PREFIX™

PROBlend

ACOUSTIC GUITAR SYSTEM

WARNING!

WE STRONGLY RECOMMEND THAT YOU FAMILIARIZE YOURSELF WITH THE PREAMP CONTROLS BEFORE YOU ATTEMPT TO PERFORM WITH THE ONBOARD BLENDER. FAILURE TO DO SO COULD RESULT IN WAVES OF EAR-SPLITTING FEEDBACK AT HIGH LEVELS. (see Quick Start on page 3.)

FISHMAN®

Congratulations! With your new Fishman Prefix™ProBlend we are pleased to offer a total onboard amplification system in a very small and unobtrusive package. This is a simple yet sophisticated system, so please take a few minutes to familiarize yourself with the control layout and go over the Quick Start instructions on the next page. If you have any questions please contact our Customer Service Department at 978.988.9665 or tech@fishman.com

The Prefix™ProBlend is an acoustic guitar system that combines the sounds from a Fishman Acoustic Matrix™ pickup and a miniature electret condenser microphone. The microphone, shock-mounted on the underside of the preamp chassis, captures the elusive natural ambience and resonance of the guitar's sound chamber. The Acoustic Matrix™ pickup delivers a clear, articulate sound with emphasis on string definition and attack. When combined, the two signals produce a powerful and cohesive acoustic guitar tone that is much greater than the sound of either microphone or pickup alone.

Downsized to fit even the thinnest of guitars, the second generation Prefix™ProBlend preamp occupies 1/3 less surface area on the side of a guitar than our standard Prefix™ series. The preamp module incorporates a space saving "flip-top" battery compartment for easy access.

Levels are set by the master VOLUME and BLEND controls. BASS & TREBLE controls, a semi-parametric CONTOUR control, a NOTCH filter and PHASE switch are included for precise tone shaping and feedback control. You may plug the PREFIX™ PRO BLEND into any instrument-level audio input.

THE PICKUP

The included Acoustic Matrix™ pickup is made with a proprietary co-polymer sensing material, available exclusively from Fishman. Unlike so called "piezo-film" pickups, our unique co-polymer formula is not available from any other manufacturer. Sound-wise, the Acoustic Matrix™ exhibits a sensitivity and dynamic range that far surpasses all other known pickups.

The Acoustic Matrix™ transducer is a fully EMI shielded, multi-layer sandwich of co-polymer strips that run the length of the pickup. This design allows the pickup to sense the motion of the entire saddle length, providing superb string to string balance, as well as sensitivity to both the strings and the soundboard of the instrument.

THE MICROPHONE

The microphone, in conjunction with PHASE, NOTCH and CONTOUR controls (see page 6), will provide very high level sound reproduction before feedback. Conveniently shock-mounted to the back of the preamp case, the microphone is acoustically isolated inside the instrument, providing freedom of movement as well as minimal leakage from other instruments on stage.

QUICK START

To combine microphone and pickup signals, first preset the microphone EQ to control feedback, then mix in the pickup. The Prefix™ProBlend has three ways to control feedback; a Notch Filter, a Phase Switch, and a Semi-parametric Contour Control.

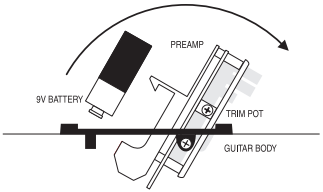
Follow these steps to achieve a strong, feedback-free sound.

1. Before you plug in, set all controls as follows:
   - NOTCH and VOLUME fully counter-clockwise
   - All sliders at their center positions
   - BLEND slider at MIC position
2. Plug in the instrument first (with 9V alkaline battery installed), then plug in to your amplifier, with the tone controls on the amp set as flat as possible.
3. Slowly increase the VOLUME until the guitar and speaker are approximately the same level. Play the open E string and flip the PHASE switch. Leave the switch in the position that sounds the deepest and clearest. *(for more on phase, see page 8)*
4. Slowly increase the volume until the instrument starts to rumble with low frequency feedback
5. Use the NOTCH FILTER to scoop out the lowest range of feedback, which usually starts at the open low E string and continues up to about the forth fret G# on the same string (often near two 'o clock).
6. Use the PHASE SWITCH to control the upper range of low frequency feedback, which usually starts at the fifth fret A on the low E string and continues up to about the twelfth fret E on the same string. Flip the PHASE SWITCH back and forth until you find the position that subdues this range of feedback.
7. Slowly increase the VOLUME again, until the microphone just starts to squeal.
8. Lower the CONTOUR Level all the way down. Slowly adjust the Contour FREQUENCY rotary control until the squealing feedback is eliminated. Raise the CONTOUR Level slider (if possible) to just below the threshold of feedback.
9. Gradually mix in the pickup signal by adjusting the BLEND slider. The pickup signal will add significant attack and definition to your sound.
10. Adjust the BASS and TREBLE controls as desired. Please note that these controls will affect pickup signal only.
11. Double check the PHASE switch position until you find the clearest, feedback free response.
12. Play your guitar as loud as you want..

