MODEL T10457
CONCERT UKULELE KIT
INSTRUCTION MANUAL
(For models manufactured since 10/11)

#KN14581 PRINTED IN JAPAN

⚠WARNING

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement, and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduces your exposure to these chemicals: Work in well ventilated area, and work with approved safety equipment, such as those dust masks that are specifically designed to filter out microscopic particles.

⚠WARNING

For Your Own Safety, Read Instruction Manual

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.

⚠DANGER	**Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**
⚠WARNING	**Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**
⚠CAUTION	**Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**
NOTICE	**This symbol is used to alert the user to useful information about proper operation of the machine.**

Table of Contents

INTRODUCTION

Manual

We are proud to offer the Model T10457 Concert Ukulele Kit. This kit is part of a growing Grizzly family of fine woodworking products. When assembled according to the guidelines set forth in this manual, you can expect years of enjoyment from this ukulele.

We are pleased to provide this manual with the Model T10457. It was written to guide you through assembly, review safety considerations, and cover general information. It represents our effort to produce the best documentation possible.

If you have any comments regarding this manual, please write to us at the address below:

Grizzly Industrial, Inc.
C/O Technical Documentation
P.O. Box 2069
Bellingham, WA 98227-2069

⚠WARNING

There is potential danger when operating woodworking machinery. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use any machines with respect and caution to decrease the risk of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use tools and any machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.

Contact Info

Most importantly, we stand behind our products. If you have any questions or parts requests, please call or write us at the location listed below.

Grizzly Industrial, Inc.
1203 Lycoming Mall Circle
Muncy, PA 17756
Phone: (570) 546-9663
Fax: (800) 438-5901
E-Mail: techsupport@grizzly.com
Web Site: http://www.grizzly.com

The specifications, drawings, and photographs illustrated in this manual represent the Model T10457 as supplied when the manual was prepared. However, owing to Grizzly's policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly. For your convenience, we always keep current Grizzly manuals available on our website at www.grizzly.com.

NOTICE

WE STRONGLY RECOMMEND that you read books, review industry trade magazines, or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

Identification

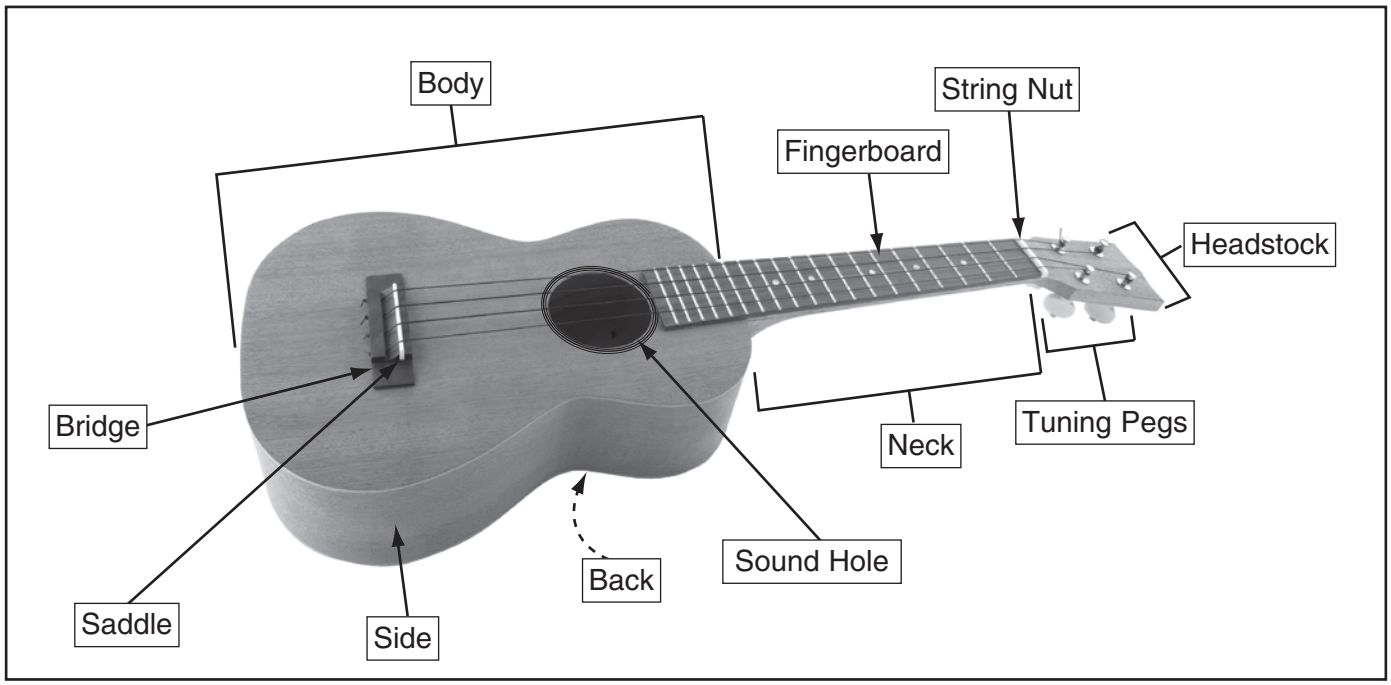


Figure 1. Ukulele identification.

