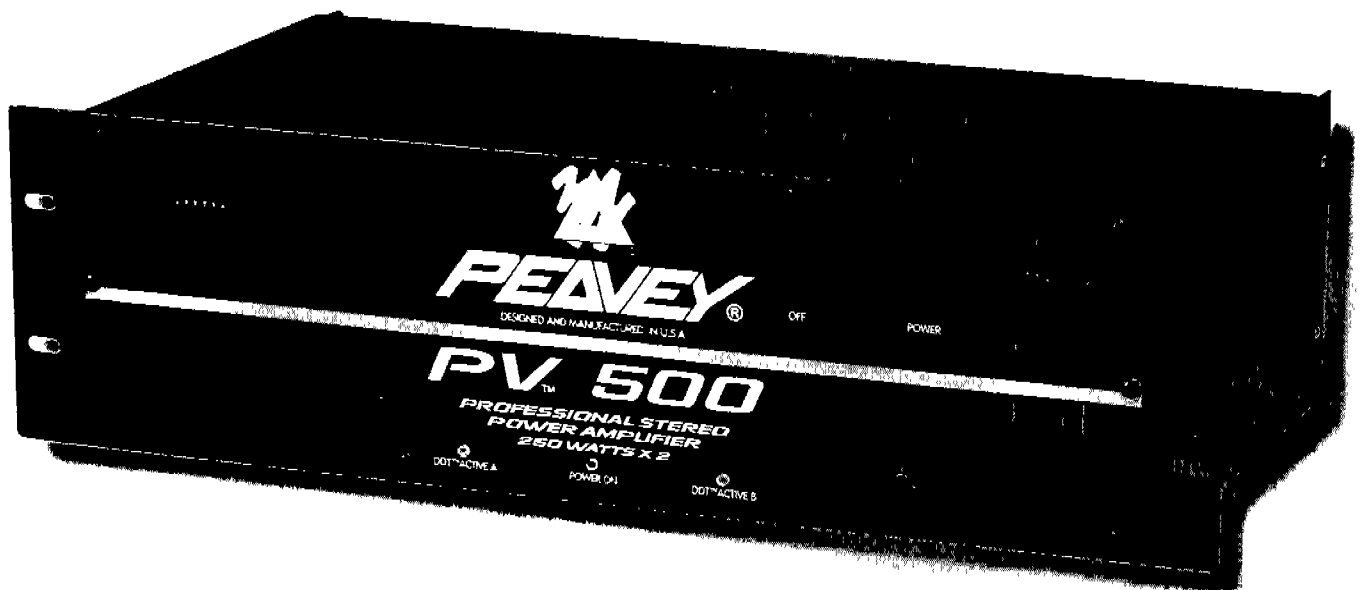


PV™ 500

Professional Power Stereo Amplifier





Intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



Intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION: Risk of electrical shock – DO NOT OPEN!

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

WARNING: To prevent electrical shock or fire hazard, do not expose this appliance to rain or moisture. Before using this appliance, read the operating guide for further warnings.



Este símbolo tiene el propósito de alertar al usuario de la presencia de "(voltaje) peligroso" que no tiene aislamiento dentro de la caja del producto que puede tener una magnitud suficiente como para constituir riesgo de corrientazo.



Este símbolo tiene el propósito de alertar al usuario de la presencia de instrucciones importantes sobre la operación y mantenimiento en la literatura que viene con el producto.

PRECAUCION: Riesgo de corrientazo – No abra.

PRECAUCION: Para disminuir el riesgo de corrientazo, no abra la cubierta. No hay piezas adentro que el usuario pueda reparar. Deje todo mantenimiento a los técnicos calificados.

ADVERTENCIA: Para evitar corrientazos o peligro de incendio, no deje expuesto a la lluvia o humedad este aparato. Antes de usar este aparato, lea más advertencias en la guía de operación.



Ce symbole est utilisé pour indiquer à l'utilisateur la présence à l'intérieur de ce produit de tension non-isolée dangereuse pouvant être d'intensité suffisante pour constituer un risque de choc électrique.



Ce symbole est utilisé pour indiquer à l'utilisateur qu'il ou qu'elle trouvera d'importantes instructions sur l'utilisation et l'entretien (service) de l'appareil dans la littérature accompagnant le produit.

