



# Vegas™ 400

## OPERATING GUIDE

**WARNING**  
TO PREVENT ELECTRICAL SHOCK OR FIRE HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. BEFORE USING THIS APPLIANCE, READ BACK COVER FOR FURTHER WARNINGS.

### VEGAS™ 400 GENERAL DESCRIPTION

Congratulations, you have just purchased the successor of the famous Session® 400. The new Vegas™ 400 is a refinement of the capabilities and features of the older Session® 400 and has far surpassed that unit in performance. This new system features our more efficient Black Widow®/Super Structure™, 15" loudspeaker in a ruggedly constructed enclosure of 3/4" wood, which is covered with 34 ounce heavy-duty vinyl Tolex. The Vegas™ 400 is state-of-the-art with every aspect of design and construction, and we have included our famous DDT® compression circuitry, which senses the onset of clipping from the power amp and compresses the signal only to the extent necessary to prevent distortion. The active tone circuitry is very similar to that used in our Session®/LTD®, except that the controls have somewhat greater range and allow considerably better noise performance.

Overall, the new Vegas™ may be considered the ultimate "Clean Machine" and has been designed to minimize distortion from the input through to the output including the loudspeaker. This system is dual channel and features a new **pre EQ** patch, which allows effects devices to be interfaced **before** the equalization so that maximum tone coloration may be used to enhance whatever effects devices are chosen.

The second channel has been added with a totally separate input and separate equalization for those players who play more than one instrument (lead guitar, steel, fiddle, keyboards, etc., etc.).

The power section of this unit features 210 watts RMS (the same as our older Session® 400 and LTD®) and it delivers this power into a 4 ohm load. The addition of our compression circuit enables the Vegas™ 400 to be both louder **and** cleaner than its predecessors, which were also 210 watts, but did not have the DDT® compression circuit. On the rear panel we have also included preamp out and power amp input jacks for the all important patching of effects devices **post** the EQ and also provides the ability to go directly into a studio console or sound reinforcement mixer with the preamp output.

Please read this manual and understand the control functions and try to adapt the technology that is designed within the Vegas™ 400 to your particular needs. We certainly believe that you will find this unit to be the most advanced state-of-the-art system for **steel guitar, keyboards, lead guitar, fiddle**, or any other application you may have which requires clean, clear, undistorted, high sound pressure level operation.

## Specs:

Due to our efforts for constant improvement, features and specifications listed herein are subject to change without notice.

### POWER AMPLIFIER SECTION:

**RATED POWER & LOAD:**  
210 W RMS into 4 ohms with DDT® compression and LED indicator

**POWER @ CLIPPING: (Typically)**  
(5% THD, 1 KHz, 120 VAC line)  
130 W RMS into 8 ohms  
220 W RMS into 4 ohms  
2 ohms not recommended

**FREQUENCY RESPONSE:**  
+0, -1 dB, 20 Hz to 20 KHz @ 200 W RMS into 4 ohms

**TOTAL HARMONIC DISTORTION:**  
Less than 0.2%, 100 mW to 200 W RMS, 20 Hz to 10 KHz, 4 ohms. Typically below 0.1%

**DDT® DYNAMIC RANGE:**  
Greater than 20 dB

**DDT® MAXIMUM THD:**  
Below 0.5% THD for 6 dB overload  
below 1% THD for 20 dB overload

**HUM & NOISE:**  
Greater than 95 dB below rated power

**POWER CONSUMPTION: (Domestic)**  
600 watts, 50/60 Hz, 120 VAC

### PREAMP SECTION:

THE FOLLOWING SPECS ARE MEASURED AT 1 KHz WITH THE LEAD CHANNEL CONTROLS PRESET AS FOLLOWS:

PRE GAIN PULL BRIGHT OFF (IN)  
POST GAIN @ 10  
LOW EQ @ +6 dB  
PARAMID™ EQ @ -9 dB  
SHIFT @ 300 Hz  
HIGH EQ @ +3 dB  
PRESENCE EQ @ +6 dB

THE NORMAL CHANNEL CONTROLS PRESET AS FOLLOWS:

PRE GAIN PULL BRIGHT OFF (IN)  
POST GAIN @ 10  
LOW EQ @ 10  
MID EQ @ 0  
HIGH EQ @ 10

ADDITIONALLY:  
REVERB @ 0

NOMINAL LEVELS ARE WITH PRE GAIN @ 5  
MINIMUM LEVELS ARE WITH PRE GAIN @ 10

### LEAD CHANNEL:

**PREAMP HIGH GAIN INPUT: (No Pad)**  
Impedance: High Z, 220K ohms  
Nominal Input Level: -28 dBV, 40 mV RMS  
Minimum Input Level: -46 dBV, 5 mV RMS  
Maximum Input Level: +8 dBV, 2.5 V RMS

**PREAMP LOW GAIN INPUT: (-10 dB Pad)**  
Impedance: High Z, 68K ohms  
Nominal Input Level: -18 dBV, 130 mV RMS  
Minimum Input Level: -36 dBV, 16 mV RMS  
Maximum Input Level: +18 dBV, 8 V RMS

### PATCH OUTPUT:

Function: Low Level Pre-EQ Effects/Pedal Send  
Load Impedance: 10K ohms or greater  
Nominal Output: -14 dBV, 0.2 V RMS

### PATCH INPUT:

Function: Low Level Pre-EQ Effects/Pedal Return  
Impedance: High Z, 220K ohms  
Designed Input Level: -14 dBV, 0.2 V RMS  
(Switching jack providing Patch Output to Patch input connection when not used)

### CHANNEL HUM & NOISE @ NOMINAL INPUT LEVEL:

(20 Hz to 20 KHz unweighted)  
75 dB below rated power

### EQUALIZATION:

LOW: +15 dB @ 60 Hz, Shelving  
PARAMID™: +15 dB (@ shift frequency), Peak/Notch  
SHIFT: 150 Hz to 1500 Hz  
HIGH: +15 dB @ 2 KHz (Special EQ)  
PRESENCE: +15 dB @ 5 KHz, Shelving  
PULL BRIGHT: +6 dB @ 2 KHz

### NORMAL CHANNEL:

**PREAMP INPUT: (No Pad)**  
Impedance: High Z, 220K ohms  
Nominal Input Level: -28 dBV, 40 mV RMS  
Minimum Input Level: -46 dBV, 5 mV RMS  
Maximum Input Level: +8 dBV, 2.5 V RMS

### CHANNEL HUM & NOISE @ NOMINAL INPUT LEVEL:

(20 Hz to 20 KHz unweighted)  
80 dB below rated power

### EQUALIZATION:

LOW, MID, SHIFT, & HIGH: Passive Type EQ  
PULL BRIGHT: +6 dB @ 2 KHz

### PREAMP OUTPUT: (Full Range)

Function: High Level Post EQ Signal Send  
Load Impedance: 1K ohms or greater  
Nominal Output: 0 dBV, 1 V RMS  
Maximum Output: +18 dBV, 8 V RMS

### LINE OUTPUT: (Frequency Compensated)

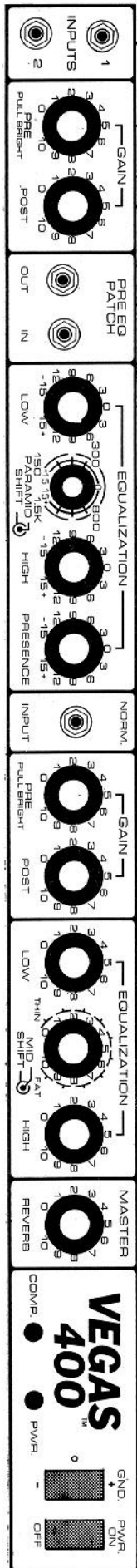
Function: Low Level Mixing Console Feed  
Load Impedance: 1K ohms or greater  
Nominal Output: -10 dBV, 0.3 V RMS  
Maximum Output: +8 dBV, 2.5 V RMS

### POWER AMP INPUT:

Function: High Level Post EQ Signal Return  
Impedance: High Z, 22K ohms  
Designed Input Level: 0 dBV, 1 V RMS  
(Switching jack providing Preamp Output to Power Amp Input connection when not used)

### FOOTSWITCH:

Reverb defeat



### LEAD CHANNEL INPUTS

The Lead Channel has two inputs, one featuring high gain and the other one third as much gain. The High Gain Jack is the input normally used, unless the signal from the instrument is overloading the input preamp. If your input signal is overloading (distorting) the High Gain Jack, then the Low Gain Jack (-10 dB) should be used. Because of the unique switching design of the input circuitry, the gain of both high and low jacks are preserved when instruments are plugged into both jacks.

