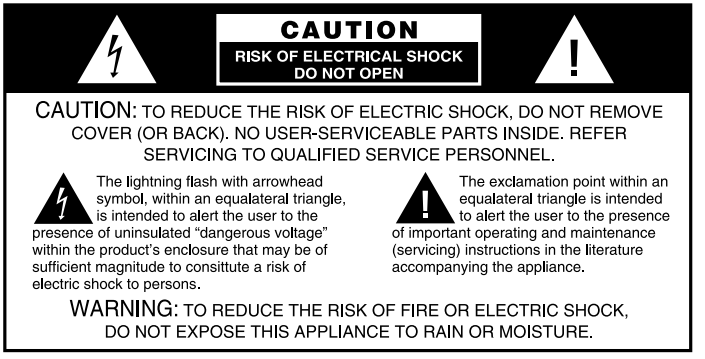
Harman Kardon
PA5800
Multichannel Amplifier

Owner's Manual

harman/kardon

Owner's Manual
PA5800 Multichannel Amplifier

Table of Contents



harman/kardon
80 Crossways Park West
Woodbury, NY 11797

H A Harman International Company

Introduction

Congratulations! As the owner of a Harman Kardon PA5800 Multichannel Power Amplifier, you have at your command a unique product. The PA5800 has been carefully designed to deliver the best possible sonic performance, along with outstanding industrial design that matches other Harman Kardon products or complements any interior design.

In order to fully enjoy the performance of your amplifier, please take a few minutes to read this owner's manual. It contains important information that will help you to make certain that the amplifier is properly connected to the rest of the equipment in your system.

If you have any questions about this product or its installation and operation, please contact your retailer or custom installer. They are your best sources of product information.

You may also contact Harman Kardon via the World Wide Web at: http://www.harmankardon.com.

Welcome to the Harman Kardon family. We wish you many years of listening pleasure!

Description and Features

The Harman Kardon PA5800 is a flexible, state-of-the-art audio power amplifier designed to deliver high performance for use in home theater or music reproduction applications. The following are among its many features:

- Designed and manufactured in the United States
- High-current output capbility
- Ultrawide bandwidth design
- Low negative feedback
- Low harmonic and intermodulation distortion
- Massive heat sinks for quiet convection cooling
- High-current power supply
- Remote turn-on/turn-off circuitry with select Harman Kardon products or through optional accessories

Important Safety Information

Verify Line Voltage Before Use
Your new Harman Kardon PA5800 amplifier has been factory-configured for use with 120-volt AC line current. Connecting the amplifier to a line voltage other than that for which it is intended can create a safety and fire hazard, and may damage the amplifier.

If you have any questions about the voltage requirements for your specific model, or about the line voltage in your area, contact your selling dealer before plugging the unit into a wall outlet.

Verify AC Circuit Capacity Before Use
High power output of your amplifier may require heavy current draw under full load conditions. To ensure proper performance and avoid potential safety hazards, we recommend that it be connected to a circuit with 20-amp capacity. Connecting multiple amplifiers to the same circuit, or connecting the amplifier to a circuit used by other heavy-power devices, such as high-wattage lights, may cause circuit breakers to trip. It is always a good idea to avoid using any audio equipment on the same AC circuit as equipment with motors, such as air conditioners or refrigerators. This will lessen the possibility of power variation and electrical start-up noise affecting your sound system.

Do Not Use Extension Cords
To avoid safety hazards, use only the power cord supplied with your unit. If a replacement cord is used, make certain that it is of a similar gauge. We do not recommend using extension cords with this product. As with all electrical devices, do not run power cords under rugs or carpets or place heavy objects on power cords. Damaged power cords should be replaced immediately with cords meeting factory specifications.

Handle the AC Power Cord Gently
When disconnecting the power cord from an AC outlet, always pull the plug, never pull the cord. If you do not intend to use the amplifier for a considerable length of time, disconnect the plug from the AC outlet.

Do Not Open the Cabinet
There are no user-serviceable components inside this product. Opening the cabinet may present a shock hazard, and any modification to the product will void your guarantee. If water enters the unit, or any metal object such as a paper clip, wire or staple accidentally falls inside the cabinet, disconnect the unit from the AC power source immediately and consult an authorized warranty station.

