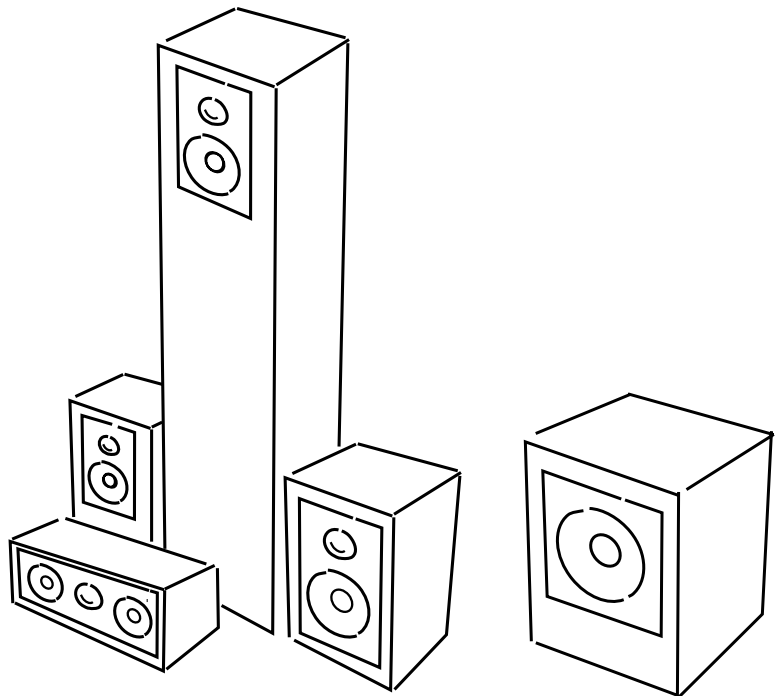

harman/kardon®
Power for the Digital Revolution.®

HKL Series

COMPONENT LOUDSPEAKERS
OWNER'S MANUAL



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Typographical Conventions

In order to help you use this manual, certain conventions have been used.

EXAMPLE – (bold type) indicates a specific control or rear-panel connection on the HKSUB 12 subwoofer

EXAMPLE – (OCR type) indicates a control or switch position on the HKSUB 12 subwoofer

1 – (number in a circle) indicates a rear-panel control or connection on the HKSUB 12 subwoofer

See trademark acknowledgements on page 20.

Read First! Important Safety Precautions!

CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

CAUTION: To prevent electric shock, do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.



The lightning flash with arrowhead symbol, within an equilateral triangle, is 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.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

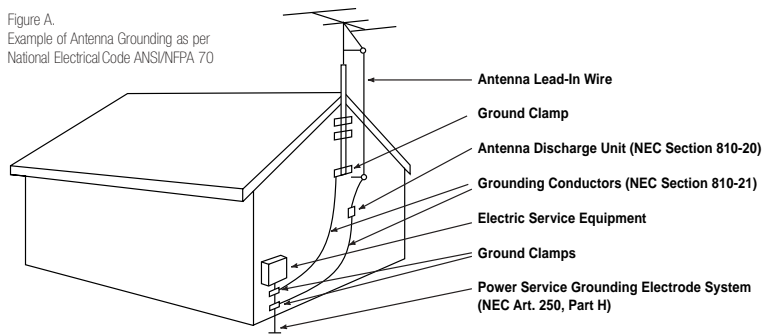
1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the



cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally or has been dropped.
15. Do not use attachments not recommended by the product manufacturer, as they may cause hazards.
16. This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power or other sources, refer to the operating instructions.
17. If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
18. An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When
19. Do not overload wall outlets, extension cords or integral convenience receptacles, as this can result in a risk of fire or electric shock.
20. Never push objects of any kind into this product through openings, as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
21. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
22. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
23. Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
24. The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

Figure A.
Example of Antenna Grounding as per
National Electrical Code ANSI/NFPA 70



Verify Line Voltage Before Use

Your HKSUB 12 has been designed for use with 120-volt AC current. Connection to a line voltage other than that for which it is intended can create a safety and fire hazard and may damage the unit.

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.

Do Not Use Extension Cords

To avoid safety hazards, use only the power cord attached to your unit. We do not recommend that extension cords be used with this product. As with all electrical devices, do not run power cords under rugs or carpets or place heavy objects on them. Damaged power cords should be replaced immediately by an authorized service center with a cord 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 unit for any 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 or any metal object such as a paper clip, wire or a staple accidentally falls inside the unit, disconnect it from the AC power source immediately, and consult an authorized service center.

CATV or Antenna Grounding

If an outside antenna or cable system is connected to this product, be certain that it is grounded so as to provide some protection against voltage surges and static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements of the grounding electrode.

NOTE TO CATV SYSTEM INSTALLER: This reminder is provided to call the CATV (Cable TV) system installer's attention to article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of

the building, as close to the point of cable entry as possible.

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 weight of the product.
- Make certain that proper space is provided behind the unit for ventilation. If this product will be installed in a cabinet or other enclosed area, make certain that there is sufficient air movement within the cabinet. Under some circumstances a fan may be required.
- Do not place the unit directly on a carpeted surface.
- Avoid installation in extremely hot or cold locations, or in an area that is exposed to direct sunlight or heating equipment.
- Avoid moist or humid locations.
- Do not place the unit so that the back panel is touching a wall, plants or any other surface. Allow at least three inches from the metal panel on the back of the unit to any other object.
- Due to the weight of the HKSUB 12 and the heat generated by the amplifier, there is the remote possibility that the rubber padding on the bottom of the unit's feet may leave marks on certain wood or veneer materials. Use caution when placing the unit on soft woods or other materials that may be damaged by heat or heavy objects.

Cleaning

When the unit gets dirty, wipe it with a clean, soft, dry cloth. If necessary, wipe it with a soft cloth dampened with mild soapy water, then a fresh cloth with clean water. Wipe dry immediately with a dry cloth. NEVER use benzene, aerosol cleaners, 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.

Important Information for the User

This equipment has been tested and found to comply with the limits for a Class-B digital device, pursuant to Part 15 of the FCC Rules. The limits are

designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio-frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that harmful interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept interference received, including interference that may cause undesired operation.

NOTE: Changes or modifications may cause this unit to fail to comply with Part 15 of the FCC Rules and may void the user's authority to operate the equipment.

Unpacking

The carton and shipping materials used to protect your new loudspeaker(s) during shipment were specially designed to cushion it (them) from shock and vibration. We suggest that you save the carton and packing materials for use in shipping if you move, or should the speaker(s) ever need repair.

