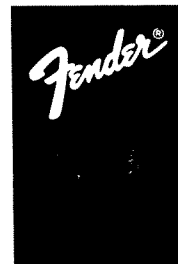


*Crafted in the American Tradition*



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## **Thank You . . .**

*We are pleased that you have selected one of our fine quality instruments. Fender guitars and basses combine the highest quality components with the finest workmanship and are warranted to give you complete satisfaction. This instrument contains many features and new improvements developed by our engineers. As a result, you are assured of receiving an instrument of superior, quality, lasting beauty and exceptional playability. We urge you to take the time to read this manual and familiarize yourself with the many new features and capabilities of this instrument.*

The Fender logo is written in a bold, black, cursive script. The word "Fender" is slanted to the right. A registered trademark symbol (®) is located at the top right of the letter "r".

**Fender®**

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## **VOLUME CONTROL**

The Volume Control allows you to control the volume level at the instrument.

## **PAN CONTROL**

The Pan Control allows you to balance the volume of two pickups. This control has a center detent which indicates that the pickups are equal in volume.

## **TONE CONTROLS**

The Tone Control allows you to modify the instrument's tonal characteristics.

### **Standard**

With the tone knob in the full clockwise position, a brighter tone is achieved. Rotating the knob counterclockwise gradually filters off the high frequencies, moving the sound from bright to more mellow.

### **TBX**

Some instruments have a unique tone circuit that features a TBX Tone Control (Patented). The TBX Control provides both the conventional guitar sound and unique new sounds.

Advancing the knob counterclockwise from the detent position gradually filters off high frequencies, like a standard tone control (see "Standard Tone Controls" above). Rotate the knob clockwise from the detent position, and you add presence and brightness by allowing the pickups' natural resonance to come through. With this added capability, the TBX provides a whole new range of sounds not previously available.

## **ACTIVE ELECTRONICS**

Some Fender instruments feature active electronics, which are powered by a 9-volt battery. The battery is accessed via a plate in the back of the guitar. More extensive descriptions of the circuit on your instrument (if it has an active electronic circuit) may be found in the manual addendum for your particular instrument included with this manual.

### **Treble Boost/Cut**

The Treble Boost/Cut control allows you to increase or decrease the treble frequency output of the instrument. The knob has a center detent, at which point the natural tone of the instrument is unaffected. By turning the appropriate knob clockwise from the center, you gradually boost the treble frequencies in volume. By turning the knob counterclockwise from the center, you gradually cut the treble frequencies in volume.

### **Bass Boost/Cut**

The Bass Boost/Cut control allows you to increase or decrease the bass frequency output of the instrument. The knob has a center detent, at which point the natural tone of the instrument is unaffected. By turning the appropriate knob clockwise from the center, you gradually boost the bass frequencies in volume. By turning the knob counterclockwise from the center, you gradually cut the bass frequencies in volume.

**Note:** When using Boost/Cut controls, it is suggested that you start with the knob in the center (at the detent) and gradually add or boost frequencies from there.

### **Midrange Boost**

The Midrange Boost Control allows you to increase the midrange response of the guitar. By turning the knob clockwise, you gradually boost the midrange and bass frequencies as you decrease the treble frequencies. You can actually shape the sound of the pickups.

**Caution:** At maximum setting, the volume increase is approximately 25 dB in the low-mid range, so the output of your instrument could be substantially more powerful than that of a standard guitar or bass.

### **Notch Filter Frequency Shift**

The active electronic circuitry is controlled by a three-way on-board switch, and offers three modes: Passive (standard tone control), Narrow Frequency Band Notch Filter, and Wide Band Notch Filter.

This circuit acts quite differently from the normal "boost" circuit that is usually available on instruments. The Notch Filter takes a particular frequency of the bass and *cuts* that frequency, thereby emphasizing the remaining frequencies and creating a unique tone. With the Frequency Shift Control, the center of the "notch" can range anywhere from 100 Hz to 10,000 Hz. This circuit also offers two different notch configurations, one that cuts a very narrow band of frequencies, and one that cuts a wider band of frequencies. Both are tuneable with the Frequency Shift Control. In the Passive position, the Frequency Shift Control is inoperative.

**Note:** As you turn the Frequency Shift Control from 1 to 10, the notch moves from high frequencies to low frequencies—therefore the tone you hear does the opposite. In other words, moving the Frequency Shift Control from 1 to 10 causes the tone you hear to go from bass to treble.

