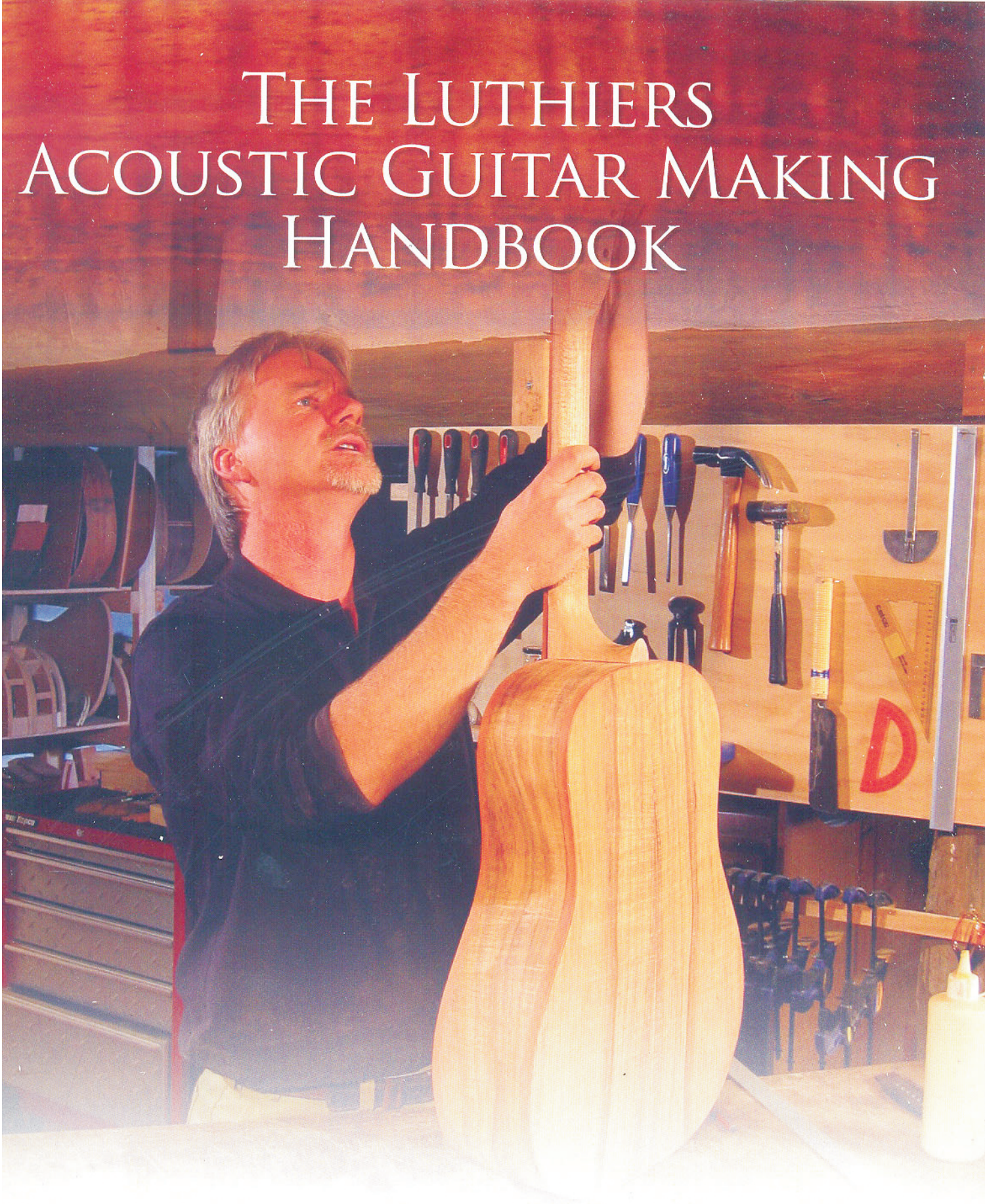
The Luthiers Acoustic Guitar Making Handbook



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HANDBOOK DISCLAIMER

PLEASE TAKE A MOMENT TO READ BEFORE YOU START YOUR ACOUSTIC GUITAR-MAKING PROJECT!

This Luthiers Handbook is best used in conjunction with "A Master Class In Acoustic Guitar Making" DVD Set.

The content in this handbook has been produced in conjunction with Chris Wynne, Luthier of Thomas Lloyd Guitars and Jason Simos, Draftsman.

The content in this handbook is as comprehensive as possible in the format that we have delivered in.

The intention of this handbook is to be a guide only as to the measurements that Chris Wynne uses in his construction of acoustic guitars, including all Luthier and Timber suppliers, tools, resources or diagrammatic notes.

All safety precautions listed in the DVD disclaimer should be read and adhered to at all times.

Chris Wynne or Thomas Lloyd Guitars are not liable for any injury that may be caused to yourself during the making of your guitar. We have at all times noted, verbally mentioned and written safety warnings in all our documentation.

We have made every effort to achieve a suitable accompaniment to the "Master Class" DVD Set, and in every area tried to deliver true and correct information as we see it.

This handbook is not to be used in public for training, coaching or lecturing in the area of Custom Building Acoustic Guitars, unless approved by Chris Wynne or Thomas Lloyd Guitars.

This handbook is not for individual sale, unless agreed first with Chris Wynne or Thomas Lloyd Guitars.

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DIRECTORY & RESOURCE GUIDE

THOMAS LLOYD GUITARS

Thomas Lloyd Guitars – School of Acoustic Guitar Making

Chris Wynne - Luthier
PO Box 1162, Research 3095, Victoria, Australia

Phone: +61 3 9431 2490

Website: www.thomaslloydguitars.com
Blog Site: http://tlgupdate.blogspot.com

Please send your Master Class Guitar making questions to:

Support / FAQ's: luthier@thomaslloydguitars.com

All guitar making questions & feedback sent to us will be answered via e-mail to you directly, then posted in your member's area as a resource to all those who have purchased The Master Class DVD! (No personal detail will be publicly shown in the postings)

Access to your NEW Members Site:

(Fill in your membership details below once you have signed in)

Website Link: _____

Username: _____

Password: _____

DIRECTORY & RESOURCE GUIDE

RECOMMENDED AUSTRALIAN INSTRUMENT TIMBER SUPPLIERS

Tasmanian Tonewoods
Fiddleback Blackwood (Back and Sides)

Specializing in Acoustic Guitar Timbers, Decorative Timbers & Veneers

Chris Searle
Stanley, Tasmania, Australia
tasmanian.tonewoods@hotmail.com
Phone: +61 3 6458 1108
Fax: +61 3 6458 1337

Australian Tonewoods
Various Australian Instrument Timbers

Tim Spittle
Bassendean, Western Australia
www.australiantonewoods.com
tim@australiantonewoods.com
Phone: +61 8 6278 2187

Kirby Fine Timbers
Plantation Bunya Pine (Soundboard) & Queensland Maple (Backs, Sides & Necks)

David Kirby
Mooloolah, Queensland, Australia
www.kirbyfinetimbers.com
davidkirby6@hotmail.com
Phone/Fax: +61 7 5494 7410

Peter Scott-Young - Timber Veneer Specialist

Peter Scott-Young
Ringwood, Victoria, Australia
Phone/Fax: +61 3 9870 8733

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RECOMMENDED AUSTRALIAN INSTRUMENT TIMBER SUPPLIERS

Loggerheads
Specialist in Exotic Outback Timbers – (Fretboards/Bridges)

Graham Naughton
Cooloola Cove, Queensland, Australia
www.loggerheads.com.au
loggerheads@spiderweb.com.au
Phone: +61 7 5486 2201

loggerheads
specialist in outback timbers
www.loggerheads.com.au

Britton Timbers
Fiddleback Blackwood (Back & Sides)

Ron Keo
Smithton, Tasmania, Australia
www.brittontimbers.com.au
veneer@brittontimbers.com.au
Phone: +61 3 6452 2522

BRITTON TIMBERS
SPECIALTY TIMBERS AND VENEERS

Directory & Resource Guide

Recommended Luthier Suppliers

ALS – Australian Luthiers Supplies

Eagle Heights, Queensland, Australia
www.luthierssupplies.com.au
info@luthierssupplies.com.au
Phone: +61 7 5545 4210

Stewart-MacDonald (USA)

www.stewmac.com
Phone: +1 740 592 3021

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TIMBER & TOOLS GUIDE

AUSTRALIAN TIMBERS USED IN THE MASTER CLASS DVD SET

25.4 Scale Length Dreadnought Acoustic Guitar

Soundboard - Queensland Plantation Bunya Pine
Back & Sides - Tasmanian Fiddleback Blackwood
Bindings, Back Strip & Heal Cap - Australian Jarrah
Neck, Tail Block, Neck Block & Back Bracings - Queensland Maple
Soundboard Bracings - Queensland Plantation Bunya Pine
Side & Centre Strips - King William (Billy) Pine
Headstock Veneer - Tasmanian Huon Pine & Fiddleback Blackwood
Fretboard - Queensland Mulga
Bridge - Queensland Mulga

OTHER AUSTRALIAN TIMBER OPTIONS

Thomas Lloyd Guitars source timbers from the Suppliers mentioned on the Master Class DVD and in the previous resource pages of this Luthiers Handbook.

These are our own Australian Timber options we recommend and are available to you DIRECT from Thomas Lloyd Guitars - Australia.

Soundboards - Bunya Pine, King William (Billy) Pine, Huon Pine
Back and Sides - Fiddleback Blackwood, Tiger Myrtle & Myrtle, Black Heart Sassafrass, Sheoak, Quilted Queensland Maple, Mountain Ash
Necks - Queensland Maple, Queensland Red Cedar, Blackwood
Fretboard/Bridge - Gidgee, Mulga, Cooktown Ironwood

The advantage of buying through Thomas Lloyd Guitars is:

You can buy minimum & individual quantities easily

The timber is dry/seasoned and ready to go!

Luthier - Chris Wynne has hand selected the timber to ensure you are getting the best quality for instrument making.

Complete Acoustic and Classical Guitar Making Timber Packs - Rough Sawn - ready to go!

See our website for full details and current prices: **www.thomaslloydguitars.com**

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Timber & Tools Guide

MISCELLANEOUS GUITAR BUILDING ITEMS

Router support mat
Wax Paper
Masking Tape - low & high tack - thick and thin width
Damp glue cleaning cloth
Cotton sheet
Dusting brush
"Titebond" glue
"Super" glue
"Hot Stuff" glue
Scissors
Wooden "glue cleaning" stick
Tacks
Steel wool - fine grade "0000"
Stanley Knives

Electrical / Power Tools

Hot Iron - bending sides (optional)
Router / trimmer
Band Saw
Drill Press
Drum Sander
Dremel
Linisher
Drill - and various drill bits (i.e counter sunk)

Finishing

"Rustin's" Danish Oil
Lemon Oil - Fretboard
Clean cotton cloth - for applying the oil
Lambs wool cloth - for polishing
Polishing wax - Bees wax

Guitar Making Techniques & Jigs (as shown on the Master Class DVD)

Bracing Dish Jig
Guitar Mould Jig - Dreadnought size
How to hand plane
How to cut fret slots by hand

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Timber & Tools Guide

Hand Tools

Hammer
Wire cutters
Chisels
Flat file
Wood files
Fret files
Spoke shave
Japanese Hand Saw
Planes - various sizes
Block planes
Clamps - Large "G" clamps & Quick grip clamps
Small Pinch Clamps (apx qty 40)
Bridge Clamps - (apx qty 3)
Miter gauge
Dial calipers

Jigs & Supports: (that you can make on your own)

Cutting support block
Dowel sticks (Long and Short)
Internal Support Jig
Clamping Cauls - Soundboard and neck
Bending Jig
Curved sanding stick
Gluing back and soundboard jig - flat board MDF (chipboard)
Pine timber lengths - jig for back strip (Jarrah strip)
Thin scrap timber - supports
Rosette cutting jig
Neck support
Vice
Bridge Jig
12" radius sanding block - Fretboard
Dovetail Jig and Plans - Supplier - Stewart MacDonald (USA)
Side bending jig plans - supplied in "The Luthiers Handbook" by Thomas Lloyd Guitars.

Rulers & Levels

Straight Edge
Fret marking ruler
Set Square
Standard Ruler
Small Level

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Timber & Tools Guide

Safety Equipment

Ear Muffs
Safety Glasses
Dust Masks

Sanding

Sanding Block - square
Sanding stick - arched
Grades of paper used - Grit 120,180,220,340,400
Sticking sand paper- Supplier - Stewart MacDonald (USA)

Set up & Accessories

Truss Rod
Alan key
Saddle-o-Matic
Nut & Saddle
Fret Wire
Fret Hammer
Fret Saw
Fret file - medium size
Fret Ruler
Fretboard dots - Mother of Pearl
Rosette Inlay - Paua Shell
Bridge Pins
Machine heads
Strings

Chapters

Chapters

HOW TO MAKE JIGS

Australian Timbers That Can Be Used In Guitar Making.

The information on this page is formatted as follows:

Line 1. Type of Wood
Line 2. Hardness - Dry
Line 3. Tree Height
Line 4. Workability

- BACKS AND SIDES -

FIDDLEBACK BLACKWOOD
5.90
Medium to tall tree, between 25m and 30m
Easy to work

QUEENSLAND MAPLE
4.70
Tall tree, up to 35m
Easy to work

BLACKHEART SASSAFRAS
4.70
Tall tree, up to 45m
Easy to work

SHEOAK
Unavailable
Medium sized tree, up to 15m
Relatively easy to work

TIGER MYRTLE
5.90
Very tall tree, up to 70m
Easy to work

MYRTLE
5.90
Very tall tree, up to 70m
Easy to work

JARRAH
8.50
Tall tree, up to 40m
Easy to medium workability

QUEENSLAND WALNUT
Unavailable
Tall tree, up to 35m
Easy to medium workability

- SOUNDBOARDS -

BUNYA PINE
2.30
Tall tree, between 30 and 40m
Easy to work

KING WILLIAM PINE
2.00
Tall tree, up to 35m
Easy to work

HUON PINE
Unavailable
Meduim tree, up to 30m
Soft, easy to work

- NECKS -

QUEENSLAND MAPLE
4.70
Medium sized tree, up to 40m
Easy to work

QUEENSLAND RED CEDAR
2.30
Tall tree, up to 40m
Very easy to work

FIDDLEBACK BLACKWOOD
5.90
Medium to tall tree, between 25m and 30m
Easy to work

Australian Timbers That Can Be Used In Guitar Making cont....

The information on this page is formatted as follows:

Line 1. Type of Wood
Line 2. Hardness - Dry
Line 3. Tree Height
Line 4. Workability

Neck cont....

ALPINE ASH
4.90
Very tall tree, up to 100m
Relatively easy to work

SHEOAK
Unavailable
Medium sized tree, up to 15m
Relatively easy to work

- FRETBOARDS / BRIDGES -

GIDGEE
19.0
Small tree, up to 10m
Requires effort to work

MULGA
13.0
Small tree, up to 10m
Requires effort to work

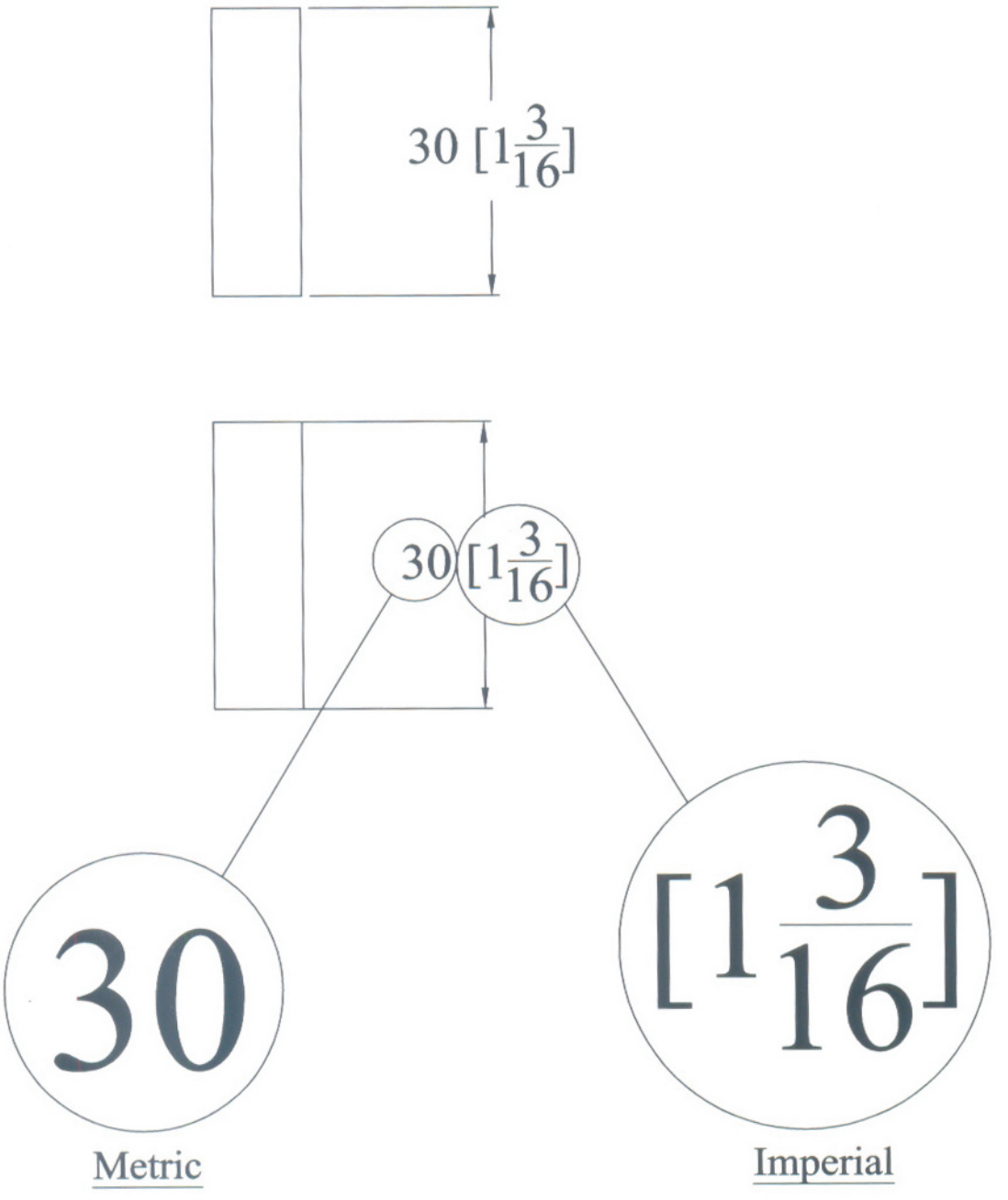
FIDDLEBACK BLACKWOOD
5.90
Medium to tall tree, between 25m and 30m
Easy to work

JARRAH
8.50
Tall tree, up to 40m
Easy to medium workability

WANDOO
15.0
Small to medium tree, up to 25m
Requires effort to work

Please Note:

The dimensions in this handbook are given in both Metric and Imperial units. See below for an example.



The dimensions in this handbook are given in Metric and then converted to Imperial. Therefore, there may be slight variations in dimensions. For accuracy, use the Metric dimensions.

The Luthier's Acoustic Guitar Making Handbook

by
Chris Wynne
Jason Simos

Preparing And Gluing The Back.

