Introduction

Congratulations and thank you for selecting an Ovation Acoustic/Electric guitar equipped with the Optima® preamp. Please read this brief manual thoroughly to insure you get "Optima-l" performance from your new Ovation.

The Ovation Optima preamp represents the cutting edge of acoustic/electric guitar circuitry. This preamp offers the player tremendous control and sonic flexibility while maintaining acoustic "transparency." In addition, this new preamp includes a built-in digital tuner - an Ovation first! In other words, whether in the recording studio or on stage, your Ovation will sound more "acoustic" and in-tune than ever.

Referring to fig. 1, you'll see the layout and nomenclature associated with the control features of the unit. To simplify the explanation of the functions and features, it's convenient to discuss the preamp and tuner functions separately.

Preamp Features & Functions

The Optima's audio circuitry is studio-quiet with super low distortion (see specifications table). Tone control is greatly enhanced with a precise four-band graphic equalizer. Moreover, you can connect your guitar to a wide range of audio amplification and recording equipment. Since the Optima features both a low impedance balanced XLR connector as well as a standard ¼" Hi-Z, unbalanced phone jack, you can even use your mixer's phantom power capability to eliminate the preamp's drain on the battery!

Connections

On the rear of the guitar, near the endpin, you'll notice two audio connectors. One is a three pin XLR (mic) type, balanced output, while the other is a conventional, ¼" phone jack.

Hi-Z Connection
If you wish to connect your guitar to a high impedance (Hi-Z) acoustic guitar amp or mixer, use a standard, shielded, ¼" guitar cable inserted into the ¼" jack on the guitar. If you have a battery installed in the guitar, you're ready to play (of course you'll read the rest of this manual first)!

Lo-Z Connection
If you have chosen to connect the guitar to a low impedance mixer or amp, there are a couple of options. If you have a conventional, Lo-Z balanced line XLR (or mic) cable, connect the guitar to the amp/mixer and insert a ¼" "activation plug[1]" into the phone jack on the guitar. This plug connects the battery's current to the preamp circuitry. If you have purchased an Ovation Lo-Z XLR Activation Cable[2], simply connect your guitar to your amp or mixer and play!

Phantom Power
Here's another unique Ovation feature: If your mixer or acoustic guitar amp has phantom power available (a voltage source that is superimposed inaudibly on the same wires as the signal), using the XLR connector on the guitar (with any balanced XLR cable) will direct this voltage to your preamp. This will dramatically extend battery life, as only the tuner will require battery current. Even without a battery, using the phantom powering option will ensure that you're getting the ultimate response and output from your preamp. Please note however, that the tuner will not function without a serviceable battery installed in the guitar.

Controls

Please refer again to fig. 1 to note control names and functions.

Gain
This "retractable" control allows you to set the output level of the preamp. If you depress and release this knob, it will "pop" out and allow easy access for adjustment. Clockwise rotation increases the output level. Depress and release the knob again and it will return to its original, recessed position. This low-profile position helps avoid unintentional contact... your level setting "stays put."

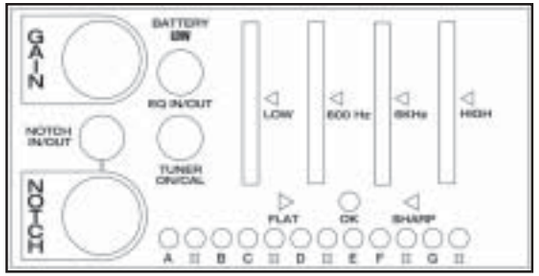

figure 1.

Battery Low
This indicator will illuminate if the voltage of the battery installed in the guitar dips below 7.7V. This means you should replace the battery as soon as possible to avoid degraded performance. If this indicator is not lit and your guitar has no output, it likely means that the battery is completely dead. Either replace the battery or use phantom power (see above). With average tuner use, expect 100-150 hours of use per battery.

EQ Controls
The EQ section allows you to accent or attenuate certain frequency bands within the guitar's audio spectrum. When all of the controls are in the center (detent) position, signals pass through the circuit unaltered. Raising an EQ knob above the center position increases the energy contained within that spectrum. Likewise, moving the control below the center position decreases the signals within that band.

The Optima preamp offers ±12dB control over four discrete ranges of the guitar's sonic spectrum.

The **Low** EQ control allows you to increase or reduce the sound in the bass region. Raise this control above the center position to add fullness or bottom to your sound. De-emphasizing this band results in a lighter, less ponderous sound quality.

The **High** EQ control performs similarly to the "Low" control except that its effect shapes the high frequency, or treble band. Increase this control for bright or airy sounds, or decrease for darker or round tonalities.

Much like the High and Low controls, the two mid-band controls add coloration to the lower and upper midrange frequencies. The **600Hz** EQ is effective controlling "nasal" tone qualities while the **6K** control can add edge or help your sound "cut" without loss of musicality.