## **SWITCHES**

### **Pickup Selector**

The pickup selector switch does just what it implies, it selects the pickups either alone or in combination. Dual pickup models are supplied with a three position switch, while the three pickup models are equipped with a five position switch.

### **Coil Splitter**

Some models with humbucking pickups also feature mini-toggle switches which allow you to select between single coil and dual coil (humbucking) modes.

### **Dual Coil Selector**

Some models have two adjacent Sensors in the bridge position. This switch allows you to utilize either of the Sensors or both together.

### **Series/Parallel**

A Series/Parallel Switch changes the wiring of the sensors to produce sound variations. The "Up" position puts your Sensors in a Parallel configuration, giving clear, bell-like tones. "Down" position puts your Sensors in a Series configuration, which produces a hotter output signal with a lot more bottom end.

### **Notch Filter**

A three-way on-board toggle that switches between three modes: Passive (standard tone control), Narrow Frequency Band Notch Filter, and Wide Band Notch Filter.

### **NON TREMOLO BRIDGES**

#### **American Standard**

The American Standard bridge saddles are made from stainless steel, due to its superior durability and resistance to corrosion. They are weight balanced to provide optimum sound transfer.

The saddles are individually adjustable for both string height and intonation.

#### **Deluxe Fine Tuning**

These Fine Tuning Adjusters (Patented) allow convenient, precise tuning at the bridge. The bridge saddles are individually adjustable for both string height and intonation.

#### ***String Loading for Deluxe Fine Tuning Bridge***

This bridge features a top load stringing system. The strings are inserted into the holes behind the bridge plate. Pull each string into its own individual hole and string the bass as normal.

#### **12-String**

Individual string height is not offered, however, the pivot post adjustment is more than sufficient due to the radius of the bridge plate which matches the curvature of the fretboard. In addition, this particular instrument features intonation adjustment.

#### **Standard**

The bridge saddles are made from stamped steel that has been case-hardened and heavily chromed for superior durability. The saddles are individually adjustable for both string height and intonation.

#### **Vintage Style**

The bridge saddles are made from stamped steel that has been case-hardened and nickelplated for superior durability.

The saddles are individually adjustable for both string height and intonation.

#### **Vintage Telecaster Style**

Just like the original '52 Telecaster bridge after which this unit is fashioned, it features brass saddles and a nickelplated chrome chassis. There are only three saddles; two strings per saddle. The saddles are each adjustable for height and intonation.

### **TREMOLO SYSTEMS**

All systems are adjustable for tremolo travel by adjusting the spring to string balance.

#### **American Standard**

The American Standard Tremolo Unit is a floating, fulcrum style tremolo, with two large pivot posts. These pivot posts are "V" grooved and are mated to the

knife edge slots that are cut into the bridge bass plate.

The thicker bass plate and steel spring block, coupled with the weight-balanced, stainless steel bridge saddles, help to deliver increased sustain and an extremely well balanced tonal response throughout the instrument's frequency range.

The tremolo arm is installed by carefully threading it into the hole adjacent to the first string. Do not overtighten, as you may snap the arm off in the block.

Do not remove the tremolo arm once it has been installed, or the spring in the receptacle hole could be lost. To store the instrument in its case, simply swing the tremolo arm towards the corner of the case where the output jack is located. If you choose to remove the tremolo arm, you will need to place a small piece of tape over the arm hole to insure that the spring remains in the hole.

#### **Deluxe American Standard**

The Deluxe American Standard Tremolo Unit is a floating, fulcrum style tremolo, with two large pivot posts. These pivot posts are "V" grooved and are mated to the knife edge slots that are cut into the bridge bass plate.

The thicker bass plate and steel spring block, coupled with the weight-balanced, chrome plated stainless steel bridge saddles, help to deliver increased sustain and an extremely well balanced tonal response throughout the instrument's frequency range.

This tremolo unit features a convenient "snap in" tremolo arm. In addition, the string rest in the saddles has been designed using a softer curve, which helps to prevent string breakage at the bridge.

#### **Kahler "Spider" (Floyd Rose® licensed)**

The Kahler "Spider" tremolo unit features a fine tuning floating bridge with two knife edge pivots, height adjustable pivot posts, intonation adjustable saddles, torque adjustable arm, and three section screw actuated locking nut.

#### **Kahler "Spider Deluxe" (Floyd Rose® licensed)**

The Kahler "Spider Deluxe" tremolo unit features a fine tuning floating bridge with two knife edge pivots, height and intonation adjustable saddles, torque adjustable arm, and three section screw actuated locking nut.

