iMIX ONBOARD

INSTALLATION MANUAL AND USER'S GUIDE



483 N. FRONTAGE RD.
NIPOMO, CA 93444
WWW.LRBAGGS.COM

TABLE OF CONTENTS

- 1. Package contents
- 2. Overview & cautions
- 3. Removal of previous system (retrofit only)
- 4. New installation woodworking
- 5. Strapjack installation
- 6. Preamp installation
- 7. iBeam installation: pin bridge guitars
- 8. iBeam installation: non-pin bridge guitars
- 9. iBeam removal and repositioning
- 10. Element installation
- 11. iBeam gain control
- 12. External controls

SPECIFICATIONS

Preamp size: 4" x 2.6" x 2.5"

Preamp weight (including battery): 6oz

Battery: single 9v

Current consumption: 3.4mA Battery life: 150 hrs (alkaline)

Bass: +- 6dB @ 100Hz Treble: +- 10dB @ 10kHz

Signal to noise: -87dB unweighted Input impedance: 10 megohms Output impedance: 620 ohms

1.PACKAGE CONTENTS

Pickups:

- one (1) Element undersaddle pickup
- one (1) iBeam bridge plate transducer
- one (1) iBeam quick mount fixture kit including:
 - one (1) fixture instruction sheet
 - two (2) threaded posts
 - two (2) standoffs
 - two (2) .312" nuts
 - one (1) fixture board
 - two (2) adhesive strips
 - two (2) small adhesive dots

Onboard Preamp:

one (1) onboard preamp

six (6) ½" black installation screws

six (6) fiber washers

one (1) flexible black preamp bezel

three (3) self-stick wire clips

one (1) preamp routing template

one (1) stereo strapjack harness

2.OVERVIEW & CAUTIONS

The L.R. Baggs iMix Onboard is an onboard retrofit stereo mixer, which combines the iBeam bridge plate transducer and the Element undersaddle pickup with an all-discrete class A battery-access preamp. The system is a drop-in retrofit upgrade that is designed to fit in the hole used by several common factory-installed systems.

We recommend that this system be installed by a professional dealer/installer. We do not provide installation advice or support for home or hobbyist installations. Installers: please read the instructions carefully before proceeding. We will not be responsible for any damage to the guitar or personal injury resulting from installation, improper installation, use or misuse of the product.

Before beginning a retrofit installation, be sure that the screw holes in the iBeam preamp bezel (mounting flange) line up with the existing preamp screw holes on the guitar.

The iBeam fits x-braced guitars with at least three inches of flat open space directly under the saddle (see figure 1).

For new installations, the preamp will generally fit in guitars with a side width of four inches or larger, assuming average lining and top thickness.

Again, verify that these requirements are met before making any alterations to the guitar.

If the space is too small to accommodate the iBeam, do not cut the iBeam to fit a tighter space.

The preamp requires a 9V battery, which is not included in this package.

There is a small slit under the iBeam cap about 1/2" from each end of the pickup. Do not poke anything into the slit.

The peel-and-stick adhesive is the best way to adhere the iBeam. It will hold the iBeam quite firmly, but will allow the pickup to be safely removed at a later time. The use of any adhesive other than the provided self-stick pads is not recommended and will void the warranty.

Avoid unnecessary bending of the Element pickup.

Installation overview: The recommended installation procedure is to begin by removing the previous system and/or performing any necessary woodwork. Then the strapjack and preamp should be installed and connected. Following that, the iBeam should be installed, connected and tested to ensure optimum placement. Then the Element should be installed, connected and tested to ensure proper sound and string balance. Finally, the gain setting on the underside of the preamp should be adjusted so that the iBeam's level matches that of the Element.

Each pickup should be installed and tested as if it were the only source in the system. Perfecting the sound of each pickup individually will provide the most rewarding overall blend when you finally turn the mix knob to 12:00 and hear the two sources together.

3.REMOVAL OF PREVIOUS SYSTEM (retrofit installations only)

Remove the entire preamp, output harness and pickup. You will also need to remove the old strapjack.

Most guitar manufacturers include cross-grain reinforcement panels on solid wood guitars beneath the preamp mounting screw holes. If, upon removing the old preamp from a solid wood guitar, you discover that there are no reinforcement strips, we recommend installing cross-grain reinforcement shims underneath the screw holes to prevent chipping the wood on the guitar.

Once the previous system is removed, proceed to the strapjack installation (section 5).

