

U S E R ' S G U I D E



Rare EarthTM

ACTIVE MAGNETIC SOUNDHOLE PICKUP

FISHMAN[®]

Thank you for purchasing the Fishman Rare Earth™!

We are pleased to offer you the finest magnetic soundhole pickup available. If you have any questions or comments, you may reach our Customer Service Department at 978-988-9665 or E-mail us at tech@fishman.com.

The Rare Earth™ is a compact active magnetic soundhole pickup, designed for most steel-string, flat top guitars. Its low profile design ensures that both your picking style and the guitar's acoustic tone will not be affected.

The natural sound of your acoustic guitar is reproduced by the Rare Earth™ thanks to state-of-the-art magnetic field/coil structure and advanced active electronics. A unique arrangement of neodymium magnets is responsible for the Rare Earth™'s excellent string balance and light weight. Neodymium (a rare earth element, hence the name) has 10 times the magnetic strength of ceramic magnets, which makes the Rare Earth™ smaller and lighter than many traditional soundhole pickups. Each magnet in the Rare Earth™ is voiced for precise balance with bronze or phosphor bronze acoustic guitar strings.

Start Up

If you are like most people, you will probably want to plug in the Rare Earth™ right out of the box. Be our guest! To temporarily install the pickup, loosen the clamps with a #1 Phillips screwdriver. Position the pickup in the soundhole, parallel to and as close to the end of the fingerboard as possible. Gently re-tighten the clamps. For now, run the cable out through the soundhole.

If you plan to travel with your guitar or store it in its case for long periods with the pickup in place, we strongly recommend that you have the endpin jack and pickup professionally fit to the guitar according to the included Installation Guide.

There are a few good reasons to do so:

1. If you store the guitar with the pickup cable outside the instrument and the cable comes to rest on the guitar, the rubber jacket may interact with the finish and leave a permanent mark.

2. A loose endpin jack stored inside the instrument may damage the guitar when travelling.
3. A pickup that has not been securely mounted in the soundhole (as per our Permanent Installation Guide) may become dislodged and could damage the instrument during transit.

Amplification

You can plug the Rare Earth™ into most musical instrument amplifiers, but for the most natural sound reproduction, we strongly recommended a full range system, such as a high-quality acoustic instrument amp, keyboard amp, or PA system.

Features

Mounting Clamps

The pickup mounts quickly and securely with these padded clamps. The jaws of the clamps are lined with natural cork, which will not interact with the guitar's finish. A #1 Phillips screwdriver works best to tighten the mounting clamps. Be careful not to over tighten the clamps! Doing so may, in some cases, perforate the finish under the clamps (see Installation Guide).

Endpin Jack

The Rare Earth™ runs on two little watch batteries that switch on when you plug in the endpin jack. To conserve battery life, unplug the endpin jack when not in use.

It is a good idea to plug the pickup in before turning on your amp to protect your speakers (and your ears) from "turn-on-transient-thump".

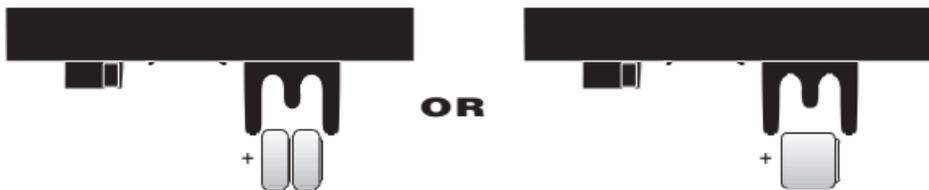
You may choose to keep the endpin jack outside the instrument for temporary use or permanently mount it in the endblock of the guitar (see Installation Guide).

Battery Power

The batteries for the Rare Earth™ are conveniently mounted to the underside of the pickup. You can expect over 300 hours of battery life (150 hours for the Rare Earth™ Blend) between battery changes. When you begin to hear distortion through the pickup, it's time to change the batteries.

Battery Replacement

Remove the pickup from the instrument and carefully pry out the batteries with a small flat-head jeweler's screwdriver. When you replace the batteries, be sure to observe the correct polarity. Note that plus (+) and minus (-) polarity marks are molded into the shell of the battery clip.



