

*Egnater*TM
CUSTOM AMPLIFICATION

VENGEANCE[®]

Owner's Manual

**120-watt
Tube Amplifier**

Greetings.....

I would like to personally thank you for choosing Egnater as your “Tone Partner”. Our goal is to provide you with the best tools we can to help you express yourself to the fullest. Your amplifier is an integral piece in your never ending “Tone Quest”. Our commitment to helping you achieve that goal is our passion. Our hope is that you will take advantage of the years of innovative tube amp designs we offer and use it to find the sound that is “in your head”.

Thank you for putting your trust in Egnater.

Best Regards,

Bruce Egnater

Bruce Egnater

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ROCK IS BACK WITH A VENGEANCE!!

Vengeance is now yours! This versatile high-gain, all-tube amp with 120 relentless watts gives you the power to take revenge on lacklustre tone.

Channel 1 takes you from lush, organic cleans to heavy crunchy rhythm while Channel 2 goes from serious classic rock overdrive to extreme modern metal. Our signature Tight & Bright voicing switches and Mid Cut / Boost switch on each channel further customizes your tone. Independent reverb on each channel has our innovative “spill-over” design, allowing natural decay when switching channels.

The foot-switchable secondary master volume pushes solos to harrowing heights. A balanced speaker-emulated output goes directly to the board live or in the studio. The 6-button footswitch connects via any standard XLR cable. Standard 1/4” jacks for external control of the switching functions provide increased flexibility.

There is a ton of useful information in this manual. Please take the time familiarize yourself with some of the cool features and tones. You won’t regret it.

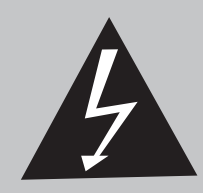
IMPORTANT INFORMATION

Please keep this instruction manual for future reference and for the duration of owning this Egnater Tweaker. Please carefully read and understand the instructions inside this user's manual before attempting to operate your new amp. This instruction manual includes essential safety information regarding the use and maintenance of the Tweaker. Take special care to heed all warning symbols and signs inside this manual and those printed on the amplifier itself.



WARNING

TO PREVENT FIRE OR SHOCK HAZARD, **DO NOT** EXPOSE THE AMPLIFIER TO WATER OR MOISTURE. **DO NOT** OPERATE NEAR ANY WATER SOURCE



WHAT'S THE MEANING OF THIS?

The lightning flash with an arrow triangular symbol is intended to alert the user to the presence of non-insulated "dangerous voltage" within the products enclosure, and may be of sufficient magnitude to constitute a risk of electric shock



WHAT'S THE MEANING OF THIS?

The exclamation point triangular symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the user manual accompanying this amplifier

1. Read these instructions – All the safety and operating instructions should be read before this product is operated.
2. Keep these instructions – The safety and operating instructions should be retained for future reference.
3. Heed all warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow all instructions – All operating and use instructions should be followed.
5. Do not use this apparatus near water – The appliance should not be used near water or moisture – for example, in a wet basement or near a swimming pool, and the like.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacture's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of grounding plug. A grounding plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart or rack is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric

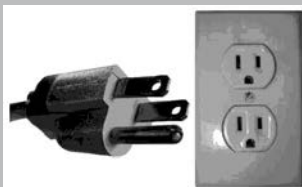


- shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.
16. WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that objects filled with liquids, such as vases, shall not be placed on apparatus.
17. WARNING: For the terminals marked with symbol of "⚡" may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the used of ready-made leads or cords.
18. WARNING: The mains plug and ac connector is used as disconnect device, the disconnect device shall remain readily operable



19. This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.
- Warning: To reduce the risk of electric shock, do not remove cover (or back) as there are no user-serviceable parts inside. Refer servicing to qualified personnel.
 - The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.
- Ensure that the ventilation is not impeded by covering the ventilation opening with items such as newspapers, table-cloths and curtains etc.

WARNING



Handle the power supply cord with care. Do not damage or deform; it may cause electric shock or malfunction when used. Hold plug attachment when removing from wall outlet. Do not pull on the power cord.

FOLLOW THESE SAFETY PRECAUTIONS

1. **READ INSTRUCTIONS** – All the safety and operating instructions should be read before this product is operated.

2. **RETAIN INSTRUCTIONS** – The safety and operating instructions should be retained for future reference.

3. **HEED WARNINGS** – All warnings on the amplifier and in the operating instructions should be adhered to.

4. **FOLLOW INSTRUCTIONS** – All operating and use instructions should be followed.

5. **WATER AND MOISTURE** – The amplifier should not be used near water - for example, a bathtub, washbowl, kitchen sink, laundry tub, wet basement, or near a swimming pool, and the like.

6. **CARTS AND STANDS** – The amplifier should be used only with a cart or stand that is recommended by the manufacturer.

An amplifier and cart combination should be moved with care. Quick stops, excessive force, and



uneven surfaces may cause the amplifier and cart combination to overturn.

7. **WALL OR CEILING MOUNTING**

– The product should never be mounted to a wall or ceiling.

8. **HEAT** – Amplifier should be situated away from heat sources such as radiators, heat registers, stoves, or other amplifier (including amplifiers) that produce heat.

9. **POWER SOURCES** – This product should be operated only from the type of power source indicated on the rating label.

If you are not sure of the type of power supply to your home, consult your product dealer or local power company.

10. **GROUNDING OR POLARIZATION**

– This product may be equipped with a polarized alternation-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

11. **POWER-CORD PROTECTION**

– Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to the cord in correspondence of plugs, convenience receptacles, and the point where they exit from the amplifier.


12. **CLEANING** – The amplifier should be cleaned only as recommended by the manufacturer. Clean by wiping with a cloth




CAUTION
DO NOT OPEN
RISK OF ELECTRIC SHOCK



CAUTION: To reduce the risk of electric shock, do not remove any cover. No user-serviceable parts inside. Refer servicing to qualified service personnel only.



The lightning flash with arrowhead symbol within the equilateral triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within the equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying this amplifier.

CAUTION

To prevent electric shock, do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

slightly damp with water. Avoid getting water inside the amplifier.

14. **NON-USE PERIODS** – The power cord of the amplifier should be unplugged from the outlet when left unused for a long period of time.

15. **OBJECT AND LIQUID ENTRY**

– Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

16. **DAMAGE REQUIRING SERVICE**

– The amplifier should be serviced by qualified service personnel when:

- A. The power-supply cord or the plug has been damaged; or
- B. Objects have fallen, or liquid has been spilled into the amplifier; or
- C. The amplifier has been exposed to rain; or
- D. The amplifier does not appear to operate normally or exhibits a marked change in performance; or
- E. The amplifier has been dropped, or the enclosure damaged.
- F. The amplifier needs tube replacement or biasing

17. **SERVICING** – The user should not attempt any service to the amplifier beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

18. **VENTILATION** – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack.

19. **ATTACHMENTS** – do not use attachments not recommended by the product manufacturer as they may cause hazards.

20. **ACCESSORIES** – Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product.

