
ColorTone Aerosol Guitar Lacquers:
- 1 can Vinyl Sealer (#3884)
- 1 can Aged Clear (#5887)
- 1 can TV Yellow (#5885)
- 2-3 cans of Clear Satin (#3882)

Parts list

1. Neck
2. Body
3. Neck plate
4. Neck attachment screws (4)
5. Tuners with bushings, washers, and screws (set of 6)
6. Pickguard with mounting screws
7. Strings
8. Neck Pickup with hardware
9. Bridge pickup with hardware
10. Output jack with mounting screws
11. Bridge with mounting screws
12. Prewired control plate with mounting screws
13. String trees with screws (2)
14. Strap buttons with screws and protective washers (2)

***Exact parts and materials may vary.**

Create your peghead shape

You can trace a favorite peghead or come up with a look all your own. You'll be cutting your design from the blank peghead on the kit's neck.

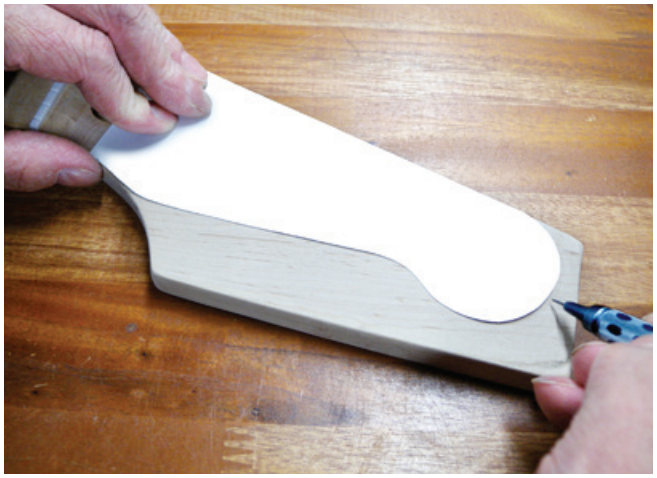
Make a paper template
Sketch out your peghead design on a piece of heavy paper and cut it to shape with scissors. Using a pencil, trace the shape onto the peghead. Use a light touch that doesn't dent or compress the wood which could make sanding out any unwanted lines difficult. Don't use ink, because it leaves permanent stains that can even bleed up through an opaque guitar finish.

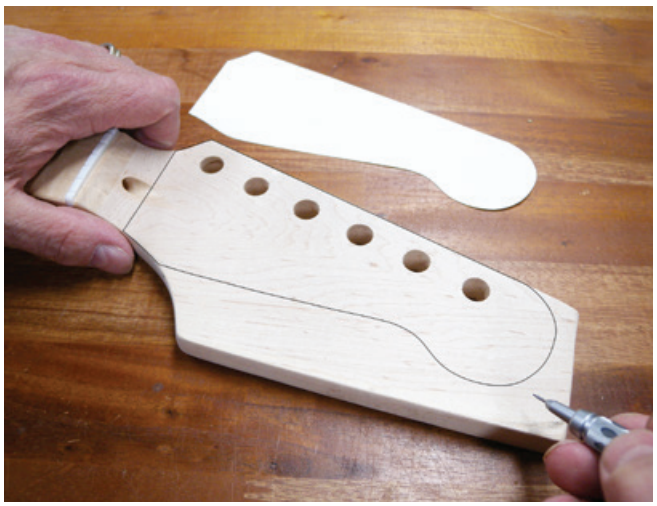
Cut the peghead to shape
It's important that your saw stays square to the face of the peghead while you cut. If it tilts to an angle, you'll get a sloppy result that takes a lot of sanding to correct. Use a bandsaw if you have one; a jigsaw is also good. A hand-held coping saw can also be used, but it's tough to hand-saw smooth clean curves.

Never cut on the line
Always cut just outside the line, so you can sand to the line afterward.