FUNCTIONS

Battery Compartment

Pull the small tab at the top of the Problend™ toward you. The body of the preamp will swing out, revealing the BATTERY COMPARTMENT. Install a fresh 9V alkaline battery.



Microphone Trim Control

A small circular potentiometer is located on the side of the preamp that faces the back of the guitar. This control can be accessed by opening the battery compartment. Use this control to fine tune the microphone volume, in relation to the pickup volume. To adjust the microphone trim control, set the BLEND slider to the center position and, with a slotted jewelers screwdriver, turn the potentiometer until both the microphone and pickup levels are balanced to your taste.

POWER

The Prefix™ProBlend has no ON/OFF switch. To turn on the power, plug an instrument cable into the endpin jack. To conserve the battery, remove the instrument cable from the endpin jack when the unit is not being used. It is a good idea turn down your amp or mixer's input before you plug into this input. Doing so will protect your speakers (and your ears) from loud pops and thumps.

Clip / Battery Low LED

This light has three distinct functions:

1. Power Up Indicator

The Clip/Batt Low LED will flash momentarily when you first turn on the preamp. Some people ask us why this light doesn't stay on, like a conventional pilot light. We feel a steadily lit LED devours too many precious hours of battery life. We prefer instead to conserve the battery with a quick flash of the LED to indicate that the preamp is powered up.

2. Clip Indicator

If the LED flashes while you are playing, you are driving the preamp into distortion. Lower the Treble and/or Bass slider until the flashing stops. This indicator may also flash as you approach the end of the battery's useful life.

3. Low Battery Warning

When the Clip/Low Batt LED lights steadily, it is time to change the battery.

Volume

Affects both microphone and pickup levels. Set this as high as possible (without distorting your amp or mixer) for the cleanest signal.

Notch and Phase

These controls work hand in hand to eliminate low frequency feedback. When you set them properly, you can play your instrument as loud as you like, without feedback.
For best results, tune the Notch filter first.

Notch

Use the Notch to scoop out the lowest range of feedback, which usually starts at the open low E string and continues up to about the forth fret G# on the same string. This "cavity resonance" feedback can usually be eliminated by setting the Notch control between 12:00 and 2:00 on the dial.
You may need to initially coax out low frequency feedback by raising your volume, flipping the phase switch and moving closer to your speakers. Note that in the fully counter-clockwise position, the Notch is effectively off.

Phase Switch

Use the phase switch to control the upper range of low frequency feedback, sometimes call "top resonance". This feedback usually starts at the fifth fret A on the low E string and continues up to about the twelfth fret E on the same string. Flip the Phase switch back and forth until you find the position that subdues this range of feedback.
Note: If, after setting the phase switch, you move your position a few feet, be prepared to flip the switch again to keep feedback at bay.

Bass

A boost/cut shelving tone control. This control affects the pickup signal only. In the center position the bass control does not affect the circuit.

Contour EQ

With this you can boost or cut a wide range of frequencies from gutsy low midrange (250 Hz) to squeaky-clean highs (10 kHz). Contour affects both the pickup and microphone signals. The CONTOUR level slider controls the amount of boost or cut applied to the selected Contour FREQUENCY. The center detent yields a flat response. The Contour FREQUENCY slider determines the frequency band that is boosted or cut by the CONTOUR Level control. The frequency is variable between 250 Hz and 10 kHz.