### PRE GAIN/PULL BRIGHT CONTROL

The **Pre Gain Control** is similar to a conventional volume control in that it is the **first** level setting device in the system. Operation of this control is conventional and even though the associated circuitry is quite different from the older totally passive units there should be no problem with operation. This control should be adjusted to the desired amount of gain necessary for the instrument, but it is also working in conjunction with the Post Gain Control. Once the **Post Gain Control** is adjusted properly then the gain desired for each individual instrument that is patched into the Vegas™ 400 should be set with the **Pre Gain Control**.

The Pre Gain Control also features an integral "pull switch" which adds a significant **boost** (6 dB) to the high frequencies when activated. This high frequency boost gives a nice "edge" to clean playing styles. **Steel guitarists** will usually adjust their high frequencies with the Presence Control but **lead players** will definitely enjoy the pull bright feature. The boost is activated by "pulling out" on the Pre Gain Control and defeated by simply "pushing" the knob inward.

### POST GAIN CONTROL

The Post Gain Control sets the overall level from the preamp which feeds the 210 watt power section of the Vegas™ 400. The action of this control is very similar to that of a master volume control and can be used to control the overload dynamics of the preamp section by decreasing the sensitivity of the power amp. Normal settings of this control for clean operation will be from 12:00 o'clock to full clockwise. Rotating the control clockwise increases the sensitivity of the power amp and the overall volume level of the system. Some studio applications (because of low noise requirements) may need a fairly low setting of the Post Gain Control, but, please be careful to keep the Post Gain Control adjusted to **at least the same number setting as the Pre Gain Control** to avoid preamp overload. An average setting for the Post Gain Control for normal conditions during concert situations would be around the number 5 to 7 positions and could be slightly lower for studio applications. Once this control is adjusted properly for the amount of sensitivity you desire for the overall system, then the gain of the individual instrument patched in should be accomplished with the **Pre Gain Control**.

### PRE EQ PATCH

The unique **pre equalization** patching jacks have been provided for use with external devices such as **volume pedals, effects units, etc.**, etc. This feature allows external devices to be patched into the system **after the input preamp but before (pre) the EQ (tone controls)**. The sensitivity of the **Pre EQ Patch** has been optimized for **low level (instrument signal)** type devices. **NOTE!** Line level (1 V RMS) devices should be patched at rear panel **preamp out and power amp input** loop. Shielded cables should be used for all external patching of effects devices.

### EQUALIZATION

#### LOW EQ CONTROL

The Low EQ Control is of the active "shelving type" and provides low frequency boost in the "clockwise" positions and low frequency cut in the "counterclockwise" positions. Flat response is obtained in the vertical 12:00 o'clock position, as indicated by the zero in the center of the rotation. The action of this control is more or less conventional and no operational problems should be encountered. You should, however, avoid excessive low end boost since this greatly affects your amps power reserve (headroom). The Low EQ Control is capable of more than 15 dB of boost or cut and you should be aware that **each 3 dB of boost doubles the amount of power necessary** to produce the desired amount of low end. Even the 210 watt RMS capability of the Vegas™ 400 may be overloaded by excessive low end boost at high volume levels.

