Booth Guitars
Made in England

Setup Reference Guide

For Models BG1400, BG1506, BG1512

Strings

Strings should be changed regularly. Strings which have lost their integrity (oxidised, dirty, corroded, flat spots etc) will not tune to pitch properly.

The strings should be replaced working inward from the 6th and 1st. Tune to pitch and thoroughly stretch the strings, hooking a finger under each one and tugging tightly, moving from the bridge to the neck. Retune and repeat several times.

Tuning Keys

The strings should be pre-cut to achieve the correct length and desired number of winds. The amount of string to leave equates to approximately the distance between two tuning posts.

Checking the Nut

A good guide for correct nut height for conventional playing (i.e. non slide playing) is a clearance of approximately 0.008in to 0.010in at the 1st fret. The feeler gauge should be a close fit but not lifting the string. If the nut is high or low, either generally or on one string, then it may require adjustment or replacement. Checking the action at the 1st fret with a string depressed at the 3rd fret, the feeler gauge at the 1st fret should register approximately .0035in.

Neck Relief Adjustment

Neck relief is adjusted by way of the truss rod. The truss rods fitted to Booth guitars are the Bi-flex type. This can counteract concave or convex curvature by exerting a correcting force in either direction as required.

A truss rod that is too loose will result in a concave bow to the neck, with a correspondingly high action. A truss rod that is too tight will result in a neck that is convex, giving buzzing strings.

- Tune instrument to pitch.
- Install a capo at the 1st fret.
- Depress the low E String at the last fret.
- Using a feeler gauge, check the gap between the bottom of the string and the top of the 8th fret.

It is a good idea to loosen the strings slightly prior to making adjustments.

If the neck is too concave turn the adjuster clockwise, if convex turn the adjuster counter clockwise. After each adjustment check the tuning and recheck the gap.

The relief should be .010” to .012” (0.25mm to 0.3mm).

String Height Adjustment (Setting the Action)

Before adjusting the bridge saddles it is worth checking the nut.

- Check the tuning.
- Using a steel rule, measure the distance between the bottom of each string and the top of the 17th fret. Using the appropriate Allen key, adjust the bridge saddles to give the correct height.
- Retune.

The string height should be $^{1}/_{16}$" (.0625")

Set the 1st string first, setting it high enough to avoid choking when bending the string in the high fret positions. Other strings should follow the neck radius pattern. If a workable action cannot be achieved with the bridge grub screws set at their lowest, a shim is probably required in the neck cavity. A good rough guide for action setting is to put the .050" Allen key under the 21st fret. If it fits, the action is in the right area.

Bridge Adjustment

The main thing is to make sure that there is sufficient string break angle (at least 30°) over the bridge saddles. Bridge adjustments such as string height and tremolo float are mostly up to personal preferences.

Intonation Adjustment (Initial Rough Setting)

Measuring the distance from the inside of the nut to the centre of the 12th fret wire and doubling it gives the value for the scale length. Adjust the first string bridge saddle to the scale length, measuring from the inside of the nut to the centre of the saddle. Adjust the distance of the second string bridge saddle back from the first string bridge saddle, using the 2nd string as a gauge. Adjust the third string bridge saddle back from the second string bridge saddle using the 3rd string as a gauge. The fourth string bridge saddle should be adjusted to be parallel with the second. The fifth and sixth string bridge saddles should be aligned using the same procedure as for the second and third, using the corresponding 5th and 6th strings as gauges.

Intonation Adjustment (Fine Setting)

Adjustments can be made with the instrument on its back but intonation should always be checked in the playing position as the readings will be visibly (and later audibly) different. Always aim to freeze or "cage" the image on the strobe tuner display. The least movement on the display gives the more accurate results.

- Tune the strings to pitch
- Lower the pickups away from the strings to avoid doubling and electromagnetic pull.

An often used technique is the 12th fret and flageolet comparison method. In this method the flageolet or "harmonic" over the 12th fret is compared to the fretted string at the 12th fret, with the saddle position adjusted as follows:

- If the fretted note is flat compared to the flageolet note, move the bridge saddle forward to shorten the string.
- If the fretted note is sharp compared to the flageolet note, move the bridge saddle back to lengthen the string.
- Adjust until both fretted note and flageolet note are identical in pitch.

This common system is not always the most satisfactory. One alternative is to adjust each string so that it is in tune at two points an octave apart on the fret board using a strobe tuner. The string should be fretted using the pressure normally used while playing. Using the 5th and 17th frets as an example:

- Tune a string at the 5th fret.
- Check the string at the 17th fret.
- If the fretted note is flat, move the bridge saddle forward to shorten the string.
- If the fretted note is sharp, move the bridge saddle back to lengthen the string.
- Keep repeating this process until each string is in tune as much as possible at both the 5th and 17th frets.

It is worth checking the intonation at the 19th fret of the 1st string (B natural) against the open B string. If the open B and E are in tune then the 19th fret and the open B should not "beat". This applies equally to the 20th fret on the B string and the open G string. Similar checks should be tried on the 19th fret for all the other strings.