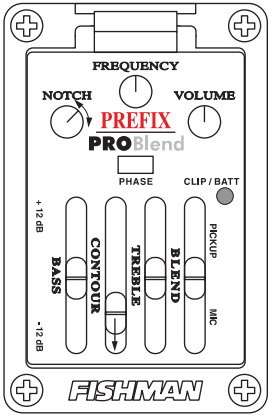
Treble

This is a boost/cut shelving tone control. Treble affects the pickup signal only. In the center position the treble control does not affect the circuit.

Blend

balances the microphone and pickup signals. This control can be used as a feedback "escape hatch" if you ever need to instantly shut off the microphone during a performance.

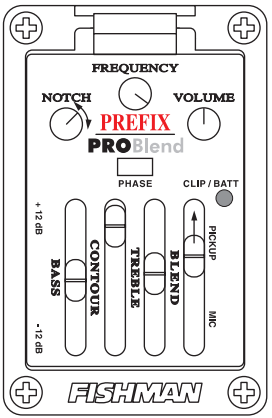
SUGGESTED EQ SETTINGS

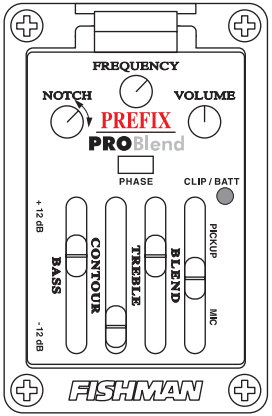


ANTI-FEEDBACK
Refer to page 3.

BRILLIANCE

If you play through an electric guitar amplifier, or use dead strings on the instrument, you can brighten up your sound by setting the Contour FREQUENCY slider at 4:00 and raising the contour LEVEL to taste. If you plan to play at high stage volume levels, dial in more pickup than microphone with the Blend control to avoid feedback.



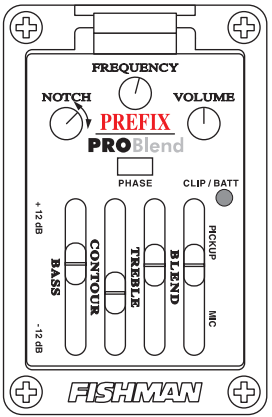


MID CUT

You can scoop out harsh midrange by setting the FREQUENCY slider AROUND 12:00 with the CONTOUR Level cut to taste below the center detent. Often the desired mid-cut will fall into the same frequency range as potential microphone feedback. You can also cut midrange (pickup only) by boosting the BASS and TREBLE sliders to realize an "implied" mid-cut at 800 Hz.

FINGERSTYLE

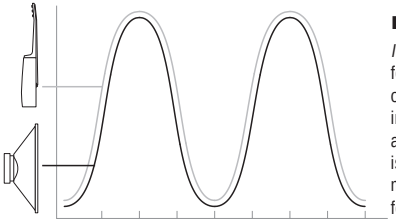
This setting will add fullness to the bass and definition to the treble.



WHAT IS PHASE?

Phase is the relationship between two signals or sound waves originating from the same instrument.

For our purposes, phase relationships are expressed as being either "in phase" or "out of phase". *In phase* tends to enhance, while *out of phase* tends to suppress the natural characteristics and acoustic tendencies of an instrument. A simple way to determine the quality of phase (in or out) of two sounds is to compare phase switch settings at low volumes.



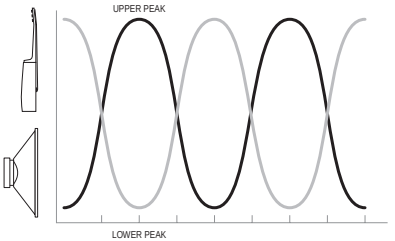
IN PHASE

In phase is when the wave forms of two sounds originating from the same instrument are similarly aligned in time. Similar phase is like looking at yourself in a mirror: your reflection directly follows your movement.

OUT OF PHASE

Out of phase is when the wave forms of two sounds originating from the same instrument are aligned such that the upper peak of one wave occurs at the same moment in time as the lower peak of the other. *Out of phase* is like looking at yourself in a live video monitor; the image you see is similar, but the perspective is shifted.

When you move to the right, the image appears to move to your left.



WHY DO I NEED A PHASE SWITCH ?

The phase switch is useful for two reasons:

1. Due to the interactive and changing nature of phase, acoustic amplification depends on maintaining optimum phase relationships between amplified instruments, sound systems and venues.
2. Since an industry standard for polarity has not been established for all sound equipment, the phase switch can compensate for any unintentional differences that might occur between instrument and sound system.

