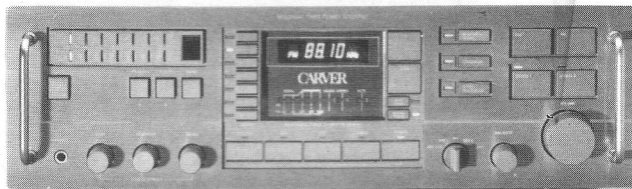


# OWNER'S MANUAL



Audio/Video Receiver  
MODEL 6250

# CARVER

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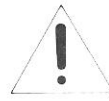
# CARVER

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The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user of 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.

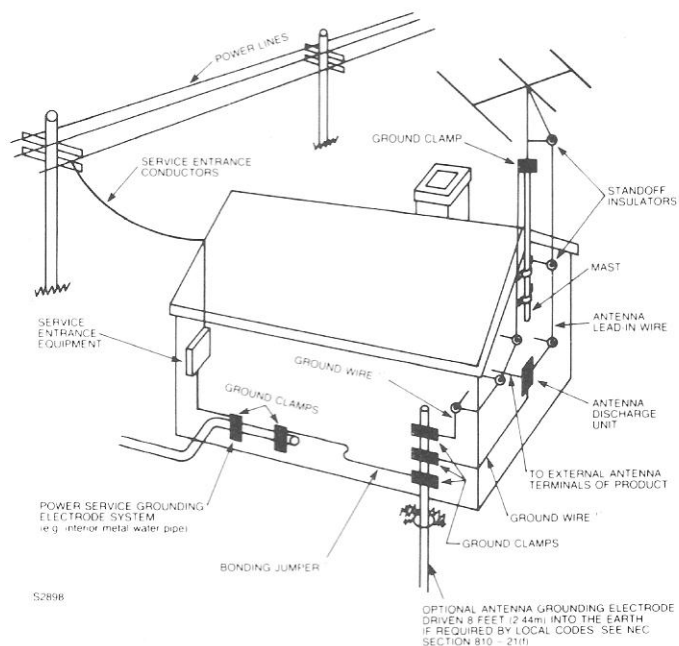


The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## Safety Instructions

- 1 Read Instructions - All the safety and operating instructions should be read before the receiver is operated.
- 2 Retain Instructions - The safety and operating instructions should be retained for future reference.
- 3 Heed Warnings - All warnings on the receiver and in the operating instructions should be adhered to.
- 4 Follow Instructions - All operating and other instructions should be followed.
- 5 Water and Moisture - The receiver should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
- 6 Ventilation - The receiver should be situated so that its location or position does not interfere with its proper ventilation. For example, the receiver should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
- 7 Heat - The receiver should be situated away from heat sources such as radiators, or other devices that produce heat.
- 8 Power Sources - The receiver should be connected to a power supply only of the type described in the operating instructions or as marked on the receiver.
- 9 Power-Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the receiver.
- 10 Cleaning - The receiver should be cleaned only as recommended in this manual.
- 11 Non-use Periods - The power cord of the receiver should be unplugged from the outlet when left unused for a long period of time.
- 12 Object and Liquid Entry - Care should be taken so that objects do not fall into and liquids not spilled into the inside of the receiver.
- 13 Damage Requiring Service - The receiver should be serviced by qualified service personnel when:
  - A. The power-supply cord or the plug has been damaged; or
  - B. Objects have fallen, or liquid has been spilled into the receiver; or
  - C. The receiver has been exposed to rain; or
  - D. The receiver does not appear to operate normally or exhibits a marked change in performance; or
  - E. The receiver has been dropped, or the cabinet damaged.
- 14 Servicing - The user should not attempt to service the receiver beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.

EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 - "RADIO AND TELEVISION EQUIPMENT"



- S2898
- Use No. 10 AWG (5.3 mm<sup>2</sup>) copper, No. 8 AWG (8.4 mm<sup>2</sup>) aluminum, No. 17 AWG (1.0 mm<sup>2</sup>) copper-clad steel or bronze wire, or larger, as a ground wire.
  - Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4-6 feet (1.22-1.83 m) apart.
  - Mount antenna discharge unit as close as possible to where lead-in enters house.
  - Use jumper wire not smaller than No. 6 AWG (13.3 mm<sup>2</sup>) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21 (j).
- OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44m) INTO THE EARTH IF REQUIRED BY LOCAL CODES. SEE NEC SECTION 810 - 21(i)

**15 Power lines** - An outdoor antenna should be located away from power lines.

**16 Grounding or Polarization** - Precautions should be taken so the grounding or polarization means of the receiver is not defeated.

**Outdoor Antenna Grounding** - If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up 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 for the grounding electrode.

# Introduction

## *A Message From Bob Carver*

Dear CARVER Customer,

Thank you for choosing CARVER electronics. We at CARVER CORPORATION realize that there is an abundance of home electronics from which to choose, and the differences between the various models are not always apparent at first glance. CARVER CORPORATION strives to produce for you the finest in audio reproduction equipment which integrates the latest and best technology with the most competitive price possible.

Each piece of our electronics is feature-packed with advances that are unrivaled. When you purchase our products you are receiving electronics that will provide you with years of enjoyment.

