



***User Guide
and
Reference
Manual***



BBE[®]
Sound Inc.

Important Safeguards



WARNING

To prevent fire or electric shock, do not immerse the unit in water or moisture.

ATTENTION: ALWAYS USE CORRECT ELECTRIC WIRING.



The appliance must not be connected to the power supply without the presence of a qualified electrician. Improper wiring of electrical connections may constitute a risk of electrocution to patients.



The manufacturer shall accept no responsibility if the appliance is used in violation of the provisions of electrical regulatory and maintenance standards (instructions in the literature accompanying the appliance).

For your protection, please read these safety instructions completely before operating the appliance, and keep this manual for future reference.

Carefully observe all warnings, precautions and instructions on the appliance and described in the operating instructions supplied with the appliance.

INSTALLATION

Water and Moisture - Do not install the appliance near water. For example, near a bathtub, washbasin, kitchen sink, laundry tub, in a wet basement or near a swimming pool.

Heat - Do not install the appliance near sources of heat such as radiators, heat registers, stoves, or other appliances that produce heat.

Ventilation - Ensure the location of the location or position does not interfere with its proper ventilation. Do not install the appliance in a location or position that might obstruct the ventilation, or placed in a location or position, such as a bedroom or bathroom, that might impede the flow of air through the ventilation openings.

Wall or Ceiling Mounting - If the appliance can be mounted on a wall or ceiling, it must be only as recommended.

USE

Power Source - Connect the appliance to a power supply only of the type described in the operating instructions supplied with the appliance.

Power-Cord Protection - Route the power cord so that it is not likely to be walked on or pinched by heavy objects, pulled on, or hung over the edge of a table, desk, chair, or bed. Do not place sharp objects on the power cord or pull it out from the appliance.

Grounding or Polarization - Do not defeat the grounding or polarization feature of the AC power cord. Never AC receptacles will not accept the ground-prong plug, unplug your appliance to make a proper AC receptacle.

Water not in use - Unplug the power cord from the appliance immediately when not in use, and do not touch the cord, cord or plug, or the plug, while wet. Do not touch the plug, cord or plug, while wet.

AC Receptacle - Check the rating and type of AC receptacle with the power cord plug. Do not use receptacles if the power cord plug is loose, contact your distributor to replace the receptacle and install the AC receptacle.

Foreign Objects - Be careful that foreign objects and debris do not enter the appliance through openings.

SERVICE

Unplug the appliance from the wall outlet and consult a qualified service person when:

• the power cord or the plug has been damaged

• a fuse blows or a circuit breaker trips the circuit

• the appliance has been exposed to water

• the appliance does not operate normally according to the instructions or the type of performance

• the appliance has been dropped or the external damaged.

Do not attempt to service the appliance yourself. For assistance in the servicing procedures, for all other servicing, refer to qualified service personnel only.

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Congratulations on your purchase of the BBE BMAX-T Bass Guitar Pre-amp!

The BBE BMAX-T is an extremely versatile pre-amp which is capable of achieving a wide array of tones while conveniently configuring itself into any application. No extra devices are needed to get flawless performance out of the BBE BMAX-T.

The BMAX-T is a high quality tube bass preamp/processor with applications both in the recording studio and on the road in demanding live applications.

At the heart of the BMAX-T is our class A, DC regulated tube preamp section, the design of which follows on in the tradition of the classic tube preamp designs of the 50's and 60's. It features a high voltage (300V) tube front end, providing all of the pre-amp gain and passive interactive tone control.

The BBE Process—"What it Is"

Loudspeakers have difficulty working with the electronic signals supplied by an amplifier. These difficulties cause such major phase and amplitude distortion that the sound reproduced by speaker differs significantly from the sound produced by the original source.

In the past, these problems proved unsolvable and were thus delegated to a position of secondary importance in audio system design. However, phase and amplitude integrity is essential to accurate sound reproduction. Research shows that the information which the listener translates into the recognizable characteristics of a live performance are intimately tied into complex time and amplitude relationships between the fundamental and harmonic components of a given musical note or sound. These relationships define a sound's "sound".

When these complex relationships pass through a speaker, the proper order is lost. The higher frequencies are delayed. A lower frequency may reach the listener's ear first or perhaps simultaneously with that of a higher frequency. In some cases, the fundamental components may be so time-shifted that they reach the listener's ear ahead of some or all of the harmonic components.

This change in the phase and amplitude relationship on the harmonic and fundamental frequencies is technically called "envelope distortion." The listener perceives this loss of sound integrity in the reproduced sound as "muddy" and "smeared." In the extreme, it can become difficult to tell the difference between musical instruments, for example, an oboe and a clarinet.

