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PURE WESTERN Mini

Thank you for buying the PURE WESTERN MINI Transducer System for your guitar!

This manual describes the installation for both, pin bridges and pinless bridges. For pin bridge guitars a jig installation can be used, for pinless bridges we describe a manual procedure.

Please take the time, read and follow this manual and work as precisely as possible.

The jig will allow for very accurate placement. But even with manual installation on pinless bridges you do not have to worry. We ran several tests where we deliberately installed the pickups somewhat off the desired spots, and the system still sounded fine and balanced. Nevertheless, please try to work as thoroughly as you can and **DO NOT INSTALL THE PICKUPS ON ANY OTHER LOCATIONS INCLUDING THE BACK SIDE OF THE BRIDGEPLATE** (towards the endpin jack)! This position will definitely not sound as good! On extremely small bridgeplates, the Mini Pure transducers may overlap by as much as 1/16" (2mm) on the cable side of the pickup. This is okay and does not create a problem.

Please familiarize yourself with the handling instructions of the supplied superglue and with the disclaimer at the end of this manual. Please read through the entire manual before installation.

List of tools needed:

- Electric drill (for endpin jack mount)
- Drill bits, at least 3/8" (10mm) and 1/2" (12mm for endpin jack mount) or 1/2" Forstner bit
- Pliers or wrench for endpin jack installation
- Large size nail for punching holes into jig
- Flashlight and small handheld mirror for visual check
- Acetone (if bridgeplate surface is dirty)
- Fine sandpaper or razorblade (if residue on bridgeplate surface or if not smooth and level)
- Some double side adhesive carpet tape or similar (for pinless bridge only)
- 3 latex gloves (for pinless bridge only)
- double side adhesive "carpet" tape (for pinless bridge only)
- 1/16" drill bit (for pinless bridge only)

Your Pure Western Mini Guitar Transducer System consists of the following parts:

- 3 transducers with cable-harness and endpin jack
- Super glue (recommended mount)
- Double side adhesive film for "peel and stick" mount if desired
- Jig materials
- Manual

Please make sure you read, understand and agree to the disclaimer at the bottom of this manual before you proceed with the installation. Please call our help line if you have any questions: (541) 888-3517 x807 or 808.

If you have doubts please do not install this product.

Your Mini Pure System uses 3 identical transducers!
It does not matter in which position (high e/b string, g/d string, low e/a string) you install them.

Superglue or “peel and stick” installation, what’s the difference in tone quality ?

We think that the pickups reach their full potential only when they are installed with as little material between the pickup and the surface of the guitar as possible. We definitely recommend the super glue installation as this forms a molecular level bond between pickup and guitar.

For the players who absolutely do not wish to use superglue on their guitar we also supply some very thin double stick tape (for “peel and stick” mount). Please note that we do **NOT** recommend this “peel and stick” installation technique with the MINI PURE pickups. Using this method will result in about 30% loss of volume and tone quality, compared to the superglue mount.

If you absolutely insist in the “peel and stick” installation of the Pure Mini system, please use the double stick film-tape, which is supplied in the package and follow the instructions that come with the tape.

The superglue gel we supply does not bond extremely tightly and if need be, the pickups can be removed by wedging a scraper blade (razor blade with a handle on one side) between bridge-plate and pickup discs.

If done correctly, this will not damage your instrument at all.

Please be aware that the removal of a pickup which has been directly super-glued, may damage the pickup, plus handling these sharp tools could result in personal injury.

Please read and understand the paragraph “removal of pickups” and page 8 of this manual.

