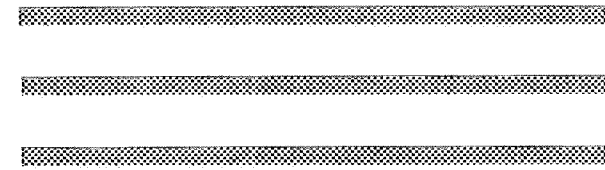
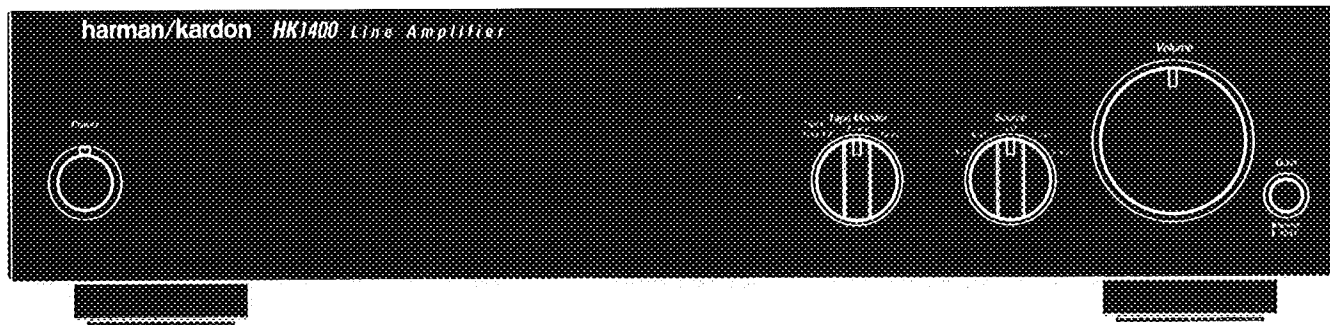


HK1400/HK1200



 **harman/kardon**

Stereo Line Amplifier

OWNER'S MANUAL



HK1400/HK1200 STEREO LINE AMPLIFIER

Congratulations on your choice of the Harman Kardon HK1400/HK1200 Stereo Line Amplifier.

In order to obtain the best performance from this line amplifier, please be sure to read this owner's manual and use the HK1400/HK1200 only in accordance with its instructions.

The special features of these units include:

Higher Fidelity through Simplicity

The HK1400/HK1200 are an extreme expression of higher fidelity through attention to the basics of amplifier design and construction. All of the key elements that produce sound have been meticulously designed to have the lowest noise and distortion, widest bandwidth and highest isolation of any product of its kind. All of the features that are rarely used and tend to complicate the audio signal path have been deliberately left out. The resulting performance is a unique combination of exceptional sound quality and value.

HCC (High Instantaneous Current Capability)

Recent studies have shown that while reproducing dynamic music signals the instantaneous impedances of nearly all loud-speakers drop to less than one third of the nominal ratings. These low instantaneous impedances typically require 3 to 6 times more current than an 8 Ohm resistive load. Reduced dynamic range and increased distortion will result if the amplifier cannot provide these higher currents. For this reason, the HK1400 and HK1200 were designed to provide respectively 45 and 30 amperes of instantaneous current.

Ultrawide Bandwidth

The bandwidth of this unit is exceptionally wide and is independent of negative feedback. This improves transient accuracy and phase linearity.

Low Negative Feedback

This unit has been designed to have low distortion and wide bandwidth without high negative feedback. This further improves its dynamic accuracy.

Discrete Component Circuitry

In order to achieve the above goals, all discrete electronic circuitry has been employed. No available integrated circuits could provide this high level of performance.

Sophisticated Electronic Protection

Harman Kardon engineers developed a unique protection system that permits high instantaneous current to be driven into speaker systems but protects the amplifier from short-circuited or damaged speakers and wires. This protection system in no way limits amplifier output voltage or current during music reproduction, and therefore has no negative effect on sound quality.

