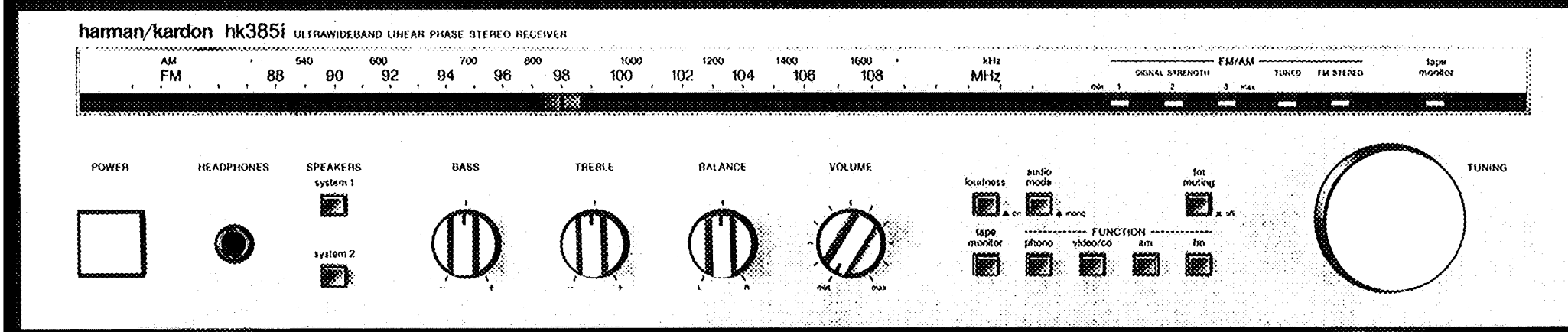
owner's manual

harman/kardon
ULTRAWIDEBAND
LINEAR PHASE
STEREO RECEIVER

hk385i



SPECIFICATIONS

Congratulations on your purchase of the Harman Kardon hk385i Ultrawideband Linear Phase Stereo Receiver.

In order to appreciate the full performance of this sophisticated unit, please be sure to read this owner's manual and use your receiver only in accordance with its instructions. Keep it in a safe place for future reference.

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.

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.

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

AUDIO

Power Output, RMS (both channels driven into 8 Ohms, 20—20,000Hz)	: 30 watts per channel @ less than 0.09% THD
HCC (high instantaneous current capability)	: 15A
Power Bandwidth (at half rated output into 8 Ohms)	: 10Hz to 60,000Hz
Frequency Response (+0, −3dB)	: 0.5Hz to 150,000Hz
Signal-to-Noise Ratio, IHF-A WTD (reference 1W output)	
Phono	: 80dB
Video/CD, Tape	: 85dB
Input Sensitivity/Impedance	
Phono	: 2.2mV/47k Ohms and 125pF
Video/CD, Tape	: 135mV/22k Ohms
Phono Overload, MM	: 185mV
Tone Control Characteristics	
Bass Boost/Cut (at 50Hz)	: +10dB/−10dB
Treble Boost/Cut (at 10kHz)	: +10dB/−10dB
Loudness Control (−40dB) at 50Hz/at 10kHz	: 10dB/3dB
Subsonic Filter	: 15Hz, 6dB/Octave

TUNER

FM Section

Usable Sensitivity (Mono)	: 11.2dBf (1μV-75 Ohms)
50dB Quieting Sensitivity (Mono)	: 16.8dBf (1.9μV-75 Ohms)
Signal-to-Noise Ratio (Stereo)	: 74dB
Alternate Channel Selectivity	: 60dB
Stereo Separation (1kHz, 65dBf, 100% modulation)	: 45dB
T.H.D. (1kHz, 65dBf)	
Mono	: 0.08%
Stereo	: 0.12%

AM Section

External Antenna Sensitivity	: 15μV
Alternate Channel Selectivity	: 45dB

GENERAL

Dimensions (W x H x D)	: 17-1/2" x 4-1/16" x 14-1/2" (443 x 103 x 368 mm)
Weight	: 13lbs.14oz. (6.3kg)
Power Supply	: AC 120V, 60Hz
Power Consumption	: 165W

All specifications and features subject to change without notice.

