USER'S GUIDE AND INSTALLATION MANUAL

ELEMENT ACTIVE SYSTEM

element

INTRODUCTION

Thank you for choosing the Element Active System from L.R. Baggs. The Element Active combines the Element undersaddle pickup with a pre-contoured all-discrete class A endpin preamp. A soundhole-mounted volume control gives you additional control and versatility without having to drill any holes in your instrument. The Element Active is designed to interface with just about anything you plug into, but best results will be achieved with a high-quality, full-range P.A. Plugging in and unplugging the cord will turn the preamp on and off.

If you have additional questions about this system or other LR Baggs products, please refer to our website at www.lrbaggs.com or contact our technical support department at (805) 929-3545.

PARTS LIST

1 Element Active System with undersaddle pickup endpin preamp and volume control
1 Battery Bag
3 Adhesive wire clips

WARNING

This product must be installed by a professional luthier to qualify for warranty coverage. Technical assistance will not be provided for home or hobbyist installations.

Avoid unnecessary hard bending of the pickup.

PICKUP INSTALLATION

Read this first:

For optimum performance of the Element, the bridge slot must have a clean, flat surface free of any debris or over-spray from the finish. The slot must be a minimum of .125" (1/8") deep but we suggest a depth of at least .187 (3/16") to avoid excessive saddle tilt.

Note: The commonly-known 50/50 rule applies: The amount of saddle visible above the bridge surface (with pickup installed) should be no greater than the amount of saddle in the slot beneath the bridge surface or the balance and output of the pickup may suffer.

Short Saddle Alert: The first 1/8" of the Element pickup is not active. If you do not have a minimum of 1/4" of saddle beyond the E strings, you may experience low output on these strings. To remedy this drill a small horizontal hole in the end of the slot to extend the pickup further under the saddle (see figure 1). To drill this hole without disrupting the floor of the saddle slot place a small jeweler's screwdriver under the tip of the drill bit. On short saddles we also advise that the pickup exit hole be drilled into the end wall of the saddle slot rather than the slot's floor (see figure 3) to likewise extend saddle/pickup contact at the exit end. Again use the jeweler's screwdriver to protect the saddle floor as you drill.

fig. 1

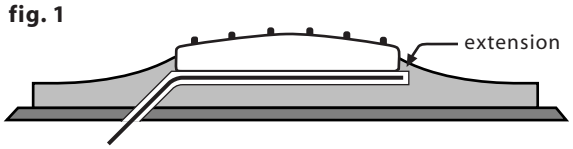


fig. 2

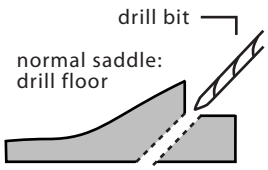
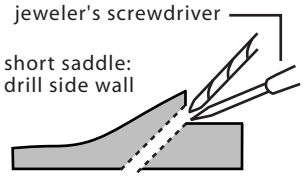


fig. 3



Installation:

Remove the strings from the guitar. If you wish to duplicate the string height exactly, scribe a line along the front edge of the saddle where it extends above the bridge. The line will later be used as a guide when removing material from the bottom of the saddle to compensate for the thickness of the pickup (.037" total).

Remove the saddle to drill the hole for the pickup. The drill bit needs to be as large as the saddle slot will allow. Inspect the inside of the guitar and note the position of the braces in relation to the saddle slot. Drill at either end of the slot of the side that will enable you to avoid all braces as you penetrate the top, as shown in figures 4 and 5. Blow out the slot with compressed air and check for debris or obstructions.

Important: Round the inside of the hole where it meets the bottom of the slot with a small, sharp knife or small file to avoid pinching the pickup as the saddle lies on it.

Feed the pickup into the slot from inside the guitar with either side up. Inserting a toothpick or similar object through the hole from the outside is helpful in finding the location of the hole on the inside of the guitar. Set the saddle in the slot, noting how much material must be removed to compensate for the thickness of the pickup. Sand the bottom surface of the saddle on a belt sander until the scribe line lines up with the bridge top. Leave the saddle just slightly tall and finish sanding the bottom by hand. It is best to do this against a machined flat surface with sandpaper. Use a straightedge with a strong light source to inspect the flatness of your saddle.

fig. 4

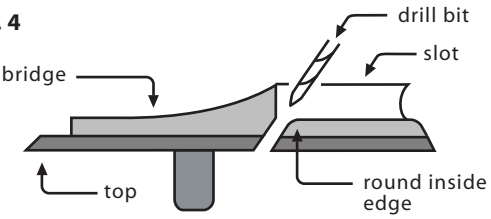
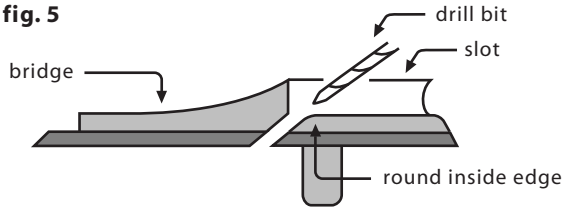
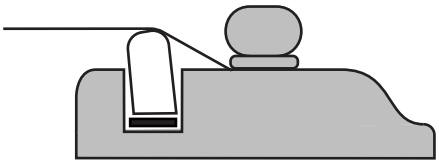


fig. 5



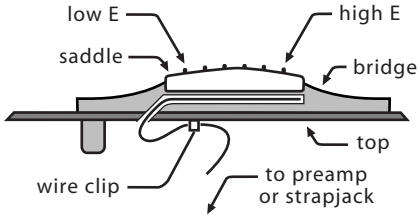
Important: The fit of the saddle in the slot is the single most important factor in this installation. It is crucial that the bottom of the slot and the lower surface of the saddle be flat to make even contact with the pickup. The saddle should fit loosely enough in the slot that it can be pulled out with your fingertips. It will then have a slight forward lean when the strings are under tension. It is *absolutely necessary* to compensate for this slight lean by sanding a compensating tilt in the bottom of the saddle so it still sits flat on the pickup when the strings are at tension (see figure 6). If the saddle is too tight or binds at all or if it is too loose, this can have a negative effect on the string balance and output.

fig. 6



proper saddle-pickup contact
(saddle lean exaggerated)

fig. 7



Insert the pickup all the way into the slot, lay the saddle on top of it and temporarily secure it with a piece of tape. Use the wire clip to secure the loose wire from the pickup to the underside of the top (see figure 7). Failure to secure the wire may produce bizarre audio consequences.

