AVI150

harman/kardon

English - Audio Video Integrated Amplifier   OWNER'S MANUAL
Français - Amplificateur intégré audio-vidéo   NOTICE D'EMPLOI
Deutsch - Audio und Video Integrierter Verstärker   EIGENTÜMERHANDBUCH
Italiano - Amplificatore integrato audio/video   MANUALE OPERATIVO
Español - Amplificador integrado de audio y video   MANUAL DEL PROPIETARIO
Nederlands - Geïntegreerde audio- en videoversterker   HANDLEIDING
Svenska - Audio- och video Inbyggd förstärkare   BRUKSANVISNING

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.

Harman Kardon   AVI150

Date of purchase _____

Purchased from _____

Address of business purchased from _____

_____

Installed by _____
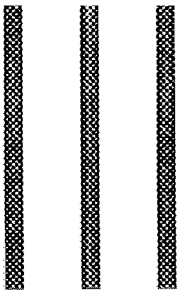
Date of installation_____

Serial No._____

Thank you for choosing a Harman Kardon Audio/Video Integrated Amplifier.

Your new unit is an exceptionally well-engineered product that will give you years of superb performance.

Save all packaging materials

It is essential for shipping should you move, or in the event the unit ever needs repair.

General Instructions

Handle the Power Cord Gently

■ To disconnect the plug from the AC outlet, pull on the plug itself, not on the cord.

■ Disconnect the plug from the AC outlet whenever the unit is to be left unused for an extended period of time.

■ Do not place furniture or other heavy objects on the cord, and avoid dropping heavy objects on it. Also do make a knot in the cord.

Place the unit on a firm and level surface.
Avoid installing it:

■ In moist or humid places;

■ Close to heating equipment or in places exposed to direct sunlight;

■ In a direct draft from an air conditioner or in other very cold locations;

■ In places subject to excessive vibration or dust;

■ In poorly ventilated places.

Moving the Unit
Before moving the unit, be sure to unplug the power cord form the AC outlet and disconnect all wires to antennas and other components.

Do Not Open the Cabinet
Do not attempt to service this unit. Tampering with internal components can cause fire or shock, and may void your guarantee. If water or small objects enter the unit, unplug the power cord immediately and consult an authorized Harman Kardon service center. Using the unit under such conditions may cause a fire or shock hazard.
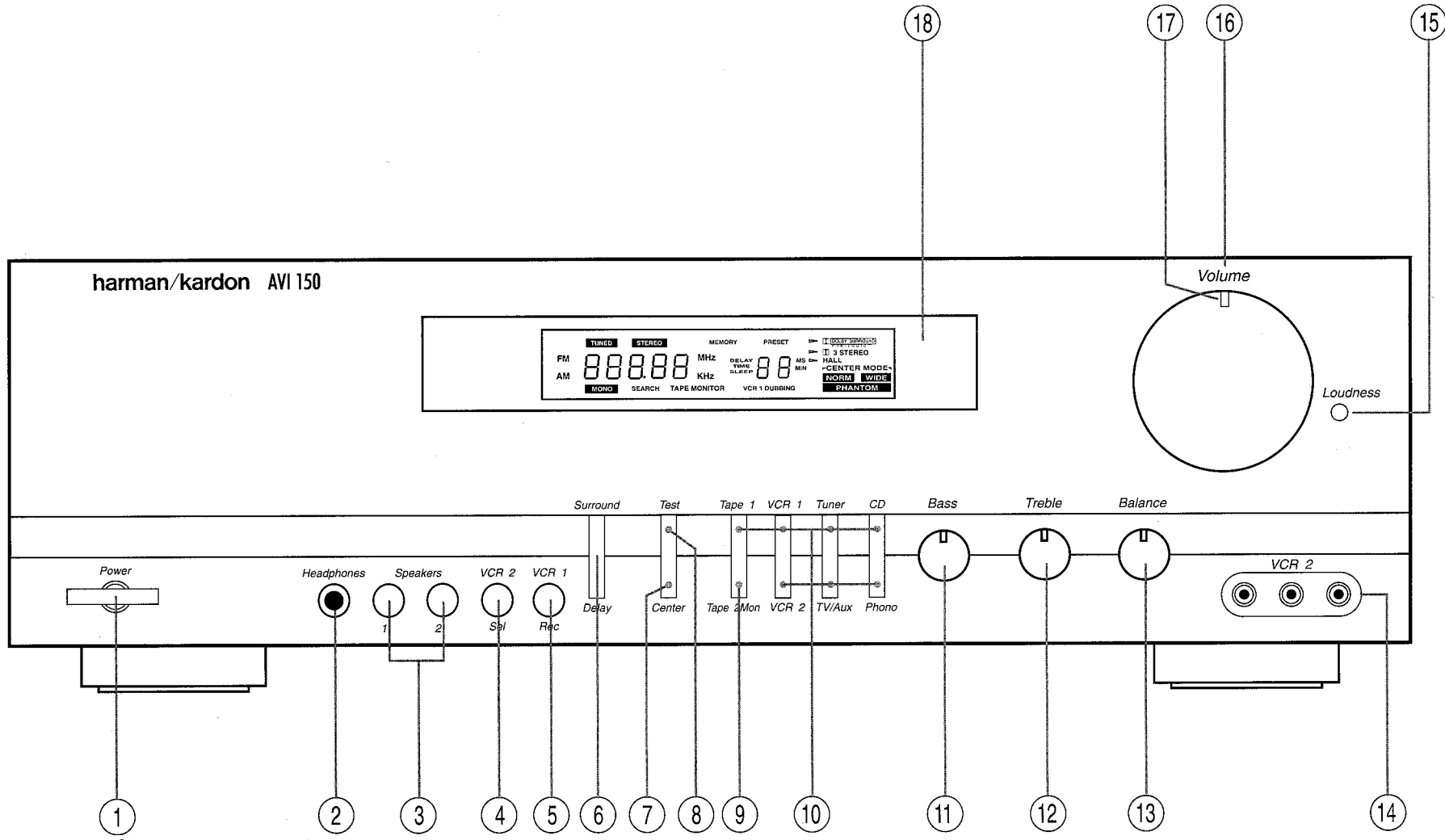
Cleaning
Remove dust by wiping the unit with a soft, dry cloth. If necessary, use a soft cloth lightly dampened with mild soapy water; then wipe with a dry cloth. Never use benzene, thinner, alcohol or other volatile agents, and avoid spraying insecticides near the unit.

