



Eden Electronics Operation Manual  
World Tour Series Amplifier

**WT-800/600/500**  
**Bass Guitar Amplifier**

**Owner's Manual**

**EDEN**

**THE STANDARD IN BASS SOUND.**

Revised 3-5-2003

# Forward

Congratulations on your purchase of the Eden WT-800/600/500 Bass Instrument Amplifier. You have purchased what we feel is one of the finest bass amplifiers in the world. The WT-800 produces 400 watts of pure power into 4 ohms (240 watts into 8 ohms) with 3db of dynamic headroom. The WT-600 produces 300 Watts per side @ 4 Ohms and 190 Watts @ 8 Ohms. The WT-500 produces 300 Watts @ 4 Ohms per side and 175 Watts @ \* Ohms .The tube pre-amp section, with its enhance control, powerful quasi-parametric tone control system, and gentle auto-compression circuit allow you to achieve a wide array of sounds. This compact, rack mountable package houses modular circuits made with superior components and designed for years of trouble-free service.

Thank you for choosing Eden. Please take the time to review this manual and to send in your warranty registration card.

## CAUTION!

Your ears are your most important piece of equipment. Unfortunately, they cannot be replaced as easily as your other gear. **Please take the following warning seriously.**

This product, when used in combination with a sound source and loudspeakers or headphones, may be capable of producing sound levels that could cause permanent hearing loss. **DO NOT** operate at high volume levels or at a level that is uncomfortable. **DO NOT** place your ears next to the speakers. If you experience any discomfort or ringing in the ears or suspect hearing loss, you should consult a health care professional.

Please complete for your records:

Date of Purchase: \_\_\_\_\_

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Dealer: \_\_\_\_\_

## **FRONT PANEL FEATURES**

**Input Jack** – Designed to accept a standard ¼ inch mono phone plug. For best results, use a high-quality, shielded cable to connect your instrument to the amplifier.

**Input Pad** – By pushing the Pad switch in, you engage a –12db pad, which will prevent the system from being overdriven by high-output instruments.

**Pad Indicator** – Lights to indicate that the pad is engaged.

**Gain Control** – Regulates the first gain stage of the preamplifier and controls the amount of signal available to the system.

**Set Level Indicator** – Lights to indicate that the preamp is sitting right on the sweet spot of the gain balance and is at optimum signal to noise as well as best overall head room.

**Compressor Indicator** – Lights to indicate that the signal has crossed the threshold of the compression circuit and that compression is taking place.

**Compressor Bypass** – Pushing the switch in will disengage the compressor. It will also turn on the set level light and turn off the compressor active light.

**Enhance Control** – Called the “Magic Knob” by some, this complex control simultaneously boosts the very low-bass, upper middle, and high frequencies while putting a dip in the lower middle frequencies. It is flat when set to its minimum level.

### **Tone Control Section**

**Bass** – This traditional shelving tone control provides 15 dB of boost or cut at 30 Hz.

**Quasi-Parametric Tone Control** – These three pairs of controls, with overlapping frequencies, allow you to boost or cut the tone at the desired frequency center. The one octave fixed bandwidth (Q=1) allows the controls to interact smoothly and musically.

**Frequency control** – Provided for low, mid, and high frequency ranges, these controls select the frequencies you wish to boost or cut.

**Boost/Cut Controls**– Located beneath each frequency selection control, these controls will boost or cut the selected frequency by 15 db. They are flat at their 12: 00 setting.

**Treble** – This is a traditional shelving-type tone control. It provides 15 db of boost or cut. The knee of the filter is at approximately, 2KHz. The control is flat at the 12:00 position.

**EQ Clip Indicator** – Flashes to indicate clipping within the tone control circuit of the preamplifier. This should never be lit up.

**Master Level Control** – Adjusts overall system output.

**Balance Control**- This control adjusts the balance between the left and right channels of the amplifier. When the Amplifier is in the Bi-Amp mode the Balance control also adjusts the Hi and Low balance.

**Cross Over Control** -This knob controls the center frequency that the crossover works at. This is a 12 dB per octave crossover. **Note. (This feature is not available on the WT -500)**

**Stereo / Bi-Amp Mode switch** - This switch sits just behind the panel in the stereo mode it moves forward when switched to the Bi-Amp mode. You will need to use a pen tip to engage the switch.