PARTS INVENTORY

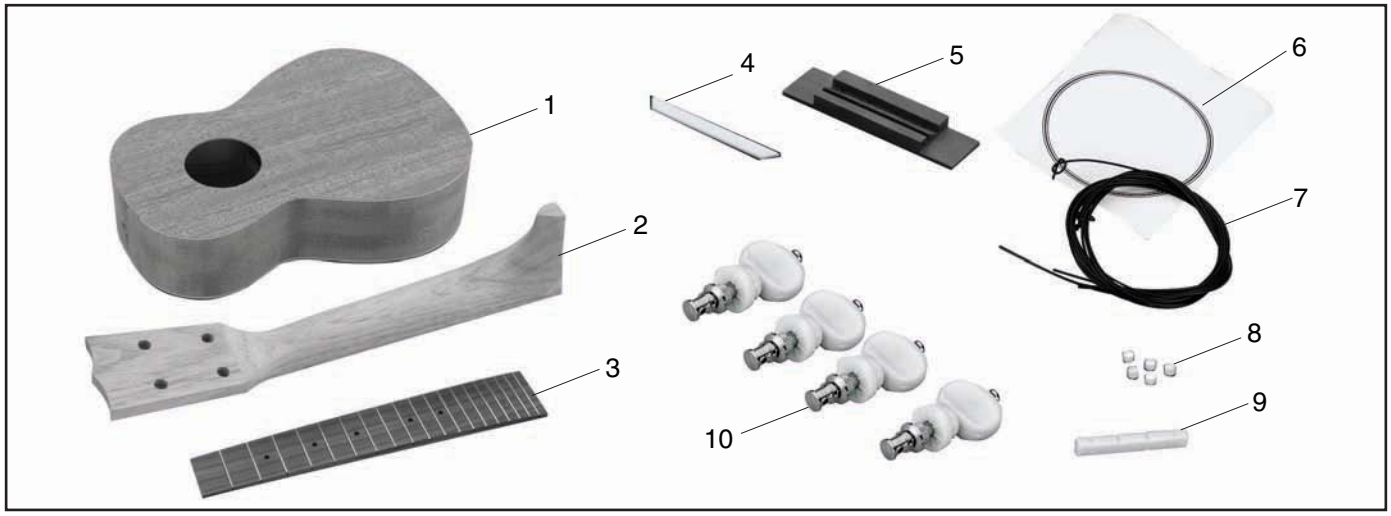


Figure 2. Ukulele parts.

REF	PART #	DESCRIPTION
1	PT10457001	Ukulele Body
2	PT10457002	Ukulele Neck
3	PT10457003	Fingerboard
4	PT10457004	Saddle
5	PT10457005	Bridge

REF	PART #	DESCRIPTION
6	PT10457006	Sound Hole Decal
7	PT10457007	String Set 4PC Set
8	PT10457008	Position Dots 5PC Set
9	PT10457009	String Nut
10	PT10457010	Tuning Peg 4PC Set

SANDING

Supplies/Tools

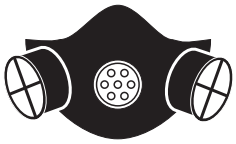
The majority of the wooden components in this kit are fully machined at the factory and are ready for assembly. A small amount of drilling, sanding and light machining will need to be performed to complete the ukulele.

Recommended Tools & Supplies:

- Wood Glue
- Finishing Supplies
- Wood Putty
- Rubber Bands or Ratchet Clamp
- Sandpaper #180, #240, #320, #600, and #800
- Sanding Block
- Masking Tape
- Razor Blade
- Coat Hanger
- C-Clamp
- Drill Bit Set
- Tack Cloth
- Coping, Jig, or Scroll Saw (Optional)

⚠WARNING

Damage to your eyes and lungs could result from dust created by sanding without proper protective gear. Always wear safety glasses and a NIOSH-approved respirator when sanding.



Ukulele Body

The ukulele body has been assembled and rough sanded at the factory; however, no finish has been applied. The joint where the neck meets the body and the sound hole should NOT be sanded. Be careful to NOT round the edges of the ukulele body for the best appearance.

To sand the ukulele body:

1. **Wear a NIOSH-approved respirator and safety glasses when sanding wood.**

2. Using either an electric palm sander or a sanding block, sand the ukulele body with #180-grit aluminum-oxide sandpaper until there is a consistent scratch pattern on the entire surface.