4.NEW INSTALLATION WOODWORKING

4.1 Routing the preamp hole: Be absolutely sure that the preamp will fit inside the guitar at its intended location before making any cuts to the instrument! Guitars with a side width of less than four inches may be unable to accommodate the preamp due to the size of the interior lining.

For solid wood guitars (especially maple), we recommend gluing two 2.5'' (63.5 mm) x .5" (12.7 mm) plywood cross-grain reinforcement panels on the inside of the guitar body where the screw holes will be drilled. This prevents the wood from splitting during the drilling process.

If you are uncomfortable freehand-cutting this area using the enclosed paper template (as described below), we recommend that you use the paper template to fashion a hard template out of masonite, Plexiglas or another suitable material.

- 1. Choose a location on the side of the instrument to mount the preamp. The flattest possible area just above the waist on the upper bout and below the shoulder is recommended. Double-check to make sure the preamp will clear all internal braces and other obstacles when installed.
- 2. Lay the enclosed paper template on the chosen location and secure it with masking tape on all four edges. With a sharp scribe put a dimple in the center of

fig. 1



each of the screw holes and then drill out the holes using a #45 drill bit (.082" or 2.08 mm). Cut out the area for the preamp carefully and slowly using a rotary cutter with a sharp 1/8" cutting bit. We recommend cutting just inside the lines for the initial cut and then cleaning up the edges with a file. Remove the template and clean up any excess tape residue with a soft cloth and naphtha.

4.2 Drilling the strapjack hole: For proper installation, this jack requires a clean 1/2" hole in the tail block of the instrument. Start by placing a piece of masking tape on the outside of the instrument over the drilling area (to avoid chipping the finish), drill a small pilot hole in the tail block and then follow with a step drill. Now proceed to the strapjack installation as detailed in the following section.

5.STRAPJACK INSTALLATION

Remove the strap ring, retaining nut and one washer from the end of the jack. There should still be one star locking washer, one flat washer and a nut remaining on the jack. Bring the jack down through the soundhole into the body and insert it into the pre-drilled hole in the tail block. Using the internal nut (be sure to include the flat and star washers), set the proper depth that will allow the entire smaller threaded section to protrude from the instrument (see figure 2). With the jack in place, lay the remaining washer over the threads and attach the external retaining nut until it's tight. Finish by attaching the strap ring (it should cover the retaining nut and washer) so as not to crack the finish of the instrument by asserting too much pressure. Now proceed to the preamp installation in the following section.

6. PREAMP INSTALLATION

This preamp is designed for sides that are .090" to .165" thick and reasonably flat or convex. The skirt of the bezel may bottom out on guitars that have especially thin or concave sides. This will prevent the bezel from seating completely on the guitar's side. If this happens, place the provided fiber washers over the protruding ends of the screws (inside of the guitar body) to space the preamp down into the guitar.

The bezel is made of a special material that may be cold-formed by hand and can be easily made to conform to the curvature of the guitar side. Simply bend the bezel by hand until it fits to the guitar side without any gaps. It may help to over-bend the bezel slightly in spots until it lies flush on the guitar side's surface.

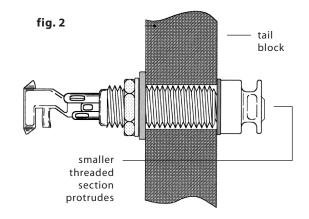
- 1. Once the bezel has been formed, drop it into the existing cutout and screw the 4 provided screws into the holes until they protrude into the guitar about 1/16". Do not enlarge the holes in the guitar! If you enlarge the holes, the screws will not be able to hold the bezel in place to position the preamp.
- 2. Insert a battery into the battery compartment (observe polarity!) and push the compartment into the hole until it click-locks into place. Insert the preamp into the guitar through the sound hole and place it into the opening in the bezel from inside of the guitar. Wiggle it until the screw ends find the corresponding slots in the chassis. Center the preamp laterally (along the length of the side) in the bezel and start the screws into the plastic. Hold the preamp firmly against the side so that it does not "walk" as you tighten the screws. Before you tighten the screws completely, be sure that the battery compartment does not bind against the bezel when you open and close the compartment.

Do not overtighten the screws! This will cause the bezel ends to lift from the side. Excess overtightening may even cause the screws to cut through the bezel. It is helpful to watch the edge of the bezel as you tighten; stop when it seats nicely against the wood.