Integrated within your Receiver, you will find the patented CARVER Magnetic Field Amplifier. We are particularly proud of this instrument and want you to know why. Your Magnetic Field Amplifier is a superb performer. Judged against conventional amplifier standards, it is second to none; its sound quality is smooth, sweet and absolutely dynamically accurate. It can deliver more than 125 watts RMS per channel into an 8 ohm loudspeaker with no more than 0.1% THD.

Closed-loop frequency response extends from below 10 Hz to beyond 100,000 Hz. Judged by the standards of its technology, the Magnetic Field Amplifier at the heart of your Receiver is truly in a class by itself. The Magnetic Field technology yields performance advantages that go far beyond that of conventional amplifiers.

The CARVER Amplifier is remarkably efficient; considerably more efficient than conventional amplifiers. Its power supply can momentarily "assign" power as required: Unused power from one channel is available to the other by as much as 200 watts.



The CARVER 6250 Receiver gives you FM stereo performance unmatched by that of any other receiver. As it is transmitted from the station, the stereo FM signal is extremely vulnerable to distortion, noise, hiss and multipath interference. However, when you engage CARVER's Asymmetrical Charge Coupled FM Detector (ACCD), the stereo signal arrives at your ears virtually noise-free. You hear fully separated stereo with space, depth and ambience.

The CARVER Sonic Holography® feature creates new dimensions in listening. The Sonic Holography sound processing system produces a sound image which is three dimensional.

Musical instruments and other sound sources are displayed before you extending well beyond the limits of the loudspeakers. Your favorite music and video soundtracks come alive with stunning images.

I am proud to present to you the best in craftsmanship and design found in CARVER electronics.

A handwritten signature in cursive script that reads "Bob Carver".

Robert W. Carver  
President, CARVER CORPORATION

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# 1

## Prior to Installation

**NOTE: Do NOT connect the 6250 Receiver to AC power until all signal connections have been made and the installation is complete.**

### *Unpacking Your Receiver*

Make a note of the serial number which is located on the back of your Receiver. Record it in the space provided for convenient reference. You will need to refer to this number in the event you require service or if it is stolen.

Model 6250

Serial number \_\_\_\_\_

Purchased at \_\_\_\_\_

Date \_\_\_\_\_

Please save the box, as well as all of the internal packing materials!

This container is the best way to store and move your new Receiver. If your Receiver should need repair, the original container is ideal for shipping to a CARVER Service Center.

Upon opening the box, please check for any visible sign of damage that does not appear on

the outside of the box. If you do encounter what appears to be concealed damage, please consult your Dealer before proceeding to further unpack the unit.

If no damage is found, gently lift out the unit by grasping the handles. After lifting the Receiver out of the box, gently lift first one side, then the other and remove the molded side packing material. Inside the box you will also find the Remote Control, batteries and an Antenna.

### *A Definition of an Audio/Video Receiver*

An Audio/Video Receiver is one of the new generation of stereo receivers that is designed to become the focal point of your home electronics center. It is designed to easily accommodate and interface with all of your other entertainment devices as well as your VCR and Television Monitor System.

Our Model 6250 Receiver is capable of routing the audio signal of several different types of components, as well as supplying the AC power requirements of up to four different components.



A receiver is comprised of three main control areas that process the audio signal. Within the Receiver chassis you have the Tuner, Preamplifier, and Power Amplifier that have been integrated into a single convenient package and are controlled by an infra-red Remote Control unit.

### **1 Tuner**

The Tuner allows you to select and listen to AM and FM radio signals. In addition to being able to log or store your favorite radio stations in a convenient memory for rapid access, your CARVER Tuner also incorporates a special section called the ASYMMETRICAL CHARGE COUPLED DETECTOR, or ACCD for short. This is a patented circuit which allows the Tuner section of your Receiver to create quality reception from weak stations. Refer to Section 4 for more details on this circuit.

### **2 Preamplifier**

The Preamplifier is the control center of your Receiver system. It directs and regulates the

flow of signals inside your system. If you want to select the Tuner, or perhaps a CD player to listen to, you route the signal selection with your Preamplifier. In addition to source selection, your Preamplifier also prepares and delivers all of the signals to the Power Amplifier to drive your Loudspeakers. Refer to Section 2 for additional information on Front Panel Controls.

### **3 Power Amplifier**

The Power Amplifier section of your Receiver delivers the power to drive your loudspeakers. The incoming signal from your Preamplifier although now fully processed and highly refined, is what is termed a "low level signal", and must be boosted, or amplified, to a greater level in order to be reproduced as music.

# 2

## Front Panel and Controls

### *Operation of Front Panel and Controls*

#### **1 POWER** (AC Power Switch)

This is a push on/push off switch that controls not only the master AC function of the Receiver, but also two of the SWITCHED AC plugs found on the rear of the Receiver. When engaged, a slight delay of 1½ seconds occurs until the Receiver is fully energized. This start-up delay is designed to allow the Receiver an opportunity to self-check all of its internal circuitry before bringing all to an on-line status.

#### **2 LEFT POWER RIGHT POWER** (LED Power Meters)

These Light Emitting Diodes (LEDs) indicate the amount of output power being delivered to your loudspeakers at the left and right speaker outputs. The meters are calibrated to display amplifier output into a conventional eight ohm load.

#### **3 SPEAKERS A B**

These push-on/push-off switches activate either the primary (A) or the secondary (B) speaker

terminals located on the rear panel of the Receiver. Depressing both buttons will activate both sets of speakers. When using headphones, you also have the option of leaving both speaker switches out for private listening. The out or OFF position disengages both speaker circuits. We recommend you check these controls first when experiencing potential problems with your system.