To minimize the size of the carton in storage, you may wish to flatten it. This is done by carefully slitting the tape seams on the bottom and collapsing 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.

If you do not wish to save the packaging materials, please note that the carton and other sections of the shipping protection are recyclable. Please respect the environment and discard those materials at a local recycling center.

Introduction

Thank you for purchasing Harman Kardon® HKL Series component loudspeakers, with which you are about to begin many years of listening enjoyment. The HKL Series loudspeakers have been custom-designed and engineered to provide all the excitement and power of the cinema experience, while accurately reproducing the subtle characteristics of every instrumental and vocal passage in your favorite music.

To obtain maximum enjoyment from your new speakers, we urge you to take a few minutes to read through this manual. This will ensure that connections to your receiver or preamp/processor and amplifier are made properly.

If you have any questions about this product, its installation or operation, please contact your dealer, the best local source of information.

Description and Features

HKL Series loudspeakers are available in a variety of models that may be used separately in a two-channel stereo system, or combined to form a multichannel surround sound system. Since the internal components are voice-matched, pans and flyovers will be seamless and transparent.

The HKB 4 is a two-way, four-inch bookshelf speaker suitable for a small two-channel system, or in any of the channels in a surround sound system. The HKB 6 is a larger two-way, six-inch bookshelf speaker capable of handling higher amplifier power levels. It is also suitable for use in the front or the surround channels in a multichannel system.

The HKTW 6 is a two-way, six-inch tower speaker. It is a superb performer in a two-channel system, or as the main left and right front speakers in a multichannel system.

The HKC speaker is a two-way, dual 5-inch, horizontally oriented speaker designed specifically for use as a center channel speaker. The center channel is the main source of dialogue, and the HKC has been designed to reproduce dialogue with excellent clarity and intelligibility.

The HKSUB 12 contains a 12-inch subwoofer powered by a 150-watt digital amplifier to reproduce the low-frequency or "bass" sounds. It has an adjustable crossover that may be bypassed by a dedicated subwoofer input designed specifically to accept the low-frequency effects (LFE) signal from digital programs. It also includes stereo line-level inputs for use with analog programs, and stereo speaker-level inputs and loop-through outputs for compatibility with audio components that lack a line-level (preamp) output. All of the line- and speaker-level inputs are gold-plated for optimal signal transfer.

Phase, crossover frequency and subwoofer level controls enable you to adjust the HKSUB 12 to fine-tune its bass performance to match your room acoustics and listening preferences. A high-cut (low-pass) filter switch lets you determine whether the HKSUB 12's internal crossover network will be activated, depending on the source and type of the input signal.

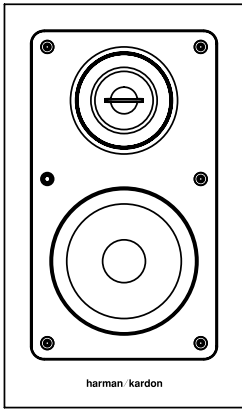
Harman Kardon invented the high-fidelity receiver almost fifty years ago. With state-of-the-art components and a design process that expresses our devotion to detail and quality, the HKL Series loudspeakers are perfect complements to a Harman Kardon receiver or any home audio system.

- **State-of-the-art titanium-laminate-dome high-frequency transducers and polymer-coated low-frequency drivers deliver superior fidelity and performance**
- **High-output, high-efficiency digital amplifier in HKSUB 12 delivers rich bass while using less power**
- **Speakers are magnetically shielded for flexible placement near video monitors (except HKSUB 12)**
- **With a slender profile and elegant design, speakers are pleasing to the eye as well as the ear**

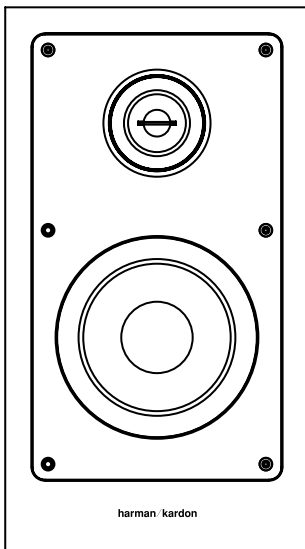
SPEAKER MODELS

This manual covers the following HKL Series loudspeakers:

