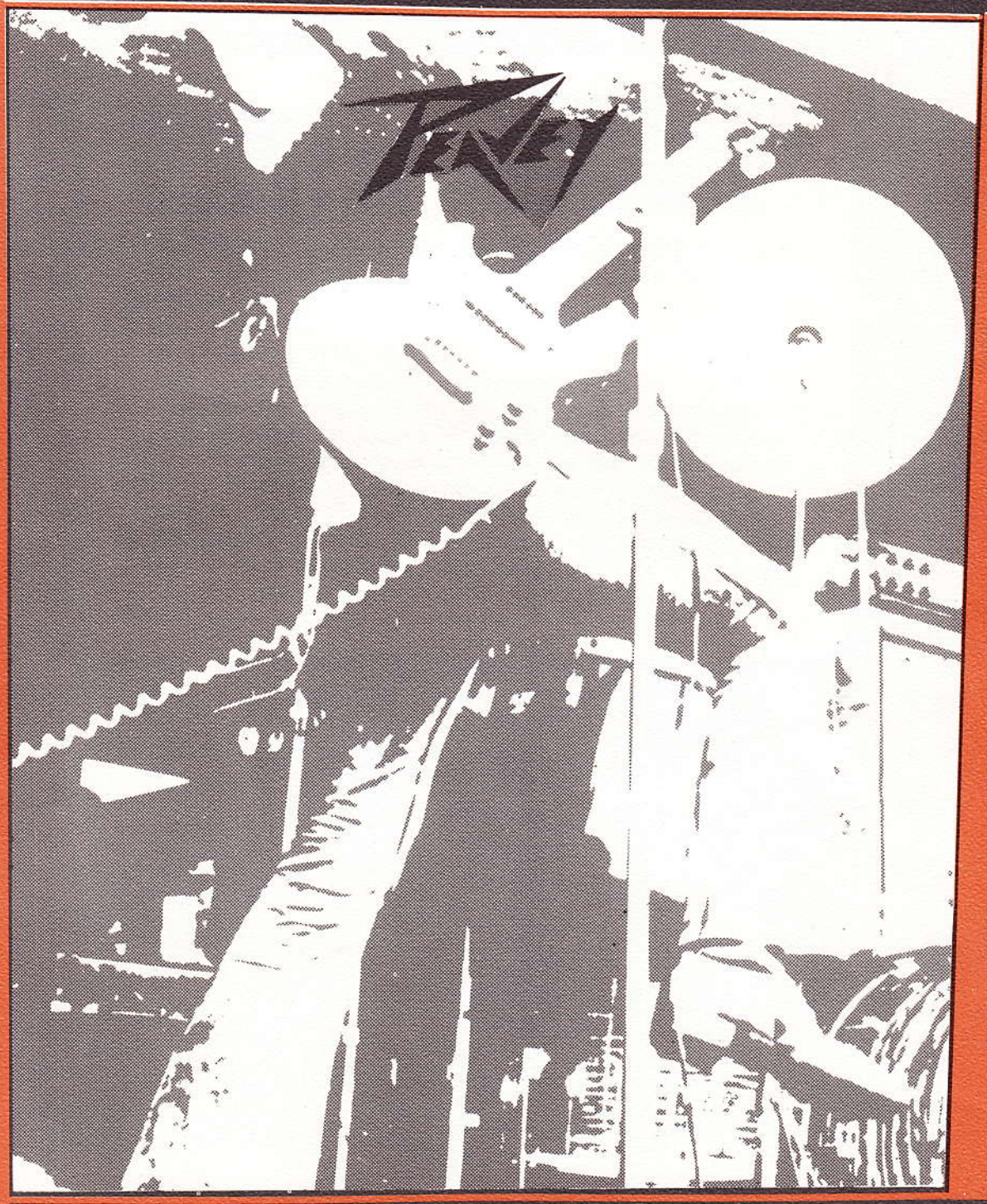
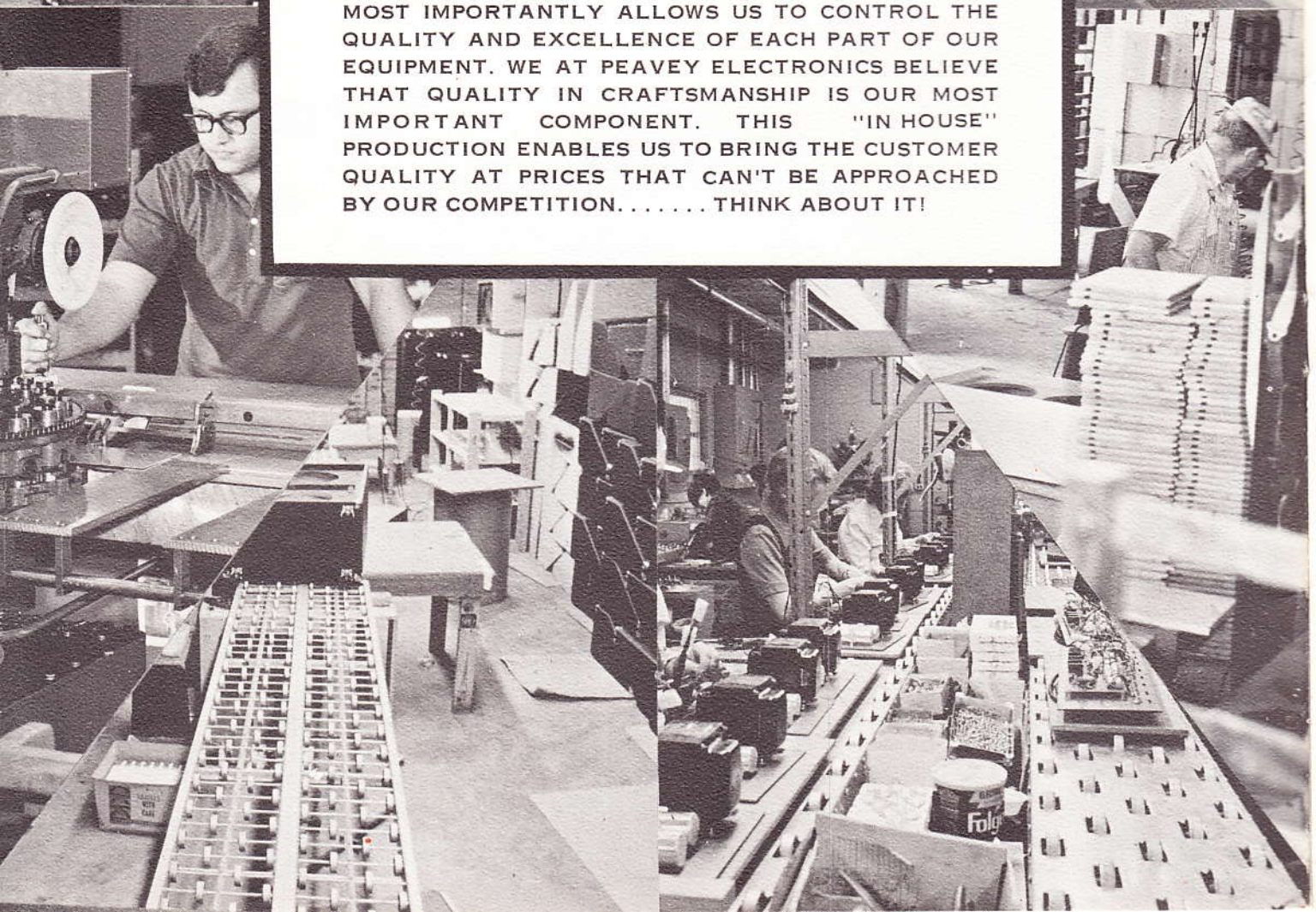


PEAVEY ELECTRONICS

1973

peavey makes it!

WE FABRICATE EVERY PIECE OF THE ELECTRONIC CHASSIS AND SPEAKER ENCLOSURES IN OUR OWN PLANT. BUILDING OUR OWN COMPONENTS KEEPS THE COST MUCH LOWER THAN BUYING FROM OUTSIDE PRODUCERS... ALLOWS US TO TEST AND RE-TEST EACH ASSEMBLY AS IT IS BUILT .... AND MOST IMPORTANTLY ALLOWS US TO CONTROL THE QUALITY AND EXCELLENCE OF EACH PART OF OUR EQUIPMENT. WE AT PEAVEY ELECTRONICS BELIEVE THAT QUALITY IN CRAFTSMANSHIP IS OUR MOST IMPORTANT COMPONENT. THIS "IN HOUSE" PRODUCTION ENABLES US TO BRING THE CUSTOMER QUALITY AT PRICES THAT CAN'T BE APPROACHED BY OUR COMPETITION..... THINK ABOUT IT!

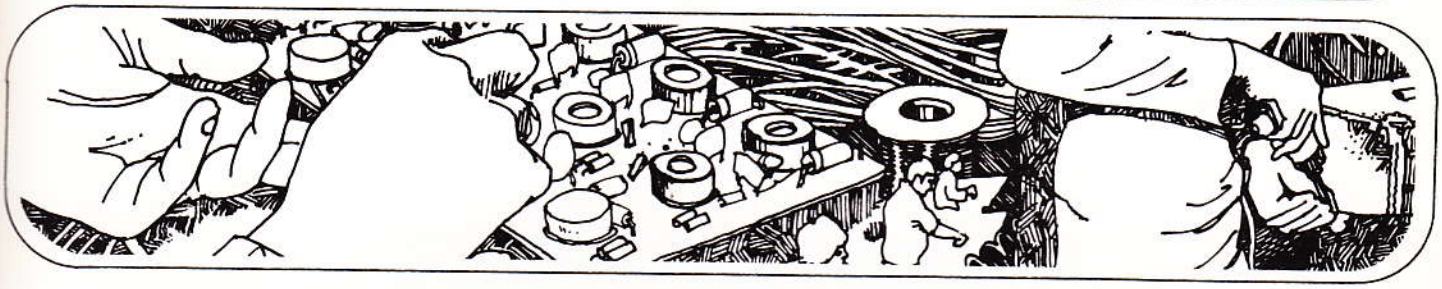


WHO ARE WE

PEAVEY ELECTRONICS is a young company with young freely flowing ideas; different ideas, about our product and about our customer, carried out within a new type of industrial enterprise. Individuality is important to us because we feel that each individual in our organization should have the chance to develop his or her particular talents to the very height of their potential.

We started out to build the finest amps on the market with price being no object. As the company developed, new ideas and methods were put into practice that actually allowed us to build better equipment for less money. We never intended to have the most competitive prices on the market at the outset . . . . . it just worked out that way. We are not involved with the huge corporate holding companies or into the "corporate hassle" as are most of our competitors. We're never forced to make compromises to satisfy a board of directors or to impress stockholders with huge profits and dividends. We want only to satisfy our customers and receive the self-satisfaction of building the finest products available at reasonable and fair prices. Because we are not into the big corporate scene, we are able to offer the customer the best value for his money.

