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## OPERATING INSTRUCTIONS

# Ampeg Amplifiers



Welcome to the Ampeg family! You now own one of the world famous Ampeg amplifiers, used and respected by top artists in Rock, Country, Jazz and Contemporary music.

Ampeg's many design features—from selective midrange and shock mounted chassis to tuned speaker enclosures—are among the most advanced and respected in amplifier design today. Knowledge gained from over 25 years of experience in building amplifiers and instruments shows up in every feature on your Ampeg amplifier.

Reliability is an Ampeg tradition. Your amplifier will perform superbly for years to come because of its inherently conservative design. All parts are rated for operating conditions that exceed any likely to be encountered in normal use.

Sound, being one of the most important qualities of any amplifier, is highly valued by the engineers and musicians who design the Ampeg products. Therefore, the vast flexibility of an Ampeg amplifier is one of its most valuable assets, allowing you—the musician—to choose your sound.

A final word—Ampeg amplifiers, like all precision electronic equipment, realize their full performance capabilities only when permitted to do so by the user. Even if you've had previous experience with other amplifiers, we urge you to follow the instruction manual while operating the amplifier for the first time. The contents can save you time and help you to avoid needless disappointment.



#### GLOSSARY TO TERMS

Before reading on it is advisable to study these terms which describe the controls and accessories found on various Ampeg amplifiers. By doing so you will have a better understanding of your Ampeg amplifier and what it can do. Not all models have all of these features. Study those that apply to your unit.

**CALIBRATED TONE CONTROLS**—Detented controls allow for accurate and repeatable adjustment of all tone controls.

**EXTENSION SPEAKER JACK**—This jack allows the use of an additional speaker cabinet. Use a cabinet that matches the original cabinet. If use of some other combination is contemplated, contact Ampeg Service Department, Linden, New Jersey, for further instructions.

**FEEDBACK COMPENSATED VOLUME CONTROLS**—These controls accept low or high impedance instruments and microphones of varying outputs.

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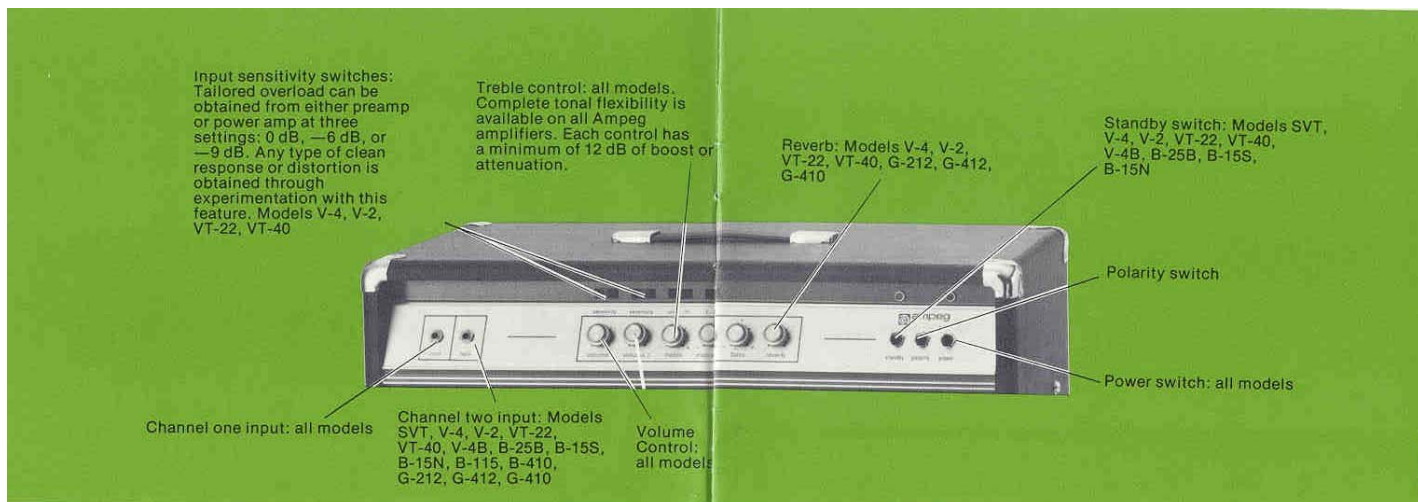
**HI AND LO GAIN JACKS**—These jacks accept instruments of vastly varying output levels.