   Note: *When hand sanding, always sand in the same direction as the wood grain.*

3. Repeat **Step 2** with a #240 grit sandpaper.

4. Repeat **Step 2** with a #320 grit sandpaper.

5. Wipe the ukulele body with a damp cloth. Wiping the workpiece with a damp cloth before the final sanding helps to “raise” the wood grain; thus, allowing the “raised” grain to be sanded smooth.

6. Once the ukulele body is dry, repeat **Step 4**.

7. Wipe the ukulele body with a tack cloth to remove all remaining sanding dust.

Neck

Like the ukulele body, most of the ukulele neck has been machined at the factory; however, the neck headstock can be customized to reflect personal taste. Additional cutting, inlay, or design work can give an otherwise ordinary ukulele that custom look that sets it apart from others!

Note: *Take your time with this sub-section and consider testing ideas on scrap wood before performing the work on the actual headstock.*

To sand the ukulele neck:

1. **Wear a NIOSH-approved respirator and safety glasses when sanding wood!**

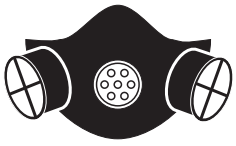
2. Perform any custom cutting, inlay, or design work to the neck headstock.

3. Using the sanding technique described in the previous sub-section, sand the entire ukulele neck, EXCEPT for the fingerboard mounting surface.

   Note: *Sanding the fingerboard mounting surface will affect the playability of the ukulele and could lead to irreparable damage.*

⚠WARNING

Damage to your eyes and lungs could result from dust created by sanding without proper protective gear. Always wear safety glasses and a NIOSH-approved respirator when sanding.



Fingerboard

The fingerboard has been prepared at the factory for attaching to the neck and body of the ukulele. The fingerboard requires no sanding.

Note: *Sanding the fingerboard will affect the playability of the ukulele and could lead to irreparable damage.*

Bridge

The bridge has been sanded and finished at the factory. Sanding and finishing the bridge is not necessary.

ASSEMBLY

Attaching Neck to Body

Attaching the neck to the ukulele body is the most crucial part of assembly. Failure to attach the neck correctly could result in difficult bridge and string adjustments, or even worse, it could lead to irreparable damage.

The ukulele neck comes shaped and ready to attach. Pegs increase the strength of the joint. However, the pegs may need adjusted to improve the alignment of the neck to the body.

NOTICE

ALWAYS follow the manufacturer's instructions for any glues or adhesive products for your safety and best results.

To attach the neck to the body:

1. Place the ukulele body and the neck face down on a workbench.

2. Mark the centerline on the ukulele body and neck.

3. Insert the pegs and align the centerlines (see **Figure 3**).

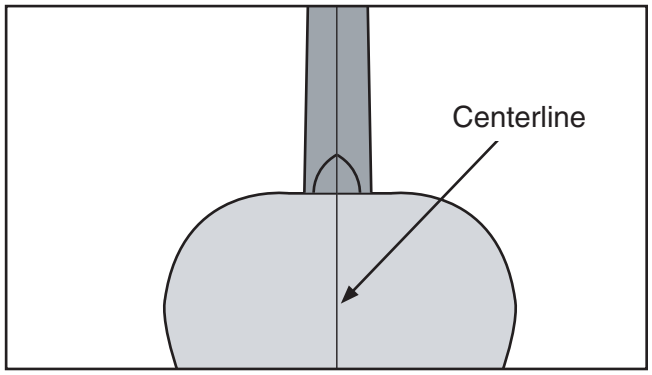


Figure 3. Marking the centerline of the ukulele body and neck.

—If the centerlines align, proceed to **Step 4**.

—If the centerlines *do not* align, adjust the pegs until they do. Then proceed to **Step 4**.

4. Apply a thin, even layer of wood glue to the mating surfaces of the ukulele body and neck.

5. Using rubber bands or a ratchet clamp, secure the ukulele body and neck together (see **Figure 4** for an example) and let the assembly dry for at least 6 hours.

Figure 4. Securing the ukulele neck to the body.

6. Use a small knife or saw to remove the portion of the neck that protrudes below the back of the ukulele (see **Figure 5**).

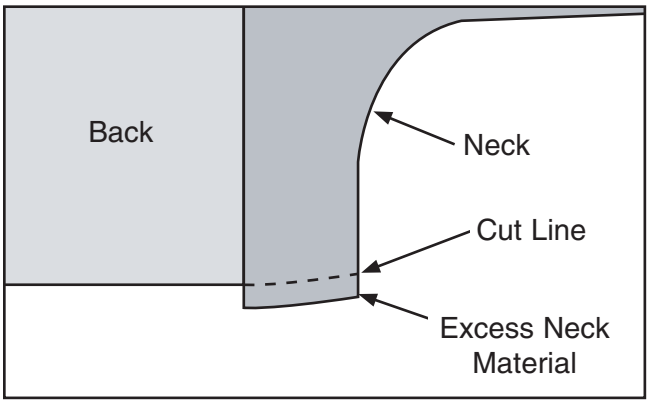


Figure 5. Excess neck material and cut line.