ATTENTION: Risques de choc électrique – NE PAS OUVRIR!

ATTENTION: Afin de réduire le risque de choc électrique, ne pas enlever le couvercle. Il ne se trouve à l'intérieur aucune pièce pouvant être réparée par l'utilisateur. Confier l'entretien à un personnel qualifié.

AVERTISSEMENT: Afin de prévenir les risques de décharge électrique ou de feu, n'exposez pas cet appareil à la pluie ou à l'humidité. Avant d'utiliser cet appareil, lisez les avertissements supplémentaires situés dans le guide.



Dieses Symbol soll den Anwender vor unisolierten gefährlichen Spannungen innerhalb des Gehäuses warnen, die von Ausreichender Stärke sind, um einen elektrischen Schlag verursachen zu können.



Dieses Symbol soll den Benutzer auf wichtige Instruktionen in der Bedienungsanleitung aufmerksam machen, die Handhabung und Wartung des Produkts betreffen.

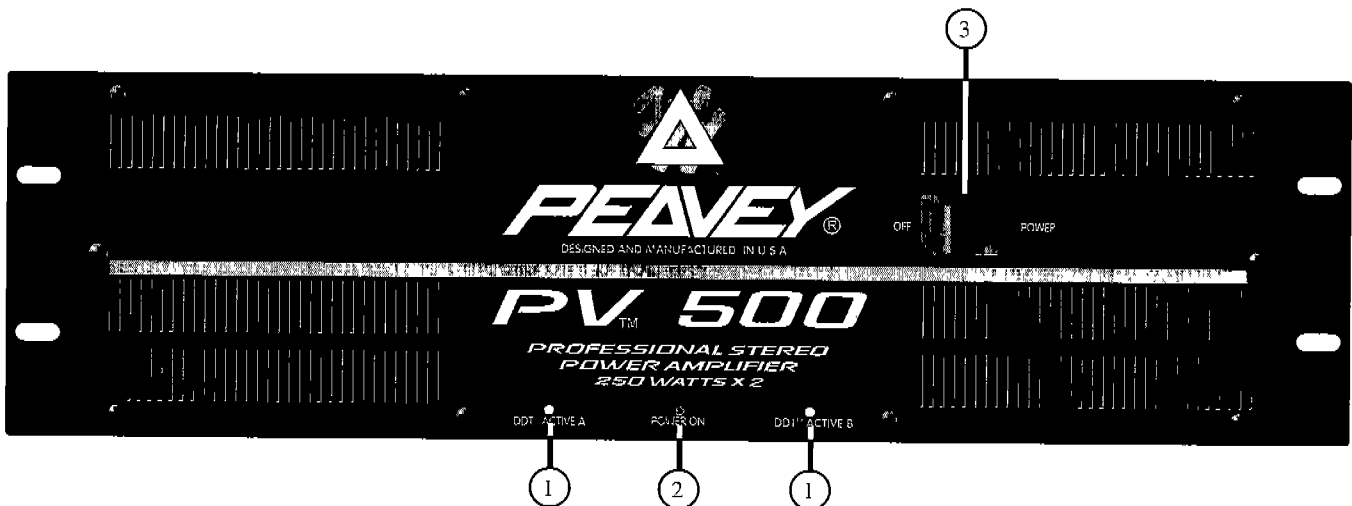
VORSICHT: Risiko – Elektrischer Schlag! Nicht öffnen!

VORSICHT: Um das Risiko eines elektrischen Schlages zu vermeiden, nicht die Abdeckung entfernen. Es befinden sich keine Teile darin, die vom Anwender repariert werden könnten. Reparaturen nur von qualifiziertem Fachpersonal durchführen lassen.

ACHTUNG: Um einen elektrischen Schlag oder Feuergefahr zu vermeiden, sollte dieses Gerät nicht dem Regen oder Feuchtigkeit ausgesetzt werden. Vor Inbetriebnahme unbedingt die Bedienungsanleitung lesen.