**HUM BALANCE CONTROL**—To operate set tone controls to playing position before plugging in the instrument. Adjust hum balance control finding position which gives least hum.

**IMPEDANCE**—This term tells at what voltage and current ratio power is to be delivered to a speaker system. It is important that the proper impedance speaker cabinets be used with Ampeg amplifiers for maximum performance.

**IMPEDANCE MATCHING SWITCH**—This feature allows full rated output power to be delivered to either a 2, 4, or 8 ohm speaker system. When using two cabinets of the same impedance, set the impedance selector switch to half of one cabinet's rated impedance.

**INPUT SENSITIVITY**—Input sensitivity refers to the size of input signal, in volts, required to drive the amplifier to rated output. On amplifiers with an input sensitivity switch, signals of greatly different levels can be accommodated with control of input overload distortion.



**INTEGRATED CIRCUITS (IC's)**—This term describes the solid state circuits which take the place of several transistor circuits.

**MIDRANGE CONTROL / MIDRANGE SELECT**—The midrange control in combination with a three position rocker switch is adjustable for three key frequency ranges: 300 Hz, 800–1000 Hz or 2500–3000 Hz. Each frequency is adjustable for 20 dB of boost or attenuation. This midrange feature provides the flexibility to generate any sound: hard rock, jazz or country.

**PEAK MUSIC POWER**—This rating tells you the largest instantaneous power peak that can be delivered by the amplifier and is useful to know since each note played on an instrument has both a peak demand and a continuous (or average) demand.

**POLARITY SWITCH**—This switch controls internal grounding for lowest hum and noise. Select whichever position is quietest with all controls in normal positions with no instrument connected but with the input guitar cable connected to the amplifier. Polarity switch feature is not provided on those units factory equipped with a 3-wire AC line cord.

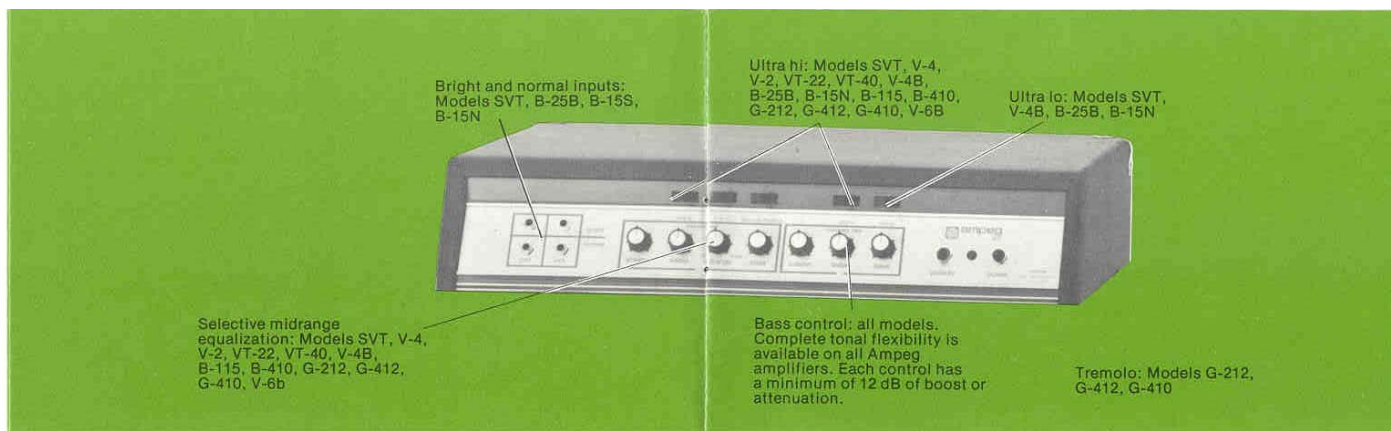
**REMOVABLE POWER MODULES**—The power modules on the solid state amplifiers can be replaced in seconds. Detailed instructions are enclosed with each spare module.

**RESPONSE SWITCH**—This feature pre-selects 3 different tone control effects. Use the position that sounds best to you.

**REVERB**—Reverb is simply the addition of delayed sound to the straight sound of an instrument. This delay is accomplished by storing the signal in a spring and retrieving it on the other end. Reverb intensity is determined by the setting of the reverb control.