#### PARAMID™EQ CONTROL

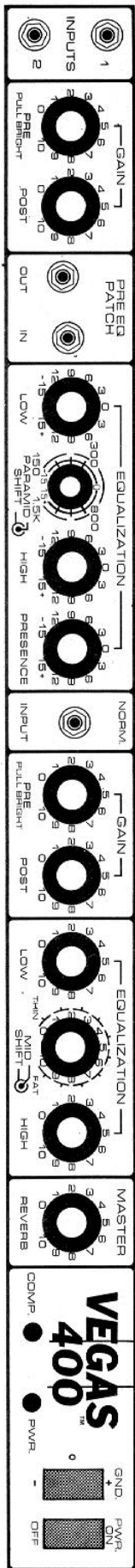
This control enables a boost or cut of 15 dB in the vital mid-range frequencies. Added versatility is possible because of the ability to vary the operating "center point" throughout the mid-range from 150 Hz to 1500 Hz by use of the frequency shift control. The Paramid™ EQ Control works in a similar manner to the Low and High EQ Control and should present no operational difficulties. Clockwise settings increase "fat" mid-range frequencies and counterclockwise settings will result in a "thinner sound" with less mids apparent. Notice the zero position at 12:00 o'clock will indicate no change is taking place to the mid-range frequencies. A setting of **zero** will render the Shift Control ineffective, because the mid-range is at that point totally flat. **Most steel guitar equalization settings for the Paramid™ control will be from minus 3 to minus 9 usually and these settings, of course, will vary from player to player because of technique and outboard equipment used.** Patch cords, volume pedals, effects devices, guitar pickups, etc., all tend to have some effect on overall tonality and for that reason we are not usually able to give a "cookbook" set of equalization settings for any particular instrument. Experience has proven that **mid-range cut** is generally more pleasing for most instruments.

#### SHIFT CONTROL

The Shift Control has the ability to move the frequency where the Paramid™ control has its effect. The "sweep" capability of the shift can position the middle control at any point along the frequency spectrum between 150 Hz and 1500 Hz. This is a wider range than was included with the Shift Control in our older model Session® 400. Please be aware that the Shift Control works in conjunction with the Paramid™ Control and any conditioning that is performed by the Paramid™ Control may be, once again, altered by the Shift Control. For instance, a setting on the minus (cut) position with the Paramid™ Control will create a dip or a notch in the mid-range response and the shift can relocate this notch anywhere between 150 Hz and 1500 Hz. With this notch preselected with the Paramid™ Control you will notice that counterclockwise settings near 150 Hz with the shift will yield thinner sounding mids, while clockwise settings will yield fatter sounding mids. Note also that just the opposite effect is possible when you select a boost with the Paramid™ Control and rotate the shift from 150 Hz to 1500 Hz. **For lead guitar, a shift setting of 300-500 will usually yield best results.** Most steel guitar players will adjust their Shift Control in the area between 600 Hz and 800 Hz depending on the player, once again, and the equipment used.

#### HIGH EQ CONTROL

This control is of the active shelving type and provides true boost or cut in lower high frequency ranges (2 KHz). As with the low and the middle controls, the high EQ produces boost in the clockwise positions and cut in the counterclockwise settings while flat response is obtained in the vertical (12:00 o'clock) position. The action of this control is conventional but pronounced. Care should be taken not to overboost the highs since this can contribute an unpleasantly harsh response, as described above. Notice also that there will be a slight interaction between the Shift Control and the High EQ Control when the shift is operated up near 1500 Hz because this places the middle control and the high control very close to each other along the frequency spectrum.



**PRESENCE CONTROL**

The Presence Control has been retained from the Session® 400, which was one of our first amplifiers to include this high frequency element. The control is a conventional rotary type device, but acts very much like a **bright boost system**. Once again, this control is active with 15 dB of cut or boost and takes effect at approximately 5 KHz. Extra brightness, which emphasizes "pick noise" and extreme silky highs, may be added with this Presence Control in the boost position. If your preference in tonality is without any additional "sizzle" on the top end, then you may desire the Presence Control to be operated on the minus or counterclockwise position. **Most guitar applications require a slight amount of presence boost but it is usually in the neighborhood of only about 3 dB.** Once again, these settings will vary according to equipment used and player technique. Please be aware that additional high frequency boost may be obtained with the "pull bright control". (See explanation for "Pre Gain/Pull Bright".)

The lead channel is the **first** choice for many instruments which require special equalization such as, **steel guitar, keyboards, fiddle, etc.**, or any situation calling for a clean (old Session® 400) tonality.