GENERAL INSTRUCTIONS

Always Use at 120V AC

This unit is designed for operation with 120V AC. Use only domestic AC outlets. Never connect the unit to an outlet supplying a higher voltage. This may create a fire hazard.

(For 230-240 Volt units only)

This unit is supplied with a voltage selector enabling selection between 230V and 240V on the rear panel. If the selector is not set to the local voltage, set the selector to the correct voltage with a screwdriver before connecting the power cord to a mains outlet.

AC Convenience Receptacles

This unit is provided with three AC convenience receptacles on the rear panel for supplying power to a tuner, tape deck or other low power component. The SWITCHED receptacles have a combined power capacity of 180 Watts. The UN-SWITCHED receptacle has a power capacity of 180 Watts. Check the component's owner's manual to find its power requirement.

SWITCHED: The power to these receptacles is turned on and off by this unit's power switch.

UNSWITCHED: The power to this receptacle is independent of this unit's power switch.

Handle the Power Cord Gently

Do not disconnect the plug from the AC outlet by pulling the cord; always pull the plug itself. Pulling the cord may damage it.

If you do not intend to use your unit for any considerable length of time, disconnect the plug from the AC outlet. Do not place furniture or other heavy objects on the cord, and try to avoid dropping heavy objects upon it. Also do not make a knot in the power cord. Not only may the cord be damaged, it can also cause a short circuit with a consequent fire hazard.

Place of Installation

Place the unit on a firm and level surface. Avoid installing your unit under the following conditions:

- Moist or humid places.
- Places exposed to direct sunlight or close to heating equipment.
- Extremely cold locations.
- Places subject to excessive vibration or dust.
- Poorly ventilated places.

Do not obstruct the ventilation slots on the top surface of the unit by placing objects over them.

Otherwise, the temperature inside the unit may rise, possibly affecting its long-term reliability.

In Case of Moving the Unit

Before moving the unit, be sure to pull out the power cord from the AC outlet and disconnect the interconnection cords with other units.

Do Not Open the Cabinet

To prevent shock hazard, do not tamper with internal components for inspection or maintenance. Harman Kardon does not guarantee against performance degradation resulting from any modification. If water, a hairpin or wire accidentally enters the unit, immediately extract the plug from the AC outlet to prevent shock and consult an authorized Harman Kardon service station. If you use the unit under this condition, it may cause a fire or shock hazard.


Cleaning

If the unit gets dirty, wipe it with a soft dry cloth. If necessary, wipe it with a soft cloth dampened with mild soapy water and then with a dry cloth.

Never use benzene, thinner, alcohol or other volatile agent, and avoid spraying an insecticide near the unit.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



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.