As you look through this catalog, we will show you who we are, what we're doing, and just why you should consider our products when you buy an amp.



HISTORY

In 1957, Hartley Peavey built his first amplifier as a part of his electronics hobby. Several of his friends who were professional musicians liked the sound so well that they ordered amps for themselves. The word spread that a kid in his basement was building high quality amplifiers for far less than the established companies. The demand soon became so great that he was forced to move out of his basement workshop into a little cinder-block building. Other musicians who had ideas and suggestions joined in and they began to perfect their new ideas in amplifier technology and production. Today Peavey Electronics takes up two large factory buildings and has become one of the largest sound system manufacturers in the United States.

PEAVEY

electronic sound equipment

Printed in U.S.A.

PEAVEY ELECTRONICS
611 TENTH AVENUE / P. O. BOX 2898 / MERIDIAN, MISSISSIPPI 39301 / 601-483-5365

1973

the MUSICIAN

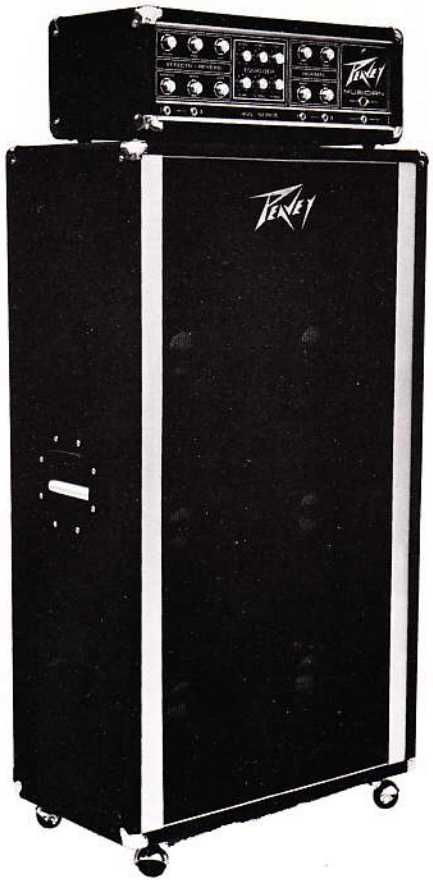
The new MUSICIAN series is the result of one of the most comprehensive and thorough research programs ever attempted by Peavey Electronics. Many new circuits and ideas are used throughout this system. The new 210 watt RMS amplifier couples the brute force of Eight high energy power transistors to a massive heatsink for fantastic power and durability. The preamplifier section has every needed control function to produce unlimited dynamics, tonal variation, and almost any special effect. The exclusive distortion control allows the Musician to duplicate the natural distortion of an overdriven tube amp at all volume levels. This distortion controls blends harmonics into the signal which match the harmonic content of a tube amp. By adjusting the setting of the distortion control, varing degrees of harmonic distortion can be introduced into the output. In addition to distortion, a conventional Fuzz circuit has been included that features extremely long sustain and velvet smooth response. The Musician also includes the standard effects of reverb and tremolo, which are continuously variable and may be cut on and off with the remote foot switch.

412

The unique six channel equalizer was developed to give the Musician complete control over the entire tonal spectrum by providing incremental controls for each frequency range. Proper adjustment of the equalizer enables new and different tonal blends to be created.

The second channel of the Musician is clear of all effects and is equipped with volume, treble, bass and middle controls. For added flexability , a booster power output has been designed to allow addition of external power amps.

The tremendous power and versatility of the Musician are complimented by the many speaker options offered with this unique series. To accomodate all preferences, we have provided several distinctly different systems, each with its particular characteristics of response, power handling, and portability. The 412 enclosure employs four twelve inch eight ohm drivers mounted in two entirely seperate sub-enclosures with ducted port



612H

tuning to provide optimum damping and efficiency at the low end as well as maintaining extremely wide frequency response at extreme power levels. The 612H utilizes six twelve inch sixteen ohm drivers in three seperate air suspension sub-enclosures for maximum power handling and performance. The extreme high end is reproduced by a hyperbolic horn with a heavy duty driver and crossover network. The 412S-2 option uses eight twelve inch sixteen ohm drivers in two seperate speaker cabinets each of which is divided into seperate air suspension sub-enclosures. These seperate enclosures may be stacked or seperated for more dispersion. The eight drivers provide huge power handling capability as well as produce intense sound pressure levels needed for large audiences.

A full compliment of effects, a six channel equalizer, a second clear channel, and nearly twice the power of anything in its price range, make the Musician well worth consideration.

specs

Output Power: **210** W RMS @ 1% THD into **2** OHMS

Sensitivity: **20** mV @ 1 KHZ (Tone Controls Flat, Volume **12:00**)

Input Impedance: **330** K OHMS

Signal-to-noise Ratio: **66** DB (50 K OHM Source Impedance)

WHAT IS POWER

There have never been so many misleading and conflicting claims as there have been over the power rating of amplifiers. It now appears that many companies are determined to further midlead the musical market by telling half truths and taking advantage of the lack of understanding of the buying public.

As you probably know, there are several ways to rate the power of an amplifier, but only one that means anything at all. Average power is determined by applying the power formula (Average Power=VRMSxIRMS) and using the RMS voltages and currents measured at the amplifier's output under CONTINUOUS operating conditions. We publish our power ratings in several ways to provide a true measure of comparison with other amplifiers. You should pay most attention to the "RMS" power rating of any amp as this is the most realistic rating method.

You should be aware that many companies give their "RMS" power ratings but do not mention the percentage of distortion at rated power. A 100 watt RMS amplifier could conceivably be rated at over 200 watts RMS if the unit is allowed to be tested at complete overdrive with forty to fifty per-cent distortion. This unit would in fact be capable of 200 watts but since the distortion is so high, it is unusable at that power. Remember, if RMS power is mentioned in a specification sheet it means nothing if the distortion figure is not given for that power level. It is the policy of some companies to rate power at over ten per-cent distortion. This policy allows them to claim over 100 watts for a 60-70 watt amp.

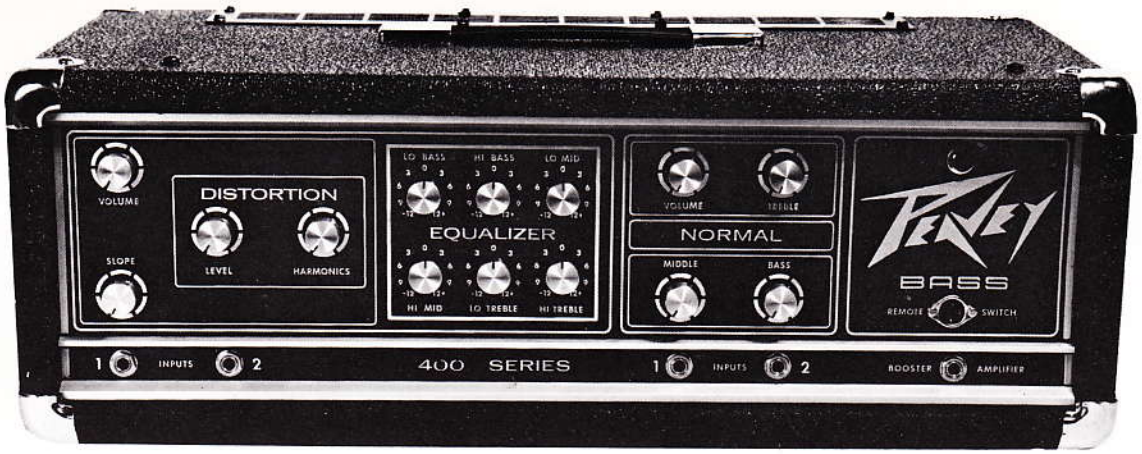
We have found it reasonable to rate our solid state amplifiers at one-per-cent distortion which conforms to what is generally considered high fidelity standards. In the case of our tube type amplifiers which generate more distortion than solid state, we rate at the five per-cent figure which is common practice for this type unit.

The peak power rating is generally considered to be twice the RMS power rating and really doesn't tell much about the amp, especially if distortion figures aren't given.

Music power is a way that some manufacturers use to "glorify" their power ratings. In most cases you can assume that any company that rates this way is not telling the whole truth. Again, distortion figures MUST be included if the rating is meaningful.

Distortion is the change that occurs in the signal as it passes through the amplifier exclusive of tonal variation. If a signal is inserted into the input of an amplifier the percentage of deviation (distortion) can be measured at the output using distortion analyzers. All amplifiers have some degree of distortion, the better units tending to have much less than poorly designed units.

The buyer of electronic audio equipment should be aware that there are several ways to rate the power output of an amp. Often extravagant power ratings are claimed to impress the uninformed buyer. Power rating is indeed an important consideration in the performance of an amp, however, you must know upon what terms the rating was made in order to properly evaluate its worth.



THE BASS

The new Bass represents the latest developments of our research and development program which have evolved from seven years of laboratory and on the job experimentation. This new amp features a 210 watt RMS power circuit that uses eight 30 amp power transistors, mounted on a massive aluminum heatsink for cool operation. Many new circuits have been developed for this unit which represent the "state of the art" in musical instrument amplification.

In order to provide complete tone control, a six channel equalizer has been developed which allows incremental control of the six seperate frequency bands. Proper adjustment of the equalizer will allow the bassist to tailor the response to duplicate the sound of any amp, or to create his own personal sound. The new slope control provides a unique method of tailoring the low end rolloff to suit the playing conditions. By rolling off the extreme low end, added punch can be obtained with only slight sacrifice in overall tone. The distortion effect on the Bass features expanded versitility in the use of controlled distortion or density. The combination of the distortion effects with the equalizer can be used to color the sound to suit any taste. A foot switch is provided to facilitate the remote control of the distortion effect.

The second clear or normal channel is equipped with volume, treble, middle, and bass controls.

The requirements of the modern bassist are very demanding in regard to the amp and especially from the speaker system. We offer the New Bass with several combinations of speakers to suit the requirements of the individual. The 215 cabinet is the most popular configuration and is capable of tremendous punch in the low end due to its horn loaded port design. The two fifteen inch drivers provide a rich midrange by direct radiation. The 118S folded horn uses one massive eighteen inch driver in a new single, smaller more portable package which delivers all the power and efficiency of the larger folded horn cabinets.