#### **4 REMOTE SENSOR** (Remote Sensor window)

This small dark rectangle is the sensor window for the Remote Control. Your Remote Control functions when it is aimed in direct line-of-sight with this window.

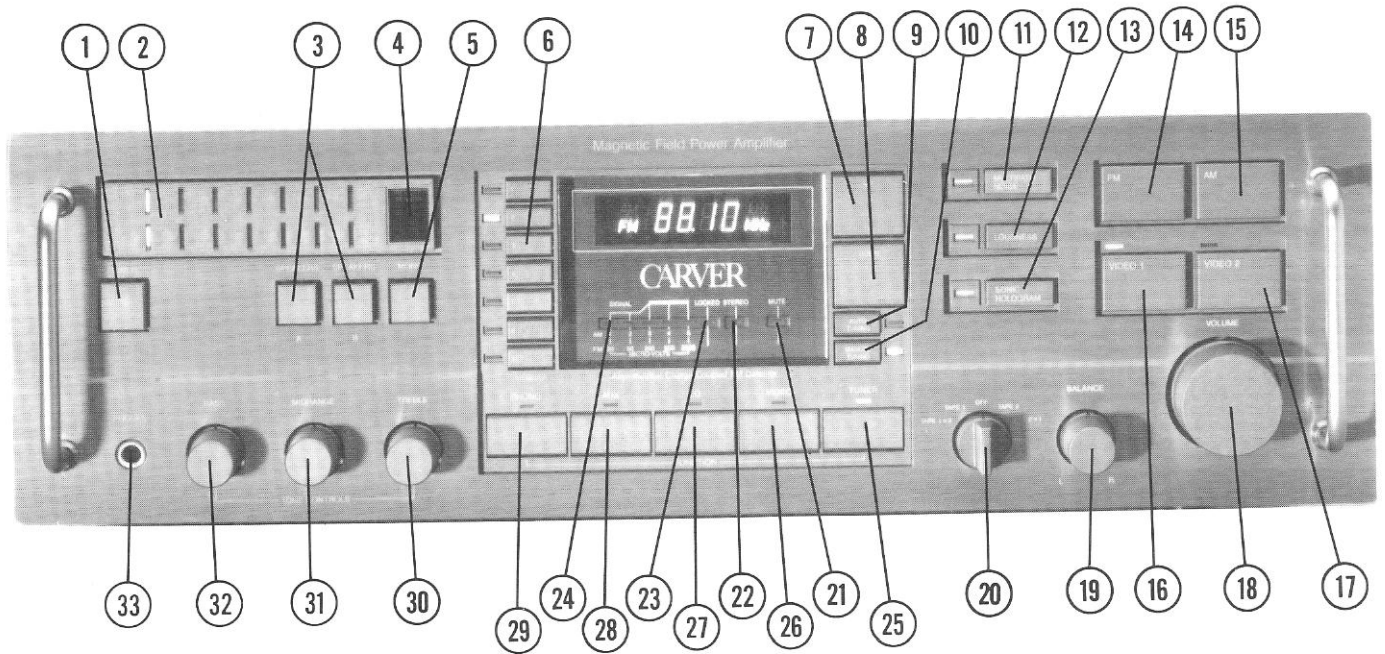
#### **5 MONO**

Engaging this switch allows your entire sound system to reproduce the same signal out of both the left and right speakers with the resulting signal composite being one of pure L + R, and not presenting a stereo sound stage. This is best used when listening to noisy stereo signals or a video game.

#### **6 MEMORY** (Memory pre-sets)

The seven buttons allow you to log and store

Figure 1



your favorite AM and FM radio stations for rapid access. Please refer to Section 4 for more details.

**7 and 8 UP DOWN (Tuner Control Buttons)**

When depressed, these controls allow you to select the AM or FM radio station of your choice. These controls are interactive with AUTO TUNING and MANUAL TUNING controls.

**9 AUTO TUNING**

This function allows your TUNER to seek the strongest, clearest radio stations and to pass over those signals that are either too weak or distorted to be fully enjoyed without using the FM ACCD button (#11). In addition, if this switch is OFF (indicated by the LED status light to the immediate right of the switch), the TUNER will be in its MANUAL TUNING Mode, which will require you to depress either the UP or DOWN switch until you reach the desired station.

**10 MANUAL TUNING**

This switch places the tuner into MANUAL TUNING mode, and is interactive with the AUTO TUNING Switch as described above (#9).

When the MANUAL TUNING switch is engaged, the LED will be lit.

**11 MULTIPATH NOISE (Multipath/Noise Circuit FM ACCD)**

This switch engages the patented ASYMMETRICAL CHARGED COUPLED FM DETECTOR, and MULTIPATH REDUCTION CIRCUIT incorporated in your Receiver. To receive weak/multipath signals such as those produced by a distant or weak FM radio station, switch OFF the AUTO TUNING switch and tune to the desired station. If you are able to see the STEREO indicator, depress the MULTIPATH NOISE switch to restore the sonic signature of the broadcast and recover a previously noisy station. The MULTIPATH NOISE LED is lit when this button is engaged.

**12 LOUDNESS**

This switch creates a proper tonal balance in your system when listening at lower volume levels. This overcomes the human ear's reduced sensitivity at low listening levels by compensating the loss of low and high frequencies. This circuit should not be engaged at higher listening levels. The LOUDNESS LED is lit when this button is engaged.