#### **Kahler "Deluxe" (Floyd Rose® licensed)**

The Kahler Deluxe tremolo unit features a fine tuning floating bridge with two knife edge height adjustable pivot posts, intonation adjustable saddles, torque adjustable arm, hardened steel bridge plate, and three section screw actuated locking nut.

NOTE: For more detailed instructions on the Kahler tremolo, please consult the Kahler manual included with this instrument.

#### **Floyd Rose® Pro, Floyd Rose® Original, Floyd Rose® II Tremolo**

The Floyd Rose Pro, Floyd Rose Original, and Floyd Rose II are intonation and height adjustable fulcrum style bridges. Additional features include hardened knife edge pivots, torque adjustable lock in/lock out arms, precision engineered locking saddles, and 3 section nut lock.

*String Loading for Floyd Rose® and Kahler (Floyd Rose® licensed) Tremolo Systems*  
Prior to stringing your guitar, set the fine tuners on the bridge to the mid-way point (Fig 1). This will allow sufficient tuning range both up and down in pitch. Starting with the low E string, loosen the Nut Clamp Bolt at the headstock with

the 3mm Allen wrench and remove old string (Fig. 2). Cut off the ball end of the new strings before installing. With the 3mm wrench, turn the Lock Bolt counter-clockwise three turns. Insert cut end of string to bridge saddle, slide the string in so that it hits the bottom base of the saddle. Using the Allen wrench, tighten snugly. Take care not to overtighten as this may cause thread stripping or cracking of the block or saddle. Thread the string through the loosened Nut Clamp Tab Bolt at the headstock, and run the string to the machine head then cut string two machine heads past the low E tuner to allow for slack and wind string to appropriate tuner. Follow these same steps for each remaining string. In order to preserve the balance of your tremolo, change only one string at a time. Once all the strings have been replaced, stretch them by pulling the string the full length of the fretboard. Retune and repeat until the strings remain in tune even after stretching. This should insure proper stretching and eliminate tuning problems associated with new strings. Finally, loosen nut, tune to pitch with the fine tuning knobs on the bridge and retighten nut snugly, taking care not to overtighten as damage may occur.

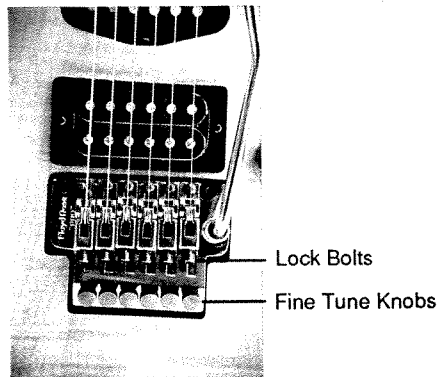


Fig. 1

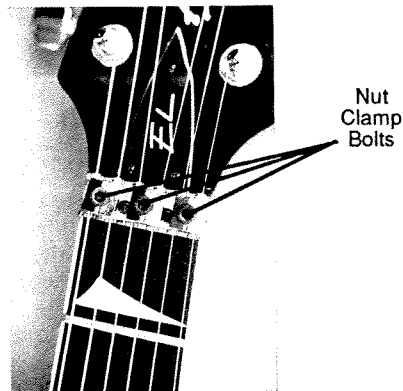


Fig. 2

#### Vintage-Style Tremolo

This is a floating, fulcrum style tremolo, which utilizes six screws as pivot posts. The bridge saddles are made from stamped steel that has been case-hardened and heavily chromed for superior durability. They are weight balanced to provide optimum sound transfer. These, coupled with the thick bass plate and steel spring block, help to deliver increased sustain and an extremely well balanced tonal response throughout the instrument's frequency range.

The saddles are individually adjustable for both string height and intonation.

The tremolo arm is installed by carefully threading it into the hole adjacent to the first string. Do not over tighten, as you may snap the arm off in the block. Once the tremolo arm has been installed, it should not be removed, because there is a spring in the receptacle hole that could fall out and be lost. To store the instrument in its case, simply swing the tremolo arm towards the corner of the case where the output jack is located. If you choose to remove the arm, you will need to place a small piece of tape over the hole to insure that the spring remains in the hole.



## TUNING GEARS

### Adjustable

Some Fender guitars and basses are equipped with tuning gears on which you can adjust the tension.

To loosen the tension (making the tuning gears easier to turn), simply use a screwdriver to turn the screw on the end of the tuning button counterclockwise.

Turn the same screw clockwise to tighten the tension on the tuning gear (making it more difficult to turn).