ENGLISH

Front Panel Controls

harman/kardon AVI 150

TUNED STEREO MEMORY PRESET

FM MHz
AM KHz

DELAY
TIME
SLEEP

MS
MIN

DOLBY SURROUND
3 STEREO
HALL
CENTER MODE
NORM WIDE
PHANTOM

MONO SEARCH TAPE MONITOR VCR 1 DUBBING

Volume

Loudness

Power

Headphones Speakers VCR 2 VCR 1

Surround Test Tape 1 VCR 1 Tuner CD Bass Treble Balance

VCR 2

Delay Center Tape 2 Mon VCR 2 TV/Aux Phono

1 2 Sel Rec

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭

⑮ ⑯ ⑰ ⑱

Front Panel Controls

1. POWER BUTTON
Press this button to turn the power on. Press again to turn the power off. It can also be used as a system power button, if you connect the other components to the switched outlets.

NOTE: In POWER OFF state, the STAND BY indicator will light up and power is partially supplied to the infrared remote control receiver and the memory circuitry.

2. HEADPHONE JACK
Stereo headphones can be plugged into this jack for private listening. Headphones impedance should be between 8 and 2K ohms. Best results between 200 and 400 ohms.

3. 1 / 2 SPEAKER SWITCHES
These switches allow you to select various combinations of speakers as follows;

■ To drive 1 pair of speakers, push only the speaker 1 switch in.

■ To drive a second pair of speakers, push only the speaker 2 switch in.

■ To drive both pairs of speakers, push both 1 and 2 switches in.

■ To use headphones for private listening or monitoring, leave both 1 and 2 switches pushed out.

NOTE: If both speaker switches are pushed in and only one set of speakers is connected to the amplifier, no sound will be heard.

4. VCR 2 SELECTOR
Push in this button to select the VCR 2 jacks on the front, rather than the VCR 2 jacks on the rear.

5. VCR 1 REC
Press the VCR 2 button and VCR1 DUBBING button. Set the recording VCR (VCR 1) to recording mode. Set the playback VCR (VCR 2) to playback mode.

Dubbing will start.

■ To hear another input source during video tape dubbing: Press the input function you want to hear, and play the input source.

NOTE: If you press the TEST TONE button during VCR 1 DUBBING, the audio signal is not recorded.

6. SURROUND MODE SELECTOR
Press this switch to select the desired surround mode. The mode is changed as below, when it is pressed in succession.

```
┌→ DOLBY PRO LOGIC → DOLBY 3 STEREO → HALL → OFF ┐
└─────────────────────────────────────────────────┘
```

The mode indicator, ► on the display window indicates the selected mode. In the OFF mode, the indicator disappears.

- Delay Time (see page 14)

7. CENTER MODE SELECTOR
This button operates only in Dolby Pro Logic and Dolby 3 Stereo mode. The mode changes as below, when the button is pressed in succession.

DOLBY PRO LOGIC MODE

```
┌→ NORM → WIDE → PHANTOM → ┐
└──────────────────────────┘
```

DOLBY 3 STEREO MODE

```
┌→ NORM → WIDE → ┐
└────────────────┘
```

The display windows shows each mode.

NORM: Select this mode if you use a small center speaker. The bass sound of the center channel is reproduced from the front speakers, because the small speaker cannot produce enough bass.

WIDE: Select this mode if you use a medium-to-large center speaker. The bass sound is reproduced from the center speaker.

PHANTOM: Select this mode if you don't use a center speaker. The center speaker's sound is reproduced from the front speakers.

ENGLISH

8. TEST TONE BUTTON

This button operates only in Dolby Pro Logic and Dolby 3 Stereo modes. When the button is pressed, 2 seconds of test tone is generated in all channels (Left, Center, Right, and Surround) in succession. The display window shows TEST L, C, R and S in succession.

The letter L, C, R or S (in Dolby Pro Logic mode) or L, C, or R (in Dolby 3 Stereo mode) blinks 2 times in succession. Use this button to test speaker connections.

9. TAPE 2 MONITOR BUTTON

Set TAPE 2 MONITOR to the "off" position when you want to hear the other input functions. Press this button to monitor the cassette deck connected to the TAPE 2 MON input jacks.

10. INPUT FUNCTION SELECTOR

Press the button to select the desired input function: VCR 1, VCR 2, TAPE 1, TV/Aux, Tuner, CD or Phono. For the input function of VCR 2, select the VCR 2 on the rear or on the front with the VCR 2 Selector.

11. BASS CONTROL

Modifies the low-frequency sound of the left and right channels as much as +/- 10 dB. Set this control at a suitable position for your taste and room acoustics.

12. TREBLE CONTROL

Modifies the high-frequency sound of the left and right channels as much as +/- 10 dB. Set this control at a suitable position for your taste and room acoustics.

13. BALANCE CONTROL

This control is used for balancing the relative sound volume of the left and right channel speakers. Clockwise rotation reduces the volume from the left speaker, counterclockwise rotation reduces the volume from the right speaker.

14. VCR 2/CAMCORDER INPUT JACKS

VIDEO IN:

Connect to the VIDEO OUTPUT jacks of a VCR (Yellow jack).

AUDIO IN:

Connect to the AUDIO OUTPUT jacks of a VCR (Red and White jacks).

15. LOUDNESS BUTTON

Press this button to compensate for the response of the human ear at low listening levels (known as the Fletcher-Munson hearing curve). The high and low frequencies are automatically boosted when this button is pushed in. In the OFF position, the frequency response is flat at all volume levels. This button does not work at high volume levels.