**NORMAL CHANNEL**

**INPUT**

The normal channel of the Vegas™ 400 has one input jack and features our high gain circuitry which is virtually identical to the number 1 input on the lead channel. Most instruments provide a signal to the amplifier which is very easily accepted by the high gain input circuitry. However, some instruments with built-in preamps, etc., may produce very high level output signals and should be patched into the number 2 input on the lead channel. The second channel (normal) has been provided for an alternate situation of plugging in more than one instrument with this system and in most cases instruments with very high outputs will be used in the lead channel. (See description of INPUTS for the lead channel.)

**PRE GAIN/PULL BRIGHT CONTROL**

The operation of this control is identical to the Pre Gain/Pull Bright feature of the lead channel. (See explanation for Pre Gain/Pull Bright control on the lead channel.)

**POST GAIN CONTROL**

This control operates in the exact same manner as the Post Gain Control on the lead channel. (See explanation for Post Gain Control on the lead channel.)

**LOW FREQUENCY CONTROL**

The Low Frequency Control adjusts the tonality for the amount of smoothness and offers extended bandwidth on the low end of the tonal range. Clockwise operation of this control places more emphasis on bass response and counterclockwise provides less apparent bass for the overall tonality. Care should be taken to not over boost this control to the degree that it causes muddiness and premature overdriving of the power amp. Extreme over boosting of bass frequencies tends to distract from the projection capabilities of the amplifier and confuses material which needs to be heard for lead guitar, fiddle, steel guitar, keyboards, etc.

**MID/SHIFT CONTROL**

The vital mid frequencies are controlled by this unique concentric (stacked) system of potentiometers. Please be aware that **mid frequencies** contribute in a large degree to the overall tone color of the guitar in all forms of music. The "stacked type" of system for controlling the mids seems a bit different but should present no problems in operation. The outer (top) control determines the amount of mid frequencies. Rotating this control clockwise increases the mids for a greater degree of "fat" tonalities, while counterclockwise rotation will cause the overall tone color to become "thinner". The inner (bottom) control allows the player to **shift** the band at which the mid frequencies will operate. After experimenting with these controls the player will be able to determine where and how much of the mid range equalization best suits his/her playing style and technique.

**HIGH FREQUENCY CONTROL**

This control operates in the range for most instruments that are considered to be the treble frequencies and works on a scale from zero to ten, which is very conventional. Clockwise rotation will place more emphasis on the high frequencies in the normal channel and counterclockwise rotation will deemphasize those treble frequencies. Care should be taken to not over emphasize high frequencies since this can contribute an unpleasantly harsh response for some instruments. Please note also that when extreme highs are needed in the normal channel you may use the "pull bright control" which is located on the pre gain control, and also rotate the high control clockwise. **NOTE:** There will be a slight interaction between the mid/shift control when the shift is operated near full clockwise positions because this places the middle control and the high control very close to each other along the frequency spectrum.

**MASTER REVERB CONTROL**

The Master Reverb Control determines the amount of delayed (reverb) signal mixed back into the output and its operation is conventional. In addition, the reverb may be switched on and off through the use of a remote footswitch. This footswitch patches into the back panel footswitch input jack and is conventional in operation. We have included a new reverb circuit featuring a "current source" drive together with the new accutronics **three spring reverb** unit. The action of this control is "0" to "10" and should provide more than enough reverberation for most any situation. **NOTE: The master reverb control is functional on both channels.**

**DDT® COMPRESSION LED**

The Vegas™ is a compact and powerful amplifier that features a 210 watt RMS power amp (at 4 ohms) with a full compliment of equalization controls and a new type of dynamic compression. The compression effect enables us to maximize the performance of the amp/speaker combination. We have determined through much research that the compression circuitry should prevent the power amplifier/speaker combination from running out of headroom (clipping) and should be as simple to operate as possible to avoid undue complications for the user. Our compression circuitry is very effective. Because of the dynamics and the percussive nature of plucked strings, it is quite common to activate the compression as indicated by the limit LED at reasonably low output levels. One should not be concerned that the limit LED indicates compression virtually constantly during a performance, since this is what it was designed to do. The system was designed to maximize the dynamics available from the amp within its power output capabilities. We have not included other compression controls since we have designed an exclusive distortion detection system which is patented and senses conditions that might cause overload and activates compression **only** when clipping is imminent. This technique effectively utilizes every precious watt available from the Vegas™ 400.