3. Plug the strapjack wire into the preamp's right-hand socket, and secure the wire inside the guitar with the self-stick wire clip provided. Then proceed to the appropriate iBeam installation instructions (pin bridge or non-pin bridge) in the following sections.

7. IBEAM INSTALLATION: PIN BRIDGE

7.1 General positioning guidelines: The iBeam is a highly sensitive pickup; therefore, placement and the unique characteristics of the instrument are critical factors in producing the outstanding results of which the iBeam is capable. A few millimeters in any direction can have profound effects on the quality of the sound. We can tell you approximately where the pickup should be placed, but we can not provide an exact specification.



Though the Element will mask some of the characteristics of a non-optimum iBeam placement, we strongly encourage the installer to invest the necessary time to perfect the iBeam as a single source. This will have a significantly positive impact on the overall mix.

The iBeam is designed to attach to the bridge plate, directly under the saddle line and generally parallel to the saddle, with the attached peel-and-stick adhesive. Good results should be consistently had by attaching the pickup as shown in figure 3. However, because every guitar is unique, you may be rewarded by searching for the optimum location.

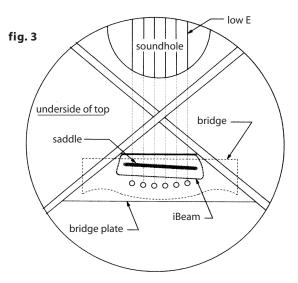
In general, placing the iBeam directly under the saddle will provide the greatest sense of immediacy, impact, snap and "string" sound. Offsetting the pickup either toward the sound hole or toward the bridge pins in the area shown in figure 4 will increase the amount of "body" in the sound and generally have a more mellow and homogeneous sound with less midrange. We have often achieved our very best results by placing the pickup as close to the string ballends as is practical and offsetting it about 1 to 2 mm toward the treble side of the saddle.

An alternative location that has often worked well, provided the x-braces are wide enough, is to offset the pickup toward the front edge of the bridge plate.

7.2 Pin bridge installation (initial placement):

- 1. Assemble the mounting fixture.
- 2. Remove the strings from the pin holes.
- 3. Reach inside the hole and feel around under the bridge to be sure the bridge plate is free from debris and obstructions. If you are unsure, stick a mirror inside to inspect this area.
- 4. Place the stationary rod of the mounting fixture in the high-E bridge pin hole and adjust the movable rod laterally in the slot until it drops into the low-E bridge pin hole as shown in figure 5. Tighten the nut to secure the movable rod.
- 5. Place the adhesive dots on the fixture over the saddle, one on each side of the big slot. Remove the adhesive backing from the dots and position the iBeam over the fixture in the desired location. Stick the iBeam to the adhesive dots on the fixture as shown in figure 6.
- 6. Remove the fixture and iBeam together from the bridge and remove the adhesive backing from the bottom surface of the iBeam.
- 7. Insert the fixture holding the iBeam into the guitar. Find the high- and low-E string bridge pin holes with the rods on the fixture.
- 8. Insert the rods into these holes and then elevate the fixture straight up until the rods just poke out of the holes about 1/2". Grasp one of the rods from the outside of the guitar and hold it. Do not pull up yet. While holding the one rod let go of the fixture inside of the guitar and grab the other rod on the outside of the guitar.
- 9. Now pull straight up on the rods as shown in figure 7 to elevate the iBeam until it contacts the bridge plate. Tug up on the rods to secure the pickup.
- 10. Pop the fixture off the iBeam inside the guitar and remove the fixture.
- 11. Press up firmly along the top surface of the iBeam, especially on the ends, to secure it. It's usually a good idea to press down on the bridge from the outside of the guitar as you press up on the iBeam from the inside to equalize pressure and avoid cracking the top. Wiggle the iBeam front to back a little as you press.
- 12. Plug the iBeam into the preamp's center socket, restring the guitar, plug the preamp into your amp or PA, and turn the mix knob completely to the right. Now test the pickup placement. Confirm that the preamp's EQ controls are at their default positions and that the stereo/mono switch underneath the preamp is set to mono. If the sound is satisfactory (see below), secure the wire with a wire clip and continue to the Element installation in section 10. If the sound is unsatisfactory, we encourage you to experiment with alternative placements (see section 9). Do not test the pickup placement without firmly securing the adhesive. Without completely securing the pickup, the sound test will produce unreliable results.