Installing Position Dots

The position dot holes have been pre-drilled into the face of the fingerboard.

To install the position dots:

1. Place a small drop of glue in each position dot hole.

2. Using a hammer and a scrap piece of wood, lightly tap the position dots into each of the holes.

3. Using sandpaper in grits from 320 to 800, progressively sand the position dots flush with the fingerboard.

Attaching Fingerboard

With sanding completed, the fingerboard is ready to be attached to the neck and body.

To attach the fingerboard:

1. Apply a thin layer of glue to the back of the fingerboard and position it on the neck.

2. Secure the fingerboard in place with rubber bands, as shown in **Figure 6**. Use wedges if necessary to ensure a tight fit. Let the glue dry for at least 24 hours.

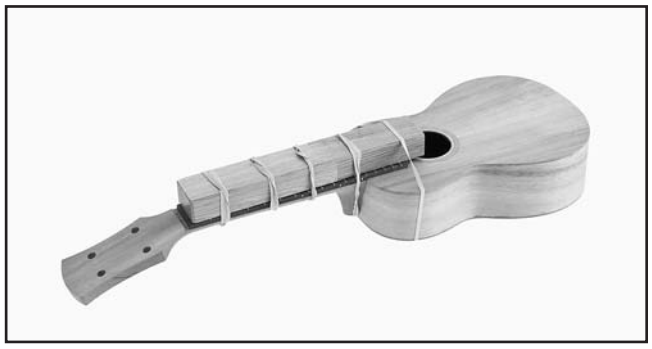


Figure 6. Attaching fingerboard to the neck.

Note: *Make sure the fingerboard is centered across the width of the neck and that the 14th fret is positioned over the neck-to-body joint.*

3. Sand or file the edge of the neck flush with the edge of the fingerboard. Do this slowly to avoid sanding the fingerboard.

Determining Bridge Location

The bridge is glued directly to the body at the location indicated in **Figure 7**. Leaving an area of the body slightly smaller than the footprint of the bridge unfinished increases the strength of the glue joint that attaches the bridge to the ukulele. The reduced size of this area allows the finish of the ukulele to be consistent around the bridge.

To determine the correct bridge/nut location:

1. Insert the saddle into the bridge and position the front edge of the saddle 7½" away from the center of the 12th fret (see **Figure 7**).

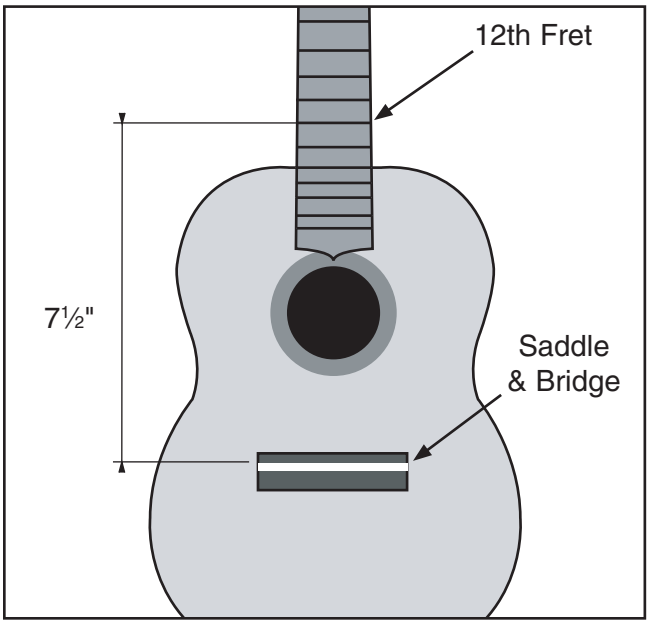


Figure 7. Bridge positioning.

2. Using a pencil, lightly mark the footprint of the bridge.

3. Cut a piece of tape slightly smaller than the footprint. Attach it to the sound board inside the footprint of the bridge.

4. Remove the pencil marks.

Preparing to Finish

In preparation for the applying the finish, protect the following parts of the ukulele. We recommend using masking tape for this process.

- Mask the bridge mounting location, (see **Figure 8**).
- Mask the fingerboard, (see **Figure 9**).
- Fill the sound hole with newspaper, (see **Figure 9**).

