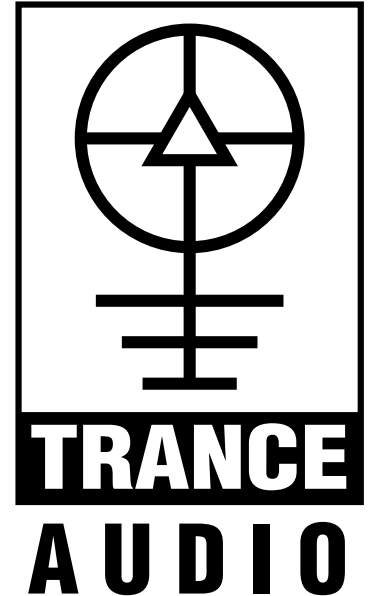


Acoustic Lens

Triaxial Transducer

INSTALLATION GUIDE

Installing the Acoustic Lens properly is critical to achieve the warm, dynamic sound that is its signature. The first installation may be a bit tricky for you, but it does get easier with practice. Take the time to do the job right and you will be justly rewarded. Please read entirely through the instructions before you begin.



Materials Needed:

Small 3" x 5" mirror (which will fit into the guitar)
Velcro with self stick backing
Inspection mirror (mirror on a stick)
Dremel Tool or other small drill
#60 Size drill bit
Old credit card or small straightedge about the length of the bone saddle
Acetone & short acid swabbing brush
Small flashlight or other light source (which will fit into guitar)
Small pencil (2" long or less)
* White pencil (works better if the bridge plate is made from dark wood)

Kit Contents:

(1) These installation instructions
(1) Tube Barge Cement

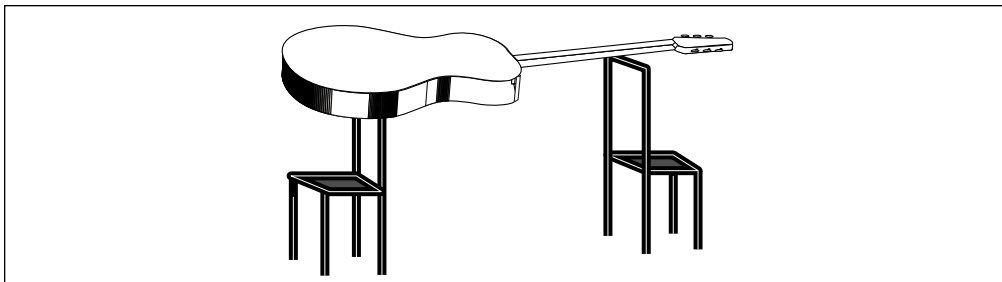
These instructions are not provided as a guarantee against improper installation. When in doubt, contact Trance Audio.

WARNING

Trance Audio recommends that Acoustic Lens installation be done by an experienced luthier or guitar repair-person, especially enlarging the hole for the endpin jack, which could cause damage to your guitar if done incorrectly.

PREPARATION

Before you begin, find a clean well lit place to work. You will need a well padded work area so you will not mar or scratch the guitar. For some operations, it is required that you work underneath the guitar with it turned upside down. Two straight back chairs with padding attached to the tops will serve this purpose well.



- Prepare the mirror by sticking small pieces of Velcro onto opposing corners. The Velcro will be used to hold the mirror in place when working on the upside-down guitar. Carefully place the mirror inside on the back of the guitar and position it so you can get a clear view of the underside of the bridge. A small gooseneck flashlight or small florescent tube is ideal for getting light on the inside work area. Stick two small pieces of the other half of the Velcro in the position that the mirror will sit, then stick the mirror to them. Make sure it won't fall out.

ELECTRICAL CONNECTIONS

Ignore these two steps if you are installing a complete Trance Audio system (Talisman or Inducer) which has plugs for all connections.

- 1) Solder the Acoustic Lens to the endpin jack or connector if it doesn't have a plug or connector attached. The shield of the wire connects to ground and the center conductor connects to the tip of the jack.
- 2) Install the endpin jack into the guitar.