ENGLISH

Congratulations! You have just purchased the world's finest professional power amplifier. Peavey is proud to introduce you to the new PV™ 500 amplifier. This amplifier uses proven technology gained from years of amplifier design, taking advantage of the rugged steel can TO-3 output devices for reliability. Unlike typical home stereo units, the PV 500 employs massive power transformers, very effective two-speed fan cooling, and offers impressive specifications and features not found on any other competitive unit in this price range. This amplifier was designed to drive 2 ohm loads per channel, thus delivering awesome performance levels at 4 ohm Bridge mode. The PV 500 offers rugged rack-mountable construction and more than adequate patching capability. The front panel contains a rocker mains switch, an LED power indicator, and dual LED DDT™ activation indicators. The back panel of each amplifier has an input level control, dual 1/4" phone jack inputs, 5-way binding post outputs, and dual 1/4" phone jack outputs for each channel. The resettable mains breaker is also located on the back. Additionally, the back contains switches for stereo/bridge select and DDT defeat.



FRONT PANEL FEATURES

DDT™ ACTIVE LEDS (1)

Illuminates when DDT compression is taking place in the channel. With the Enable/Defeat switch on the back panel in the Defeat position, this LED indicates when channel clipping is occurring.

POWER LED (2)

Illuminates when AC mains power is being supplied to the amp and both channels are operational. If either channel were to experience fault conditions, or have the associated circuit breaker trip, then the power LED will go out, indicating such conditions exist.

POWER SWITCH (3)

A heavy-duty, rocker-type switch. Selecting the "OFF" position turns off the power amplifier.

BACK PANEL FEATURES

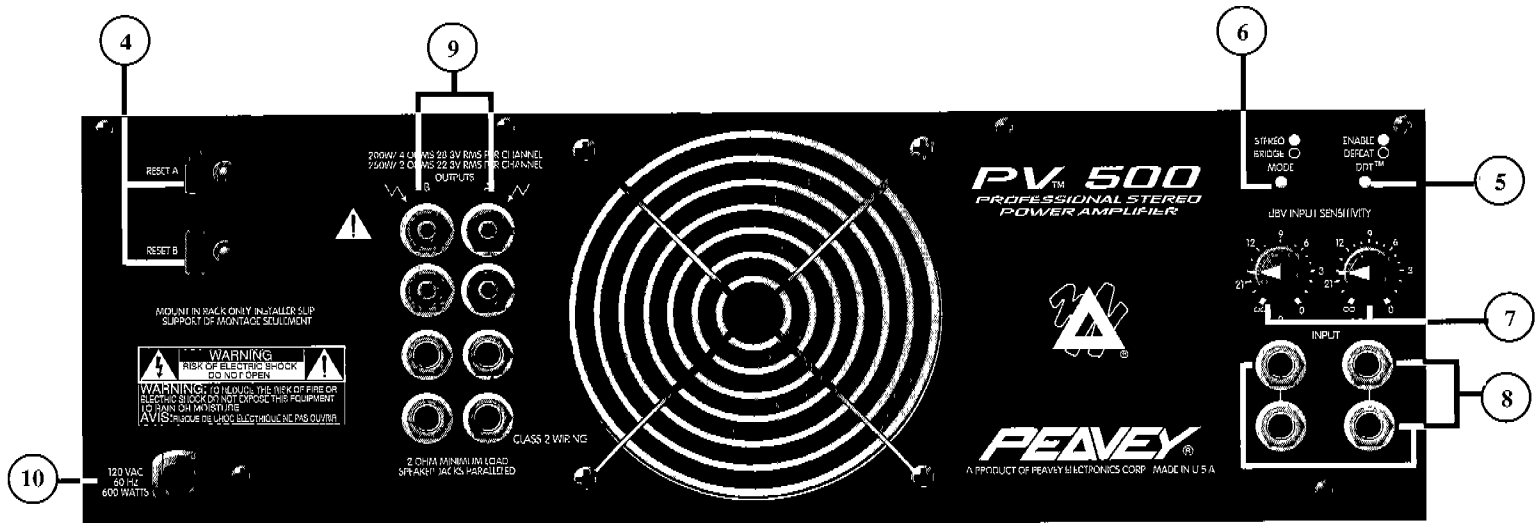
CIRCUIT BREAKER (4)

There are two circuit breakers located on the back of the PV 500. These breakers are provided to limit the current to the associated power transformer and protect it from overheating and possible destruction due to fault conditions in the amplifier. The trip current values have been carefully chosen to allow continuous power output performance while still protecting the power transformer. Normally, the breakers should not trip unless there is a fault in the amplifier circuitry that draws excessive mains current. However, abnormal conditions, such as a short circuit on either or both channels, or continuous operation at overload or clipping (especially into 2 ohm loads), will cause them to trip. If this occurs, turn the power switch off, then simply reset the breaker (s) and correct the cause of the overload.



