



## PRODUCT MANUAL

# PURE 12-STRING

Thank you for choosing the Pure 12-String pickup for your guitar! This manual describes the installation for pin bridges and pinless bridges. For pin bridge guitars, a jig installation can be used. The jig allows you to place the pickups very accurately.

For pinless bridges, we describe a manual installation procedure. Don't worry too much about not using the jig. We ran several tests where we deliberately installed the pickups somewhat off the desired spots, and the system still sounded fine and balanced.

However, please try to work as thoroughly as you can and **DO NOT INSTALL THE PICKUPS ANY OTHER LOCATION, INCLUDING THE BACKSIDE OF THE BRIDGE PLATE** (towards the endpin jack). This position will definitely not sound as good! On extremely small bridge plates, the 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 double-sided tape, our recommendations regarding using superglue gel, and with the disclaimer at the end of this manual. Please read through the entire manual before installation.

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 us if you have any questions. If you have doubts, please do not install this product.

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### 1. TOOLS & SUPPLIES NEEDED

- **Superglue gel (any brand of Cyanoacrylate glue will do as long as it is gel)**
- 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 bridge plate surface is dirty)
- Fine sandpaper or razorblade (if residue on bridge plate 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)

## 2. PACKAGE CONTENTS

- 3 transducers with cable-harness and endpin jack
- Polyester foil for removable "on tape" attachment
- Jig materials
- Manual

## 3. SUPERGLUE VS. "ON TAPE" INSTALLATION

The pickups can be installed either with superglue gel directly to the bridge plate or with our special foil-mount technique. Of course there is a difference in tone whether the foil is used or not.

Pickups glued directly to the wood will put out about 20% more volume, more bass, and more midrange. The overall tone quality using the direct installation is probably best described as providing "authoritative midrange" and very fundamental bass response. Finger-stylists will like that. It is absolutely great for flat-picked solos: every single tone will sound very warm and "thick".

On the other hand, an installation using the foil provides a somewhat finer tone with less individual tone pronunciation, which may be desired by strummers. It sounds slightly brighter, with less midrange and with a somewhat lower bass response. The overall sound is still natural and the output will still be excellent, much higher than most competitors' passive pickups. The signal can easily be boosted with one of our preamps if desired.

You will find 2 silver strips (1" x 4") with adhesive backing in the package. These 2-mm thin, super-sturdy foil strips are made of a high-tech material, which is specially suited for acoustic transmission. If you attach a fitting strip to the bridge-plate and then superglue the pickups to the foil, you can simply remove the pickups by pulling off the foil.

If you are in doubt about which installation method to choose, we recommend using the foil mount at first. You may like it just fine this way. If you later decide to give the permanent installation a try, you can carefully remove and re-glue the pickups directly. Please follow paragraph "Removal of Pickups" below.

## 4. PREPARATION (FOR ALL GUITARS)

1. If you have a pin-less bridge, remove the stings. If you have a pin bridge, 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. This way you don't have to remove the strings entirely and can quickly re-install them after the pickup is installed.
2. Place the guitar on a table (use a blanket underneath) so you can comfortably put your hand into the sound hole and feel the inside structures underneath the bridge with your fingers.
3. 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.
4. Use a handheld mirror (one which fits into the sound hole) and a flashlight to examine the bridge plate area. Make sure that the bridge plate is level, clean and smooth.
5. Drill or widen the endpin hole to 1/2" (12mm). In my opinion, this is 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.
6. Tape the endpin-hole with a piece of duct tape to protect the surrounding area of your guitar.
7. Single screw type: We recommend using a 1/2" (12mm) FORSTNER drill bit to drill out the screw hole. 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!

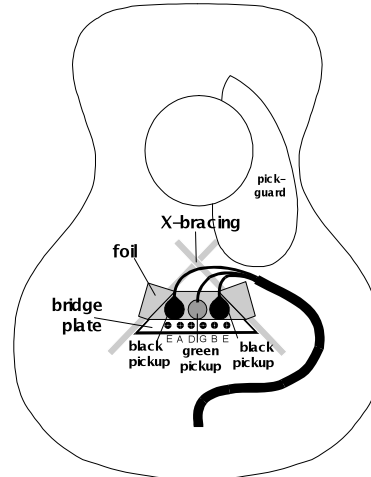
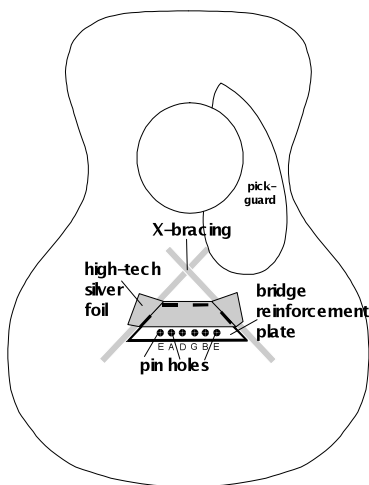
8. Standard 1/4 taper press fit endpin: Pull out the endpin and use several ascending size drill bits in succession to widen the hole step by step. Make sure to use self-centering drill bits (used for metalwork) not the single-pointed drills for wood!