Smooth your saw cuts to create your peghead shape using rasps, files and sandpaper. Don't rush: rough patches will disappear into a good final shape if you take your time.

When you're happy with your peghead shape, sand it smooth using 150-grit sandpaper followed by 220-grit, then 320-grit.





Prep for finishing

Preparing the neck and body for finish is just as important if not more important than the final spray. The key to a great looking finish is patience and lots of it. Be thorough with your sanding and follow the finishing schedule on page 6 for best results.

Inspect the body and neck for any dents, chips, or other imperfections and repair them. Small dents can be steamed out by placing a damp cloth over the dent and applying heat with a soldering iron. Chips and knotholes will need to be filled.

Fill the grain
If your kit has an open grained wood such as mahogany or ash the grain will need to be filled before finishing in order to achieve a flat surface. As a general rule, if you can see the pores of the wood with the naked eye, you should use grain filler before finishing. We suggest using our Neutral ColorTone Grain Filler following the instructions on the label. Three applications are recommended to get a nice flat surface to build finish coats over. Tight grained woods such as alder and poplar do not need to be filled.

For more information on grain filling, see our article "Using ColorTone Grain Filler" at stewmac.com.

stewmac.com search: i-5035

Sand the body
Using 150-grit sandpaper on a flat sanding block, sand the entire body working only in the direction of the grain.

After a complete sanding, wipe the body with a damp cloth to raise the grain, to reveal fibers that need more sanding. Let the dampness dry, then sand the raised grain with 220-grit sandpaper. After sanding, raise the grain again and sand a third time, using 320-grit sandpaper.

Seat the frets

Before sanding the neck use a fretting hammer to make sure the frets are all seated properly. The more evenly your frets have been hammered in, the less leveling work there is to do later.

After finishing, the frets will be leveled and dressed for the best playability.

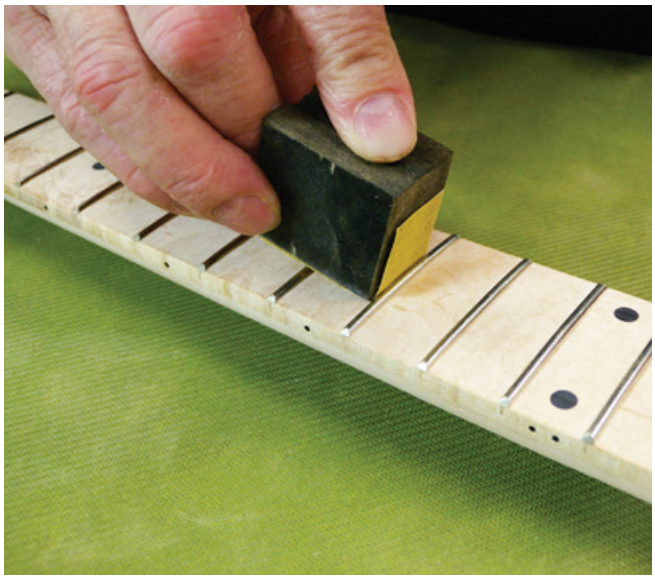
Sand the neck

Sand the neck with 220-grit followed by 320-grit. Rosewood or other dark wood fretboards don't need finish applied, but maple fretboards do need a finish in order to keep them from looking dirty as they're played. Run your fingers lightly along the edges of the fretboard and feel for sharp fret ends. If the frets feel sharp where they meet the edge of the neck, gently sand them back with long strokes down the length of the neck. Use care not to change the bevel of the frets in the process.

Rosewood or dark wood fretboards are not sanded on the fretboard face. For maple fretboards, sand the fretboard face as well. When prep sanding the face of a maple fretboard, avoid sanding the fret tops. A small foam pad wrapped in sandpaper works well for sanding between the frets.

For all necks and fingerboard woods, slightly break any sharp edges on the fretboard, peghead, and body around the neck pocket. Softening hard edges promotes even finish coverage. Later, when you're lightly sanding between coats of finish, these edges are less likely to sand through to bare finish.