The combination of the two 118S enclosures provides truly phenominal bass response and unbelievable power handling for large areas. For those who prefer a more "punchy" bass sounds the dual 412 cabinets are the ideal choice because of the extended range of the twelve inch speakers. The twelves tend to emphasize the middles and upper harmonics of the strings.

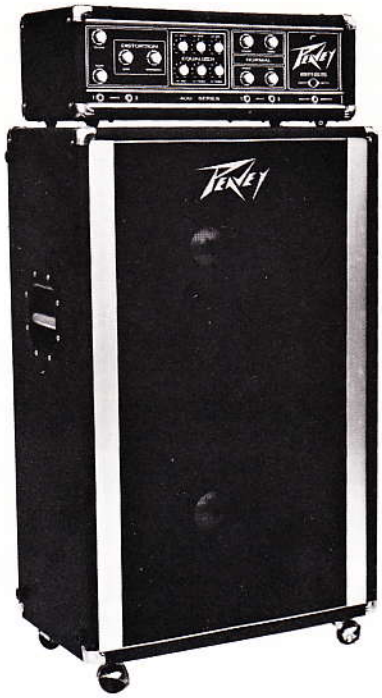
SPECS

Output Power: 210 W RMS @ 1% THD INTO 2 OHMS

Sensitivity: 20 mV @ KHZ (TONE CONTROLS FLAT, VOLUME 12:00)

Input Impedance: 330 K OHMS

Signal-to-noise Ratio: 66 DB (50 K OHM SOURCE IMPEDANCE)



215

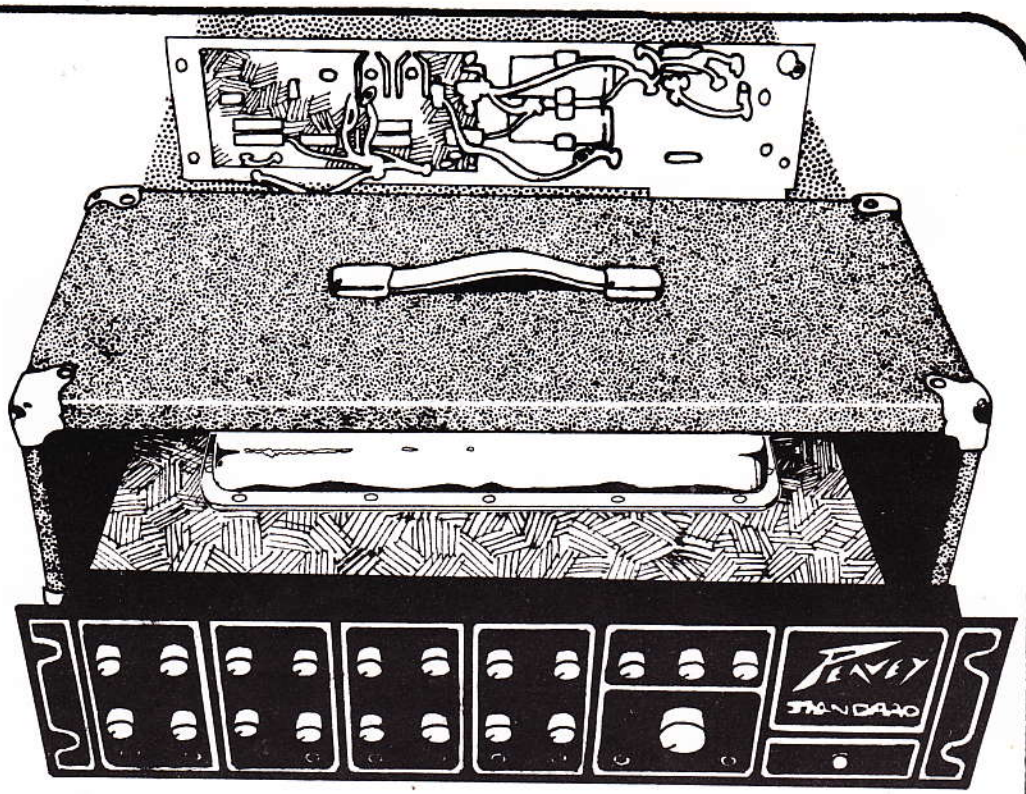
118S-2

In an effort to provide for better serviceability and packaging, we have designed all our amps on a modular concept. This means that if you have trouble, the defective power module can be replaced and you are back in business. Even a non-technical person can repair a Peavey, thanks to our modular design.

About 90 per-cent of all amplifier trouble is in the power section of the amp. If you own a Peavey all you need do is exchange the power module panel with a Peavey dealer-service man. He'll connect the plugs, put back the screws and you're sitting on GO! If you're covered by the warranty, it's free. If you're not, it's still cheap. Making each sub-assembly modular costs considerably more but we feel the extra expense on our part is justified in order to provide you with a more serviceable and functional product.

Our service attitude is this: If you treat your Peavey equipment with reasonable respect, we will knock ourselves out to keep you happy with it. We'll do it willingly, accurately, and the fastest possible way.

The modular concept is another of the innovations that have been applied to our equipment, not just talked about.



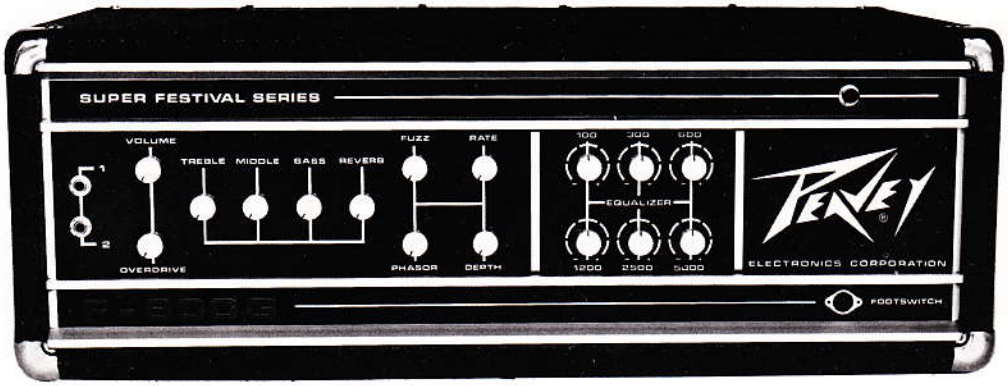
MODULAR CONCEPT

SUPER FESTIVALS

F-800G

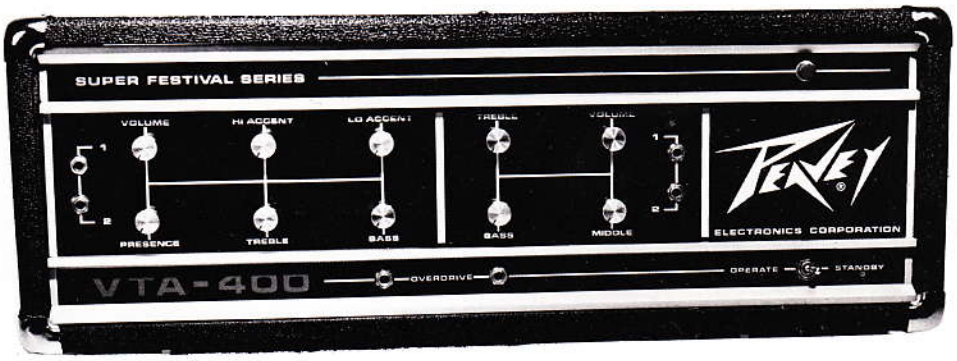
Today's music is moving in many different directions, both in form and delivery. This has required us to answer the demand with a completely new series of amplification systems. We have created new circuits to give more power and control than have previously been available. The solid state 410 watt RMS power section uses ten selected high voltage transistors mounted on a giant finned aluminum heatsink. As added insurance against failure we have provided forced air cooling to maintain optimum operating temperature under the most sever playing conditions.

The many features of the F-800 series give them the tonal flexability, sustain, and power needed to duplicate the sound of any amp as well as generate new sounds at previously unattainable sound pressure levels.



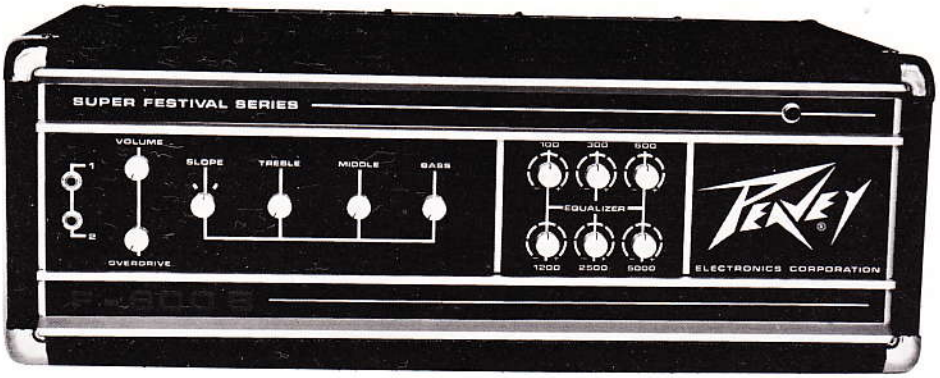
The F-800G is the lead guitarist's answer to the problem of control and projection to large audiences. The single channel F-800 has only functional controls, and is as simple to operate as is possible while retaining all the necessary effects. The overdrive allows controlled distortion in the front end, while the built-in fuzz augments this distortion capability. The overdrive circuit is not the same as "Fuzz" and these two features may be combined for some very interesting harmonic effects. The effects of reverb and tremolo are standard on the F-800G, and the distortion, fuzz, reverb and tremolo are controlled from the remote footswitch. The bass, treble, and middle controls are followed and augmented by our six channel equalizer to give maximum control to the various bands of the guitar sound spectrum. Each channel of the equalizer circuit allows a 14 DB boost or cut in the response of those frequencies controlled. Tonal flexability and power fed into massive speaker systems combine to make the F-800G a truly phenominal performer in a functional and durable package.

