

RAS GUITAR KITS

INTRODUCTION

Congratulations on your purchase of your RAS Kit. While it can be a great challenge for an inexperienced builder, with care and attention to details, it can produce an excellent instrument that can last a lifetime.

TOOLS

You will need some tools. Mostly, they're tools you probably have around the house, anyway.

Very good straightedge. I use a long aluminum yardstick, available at most home repair stores

An electric drill. A 3/8 standard drill works just fine. However, I use a drill/screwdriver with torque control, which will keep you from stripping most screws.

Screwdrivers. Get good quality; it will save you a lot of grief.

Finishing supplies. That includes sealers, stains, polyurethane or lacquer, sandpaper, brushes, etc. Complete instruction on finishing is beyond the scope of these instructions but there are tons of great resources at:

- Stew Mac

http://www.stewmac.com/How-To/Online_Resources/Finishing/

- Youtube

https://www.youtube.com/results?search_query=how+to+finish+a+guitar+body

Masking tape. Get the good stuff. At a minimum, use the blue tape that is good for 7 days. Anything less than that will bleed through, leave residue, and otherwise disappoint you. Get a wide roll and a narrow roll.

TEST FITTING & ASSEMBLY

Before you are ready to put a final finish on the guitar, you need to be sure everything is going to fit properly. Take each piece and check it's fit on the body and neck. Once you have found everything to fit properly, apply your finish to the wood. For these instructions, we used an unfinished kit to demonstrate assembly. However, you will not complete your final assembly until after your finish work is complete.

ATTACHING THE NECK

This is a bolt-on neck kit which simply means that the neck is joined to the body with the 4 screws provided. Be sure the neck is snug to the body and secure it to the body from the back with the 4 screws.





TUNING MACHINES

The 4 tuning machines are secured to the neck from the back with 4 screws. First press the ferrules into each of the tuning machine holes from the top of the headstock.



Next slide the tuning machine into the hole from the back of the headstock. **Be sure to mark and drill pilot holes for the tuning machine screws.** The Maple neck is very hard and the tuning machine screws are small and easy to strip/break. Secure each tuning machine with to the back of the headstock with the screws provided.

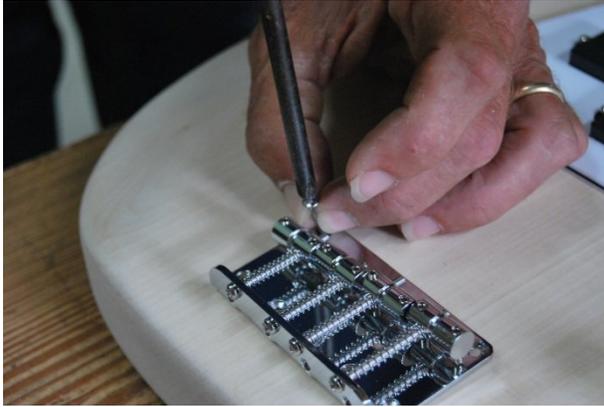


BRIDGE

The bridge sits on the top lower portion of the body below the pickups. Align the bridge above the pre-drilled holes. **Be sure to secure the black ground wire beneath the bridge with good contact between the bare ground wire and the bottom of the bridge. You may need to strip some of the insulation off the wire. Failure to get a proper ground will result in an open circuit and no sound when you try playing.** If this wire is not visible on the top of your guitar, you will need to remove the pickguard and push the black ground wire through the only in the control cavity leading toward the bridgehole beneath the bridge.



Secure the bridge to the body with the screws provided.



STRAP BUTTONS

Connect the 2 strap buttons to the body with the screws provided. One goes on the bottom center of the body (as shown in pic). The second goes on the upper horn at the top of the body. If you are having trouble locating this, just look for the small hole drilled into the width of the body on the horn above the neck when holding in a playing position.



SETTING UP YOUR BASS

Like all guitars, set up is a very personal thing in the sense that most players have their own preferences. However in the spirit of getting you started we have included this very helpful set up guide.

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 oxidised, 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.

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).

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.

Neck Radius	String Height Bass Side	Treble Side
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)

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.

	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)

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 anywhere you wouldn't feel comfortable yourself.

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CONTACT

If you have questions or your kit is missing any parts, please contact us at customerservice@rasdistrutors.com.