**12 Operation of Front Panel and Controls**

### 13 SONIC HOLOGRAM

This switch controls the built-in Sonic Holography® circuit. When engaged, and set-up conditions have accurately been met, this circuit creates music dimensions not normally realized with conventional stereo. The SONIC HOLOGRAM LED is lit when this button is engaged. Refer to Section 5 for more details about this amazing processor.

### 14 and 15 FM-AM (Selectors)

These two switches select the band you want your TUNER to receive, either AM or FM.

### 16 and 17 VIDEO 1 VIDEO 2

These buttons select either VIDEO 1 source or VIDEO 2 source and are interactive with the VIDEO button (#26). The LED above the VIDEO 1 or VIDEO 2 will illuminate when this button is engaged.

### 18 VOLUME (Master Gain)

This rotary control sets the power output, or gain to your loudspeakers, as well as the Volume Window for your Remote Control unit. When the knob is rotated fully counterclockwise, the volume or gain to your Receiver is at its lowest point. To set the Volume Window for your Remote Control, press the VOLUME DOWN button on the Remote Control and hold it down for approximately five seconds. Then increase the volume by rotating your Receiver's VOLUME knob clockwise until you have the minimum listening level you desire. Your Remote Control will now be calibrated to work properly with your Receiver's VOLUME knob.

### 19 BALANCE (Balance Control)

This rotary control allows you to shift the center balance between your loudspeakers to adjust for different room acoustics or loudspeaker placement. With the knob in its vertical center position, both loudspeakers will be receiving the same amount of output power from your Receiver. Rotating the knob to the left, or counterclockwise will increase the power to the left speaker, as well as decreasing the power to the right, and vice versa.

### 20 TAPE 1 ►2 TAPE 1 OFF TAPE 2 TAPE 2 ►1 (Tape Selector)

This is a five position rotary switch which allows you to select between two different tape players, as well as to dub between tape decks. With the switch pointing straight up to the center or OFF position, neither of the tape decks will be engaged in the circuit. Rotating the switch one click to the left engages the TAPE 1 circuit and input jacks located on the rear panel. One click to the right of the OFF position engages TAPE 2, or second tape source.

**NOTE:** When either TAPE 1 or TAPE 2 is engaged, no other source selection switches will enter the signal path. Please check this switch as well as the SPEAKER selectors if you encounter problems with your Receiver.

Rotating the switch counterclockwise until it stops places the TAPE 1 ►2 in control. In this position, you can directly dub the music from the Tape deck connected to TAPE 1 into the deck on TAPE 2. The same is true if you rotate the switch fully clockwise to the TAPE 2 ►1 position, but now the TAPE 2 circuit will be in control, and will send its output signal directly to the input jacks of TAPE 1. This is handy when copying a cassette to a reel to reel recorder or vice versa.

### 21 MUTE

When MUTE is depressed on the Remote Control, this LED illuminates. The MUTE function reduces the volume level by 90%. Press again to release and restore the original sound level.

### 22 STEREO

This LED indicates that you are receiving a true stereo signal from the source.

### 23 LOCKED (Digital Display Readout)

This LED display indicates that your TUNER is locked on to the exact AM or FM frequency shown in the digital display readout.

### 24 SIGNAL (Signal Strength Meter)

These LEDs indicate the relative incoming signal strength of AM or FM broadcast. With all LEDs illuminated, your TUNER section will be receiving a maximum signal.

### 25-29 Source Selection - FUNCTION Buttons

These five control switches are located in the center of the face plate of your Receiver, below the LED read-out for station frequency display. Only one can be activated at a time. Each has a small rectangular red LED directly above which when illuminated will give visual confirmation that the Source is engaged. The different main sources are as follows:

#### 25 TUNER

This activates the AM or FM Tuner of the receiver.

#### 26 VIDEO

Activates both VIDEO and AUDIO inputs for the VIDEO jacks on the rear panel. This circuit is

designed for the Audio Section derived from a satellite receiver, output signal from a stereo Video Cassette Recorder (VCR), Laser Disc Player, or audio-out signal from an MTS-Stereo Television Set. This switch is also interactive with the two switches located directly above the VOLUME knob labeled VIDEO 1 and VIDEO 2. You must have this switch engaged to be able to hear the audio from the VIDEO source you select.

#### 27 CD

This switch activates the Compact Disc input jacks for playback.

#### 28 AUX

Activates any high-level source connected to the AUX input jacks on the rear panel. This could

## Remote Control

Two AA batteries are needed to operate your Remote Control unit. Insert the batteries supplied with your 6250 Receiver in the back sliding panel. Match the positive (+) and negative (-) polarities as indicated inside the battery compartment.

#### 1 POWER

Switches the MODEL 6250 ON and OFF.

#### 2 HOLOGRAM

Selects SONIC HOLOGRAPHY® circuit ON or OFF.