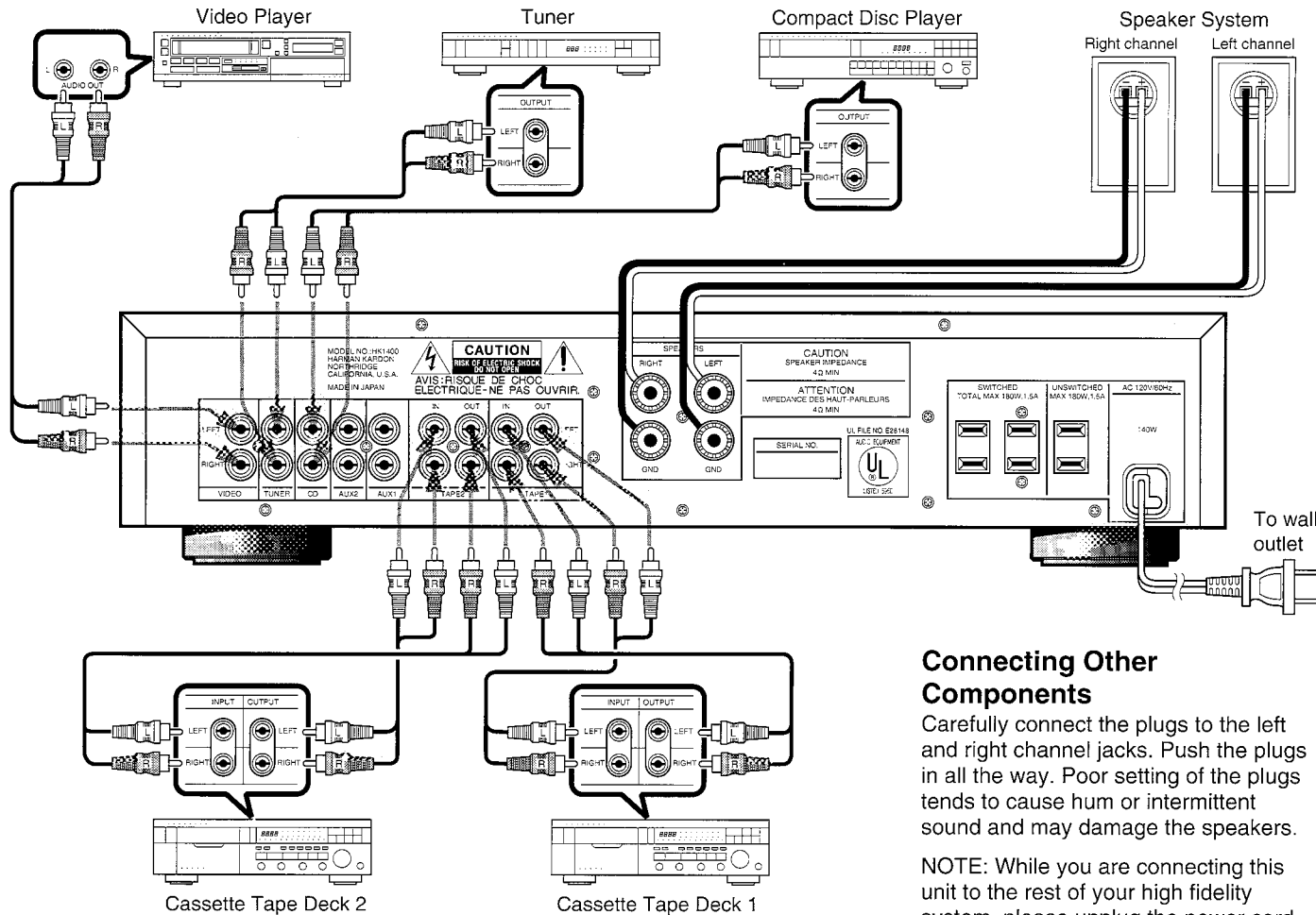


The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION: POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

CONNECTIONS



disconnecting not only this unit but all the components, from the AC outlet. Do not interwind the connection wires with the power cord. If interwound, the sound quality may be degraded.

Connecting the Speakers

CAUTION: The rated impedance of the speakers to be connected should be in the range of 4 to 16 ohms. Connect the speaker wires carefully to the SPEAKER terminals so as not to mistake the left and right channels or reverse the speaker polarities (+ and -). Use sufficiently thick wire (16 gauge minimum) with low electrical resistance. It is recommended that color-coded wires be used for easy determination of polarities. Speaker wires should be as short as possible, and the left and the right channel wires should have the same length.