16. VOLUME CONTROL

Turn the VOLUME clockwise to increase the volume and counterclockwise to decrease it. The volume of the front, center, and rear channels is changed at the same time.
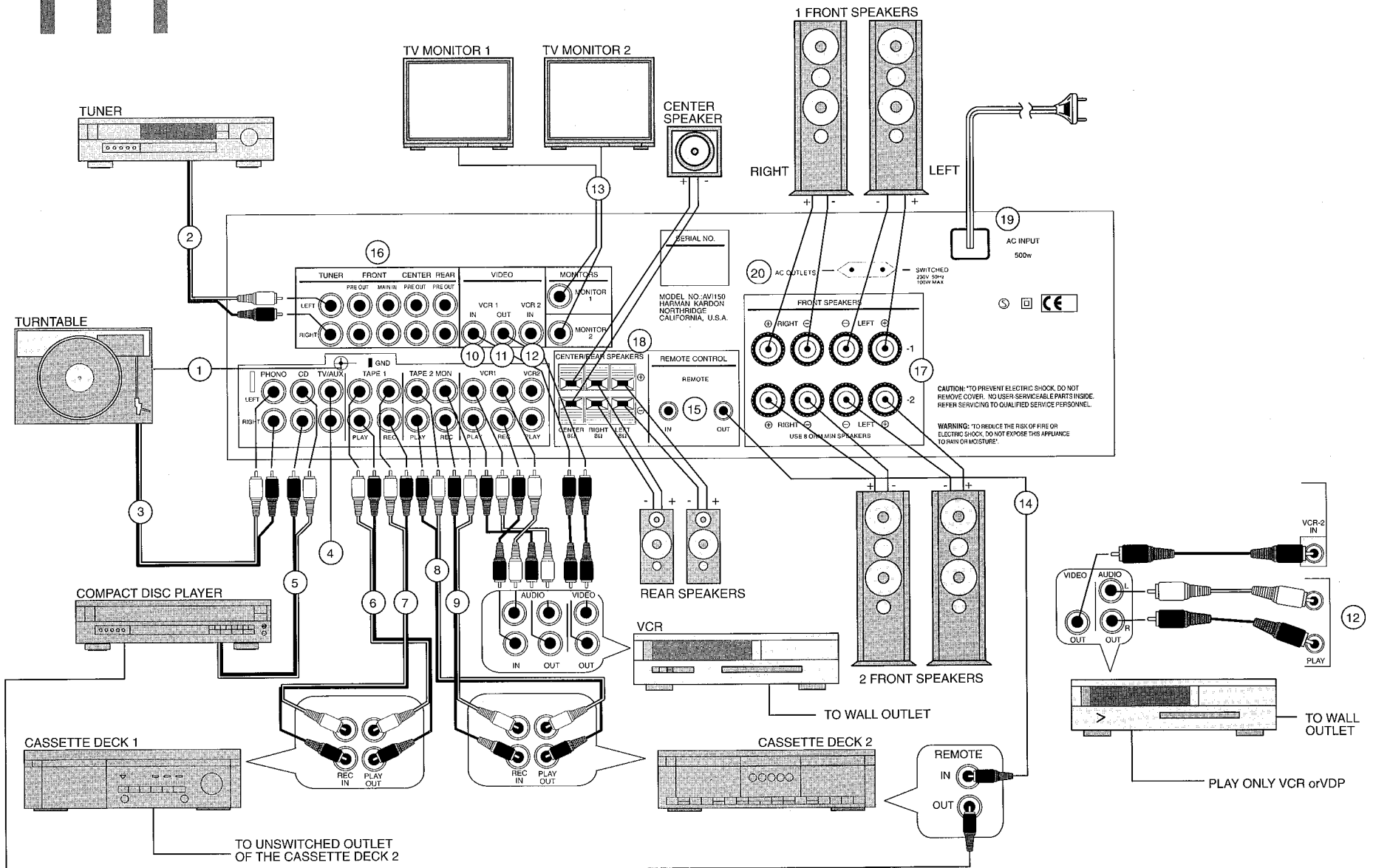
17. VOLUME LEVEL INDICATOR

This indicator moves in accordance with the volume level. The indicator blinks when the mute button on the remote commander is pressed.

18. DISPLAY WINDOW

This window shows the state of operation for easiest control of the amplifier. It also contains the IR Remote Sensor.

Rear Panel Connections

TV MONITOR 1

TV MONITOR 2

CENTER
SPEAKER

1 FRONT SPEAKERS

RIGHT

LEFT

TUNER

TURNTABLE

TUNER FRONT CENTER REAR

VIDEO

MONITORS

PRE OUT MAIN IN PRE OUT PRE OUT

LEFT

RIGHT

VCR 1   VCR 2
IN   OUT   IN

MONITOR
1

MONITOR
2

SERIAL NO.

MODEL NO.:AVI150
HARMAN KARDON
NORTHRIDGE
CALIFORNIA, U.S.A.

GND

PHONO CD TV/AUX TAPE 1 TAPE 2 MON VCR1 VCR

LEFT

RIGHT

PLAY   REC   PLAY   REC   PLAY   REC   PLAY

CENTER/REAR SPEAKERS

CENTER RIGHT LEFT
8Ω   8Ω   8Ω

REMOTE CONTROL

REMOTE

IN   OUT

AC OUTLETS   SWITCHED
230V 50Hz
100W MAX

FRONT SPEAKERS

RIGHT   LEFT

RIGHT   LEFT
USE 8 OHM MIN SPEAKERS

AC INPUT
500w

CAUTION: "TO PREVENT ELECTRIC SHOCK, DO NOT
REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL."

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ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE
TO RAIN OR MOISTURE".

COMPACT DISC PLAYER

CASSETTE DECK 1

TO UNSWITCHED OUTLET
OF THE CASSETTE DECK 2

REAR SPEAKERS

AUDIO   VIDEO

IN   OUT   OUT

VCR

CASSETTE DECK 2

REMOTE

IN

OUT

TO WALL OUTLET

2 FRONT SPEAKERS

VCR-2
IN

VIDEO   AUDIO
              L

OUT   OUT
         R

PLAY

TO WALL
OUTLET

PLAY ONLY VCR orVDP

Rear Panel Connections

1 SYSTEM GROUND TERMINAL
To reduce hum to a minimum, connect the ground lead from your turntable to this terminal.

2 TUNER INPUT JACKS
Connect the line output of your tuner to these jacks.

3 PHONO INPUT JACKS
Input for TURNTABLE with an MM cartridge having 47K ohms of load impedance. Connect shielded cables from your phono to the LEFT and RIGHT input jacks.

NOTE: Do not place your TURNTABLE on a speaker enclosure. This will avoid howling caused by transmission of the speaker vibration to the TURNTABLE.

4 TV/AUX INPUT JACKS
This extra stereo input is provided for any source you want to hear. In addition, a compact disc player, tape recorder, video cassette recorder (VCR) etc. can be plugged into these jacks.

5 CD INPUT JACKS
Connect the output cable of a compact disc player to these jacks.

6 TAPE 1 PLAY JACKS
Connect the line output of your CASSETTE DECK to these jacks.

7 TAPE 1 REC JACKS
Connect the line input of your CASSETTE DECK to these jacks.

8 TAPE 2 MONITOR PLAY JACKS
Connect the line output of your cassette deck to these jacks. This input may be connected to the line output of the audio processor like an optional graphic equalizer or a Digital Signal Processor.

9 TAPE 2 MONITOR REC JACKS
Connect the line input of your cassette deck to these jacks. EQ controls, loudness and volume settings have no effect on the signal from this output for recording. To monitor this input source while recording, press the TAPE 2 MONITOR button (MONITOR ON position). These REC jacks may be used for the line input of the audio processor like an optional graphic equalizer or a Digital Signal Processor.

10 VIDEO/AUDIO INPUT (PLAY) JACKS OF VCR 1
Connect these jacks to the corresponding OUTPUT jacks of your TV (if available) or VCR.

