

# B-15R PORTAFLEX BASS AMPLIFIER



**USER'S GUIDE**



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### Declaration Of Conformity

#35, Effective 01-01-2001

**Manufacturer's Name:** SLM Electronics  
**Production Facility:** 1901 Congressional Drive, St. Louis, MO 63146, USA  
**Production Facility:** 700 Hwy 202 W, Yellville, AR 72687, USA  
**Shipping Facility:** 1400 Ferguson Ave., St. Louis, MO 63133, USA  
**Office Facility:** 1400 Ferguson Ave., St. Louis, MO 63133, USA

**Product Type:** Audio Amplifier

**Complies with the following Standards:**

**Safety:** EN60065, E60065, C22.2, UL6500 and/or UL813  
**EMC:** Directive 89/336/EEC, EN55103, EN55013, EN61000, and/or FCC 47CFR 15B c/a

Supplementary information provided by:  
 SLM Electronics - R & D Engineering  
 1901 Congressional Drive, St Louis, MO 63146, USA  
 Tel.: 314-569-0141, Fax: 314-569-0175

**CAUTION** **RISK OF ELECTRIC SHOCK DO NOT OPEN**

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE. TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

**PRECAUCION** **RIESGO DE CORRIENTAZO NO ABRA**

PRECAUCION: PARA REDUCIR EL RIESGO DE INCENDIOS O DESCARGAS ELECTRICAS, NO PERMITA QUE ESTE APARATO QUEDE EXPUESTO A LA LLUVIA O LA HUMEDAD. PARA DISMINUIR EL RIESGO DE CORRIENTAZO, NO ABRA LA CUBIERTA. NO HAY PIEZAS ADENTRO QUE EL USUARIO PUEDA REPARAR DEJE TODO MANTENIMIENTO A LOS TECNICOS CALIFICADOS.

**ATTENTION** **RISSQUE D'ELECTROCUTION NE PAS OUVRIRE**

ATTENTION: PROTEGEZ CET APPAREIL DE LA PLUIE ET DE L'HUMIDITE AFIN D'EVITER TOUT RISSQUE D'INCENDIE OU D'ELECTROCUTION. POUR REDUIRE D'ELECTROCUTION NE PAS ENLEVER LE COUVERCLE. AUCUNE PIECE INTERNE N'EST REPARABLE PAR L'UTILISATEUR. POUR TOUTE REPARATION, S'ADRESSEZ A UN TECHNICIEN QUALIFIE.

### IMPORTANT SAFETY INSTRUCTIONS

- READ, FOLLOW, HEED, AND KEEP ALL INSTRUCTIONS AND WARNINGS.
- DO NOT OPERATE NEAR ANY HEAT SOURCE AND DO NOT BLOCK ANY VENTILATION OPENINGS ON THIS APPARATUS. FOR PROPER OPERATION, THIS UNIT REQUIRES 3" (75CM) OF WELL VENTILATED SPACE AROUND HEATSINKS AND OTHER AIR FLOW PROVISIONS IN THE CABINET.
- DO NOT USE THIS APPARATUS NEAR SPLASHING, FALLING, SPRAYING, OR STANDING LIQUIDS.
- CLEAN ONLY WITH LINT-FREE DAMP CLOTH AND DO NOT USE CLEANING AGENTS.
- ONLY CONNECT POWER CORD TO A POLARIZED, SAFETY GROUNDED OUTLET WIRED TO CURRENT ELECTRICAL CODES AND COMPATIBLE WITH VOLTAGE, POWER, AND FREQUENCY REQUIREMENTS STATED ON THE REAR PANEL OF THE APPARATUS.
- PROTECT THE POWER CORD FROM DAMAGE DUE TO BEING WALKED ON, PINCHED, OR STRAINED.
- UNPLUG THE APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.
- ONLY USE ATTACHMENTS, ACCESSORIES, STANDS, OR BRACKETS SPECIFIED BY THE MANUFACTURER FOR SAFE OPERATION AND TO AVOID INJURY.
- WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK OR FIRE, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.
- SERVICE MUST BE PERFORMED BY QUALIFIED PERSONNEL.
- OUR AMPLIFIERS ARE CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS. CONTINUED EXPOSURE TO HIGH SOUND PRESSURE LEVELS CAN CAUSE PERMANENT HEARING IMPAIRMENT OR LOSS. USER CAUTION IS ADVISED AND EAR PROTECTION IS RECOMMENDED IF UNIT IS OPERATED AT HIGH VOLUME.