When tripped, the button on the breaker will be outward nearly 1/2" and can be reset by pushing inward. A normal reset button length is about 1/4". If this "thermal" type breaker does trip, simply pushing the button back in will reset it, after waiting a brief period of time to allow it to cool down.

REMEMBER, ALWAYS TURN THE POWER OFF BEFORE RESETTING THE BREAKER. If the breaker trips instantly each time you attempt to reset it, the unit should be taken to a qualified service center for repair.



DDT™ SWITCH (5)

This switch is used to either enable or defeat the DDT™ compressor. Normally the DDT function should be enabled to minimize the possibility of either or both channels going into clipping or overload. With DDT defeated, a severe overload could cause the mains circuit breaker to trip as a matter of course. *(The Peavey DDT compression system will be covered in greater detail later in this manual.)*

MODE SWITCH (6)

This switch is used to select either Stereo or Bridge mode of operation. Care should be exercised whenever the Bridge mode is selected. Accidental selection of this mode could damage loudspeakers, particularly in biamped systems. *(The Bridge mode will be covered in greater detail later in this manual.)*

INPUT SENSITIVITY (7)

These controls are used to adjust the input gain of each channel. Thus, they determine how "loud" each channel of the power amplifier will "play" for a given input signal level. Maximum input gain (minimum sensitivity rating) is achieved at the full clockwise setting, and this setting yields maximum mixer/system headroom. A setting of less than full clockwise will yield lower system noise at the expense of mixer/system headroom.

HIGH-Z INPUT JACKS (8)

Two parallel (bridged) input jacks are provided for each channel. This allows for one to be used as a conventional input, and, simultaneously, the other to be used as a "line out" (Y-cord) to connect to another input jack on this amplifier or other amps or equipment. These 1/4" jacks are not "chassis grounded" and, when used, will provide a quasi-balanced input capability due to the unique "ground loop" elimination circuitry associated with each input. This feature will normally allow "hum-free" operation when relatively short 1/4" cable patches are made between the jacks on this amp and other jacks on various other equipment that share the same rack with this amp.

SPEAKER OUTPUTS (9)



Two 1/4" jacks and 5-way binding post speaker output terminals are provided for each channel. Again, for each channel, these outputs are in parallel; hence, the speaker connection cables can be terminated with 1/4" phone plugs or stripped wires for use in the binding post terminals. For sustained high power applications, the use of the binding post terminals is recommended. However, care must be exercised to assure correct speaker phasing.

Regardless of what connections are used, the typical parallel speaker load should always be limited to 2 ohms per channel or 4 ohms Bridge mode for any application. Operation at loads of 4 ohms per channel or 8 ohms Bridge mode is more desirable for sustained operation applications due to the fact that the amplifier will run much

cooler at this load. Operation above 4 ohms per channel, and even open circuit conditions, can always be considered safe. However, sustained operation at loads below 2 ohms could result in temporary amplifier shutdown due to the thermal limits and/or the amplifier internal fault circuitry.

AC LINE CORD—120 V products only (10)



All the PV Series power amplifiers are fitted with a single, heavy-duty 3-conductor line cord and a conventional AC plug with a ground pin. It should be connected to an independent circuit capable of supporting at least 15 amps or greater continuously. This is particularly critical for sustained high power applications. If the socket used does not have a ground pin, a suitable ground lift adaptor should be used and the third wire grounded properly. **Never break off the ground pin on any equipment. It is provided for your safety.**

The use of extension cords should be avoided but, if necessary, always use a three-wire type with at least a #14 AWG wire size. The use of lighter wire will severely limit the power capability of this power amplifier. Always use a qualified electrician to install any new electrical equipment. To prevent the risk of shock or fire hazard, always be sure that the amplifier is properly grounded.