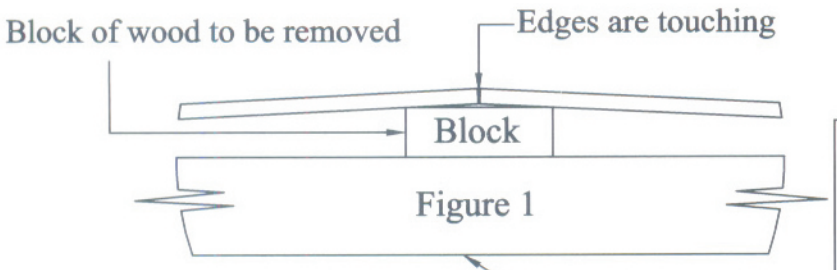
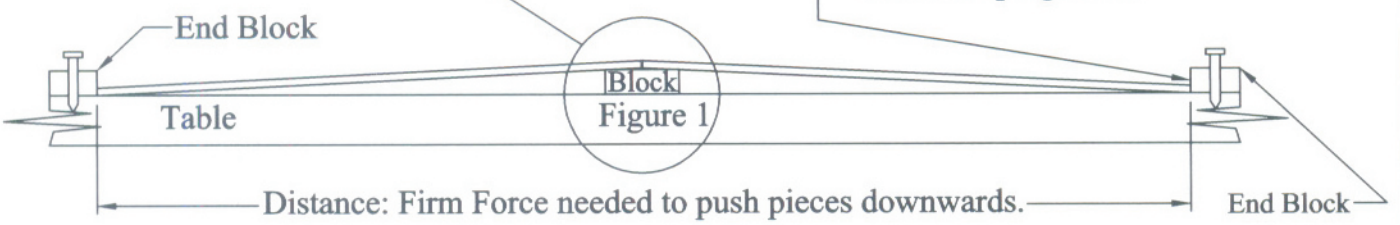


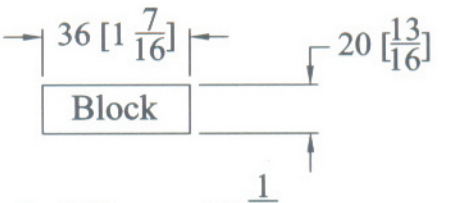
Figure 1

Step 1:

First nail one side into the table and rest the two pieces of Blackwood on the Block in the middle so that their edges are touching. Then nail in the other End Blocks. This is done to obtain side clamping force.

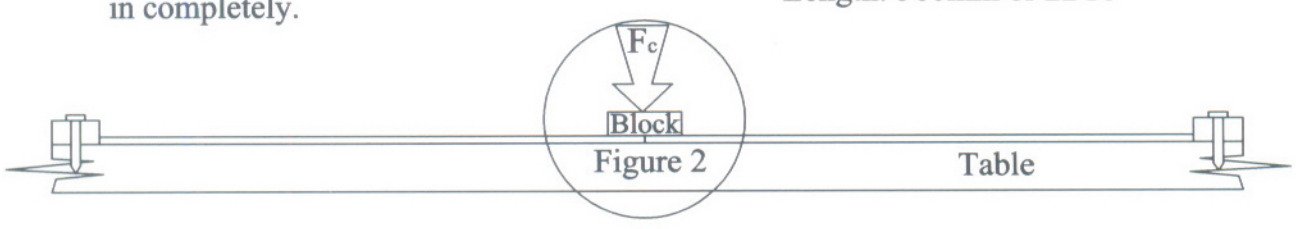


Note: If it's too hard to push down and pieces buckle, move the End Blocks on one side the width of a pencil mark. This should help.

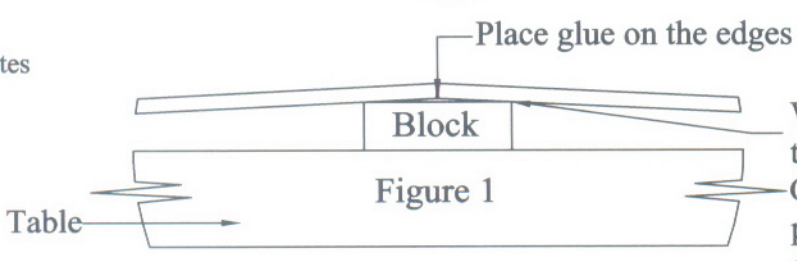


Step 2: When you are satisfied with the distance between the End Blocks, then tap the nails in completely.

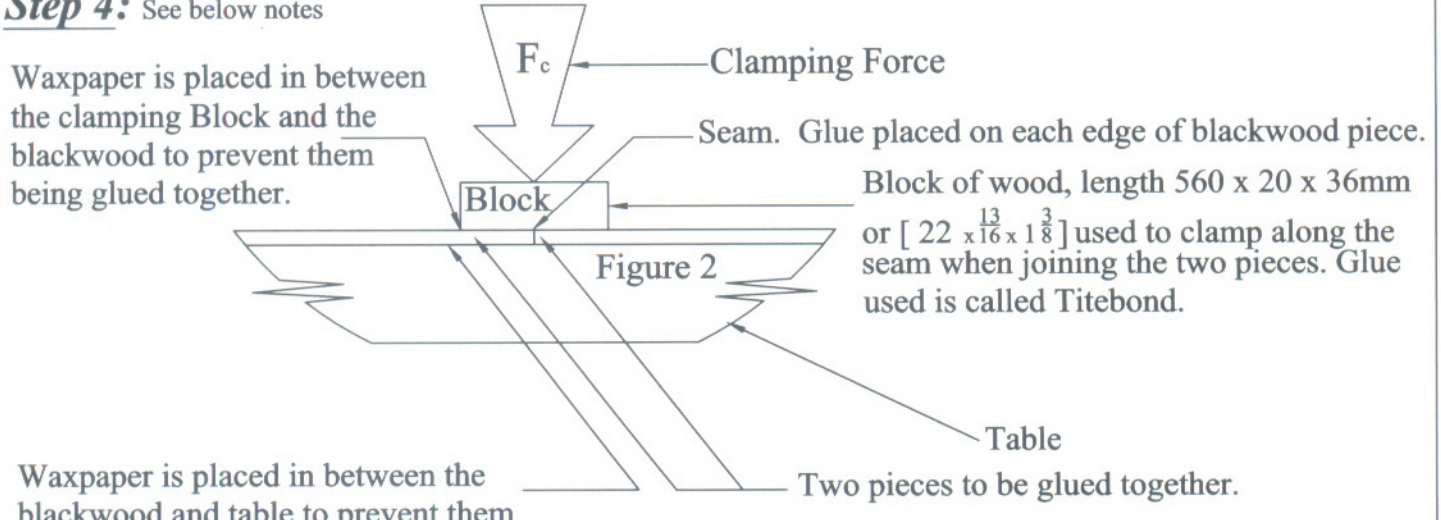
Length: 560mm or 22 1/16



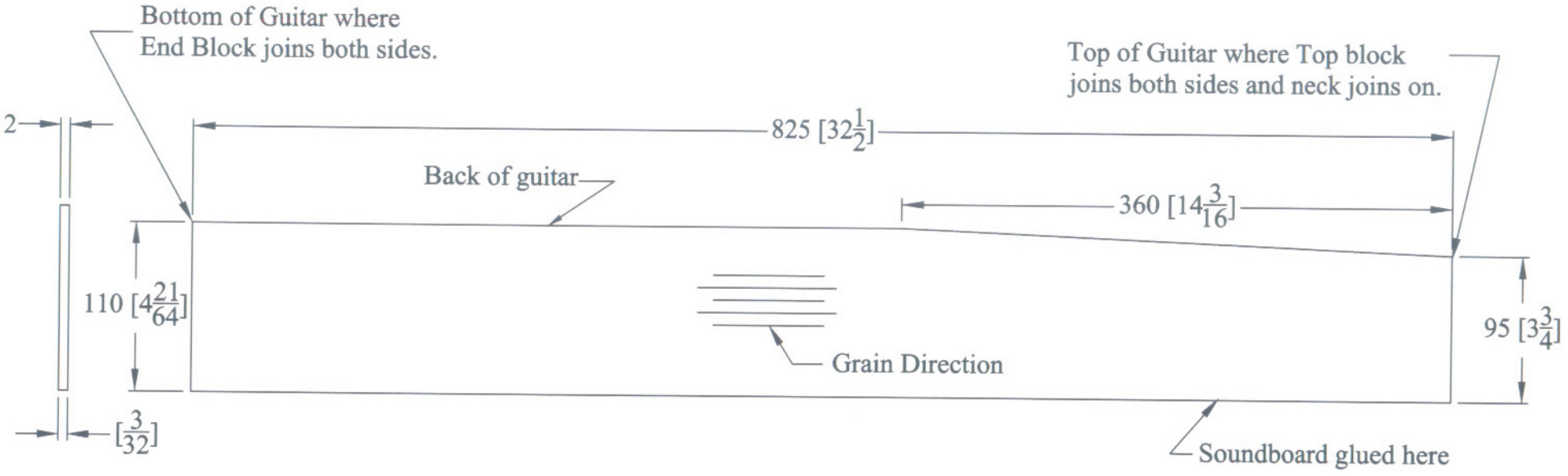
Step 3: See notes



Step 4: See below notes



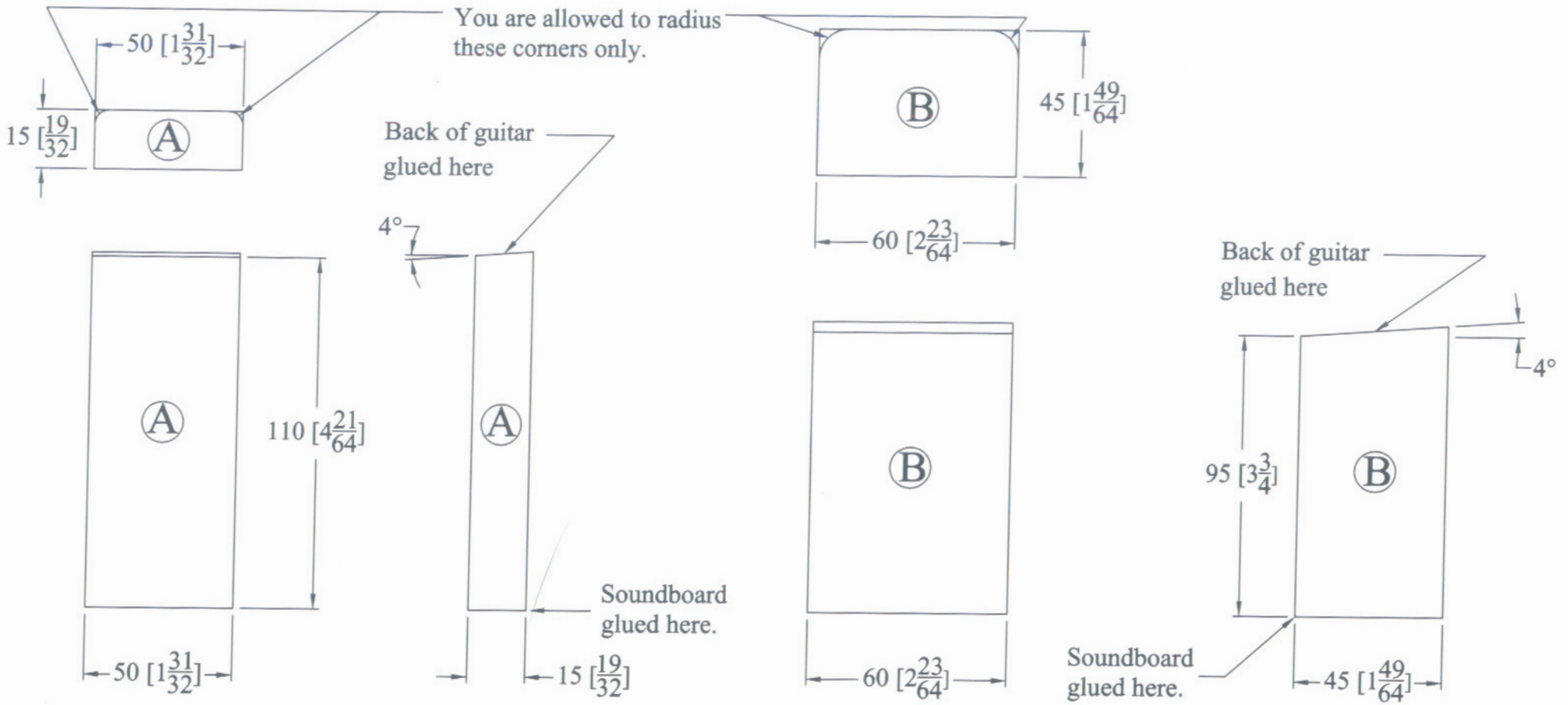
Preparing And Bending The Sides



Wood: Fiddleback Blackwood, quarter-sawn.

Turn on the Side-bending Jig and allow the globes to warm up for 10 minutes.
Wet the timber. Place the sides between two sheets of sheet metal (0.8mm [1/32] thick.)
Then place both pieces into the Jig, to be bent.
Slowly bring down the lower bout of the guitar. Then the upper bout, before winding down the waist. Allow to sit for 5 minutes before turning the dimmer switch down.
Leave in the jig for approx. 45 minutes.

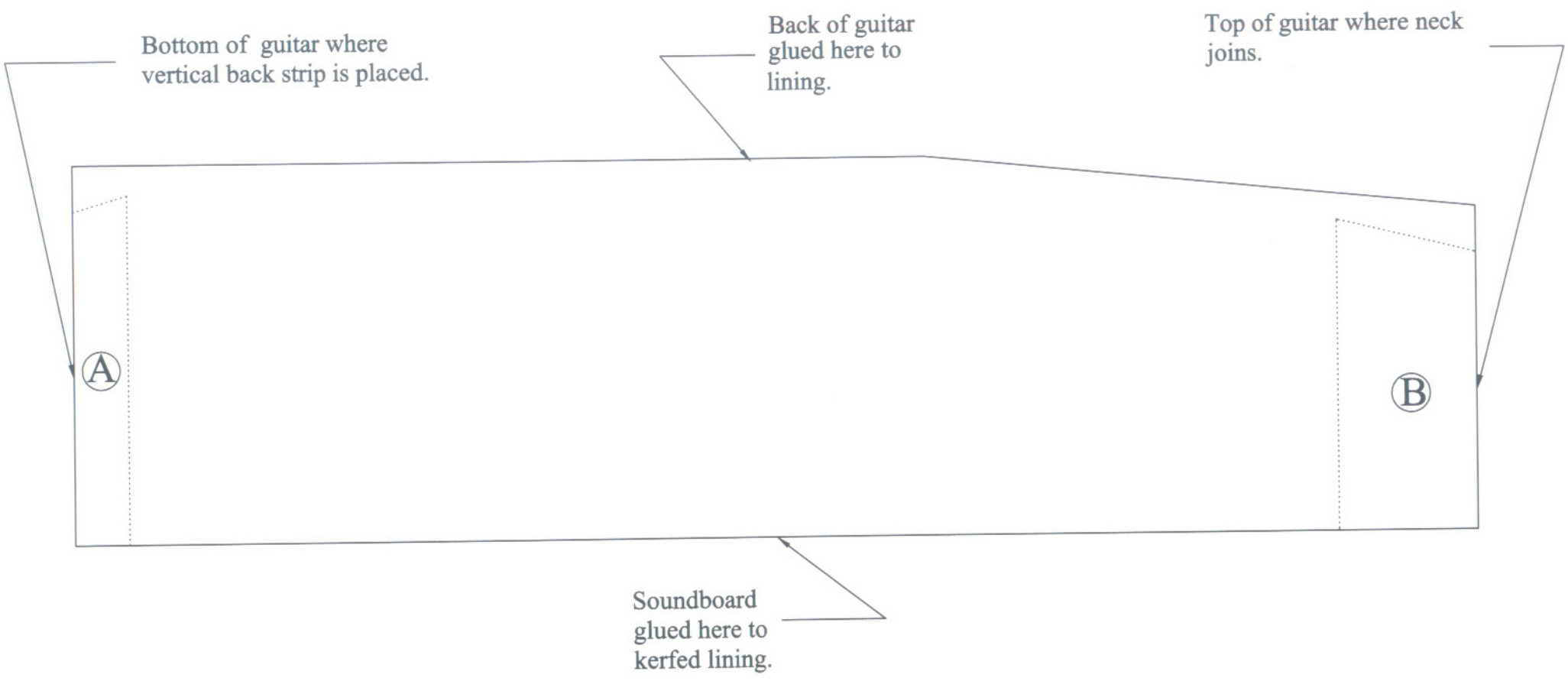
Preparing Tail And Neck Blocks



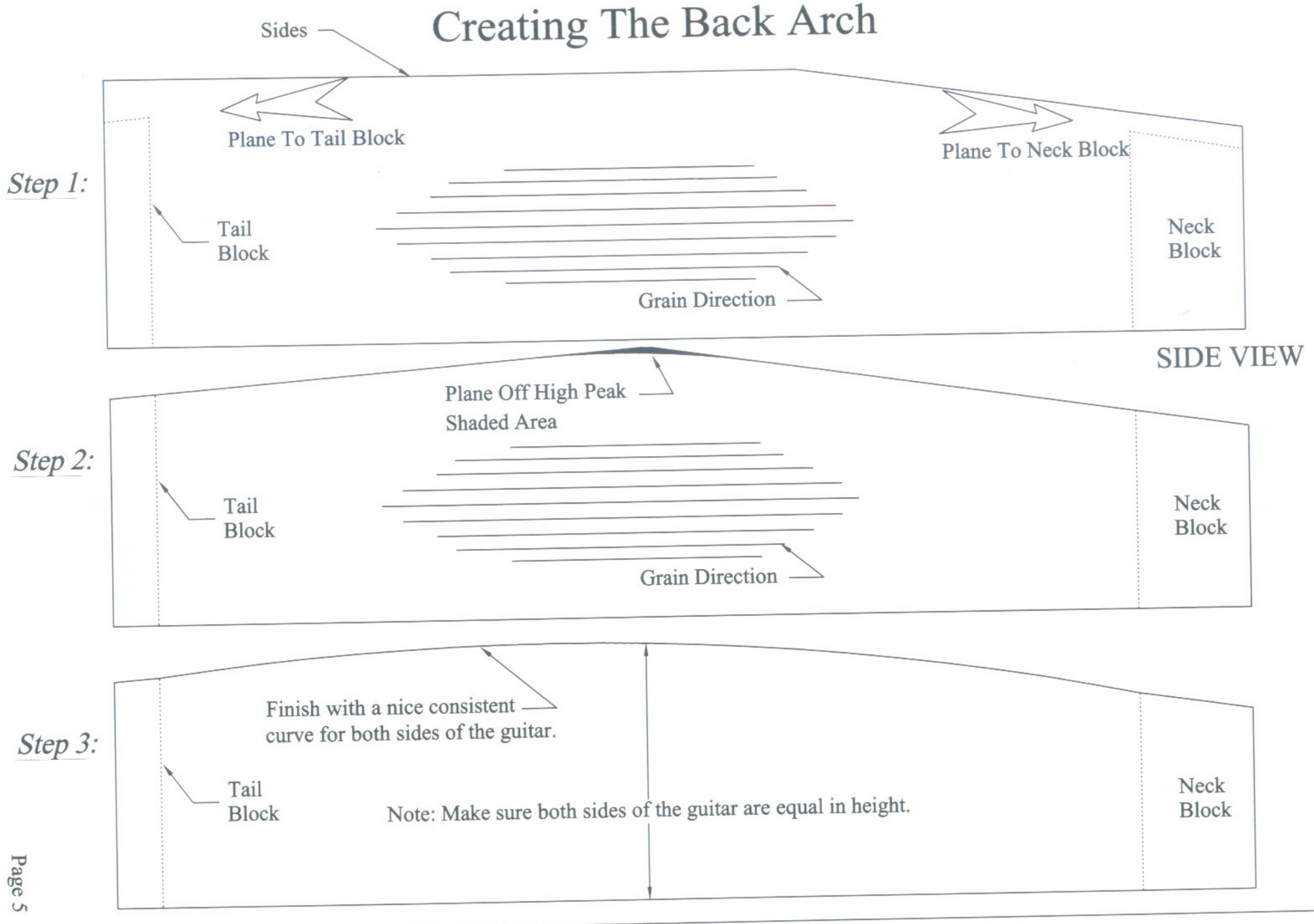
Tail Block: Wood: Queensland Maple
* Dimensions in brackets are approx.
Use 110 dim. to measure off 4° angle.