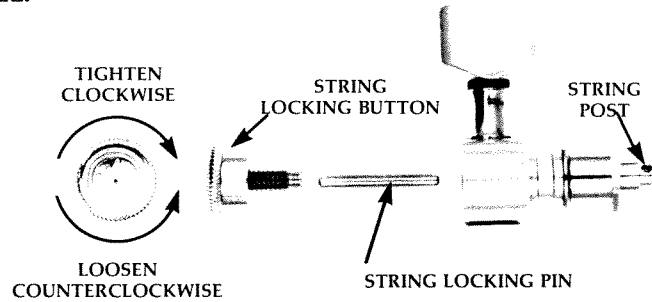
**Caution:** Too little tension on the tuning gears causes the strings to slip out of tune.

### Locking

Several guitars are equipped with locking keys that also feature "zero" string backlash. These unique keys provide a positive string lock to the post (with minimal string wrap) that keeps the guitar in tune during tremolo use. Fender uses two types of locking keys (Fig.3 & 4):

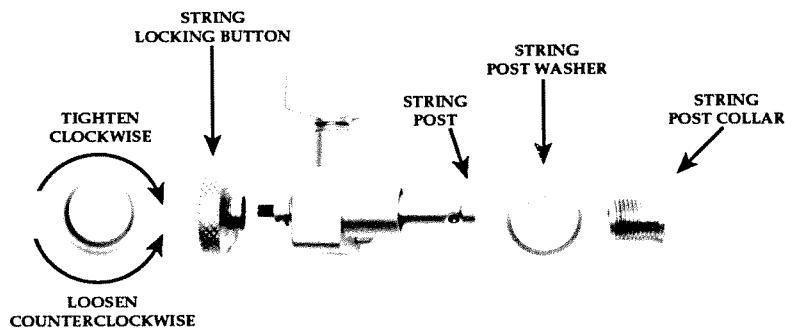
#### SPERZEL:

Fig. 3



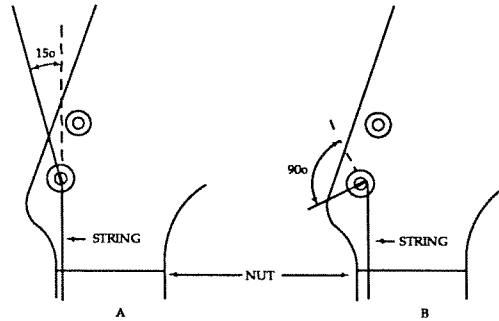
#### SCHALLER:

Fig. 4



To fasten a string to the locking key, follow the winding directions illustrated:

Fig. 5



Be sure the string hole in the string post is at approximately  $15^\circ$  (A) to the left of a line perpendicular to the nut. Firmly draw the string through the hole, tautly, and lock in place by turning the String Locking Button clockwise. Then turn the key until the string hole rotates counterclockwise approximately  $90^\circ$  (B). Tune to pitch.

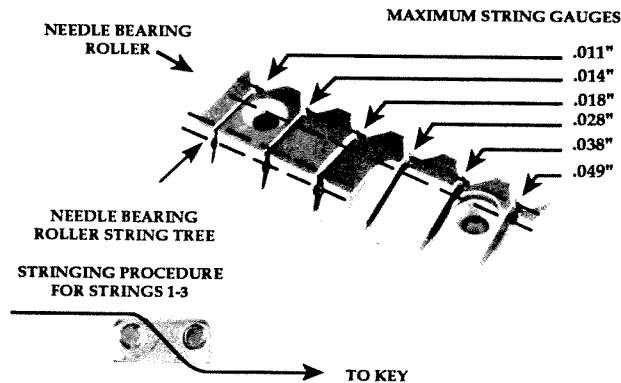
**Caution:** Because of the positive locking action of the locking keys, when changing strings, tension should first be relieved by turning (loosening) the key; no tension should be applied to the strings.

#### FENDER/WILKINSON NUT

Some guitars feature the Fender/Wilkinson Nut, which utilizes a completely new, revolutionary needle-bearing roller design with integral needle-bearing roller string tree for strings 1-3. (Some model feature 2 sets of rollers for all six strings.) This unique design reduces string binding and friction, and eliminates the need for a locking nut when using the tremolo system.