VTA-400



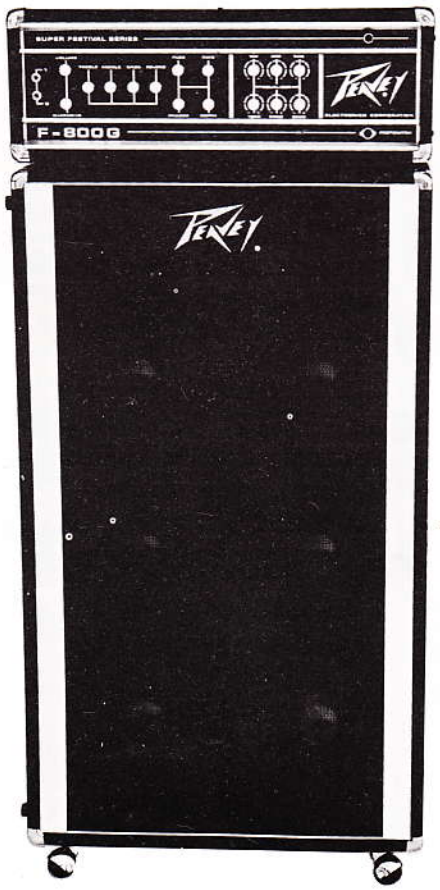
In an effort to satisy all preferences, we have created new vacuum designes for those who prefer the warm glow of power. The VTA is powered by four 6550 output tubes and is conservatively rated at 200 watts RMS. This dual channel amp can be used for either bass or guitar, with suitable speakers. The VTA preamplifiers are very modern in design and are of two different types to allow different sounds to be obtained from each channel. One circuit of the preamp uses the classic "passive" type tone controls which tend to produce a flatter sound than the newer feedback type as used in the second channel. The VTA incorporates a unique feature, OVERDRIVE, which allows either channel to drive the other to produce a fantastic range of distortion and sustain never before obtainable with any amplifier. The VTA is offered with a wide variety of speaker options (see back page) in order to deliver maximum performance for guitar, bass, piano, organ, etc.

F-800B

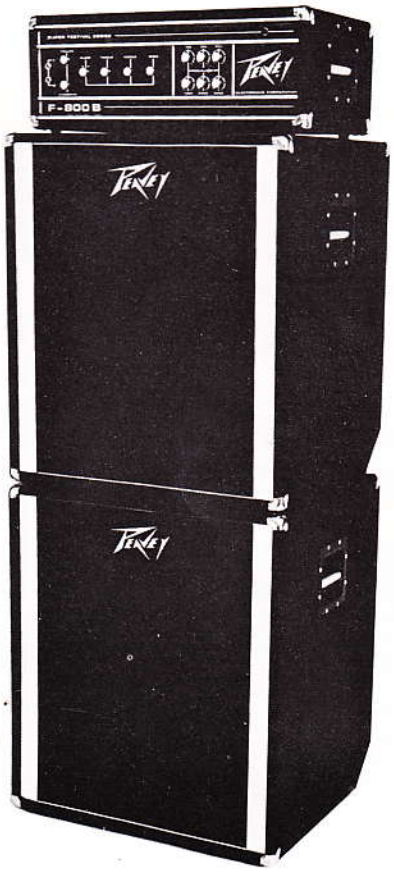


The F-800B is the bass amp that will provide any sound the performer can imagine and at power levels that have been impossible until now. The exclusive slope circuit with overdrive enables the performer to control distortion as well as tailor the low end performance of the unit to compensate for the type of playing area. The normal treble, middle, and bass controls are followed by our six channel equalizer enabling the most precise control of tone available. Every harmonic is controlled and filtered to suit the taste of the performer. This control of tonality, coupled with the brute 400 watt power amp, is a combination that defies description. Forced air cooling assures the performer of continuous reliability under road conditions.

VTA400



F800G



F800B

SPECS

F-800G

Output Power: **410** W RMS @ 1% THD into 2 OHMS
Sensitivity: **30** mV @ 1 KHZ (Tone Controls Flat, Volume 12:00)
Input Impedance: **330** K OHMS
Signal-to-noise Ratio: **68** DB (50 K OHM Source Impedance)

SPECS

F-800B

Output Power: **410** W RMS @ 1% THD into 2 OHMS
Sensitivity: **30** mV @ 1 KHZ (Tone Controls Flat, Volume 12:00)
Input Impedance: **330** K OHMS
Signal-to-noise Ratio: **68** DB (50 K OHM Source Impedance)

SPECS

VTA-400

Output Power: **200** W RMS @ 1% THD into 2 OHMS
Sensitivity: **8** mV @ 1 KHZ (Tone Controls Flat, Volume 12:00)
Input Impedance: **1 Meg.** OHMS
Signal-to-noise Ratio: **56** DB (50 K OHM Source Impedance)

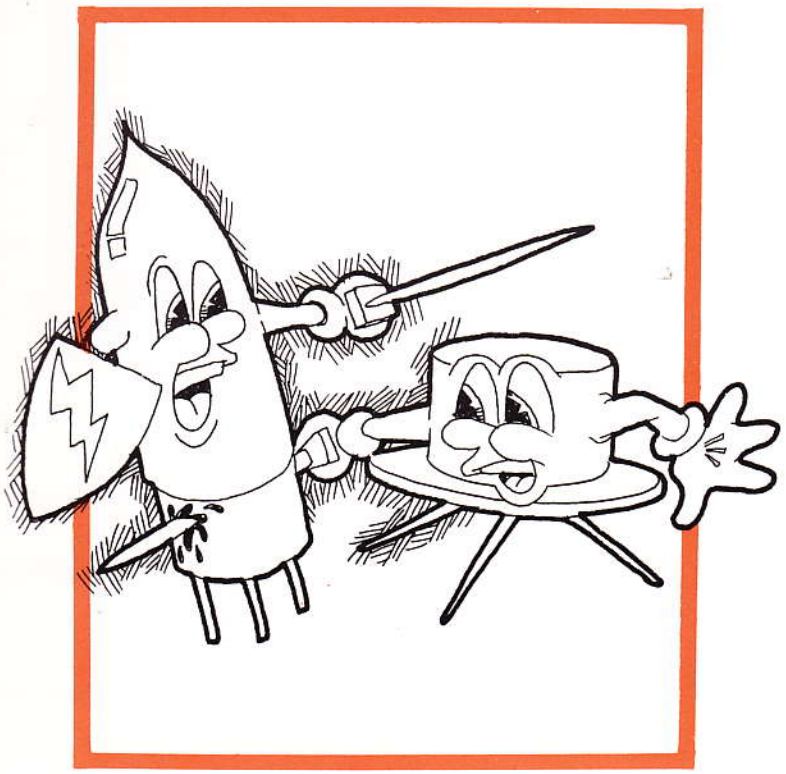
The combination of 1973 electronics with the classic cabinet design of the 1950's make the new Vintage outstanding in performance as well as looks. The Vintage features a 110 watt (RMS) tube type chassis with more than enough punch to be heard over larger and more powerful amps. The Vintage features volume, treble, middle, and bass controls. Reverb is also standard on all Vintage models. The open back cabinets of the Vintage series lend to their "singing" quality and the harmonics of the amp enable the performer to get clean sound, as well as natural distortion with tremendous sustaining quality.

We now offer three models of the Vintage to allow the performer to choose either 10 or 12 inch speakers in several combinations for maximum tonal versatility. Matching extension speakers are also available.

VINTAGE

deuce

The DEUCE amp is a 120 watt RMS dual channel guitar amplifier with reverb and tremolo. The DEUCE is ideally suited for club and studio work and has enough reserve power to handle much larger areas. The power, dynamic range, and tonality of the DEUCE make it possible to handle the most difficult waveforms such as the pedal steel guitar and electric piano. Because of its smaller size and plenty of punch, the DEUCE is definitely the working man's amp. The DEUCE is available with two 12" heavy duty ram drivers; one 15" Electro-Voice or two 12" Electro-Voice Drivers.



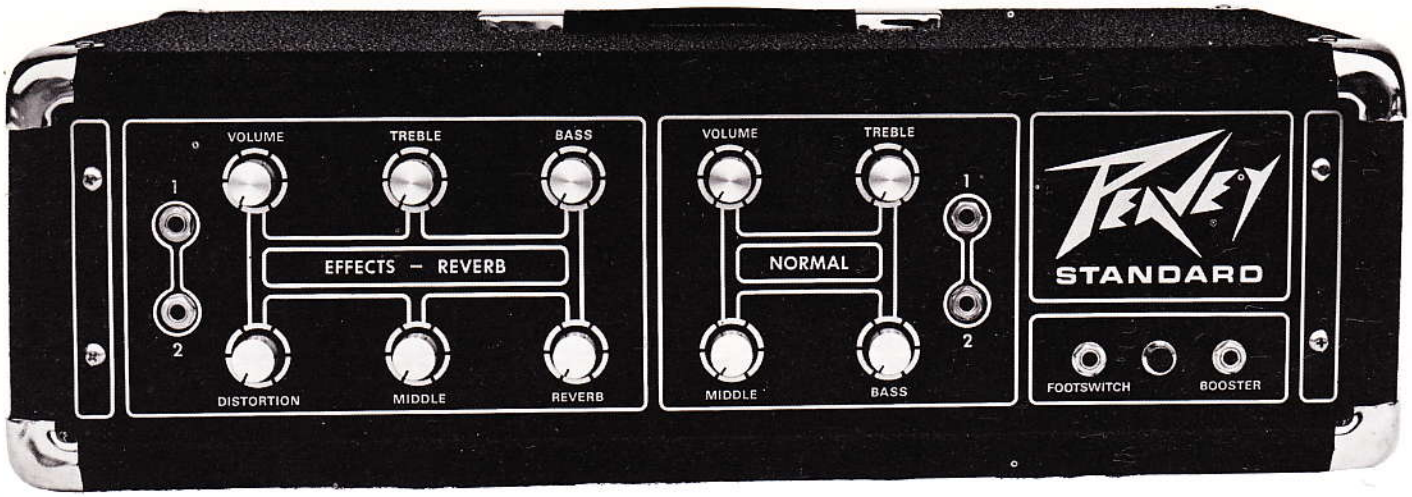
TUBES VS. TRANSISTORS

For the last few years there has been much said about the merits of tubes versus transistors for amplification. Actually, BOTH tubes and transistors have their own sets of advantages and disadvantages. Tube type gear has been around for over fifty years and is now fairly well standarized. The transistor has only been around for twenty-five years and just within the last few years have these fantastic devices been used in high powered sound systems. It's a well known fact that tube type gear is much easier to design and this is a big reason many companies have stayed away from the more difficult solid state designs.

Several of the major companies have put out a lot of talk about how much better they think tube type equipment performs than solid state. Interestingly, these outfits that make all the noise about how bad transistors are happen to be the same companies who went heavily into solid state and found that they lacked the engineering and manufacturing skill to build reliable solid state amps. In fact they found it necessary to disconue their transistor gear because of their reliability problems. By now, it's common knowledge that there are several companies that manufacture only solid state gear that is very reliable. When you see the advertising screaming "ALL TUBES" you should be objective and realize that they are telling you only their side and not necessarily the whole story . . . . We feel that we should "clear the air" of all these conflicting claims, since we are currently manufacturing BOTH tubes and solid state gear and can give an honest opinion of their respective merits.

