



## Guitar and Bass

Care & Maintenance Manual

**C**ongratulations on your purchase! You are now the owner of a distinctive instrument renowned for quality craftsmanship, tradition, and the legendary Rickenbacker name.

In this comprehensive manual, you will find all of the information needed to fully enjoy and take care of your instrument.

**Pickups** All guitars equipped with pickups manufactured by Rickenbacker.

**Bridge Assembly** Rickenbacker guitars come with a six way adjustable bridge, with individual string saddles for increased adjustability. Bases are equipped with the professional adjustable bridge/tailpiece assembly.

**Easy Stringing "R" Tailpiece** The famous Rickenbacker "R" tailpiece, is built with a no hole slot design for easy restringing.

**Output Jacks** Deluxe models come with the exclusive Rick-O-Sound jack for effects and multi-channel capabilities.

**Tone and Volume Controls** Most guitars and basses are equipped with separate tone and volume controls for each pickup and have three position pickup selectors.

**Exclusive Head Design** Unique and easy tuning head shape on all 12 string models.

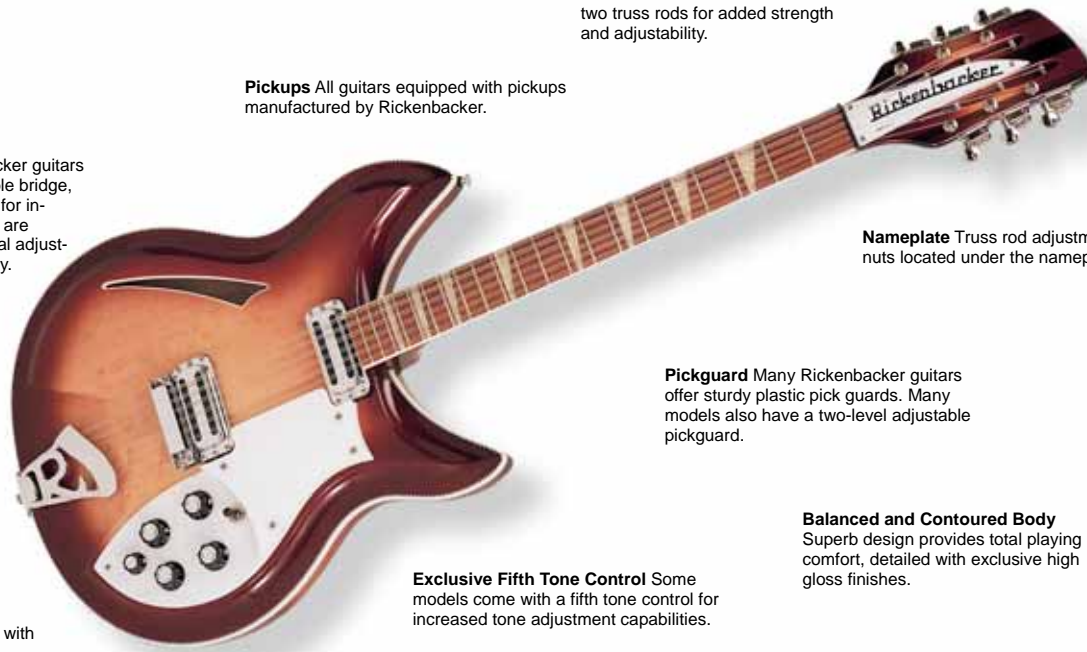
**Dual Truss Rod Neck Design** Most Rickenbacker necks are built with two truss rods for added strength and adjustability.

**Nameplate** Truss rod adjustment nuts located under the nameplate.

**Pickguard** Many Rickenbacker guitars offer sturdy plastic pick guards. Many models also have a two-level adjustable pickguard.

**Balanced and Contoured Body** Superb design provides total playing comfort, detailed with exclusive high gloss finishes.

**Exclusive Fifth Tone Control** Some models come with a fifth tone control for increased tone adjustment capabilities.



### Volume and Tone Controls



Most Rickenbacker six and twelve string guitars come with separate volume and tone control knobs for the bass and treble pickups. In addition, each guitar has a three position pickup selector which allows instantaneous selection of the bass pickup, the treble pickup, or a tonal blend using both pickups. When the pickup selector is combined with the tone and volume controls, three different sounds can be present and chosen simply by switching the pickup selector.

When the volume and tone knobs are turned all the way clockwise, they are in the wide open "on" position. When the pickup selector is down, the treble pickup (closest to the bridge) is in use. When the selector is up, the bass pickup is in use. The middle selector position is a blend of both pickups. When using only one pick up, only that pickup's tone and volume controls will have an effect.