## 5. REMOVABLE INSTALLATION

1. Clean the bridge-plate. We recommend to either use fine sandpaper or to scrape the surface with a razor blade to smoothen it. Then clean it with acetone.
2. Following the diagrams below, stick one foil strip to the bridge-plate. Make sure that the edge of the foil is lining up with the edges of the pinholes!
3. Press the foil flat against the bridge-plate and around the edges of the left and right braces.
4. The ends of the foil can extend over the braces to form grip-tabs (handy for getting a good grip when pulling off the foil). You can also cut the overlapping edges off with a new and sharp razor blade.

With pin-less bridges, the foil should be installed after the reference holes are drilled. Please smooth and clean the bridge-plate **BEFORE** you install the tape! Make sure that the foil will line up with the saddle. You have to cleanly puncture the foil at the 2 reference holes and make sure that it sticks securely and flat to the bridge-plate with the guide pieces inserted. Please check paragraph for installation with pin-less bridges. See according paragraph below.

**NOTE:** Pickups must be installed with a safety distance of 1/8" (3-4mm) from the holes to allow space for ball-ends.



## REMOVING THE PICKUPS

Remove the pickups by pulling off the silver foil on the bridge-plate in your guitar. Be especially careful with the center pickup, this one has a weaker base-plate and it might bend its edge when you pull the tape too hard or at an angle. Please use a very flat pulling angle and proceed carefully. You can support by wedging your fingernail under the pickup edge and carefully loosen it a bit if possible. Please be aware that a bent pickup will most likely be damaged.

Once the pickups and foil are off and out of the guitar, peel the foil off the pickups. There will be some silver foil and glue residue on the base plates of the pickups. Use a scraper blade to scrape off this residue, again be even more careful with the green center pickup. The base-plates are made of brass and will easily tolerate this. Do not worry about a few minor scratches.

After the pickups are cleaned, plug them into your amp and hold each pickup by its wire 1/2" from transducer head. Test by tapping on the golden surface of each pickup with a fingernail to make sure that all pickups work. The tapping sound should be clearly amplified. Every little tap must be heard. The green pickup will be lower in volume and it has a different tone than the black ones, this is normal. If the test is successful, the pickups are ready for re-installation.

## 6. SUPERGLUE INSTALLATION FOR PIN BRIDGES

Important: The photos show the Pure Mini pickups. The procedure is the same for the Pure 12-String, except that the green pickup has to be in the middle.

1. Please remove the blue protective foil from both sides of the jig before starting. The jig itself is clear and the protective foil peels off easily.
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2. The white pin needs to be inserted into the round hole. When holding the pointed end of the jig with the round hole to the right, the white pin should go in point first. Push the pin about  $\frac{3}{4}$  of the way through the jig.

The pin should fit very snugly – you may have to use some force to press it into the hole. If the pin fits too loosely, please use some of the included superglue to secure it.



3. Insert the flat end of the white pin into the high E string pinhole. Slide the brown golf tee through the oblong hole in the jig and through the G string pinhole.
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4. With the included putty, form a small ball and stick it on top the jig, above the point where saddle and high E string intersect.



- Place one pickup on the putty with the metal side facing up and press down. It should hold the pickup in place securely enough to allow for the installation.

Make sure the pickup sits parallel to the surface of the jig.

**We recommend that you do a test run without using the glue at this point to practice finding the right position for the jig inside the guitar.**



- Hold the tip of the white pin between your thumb and forefinger. The golden part of the pickup should be facing up and away from the palm of your hand.



- Move the jig inside the guitar through the sound hole. Stick the golf tee into the high E string from the outside with your dominant hand and try to feel it protruding to the inside with the thumb or index finger of your other hand. This process helps you identify the correct pinhole to attach the pickup.



