

## DOUBLE HELIX PICKUP

The Double Helix is a magnetic soundhole pickup for steel string acoustic guitars. It fits soundholes with a minimum diameter of 90mm, about 3.5".

The pickup features two switches on the base-plate of the pickup:

- The PHASE switch allows you to adjust the phase of the pickup, so the Double Helix will harmonize with any other pickup that is in your guitar.
- The TONE switch allows you to choose two settings:
  - GLOSS - a fine and bright tone that sounds very acoustic, hum-cancelling
  - STEAM - a more substantial and louder tone generally associated with soundhole pickups, hum-cancelling

### INSTALLATION:

This manual describes the installation of the Double Helix pickup only.

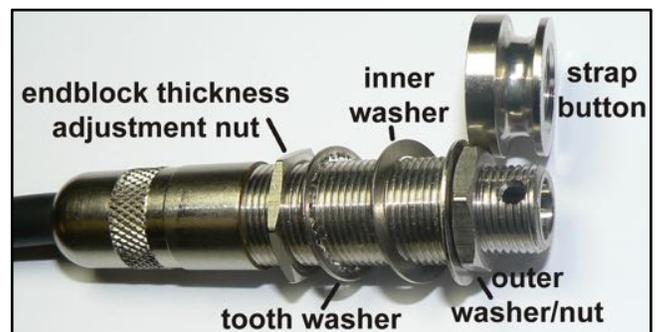
If you have a Double Helix intended for a combination system (Pure Pickup, or other pickup) the cable connection to the endpin jack will vary slightly. For detailed info on cable connection in combination systems, please refer to the additional information that comes with your combo system.

For ease of pickup installation and pickup cable connection, we recommend removing the strings.

**TIP:** If your guitar has string pins, you can put a capo on the 10th fret, loosen the strings and remove the string pins. You can now pull out the ball-ends, work on the installation and quickly restring your guitar later.

### INSTALLING THE ENDPIN JACK:

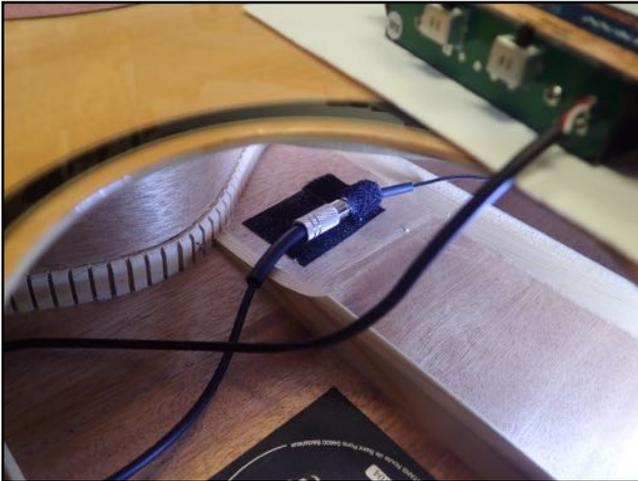
- The endpin hole needs to be widened to ½" 12mm. You can follow the drill instructions included with the endpin jack, but **we highly recommend that this part of the installation be done by a professional.**
- Unscrew the endpin jack's strap button.
- Remove the outer nut and washer.
- Determine the thickness of your guitar's end block and set the endblock thickness adjustment nut accordingly. You may have to back off the screw cap. Once the nut is in place, screw the cap back in, either right up against the nut or as far as it goes, as tightly as possible. This step might take a few tries to get the right spacing.
- 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 guide it through.
- Attach outside washer and nut and tighten. Attach the strap button. Important: Make sure that the strap button 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 button is tightened.



(If you do not wish to install an endpin jack at this time, please see "USING THE ENDPIN JACK ADAPTER" on p. 5 of this manual.)

### INSTALLATION ON GUITARS WITH STANDARD SIZE SOUNDHOLES (ABOUT 4" / ABOUT 100MM):

- Please put a cloth or similar on your guitar top and lay the pickup on it.
- Connect the plug first and secure the cable inside the guitar.



- Loosen the 2 mounting screws on the pickup a little bit. Insert the pickup in the center of the soundhole. Move it towards the neck, align the pickup.
- Tighten the 2 mounting screws. A light tightening will be just fine.

### INSTALLATION ON GUITARS WITH SMALL SOUNDHOLES (DOWN TO 90MM / ABOUT 3.5"):

Auditorium size guitars have smaller soundholes than dreadnaught or full size guitars. The minimum soundhole diameter needed to fit this pickup is 90mm or a little more than 3.5"

- If you have a guitar with a small soundhole you should first test if you can insert the pickup when the two mounting lugs are adjusted all the way down with the two mounting screws. Bring the lugs into the lowest possible position, just before they would fall out. Insert the low string side of the pickup first and check if you can drop the high string in also. If yes you are fine. If not, you have to use the supplied long mounting screws instead of the shorter screws.



- Unscrew the 2 mounting screws and mounting lugs and remember the up/down orientation of the lugs.