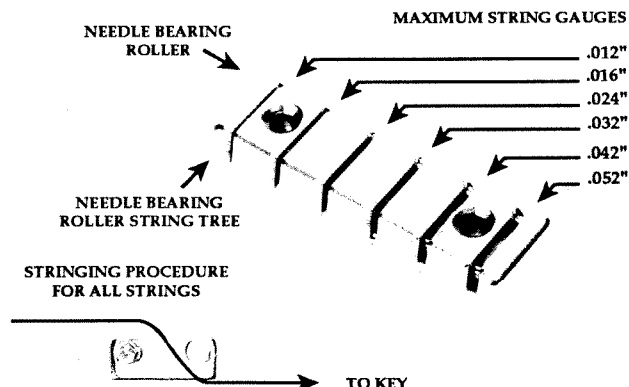
**Note:** The Wilkinson Nut on your guitar works only for maximum string sizes of: .010, .013, .017, .026, .036, .046

Fig. 6



For larger strings (up to .012, .016, .024, .032, .042, .052), a retrofitable unit is available (shown below)

Fig. 7



#### ADJUSTABLE PICKUPS AND SENSORS

Pickups and Sensors on Fender guitars and basses can be adjusted for height. The procedure for adjusting the height is covered in section 5, Set Pickup or Sensor Height.

#### TRUSS ROD

Each Fender guitar and bass is carefully adjusted at the factory. The truss rod and string height are set for optimum action and playability with medium gauge strings.

Under normal tension, the neck should have a slight concave curvature. By creating a counteracting force, the truss rod prevents the neck from bending excessively under the stress placed on it by the strings.

Adjusting the Truss Rod is covered in section 2, Adjust Neck Curvature.

#### Standard Truss Rod

The standard truss rod can counteract a neck that is too concave, by compensating for excessive string tension.

#### Bi-Flex Truss Rod

Some Fender guitars and basses have a unique Bi-Flex truss rod system. Unlike standard truss rods, which can only correct a neck that is too concave (under-bow), the Bi-Flex truss can pull the neck in *either* direction.

#### BATTERY

Batteries on guitars or basses with active electronics are accessed via a screwplate on the back of the body.

Batteries only become active when the instrument has a cord plugged into the jack. For the longest possible battery life, always unplug your instrument when it is not in use.

#### TRUSS ROD, ACTION, AND INTONATION ADJUSTMENTS

Because of travel effects, changes in string gauges, climatic conditions, and differences in playing styles, you might need to adjust your Fender guitar or bass. If it becomes necessary, the following procedure outlines the standards set at the factory.

To make these adjustments, you will need—in addition to the tools that are included with your instrument—the following equipment:

Capo  
Feeler Gauge Set  
6" Mechanic's ruler (with 1/64" increments)

### 1. Tuning

Tune the instrument to standard pitch.

### 2. Adjust Neck Curvature (Truss Rod)

Each Fender guitar is carefully adjusted at the factory. The truss rod and string height are set for optimum action and playability with the gauge strings supplied.

Under normal tension, the neck should have a slightly concave curvature. By creating a counteracting force, the truss rod prevents the neck from bending excessively under the stress placed on it by the strings. The tension on the rod is adjustable so the correct curvature can be achieved by regulating the neck's resistance to string tension.

To check the truss rod setting for a guitar, tune the guitar to playing pitch. Install a capo at the first fret, depress the 6th string at the fret where the neck joins the body. Using a feeler gauge, check the gap between the bottom of the 6th string and the top of the 8th fret. The string clearance should be approximately .010".

To check the truss rod setting for a bass, tune the bass to playing pitch. Install a capo at the first fret, depress the 4th string at the fret where the neck joins the body. Using a feeler gauge, check the gap between the bottom of the 4th string and the top of the 8th fret. The string clearance should be approximately .015" to .020".

#### Standard Truss Rod

The standard truss rod can counteract a neck that is too concave, by compensating for excessive string tension. If an adjustment is necessary, either: 1) insert the appropriate Allen socket wrench into the truss rod adjustment hole at the headstock of the guitar; or 2) insert a Phillips screwdriver into the truss rod adjustment hole where the neck joins the body. Rotate [the screwdriver/wrench] gently until you feel it engage.

If the neck is too concave, turn the Truss Rod Nut clockwise. If it is too straight or convex, turn the Truss Rod Nut counterclockwise.

Periodically, check the gap with the feeler gauge, and check the tuning for standard pitch.

**Caution:** DO NOT continue adjusting: 1) If extreme resistance is felt while adjusting in either direction, or 2) If the neck has a convex bow that remains when the truss rod nut is loosened. Take the instrument to the nearest Authorized Dealer or Service Center for inspection.