■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 hk385i was designed to provide 15 amperes of instantaneous current.

■Ultrawide Bandwidth

The bandwidth of this unit is exceptionally wide and 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. All available integrated circuits could not provide this high level of performance.

■Active/Passive Phono Section

Unique circuitry provides precise passive RIAA equalization (without negative feedback). Then the same low level of negative feedback is applied at all frequencies from 20Hz—20kHz, resulting in improved transient accuracy.

■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.

■Constructed for Audio Purity

The internal wiring, layout and materials have been chosen to minimize noise, hum and interaction of the various circuits.

Always Use at 120V AC

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

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 break the wire.
- 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 avoid dropping heavy objects on 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 and a consequent fire hazard.

Place of Installation

Place your 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 such as those in the direct draft from an air conditioner.
- ▶Places subject to excessive vibration or dust.
- ▶Poorly ventilated places.

Do not cover the ventilation slots on the top of the unit. This will cause the temperature inside the unit to rise, which can eventually effect the reliability of your unit.

Moving the Unit

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

Do Not Open the Cabinet

To prevent fire or 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 unplug the power cord 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

When 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 wipe with a dry cloth.

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

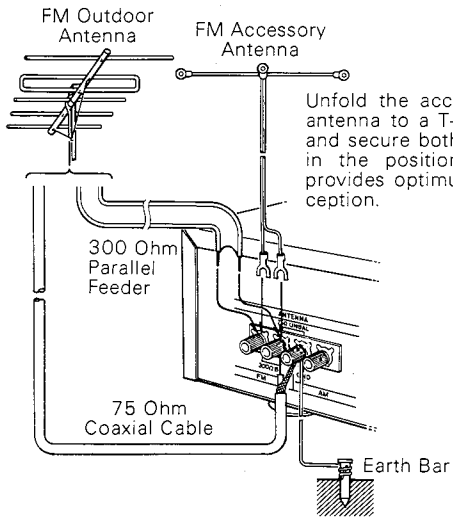
ANTENNAS

FM Antenna

If experiencing poor FM reception while using the accessory antenna, the use of an outdoor antenna exclusively for FM reception is likely to improve FM reception.

The connecting wire between the antenna and the antenna input terminal is called a feeder. Most feeders are 300 Ohm parallel or 75 Ohm coaxial cables. We recommend type 3C-2V or 5C-2V 75 Ohm coaxial cable to be used with this unit to enable it to perform to its fullest capacity. The coaxial cable has a stronger resistance against loss and interference compared to a parallel feeder.

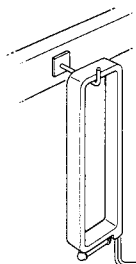
If there is a lot of noise while receiving an FM broadcast, we recommend that you make a ground connection. Connect one end of a thick wire to the antenna GND terminal and wind the other end around an earth bar or earth plate and drive it into the ground.



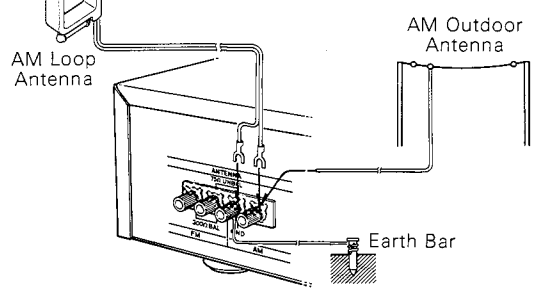
CAUTION: Never make a connection to a gas pipe because it can cause fire hazard.

AM Antenna

The AM loop antenna attached to this unit allows sufficient reception, except in an area where AM signals are weak. In a fringe area or inside a concrete building where the reception is weak and the sound quality is poor, an outdoor AM antenna is likely to improve reception.



Place the AM loop antenna as far away from this unit as possible, e.g. hang it on wall, without touching a metal object. You may also install the AM loop antenna by fitting it onto the antenna holder on the rear panel. To remove the AM loop antenna from the unit, simply pull it out of the holder.



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, 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.

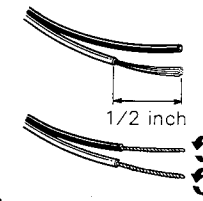
The AC convenience receptacle (SWITCHED) on the rear panel can be used for supplying power to a turntable, tape deck or other low power component. The power capacity is 180 watts. Check the component's owner's manual to find its power requirement. This receptacle is turned on and off by this unit's power switch.