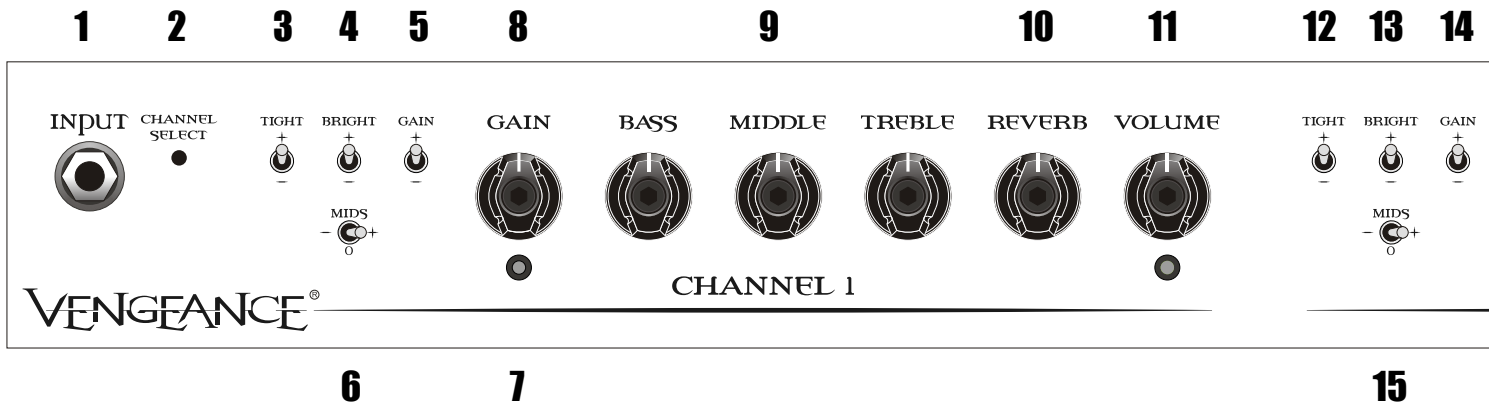
21. **LIGHTNING** – For added protection for this product before a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges.

22. **REPLACEMENT PARTS** – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

23. **SAFETY CHECK** – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

24. **FUSES** – Always use the correct rating and type of fuse as indicated on the rear panel. Note the proper rating fuse is determined by the AC line voltage in the country this unit is being operated.

25. **AC SELECT SWITCH:** This switch must be set to match the AC line voltage in the country this unit is being operated. To change the setting, loosen (do not remove) the two screws above and below the slide switch. Temporarily move the protective cover strip and slide the actuator to match the voltage in your country. Place the protective cover strip back over the switch and tighten the two screws.



1) GUITAR INPUT: Plug your guitar in here using a high quality, shielded instrument cable.

2) CHANNEL SELECT: The pushbutton switch to select CHANNEL 1 or CHANNEL 2.

3) CHANNEL 1 TIGHT SWITCH: This switch is really useful for tightening up the low end, especially when pushing the gain. It works by cutting the deep bass at the beginning of the preamp. Setting the TIGHT switch up (+) will result in a clearer, tighter tone. Down (-) retains a full, big low end that is great for a really robust, fat rhythm sound.

4) CHANNEL 1 BRIGHT SWITCH: As expected, the (+) setting boosts the high end. Do experiment with different combinations of the BRIGHT on and TREBLE knob down compared to the BRIGHT off and the TREBLE up. You will find that with the BRIGHT on and the TREBLE down, the tone will be a little less midrangy compared to the BRIGHT off and the TREBLE turned up.

5) CHANNEL 1 GAIN SWITCH: In the down (-) position, the gain is normal and is best for really clean tones. The up (+) setting increases the GAIN making it easy to dial in some excellent rock and roll crunch rhythm sounds.

6) CHANNEL 1 MIDS SWITCH: Now this is cool. The MIDS switch allows you to preset either a mid cut (-) or mid boost (+) and switch it on and off from the footpedal. Some players prefer to keep the mid cut on for their "normal" pristine clean tone and switch it off when the rhythm needs to jump out. Others keep it off on

the pedal and switch in the cut or boost for an alternate tone.

7) CHANNEL 1 ON (GREEN) LEDS: Tells you CHANNEL 1 is active.

8) CHANNEL 1 GAIN: This controls the amount of "drive" in the CLEAN channel. Low settings of the GAIN knob (with higher settings of the VOLUME knob) will keep the sound big, full and beautiful. You can also use higher settings of the GAIN knob, along with the GAIN boost switch, to push the channel into overdrive for some really raucous rock & roll tones.

9) CHANNEL 1 TONE CONTROLS: This channel features a variation of the familiar passive tone control designs of many revered classic tube amps. Dial in beautiful, pristine clean sounds to bold, powerful overdrive tones. Don't hesitate to turn the knobs. You'll find a vast array of stellar sounds.

10) CHANNEL 1 REVERB: Adjusts the amount of REVERB on CHANNEL 1 only. A unique feature of our reverb is the "spillover" effect. This allows the Reverb to trail off naturally after you switch channels.

11) CHANNEL 1 VOLUME: Adjusts the loudness of CHANNEL 1.

12) CHANNEL 2 TIGHT SWITCH: This switch is really useful for tightening up the low end, especially when pushing the gain. It works by cutting the deep bass at the beginning of the high gain preamp. Setting the TIGHT switch up (+) will result in a clearer, tighter tone. Setting the switch to (-) will create a fuller, fatter tone but can tend to get a little muddy with very high gain settings, especially with hum-

bucking type pickups. Find the setting that suits your style.

13) CHANNEL 2 BRIGHT SWITCH: As expected, the up (+) setting boosts the high end. Do experiment with different combinations of the BRIGHT on and TREBLE knob down compared to the BRIGHT off and the TREBLE up. You will find that with the BRIGHT on and the TREBLE down, the tone will be a little less midrangy compared to the BRIGHT off and the TREBLE turned up.

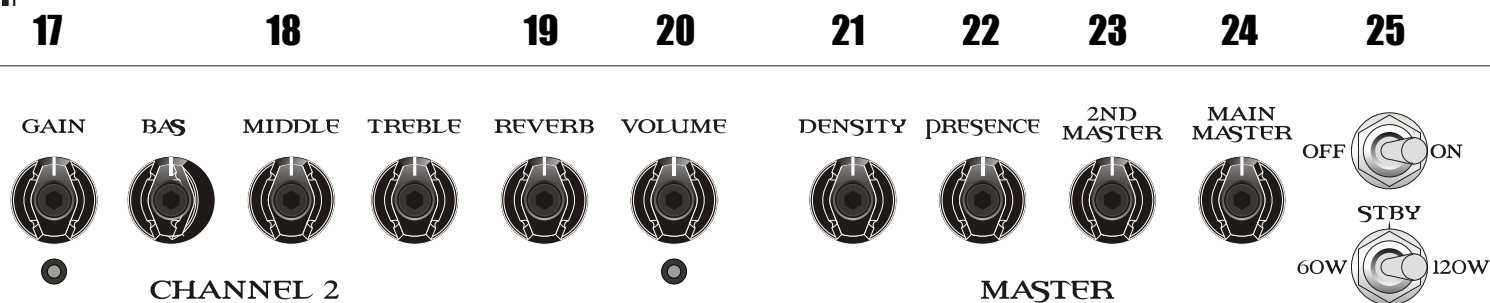
14) CHANNEL 2 GAIN SWITCH: In the down (-) position, the gain is reduced to make the overdrive a bit more manageable. Set the GAIN switch to (+) for the maximum overdrive.

15) CHANNEL 2 MIDS: The MIDS switch allows you to preset either a mid cut (-) or mid boost (+) and switch it on and off from the footpedal. Some players prefer to keep the mid cut on for their "normal" heavy rhythm tone and switch it off when the guitar needs to jump out for solos. Others keep it off on the pedal and switch in the cut or boost for alternate sounds. This tiny switch opens a whole new world of tones.

16) CHANNEL 2 ON (RED) LEDs: Tells you CHANNEL 2 is active.

17) CHANNEL 2 GAIN: The gain knob controls the amount of overdrive (distortion). Use the least amount of gain to get "your tone". As always, lower gain settings will result in a tighter, more defined sound. Higher gain settings are more fun and make an amp easier to play but can get more compressed and muddy. Remember, to try the TIGHT switch with high gain.