Installation Location
- To ensure proper operation and to avoid the potential for safety hazards, place the unit on a firm and level surface. When placing the unit on a shelf, be certain that the shelf and any mounting hardware can support the amplifier's weight.
- Make certain that the proper space is provided both above and below the unit for ventilation. If the amplifier will be installed in a cabinet or other enclosed area, make certain that there is sufficient air movement within the cabinet. Consult with your dealer or installer for more information.
- Do not place the unit directly on a carpeted surface.
- Avoid installation in extremely hot or cold locations, in an area that is exposed to direct sunlight or near heating equipment.
- Avoid moist or humid locations.
- Do not obstruct the ventilation slots on the top of the unit or place objects directly over them. Remember, power amplifiers generate heat, and the heat sink fins and ventilation slots that form part of the cabinet are specially designed to remove this heat. Placing other electronic equipment near these heat-dissipation systems may possibly affect the long-term reliability of both your amplifier and the objects placed above it.

Cleaning
When the unit gets dirty, wipe it with a clean, soft and dry cloth. If necessary, first wipe the surface with a soft cloth slightly dampened with mild soapy water, followed by a fresh cloth with clean water. Wipe immediately with a dry cloth. Never use benzene, thinner, alcohol or any other volatile cleaning agent. Do not use abrasive cleaners, as they may damage the finish of metal parts. Avoid spraying insecticide near the unit.

Moving the Unit
Before moving the unit, be certain to disconnect any interconnection cords with other components, and make certain that you disconnect the unit from the AC outlet.

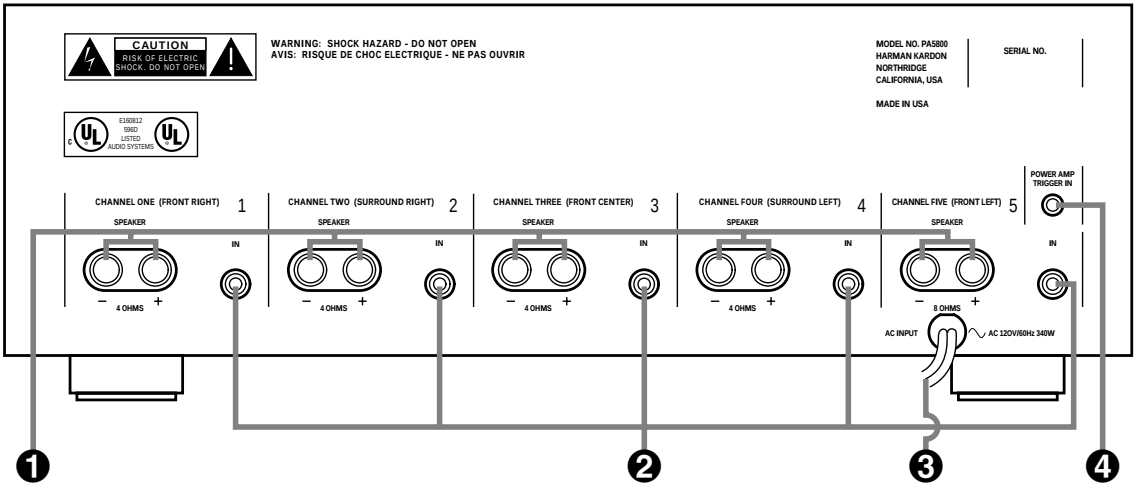
Unpacking and Installation

The carton and shipping materials used in protecting your new amplifier were specially designed to cushion it from the shocks and vibration of shipping. We suggest that you save the carton and packing materials for use in shipping if you move or if the unit ever needs repair.

To minimize the size of the carton in storage, you may wish to flatten it. Carefully remove any staples used to close carton seams; carefully slit the tape on the bottom and collapse the carton. Other cardboard inserts may be stored in the same manner. Packing materials that cannot be collapsed should be saved along with the carton in a plastic bag.

When positioning the amplifier in its final location, make certain that it has adequate ventilation on all sides, as well as on the top and bottom. Do not place CDs, record jackets, owner's manuals or other paper on top of, or beneath the unit, or in between multiple amplifiers in a stack. This will block the air flow, causing degraded performance and a possible fire hazard. If the unit is to be enclosed in a cabinet or rack, make certain that there is adequate air circulation, with means provided for hot air to exit and for cool air to be brought in.

Rear Panel Connections



❶ **Speaker Outputs:** Connections from these terminals should be made to the appropriate speakers in your system.