11 VIDEO/AUDIO OUTPUT (REC) JACKS OF VCR1
Connect these jacks to the corresponding INPUT jacks of a VCR. VIDEO OUTPUT jack: Connect this jack to the VIDEO INPUT jack of the VCR. VIDEO REC jack: Connect these jacks to the AUDIO INPUT jacks of the VCR.

12 VIDEO/AUDIO INPUT (PLAY) JACKS OF VCR 2
Connect these jacks to the corresponding OUTPUT jacks of your VCR or VDP.

13 VIDEO MONITOR JACK
Connect this jack to the VIDEO INPUT jack of a TV/MONITOR.

14 REMOTE CONTROL OUT JACK
Connect this jack to the "REMOTE IN" jack on a Harman Kardon component. Use one of the accessory mini-plug cables.

You can control many other Harman Kardon components in your system using the AVI150 remote commander.

15 MULTI-ROOM REMOTE IN JACK
Connect a Harman Kardon HE 1000 remote IR sensor to this jack. You can operate the unit by remote commander through the adapter. It is convenient when the unit is located in a separate room. (See page 8).

16 FRONT, CENTER, REAR PRE OUT AND MAIN IN JACKS

FRONT PRE OUT
When a separate power amplifier is used to drive the front speakers, connect the power amplifier input to these jacks.

FRONT MAIN IN
When a separate pre-amplifier is connected and this unit is used as a power amplifier, connect the pre-amplifier output to these jacks.

NOTE: When you do not use the PRE OUT and MAIN IN separately, always connect the PRE OUT and MAIN IN jacks with a jumper plug.

CENTER PRE OUT
When a separate power amplifier is used to drive the center speaker, connect the power amplifier input to these jacks.

REAR PRE OUT
When a separate power amplifier is used to drive the rear speaker, connect the power amplifier input to these jacks.

17 1/2 SPEAKER TERMINALS
Connect the main left (L) and right (R) speakers to the corresponding 1 and 2 speaker terminals. Make sure that the positive (+) and negative (-) terminals on the speaker are connected to the corresponding terminals on the receiver.
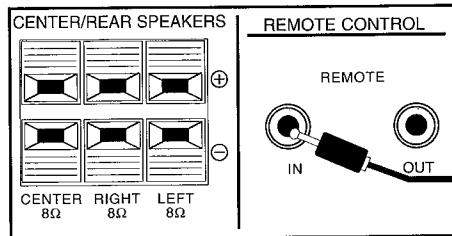
18 CENTER/REAR SPEAKER TERMINALS
Connect center and rear speakers to the corresponding terminals. When you connect the rear speakers connect both L and R speakers.

PLEASE NOTE: Sound will not be provided through the rear speakers unless both speakers are connected.
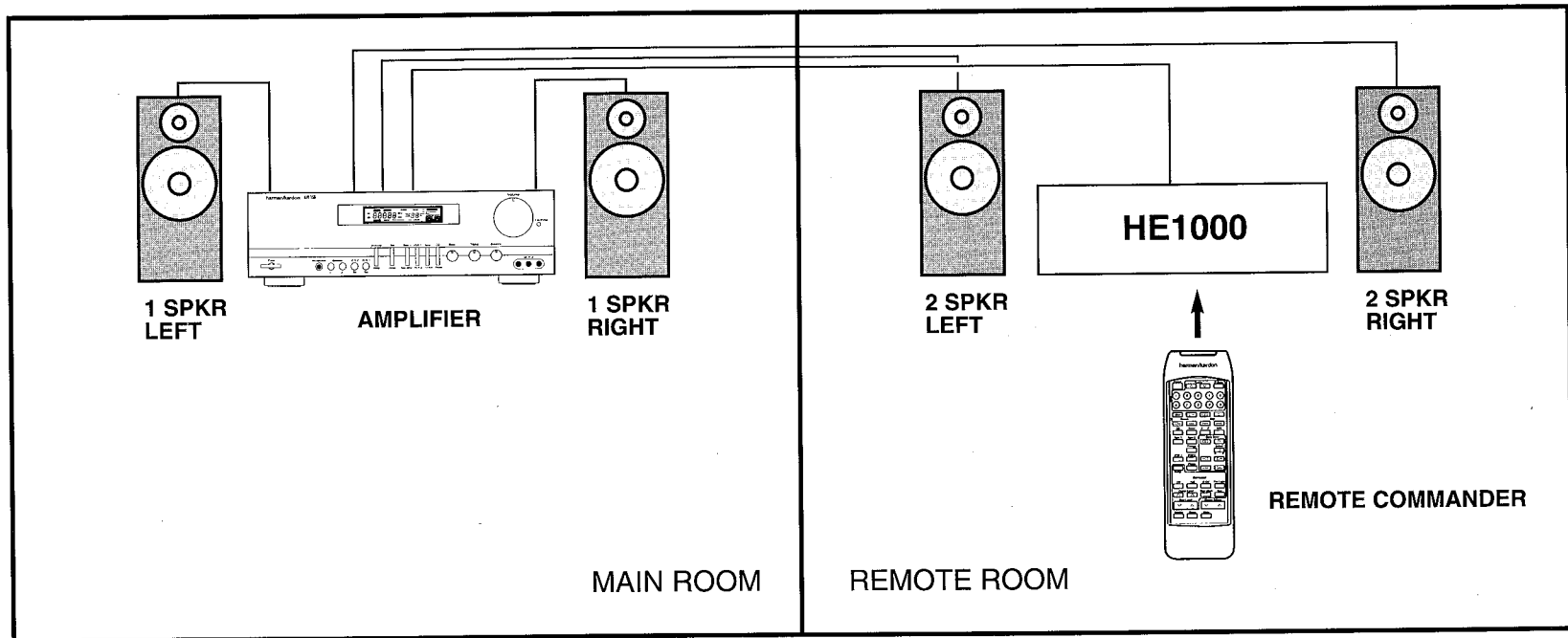
19 AC INPUT CORD
Plug this cord in an AC outlet on a wall.