Wipe the neck with a damp cloth to raise the grain. After it's dry, sand it again with 320-grit.



Degrease with naphtha

When you've finished sanding, wipe the body and neck with a naphtha-dampened rag to remove any oils or grease. From this point on, wear clean gloves when handling so you won't contaminate the wood.

For rosewood or dark wood fretboards, tape off the string nut and the fretboard face before spraying, so it remains free of finish. For maple, tape off only the string nut.

Spray the finish

There are many finishes and application methods to choose from. In creating these instructions, we're using ColorTone Aerosol Guitar Lacquers. These aerosols are a fast way to build a quality finish.

Using a clear satin topcoat is recommended, because satin doesn't require much sanding or buffing the way gloss does. If you choose to spray a glossy finish, it will involve more steps. For help with that or any kind of finish, see our book, *Guitar Finishing Step-By-Step* (#5095).

Use scrap wood to make a spray handle. Put a hole in this handle and bend a thin metal rod into an S-shape to hang the body and neck during spraying and while drying.

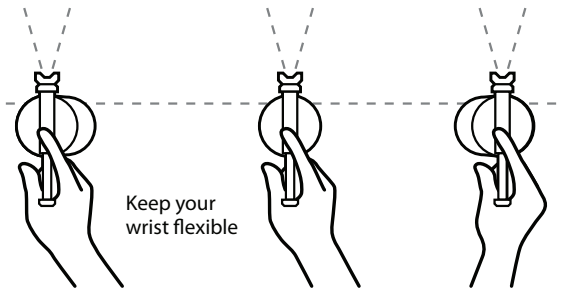
A brushed-on finish like tung oil, waterbase lacquer, or shellac works great too. Any of these finishes will seal and protect the wood from dirt and moisture.

The best advice for finishing: practice on scrap!
Test your finish of choice on scrap wood first, so you can see what you'll get before applying it to your guitar.

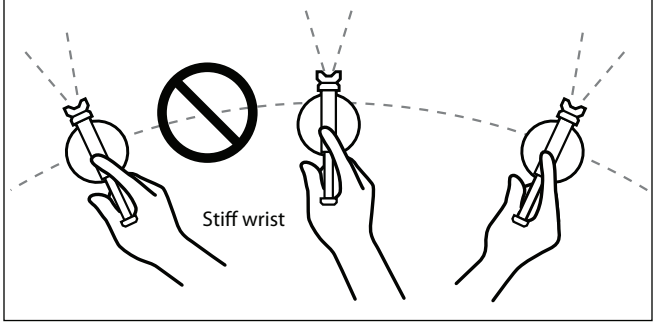
Use warm lacquer, not cold. Professional finishers spray heated lacquer because cold lacquer spatters, requiring extra sanding. Warm up your aerosols before spraying by placing the cans in a sink of warm tap water.

When spraying, keep the spray parallel to the surface of the guitar for even coverage as shown below.

The right way to spray: Move in a straight line, so the distance from the work stays the same. This gives you even coverage.



The wrong way: Swinging in an arc moves the spray closer and farther from the work. Center coverage is heavy, edges are light.



Spray schedule with ColorTone Aerosol Lacquer

This finishing process can be completed in as little as three days, followed by a week of curing. Remember that patience is the key to a successful finish job. Don't rush it! Spray the lacquer using light passes to prevent runs.

Day 1
Body: Spray 1-2 coats of aerosol Vinyl Sealer on the body, waiting 1-2 hours between coats.

Neck: Spray 1-2 coats of Clear Satin lacquer, allowing 1 hour between coats. Follow this with 1-2 coats of our Aged Clear lacquer for a warm maple color. Wait 1 hour between coats.

If your fretboard is maple, you will be spraying over the entire neck, including the frets. Finish will be removed from the frets during the leveling and dressing process after it has cured. The nut has been taped off to keep it unfinished. If your guitar has a dark wood fretboard, mask off the face. Any excess overspray can be scraped away after finishing.

