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Congratulations and thank you for purchasing the HUGHES & KETTNER BassBase 600!

The BassBase 600 represents our goal of designing the ultimate bass amp, featuring the cutting edge of contemporary amplification technology. In respect to performance, sound quality, flexibility and workmanship, we made our dream of the perfect bass amp a reality (and hopefully yours too).

In addition to all the tried-and-true features of classic bass amps, the BassBase 600 offers many innovative details that will help you translate your ideas about sound into music.

In spite of its wealth of features, the BassBase 600 is designed to be straightforward to understand and easy to operate. This manual will help you exploit the many options your new amp offers.

We wish you much enjoyment and success with your BassBase 600!

BEFORE OPERATING....

Check the voltage rating displayed next to the amp's AC socket. Make sure it matches your local AC current before you plug the amp's power cord into an AC outlet.

Place the amp on a sturdy, secure base (no, a stack of empty beer crates won't do). If you install the amp in a rack, make sure the amp is supported from the rear, or is mounted at the bottom rack space.

HUGHES & KETTNER is not liable for damage to the amp due to incorrect installation in racks.

1.0 CONNECTIONS AND CONTROL FEATURES

1.1 FRONT PANEL

GAIN:
Controls the input sensitivity and drive level of the BassBase preamp.

CLIP:
Indicates all types of clipping in the BassBase preamp stage (including post-EQ section and FX loop distortion). In other words, an illuminated CLIP LED does not necessarily mean the GAIN control is set too high, it may also indicate the FX signal level is not adjusted properly.

LEVEL:
This control amplifies or attenuates the frequency range you selected via the FREQ HZ control. Turn clockwise to increase, counter-clockwise to decrease.

DIRECT:
Press this button to send the original instrument signal (unaffected by gain settings, voicing controls, FX loop and notch filter) directly to the DI OUT jack, at MIC level.

TUBE SATURATION:
Indicates the preamp is in tube overdrive mode.

SIGNAL:
Indicates the presence of an instrument signal at the tube stage.

PREAMP:
These LEDs indicate the preamp's operating status.

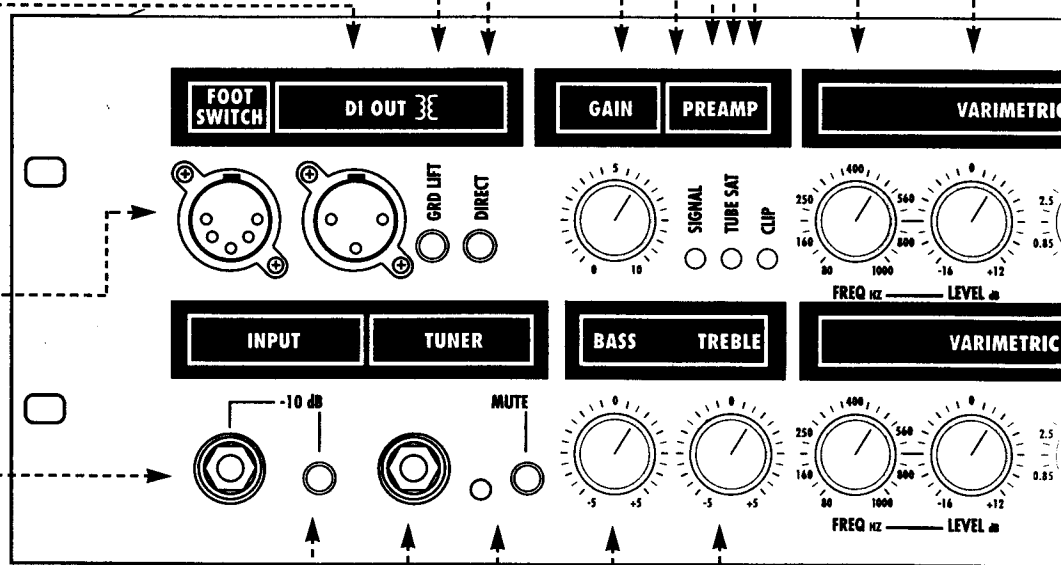
FREQ HZ:
Defines the center frequency for the EQ's LOW RANGE section.