#### 3 CD (Player Functions)

PLAY PAUSE STOP SKIP - +

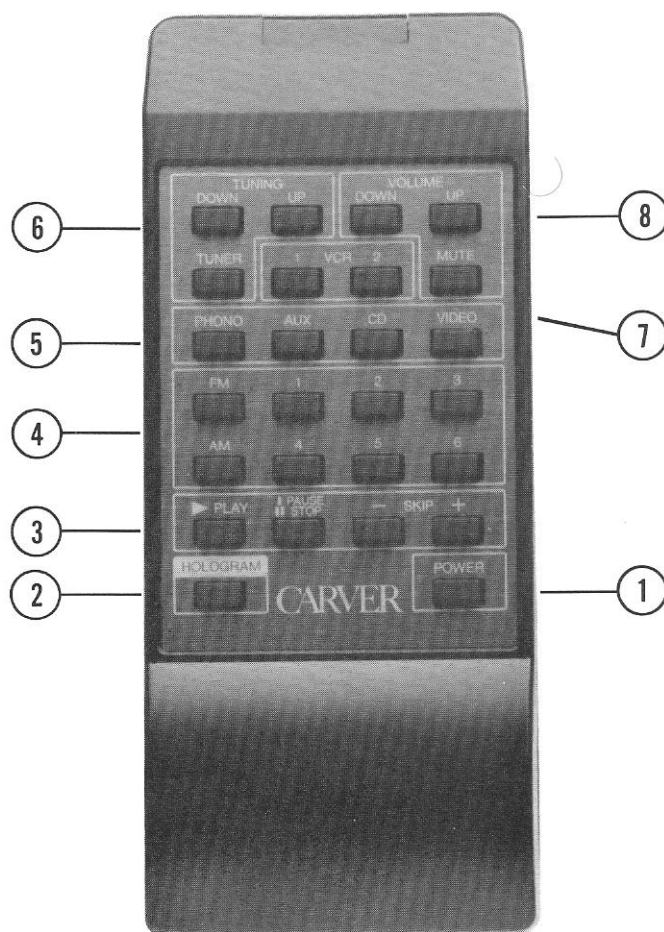
PLAY

This button begins the play of a disc in a CARVER CD player.

PAUSE/STOP

This button pauses or stops the disc in the CD player.

Figure 2 Remote Control



be utilized for the audio component of a computer, computer game, ham radio or scanner, portable electronic key board, extra tape deck, etc.

#### **29 PHONO**

Activates the PHONO jacks located on the rear panel. The turntable that is connected to these jacks must have a moving-magnet phono cartridge. A moving-coil cartridge will require a preamp for proper signal gain.

#### **30 TREBLE**

This rotary knob adjusts the high frequency level of the source material. Turning the knob clockwise increases the amount of high frequencies and turning counterclockwise decreases high frequencies.

#### **31 MIDRANGE**

The knob controls the level of the midrange frequencies.

#### **32 BASS**

The knob controls the low or bass frequencies.

#### **33 PHONES (Jack)**

This is for private listening with quality headphones. Standard headphones are recommended for connection to this output port. If you have an exotic electrostatic design of headphone, please refer to the manufacturer's product manual. You can switch OFF your loudspeaker by using the SPEAKERS Switches, Figure 1, for private listening.

---

#### **SKIP (-) (+)**

Lets you reverse or go forward on the disc in the CD player.

**NOTE:** These functions control the CARVER DTL-50 or the DTL-200 CD players and later models.

#### **4 FM/AM Selector and (1-6 Pre-sets)**

FM/AM select buttons and buttons numbered one through six provide pre-set programming of six stations for FM and six for AM.

#### **5a PHONO**

This button selects the Turntable.

#### **5b AUX**

This button engages the auxiliary unit connected to the rear panel AUX jack.

#### **5c CD (Compact Disc Player)**

Selects the CD unit.

#### **5d VIDEO**

Selects the VIDEO audio inputs.

#### **6a TUNER**

This button selects the AM/FM tuner.

#### **6b TUNING DOWN UP**

These buttons select the AM/FM stations. When reaching the highest frequency in UP tuning mode, your Receiver will scan the band over again if AUTO TUNING is selected.

#### **7 VCR1 VCR2**

These buttons select either VCR 1 or VCR 2.

#### **8a DOWN UP Volume**

These buttons increase or decrease the listening level to the speakers for all functions. It will vary the volume level by about 12 decibels.

#### **8b MUTE**

When depressed, this function reduces the volume level by 90%. Pressing this button again will increase the volume level to normal. The LED in the front window will light when MUTE is selected.

# 3

## Rear Panel and Connections

**NOTE:** Connect Left input cables to Left input jacks. Connect Right input cables to Right input jacks. Similarly, connect Left and Right output cables to proper Left and Right output jacks. This is important in maintaining proper phasing within your system.

### *Rear Panel*

#### **1 GROUND** (Phono Ground Screw)

Connect the ground wire (typically green or black) from your turntable to this screw. This will eliminate hum.

#### **2 PHONO** (Phono Jacks)

Connect turntable with moving-magnet cartridge to these jacks. This circuit is activated by depressing the PHONO switch on the front panel of your Receiver.

#### **3 AUX** (Auxiliary Jacks)

Connect any high-level source as described in Section 2. These jacks are activated when the AUX switch is engaged on the front panel.

#### **4 CD** (Compact Disc Player)

Connect the outputs of your Compact Disc player to these jacks.

#### **5 TAPE1 IN** (Tape1 Input Jacks)

These jacks are for the line-out, or incoming signal from a tape deck, and are utilized to listen to the signal coming from the tape deck. The TAPE MONITOR switch must be in the TAPE1 position to activate this circuit.