1. Heat is the largest cause of amplifier failure since it literally "cooks" the internal parts until they fail under the electrical energy they are designed to carry. If an amp runs cool it will last much longer than if it is allowed to reach high temperatures during operation. Transistors run much cooler than tubes.
2. Tube type power amplifiers require expensive output transformers if they are to produce little distortion in the output signal. Most of the instrument amplifiers on today's market use relatively inexpensive transformers and produce five to ten per-cent harmonic distortion. This is the "natural distortion" that many people prefer to the generally cleaner sound of solid state which doesn't require an output transformer. This tube "coloration" is good for guitars since it tends to enrich the harmonic structure, but it is generally undesirable for PA applications since it changes the nature of the voices. The output transformer tends to make the tube amp slightly less sensitive to changes in the speaker load impedance than the transformerless solid state amps.
3. Tube type equipment is generally easier to repair than solid state amps because the tubes are located in sockets for quick replacement. Unfortunately, a tube ages and becomes useless after a certain period and MUST be replaced. Transistors have an indefinite useful life and are capable of years of service in properly designed equipment. Transistors are not sensitive to shock and vibration as are tubes and this provides a definite edge in portable equipment. The tube amp's easy serviceability is offset by the certainty of deteriorating performance as the tubes age, making maintenance a necessity rather than a possibility.
possibility.
4. When transistors were very new, they were considerably more expensive than the tubes. Since the major part of the audio equipment on today's market has changed to solid state, the manufacturers of transistors are now able to produce devices at considerably less than the cost of tubes. Because transistors cost less, the engineer is able to use more devices to design MUCH more performance into an amp selling for the same price as a tube amp.
5. Since transistors don't require hum inducing filaments, solid state amps tend to be much less prone to pick up internal hum than tube types. A well designed solid state amp is generally much better than its vacuum tube equivalent. This is why almost all high fidelity stereo components, recording consoles, and all other professional equipment is being designed and built using transistors.

It is possible to combine the best features of both solid state and tube type amplifiers and this is being done by several companies today. By using a solid state preamplifier and tone control circuits, the quietness and freedom from microphonics are obtained, while coupling to a tube type power amplifier gives the natural distortion of the tubes. We can conclude from our experience, that the solid state amp is most definitely superior in nearly every respect from the technical viewpoint. But to each musician the sound he prefers determines which amp is best for him. It is important to have an amplification system which is reliable, but in the final analysis it is the music that counts. This is why we continue to build both tube and transistor equipment to satisy any musical taste.



THE STANDARD

The Standard is a gutsy, no frills, inexpensive amp that is suited for use with any musical instrument. This series was designed in response to many requests for a "utility" amplifier with adequate power (130 watts RMS) for most any job, but without the extras that sometimes aren't needed.

The Standard features two completely seperate channels each having two inputs with our unique gain switching circuit allowing a wide range of input levels to be used. The Effects-Reverb Channel has our unique distortion feature, as well as reverb in addition to the normal tone controls. The distortion control provides a continuously variable method of changing the harmonic content of the output signal. This control enables the musician to exactly duplicate the harmonic structure and sound of a tube amp in overload. The normal channel is clear of effects and is equipped with volume, treble, middle, and bass controls. The Standard is built in our modular configuration for ease of serviceability and ruggedness of construction. The power output stage features four extremely rugged output transistors mounted on a large 1/8" thick aluminum heatsink for cool operation under full power operation. The heavy duty power supply components assure reliability and increased overload capabilities as well as great power and performance. The Standard is a very reliable and straightforward amp with sound and power comparable with units selling for more than twice its price.

The Standard is offered with a wide range of speaker systems to take advantage of the tremendous versatility of the amp. The unit is designed for use on four ohm speaker systems but will work on two ohm systems with only a slight loss in power. The 115 cabinet is designed for those who want good low end performance in a small compact package at reasonable volume levels. The 215 cabinet (ideal for bass, organ, piano, etc.) allows the standard an optimum impedance matching and provides tremendous projection at the low end as well as the middle frequencies. The 212 and 610 cabinets are an exact impedance match for the standard and are engineered primarily for guitar and other instruments that do not require extended low end response.

Comparison of any of the standard combinations will prove that it is unmatched in its price range.

SPECS

Output Power: 130 W RMS @ 1% THD into 4 OHMS

Sensitivity: 40 mV @ 1 KHZ (Tone Controls Flat, Volume 12:00)

Input Impedance: 330 K OHMS

Signal-to-noise Ratio: 72 DB (50 K OHM Source Impedance)

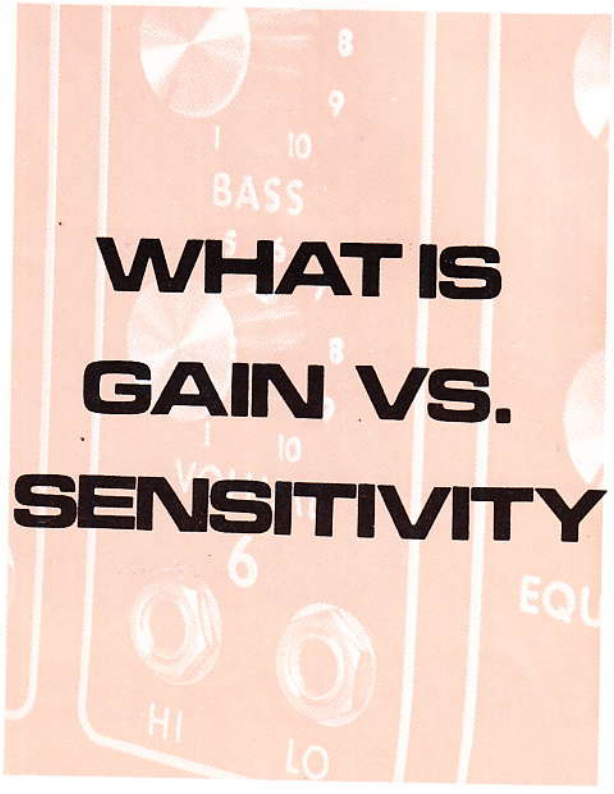
115 610 215

THE STANDARD SERIES

The volume setting of an amplifier is no indication of the output power. Amplifiers with extremely high gain are not necessarily more powerful than amps with lower gain. Power can be defined as the total undistorted signal delivered to the speakers, but gain/sensitivity is only a measure of the amount of input signal necessary to drive the amplifier to full power. A high gain amplifier can be driven to full power at very low volume settings depending on the instrument's output level.

Why do amps have more power than a speaker can take?

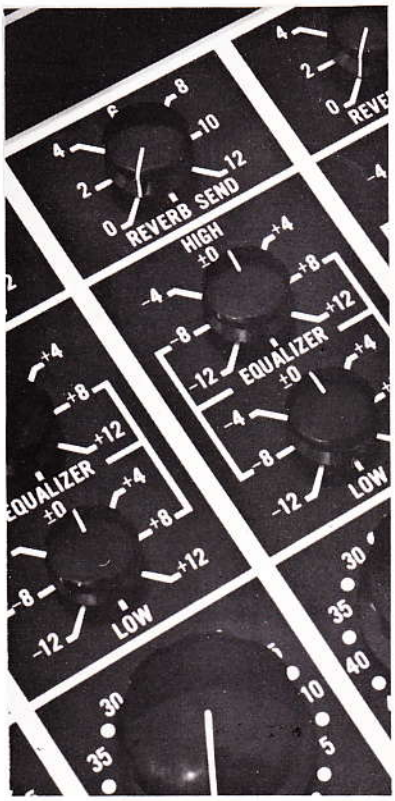
Most amps that have extension speaker jacks are designed to supply enough additional power capability to drive additional speaker systems. If output power capability is adequate to handle more than one speaker system, obviously there is more power available than any single system can reasonable handle. No amplifier should be forced to operate at maximum limits continuously, therefore, we build our amps with slightly more power than is generally required, to provide an extra margin of reliability and performance.

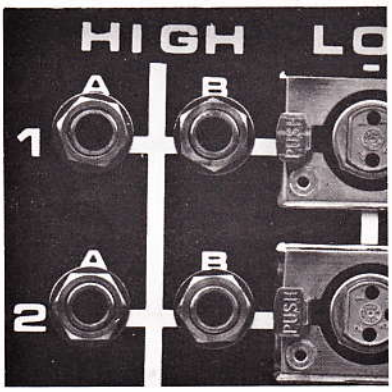


WHAT IS GAIN VS. SENSITIVITY

PUBLIC ADDRESS

PEAVEY.....





the widest selection of PA amplification systems available.

PA 120

The PA-120 was designed to meet the great demand for an economical, but powerful unit to handle PA requirements in clubs and lounges, or in any application where extremely high power is not needed.

The PA-120 is a four channel mixer/amplifier with the capability of handling up to four microphones or instruments because of its extremely wide dynamic range. Each channel of the 120 features seperate volume, bass, treble, and reverb controls to enable the operator to control each microphone or instrument's tone and response characteristics. The master section of the PA-120 provides overall volume and main reverb controls for added flexability. These master controls enable the operator to more fully control the output in order to create a more balanced sound. The reverb effect is controllable from the optional remote footswitch.

The 60 watt RMS (@ 1% THD) power amplifier is constructed on a large modular aluminum heatsink for reliability and continuous service. The pair of 30 ampere power transistors provide more than enough output to handle most medium size areas with the 2 column speakers, each of which contain two heavy duty 10" drivers. The entire PA-120 system is less expensive than some competing amps or speakers alone. The seperate tone networks on each channel in conjunction with the master controls give the unit professional response and flexability in a functional and easily portable package. In many cases the 120 can handle a public address application, just as well as more powerful and elaborate systems. If there are several areas to be covered, two of these systems can be had for less than the price of one comparable unit of another brand.

The PA-120 system is the best PA buy on today's market!