On Rickenbacker models which have three pickups, the bass pickup and the middle pickup are wired together, and the instrument is then controlled just as if it had only two pickups. When the selector is down, the treble pickup is on.

When it is in the middle, all three pickups are on. When it is up, both the bass and the middle pickup are on.

Rickenbacker basses with two pickups have the same volume and tone controls as the six and twelve string guitars, as well as a three position pickup selector.

Many Rickenbacker guitars come with a fifth control knob providing extra tone adjustment capabilities. Using this control to adjust the volume of the bass pickup in relation to a pre-selected treble pickup lead volume setting, you can set it at the tone you will use more often. Or it can function as a bass/treble equalization control.

To use the fifth knob as a bass pickup volume equalizer, first place both volume and both tone controls on the instrument at their maximum clockwise positions. Then, move the pickup selector to the treble position and set the amplifier to the desired lead sound. Now, switch the pickup selector to the bass pick up. The fifth tone knob can now be adjusted in order to bring the rhythm sound to a volume compatible with the already selected lead sound volume.

To use the fifth knob in a set position, first place both volume controls and both tone controls on the instrument at their maximum clockwise positions, and move the pickup selector to the center position. Now, adjust the amplifier, by setting the gain controls at the desired volume and the bass and the treble controls at their maxi-

mum positions. Finally, adjust the fine tone selection knob on the instrument until the tone which will be used most frequently is reached, and leave it in that position. After the small knob has been set, the pickup selector may be moved down for maximum treble or up for maximum bass. The variable volume and tone controls on either the amplifier or the instrument can now be moved to the desired volume and tone settings.

To use the fifth knob as an equalization control, first place both volume controls and the treble tone control on the instrument at their maximum clockwise positions, and move the pickup selector to the center position. Move the bass tone control on the instrument to its maximum counter-clockwise positions, and set the volume and tone controls on the amplifier to their desired positions. Now, with the instrument's treble up full and the bass at its minimum, the fine tone selection knob can be used as a tone equalizer, moving the instrument through the entire tonal range without adjusting the amplifier.

When using a Rickenbacker guitar with the Rick-O-Sound effect, much of the tonal variation produced by playing through R.O.S. can be better controlled through two different amplifiers or through two channels of one amplifier. However, when using Rick-O-Sound, the fine tone selection knob now becomes a balance between the two amplifiers or channels, and can be adjusted to provide the desired blend of treble and bass.

### Reverse Controls

Some replica models have volume or tone controls which operate in reverse fashion or are located a different relative position. In keeping with 1950's specifications, the Model 325C58, for example, features reverse-wired tone knobs so the tone is brightest when the knobs are turned completely counterclockwise.

### Vintage Tone Selector on Model 4003 Basses

Prior to 1984, Rickenbacker basses utilized a capacitor in the treble pickup circuit to emphasize treble tones coming from that pickup. However, changes in tone preference and a call for higher output led RIC to discontinue the use of this capacitor in favor of a more balanced sound. Nevertheless many users added this capacitor back into the circuit, experimenting with and sometimes preferring the sound of the older configuration, despite the resulting drop in volume.



Modern 4003 Series basses now allow this capacitor to be easily added or removed from the circuit.

With a simple upwards pull of the treble tone control, the Vintage Tone Selector will allow a player to move between both sounds at the drop of a hat. Pressed in, one hears the familiar balanced tone of the 4003, while pulled out to engage the circuit, the classic 4001 tone is heard.

### String Height Adjustment

Most Rickenbacker guitars come equipped with a six way bridge. Individual string saddles allow extremely critical pitch and action adjustments. Four bridge height adjustment screws are located at each corner of the bridge assembly.



To raise the height of the strings from the surface of the neck, raise the bridge by turning each of the four adjusting screws clockwise using the adjusting key supplied with the instrument. Lower the playing action by turning the adjusting screws counterclockwise.

Some replica instruments with vibrato assemblies feature bridges that have individual rollers supporting each string. Just like the original instruments, it is possible for these

to become loose, vibrate, and provide undesired string noise.

Pliers may be used to squeeze the saddle from either side to stop roller rattle. It is not generally necessary for the roller to spin freely as the string will easily slide across the brass surface during tuning or vibrato use.

Rickenbacker basses come equipped with bridge assemblies that have just two hex height adjustment screws, located at either side of the bridge assembly. To raise the strings, turn each of the height adjustment screws clockwise. To lower the action, turn the screws counterclockwise.