QUICK START GUIDE



16

Also, there is a lot of gain on tap here. Use it sparingly to prevent your guitar pickups from squealing and feeding back. If you do find you have pickup feedback problems, and turning the gain down is NOT an option, try moving away from the speakers. Also, ask your guitar tech about options to reduce pickup squeal. Thirdly, consider using a gate in the loop to “cut off” the feedback when you are not playing.

18) CHANNEL 2 TONE CONTROLS: The Vengeance overdrive channel features a tone control circuit reminiscent of many classic British amps. The range and feel should be familiar to most players and makes it really easy to dial in some great tones with minimal knob “twiddling”. Our advice is to always “use your ears, not your eyes” to find your TONE.

19) CHANNEL 2 REVERB: Adjusts the amount of REVERB on CHANNEL 2 only. A unique feature of our reverb is the “spillover” effect. This allows the Reverb to decay naturally after you switch channels.

20) CHANNEL 2 VOLUME: Adjusts the overall loudness of CHANNEL 2.

21) DENSITY: This control varies the amount of deep, low end in the power amp section and affects both channels. Higher settings create a really big, full low end. Use this control sparingly at high volumes. Excessive bass boost at high volumes can cause some speakers to break up (technical term is “fart out”). This is a cut or boost type control so start with the knob at 12:00 and adjust from there.

22) PRESENCE: Adjusts the amount of overall “brightness” in the power amp

section and affects both channels. Use this knob sparingly, also. Too much PRESENCE boost, especially at high volumes, can create the dreaded ice pick tone. Also, it is a cut or boost control like the DENSITY. Start with the knob at 12:00.

23) 2ND MASTER: A second overall master control for a solo or volume boost that is controlled from the footpedal. Set the MAIN MASTER first to get your normal playing volume. Next, switch the 2nd MASTER on with the pedal and set your boost volume. NOTE: The 2nd MASTER does not function unless the pedal is plugged in.

24) MAIN MASTER: Control the overall volume of both channels simultaneously. Use this knob for a rhythm volume and the SECOND MASTER as a bumped up solo volume. Both controls are after the effects loop. Adjustments made to the MAIN and SECOND MASTERS will not affect the loop levels.

25) ON/OFF SWITCH: Turns the main power On and Off.

26) STANDBY/PLAY SWITCH: When in the STANDBY position, the amp is warmed up and waiting to play. To play, switch the STANDBY switch to 60W or 120W. Placing the switch in the STANDBY position when you are not actually playing will help extend tube life in the long run. Note that the STANDBY (OFF) position is in the center. When switching to PLAY you can select the full 120 watts by switching to the right to the 120W setting. Or, you may choose to use the 60 watt position (LEFT) for reduced power and a little power tube compression (technical

term is squish). Only the two outer power tubes (1 & 4) are active in the 60 watt mode.

NOTE: The correct procedure for turning your amp ON and OFF is as follows. When first powering the amp on, always have the STANDBY switch in the STANDBY (center) position. Turn the POWER switch ON. Wait about 30 seconds or longer before moving the STANDBY switch to 60W or 120W. Reverse the procedure when shutting the amp off. Turn the STANDBY switch off (center position) first, wait about 30 seconds, then turn off the power. By following these steps you will, once again, help extend tube life by not “slamming” the tubes with high voltage while they are cold. This also allows the high voltages inside to properly “drain off” preventing clicks or pops at power down.

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TONE SETTINGS: CHANNEL 1



ALMOST ACOUSTIC...CLEAN



CALIFORNIA CLEAN



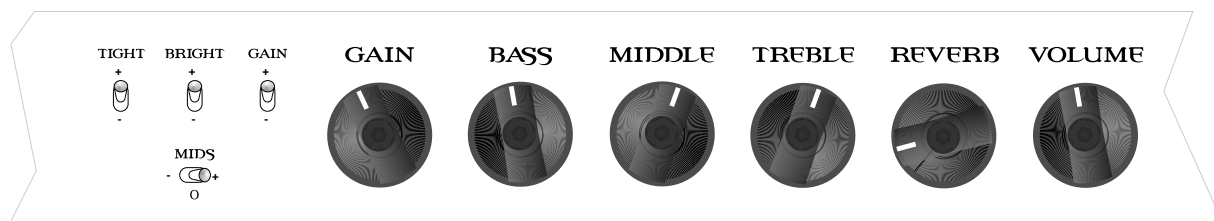
BRITISH CLEAN



AMERICAN BLUES



BRITISH ROCK RHYTHM



HONKIN' MID DRIVE

TONE SETTINGS: CHANNEL 2



CLASSIC BRITISH ROCK



AMERICAN ROCK & ROLL



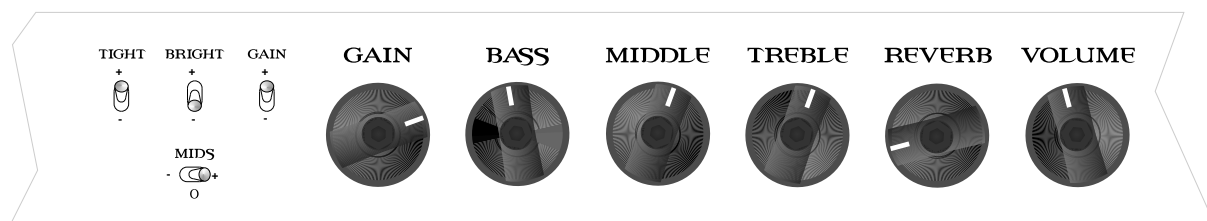
METAL CHUG



SCOOPED METAL



SCREAMIN' SOLO



SCREAMIN' MID DRIVE

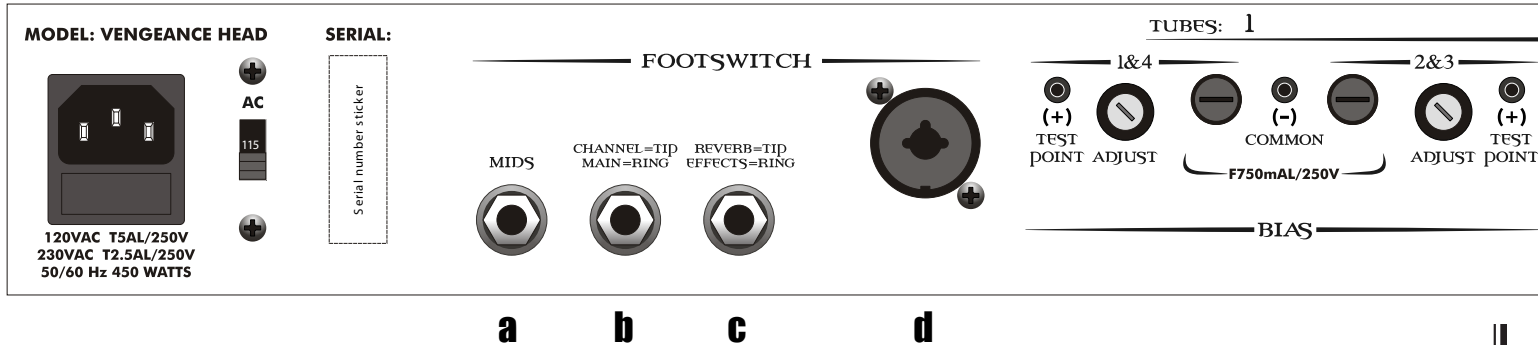
REAR PANEL

1

2

3

4



1) AC INLET and FUSE: Connect a universal IEC type power cord. Be sure the proper value fuse is installed that matches the ratings as indicated for your country on the rear panel.

