Fender® Basses—Adjustments and Care

The following setup procedures and specifications for your Fender bass were derived using the strings, which come on the instruments as standard equipment from the factory. Note: If you plan to change string gauges, you may need to adjust the specs somewhat to compensate for the changes in string sizes. Modifications of the specifications may also be made, (within limited parameters) to adjust for your individual playing style or application (i.e., how hard you pick, finger, slap, pop, or fret the bass) Note: These are minimum specifications, which are meant to guide you, and should not to be taken as hard and fast rules, as we realize that every player's subjective requirements may differ somewhat.

Necessary Tools

- Set of automotive feeler gauges (.002 - .025) (0.05 – 1 mm)
- 6" (150 mm) ruler (with 1/32" and 1/64" increments) (0.05 mm increments)
- Light machine oil (3-in-1, toy locomotive, or gun oil)
- Phillips screwdriver
- Electronic tuner
- Wire cutters
- Peg winder
- Polish and cloth

Strings

New bass strings can breathe new life into your bass. A lot of the thump and pop you expect from your bass starts right here. In order for strings to stay in tune well, they should be changed on a regular basis. Strings that have lost their integrity (worn where the string is pressed against the fret) or have become oxidized, rusty, and dirty will not return to pitch properly. To check if your strings need changing, run a finger underneath the string and feel for dirt, rust or flat spots. If you find any of these, you should change your strings.

Fender offers a variety of bass strings—from the smooth, vintage sounding, pure nickel Original Bass 7150's, the pumpin' response of the Super Bass 7250's, to the bright, snappy performance of the Stainless Steel 7350's. There are choices of long scale, medium scale, or short scale; strings that are taperwound, and strings that are designed for either top loading or a string-through-the-body bridge designs. Whatever your need—to fit your bass—these strings will give you the jump-start you need.

Because of the amount of tension prevalent on the neck, it is advisable to replace and tune each new string before removing the next string. After the whole set is changed and tuned; make sure that you stretch your strings properly. This is done by holding the strings at the first fret and hooking your fingers under each string (one at a time) and then tugging lightly, moving your hand from the bridge to the neck. Re-tune and repeat this procedure several times.

Back to Top

Tuning Keys

Whether your bass has standard or vintage tuning keys; how you wind the strings onto the pegs is very important. First start by loading each string through the bridge and then loading it onto the appropriate key as follows:

Standard keys - You will want to pre-cut each string to achieve the proper length and the desired amount of winds. Pull the 4th string 3" (76 mm) past the 4th string tuning post and cut it (make sure when you are pulling the strings that you are pulling the string taut). Insert through the eyelet in the tuning key, allowing approximately 1/16" (1.6 mm) of the end to extend through the eyelet, then wind neatly in a downward pattern (carefully as to prevent overlapping of the strings). Pull the 3rd string 3 1//2" (89 mm) past the 3rd string tuning post and cut it. Now, repeat the winding procedure. Pull the 2nd string 3 ½" (89 mm) past the 2nd string tuning post and cut it. Again, repeat

the winding procedure. Pull the 1st string 3 ½" (89 mm) past the 1st string tuning post and cut it. Finally, repeat the winding procedure one more time. Note: For 5-string basses follow the above procedures, cutting the 5th string 3" (76 mm) past the 5th tuning post.
Vintage keys - You will want to pre-cut each string to achieve the proper length and the desired amount of winds. Pull the 4th string 4" (102 mm) past the 4th string tuning post and cut it (make sure when you are pulling the strings that you are pulling the string taut). Insert into the center hole of the tuning key, bend and crimp to a 90° angle, and wind neatly in a downward pattern (carefully as to prevent overlapping of the strings). Pull the 3rd string 4 ½" (114 mm) past the 3rd string tuning post and cut it. Now, repeat the winding procedure. Pull the 2nd string 4 ½" (114 mm) past the 2nd string tuning post and cut it. Again, repeat the winding procedure. Pull the 1st string 4 ½" (114 mm) past the 1st string tuning post and cut it. Finally, repeat the winding procedure one more time. Note: For 5-string basses follow the above procedure cutting the 5th string 3 ½" (89 mm) past the 5th tuning post.
Intonation (Roughing it out)
You can pre-set the basic intonation of your bass by taking your tape measure and measuring from the inside of the nut to the center of the 12th fret (the wire, not the fingerboard). Double that measurement to find the scale length of your bass. Adjust the 1st string bridge saddle to this scale length, measuring from the inside of the nut to the center of the bridge saddle. Now, adjust the distance of the 2nd saddle back from the 1st saddle, using the gauge of the 2nd string as a measurement (Example: If the 2nd string is .060" (1.5 mm) you would move the 2nd string back .060" (1.5 mm) from the 1st saddle). Move the 3rd back from the 2nd saddle, using the gauge of the 3rd string as a measurement. The 4th in the same method (and 5th if you have a 5-string bass). Note: If you are using taperwound 4th string (and 5th if you have a 5-string bass) use the actual gauge of the string for your measurement-not the dimension of the tapered portion of the string.

