

HIGHLANDER *iP-1Xinline*

MUSICAL AUDIO PRODUCTS

Pickup and Preamp for Single Cone Resophonic Guitar

highlanderpickups.com

Thank you for purchasing the Highlander iP-1Xinline Pickup For Single Cone 'Biscuit Saddle' Resonator Guitars.

Built to take the rigors of the road, you can rely on a Highlander.

At Highlander we appreciate that it takes years of practice, dedication and personal growth for an acoustic musician to develop the skills and spirit necessary to express themselves fully through their music. Through years of practice, dedication and personal growth our highly skilled team is crafting amplification equipment for these musicians that is so pure, we can all fully appreciate and be moved by the true spirit of their music.

For more information please visit our web site.

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iP-1Xinline INSTALLATION

For optimum pickup performance and ease of installation, please take a moment to read through this Installation Guide before beginning. Thank You.

THIS INSTALLATION SHOULD ONLY BE UNDERTAKEN BY LUTHIER WITH EXPERIENCE WORKING ON RESO-PHONIC STRINGED INSTRUMENTS.

Using the wrong techniques or tools could result in permanent damage to your Instrument. Highlander is not responsible for any damage resulting from the installation of this pickup system.

About External Power

As with any piezo pickup, it is important to have the preamplifier mounted as close to the pickup as possible. This minimizes the length of cable between the pickup and the preamp, greatly enhancing the sound quality.

The preamp requires a 9V battery. While Highlander systems can run for 1000 hours on one 9V battery, this battery will have to be replaced from time to time. In an acoustic flat top guitar this is easily accomplished through the sound hole; however, it is not so easy to access the inside of a resonator guitar. That is why the External Power Accessory is highly recommended by Highlander and the National Reso-Phonic Guitar Company. The cover plate on these guitars was not designed to be removed and replaced regularly. Apart from the hassle, there is a possibility that over time this could cause problems. The External Power Option is easy to use, eliminating the hassle and potential problems.

Power is delivered to the guitar on the 'ring' of a stereo cable. If a mono cable is inadvertently plugged into the guitar jack on the External Power Box, the battery will be shorted out. This will cause the battery to run down very quickly, and there is also the possibility that the battery could get quite warm. If this happens the battery should be replaced.

Please note the External Power Box is used to power the preamp that is in the guitar -- there is no preamplifier in the External Power Box.

Parts Included:

Qty.	Description
1	Biscuit with Highlander Pickup embedded
1	iP-1Xi Inline Preamplifier
1	Hardware Mounting Kit comprising of: <ul style="list-style-type: none">2 Screws2 Washers2 Preamp Clamps
1	Male RCA Connector
3	Pieces of Self Adhesive Velcro® for cable strain relief
1	External Power Adapter comprising of: <ul style="list-style-type: none">1 External Power Box (battery not included)1 15 foot Stereo Cable

Tools Required:

- 1) HAND DRILL or ELECTRIC DRILL (cordless preferred)
- 2) 3/8" DRILL BIT, RELIEVED ON RAKE EDGES
Used for drilling guitar for the Output Connector
- 3) 1/2" NUT DRIVER
For tightening
- 4) SHARP SCRIBER OR SIMILAR
For piercing the dome in the cone
- 5) SMALL SOLDERING IRON AND MULTICORE SOLDER
(must be electronic grade multicore solder not acid based)
For soldering the RCA Connector to the Pickup Cable
- 6) CROSS HEAD (PHILLIPS) SCREWDRIVER
For replacing the biscuit
- 7) WIRE CUTTERS
For trimming excess wire from the RCA Solder joins

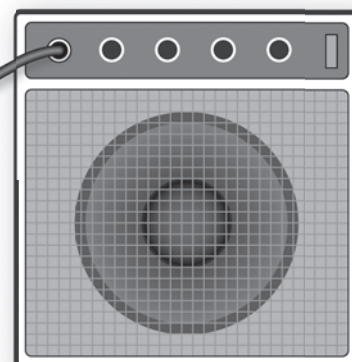
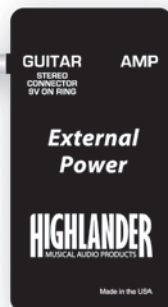
A STEREO GUITAR CABLE
✓
POWERS THE GUITAR
X