2) AC VOLTAGE SELECTOR: Makes the Vengeance compatible with the line voltage in many countries. Proper setting of this switch is absolutely critical. Be sure the switch position matches the line voltage in your country. Severe damage will result from improperly setting this switch and will void your warranty, as well as destroy your amp. To change the setting, loosen (DO NOT REMOVE) the two screws securing the plastic safety cover strip over the switch. Swing the cover aside. Using a small screwdriver, slide the switch to the proper setting. Replace the cover and retighten the screws. Be sure to install the proper value fuse.

3) FOOTSWITCH SECTION: These three jacks can be used to control the indicated functions when using an external device such as a loop switcher or MIDI controller. The jacks are all latching (not momentary) logic and switch either tip to sleeve or ring to sleeve. The amp is not designed to use both the ¼" switching jacks and the Vengeance footpedal at the same time.

a) MIDS JACK: This is a two conductor tip/sleeve jack that simultaneously can turn the MID function on/off on both channels.

b) CHANNEL=TIP/MAIN=RING:

A three conductor T/R/S connector. Short or open the tip to sleeve changes channels. Short or open the ring to sleeve turns the 2nd master on/off.

c) REVERB=TIP/EFFECTS=RING: A three conductor T/R/S connector. Short or open tip to sleeve turns the REVERB on/off. Short or open the ring to sleeve turns the loop on/off.

d) FOOTSWITCH: The proprietary Vengeance footpedal plugs in here using a standard XLR male to female microphone cable. A T/R/S ¼ cable could also be used but certainly is not as common. Any normal microphone cable can be used up to about 100 feet maximum in length.

4) BIAS SECTION: See more detailed information elsewhere in this manual.

5) IMPEDANCE SWITCH: Set this switch to match the IMPEDANCE of your speaker cabinets.

6) MAIN SPEAKER OUTPUT: Labeled "USE FIRST" because you must use this jack...FIRST. There is a special circuit inside the Vengeance that helps protect the amplifier from damage in case you forget to plug in the speakers and attempt to play. As we all know, NEVER operate a tube amplifier without a proper speaker load connectedbut we didn't have to tell you that did we ?

7) EXTENSION SPEAKER OUTPUT: Used to connect an external speaker when a second speaker cabinet is used with the head. Since the MAIN speaker output in labeled USE FIRST, it would reasonable

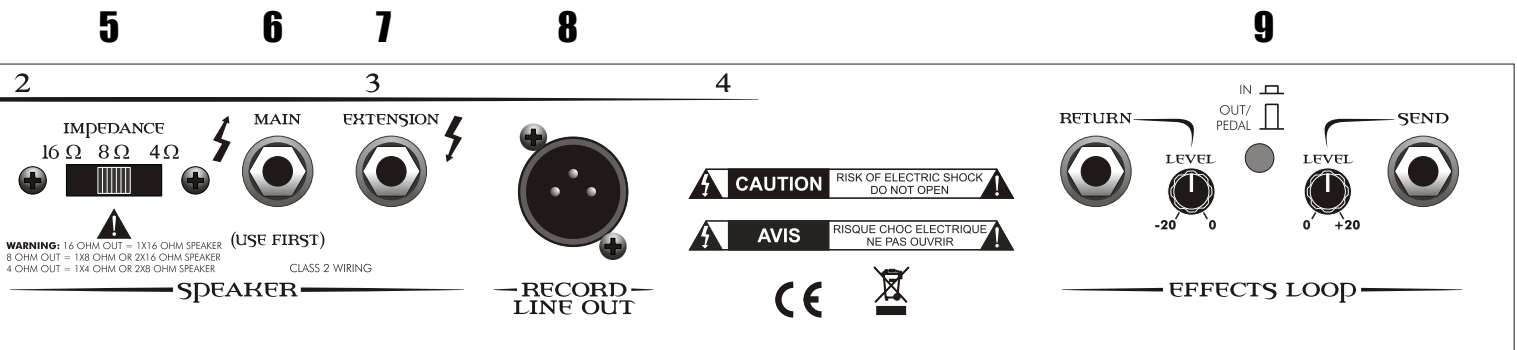
to assume this jack could be labeled USE SECOND, which would be correct. See the section later in this manual for proper connection and IMPEDANCE SWITCH settings for different speaker arrangements. **NOTE:** The two speaker output jacks are in parallel.

8) RECORD LINE OUT: This is an active, balanced "cabinet simulated" output for direct connection to the balanced mic or line input on your mixer for recording or live sound. It effectively eliminates the need to place a microphone in front of the speaker. The frequency response of this output closely mimics the sound of a mic'd 4x12 speaker cabinet. Using this output is great for getting a consistent recording or live output from your rig regardless of what mics are available and how competent the person setting up your gear is. Often setups on stage are done in a hurry and the mic is just hung from the top of the cabinet or stuck right in the middle of the speaker (the worst location) or even forgotten. By supplying a predictable, consistent output to the PA or recorder, you are never at the mercy of any of these issues.

NOTE: This is not a silent recording output. You must have a speaker or suitable load connected at all times.

9) EFFECTS LOOP: Basically a series insert patch point between the preamp and power amp. With the pushbutton IN, the loop is always active. With the pushbutton in the OUT position and the footswitch connected, the loop can be controlled by

REAR PANEL



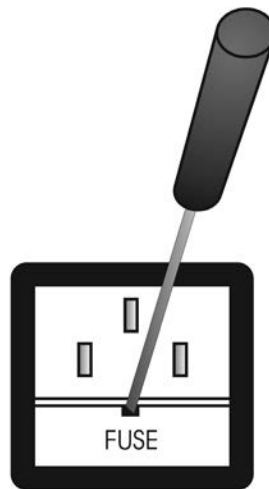
the pedal. If the footpedal is not connected, having the pushbutton OUT bypasses the loop. When an external effects gadget is patched into these jacks, and the loop is turned on, the path is interrupted and 100% of your signal is routed through the effects. This puts some special demands on the effects unit. First is must be essentially transparent, meaning it can't mess with your tone. Second, the input and output levels must be properly set for lowest noise and maximum headroom. Proper setting of these controls can be achieved using the following method:

a) Set your amp/preamp volume levels for normal playing levels. Connect a high quality shielded cable from the series send jack to the effect input.

b) Adjust the send level to "just peak" while playing your most aggressive licks.

c) Now connect another high quality shielded cable from the effect output to the return jack.

d) Adjust the RETURN level to match the volume you heard before connecting the return cable. You can check this by turning the loop on and off while playing and verifying there is no substantial volume difference. This is called "unity gain". A cool "techie" phrase for "you get out what you put in". If your effects gadget does not have level controls, it can be assumed you will get unity gain when plugged in.



INSERT A SMALL SCREWDRIVER INTO THE SLOT TO SLIDE THE FUSE CAP OUT

e) If your effects unit does not have any sort of level indicators (LEDs, VU meter etc.) you would likely not know what the proper setting for the SEND and RETURN levels might be. If this is the case, please follow these instructions:

1) Connect your effect to the SEND and RETURN jacks and turn the effect on. Switch the loop off and listen carefully to the clean channel. Set the RETURN level to about noon and the SEND to '0'. Turn the loop on. Now increase the SEND level knob until you start to hear clean, undistorted sound. Continue to increase the SEND level knob until you start to hear distortion

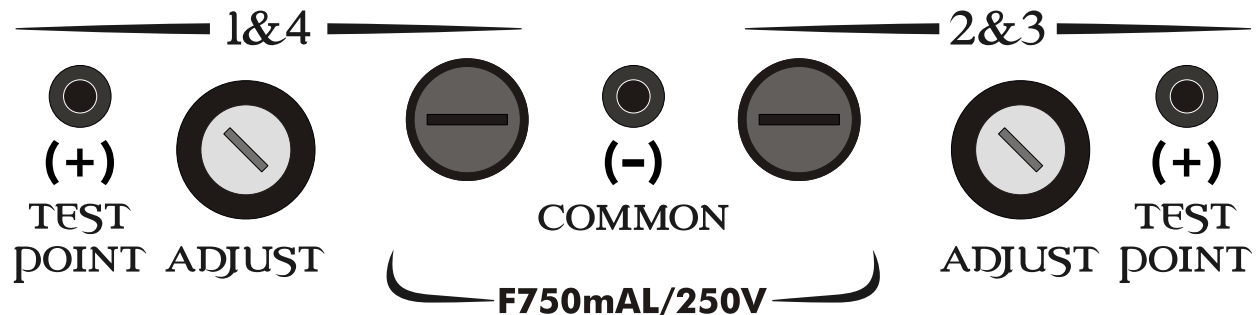
or loss of tone/high end. You have now identified the overload point for that pedal. Now back the SEND level down until the distortion disappears. Lastly, while switching the loop in/out, adjust the RETURN level until the volume is equal with the loop switched in and out.