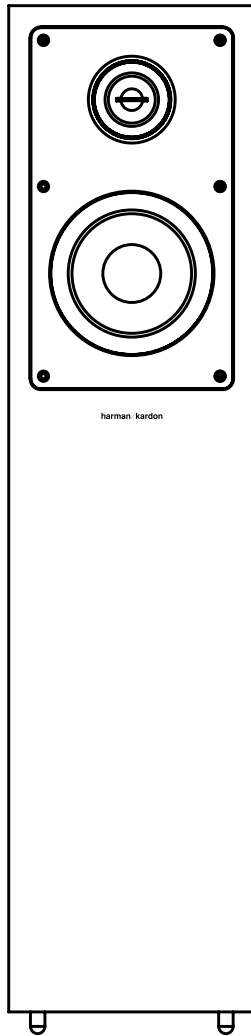
HKB 4 bookshelf speaker



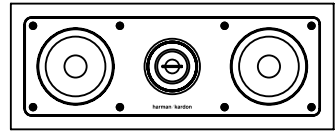
HKB 6 bookshelf speaker



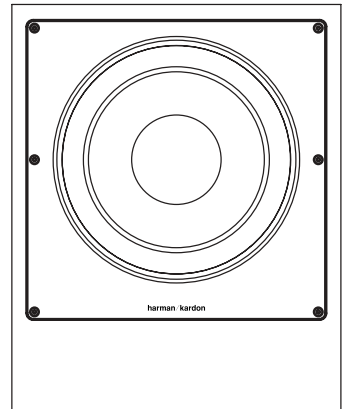
HKTW 6 floorstanding speaker



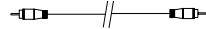
HKC center channel speaker



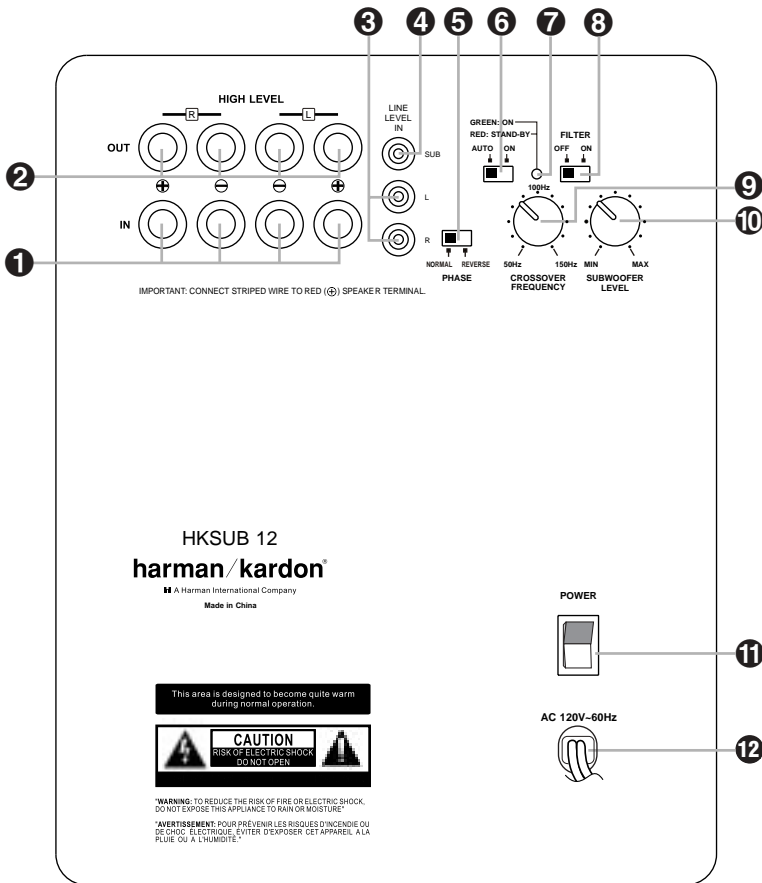
HKSUB 12 powered subwoofer



Includes one 15-foot interconnect cable.



HKSUB 12 AMPLIFIER PANEL CONTROLS AND CONNECTIONS



- 1 Speaker-Level Inputs
- 2 Speaker-Level Outputs
- 3 Line-Level Full-Range Inputs
- 4 Line-Level Subwoofer (SUB) Input
- 5 Phase Switch
- 6 Music-Sense On/Off Switch
- 7 LED Indicator
- 8 High-Cut (Low-Pass) Filter Switch
- 9 Crossover Frequency Control
- 10 Subwoofer Level Control
- 11 Master Power Switch
- 12 AC Power Cord

HKSUB 12
harman/kardon®
A Harman International Company
Made in China



*WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
*AVERTISSEMENT: POUR PRÉVENIR LES RISQUES D'INCENDIE OU DE CHOC ÉLECTRIQUE, ÉVITER D'EXPOSER CET APPAREIL À LA PLUIE OU À L'HUMIDITÉ.

1 Speaker-Level Inputs: If your receiver or amplifier does not have a line-level subwoofer output, connect these binding post terminals to the main (front) left and right speaker terminals of your receiver or amplifier. Remember to maintain polarity by connecting the positive (+) terminal on the receiver/amplifier to the positive (+) terminal on the HKSUB 12 subwoofer, and the negative (-) terminal on the receiver/amplifier to the negative (-) terminal on the HKSUB 12 subwoofer.

2 Speaker-Level Outputs: If you are using the **Speaker-Level Inputs 1** on the HKSUB 12, connect these binding post terminals to your front left and right speakers,

remembering to maintain polarity by connecting the positive (+) terminal on the HKSUB 12 subwoofer to the positive (+) terminal on the speaker, and the negative (-) terminal on the speaker. If you are not using the **Speaker-Level Inputs 1**, connect your front left and right speakers directly to your receiver or amplifier. See pages 12 through 15 for further information on speaker connections.

3 Line-Level Full-Range Inputs: Connect the full-range, unfiltered line-level subwoofer output or preamp output(s) of your receiver or amplifier to these inputs. If your receiver does not have a separate subwoofer output, use a

Y-adaptor (not supplied) to bridge the receiver's preamp output to the main amp input for that channel, and connect the long end of the adaptor to the corresponding line-level input on the HKSUB 12. If your receiver has only a single subwoofer output, you may connect it to either the left or right line-level input on the HKSUB 12, and no Y-adaptor is needed.

4 Line-Level Subwoofer (SUB) Input: Connect the filtered subwoofer output of a receiver to this input. This input bypasses the HKSUB 12's internal crossover circuitry, and should only be used with a filtered signal. If your receiver does not have a filtered subwoofer output, you should use the **Line-Level Full-Range Inputs 3** instead.

5 Phase Switch: This switch determines whether the HKSUB 12 subwoofer's piston-like action moves in phase with the main speakers. If the speakers are out of phase, the sound waves produced by the subwoofer will be cancelled out, reducing bass response. This phenomenon depends in part on the relative placement of the speakers in the room. In most cases, the **Phase Switch 5** should be left in the **NORMAL** position. However, it does no harm to experiment with the **Phase Switch 5**, and you may leave it in the position that maximizes bass response.

6 Music-Sense On/Off Switch: When this switch is placed in the **AUTO** position, and when the **Master Power Switch 11** is turned on, the HKSUB 12 will automatically turn on when an audio signal is present, or enter the Standby mode when no signal is being received. When this switch is placed in the **ON** position, the HKSUB 12 will remain on, whether or not it is receiving an audio signal.

7 LED Indicator: This LED indicates whether the HKSUB 12 is in the **ON** or **STANDBY** state when used with the **Music-Sense On/Off Switch 6** in the **AUTO** position. The LED is lit green to indicate that the HKSUB 12 is receiving an audio signal and is turned on, and the LED is lit red to indicate that no signal is being received and the HKSUB 12 is in Standby mode.

When the **Music-Sense On/Off Switch 6** is in the **ON** position, the LED will be lit green, whether or not an audio signal is present.

When the **Master Power Switch 11** is turned off, the LED goes dark, no matter

which position the **Music-Sense On/Off Switch 6** is in.

8 High-Cut (Low-Pass) Filter Switch: Placing this switch in the **ON** position activates circuitry that filters out all audio input signals above the setting of the **Crossover Frequency Control 9**. This allows the HKSUB 12 to focus its power on reproducing the low-frequency portion of the signal, avoiding inefficiency and distortion. Engage this filter when using the **Speaker-Level Inputs 1**, or when using the **Line-Level Full-Range Inputs 3**, unless your receiver or processor processes its line-level output using a low-pass filter. The filter has no effect when the **SUB Input 4** is used. See page 17 for more information about this switch.