SPECS

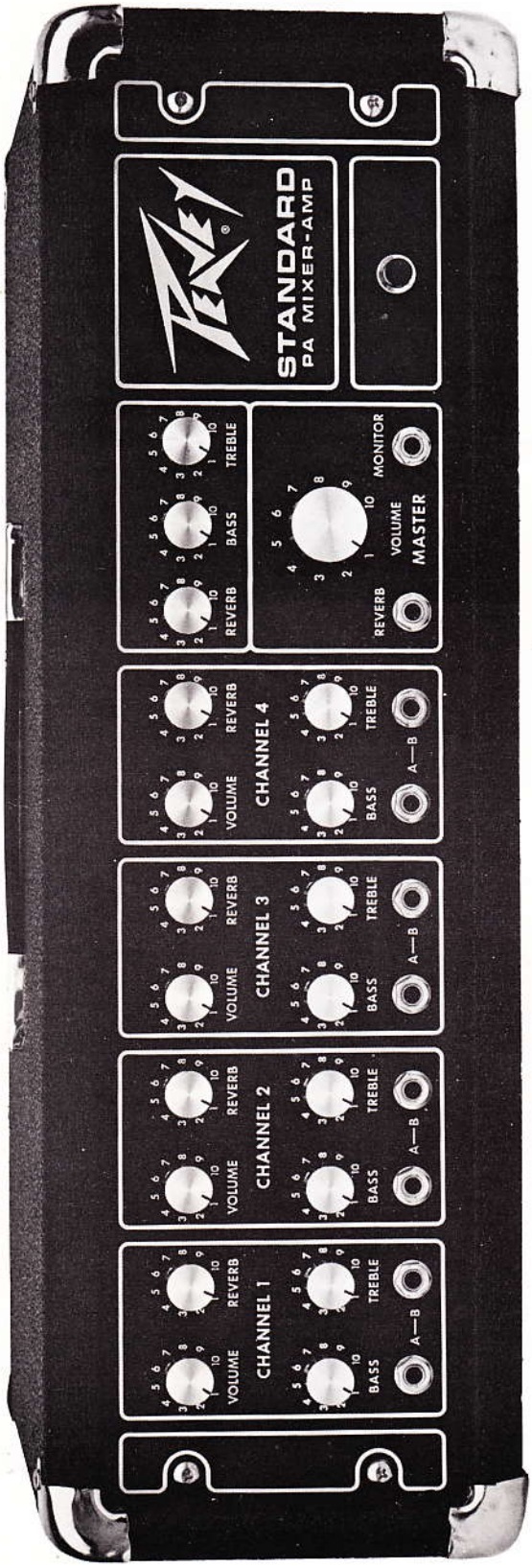
Output Power: 60 W RMS @ 1% THD into 8 OHMS

Sensitivity: 25 mV @ 1 KHZ (Tone Controls Flat, Volume MAX.)

Input Impedance: 130 K OHMS

Signal-to-noise Ratio: 84 DB (50 K OHM Source Impedance)

THE STANDARD PA



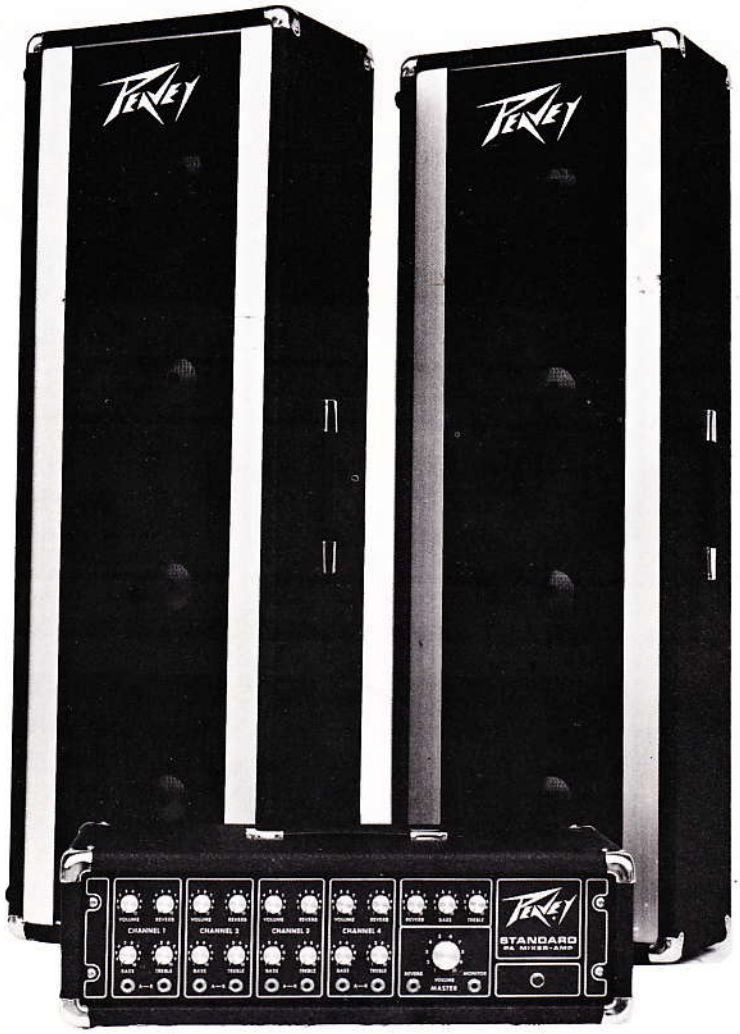
Our new Standard PA is a medium priced unit which compares most favorably with units selling for more than twice its price. The Standard features four entirely seperate channels each having two input jacks using our unique gain switching circuit that allows a very wide range of inputs to be used without overload. The individual preamps have adequate gain to allow the use of all high impedance mikes, as well as, most low impedance microphones. Each channel has individual volume, bass, and treble controls to provide proper tonal balance in addition to a continuously variable reverb control. This variable control is much better than the common on/off switch because it allows incremental reverb mixing instead of on or off reverb.

The master section features overall volume, bass, treble, and reverb to provide total control of the output response characteristics in order to create a professional sound. We feel that the master bass and treble controls are important because they allow the operator to arrive at an overall balance that is difficult, if not impossible, to achieve without them. These master tone controls also aid in the control of acoustic feedback. A monitor output jack has been provided to drive an external monitor amp/speaker combination for those who would like to monitor the output of their PA. Reverb is controllable from the optional remote footswitch. The amazing utility and versatility of the Standard PA make it suitable for instruments, as well as, for microphones. The ultra modern design and wide dynamic range of the pre-amplifiers allows use of any instrument without use of the old fashioned input attenuator switches.

The Standard series is powered by our 130 watt RMS (@ 1% THD) power module which uses four high energy silicon transistors mounted on a massive heatsink for reliability and continuous operation, as well as, improved serviceability. The large, well-regulated power supply is able to give the unit tremendous peak power capabilities and continuous power reserve. Because of its advanced design and massive construction, the Standard PA may be used with several speaker speaker combinations without impedance overload. The speaker options available with the Standard PA are illustrated in order for you to select the speaker configuration which best suits your particular requirements.

The 130 watt RMS power capability, coupled with the flexability of the mixer section, combine to provide outstanding performance and makes this unit the "standard" of comparison with anything near its price range.

812 STANDARD PA



SPECS

Output Power: 130W RMS @ 1% THD into 4 OHMS

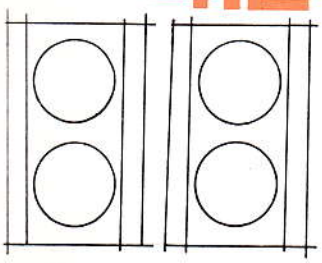
Sensitivity: 5 mV @ 1 KHZ (Tone Controls Flat, Volume MAX.)

Input Impedance: 330K OHMS

Signal-to-noise Ratio: 65 DB (50 K OHM Source Impedance)

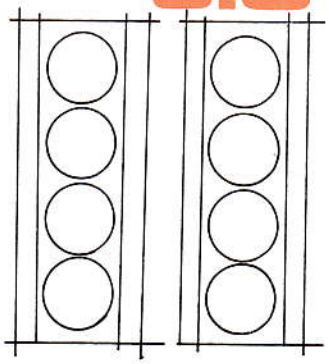
RECOMMENDED COMBINATIONS

412



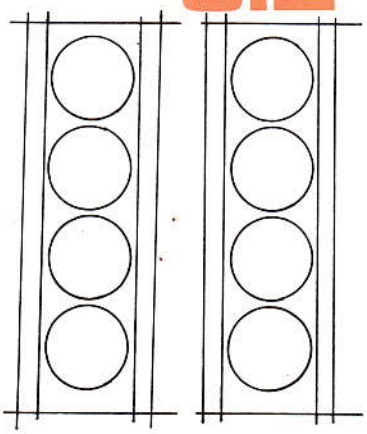
Four heavy-duty 12" RAM DRIVERS in two columns. Dimensions: 31" x 16" x 11½"

810



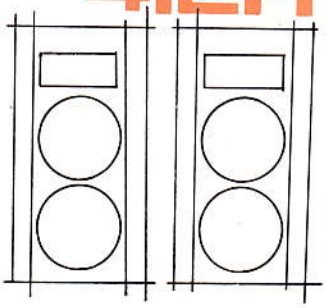
Eight heavy-duty 10" RAM DRIVERS in two columns. Dimensions: 48½" x 16" x 9½"

812



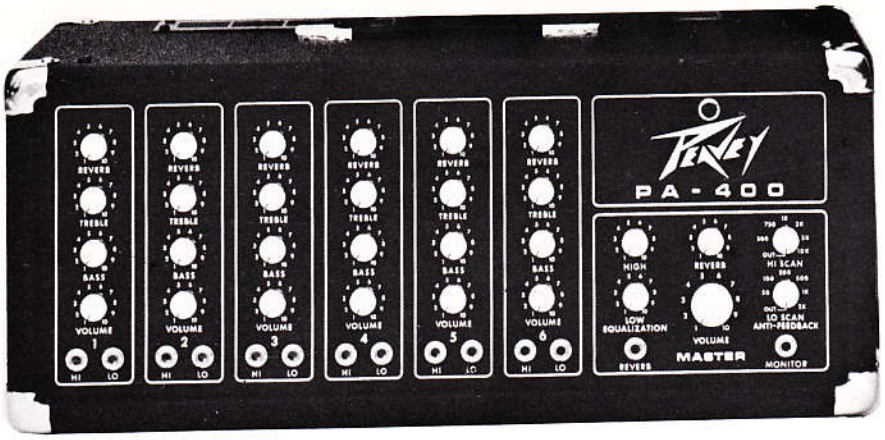
Eight heavy-duty 12" RAM DRIVERS in two columns. Dimensions: 57" x 16" x 11½"

412H



Four heavy-duty 12" RAM DRIVERS and two hyperbolic horns in two unit-constructed columns. Dimensions: 40" x 16" x 11½"

PA FOUR HUNDRED

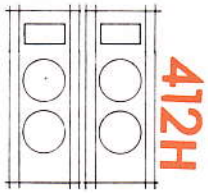


The new PA-400 has all the features to handle the PA requirements of the most discriminating professionals, even in the largest areas. The versatility of the six channel mixer is augmented by the full complement of master controls, as well as, the brute 210 watt RMS power amp. Each channel of the PA-400 has two inputs with a unique switching arrangement that allows a wide range of inputs to be handled without overload. There is adequate gain built into each preamp to handle both low and high impedance microphones without the use of matching transformers. Each channel features seperate volume, bass, and treble controls, as well as, an infinitely variable reverb mixing control. We feel that the infinitely variable reverb control is much better than the "in or out" action of the cheaper switch type controls. Jacks are provided for monitor amp/speaker systems and also for reverb cut-off remote footswitch.