**RMS POWER**—This term indicates the continuous power that the amplifier can deliver to a speaker system before output clipping (distortion) occurs.

**STANDBY SWITCH**—Ampeg tube amplifiers have a standby switch on the front or rear panel. This switch allows the amplifier to stay ready to play (in standby position) and be used in the operate position.



**TONE CONTROLS / CUT (–) AND BOOST (+)**—All Ampeg amplifiers have both boost and cut tone control circuits. At midpoint (12 o'clock) the control is removed from operation. Clockwise rotation results in more bass or treble, counter clockwise rotation results in less.

**TREMOLO**—Tremolo is amplitude (volume) modulation added to the straight signal in pulses. The speed of these pulses is set by the tremolo speed control. The amount of tremolo with respect to the straight signal is increased by advancing the control clockwise.

**TUFFRUGG**—Ampeg's exclusive 1/8" thick synthetic polymer fiber covering, Tuffrugg is colorfast, non-absorbent, and resists abrasions, scratches and chemicals. To clean Tuffrugg covering, remove dust with a suede brush, clip with shears any piling or unevenness, and remove stains with a general household cleaner in lukewarm water. Indentations can be removed by steaming with an iron. Small, damaged areas can be replaced by gluing a patch of Tuffrugg with Duco Cement.

**ULTRA HI BOOST / CUT**—Ultra Hi provides additional boost of the critical presence frequencies. The cut (–) position reduces the

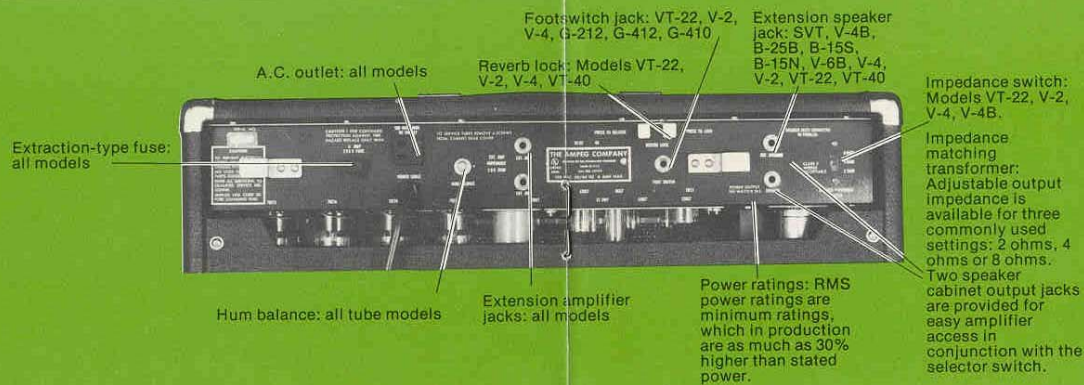
same frequencies and allows guitarists to play the sustain style. The Ultra Hi cut is only significant in the circuitry if the volume control is advanced past the 12 o'clock position.

**ULTRA LO / BASS CUT**—Ultra Lo provides an apparent increase of bass frequencies by removing a portion of the midrange. The ear hears this change as more bass. Bass cut removes extremely low frequencies. Some readjustment of the volume control may be necessary when this control is used.

#### Setup Procedure

**ITEMS ON REAR AMPLIFIER PANEL**—While set-up procedure is relatively simple, certain precautions must be observed. Please keep in mind that our warranty does not cover damage caused by mishandling, misuse, excessive line voltage, or insufficient ventilation. We therefore urge you to understand and follow the instructions in this booklet completely and carefully.

**POWER SOURCE**—Most amplifiers are wired for domestic operation. Make sure that the electrical power you use is 120 volts A.C. (or less) at 50-60 Hz as specified on the rear identification panel of your amplifier.



**SPEAKER CONNECTION**—Applies only to units with separate amplifier and speaker enclosure. Speaker enclosures may be connected in one of two ways:

- A. Using the speaker cable(s) furnished, insert the male phone plug into the phone jack marked "speaker" located on the rear amplifier panel. Insert the other connector into the receptacle located on the back of the speaker enclosure.
- B. On other units, one speaker cord is permanently connected to the rear amplifier panel. Insert the cable into the receptacle located on the back of the speaker enclosure. In both A and B, a second speaker system may be connected.