9 Crossover Frequency Control: Adjust this control to set the highest frequency the HKSUB 12 will reproduce. You should begin by setting it slightly above the lowest frequency that your main speakers are capable of reproducing. You may safely adjust the crossover frequency later as you listen to different program materials. This control will have no effect if you are using the **Line-Level Subwoofer (SUB) Input 4**, or if you have set the **High-Cut (Low-Pass) Filter Switch 8** to the **OFF** position. See page 17 for more information on adjusting the crossover setting.

10 Subwoofer-Level Control: Volume may be adjusted using the **Subwoofer-Level Control**. Turn the control clockwise to increase the HKSUB 12's volume, or counterclockwise to decrease it.

11 Master Power Switch: Press this rocker switch at the "●" mark to power-on the HKSUB 12 subwoofer. The HKSUB 12 will then be either in the Standby mode or completely on, depending on the position of the **Music-Sense On/Off Switch 6**.

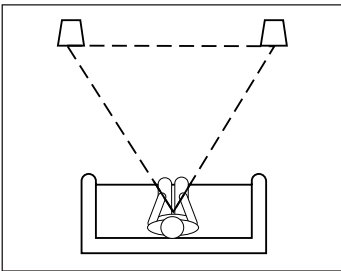
12 AC Power Cord: Plug this cord into an active, unswitched electrical outlet. The cord should never be plugged into the accessory outlets found on some audio components.

Proper placement of the speakers is an important step in obtaining the most realistic soundstage possible. These recommendations are for the optimal placement of the loudspeakers, and should be used as a guide. Slight variations will not diminish your listening pleasure.

The following HKL Series loudspeakers are video-shielded and may safely be placed near a television or video display: HKB 4, HKB 6, HKTW 6 and HKC.

The HKSUB 12 subwoofer is not video-shielded, and should be placed at least three feet away from any CRT video display devices, including televisions and computer monitors.

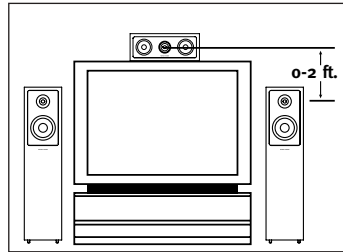
Front Speakers (HKB 4, HKB 6, HKTW 6)



Models HKB 4, HKB 6 and HKTW 6 are suitable for placement in the front left and right speaker locations in either a two-channel system or a multichannel home theater system.

The front speakers should be placed the same distance from each other as they are from the listening position, and they may be "toed in," or angled slightly, toward the listening position. They should be placed at the same height as the listeners' ears.

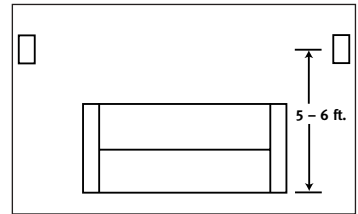
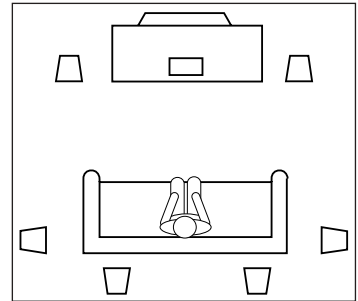
Center Channel Speaker (HKC)



Model HKC is suitable for use as the center channel speaker in a multichannel home theater system.

The center channel speaker should be placed slightly behind the front left and right speakers. It is often convenient to set the center speaker on top of the television set, as shown in the drawing, or it may be placed on a shelf above or below the television or video display. The tweeter of the center speaker should be no more than two feet above or below the tweeters of the main left and right speakers.

Surround Speakers (HKB 4, HKB 6)



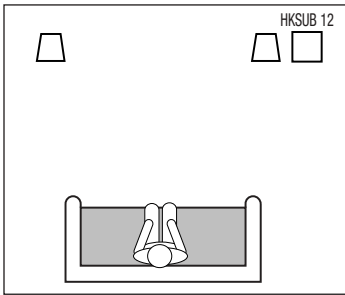
Models HKB4 and HKB 6 are suitable for use as the side or rear surround speakers in a multichannel home theater system.

The two side surround speakers should be placed slightly behind the listening position and, ideally, should face each other and be at a level higher than the listeners' ears. If that is not possible, they may be placed on a wall behind the listening position, facing forward. In a 6.1- or 7.1-channel system, in which surround back speakers as well as side surround speakers are used, you may place one pair of speakers to the sides, and a second pair of speakers on the rear wall, facing forward, as shown in the diagram.

The surround speakers should not call attention to themselves. Experiment with their placement until you hear a diffuse, ambient sound accompanying the main program material heard in the front speakers.

SPEAKER PLACEMENT

Powered Subwoofer (HKSUB 12)



As a general rule, bass response increases as a subwoofer is placed closer to a wall. Therefore, bass output is maximized when the subwoofer is placed in a corner.

We recommend that you place the HKSUB 12 along the same wall as the front loudspeakers, as shown in the diagram.

Low-frequency sounds are normally omnidirectional, meaning the listener cannot localize them to a specific place in the room. However, frequencies between 75Hz – 150Hz can be localized, especially at higher volume levels. Positioning your subwoofer as recommended will provide the most natural soundstage and imaging from your loudspeaker system.

Remember that these are just guidelines. Since every listening room is different, Harman Kardon strongly recommends experimenting with the positioning of your subwoofer to obtain the most pleasing results in your room. One technique that can help you find the ideal subwoofer location is to temporarily place the subwoofer near the main listening location. Then move around the room and determine where you hear the most pleasing bass performance. This is the ideal location for the subwoofer.

HKB 4 and HKB 6 Bookshelf Speakers

The HKB 4 and HKB 6 speakers may be placed on a shelf. Place the supplied rubber pads on the bottom of each speaker, one pad at each corner, to protect your furniture and the speakers. These two models also feature a threaded insert capable of accepting OmniMount® wall-mount brackets. Harman Kardon recommends that you select Model 20.0 Wall to safely mount your HKB 4 loudspeakers, and Model 30.0 Wall to safely mount your HKB 6 loudspeakers. DO NOT mount these speakers from the ceiling, as they are not designed for ceiling mounting, and doing so may present a serious danger to personal safety.

The customer is responsible for proper selection and use of mounting hardware, available through hardware stores, to properly and safely wall-mount the speakers.

HKTW 6 Floorstanding Speakers

The HKTW 6 speakers are placed directly on the floor. Each speaker is equipped with a rubber foot at each corner to protect hard-surfaced floors, such as wood or ceramic tile. If you are placing the speakers on a carpeted floor, screw the supplied spiked feet into the threaded inserts in the center of each rubber foot to decouple the speaker from the floor for improved performance.