Truss-Rod

Check your tuning. Install a capo at the 1st fret, depress the 4th string at the last fret. With a feeler gauge, check the gap between the bottom of the string and the top of the 8th fret—see the specification chart below for the proper gap. Caution: Because of the amount of string tension placed on the neck (some basses also feature graphite reinforced necks, adding to the resistance present while the bass is tuned to pitch), it is advisable to loosen the strings prior to making any actual adjustment. After the adjustment is made retune the strings to pitch and recheck the gap with the feeler gauge.
Adjustment At Headstock (Allen wrench): Sight down the edge of the fingerboard from behind the headstock, looking toward the body of the instrument. If neck is too concave (action too high), turn the truss rod nut clock-wise to remove excess relief. If the neck is too convex (strings too close to the fingerboard), turn the truss rod nut counter-clockwise to allow the string tension to pull more relief into the neck. Check your tuning, then recheck the gap with the feeler gauge and re-adjust as needed.
Adjustment At Neck Joint (Phillips screwdriver or Allen wrench): Sight down the edge of the fingerboard from behind the body, looking up toward the headstock of the instrument. If the neck is too concave (action too high), turn the truss rod nut clock-wise to remove excess relief. If the neck is too convex (strings too close to the fingerboard), turn the truss rod nut counter-clockwise to allow the string tension to pull more relief into the neck. Check your tuning, then recheck the gap with the feeler gauge and re-adjust as needed.
Note: In either case, if you meet excessive resistance when adjusting the truss rod, your instrument needs constant adjustment, adjusting the truss rod has no effect on the neck, or you're simply not comfortable making this type of adjustment yourself, take your instrument to your local Authorized Fender Service Center.

Neck Radius
7.25"
9.5" to 12"
15" to 17" Relief
.014" (0.35 mm)

.012” (0.3 mm)
.010” (0.25 mm)

Back to Top

Action

Players with a light touch can get away with lower action, others need higher action to avoid rattles. Check tuning. Using the 6” (150 mm) ruler, measure distance between bottom of strings and top of the 17th fret. Adjust bridge saddles to the height according to the chart, then re-tune. Experiment with the height until the desired sound and feel is achieved.

Neck Radius	String Height	
	Bass Side	Treble Side
7.25”		
9.5” to 12”		
15” to 17”	7/64” (2.8 mm)	
	6/64” (2.4 mm)	
	6/64” (2.4 mm)	6/64” (2.4 mm)
	5/64” (2 mm)	
	5/64” (2 mm)	

Shimming/Micro-Tilt Adjustment

Shimming is a procedure used to adjust the pitch of the neck in relation to the body. A shim is placed in the neck pocket, underneath the butt-end of the neck. On many of the American series guitars, a Micro-Tilt adjustment is offered. It replaces the need for a shim by using a hex screw against a plate installed in the butt-end of the neck. The need to adjust the pitch (raising the butt-end of the neck in the pocket, thereby pitching the neck back) of the neck occurs in situations where the string height is high and the action adjustment is as low as the adjustment will allow. To properly shim a neck the neck needs to be removed from the neck pocket of the body. A shim approximately ¼” (6.4 mm) wide x 1 ¾” (44.5 mm) long x .010” (0.25 mm) thick will allow you to raise the action approximately 1/32” (0.8 mm). For those guitars with the Micro-Tilt adjustment, loosen the two neck screws on both sides of the adjustment access hole on the neckplate by at least 4 full turns. Tightening the hex adjustment screw with an 1/8” hex wrench approximately ¼ turn will allow you to raise the action approximately 1/32” (0.8 mm). Retighten the neck screws when the adjustment is complete. The pitch of the neck on your guitar has been preset at the factory and in most cases will not need to be adjusted. Note: If you feel you need this adjustment to be made and you’re not comfortable with the procedure, take your guitar to your authorized Fender Service Center.

Pickups

Setting pickups too high can cause a number of unusual occurrences. Depress strings at last fret. Using 6” (150 mm) ruler, measure the distance from the bottom of the 1st and 4th strings to top of the pole piece. Rule of thumb—distance should be greatest at the 4th string neck pickup and closest at the 1st string bridge position. Follow the measurement guidelines from the chart as starting points. The distance will vary according to the amount of magnetic pull of the pickup. Note: Larger gauges of strings need wider vibrational allowances. If you have a 5-string bass or are using a heavier gauge of string, your measurements will need to be increased accordingly.

	Bass Side	Treble Side
Vintage style	8/64” (3.6 mm)	6/64” (2.4 mm)

Noiseless™ Series 8/64” (3.6 mm) 6/64” (2.4 mm)
Standard “J” or “P” 7/64” (2.8 mm) 5/64” (2 mm)
Special Design Humbuckers 7/64” (2.8 mm) 5/64” (2 mm)

Intonation (Fine Tuning)
Final intonation adjustments should be made after all of the above have been finished. Set the pickup selector in the middle, volume and tone controls to the max. Check tuning. Compare each string at the 12th fret harmonic to fretted note. If sharp, lengthen string by adjusting the saddle back. If flat, shorten string by moving the saddle forward. Remember basses are tempered instruments, retune, play and make further adjustments as needed.

Additional Hints

There are a couple of additional things that you can do to optimize your tuning stability that have more to do with playing and tuning habits. Each time that you go to play your bass, before you do your final tuning, play for a few minutes to allow the strings to warm-up. Metal expands when warm and contracts when cool. After you have played a few riffs, done a few slaps and pops, you can then do your final tuning. Remember that with most tuning keys it’s desirable to tune up to pitch. However, with locking tuners go past the note, and tune down to pitch. Finally, wipe strings, neck, and bridge with a lint free clothe after playing. When transporting or storing your bass, even for short periods, avoid leaving it anyplace you wouldn’t feel comfortable yourself.