Connect as follows:

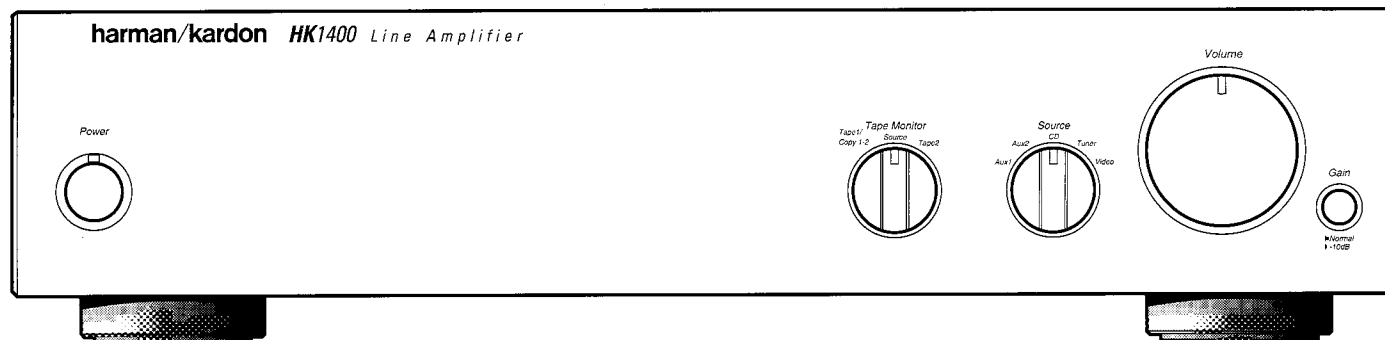
1. Remove about 3/4 inch (20 mm) of insulation from the end of each wire and twist the strands of each conductor.
2. After making sure of the correct channel and polarity, loosen the SPEAKER terminal knob and insert the conductor directly into the recess at the upper-left of the terminal. Then tighten the terminal knob, and the end of speaker wire is automatically wound around the terminal.

Connecting Other Components

Carefully connect the plugs to the left and right channel jacks. Push the plugs in all the way. Poor setting of the plugs tends to cause hum or intermittent sound and may damage the speakers.

NOTE: While you are connecting this unit to the rest of your high fidelity system, please unplug the power cord,

CONTROLS and FUNCTIONS



(NOTE: HK1200 features are the same)

Power Switch

Pressing this switch will turn on the power and the POWER indicator lights up. Press the switch again to turn the power off.

Power Indicator

When the POWER switch is pressed, this indicator lights up in green.

Tape Monitor Selector

This selector is used when playing a tape deck, or monitoring during recording.

Tape 1/Copy 1→2: Select this position to play a tape or to monitor the recording on the tape deck connected to the TAPE 1 jacks. This is also the position to use to copy a tape from Tape 1 to Tape 2.

Source: Select this position to listen to a program source other than a tape.

Tape 2: Select this position to play a tape, or to monitor during recording on the tape deck connected to the TAPE 2 jacks.

Source Selector

This selector is used to select a program source other than a tape.

Aux 1: Select this position to listen to a source connected to the AUX 1 jacks.

Aux 2: Select this position to listen to a source connected to the AUX 2 jacks.

CD: Select this position to listen to a CD player connected to the CD jacks.

Tuner: Select this position to listen to a Tuner connected to the TUNER jacks.

Video: Select this position to listen to the sound of a TV, VCR or Laserdisc player connected to the VIDEO jacks.

Volume Control

This knob controls the sound level. Turning clockwise increases the sound volume, and turning counterclockwise decreases it. Set this control at a minimum level before turning the power on, changing the sound source or changing the GAIN switch to protect the speakers from being damaged by a sudden high level sound.

Gain Switch

The GAIN Switch changes both the input sensitivity (amount of amplification) and the input overload level of the preamplifier circuitry. The "Normal" position provides an input sensitivity that is typical of other high quality integrated amplifiers and preamplifiers. This mode has an input overload level of 2.5 Volts, which is high enough to use with nearly any high fidelity source. The "-10dB" position both decreases the input sensitivity and increases the input overload level by 10dB (approximately 3 times). This allows very strong input signals to be amplified without distortion. It also provides a wider dynamic range. Some listeners may prefer this position for listening to CD players, for example.