EXPLANATION OF GRAPHICAL SYMBOLS:  
 EXPLICACION DE SIMBOLOS GRAFICOS:  
 EXPLICATION DES SYMBOLES GRAPHIQUES:



"DANGEROUS VOLTAGE"  
 "VOLTAJE PELIGROSO"  
 "DANGER HAUTE TENSION"



"IT IS NECESSARY FOR THE USER TO REFER TO THE INSTRUCTION MANUAL"  
 "ES NECESARIO QUE EL USUARIO SE REFIERA AL MANUAL DE INSTRUCCIONES."  
 "REFERREZ-VOUS AU MANUAL D'UTILISATION"



## INTRODUCTION:

Thank you for selecting the Ampeg B-15R Portaflex Bass Amplifier. Revived from the past and enhanced for the present, this limited production model offers all of the best features of the 1960's classic plus more. In order to get the most out of your new amplifier, please read this user's guide before its use.

## FEATURES:

- 0db and -15dB Input Jacks
- Ultra High / Ultra Low Boosts
- Input Gain Control
- Three Band EQ
- Five Position Mid Freq Select
- Master Volume Control
- Half-Power Switch
- Tube Bias Select Switch
- Impedance Selector (8/4 Ohms)
- Line Out/Line In jacks
- XLR Balanced Line Out Jack
- Line Out Level Control
- Pre/Post Select Switch
- Ground Lift Switch
- Patented "Flip Top" Enclosure
- Ampeg Vintage 15" Speaker
- H.F. Horn w/Level control
- 100 watts RMS
- All Tube Design
- Removable Dolly Board w/Casters
- Proudly Made In America

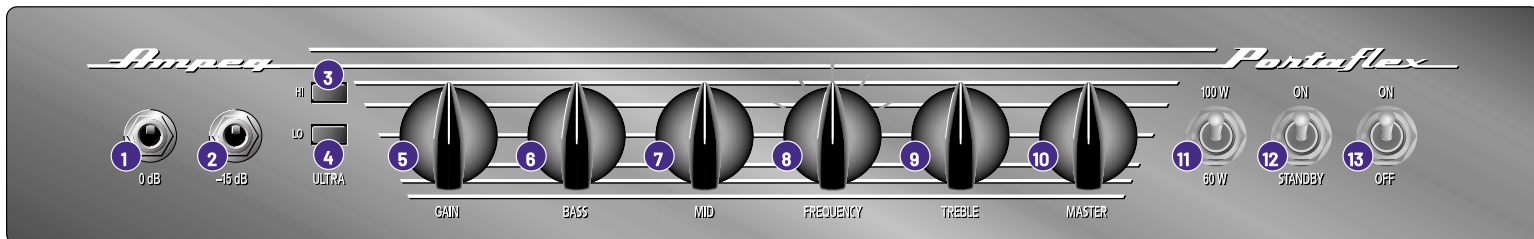
## IMPORTANT SAFEGUARDS AND PRECAUTIONS:

All Ampeg products are designed for continuous safe operation, as long as common sense is used and steps are taken to help avoid certain problems. Abiding by the following rules can help prevent damage to your equipment, yourself, and others.