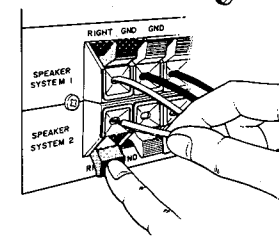
Connecting Speakers

Connect the speaker wires carefully to the speaker terminals on the rear panel so as not to mistake the left and the right channels or reverse the speaker polarities (+ and —).

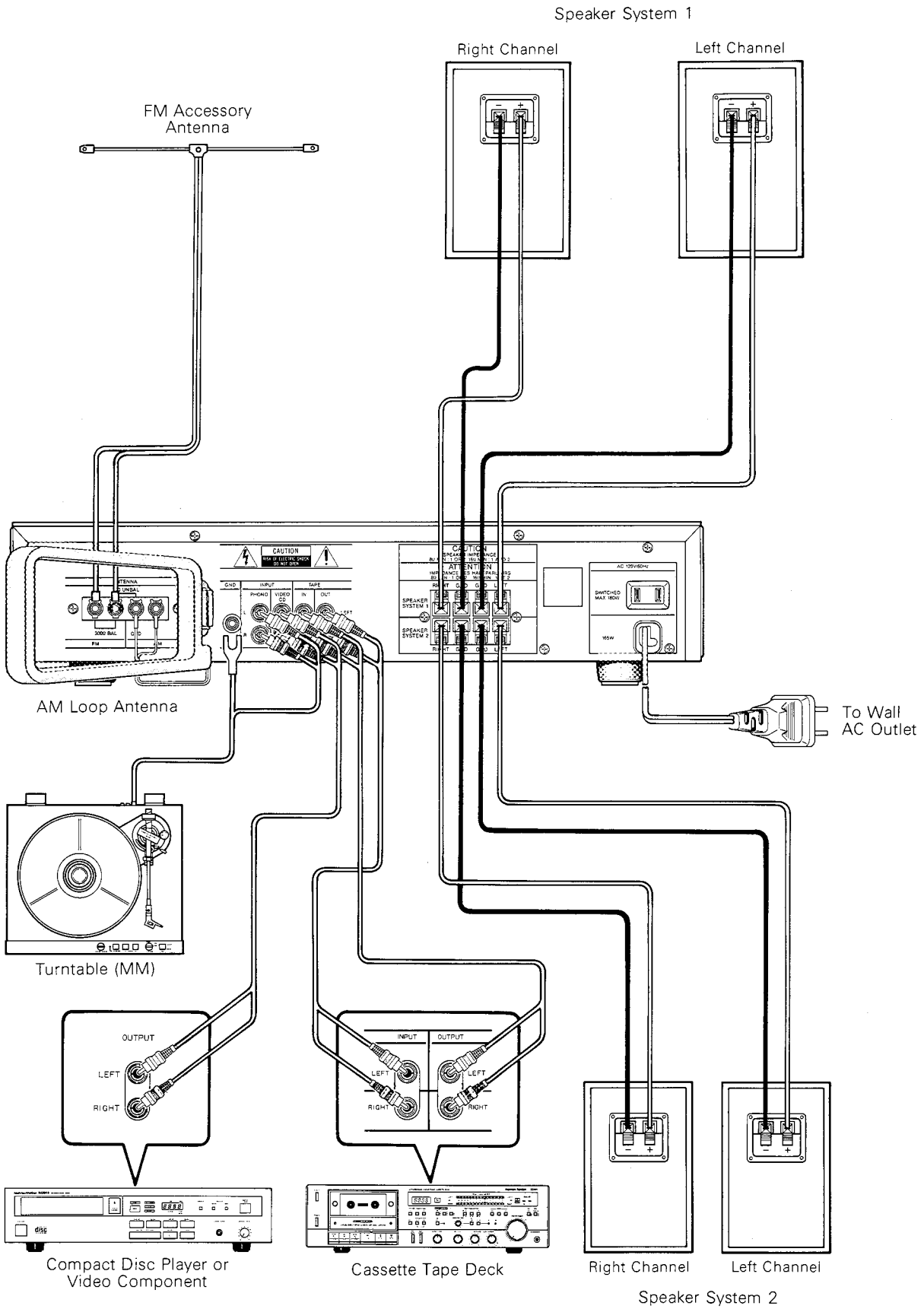
Use sufficiently thick wire (18 gauge for short lengths, 16~12 gauge for longer lengths). It is recommended to use color-coded wire for easy polarity identification. Speaker wires should be as short as possible, and the left and the right channel wires should be the same length.