HKC Center Channel Speaker

The HKC speaker may be placed on a shelf above or below the video display, or on top of the television if there is a sufficient room. Place the supplied rubber pads on the bottom of the speaker, one pad at each corner, to protect your furniture and the speaker.

HKSUB 12 Powered Subwoofer

The HKSUB 12 speaker should be placed directly on the floor. Due to its weight, the HKSUB 12 should not be placed on a shelf, and it should not be mounted on a wall. Make sure to leave adequate space around the amplifier heatsinks for proper ventilation. Place the HKSUB 12 near an active electrical outlet to avoid using an extension cord. See the Safety Information on pages 3 and 4 for more information on proper placement and installation of the HKSUB 12.

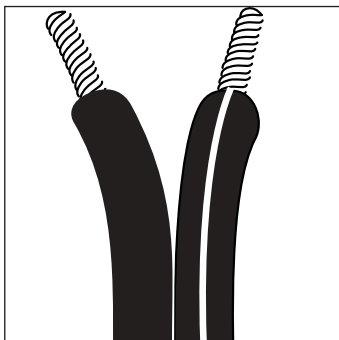
IMPORTANT NOTE: Before making speaker connections, be certain that both the HKSUB 12 and your receiver or audio power amplifier are turned off and unplugged from their AC power sources.

Speaker-Level Connection Guide

Speakers and electronics terminals have corresponding positive (+) and negative (–) terminals. Most manufacturers of speakers and electronics, including Harman Kardon, use red to denote the positive (+) terminal and black, the negative (–) terminal.

Newer Harman Kardon receivers conform to the new CEA standard and therefore use a color other than red or black for the positive (+) terminal to indicate some speaker positions, e.g. surround left.

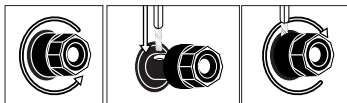
If you are using speaker-level connections for the HKSUB 12, you should connect the HKSUB 12 only to the front left and right speaker terminals on your receiver or amplifier.



Two-conductor speaker wire uses some distinguishing feature, such as a stripe or ridge, to indicate the positive (+) lead. It is important to connect all speakers identically: positive (+) on the speaker to positive (+) on the receiver/amplifier and negative (–) on the speaker to negative (–) on the receiver/amplifier. Wiring "out of phase"

results in thin sound, weak bass and a poor stereo image.

With the advent of multichannel surround sound systems, connecting all of the speakers in your system with the correct polarity remains equally important in order to preserve the proper ambience and directionality of the program material.



To connect your speaker wires to the speaker terminals on your HKL Series speakers, or to the speaker-level terminals on your HKSUB 12 subwoofer, unscrew the binding-post collar until the pass-through hole in the center post is visible under the collar. Insert the bare end of the wire through this hole; then screw the collar down until the connection is tight. The hole in the center of each collar is intended for use with banana-type connectors.

Connection Options

The three alternatives for connecting the HKSUB 12 subwoofer to your system are described on the following pages. The option you choose will depend on the capabilities of your receiver or processor.

- Option 1: If your receiver or processor does not have digital surround sound processing, bass-management programming, or a subwoofer or volume-controlled pre-amp (line-level) output, follow the connection instructions on page 13.
- Option 2: If your receiver or processor does not have digital surround sound processing or bass-management programming, and is equipped with an unfiltered subwoofer output or volume-controlled pre-amp (line-level) output, follow the connection instructions on page 14.

- Option 3: If your receiver or processor has Dolby Digital, DTS or another digital surround decoder and bass-management programming, or if your receiver or processor has a filtered subwoofer output, follow the connection instructions on page 15.

In all three cases, connections for a 7.1-channel system are shown. However, you don't need to connect all eight speakers to your receiver or processor. Typical systems include (2.0) – front left and right speakers only; (2.1) – front left and right speakers and a subwoofer; (3.0) – front left, right and center speakers; (3.1) – front left, right and center speakers and a subwoofer; (5.1) – front left, right and center speakers, surround left and right speakers and a subwoofer; (6.1) – front left, right and center speakers, surround left and right speakers, single surround back speaker and a subwoofer; and (7.1) – front left, right and center speakers, surround left and right speakers, surround back left and right speakers and a subwoofer.

If you are not using a subwoofer, refer to the diagram on page 15, and make only those connections that apply to your system.

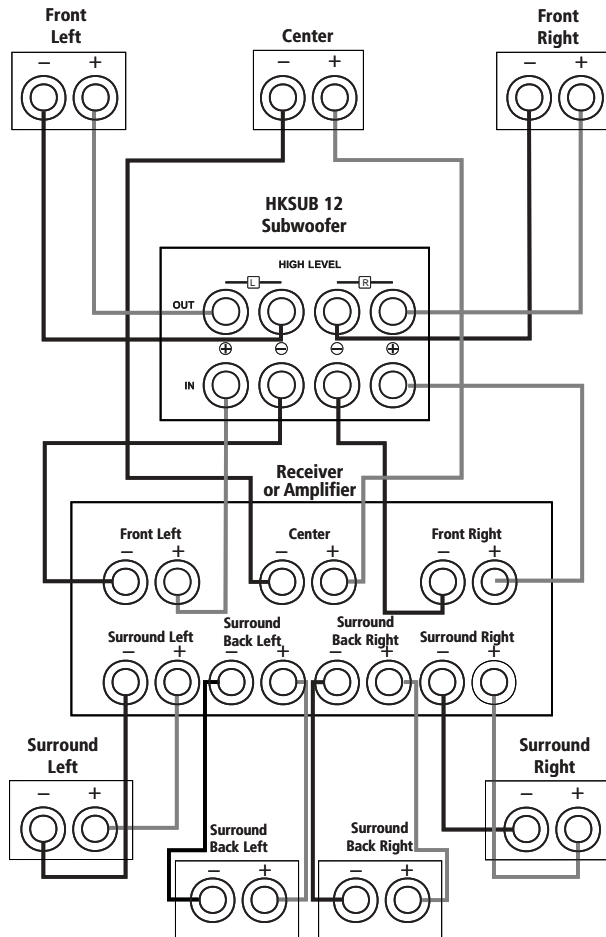
Analog Receiver/Processor – Speaker-Level Connections to HKSUB 12

Use this installation method for analog receivers or processors that do not have digital processing or bass-management programming, and where the receiver/processor does not have a subwoofer output, or a volume-controlled preamp (line-level) output:

Connect your receiver or amplifier's front left and right speaker terminals to the left and right **Speaker-Level Input 1** terminals on the HKSUB 12 subwoofer that are marked "High Level In." Connect the left and right **Speaker-Level Output 2** terminals on the HKSUB 12 subwoofer that are marked "High Level Out" to the corresponding terminals on the back of your front left and right speakers.