Certain models, such as those in the 650 and 4004 Series, are equipped with a special bridge/tailpiece assembly, in which the individual bridges are adjusted separately for each string. Each bridge piece is adjusted by two hex screws, located on either side of the string it supports.

To adjust one of these bridges, first loosen the locking screw, if present, so that an adjustment can be made. Then, using the metric wrench supplied with the instrument, turn each of the two adjust-

ment screws clockwise to raise the string, or counterclockwise to lower the string.

Some models may be equipped with saddles which have threaded rollers to allow for string centering. Lift the string and turn the roller to move it to either side as appropriate.



#### String Length and Pitch Adjustment

Each string saddle on Rickenbacker guitar and bass bridges may be adjusted for perfect pitch or intonation. Each saddle is set at the factory for the gauge of Rickenbacker strings that come with the instrument. If the pitch should become slightly sharp or flat, or you desire a change from standard Rickenbacker string sizes, you can readjust the pitch by turning the saddle adjustment screws on the back side of the bridge.

When making any pitch adjustments, first loosen the string, then make an adjustment, and finally bring the string back up to pitch. If another adjustment is necessary, repeat the process until the intonation is correct. This method protects the strings from damage.



First, check the pitch of each string. If the string pitch sounds flat when played at the 12th fret as compared to the open harmonic at the fret, turn the length adjustment screw counterclockwise to shorten the string. If the string sounds sharp to the harmonic, turn the screw clockwise to lengthen the string.

It is vital that the neck is dead straight before making intonation adjustments as the location of the bridge components was chosen on the basis of a well adjusted instrument.

Additionally, the bridge baseplate on most 300 and 600 series guitars is adjustable for coarse intonation to allow use of a wider range of strings. Loosen the baseplate and move it to the position required. Generally speaking, flat wound strings require the bridge to be



closer to the tail of the instrument while round wound strings favor a position toward the neck. Carefully re-tighten the baseplate before restringing.

#### Hi Tek™ Vibrato

Intonation and individual string height adjustment is accomplished in the same fashion as the 650 Series fixed bridge assembly. Simply use the hex key to raise or lower the saddle and use a small screwdriver to move the entire saddle forward or back to correct for pitch as described above.



The height of the handle is a direct function of string tension and can be adjusted by removing the cover on the back of the guitar to access the vibrato springs. Tightening the retaining screw will cause the handle to rise away from the body while loosening it will bring it closer to the instrument. It may be necessary to add or remove a spring when changing to a string type of significantly different tension.

Note that all adjustments on this type of bridge are interactive, i.e. one adjustment may affect another. Make sure to fully retune the instrument each time an adjustment is made before making another one to minimize this effect.

#### Accent™ Vibrato

This vintage replica vibrato assembly does not have the adjustability and precision of modern vibrato assemblies but does eliminate entirely the friction of springs and bearings. The only adjustment is that for handle position which may be loosened with a screwdriver and retightened after positioning the



handle to the desired location.

#### Kauffman™ Vibrato

In keeping with 1950's specifications, this is a sideways vibrato, unlike most vibrato units which operate in an up-and-down motion. It can be neutralized by either removing the bar or gently turning the tip of the bar towards the pickguard and out of the playing field.



This authentic replica shares the shortcomings of the original design. Specifically it may not always perfectly return to pitch and may produce some noise of its own



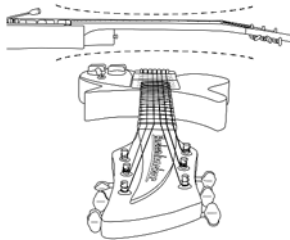
during use.

### Neck Adjustment

Most Rickenbacker guitars and basses are reinforced with twin truss rods. This exclusive design gives greater strength and stability to the neck of the guitar. The truss rods are separately adjustable, allowing either side of the neck to be readjusted independently of the other, should it become necessary.

Three indications that the neck may require adjustment are: 1) the strings begin to buzz against the frets; 2) the action of the strings seems too high; or 3) the truss rods rattle.

With the instrument in tune, sight the neck for a bow or under-bow by resting the body on a level table at an approximate 45 degree angle holding the top horn near the strap bolt.



Do not hold by the neck or head, as doing so will change the actual position of the neck.

Should adjustment be necessary, take the strings out of the nut

grooves to allow room to remove the nameplate from the head of the instrument. After replacing strings to the grooves of the nut, retune the instrument to assure normal tension on the neck.