NOTE: Depending on how loud you play, the level at the loop can vary wildly. Though many floor type and tabletop effects may work, some may tend to overload. You will know an effect is not made for higher levels if, when you plug it the effect into the loop, you notice distortion and/or a loss of volume. Most modern effects (including many pedals) can operate just fine in an effects loop.

We have gone to great lengths to make the Vengeance loop compatible with as many different effects gadgets as possible. Of course, you still may occasionally encounter a device that simply won't cooperate in the loop. This is one of the reasons we discourage players from using crappy pedals in a loop. You just spent a considerable amount of your hard earned dollars to get this awesome sounding amp. Sticking a mediocre pedal in the loop of your amp seems to be "counter-tone". Remember what we said about the effect being transparent. Most pedals color your sound and not always in a good way.

POWER TUBE BIAS

TUBES: 1



BIAS

WHAT IS BIAS?

Simply put, it is a circuit inside the power amplifier section that controls the “idle current” that flows through the power tubes. Much like the idle speed on a car. There is an optimum setting where the engine (amplifier) is running (idling) fast (hot) enough to keep it from stalling (distorting) but not too fast (hot) to cause excessive wear and overheating. Get it?

WHY DON'T ALL AMPLIFIERS HAVE BIAS OR IDLE CURRENT ADJUSTMENTS?

Most do have some provision for that but typically involve removing the amp chassis from the box, exposing you to very dangerous high voltage. Special test equipment and knowledge of amp circuits and tubes is also needed. Not a skill most musicians possess and shouldn't need to.

WHY WOULD I WANT TO ADJUST THE BIAS?

All power tubes are different. They each have unique sonic and electrical characteristics. The Vengeance amplifier is shipped

with a matched quartet of EL34 tubes, but is designed to accept a variety of different tube types. EL34, 6L6, 5881, 6CA7, 6550, KT66 and KT77 are among the many possible choices. Because they are all different, each requires different bias settings for safety, reliability and optimum performance.

Please read the following instructions on how to use this cool feature.....

You will need a decent quality digital voltmeter capable of measuring in the 100 to 200 millivolts DC range. This is a very basic type of meter available at any electronic supply house or Radio Shack. They typically cost anywhere from \$10 to \$25, about the cost of one bias adjustment from your local amp tech.

You will also need a small, flat blade screwdriver to turn the adjustment controls that are recessed inside the grommets below each tube label on the rear panel.

1) Turn the amp on, standby switch in the 120W/PLAY position. All controls

all the way down. Turn the meter on and set for reading DC millivolts. Consult the meter instructions for how to do this properly. Since all meters are different, it is extremely important that you thoroughly understand what you are looking at on the meter display.

1) Insert the black (negative) test lead into the panel hole labeled (-) COMMON.

2) Notice there are two identical sections to the left and right of the common terminal labeled 1&4 and 2&3. These correspond to the power tube numbers designated on the rear panel.

3) First step is to insert the red (positive) meter lead into the left test point (+) hole.

4) With your flat blade screwdriver, turn the BIAS ADJUST control to obtain a correct reading from the chart below.

5) Repeat this procedure for the other pair of tubes.

6) Now allow the amp to warm up for about 10 minutes and retweak so the readings are within the range of the recommended reading.

RECOMMENDED BIAS SETTINGS

6L6/5881	60mV to 70mV
EL34/6CA7	65mV to 75mV
E34L	70mV to 80mV
6550.....	70mV to 80mV
6V6 (JJ ONLY !!!!!!!).....	30mV to 40mV
KT66.....	60mV to 70mV
KT77.....	65mV to 75mV

Displays differ from one meter to the next. Some may indicate, for example, 60.0 for 60 millivolts. Others may show .060 for 60 millivolts. Knowing how your meter works if of the utmost importance.

You should always check the bias readings whenever you replace output tubes and readjust if needed. Since we've made it so simple, there is no reason to not.

Additional features of the "POWER TUBE BIAS SECTION"

Fast Blo fuses. One per output tube pair. In the event of a power tube failure, the corresponding fuse will open protecting the amp from additional damage by effectively removing the failed tube from the circuit. You can keep playing with just a small reduction in performance and still get through the gig. If this happened in the past, you would need to take the amp to a repair shop. They would then hold it for ransom while you figured out how to raise enough money to pay them to fix it. No more. The amp will protect itself from the potential damage and you can continue to play.

Read the quick trouble shooting procedure below if you suspect a tube failure: If you notice a sudden loss of power/volume or degradation in tone, you may have a blown power tube. Not really that uncommon these days. You now need to "check" the fuses located in the BIAS section. Often you cannot verify if a fuse is blown visually. Learn how to use your meter to check for continuity. A good fuse will indicate at or near '0' ohms. An open fuse will read many meg ohms. If you do find a blown (open) fuse, this is a pretty sure bet one of the power tubes in that pair

have failed. Note the left side of the BIAS section is for power tubes 1&4, the outside pair. The other fuse is for power tubes 2 & 3, the inside pair. Remove the suspect pair of tubes and replace the fuse with a 750mA (3/4amp) fast blo type fuse. Install a new, matched pair of tubes, plug the power cord back in and turn the power on and standby to 120W. Check the bias reading. If you get a reading that is reasonably close to the proper setting, you have just repaired your own amp. Simply readjust the bias control according to the chart and you are on your way. You can thank us later for saving you a bunch of money and a trip to the repair shop.

SPECIAL NOTE:

Obviously for this to work, you MUST carry spare power tubes, fuses, a flat blade screwdriver and your voltmeter with you. If a tube fails at a gig, you could be back up and running in a matter of minutes. You wouldn't drive your car without a spare tire, right? In a pinch you may continue to use your Vengeance with somewhat reduced performance, even with shorted tubes. No additional damage to the amp will occur. Do service the amp as soon as possible, of course. Because the BIAS readings are actually the sum of the currents for each tube in the pair, we highly recommend replacing power tubes in matched pairs. If your tubes are not matched, one tube could be running very hot while the other is barely on but you would still read the sum of the pair. This is not a good thing.

ADVANCED THEORY (FOR THOSE WHO CARE):

Those of you with electronic knowledge

may notice we are referring to current draw but are making measurements in millivolts. Ohms law states that $I=E/R$ or current (I) equals voltage (E) divided by resistance (R). Inside the amp are one ohm resistors in the cathodes of the output tube pairs. The external test points allow access to those resistors. When you measure across those resistors at the rear panel test points, you are reading the DC voltage drop across a one ohm resistor. Referring to ohms law, if $R=1$ in the formula, then $I = E$ or current equals voltage. So when you read for example, 60mV you are also seeing the equivalent numerical value of current or 60mA. You may have also figured out by now that since you have separate adjustments for each tube pair, it may be possible to use alternate tube types at the same time. Your suspicion is correct. You "tweakers" can combine different types by installing one type in the outside (1 & 4) sockets and another type in the inside (2 & 3) sockets. Be sure to adjust each pair for the proper range. This way you can combine the characteristics of the different types. The range of the bias adjustments are such that you should have not problem adjusting for just about any type of compatible tubes.