GROUND LIFT:
Removes the ground from the chassis at the DI OUT jack.

DI OUT:
Use this jack to send signals to a mixing console or additional power amp. The output is transformer to ensure a hum-free feed to mixing consoles.

FOOTSWITCH:
Input jack for the BassBase STAGEBOARD.

INPUT:
1/4" input jack for your bass.



-10 dB SWITCH:
Lowers the BassBase's input impedance (e.g. for active instruments).

TUNER OUT:
Jack for connecting an external tuner.

MUTE:
Switches all of the BassBase 600's outputs off except for the TUNER OUT. Use this button for breaks between sets, switching instruments, or when tuning. The RED MUTE LED will illuminate to indicate the amp is muted.

BASS:
This active EQ control defines the bottom end. At the 12 o'clock position, the signal remains completely unaffected.

VARIMETRIC B:
This is the second section of the BassBase 600's special VARIMETRIC EQ. All controls have identical functions to those of the first section. Use the EQ SELECT switch to activate the desired section.

TREBLE:
Use this pre-tube stage control to adjust the high end, particularly the 'sizzle' and overtone range.

VARIMETRIC A:

One section of the special VARIMETRIC EQ.
Please refer to Chapter 4.2 (VARIMETRIC EQ)

MIDI LEARN

You can upgrade the BassBase 600 for MIDI operation by installing the MSM 1 MIDI MODULE. The MSM 1 lets you save the current sound and effects combination by simply pressing the MIDI LEARN BUTTON. Installation takes just a few minutes and does not require soldering. Talk to your Hughes & Kettner dealer for details.

FREQ KHZ:

Defines the center frequency for the EQ's HI RANGE section.

EQ SELECT:

Selector switch for the BassBase EQ section.

LEVEL:

This control adjusts the level of the frequency range you selected via the FREQ KHZ control.

ON:

Activates the VARIMETRIC EQs.

FX LOOP ON:

Press this button to activate the BassBase 600's parallel FX loop.

RED VARIMETRIC A LED:

Indicates Section A of the VARIMETRIC EQs is active.

A/B:

Activates the VARIMETRIC A or VARIMETRIC B sections.

GREEN FX LED:

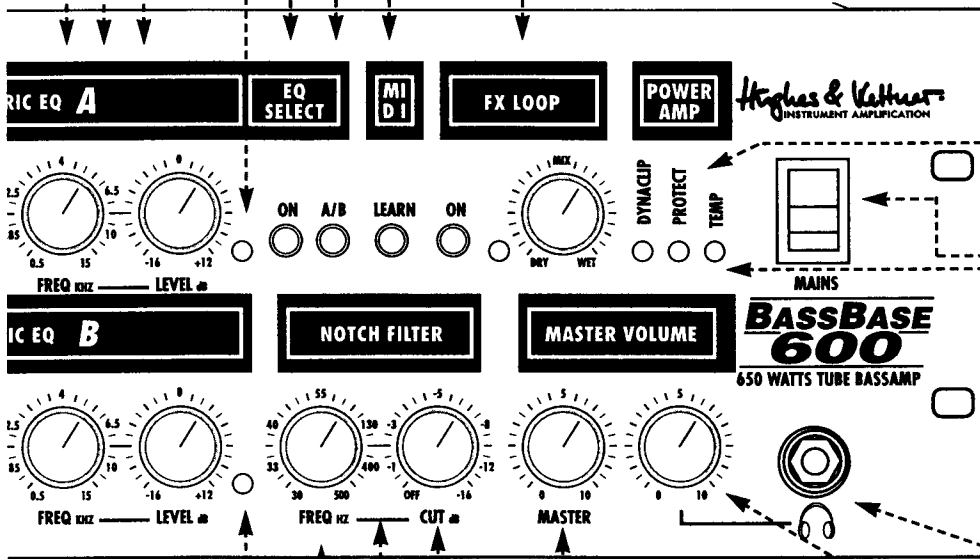
Shows that the FX loop is active.