#### **6 TAPE1 OUT** (Tape1 Output Jacks)

These jacks send the signal from the Receiver to the inputs of the tape deck. These must be properly connected before the tape deck will be able to record or monitor any signals.

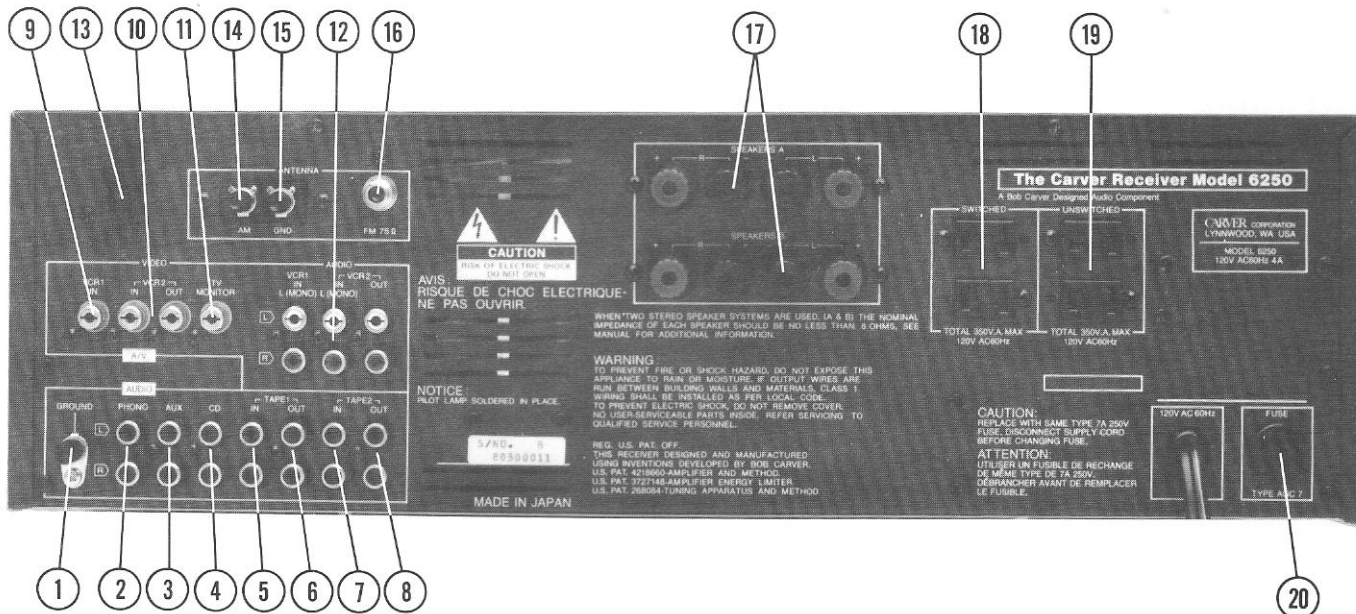
#### **7 TAPE2 IN** (Tape2 Input Jacks)

These are the same as described in (#5), but are for a second tape machine, and are activated by the TAPE2 position on the front panel.

#### **8 TAPE2 OUT** (Tape2 Output Jacks)

These are the same as the description found in

Figure 3



(#6) above, but are designed for a second tape deck source.

**9 VCR1 IN (Video 1 Input Output)**

This is the same circuit as described in (#10) below but is designed for the use of another or second video tape deck connection. No output jack is available for recording on VCR1.

**10 VCR2 IN OUT (Video 2 Input/Output)**

These four jacks are supplied to interface with the audio signals from your stereo or mono VCR. Connect both the LEFT and RIGHT OUTPUT cables of the VCR to the INPUT of this section for stereo. The OUTPUT from this circuit should be connected to the INPUT section of your VCR. Refer to VCR Connection for more details. For mono VCRs connect only to LEFT input.

**11 TV (Monitor)**

Connect the video cable from your TV monitor's external VIDEO IN jack to this jack. This allows your TV monitor to show VCR1 and VCR2 video signals as they are selected from the front panel.

**12 A/V VIDEO**

**VCR1 IN**

Connect the video cable from VCR1's Video Out jack to this jack.

**VCR2 IN**

Connect the video cable from VCR2's Video Out jack to this jack.

**VCR2 OUT**

Connect the video cable from VCR2's Video Input jack to this jack.

**13 AM (Antenna Mounting Bracket)**

Connect the supplied plastic AM Loop antenna to this terminal. Refer to System Configuration Figure 4.