WARNING: DO NOT be tempted to run your tubes hotter than the maximum values in the chart. You may find it sounds really cool as you destroy your expensive tubes and possibly damage your amp, of course voiding your warranty! Also, in case you haven't found out the hard way yet, power tubes get extremely hot (as high as 800 degrees)!!!! NEVER touch the tubes while the amp is on. Always allow at least 5 minutes for the tubes to cool before touching them after turning the amp off.

TECH TALK TIPS: SOUND DISPERSION

Ever wonder why your 4x12 cabinet sounds better when you stand off to the side? Did you consider why the pro mic a speaker from the edge instead of in the center?

Ever have people in the audience tell you your guitar tone is really loud and shrill but it sounds great to you on-stage? This is a result of the directionality of loudspeakers. Speakers inherently do not project all frequencies equally. As the frequency increases, the dispersion decreases.

In non technical terms, this means the higher you play on your guitar neck, the more directional your sound will be. By nature, speakers tend to be somewhat non-directional at lower frequencies. This means you can stand off to the side of your cabinet and you will hear basically the same bass and lower mids as your audience is hearing right in front of your speakers.

On the other hand, and this is where the trouble starts, higher frequencies tend to "beam" from the speaker. While you are standing off axis from your cabinet (not directly in front of it) you are hearing an even balance of lows, mids and highs and feeling pretty pumped about your awesome tone. Unfortunately, unbeknownst to you, the listeners directly in front of your cabinets are being killed by the high end that is "beaming". FYI, contrary to what one might deduce, having more speakers in a 2 by 2 arrangement, as in a 4x12 cabinet compounds the problem and makes the beaming even worse. Next time you play take a moment to walk from side to side and squat down in front of your speakers. You will be amazed at the difference between listening off axis (to the side) and listening on axis (directly in front).

Have you ever seen a band in a small place where you are hearing the stage volume and wonder why the guitars sound so bright? Doesn't that guitar player hear that obnoxious high end? That knucklehead must be deaf!?!? More likely he is standing close to his cabinets and all that high end is just blowing past his/her legs so he/she doesn't even hear it.

OK...so now I've pointed out how we've all been playing for years believing everyone in the crowd thinks our tone is as awesome as we think.....or is it? Great, so what can you do about it? The key is to place your speakers so you are hearing the same thing as everyone else.

If you can get the cabinets far enough behind you, you probably will pretty much hear everything just fine. If that is not possible, try placing the cabinets pointing across the stage sideways instead of forward at the audience. At least then you will only be killing your other band members instead of the audience. Chances are you often want to kill

the drummer or bass player anyway, right? The best thing you can do is to tilt your cabinets so that they are pointed at your head. I guarantee you will set your controls way different from what you normally do.

There are a number of possible options to combat the beaming problem. A few companies make a solid disc that you install in front of the speakers to help disperse or attenuate the high end.

These discs have met with some success though they do introduce some phasing issues. Also, because there is a solid piece in front of the speaker, if one places a microphone in front of the disc (which happens quite often at shows), it can sound weird because the disc is altering the sound into the mic. There are some other smart people attempting to address the problem.

Most involve using some form of foam piece in front of the speakers. The method we find works best for both live, and when placing a mic in front of the speakers, utilizes a sound absorbing 4" x 1" foam disc placed on the back side of the grill cloth directly in front of the speaker. The discs are made of an acoustical foam material that attenuates the beaming highs instead of blocking them.

I'm always surprised whenever this subject is discussed and many guitar players make the statement "I hate the way my guitar sounds when I stand in front of my speakers". The answer is not to simply stand off to the side so it only sounds good to you because everyone else is still hearing the sound that you hate. Remember why we play music? It is for others to enjoy.

We should always make a conscious effort to think about what the audience is hearing, too.

On that happy note.....

Be the one who makes the shovels, not the one who digs the ditches

- Ed Kreske

TECH TALK: IDENTIFYING SPEAKER OR TUBE PROBLEMS

So your band is going on in an hour. You're setting up your gear and something is wrong with your amp...maybe? The following is a systematic troubleshooting guide for when this happens.

1) DON'T PANIC!

Here are the items you should carry with you in case of trouble.

- 1) Spare guitar cables
 - 2) Spare speaker cables
 - 3) Spare fuses for everything
 - a. Look at the fuse holders on all your gear and get replacement fuses for each one.
 - 4) A spare preamp tube and power tubes.
 - 5) A new 9 volt battery even if you don't use pedals (you'll see why later)
 - 6) A reliable digital multimeter. Doesn't need to be fancy or expensive.
 - 7) A small flat blade screwdriver for bias adjustment.
 - 8) Band Aids. In case of injury. Has nothing to do with fixing your gear but they sure come in handy when you are bleeding.
 - 9) A spare tire for your car. You wouldn't go anywhere without a spare tire would you? Same goes for your gear that you count on to work every time.
- Stuff goes wrong. If you are prepared, you won't need to freak out.

Your "rig" is just a combination of "sub-systems" consisting of, but not limited to, your guitar, cables, effects, amp and speakers. The trick is to quickly and accurately eliminate each component to narrow the trouble down to one part of the "system". A systematic approach using process of elimination will quickly tell you which component in your "system" has failed.

SYMPTOM = NO SOUND:

- 1) The first quick check is obviously to make sure everything is securely plugged in and all power indicators are lit on everything and the amp is not in STANDBY. I can't tell you how many times something didn't work simply because a plug was not fully inserted. Also, many amps have a MAIN and an EXTENSION speaker output. Verify you are using the MAIN output first. I've made that mistake myself.
- 2) Accurately verify if everything is absolutely, 100% dead or can you hear some tiny sound (hum, hiss, a little guitar, anything at all) coming from the speakers. This is important information because there are two

different approaches to troubleshooting depending on which symptom you encounter.

- 3) If you are sure there is absolutely no sound at all, do this:

- a. This tells you either the amp or the speakers are dead. Here is a simple and quick speaker test. Get your 9 volt battery that you, of course, have in your emergency kit. Pull the speaker cable end out of your amp and hold it in one hand. Take the 9 volt battery and touch the two battery terminals to the tip and body of the plug simultaneously.

You will hear a fairly loud "thump" noise from your speaker cabinet each time you touch the battery. If you hear the "thump", you just verified the speakers and speaker cable are good and can be removed from the list of possible problem components. If you don't hear the "thump" either your cable or your speaker cabinet is at fault. By the way, you can use this same test for your combo amp speakers.

- b. A special note is in order here. If you are having the "no or very little sound", do not...I repeat DO NOT just turn everything up louder or, worse, full up and try to play. This is not an acceptable repair technique. If your speaker cable or cabinet is bad, doing this will quite possibly blow up your tube amp that was probably not broken until you did this. Plus, if you have everything cranked and, by some chance things suddenly start working, you will probably damage your amp, speakers or hearing.

- c. Next is the amp itself. First unplug everything from the amp except for the power cord. One very common failure is a shorted power tube. Many amps have a fuse that is dedicated to protecting the power tubes and transformers.

It is usually on the rear panel labeled something like HT or High Voltage or Power Tubes. Remove and inspect this fuse. If it looks burned inside, this is pretty much a sure indication of a shorted power tube. Often a fuse "looks" fine but can still be open (blown).