❷ **Audio Inputs:** Connect the outputs of the PT2500, ADP303 or other surround processor, preamplifier or decoder to these jacks.

❸ **AC Power Cord:** Connect this plug to a wall-mounted AC outlet. Due to the current draw of the PA5800, it is NOT recommended that the accessory outlets on the back of the audio/video components be used to power this product.

❹ **Remote Amp Trigger In**: Connect this jack to the matching trigger output on a PT2500 or other compatible device to have the PA5800 automatically turn on when the device is activated. See page 4 for additional details.

Note: To assist in the installation of this product, the numbers used in this diagram appear in the manual to guide you to rear panel connections.

Note: When making any connections between source components, processors or preamplifiers and the PA5800, or when making any connections to speakers, be certain that both the input device and the PA5800 are turned off. To ensure that there will be no unwanted signal transients that can damage equipment or speakers, it is always best to unplug all equipment from AC power outlets before making any connections. Modern electronic products often have a "standby" mode that may be activated even though the product may appear to be turned off.

Power Control Connections

The Harman Kardon PA5800 amplifier features a built-in remote turn-on system that will automatically turn on the amplifier when another device in the system is switched on. To activate this system, this amplifier must be used in conjunction with a Harman Kardon PT2500, other compatible Harman Kardon products or other approved devices.

NOTE: Before making any connections to remote trigger outlets, it is critical that both the PA5800 and the triggering device be turned off. For additional safety, it is best that these connections be made while both products are unplugged from AC power sources.

Remote Turn-On with Compatible Harman Kardon Products – including the PT2500

Connect one end of the accessory cable supplied with the PT2500 to the Remote Amp Trigger in ❹ jack on the rear of the PA5800. Connect the other end to the jack on the PT2500 that carries the same identification.

Remote Turn-On Using an External AC-to-DC Converter

If the PA5800 is not used with a compatible Harman Kardon product, it is still possible to activate the unit for automatic turn-on.

To control the amplifier in this manner you will need a small AC-to-DC power converter capable of delivering a 6- to 12-volt DC signal. The DC voltage should terminate in a standard 3.5mm mono miniplug. This type of converter may be obtained as a "Power Adapter" from many electronics retailers. Consult your dealer for further information.

Plug the AC adapter into a switched outlet that will be activated when you wish to have the amplifier turn on. This may be the switched outlet at the rear of an AV receiver or other audio equipment, an AC outlet that is part of a current sensing control unit activated by a preamp or surround processor or a switched AC wall outlet.

Connect the 3.5mm miniplug from the power converter to the Remote Amp Trigger in ❹ jack on the rear of the PA5800.

Audio System Connections

As a general rule, avoid running any input signal or speaker wire connections next to or parallel with AC power cords. This may cause undesired hum or other interference that will greatly degrade signal performance.

When making connections with RCA-type plugs on interconnect cables, make certain to gently but firmly insert the plugs into the jacks on the rear of the PA5800. Loose connections can cause intermittent sound and my damage your speakers.

Connect the outputs of the PT2500 or your surround processor to the audio inputs of the PA5800 ❷. To simplify installation, it is best to follow the markings on the rear panel by connecting the Front Right output of the PT2500 to the Front Right input on the PA5800, following the same pattern for each channel.

Important Note: The PA5800 is not designed for use in Bridged configuration. Do not connect the same input or speaker to more than one channel.

To ensure that the high-quality signals produced by the PA5800 are carried to your speakers without loss of clarity or resolution , we recommend that you use high-quality speaker cable. Many brands of cable are available, and the choice of cable may be influenced by the distance between your speakers and the amplifier, the type of speakers you use, personal preferences and other factors. Your dealer or installer is a valuable resource to consult in selecting a proper cable for connections between your amplifier and speakers.

Regardless of the brand or type of cable selected, we recommend that you use a cable constructed of fine, multistrand copper with a gauge of 14 or smaller. When specifying cable, remember that the lower the number, the thicker the cable.

Cable with a gauge of 16 may be used for short runs of less than ten feet. We do not recommend the use of cables with an AWG equivalent of 18 or higher due to the power loss and degradation in performance that will occur.