**Note:** The Truss Rod Nut should not be left loose, but should be tightened by at least a quarter turn.

#### Bi-Flex Truss Rod

Some Fender guitars and basses have a unique Bi-Flex truss rod system. Unlike standard truss rods, which can only correct a neck that is too concave (underbow), the Bi-Flex truss can pull the neck in *either* direction. If an adjustment is

necessary, insert the appropriate Allen socket wrench into the truss rod adjustment hole at the headstock of the guitar. Rotate the wrench gently until you feel it engage.

If the neck is too concave, turn the Truss Rod Nut clockwise. If it is too straight or convex, turn the Truss Rod Nut counterclockwise. When you come to the "center" point of the Truss Rod adjustment, the Truss Rod will feel slack. Keep turning past that point to adjust the Truss Rod in the opposite direction.

Periodically, check the gap with the feeler gauge and check the tuning for standard pitch.

**Caution:** DO NOT continue adjusting if extreme resistance is felt while adjusting in either direction. Take the instrument to the nearest Authorized Dealer or Service Center for inspection.

**Note:** The Truss Rod Nut should not be left loose, but should be tightened by at least a quarter turn.

### 3. Set Bridge Height

The recommended string clearance at the 12th fret (measured by the distance between the bottom of the string and the top of the fret) is:

**Guitar:** Strings 1 - 4:  $5/64''$  (2mm)  $\pm 1/64''$  (.4mm)  
Strings 5 - 6:  $3/32''$  (2.4mm)  $\pm 1/64''$  (.4mm)

**Bass:** Strings 1 - 4:  $3/32''$  (2mm)  $\pm 1/64''$  (.4mm)

These dimensions are the factory recommended settings only. The optimum height adjustment varies from player to player due to differences in technique, playing styles, string gauges, etc.

#### American Standard

Each saddle is individually adjusted by using the .050" Allen wrench to turn the two Allen socket screws located on the top of the saddle. Clockwise raises and counterclockwise lowers. Be sure both height adjustment screws of each bridge saddle rest firmly against the bridge plate. Also be sure each saddle is parallel to the bridge plate after adjustment.

#### Deluxe Fine Tuning

Each saddle is individually adjusted by using the .050" Allen wrench to turn the two Allen socket screws located on the top of the saddle. Clockwise raises and counterclockwise lowers. Be sure both height adjustment screws of each bridge saddle rest firmly against the bridge plate. Also be sure each saddle is parallel to the bridge plate after adjustment.

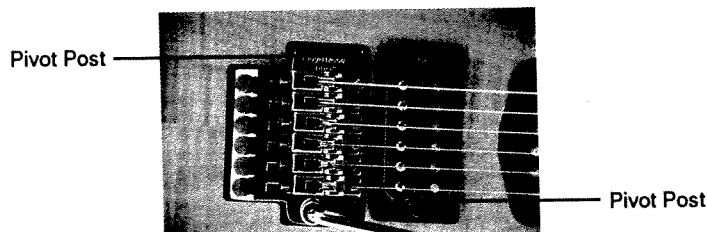
#### Floyd Rose® Pro, Floyd Rose® Original, Floyd Rose® II

On these Floyd Rose units, the overall height of the bridge is set by adjusting the Pivot Posts located on either side of the bridge (Fig. 7). To raise the bridge height, simply adjust each Pivot Post by inserting the Allen wrench into the Pivot Post and rotating it counterclockwise to the desired height.

To lower the bridge height, simply rotate each Pivot Post clockwise until the desired bridge height is reached. Remember to check for neck bow while adjusting bridge height as neck bow can effect string height. For best playability, try to keep the Pivot Posts adjusted evenly.

Individual string height is not offered on the Floyd Rose systems as it can negatively effect the overall tuning stability of the tremolo system.

Fig. 7



#### Kahler (Floyd Rose® licensed)

There are three different models of Kahler tremolos employed on the contemporary guitars. The only difference is that the "Deluxe Spider" tremolo unit offers individual height adjustment for each string. To adjust the saddle height on these guitars, simply loosen the Intonation Block Hold-down Bolt by turning counterclockwise with the appropriate wrench. Using the appropriate wrench, turn each

Saddle Riser Screw clockwise to achieve the desired string arc over the fingerboard and neck. Finally, retighten the Intonation Block Hold-down Bolt.

Individual string height is not offered on the other Floyd Rose® licensed systems, however, the Pivot Post adjustment is more than sufficient due to the radiused bridge plate which matches the curvature of the fretboard. The bridge can be raised by turning the pivot post screws counterclockwise or lowered by turning them clockwise.