Allow the body and neck to dry overnight.

Day 2
Body: Spray 2-3 coats of TV Yellow, waiting 1 hour between coats.

Body and Neck: Spray 3-4 additional coats of Clear Satin, 1 hour apart.

Allow to dry overnight.

Day 3
Body and Neck: Lightly sand the body and neck with 400-grit paper to remove any finish spatter or dust.

Spray 3-4 additional coats of satin clear, 1-2 hours apart.

Allow the finish to cure for a week in a cool, dry room. Around 70° at 50% humidity is recommended.

After the finish has dried for 1 week, go over the entire instrument lightly with Light Duty 3M Scotch-Brite Pads or 0000 steel wool for a nice satin appearance.

Level and dress the frets

After the finish has cured, it's time to level and dress the frets. If you have a maple fretboard, lightly score the lacquer along the length of the frets with a sharp knife, using care not to cut into the wood or scratch the frets. This step helps in removing the lacquer that was sprayed over the frets during finishing.

Then tape off the entire board between the frets to protect it from damage during the leveling and dressing process. Use low tack tape to prevent pulling any finish up.

Straighten the neck

Use the 4mm hex wrench to adjust the truss rod. With a straightedge on the frets, adjust the truss rod until the straightedge touches all of the fret tops without rocking.

Turn the truss rod nut counterclockwise (viewed from the peghead end) to loosen the truss rod, allowing the neck to bow upward. Turning it right tightens the rod, pulling the neck back.

For more information, see our Trade Secrets article "Don't be nervous about adjusting that truss rod!" at stewmac.com.

stewmac.com search: ts0033

Color the fret tops with a blue permanent marker to prepare them for leveling. The blue ink will show your progress: the frets are level when sanding has removed some of the blue across all of the fret tops.

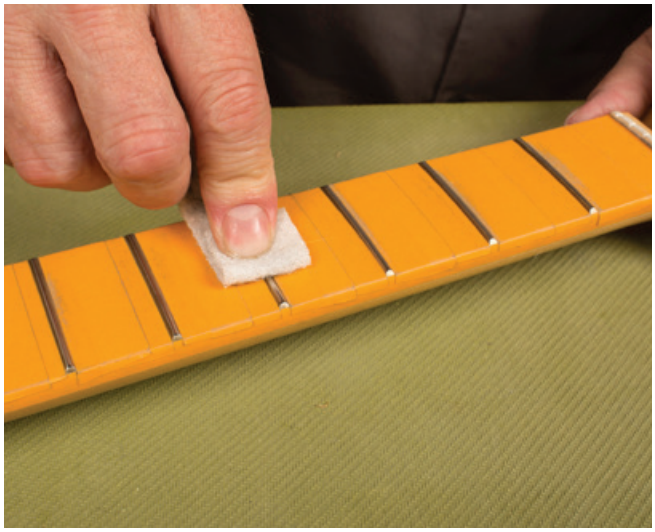
Level the frets

Use double-stick tape to attach 320-grit sandpaper to the 14" radius sanding block. With this, level the frets using full length strokes down the fretboard.

Recrown the frets
Leveling will leave flat tops on the frets. Use a fret crowning file to restore their rounded shape.

Reapply blue marker to the fret tops. By filing the sides of the frets, bring in the edges of the flats left over from leveling. With a rounding motion, keep bringing in these edges until the remaining flatted top is a very thin line. Don't remove this line entirely; filing the fret tops would undo your leveling.

Sand the frets with 400-grit, then 600-grit sandpaper wrapped around a foam block, running up and down the entire length of the fretboard.



Follow up with Light Duty Scotch-Brite Pads or 0000 steel wool for a final finish. This will remove any of the remaining lacquer from the frets, and polish them to a smooth finish.