Neck Block: Wood: Queensland Maple
* Dimensions in brackets are approx.
Use 95 dim to measure off 4° angle.

Gluing Tail and Neck Blocks cont....

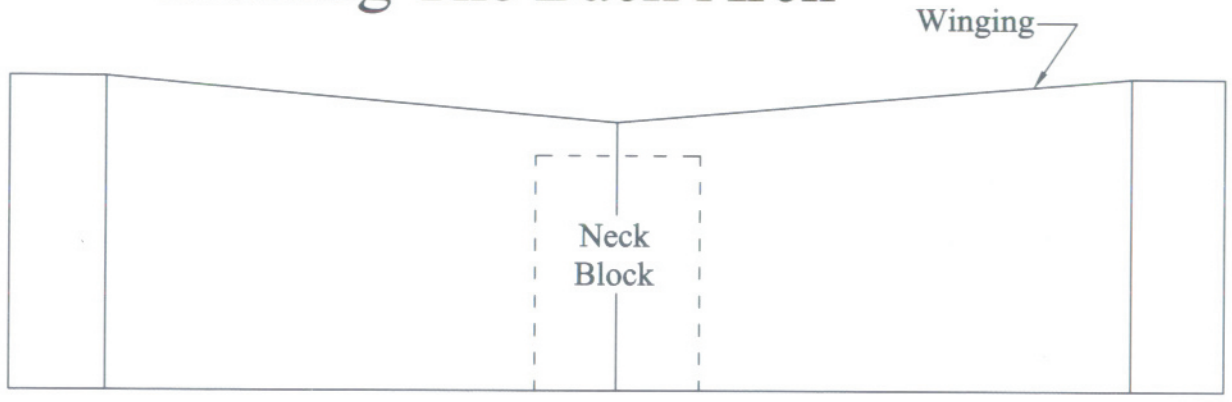


Creating The Back Arch

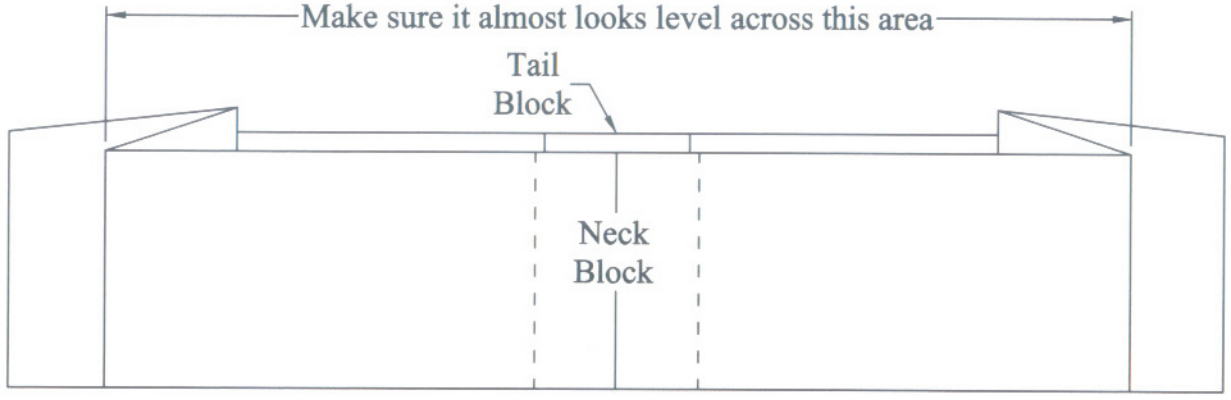


Creating The Back Arch

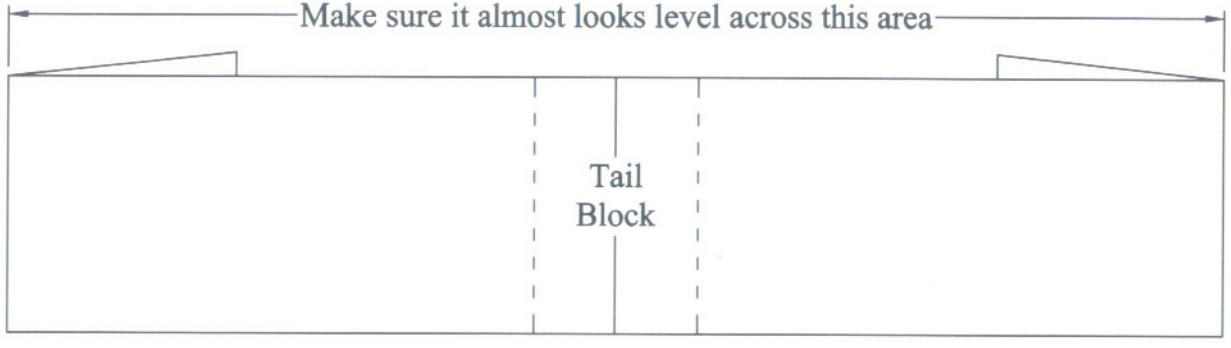
Front View Before shaping



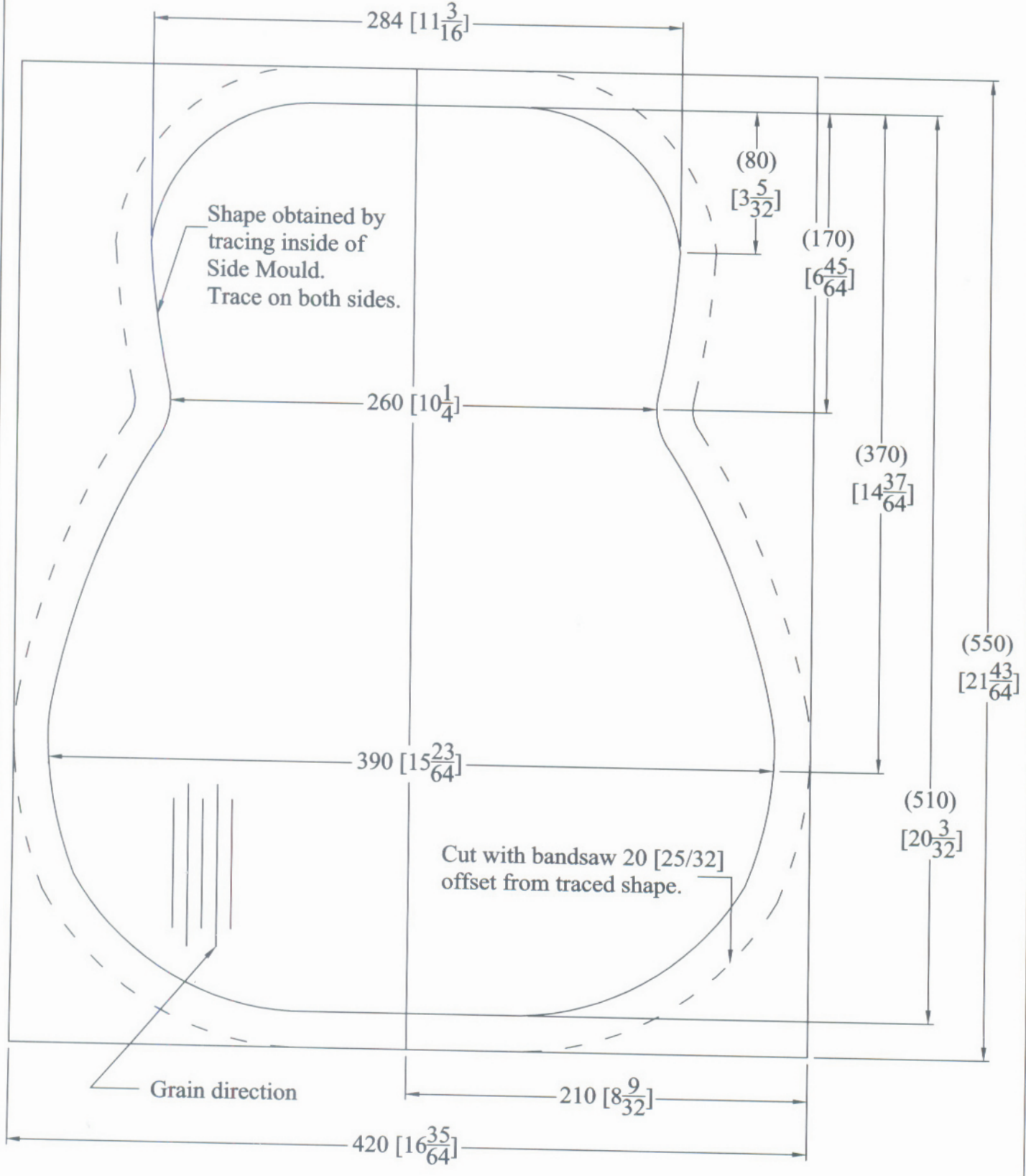
Front View After shaping



Back View After shaping



Cutting Out The Back



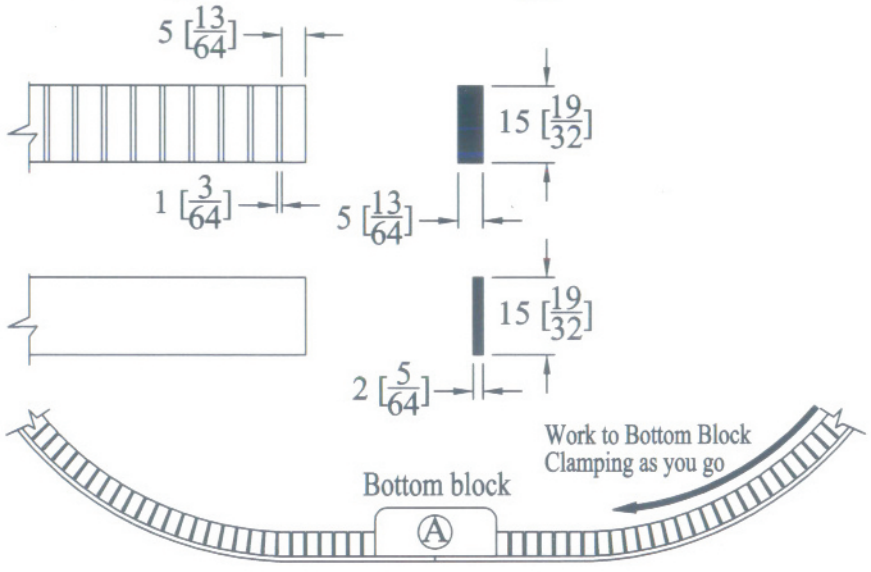
Wood: Fiddleback Blackwood, quarter-sawn

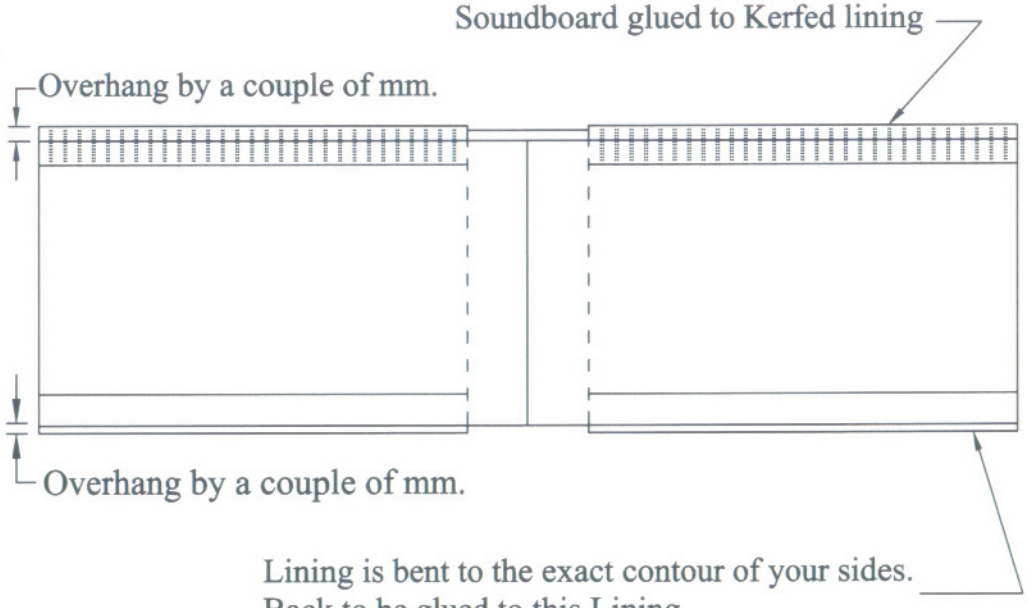
Thickness: 2.5mm [3 /32]

Note: The above "Vertical" dimensions are approximate.

Making And Gluing Kerfed Lining

Wood: King Billy Pine





You can also purchase CNC cut Kerfed Lining.

King Billy Pine Strips are already pre-bent to the guitar's shape and therefore just need to be cut and glued in.

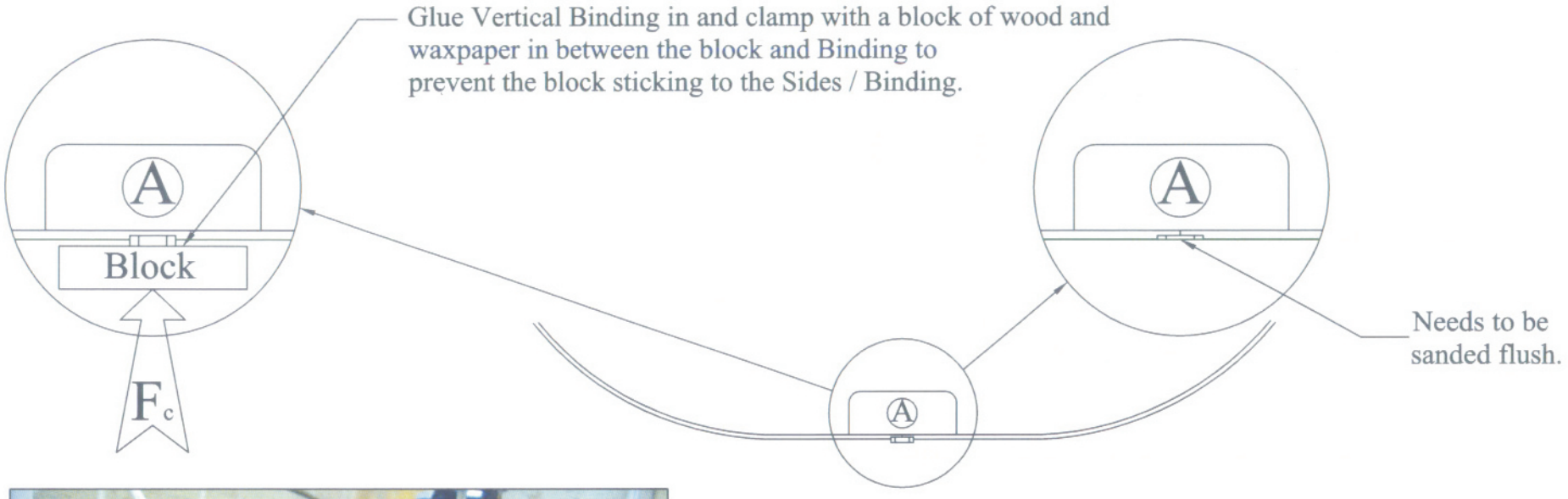
Step 1: Place the joined Sides back into the Side moulds and clamp so they retain their shape.

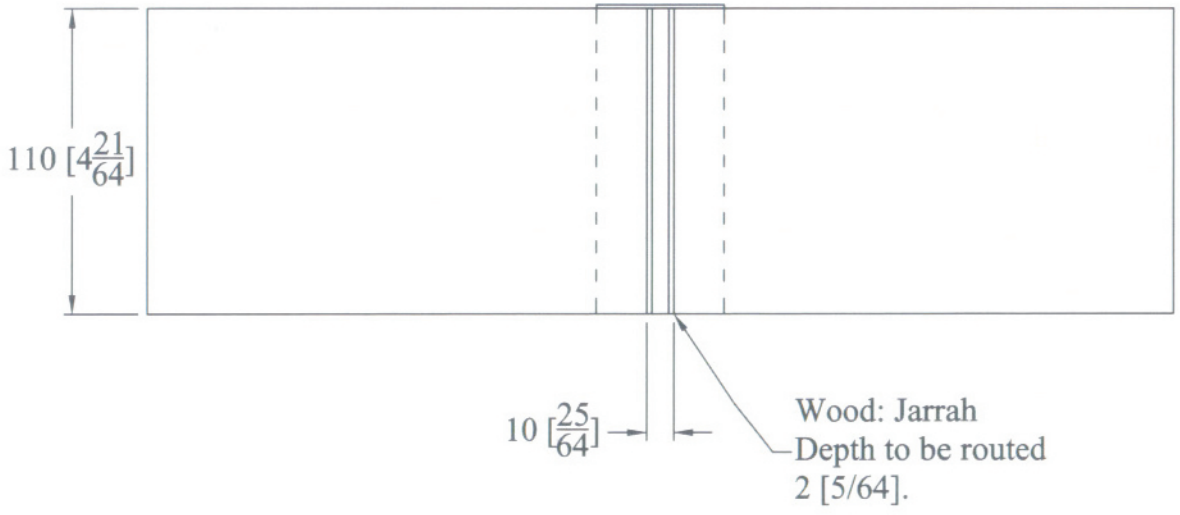
Step 2: Take a strip of lining. Cut to length. Apply glue and begin at the neck block of the guitar working your way around to the tail block, clamping as you go. Wipe away any excess glue from the inside of the guitar.

Step 3: Repeat the same process for the other linings and for your kerfed lining. Remember to overhang the linings and the kerfed linings by 2mm [5/64] above the sides.