MONO
CABLE

Audio

Power

Audio



For more information check out our web site: highlanderpickups.com

iP-1Xinline INSTALLATION

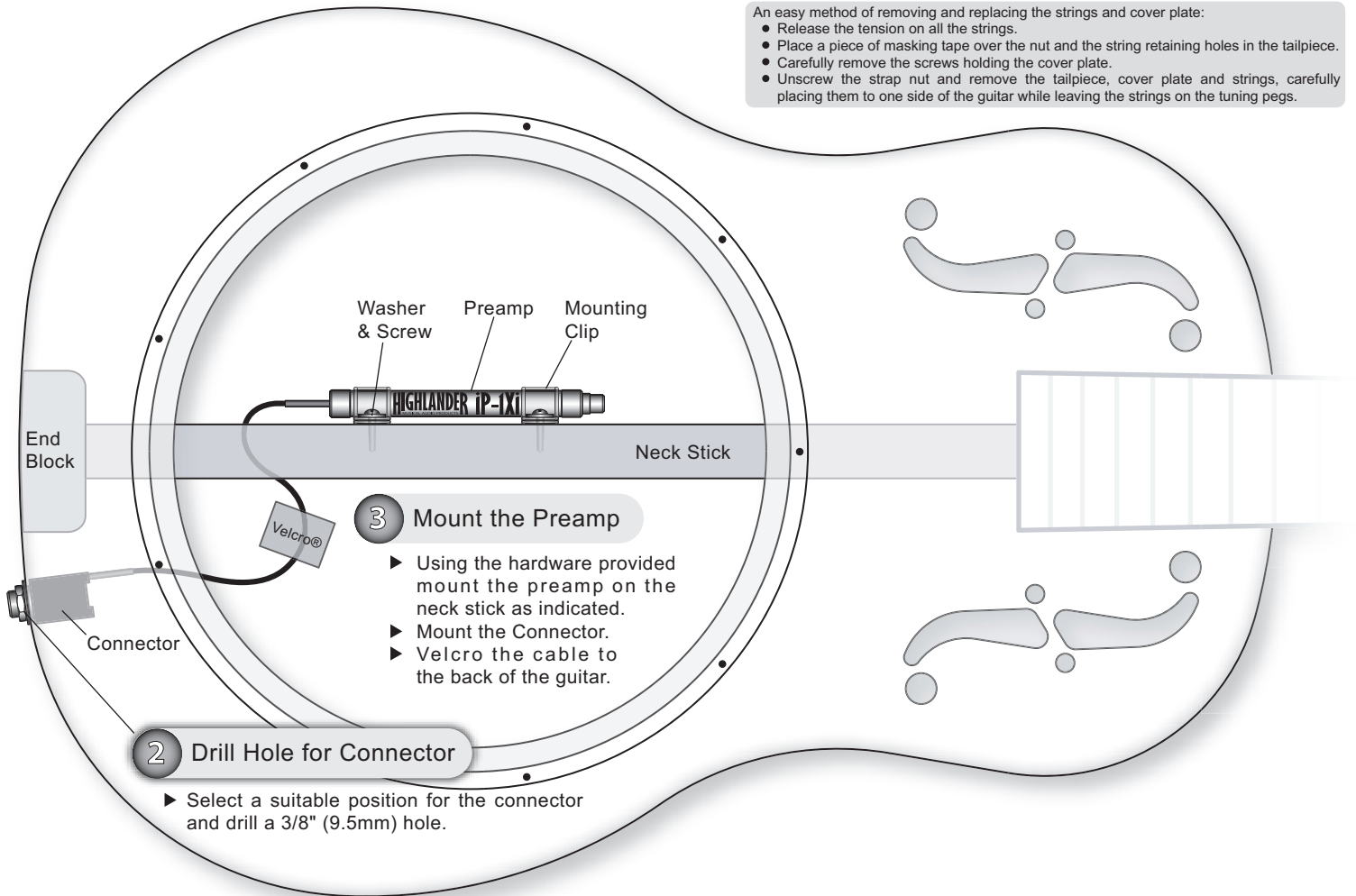
Please handle the cone with care. A vintage cone could be replaced by a new cone if there are any reservations about piercing the dome.

1 Preparation

- ▶ Listen to the instrument, if there are no apparent problems note the height of the strings. In the event of a string buzz or other problem, deal with this first then record the new string height and continue with the installation.
- ▶ Remove the strings and cover plate. Take out the resonator cone and biscuit bridge and carefully place them out of harms way.

An easy method of removing and replacing the strings and cover plate:

- Release the tension on all the strings.
- Place a piece of masking tape over the nut and the string retaining holes in the tailpiece.
- Carefully remove the screws holding the cover plate.
- Unscrew the strap nut and remove the tailpiece, cover plate and strings, carefully placing them to one side of the guitar while leaving the strings on the tuning pegs.