Repeat the sighting step to confirm the amount of bow or under bow in the neck. Using 1/4 inch nut driver wrench, such as the NW1 neck adjustment tool, turn only a half a turn at a time. Turn the nut clockwise to correct an under bow, counterclockwise to straighten an over bow. Continue this until the desired angle of the neck is obtained.

A slight under bow (relief) is common on non-Rickenbacker instruments due to their limited range of adjustment. Due to their extreme adjustability you may prefer to adjust a RIC neck almost dead straight depending on the playing action preferred.



Finally, replace the nameplate and tune the instrument.

On instruments produced before September 1, 1984, first loosen the truss rod nuts, then move the neck manually to the desired position and snug the rod up to hold that

position. Do not rely on the rod itself to provide the bowing force. This advice actually applies to all guitar truss rod systems. Adjustments other than these can seriously damage your instrument.

Do not use a socket drive or T-handle wrench as damage may occur. Nut driver tools generally will slip in your hand prior to truss rod damage, while these tools can easily permit excessive force to be applied.

### Pickup Adjustment

In order to achieve more volume by placing the pickup closer to the strings, guitar and bass pickups are height adjustable. Both sides of the pickup may be raised or lowered to change overall volume. Just one of the instrument pickups may be adjusted in order to change the relative output of the pickups, or just one side of any pickup may be adjusted for changing the volume of certain strings with respect to the others. To do this set the pickup at an angle.

All Rickenbacker pickups are adjusted by two screws, one on each side of the pickup. For the standard high gain and super high gain Rickenbacker pickups which are mounted on a piece of flexible foam rubber, as on series 300 and 600 guitars, only the middle screw of the three screws on each side of the pickup is used for readjustment. To lower the pickup, simply tighten down each of the two screws clockwise. To raise the pickup, loosen both screws counterclockwise.

Additionally, all Rickenbacker standard "Hi-Gain" pickups currently have individually adjustable polepieces. Using the 3/32" hex wrench included with your instrument, gently turn the individual polepiece to raise or lower it. This allows the player to fine-tune the balance between strings, should there be any inconsistency.



Better balance adjustment is usually achieved by lowering poles on strings that are too loud rather than raising those that are too soft. The entire pickup assembly may be raised closer to the strings to increase overall volume after such adjustment.

The bass pickup on the 4000 series models is mounted on to the top pick plate of the instrument. These pickups have just one screw on each side, and are adjusted in the opposite manner. To lower the pickup, loosen the two side screws counterclockwise. To raise the pickup, tighten the screws clockwise.

Do not attempt to adjust the pole pieces (screw-like studs in the center of the pickup) on older Rickenbacker high gain pickups

not equipped with hex socket polepieces. These are set at the factory, and any attempt to adjust them can cause permanent damage to the pickup.

### Rick-O-Sound

Many Rickenbacker instruments come equipped with two output jacks. The jack labeled "Standard" uses a typical 1/4 instrument cable for normal mono use. The other jack is a Rick-O-Sound effects output. This feature allows for separate output of the bass and treble position pickups, in conjunction with a quality stereo Y-cable. It is also designed for use with a stereo equipped amplifier.

Rick-O-Sound can be used to produce special effects and multichannel output when used with a stereo amplifier, a dual channel amplifier, or two separate amplifiers. Additionally, Rick-O-Sound can produce many other



sounds with the use of external effects devices. These effects may be run through each amplifier or channel, producing many unique tonal variations.

It is important to understand that only one of the two jacks on the guitar can be used at a time as some rather complex switching is done by the jack contacts. If you

wish to use a mono or standard cable, plug it into the standard jack only.

To use with a quality stereo Y-cord, insert the cable's stereo plug into the Rick-O-Sound output jack on the instrument. Then, plug each of the cable's standard mono cables into either 1) two separate amplifiers, or 2) each channel of a dual channel amplifier.

Rick-O-Sound provides a choice between three different types of effects at one time. With the pickup selector on the bass pickup, Rick-O-Sound puts out a lush and full bass sound. With the pickup selector in the middle position, a beautiful blend of highs and lows can be achieved, much like a clean chorus effect. The tonal separation is improved when using two amplifiers. With the pickup selector in the treble position, Rick-O-Sound produces a bright and full ringing lead tone.

An example set-up might have a soft, full jazz sound with plenty of reverb at the bass setting in the amplifier or channel one. Or a loud, distorted heavy rock sound at the treble position in the amplifier or channel two. A big pop rock stereo chorus type sound could come from a combination of the two in the middle position using both amplifiers or channels.