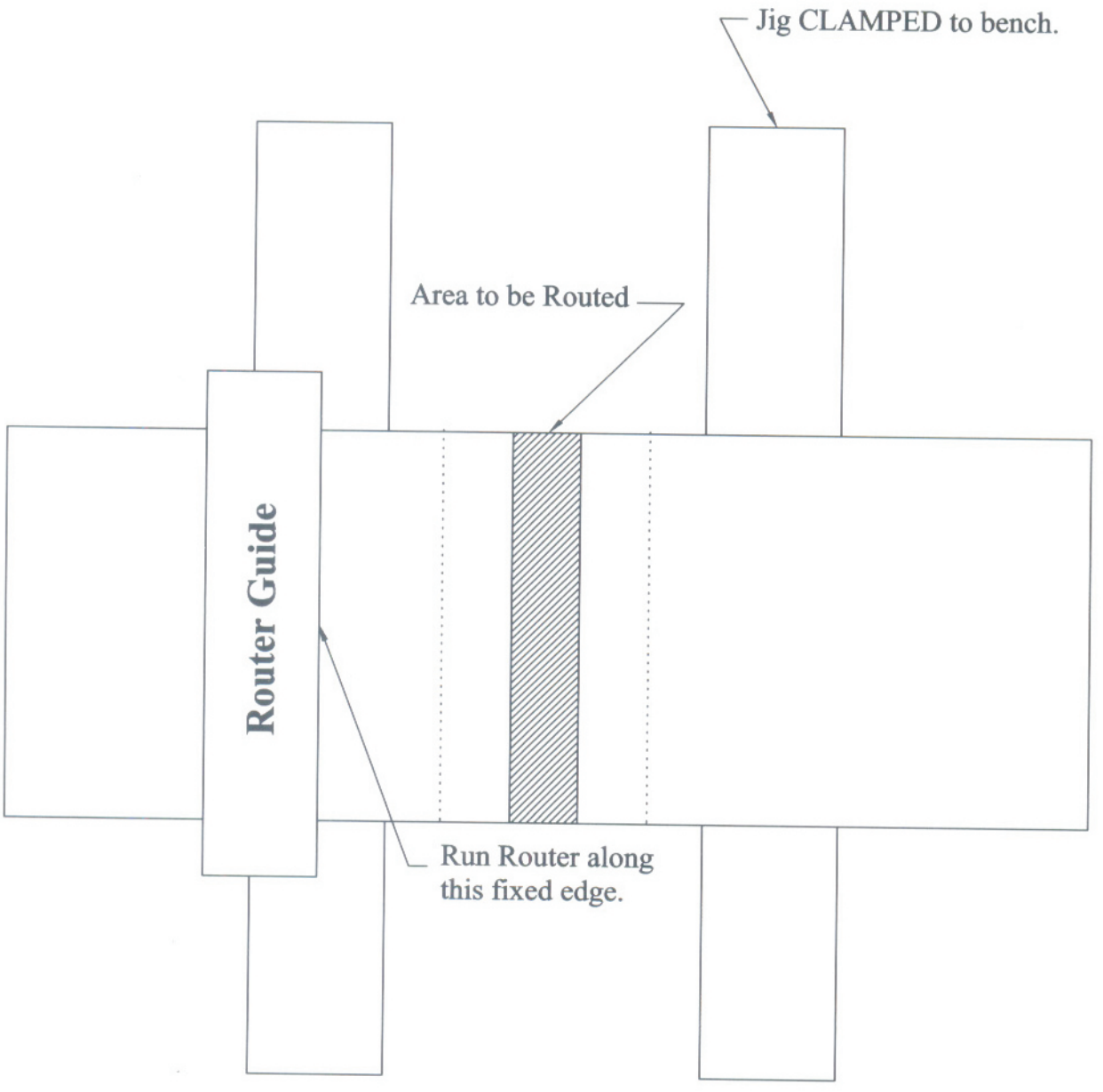
Step 4: After all linings and kerfed linings have dried, sand flush to the top and bottom blocks, maintaining the angle of the blocks all around.

Fitting Back Strip





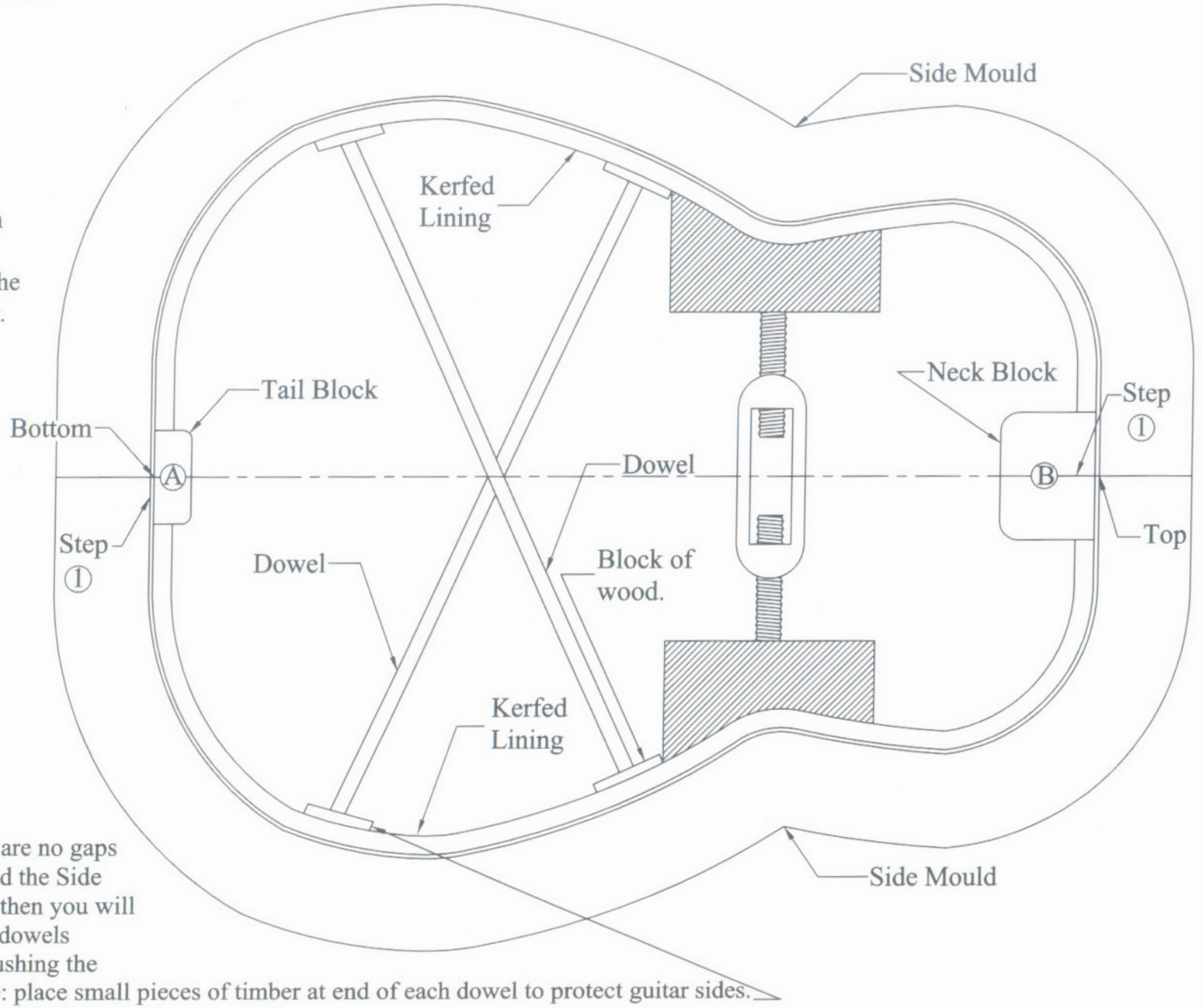
Fitting Back Strip cont.....



Fitting The Back

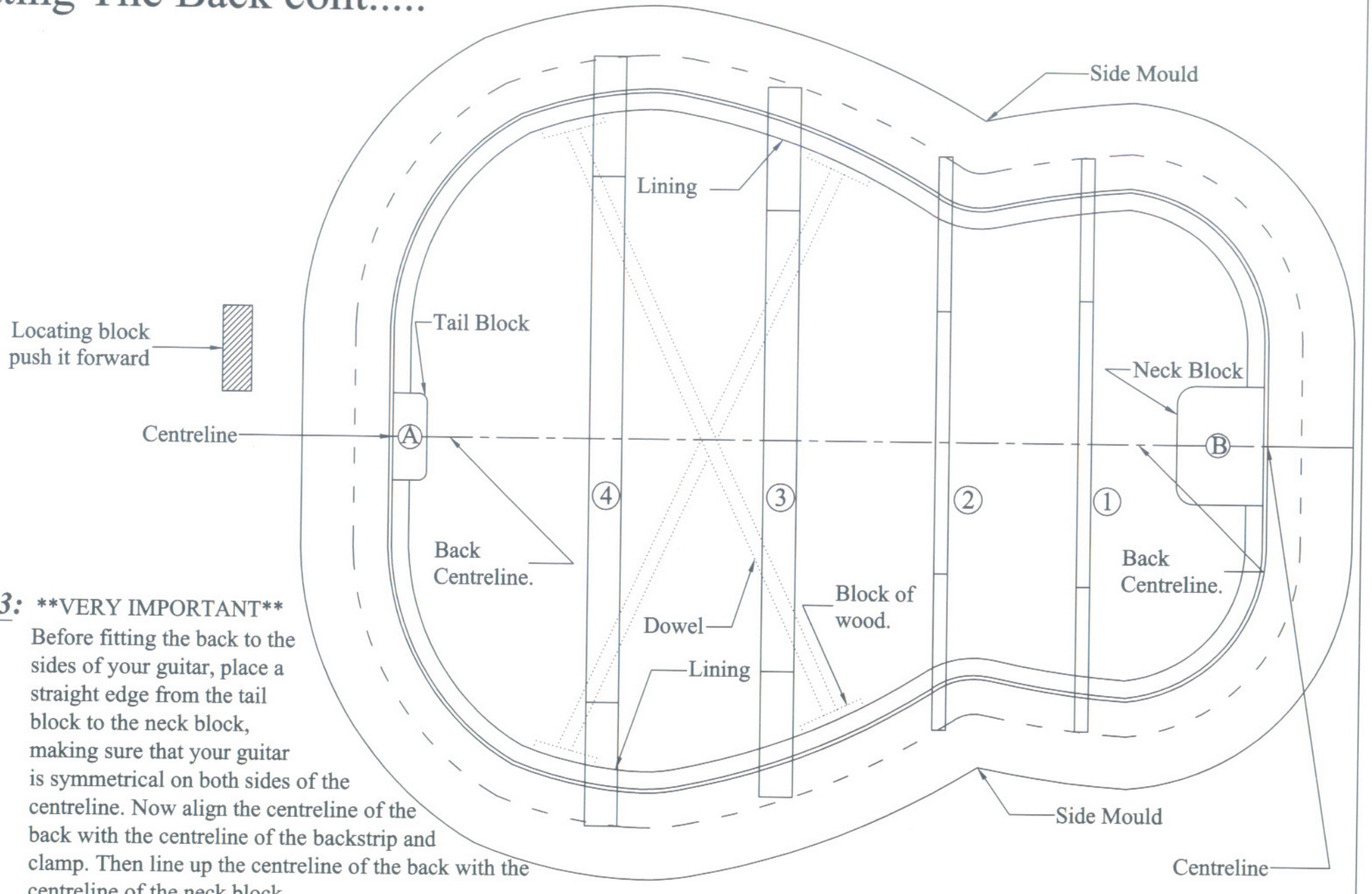
Step 1:

Sand lining sides down first. Draw a centreline from the Vertical Binding at the Bottom of your guitar to the Top. This will help with the aligning of the Back and the Soundboard later. Then place the Sides into the Side Moulds.



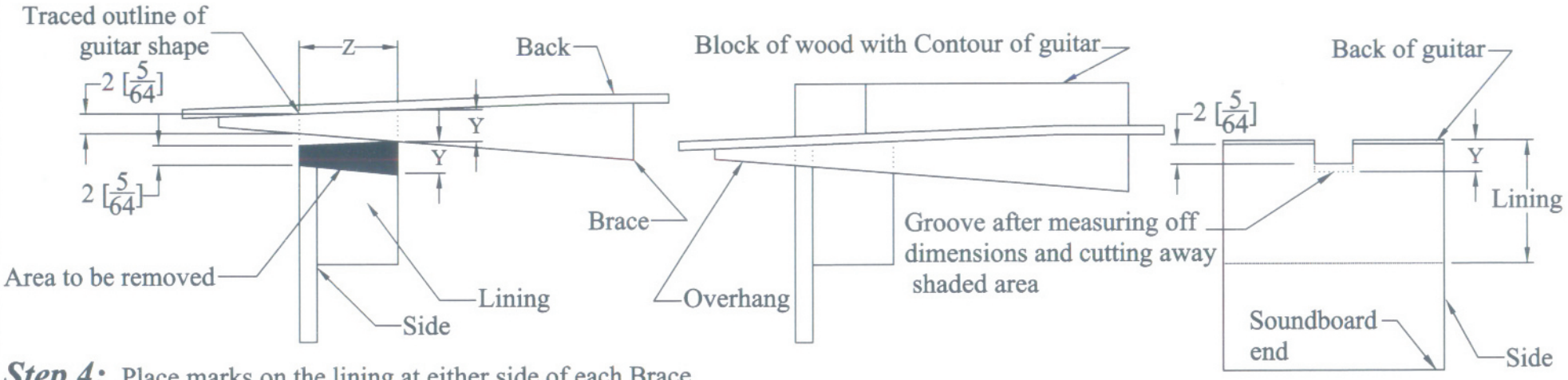
Step 2: Make sure that there are no gaps between the Sides and the Side Moulds. If there are, then you will need to wedge some dowels across the interior, pushing the Sides outwards. Note: place small pieces of timber at end of each dowel to protect guitar sides.

Fitting The Back cont.....



Step 3: **VERY IMPORTANT**
Before fitting the back to the sides of your guitar, place a straight edge from the tail block to the neck block, making sure that your guitar is symmetrical on both sides of the centreline. Now align the centreline of the back with the centreline of the backstrip and clamp. Then line up the centreline of the back with the centreline of the neck block.

Fitting The Back cont.....



Step 4: Place marks on the lining at either side of each Brace (marking on both sides of the body, left and right). These form the areas where you will cut down the Sides and Kerfed lining the thickness of the brace at that location.

Step 5: All your Tapers for the Backbraces should be 2mm [5/64] at the guitar's outline shape, so 2mm [5/64] has to come off the Side. Next, measure off distance Z (which is the thickness of the Side and Lining) and workout how much distance Y has to be removed from the Lining in order for the Brace to fit and allow the Back to rest onto the Lining. Once you have marked off on both sides of the body, you can use a Japanese Hand Saw to make cuts. Then use either a chisel or file to remove the shaded area. Check the groove from time to time for fit by ***re-clamping and aligning*** the Back.

Step 6: When you are satisfied with the way the Back fits, align to centre line, glue and clamp it to the Sides. Allow to dry. Turn guitar over wipe away the excess glue off the Lining and Back of guitar.

Step 7: A router is needed to remove any overhang all the way around the guitar. Once the overhang is flush with the Sides, a Binding strip bent to the contour of the guitar will be added to hide the braces, giving it a better finish. Refer to Page 29.v2

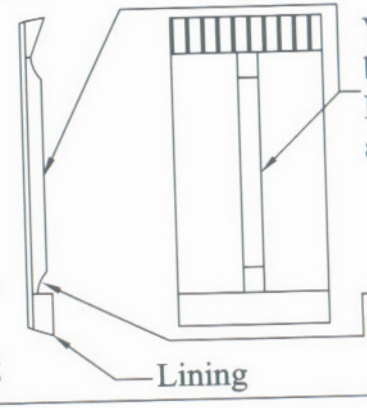
Side Strips Wood: Queensland Maple. Centre Braces: King Billy Pine

Step 1:

Centre Braces are added along the centreline of the Back for extra strength to the seam. Take your pieces of wood and sand them smooth. Then measure and cut each brace. They have to be a nice fit (no visible gaps) between each Back. Glue them into position. They don't need to be clamped.

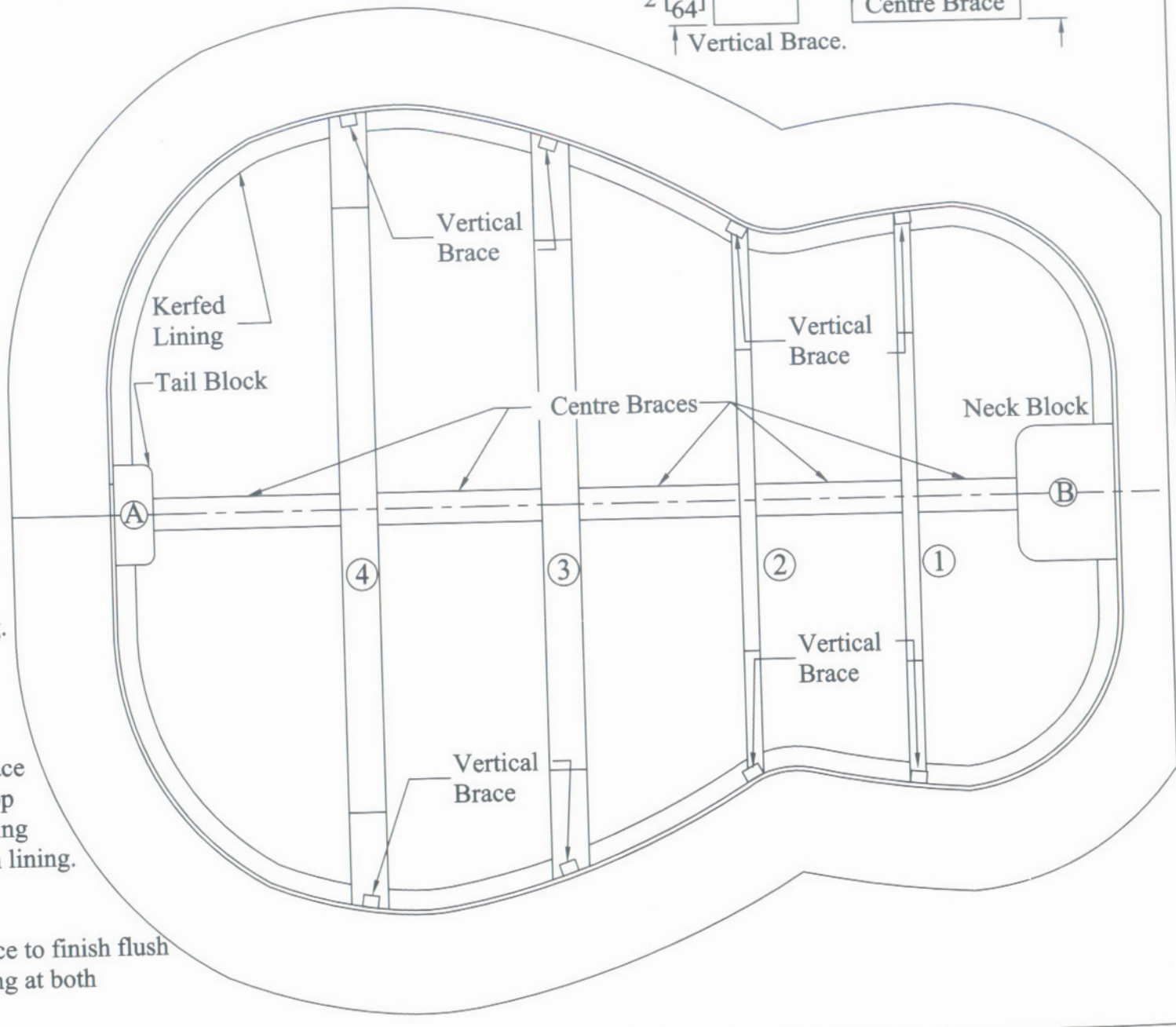
Step 2:

At every Backbrace position, there is a Vertical Brace supporting the Sides. It is wedged in between the Top and Bottom Linings at that point. Measure and cut each brace and taper the ends to finish flush with the Lining. Glue / Clamp to the Sides and align them so that they are in the middle of the Backbrace.