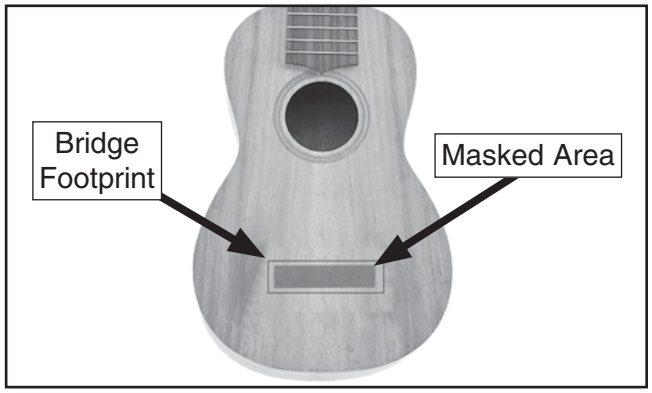


Figure 8. Masked off area for bridge.

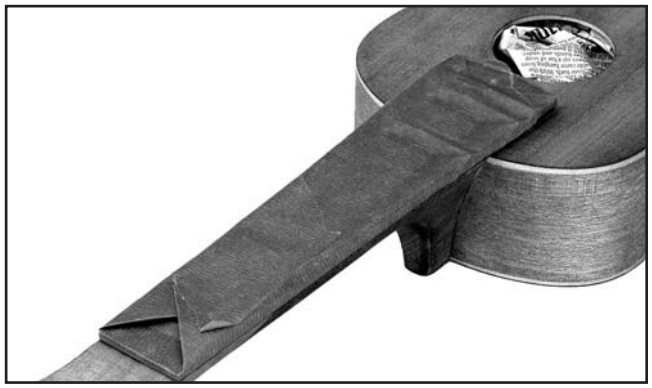


Figure 9. Example of a masked fingerboard and stuffed sound hole.

Carefully press all the masking tape edges securely to the ukulele pieces. The finish coat can seep under these edges, especially near corners, uneven edges, and where the frets meet the fingerboard.

Note: *Failure to correctly mask these areas could result in irreparable damage to the ukulele.*

Painting/Finishing

Finishing supplies are not supplied with the ukulele kit.

Tip: *The ukulele body is made from mahogany plywood. Clear finishes such as lacquer look exceptionally stunning and glossy on this wood.*

Painting/Finishing Tips:

- **Always work in a well ventilated area when using finishing materials.**

- **Wear an approved respirator mask and safety glasses when using finishing materials!**

- Fabricate hooks from metal hangers to suspend the ukulele components during the finishing process.

- Several thinner coats usually produce a nicer finish than one heavy coat.

  Note: *Always follow the finish manufacturer's instructions.*

- Dust particles suspended in the air will settle on wet finishes, resulting in less than satisfactory results. To avoid this problem:

  1. Have the ukulele components positioned for the finish application upon entering the room.

  2. Leave the room where the finishing will take place completely undisturbed for 24 hours prior to applying the finish.

  3. Avoid making unnecessary movements upon entering the finish room.

  4. Apply the finish to the ukulele parts and immediately leave the finish room.

  5. DO NOT return to the room until the specified drying time has elapsed.

Attaching Sound Hole Decal

The decal must be applied after the ukulele is finished to properly adhere to the ukulele. However, the decal slightly overlaps the fingerboard. It is easiest to trim the decal after it is applied but before it is dry.

To attach the sound hole decal:

1. Submerge the decal sheet in water until the decal slides on the paper backing. This takes less than a minute.

2. Remove the decal sheet (with decal) from the water and let the excess water run off.

3. Gently slide the decal off the decal sheet into position around the sound hole.

4. Lightly press down on the decal with dampened fingers.

5. With a dry cloth, lightly press on the decal to remove the excess water trapped underneath.

6. Trim the decal with a razor knife or marking knife where it overlaps the fingerboard, as shown in **Figure 10**.

Figure 10. Cutting decal to fit.

7. Let the decal dry for at least 8 hours.

Attaching Bridge

Remove the tape from the masked areas in preparation for attaching the bridge. Refer to **Page 7** for the necessary measurements to locate the bridge.

To attach the bridge to the ukulele:

1. Using a pencil, lightly mark the ukulele body where the front edge of the bridge is located.

2. Set the string nut along the end of the fingerboard, near the headstock.

3. Attach pieces of sewing thread to the 1st and the 4th nut slots, and tape the opposite ends over the corresponding locations on the bridge.

4. Position the bridge on the body at the location marked in the **Determining Bridge Location** section on **Page 7**.

5. Adjust the bridge side-to-side so there is an equal amount of space between the fingerboard edges and the threads (see **Figure 11**).

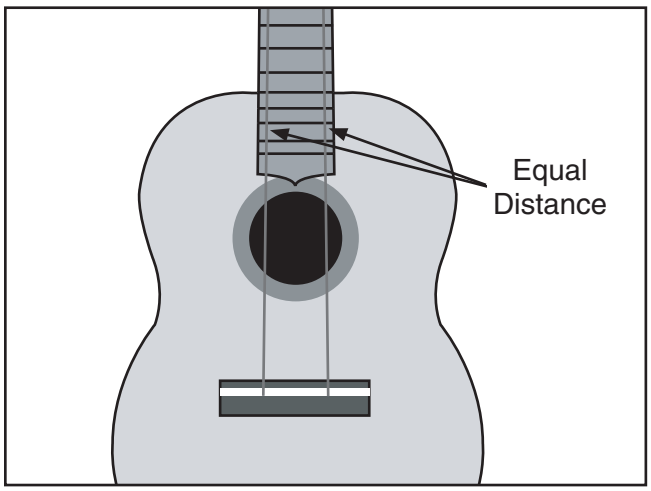


Figure 11. Positioning the bridge across the width of the ukulele.