Preparation for guitars with pin bridges and pin-less bridges

- If you have a pin-less-bridge, remove the strings, if you have a pin bridge see next point.
- **Tip for pin bridge guitars:** Loosen the strings and clamp a capo on the 10th fret. Pull out the string pins and the ball ends of the strings. The capo will hold the strings on neck and tuners. Like this you don't have to remove the strings entirely and can quickly re-install them after the pickup is installed.
- Place the guitar on a table (use a blanket underneath) so you can comfortably put your hand into the soundhole and feel the inside structures underneath the bridge with your fingers.
- Locate the X-bracing and the bridge-plate. The size of the bridge-plate and the bracing of your guitar might be different to the bracing structure shown in the pictures in this manual.
- Use a handheld mirror (one which fits into the soundhole) and a flashlight to examine the bridgeplate area. Make sure that the bridgeplate is level, clean and smooth.
- Drill or widen the endpin hole to 1/2" (12mm). This is in our opinion the most difficult part of the installation. First you have to determine what kind of endpin is currently installed in your guitar. It may be a simple type, which is held in place by a single screw. Or it may be a standard 1/4" tapered endpin, either press-fit or glued in. The glued in type is the most difficult one to deal with and we recommend looking for professional assistance.
- Tape the endpin-hole with a piece of duct tape to protect the surrounding area of your guitar.
- Single screw type: we recommend using a 1/2" (12mm) FORSTNER drill bit to drill out the screwhole. This one makes the nicest cut and is most gentle to your guitar. You also may use a step by step method to widen the hole to 1/2" (12mm). Use several ascending size drill bits in succession. Make sure to use self-centering drill bits (used for metalwork) not the single-pointed drills for wood!
- Standard 1/4 taper press fit endpin: pull out the endpin and use several ascending size drill bits in succession to widen the hole step by step. Make sure to use self-centering drill bits (used for metalwork) not the single-pointed drills for wood!

In the following paragraphs we describe the installation procedure for pin-bridge-guitars and for guitars with pin-less bridges in detail. Pin-bridge-guitars use a jig for the transducer installation. In pin-less models the pickups have to be mounted manually.

Pin-bridge guitars Jig Installation for *Mini Pure Pickups*

Before you actually work with the pickup, you should practice using the jig without a pickup or putty. This ensures that you are comfortable with the jig technique so that the pickups are positioned perfectly. It may be possible that your guitar has a tighter bracing on the high e string side and the jig may have to be trimmed down a little bit.



1. Cut a piece of corrugated cardboard out of the sales-box your pickup came in. It has a white and a brown side. Size: 1" x 1.25" (2,5cm x 3,5cm). Mark center to center distance of 2 pinholes on the white side.



2. Use a large nail (or similar pointed object) to punch two holes about 3/8" (10mm) from the front edge of the jig.



3. Widen the holes with the wooden pin.



4. Stick the headless pin through the hole, as shown on the photo (brown side of cardboard down, make sure the pin is straight). Use some superglue (supplied with the Pure pickup) to glue the white pin into the cardboard, let dry for a minute and wipe off excess glue.



5. The finished jig should look like this.



6. Place the jig on top of the bridge, insert the dull end of the headless pin into the high e string pinhole and press the golf tee into the b string hole. Remove it several times in order to widen the hole in the jig a bit. The golf tee should slide into the jig hole easily.

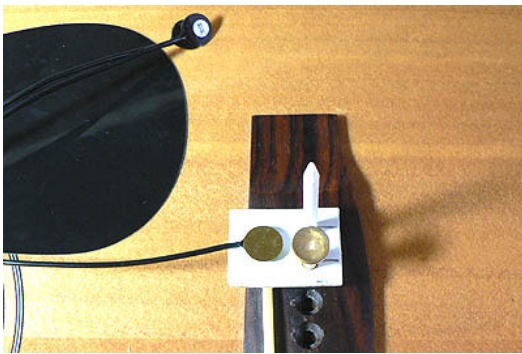
NOTE: Now practice step 11 - 16 without pickup or putty to learn to handle the jig!



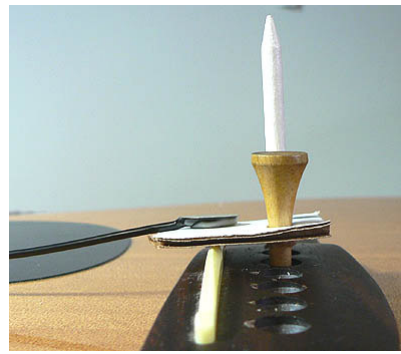
7. Cut off 1/3rd of the gray putty strip.



8. Form a putty-ball and place it on the jig over the saddle between the high e and b string.



9. Get the Pure pickup and place the jack into the sound hole. Press one transducer with the golden side up on the putty as shown in the photo. Make sure the pickup is placed precisely over the saddle.



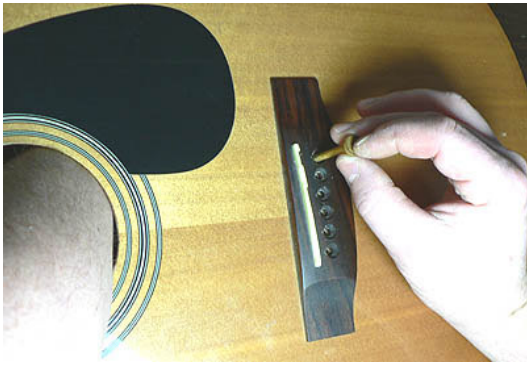
10. Make sure the pickup sits absolutely flat and level on the jig.