BBE Sound, Inc. conducted extensive studies of numerous speaker systems over a ten year period. With this knowledge, it became possible to identify the characteristics of an ideal speaker and to distill the corrections necessary to return the fundamental and harmonic frequency structures to their correct order. While there are differences among various speaker designs in the magnitude of their correction, the overall pattern of correction needed is remarkably consistent.

The BBE Process is so unique that 42 patents have been awarded by the U.S. Patent Office.

BMAX-T FEATURES AND APPLICATIONS

- The BMAX-T is perfect anywhere an extremely high-quality, pristine preamplifier is required for the bass guitar
- It can be used in the recording studio where a bass amplifier is impractical due to space or loudness considerations
- In performance applications, players will find the BMAX-T's ergonomics intuitive and easy to use
- All players will find the BMAX-T's EQ and Dynamics controls, as well as our patented Sonic Maximizer™ Process, afford a wide palette of tonal experiences
- Full Function BBE® Sonic Maximizer™
- All tube Class A front-end with interactive 3 band EQ and interactive "bright" switch
- Hand-selected premium quality Groove Tubes® 12AX7 preamp tube
- Jensen® JT-DB-E transformer balanced DI output
- Optical "soft knee" compressor
- Custom torroidial power supply transformer
- Inputs for both passive pickup and active pickup instruments
- 1meg ohm input impedance (Passive input), 100Kohm (Active input)
- Ground lift switch
- Balanced XLR and 1/4" unbalanced output
- Mil-spec circuit boards
- Extra thick, extra wide circuit board traces for unequaled electron flow
- 1% metal film resistors throughout
- Solid 1/4" thick aluminum extrusion front panel for extreme ruggedness

IMPORTANT

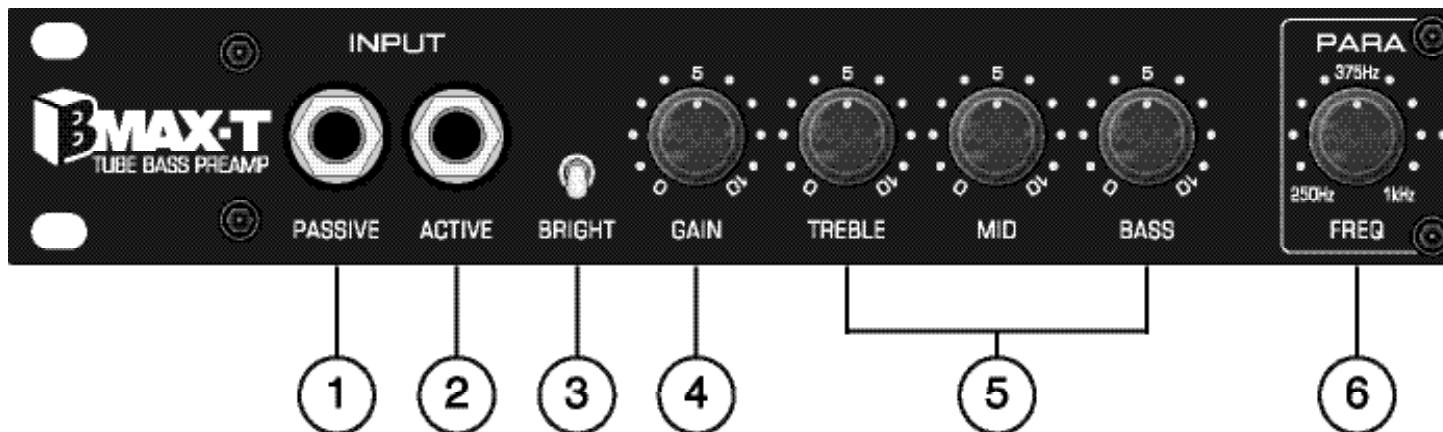
Before you begin, please check the contents within this box to insure that included are:

1. The BBE BMAX-T Bass Guitar Pre-amp.
2. The BBE BMAX-T User's manual.

If either of these items are found to be missing, immediately contact the BBE dealer from whom the unit was purchased immediately.

WARNING! To prevent possible speaker or amplifier damage, always power-up peripheral devices first, wait 10 seconds, and then turn on the power amplifier. Turn off power amplifier first, then power-down peripheral devices.

FRONT PANEL CONNECTIONS



Input

1. **PASSIVE:** This jack allows for the connection of a bass guitar with passive-pickups to the BMAX-T.
2. **ACTIVE:** This jack allows for the connection of a bass guitar with active-pickups to the BMAX-T. It is attenuated, with respect to the “passive input”, by about 6dB to allow for the higher level output of active-pickup systems.