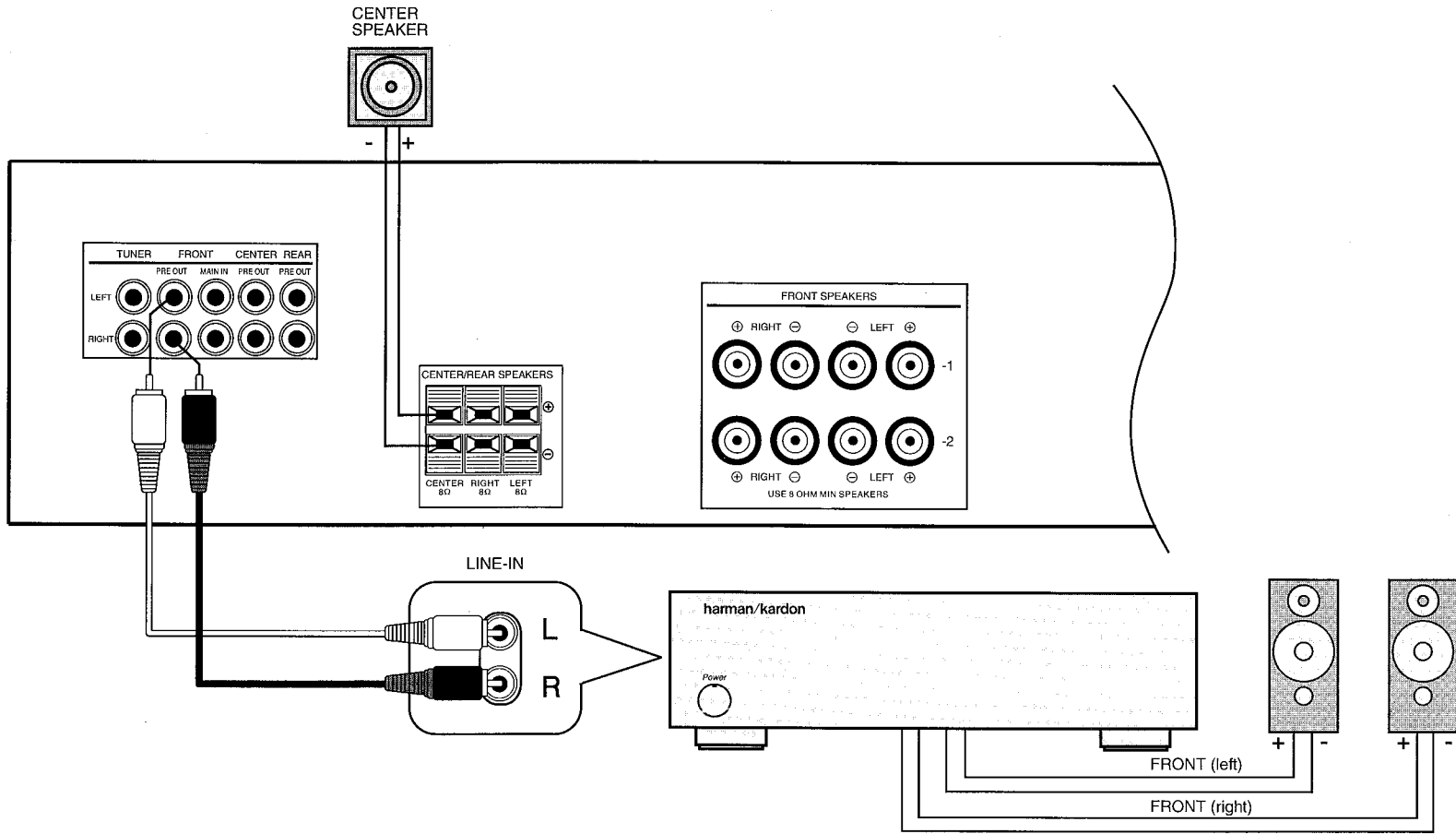# Optional Multi-Room Control Adapter Connection

CENTER/REAR SPEAKERS | REMOTE CONTROL

REMOTE

IN   OUT

CENTER   RIGHT   LEFT
  8Ω   8Ω   8Ω

HARMAN KARDON HE1000 REMOTE IR SENSOR

1 SPKR
LEFT

AMPLIFIER

1 SPKR
RIGHT

2 SPKR
LEFT

HE1000

2 SPKR
RIGHT

REMOTE COMMANDER

MAIN ROOM   REMOTE ROOM

8

When you drive the front speakers with another amplifier

(Remove PRE-OUT/MAIN IN jumpers when the front speakers are connected to external amplifier.)

CENTER
SPEAKER

- +

TUNER   FRONT   CENTER REAR
         PRE OUT MAIN IN PRE OUT PRE OUT

LEFT

RIGHT

CENTER/REAR SPEAKERS

⊕

⊖

CENTER RIGHT LEFT
  8Ω   8Ω   8Ω

FRONT SPEAKERS

⊕ RIGHT ⊖   ⊖ LEFT ⊕

-1

-2

⊕ RIGHT ⊖   ⊖ LEFT ⊕
USE 8 OHM MIN SPEAKERS

LINE-IN

L

R

harman/kardon

Power

FRONT (left)

FRONT (right)

+ -   + -

When you drive the rear speakers with another amplifier.

JUMPER PLUG

FRONT SPEAKER

CENTER SPEAKER

TUNER FRONT CENTER REAR
PRE OUT MAIN IN PRE OUT PRE OUT

LEFT

RIGHT

CENTER/REAR SPEAKERS

⊕

⊖

CENTER RIGHT LEFT
8Ω 8Ω 8Ω

FRONT SPEAKERS

⊕ RIGHT ⊖   ⊖ LEFT ⊕

-1

⊕ RIGHT ⊖   ⊖ LEFT ⊕

-2

USE 8 OHM MIN SPEAKERS

LINE-IN

L

R

harman/kardon

Power

FRONT (left)

FRONT (right)

10

Surround Sound Effects

Surround Sound

The AVI150 is equipped with 3 types of surround processors (Dolby Pro Logic, Dolby 3 Stereo and HALL) which provide a sense of presence and expansion and let you enjoy surround sound in your home.

Every day, we are exposed to sounds coming from surroundings. Some sounds reach our ears directly from the source, some indirectly reflected by walls or ceilings. Sounds of voices reach us from behind, sounds of cars reach us from the side. Sounds coming from all around us are called "surround sounds".

In order to recreate with as much precision as possible the special sound in movie theaters, speakers are placed both in front of and behind the listeners. One reason that sound from the television in our homes is so different from sound in movie theaters is because usually sound from a television only comes from in front of the viewer. With a surround system, the sounds of applause and cheers from the stands during a baseball game on TV comes from the front and back, and from the left and right.

The sound from a TV equipped with a single speaker (or 2 speakers with stereo television) sounds very different from the actual, "live"sound.

Surround Processors
-HALL

Hall mode works best for recorded concerts and other music programs. In this mode, the front speakers provide a normal stereo effect while the rear speakers provide a reverberated sound. This reverberation helps simulate the sound you might hear at a live concert.

-DOLBY 3 STEREO

Combining the front and rear signals so that you can enjoy a regenerated sound field which has comparatively more presence and a more expansive feeling from the front 3 channels (front L, front R, center) regeneration.

