

FENDER® BASS ADJUSTMENT AND CARE

The following setup procedures and specifications are for your Fender bass as equipped with the strings that come on the instrument as standard equipment from the factory. 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 specs 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 that are meant as a guide; they should not be construed as hard and fast rules, as we realize that every player's subjective requirements often differ.

TOOLS NEEDED

- Set of automotive feeler gauges (.002-.025) (0.05-1 mm)
- 6" (150 mm) ruler (with 1/32" and 1/64" increments) (0.5 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 strings can breathe new life into your bass. Much of the thump and pop you expect from your bass starts right there. For strings to stay in tune, they should be changed regularly. Strings that have lost their integrity (worn where 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—smooth, vintage-sounding pure-nickel Original Bass 7150s; Super Bass 7250s; bright, snappy Stainless Steel 7350s and others. They

are available in long, medium and short scales; taper-wound; and top-loading or string-through-body types.

Because of the amount of tension on the neck, it's advisable to replace and tune each new string before removing the next string. After the whole set is changed and tuned, stretch your strings properly by holding them 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 several times.

TUNING KEYS

How you wind the strings onto the pegs is very important. Start by loading them through the bridge and then loading them onto the appropriate keys as follows:

Standard keys. Pre-cut each string for the proper length and desired amount of winds. Pull the fourth string 3" (76 mm) past its tuning post and cut it (make sure to pull each 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, being careful to prevent overlapping. Pull the third string 3 1/2" (89 mm) past its tuning post, cut it, and repeat the winding procedure. Pull the second and first strings 3 1/2" (89 mm) past their tuning posts and cut and wind as noted. For five-string basses, cut the fifth string 3" (76 mm) past its tuning post and repeat the same cutting and winding procedure.

Vintage keys. Pre-cut each string for the proper length and desired amount of winds. Pull the fourth string 4" (102 mm) past its tuning post and cut it (again, make sure to pull each 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, being careful to prevent overlapping. Pull the third string 4 1/2" (114 mm) past its tuning post, cut it, and repeat the winding procedure. Pull the second and first strings 4 1/2" (114 mm) past their tuning posts and cut and wind as noted. For five-string basses, cut the fifth string 3 1/2" (89 mm) past its tuning post and repeat the same cutting and winding procedure.

INTONATION (ROUGHING IT OUT)

You can preset the basic intonation of your bass by taking a tape measure and measuring from the inside of the nut to the center of the 12th fret (the fret wire itself; not the fingerboard). Double that measurement to find the scale length of your bass. Adjust the first-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 second saddle back from the first saddle, using the gauge of the second string as a measurement. For example, if the second string is .060" (1.5 mm), you would move the second-string saddle back .060" (1.5 mm) from the first saddle. Move the third saddle back from the second saddle, using the gauge of the third string as a measurement. Adjust the fourth saddle in the same manner (and fifth if you have a five-string bass).

Note: If you're using a taper-wound fourth string (and fifth if it's a five-string bass), use the actual gauge of the string for your measurement rather than the dimension of the tapered portion of the string.

TRUSS ROD

First, check your tuning. Affix a capo at the first fret and depress the fourth 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 spec chart below for the proper gap.

Caution: Because of the amount of string tension on the neck, you should loosen the strings before adjusting the truss rod. After the adjustment is made, re-tune the strings and re-check 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 the neck is too concave (action too high), turn the truss rod nut clockwise 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 re-check the gap with the feeler gauge and re-adjust as needed.

Adjustment at neck joint (phillips screwdriver): 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 clockwise 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 re-check 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, if your instrument needs constant adjustment, if adjusting the truss rod has no effect on the neck, or if you're simply not comfortable making this type of adjustment yourself, take your instrument to your local Fender Authorized Dealer.

<u>Neck Radius</u>	<u>Relief</u>
7.25"	.014" (0.35 mm)
9.5" to 12"	.012" (0.3 mm)
15" to 17"	.010" (0.25 mm)

ACTION

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

<u>Neck Radius</u>	<u>String Height Bass Side</u>	<u>Treble Side</u>
7.25"	7/64" (2.8 mm)	6/64" (2.4 mm)
9.5" to 12"	6/64" (2.4 mm)	5/64" (2 mm)
15" to 17"	6/64" (2.4 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 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 must be removed from the neck pocket of the body. A shim approximately 1/4" (6.4 mm) wide by 1 3/4" (44.5 mm) long by .010" (0.25 mm) thick will allow you to raise the action approximately 1/32" (0.8 mm). For 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 four full turns. Tightening the hex adjustment screw with an 1/8" hex wrench approximately 1/4 turn will allow you to raise the action approximately 1/32". 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 that this adjustment needs to be made and you're not comfortable doing it yourself, take your guitar to your local Fender Authorized Dealer.

PICKUPS

Setting pickups too high can cause a number of unusual occurrences. Depress strings at last fret. Using a 6" (150 mm) ruler, measure the distance from the bottom of the first and fourth strings to top of the pole piece. A good rule of thumb is that the distance should be greatest at the fourth-string neck pickup position and closest at the first-string bridge pickup position. Follow the measurement guidelines from the chart below as starting points. The distance will vary according to the amount of magnetic pull from the pickup.

Note: Larger string gauges need wider vibrational allowances. If you have a five-string bass or are using heavier-gauge strings, your measurements must be increased accordingly.

	<u>Bass Side</u>	<u>Treble Side</u>
Vintage style	8/64" (3.2 mm)	6/64" (2.4 mm)
Noiseless™ Series	8/64" (3.2 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)

Adjustments should be made after all of the above have been accomplished. Set the pickup selector switch (if your bass has one) in the middle position, and turn the

volume and tone controls to their maximum settings. Check tuning. Check each string at the 12th fret, harmonic to fretted note (make sure you are depressing the string evenly to the fret, not the fingerboard). If sharp, lengthen the string by adjusting the saddle back. If flat, shorten the string by moving the saddle forward. Remember, basses are tempered instruments! Re-tune, play and make further adjustments as needed.

ADDITIONAL HINTS

There are a few other things that you can do to optimize your tuning stability that have more to do with playing and tuning habits.

Each time you 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've played a few riffs and done a few slaps and pops, you can then do your final tuning. Remember— with most tuning keys, it's preferable to tune up to pitch. However, with locking tuners, go past the note and tune down to pitch. Finally, wipe the strings, neck and bridge with a lint-free cloth after playing. When transporting or storing your bass, even for short periods, avoid leaving it anyplace you wouldn't feel comfortable yourself.