PREAMP INSTALLATION

This preamp requires a clean ½" hole in the tailblock of the instrument. Remove the existing strap button and then drill the preamp hole with a Step Drill, using the strap button hole as the pilot.

Remove the strap button, retaining nut and small flat washer from the end of the jack. Feed the preamp through the soundhole, into the body and insert it into the hole in the tailblock. Using the internal nut, set the proper depth that will allow most of the smaller threaded section to protrude from the instrument (see figure 8). Place the small flat washer over the threaded section and screw on the retaining nut. Use a jeweler's screwdriver in the cross drilled hole to keep the jack from turning when tightening the retaining nut. Finish by attaching the strap button snugly.

Note: When the strap button is screwed on, a small length of the smaller threaded portion should protrude very slightly from the strap button (if possible) so the strap button does not block the plug from seating completely when it is inserted (see figure 9).

fig. 8

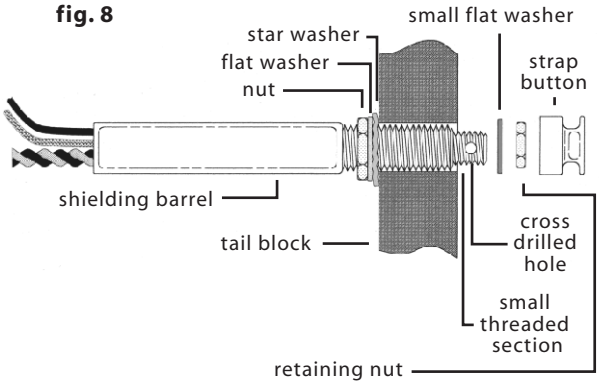
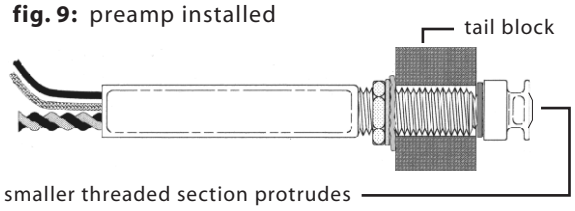


fig. 9: preamp installed



VOLUME CONTROL WHEEL

Remove the adhesive on the back side of the volume control and mount it in a comfortable and convenient place (see figure 10).

Secure the wire near the volume control with a wire clip.

fig. 10

BATTERY BAG

Stick the double-sided adhesive to an easily-accessible spot inside of the guitar. The battery can then be changed by opening the flap on the bag and pulling out the battery.

ADDITIONAL FEATURES

Passive auxiliary channel: It is possible to add a mini-mic or magnetic pickup to the Element Active System. Do not use high impedance pickups such as the iBeam.

Adding a mini-mic: To add a mini-mic, solder the hot lead to positive and the ground lead to negative of the auxiliary passive input and run both pickup and mic down a stereo cord to a 2-channel mixer with phantom power for the mic (see figure 11).

Adding a magnetic pickup: Add a magnetic pickup the same way to the auxiliary passive channel, and run both signals down a stereo cord to a 2 channel mixer or use a stereo Y cord and two Para D.I.s.

Default Pickup: Often in a two pickup system the "default" pickup is preferred to be on the tip contact on the strapjack. On the Element Active preamp, the pickup's output is routed to the tip contact, but a provision has been made with solder bump jumpers on the PC board to reverse the pickup assignment, as shown in figures 11 and 12. Using a soldering iron with a small tip, scrape the older solder off the jumpers until a small gap appears between the jumper pads. Then add solder across the other gap, until a bridge forms. Do this on both jumpers so they look like figure 12. This will allow the second pickup to be the default pickup on the tip and the Element to be on the ring. Plugging in and unplugging the cord will still turn the preamp on and off.

fig. 11

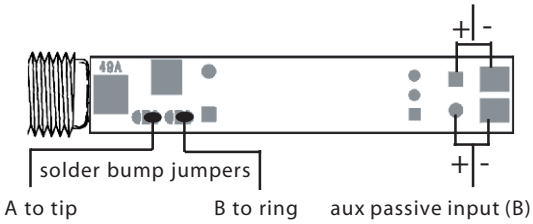
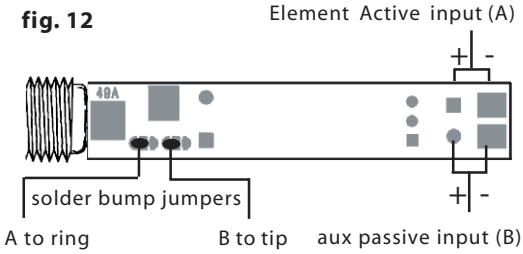


fig. 12



SPECIFICATIONS

Battery Type: Single 9V

Current Consumption: 0.5mA

Battery Life: 1000+ hours (alkaline)

Low Cut Filter: Fixed, 12dB/Oct. @ 45Hz

Signal To Noise: -92dB, unweighted

Output Stage: Pure class A buffer

Output Level: -10dB

Output impedance: 800 ohms

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