Pickup Height Adjustment

Fret all the strings at the last fret and use a steel rule to measure the distance from the bottom of the first (high E) and sixth (low E) strings to the top of their respective pole pieces. Optimum distances depend upon the pickups fitted. The outside pickup mounting screws should be used to adjust the distances according to the chart. The distances should be greatest on the 6th string at the neck pickup and closest on the 1st string at the bridge pickup. The distance will also vary according to the strength of the magnetic pull of the pickups.

Pickups	Bass Side	Treble Side
Humbucking	1/16" to 5/64" (1.6 mm to 2mm)	1/16" to 5/64" (1.6 mm to 2mm)

Lubrication

Lubricating all the contact points of a string's travel is an important element in maintaining tuning stability during tremolo use and reducing string breakage.

Recommended lubricants for the various contact points are as follows:

Contact Point	Lubricant
Bridge Saddle (String Contact Point)	3 in 1 Oil
Nut	Graphite
String Tension Bar	Lip Balm

Specifications BG1400

Body

Body Material:	Swamp Ash
Body Finish:	Gloss Nitrocellulose Lacquer

Neck

Neck Material:	1-Piece Quarter sawn Maple
Neck Finish:	Satin Nitrocellulose Lacquer
Neck Shape:	C
Scale Length:	25.5" (648 mm)
Fingerboard:	Maple
Fingerboard Radius:	9.5" (241 mm)
Number of Frets:	24
Fret Size:	2mm
String Nut:	Graphite Compound
Nut Width:	1.650" (42 mm)
Position Inlays:	Black Dot
Truss Rod	Bi Flex Truss Rod
Truss Rod Nut:	4mm Allen Key
Location	Headstock
Neck Plate:	4-Bolt

Electronics

Bridge Pickup:	Bare Knuckle Black Hawk Humbucker Ceramic Magnet
Neck Pickup:	Bare Knuckle Black Hawk Humbucker Alnico Magnet
Controls:	Tone 1. (Neck Pickup), Tone 2. (Bridge Pickup)
Pickup Switching:	5-Position Rotary: • Position 1. Bridge Pickup, • Position 2. Bridge Pickup Coil Tapped, • Position 3.Bridge and Neck Pickups, • Position 4. Neck Pickup Coil Tapped, • Position 5. Neck Pickup
Pickup Configuration:	HH

Hardware

Bridge:	6-Saddle Hardtail
Hardware Finish:	Black
Tuning Machines:	Vintage-Style, Wilkinson Deluxe
Pickguard:	3-Ply Pearloid

Control Knobs:	Black

Miscellaneous

Strings:	D'Addario EXL120 (.009-.042 Gauges)

Specifications BG1506 & BG1512

Body

Body Material:	Swamp Ash
Body Finish:	Gloss Nitrocellulose Lacquer

Neck

Neck Material:	1-Piece Quarter sawn Maple
Neck Finish:	Satin Nitrocellulose Lacquer
Neck Shape:	C
Scale Length:	25.5" (648 mm)
Fingerboard:	Maple
Fingerboard Radius:	12" (304 mm)
Number of Frets:	24
Fret Size:	2mm
String Nut:	Bone
Nut Width:	1.689" (43 mm)
Position Inlays:	Black Dot
Truss Rod	Bi Flex Truss Rod
Truss Rod Nut:	4mm Allen Key
Location	Neck Heel
Neck Plate:	4-Bolt

Electronics

Bridge Pickup:	Zebra Humbucker Ceramic Magnet
Neck Pickup:	Zebra Humbucker Ceramic Magnet
Controls:	Volume 1 (Neck Pickup incorporating push/pull for mono/stereo switching) Volume 2 (Bridge Pickup) Tone 1. (Neck Pickup), Tone 2. (Bridge Pickup)
Pickup Switching:	5-Position Rotary Option: • Position 1. Bridge Pickup, • Position 2. Bridge Pickup Coil Tapped, • Position 3.Bridge and Neck Pickups,

	• Position 4. Neck Pickup Coil Tapped, • Position 5. Neck Pickup
Pickup Switching:	4-Position Rotary Option: • Position 1. Bridge Pickup, • Position 2. Bridge Pickup Coil Tapped, • Position 3.Bridge and Neck Pickups, • Position 4. Neck Pickup
Pickup Configuration:	HH

Hardware

Bridge: (BG1506)	6-Saddle Hardtail
Bridge (BG1512)	12-Saddle Hardtail
Hardware Finish:	Chrome
Tuning Machines:	Hexagonal Back Flat Head
Pickguard:	3-Ply Pearloid or 3-Ply White
Control Knobs:	Chrome

Miscellaneous

Strings: (BG1506)	D'Addario EXL120 (.009-.042 Gauges)
Strings: (BG1512)	D'Addario EXL150 Regular Light 12 String (.010-.046 Gauges)

We hope that this document is error free. Please let us know if it isn't.

Www.boothguitars.com

info@boothguitars.com

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