- The unit is equipped with a three-pronged AC power cord. To reduce the risk of electrical shock, **NEVER** remove or otherwise attempt to defeat the ground pin of the power cord.
- Connect the unit **ONLY** to a properly grounded AC outlet of the proper voltage for your unit.
- Avoid sudden temperature extremes, rain and moisture. Also, avoid sudden and intense impact. (If the unit has been subjected to any of the preceding abuses, have it looked at by an authorized service center.)
- **NEVER** set the unit on a support that might give out under its weight.
- Always keep the total speaker impedance at or above the rated load.
- Unplug the unit before cleaning it. **NEVER** spray liquid cleaners onto the unit. Wipe it with a slightly dampened, lint-free cloth to remove dirt and film.
- Do not use the unit if it has sustained damage to the chassis, controls, or power cord. Refer the unit to an authorized service center for inspection.
- Audio equipment capable of producing high volume levels are also capable of inflicting permanent hearing loss or damage, if the exposure to such levels is prolonged. Such damage is progressive and irreversible! Consider using quality hearing protection devices.



## THE FRONT PANEL:



**1. 0dB INPUT:** If your instrument has normal pickups, connect it here by means of a shielded signal cable. If your instrument has active electronics or “hot” pickups, use the -15dB Input jack (#2).

**2. -15dB INPUT:** If your instrument has active electronics or “hot” pickups, connect it here by means of a shielded signal cable. If your instrument has normal pickups, use the 0dB Input jack (#1).

**3. ULTRA HI:** This switch, when depressed, boosts the high frequencies.

**4. ULTRA LO:** This switch, when depressed, boosts the low frequencies.

**5. GAIN:** Use this control to adjust the input gain of the amplifier to your instrument and playing style. With a low instrument output and a soft playing style, this control would be set higher than with higher outputs and harder playing styles. Proper setting of the Gain control will produce clean output with the lowest noise level. Use this control in conjunction with the Master control (#10).

**6. BASS:** Use this control to adjust the output level of the low frequencies. This control provides an adjustment range of 25dB at 40Hz.

**7. MID:** Use this control to adjust the output level of the middle frequencies. This control provides an adjustment range of 34dB at the frequency selected by the Frequency control (#8).

**8. FREQUENCY:** Use this control to select the midrange frequency: 200Hz (at the fully counter clockwise position), 400 Hz, 900Hz, 1.5kHz, or 2.5kHz (at the fully clockwise position).

**9. TREBLE:** Use this control to adjust the output level of the high frequencies. This control provides an adjustment range of 30dB at 4kHz.

**10. MASTER:** Use this control to adjust the output level of the amplifier and the output level at the Balanced Line Out jack (#24) when the Post/Pre switch (#22) is depressed.

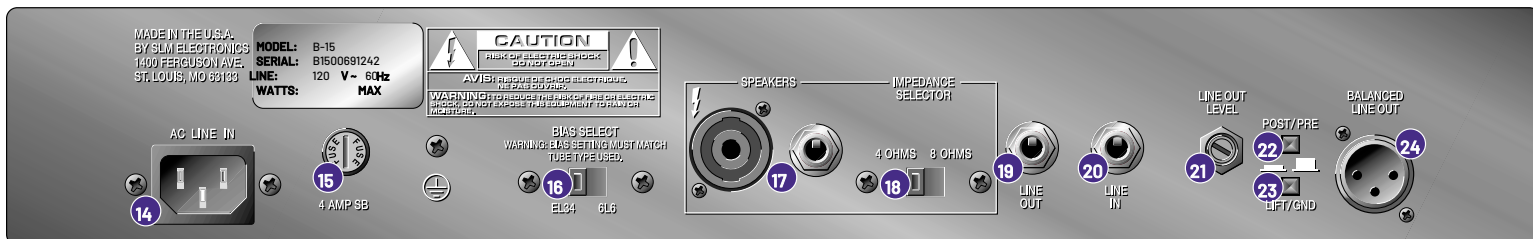
**11. 100W/60W:** Use this switch to choose whether the output of the amplifier is full power (switch at the 100W position) or half power (switch at the 60W position).