Assemble your guitar

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

Install the tuners

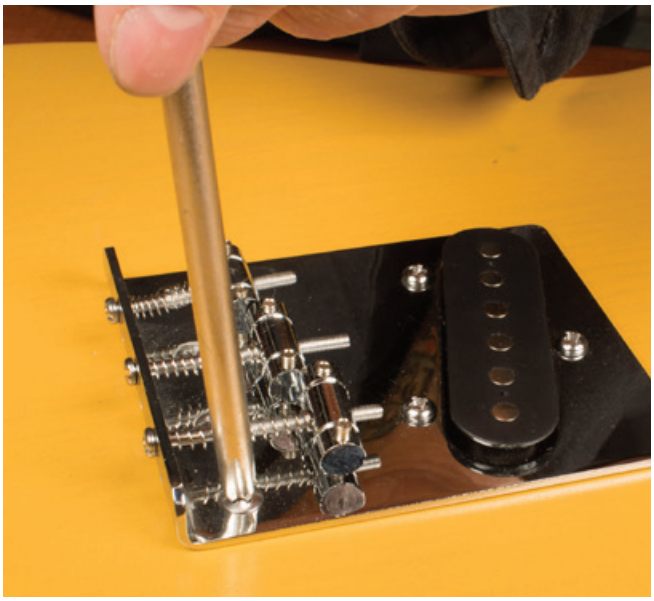
Lay out the tuners, using a ruler to make sure they're in line with one another and square to the edge of the peghead. Mark out your mounting holes with a scribe or punch.

Tuner mounting screws are very delicate, and will break off if forced into the wood. 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 by dragging them across soap or wax for smooth installation.

With the tuners in place, install the screws in the pilot holes with a #1 Phillips screwdriver. On the tuner string post, add a washer then the threaded bushing. Tighten with a 10mm nut driver or wrench.

Install the bridge

Feed the lead wire of the pickup through the hole in the body running from the pickup cavity to the control cavity. Attach the bridge to the body using the provided mounting screws and a #2 screwdriver.



Install the neck

Use a clamp to lightly hold the neck in place. Place a scrap of wood over the frets so the clamp doesn't mar them. The kit comes with a set of strings for checking the alignment of the neck and positioning the string trees.

Install the high and low E strings to check alignment and make side-to-side adjustments as needed to make sure the strings ride even along both edges of the fretboard.

Use the holes in the body to mark the neck. A scribe, nail, or transfer punch will make clean marks in the neck to show you where to drill. A 4mm brad point drill bit turned by hand also works well 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.

For more information, see our Trade Secrets video "How to install a bolt-on neck" at stewmac.com.

stewmac.com search: ts0245

Install the pickguard and control plate

The neck has a 22nd fret extension that prevents the pickguard from seating if the neck is attached. First feed the lead wire from the neck pickup through the hole in the body running from the bottom of the pickup rout and feed it through to the control cavity. Do not drill or mount the pickguard yet. With the guard properly seated carefully attach the neck to the body. A rubber band around the waist of the body will help keep the pickguard in place. Lay out the pickguard and control plate using the neck and bridge for reference. Once positioned, mark out the mounting screw holes with a scribe or punch. Drill pilot holes for the screws using a 1/16" drill bit. Secure the pickguard with the included mounting screws. The control plate will get attached after wiring.

Mark the mounting holes for your jack plate, then drill pilot holes for the screws using a 1/16" drill bit.

Install the string retainers

Install the rest of the strings and mark the locations for the string retainers on the peghead. These retainers maintain the proper string angle over the nut for the D, G, B, and E strings.

Locate the D/G string retainer between the E and A string posts (approximately 2" from the nut).

Locate the B/E string retainer between the A and D string posts (approximately 3" from the nut).

Wire the electronics

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).