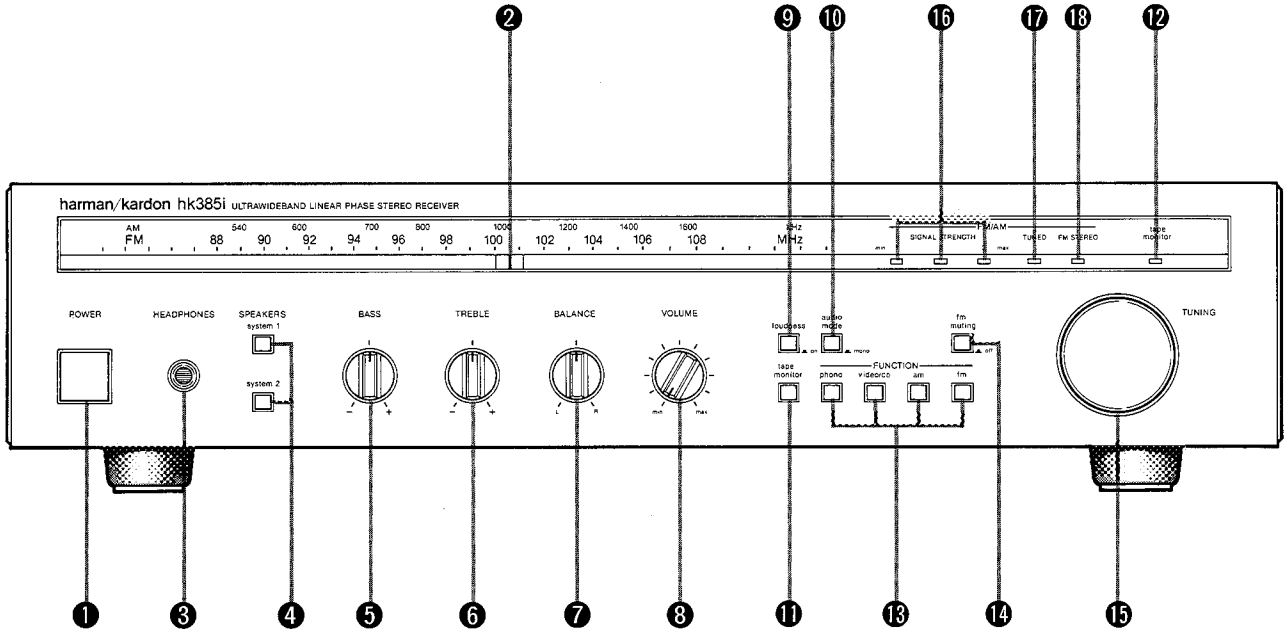
1. Remove about 1/2 inch (12 mm) of insulation from the end of each wire and twist the strands of each end.
2. Push the plastic button of the speaker terminal. Insert the bare end of the wire into the opening at the center of the speaker terminal. Release the plastic button, and the end of the wire will automatically be held in place.





CAUTION: Two speaker systems can be connected to this unit. The minimum speaker impedance should be 8 Ohm when only one speaker system is connected. When two speaker systems are connected, care should be taken that net impedance does not become less than 8 Ohm.


Speaker System 1
Right Channel
Left Channel
FM Accessory Antenna
AM Loop Antenna
To Wall AC Outlet
Turntable (MM)
OUTPUT
LEFT
RIGHT
INPUT
OUTPUT
Compact Disc Player or Video Component
Cassette Tape Deck
Right Channel
Left Channel
Speaker System 2



❶ POWER SWITCH (POWER)
Pressing this switch will turn on the power and the DIAL POINTER are illuminated. Press the switch again to turn the power off.