Connect your receiver or amplifier's center, surround, and surround back speaker terminals (as applicable) to the corresponding terminals on the back of your center and surround speakers.

When all connections have been made, plug the **AC Power Cord 12** on the subwoofer into an AC outlet.



Analog Receiver/Processor – Line-Level Connections to HKSUB 12

Use this installation method for analog receivers or processors that do not have digital processing or bass-management programming, and where the receiver/processor is equipped with an unfiltered subwoofer output, or a volume-controlled preamp (line-level) output:

Use the interconnect cable supplied with the HKSUB 12 to connect the line-level subwoofer output on your receiver or amplifier to *either* the left *or* right **Line-Level Full-Range Input** ③ on the HKSUB 12 subwoofer. Use both the left and right inputs on the subwoofer if your receiver or processor has both left and right line-level outputs. (You will need to purchase an additional 15-foot interconnect cable.)

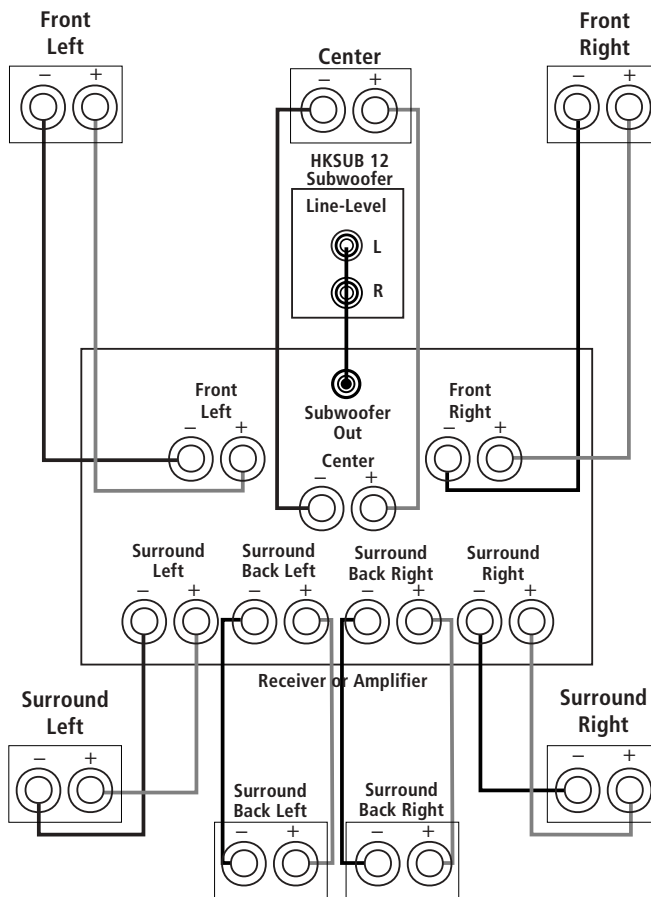
If your receiver is equipped with line-level outputs but does not have a separate subwoofer output, use a Y-adaptor (not supplied) to bridge the receiver's preamp output to the main amp input for that channel, and connect the long end of the adaptor to the corresponding line-level input on the HKSUB 12.

IMPORTANT: Do not use the **SUB Input** ④ on the subwoofer with analog receivers or processors that have a full-range subwoofer output, such as models that have Dolby Pro Logic® surround processing, but not Dolby Digital processing. However, if your analog receiver or processor has a filtered subwoofer output, such as with THX®-certified models, you may connect it to the **SUB Input** ④. Consult your receiver's or processor's owner's manual for more information.

Make sure that you have configured your surround sound processor for "Subwoofer On."

Connect each speaker to the corresponding speaker terminals on your receiver or amplifier.

When all connections have been made, plug the **AC Power Cord** ⑫ on the subwoofer into an AC outlet.



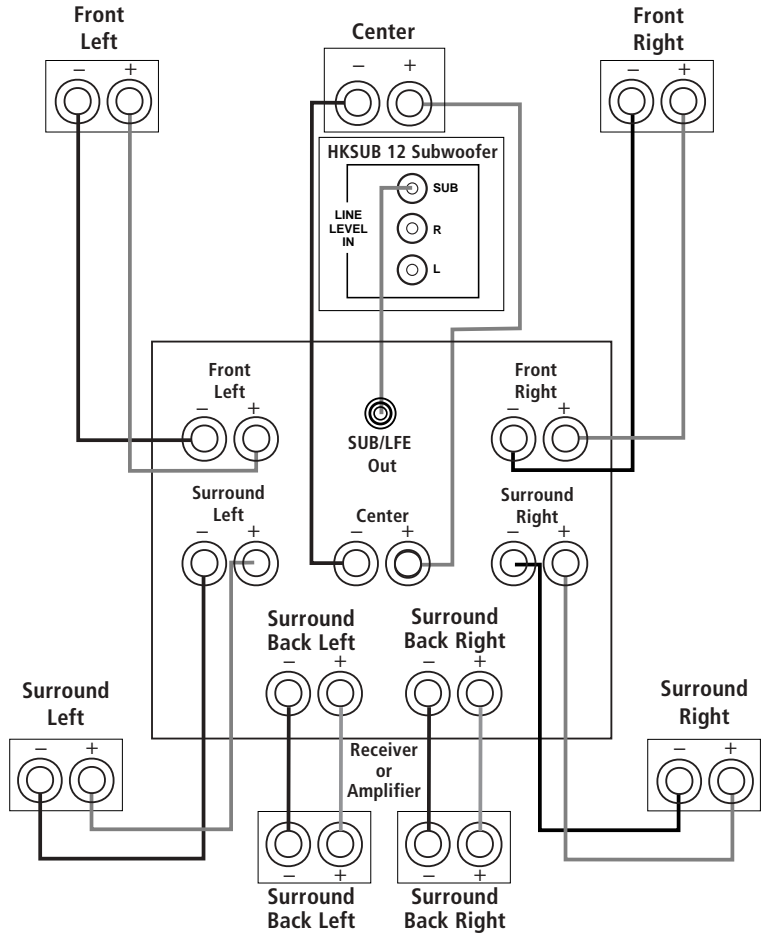
Connection of HKSUB 12 to Digital Receiver/Processor

Use this installation method for receivers or processors that have Dolby Digital, DTS or other digital surround decoders and bass-management programming, or analog receivers or processors that have a filtered subwoofer output:

Use the line-level input jack marked **SUB 4** for the Low-Frequency Effects channel. Connect this jack to the subwoofer output or LFE output on your receiver or amplifier. Connect each speaker to the corresponding speaker terminals on your receiver or amplifier.