For more information, see our Trade Secrets video "How to get a good clean solder joint!" at stewmac.com.

stewmac.com search: **ts0186**

Solder the pickup leads to the switch

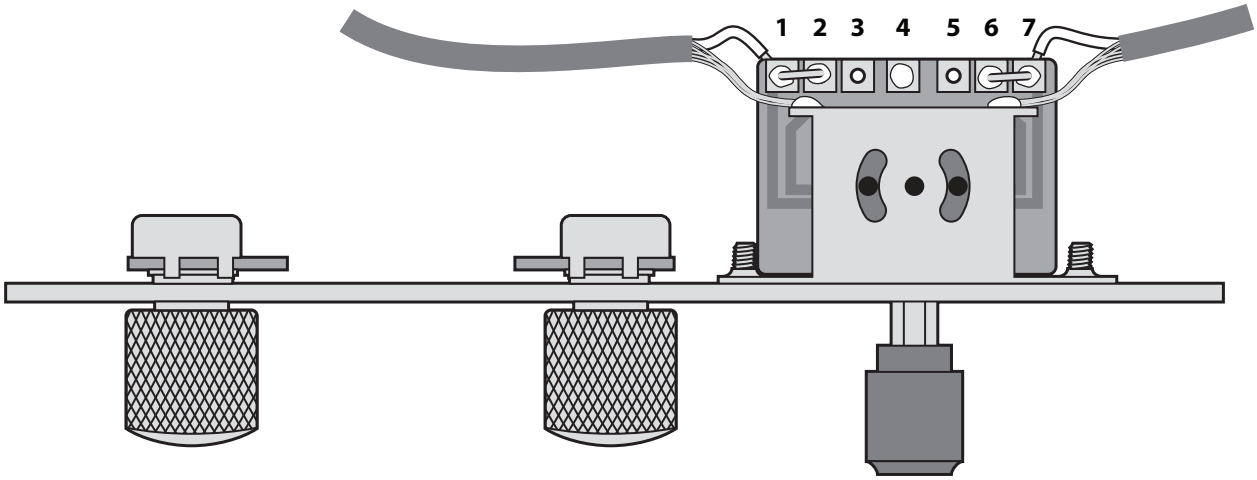
With the mechanism of the switch facing you, refer to the drawing below. Lugs #3 and #5 are not used. The center lug, #4, is already soldered to the volume pot.

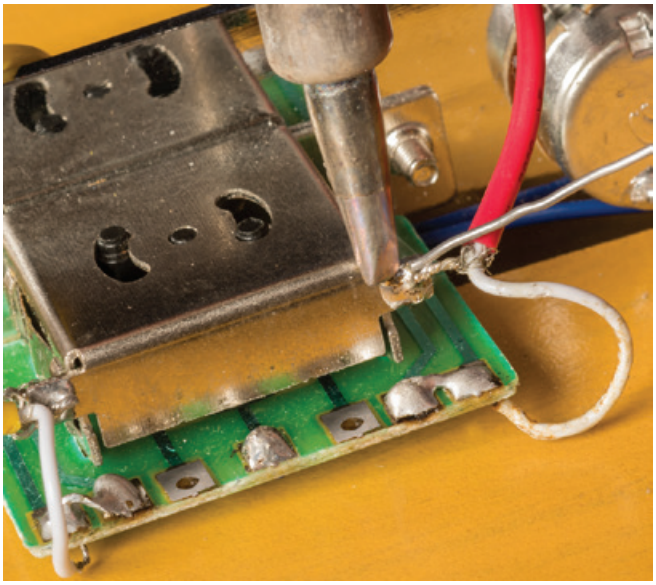
Strip the white leads of the neck and bridge pickups to expose 3/16" of bare wire. These are the hot leads. The bare wires are the ground leads.

Feed the hot lead from the neck pickup through the back of lug #1 and jump it to lug #2.