Pre-amp

3. **BRIGHT:** The Bright Switch connects a capacitor to the GAIN circuit creating a 10dB boost @ 10Khz.
4. **GAIN:** This controls the output of the preamp section post EQ.
5. **3-BAND INTERACTIVE EQUALIZER:** The Bass and Treble controls are mainly “boost” and the Mid control only “cut”. While there is no absolutely flat position, the response is reasonably flat with the controls set at TREBLE:2, MID:10, BASS: 2, with the bright switch off. The circuit can be described as interacting, such that when all 3 tone controls are turned to 0 then no signal is passed at all.

Para-mids

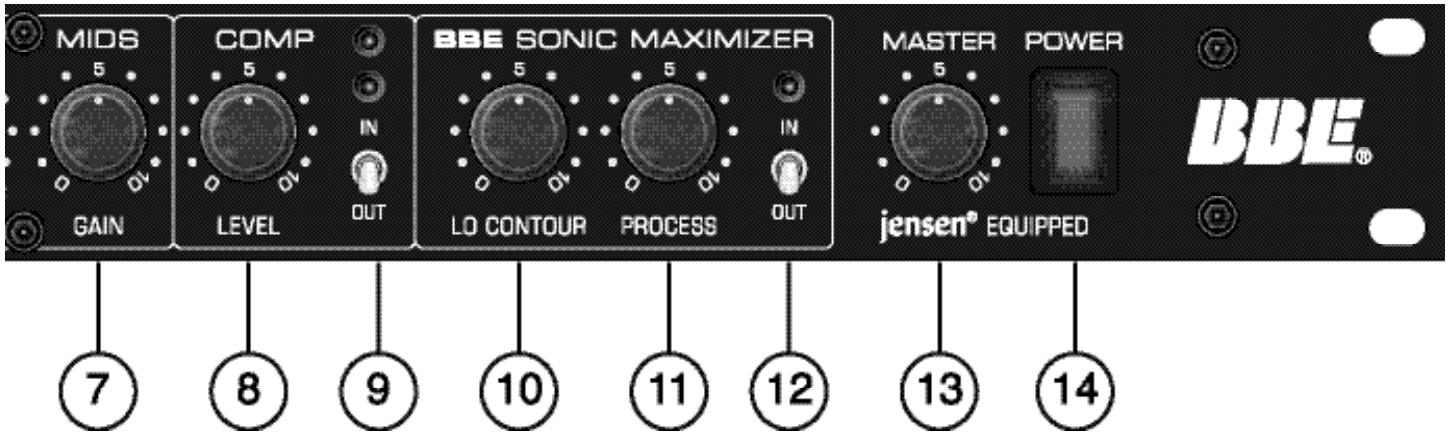
6. **FREQ:** A range from 250hz to 1000hz is adjustable with the FREQ knob.
7. **GAIN:** This control is adjustable as follows:

“0” = -12dB

“5” = 0dB

“10” = +12dB





Compressor

- 8. **LEVEL:** This is a “soft-knee” compressor using a photo-optical cell as it’s attenuating element for controlling gain-reduction. The single-knob LEVEL control will lower the threshold at which gain reduction begins and increase the ratio of input vs. output, simultaneously, as it is rotated in the clockwise direction from “0” to “10”.
- 9. **IN/OUT:** When switched to the “IN” position, the compressor circuit will be engaged as indicated by the green LED. When the incoming signal reaches the threshold, determined by the position of the LEVEL control, the yellow LED indicates that compression is taking place. This switch is superceded by the use of the optional FS-BMAX footswitch.

