Schatten Design
Better By Sound

Handmade Pickups For Acoustic Instruments

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Installation Instructions - NR-2 Player Pickup 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.

fig 1


Fig 2

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. 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.
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
3) Remove the strings, cover plate and the resonator cone from the instrument.


fig 3

For Wood Bodied Reso's

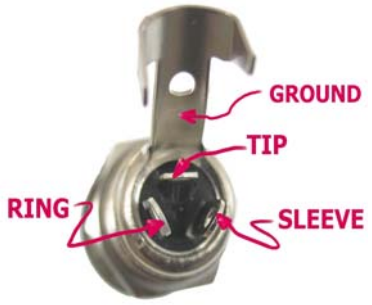
1) As shown in fig 3, drill a 3/32" diameter hole through the wall of the well approximately ½" below the top surface of the instrument.
2) Choose a spot where you want to locate the output jack.
3) If you are installing the jack through the end block of the instrument, a ½" diameter hole is to be drilled to allow the jack body to pass through the block.
4) If you are installing the jack through the side of the instrument, a 3/8" diameter hole is to be drilled to allow only the smaller diameter end of the jack to pass through the body.

For Metal Bodied Reso's

1) Drill a 1/4" diameter hole (approximately ½" down from the top of the instrument) through the wall of the well. Remove any burrs from the hole and insert grommet into the hole.
2) Choose a spot on the side of the instrument where you want to locate the output jack.
3) Drill a 3/8" diameter hole to allow only the smaller diameter end of the jack to pass through the body.

Wiring

1) Feed the lead wire from the pickup sensor through the hole/grommet in the well wall.
2) The lead wire from the sensor is a shielded cable consisting of an outer wrap (ground) and an inner insulated wire (+).
3) As per fig 4, the (+) inner wire is soldered to the jack lug marked 'TIP' and the outer wrap ground (-) is soldered to the jack part marked 'GROUND'.
4) Insert the jack into the hole drilled in the body and tighten accordingly.



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Sensor Mounting

1) The sensor will mount with the supplied 3M VHB tape. 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.
2) It is recommended that you first install the sensor on the saddle and then on the biscuit if necessary.
3) Mounting to the saddle: 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.
4) The element is to be centered along the length of the saddle so it spans approximately the distance from the 5th and 1st 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.
5) It is suggested that you reinstall the cone and strings and check the pickup for output level and sound quality at this point.
6) If necessary, reinstall the sensor onto the biscuit with a new piece of VHB tape. Place the sensor so that it does not touch the saddle (fig 2.). Check the sound. Locate the pickup for best sound.
7) Any excess wire between the sensor and the well wall should be pushed through the hole in the well wall.
8) Remove the strings, and reinstall the cover plate and strings.