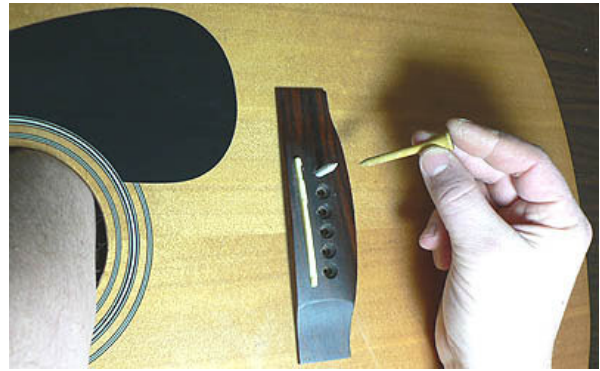
11. **This is a very important step!** Remove the golf tee and hold the jig as shown (between thumb and forefinger on the headless pin). **The tip of the headless pin must be flush with the fingertips.** I use my left hand although I'm right-handed but you may feel more comfortable using your right hand for this.



12. Once you feel confident, make sure that the putty securely holds the pickup and **apply a generous amount of superglue. Spread it over the entire golden surface of the transducer.** Be careful not to touch the pickup and superglue after this step. Make sure you've practiced the whole procedure before super-gluing the pickup! Please read and follow the safety instruction for the superglue!



13. Place the hand that is holding the jig into the guitar and try to bring your fingertips near the high e string hole. Your goal is to stick the headless pin through the high e string hole from the inside. **HERE IS THE TRICK:** Use the golf tee as a guide by inserting it into the high e string pin hole. This way you will be able to feel it on the inside and find the high e string hole fairly easy.



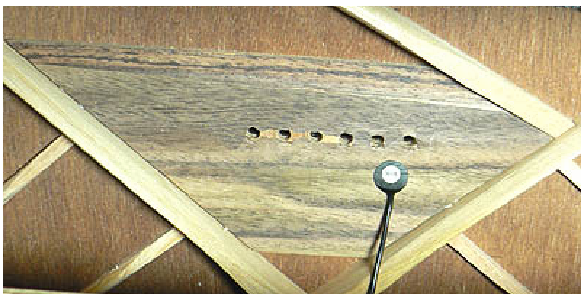
14. Remove the golf tee and carefully push the headless pin a little bit up from inside (not all the way yet!).



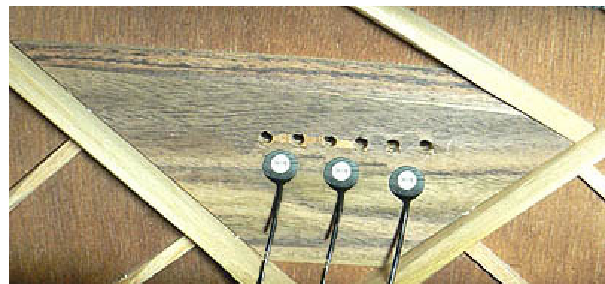
15. Align the jig to the desired square position by feeling its edges (make sure not to touch the pickup as there will be superglue). Insert the golf tee into the b string hole and push it through the corresponding hole in the jig. Make sure to feel if you indeed hit the hole.



16. Push the jig up until it is flush against the bridge plate and apply some pressure to the pickup. (With the final installation you should slowly count to 30 to allow for the glue to set.) This photo shows the jig inside the guitar (yes - we cut a hole in the bottom for the photo, ouch). Remove the jig by pulling out the golf tee and carefully pull the cardboard off the pickup. Remove the used putty, which will either stick to the cardboard or to the pickup.



7. This picture shows the high e/b string pickup perfectly placed. You may use a rag or tissue to wipe off any superglue that oozed out around the pickup. Be extremely careful not to get the rag in contact with the guitar's finish! Use a new piece of putty for each pickup.



18. To finish, simply repeat this procedure with the remaining pickups, one between g and d string and the other between the low e and a string. Make sure all pickups are located precisely **UNDER THE SADDLE!**

Pin-less bridges Installation preparation

Installation on pin-less bridges requires you to drill two 1/16" reference holes in each end of the saddle-slot. If the guitar already has a hole in the saddle-slot for an under-saddle pickup you can use this hole.