The optimum location will deliver a sound that is focused and tight, with proper string balance and good presence. It will capture enough of the string resonance to be articulate, but will be mellowed by a full and strong body resonance. Ultimately, it will accurately capture the distinct tone of the



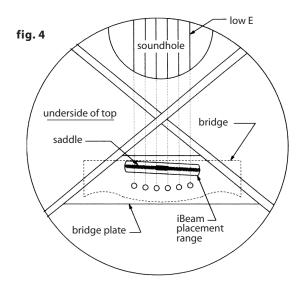
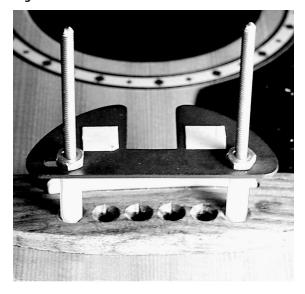


fig. 5



instrument. An unsatisfactory location will often be characterized by a woofy or nasal tone, poor string balance and a high sensitivity to feedback.

8. IBEAM INSTALLATION: NON-PIN BRIDGE

8.1 General positioning guidelines: The iBeam is a highly sensitive pickup; therefore, placement and the unique characteristics of the instrument are critical factors in producing the outstanding results of which the iBeam is capable. A few millimeters in any direction can have profound effects on the quality of the sound. Because every guitar is unique, you may be rewarded by searching for the optimum location. With non-pin bridge guitars, it is unlikely that the first selected spot will be ideal.

Though the Element will mask some of the characteristics of a non-optimum iBeam placement, we strongly encourage the installer to invest the necessary time to perfect the iBeam as a single source. This will have a significantly positive impact on the overall mix.

In general, placing the iBeam directly under the saddle will provide the greatest sense of immediacy, impact, snap and "string" sound. Offsetting the pickup either toward or away from the sound hole will increase the amount of "body" in the sound and generally have a more mellow and homogeneous sound with less midrange.

- **8.2** Non-pin bridge installation (initial placement): Installation on non-pin bridge guitars requires that you remove the saddle, drill a small hole in each end of the saddle slot, and insert guide pins to act as a reference when locating the iBeam. The hole locations will correspond to the small slots in the bottom of each end of the iBeam (see figure 8). A good starting place is to drill the holes so that the iBeam will be centered under the E strings. You will need an inspection light, inspection mirror, drill, 1/16" drill bit, wooden matchsticks or toothpicks, and a short pencil.
- 1. Drill a 1/16" hole through the bridge at both ends of the saddle slot. If the guitar already has a hole in the saddle slot for a pickup, you may be able to use this as one of the holes. The minimum distance between the holes should allow the notches in each end of the iBeam's base to nest over the protruding matches or toothpicks that you will insert as a reference to place the iBeam.
- 2. Press the matches or toothpicks into the holes until they just protrude (1/16" to 1/8") into the guitar. These will act as locating pins for determining the iBeam's placement.
- 3. Remove the adhesive backing from the iBeam and, holding the iBeam upright between your thumb and two middle fingers, use your index and little fingers to locate the matches.
- 4. Hold the iBeam at a slight angle away from the inside of the guitar top, and, using the slot in one end of the bottom of the iBeam, locate one of the protruding matches. Rotate the other end of the pickup until you find the other protruding match with the slot in the other end of the iBeam. Then very lightly press the adhesive against the bridge plate with just enough pressure to hold it in place.
- 5. Once you have tacked the pickup into place, insert an inspection mirror into the body to check the placement of the pickup. After confirming that it is located correctly, remove the guide pins and press firmly with a little rocking motion over the surface of the top of the pickup to secure it to the bridge plate. Be sure to apply an equal downward force to the top of the bridge when pressing up from the inside to prevent damage to the guitar.
- 6. Plug the iBeam into the preamp's center socket, restring the guitar, plug the preamp into your amp or PA, and turn the mix knob completely to the right. Now test the pickup placement. Confirm that the preamp's EQ controls are at their default positions and that the stereo/mono switch on the bottom of the preamp is set to mono. If the sound is satisfactory (see below), secure the wire with a wire clip and continue to the Element installation in section 10. If the sound is unsatisfactory, we encourage you to experiment with alternative placements (see section 9). Do not test the pickup placement without firmly securing the adhesive. Without completely securing the pickup, the sound test will produce unreliable results.