**NOTE:** If you have purchased an Ampeg power head only, or if you have mixed our power heads and speaker enclosures, be absolutely sure that the speakers are capable of handling the RMS power output of the amplifier. Also make sure that speaker enclosure impedance matches that of the power amplifier.

**EXTENSION SPEAKERS**—For those amplifiers which come with only one speaker enclosure, or the amplifier and speaker(s) are in one enclosure, you may add an extension speaker if the rear panel has an Extension Speaker Jack. It is best to add a speaker enclosure which has the same impedance as the standard enclosure or speakers.

**NOTE:** On amplifiers which come standard with two speaker enclosures, it is always advisable to connect both speaker enclosures since the amplifier may put out more power than one enclosure will handle.

**IMPEDANCE MATCHING SWITCH**—(On some models)—On those amplifiers which are equipped with the Impedance Matching Switch (located on the rear panel) you may adjust amplifier impedance to match whichever speaker enclosure you may use.

**EXTENSION AMPLIFIER**—On those amplifiers which are equipped with an Extension Amplifier Jack (located on the rear panel) you may connect amplifiers in tandem. That is, Extension Amp Jack to Extension Amp Jack with a regular guitar cord, using the first amplifier volume and tone controls to operate both amplifiers; or, you may take the musical signal from one Extension Amp Jack and run it into the front panel input jack of another amplifier. The Extension Amplifier Jack can also be used to patch into a recording studio board or into large PA systems.

### Operation

**ITEMS ON FRONT AMPLIFIER PANEL**—Before starting, make sure the unit is plugged into the proper A.C. outlet. Set all of the Tone, Volume, Reverb, etc., controls to "0" and make sure the cord you use to connect your instrument to the amplifier is in good working order. Set the volume control(s) on your instrument to full. You're now ready to operate the amplifier.

**POWER SWITCH**—move to the up position.

**STANDBY SWITCH**—move to the up position. This changes the amplifier from standby to operate. This switch is on the front or rear panel of Ampeg amplifiers.

**NOTE:** When turning the amplifier on, allow 30 seconds for the tubes to warm up. Solid state amplifiers and some of the smaller amplifiers are not equipped with a standby switch.

**POLARITY SWITCH**—This switch controls internal grounding for lowest hum and noise. Select whichever position is quietest with all controls at normal positions with no instrument connected, but with a guitar cable connected to the amplifier. The polarity switch will have no effect on amplifiers equipped with a 3-wire line cord connected to a 3-wire receptacle. The polarity switch only functions when the amplifier is connected to a 2-wire system through an appropriate adapter. The 3-wire line cord is provided for your safety and convenience and should not be modified in any way except with the use of an appropriate 3-prong to 2-prong adapter.

**NOTE:** The volume must be turned up in order to hear the hum.

**ADJUST VOLUME** to a suitable level.

**SENSITIVITY SWITCH**—On those amplifiers which are equipped with a sensitivity switch you can accommodate the level of the input signal from your instrument. There is no "proper" setting, rather it is up to the taste of each musician. Experimentation is the best way to find the proper setting for you.

**TREBLE AND BASS CONTROL**—These settings are also up to the individual. By setting the controls at 12 o'clock and moving them to the left or right, you have the choice of cut (–) (decrease) or boost (+) (increase) in bass or treble response.

**ULTRA HI**—Additional high frequency response in the presence range beyond what is available from the treble control.

**ULTRA LO**—Additional low frequency response beyond what is available from the bass control. The "cut" position decreases the bass response in the extreme low frequency range.

**MIDRANGE CONTROL**—Cuts (–) or boosts (+) midrange response. This allows you recording studio control of your sound. The correct setting is that setting that sounds best to you.

**MIDRANGE SELECTOR**—Selector for any one of three frequency bands which you may then cut (–) or boost (+) with the *midrange control*.

| POSITION                   | FREQUENCY BAND                          |
|----------------------------|---|
| Position 1 (Extreme Left)  | Lower Midrange (250–300 Hz)             |
| Position 2 (Middle)        | Midrange (800–1000 Hz)                  |
| Position 3 (Extreme Right) | Upper Midrange—Lo Treble (2500–3000 Hz) |

Once the midrange rocker switch is set to one of the frequency bands, adjust the control from the 12 o'clock position for the designed amount of boost or cut.