Learn how to measure continuity with your multimeter and use it to verify if the fuse is open or not. If the fuse reads just a couple of ohms on your meter, it is not blown and power tubes are not likely the problem.. If you get no reading, infinite or a very high ohm reading, it is blown.

If you do have the misfortune of blowing a power tube, which of course will only happen at the most importune time, there is a way out. It does require you carry a couple of extra power tubes and at least four of the correct value HT fuse for your amp. If you do find the fuse is open, your amp will not

produce any sound which is why we are talking about this here.

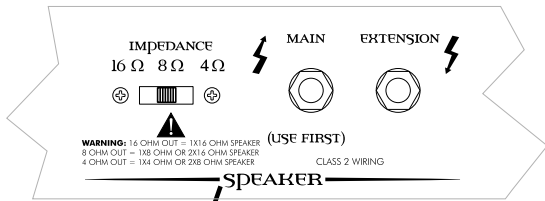
Follow this procedure to get your self out of trouble and back "up and running":

- 1) Turn the amplifier power off.
- 2) Replace the blown HT/Power tubes fuse.
- 3) Remove all the power tubes
- 4) Turn the amplifier power on and wait 30 seconds.
- 5) Move the STANDBY switch to the PLAY position.
- 6) Wait 30 seconds again and now turn the amp off.
- 7) Remove and recheck the HT/ Powertubes fuse.
- 8) If the fuse is blown, you are screwed. Nothing you can do right now will make it work.... sorry. Hope you brought a backup amp. If the fuse is not blown, one of your power tubes is shorted, which is good news.
- 9) Put one, and only one of the power tubes back in.
- 10) Turn the POWER switch on, wait 30 seconds and now turn the STANDBY on.
- 11) Next POWER and STANDBY off.
- 12) Recheck the HT/Powertubes fuse. If it is not blown, that tube is good. If it is blown, the tube is bad so get rid of it.
- 13) If the fuse is good, leave that tube in and install another one. Same drill, blown fuse=Bad tube, good fuse=Good tube.

See the pattern? If you install the tubes one at a time like this, when you put the shorted one in, the fuse will blow. Once you determine that a tube is, in fact, shorted you have options. If the amp only has two power tubes, you will want to put one of your spare tubes in. Of course you brought them with you right? One note here, I suggest you buy a matched set of four power tubes for your amp. Use two and keep two for the spares. If they are from the same set, you won't need to rebias them and you are good to go. If your amp has four power tubes, you have two choices.

You can get through the show with just two power tubes with somewhat reduced power and headroom and not worry about replacing any tubes. To do this, simply leave in only two of the known good tubes. Install them as one on each end of the row of tubes and leave the center pair out or, put the good pair in the center sockets and leave each end out. Doesn't matter which way.

CONNECTING YOUR SPEAKERS



To 8 ohm
mono input

Set impedance
switch to 8 ohms

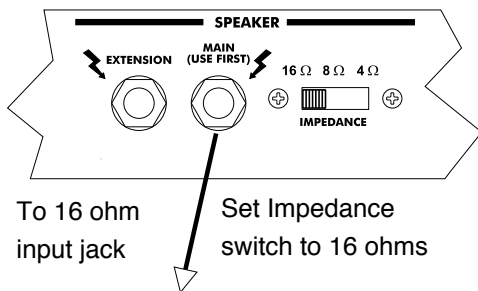


2x12

Always set the impedance switch to match the cabinet impedance. Here is some handy information.

To determine the proper setting using multiple cabinets of the same impedance, simply take the impedance of one cab divided by the number of cabinets. For example, if you have two 16 ohm cabs, simply divide 16 by 2 for a total load of 8 ohms.

The MAIN (USE FIRST) and the EXTENSION speaker outputs are in parallel. This means if you connect one cabinet to each speaker jack on the amp, you will use the example above to calculate the proper setting for the impedance switch. For example, if you connect one 16 ohm cabinet to each output, the load the amp see is 8 ohms ... 16 ohms divided by two equals 8 ohms.



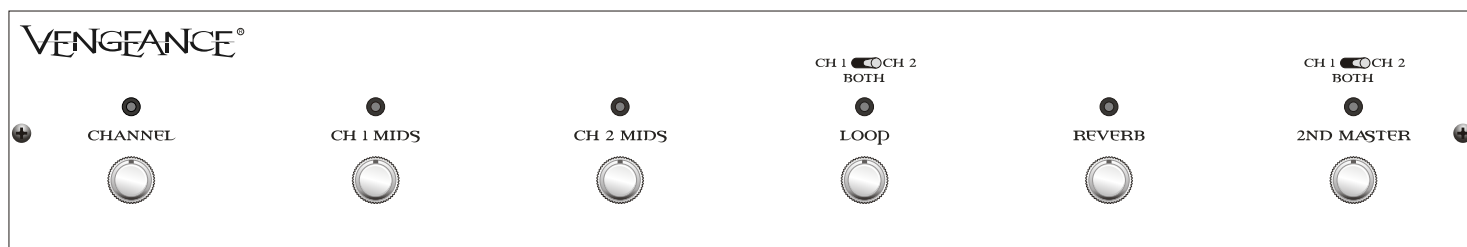
To 16 ohm
input jack

Set Impedance
switch to 16 ohms



4x12

SIX-BUTTON FOOTSWITCH



CHANNEL: Selects either CHANNEL 1 (no light on) or CHANNEL 2 (RED light on)

CH1 MIDS: Activates the MIDS switch on CHANNEL 1. Preset the switch on the front of the amp for CUT (-) or BOOST (+). You can now switch the CUT or BOOST on and off “on the fly” with the footpedal. Typically players leave this function off on the pedal and switch on for a different sound. Others prefer to leave the pedal MIDS on for a mid scoop or mid boosted sound and then switch off for an alternate sound. Try it both ways.

CH2 MIDS: Same as CH1 above but only works on CHANNEL 2. Again, you may find you prefer the MIDS on and set to cut for your heavy rhythm tone and switch off to make your solos cut through with a little more midrange.

LOOP: This is a cool Egnater thing. The small toggle switch above the LED allows you to preset the loop to come on automatically with CHANNEL 1 or CHANNEL 2 and turn off automatically when going over to the opposite CHANNEL. For example, suppose you have a favorite compressor that you only want to use with your clean sound. You can connect it to the loop, set the level controls per the instructions elsewhere in this manual, and set the toggle switch to CH1. When you select CHANNEL 1, the compressor will automatically be switched into the loop. When you go to CHANNEL 2, the compressor will automatically switch out. You can also do the opposite with CHANNEL 2.

If you have an effect that you just always want on, set the switch to BOTH and turn the loop on. Note: when you are in any of the three modes of the toggle switch, you can still turn the loop on/off manually with the pushbutton.

REVERB: This pushbutton simply turns the internal reverb on and off.