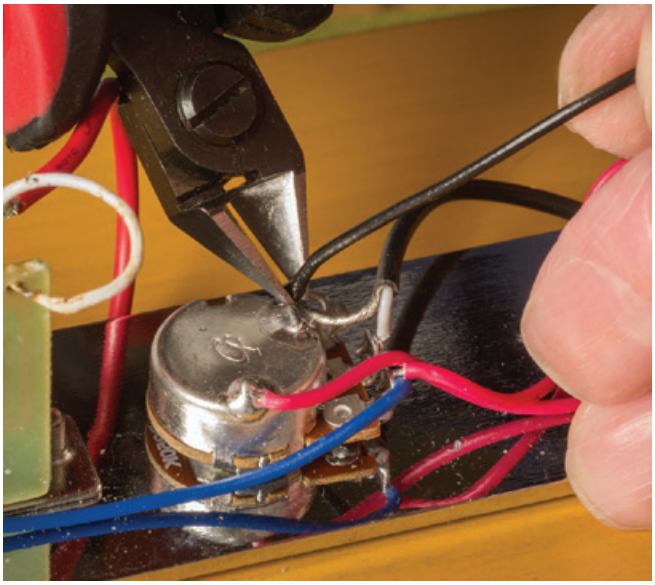
Feed the hot lead through the back of lug #7 and jump it to lug #6.

Solder these connections.





Solder the bare ground leads of each pickup to the lugs on the switch housing.



Note that there is one lead that is not necessary for this circuit. Cut this wire off at the volume pot.

Final setup

Tune the strings to pitch (or install your own preferred brand/gauge and tune to pitch). Adjust the neck using the included 4mm hex wrench.

Straight neck, or a little relief?
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 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

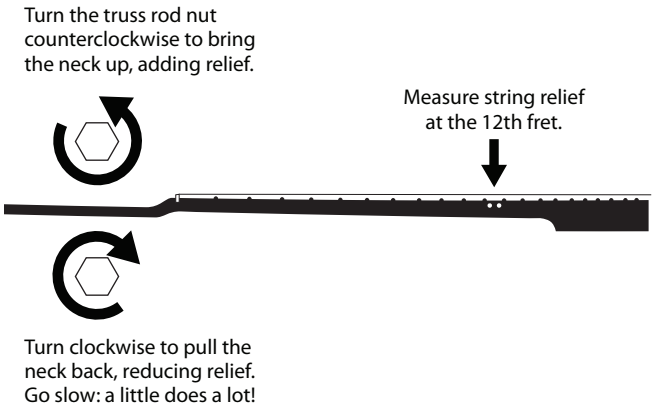
Use feeler gauges to measure the gap, or use guitar strings whose gauges match the measurement you're after. Stop when the string sits on your feeler gauge. Go slow and check your work frequently—it's easy to go too far in this step and ruin the nut.

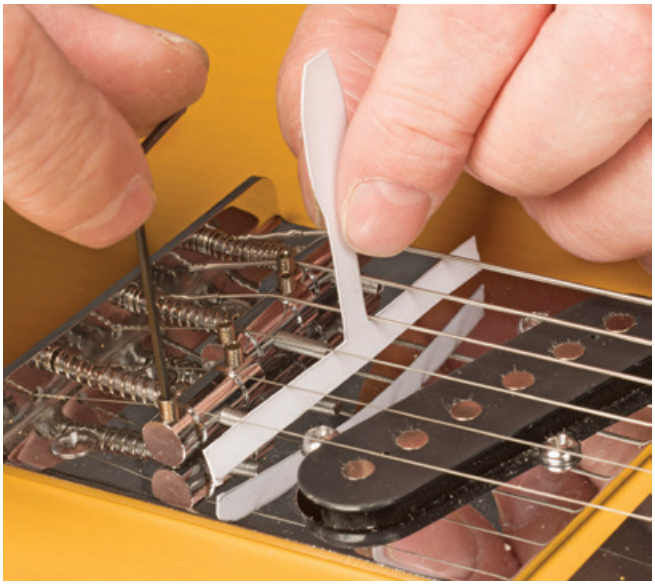
Set the action at the bridge
Adjust the action at the bridge by raising or lowering the string saddles using a 1.5mm hex wrench. Measure string height over the 12th fret, between the bottom of the string and the top of the fret.