-DOLBY PRO LOGIC SURROUND

A great number of movies made in recent times have the sound track specially encoded with the Dolby Surround mode (carrying the (Dolby Stereo) or (Dolby Surround) trademark*). The front speakers provide the dialogue and normal stereo effect, while the rear speakers reproduce the surround signals. This position provides excellent results when watching television programs, video software, video discs or video tapes of stereo television broadcasts encoded with Dolby Surround. Dolby Stereo films have dramatically changed the role of the movie-goer from that of observer to that of the participant. Clearer dialogue, richer

music, enveloping ambience, and making high-fidelity multi-dimensional sound are essential parts of cinematic presentations. Imagine recreating the same sort of audio-visual experience right in your own home.

Manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby Prologic" and the Double-D symbol

Speaker Installation

The AVI150 incorporates a decoder which reproduces the specially encoded surround sound of Dolby Surround video programs. In Dolby Surround mode, select the speaker operation mode according to your speaker system.
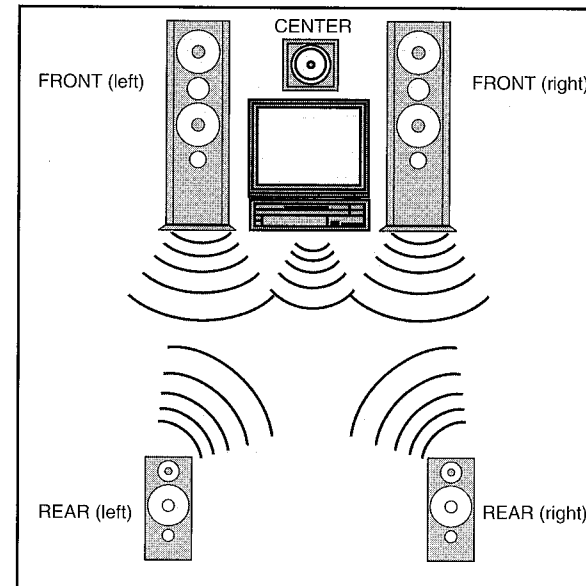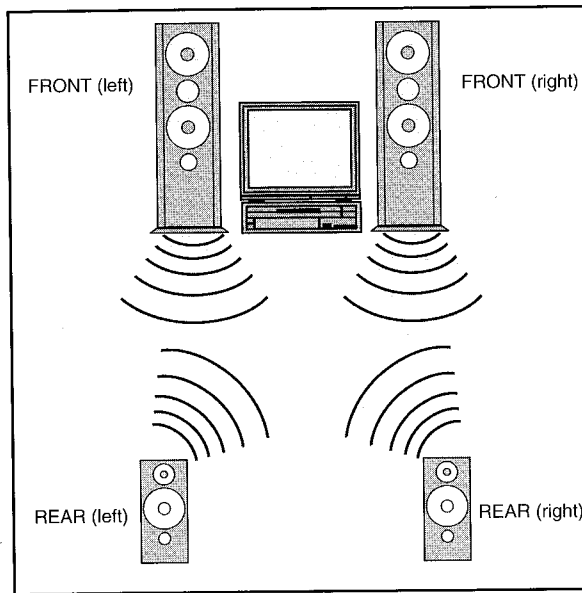

NORMAL mode

Select this mode if you use a small center speaker. The bass sound of the center channel is output from the front speakers, because a small speaker can't produce enough bass.
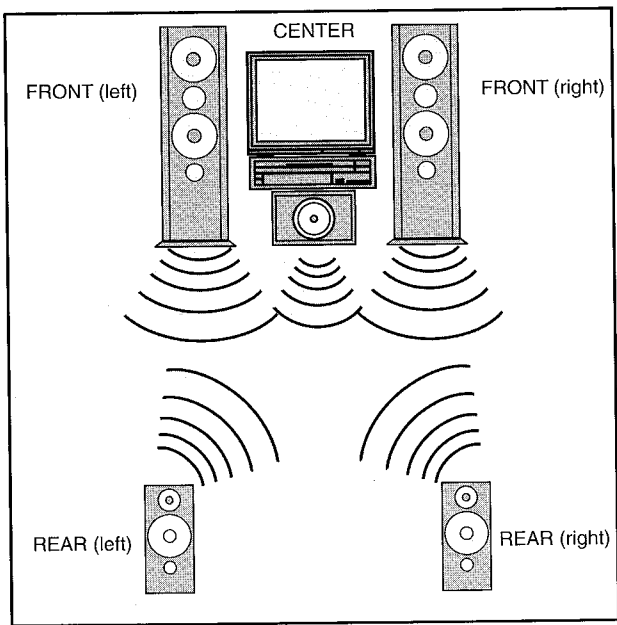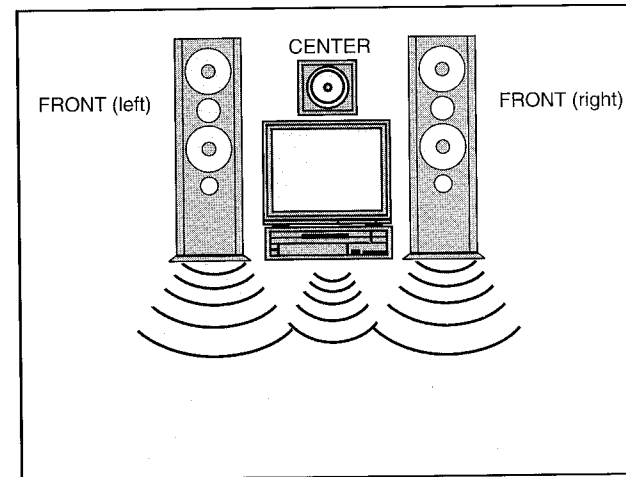
WIDEBAND mode
Select this mode if you use a medium to big center speaker.

PHANTOM mode
Select this mode when you play back a Dolby Surround program source without using a center speaker. The sound of the center channel is output from the front (L and R) speakers.

3 STEREO mode
Select this mode when you play back a Dolby Surround program source with only the front and center speakers. The sound of the rear channel is output from the front (L and R) speakers.

12

Operation

AMPLIFIER SECTION

1. Set the VOLUME CONTROL to the extreme counterclockwise position.
2. Turn the power on.
3. Select the desired input function.
4. Play the input source.
5. Turn the VOLUME clockwise until you reach the desired sound level.

TAPE RECORDING

1. Insert a blank tape in a cassette deck (TAPE1 or TAPE2).
2. Select the desired input function. For Tuner, tune in the desired station.
3. Set the cassette deck to recording mode.
4. Play the input source. Recording will start.

TAPE DUBBING

1. Insert a blank tape in cassette deck 2 (TAPE2).
2. Insert a recorded tape in cassette deck 1 (TAPE1).
3. Select the input function of TAPE2 MON to monitor the sound (see #9 on page 7).
4. Set cassette deck 2 to recording mode.
5. Set cassette deck 1 to playback mode. Dubbing will start. NOTE: If you press the TEST TONE button during TAPE RECORDING or TAPE DUBBING, the audio signal is not recorded.