Please inspect the bridge-plate inside the guitar with a mirror and a flashlight to make sure that there is enough room for all 3 pickups. In addition to that, please place the 3 pickups over the saddle on the outside to check if they fit in between the 2 reference holes.

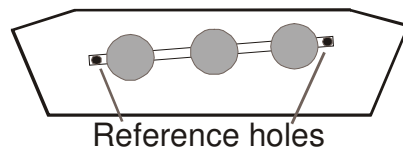
Use a fitting nail, toothpick or (that's what I do) the drill bit itself to stick it through the reference holes so that it will extend about 1/2" or so inside the guitar and acts as a guide on the inside.

Use this guide as a side-stop for your 2 outer pickups (see diagram below):

The 2 outer pickups are going to be placed with their outer edges right next to the guides.

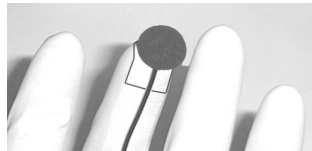
Once the outer pickups are in place you can remove the guides and install the center pickup in between the 2 outer transducers.

Unfortunately, you will have to install this one by feel only.



Pin-less bridge: transducer installation Practice procedures

- Before you actually superglue the pickups into your guitar, you should perform some practice runs without using the glue. This is important for learning the correct movements and getting the feel.
- Find out which hand is feeling more comfortable doing the installation procedure and put on a latex glove.
- Get yourself some double-side adhesive tape ("carpet tape" available in your hardware store) and stick a small piece onto your fingertip (see photo below); the golden side of the pickup is facing **up**. This makes holding on to the pickup and aiming inside the guitar a lot easier.



- Practice to place the outer pickup discs right next to one of the guides in the reference holes.
- Later, when doing the actual installation, you will have to firmly press the pickup to the bridge-plate to allow the excess glue to ooze out around the pickup's edges. At this point, the pickup will most likely move a tiny little bit. Please make sure that you will be able to comfortably perform this final aiming procedure. The pickup has to be pressed down and held in place against the bridge-plate for at least 30 seconds.
- The center pickup should only be installed when the two outer pickups are glued in place. These 2 pickups need to be used as guides for the installation of the center transducer. This means you should **practice with the center pickup only after the 2 outer pickups are installed**.
- On occasion, with pinless bridges, we used double stick tape for the center pickup while we superglued the 2 outer ones. Interestingly, the center pickup does contribute only about 15% to the total sound (measured with a full superglue installation). The 2 outer transducers definitely carry the workload. The "peel and stick" installation of the center pickup will only have very little effect on the sound. In fact, on the installations we did it like this, it came out very nice and very balanced. It is a lot easier on you in case you would badly misplace the center pickup with superglue.
- Practice until you feel confident to do it right the first time.

Pin-less bridge: final Installation of the pickups

Please read and follow the safety instruction for the superglue!

Make sure not to get superglue on your fingers or on your guitar!

It is a good idea to cover the entire guitar top with fabric or paper, just leaving an opening for the sound-hole.

IMPORTANT: The entire golden under-side of the pickup discs needs to be covered with glue!

Spread a generous amount all over the surface. Do not use just a drop in the center, as this will not distribute evenly. Please be aware that the amount of glue coverage is directly related to the signal output, balance and sound!

Shoddy and insufficient gluing is the number 1 cause of unsatisfactory sound of the pickup!!!!

Please do not worry; the glue we supply will not dry immediately after it is applied to the pickup. You will have more than sufficient time without rushing things. A generous amount of glue will not dry fast at all, it will actually be good for several minutes. Only after contact the glue will cure.

The superglue gel even allows for about 10-15 seconds of repositioning time after the pickup is pressed onto the bridgeplate surface.

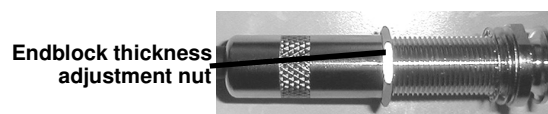
After the final position is reached, hold and press the pickup firmly down in place for at least another 30 seconds. Excess glue will ooze out around the edges and eventually dry - that's fine. You can also use a rag to wipe off the excess glue if you want. Be extremely careful not to get the rag in contact with the guitar's finish.