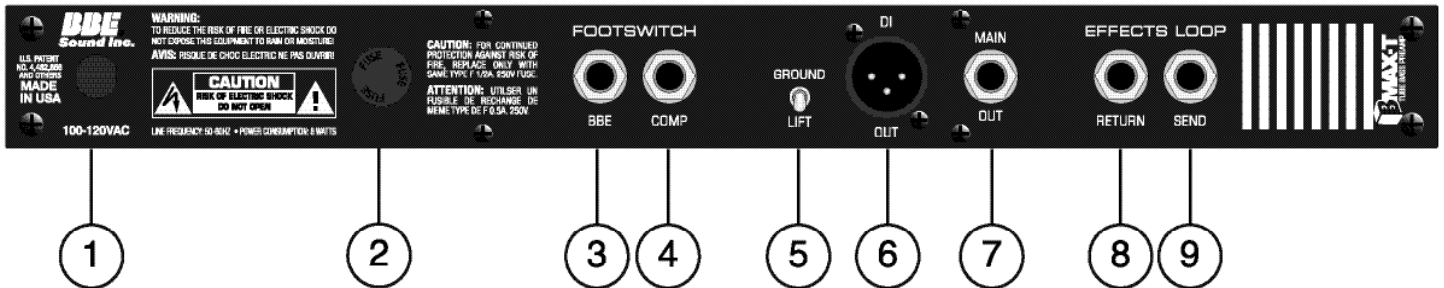
BBE Process

- 10. **LO CONTOUR:** This control is a low frequency adjustment for the BBE Process. It provides a boost of 10dBu when turned to its maximum position (clockwise) at 50Hz. When turned to its minimum position (counter-clockwise) it would be flat or no change.
- 11. **PROCESS:** When the knob is in its minimum position, completely counterclockwise, no process is taking effect and the circuit is in its noise suppression mode. Turning the knob clockwise will introduce the BBE Process. Adjust the knob to mix the desired amount of process to suit your taste. Use the BBE as an extension of the tone controls. Generally a good place to start the BBE process is to set the knob to it’s 12 o’clock position, then adjust accordingly. Note: The BBE process is applied after the effects return.
- 12. **BBE IN/OUT:** This switch engages the BBE Process as indicated by the green LED. When in the “OUT” position, the green LED will not illuminate, indicating that the BBE Process has been disengaged. This switch is superceded by the use of the optional FS-BMAX footswitch.

Output

- 13. **MASTER:** This control simultaneously adjusts the signal level of both the Balanced and Unbalanced outputs.
- 14. **POWER:** This switch applies AC power to the BBE BMAX-T. The green power switch will illuminate when the power switch is in the “ON” position.

REAR PANEL CONNECTIONS



1. **AC POWER CORD:** This is a standard two-pronged AC power cable.
2. **FUSE:** Replace **ONLY** with same type Fastblow fuse.
U.S., Canada & Japan models: .5A, 250VAC fast-blow type
All others: .250A, 250VAC fast-blow type

Footswitch

3. **BBE:** This jack allows remote in/out switching for the BBE Sonic Maximizer section of the BMAX-T. Please use our (optional) FS-BMAX dual footswitch.
4. **COMP:** This jack allows remote in/out switching for the COMP section of the BMAX-T. Please use our (optional) FS-BMAX dual footswitch.

Ground lift

5. **GROUND LIFT:** In the "up" position, use this switch to disable the ground pin of the XLR connector. This is a useful feature in eliminating a ground loop between the BMAX-T and any subsequent component in the signal chain.

Output

6. **DI OUT:** This is a transformer balanced low impedance output. Use this output to feed long cable runs or microphone level inputs on a mixing console or recorder
7. **MAIN OUT:** This unbalanced output is used to connect the BBE BMAX-T Pre-amp to the next subsequent component in the system, i.e. power amplifier.

Effects

8. **RETURN:** Use this jack to connect the BMAX-T to an effects processor's output.
9. **SEND:** Use this jack to connect the BMAX-T to an effects processor's input. *The send jack can also be used to feed the input of a guitar tuner.*

Specifications

Frequency Response:15Hz – 30kHz +/-3dB
Signal to Noise:100dB@unity
THD:Tube section 1%, Post-Tube section less than 0.02%
Maximum Output:+22dBu
Noise: -77 dBu @ unity gain, eq flat
Input Impedance:
 Passive1 Meg Ohm
 Active.....100 K Ohm
Output Impedance:
 Balanced XLR600 Ohms, Pin #2 hot or “+”
 Unbalanced 1/4”1K Ohms
Interactive EQ:
 Treble (boost only)15dB@ 6kHz
 Mid (cut only).....15dB@ 300Hz
 Bass (boost only)15db@ 40Hz
Bright Switch:+10dB@ 10kHz, eq flat
Para-mids:+/- 12dB from 250Hz to 1kHz
* 0dBu = 0.775mVrms

Power Requirements:U.S., Canada & Japan models: 120VAC, 50/60Hz, 8 WATTS
Standard model: 220VAC, 50/60Hz, 8 WATTS
Fuse:Replace with the same type FASTBLOW fuse
U.S., Canada & Japan models: .5A, 250VAC fast-blow type
All others: .250A, 250VAC fast-blow type
Dimensions:19"(W) x 5.5"(D) x 1.7"(H)
Shipping Weight:7 lbs.

Note: Due to continuing product improvement, specifications and design are subject to change without notice.

General Operation

In order to reduce the risk of damage to any equipment, properly connect all audio and power cables before turning on any components in the system. Most important of all, ALWAYS TURN ON THE POWER AMPLIFIER LAST TO AVOID DAMAGING THE SPEAKERS OR THE AMP.

The Bass and Treble controls are mainly “boost” and the Mid control only “cut”. While there is no absolutely flat position, the response is reasonably flat with the controls set at TREBLE:2, MID:10, BASS: 2, with the bright switch off. The circuit can be described as interacting, such that the frequencies affected by each control is affected somewhat by the settings of the others. When all 3 tone controls are turned to 0 then no signal is passed at all.