FX-MIX :

The FX MIX pot adjusts the balance between the original signal and the processed signal. DRY = original signal only, WET = processed signal only.

DYNACLIP LED:

Illuminates when the DYNACLIP power amp circuit is active. DYNACLIP eliminates undesirable power amp distortion and provides 20% additional headroom, effectively raising the BassBase 600's continuous power to 840 watts at 4 ohms.



MAINS:

AC power switch.

PROTECT LED:

Illuminates when one of the power amp circuit breakers has tripped. Inadequate ventilation, a short circuit in the SPEAKER OUTS or direct current in the output will trigger the circuit breaker.

TEMP LED:

Indicates that thermal overload (overheating) is the reason why the protective circuit has activated (e.g. when the ribbed ventilation duct is obstructed).

CUT:

Turn this control up to suppress the frequency you selected via the FREQ control.

NOTCH FILTER:

This adjustable, extremely narrow-band filter is not used for normal sound-shaping, but to suppress specific stage and room resonances (e.g. a stage floor's sympathetic vibrations).

RED VARIMETRIC B LED:

Illuminates to indicate Section B is active.

HEADPHONES JACK:

jack for stereo headphones (4 - 600 Ohms).

HEADPHONES VOLUME:

Controls the signal level at the HEADPHONES OUT jack.

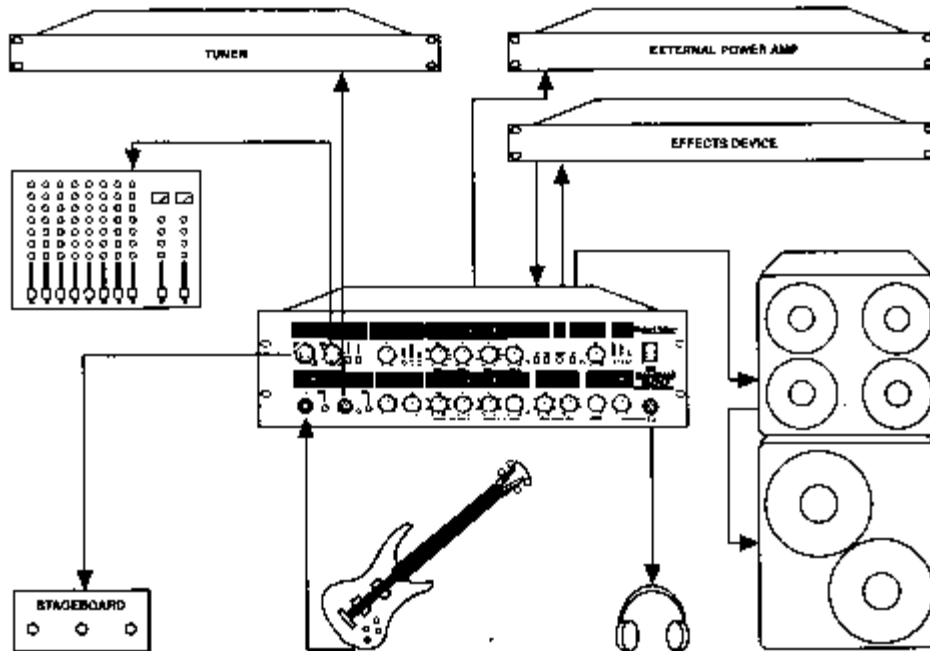
FREQ:

Use this control to set the notch filter's center frequency within a range of 30 to 500 Hz.

MASTER VOLUME:

Controls the BassBase 600's overall output.