INSTALLATION AND CONNECTION

The PV professional series of power amplifiers is designed for durability in commercial installations and has the quality of performance required in studio and home applications. These units are a standard rack-mount configuration height, and each is cooled by an automatic two-speed internal fan. All input and output connections are on the back panel. Additionally, the level controls and selector switches are on the back panel. The front panel contains LED indicators for power & DDT activation, the mains power switch, and the resettable circuit breaker(s).

INDUSTRIAL AND COMMERCIAL INSTALLATIONS

For commercial and other installations where sustained high power operation is required, the amplifiers should be mounted in a standard 19" rack. It is not necessary to leave a rack space between each amplifier in the stack since each fan pulls air in from the rear and exhausts the hot air out the front. However, an adequate "COOL" air supply must be provided for the amplifier when rack-mounted. The internal fan must have a source of air that is not preheated by other equipment. The amplifier will start up in low speed fan operation and will normally stay at low speed operation unless sustained high power operating levels occur. Then, as the amplifier "heat sinks" heat up, the automatic thermal sensing circuitry will cause high speed operation to occur. Depending upon signal conditions and amp loading, high speed fan operation may continue or it may cycle continuously between high and low. This situation is quite normal. If cooling is inadequate due to preheated air or a reduction of air flow occurs due to blockage of the amplifier inlet/outlet ports, or if the amplifier is severely overloaded or short circuited, the amplifier thermal sensing system may cause temporary shutdown of the unit. This is indicated by the power LED on the front panel ceasing to illuminate. Depending upon the available cooling air, operation should be restored relatively quickly, and the power LED will be illuminated. In any event, corrective action should be taken to determine the cause of the thermal shutdown. If the amplifier is not severely overloaded or shorted and air flow is normal in and out of the amplifier, then steps should be taken to provide a cooler environment for all the amplifiers. As a general rule, the cooler electronic equipment is operated, the longer its useful service life.

STUDIO AND HOME INSTALLATION

In most low to medium power applications, the power amplifier can be mounted in any configuration. It is desirable that, if at all possible, the power amplifier be located at the top of an equipment stack. This will prevent possible overheating of sensitive equipment by the hot air rising from the power amplifier. As a general rule, most home and studio requirements will never cause high speed fan operation. However, if they do, this may indicate that you have not taken the necessary steps to provide adequate cooling. Remember, closed up in a cabinet, a PV Series power amplifier will have severe cooling problems, even at low power levels. Again, inadvertent short circuit or sustained overload usage could also cause temporary thermal shutdown and/or tripping of the mains power breaker. Also, most home wiring and electrical circuits are only 15 amps.

BRIDGE MODE

The Bridge mode on stereo amplifiers is often misunderstood as to the actual operation and usage. In basic terms, when a two-channel amplifier is operated in the Bridge mode, it is converted into a single-channel unit with a Power Rating equal to the sum of both channels' power ratings at a Load Rating of twice that of the single channel rating. For example, the PV 500 is rated at 250 watts RMS per channel into 2 ohms. The Bridge Ratings are 500 watts RMS into 4 ohms (minimum load). Bridge mode operation is accomplished by placing the mode switch in the "BRIDGE" position, connecting the positive speaker lead to Channel A red binding post, negative

speaker lead to Channel B red binding post, and using Channel A as the input channel. All Channel B input functions are defeated, and they serve no purpose now. Another application for Bridge mode operation is to drive sound distribution systems in very large public address applications. In this mode, the PV 500 power amplifier can actually drive 70 volt systems directly without using matching transformers. Another common use for the Bridge mode is in subwoofer applications where very high power levels are required to reproduce extreme low frequencies. Such enclosures usually contain 2 or 4 loudspeakers to handle the power levels involved. For Bridge mode usage, the enclosure impedance must be 4 or 8 ohms—never below 4 ohms!