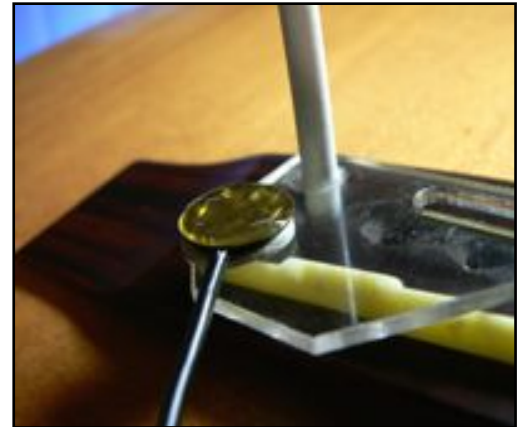
8. When you've felt the position of the golf tee, guide the white pin up through the E string hole from the inside and secure the jig by moving the golf tee to the G string hole from the outside and finding the oblong hole in the jig. This will align the jig exactly as was done in step 5, outside the guitar.



9. Once you confirmed that the procedure works as intended, you can apply glue the pickup and glue it in. **Please ensure that the putty still holds the pickup firmly in place after the trial run.** Use a fresh piece of putty if necessary.

Use a good amount of glue and spread it over the metal surface of the pickup. You should use enough glue so to cover the entire surface of the pickup. It is best if some glue "oozes" out around the pickup as you install it.

**The most common source of sound issues and transmission problems with the Pure pickups is using too little glue for the pickup to bond properly to the bridge plate.**

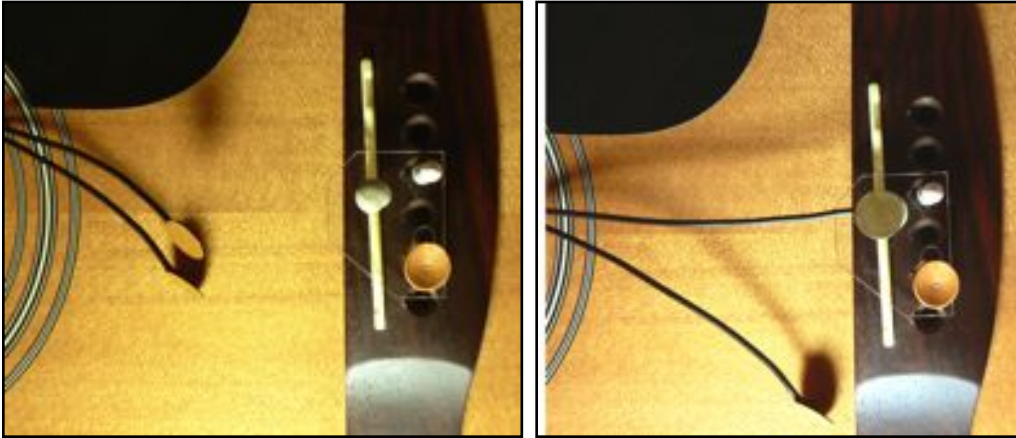


10. Once the pickup is in place, apply pressure to the jig/pickup while you slowly count to 30 to allow the glue to cure. Release the pressure, but **leave the jig in place for another 5-10 minutes** to allow the glue to settle before continuing.

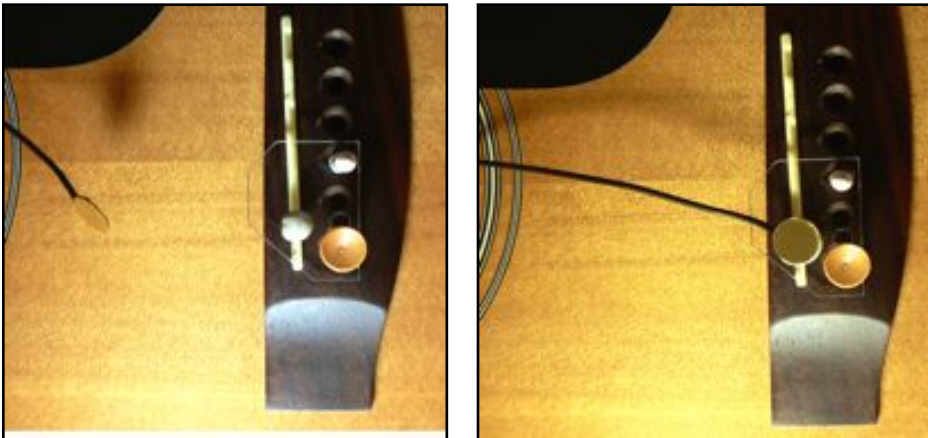
11. To remove the jig, carefully wiggle it left and right to loosen the bond of the putty from the pickup. The putty will most likely stick to the pickup. We recommend using a paper towel to wipe off the excess superglue around the pickup and then remove the putty from the pickup. If there is some small amount of putty residue left, it will not present a sound problem.

If you get superglue on your fingers, the easiest way to remove it is to let it dry and then buff it off with some fine sandpaper or a nail file.