The Rick-O-Sound may also be used with a standard stereo cable to connect directly with amplifiers equipped with a stereo input.

A standard, quality shielded stereo

Y-cord, sometimes termed an "insert cable", is recommended for use with ROS, but cables of poorer quality may result in a significant increase in noise or loss in treble tone. Low capacitance and a high degree of shielding comprise the most important characteristics of a quality cord.

### Strings and tuning

All Rickenbacker instruments come equipped with Rickenbacker strings. These strings are specially designed to bring out the best tonal properties, playability and overall fidelity in all Rickenbacker instruments. The strings come on new Rickenbacker instruments with a factory specified gauge and tension, designed to provide optimum performance. Moreover, each Rickenbacker instrument is specifically adjusted for the type of string provided. If a different gauge, tension or brand of string is desired, it may be necessary to readjust the instrument. To avoid readjustment of the instrument, continue to use the RIC strings designed for use on your model. Check the string guide in this manual for specific information. Rickenbacker strings are made specifically for your instrument.

### String Replacement

When installing strings, the first string should be loosened and removed, and the new one installed and brought to pitch before proceeding to the next string. Replacing strings in this manner keeps the adjustments in place. Avoid stretching the string beyond

the intended pitch.

Proper string winding helps the instrument stay in tune and produce proper intonation. On the first turn, wrap the string over the exposed string tip. This method helps hold the string in place when it is brought up to pitch. For unwound strings, wrap them at least five times around the machine head. For wound strings, three times around should prevent string slippage.

Some Rickenbacker guitars come with no-hole slot tailpieces for easy stringing. Simply slip the string bead into its proper slot and pull the string up to the key wind, keeping tension on the instrument. Then wind the string as discussed above.

### 12 String Tuning

The most effective way to tune a twelve string guitar is to begin by tuning the regular six strings as would be done on a six string guitar. After these are brought to pitch, proceed to tune the strings that play in unison (the high E and B set, or numbers 1 and 2).

Now proceed to tune the remaining strings, which play at an octave from their regular string partner. The strings which play in unison are of the same gauge, while the strings that play at the octave are a lighter gauge than the other string of their pair. Sometimes it is necessary to go back and repeat this process again for perfect tuning.

Many newer Rickenbacker 12-

| SKU   | Standard Factory Stringing    | String Type                                 | String Gauge                           |
|-------|-------------------------------|---|--|
| 95106 | All Short Scale Guitars       | Short Scale NikL                            | 12-16-24W-32-42-54                     |
| 95403 | Full Scale Six String Guitars | Compressed Round Wound                      | 10-13-17-26-34-42                      |
| 95404 | All Twelve String Guitars     | Compressed Round Wound<br>12 String Harmony | 10-13-20-26-34-42<br>10-13-10-13-20-26 |
| 95511 | All Four String Bass Guitars  | Round Wound NikL                            | 45-55-75-105                           |
| 95515 | All Five String Bass Guitars  | Round Wound NikL                            | 45-55-75-105-115                       |
| 95405 | Mandolin                      | Compressed Round Wound                      | 10-13-26-36<br>10-13-26-36             |

stringers now feature "slot-through" peg heads, wherein the channels for the "sideways" keywinds extend through the back of the headstock. This design makes it easier to string and tune up 12-string mod-

### String Guide

The table above shows the gauges of strings which come on all Rickenbacker guitars and basses when purchased from the factory.



els, as well as improving tone due to decreased head weight.

Note that on some models the strings touch the nameplate which has no adverse effect.

Before changing strings, consult the table to see what gauge string each instrument was designed to use and compare the gauges. Heavier strings than the original factory sets may require adjustment of the neck and re-grooving of the saddles and nut. Less adjustment may be needed if choosing a lighter than standard set.

Any quality string set may be utilized on a Rickenbacker guitar or bass within a reasonable gauge range as suggested by the chart above. Perhaps the most important characteristic of a quality string is uniformity of diameter throughout its length. The varying diameter of a cheap or non-uniform strings makes it impossible to adjust for acceptable intonation. So-called

hand-made strings often have highly imperfect diameter.

#### General Guitar Care

Rickenbacker instruments are exquisitely detailed with exclusive high gloss finishes. With proper care, these finishes can last the life of the guitar. Following these directions will ensure proper care and protection.

Clean all perspiration, fingerprints, dust and grime stains, etc. with a RIC polishing cloth after each use. RIC cloths are specially treated, and other cloths may damage the finish.