Cables run inside walls should have the appropriate markings to indicate listing with UL ("CL-2/CL-3"), CSA ("FT-4") or appropriate safety agency standards that may be required in your area. Questions about running cables inside walls should be referred to your installer or a licensed electrical contractor who is familiar with the NEC and/or the applicable building or electrical codes in your area.

Connections to Speakers

The final step of the installation process is to connect the amplifier to your speakers using high-quality cable. A pair of binding posts is provided for each channel output. These posts will accept bare wire or banana-type plugs.

Note that one conductor of the speaker cable will have no markings or an indication of "–" for negative polarity, and the other will have a red line, brand-name markings, a colored thread or some other positive-polarity indication.

The wire with the positive indication should be connected to the red terminals on both the PA5800 and your speakers. The negative wire should be connected to the black terminal on the PA5800 and the speakers.

If bare wire is used for connections, strip approximately 3/4" (20mm) of insulation from the end of each wire and carefully twist the strands of each conductor together. Be careful not to cut the individual strands or twist them off; for optimal performance, all strands must be used.

Next, loosen the knobs of the speaker output terminals far enough so that the cap moves back on its threads past the U-shaped groove at the back end of the terminal. Making certain that you observe polarity by connecting the negative (-) wire to the black terminal and the positive (+) wire to the red terminal, pass the exposed wire through from the top of the slot until the wire is visible from the bottom end. Holding the wire in place, twist the cap back so that the connection is secured. Do not overtighten or use tools, as this may damage the plastic terminal cap or break the delicate wire strands and decrease system performance.

Important Note: When making speaker wire connections, be certain that none of the strands from one lead touch any other lead. This will cause a short circuit and may damage you amplifier or speakers. Damage from short circuits caused in this manner is not covered by the product warranty.

Connections may also be made using standard 4mm OD banana plugs. Before using a banana-type jack, make certain that the plastic screw caps on the PA5800 are firmly tightened by turning them clockwise until they are snug against the chassis. This will ensure that the maximum surface area of the plug is in contact with the jack. Once the wire has been attached to the banana plug following the plug manufacturer's instructions, simply insert the banana plug into the hole provided on the rear of the colored screw caps on the terminal posts. Be certain to observe proper polarity.

Finally, run the cables to the speaker locations. It is highly recommended that the length of cable connecting any pair of speakers be identical. For example, make certain that the cable length connecting left and right front or left and right rear (surround) speakers is identical, even though one speaker may be physically closer to the amplifier than the other. Do not coil any excess cable, as this may become an inductor that creates frequency response variations in your system.

Connect the wires to the speakers, again being certain to observe proper polarity. Remember to connect the negative or black wire to the matching terminal on the speaker. Similarly, the positive or red wire should be connected to the like terminal on the speaker.

NOTE: While most speaker manufacturers adhere to an industry standard of using black terminals for negative and red ones for positive, some manufacturers may not adhere to this configuration. To ensure properly phased connections and optimal performance, consult the identification plate on your speaker terminals, or the speaker's manual to verify polarity. If you do not know the polarity of your speaker, ask your dealer or installer for advice before proceeding, or consult the speaker's manufacturer.

Operation

Operation of the PA5800 is simple. There are no controls to adjust once the installation is complete.

After all connections have been made to the amplifier's inputs and speaker terminals, connect the amplifier's power cord to an AC outlet. Make certain that the PA5800 power switch is in the off position before plugging in the power cord.

At this point you are almost ready for listening. First, turn on the source components and processor in your system. It is always a good idea to turn on your amplifier last. This avoids the possibility of any turn-on pops or transients from other equipment being amplified and sent to your speakers, where they may cause damage. Always start with a low volume level on your controller or preamp to avoid damage to your speakers.

Manual Operation

If the unit is not being used with the automatic, remote turn-on system and the AC power plug is connected to a live outlet, the ring surrounding the power switch will glow red. This is your indication that the unit is functional.

To place the unit in operation, simply depress the power switch. Note that the ring surrounding the power switch will glow green. There may be a short pause between the time the power switch is turned on and power is applied to the speakers. This is intentional, and this feature protects your speakers from damage as the amplifier stabilizes.

You are now ready to enjoy the finest sonic performance available. All volume and level adjustments are made at your preamp, controller or surround processor.

To turn the unit off, press the front panel power switch.

For Automatic Operation

Before proceeding, make certain that the connection between the PA5800 and PT2500 or other trigger source has been properly made as outlined previously. At this point the triggering unit should be turned off.