**PILOT LED**

This light emitting diode (LED) indicates when the amp is switched on and actually drawing power from the line (mains) connection. It is totally solid-state and not subject to burnouts, as are incandescent or neon types.

**POLARITY SWITCH**

This switch is a three position type with the center, zero position, completely removing the internal grounding capacitor from the circuit. This position is normally recommended for situations where the AC power receptacle is known to contain a properly grounded third wire. If properly grounded AC main supply is not available, a suitable ground adaptor should be used. The (plus and minus) positions are used to ground the amplifier properly when only two wire services are available. One of these positions will yield the lowest amount of residual hum or popping when the instrument is touched. **NOTE: THE GROUND LIFT SWITCH IS NOT OPERATIONAL ON 220 VOLT AND 240**

**VOLT EXPORT MODELS.**

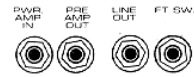
**ON/OFF SWITCH**

The On/Off Switch is a simple, two position rocker type, and should present no operational difficulties.

**VEGAS-400**

**CAUTION**  
 TO PREVENT THE RISK OF FIRE AND SHOCK HAZARD:  
 DO NOT EXPOSE THE UNIT TO HEAVY RAIN OR  
 MOISTURE. DO NOT REMOVE PROTECTIVE HOUSING OR USE  
 REMOVABLE PARTS UNLESS YOU ARE QUALIFIED TO  
 DO SO. ALWAYS USE PROPER HANDLING TECHNIQUE.  
 AVOID RISK OF SHOCK ELECTRICAL - 50 000  
 VOLTS

120 VAC  
 600 WATTS  
 810 WATTS  
 4 OHMS  
 25 V RMS



A PRODUCT OF PEAVEY ELECTRONICS CORP.  
 MERIDIAN, MISSISSIPPI  
 BUILT UNDER U.S. PATENT NO. 4,318,053  
 MADE IN U.S.A.

**REAR PANEL**

**PREAMP OUT AND POWER AMP IN**

To allow "in line" patching of various accessories we have included a system of preamp out/power amp in jacks on the rear panel. The Preamp Out is a "straight" preamp signal which includes the entire equalization circuit plus reverb. The output level is approximately **1 V RMS** and is relatively low, 600 ohms, impedance. The Preamp Out signal is connected through a switching contact to the Power Amp Input Jack and **normally the preamp out is internally connected to the power amp's input**. This circuit allows basically two modes of operation. When signal is taken from the preamp output, the signal is **also delivered to the internal power amplifier**. If access to the power amplifier input is needed, or if some accessory device, such as a noise gate, delay line, effects device, etc., is to be patched "in line", then the **preamp output** signal must be connected to the **auxiliary unit's input** while the auxiliary unit's **output** must be connected to the **power amp input** with **shielded cables**, thereby placing the auxiliary unit in series or "in line" with the normal signal path. Additional booster amp/speaker combinations should be patched using the **preamp output**. With this unique patching facility many interesting effects can be accomplished. **Line level (1 V RMS) devices should be used with the preamp out and power amp input.**

**LINE OUTPUT**

The line output is a **frequency compensated** signal which is taken directly from the preamp. This built-in **compensation circuitry** closely matches the roll-off characteristic of a speaker system in order to produce an output signal which corresponds very closely to the tonality being heard from the speaker system. There is also a roll-off of the extreme **low frequencies** to avoid overload of the associated console by the "sub-sonic" bass signals. The signal from this **line output jack** is low impedance (600 ohms) unbalanced at a nominal level of 0.3 V RMS (-10 dBV).

**FOOTSWITCH JACK**

The 1/4" footswitch jack allows remote switching of the reverb system from the footswitch. The footswitch is a simple, single function unit that merely defeats or cancels the internal reverberation capability.