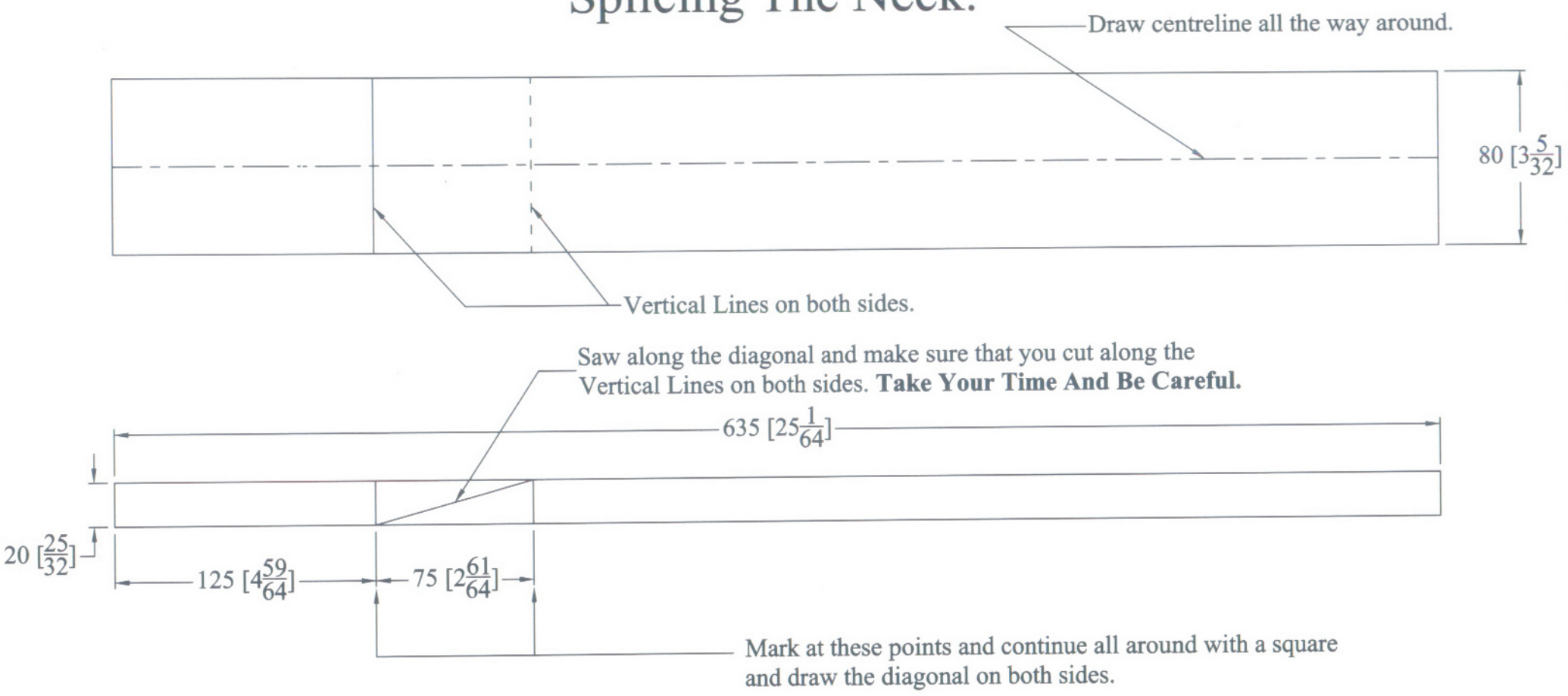


Vertical brace between Top Kerfed Lining and Bottom lining.

Taper brace to finish flush with Lining at both ends.



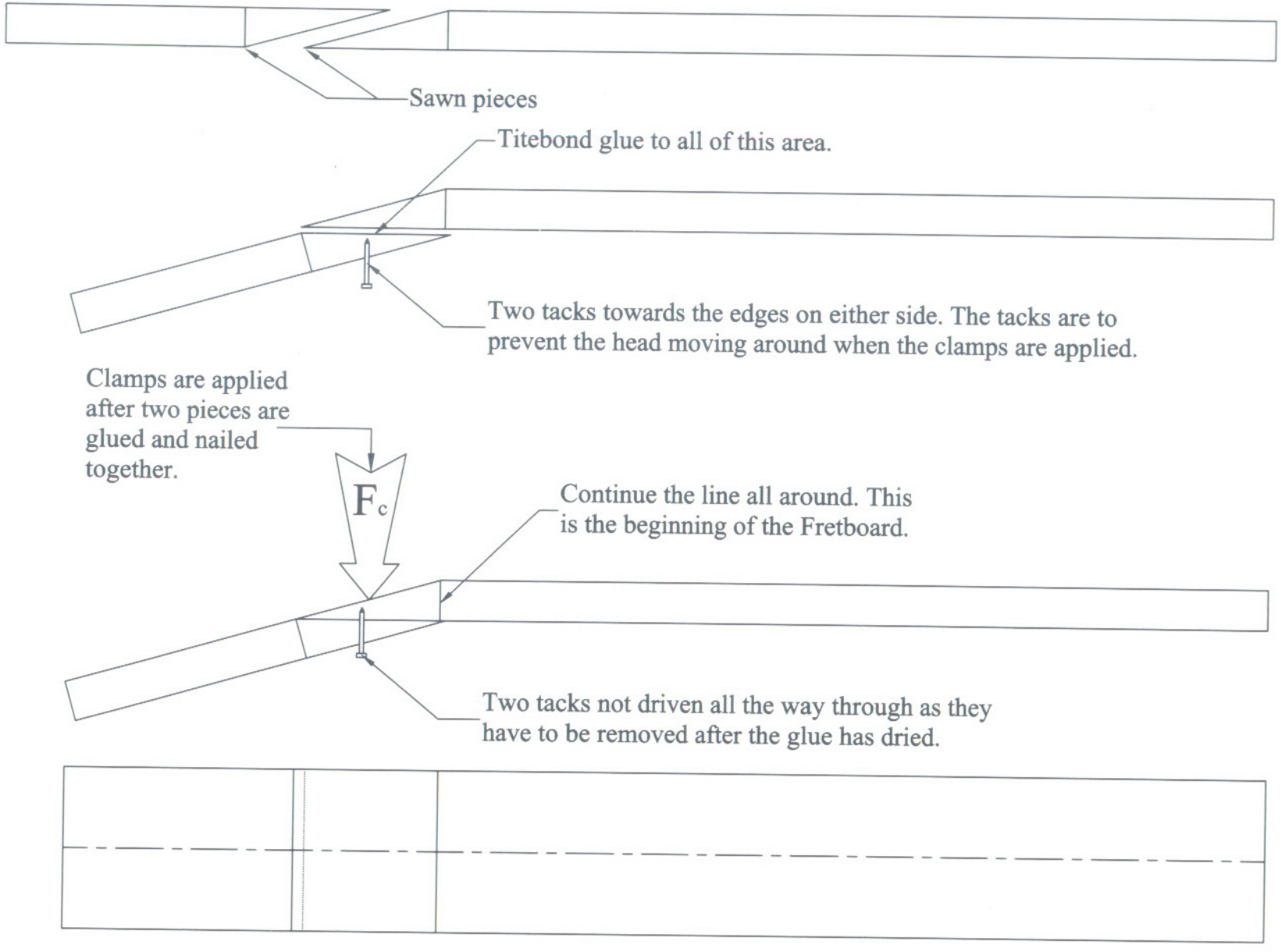
Splicing The Neck.



Wood: Queenland Maple.

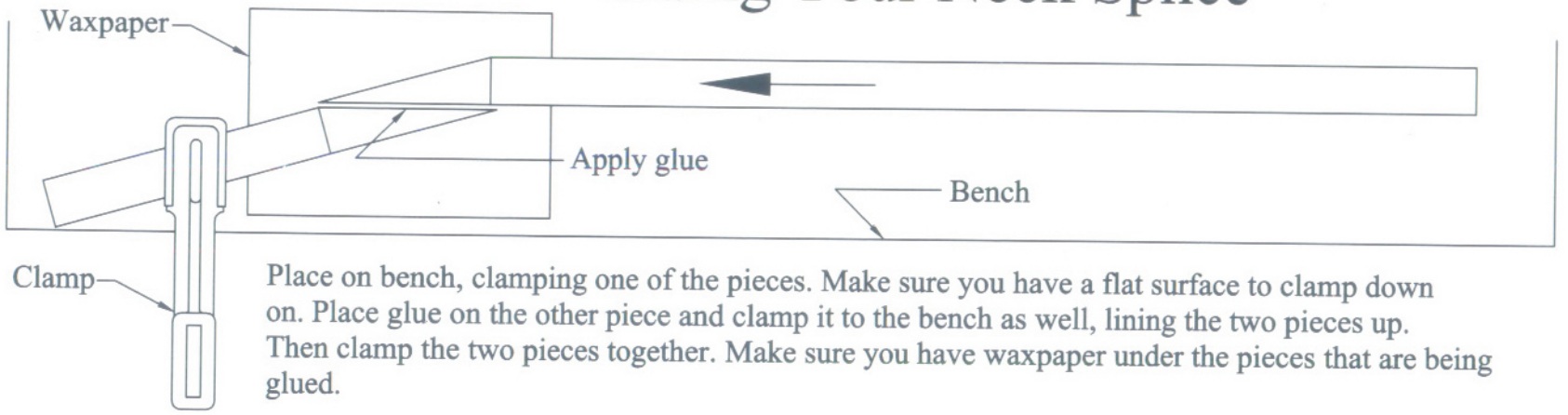
Note: It is strongly recommended that before you glue the Heel Block onto the Neck, you completely draw all the other lines necessary for the Neck taper and Truss Rod Groove because it is difficult to do so later. After the Heel Block is glued onto the Neck, it is easier to draw the lines to cut out your neck shape.

Gluing Your Neck Splice

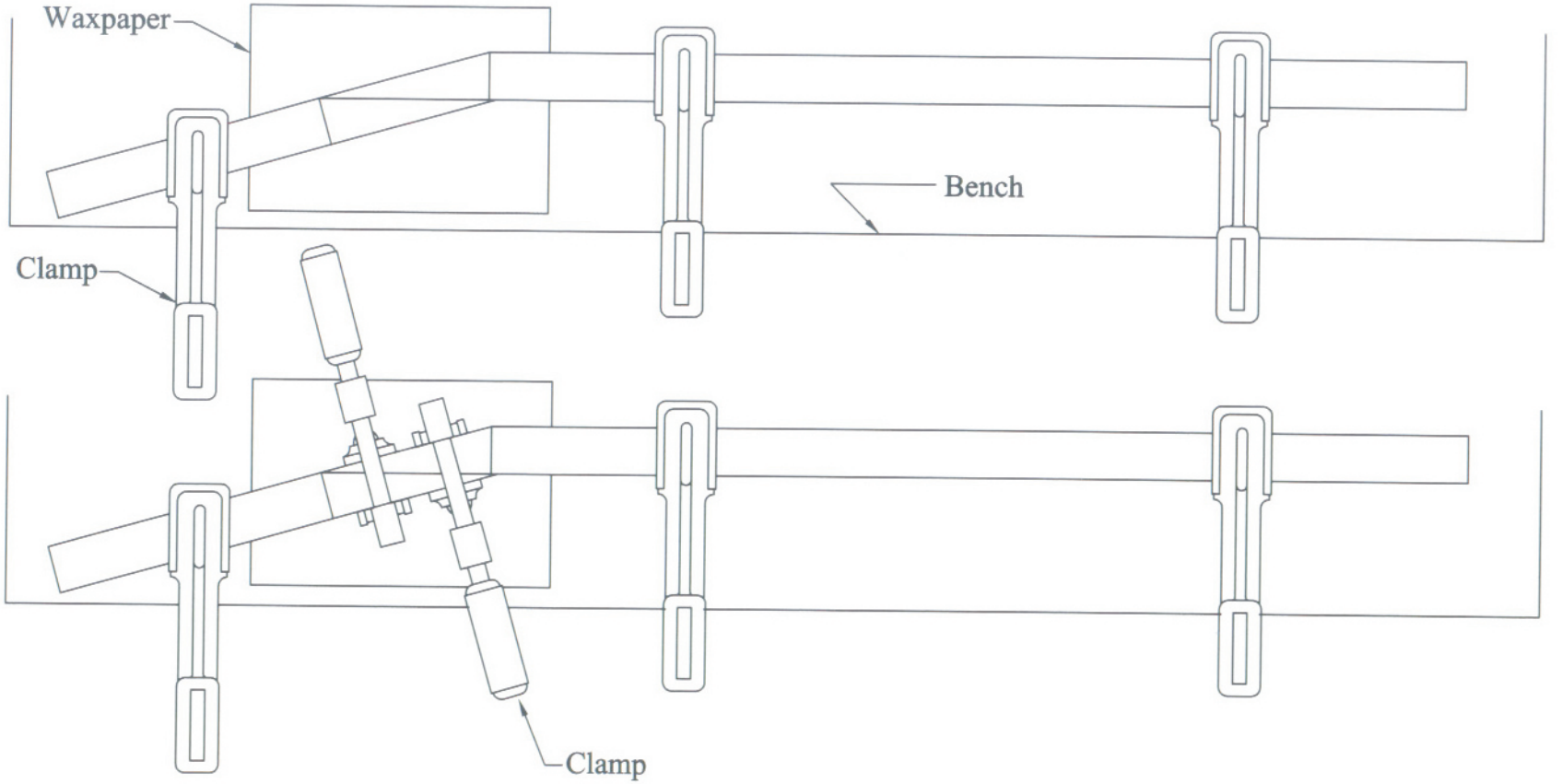


Now you are ready to glue the veneers onto the Headstock .

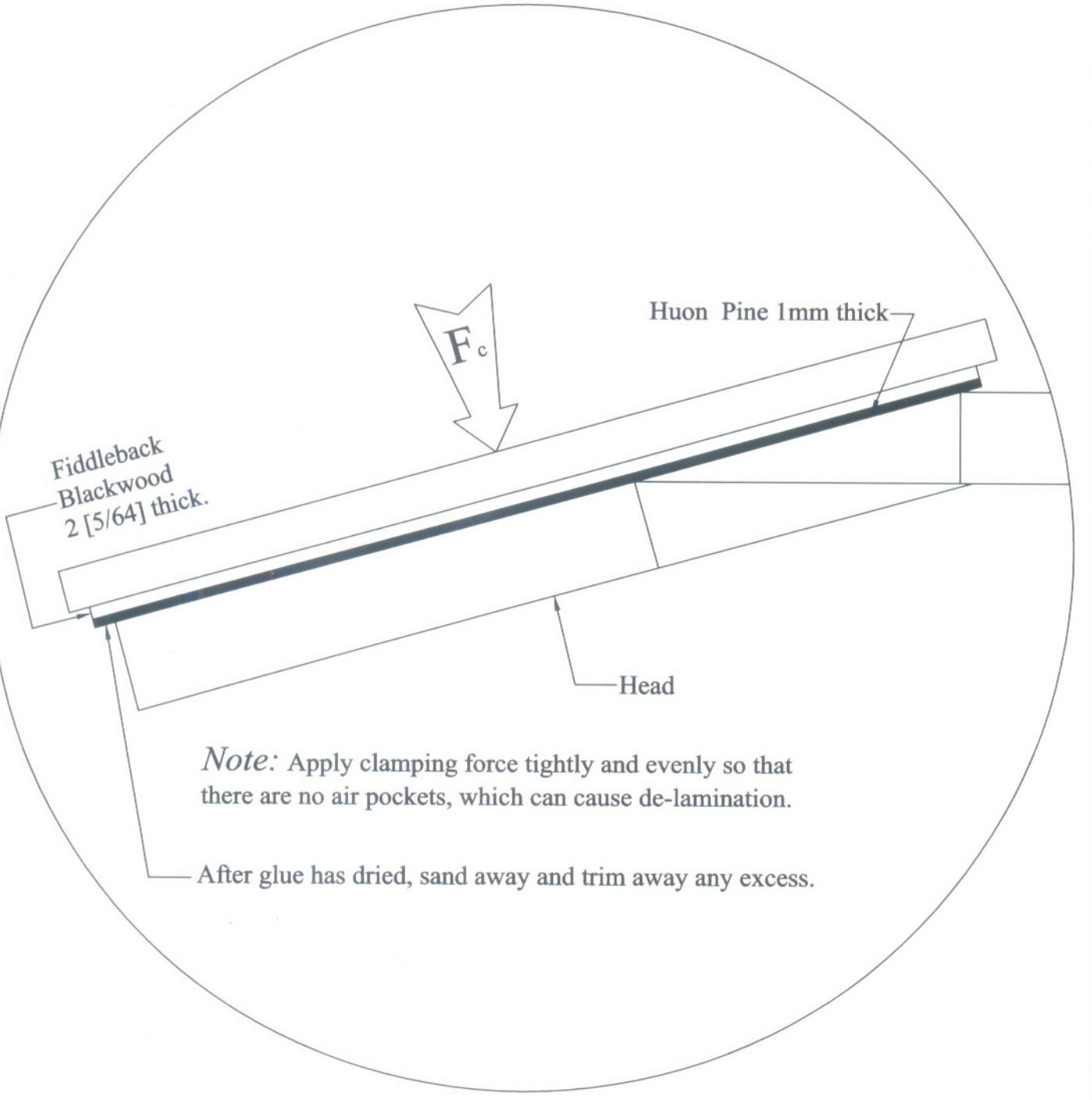
Gluing Your Neck Splice



Place on bench, clamping one of the pieces. Make sure you have a flat surface to clamp down on. Place glue on the other piece and clamp it to the bench as well, lining the two pieces up. Then clamp the two pieces together. Make sure you have waxpaper under the pieces that are being glued.