**Note:** In the 60W position the amplifier will deliver approximately 40 watts to the internal 8 ohm speaker. To deliver the full 60 watts to the internal speaker, set the Impedance Selector switch (#18) to the 4 Ohms position. Operation at either the 4 or 8 Ohms position is acceptable and will produce tonal variances. Experiment with these settings to determine which setting provides the best results for your application.

**12. ON/STANDBY:** Use this switch to activate the amplifier after the On/Off switch (#13) is turned on. **Always turn the On/Standby switch OFF first and ON last! Turn the On/Off switch (#13) on at least 30 seconds before turning on the On/Standby switch.** During short breaks you should set this switch to the Standby position to help prolong the life of the amplifier’s tubes.

**13. ON/OFF:** Use this switch to turn the amplifier on and off. **Always turn this switch ON first and OFF last! Turn the On/Standby switch (#12) on at least 30 seconds after turning on the On/Off switch.**

## THE REAR PANEL:



**14. AC LINE IN:** Firmly insert the female end of the supplied AC power cord into this socket. The grounded power cord should only be plugged into a grounded power outlet that meets all applicable electrical codes and is compatible with the voltage, power and frequency requirements stated on the rear panel. **Do not attempt to defeat the safety ground connection!**

**15. FUSE:** The B-15R employs a fuse to help protect the amplifier from damage due to overload conditions. If the fuse fails, replace it only with the same size and type.

**16. BIAS SELECT:** Use this switch to match the bias to the type of output tube you are using. The B-15R is shipped from the factory with 6L6 output tubes and the Bias Select switch set to the 6L6 position. The only time you would need to change this switch is when installing EL34 output tubes.

**17. SPEAKERS:** Use these jacks to connect the amplifier to the internal speaker and/or an extension speaker. Use heavy duty speaker cables terminated with the proper connectors. The total speaker impedance must be no less than four ohms and the Impedance Selector switch (#18) must be set to match the total impedance. The B-15R's cabinet impedance is rated at eight ohms.

**18. IMPEDANCE SELECTOR:** Use this switch to match the amplifier to the total impedance of your speaker cabinet(s). Use the chart which follows determine the total impedance of parallel cabinets:

CABINET IMPEDANCE	# OF CABINETS	TOTAL IMPEDANCE
16 ohms	2	8 ohms
16 ohms	4	4 ohms
8 ohms	2	4 ohms

**19. LINE OUT:** Use this jack to send a line level signal from the amplifier to an external amplifier, a mixing console, or the input of an external effect.

**20. LINE IN:** Use this jack to return the signal from an external effect to the amplifier.

**21. LINE OUT LEVEL:** Use this control to adjust the signal level at the Balanced Line Out jack (#24).

**22. POST/PRE:** This switch, when depressed, sends a pre-eq signal to the Balanced Line Out jack (#24), which is not affected by the settings of the tone controls or master level controls. When this switch is in the out position, the signal sent to the Balanced Line Out jack (#24) is post-eq, and is affected by the settings of the tone controls and master level control.

**23. LIFT/GND:** This switch, when depressed, lifts the chassis ground connection at the Balanced Line Out jack (#24). This switch should only be depressed if there is excessive buzzing or hum coming from the amplifier due to ground loops.

**24. BALANCED LINE OUT:** Use this XLR jack to connect a balanced line level signal to a mixing console, recording device, or external amplifier.

## THE SPEAKER CABINET INPUT PLATE:



**25: HIGH FREQUENCY ATTENUATOR:** Use this three-position rotary switch to adjust the output level of the internal high frequency driver. Use the tip of a flatblade screwdriver to set this switch to the position which best suits your tastes and playing environment.

**26: FULL RANGE INPUTS:** Use either of these jacks to connect the internal speaker to the B-15R's Speaker jack (#17) by means of a heavy duty speaker cable. Use the remaining jack to connect to the input jack of an extension speaker cabinet if desired.