Make sure you've configured your surround sound processor for "Subwoofer On."

When all connections have been made, plug the **AC Power Cord 12** on the subwoofer into an AC outlet.



CONFIGURING YOUR RECEIVER OR PROCESSOR

Modern surround sound receivers and processors are sophisticated machines that enable you to tailor the receiver's performance to match your loudspeakers by programming the bass-management function of the receiver. Bass management ensures that the lowest and most powerful frequency signals will be sent only to those loudspeakers capable of reproducing them without distortion. This is a simple matter of selecting the correct speaker "size" on the receiver to match the frequency range of your speakers. For each channel on your receiver or processor, configure the speaker as indicated below, depending on which model you have selected for that position:

HKB 4: **SMALL**

HKB 6: **LARGE**

HKTW 6: **LARGE**

HKC: **SMALL**

If your receiver or processor allows you to specify the crossover frequency for any of the channels, select the lowest option that is *above* the lowest end of the speaker model's frequency response specification (see page 19 for specifications for HKL Series speakers). For example, the frequency response for the HKB 4 speaker is 80Hz – 20kHz (–6dB). The lowest frequency is 80Hz. If your receiver offers you the choice of setting the crossover for that channel at 80Hz, 100Hz or 120Hz, select the 100Hz setting. The higher setting will minimize distortion and provide superior performance.

In the case of the HKSUB 12 subwoofer, it is important to make sure that the Subwoofer channel is enabled by setting it to **ON**, **SUB, LFE** or **L/R + LFE**, depending upon the capabilities of your receiver. If you have full-range speakers for your front left and right channels, you may wish to configure your receiver to send only the LFE signal to the HKSUB 12. For maximum bass performance, you may prefer to send both the L/R and LFE low-frequency signals to the HKSUB 12. Consult the owner's manual for your receiver or processor for additional information.

Power

Press the **Master Power Switch 11** (marked **Power**) at the “•” (On) marking. The HKSUB 12 subwoofer will automatically turn on or go into Standby mode, depending on whether or not a signal is being sent to it by your receiver or surround processor, and provided that the **Music-Sense On/Off Switch 6** is moved to the left so that it is in the **AUTO** position.

When your receiver or amplifier is off, or is not sending program material to the subwoofer, the subwoofer will be in Standby mode and the **LED Indicator 7** on the amp panel will turn red. When the subwoofer senses an audio signal, it will automatically turn on and the **LED Indicator 7** will turn green. If the subwoofer does not sense a signal after approximately fifteen minutes, it will automatically go into Standby mode.

When the **Music-Sense On/Off Switch 6** is switched to the **ON** position, the subwoofer will remain on, whether or not program material is playing.

When you are away from home for an extended period of time, switch the **Master Power Switch 11** to the **OFF** position to prevent accidental activation of the HKSUB 12.

Volume

Volume may be adjusted using the **Subwoofer Level Control 10**, as shown. Turn the control knob clockwise to increase the volume of the subwoofer, and counterclockwise to decrease the subwoofer's volume.



The **Subwoofer Level Control 10** adjusts the volume of the subwoofer relative to the rest of the system. Proper level adjustment depends on several variables such as room size, subwoofer placement, type of main speakers and listener position. Adjust the subwoofer level so that the volume of the bass information is pleasing to you.

Additional Bass Adjustments

In addition to the volume adjustments described above, the HKSUB 12 subwoofer includes a **Crossover Frequency Control 9**, a **Filter Switch 8** and a **Phase Switch 5** that can be used to adjust the bass response to suit your listening environment or taste.

The **Crossover Frequency Control 9** determines the highest frequency at which the subwoofer reproduces sounds when the **Speaker-Level Inputs 1** or **Line-Level Full-Range Inputs 3** are used. Consult the specifications for your main speakers on page 19 to determine the lowest frequency they are capable of reproducing, and set this control slightly above that frequency. For example, if the specified frequency response for your HKB 4 main speakers is 80Hz – 20kHz, then set the **Crossover Frequency Control 9** slightly to the left of the **100Hz** marking on the HKSUB 12's amplifier panel.

The **Crossover Frequency Control 9** has no effect when the **SUB Input 4** is in use, or when the **High-Cut (Low-Pass) Filter Switch 8** is in the **OFF** position.

The **High-Cut (Low-Pass) Filter Switch 8** limits the frequencies of the audio signal inputted to the subwoofer to the low

frequencies that the subwoofer reproduces best. This allows the subwoofer to perform more efficiently and with superior bass reproduction, minimizing distortion that might occur if the subwoofer attempted to reproduce higher frequencies. This switch should be left in the **ON** position, **except**:

1. When the **SUB Input 4** is being used, in which case it has no effect, or
2. When the **Speaker-Level Inputs 1** or the **Line-Level Full-Range Inputs 3** are being used with a crossover or filter aboard the receiver or processor.

In these two circumstances, place the switch in the **OFF** position.

If your receiver or processor allows you to select the crossover frequency for the main speakers, choose the setting just above the lowest frequency the main speakers are capable of reproducing. This will send the low-frequency portion of the signal to your HKSUB 12, which is best able to reproduce these frequencies with greatest efficiency and minimal distortion. In this case, you may use the **SUB Input 4** connection, or if that is not compatible with your receiver or processor, place the **High-Cut (Low-Pass) Filter Switch 8** in the **OFF** position in order to avoid filtering the signal twice, which may lead to signal loss and distortion.

In most situations, the **Phase Switch 5** should be left in the **NORMAL** position. If you suspect that the subwoofer is playing out of phase with the other speakers, which would tend to diminish bass response, try placing this switch in the **REVERSE** position. There is no harm in experimenting, and you may return the switch to the **NORMAL** position at any time.

If you rearrange your room and reposition the speakers, it would be a good idea to check whether they are in phase by flipping this switch.

TROUBLESHOOTING

SYMPTOM

SOLUTION

If there is no sound from any of the speakers:

- Check that receiver/amplifier is on and a source is playing.
- Check all wires and connections between receiver/amplifier and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut, punctured or touching other wires or terminals, which may cause a short.
- If you used the **Speaker-Level Inputs 1** on the HKSUB 12, check that the HKSUB 12 is plugged into an active electrical outlet and is switched on using the **Master Power Switch 11**.
- Review proper operation of your receiver/amplifier.

