Congratulations:

You have purchased a Delta Groove Guitar DIY Kit. I know you are excited about laying this thing out and getting started. I have put things in this Information Sheet, to represent what I would like to know if I were building my first neck or things I learned getting up to my last Neck. You may not be a first time builder. Hopefully, you can still take something away from this Info Sheet or perhaps, add to it in future. I have provided a 33” Neck ready for shaping with a 15° scarf joint. You have a blank (paddle) Head Stock and a 15” Heel that will provide support and rigidity to your build. Topping off the kit is a 22+ slotted Fret Board.

Recommended Tools and Supplies:

- 4 oz. bottle of wood glue. I use Titebond II. Do not use Gorilla Glue (it expands, which is not good for a guitar joint). You will use the glue for gluing the Head Stock, Fret Board and Heel to the Neck
- 8 – 2” Spring Clamps (Home Depot has the for $.99 each)
- A drill with 1/8”, 5/16” and 7/16” bits for drilling holes for tuners. See illustrations on next page.
- Coping (or band) saw for shaping of Head Stock
- Sanding Blocks and Sanding Paper
  - I use a combination of 80° and 150 grit paper for cutting and shaping. I use 220 and 320 grip paper for finishing. Your kit will come sanded to a 150 grit level. Any new cuts or shaping will need to follow the above combination for a better finish (I make sanding blocks out of anything -just hold the paper around a stick or board, and sand.).
- Hammer for fret work
- A 6”- 8” flat “mill bastard” file for frets
- End cutters/large side cutters for fret wire
- A router w/45° chamfer bit or wood rasp for rough shaping the neck
- Contour Gauge

I attempt to size my Fret Board and Heel to the Neck. It is a quality control issue and reduces sanding. I mark matched sets with a number to keep them together (that’s why your kit has a number).

Shaping the Head Stock:

I like to shape and drill the Head Stock before gluing it to the Neck. It is just easier to work with. Copy a design, create your own design, or create a design from something that is existing (see my P-Bass modified design in picture). I use graft paper to make sure I have a reference points. Mark the center of your Head Stock. This will help later when gluing it to the neck. For more help with this, go to my website, www.DeltaGrooveGuitars.com. I have a page you can access from the header, DGG Library. It has copies of my “How To” design your own Asymmetrical, Symmetrical and Inline, Head Stocks Designs.

Drilling Tuner Holes:

Drilling tuner holes is not hard. Remember, just because you own a tool does mean you have mastered it. Practice with your drill or drill press before making a hole. Mark an X were you will drill. Rule of thumb, ½” from the edge, 2” separation of tuners (if possible). Use a center punch on the X. Drill a pilot hole with a 1/8” drill bit. Always back-up the “exit side” of the board with a piece of wood so you do not bust out the wood. If you are comfortable with drilling holes, “go for it”. If not, check this out.

Procedures:

1. Lay out pattern on top. Center punch your X. Back-up 1/8” pilot drill with backing block.
2. Drill 7/16”, 3/8” deep. Mark depth with tape or collar. Drill slowly as you approach the mark.
3. Drill 5/16” hole from top.
4. Ready for your tuner.
**Gluing in General**

This is not the definitive works on how to glue. Just some trial and error stuff I have learned. Gluing Notes (how I do it, today – I am always learning): 1) Get your glue, clamps, measuring devices, scrap lumber, and a wet cloth for wiping off excess glue (good clamping leads to good squeezing, which leads to excess glue). Make sure your joint area is clean. 2) Spread the glue on one piece of wood. Spread it evenly as you can on that piece of wood. Let it set for a minute or two. Join boards. Clamp the boards being glued so they align correctly. 3) Clamp with 7-8 spring wood clamps, making sure to clamp edges and in the center. 4) Use that wet wash cloth to keep the excess glue wiped up (what you do not wipe now, you will sand, and sand, and sand, later). Clamp the Head Stock/Neck joint FIRST, AND LET IS CURE FOR 24 HOURS BEFORE REMOVING CLAMPS. For the Fret Board and Heel, you can clamp for 45 minutes and move to the next glue joint. **LET ALL GLUED JOINTS SET FOR 24 HOURS BEFORE STRESSING THEM.**

**Gluing the Head Stock**

**Glue the head stock joint first.** This is not rocket science. It is easy, but you have to be careful. When gluing a scarf joint, the glue can make it slippery and cause it to move. Read the tips above. 1) Watch for centerline alignment, 2) Use clamps to keep things from moving around. 3) Follow general gluing guidelines above. You can use a jig or just go for it (I have put a link to a video for both). If you see it slipping when just using clamps, remove the Head Stock, wipe off the glue (this is to prep it for your second attempt. When I first got started, I glued one joint twice and had to cut the Head Stock off the third time, to get a chance to try again. If all else fails, call me, I may be able to suggest some other things. Remember, if it slips or is out of alignment, it will play, but it may not be as ascetically pleasing as you had hoped. Here are two technique videos on YouTube.

**Gluing Your Head Stock/Neck Joint**

I suggest you go to YouTube.com and watch the following video on gluing your scarf joint. This is one Darren made in 2011. It runs between minutes 16:00 – 17:35. [https://www.youtube.com/watch?v=BsP0jWguLf8](https://www.youtube.com/watch?v=BsP0jWguLf8).

**Another approach**

Mark Lindsay has a YouTube video that is very helpful. If you are not sure that the above approach will not work for you, try this one. “**How I Clamp a Scarf Joint**” [https://www.youtube.com/watch?v=16djzfh6Eb0](https://www.youtube.com/watch?v=16djzfh6Eb0)

**Marking the Neck**

I mark the Neck several places. These points can float depending on the placement of the Head Stock and **NUT** – see the illustration following. 1) The rough location of the Nut. 2) The end of the Fret Board. 3) The Bridge (**around 25 1/2” from the Nut, depending on Scale** – I mark it and write the scale next the line so you will know it). 4) The front edge of the Heel. 5) And the end of the Neck shaping (shaping is from end to the place marked).
Before gluing the anything, make a mock-up of the finished Neck. Tape the Head Stock and Fret Board, to the Neck and place the Nut slot of the Fret Board over the edge of the scarf joint (see 1 circled in the graphic above and exploded). Mark the end of the Fret Board (2) on the top of the neck. Set your heel, ¾” shorter (4) and the end of your neck shaping, ¾” less (5) than that. This is the area of shaping the neck (orange shading above).

### Shaping the Neck

There are many great videos on YouTube showing how individuals make their necks. Watch several and find one that you feel comfortable with. Here is my general advice. Don’t shape the whole neck at one time. Use a 45° Chamfer router bit or a rasp file, to take the edges down (see #1 below).

- Neck Blank
- Desired Result
- Use Router, Rasp or 60-80° grit sand paper to remove a large portion of wood
- Use small rasp, files, sand paper, or scrapers (anything that will remove wood) and do final shaping

Hope these notes help. Let me know if I can make them better.

Rick Smith  
*The Mojo Magic Man*  
*Building CBG Necks for Builder*  
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* Make a sanding block 8” long and glue 60 or 80 grit sand paper to the block. This will help in shaping the neck and getting a positive result. It will take less than 10 minutes to rough sand the neck for finishing. I have one of these in my sanding paper drawer and use it daily on issues that require removing large amounts of wood.

If you have any questions, call or text. I will try to walk you through it. If you have any suggestions for improving this info sheet, let me know. There are a lot of builders that want your business. I am one of them. As one builder to another, I am committed to the success of your build. I am here to serve you.
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