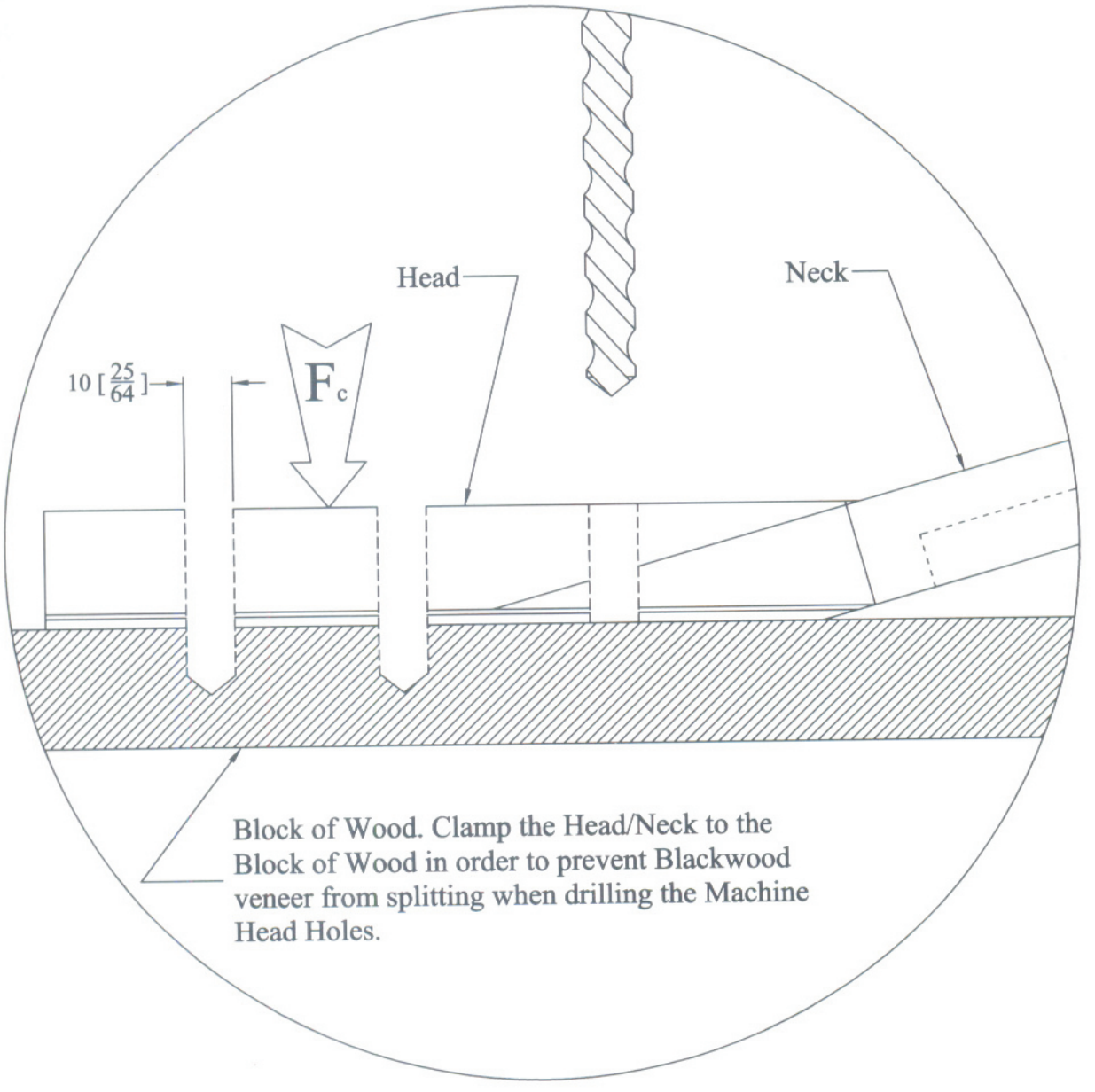
Gluing On Headstock Veneer



Note: Apply clamping force tightly and evenly so that there are no air pockets, which can cause de-lamination.

After glue has dried, sand away and trim away any excess.

Drilling Machine Head Holes



Step 1 : Drill Machine Head Hole. See above diagram for details.
Make sure that the Head is LEVEL *for each hole drilled.*

Marking Out Soundboard Bracing

X-Bracing: Width = 8mm [5/16], Height = 19mm [3/4] , Length = 522mm. [20 9/16] ***Two Pieces***

Upper Transverse Graft: Width = 22mm [7/8], Height = 3mm [1/8] , Length = 328mm. [12 59/64]***One Piece***

Upper Face Brace: Width = 13mm [33/64], Height = 16mm [5/8] , Length = 335mm. [13 13/64] ***One Piece***

Lower Face Brace: Width = 6mm [15/64], Height = 13mm [33/64] , Length = 290mm. [11 27/64] ***Two Pieces***

Finger Brace: Width = 6mm [15/64], Height = 6mm [15/64] , Length = 100mm. [3 15/16] ***Four Pieces***

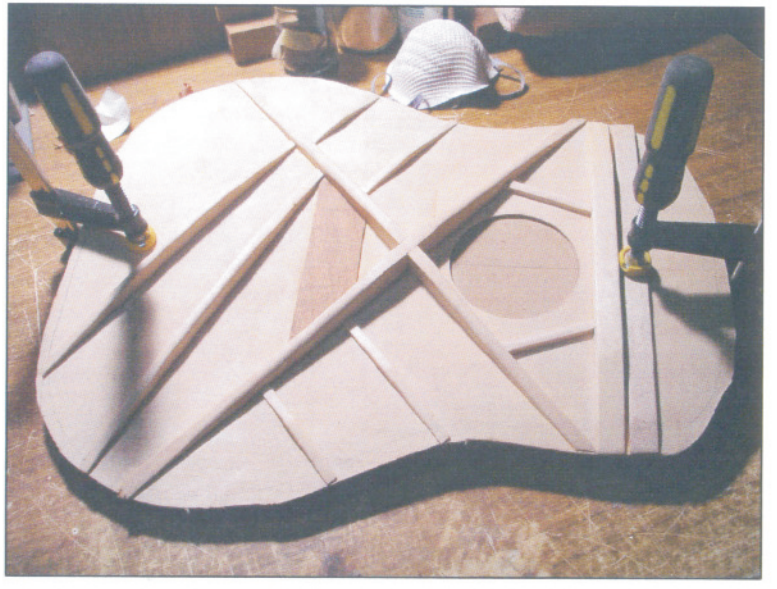
Soundhole Brace: Width = 8mm [5/16], Height = 10mm [25/64] , Length = 76mm. [3] ***Two Pieces***

Step 1: Draw all the brace locations on the Soundboard (but not on the side that is going to be the front). Determine whether it is a left or right handed guitar you are making as the bracing pattern differs.

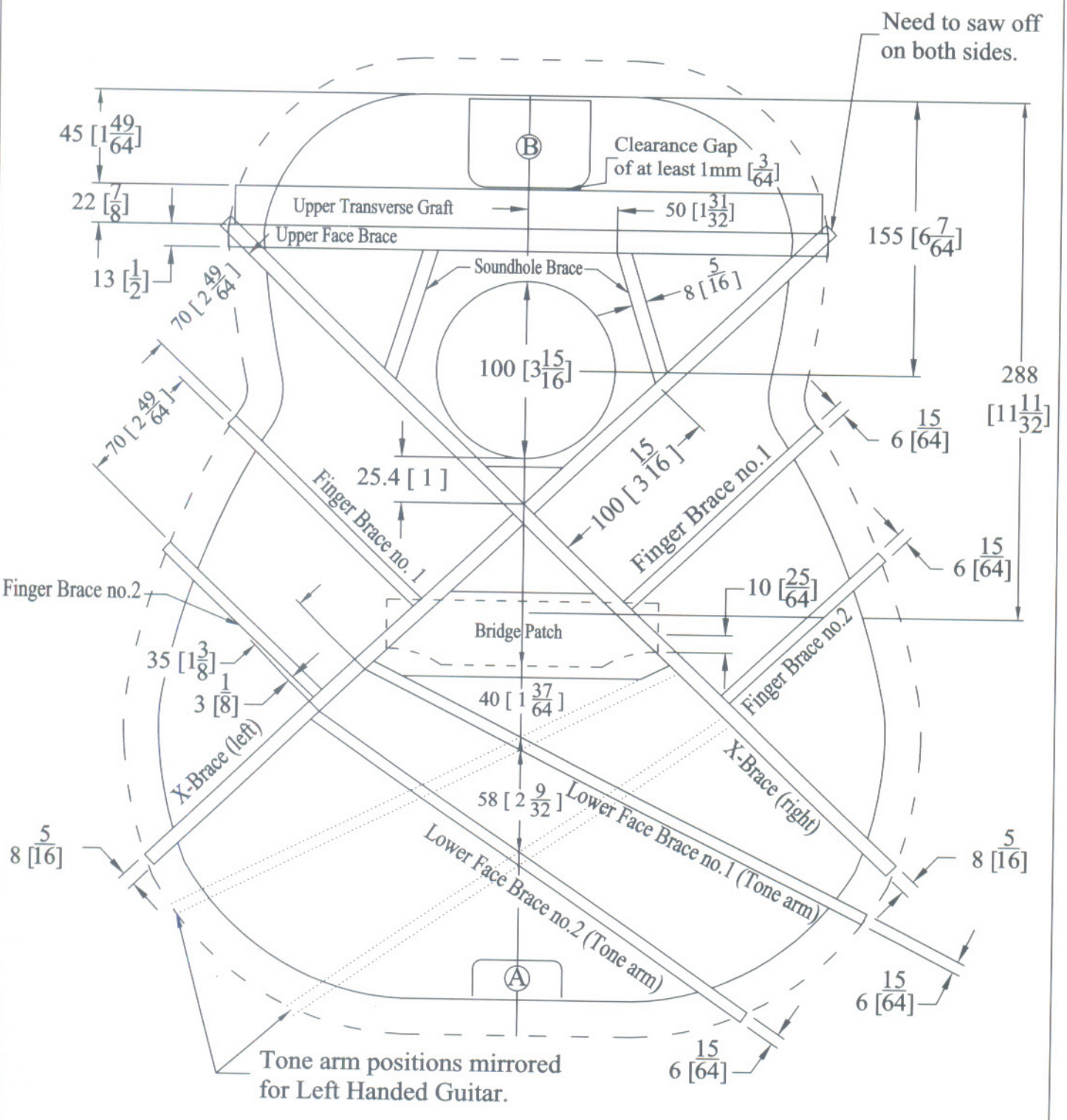
Step 2: Sand all bracing woods smooth, as it will be difficult to do so after they have been glued to the Soundboard.

Step 3: As you did with the Backbracing, place sandpaper under the brace needed to be shaped. Then sand it until you obtain the desired shape of the mould at the brace's location. With light finger pressure, there should be no visible gaps between the Soundboard mould and the brace. Repeat this for all braces.

Note: There must be some clearance between the Top Block B and the Upper Transverse Graft, at least 1mm [3/64] or else the Soundboard won't fit properly. See drawing.



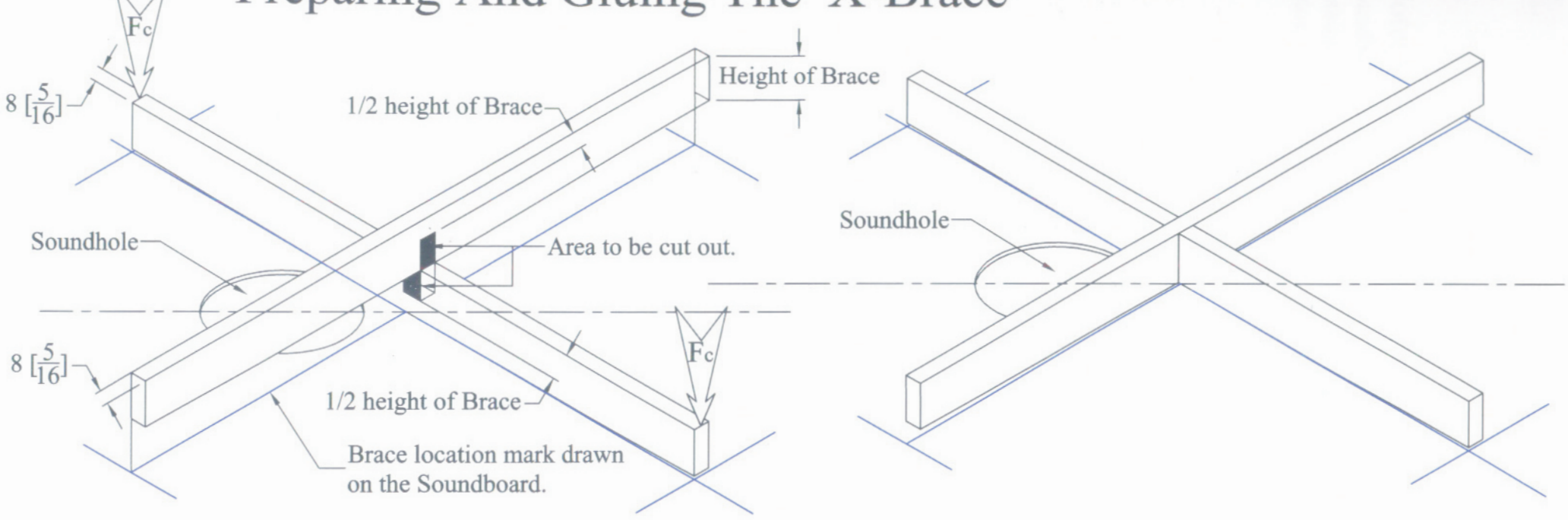
Marking Out Soundboard Bracing



Wood: Bunya Pine, quarter-sawn

***Note:** The dimension 288 [11 11/32] is to the front edge of the Saddle Slot on the Bridge.

Preparing And Gluing The X-Brace



***Step 1*:** Before you cut out the notches for your X-brace, you must remember to sand the curve into both braces using the soundboard mould. Mark each brace carefully, ensuring a nice, tight fit. Remember that when you cut out your notches, you must ensure that you cut the curved edge of one brace, and the straight edge of the other. To do this, you must put them both in the vice together, one curved edge up and one straight edge up. Be sure to cut on the inside of the pencil marks, to ensure a tight fit.

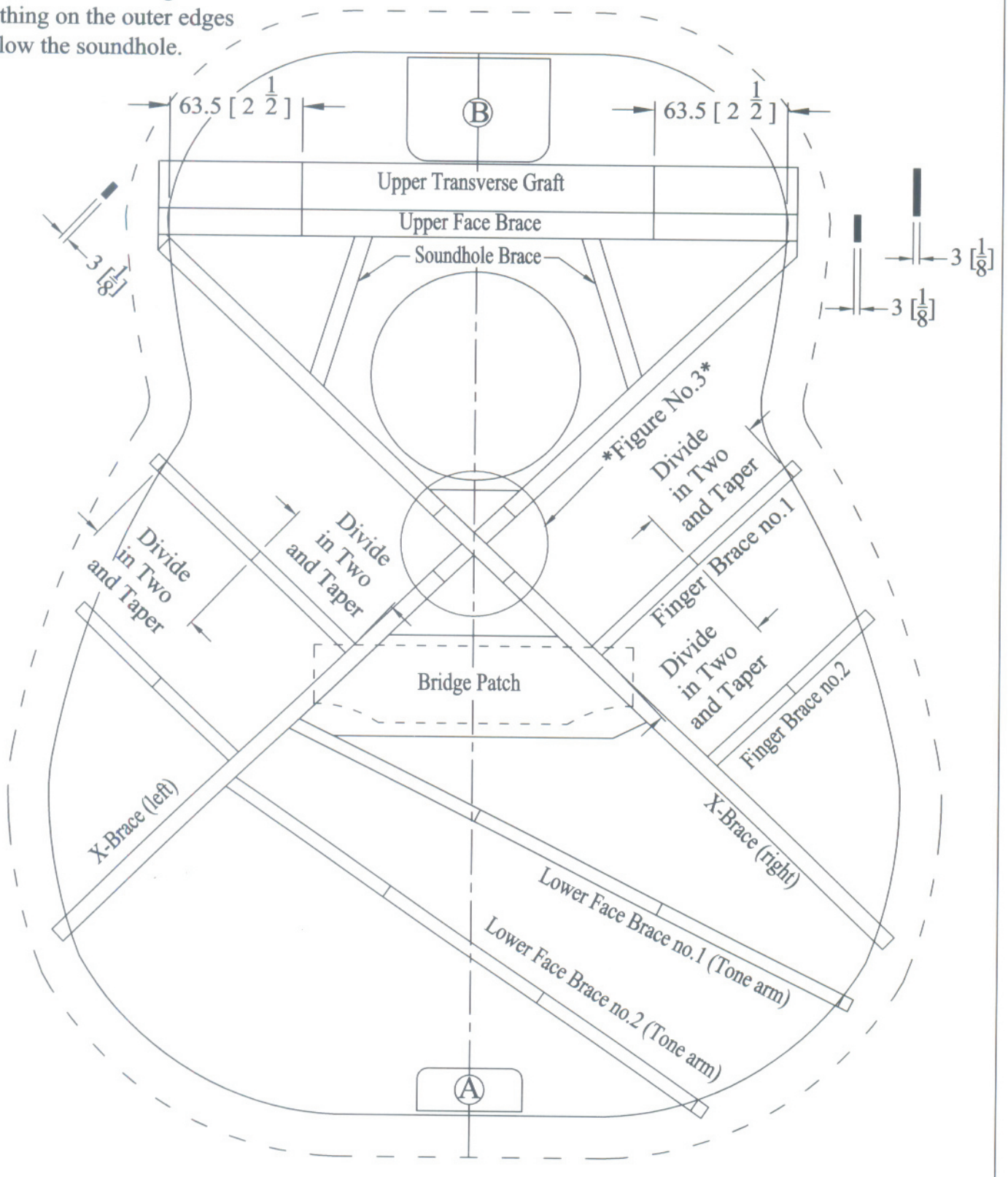
Step 2: Now you have all the information necessary to cut out the shaded areas on the diagram above.

Remember that the shaded area in the Bottom Brace must be removed from the top half of the brace. The shaded area in the Top Brace must be removed from the bottom half of the brace.

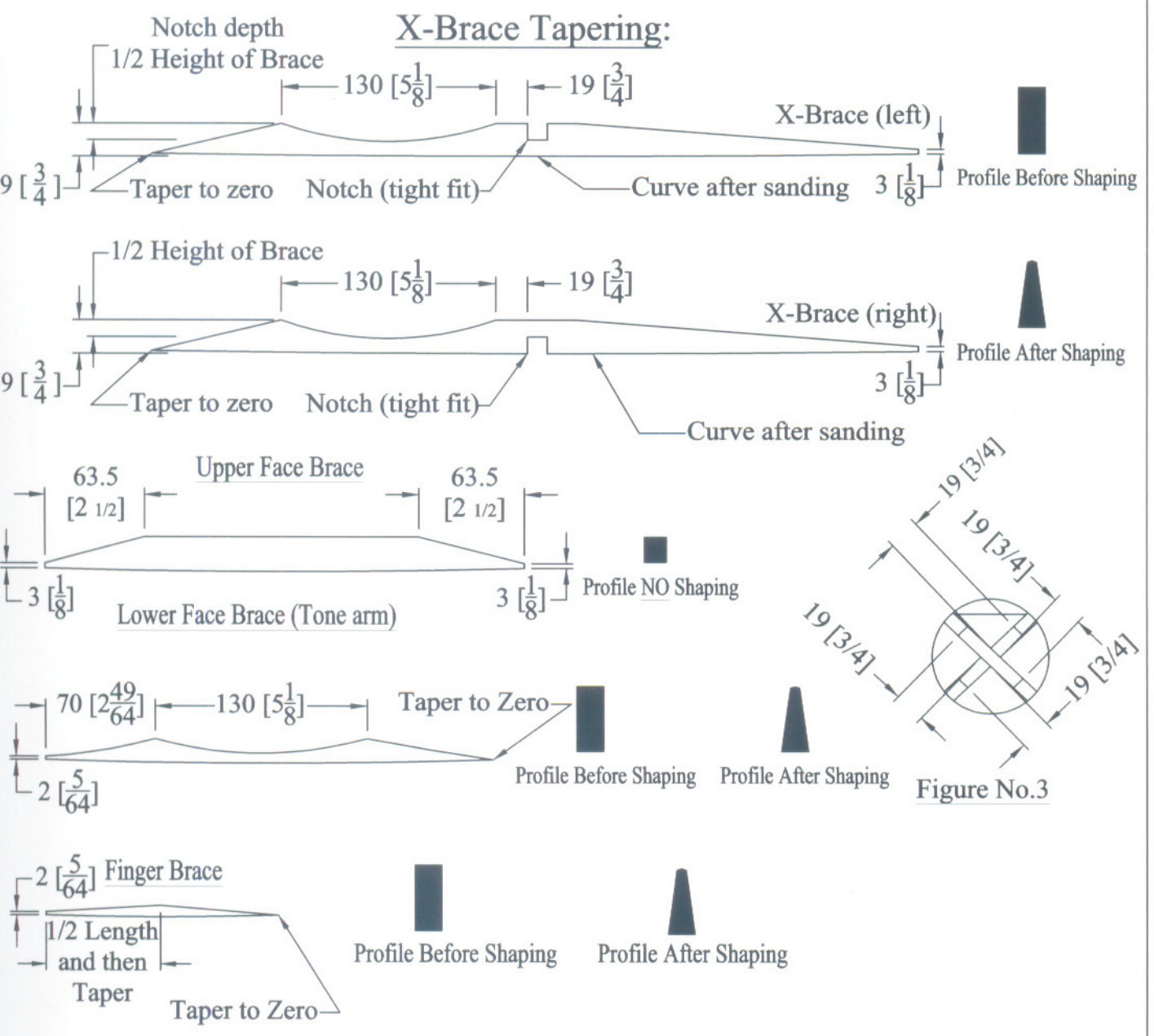
Be sure that any cuts you make are on the inside of the pencil marks, to ensure a tight fit between the braces.