If there is no sound coming from one speaker:

- Check the "Balance" control on your receiver/amplifier.
- Check all wires and connections between receiver/amplifier and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut, punctured or touching other wires or terminals, which may cause a short.
- In Dolby* Digital or DTS* modes, make sure that the receiver/processor is configured so that the speaker in question is enabled.
- Turn off all electronics and switch the speaker in question with one of the other speakers that is working correctly. Turn everything back on, and determine whether the speaker is still not working, or whether it is working now and the speaker that was working correctly prior to the swap is now not working. If the previously working speaker is now not working while the previously nonworking speaker is now working, then the source of the problem is most likely with your receiver or amplifier, and you should consult the owner's manual for that product for further information. If the same speaker continues not to work correctly, then consult your dealer for further assistance, or, if that is not possible, visit our Web site at www.harmankardon.com for further information.

If there is no sound from the center speaker:

- Check all wires and connections between receiver/amplifier and speaker. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut, punctured or touching other wires or terminals, which may cause a short.
- If your receiver/processor is set in Dolby* Pro Logic* mode, make sure the center speaker is not in phantom mode.
- If your receiver/processor is set in one of the Dolby Digital or DTS* modes, make sure the receiver/processor is configured so that the center speaker is enabled.

If the system plays at low volumes but shuts off as volume is increased:

- Check all wires and connections between receiver/amplifier and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut, punctured or touching other wires or terminals, which may cause a short.
- If more than one pair of main speakers is being used, check the minimum impedance requirements of your receiver/amplifier.

If there is low (or no) bass output:

- Make sure that all speakers have been correctly connected in phase, with the (+) terminal on the speaker connected to the (+) terminal on the receiver/amplifier, and the (-) terminal on the speaker to the (-) terminal on the receiver/amplifier. See page 12 for further information.
- Try reprogramming your receiver's/processor's bass-management settings from **SMALL** to **LARGE**.
- **When using the HKSUB 12:**
 - Check that the HKSUB 12 is plugged into an active electrical outlet and is switched on using the **Master Power Switch 11**.
 - Slowly turn the **Subwoofer Level Control 10** clockwise until you begin to hear the desired amount of bass.
 - If you are using either the **Line-Level Full-Range Inputs 3** or the **Line-Level Subwoofer (SUB) Input 4**, make sure you have properly configured your receiver or processor to enable its subwoofer output.
 - If you are using the **Line-Level Full-Range Inputs 3**, try adjusting the crossover setting using the **Crossover Frequency Control 9**.
 - If you are using either the **Speaker-Level Inputs 1** or the **Line-Level Full-Range Inputs 3** with a full-range output from your receiver or processor, switch the **High-Cut (Low-Pass) Filter Switch 8** to the **ON** position.
 - Switch the **Phase Switch 5** from the **NORMAL** to the **REVERSE** position, or vice versa.
 - Review proper operation of your receiver or processor and amplifier.

If there is no sound from the surround speakers:

- Check all wires and connections between receiver/amplifier and speakers. Make sure all wires are connected. Make sure none of the speaker wires are frayed, cut, punctured or touching other wires or terminals, which may cause a short.
- Review proper operation of your receiver/processor and its surround sound features.
- Make sure the movie or TV show you are watching is recorded in a surround sound mode. If it is not, check to see whether your receiver/processor has other surround modes you may use, such as Logic 7.*
- In Dolby* Digital or DTS* modes, make sure your receiver/processor is configured so that the surround speakers are enabled.
- Review the operation of your DVD player and the jacket of your DVD to make sure that the DVD features the desired Dolby Digital or DTS mode, and that you have properly selected that mode using both the DVD player's menu and the DVD disc's menu.

Model	HKB 4	HKB 6	HKTW 6	HKC
Description	2-Way, 4-inch bookshelf	2-Way, 6-inch bookshelf	2-Way, 6-inch floorstanding	2-Way, dual 5-inch center
Maximum Recommended Amplifier Power**	110 Watts	150 Watts	150 Watts	125 Watts
Nominal Impedance	8 Ohms	8 Ohms	8 Ohms	8 Ohms
Sensitivity (2.83V/1m)	88dB	89dB	89dB	91dB
Frequency Response (-6dB)	80Hz – 20kHz	55Hz – 20kHz	48Hz – 20kHz	80Hz – 20kHz
Crossover Frequency	3400Hz	2800Hz	2800Hz	3000Hz
High-Frequency Transducer	3/4" Titanium-laminate dome, shielded	3/4" Titanium-laminate dome, shielded	3/4" Titanium-laminate dome, shielded	3/4" Titanium-laminate dome, shielded
Low-Frequency Transducer	4" Polymer-coated cone, shielded	6" Polymer-coated cone, shielded	6" Polymer-coated cone, shielded	Dual 5" Polymer-coated cones, shielded
Enclosure	Bass reflex	Bass reflex	Bass reflex	Bass reflex
Terminals	5-Way binding posts	5-Way binding posts	5-Way binding posts	5-Way binding posts
Dimensions (H x W x D)	10-1/2" x 6-1/2" x 8" (267mm x 165mm x 203mm)	15" x 8-1/2" x 9-1/4" (381mm x 216mm x 235mm)	34-1/2" x 8-1/2" x 10" (876mm x 216mm x 254mm)	6-1/2" x 17" x 7-1/2" (165mm x 432mm x 191mm)
Weight	9.6 lb/4.4kg	15.9 lb/7.2kg	28.4 lb/12.9kg	14.8 lb/6.7kg

**The maximum recommended amplifier power rating will ensure proper system headroom to allow for occasional peaks. We do not recommend sustained operation at these maximum power levels.

SPECIFICATIONS

Model	HKSUB 12
Description	Powered subwoofer
Amplifier Power (RMS)	150 Watts
Driver	12" Polymer-coated-cone woofer
Inputs	Stereo Line Level, dedicated Subwoofer (LFE) and Speaker Level with gold-plated 5-way binding posts
Outputs	Speaker Level with gold-plated 5-way binding posts
Low-Pass Frequency	Continuously variable from 50Hz – 150Hz
Frequency Response	25Hz – low-pass crossover setting
Dimensions (H x W x D)	20-1/2" x 16" x 13-3/4" (520mm x 401mm x 350mm)
Weight	49 lb/22kg

All features and specifications are subject to change without notice.

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