So, now let's install:

- Apply superglue to the golden under-side of the green transducer. Spread a generous layer of the glue with the tip of the tube so it will cover the entire surface.
- Now install the first transducer to its corresponding position at the high B and E strings as practiced. Press it down and hold it in position for at least 30 seconds.
- Repeat above steps and attach the second transducer to the corresponding position of the low E and A strings.
- Check your work with a mirror and flashlight.
- Attach the center transducer by feel between the 2 outer pickups, either with the double stick tape or with superglue if you feel confident (see practice procedures above).
- Check your work with a mirror and flashlight.

Installation of the endpin jack For guitars with pin bridges and pin-less bridges:

- Unscrew the endpin jack's strap mount knob
- Take off the nut and washer.
- Find out the thickness of your end block and set the nut on the cap accordingly (see picture below). Once in place, screw the cap against it to secure the nut.
- Insert the jack from the inside into the endpin hole.
TIP: a chopstick or something similar helps to get a hold of the jack and pull it through the hole.
- Attach outside washer and nut and tighten. Attach the end knob.



Important:

Make sure that the strap knob screws in ALL THE WAY over the outer threaded part of the jack, so that a tiny portion of the thread is exposed when the strap-knob is tightened.

If you don't do this, you might experience insufficient signal transmission and sound, which is cutting in and out.

Removal of pickups that were directly glued to the guitar:

This removal is at your own risk. It might result in injury to your fingers as well as destruction of the pickup.

Experienced luthiers should be able to remove the pickups by using a scraper blade wedged between bridge-plate and pickup discs from the pinhole side. Be aware that this will very likely damage the piezo transducers.

It also is dangerous to work with a scraper blade inside your guitar where you can't see what you are doing. The superglue we supply does not bond super tight. This makes it possible to remove the pickups without damaging the wood, but you may damage a pickup during removal. You have to carefully test the pickups after removal and cleaning (explained later). You can purchase single replacement transducers from us if needed.

Removal can be tricky (and is not recommended to unskilled persons) because we do not want you to accidentally hurt yourself. We recommend using a scraper blade (razor blade with a handle on one side) to separate the pickup from the bridgeplate from the endpin side (the back of the pickup). Make sure to get the blade flat between wood and metal side of the pickup. This is the difficult part. The pickup usually pops off once the blade is about 1/8 - 1/4" or so under the pickup. The glue residue on the bridgeplate can be removed with fine sandpaper or you can carefully scrape it off with the scraper blade.

If done correctly there should be no damage to the bridgeplate or guitar top. But again - some skill is needed to do this. Any good luthier should be able to remove the pickups.

Here is what you do to save the pickups for a re-installation:

Be careful not to bend the pickups. Visually inspect the pickups for bend marks or other irregularities. If they look damaged, they may still work but we recommend replacing bent or nicked pickups. Use the scraper blade to scratch off any remaining glue residue from the golden side of the transducers. Make sure not to bend the pickups while you are doing this. Some fine scratches in the metal will not hurt the performance.

To test the pickups, plug the pickups into an amp. If you have a Trinity System you can still plug a mono cable into the endpin and you will get the pickups only. Hold one pickup at a time about 3/4" (2cm) from the pickup head on the cable and tap the pickup with your finger. Do this tapping in both directions, so that you tap the black side and the golden side. You can do this quite hard.

The tapping sound has to be amplified and all pickups should produce about the same volume. There should not be any missing taps. There should not be any loud "crackles." If the pickups test out fine, you can reinstall them.

Make sure that all glue residue is cleaned off the wood of the bridgeplate or guitar top. Smooth the wood surface until it is perfectly straight and clean. You can use any store-bought superglue to glue the pickups into your guitar. We recommend a superglue GEL, because it gives you a little more time to re-position the pickups before it dries.

Disclaimer regarding the installation or removal of the Pure Western, Pure Classic, Mini Pure and any product which contains any of these transducers:

Installation or removal of the above listed products is at your own risk. In no event will K & K Sound Systems Inc. be liable to you or whoever you select for doing this installation or removal in your place, for any damages arising from your use of, or, the inability to use these products. This includes any possible health hazards, accidents, injuries, any lost profits, or other incidental or consequential damages, even if K & K Sound Systems Inc. has been advised of the possibility of such damages, or for any claim by another party.

Exact following of mounting instructions and handling instructions for supplied superglue is mandatory.