Two 1.5 Volt silver oxide EverReady #357

One 3 Volt Duracell DL1/3N

Pickup

The Rare Earth™ has been carefully voiced to reproduce a balanced string to string response. If your guitar has very high action on the bass side or very low action on the treble side, you may hear slight imbalance between the outside strings. To attain a balanced response in these cases, raise the bass side of the pickup with a shim.

The Rare Earth™ is voiced specifically for bronze or phosphor bronze strings. If nickel electric guitar strings are used with the Rare Earth™, the lower wound strings will overpower the higher plain strings.

Preamp

The preamp is housed within the pickup. A low noise circuit design preserves the pickup's performance in any audio environment. The preamp allows you to plug the Rare Earth™ into a full range instrument amplifier, an unbalanced input of a PA system, a recording console or direct box, without the signal loss or degradation typically found with passive soundhole pickups. You may run cables up to 80' (25m) in length without any audible loss of fidelity.

Pickup Flavors

SINGLE COIL

This model is for those who prefer the brightness and character associated with a single coil pickup. Note that this version, like all single coil pickups, is susceptible to 50-60 HZ hum. To minimize noise, keep the Rare Earth™ Single Coil away from fluorescent lights, dimmer packs, computer monitors and transformers.

HUMBUCKING

A "stacked coil" style, for musicians who demand quieter reproduction than a single coil pickup can offer. A brilliance switch, located on the side of the pickup, is easily accessible through the soundhole. In the "up" position, this switch provides a subtle, rising treble boost, from 2 kHz to 20 kHz. This position is especially effective for adding a bit of extra sparkle to finger style playing. In the "down" position, the switch provides a flat response, which produces a mellower sound, well suited for strumming and flatpicking.

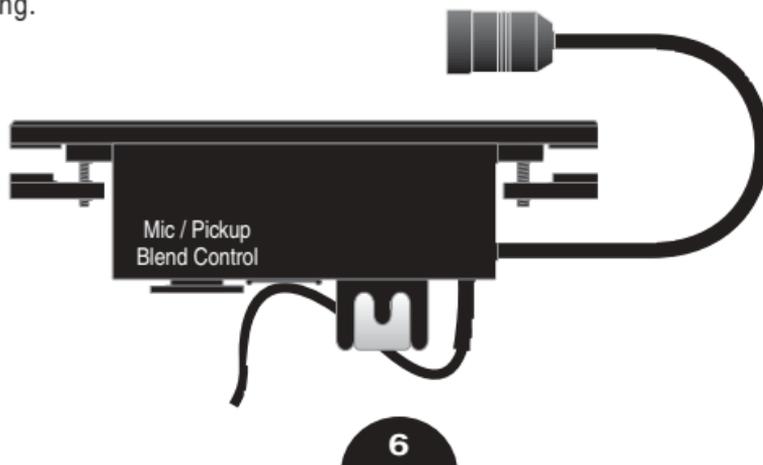
Pickup Flavors: Continued



BLEND

The Rare Earth™ Blend marries our active humbucking pickup to a high quality, internally mounted miniature microphone. The system combines the percussive attack and controlled sustain of the magnetic pickup with the resonant, ambient qualities captured by an internal microphone. These sonic components couple seamlessly to provide a cohesive, three-dimensional amplified acoustic guitar tone.

The microphone is a miniature electret type, with a hypercardioid response pattern for high volume, low feedback performance. It easily adjusts into position with a flexible gooseneck that is permanently attached to the pickup housing.



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Balance between the microphone and magnetic signals is controlled by a small rotary blend control, located underneath the pickup. Move the wheel towards the treble strings for more pickup, and towards the bass strings for more microphone.

CUSTOM BLEND

For the flagship of the line, we start with the same feature set as the Rare Earth™ Blend (see above), then add convenient internal / external microphone mounts and deluxe visual appointments. A precision milled ebony top and machined miniature brass coaxial connectors lend an understated elegance to the Rare Earth™ Custom Blend.