**REVERB/ECHO**—Extreme counter-clockwise position is off. There is a reverb lock on most units which will be located at the rear.

**TREMOLO INTENSITY**—Controls the accent of Tremolo effect.

**TREMOLO SPEED**—Controls the time lapse between the crests of the effect.

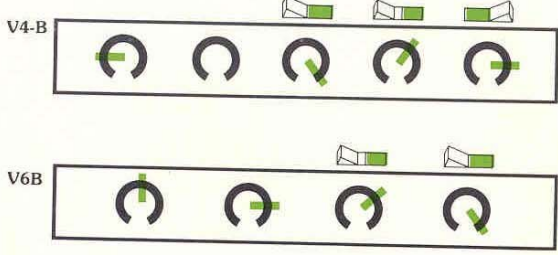
Because the tone controls of Ampeg products offer so much flexibility in your sound, we suggest you spend enough time with your new amplifier to understand how each control works and what it will do.

Ampeg builds as well as designs with special attention to the player's needs—that's why Ampeg is noted for the reliability and durability so important to professionals on the road (when you're on the road, it's also good to know about Ampeg's nationwide service centers). Speaker cabinets are built entirely of selected  $\frac{3}{4}$ " veneer, and protected with fabric backed vinyl no-scurf covering. Heads are not just assembled from stock components, but designed and built throughout to take advantage of such premium quality parts as industrial grade heavy duty tubes.

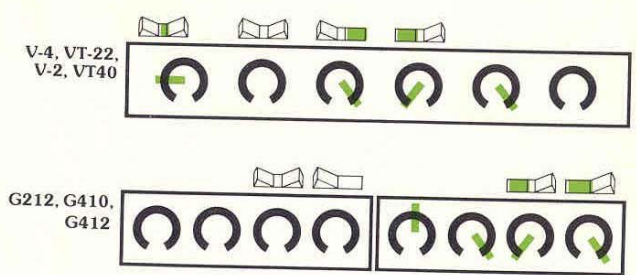
**How to Achieve a Special Sound**

Ampeg amplifiers have been carefully designed to allow you great versatility in sound. The following charts contain the recommended control panel settings for both tube and solid state models to best achieve specific effects.

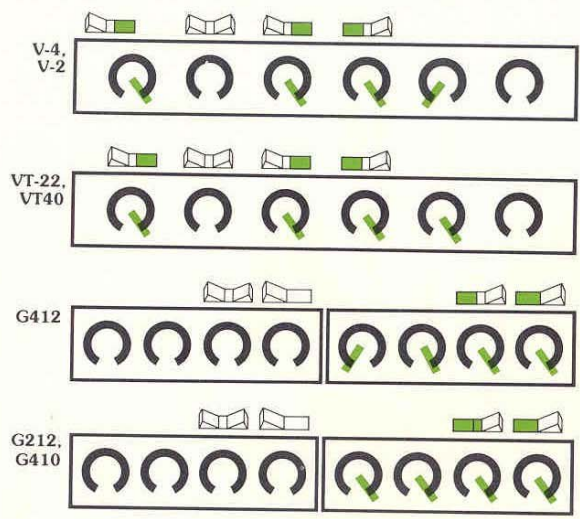
**Acoustic 371 Bass Sound**



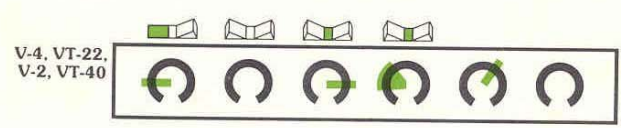
**Fender Twin Sound**

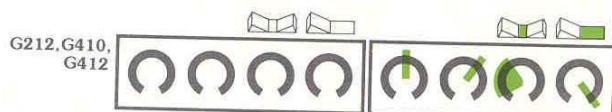
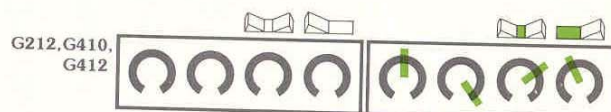
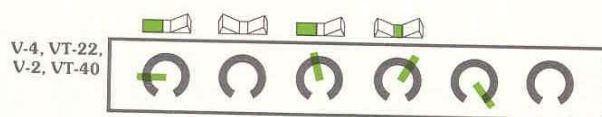


**Marshall Rock Sound**



**Country Lead and Steel Guitar Sound**



**Country Lead and Steel Guitar Sound****Jazz Sound**

Ampeg builds cabinets and heads from the bottom up, entirely in their own shops.