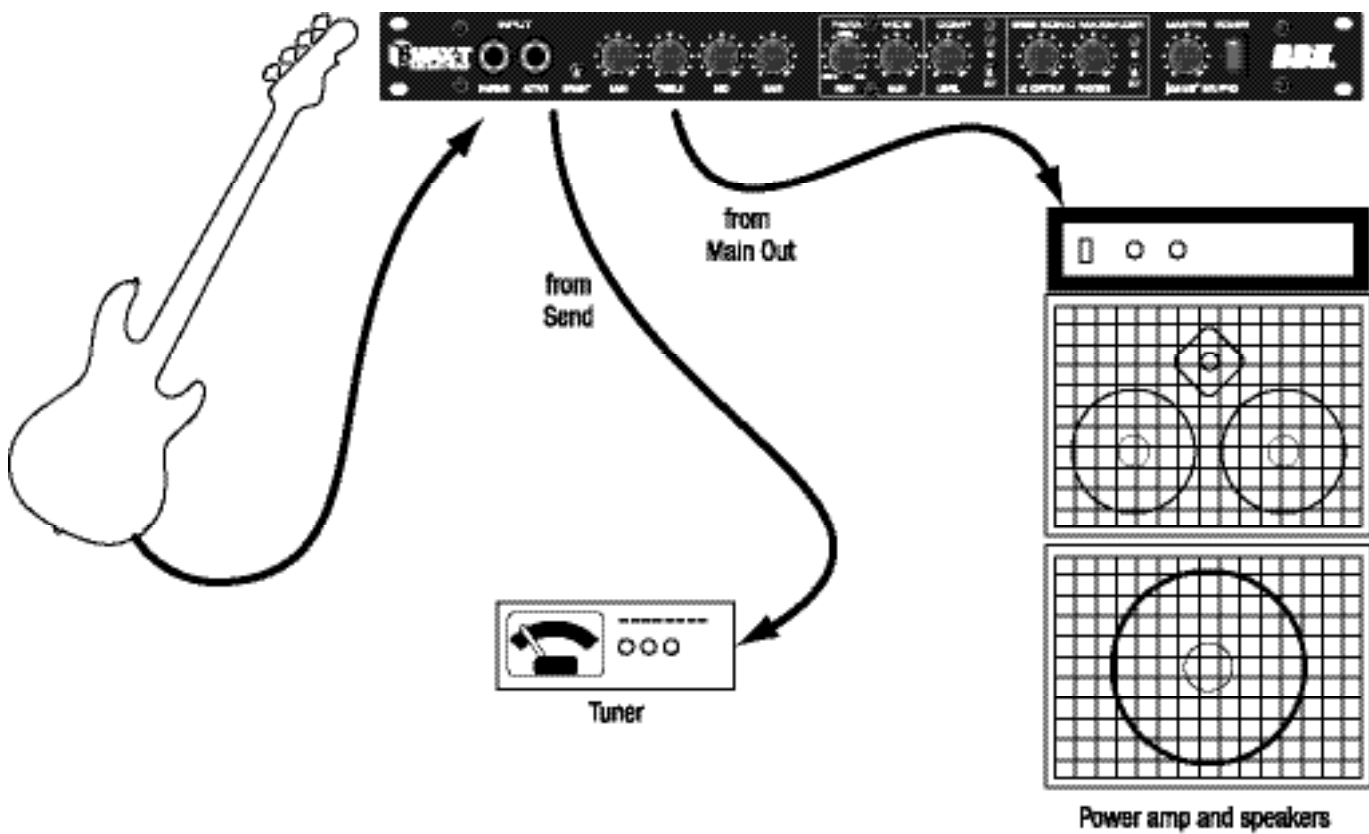
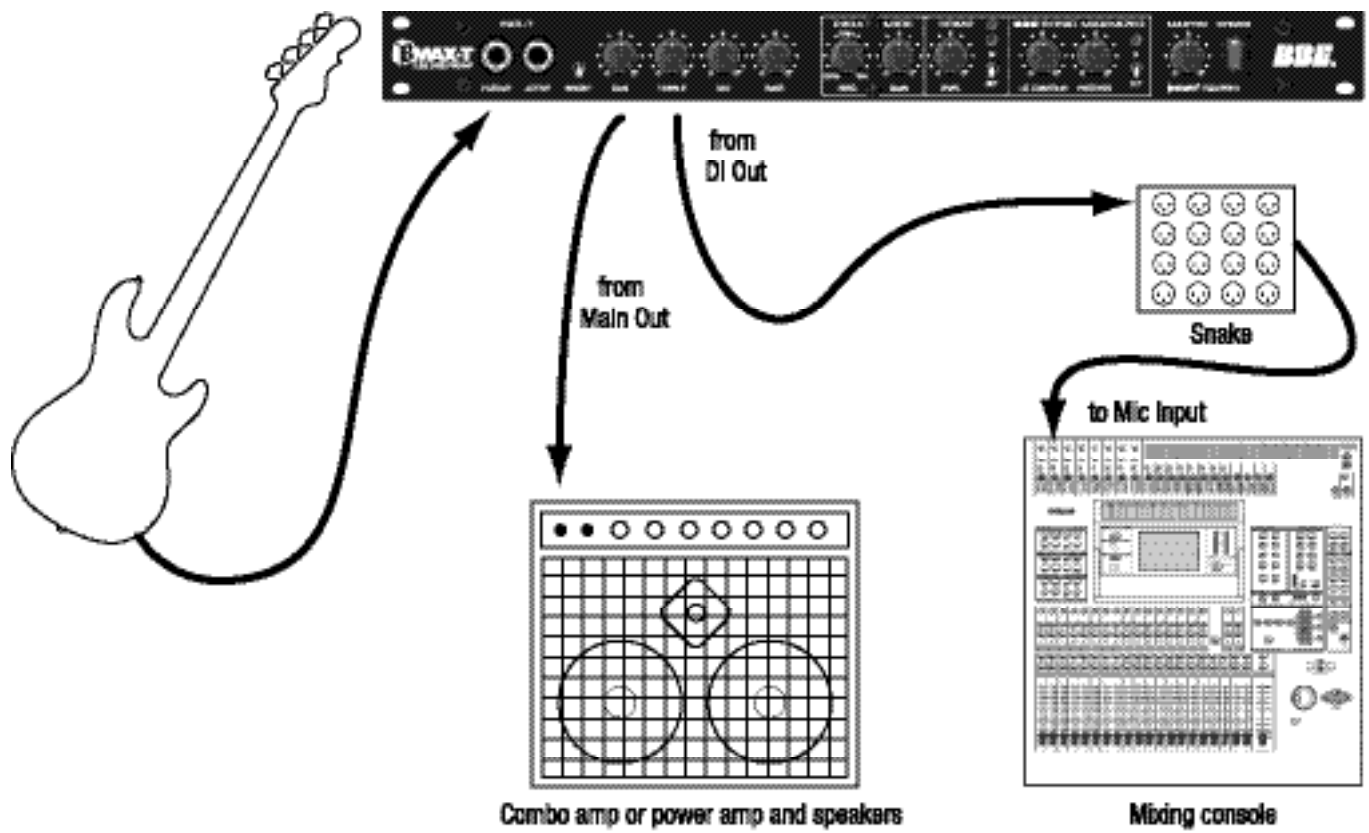
BBE’s exclusive “PARA-MID” midrange equalization offers even further control over the crucial mid-band of the Bass’ overall tonal characteristics.