**Bridge Mono Switch** – This switch turns the amplifier from stereo to bridged Mono. This switch is recessed to prevent it being turned on or off by accident. In mono bridge this amplifier produces an 800 Watts RMS output @ 8 Ohms. Please be very careful when using the bridge mode you can severely damage loudspeakers that are not rated for this amount of power.

**Headphone Jack** – It accepts a standard ¼ stereo or mono headphone plug.

**Output Limit Indicators** – Lights to indicate activity of the power amplifier limiting circuit, which protects the speaker system from severe distortion. This LED indicates that the amplifier has reached its maximum output level.

**On/Off Switch** – This switch turns the system power on or off. The switch illuminates to indicate the presence of current prior to the fuse. The light in the switch may flicker depending on local voltage conditions. This is normal and nothing to be concerned about

## **REAR PANEL FEATURES**

**Combination Power Cord Jack and Fuse Holder** – The removable power cord is attached here. Pulling the holder out of the top of the power inlet accesses the fuse carrier. Your unit was shipped with a spare fuse inserted in the fuse carrier. **USE ONLY THE SAME SIZE AND TYPE FOR REPLACEMENT.** U.S. users should make sure the fuse holder is installed so the “115 VOLTS” reads right side up. For Europe the 230 should be right side up. Some European models come with a holder marked (FUSE) they are configured for 230 / 240 only and must be adapted by a service tech for U.S. standard voltage. The standard fuse for U.S. use is (10) Amp slow blow or time delay.

**Do not use fast blow fuses.**

**Amp Outs left and Right** – These consist of two ¼ inch jacks and a 5 way binding post on each channel. Or on newer models the NL-4 connector replaces the binding post. The jacks are wired in parallel. The total speaker load impedance should not exceed 4 ohms minimum for each channel.

**Left Amp out/ Hi out** - This is also the High out put when the amp is in Bi-Amp mode. The Hi Out is not used on the WT-500.

**Right Amp Out** –This jack is also the Low output when the Amp is in the Bi-amp mode. Low out not used on the WT-500.

**Bridged Mono Out-** Use this jack only for Mono bridging. Do not use any other output in conjunction with this. Note **(The Minimum load in Bridged Mono is 8 Ohms). Use caution this is a high voltage and high power connection point.**

**Mono Pre Tone Effects Send/Return** – These standard ¼ jacks allow you to send and receive your signal to and from external devices. The effects loop is positioned post (behind) the compressor and enhance control and prior to the tone section.

**Stereo Post Tone effects**

**Send/Return** – This loop allows you to send the effects in mono and return them in stereo. The left return also functions as a mono return if you are not running stereo.

**Recording Out** – This fully balanced XLR output allows you to send a post-EQ/pre-master signal to a recording or sound reinforcement mixing console. This output is designed to allow use with phantom powered systems.

**D.I. Level** – This Controls the level being sent from the XLR balanced output jack.

**Ground Lift Switch** – This switch lifts the ground within the balanced output system to allow you to eliminate excessive noise when connected to external systems.

**AUX In** - The standard ¼ mono jack is designed to accept the signal from an external source such as a CD or cassette player, drum machine, synth. module, etc. The signal is summed prior to the master volume control. The signal enters the system post the tone controls. These jacks can also be used to return a studio cue signal, allowing the WT-800/600/500 to

provide you with your own headphone mix in the studio.

**Tuner Out Jack** – This standard ¼ inch jack is designed to provide a post-tube, pre-gain signal for connection to a tuner. It can also be used to provide pre-tone signal to other devices such as a direct box or console.

**Cooling System** – Your amplifier features a thermostatically controlled fan, which will switch on when the internal temperature reaches 130 degrees F. In low volume situations (into 8 Ohm loads) the fan may not come on at all. The system also features a high temperature thermal safety system which will activate if the operating temperature goes above 190 degrees F. This circuit will turn the system off in the event of overheating. It will automatically reset itself as soon as the unit cools down to a safe operating temperature. Usually it takes from 1 to 5 minutes before the unit will begin to operate again. (Note: the D.I. will continue to operate normally even when the amplifier is in thermal shut down only the stage sound will be lost.) The system is set up so that each amplifier is separately protected.

