

### Installation Instructions - NR-2 Std and NR-2 Pro Pickups For National Style Biscuit Bridge Instruments

#### Before You Start, A Word About Amplification:

NR-2 passive pickups have been designed to operate properly and sound good without the use of a preamp when plugged into any normal electric guitar amp. As a non-preamped piezo pickup the NR-2 has an impedance of approximately 2 mega ohms which most electric guitar amps will handle. As with any passive pickup, the sound can be further enhanced and EQ'd with an outboard preamp.

PA systems: If you require the added ability to be able to plug directly into a P.A. or mixer then a preamp designed for pickups will be necessary. The preamps that are built into PA systems are microphone preamps and generally will not work properly with a passive pickup.

Acoustic Amps: If you are plugging into an acoustic amp a preamp may be required depending upon the design of that acoustic amp. Acoustic amps may or may not require the use of a preamp with a passive pickup and that will depend upon whether or not there is a special built in preamp section within that amp that specifically allows for the choice of plugging in either a passive (non-preamped) or active (preamped) pickup. This choice is quite often a second channel or a pushbutton on the amp's control panel. Many acoustic amps show a selection that may indicate the choice of 'high impedance' and 'low impedance'. Low impedance in these instances usually indicates that in this range the amp will handle an impedance of 1000 ohms or less - which will allow active pickups with preamps to be used.

High impedance in these instances may indicate an allowable impedance in the 2 or 3 mega ohm range - which will allow passive pickups to be used. Or it may indicate a maximum input impedance allowed of 20,000 ohms or less - which will handle magnetic electric guitar pickups but not passive pickups. You should carefully read the technical specifications of your acoustic amp in order to see what it will do.

Important Notes: 1) It is critical that the fit of the saddle into the biscuit of the instrument be rock solid. If there is any movement or play in the saddle, the pickup may not work properly. Should you need to replace the existing saddle to achieve a proper fit into the biscuit or need to shim and/or glue the saddle in, then it should be done prior to installing this pickup system.

2) The primary location for mounting the sensor is on the face of the saddle (as shown in fig.1). Depending upon the instrument, if the output of the pickup is found to be too trebly or harsh, then the sensor may be mounted to the surface of the biscuit itself and placed so that it does not touch the saddle (fig.2).

#### **Sensor Mounting**

- 1) Remove the strings, cover plate (and the resonator cone itself if possible) from the instrument.
- 2) The NR-2 element is designed to mount to the flat surface of the biscuit saddle or to the surface of the biscuit itself using the supplied VHB tape. The saddle fit to the biscuit must be tight otherwise there can be quite noticeable variations in string to string volume. Address this as required.
- 3) Take a piece of the narrow VHB tape, cut it to the length of the sensor, remove the backing paper on one side of the tape and apply it to the non-labeled side of the sensor.
- 4) Thread the sensor element through the center opening of the cover plate.
- 5) The sensor element is not to come into contact with the biscuit itself. Place a shim or spacer approximately 1/16" to 1/8" thick on top of the biscuit. The strings should not be able to come into contact with the sensor.
- 6) The element is to be centered along the length of the saddle so it spans approximately the distance from the 5<sup>th</sup> and 1<sup>st</sup> strings. Remove the backing paper on the VHB and firmly place the sensor into place on the saddle. Remove the shim/spacer keeping the sensor from contacting the biscuit.
- 7) It is suggested that you reinstall the strings and check the pickup for output level and sound quality at this point. If necessary, reinstall the sensor onto the biscuit with a new piece of VHB tape and check the sound. Locate the pickup for best sound.
- 8) Remove the strings, and reinstall the cover plate.

#### **Jack Assembly Mounting**

- 8) You now have the option of either having the jack assembly mount directly to the surface of the instrument or have it mount to the stand off plate. The stand off plate will use the same VHB mounting method but the point of adhesion is moved more to the area under the tailpiece. If you wish, you may trim the VHB so that it matches the outline of the tailpiece which would hide any possible finish damage that later jack mounting removal might cause.
- 9) If you are going to install the jack assembly right to the surface of the instrument then make sure that the area is clean and dry. Remove the backing from the VHB on the underside of the jack assembly and firmly press the unit into place as shown.
- 10) If you are going to use the stand off plate, firmly press the jack assembly to the plate on the opposite surface of and directly above the black protective material.
- 11) Slide the plate between the tailpiece and the surface of the instrument and check for fit and clearance.
- 12) Mark the position of the plate on the surface of the instrument with a few small pieces of masking tape.
- 13) Remove the tailpiece, remove the backing from the VHB on the underside of the plate and firmly press the plate into place.
- 14) Reinstall the tailpiece and strings as required.
- 15) There is some room within the jack assembly to store a bit of excess wire, you may take the cover off of the top of the assembly and push wire inside as possible.
- 16) A quantity of black self adhesive material is supplied with the pickup. This material may be used to stick the pickup lead wire down to the cover plate so that it doesn't rattle. Cut and trim several pieces as required and install.

Notes: Should you need to remove the pickup system at a later time in order to access the cone or the interior of the instrument, the jack assembly will have to be freed from its' mounting. A thin blade should be worked in between the VHB tape and the underside of the jack assembly in order to do this. Slight rotational force should be exerted on the jack box while the blade is being worked.



fig 1



Fig 2



fig 3