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's 14" radius using the cut out gauge included on page 15.





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".

Set the intonation
The last step is intonating the guitar by adjusting the string lengths at the bridge saddles so the guitar plays in tune all the way up the neck.

The bridge on this kit features the same 3-saddle design as the original Telecaster guitars of the 50s and 60s. While this is a traditional feature, it does have a drawback. Because the bridge only has 3 adjustable saddles you will not be able to perfectly set the intonation on all strings.

By intonating the high E, D, and A strings as described below, the B, G, low E strings will be intonated close enough for rock and roll.

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.

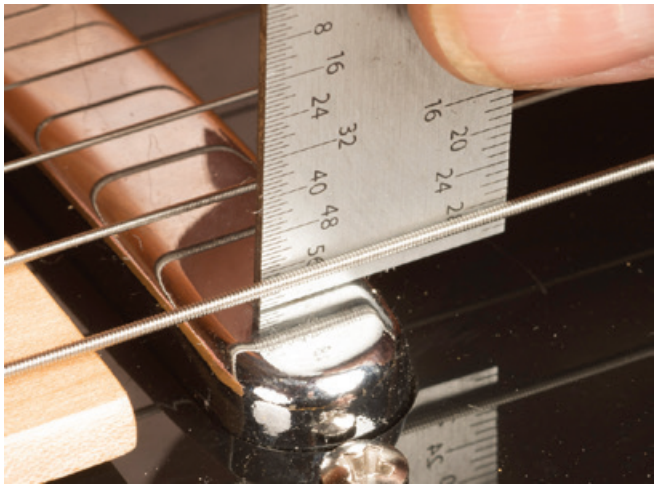
If the note reads flat, the saddle needs to be adjusted forward towards the nut, shortening the length of the string.

If the note reads sharp, the saddle needs to be adjusted back away from the nut, increasing the string length.

Moving to the D/G saddle, check and adjust the intonation of the D string at the 12th fret. Lastly, check and adjust the A string at the 12th.

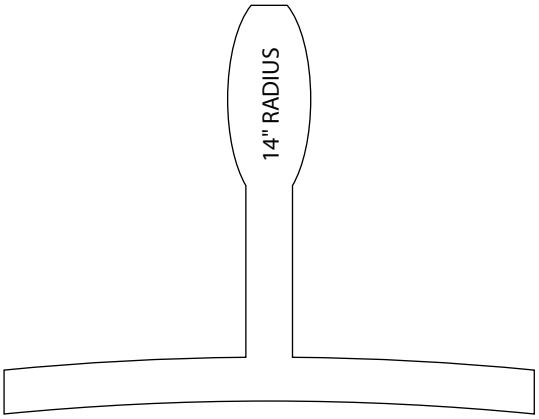
You're done!
Congratulations! Your guitar is ready to play. We hope this guitar will be the first of many that you have fun assembling and customizing.

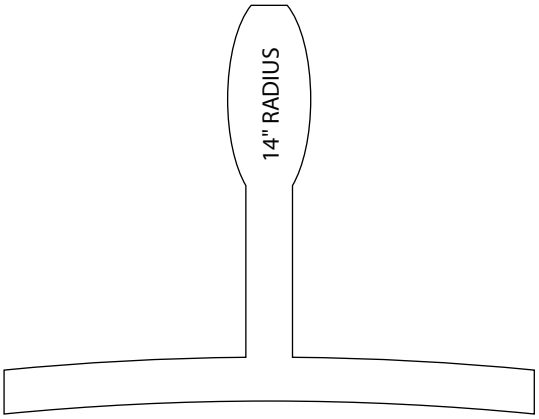
Be sure to get a gig bag or case, so it doesn't get banged around!



Cut-out radius gauge

Carefully cut out this radius gauge to check your saddle heights as shown on page 13. We've printed two, so you have a backup.





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