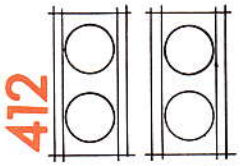
The master control section includes controls for the overall adjustment of volume and reverb, as well as, master bass and treble for optimum frequency balance of the entire system. Our new and unique "scanning" anti-feedback system is able to eliminate feedback by actually sweeping the frequency spectrum and tuning out the frequencies feeding back—much the same as you would tune a radio. It is possible to "tune out" feedback by using either the high frequency filter, the low frequency, or both. This new system of feedback control is much easier to use, and in many ways superior to the use of graphic equalizers. Because of its scanning ability, the system is much faster and easier to adjust than the graphic, as well as, being infinitely variable as to frequency. These filters, however, do not drastically change the tonality and balance of the sound as other feedback systems do. Simplicity is the hallmark of well engineered systems and this is the most effective and easily controlled anti-feedback feature we have found on any amp, regardless of price.

The 210 watt RMS power amplifier (@ 1% THD) is more than adequate to power any speaker system and is able to cover most areas with tremendous sound pressure levels. The era of the $1,000.00 PA system with only 100 watts of power is over now that the PA-400 is available for considerably less. The wide variety of speaker systems available with the PA-400 make it a most versatile and professional unit in every respect.

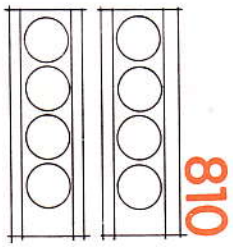
The new PA-400 is the "working man's amplifier" both in performance and features. The exceptionally reasonable price of the PA-400 reflects the sophistication of engineering and packaging, rather than the lack of features and performance, and is in accord with our policy of producing the best unit for less money.



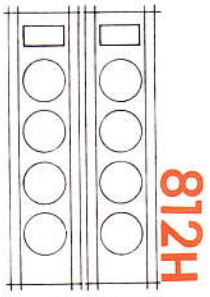
Four heavy-duty 12" RAM DRIVERS and two hyperbolic horns in two unit-constructed columns. Dimensions: 40" x 16" x 11½"



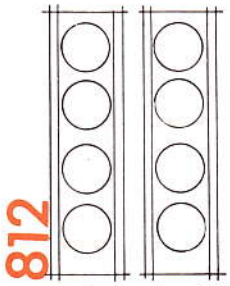
Four heavy-duty 12" RAM DRIVERS in two columns. Dimensions: 31" x 16" x 11½"



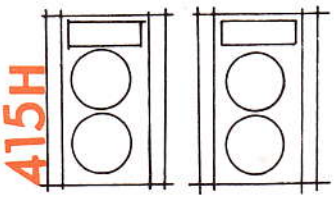
Eight heavy-duty 10" RAM DRIVERS in two columns. Dimensions: 48½" x 16" x 9½"



Eight heavy-duty 12" RAM DRIVERS and two hyperbolic horns in two unit-constructed columns. Dimensions: 61" x 16" x 11½"



Eight heavy-duty 12" RAM DRIVERS in two columns. Dimensions: 57" x 16" x 11½"



Four 15" DRIVERS and two hyperbolic horns in two enclosures. Dimension: 51" x 28" x 15" (each cabinet)

PA 400 SPECS

Output Power: 210 W RMS @ 1% THD into 2 OHMS

Sensitivity: 4 mV @ 1 KHZ (Tone Controls Flat, Volume MAX.)

Input Impedance: 130 K OHMS

Signal-to-noise Ratio: 60 DB (50 K OHM Source Impedance)

PA 400

812

PA 6A PA 6A PA 6A

Three years ago, we introduced the first professional mixing console/amplifier at a reasonable price. The new PA-6A and PA-9 are the refined versions of this first series. The circuitry, design, and concept of the PA-6A and the PA-9 are identical, except the nine channel model has three additional channels and twice the power. Each channel of the PA-6A and PA-9 features a professional three pin "cannon" type connector to facilitate low impedance inputs, as well as, two phone jacks for high impedance microphones. The input channels feature their own individual preamplifiers which utilize variable negative feedback to eliminate the need for outdated input attenuator switches. Each channel also has variable high and low frequency equalization for complete frequency balance, as well as, an infinitely variable reverb control.

The master control area of these systems features a complete compliment of controls to give the operator any needed function to balance and attenuate the sound being mixed. The master high and low equalizers enable the exact tonal blend to be obtained after the individual channels have been adjusted for proper gain and response. A four band anti-feedback filter bank is provided for the incremental adjustment necessary to cancel feedback without appreciably changing the tonality of the system. Each of these anti-feedback controls are infinitely variable with respect to their particular frequency band, which is much superior to the cheaper switch type "in or out" feedback filters. The reverb/echo facilities include a drive control for varying the amount of signal delivered to the internal reverb unit or to an external echo unit. The drive control determines the amount of sustain or decay of the reverb and the reverb tone control allows selective adjustment of the frequency response from the unit. The reverb return determines how much of the delayed reverb/echo signal is mixed back into the main mix. The ability to control the reverb drive and tone is a definite plus in achieving a professional response. These master volume, tone, reverb and anti-feedback filters provide the operator with the ability to fine tune the entire system for unmatched PA projection and tonality.

A monitor line output is provided for the use of an external amp/speaker monitor system, as well as, a main line output to drive any number of booster power amplifiers. Because of this versatility, the PA-6A or PA-9 systems may be used as the heart of huge mixing systems which would be comparable with systems selling for many times the cost of these units.

The PA-6A is powered by our 210 watt RMS (@ 1% THD) module, and the PA-9 incorporates the 410 watt RMS (@ 1% THD) power module. These units use eight and ten 30 amphere power transistors respectively which are mounted on a massive heatsink to provide cool and reliable operation under the most demanding requirements. The PA-9 features forced air circulation to provide adequate cooling under any conceivable operating condition. These extremely rugged power supplies make possible a wide range of speaker systems which are compatible with these consoles.

PA 9 PA 9

PA-6A SPECIFICATIONS

Output Power: 210 W RMS @ 1% THD into 2 OHMS

Input Characteristics:
(Tone controls flat, volume max, master @ 12:00)

Hi Impedance Inputs:

Sensitivity: 30 mv @ 1 KHZ
Input Impedance: 100 K OHMS
Signal-To-Noise Ratio: 67 DB (50 K OHM source)

Low Impedance Inputs:

Sensitivity: 2 mv @ 1 KHZ
Input Impedance: 600 OHMS
Signal-To-Noise Ratio: 60 DB (600 OHM source)

PA-9 SPECIFICATIONS

Output Power: 410 W RMS @ 1% THD into 2 ohms

Input Characteristics:
(Tone controls flat, volume max, master @ 12:00)

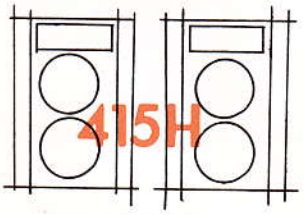
Hi Impedance Inputs:

Sensitivity: 30 mv @ 1 KHZ
Input Impedance: 100 K OHMS
Signal-To-Noise Ratio: 67 DB (50 K OHM source)

Low Impedance Inputs:

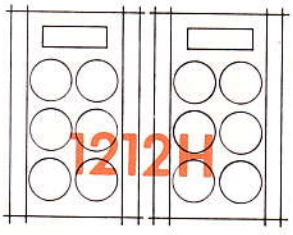
Sensitivity: 2 mv @ 1 KHZ
Input Impedance: 600 OHMS
Signal-To-Noise Ratio: 60 DB (600 OHM source)

recommended combinations



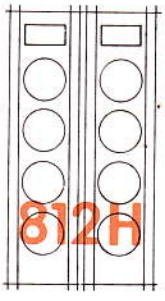
415H

Four 15" DRIVERS and two hyperbolic horns in two enclosures.
Dimension:
51" x 28" x 15"



1212H

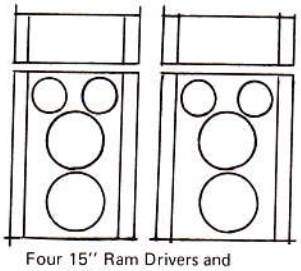
Twelve heavy-duty 12" RAM DRIVERS and two hyperbolic horns in two tuned specially designed enclosures.
Dimensions: 48½" x 28" x15"



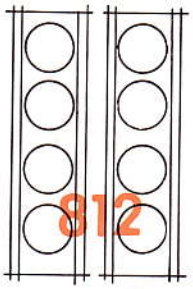
812H

Eight heavy-duty 12" RAM DRIVERS and two hyperbolic horns in two unit-constructed columns.
Dimensions: 61" x 16" x 11½"

FESTIVAL SOUND SYSTEM:



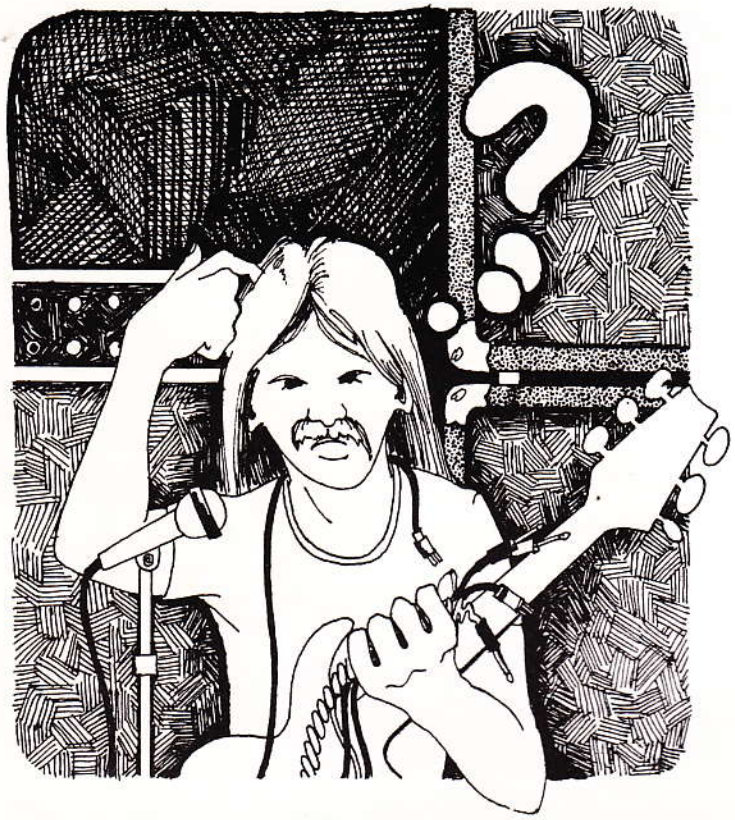
Four 15" Ram Drivers and four 12" Ram Drivers in two enclosures, plus two compound diffraction horns with dual drivers and adjustable cross-over networks.
Dimensions: 48" x 28" x 15"



812

Eight heavy-duty 12" RAM DRIVERS in two columns.
Dimensions:
57" x 16" x 11½"

WHAT IS IMPEDANCE?