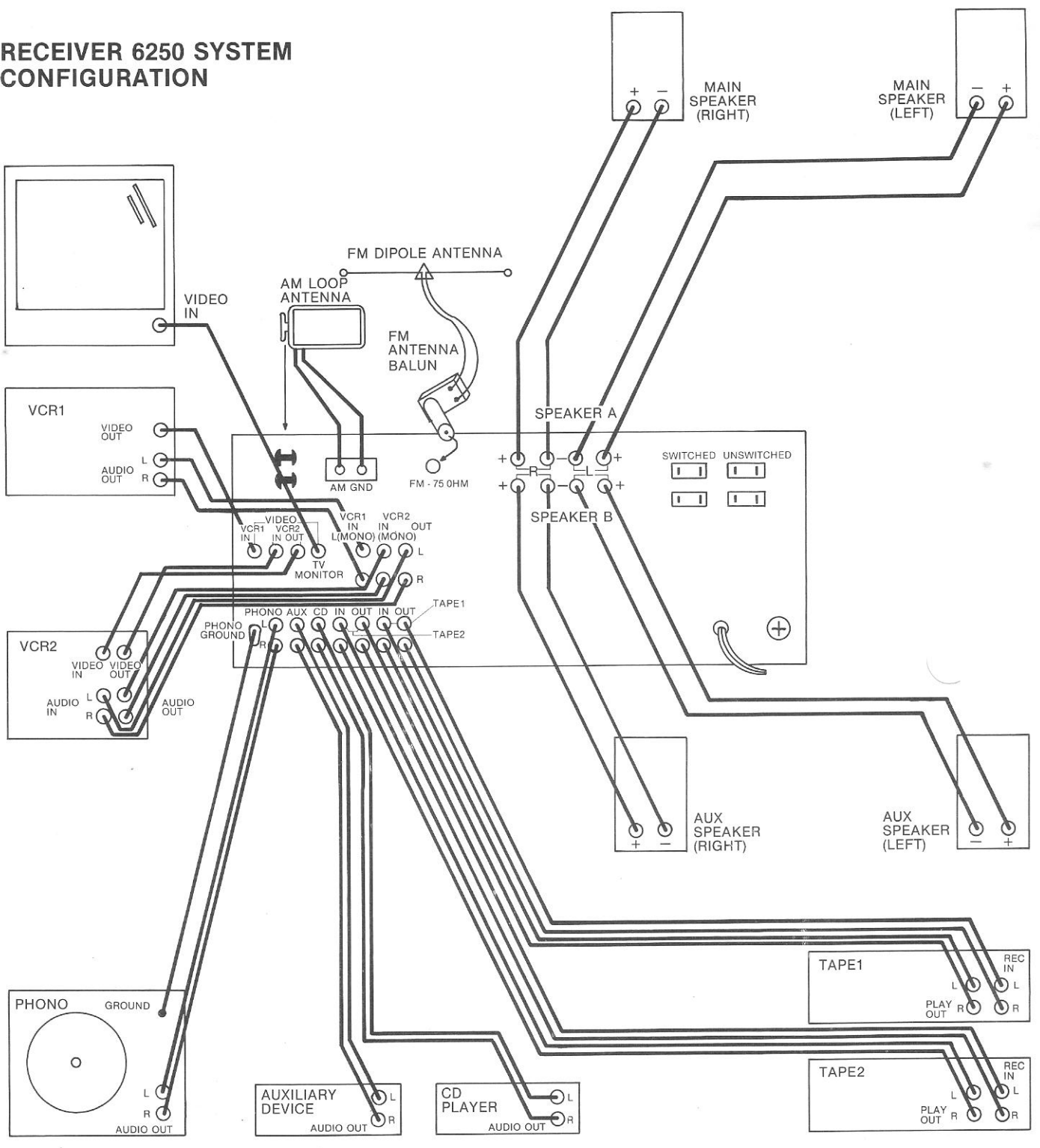
**14 AM (Antenna Screw Terminals)**

Connect an external AM antenna here for long distance AM reception. In most cases, the supplied antenna will provide excellent reception. Connecting a ground wire to the GROUND terminal is optional when using an



Figure 4

**RECEIVER 6250 SYSTEM CONFIGURATION**



internal antenna but its use is recommended if an outside external antenna is used. See Notice in the front of this manual.

#### 15 ANTENNA AM GND (AM Loop Antenna)

This antenna is adequate for most locations for AM reception. Adjust the antenna for best reception. It may also be wall mounted with the supplied bracket.

#### 16 FM 75 OHM (Antenna Terminals)

You can either connect directly to your local Cable Television System for FM (consult your Cable Operator) using coaxial cable, or use the supplied 75/300 ohm adaptor and dipole ribbon antenna. Caution should be used when connecting your Receiver to an external outside TV/FM antenna. See Notice located in the front of this manual. If uncertain, please refer to qualified personnel. If hum occurs when using the 75 ohm terminal, install a 75/300 ohm balanced transformer to the coaxial cable, and reconnect to the supplied 300 ohm to 75 ohm adapter to break the ground loop that is causing the offending hum.

#### 17 SPEAKERS A B (Terminals) L (+) (—) R (+) (—)

These Terminals are used to bind the speaker wire to the Receiver. Refer to Loudspeaker Connection for more details.

#### 18 SWITCHED (Switched Convenience AC Power)

These power outlets provide 110 volts AC. The SWITCHED outlets are controlled by the Main Power Switch of the Receiver. They will accommodate any additional accessory with a power rating of up to 350 watts total.

#### 19 UNSWITCHED (Unswitched Convenience AC Power)

These two outlets are similar to (#18) above. The two outlets are NOT turned on and off with the main POWER switch on the receiver, but are always ON. They can be used to supply power to any accessory up to 350 watts total.

#### 20 FUSE (AC Power Fuse)

**WARNING: Do NOT increase the fuse value under any circumstance. Replace with original value and type only.**

The FUSE is a safety device installed to protect the Receiver from voltage surges or other abnormal operating conditions. If the Digital Display or an LED Function Indicator does not light when the power is engaged, disconnect the AC power cord of the Receiver from the wall, and remove the fuse. Replace it with the same size and value indicated near the fuse holder on the rear panel. If you are using 120 volt AC current, replace the fuse with an AGC7. If the FUSE blows again, please contact your Dealer or CARVER Customer Service. There are no user serviceable items inside and electrical hazards do exist.