Compression is a feature that will be welcomed by any bass player. Adjust the LEVEL knob to eliminate any volume peaks. An increase in sustain is also a desired result of large amounts of compression as determined by the LEVEL control.

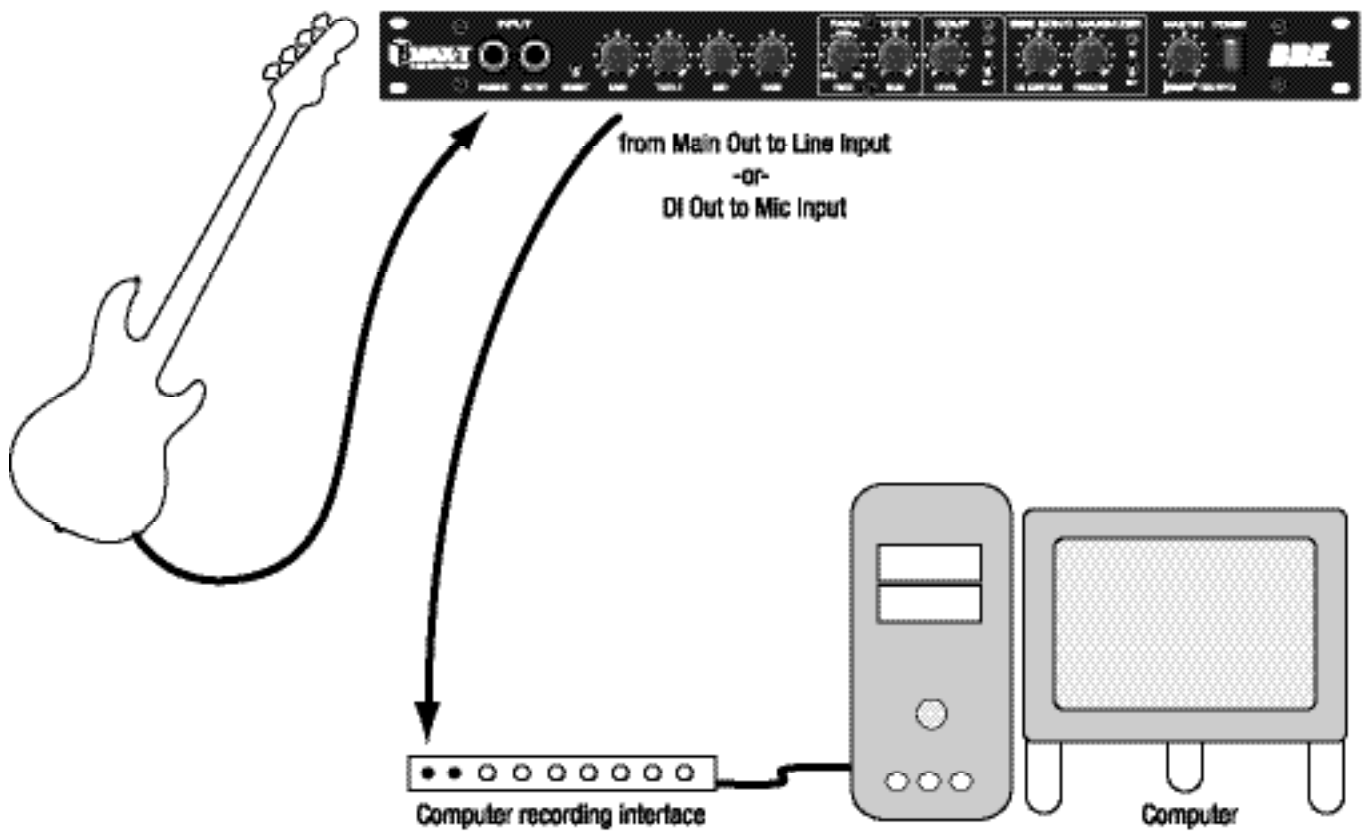
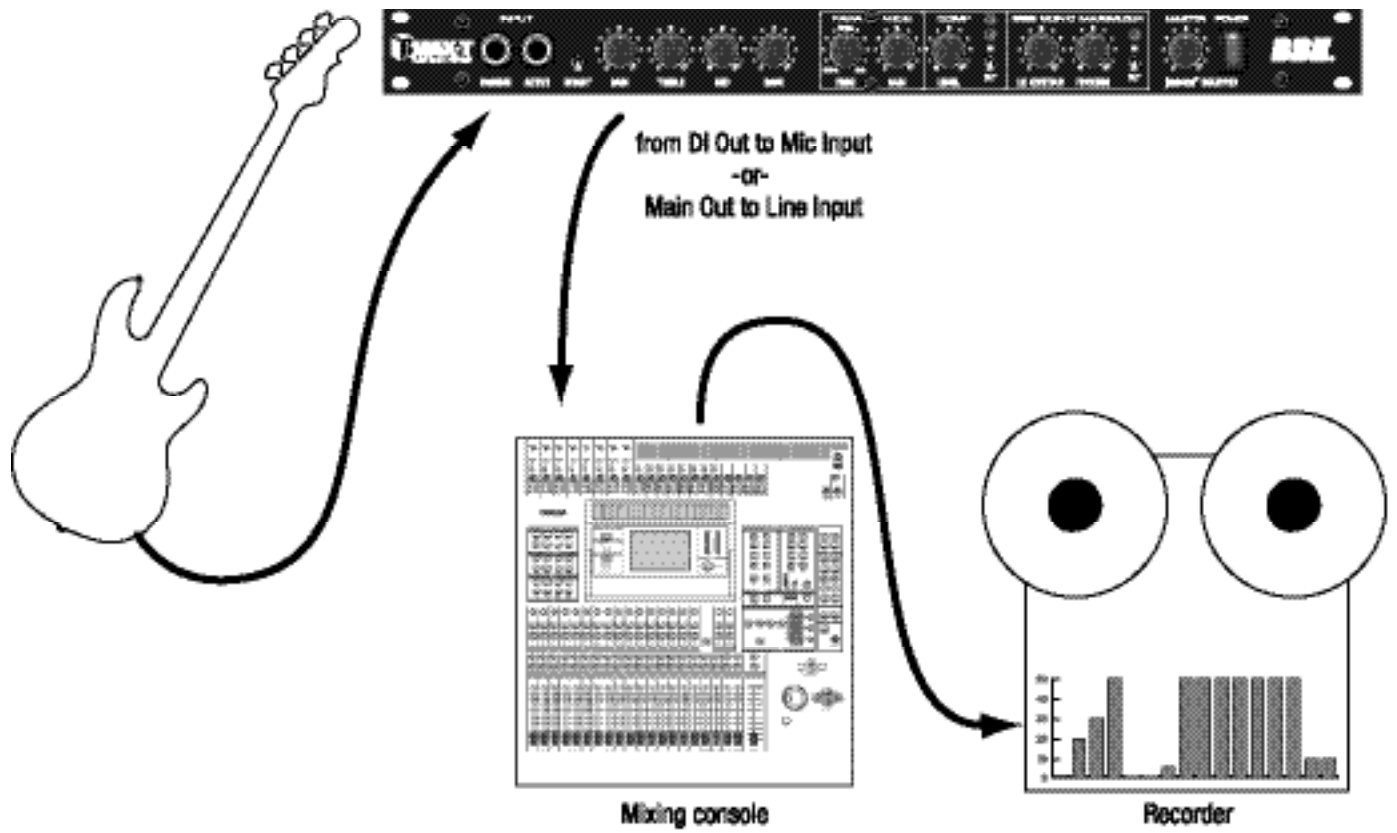
The BBE Process is a unique feature that only the BBE series of pre-amps possess. The BBE Process will produce a clear, crisp, full-bodied sound without adding any noise or harmonic distortion to the signal. The BBE Process should be used as an extension of the Equalization controls to improve the overall quality of the bass guitar's tone.