APPLICATIONS

In any situation where the mic'ed instrument faces a loudspeaker, there will be an interactive phase relationship between the two. This usually occurs with stage amps, side fill and floor monitors at close distances.

• LOW VOLUME AMPLIFICATION

At low volumes, when a mic'ed instrument and speaker are at similar levels and are *in phase,* the sound is full and solid, with the lower frequencies emphasized.

When a mic'ed instrument and speaker are *out of phase* at low levels, the bass frequencies cancel out to some extent. The resulting sound is somewhat unnatural and unbalanced compared to *in phase.*

• HIGH VOLUME LEVELS

At high volume levels, when a mic'ed instrument and speaker are *in phase,* the sound pressure from the speaker will excite the instrument's sound chamber, creating a feedback loop at the instrument's lowest octave. This "cavity resonance" feedback can be dealt with by putting the mic'ed instrument and speaker out of phase or by adding equalization.

A. USING THE PHASE SWITCH TO REDUCE FEEDBACK.

Inverting the PHASE switch will put the mic'ed instrument and speaker *out of phase* with each other, cancelling the low frequency feedback.

If you move from your position on stage more than a few feet, you may have to invert the PHASE switch again to maintain an *out of phase* relationship between the mic'ed instrument and speaker.

Continued ...

Continued from Page 9

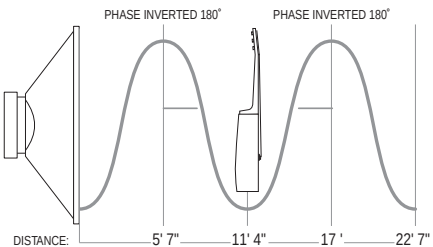
Here's why:

A typical guitar has a cavity resonance of about 100 Hz. This is the frequency that generally feeds back when a mic'ed guitar and speaker are *in phase.*

100 Hz has a wavelength of about 11 feet.

Phase inverts 180° for every 1/2 a frequency's wavelength. In this case, 1/2 the wavelength is about 5 1/2 feet.

If you set your PHASE switch to eliminate cavity resonance *(out of phase)* and then move 5 1/2 feet towards or away from the speaker, you will effectively put the mic'ed guitar/speaker relationship at 100 Hz back *in phase;* in the line of fire for low frequency feedback.



The PHASE switch on the ONBOARD BLENDER in effect electronically "moves" your instrument's position relative to the speaker by inverting the phase 180° every time you flip it.

B. USING THE NOTCH FILTER TO REDUCE FEEDBACK

Notching out instrument cavity resonance will eliminate the low frequency feedback problem completely. The advantages to using notching equalization are:

- The physical distance from the speaker will no longer be a factor for potential low frequency feedback.
- The mic'ed instrument/speaker can remain *in phase,* maintaining a more natural and balanced response at lower volume levels.

SPECIFICATIONS

Nominal Input Level:	-20 dBV
Input Overload:	(20 Hz - 20 kHz) -2 dBV
Input Impedance:	20 M Ohms
Output Impedance:	Less than 3.5 k Ohms
Nominal Output Level:	-12 dBV
THD:	Less than .04 %, -20 dBV input
Signal to Noise Ratio:	77 dB (A weighted referred to nominal -20 dBV input)
Current Drain:	Less than 4 mA
Power Supply:	9V Alkaline battery (estimated 140 hours continuous use with low battery indicator at 6.5V)
Notch Filter Range:	50Hz - 900 Hz (-15 dB)
Bass Control Range:	± 12 dB at 60 Hz ± 3 dB at 350 Hz
Treble Control Range:	± 12 dB at 10 kHz ± 3 dB at 2.4 kHz
Contour Control Range:	± 12dB (adjustable from 250 Hz to 10 kHz) Q = 0.5

PICKUP ONLY

All specifications subject to change without notice.

PREFIX™
PROBlend
ACOUSTIC GUITAR SYSTEM

LIMITED WARRANTY

INSTALLATION BY A QUALIFIED PROFESSIONAL REPAIRMAN IS STRONGLY RECOMMENDED. FISHMAN TRANSDUCERS WILL NOT BE RESPONSIBLE FOR ANY DAMAGES THAT MAY RESULT FROM IMPROPER INSTALLATION.

The FISHMAN Prefix™ProBlend Acoustic Guitar System 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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