12. The next pictures show the position of the jig for the center pickup, between G and D strings. Please use a fresh ball of putty and repeat the procedure as with the first pickup.



13. The next pictures show the position of the jig for the low string pickup, between E and A string. Again, please use fresh putty and repeat the same process as with the previous pickups.



14. Here is how the finished result will look inside the guitar. You can use a mirror and flashlight to check that the position of the pickups is correct.

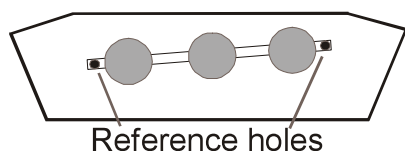
**Tip:** The sliding tube along the pickup cable can now be slid about 1-2 inches from the pickup heads to keep the cables together. Once the endpin jack is mounted and before it is fully fastened, give it a twist or two to form a loop in the pickup cables to keep them from touching the soundboard or bottom of the guitar.



## 7. SUPERGLUE INSTALLATION FOR PINLESS BRIDGES

### PREPARATION

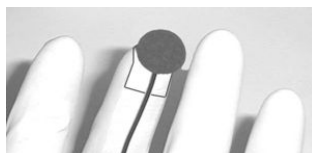
1. Installation on pin-less bridges requires you to drill two 1/16" reference holes in each end of the saddle-slot. If the guitar already has a hole in the saddle-slot for an under-saddle pickup you can use this hole.
2. Please inspect the bridge plate inside the guitar with a mirror and a flashlight 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.
3. 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.
4. Use this guide as a side-stop for your 2 outer pickups (see diagram below):



5. The 2 outer pickups are going to be placed with their outer edges right next to the guides.
6. Once the outer pickups are in place you can remove the guides and install the center pickup in between the 2 outer transducers.
7. Unfortunately, you will have to install this one by feel only.

### PRACTICE

1. Before you actually superglue the pickups into your guitar, you should perform some practice runs without using the superglue gel. This is important for learning the correct movements and getting the feel.
2. Find out which hand is feeling more comfortable doing the installation procedure and put on a latex glove.
3. 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.

4. Practice to place the outer pickup discs right next to one of the guides in the reference holes.
5. 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.
6. 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.
7. On occasion, with pin-less 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.
8. Practice until you feel confident to do it right the first time.

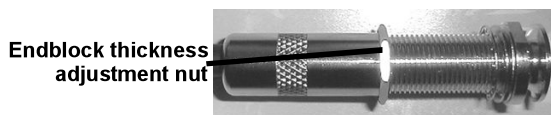
### FINAL INSTALLATION

1. Apply superglue gel to the golden underside of the first pickup. Spread a generous layer of the gel with the tip of the tube so it will cover the entire surface.
2. Now install the first pickup 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.
3. Repeat above steps and attach the second transducer to the corresponding position of the low E and A strings.
4. Check your work with a mirror and flashlight.
5. Attach the center transducer by feel between the 2 outer pickups.
6. Check your work with a mirror and flashlight.



## 8. INSTALLING THE ENDPIN JACK (FOR ALL GUITARS)

1. Unscrew the endpin jack's strap mount knob.
2. Take off the nut and washer.
3. 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 in as far as it goes.
4. 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.
5. 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.

## 9. IMPORTANT SUPERGLUE INFORMATION

Please read and follow the safety instruction for the superglue gel. 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.

The entire golden underside of the pickup discs needs to be covered with superglue gel. 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. Careless and insufficient gluing is the number one cause of unsatisfactory sound for this pickup!

Don't worry; the superglue gel 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 gel will actually be good for several minutes. The gel will only set after contact with another surface.

The superglue gel even allows for about 10-15 seconds of repositioning time after the pickup is pressed onto the bridge plate surface. After the final position is reached, hold and press the pickup firmly down in place for at least another 30 seconds.

Excess gel will ooze out around the edges and eventually dry - that's fine. You can also use a rag to wipe off the excess gel if you want. Be extremely careful not to get the rag in contact with the guitar's finish.

## 10. REMOVING SUPERGLUED PICKUPS

Removal is at your own risk. It might result in destruction of the pickup and/or personal injury.

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 pickups.

It also is dangerous to work with a scraper blade inside your guitar where you can't see what you are doing. The superglue gel 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 bridge plate 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 bridge plate 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 bridge plate or guitar top. But again - some skill is needed to do this. Any good luthier should be able to remove the pickups.

### **SAVING THE PICKUPS FOR 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 bridge plate or guitar top. Smooth the wood surface until it is perfectly straight and clean.

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### **DISCLAIMER**

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 whomever 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, injury, 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. Following pickup installation instructions and handling instructions for supplied superglue is mandatory.