PROTECTION CIRCUITS

This amplifier has special protection circuits.

■ The thermal overload protection circuit automatically turns off the power if it begins to overheat.

■ The overdrive protection circuit automatically turns off the power if it is about to deliver too much power.

■ The short protection circuit automatically turns off the power if the speaker terminals are shorted.

If the amplifier shuts off check that the ventilation holes on the top of the amplifier are clear of obstructions and check the speaker connections and impedance.
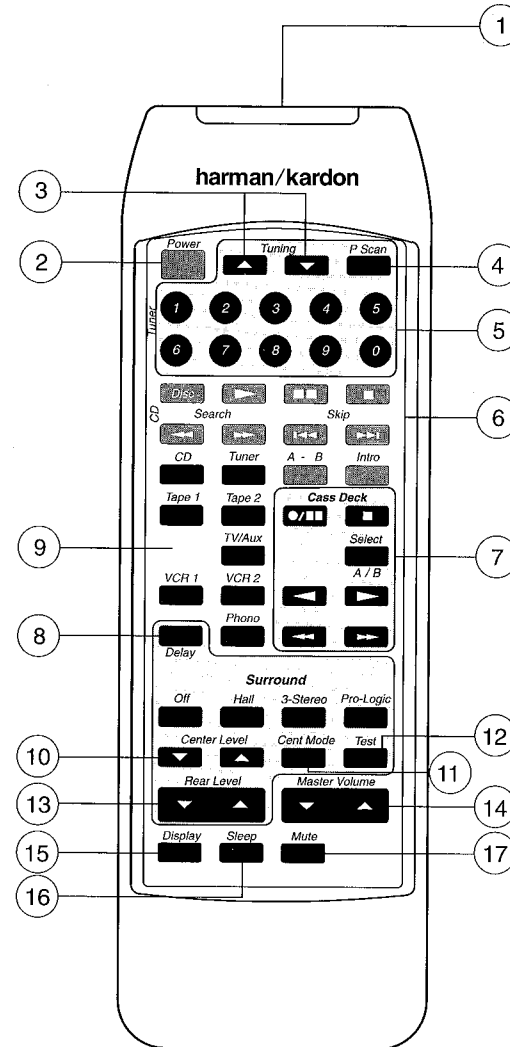
AVI150 System Remote Control

1. INFRARED TRANSMITTER WINDOW

The infrared beam is emitted forward from this window when you press any button on the commander. For the remote controls to function properly always face this window toward the remote sensor window on the receiver and do not obstruct this window with any material.

REMOTE CONTROL
OPERATION RANGE

2. POWER BUTTON

Press this button to turn the power on and off. AUTOMATIC POWER on: When you press the input function buttons (CD, TUNER, TAPE 1, TAPE 2, TV/AUX, VCR 1, VCR 2, PHONO) in STANDBY mode, the power is automatically turned on and the function is selected.

3. TUNING UP/DOWN

Press these buttons to tune a Harman Kardon tuner.

4. PRESET SCAN BUTTON

Button for scanning preset station frequencies when used with a Harman Kardon tuner.

5. NUMERIC BUTTONS

These buttons can be used for preset tuning in TUNER mode or selection of the track number in CD mode. Preset tuning: Press the TUNER button to change the input function of the receiver to TUNER and then select one of 30 preset locations. Selection of CD track number: Press the CD button to change the input function of the receiver to CD, press the desired track number (1, 2, ... 98, 99) and the CD player starts to play.

6. CD FUNCTION BUTTONS

For a CD PLAYER: DISC (DISC SELECTOR, this is available for Harman Kardon FL8400 and FL8450 CD changers), (play), (pause), (stop), (backward search), (forward search), (backward skip), (forward skip), A-B and INTRO buttons are available. When selecting a disc, press the DISC button and the desired disc number (1-5) in the NUMERIC buttons within 2 seconds. The A-B button is used to repeat a specific passage.
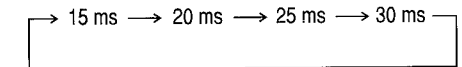
7. CASSETTE DECK FUNCTION

BUTTONS - For a cassette deck: (pause/record), (stop), (A/B selector), (reverse play), (forward play), (rewind) and (fast forward) buttons are available.
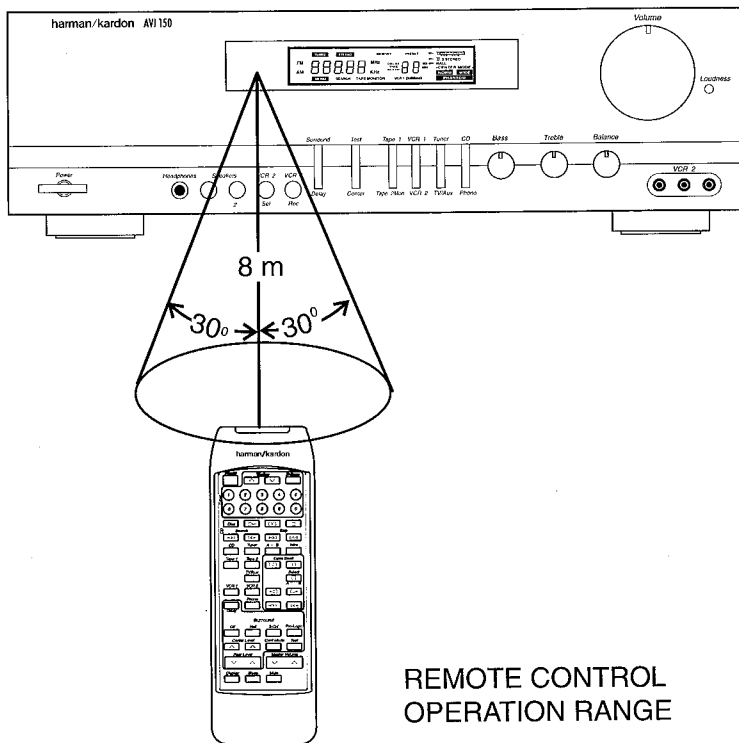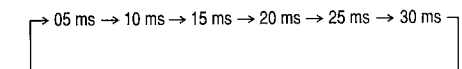
8 DELAY TIME BUTTON

This button operates only in Dolby Pro Logic and HALL modes. In these modes, the output signal from the surround speakers is delayed slightly from that of the front speakers. Select appropriate delay time to achieve the best surround sound effect.
For Dolby Surround sound, we recommend a 20ms delay. The time is changed as below, when the button is pressed in succession.