The Volume control will simultaneously adjust the BMAX-T's output volume from both outputs: The Balanced and Unbalanced outputs. Use either the Unbalanced or the Balanced output to connect to a power amp or a mixing console. The Unbalanced outputs are 1/4" monaural phone plugs while the Balanced output is a male XLR connector with a Ground Lift switch to eliminate any multiple ground connections.

LIVE APPLICATIONS



RECORDING APPLICATIONS



Service

We recommend that if at all possible, a BBE BMAX-T which requires service be sent to our facility in Huntington Beach, California. We request that a "RETURN AUTHORIZATION" be issued by the dealer from whom you purchased the unit. If this is not possible, call BBE Sound, Inc. directly at (714) 897-6766, extension 116 to obtain a "RETURN AUTHORIZATION". Include a copy of the bill of sale with the unit when it is shipped to BBE Sound, Inc. so that the service can be expedited.

As the repair turnaround time is minimal, we request that the unit be sent to BBE Sound, Inc. We also need to add reliability data to our files so that future revision may be undertaken, if necessary, to improve the product. **If this unit has been purchased outside the US, please contact your national distributor.**

Warranty

Warranty registration of the unit to BBE Sound, Inc. is not necessary. It is strongly recommended that you retain a copy of the bill of sale for future reference.

IT IS THE SOLE RESPONSIBILITY OF THE END USER TO PROVIDE THE BILL OF SALE OR OTHER MEANS OF PROOF OF PURCHASE TO VALIDATE THE WARRANTY IF WARRANTY SERVICE IS REQUESTED.

The BBE BMAX-T is warranted against defects in material and workmanship for a period of five (5) years, **the tube is warranted against defects in material and workmanship for a period of six (6) months**, from date of purchase from BBE Sound Inc. or from an authorized dealer. During this period, we will repair units free of charge providing that they are shipped prepaid to BBE Sound, Inc., 5381 Production Drive, Huntington Beach, CA 92649. We will pay return UPS shipping charges within the USA. All charges related to non-UPS shipping, including customs clearance, will be billed. The warranty will be honored for the longer of either 90 days from the date of any service or the remainder of the original 5 Year factory warranty.

This warranty will be consider null and void by BBE Sound, Inc. if any of the following is found:

1. The equipment has been physically damaged.
2. The equipment shows signs of abuse.
3. The equipment has been electrically damaged by improper connection or attempted repair by the customer or a third party.
4. The equipment has been modified without authorization.
5. The bill of sales indicates that the purchase date of the equipment is not within the warranty period.

All non-warranty repairs are warranted for a period of 90 days from the date of service.

BBE Sound, Inc. is NOT LIABLE FOR CONSEQUENTIAL DAMAGES. Should the unit fail to operate for any reason, our sole obligation is to repair it as described above.

DO NOT RETURN ANY PRODUCT TO THE ABOVE ADDRESS WITHOUT INSTRUCTIONS AND AUTHORIZATION ISSUED BY THE ABOVE LOCATION.

Maintenance

Maintenance of the BBE BMAX-T is limited to proper cleaning of the unit with mild household cleaner such as Formula 409™ or Windex™. The chassis and cover are steel finished with a durable polyurethane paint, while the front panel is an anodized aluminum extrusion.

There are no user replaceable parts and the unit should not be opened for any reason unless you are a qualified technician. Calibration should be performed if parts are replaced or if a performance check-out indicates a problem with calibration. Long term use has shown that over the life of this unit there is little or no drift of the components in the BBE BMAX-T which would cause a change in calibration. A very conservative design philosophy has resulted in a piece of equipment which runs very cool and should give years of trouble-free service.



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covered by U.S. Patent 4,482,866 and other U.S. and foreign patents pending.
BBE is the registered trademark of BBE Sound, Inc.