## IMPORTANT INFORMATION ABOUT TUBES AND TUBE PRODUCTS:

### A BRIEF HISTORY OF THE TUBE:

In 1883, Edison discovered that electrons would flow from a suspended filament when enclosed in an evacuated lamp. Years later, in 1905, Fleming expanded on Edison's discovery and created the "Fleming Valve". Then, in 1907, Dr. Lee de Forest added a third component – the grid – to the "Fleming's Valve" and the vacuum tube was a fact of life. The door to electronic amplification was now open.

During World War II, data gleaned from their intensive research on the detectors used in radar systems led Bell Telephone Laboratories to the invention of the transistor. This reliable little device gained quick support as the new component for amplification. The death of the vacuum tube seemed imminent as designers, scientists, and engineers reveled in the idea of replacing large, fragile glass tubes with these small, solid-state devices.

However, there were (and still are) many serious listeners who realized that the sound produced by a "transistor" amplifier is significantly different from that produced by a tube amplifier with identical design specifications. They considered the sound

### TUBE TYPES AND USAGE:

Tube amplifiers are based primarily on two types of tubes – preamplifier tubes and power tubes. The tubes used in preamplifiers (12AX7, 12AU7, 12AT7, etc.) are smaller than the power tubes. These tubes amplify the signal from your instrument and shape the sound. They are inherently microphonic (mechanically pick up and transmit external noises). Since these tubes are used in the critical first stages of a tube amplifier's circuitry, it is very important to use high-quality, low noise/low microphonic tubes for this application. Although tubes of this quality may be difficult to find and typically cost more than "off-the-shelf" tubes, the improvement in performance is worth the investment.

Preamplifier tubes are also used to drive the power tubes. When used in this application, a 12AX7 will produce a more distorted tone than a 12AT7, which produces a clearer, sweeter sound. A 12AU7 is even cleaner and brighter than a 12AT7, giving more definition to the sound. (In some cases it is possible to change the sound by changing the type of preamp and/or driver tubes. When making any modification to your equipment, it is highly recommended that you consult with a qualified service center.)

The power tubes are the largest tubes used in an amplifier. These tubes convert

### THE NATURE OF TUBES - WHY (AND WHEN) TO REPLACE THEM:

Tubes are made up of a number of fragile mechanical components that are vacuum-sealed in a glass envelope or bubble. The tube's longevity is based on a number of factors which include how hard and often the amplifier is played, vibration from the speakers, road travel, repeated set up and tear down, etc.

Any time you notice a change in your amplifier's performance, check the tubes first. If it's been a while since the tubes were replaced and the sound from your amplifier lacks punch, fades in and out, loses highs or lows or produces unusual sounds, the power tubes probably need to be replaced. If your amplifier squeals, makes noise, loses gain, starts to hum, lacks "sensitivity", or feels as if it is working against you, the preamplifier tubes may need to be replaced.

The power tubes are subjected to considerably more stress than the preamplifier tubes. Consequently, they almost always fail/degrade first. If deteriorating power tubes aren't replaced they will ultimately fail. Depending on the failure mode, they may even cause severe damage to the audio output transformer and/or other components in the amplifier. Replacing the tubes before they fail completely has the potential to save you time, money and unwanted trouble. Since power tubes work together in an amplifier, it is crucial that they (if there is more than one) be replaced by a matched set. If you're on the road a lot, we recommend that you carry a spare matched set of replacement power tubes and their associated driver tubes.

After turning off the power and disconnecting the amplifier from the power source, carefully check the tubes (in bright light) for cracks or white spots inside the glass

produced by these new solid-state devices to be hard, brittle, and lifeless. It was determined that solid-state devices produced a less musical set of harmonics than tubes. When pushed past their limits, they tend to mute the tone and emphasize the distortion.

Tubes, on the other hand, produce a more musical set of harmonics, the intensity of which can be controlled by the player. This characteristic adds warmth and definition to the sound which has become the hallmark of tube amplifiers. When tubes are driven into clipping, the harmonic overtones can be both sweet and pleasing or intense and penetrating, depending on the musician's musical taste and playing technique.