#### 12-String

The overall height of the bridge is set by adjusting the two pivot posts, one on each side of the bridge. This is done by using an Allen wrench placed in the slot section of the post, rotating counterclockwise to raise and clockwise to lower.

#### Vintage

Each saddle is individually adjusted by using the two Allen socket screws located on the top of the saddle (vintage Telecasters and vintage basses have flathead screws instead of Allen socket screws). Clockwise raises and counterclockwise lowers. Be sure both height adjustment screws of each bridge saddle rest firmly against the bridge plate. Also be sure each saddle is parallel to the bridge plate after adjustment.

#### 4. Adjusting Spring Tension (Bridge/String Balance)

The tremolos utilize a spring adjustment system: two Phillips head wood screws drawing a claw back and forth, with one end of the [3 to 5] springs attached to the body while the other end is attached to the bridge Spring Block/Sustain Bar.

First, remove the six screws that hold the tremolo back cover plate in position and remove plate. The tremolo arm should be depressed so as to raise the back of the bridge. Place a 5/32" (4mm) spacer block between the bridge and the body. (Due to the recessed tail section, you won't be able to use a spacer block in this manner on the Floyd Rose-licensed bridge. To measure the Floyd Rose licensed system, take off the back plate and make sure the back of the Spring Block is vertical. A wood block can be placed between the back of the Spring Block and the rear of the body cavity.)

Allow bridge to return back to body, trapping the block. Tune guitar up to pitch. If bridge raises and fails to trap block, tighten the two claw screws clockwise until spring pressure will trap the block with the strings all tuned to pitch. Stretch all strings out completely (sometimes it helps to hold the bridge down with one hand while stretching the strings with the other).

Now remove the spacer block either by depressing or pulling up on the tremolo arm (depending on the bridge type). The pitch of the strings should now be raised. Using your tuning source (preferably an electronic tuner) and a Phillips tip screwdriver, turn the screws which adjust the claw, counterclockwise, until the strings return to pitch. This should raise your bridge and return the bridge to the proper balance point. On bridges so equipped, you can use the fine tuners for final tuning adjustments.

**Note:** For Hipshot Tremsetter equipped guitars, disengage and remove the Tremsetter before adjusting tremolo. Reinstall Tremsetter when finished.

#### 5. Set Pickup or Sensor Height

The pickups/Sensors on your Fender guitar or bass are fully adjustable for height. Adjustments are made by turning the Height Adjustment Screws located at each end of the pickups/Sensors. (On humbucking pickups, the center screw on either side of the pickup is the Height Adjustment Screw.)

Depress all strings at the highest fret. Check the distance from the bottom of the 1st and 6th strings to the top of the pole piece or pickup/Sensor cover. The measurement should be as follows:

Standard Guitar Pickups: 1st string: 1/16" (1.6mm), 6th string: 3/32" (2.4mm)

Standard Bass Pickups: 1st string: 1/8" (3.2mm), 4th string: 1/8" (3.2mm)

Fender-Lace Sensors: No limit

Pickups are adjusted in the following manner: to raise the pickup/Sensor, turn the adjustment screws clockwise; to lower it, turn the screws counterclockwise. The recommended string clearance is measured between the pickup/Sensor and the outside strings when fretted at the last fret on the fingerboard.

**Note:** Pickups set too close to the strings can cause false tones and loss of sustain due to magnetic pull on the strings. Sensors, however, can be set as close to the

#### 6. Check for Fret Rattles

With the instrument plugged into your amplifier and the pickup selector switch set to the neck pickup position, pick in the area between the neck and bridge pickups. Play each fret position, holding the pick parallel to the plane of the body, to determine that the strings do not buzz or rattle against successively higher frets.

Bend the first and second strings up one whole tone in pitch at the 12th, 15th and 17th frets. The notes should ring true, without choking off.

Due to differences in playing styles and picking techniques, action settings that produce no string rattle for one player may rattle when another player plays the instrument. If you have followed all the adjustment procedures listed and set the string action at the recommended setting, but are still experiencing fret rattle, you may require slightly higher than normal settings to accommodate your style of playing. If you still experience difficulties, take the guitar to an Authorized Dealer or Service Center.