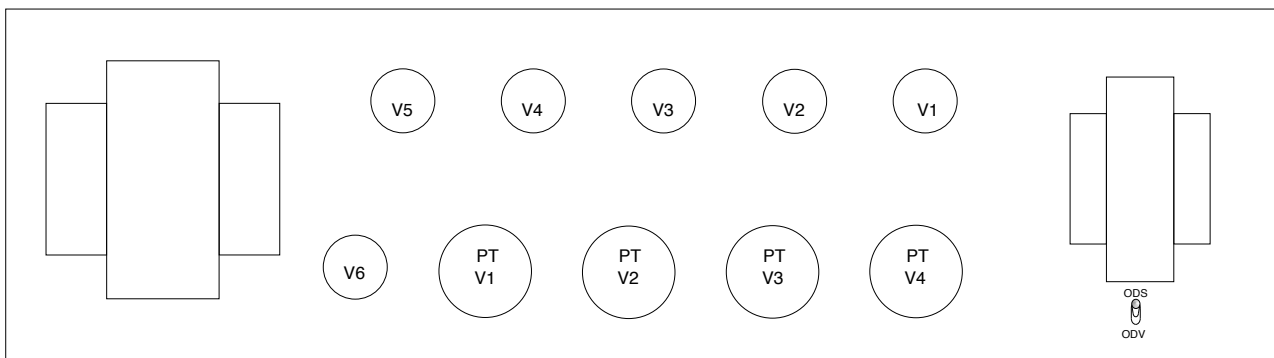
2nd MASTER: Pressing this pushbutton activates the 2nd MASTER on the amp. This gives you another control to use for a preset volume boost. Set the MAIN master for your normal“ playing volume. Then turn on the 2nd MASTER for a preset solo boost level. You can now alternate between the two settings with the pushbutt on. This function also features the CHANNEL preset mode switch. This switch operates a bit differently than the effects switch. You simply set the toggle switch for the channel that you want the pushbutton to work with or, set to BOTH to be able to turn the 2nd MASTER on/off at will. Let’s say you want to use the 2nd MASTER for a boost on CH2 only. By setting the toggle to CH2, the pushbutton will only function on CH2. The advantage here is let’s say you have just finished your solo in the boosted (2nd MASTER on) mode and you want to go back to the CLEAN (CH1) channel. You would normally need to turn the boost (2nd MASTER) off and then switch to CHANNEL 1. By setting the toggle to CH2 only, you can instantly go to CHANNEL 1 and the boost (2nd MASTER) will be off. NOTE; It will still be on next time you go to CHANNEL 2 but you can simply turn it off while in CHANNEL 1 so CHANNEL 2 is back to normal before going there. The last great thing about the Vengeance pedal is that it connects to the amp using a standard 3 pin microphone cable. No more worries about having a special cable for your footpedal.

FEATURES AND SPECIFICATIONS

- 120-Watt All Tube Head
- Premium Tubes:
- 4 x EL34 & 6 x 12AX7
- Selectable Full/Half Power Switch (120/60-Watts)
- Two Independent Channels each With:
 - Volume, Gain and 3-band EQ
 - Tight and Bright Voicing Switches
 - Mid Cut/Boost Voicing Switch (Footswitchable)
 - High/Low Gain Switch
 - Independent Reverb Controls with “Spillover”
- Master Controls:
 - Presence & Density
 - Main and Secondary Master Volumes
- Six Button Footswitch for Channel Select, Channel 1 Mids, Channel 2 Mids, Effects Loop, Reverb and 2nd Master Volume
- Assign the Effects Loop and 2nd Master to Channel 1, Channel 2 or Both
- Connects to Amp Via a Standard XLR Cable
- Additional ¼” Jacks for External Control of Switching Functions
- Simple Bias Adjust with External Test Points
- Balanced XLR Cabinet Voiced Line / Recording Output
- Buffered Effects Loop with Send and Return Levels
- 117VAC//230VAC Voltage Selector

V1 - V6 = 12AX7

PTV1 - PTV4 = EL34



Egnater Amplification is dedicated to product excellence and therefore continuously attempts to improve each and every model we manufacture. This ongoing process includes refinements in design, materials and workmanship which may result in products which differ than those described in our literature. All features, specifications, prices and terms are subject to change without notice.

PERSONALIZE YOUR SETTINGS

TIGHT + - 0	BRIGHT + - 0	GAIN + - 0	GAIN	BASS	MIDDLE	TREBLE	REVERB	VOLUME
<div>MIDS - 0 +</div>								

TIGHT + - 0	BRIGHT + - 0	GAIN + - 0	GAIN	BASS	MIDDLE	TREBLE	REVERB	VOLUME
<div>MIDS - 0 +</div>								

TIGHT + - 0	BRIGHT + - 0	GAIN + - 0	GAIN	BASS	MIDDLE	TREBLE	REVERB	VOLUME
<div>MIDS - 0 +</div>								

TIGHT + - 0	BRIGHT + - 0	GAIN + - 0	GAIN	BASS	MIDDLE	TREBLE	REVERB	VOLUME
<div>MIDS - 0 +</div>								

TIGHT + - 0	BRIGHT + - 0	GAIN + - 0	GAIN	BASS	MIDDLE	TREBLE	REVERB	VOLUME
<div>MIDS - 0 +</div>								

TIGHT + - 0	BRIGHT + - 0	GAIN + - 0	GAIN	BASS	MIDDLE	TREBLE	REVERB	VOLUME
<div>MIDS - 0 +</div>								



VENGEANCE®

LIMITED WARRANTY

Thank you for choosing Egnater. Egnater manufactures some of the world's most innovative all-tube amplifier, combos and speaker cabinets. Egnater takes great pride in thoroughly testing each product prior to shipment.

AMPLIFIERS, COMBOS AND SPEAKER

CABINETS: Egnater offers a three (3) year warranty to the original purchaser that an Egnater product will be free from defects in material and workmanship. A dated sales receipt will establish coverage under this warranty. This warranty does not cover service or parts to repair damage caused by accident, neglect, abuse, normal & wear, disaster, misuse, abuse, over-powering, negligence, inadequate packing or shipping procedures and service, repair or modifications to the product which have not been authorized or approved by Egnater. If this product is defective in materials or workmanship as warranted above, your sole remedy shall be repair or replacement as provided below.

TUBES: Egnater warrants the original purchaser that the tubes used in an Egnater amplifier/combo will be free from defects in material and workmanship for a period of 90 days from the original date of purchase. A dated sales receipt will establish coverage under this warranty. This warranty will automatically terminate 90 days after the original retail sales date. This warranty is in lieu of all other expressed warranties. If tubes fail within the 90 day warrant period your sole remedy shall be replacement of tubes as provided below.

RETURN PROCEDURES: In the unlikely event that a defect should occur, follow the procedure outlined below. Defective products must be shipped, together with proof of purchase, freight pre-paid and insured to the Authorized Egnater Service Center or directly to Egnater. If a product must be returned to Egnater for warranty replacement/repair, a Return Authorization Number must be obtained from our Customer Service Department prior to shipping the product.

Please contact our Customer Service Department for the Authorized Egnater Service Center nearest you. Products

must be shipped in their original packaging or its equivalent; in any case, the risk of loss or damage in transit is to be borne by the purchaser. The Return Authorization Number must appear in large print directly below the shipping address. Always include a brief description of the defect, along with your correct return address and telephone number.

When calling to inquire about a returned product, always refer to the Return Authorization Number. If Egnater determines that the unit was defective in materials or workmanship at any time during the warranty period, Egnater has the option of repairing or replacing the product at no additional charge, except as set forth below. All replaced parts become a property of Egnater. Products replaced or repaired under this warranty will be returned via ground shipping within the United States-freight prepaid. Egnater is not responsible for costs associated with expedited shipping, either to Egnater or the return of the product to the customer.

INCIDENTAL OR CONSEQUENTIAL DAMAGE:

In no event will Egnater be liable for any incidental or consequential damages arising out of the use or inability to use of any Egnater product, even if an Egnater dealer has been advised of the possibility of such damages, or any other claim by any other party. Some states do not allow the exclusion or limitation of consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state.

FOR YOUR PROTECTION: Please complete and mail the Purchase Information Card within (10) ten days of the date of purchase so that we may contact you directly in the event a safety notification issued in accordance with the 1972 Consumer Product Safety Act.

CUSTOMER SUPPORT: Our dedicated staff is ready to help you with any warranty or product questions you may have. Please call 1-877-EGNATER (9:00AM to 4:00PM Pacific Standard Time).

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