2.0 STANDARD SETUP/CABLE CONNECTIONS



For safety purposes, the BassBase 600's power amp is exclusively equipped with Speakon jacks and female XLR jacks. (In some cases, you may need to employ an adapter cable.)

NOTE: Under no circumstances should you use 1/4" plugs for connecting speaker cabinets to the BassBase 600; they are not designed to handle the amount of power this amp puts out.

3.0 SELECTING EQ SETTINGS/MIDI

You can activate the BassBase 600's two VARIMETRIC EQs and the FX LOOP in any one of three different ways: via the front panel controls, the STAGEBOARD, or MIDI (once the MSM 1 MIDI Module has been installed).

From the front panel, press the EQ ON button to enhance the basic EQ section (BASS and TREBLE), which is always on, with the VARIMETRIC EQ. Now you can use the EQ A/B button to switch back and forth between VARIMETRIC A and VARIMETRIC B.

From the Stageboard, use the same procedure to select a setting. The LEDs illuminate to indicate the current switching status.

NOTE: To use either the Stageboard or MIDI to operate the BassBase, please ensure that all switches on the front panel of the unit itself are OUT (not depressed). Alternatively, to operate the BassBase using either the front panel switches or MIDI, ensure the Stageboard is either unplugged or completely switched off (that is, no Stageboard LEDs are on).

Once the MSM 1 MIDI Module has been installed, you can switch EQ sections and activate the FX loop via MIDI commands. Using MIDI to handle the simultaneous switching of the BassBase 600 and your FX processor leaves you free to concentrate on your music.

Please refer to the MSM 1 Instruction Manual for detailed information on installation and MIDI operation.

4.0 OPERATING THE BASSBASE 600

4.1 THE INPUT SECTION AND BASIC EQ SECTION

The response of the BassBase 600 tube preamp stage depends in large part on your instrument, its pickups and signal level, and your playing style. The -10 dB and GAIN controls simplify and significantly expedite your search for the proper level. Although your ears are the ultimate authority, the PREAMP LEDs are also great visual reference tools for this task.

To adjust the gain properly, turn your instrument's volume all the way up and 'spank the plank' hard by slapping or really digging in with your pick. For the ideal setting, the RED CLIP LED will flash briefly on peaks only. If the signal is too hot, press the -10 dB button to damp it.

NOTE: The RED CLIP LED illuminates to indicate distortion in the BassBase 600 preamp caused by a saturated input or incorrect FX processor levels. It will not show distortion caused by your bass, such as an active instrument's low batteries.

The yellow TUBE SATURATION LED indicates the amp's tube stage is entering the mellow overdrive zone. You will now begin to hear that utterly desirable tube growl and typical tube compression. For ultraclean sounds, only the SIGNAL LED should illuminate. If you cannot achieve tube saturation even with the gain wide open, deactivate the -10 dB button (not depressed).

Use the BASS and TREBLE controls to dial in the basic tone. Note that the TREBLE control is situated *before* the tube stage in the signal chain, yielding smoother harmonic overtones. If the CLIP LED illuminates when you dial in higher TREBLE settings, simply adjust the GAIN control to a lower level.

4.2 THE VARIMETRIC EQs

Handle the VARIMETRIC EQ sections as you would a semi-parametric EQ. The difference lies in the VARIMETRIC EQ's auto-variable bandwidth and slope, which enables you to achieve substantially more musical results. The easiest way to use it (and the best way to acquaint yourself with how it works) is to do the following:

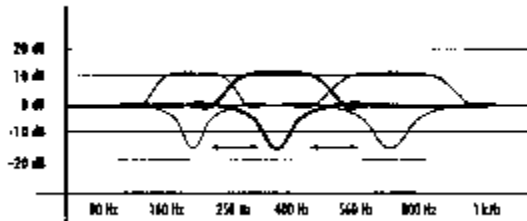
- Turn the LEVEL control all the way up so you can really hear the results when you tune a frequency range in the lower midrange.
- Dial in the desired low-mids center frequency via the FREQ HZ control. (You will hear a wah-wah effect when turning this knob. If you stop rotating the pot at any point you will hear that particular frequency especially pronounced. You may find a given frequency particularly annoying, but not to worry, help is near: simply attenuate the culprit.
- You can now use the LEVEL control to amplify/attenuate selected frequencies as desired.
- Use the same procedure to tune the upper-mid frequencies via the FREQ KHZ and LEVEL controls (LEVEL to maximum, tune FREQ KHZ, then adjust LEVEL to amplify/attenuate the chosen frequencies).
- Hit the EQ ON button if you need to compare your EQed tone to the basic tone.
- If you leave the LEVEL control in the 12 o'clock position for a given frequency, that frequency will not be affected.

With a bit of practice, you can also tune an attenuated frequency range (rather than artificially overemphasizing it first like we just did), but keep in mind that for the human ear, attenuated frequencies are generally more difficult to discern.

Why call it "VARIMETRIC" rather than "PARAMETRIC?"

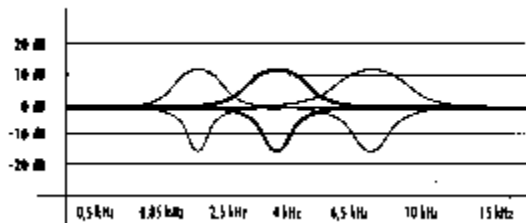
Even though you handle the VARIMETRIC the same way you would a conventional semi-parametric EQ with its fixed filtering, it is a much more sophisticated sound-shaping tool. The filters, rather than being geared to a fixed frequency range, are variable, enabling you to fine-tune your tone for a truly musical result.

LOW/MID VARIMETRIC:



This frequency diagram depicts the effects of the VARIMETRIC EQ on the lower-midrange. As clearly illustrated, the boost of a complete octave range is very well-rounded and even, ideal for clearly establishing the basic sound character. Attenuation occurs at a much narrower bandwidth to allow you to accurately target undesirable frequencies. If you amplify a given frequency range, the frequencies bordering its outer parameters are smoothed out with a touch of attenuation, and if you attenuate a given frequency range, the frequencies bordering its outer parameters are gently amplified, achieving an audio contour which intensifies the overall EQ effect.

HIGH/MID VARIMETRIC:



Mid/Treble equalization: The higher the frequency, the broader the bandwidth processed by the VARIMETRIC EQ, much in the way the human ear registers the upper end. Attenuation occurs at a much narrower bandwidth so you can accurately target undesirable frequencies and avoid the dreaded broad-band hollow midrange effect.

4.3 THE NOTCH FILTER

Undesirable frequencies such as those caused by resonating objects in the room or floor boards in the stage can be suppressed via the NOTCH FILTER. The NOTCH FILTER operates in extremely narrow bandwidths to avoid altering the overall sound. Adjust the NOTCH FILTER as follows:

- Turn the NOTCH FILTER LEVEL control all the way up so you can clearly hear the attenuated frequency.
- Turn the FREQUENCY knob until you locate the frequency responsible for the sympathetic vibrations; the NOTCH FILTER will suppress it.
- Now turn the LEVEL control to just below the point where the resonance sets in, thus ensuring that the filter has a minimal effect on the overall sound.

It does take a bit of practice to get the hang of the NOTCH FILTER, as the human ear cannot readily identify attenuated narrow bandwidths.

4.4 THE BASSBASE 600 AND FX PROCESSORS

The BassBase 600 is equipped with a parallel FX loop. The processed signal is mixed with the original signal (i.e. the BassBase preamp signal) so that the original signal is still audible during the brief interruptions caused by multieffects processor switching. The FX-MIX knob controls the dry/wet mix.

NOTE: As a rule of thumb, the best method for using signal processors is to set the device so that its output is all effect, then to mix the original signal with the processed signal via the FX-MIX control. This will avoid the tone degradation often caused by effects devices.