Over the years, application engineers have designed a number of outstanding solid-state amplifiers that sound very, very good. Some use special circuitry which enables them to simulate the distortion characteristics of a tube amplifier. However, the tube amplifier, still held in the highest esteem by many musicians, offers a classic "vintage" sound in a contemporary market.

the low-level, conditioned signal from the preamplifier into a level that is sufficient to drive the speakers. There are several types of power tubes available, each of which offers a different performance/sound characteristic. For example, the EL34 power tube produces a great Classic rock sound. When an EL34 is driven into distortion it produces a unique sound ("crunch"). When compared to the 6L6, the EL34 distorts more quickly, exhibits a "looser" low-end response and produces more harmonics at mid and high frequencies ("creamier" sound). These differences become more noticeable at higher volumes.

The 6L6 tubes produce a big low-end thump and have a very good dynamic range. They offer a more traditional "American Rock" sound. The 6V6 tubes produce a creamy sound with nice distortion. On the other hand, the KT88 produces a big low-end but sounds more like an EL34 in the mid and high frequencies.

The 6550 power tubes are more rugged and stay cleaner sounding even at full power. When they do distort, the sound produced is more solid and has a tighter low end; more of a "heavy metal" type distortion with lots of power.

Some tubes are available in matched sets. These tubes have been extensively tested for optimum performance and longevity.

or any other apparent damage. Then, with the power on, view the tubes in a dark room. Look for preamplifier tubes that do not glow at all or power tubes that glow excessively red.

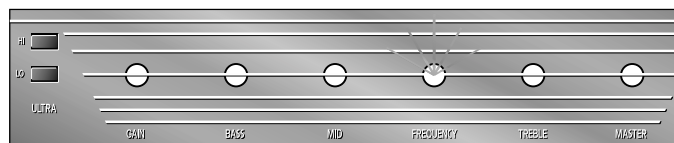
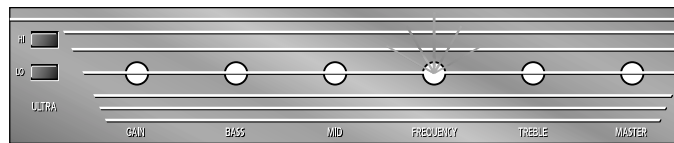
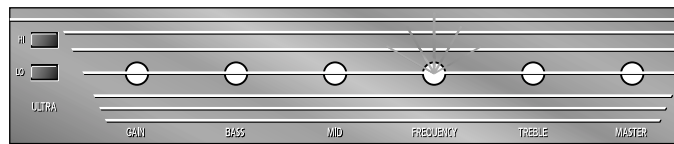
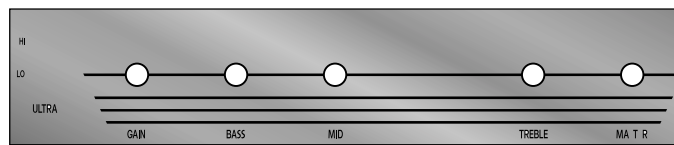
Whenever you replace the power tube(s):

- Always have the amplifier's bias voltage checked by a qualified service center. Improper bias voltage will cause degradation in performance and possibly damage the tubes and/or the amplifier. (See the section below entitled, "The Importance of Proper Biasing", for more information on this subject).
- We highly recommend that you replace the driver tube(s) as well. The driver tube determines the shape and amplitude of the signal applied to the power tube(s) and has to work almost as hard as the power tube(s).

You can check your preamplifier tubes for microphonics by turning the amplifier on, turning up the gain and tapping lightly on each tube with the end of a pencil or a chop stick (my favorite). You will be able to hear the tapping through your speakers, which is normal. It is not normal for a tube to ring like a bell after it's tapped. If it does ring then it's microphonic and should be replaced. Remember to use only high quality, low microphonic tubes in the preamplifier section.

Even though power tubes are rarely microphonic, you should check them anyway. The power tubes can be checked for microphonics just like pre-amp tubes.

In the case of very high gain amps, you may be able to reduce the amount of noise generated by simply swapping the preamp tubes around.