EQ In/Out
This push-button enables you to engage or defeat the EQ section. When the switch is in the depressed position, the EQ is active. Return the switch to the "up" position and the EQ circuit is bypassed. The bypass of the EQ circuit is desirable in some studio environments where external EQ is preferable. You can also use this defeat switch to quickly check the results of your EQ adjustments relative to the original sound or even as instant access to a discrete second EQ "channel."

Notch In/Out
This switch enables the notch circuitry in the down position and disables it in the up position.

Notch
A Notch filter is a very special type of EQ. Essentially, it is an extremely narrow and deep cut of an audio frequency band. The Optima has a "tunable" notch filter which empowers you to select the specific frequency band that will be affected by the notch. With the Optima's tunable notch filter you can "surgically" remove troublesome feedback frequencies which occur due to the guitar's natural resonances.

The Notch control provides control of the center frequency of the notch effect. Like the Gain Control it is "retractable."

When your monitor or stage levels are too high, and you hear the guitar starting to feed back, engage the notch circuitry and simply tune the filter (you're actually changing the center frequency of the notch) by slowly rotating the Notch control until the feedback is eliminated. Full counterclockwise, the Notch frequency is roughly 70Hz, while full clockwise it is about 700Hz.

Tuner Features and Functions

The tuner built in to your Optima preamp is easy to use, flexible, and extremely accurate. It is an "automatic chromatic" model which, when activated, will display the name of the note you are playing as well as its tuning status (sharp or flat). There is an additional function which allows "offset" tuning - a quick way to touch up a guitar's tuning. Finally, to extend battery life, the tuner is controlled by a automatically timed turn-off circuit. The tuner function is accessible regardless of whether or not you are "plugged in." This means that even when you are playing acoustically, you'll be able to tune your instrument precisely.

Tune/Cal

To activate the tuner, simply depress the Tune/Cal push-button one time. The tuner "OK" LED will flash periodically, indicating that it is now in the "standby" mode - awaiting a note to measure. It will remain active for over one minute (usually enough time to completely tune your instrument). After this period, the timer circuit will return the tuner to its "off" state to ensure that your battery will not be unnecessarily depleted. You can activate the tune mode in this way as often as you need to complete tuning.

Once you've enabled the tuner, simply play a note on the guitar and the tuner LEDs will indicate the note name and the tuning status. If the note is too sharp, the "Sharp" indicator will illuminate. Similarly, the "Flat" and the "OK" LEDs will respond to note you play. In addition, if the note you play is sharp or flat, the LED will flash at varying rates depending upon the amount sharp or flat. As you move closer to the correct pitch, the flash rate will decrease until you have reached the correct pitch, at which time the "OK" LED will illuminate. After tuning each string this way, check each string a second time. Some strings may require "re-touching," especially if your guitar was significantly out of tune to begin with.

There is another convenient function built in to this tuner. Occasionally, you might find yourself in a situation where you must play with other instruments (like an old piano) which may be slightly out of tune. Simply tune one string of your guitar to this instrument, then activate the tuner (see above) and play that string. Wait for the tuner to "lock" on the pitch (it may indicate sharp or flat). While "locked," depress the Tune/Cal button again. The tuner will now be calibrated to "relative" pitch. This approach may also be used when performing "live" and there isn't enough time to completely retune your guitar... You started your first set in tune, but the whole guitar has gone a little flat... one string a little more than the others. You can "touch up" that offending string quickly and accurately. Activate the tuner and play a string that's "relatively" in tune. By locking the tuner calibration to this pitch the offending string can now be accurately tuned relative to the other strings! This "offset" tuning function is indicated by a double flash of the "OK" LED in the standby mode.

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[1]Activation Plug (¼")
(Part Number 9659-0)

Retail: $3.99

[2]Ovation Lo-Z Balanced XLR Activation Cable
(Part Number 9658-0)

Retail: $19.95

Above accessories are available from the Ovation Service Department (800-552-4681).

Specifications

Current Draw: 4.7mA @ 9VDC

Flat Ref. Level: -6.1dB

Freq. Response: 20Hz-20KHz (±0.5dB)

Signal to Noise:

Bypass EQ/Notch w/max Gain:	-104.3dB
EQ in w/flat setting:	- 99.8dB
EQ in w/max High:	- 94.9dB

EQ Response:

Low:	±14dB @ 80Hz
LMid:	±14dB @ 600Hz
HMid:	±13dB @ 6.6KHz
High	±12dB @ 10KHz

Notch Response:

Range:	56Hz	105Hz	668Hz
Depth:	-31dB	-32dB	-28dB
Q:	3.3	2.9	2.5

Output: Max. Level @ 5K Ohm: 2V
Max. Level @ 600 Ohm: 1.4V

THD: <.1% (nominal)

Tune "ON" Timer: 64 seconds (nominal)

Low Battery "ON" voltage: 7.7V

Ovation®

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Acoustic/Electric Guitar Preamp

Owner's Manual

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