- Activate the FX loop via the FX SELECTOR SWITCH.
- Adjust the FX loop's level to your FX processor's input level. Press the -10 dB button for effects devices that are designed for instrument levels. If the button is not pushed in, the signal remains at standard line level for 19" rackmounted processors.
- Adjust the blend between the original and processed signal via the FX MIX pot located on the front panel. Towards DRY = more original signal, towards WET = more processed signal.

NOTE: Some signal processors cause phase cancellations that are detrimental to the overall sound (washed-out tone, lower output level at the 12 o'clock position). In this case, turn the BassBase FX control all the way to the right (WET). The effects loop then operates as a conventional serial loop, i.e. the volume relationship between the original and the processed signal must be adjusted at the processor.

TIP 1: If you choose not to connect a signal processor/effects device to the FX loop, you can connect another instrument or tape deck. For instance you could connect a guitar, keyboard, drum machine, tape player, etc. for rehearsals or practice sessions.

Connect the additional device as described above and use the FX-MIX knob as the volume balance control between your bass and the external signal source.

TIP 2: Another option is open to you if you do not connect a signal processor: You can use the loop to activate an additional MASTER volume for the BassBase. To use the FX-Mix control this way:

- Activate the FX LOOP.

- Dial in a separate MASTER VOLUME setting via the FX MIX pot (to the left towards DRY = volume down, to the right towards WET = volume up).

- You can switch back and forth between the two MASTER VOLUMES via the FX footswitch. Once the BassBase has been equipped with the MSM 1 MIDI Module, you can also activate the second MASTER VOLUME via MIDI messages.

4.5 THE BASSBASE 600 AND MIDI

Once the MSM 1 MIDI Module has been installed, you can execute many of the switching operations of your BassBase via MIDI. Simultaneous switching of both the BassBase 600 and the multi-effects processor offers optimum operational simplicity.

Consult the MSM 1's instructions for detailed information on the installation procedure.

BassBase 600 MIDI operations are also described in the MSM 1 Module's operators manual.

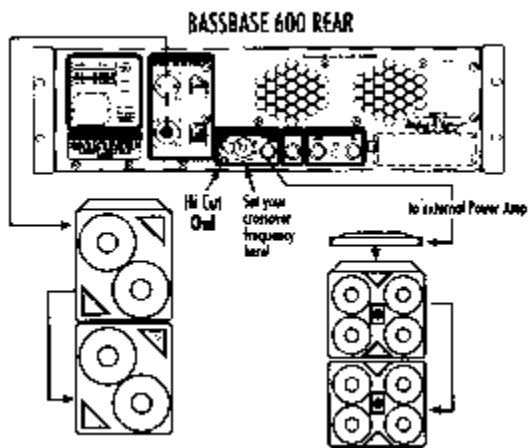
4.6 THE ACTIVE CROSSOVER

The BassBase 600 is equipped with an active crossover. This enables you to biamp your system. The output signal is separated into two frequency ranges and sent to two different power amps and then on to the speaker cabinets. Always use the BassBase 600's integrated power amp for bottom-end amplification.

The biamping capability provides enhance flexibility, additional speaker cabinet options and even higher stage volumes. A popular option is to send only the upper frequencies through an FX processor, thus retaining a clean, punchy bottom end.

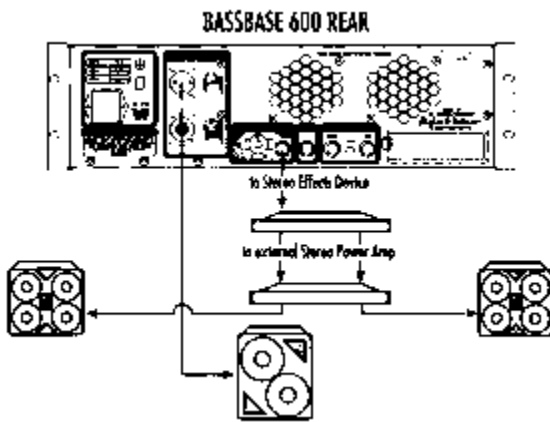
To operate your system in the biamping mode, proceed as follows:

- Set up your system as illustrated in the following diagram.