To place the microphone outside the instrument, simply loosen the threaded collar at the end of the gooseneck and re-fasten it to the connector on top of the pickup. To protect your guitar's finish, we suggest that you remove an externally mounted microphone before storing the instrument in its case.

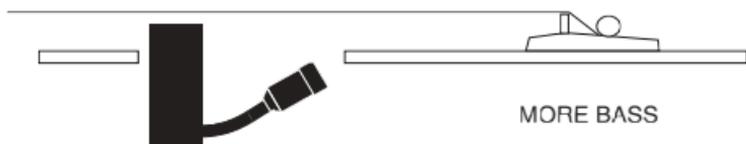
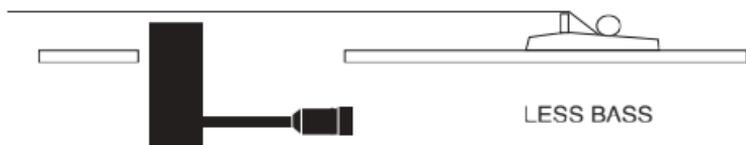
Microphone Placement

To combine microphone and pickup signals, it is best to first find an optimum "sweet spot" for the microphone. The best spot for the microphone is subjective and depends on your personal preference. We recommend that you take the time to experiment with microphone placement until you find a position you like.

Here are some suggestions to get you started:

With the pickup plugged into an amplifier, begin by moving the rotary blend control so that only the microphone signal is present. Start with the microphone capsule parallel to the soundboard. Point it toward the edge of the soundhole to emphasize more bass. Once you find a position you like, blend in the pickup to taste.

Microphone Placement continued



Rare Earth™ Blend

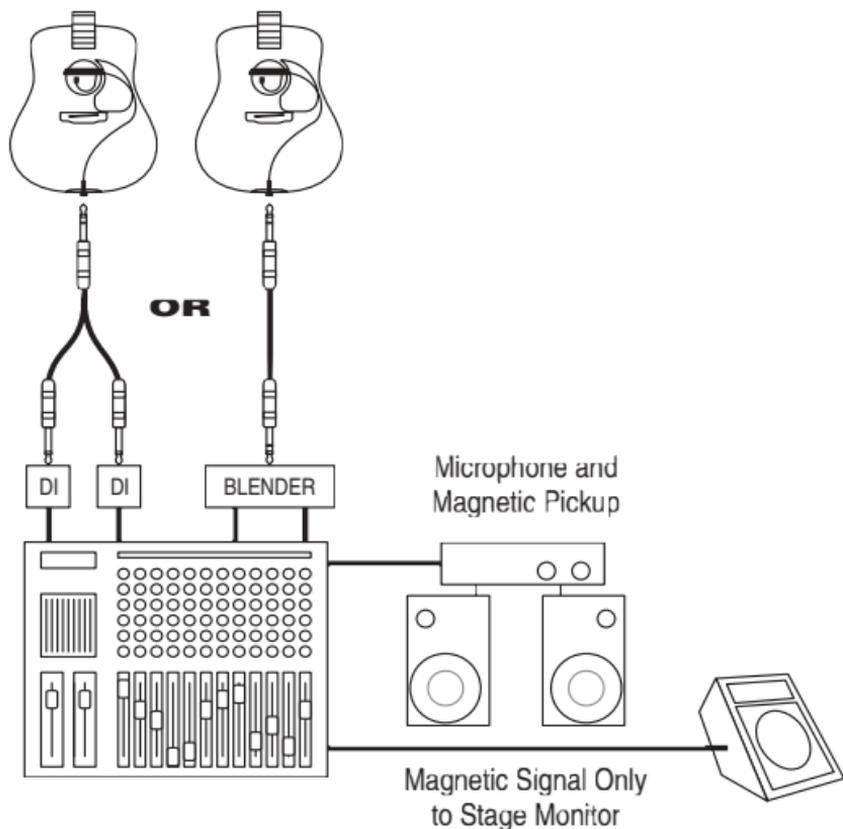
Rare Earth™ Custom Blend - External Mic Mount



ACTIVE MAGNETIC SOUNDHOLE PICKUP

Stereo Blending

The Rare Earth™ Blend and Custom Blend models are prewired at the factory so that both pickup and microphone signals will combine to a single mono output. A simple modification can be made to split the pickup and microphone signals to separate signal paths, for true stereo blending. This type of signal routing is especially useful for high volume stage levels, where separate destinations for pickup and microphone may be necessary to prevent acoustic feedback. (see the included Permanent Installation Guide: Wiring Options).