**LINE CORD**

For your safety we have incorporated a three wire line (mains) cable with proper grounding facilities. It is not advisable to remove the ground pin under any circumstances. If it is necessary to use the amp without proper grounding receptacles, a suitable grounding adaptor should be used. Extraneous noise and the probability of shock hazard is greatly reduced when the unit is operated with properly grounded receptacles.

**TONE CHARTS**

Adjust to desired level

Adjust to desired level

**FIDDLE**

Adjust to desired level

Adjust to personal taste

**LEAD GUITAR**

Adjust to desired level

Adjust to personal taste

**STEEL GUITAR (E 9th)**

Adjust to desired level

Adjust to personal taste

**STEEL GUITAR (C 6th)**

NOTE  
 THE ABOVE TONE CHARTS ARE MEANT ONLY AS A GENERAL GUIDE AND ARE PROVIDED TO FAMILIARIZE THE PLAYER WITH THE FUNCTIONS AND CONTROLS OF THE VEGAS™ 400. ADJUSTMENTS TO THESE CONTROLS WILL BE NECESSARY DUE TO VARYING TYPES OF INSTRUMENTS, PICKUPS AND ACCESSORIES UTILIZED ALONG WITH YOUR STYLE OF MUSIC AND PLAYING TECHNIQUE. BE SURE TO READ ALL OF THIS OPERATING GUIDE TO UNDERSTAND FULLY ALL OF THE CONTROLS AND THEIR FUNCTIONS.

**DANGER**

EXPOSURE TO EXTREMELY HIGH NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS. INDIVIDUALS VARY CONSIDERABLY IN SUSCEPTIBILITY TO NOISE INDUCED HEARING LOSS, BUT NEARLY EVERYONE WILL LOSE SOME HEARING IF EXPOSED TO SUFFICIENTLY INTENSE NOISE FOR A SUFFICIENT TIME.

THE U.S. GOVERNMENT'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAS SPECIFIED THE FOLLOWING PERMISSIBLE NOISE LEVEL EXPOSURES:  
 SOUND LEVEL dBA, SLOW RESPONSE

DURATION PER DAY IN HOURS	SOUND LEVEL dBA, SLOW RESPONSE
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

ACCORDING TO OSHA, ANY EXPOSURE IN EXCESS OF THE ABOVE PERMISSIBLE LIMITS COULD RESULT IN SOME HEARING LOSS.

EAR PLUGS OR PROTECTORS IN THE EAR CANALS OR OVER THE EARS MUST BE WORN WHEN OPERATING THIS AMPLIFICATION SYSTEM IN ORDER TO PREVENT A PERMANENT HEARING LOSS IF EXPOSURE IS IN EXCESS OF THE LIMITS AS SET FORTH ABOVE. TO INSURE AGAINST POTENTIALLY DANGEROUS EXPOSURE TO HIGH SOUND PRESSURE LEVELS, IT IS RECOMMENDED THAT ALL PERSONS EXPOSED TO EQUIPMENT CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS SUCH AS THIS AMPLIFICATION SYSTEM BE PROTECTED BY HEARING PROTECTORS WHILE THIS UNIT IS IN OPERATION.

**CAUTION**

THIS AMPLIFIER HAS BEEN DESIGNED AND CONSTRUCTED TO PROVIDE ADEQUATE POWER RESERVE FOR PLAYING MODERN MUSIC WHICH MAY REQUIRE OCCASIONAL PEAK POWER. TO HANDLE OCCASIONAL PEAK POWER, ADEQUATE POWER "HEADROOM" HAS BEEN DESIGNED INTO THIS SYSTEM. EXTENDED OPERATION AT ABSOLUTE MAXIMUM POWER LEVELS IS NOT RECOMMENDED SINCE THIS COULD DAMAGE THE ASSOCIATED LOUDSPEAKER SYSTEM. PLEASE BE AWARE THAT **MAXIMUM POWER** CAN BE OBTAINED WITH VERY LOW SETTINGS OF THE **GAIN** CONTROLS IF THE INPUT SIGNAL IS VERY STRONG.