3 Mount the Preamp

- ▶ Using the hardware provided mount the preamp on the neck stick as indicated.
- ▶ Mount the Connector.
- ▶ Velcro the cable to the back of the guitar.

2 Drill Hole for Connector

- ▶ Select a suitable position for the connector and drill a 3/8" (9.5mm) hole.

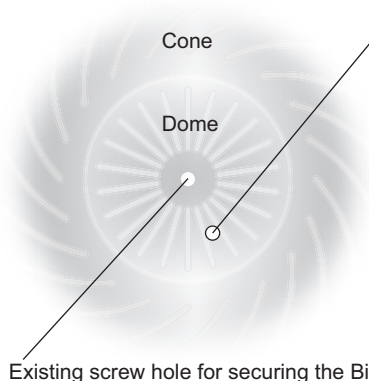
Replacing the Biscuit Bridge

The hole in the dome does not alter the tone or compromise the structural integrity of the cone. This has been corroborated by experts at the National Reso-phonic Guitar Company.

4 Preparing the New Saddle

- ▶ Detach the original biscuit from the cone by removing the screw that holds them together.
- ▶ Shape the new saddle to match the height, contour and string spacing of the original saddle (to preserve the original action and feel of the instrument). Err on the side of caution, the action can be adjusted later.

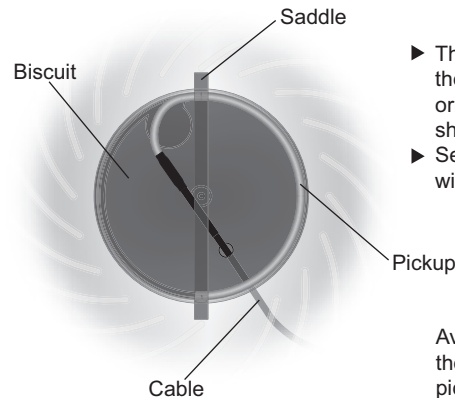
5 Piercing the Cone



- ▶ Carefully pierce the 'dome' in the top of the cone as indicated. Support the back of the 'dome' while piercing using a piece of cork or rubber. Do not press down on the cone itself.
- ▶ Open the hole to 3/32" (2.5mm) the black cable coming from the biscuit should pass easily through the hole.

6 Installing the New Biscuit

Note: The biscuit is shown here as transparent to reveal the orientation of the pickup.



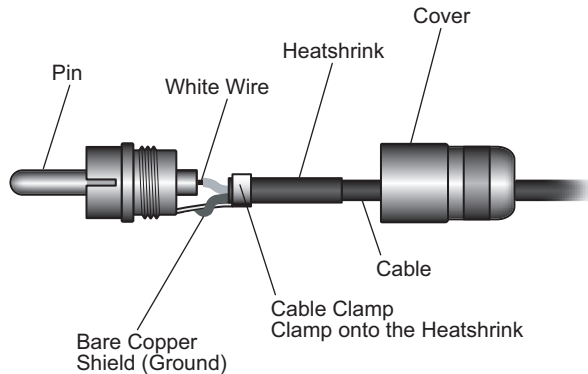
- ▶ Thread the cable through the hole in the cone and orient the biscuit as shown.
- ▶ Secure the biscuit in place with the screw provided.

Avoid getting adhesive on the pickup; it will cause the pickup to malfunction and void the warranty.

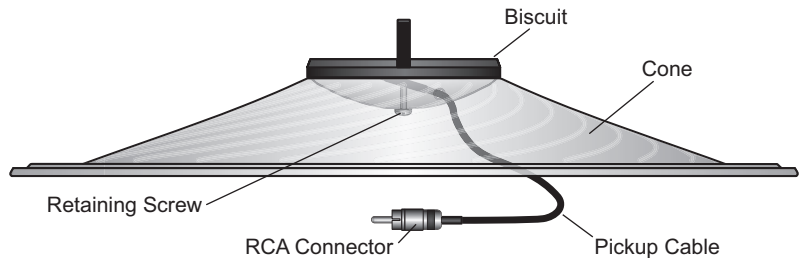
Solder the Pickup Cable to the RCA Connector

Use small soldering iron and a multicore solder designed for electronic assembly. Do not use solder with an acid based flux.

An RCA Connector is used to connect the pickup to the preamp. This connector was chosen for its 100% shielding, large contact area (providing a very low noise connection) and long term resistance to corrosion.