6. Using a pencil, lightly mark the ukulele body where the side edges of the bridge are located.

7. Remove the saddle from the bridge, and apply a thin coat of glue to the back of the bridge and the unfinished area of the sound board.

   Note: *Do not use too much glue or the excess may require clean up that can adversely affect the finish of the ukulele.*

8. Let the glue set until it is still tacky but clear.

9. Place and firmly hold the bridge in position for two minutes by hand. This will secure it temporarily before clamping it.

10. Clamp the bridge in place overnight, as shown in **Figure 12**.

Figure 12. Gluing the bridge to the body.

11. Remove the clamp setup. Install the saddle on the bridge. The saddle and bridge are now ready for string installation (see **Figure 13**).

Figure 13. Bridge and saddle installed on the sound board.

Installing Tuning Peg

Each tuning peg consists of a bushing, a tuning peg, a spacer, a tuning button, and a screw (see **Figure 14**).

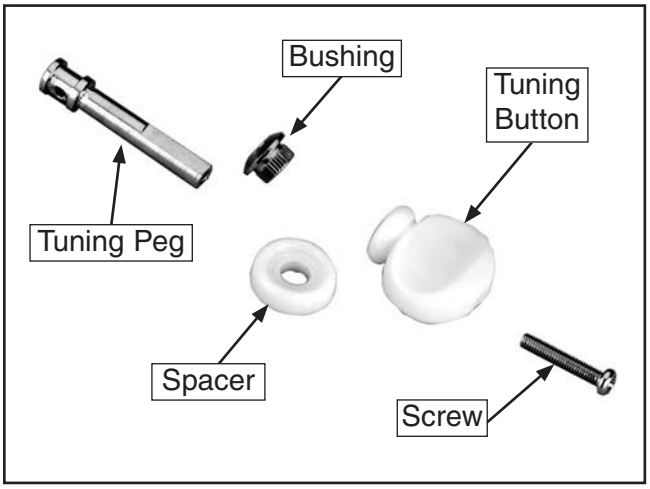


Figure 14. Tuning peg components.

To install tuning pegs:

1. Using a non-marring mallet, tap each of the four peg seats into the pre-drilled holes on the front of the headstock, as shown in **Figure 15**.

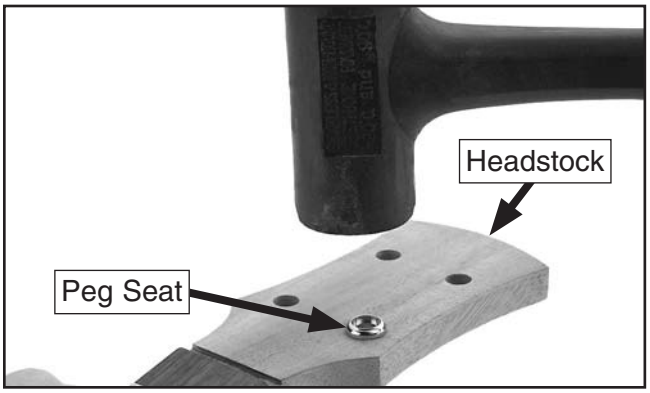


Figure 15. Installing peg seat into front of headstock.

2. Slide each peg through one nylon bushing into the seat on the front of the headstock.

3. Attach the remaining components to the peg in the order shown in **Figure 14**.

4. Secure the tuning peg assembly by tightening the Phillips screw.

Installing Strings

Each string of the ukulele is a different diameter. Number the strings 1, 2, 3, and 4—from the smallest diameter to the largest diameter. Their arrangement on the ukulele is shown in **Figure 16**.

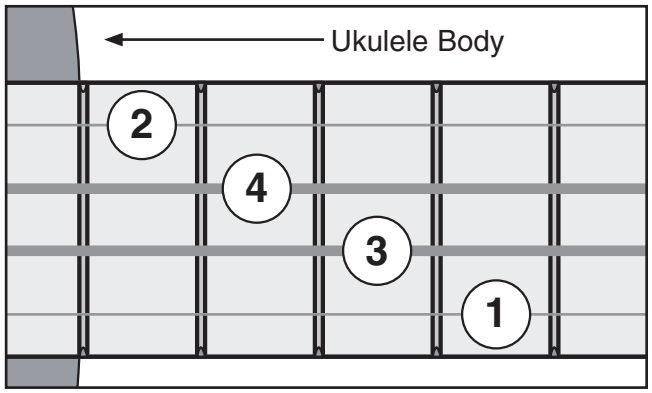


Figure 16. Proper string arrangement.