## **OPERATING INSTRUCTIONS**

### **MECHANICAL AND THERMAL**

**ISSUES** – Your amplifier should always be placed for operation away from sources of moisture or heat. Care should be taken not to obstruct the ventilation holes on the top and sides of the unit. In the event of thermal shutdown, you should eliminate the cause of the thermal problem (poor ventilation, speaker loads lower than 4 ohms) immediately. The supplied rack ears can be used to install your amplifier in a conventional equipment rack for protection during transportation.

**ELECTRICAL requires 15 Amps** of correctly wired alternating current for proper operations. The WT-600 and 500 require 12 Amps. The 800 should have 15 Amps available.

**CONNECTIONS** – All line connections (everything but the speakers) should be

made with high-quality shielded cables. The use of speaker cables for line connections will result in excess noise. Speaker connections should be made with high-quality 16 gauge or larger unshielded speaker cables. We recommend 10 or 12 gauge cables. The use of shielded line or instrument cables for speaker connections can damage your amplifier. The speaker cable should be as short as possible.

**TURN ON** – We recommend turning your system on with the master volume control set to its minimum position. This will prevent any unexpected signal from being sent to your speakers. A crackling sound heard through the system when it is first turned on is the result of the tube warming up. This is normal.

**SETTING YOUR LEVEL** – Effective use of the gain control will ensure the best signal-to-noise ratio. The Set Level, Compressor, and EQ Clip indicators are all provided to assist you in setting your level correctly. You should begin the process with your master control set to a low, or off position, and your tone controls set flat. While playing your instrument normally, bring the gain control up until the set level light or the compressor light winks on the peaks that result from your strongest normal attack. This will generally show up most on your lower strings. You will use the compressor light if the compressor is engaged (enhance knob pushed in) and the Set Level light if the compressor is disabled (enhance knob pulled out). If more compression is desired, increase the gain control so the compressor light comes on more readily. Having set your initial level, you are now ready to proceed with setting up your tone controls. Since tone adjustments have an impact on the overall preamp gain level, you may well need to return to the gain control and repeat this process once you have completed your EQ adjustments.

### **SETTING UP YOUR EQ**

Begin with all tone controls set flat and with the Enhance Control set to its minimum position. After setting your Gain level, bring the Master control up to a moderate level. Slowly bring the Enhance control up, playing

as you make each adjustment. Many players find that there is a small amount of boost on the Enhance control that will get them very close to the sound they are after. If it doesn't, return it to its minimum or 0 position.

Overall bass and treble adjustments can be made with the Bass and Treble controls. These controls cover a fairly broad range of the frequency spectrum. Many players use these controls to compensate for acoustic situations, relying on the Enhance and Parametric controls to achieve their basic sound.

Effective use of the quasi-parametric section can help you boost and/or cut more narrow sections. In each band, you will need to "find" the frequency you wish to boost or cut. The fastest way to do this is to boost the Level control of one section significantly, then rotate the Frequency control above it. If you hear more of a frequency than you like, leave the Frequency control at that spot and reset the level to the desired amount of boost. Conversely, if you hear a frequency which is undesirable, leave the Frequency control at that spot and reduce the Level control to the desired amount of cut.

The frequencies that you will need to boost or cut are dependent upon your instrument, playing style, speaker cabinets, and venue. Extreme settings of boost or cut are unlikely to be necessary or helpful.

We are frequently asked to provide suggested settings for various styles of play. We have discovered though, that most of our endorsers tend to set their EQ generally flat, using varying amounts of the Enhance Control. We encourage you to experiment with different settings to obtain the sound you desire. We have included some EQ panel diagrams at the back of this manual to help you record your settings.

**EQ Clip Light** – This indicator will flash if clipping occurs in the EQ section of the preamp. This can be remedied by decreasing the amount of boost in the EQ section or by decreasing the Gain control. This light should never be on while playing.

**Other EQ Considerations** – If you find yourself running out of amplifier headroom, cut a little in the lower frequencies, which require the most power from your amp.