OPERATING INSTRUCTIONS

Listening to Radio Broadcasts

1. Turn the VOLUME control to the minimum level and press the POWER switch. The power indicator lights up.
2. Set the SOURCE selector to the Tuner position.
3. Set the TAPE MONITOR selector to the Source position.
4. Activate the tuner and tune to broadcast frequency.
5. When the desired station is selected, advance the VOLUME control to a comfortable level.

Listening to a Compact Disc

1. Turn the VOLUME control to the minimum level and press the POWER switch. The power indicator lights up.
2. Set the SOURCE selector to the CD position.
3. Set the TAPE MONITOR selector to the Source position.
4. Activate the compact disc player and set the player in the play mode.
5. Advance the VOLUME control to a comfortable level.

Listening to the Video or Aux Input Source

To listen to a video component, TV tuner or other auxiliary component:

1. Turn the VOLUME control to the minimum level and press the POWER switch. The power indicator lights up.
2. Set the SOURCE selector to the Video, Aux 1 or Aux 2 position.
3. Set the TAPE MONITOR selector to the Source position.
4. Activate the component connected to the selected jacks.
5. Advance the VOLUME control to a comfortable level.

Tape Playback

1. Turn the VOLUME control to the minimum level and press the POWER switch. The power indicator lights up.
2. Set the TAPE MONITOR selector to the Tape 1/Copy 1→2 or Tape 2 position corresponding to the tape deck to be played.
3. Insert a recorded tape in the tape deck and set the tape deck in the playback mode.
4. Advance the VOLUME control to a comfortable level.

Tape Recording

Recording from a program source (FM/AM broadcast, compact disc player or components connected to the VIDEO or AUX jacks) on a tape deck connected to the TAPE 1 and/or TAPE 2 jacks:

1. Turn the VOLUME control to the minimum level and press the POWER switch. The power indicator lights up.
2. Select the desired program source with the SOURCE selector.
3. Set the TAPE MONITOR selector to the Source position.
4. Advance the VOLUME control to a comfortable level.
5. Start recording by activating the tape deck(s) connected to the TAPE 1 and/or TAPE 2 jacks. The source sound can be listened to from the speakers or headphone.
6. To monitor the sound being recorded, set the TAPE MONITOR selector to the Tape 1/Copy 1→2 or Tape 2 position according to the tape deck that you wish to monitor.

NOTE: The record output signal is carried directly from the program source without being influenced by the volume control or GAIN switch.

Tape Dubbing

Two tape decks can be connected to this unit and dubbing can be done from the tape in the tape deck connected to the TAPE 1 jacks onto the tape in the tape deck connected to the TAPE 2 jacks.

1. Turn the VOLUME control to the minimum level and press the POWER switch. The power indicator lights up.
2. Set the TAPE MONITOR selector to the Tape 1/Copy 1→2 position.
3. After setting the tape deck connected to the TAPE 1 jacks for playback, and the tape deck connected to the TAPE 2 jacks for recording, dubbing will begin.

NOTE: To monitor the sound being recorded, use headphones connected to the phone jack of tape deck connected to the TAPE 2 jacks.

TROUBLESHOOTING

This unit is designed for trouble-free operation; most problems users encounter are due to operating errors. So if you have a problem, first check this list for a possible solution. If the problem persists, consult your authorized Harman Kardon service center.