fig. 6

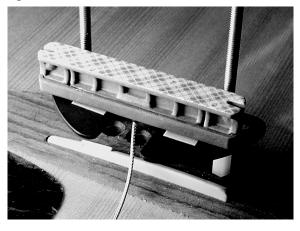
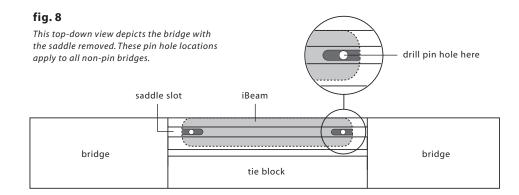


fig. 7





The optimum location will deliver a sound that is focused and tight, with proper string balance and good presence. It will capture enough of the string resonance to be articulate, but will be mellowed by a full and strong body resonance. Ultimately, it will accurately capture the distinct tone of the instrument. An unsatisfactory location will often be characterized by a woofy or nasal tone, poor string balance and a high sensitivity to feedback.

9. IBEAM REMOVAL AND REPOSITIONING

The adhesive used to secure the iBeam is very strong. Once you stick it down, it will increase its grip over about a week's time. If you wish to experiment with placement, it will be easier before the adhesive develops its full strength. To experiment with placement, begin by outlining the pickup in its current position with a pencil; this will act as a reference of the initial location. Next, place three fingers along the length of the back side of the pickup. Pull firmly with even pressure parallel to the guitar top, until the adhesive gives way. Rock it up onto one edge and then lift up one end to pull the adhesive away from the bridge plate. **Do not pull up on the cap.** Then pull the pickup off. Because the iBeam relies on a clean connection with the guitar body, we do not recommend reusing the adhesive; instead, use a new strip.

To remove the adhesive from the bottom of the pickup, roll it off like carpet. After tacking the new pad to the bottom of the pickup, use the edge of a pencil to press the adhesive firmly to the pickup. We've included two extra pads in the kit, and extra pads are available from us in packs of 10 for \$5.00. Be sure to inspect the bridge plate for any adhesive residue before you reposition the iBeam.

Now reposition and test the pickup. Remember that moving the pickup towards the saddle will increase presence and string response, while away from the saddle will increase warmth and body response. If the sound is satisfactory, continue to the Element installation in section 10. If not, continue repositioning the iBeam as needed until you find the proper location.

10.ELEMENT INSTALLATION

10.1 Installation notes: 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.

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; otherwise the balance and output of the pickup may suffer.

10.2 Short saddle note: 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 9). 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 11) to likewise extend addle/pickup contact at the exit end. Again use the jeweler's screwdriver to protect the saddle floor as you drill.

10.3 Installation: Remove the strings from the guitar. 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 and the iBeam in relation to the saddle slot. Drill at either end of the slot on the side that will enable you to avoid all braces as you penetrate the top, as shown in figure 12. **Do not drill through the iBeam!** Blow out the slot with compressed air and check for remaining debris.

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.

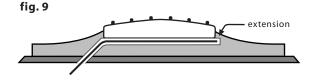


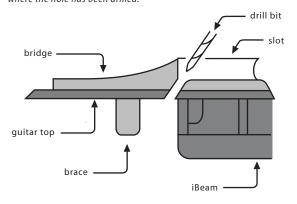
fig. 10

drill bit jeweler's screwdriver

short saddle:
drill floor

drill side wall

fig. 12This view depicts the bridge at an angle that is level with the guitar top and perpendicular to the saddle slot. Note the rounded edge where the hole has been drilled.



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 tilt in the bottom of the saddle so it still sits flat on the pickup when the strings are at tension (see figure 13). If the saddle is too tight, binds at all or is too loose, this will have a negative effect on the string balance and output.

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 is just above the bridge top. Finish sanding the bottom by hand. It is best to do this against a machined flat surface with fine sandpaper. Use a straightedge with a strong light source to inspect the flatness of your saddle.

Insert the pickup all the way into the slot, place the saddle on top of it, and temporarily secure it with a piece of tape. Secure the wire with a wire clip as close to the exit hole as is practical, with a one- to two-inch service loop. Failure to secure the wire may produce boominess and feedback. Now plug the Element into the preamp's left-hand socket, restring the guitar, plug into your amp or PA and turn the mix knob completely to the left. Confirm that the EQ controls are at their default positions and test the Element, paying careful attention to string balance. If the sound is satisfactory, proceed to the next section. If not, read on.

String balance problems are almost always the result of an uneven interface between the bottom of the saddle and the saddle slot. If the string balance is uneven, check these surfaces to ensure that they are both **completely** flat.