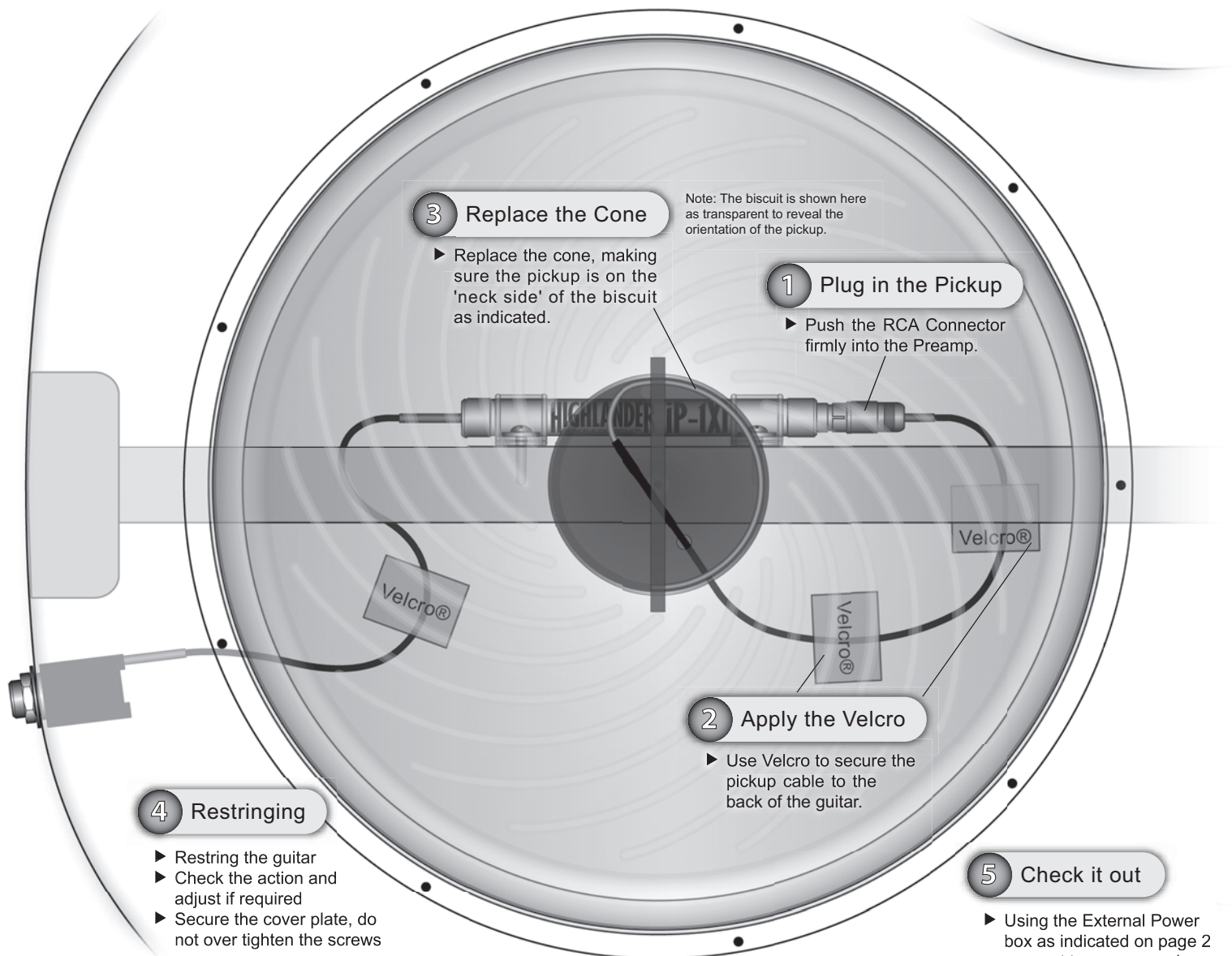


- ▶ Slide the Cover over the Cable.
- ▶ Tin the INSIDE, back of the Pin (deposit a small amount of solder).
- ▶ Solder the White Wire INTO the back of the Pin.
- ▶ Bend the Bare Copper Shield around the Cable Clamp as indicated.
- ▶ Solder the Shield (do not overheat, it will cause a short in the cable).
- ▶ Remove any excess Shield with a sharp pair of wire cutters.
- ▶ Lightly, crimp the Cable Clamp onto the Heatshrink.
- ▶ Screw the Cover in place and tighten.



Putting it all together

During this final phase of installation it is more important than ever handle the cone with care. Try to avoid pulling on the pickup cable while plugging in the RCA and applying the Velcro.



Excess cable is held in place on the back of the guitar with Velcro®. Cables should be loosely coiled. The Velcro® ensures the cable will not be pinched. AVOID SHARP BENDS, KINKS or TWISTS IN THE CABLES.