Tapering The Soundboard Bracing

Note: Taper the Soundboard Bracing to nothing on the outer edges below the soundhole.



Tapering The Soundboard Bracing cont.....



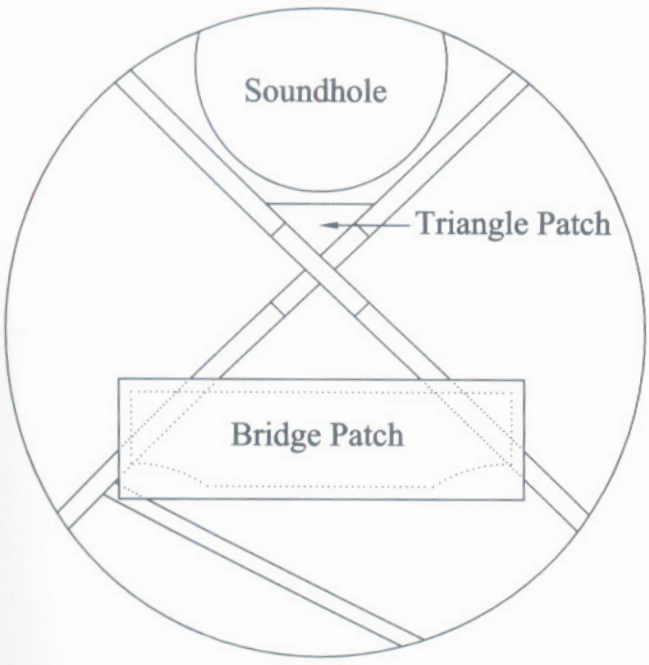
The process of Tapering and Shaping the braces is only completed **after each brace has been glued and allowed to dry**.

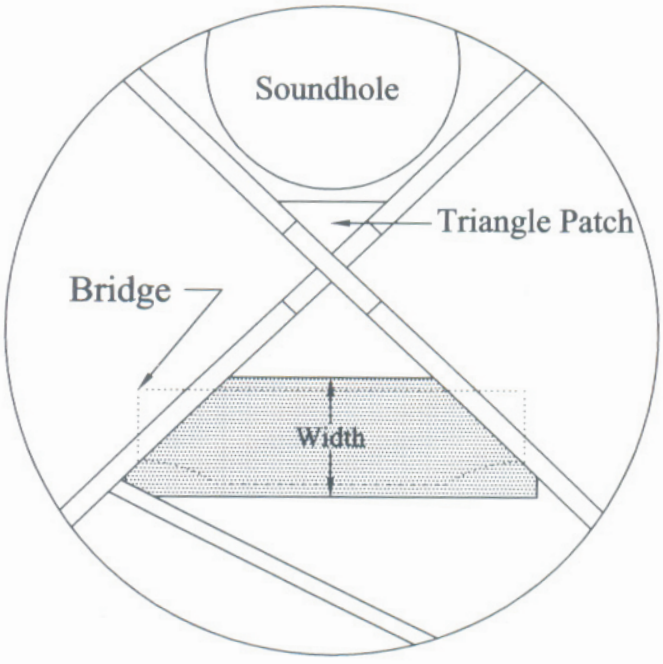
Step 1: Secure the Soundboard onto the Soundboard mould, aligning the centerline and outline. Next, glue and clamp the X-Braces onto the Soundboard and apply glue to the notches that you created on each brace. Once the glue has dried, you can taper the X-Braces.

Step 2: Now clamp the rest of your soundboard bracing on in this order:

1. Lower face brace 1, dry and shape.
2. Lower face brace 2 and finger braces, dry and shape.
3. Upper face brace, dry and shape.
4. Soundhole braces and upper transverse graft, dry and shape.

Marking And Gluing The Bridge Plate





Wood: Fiddleback Blackwood, 2 [5/64] thick.

BRIDGE PLATE

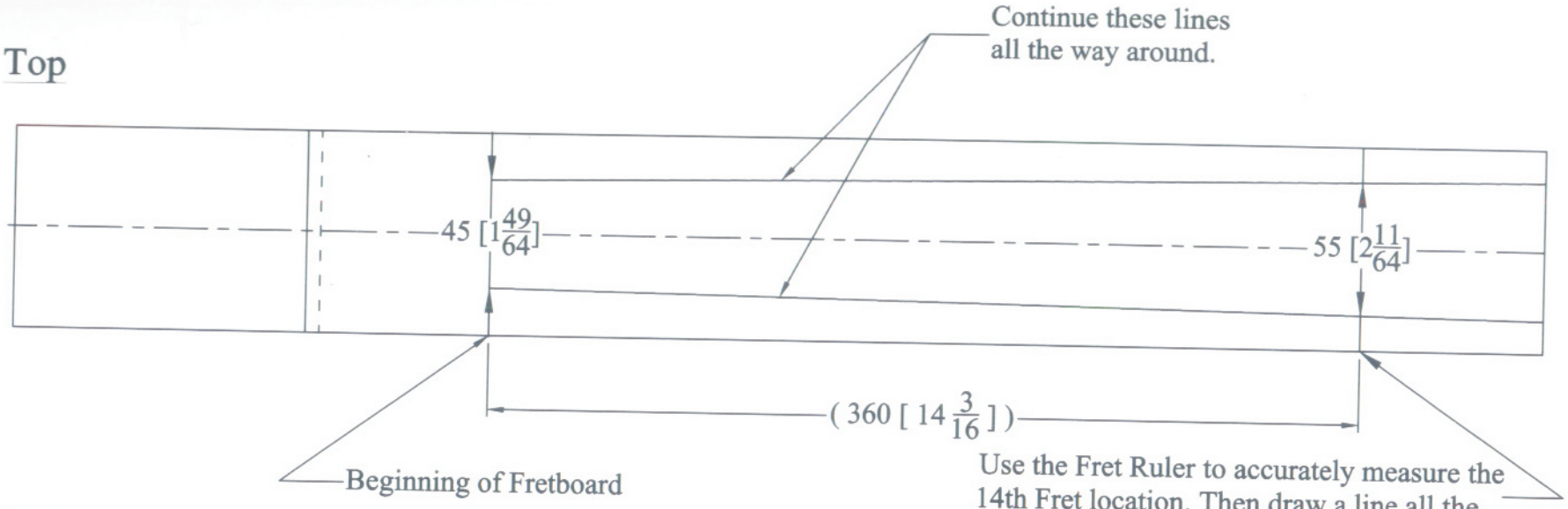
Step 1: Get a piece of Blackwood timber, approximately the size of the Bridge Plate that you are going to make. Roughly mark out where it will sit and cut to size.

Step 2: Slowly sand the edges, in order to get a tight, snug fit. It is very important that there is no movement of the Bridge plate against your soundboard bracing and that it is atleast 2-3mm [5/64] - [1/8] bigger in width than the Bridge.

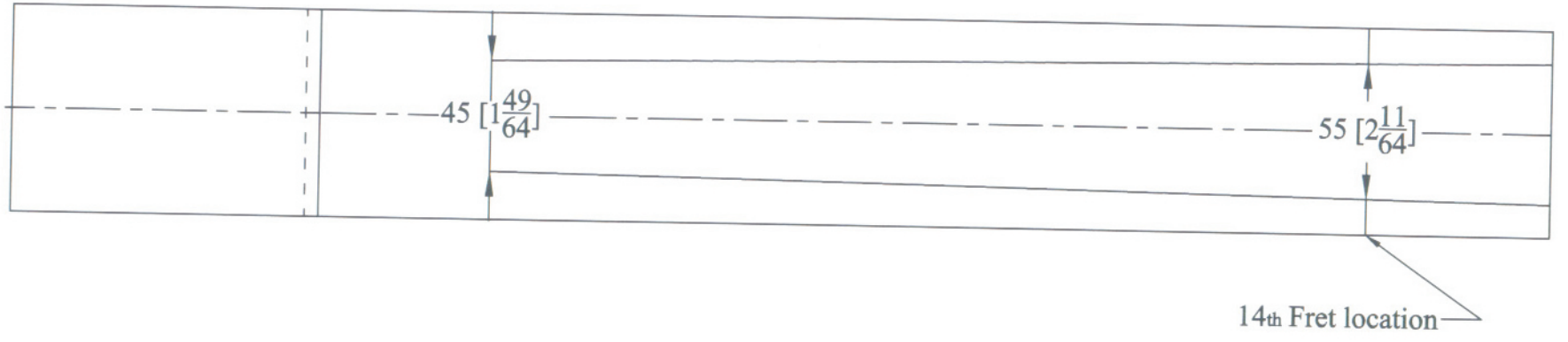
Step 3: It is very important to make sure that the Bridge Plate is glued down firmly on all edges.

Marking Out The Neck Shape

Top

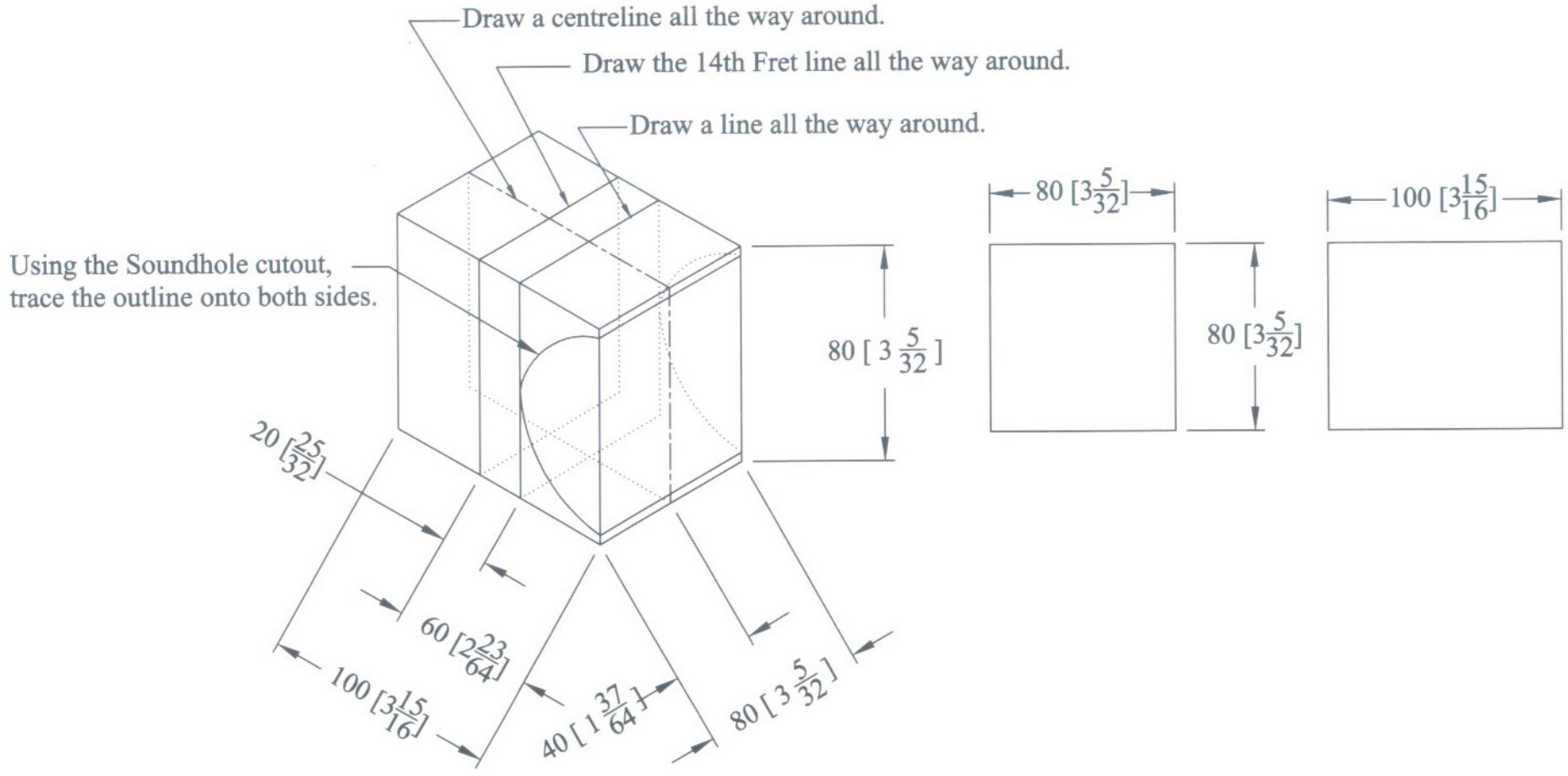


Bottom

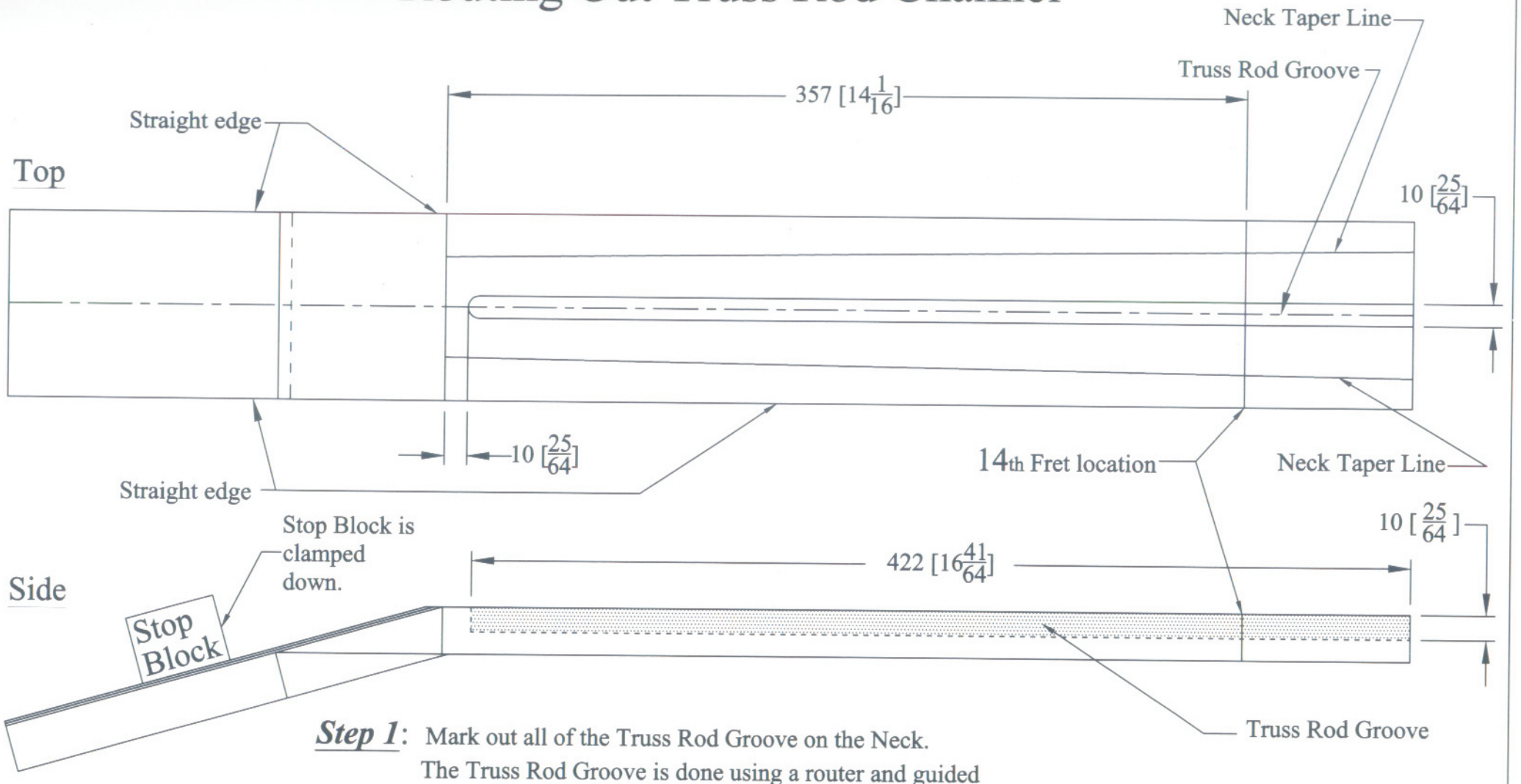


Option: *If you have already completed your Fretboard (i.e. the Taper and sanded the radius) then you could simply trace the outline of the Fretboard onto the Neck in its' correct position. Remember to align the centrelines.*

Heel Block Placement And Gluing



Routing Out Truss Rod Channel



Step 1: Mark out all of the Truss Rod Groove on the Neck. The Truss Rod Groove is done using a router and guided using the straight edge of the neck. This is done after the Heel Block has been glued onto the Neck.

Step 2: See Heel Block instructions.