## **7. Intonation**

For optimum results, these adjustments should be made when the strings are in new condition. With the pickup selector switch set to the neck pickup position and the tone and volume controls at the maximum settings, tune the guitar. Check the intonation of each string with an electronic tuner by playing the open string harmonic at the 12th fret and comparing this note with the note produced by fretting the string at the 12th fret. The pitch should be the same + or - 1 cent (1/100th of a semitone). If the fretted note is sharp, the string must be lengthened by moving the saddle back; if the fretted note is flat, the string must be shortened by moving the saddle forward. After each adjustment, retune and repeat this test until both notes produce the same pitch. The procedures for doing this are as follows:

**Note:** A small adjustment in the position of the bridge saddle makes a noticeable difference in the string, so move the bridge saddles in small increments.

### **American Standard**

Adjust the Phillips head screw at the end of the bridge clockwise to lengthen the string and counterclockwise to shorten, depending on whether the string is sharp or flat in relation to the 12th fret harmonic. Retune and retest each adjustment.

### **Deluxe Fine Tuning**

Adjust the Phillips head screw at the end of the bridge clockwise to lengthen the string and counterclockwise to shorten, depending on whether the string is sharp or flat in relation to the 12th fret harmonic. Retune and retest each adjustment.

### **Floyd Rose® Pro, Floyd Rose® Original, and Floyd Rose® II**

Loosen the Intonation Block Hold-down Bolt by turning counterclockwise with 2.5mm Allen wrench. Push arm down to loosen string tension. Slide the Bridge Saddle in the desired direction (it may be necessary to detune string completely if saddle has to be slid toward bottom end of the guitar). Tighten the Intonation Block Hold-down Bolt. Retune and retest each adjustment.

### **Kahler (Floyd Rose® licensed)**

Loosen the Intonation Hold-down Bolt by turning counterclockwise with the 2.5mm Allen wrench. Push arm down. Slide the Bridge Saddle in the desired direction. Tighten in the Intonation Block Hold-down Bolt.

### **Vintage**

Adjust the Phillips screw at the end of the bridge clockwise to lengthen the string and counterclockwise to shorten, depending on whether the string is sharp or flat in relation to the 12th fret harmonic. Retune and retest after each adjustment.

### **Vintage Telecaster**

Adjust the flathead screw at the end of the bridge clockwise to lengthen the string and counterclockwise to shorten, depending on whether the string is sharp or flat in relation to the 12th fret harmonic. Retune and retest after each adjustment. Since this bridge has two strings sharing one saddle, it is necessary to set the intonation so that an average between the two strings is achieved.

## **CARE OF YOUR GUITAR OR BASS**

Your new Fender guitar or bass is precision made to give you many years of satisfaction. A few simple maintenance procedures will help you keep your instrument playing like new.



After you have finished playing, thoroughly wipe the entire guitar, including the strings, with a clean, soft cloth. Regular cleaning with Fender Polish is recommended.

Avoid exposing the guitar to any chemical or substance that might mar the finish, or to direct sunlight or other sources of excessive heat humidity or shock.

**Caution:** It is important to avoid sudden changes in temperature, since this causes the wood to expand at a different rate than the finish, which may result in checking. While this condition does not affect the tone, it does affect the appearance.

Let the instrument warm up in its own case. Then, open the case slowly, allowing warm air to enter gradually. After the instrument is removed, leave the case open so it too can warm up thoroughly.

String tension should be reduced during shipping to avoid possible damage.

Dirty, corroded or worn strings cause loss of sustain, loss of treble frequencies, and faulty intonation. Fresh strings add to the enjoyment and tonal qualities of your guitar. Change them often, using Fender strings.

If your guitar needs repair work, refer all such work to your Authorized Dealer whose trained personnel and complete service facilities will assure your satisfaction.

### LIMITED WARRANTY

This limited warranty against defects in material and workmanship applies only to the original retail purchase. **IMPORTANT: PLEASE RETAIN YOUR SALES RECEIPT, AS IT IS YOUR PROOF OF PURCHASE COVERING YOUR ONE YEAR LIMITED WARRANTY.**

Defective parts will be repaired or replaced without charge if the product is returned to any Authorized Fender Dealer or Fender Service Center. Any service performed by other than an Authorized Fender Dealer or Fender Service Center is not reimburseable under the warranty. Transportation costs are not included in this warranty.

This warranty becomes void if the serial number is defaced or removed, or the product has been damaged by alteration, misuse, accident, or neglect; or the product has been serviced by persons not authorized by Fender Musical Instruments. The company assumes no liability for property damage of any sort which may result from the failure of this product. Any warranties implied by law are limited to the duration of this express limited warranty.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you also have other rights which vary from state to state.

Have service performed by any Authorized Fender Dealer or contact:

Customer Relations  
Fender Musical Instruments  
1130 Columbia Street  
Brea, CA 92621