Polish using any non-abrasive pure carnauba based auto wax if the finish becomes stained or dull. Inexpensive Turtle Wax® T-123 mixed 50/50 with water works better than most available specialty guitar polishes. Wipe in a circular motion at the speed which is slow enough to see small water bubbles form but fast enough to remove the polish completely before drying.

Protect your purchase from various chemicals such as household cleaners, especially chlorine. Many compounds found in rubber padding or packaging materials, plastic bags, imported guitar stands, hand soaps, lotions, sanitizers, etc., cause the finish to melt, dissolve, appear tacky, or color bleed.

The ideal humidity level for Rickenbacker guitar storage is about 35-40% while ideal temperature is around 70 degrees Fahrenheit. However, humidity is always more

important than temperature, so if a compromise must be made during storage, look for the most stable environment within the optimum humidity level.

Do not expose your instrument during use or storage to environmental extremes such as heat, cold, moisture, dryness, harsh direct sunlight, rain, etc. (These harmful conditions may cause finish damage that is not covered by warranty.)

Do not loosen string tension when storing or transporting your instrument. The neck and body are designed to remain under tension at all times at full concert pitch.

Do not let damp clothing with non-colorfast dyes touch lighter guitars.

Do not place anti-moisture packets or formulas with the instrument. These items contain harmful chemicals and could dry out the guitar to a damaging degree.

#### Oil Finish Maintenance

Beyond routine cleaning, the best way to maintain a hand rubbed oil finish (as seen on Rickenbacker Models 650D, 650 S, and some older models), is with Tung oil and a 3M Scotch-Brite™ Ultra Fine Hand Pad (#7448).

Using small amounts of oil at a time, wipe down the instrument until there is a relatively uniform coating on the surface of the guitar. Going with the wood grain, use the Scotch-Brite™ pad to lightly sand the surface until it begins to take

on its original silky smooth feel.

Before setting the instrument aside to dry, use a clean, lint free cloth to wipe down any excess oil or grit. Allow 8 – 12 hours for proper drying.

This procedure can also be performed using ultra fine, light or gray colored sandpaper. A minimum grade of 1200 should be used to avoid damaging the surface of the wood. It is also important to avoid black sandpaper, as the residue is likely to stain the instrument as the oil sets in.

Use of steel wool is not recommended as the ferrous residue can cling to pickups. Particles of this residue can also become suspended in the finish and rust over time.

#### Warranty Repair

Should any warranty repairs be necessary, we must have your warranty card on file or you must supply the original sales slip showing the date of purchase, model, and serial number.

All warranty repairs must be performed by the factory. We do not authorize warranty repairs elsewhere.

Before returning your purchase for warranty service within the United States, please phone our Customer Service Department at 714-545-5574 or communicate by e-mail to [service@rickenbacker.com](mailto:service@rickenbacker.com) to obtain a Return Authorization Number. Items shipped without an

RMA number will be refused and returned to sender unopened.

This will expedite the repair of your guitar and allow us to work on your guitar as soon as it arrives. Also be sure to enclose a complete description of the damage if additional information beyond that contained in the RMA is available. Be sure to insure the instrument for the full value, as you perceive it, when returning it to the factory.

Currently, Rickenbacker does not accept instruments outside of warranty for repair work.

#### Parts

Rickenbacker maintains an extensive inventory of genuine replacement parts. Our Customer Service Department is pleased to help you select the proper part for your model as well as provide current pricing information.

You will need to know the correct model and serial number when ordering parts directly from the factory. On most models, the serial number is located on the output jack plate and includes the digits at each end of the plate.

You may also buy parts from any authorized Rickenbacker dealer.

In some limited cases, warranty exchanges for defective small parts can be made after consulting with Customer Service.

Note: Whenever you need replacement parts, make sure that Rickenbacker parts, or their exact

equivalents are used. The use of any parts, including strings, failing to meet original specifications may void the warranty.

#### Shipping

First consult the dealer where you purchased your Rickenbacker. Often the dealer will take responsibility for shipping your instrument.

Otherwise, contact our Customer Service Department for a Return Authorization Number and further instruction on returning your Rickenbacker to the factory for warranty work.

#### Manual Updates

This manual may be revised at any time and is also available online at [www.rickenbacker.com/pdf/manual.pdf](http://www.rickenbacker.com/pdf/manual.pdf) in the most current revision.

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RIC reserves the right to discontinue models, parts and accessories, and other items or change specifications at any time without prior notice.



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