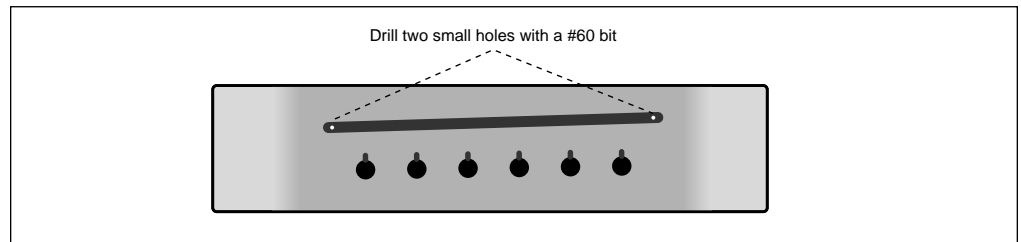
FINDING THE SADDLE LINE

The pickups need to be installed exactly on the saddle line. From inside the guitar it can be hard to locate the exact position of the saddle. We offer two ways of marking the saddle line on the inside of the guitar.

Hole Method (recommended)

This method involves drilling two very small holes in the saddle slot. What! Drill holes in my guitar top? First, note the six large holes directly behind the saddle. Next note the size of the #60 drill. Very small. These holes will not affect the sound nor the structural integrity of the guitar. We recommend that you use this method since it is more accurate and easier than the Template method. If you don't like the idea of the holes go on to the Template method.

- 1) Remove the strings and bone saddle.
- 2) Using the Dremel Tool with #60 bit, drill a hole at both ends of the saddle slot as shown in the diagram. The tiny holes should be in the exact center of the slot.

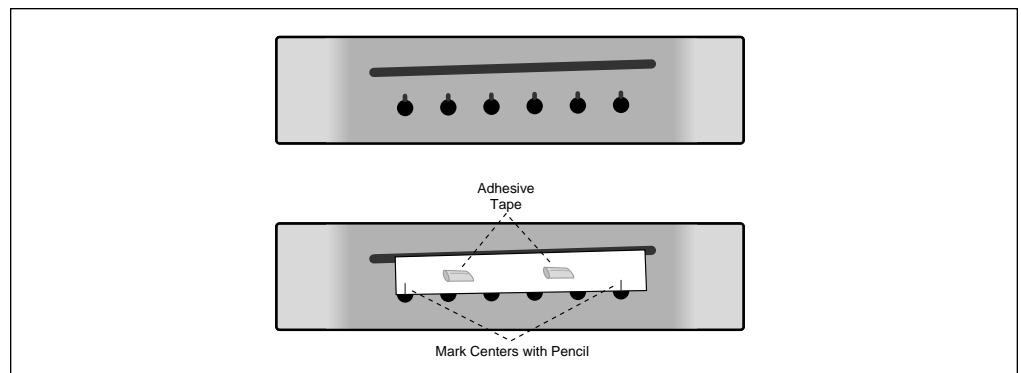


- 3) Position the guitar upside down between to the two chairs. Position the flashlight inside so you can see the bridge plate in the mirror.
- 4) Take a couple pieces of adhesive tape and tape it back on itself adhesive side out (or use double stick tape).
- 5) Apply the two tape loops to one side of the straightedge.
- 6) Working inside the guitar, position the straightedge so you can draw a line between the two holes.
- 7) Draw a line between the two holes with the small pencil.