❷ DIAL POINTER

❸ HEADPHONE JACK (HEADPHONES)
Stereo headphones with a standard 1/4 inch plug can be connected to this jack. When both SPEAKER switches are in the OFF position (buttons out), sound can still be obtained via the headphone jack.

❹ SPEAKER SWITCHES (SPEAKERS)
One or two speaker systems can be connected to this unit. Depress the SPEAKERS SYSTEM 1 or SYSTEM 2 switch corresponding to the system to which you want to listen. To use both speaker systems, depress both switches. Press down the switches once again if the use of the speaker systems are not desired.

❺ BASS CONTROL KNOB (BASS)
This knob controls the low frequency sound level. Turn it clockwise to boost or counterclockwise to reduce the low frequency sound level.

❻ TREBLE CONTROL KNOB (TREBLE)
This knob controls the high frequency sound level. Turn it clockwise to boost or counterclockwise to reduce the high frequency sound level.

❼ BALANCE CONTROL KNOB (BALANCE)
This knob is used to balance the left and the right channels. Usually, it is set at the center. Turn it to the left or right to balance the sound if it seems unbalanced from the speakers or the headphones.

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

❾ LOUDNESS SWITCH (loudness)
This switch is pressed to create a natural sound quality when listening at a low volume by boosting the low and high frequency ranges.

❿ AUDIO MODE SWITCH (audio mode)
This switch is used to combine the left and right channels and create a mono signal. Usually it is set in the stereo position (button out). If the FM stereo broadcast station you are listening to is weak and there is a lot of noise, set this switch to "mono." The two channels are combined into a monaural signal, but the noise is reduced for more comfortable listening.

⓫ TAPE MONITOR SWITCH (tape monitor)
This switch is used when listening to a tape or monitoring the sound during recording. The TAPE MONITOR indicator lights up in red when it is pressed.

NOTE: The TAPE jacks on the rear panel can also be used to record and playback audio signals with a video cassette recorder.

The VIDEO/CD INPUT jacks can be used to play audio signals from a video disc player or video cassette recorder.

⓬ TAPE MONITOR INDICATOR
This indicator illuminates when the TAPE MONITOR switch is pressed.

⓭ FUNCTION SELECTOR (FUNCTION)
These switches are used to select a program source other than a tape.

- **phono** : Press this switch to listen to a disc played on the turntable connected to the PHONO INPUT jacks.
- **video/CD** : Press this switch to listen to the sound from the video component, the compact disc player or other component connected to the VIDEO/CD INPUT jacks.
- **am** : Press this switch to listen to an AM broadcast.
- **fm** : Press this switch to listen to an FM broadcast.

⓮ FM MUTING SWITCH (fm muting)
This switch eliminates irritating inter-station noise when tuning from station to station. To tune in a weak station, it may be necessary to press this switch to the "off" position, which deactivates the muting function. This muting feature only applies to FM reception.

⓯ TUNING KNOB (TUNING)
This knob is used to tune to the desired stations.

⓰ SIGNAL STRENGTH INDICATOR
The relative strength of the signal being received is displayed by this indicator. Tune and adjust the antenna position for the highest possible indication.

⓱ TUNED INDICATOR
This indicator turns on when a broadcast frequency is correctly tuned in. It may not light up for a weak station, even when it is correctly tuned.

⓲ FM STEREO INDICATOR
This indicator is illuminated when an FM stereo broadcast is received.

FM/AM Reception

1. Turn the VOLUME control knob to the minimum level and press the POWER switch. The DIAL POINTER are illuminated.
2. Press the SPEAKERS SYSTEM 1 switch or/and SPEAKERS SYSTEM 2 switch for the desired speaker system(s).
3. Press the FM switch of the FUNCTION selector for FM reception or the AM switch of the FUNCTION selector for AM reception.
4. Set the TAPE MONITOR switch to the source (button out) position.
5. Tune in the desired station by using the TUNING knob. The SIGNAL STRENGTH indicator progressively illuminates according to the reception level, and the TUNED indicator will illuminate to indicate that the FM station is properly tuned in. When receiving an FM stereo broadcast, the FM STEREO indicator will illuminate automatically.
6. Under normal FM reception conditions, set the FM MUTING switch to the ON position (button out) to eliminate irritating interstation noise when scanning the stations. To receive a weak station, press this switch to the "off" position, which deactivates the muting function.
7. When the desired station is selected, advance the VOLUME control knob to a comfortable level and adjust the BASS and TREBLE control knobs as desired.
8. Activate the BALANCE control knob, LOUDNESS or AUDIO MODE switch if necessary.