Important Things to Know about Stereo Blending

- Set the thumb-wheel, located under the pickup, fully toward the treble side (and leave it there), to keep the mic out of the pickup channel. In stereo mode, the thumb-wheel will not affect the level of the microphone signal that appears at the Ring output.
- To use the Rare Earth™ Blend in stereo mode, you must connect a Stereo patch cord (p/n ACC-BLE-CBL) or Stereo "Y" cable (p/n ACC-PBR-20C) to the output jack to carry the separate pickup and microphone signals.
- If you plug a standard mono cable into a stereo wired Rare Earth™ Blend, the magnetic pickup will function normally, but the microphone performance will be significantly degraded (see below).
- A Stereo wired Rare Earth™ Blend can be externally retrofitted for mono blending with a special adapter or patch cord, wired with an open ring terminal (see the included Permanent Installation Guide: Wiring Options).

Specifications

SINGLE COIL

Maximum Output Level	0 dBu RMS
Output Impedance	200 Ohms
Output Noise Level	<-93dBu RMS, A weighted
Recommended Minimum Load Impedance	2K ohm
Supply Voltage	3.0-3.6V
Current Consumption	.4 mA
Battery Life	>300 hours

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Specifications continued

HUMBUCKER

Maximum Output Level	-6 dBu RMS
Output Impedance	200 Ohms
Output Noise Level	<-98dBu RMS, A weighted
Recommended Minimum Load Impedance	2K ohm
Brilliance Switch (humbucker)	+3 dB @ 20kHz
Supply Voltage	3.0-3.6V
Current Consumption	.4 mA
Battery Life	>300 hours

RARE EARTH™ BLEND / CUSTOM BLEND

Maximum Output Level	-6 dBu RMS
Output Noise Level	<-98dBu RMS, A weighted

Blend / Custom Blend MICROPHONE

Maximum Output Level	-6 dBu RMS
Recommended Minimum Load Impedance	5K ohm
Output Impedance	<1.2k ohm
Supply Voltage	3.0-3.6V
Current Consumption	.8 mA
Battery Life	>150 hours

Battery Requirements

Two 1.5 Volt silver oxide:	Eveready #357 ANSI-WS15 1EC-SR44
Will also accept one 3-Volt lithium battery:	Duracell DL1/3N Eveready 2L76 Varta CR 1/3N 6132 Union Carbide 2L76 Sanyo CR 1/3N
Others:	K58L

All specifications subject to change without notice.

Limited Warranty

The FISHMAN Rare Earth™ Active Magnetic Soundhole Pickup is warranted to function for a period of One (1) Year from the date of purchase. If the unit fails to function properly within the warranty period, free repair and the option of replacement or refund in the event that FISHMAN is unable to make repair are FISHMAN's only obligations. This warranty does not cover any consequential damages or damage to the unit due to misuse, accident, or neglect. FISHMAN retains the right to make such determination on the basis of factory inspection. Products returned to FISHMAN for repair or replacement must be shipped in accordance with the Return Policy, as follows. This warranty remains valid only if repairs are performed by FISHMAN. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

Return Policy

To return products to FISHMAN TRANSDUCERS, you must follow these steps...

1. Call FISHMAN TRANSDUCERS at 978-988-9199 for a Return Authorization Number ("RAN").
2. Enclose a copy of the original Bill of Sale as evidence of the date of purchase, with the product in its original packaging and a protective carton or mailer.
3. FISHMAN TRANSDUCERS' technicians will determine whether the item is covered by warranty or if it instead has been damaged by improper customer installation or other causes not related to defects in material or workmanship.
4. Warranty repairs or replacements will be sent automatically free of charge.
5. If FISHMAN TRANSDUCERS determines the item is not covered by warranty, we will notify you of the repair or replacement cost and wait for your authorization to proceed.



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