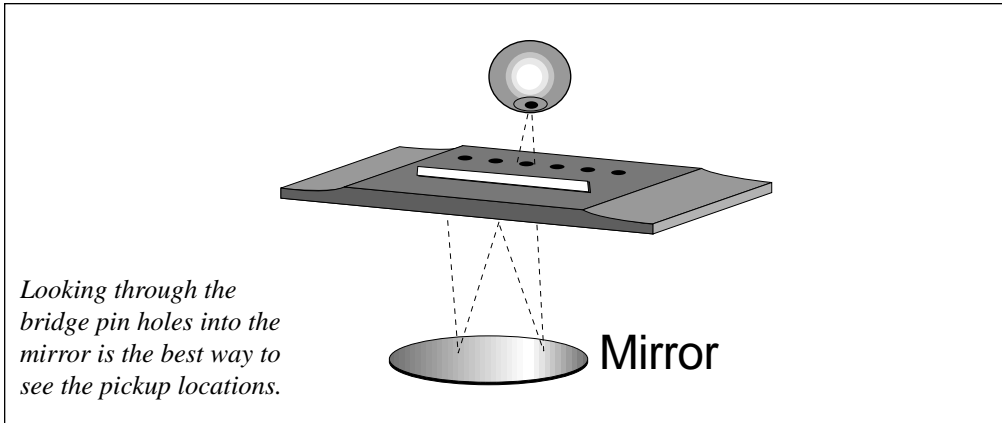
Template Method (works well if you are very careful)

Another way which does not require any hole drilling is to make a template out of a business card or similar weight paper.

- 1) Remove the bone saddle and lay the business card so that the edge falls exactly down the center of the slot.
- 2) Cut the business card so that the opposite side dissects the bridge pin holes. Mark the position of the two "E" strings with a pencil.



- 3) Roll up two small pieces of adhesive (Scotch) tape and stick them onto the side of the template you just marked.
- 4) Working inside the guitar, position the template so that it again dissects the bridge pin holes and so you can see the two marks you made aligning the E string holes. When you have the template perfectly aligned, stick it in place.
- 5) On guitars that use bridge pins, you can look right down through the bridge pin holes and see the underside of the bridge plate in the mirror. This is the best way to see inside. Otherwise, look through the sound hole.



- 6) Using the edge of the card as a straightedge, draw a line with a small pencil on the bridge plate to mark the saddle position.

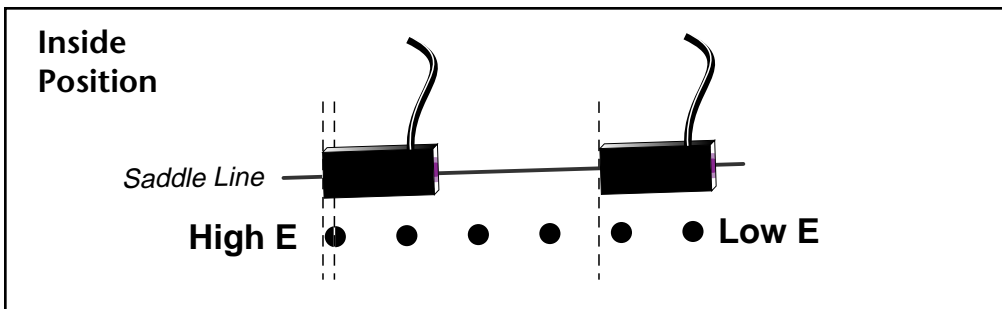
MARKING THE PICKUP LOCATIONS

In this procedure you will place the Acoustic Lens in the proper location on each side and make an outline around the lens with a pencil. The application of Barge cement here is only to make the pickup sticky and stay in place better. If the glue loses its stickiness, reapply a new bead.

- 1) Prepare one of the Acoustic Lenses by squeezing out a bead of Barge cement on the red side of the pickup. Let this set up for about 15 minutes.
- 2) Now it's time to mark the position of the Acoustic Lenses. This operation is best done with the guitar in the upside down position with gravity working with you.

The diagram below shows the positioning of stereo pickups. The end of the treble pickup falls on the outside line of the high E string bridge pin hole. The end of the bass pickup falls just inside of the A string bridge pin hole. Position the pickup exactly in place, press tight, then mark the position of each pickup with the little pencil. Use the inspection mirror to make sure the pickup is perfectly centered on the saddle line.