Any musician today involved with electric instruments, amplification systems, speakers, microphones, etc. should be familiar with what units are compatable. An understanding of impedance and impedance matching is necessary to properly combine your equipment in the best possible manner.

In many of the technical specifications for electronic products the term IMPEDANCE is used repeatedly. Impedance as well as resistance is measured in OHMS which is the actual unit of measure for both. Impedance and resistance are commonly used as the criteria in determining how well electronic and electro-mechanical devices can be matched to each other.

Generally speaking, impedances should be matched in such a way that the device with the output signal (amplifier, guitar, microphone, etc.) is not loaded down to the point where its performance suffers. It is common knowledge that amplifiers are sensitive to proper load impedances, but it generally isn't recognized that many other devices also suffer from impedance mis-matching. An analogy will probably illustrate the impedance matching problem. If you plug your guitar directly into a speaker, you have a mis-match similar to trying to operate your car headlights with a single flashlight battery! In both cases you have a gross impedance mis-match. The guitar is hopelessly loaded by the speaker's impedance. The battery is generating a small electrical signal but the headlamps require much more than the flashlight battery to operate.

An amplifier that is designed to work into a certain impedance will load down if the impedance is too low. If the impedance is too high, the very resistance of the load limits the amount of electrical energy that can flow. Amplifiers deliver maximum power into the proper load (Speaker) impedance.

There are two types of inputs found on PA and instrument amplifiers, high and low impedance. High impedance inputs are found on all guitar amps and most PA systems. The low impedance inputs are found on higher quality PA systems and generally use connectors other than the common phone jack.

Most musical instruments are supplied with phone jack connectors and are designed to work with high impedance inputs. Due to the nature of dynamic microphone elements, they are ALL low impedance devices. Most microphones have relatively poor quality transformers to change their basic low impedance output to high impedance, and this is why many mikes sound better on low impedance than on high into the proper load. Low impedance is generally favored over high because a low impedance mike is less susceptible to picking up hum and noise. Low impedance microphones work well with extremely long cables while high impedance units loose performance with cables longer than fifteen feet.

High impedance microphones should not be considered inferior to a comparable low impedance mike, if it is a good quality unit with a relatively short connector cord. High impedance microphones are the most common type and there are many fine units available. Proper usage of the high impedance microphone yields very good performance. However, the low impedance mike is the choice of the professional who needs extremely long cable runs from the mike to the amplifier.

WHAT IS FEEDBACK

Well, just about everybody knows what that familiar high pitched squeal is and that it's caused by microphones and speakers interacting. Surprisingly enough, very few people know just how this common acoustic phenominon is caused and just how the various "anti-feedback" devices work to control it.

Feedback, just as the name implies, is a signal feeding out of a system and back into itself. Actually feedback can be thought of as an amplifier/speaker system in a "closed circuit" with the input being amplified to become the output, then becoming the input again, thus sustaining the oscillation we hear as a high pitched squeal.

When the microphone is connected to an amplifier and it is able to pick up the sound of the speakers the conditions exist for acoustic feedback to occur. There are many factors which affect the system's tendency to feedback and we will cover some of them for your better understanding.

Microphones have always been one of the prime contributing factors to the problem of feedback. To help combat feedback, microphone manufacturers have devised several different designs that in many ways help solve the problem.

Cardioid or unidirectional microphones are designed in such a manner as to greatly reduce the sensitivity to sounds coming from the back side of the unit. This type of microphone greatly aids the problem of feedback since it picks up sound only from the front and tends to cancel out the reflected or direct sounds coming in from the rear of the microphone, i.e., it picks up the singer but not the reflected sounds.

Many of the unidirectional microphones designed for stage use also have an acoustical filter placed around the internal element to allow only sounds produced close to the microphone to be picked up. These "close talk" microphones are a further aid to reducing the sensitivity of the microphone to stray sound from the speakers which can cause feedback.

Sound can get back into the system by either of two methods: by direct radiation and/or reflection. Since most everyone is aware that the speakers must be placed properly, (away from the microphone) the most troublesome problem is REFLECTED SOUND that comes back to the microphone. An object in front of the speakers is capable of reflecting sound back to the microphone. The distance between the microphone, the reflecting objects, and the speakers determines the frequency points at which feedback occurs. Sound, which travels at approximately 700 miles per hour, takes a certain amount of time to move from the speaker to the reflecting surface, then back to the microphone. The sound wave can make many "trips" out and back within a second and the number of cycles it makes determines the feedback point, or "node" as its called in acoustics. If the feedback is occuring at the rate of 1,000 cycles per second, and we have some method to limit the gain of the amplifier in that frequency, we can often control the feedback without appreciably changing the tonality of the system. Anti-feedback methods such as Graphic Equalizers, Notch Filters, Sweep Filters etc., operate by being able to selectively tailor certain narrow portions of the audio spectrum without affecting the adjacent frequencies.

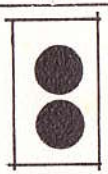
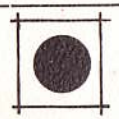
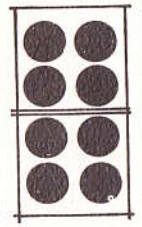
Feedback may occur at more than one frequency, since there are usually many objects in front of the speakers to reflect the sound from different points in the area. Because feedback can occur at several points, most "Anti-Feedback" systems feature several elements to allow control at more than one frequency. Bass and treble controls can also be used to control the tendency for any channel of the PA amp to feedback. Since there are usually several microphones in several locations, the controls of each channel must be used in conjunction with the main Anti-Feedback system to be really effective.

It is generally not recognized that reverberation is a form of controlled feedback since it is a signal delayed and fed back into the system just as a reflected sound would be. Reverberation has the tendency to cause the feedback to be slightly worse than a "dry" system. The Master Bass and treble controls on quality PA systems generally are able to compensate for the reverb sustain that tends to encourage feedback.

You should be aware that there are NO systems that are feedback proof and the more complicated an anit-feedback system becomes, the harder it is to set up properly in the different playing areas. Speaker and microphone placement and proper operating knowledge of your equipment are the best insurance against the greatest limitation of PA . . . . . Feedback.

RECOMMENDED COMBINATIONS

*Available with 2 enclosure option

	115	212	215S	215*	610*	412	215H	118S*	612H*	118FH*	412S-2
	 One 15" heavy duty driver with aluminum voice coil and 54 oz. magnet in a direct radiating, ported, horn loaded enclosure. 23 1/2"x24"x15"	 Two 12" heavy duty drivers with aluminum voice coils in a infinite baffle enclosure. 35 1/4"x24"x11 3/16"	 Two 15" heavy duty drivers with aluminum voice coils in a ported enclosure. 35 1/4"x24"x11 3/16"	 Two 15" heavy duty drivers with aluminum voice coils in a direct raidiating, ported, horn loaded enclosure. 39 1/4"x25"x15"	 Six 10" heavy duty drivers with aluminum voice coils in an infinite baffle enclosure. 35 1/4"x24"x11 3/16"	 Four 12" heavy duty drivers with aluminum voice coils in a ported, horn loaded enclosure. 43"x28"x11 1/2"	 Two 15" heavy duty drivers with aluminum voice coils and 54 oz. magnets, and a hyperbolic horn in a ported, horn loaded enclosure. 51"x28"x15"	 One Vega 18" heavy duty driver with a 3" aluminum voice coil and a massive magnet structure in a folded horn enclosure. 32"x28"x24"	 Six 12" heavy duty drivers with aluminum voice coils and a hyperbolic horn in an infinite baffle enclosure. 51"x28"x15"	 One 18" heavy duty driver with a 3" voice coil and a massive magnet structure in a folded horn enclosure. 48"x24"x24"	 Eight 12" heavy duty drivers in two infinite baffle enclosures. Drivers have aluminum voice coils. 30"x28"x15"
BASS Dual channel, 200 watts (RMS, 1% THD), 6 channel equalizer, distortion.				**215 Bass**				**118S Bass**		**118 FH Bass**	**412S-2 Bass**
				BASS PIANO ORGAN				BASS ORGAN		BASS ORGAN	BASS PIANO ORGAN
MUSICIAN Dual channel, 200 watts (RMS, 1% THD), 6 channel equalizer, reverb, tremolo, fuzz, distortion.				**215 Musician**	**610 Musician**	**412 Musician**	**215H Musician**		**612H Musician**		**412S-2 Musician**
				GUITAR PIANO ORGAN	GUITAR PIANO ORGAN	GUITAR PIANO ORGAN	GUITAR PIANO ORGAN		GUITAR PIANO ORGAN		GUITAR PIANO ORGAN
F800 B Single channel, 400 watts (RMS, 1% THD), 6 channel equalizer, distortion.				**215-2 F800B**				**118S-2 F800B**		**118FH F800B**	**412S-2 F800B**
				BASS PIANO ORGAN (with 2 encl.)				BASS ORGAN (with 2 encl.)		BASS ORGAN (with 2 encl.)	BASS PIANO ORGAN
F800 G Single channel, 400 watts (RMS, 1% THD), 6 channel equalizer, distortion.				**215-2 F800G**					**612H F800G**		**412S-2 F800G**
				GUITAR PIANO ORGAN (with 2 encl.)					GUITAR PIANO ORGAN		GUITAR PIANO ORGAN
VTA 400 Dual channel, 200 watts (RMS, 5% THD), four 6550 output tubes, overdrive.				**215 VTA**		**412 VTA**	**215H VTA**	**118S VTA**	**612H VTA**	**118FH VTA**	**412S-2 VTA**
				BASS ORGAN GUITAR PIANO		GUITAR PIANO BASS	GUITAR PIANO ORGAN	BASS ORGAN	GUITAR PIANO ORGAN	BASS ORGAN	BASS ORGAN GUITAR PIANO
STANDARD Dual channel, 130 watts (RMS, 1% THD), reverb, distortion.	**115 Standard**	**212 Standard**	**215S Standard**		**610 Standard**						
	BASS PIANO ORGAN	GUITAR PIANO ORGAN	BASS ORGAN GUITAR PIANO		GUITAR PIANO						