The Ampeg Limited Warranty becomes effective immediately upon receipt of the registration card by Ampeg. (The registration card must be signed by an authorized Ampeg dealer and the purchaser.)

The Ampeg Limited Warranty is available only to the original purchaser who must be an individual person (not a group, club or organization).

**THE AMPEG LIMITED WARRANTY**

All Ampeg products are warranted to be free of defects in workmanship and materials for a period of one (1) year from date of purchase. The Ampeg Limited Warranty becomes effective immediately upon receipt by Ampeg of the completed owner registration card. (The registration card must be signed by an authorized Ampeg dealer and the purchaser.) This warranty is offered only to the original purchaser of a new Ampeg product at retail.

Should a malfunction occur within the warranty period presentation of the warranty identification card will entitle the owner to receive authorized repair and service from any authorized Ampeg dealer or service center. If the malfunction is due to a defect in materials or workmanship, the repair will be completed free of charge to the owner (including parts and labor). *Transportation Charges* to and from the Ampeg service center shall be paid by the owner.

*Note: This Limited Warranty does not apply to Ampeg Products purchased from anyone other than authorized Ampeg dealer or to products that have been subjected to shipping damage, alteration, neglect [extremes of temperature and/or moisture], accident, misuse or modification in any manner by an unauthorized person.*

If additional information concerning the Ampeg Limited Warranty or the address of the nearest Authorized Ampeg Dealer or Service Center is required, write to: National Service Manager, The Ampeg Company, Box 310 Elkhart, Indiana 46514.



**SELECTIVE MIDRANGE  
EQUALIZATION CONTROL**

**IMPORTANT INSTRUCTIONS**

THIS MIDRANGE CONTROL, IN CONJUNCTION WITH THE THREE POSITION ROCKER SWITCH, WILL GIVE TONE BALANCE FLEXIBILITY COMPARABLE TO A RECORDING STUDIO.

- (1) SET CONTROL AT MID-POINT — 12:00 O'CLOCK.
- (2) NEXT ADJUST BASS AND TREBLE CONTROLS.
- (3) THEN TRY ALL THREE POSITIONS OF THE ROCKER SWITCH WITH DIFFERENT SETTINGS OF THE MIDRANGE CONTROL. USE THESE SETTINGS TO "FINE TUNE" THIS AMPLIFIER FOR YOUR REQUIREMENTS.

PART NO. 591703-4



**REVERB**

THIS AMPLIFIER IS EQUIPPED WITH A REVERB TRANSIT CLAMP. CHECK REAR FOR RELEASE INSTRUCTIONS. FAILURE TO RELEASE THIS CLAMP BEFORE OPERATING AMPLIFIER WILL RESULT IN A HIGH FREQUENCY SQUEAL.

PART NO. 591703-1



VT-22 IMPEDANCE SELECTOR SWITCH INSTRUCTIONS:

SWITCH  
SETTING



8 OHM

8 OHM POSITION:

SET THE IMPEDANCE SWITCH IN THE 8 OHM POSITION WHENEVER STANDARD SPEAKERS ARE USED.



4 OHM

4 OHM POSITION:

SET THE IMPEDANCE SWITCH IN THE 4 OHM POSITION WHENEVER THE STANDARD SPEAKERS ARE USED WITH AN 8 OHM EXTENSION CABINET.

SET THE IMPEDANCE SWITCH IN THE 4 OHM POSITION WHENEVER THE VT22 CABINET IS EQUIPPED WITH ALTEC SPEAKERS.



2 OHM

2 OHM POSITION:

SET THE IMPEDANCE SWITCH IN THE 2 OHM POSITION WHENEVER ALTEC SPEAKERS ARE USED WITH A 4 OHM EXTENSION CABINET.

PART NO, 591751-1