Tip: A segmented packaging knife blade is a useful tool in determining the flatness of the saddle slot. Break off only enough blade segments so as much blade fits into the slot as possible. Briefly use a back-and-forth scraping motion to see if the slot bottom scrapes evenly. Any high or low the saddle slot. Break off enough blade segments so as much of the blade fits into the slot as possible. Briefly use a back-and-forth scraping motion to see if the slot bottom scrapes evenly. Any high or low spots will be readily apparent. A minor low spot in the slot may be compensated for by shims under the pickup; however, for gaps over .005" or multiple gaps, we recommend rerouting the slot.

11. iBEAM GAIN CONTROL

The likelihood of the iBeam and Element gain levels being naturally equal is extremely low. Therefore we have provided a gain control that affects only the iBeam channel, which is located on the underside of the preamp. Adjusting this can be tricky, but it is an essential step in perfecting the mix. To adjust this correctly, you will need a small Phillips screwdriver.

First, make sure everything is plugged in and turned on, and rotate the mix knob completely counterclockwise (to "pz"). Now test the overall volume of the Element by playing all the strings in your normal playing style. Then rotate the control completely clockwise (to "iBeam") and do the same. Note the difference between the two pickups.

Now adjust the gain control accordingly. Insert the screwdriver through the hole on the underside of the preamp. To increase the gain, rotate the screw clockwise in relation to the preamp's underside; to decrease the iBeam gain, rotate the screw counterclockwise.

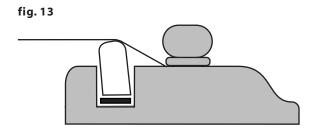
Once the gain has been adjusted, again test both pickups individually, using the mix knob to pan between the two. If the outputs are equal, the installation is complete: you can rotate the mix knob to the 12:00 position and start enjoying your new iMix system. If the outputs differ, repeat these steps as necessary to make them equal.

Be sure to review the external controls, which are explained in the following section.

12.EXTERNAL CONTROLS

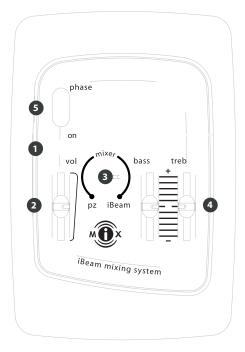
Caution: Do not remove the battery from the preamp while plugged in.

- **1. Battery gauge light:** When the battery light dims, it time to replace the battery. To change the battery, simply press the top of the preamp to disengage the click-lock access. This will pop out the battery compartment.
- 2. Volume control: This adjusts the preamp volume.



proper saddle-pickup contact (saddle lean exaggerated)

fig. 14



- **3. Mix control:** The position of this knob will determine how much of each pickup's signal will be present in the overall mix. When the knob is turned completely counterclockwise, the output will be 100% Element; likewise, when the knob is turned completely clockwise, the output will be 100% iBeam. For most situations, the best position is 12:00.
- **4. Treble and bass controls:** These controls adjust the level of high and low frequency output.
- **5. Phase:** This inverts the signal phase. If you are experiencing feedback, this is the first tool that should be used. However, depending on your position in relation to the speaker(s), pressing this button may have no effect or even make the problem worse. Also, phase inversion is of little use if you are moving around the stage. There is no way to predict beforehand whether or not you are in the correct phase setting without using this button.
- **6. Stereo/mono switch (on underside of preamp):** This controls whether the output is summed to one mono channel or split into two signals. The stereo position is toward the neck, mono is toward the tail block. The default setting is mono, which mixes both pickup outputs into one signal, to be run down a standard mono cable. Stereo mode requires the use of a standard stereo cable or stereo Y cable; this mode puts the Element on the tip channel and the iBeam on the ring channel. If you use a mono cable in stereo mode, only the Element will be present.

In stereo mode, the volume, mix and phase controls are fully functional; only the treble and bass sliders are defeated. Phase inversion will affect both channels, and the mix knob will control the level of output for both pickups in their respective channels. With the mix control at 12:00, both pickups will have equal output; rotating it will decrease the level of one pickup until that channel is completely silent, while slightly increasing the volume of the other pickup in its channel. The master volume affects the levels of both channels equally.

This setting is useful for recording each pickup independently, creating separate blends for two different sets of speakers (for example, the house speakers and stage monitors), or applying different effects to each channel.