Problem	Probable Cause	Remedy
The Power indicator does not light up when the POWER switch is pressed.	<ul style="list-style-type: none"> ■ The power cord is not plugged in. 	<ul style="list-style-type: none"> ■ Plug in the power cord securely.
The Power indicator lights up, but no sound is heard.	<ul style="list-style-type: none"> ■ The TAPE MONITOR selector is in the Tape 1/Copy1→2 or Tape 2 position. ■ The SOURCE selection was not made properly. ■ The speaker wires are disconnected or broken. 	<ul style="list-style-type: none"> ■ Set the TAPE MONITOR selector to the Source position. ■ Set the SOURCE selector to the proper position for the desired program source. ■ Check the speaker wires and connect them correctly.
Sound is not heard from the speaker system on one side.	<ul style="list-style-type: none"> ■ The connection of speaker wires is incorrect or incomplete. ■ The connection wires to other equipment are disconnected. 	<ul style="list-style-type: none"> ■ Check the speaker wires for disconnection or breaking and reconnect them correctly. ■ Check the wires for disconnection and connect them correctly.
When listening to stereo sound, the left and right sounds are reversed.	<ul style="list-style-type: none"> ■ The left and right speaker wires are reversed. ■ The left and right wires connected to other equipment are reversed. 	<ul style="list-style-type: none"> ■ Check the speaker wires and connect them correctly. ■ Check the wires to other equipment and connect them correctly.
Sound quality is poor.	<ul style="list-style-type: none"> ■ Input components have not been set up correctly. ■ Sound is distorted due to input overloading by a high level source. 	<ul style="list-style-type: none"> ■ Check the antenna of the tuner or head of the tape deck, etc. and make corrections as needed. ■ Set the GAIN switch to the “-10dB” position.

Warranty and After-sale Service (USA Customers Only)

- Please find the warranty card enclosed with this unit when you purchased it.
- After filling in the required items and reading the contents of the warranty card, keep it in a safe place.
- The warranty term is two years after date of purchase.

- If this unit does not appear to operate normally, read this manual following the instructions carefully and operate the unit again.
- If a problem persists even though you have done according to the manual, consult your authorized Harman Kardon service station.
- Repair within the warranty term is made according to the conditions specified in the warranty card.

HK1400/HK1200 SPECIFICATIONS

		<u>HK1400</u>	<u>HK1200</u>
Continuours Average Power Per Channel (FTC), from 20Hz to 20kHz, Both Channels Driven	8 Ohms:	40 Watts @ < 0.09% THD	25 Watts @ < 0.09% THD
	4 Ohms:	60 Watts @ < 0.3% THD	40 Watts @ < 0.3% THD
Dynamic Power (IHF, 1kHz tone burst)	8 Ohms:	45 Watts	35 Watts
	4 Ohms:	75 Watts	55 Watts
	2 Ohms:	105 Watts	70 Watts
DIN Power (1kHz, 1% THD, 4 Ohms):		78 Watts	48 Watts
High Instantaneous Current Capability (HCC):		± 45 Amperes	± 30 Amperes
Negative Feedback:		12dB	12dB
Power Bandwidth @ half-rated output, 8 Ohms:		< 10Hz - >100kHz	< 10Hz - >100kHz
Frequency Response @ 1Watt (+0/-3dB):		0.3Hz - 250kHz	0.3Hz - 250kHz
Slew Rate*:		130 Volts/μSec	100 Volts/μSec
Rise Time:		1.2 μSec	1.2 μSec
Transient Intermodulation Distortion (TIM):		unmeasureable	unmeasureable
Damping Factor:		80	55
Signal-to-Noise Ratio (ref rated power, A-Wtd):		110dB	110dB
Input Sensitivity (for rated power)	Normal:	135mV	135mV
	-10dB:	425mV	425mV
Input Impedance:		33kOhms	33kOhms
Input Overload Level (RMS)	Normal:	2.5 Volts	2.5 Volts
	-10dB:	7.8 Volts	7.8 Volts
Dimensions (W × H × D)	inches:	17.4 × 4.1 × 13.7	17.4 × 4.1 × 13.7
	mm:	443 × 105 × 347	443 × 105 × 347
Weight	lbs:	18.3	15.0
	kgs:	8.3	6.8

Depth measurement includes buttons and terminals.
Height measurement includes chassis feet.

*Measured without input anti-slewing and output isolation networks.
All features and specifications are subject to change without notice.

harman/kardon

Service and Parts Office
240 Crossways Park West, Woodbury, New York 11797 (516) 496-3406
8380 Balboa Boulevard, Northridge, CA 91325

H A Harman International Company