To install the ukulele strings:

1. Use a piece of tape and pen to designate each string number and tie a knot at one end of each string.

2. In the order shown in **Figure 16**, pull the strings through the bridge slots, over the saddle, and over the string nut slots.

3. Route the strings to the inside of the tuning pegs and through the peg holes.

   Note: *Provide enough string slack to allow 2–3 complete winds around the tuning peg.*

4. Turn the tuning buttons to lightly tighten the strings. The ukulele should look like that shown in **Figure 17**.

Figure 17. Completed ukulele.

Setting String Height

The string height is the distance between the top of the fret and the bottom of the string (**Figure 18**). Correct string height is crucial for maximizing the playability of the ukulele. Measurements are taken at the 1st and 12th fret.

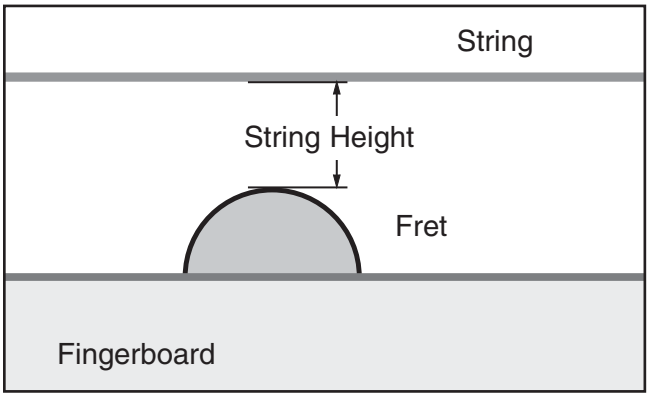


Figure 18. String height measurement (side view).

The string nut and saddle come oversized from the factory. Sizing them requires measuring, sanding, and re-measuring. Fix both the nut and saddle until correct string heights are reached. Hand-sanding prevents removing too much material.

To check the string heights at the 1st and 12th frets:

1. Measure the string height at each of the strings along the 1st fret (see **Figure 19**).

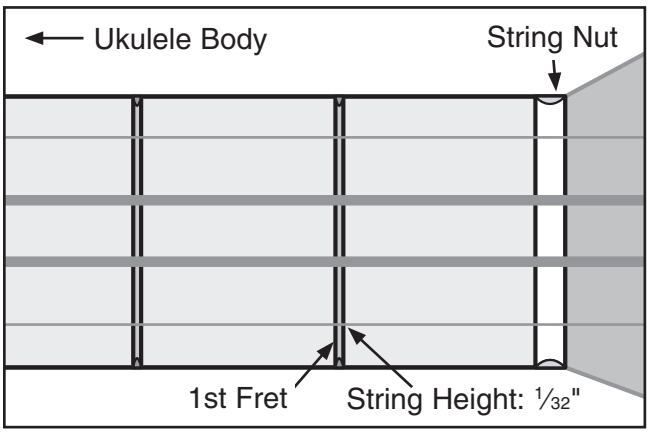


Figure 19. Correct 1st fret string heights.

All first fret string heights should be approximately 1/32".

— If the string heights are correct, then proceed to **Step 2**.

— If the string heights are more than 1/32" at the 1st fret, then proceed to **Step 3** to reduce the height of the string nut.

2. Measure the string height at each of the strings along the 12th fret (see **Figure 20**).

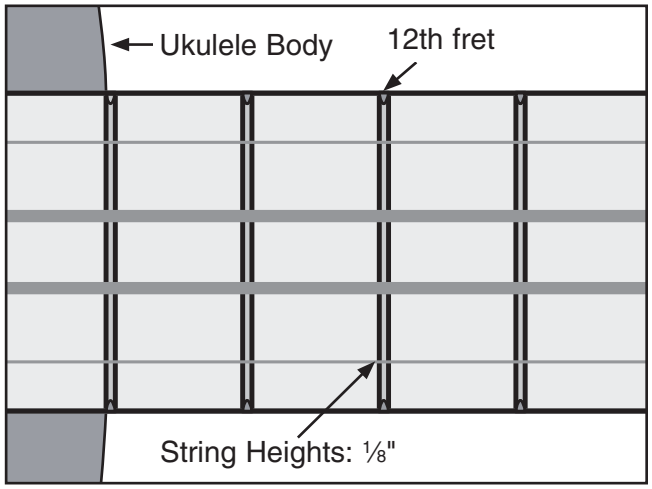


Figure 20. Correct 12th fret string heights.

All 12th fret string heights should be approximately 1/8".

— If the string heights are correct, then continue to **Step 5**.

— If the string heights are more than 1/8" at the 12th fret, then proceed to **Step 3** to reduce the height of the saddle.