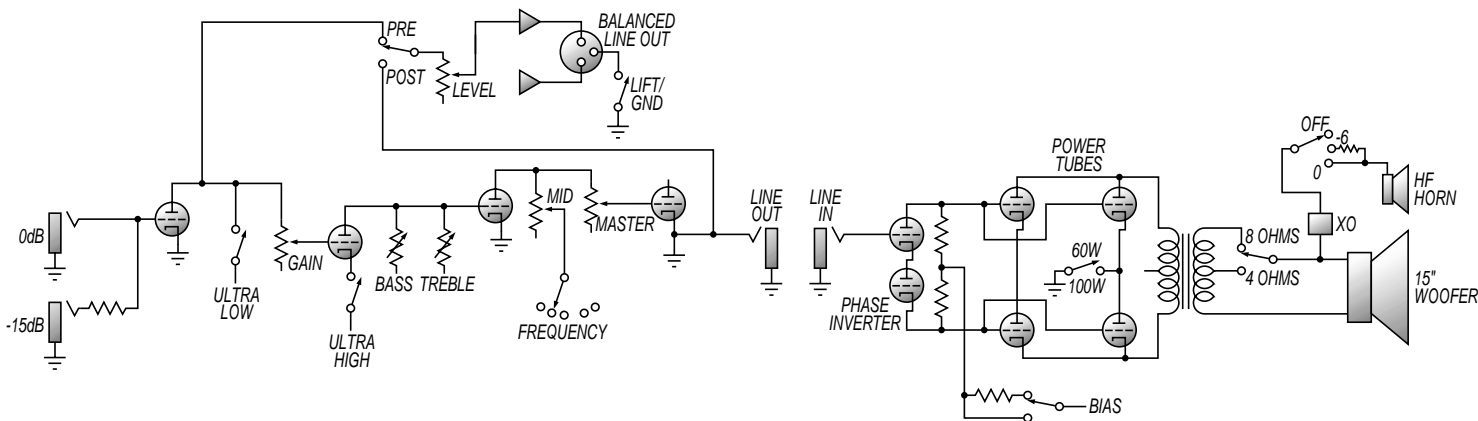
# B-15R PORTAFLEX

## TECHNICAL SPECIFICATIONS:

OUTPUT POWER RATING	100 watts @ 5%THD, 8 ohm load, 120VAC
SPEAKER SIZE AND RATING	Ampeg Vintage 15", 8 ohm, 150 watt, 2" voice coil, 56 oz magnet High Efficiency Piezo Tweeter, 8 ohm, 150 watt (w/network)
CROSSOVER FREQUENCY	3kHz
ULTRA HIGH SWITCH	6dB Boost @ 4kHz
ULTRA LOW SWITCH	10dB Boost @ 40Hz
BASS CONTROL	25dB Range @ 40Hz
MID CONTROL	34dB Range @ 200, 400, 900, 1.5k or 2.5kHz
TREBLE CONTROL	30dB Range @ 4kHz
INPUT IMPEDANCE	0dB: 3M ohms; -15dB: 47k ohms
MAX. INPUT SIGNAL LEVEL ACCEPTED	0dB: 1V RMS; -15dB: 5.75V RMS
TOTAL SYSTEM GAIN	50dB w/tones flat, Ultra Low and Ultra High off
SIGNAL TO NOISE RATIO	90dB
POWER REQUIREMENTS	120VAC, 60Hz, 400VA 100VAC, 50/60Hz, 400VA 230VAC, 50/60Hz, 400VA
DIMENSIONS	24"W x 16-1/2"D x 24-1/4"H w/amp flipped inside, w/out caster board 32-7/8" H w/amp flipped out, w/out caster board; 37-1/4" H w/caster board
WEIGHT:	117 lbs

*Ampeg continually develops new products, as well as improves existing ones. For this reason, the specifications and information in this publication are subject to change without notice.*

## SYSTEM BLOCK DIAGRAM:



[www.amepeg.com](http://www.amepeg.com)

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