- Replace the mounting screws with the two longer ones (supplied) and screw on the lugs just enough to hold them in place. They must be able to move around the outside of the lug-slot.
- Please put a cloth or similar on your guitar top and lay the pickup on it.
- Connect the plug first and secure the cable inside the guitar with the supplied cable clamps, see photos in paragraph above.
- Align the lugs as shown below and drop the pickup into the soundhole.



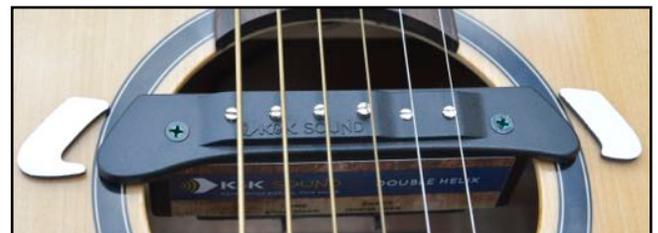
- Align the lugs with the lug slot, pull the screws up by  $\frac{1}{2}$ " (10mm) make sure the lugs are inside the lug slot. Tighten the long screws.
- Move the pickup as far as possible towards the neck, align the pickup and tighten the 2 mounting screws. A light tightening will be just fine.

#### PICKUP HEIGHT AND POLE PIECE ADJUSTMENT:

The pickup is partially internally compensated for acoustic guitar strings, plus it has adjustable pole pieces for perfect string-to-string balance.

The 4 wound strings (E-A-D-G) on an acoustic guitar are typically bronze wound and therefore not as loud as the 2 plain steel strings B and high E. Therefore the gap between pickup and strings, especially on the low string side (E-A-D-G), should be as small as possible.

The pickup comes with a factory adjusted pole-piece height setting. When the Low E and A strings are pressed down on the highest fret, the gap between the corresponding pole pieces and the strings should be minimal. If it is larger than about 2.5mm (3/32") the whole pickup should be raised by adding padding on the underside of the top plate of the pickup. We include two pieces of extra padding for this purpose: one for bass- and one for treble side.



There is one piece of padding on each side of the pickup already. However, if your gap is larger than 2.5mm or 3/32" you should add another piece of padding, especially on the low string side, to bring this side up as high as possible. Further fine adjustment can be done with the pole pieces.

The padding has a sticky tape on one side, but we recommend wedging the piece in without taping it. Once the pickup is screwed down the padding will not move and can still be easily removed if necessary.

If your guitar is especially "flat" you can also remove the existing pieces of padding entirely.



Players who strum very hard, or use percussive techniques that would cause the strings to hit the pole pieces, should lower all 6 pole pieces so that E-A-D-G are flush with the top of the pickup and B-E are dropped down even lower.

If this does not provide enough clearance, you can also remove the existing padding on the left and right side of the pickup (see photo above).

Please keep in mind that lowering the pickup also cuts down on output volume. Even so, you should still have more than enough output signal in the STEAM setting.

**Once this adjustment is done properly, the pole pieces should be adjusted as follows:**

- Press the low E string on the highest fret (usually the 20th) and adjust the according pole piece with a small screwdriver so it just clears the string. It should be as high as possible without hitting with the string.
- Do the same with the A-D and G string pole pieces.
- The pole pieces for the B and high E string need to be adjusted much further down, with the B usually a little lower than the high E.
- **Note:** we found that there is a small difference in tone depending on which way the slot on the pole pieces is pointing in relation to the string. We recommend aligning all pole pieces with the slot perpendicular to the strings.



- We preset the pole pieces for an average guitar but, for best results, please fine-tune this on your instrument.
- Once the above steps are done, you can further fine-tune the balance by listening to the amplified tone. The higher the pole piece, the louder the string will be.

### USING THE ENDPIN JACK ADAPTER:

We've included an endpin adapter, so the Double Helix can be used without installing an endpin jack. The cable comes out of the soundhole and then this adapter clips the jack to the endpin on the outside.



**\*\*Endpin jack adapter is not included with Double Helix Combination and Upgrade systems\*\***

### USING THE PHASE SWITCH:

If you use another pickup in your guitar already and want to blend it with the Double Helix, it is important that the phase switch on the Double Helix is set correctly.

If you have a Double Helix/Pure Mini combo system with the K&K Dual Channel Pro ST Preamp, simply set the phase switch to the "K&K" setting.

If you're using a non-K&K preamp, or just one preamp on one of the pickups, determining the correct phase setting is a bit more complicated, as the preamp might reverse the phase of a pickup.

Here's what you do: when you play both pickups simultaneously, the combined sound should be louder and fuller. If it is weaker than one pickup alone, just flip the phase switch on the Double Helix and you will fix that issue.

When you only have the Double Helix in your guitar, you have to determine if it sounds better with the phase switch set to the "K&K" or the "reverse" setting. There is a 50/50 chance that either way will compliment your guitar/amp system better. Usually one setting will get you a slightly fuller tone and less feedback.