Receiving a Very Weak FM Broadcast

Normally, weak FM broadcasts and noise are cut out by the muting function. When receiving such a weak FM broadcast is desired, do as follows:

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKERS SYSTEM 1 switch or/and SPEAKERS SYSTEM 2 switch for the desired speaker system(s).
3. Press the FM switch of the FUNCTION selector.
4. Set the TAPE MONITOR switch to the source (button out) position.
5. Press the FM MUTING switch to the "off" position.
6. Press the AUDIO MODE switch to the "mono" position.
7. Tune the desired station by using the TUNING knob. The best tuning is obtained when many segments of the SIGNAL STRENGTH indicator light up.
8. When the desired station is selected, advance the VOLUME control knob to a comfortable level and adjust the BASS and TREBLE control knobs as desired.

Listening to a Record (Disc)

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKERS SYSTEM 1 switch or/and SPEAKERS SYSTEM 2 switch for the desired speaker system(s).
3. Press the PHONO switch of the FUNCTION selector.
4. Set the TAPE MONITOR switch to the source (button out) position.
5. Activate your turntable and place the stylus on the record (disc).
6. Turn the VOLUME control knob clockwise to increase the sound volume to the desired level.
7. Adjust the BASS and TREBLE control knobs to obtain the desired tone.
8. Activate the BALANCE control knob, LOUDNESS or AUDIO MODE switch if necessary.

NOTE: If you hear a hum at average listening levels, turn the POWER switch off and check to see that the phono and the ground connections are secure. Depending on the cartridge type used, less hum may be created without the ground connection.

Listening to the Video/CD Input Source

To listen to a video component, compact disc player or other component:

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKERS SYSTEM 1 switch or/and SPEAKERS SYSTEM 2 switch for the desired speaker system(s).
3. Press the VIDEO/CD switch of the FUNCTION selector.
4. Set the TAPE MONITOR switch to the source (button out) position.
5. Activate the component connected to the VIDEO/CD INPUT jacks.
6. Advance the VOLUME control knob to a comfortable level and adjust the BASS and TREBLE control knobs as desired.
7. Activate the BALANCE control knob, LOUDNESS or AUDIO MODE switch if necessary.

Tape Recording

Recording from a program source (FM/AM broadcast, turntable or a component connected to VIDEO/CD INPUT jacks) on a tape deck connected to the TAPE jacks:

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKERS SYSTEM 1 switch or/and SPEAKERS SYSTEM 2 switch for the desired speaker system(s).
3. Select the desired program source with the FUNCTION selector.
4. Set the TAPE MONITOR switch to the source (button out) position.
5. Advance the VOLUME control knob to a comfortable level.
6. If the program source mode is monaural, press the AUDIO MODE switch to the "mono" position according to the mono program source.
7. Start recording by activating the tape deck connected to TAPE jacks. The source sound can be listened to from the speakers or headphone.
8. To monitor the sound being recorded, press the TAPE MONITOR switch. The TAPE MONITOR indicator lights up, indicating the monitoring state.

NOTE: Recording onto the tape deck is carried out directly from the program source without being influenced by the volume, balance, bass and treble controls and loudness switch of this unit.

Tape Playback

1. Turn the VOLUME control knob to the minimum level and press the POWER switch.
2. Press the SPEAKERS SYSTEM 1 switch or/and SPEAKERS SYSTEM 2 switch for the desired speaker system(s).
3. Press the TAPE MONITOR switch and confirm that the TAPE MONITOR indicator lights up.
4. Insert a recorded tape in the tape deck and set the tape deck in the playback mode.
5. Advance the VOLUME control knob to a comfortable level and adjust the BASS and TREBLE control knobs as desired.
6. Activate the BALANCE control knob, LOUDNESS or AUDIO MODE switch if necessary.