DDT™

Peavey's patented DDT (Distortion Detection Technique) compression circuit enables the user to maximize the performance of the amplifier/speaker combination by preventing the power amp from running out of headroom (clipping). This compression system is activated by a very unique circuit that senses signal conditions which might overload the amplifier and activates compression (reduces the amp gain) when clipping is imminent. Threshold of compression, then, is clipping itself, and no specific threshold control is used. This technique effectively utilizes every precious watt available for the power amplifier to reproduce the signal while at the same time minimizing clipping and distortion and thus significantly reducing the potential of loudspeaker degradation and damage. The DDT system is an automatic hands-off approach to the problem of power amplifier clipping. Since the PV Series power amplifiers use circuit breakers for "over current" protection, the DDT compression system plays even a more important role in continuous performance by preventing each channel from clipping and overload. Continuous operation at clipping can cause the circuit breakers to trip, but with the DDT activated, this problem is minimized. For this reason, you should always have the DDT compression system enabled.

SPECIFICATIONS

Output Power^{2,3}:

2 ohms, 1 kHz, 1% THD	250 W RMS per channel
4 ohms, 1 kHz, 1% THD	210 W RMS per channel
8 ohms, 1 kHz, 1% THD	130 W RMS per channel

(Bridge mode, mono)

4 ohms, 1 kHz, 0.1% THD	500 W RMS
8 ohms, 1 kHz, 0.07% THD	420 W RMS -- 578 V

Rated Output Power²:

4 ohms, 20 Hz to 20 kHz, 0.1% THD	200 W RMS per channel
8 ohms, 20 Hz to 20 kHz, 0.07% THD	120 W RMS per channel

Slew Rate³:

Stereo mode, each channel	20 volts per μ Sec
Bridge mode, mono	40 volts per μ Sec

Total Harmonic Distortion^{2,3}:

20 Hz to 20 kHz, @ rated output power, 8 ohms	Less than 0.07%
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Input Sensitivity & Impedance⁴:

@ rated output power, 8 ohms	1.0 V RMS (0 dBV)
	20 K ohms (32 dB gain)

Dimensions & Weight:

Height	5.25" (13.3 cm)
Width	19" (48.3 cm)
Depth	9" (38.1 cm)
Weight	29 pounds (13.2 kg)

Frequency Response^{2,3}:

± 1 dB, 1 W RMS, 8 ohms	10 Hz to 40 Hz
± 0.2 dB, @ rated output, 8 ohms	20 Hz to 20 kHz

Damping Factor^{2,3}:

8 ohms, 1 kHz	Greater than 300
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Hum & Noise²:

Below rated output power, 8 ohms	100 dB, unweighted
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Power Consumption²:

@ rated output power, 8 ohms	4.4 A @ 120 V AC
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Cooling System:

2-speed fan

DDT™ Compression System:

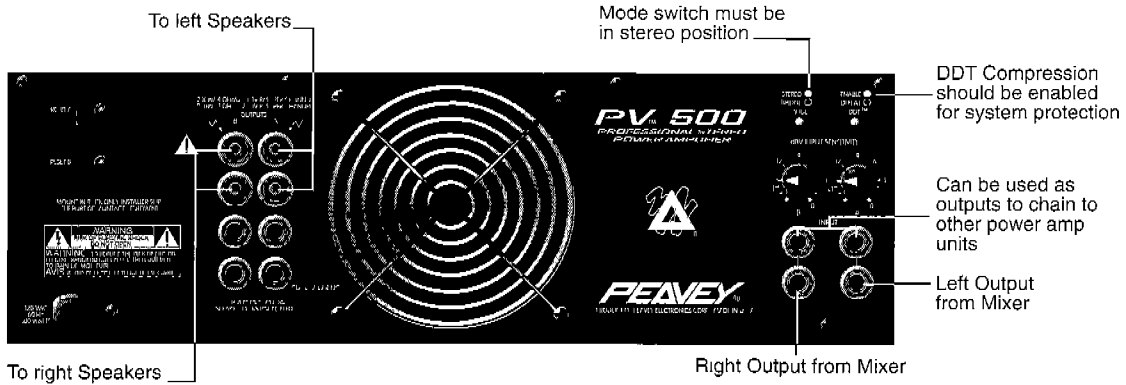
Switchable with LED

¹ @ 120 V AC, 60 Hz ² Stereo mode, both channels driven ³ Typical Value ⁴ Input attenuator set FCW