Plug the PA5800 into a live AC power source. The ring surrounding the power switch will glow red. Press the Power switch once and note that the ring will turn to amber. This is your indication that the PA5800 is in standby mode.

Finally, turn on the PT2500 or other device used to trigger the remote amp trigger, such as a wall-mounted AC adapter. The PA5800 will respond to the trigger signal by automatically turning on, and the ring surrounding the power switch will turn green. There will be a short pause after the signal is applied and the indicator changes color, and the power will be applied to the speakers. This pause is intentional to protect your speakers from damage as the amplifier stabilizes.

Once your system is turned on, you are ready to enjoy the finest sonic performance available. There are no controls to adjust. All volume and level adjustments are made by your preamp, controller or surround processor.

At the conclusion of your listening session, there is no need to manually turn off the PA5800. When the PT2500 or other triggering device is turned off, removing power from the trigger jack, the PA5800 will return to the standby mode.

Important Note: If you will not be using your audio system for an extended period of time, such as during a vacation, it is always a good idea to turn the unit off using the power switch. This will prevent the automatic turn-on circuits from accidentally turning the system on during your absence.

If your installation has followed the procedures in this manual, you should enjoy many years of trouble-free operation and high-quality listening enjoyment. The PA5800 does not contain any user-serviceable parts. If you suspect a problem that may require service assistance, contact your dealer, installer or an authorized Harman Kardon service depot.

You may also contact Harman Kardon via the World Wide Web at: http://www.harmankardon.com.

It is important that any repairs be carried out only by an authorized Harman Kardon service agent to ensure proper service and preserve the protection of your Limited Warranty. It is a good idea to keep your sales slip or receipt in a safe place (along with this manual) so that it will be available to verify the purchase date for warranty claims.

Input/Output Protection
Under some conditions, such as a shorted speaker wire, DC voltage on an input connection or thermal overload, the Harman Kardon PA5800 will place itself in a "protect" mode to prevent damage to the amplifier. When this happens, the ring surrounding the power switch will flash and alternate between red and amber.

When this occurs, IMMEDIATELY turn off the unit using the power switch and correct the problem. Then turn the unit back on. If the unit continues to go into a protect mode, contact your dealer or installer for assistance.

Troubleshooting Chart

The items listed below are a brief guide to minor problems that may arise with audio equipment such as the PA5800. Before taking a unit in for service, you should check to see if any of these hints solve the problem. If these solutions do not rectify the problem or if the problem reoccurs, contact your dealer or an authorized Harman Kardon service depot for assistance.

PROBLEM	***DIAGONSIS***	***TROUBLESHOOTING HINTS***
Amplifier will not turn on.	• Power Switch turned off. (No Power Light LED)	• Turn on Power Switch.
	• Remote trigger cable not properly connected.	• Verify connection of trigger cable at both ends.
Amplifier turns on, but no audio from one or more channels.	• Inputs not connected to proper jack.	• Check input connections.
	• Speakers not connected properly.	• Check speaker connections.
	• Improper settings or output levels from processor or controller.	• Check the settings on your preamp, processor or controller.
Audio plays, then cuts off.	• Amplifier shorted (LED flashes amber).	• Check speaker connections for short circuit.

Technical Specifications

Power Output:	5 x 80 watts @ 8 ohms FTC: 20 - 20kHz, .03% THD, All Channels Driven 5 x 110 watts @ 4 ohms FTC: 20 - 20kHz, .03% THD, All Channels Driven
High Current Capability:	± 73 Amps
Frequency Response:	0.22 Hz - 160 kHz - 3 dB at 1 watt
Signal to Noise:	Less than 110 at rated power 80 watts
THD/IMD:	Less than 0.03% at rated output
Power Bandwidth:	<5Hz ~ 160kHz
Input Impedance:	33K Ohms
Input Sensitivity:	1 volt for rated output
Remote Trigger Voltage:	6 - 12 volts DC
Remote Trigger Impedance:	20K Ohms
Dimensions (HxWxD):	17-3/8 x 6-1/8 x 15-1/2 inches 165 x 440 x 394 mm
Weight:	30 lbs/27.3 kg
Power Requirements:	120VAC, 50 Hz / 60 Hz 340 watts, maximum

Staple or clip original invoice here. ▼

Printed in USA

Part #1111-PA5800
HA 160-0000-A