Most of the problems consumers have with their high fidelity system are due to incorrect operation. If this unit does not operate as you intended, first check the items in the following checklist. Also check other related components such as the turntable, tape deck, speakers and other electrical equipment you use with this receiver.

Problem	Cause	Remedy
The DIAL POINTER does not illuminate when the POWER switch is pressed.	• The power cord is not plugged in.	• Plug in the power cord securely.
No sound is heard.	• The tuned frequency does not carry a broadcast. • The muting function is ON and the signal strength is weak. • The TAPE MONITOR switch is in the ON position (indicator is lit up). • The FUNCTION selection was not made properly. • The SPEAKERS 1 and 2 switches are set to the OFF position. • The speaker wires are disconnected or broken.	• Tune to a broadcasted station. • Press the FM MUTING switch to the "off" position. • Repress the TAPE MONITOR switch (button out). • Press the proper FUNCTION selector according to the desired program source. • Press the SPEAKERS 1 or 2 switch. • Check the speaker wires and connect them correctly.
FM sound has a large amount interference. The FM STEREO indicator is not completely illuminating. The TUNED indicator does not illuminate. Sound distorts and/or the volume level becomes low.	• Incorrect connection to the antenna. • Poor location and/or direction of the antenna. • Transmitting station is too far away. • Multi-path distortion is being caused by the mutual interference of broadcast signals received directly from the transmitting station (direct waves) and signals being reflected from nearby buildings or mountains (reflected waves).	• Check the antenna connection wires and connect them correctly. • Try changing the location, height and/or direction of the antenna. • If an indoor antenna is being used, change to an outdoor antenna. • Use a more directional antenna.
A buzzing or hissing noise is produced continuously or intermittently.	• Caused by the "discharge phenomenon" and the "oscillation phenomenon" of nearby electric appliances (such as fluorescent lights, TV, motors, etc.).	• Place this unit further away from these types of electric appliances. • Install noise-filters on the electric appliances.
Sound is not heard from the speaker system on one side.	• The connection of a speaker wires are incorrect or incomplete. • The connection wires to other equipment are disconnected. • The BALANCE control knob is turned to either the extreme right or the left position.	• Check the speaker wires for disconnection or breaking and reconnect them correctly. • Check the wires for disconnection and connect them correctly. • Set the mark on the BALANCE control knob to the center position.
When listening to stereo sound, the left and right sounds are reversed.	• The left and right speaker wires are reversed. • The left and right wires connected to other equipment are reversed.	• Check the speaker wires and connect them correctly. • Check the wires to other equipment and connect them correctly.
Sounds are not heard in stereo.	• The AUDIO MODE switch is in the "mono" position.	• Repress the AUDIO MODE switch (button out).

TROUBLESHOOTING CHECKLIST

Problem	Cause	Remedy
When playing the turntable, a low-pitched noise ("hum" or "buzz") is heard.	• The ground wire of the turntable is disconnected. • The connections of the turntable wires are incorrect or incomplete.	• Make the ground wire connection correctly. • Insert the turntable wires into the PHONO INPUT jacks of this unit securely.
When increasing the volume level while playing a turntable, an undesireble prolonged sound (howling) is heard.	• "Howling" is created by the speakers and turntable. • Too much low frequency sound is present.	• Place the speakers further away from the turntable. • Place the turntable on a more solid surface. • Decrease the setting of the BASS control knob. • Turn off the LOUDNESS switch.
Sound quality is poor.	• Input components have not been set up correctly. • Tone control is not proper.	• Check the antenna, turntable and cartridge, tape deck, etc. and make corrections as needed. • Adjust the BASS and/or TREBLE control knobs to obtain a desired tone.

Warranty and After-sale Service

● Please find the description of our warranty policy enclosed with this unit.
● Read it carefully and keep it in a safe place.
● The warranty period is two years from the date of purchase. Your bill of sale identifies this date. Therefore, it is important that you also keep the bill of sale for the length of the warranty period.
● If this unit does not operate normally, first check this unit by yourself following the instructions provided in TROUBLESHOOTING CHECKLIST in the manual.
● If a problem persists even though you have done as suggested in the checklist, consult your authorized Harman Kardon service station.
● Repair within the warranty term is made according to the prescriptions specified in the warranty card. For details, refer to the warranty card.