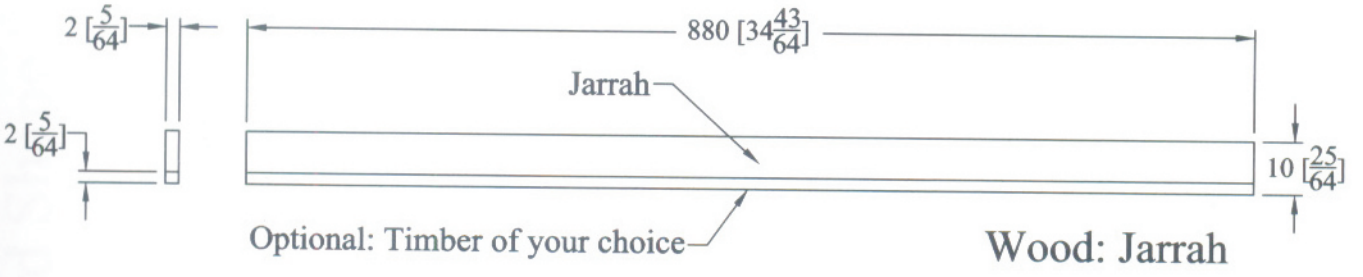
Gluing The Soundboard

Gluing the Soundboard on is done in the same manner as is the Back to the Sides.
You must first place a straight edge down your guitar from the tail block to the neck block. Make sure, again, that your guitar is symmetrical off your centreline. Write down the measurements of your upper bout, your waist and your lower bout. Make sure that they are the same as those on the back of your guitar. Check to see that your sides are square to each other. Once you are happy with all these measurements, you may begin to fit your soundboard.
Remember that all the braces down from the soundhole are not notched out of the sides.
If you need to place dowels into your guitar to make it symmetrical, you can remove them after the soundboard is glued on, using a small handsaw.
Before you glue the soundboard on, be TOTALLY satisfied with the interior of your guitar, ie. that there are no parts missing, that parts do not need touching up, etc. Remember to sign your name somewhere on the inside, where everyone can see it.

Gluing The Bindings

Preparing the Bindings

Prepare your binding strips in the side bending jig or hand bend them with the hot iron. You can vary the design of the binding by using another timber. You will need to make four binding strips, cut to the reqired dimensions using a bandsaw.



Follow specific instructions as per DVD No.5.

Cutting Binding Groove

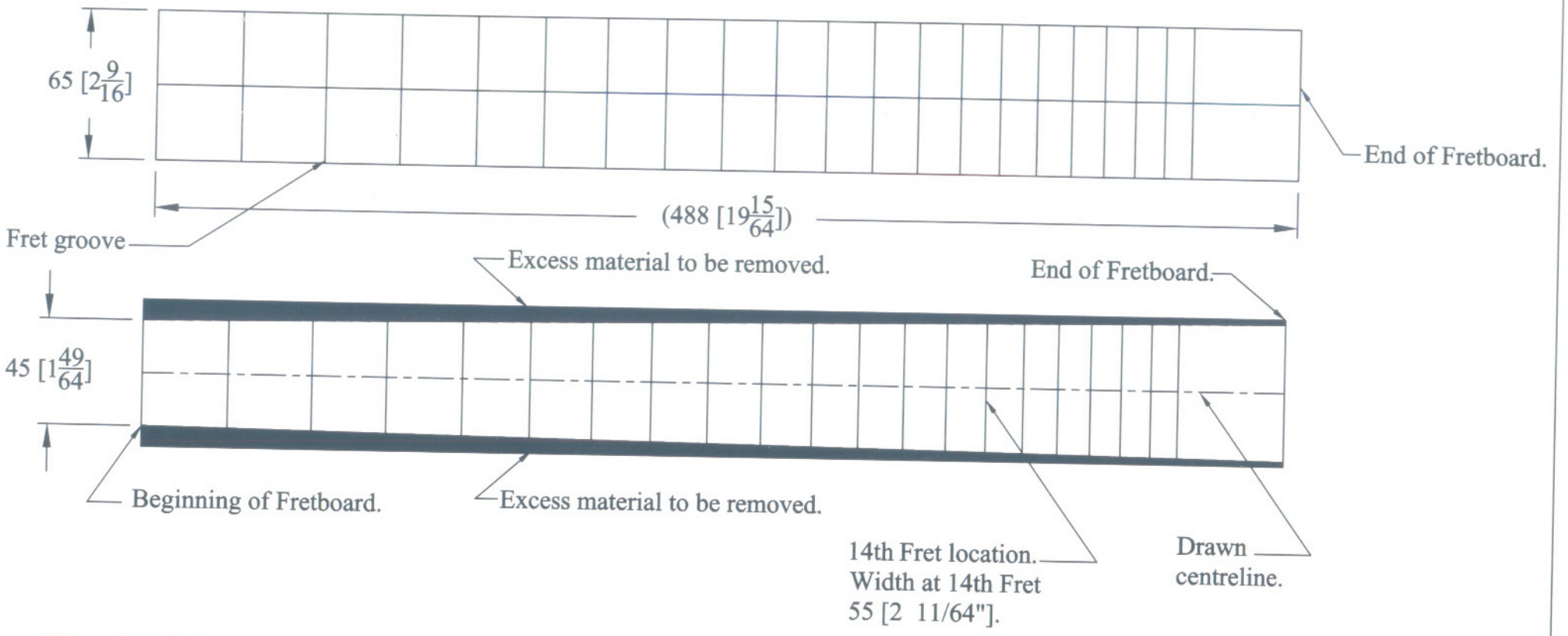
Measure the depth of the bindings on the side of the guitar. Start with the soundboard binding first, as you are routing on a flat surface and cutting a soft and hard wood. Do not cut the total depth of the binding in one cut, as this can increase the risk of tearing the timber grain. Then continue with the other guitar sides

Gluing On Bindings

Measure the length of each binding by holding the binding at the waist of the guitar. Then write on each binding **left** or **right** after you measure its length. Ensure nice clean cuts at end of binding strips.

Once your strips are cut to length, take a strip of masking tape and cut two strips about 15cms [5 29/32] long. Place one strip on top of the other. Do this about 20 times. Place glue on the guitar body Lining (Soundboard side) and start from the centreline at the bottom of the body and work your way to the neck area. Press down and pull inwards on the Binding. Take a piece of tape and stick one side to the Side of the body and the other to the Soundboard. This will hold the Binding. As you work around, overlap and pull tight the next bit of tape. Once the glue has dried, remove the tape **carefully.** You will need to sand the Binding strip back so that it is flush with the sides, as the strip is wider than the groove created. Remember to keep the thickness of the strip even all the way around.

Marking And Cutting Out Fretboard Shape

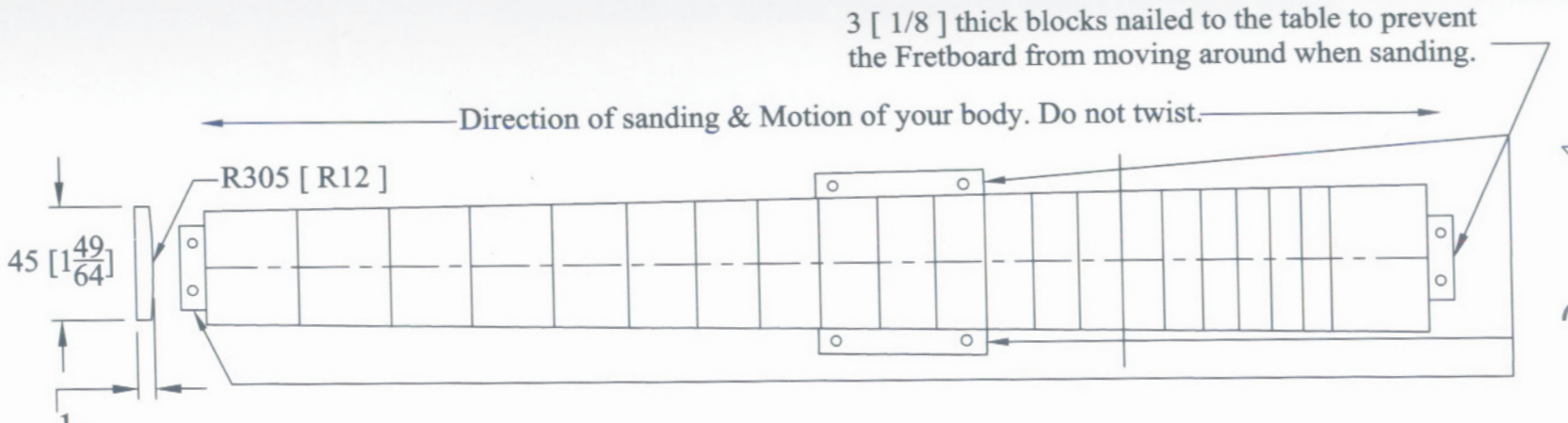


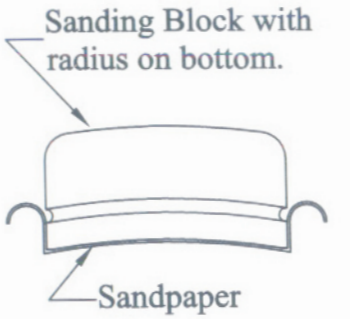
Wood: Mulga (thickness: 6.5mm [1/4])

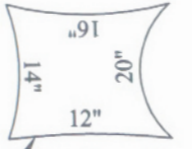
Step 1: First draw a centreline. Mark off 45 [1 49/64"] at the beginning of the Fretboard and 55 [2 11/64"] at the 14th Fret. Draw a straight line between the two points to obtain the taper.

Step 2: To remove the excess material use the bandsaw, leaving the line on. Remove the last millimeter with sandpaper on a sanding board.

Fretboard Radius



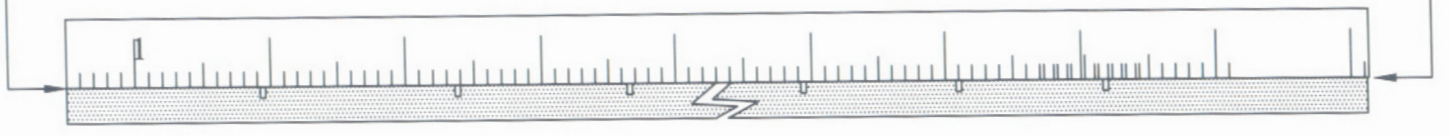




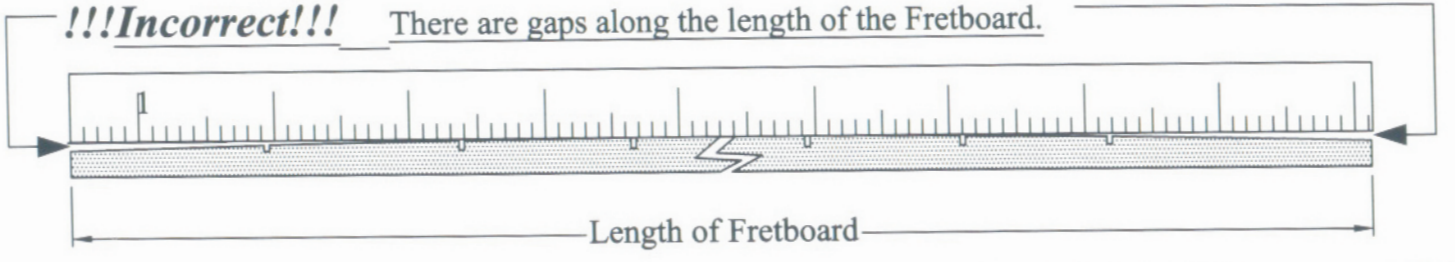
Radius Gauge used to measure the progress of the sanding at any Fret.

Note: There is a curve on the top of the Fretboard which is obtained using a specially shaped block and rough sandpaper. It is sanded from left to right in long strokes, checked with Radius Gauge from time to time until radius is obtained. As you are getting close to the gauge radius, start to use finer and finer sandpaper to get a smooth finish. You also need to check the straightness along the length of Fretboard. This is done with the aid of a straight edged ruler. It's **VERY IMPORTANT** to keep the Fretboard level. See Below.

Correct: There are *NO* gaps along the entire straight edge of the ruler.

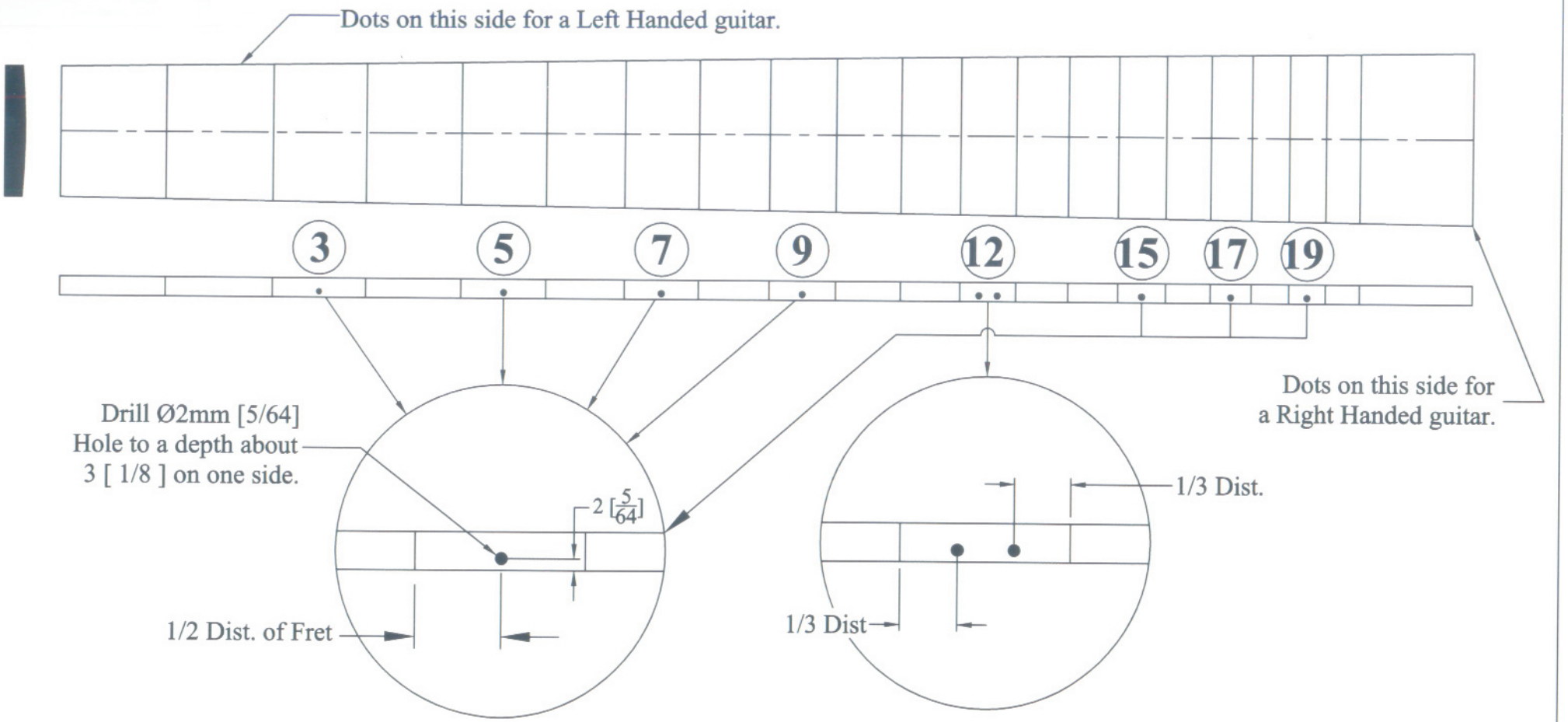


!!!Incorrect!!! There are gaps along the length of the Fretboard.



Inlay Fret Dots

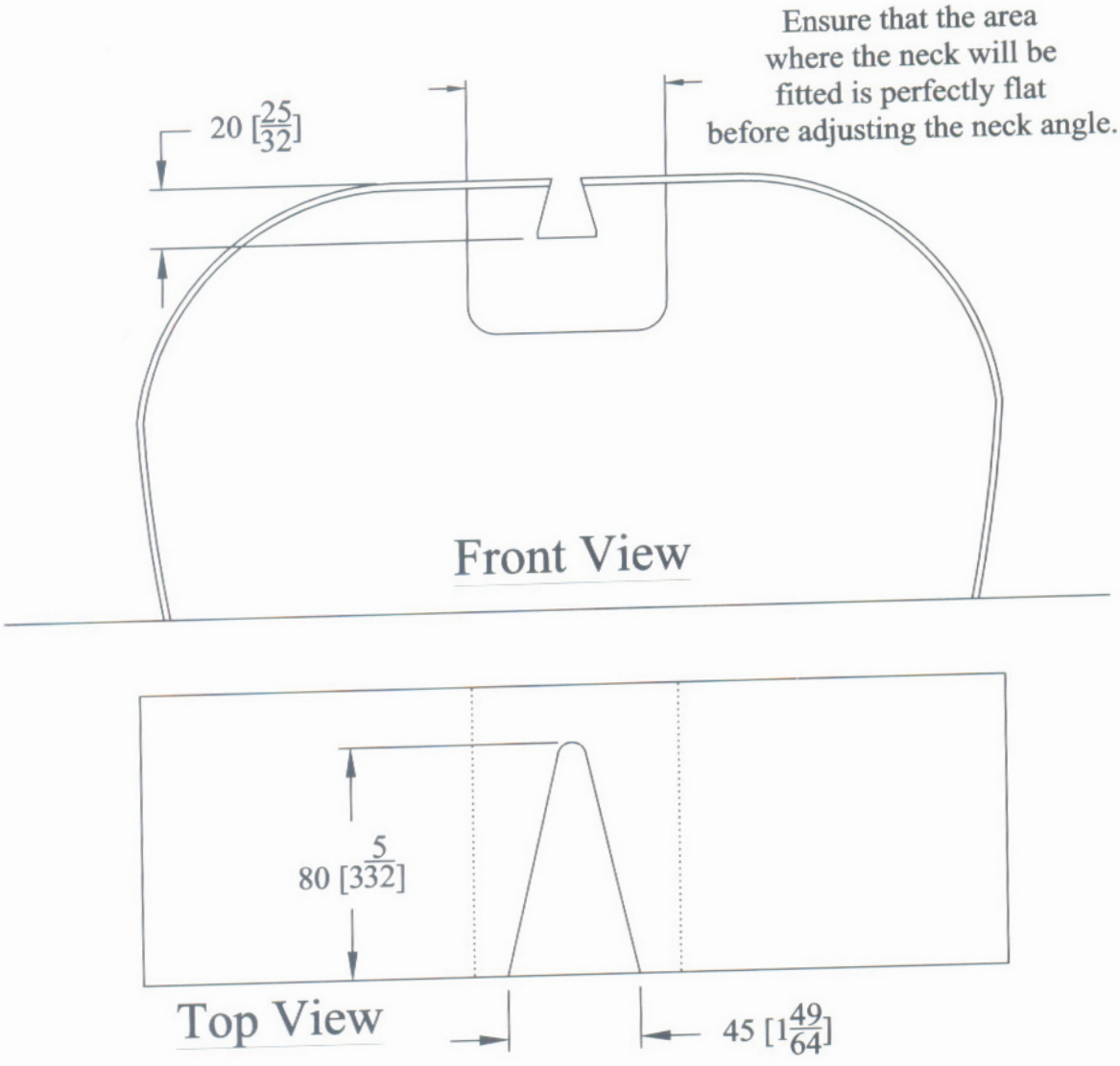
Dots Can Be Either Mother of Pearl or Paua shell.



Note: When drilling the holes, don't drill on an angle. Keep the Fretboard as vertical as possible. Try to keep them (by eye) in line with each other. The dots are simply tapped into the holes and no glue is required. Just tap them flush with the Fretboard.

Setting Up The Dovetailing

See DVD for a comprehensive explanation on how to dovetail



Note: When doing your neck block for dovetailing, ensure that you have a centreline up the middle of your neck block.