Two areas are a frequent source of frustration for bassists trying to achieve their sound: frequency masking and frequency enhancement. Frequency masking occurs when other instruments (particularly cymbals and electric guitars) obscure the important upper harmonic content of your sound. As a result, you find that the EQ settings that were so perfect at home lack definition in a live setting. On the other hand, the stage settings that worked so well sound harsh and/or thin in the absence of other instruments. Frequency enhancement results from cabinet placement and room acoustics. A cabinet placed on the floor will have the lower frequencies boosted by about 3 db. Placement against a wall adds another 3 db. A corner adds 3 db more. Consequently you may find a surprising boominess to your sound. Certain qualities in the room itself can also enhance the lower frequencies, further contributing to this problem. Frequently this effect is more noticeable in the audience than it is on stage. Compensating for it may result in a stage sound that may seem a little thin. However the sound is actually quite full out in front.

## **OTHER CONSIDERATIONS**

**Suggested Speaker Systems** – Your speaker system, should be chosen to accommodate the characteristics of your amplifier and your predominant application. If you will only be using one cabinet per side, a 4 Ohm model will draw the most current from your amplifier. If you will generally be using two cabinets, they should both be 8 Ohm models so their combined impedance will be 4 ohms. If you are uncertain about your future needs always go with the 8 Ohm speaker option so that you can add another speaker later if you need to.

**Headphone Jack as a Line Driver** – On some occasions (such as high-volume or outdoor situations) it may be desirable to use the WT-800/600/500 along with an

additional power amplifier and added cabinets. A standard shielded instrument cable may be used to connect from the headphone jack of the WT-800/600/500 to an unbalanced input of a standard power amplifier. This will provide a signal that is post EQ and master volume controls, allowing the entire system to be controlled from the WT-800/600/500.

### **Using the WT-800/600/500 With out Speakers -**

This amplifier is designed to be used safely with headphones only, without the loud speaker plugged in. No harm will result from using the amplifier in this fashion. This allows the use of the unit for practice with headphones and as a preamplifier with other amplifiers.

### **MAINTENANCE**

Your Eden amplifier has been designed to require minimal routine maintenance. Attention to the following areas will ensure optimum performance of your amplifier.

**Contact Point Cleaning** – One of the weakest links in most bass amplification systems are the solderless connection points where instruments, speaker cabinets, effects, and other devices are connected to the amplifier. (The most vulnerable of these types of connection is the jack on your instrument). In addition to contamination from airborne pollutants, these points are frequently assaulted by connectors that have picked up debris from dirty stages, cases, etc. These points should be cleaned regularly with a cotton swab soaked in denatured alcohol or a commercially available deoxidant. Frequent cleaning of the plugs on your cords is also recommended.

**Dust Removal** – You should periodically inspect the ventilation openings on the top and sides of the unit to ensure that they have not become blocked by accumulated dust. Vacuum the openings to remove any dust buildup.

**Tube Replacement** – Tube life varies greatly depending upon use, vibration, and tube quality. It is uncommon for a tube to last less than a year in our circuits. Tube life

of several years is not at all uncommon. Symptoms of tube failure include signal loss, distortion, and increased noise. The tube is easily replaced by removing the unit's cover. **Always disconnect the power cord from the back of the unit prior to removing the cover.** Gently remove the tube and replace with a 7025 or high quality 12AX7 or equivalent tube.

**Service** – In the event of amplifier malfunction, or questions about your unit's operating features, you should contact your Dealer, the factory or one of our authorized service centers for assistance.

**Please call our Customer Service dept. at  
1-800-USSOUND  
(1-800-877-6863)extension 5120**

for more information or to obtain a Return Authorization number and instructions for factory returns.

**Please ship Authorized Returns for service to:**

**Eden Electronics  
115 2<sup>nd</sup> St.  
Montrose, MN 55363  
763-675-1890**

**Eden Electronics  
C/O U.S. Music Corp.  
444 E. Courtland Rd.  
Mundelein, IL 60060  
(847) 949-0444  
(847) 949-8444(fax)**

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# Your Favorite Tone Control Settings\_\_\_\_\_