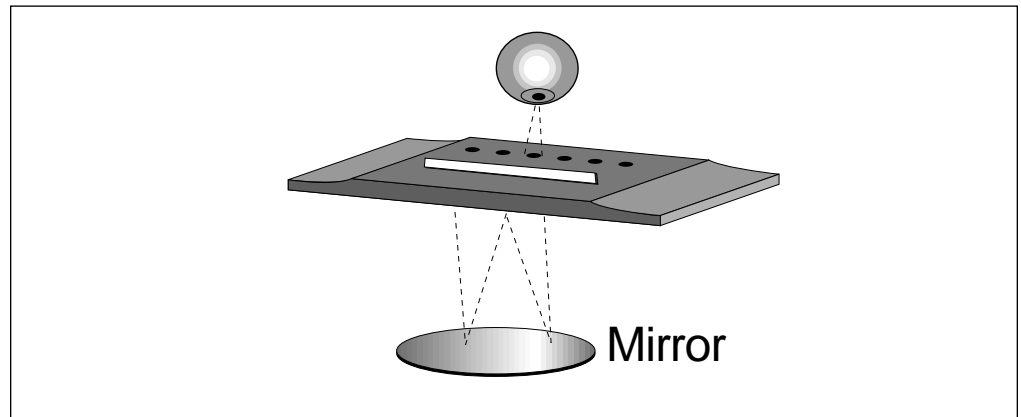
NOTE: Single pickups are usually mounted on the treble side.



PICKUP PLACEMENT

Pickups should be put on one at a time. Wait at least a day before mounting the second pickup. This is because it's easy to knock the first pickup loose before the glue has dried. Barge cement works best when applied to both surfaces and allowed to dry until tacky. When the two surfaces are pressed together and held, it forms a tough, flexible bond. Barge retains its flexibility over time and provides acoustic "damping" which is an important part of the Acoustic Lens sound.

- 1) Remove the Barge cement from the pickup by rubbing with your finger. You may have to use a little acetone on the end of a cotton tip swab stick.
- 2) Practice placing the pickup in the spot you marked under the saddle. **Pickup placement can be done with the soundhole up.** The pickup wire should point toward the sound hole. You'll only get one chance to place the pickups after the glue is applied, so make sure you have a good feel for positioning each pickup in the exact location.



- 3) Prepare the Acoustic Lens by squeezing a thick bead of Barge cement (1/8 inch) onto the red side of the pickup. Use a toothpick to spread out the cement evenly and pop any large air bubbles. With the guitar in the upside-down position, carefully apply a thick bead (1/8 inch) of Barge to the spot you marked inside. Use a toothpick to spread out the cement evenly and pop any large air bubbles. Let the glue dry for about 1/2 hour. After 1/2 hour you may touch the glue lightly with your finger to check that it is not too wet.
- 4) **Now is the critical operation!** Carefully move the pickup close to the exact spot you marked, then press into place. **The pickup wire should point toward the sound hole** so it won't get in the way of the bridge pins. Once you have stuck the two parts together, very little movement is possible. Moving the pickup too much after it has been stuck on will weaken the cement and ruin the bond. If you miss the position, you have to start over. The pickup will not work correctly unless a good bond is made between it and the soundboard.
 - **Starting Over:** Remove the Barge cement from the pickup and inside of the guitar. We have found that Jasco semi-paste paint stripper works well to soften Barge cement. Simply dab on a small amount to the cement using a short acid swabbing brush and let set for a few minutes. The cement then can be wiped off with a paper towel. Don't feel too bad if it doesn't work the first time. This operation can take a little practice.
- 5) When the pickup is properly positioned, hold in place for a minute or so, then leave the guitar in the upside-down position for two days. Yes, two days! If you are installing stereo pickups, let the first one dry for at least a day before installing the second one.
- 6) When the glue has set up, plug the pickups into the preamp (if it isn't already) and string up the guitar. The treble pickup should sound bright and natural. If it sounds great, you've got it! The bass pickup is far less critical (it almost always sounds good). In any case, if you're not happy with the sound, you can remove a pickup (as described above) and reposition it.
 - **Problems?** Check the position with the light and mirror. If it's not perfect, you should do the job over. Please feel free to call us. We're here to help you. - Trance Audio



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