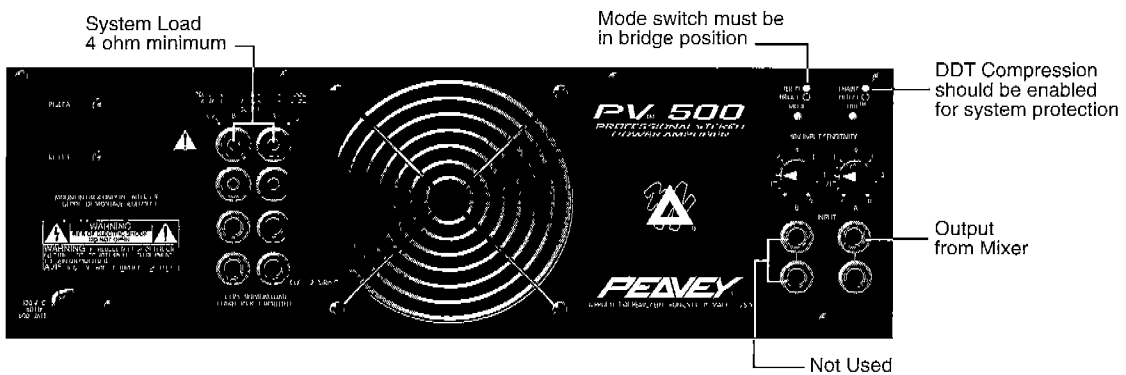


*Due to our efforts for constant improvements,
features and specifications listed herein are subject to change without notice.*

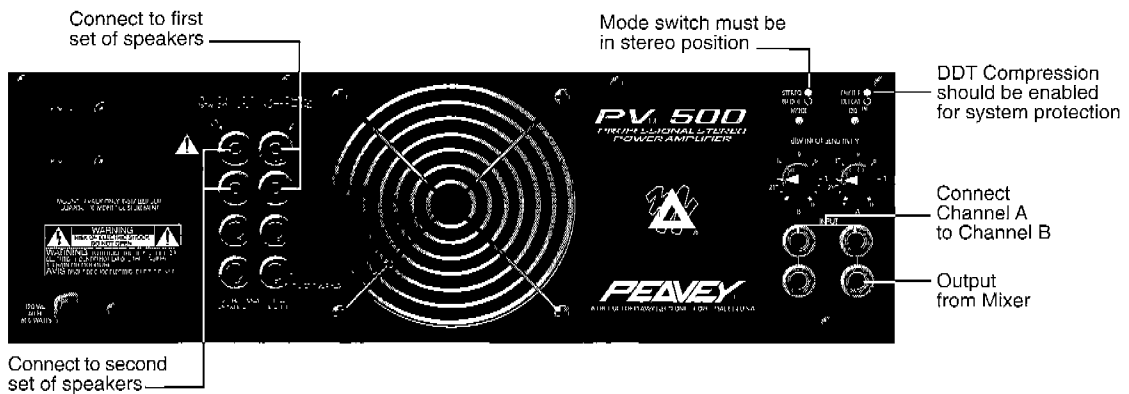
STEREO MODE



BRIDGE MODE



TWO-CHANNEL MONO MODE



! WARNING!

For optimum performance and reliability DO NOT PRESENT THE AMPLIFIER WITH A SPEAKER LOAD OF LESS THAN 2 OHMS. OR A COMBINATION OF SPEAKERS THAT TOGETHER ARE LESS THAN 2 OHMS!

Using one speaker, it must be rated at 2 ohms minimum.

Using two speakers, they must be rated each at 4 ohms minimum

Using three speakers, they must be rated each at 8 ohms minimum.

! AVIS!

Pour assurer la fiabilité et obtenir une performance optimale, ne soumettez jamais l'amplificateur à une charge d'impédance totale inférieure à 2 ohms, ni avec un H.P. ni en combinaison des H.P.

AVEC un H.P., il faut une charge d'impédance minimum de 2 ohms.

AVEC deux H.P., il faut pour chacun une charge d'impédance minimum de 4 ohms

AVEC trois H.P., il faut pour chacun une charge d'impédance minimum de 8 ohms.

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