- Activate the HI CUT, provided you want your bass bin to reproduce the bottom end only; in other words, you do not want the cabinet to operate in full-range mode.
- Use the X-OVER CONTROL to adjust the separating frequency by ear. There is no ideal setting, it depends on a number of factors such as power amp ratings, speaker response and personal taste. If you are using a power amp with a relatively low rating, set the separating frequency to somewhere in the upper range so that your system delivers a balanced midrange response.

If you chose to send the hi-range signal through an FX processor, a rule of thumb is to set a lower separating frequency. Cable connections are as follows:



5.0 SERVICE AND PREVENTIVE MAINTENANCE

The BassBase 600 will not require service of any type for many years. Tube fatigue is normal after several thousand operating hours and becomes apparent through treble loss or increased microphonics (audible as a ringing noise reproduced by the tweeter).

Use a soft, slightly damp cloth to clean all metal parts. Avoid exposure to mechanical shocks, extreme heat, dust and moisture.

6.0 TROUBLESHOOTING

E1) The BassBase is not getting any power:

- Check the mains cable to see if it is connected properly.
- The mains fuse is defective. Replace the fuse with another identical fuse. If this fuse also blows, consult your Hughes & Kettner dealer.

E2) The BassBase is connected properly, but no sound is audible.

- The MUTE function is activated. Press the MUTE button!
- One or several GAIN and MASTER controls are turned all the way down. Dial in a higher setting.
- The FX-MIX control is turned all the way to WET but you have not connected a processor to the FX loop. Turn the FX-MIX knob to DRY.
- One of the circuit breakers has tripped. Locate and eliminate the defect (e.g. inadequate ventilation, defective speaker cable).
- One of the internal fuses is blown (e.g. caused by a permanent short in the speaker output jack). Locate and eliminate the defect and change the fuse (make certain the replacement fuse bears the proper rating).

E3) Hi-range/midrange response is poor even though you have verified your EQ settings.

- The HI-CUT button is in the ON position although you are not running a biamped rig. Switch the HI-CUT off (button not depressed).

E4) Using the Stageboard, you are unable to turn off the VARIMETRIC EQ or the FX LOOP, or you can only activate VARIMETRIC B:

- The EQ or FX LOOP front panel selector switches were inadvertently left in the ON position. Press the appropriate selector switch to disengage front panel control.
- The STAGEBOARD is not plugged in. Connect it to the BassBase.
- The MIDI module was previously active. Briefly press the MIDI LEARN button to clear the MIDI mode.

E5) The sound is thin and muddy when the FX processor is active.

- The signal processor is causing phase shifting that is being added to the original signal in the parallel loop. Turn the FX-MIX control all the way to the right (WET) to avoid phase cancellations.

E6) The red CLIP LED keeps illuminating.

- The BassBase 600's input is overloaded. Press the -10 dB button or turn your instrument's volume pot down.
- The BassBase 600's preamp is overloaded. Reduce the GAIN.
- The BassBase 600's FX LOOP is overloaded. Briefly disconnect the FX processor from the loop. If the CLIP LED no longer illuminates, you must reduce the processor's output level.

E7) When using the LINE OUT or HF OUT jacks, you experience annoying hum.

- You have just encountered a ground loop (possibly coming from a mixing console or power amp) or interference (possibly from emanating from a transformer or neon lighting). In the first situation, ensure the connection is galvanically separated by routing the signal through a DI box. Important: never sever the ground!

For the second problem, switch off the source of interference or reroute the connector cable.

NOTE: The BassBase 600's DI OUT is transformer-balanced, in other words, it features an integrated DI box. This type of output ensures that a ground loop is highly unlikely. You also have a GROUND LIFT switch available.