DOLBY PRO LOGIC MODE

$15\,ms \longrightarrow 20\,ms \longrightarrow 25\,ms \longrightarrow 30\,ms$

HALL MODE

$05\,ms \rightarrow 10\,ms \rightarrow 15\,ms \rightarrow 20\,ms \rightarrow 25\,ms \rightarrow 30\,ms$

ENGLISH

14

9. INPUT FUNCTION SELECTOR
Press the button to select the desired input function. The available buttons are CD, TUNER, TAPE 1, TAPE 2, TV/AUX, VCR 1, VCR 2, and PHONO.

10. CENTER LEVEL UP/DOWN BUTTONS
Use these buttons to adjust the sound level of the center speaker to that of the front speakers. These buttons work only in Dolby, Pro Logic, and Dolby 3 Stereo modes. These buttons do not work in PHANTOM mode.

11. CENTER MODE BUTTON
Selects the center mode(see page 11/12).

12. TEST TONE BUTTON
Generates test sounds in all channels (Left, Center, Right and Surround) in succession.

13. REAR LEVEL UP/DOWN BUTTONS
These buttons operate only in Dolby Pro Logic, and HALL modes. Use these buttons to adjust the sound level of the surround speakers. Set the MASTER VOLUME control at the desired level and press the up or down button until you get the optimum surround effect at your listening position.

14. MASTER VOLUME BUTTONS
Adjust the overall (front, center, and rear) volume level.

15. DISPLAY BUTTON
Press once and the display dims, press again and it turns off. Press a third time and it goes on.

16. SLEEP BUTTON
Sets the receiver to automatically turn off after 10, 20, 30, 60, or 90 minutes. Each time the button is pressed, the setting is advanced as below.

$\rightarrow$ 10 min $\rightarrow$ 20 min $\rightarrow$ 30 min $\rightarrow$ 60 min $\rightarrow$ 90 min $\rightarrow$ OFF
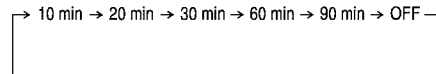
The display will dim when the sleep function has been set.

17. MUTE BUTTON
Press this button to silence the speakers temporarily. The volume indicator blinks. Press again to restore the same listening level as before.

18. BATTERY COMPARTMENT
This battery case is provided as the power source for the commander. To remove the cover, press it down with your thumb and pull it toward the back side. Two UM-3, size "AA" or R6 1.5V dry batteries are used. When loading the batteries, make sure that the polarity is correct. Remove the batteries from the case if the remote commander will not be used for a long time.
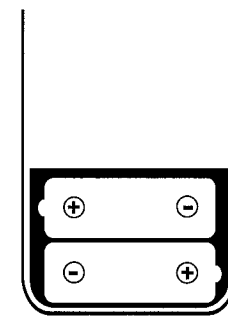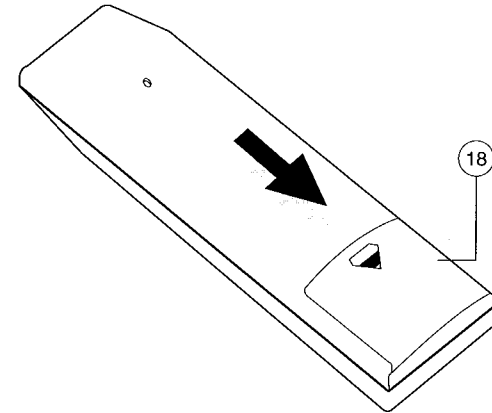
Troubleshooting

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 the chart below for a possible solution. If the problem persists, consult your authorized Harman Kardon service center.

If the Problem Is:

If the Problem Is:	Make Sure That:
No lights illuminate when Power switch is pressed.	☐ Unit is plugged into a live outlet.
No sound is heard.	☐ Speaker selector is set to the desired speakers.
	☐ Correct source button has been pressed.
	☐ Volume is turned up.
	☐ Speakers are connected properly.
Dolby Surround does not work on center and rear channels.	☐ Correct surround mode is selected.
	☐ Rear and Center levels are turned up.
Selecting video component produces sound but no picture.	☐ Video cables are connected properly.
The TV picture does not match the sound.	☐ Video sources are properly connected to the Integrated Amplifier.
	☐ Video/Antenna Switch on TV is set to video.
No output from one or more channels.	☐ Cables are not defective: check/replace speaker or phono cables.
	☐ The signal source is operating and providing proper signal output to the AVI150.
No center channel output.	☐ Dolby surround or movie mode is turned on.
	☐ "Phantom" mode is not active.
Phono sound is too faint, has hum, ringing, or "howl".	☐ Turntable cartridge is moving magnet type, or step-up transformer is used.
	☐ Ground wire from turntable has been connected to ground terminal on Intergrated Amplifier.
	☐ Cable from turntable is away from power cords and speaker cables.
	☐ Turntable is away from speakers.
	☐ Turntable is on a stable surface.

Specifications

AVI150

Stereo Mode
Continuous Average Power (FTC)
60 Watts from 20Hz-20kHz: @<0.09% THD,, both channels driven into 8 Ohms

Five Channel Surround Mode
Continuous average power per channel (FTC)

Front L&R channels
50 Watts from 20Hz-20kHz: @<0.3% THD, both channels driven into 8 Ohms

Center channel
50 Watts from 20Hz-20kHz: @<0.3% THD, driven into 8 Ohms

Rear channels
20 Watts from 20Hz-20kHz: @<1.0% THD, both channels driven into 8 Ohms

Amplifier Section
High-Instantaneous Current Capability (HCC):	± 30 Amps
Negative Feedback:	26dB
Frequency Response @1W (+0/-3dB):	0.5Hz - 150kHz
Slew Rate:	80 Volts/µSec
Rise Time:	1.8µSec
Transient Intermodulation Distortion (TIM):	Unmeasurable

Preamplifier Section
Signal-to-Noise Ratio (ref. 1 Volt, A-Wtd)

Phono (MM):	74dB
Video, CD:	92dB

Input Sensitivity/Impedance

Phono (MM):	2.5mV/47kΩ, 125pF
Video, CD, Tape:	150mV/22kΩ
Phono Overload:	120mV
RIAA EQ Accuracy (20Hz-20kHz):	± 1.0dB

Tone Control Range

Bass @ 50Hz:	± 10dB
Treble @ 10kHz:	± 10dB

Loudness Contour

@ -40dB, 100Hz/10kHz:	+10dB/+3dB

Dimensions: (L x H x D)

Inches:	17 5/16 × 4 7/8 × 14 15/16
mm:	440 × 125 × 380
Weight (lbs kgs):	17.6/8

Depth measurement includes knobs, buttons and antennas.

Height measurement includes feet.

All features and specifications are subject to change without notice.