3. Hand-sand the base of the string nut/saddle. *DO NOT* remove too much material.

4. Test the string nut/saddle by repeating **Steps 1–2**.

5. Glue the string nut into place.

Note: *The nut and saddle may need to be removed and re-sized if the neck of the ukulele warps due to moisture. Use only enough glue to keep the string nut in place. The saddle should not be glued.*

6. Congratulations! The construction of the ukulele is complete. Proceed to **Tuning** to tune the instrument.

Tuning

Tuning is the most important concept of playing a ukulele. If the ukulele is not in tune with itself, or the other instruments in an ensemble, the resulting music will not sound pleasing to the ear. Having a good understanding of tuning is essential to maximizing the full potential of any ukulele.

Important issues to consider when tuning a ukulele:

- Get into the habit of tuning the ukulele every time it is picked up to be played.
- Always tune the strings "up." The final tuned tension of each string should be reached while tightening the string, not loosening it. If the string is tensioned too far, loosen the tension and tune "up" again.
- The goal when tuning is to make the strings in tune with one another. Standard tuning is shown in **Figure 21**.

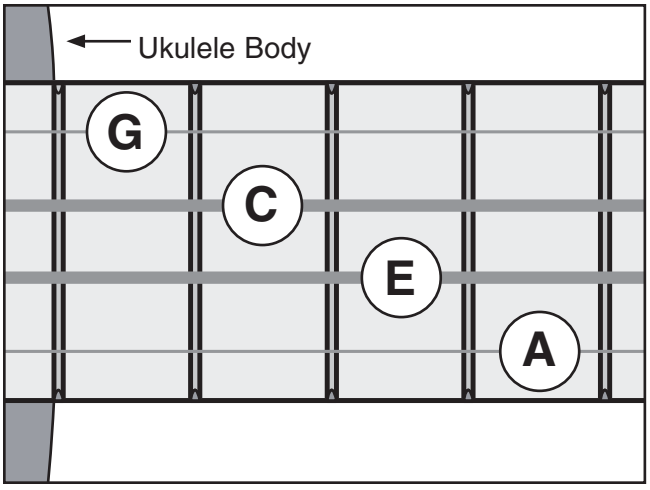


Figure 21. Standard tuning notes.

- The easiest way to tune a ukulele is using an electronic tuner such as the Grizzly T23099 Chromatic Tuner shown on **Page 13**.

AFTERMARKET ACCESSORIES

NOTICE

Refer to the newest copy of the Grizzly Catalog for other available accessories.

Call 1-800-523-4777 To Order

Model T23099—Chromatic Tuner/Metronome
This metronome/tuner is suitable for all electric and acoustic stringed instruments. It has an easy-to-read LCD display and is able to tune notes: A, A#, B, C, C#, D, D#, E, F, F#, G, and G#. Seven beat settings and 5 rhythms make this versatile device a must for the novice or experienced musician.

Figure 22. T23099 Chromatic Tuner.

Model H5902—Jumpin' Jim's Camp Ukulele
Model H5903—Jumpin' Jim's '60s Uke-In
Jumpin' Jim's books provide a collection of songs for the ukulele with easy to play along arrangements. Great for any ukulele musician.

Figure 23. Jumpin' Jim's Camp Ukulele and '60s Uke-In.

Model T24022—The Daily Ukulele
Strum a different song every day with easy arrangements of 365 of your favorite songs! The Daily Ukulele includes arrangements that feature melody, lyrics and ukulele chord grids and are in ukulele-friendly keys that are particularly suited for groups of one to one hundred. Includes folk songs, pop songs, kids' songs, Christmas carols and Broadway tunes, all with a spiral binding.

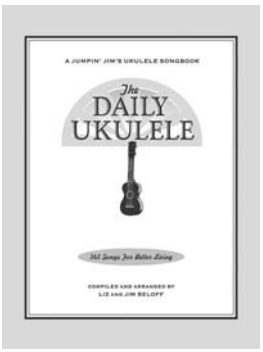


Figure 24. T24022 The Daily Ukulele.

Model T24020—Rogers & Hammerstein for Ukulele
Now you can play 20 classic show tunes from this beloved songwriting duo on your uke! Includes: Do-Re-Mi • Edelweiss • I'm Gonna Wash That Man Right Outa My Hair • My Favorite Things • The Surrey with the Fringe on Top • Younger Than Springtime • and more. 48 pages.

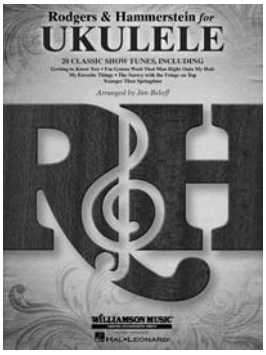


Figure 25. T24020 Rogers & Hammerstein for Ukulele.

Call 1-800-523-4777 To Order