**NOTE:** In lightning-prone areas we recommend the use of an AC power surge suppressor.

### *Loudspeaker Connections*

Locate the positive (+) and negative (—) terminals of your loudspeakers. Using a good quality speaker wire from 18 to 10 gauge depending upon the length of the run, connect the wire coming from the (+) positive terminal of the speaker to the (+) positive terminal of the Speaker A binding post on your Receiver. Most good quality wire will be coded in copper and silver, or one side will have ridges, and the other smooth. Please be certain to connect the (+) positive lead from the Receiver to (+) positive on the loudspeaker. The same is true for the negative lead. We recommend you run the same amount of wire length to each of your loudspeakers. Completely connect either the Right or Left side of your system before going on to the next side. This will ensure proper phasing to your speakers, as well as eliminating confusion. It is easier to first connect SPEAKERS B, if you are using two sets of loudspeakers.

### *Cassette Deck and DAT Connections*

To connect a cassette recorder/player or Digital Audio Tape recorder/player (DAT) you will use the bank of input/output jacks shown as numbers 5-6-7-8 on Figure 3. High quality interconnect cables are recommended. Also

achieving proper phasing is important in being able to make and play back recordings. We recommend that you connect each lead one at a time to eliminate possible confusion.

### *VCR (Stereo) Connection*

There are now several million VCRs in American households as well as abroad. Although they all look similar on the front panel, many are quite different in form and function. The main differences are with the AUDIO output of your VCR. If you have a Stereo VCR, you will find two output jacks as well as two input jacks on the rear of the unit. Run the left and right AUDIO OUTPUT from your VCR to the AUDIO INPUT jacks of VIDEO2 (#10 on Figure 3) on the rear of the Receiver. Connect the L and R AUDIO INPUT from your VCR to the AUDIO OUTPUT jacks of VIDEO2 (#10 on Figure 3). Also refer to System Configuration Figure 4.

### *VCR (Mono) Connection*

To connect a Mono VCR, you will have only one audio line out. Connect this to the Left channel INPUT of VIDEO1 (or VIDEO2 if you have a stereo VCR on VIDEO1), and use only one line to return the audio signal from the Receiver to

your VCR. Most mono style VCRs have auto-switching A/V input jacks. That is, the VCR's tuner is automatically disconnected from the recording section of the VCR when a cord is plugged into the A/V inputs of the VCR. Please consult your VCR Owner's Manual regarding its recording functions.

### *Laser Disc Player/Satellite (TVRO) Connection*

Connection for the audio portion of a Laser Disc Player is similar to the Stereo VCR described earlier in Section 3 except when you have both VIDEO 1 and VIDEO 2 already used. In this case, we recommend that you utilize the AUX input (Figure 4). If you have only one stereo VCR connected to your Receiver, then use VIDEO 1 INPUTS for your Laser Video Disc.

### *Antenna and Cable (CATV) Connection*

There are potential hazards that can arise from an improperly installed antenna. Electrical hazards can result from an external antenna as well as connection to your local Cable Television system. Please refer to the Safety Instructions.

# 4

## Using Your AM/FM Tuner with ACCD

### *Tuner Controls*

#### **Auto/Manual Tuning**

This function allows your TUNER to seek radio stations that have the strongest and clearest signals and to automatically “lock on” to them. It also has the option to pass over those signals that are either too weak or distorted to be fully enjoyed without using the FM ACCD. If the AUTO TUNING switch is OFF, indicated by the LED status light to the immediate right of the switch, the TUNER will be in its MANUAL TUNING Mode. In MANUAL TUNING mode, depress either the UP or DOWN switch until you reach the desired station.

#### **AM and FM (Band Selection)**

Select by pushing the FM button for FM broadcasts or the AM button for AM broadcasts. The Digital Display located in the center of the Receiver provides visual confirmation of the AM or FM band you have selected.

#### **MEMORY (Presets Selection)**

The MEMORY Presets are located at the immediate left-hand side of the Digital Display. The series of seven vertical switches have built-

in LEDs. The bottom button is labeled SET. It is used to log your favorite stations into memory. You can SET up to 12 of your favorite stations using six stations for FM and six for AM. To use this feature, simply tune to your favorite AM or FM station and push the SET button. Then, while the SET button is illuminated, push any one of the PRESET buttons numbered 1-6. Your selection is now logged into the memory section of the Tuner, and will remain there until you change it. To delete old stations from memory, simply replace with new stations and the old ones will be erased.

MEMORY Presets will not become erased when your Receiver is either switched OFF, or unplugged for short periods of time. If your Receiver is unplugged for more than a few hours, you will need to re-enter the stations into MEMORY.

### *Using ACCD for Very Weak Stations*

The ASYMMETRICAL CHARGED COUPLED FM DETECTOR, and MULTIPATH REDUCTION CIRCUIT are patented circuits incorporated in the Tuner of your Receiver. Only a CARVER Receiver has the circuitry which improves

# 5

## CARVER

### Sonic Holography®

#### *Principles of Sonic Holography®*

Sonic Holography® will greatly increase your listening pleasure and enjoyment by bringing a completely new perspective to your favorite music, as well as a totally new dimension to the audio soundtrack of all video sources.

For years sophisticated systems for recording and reproducing stereo have been offered as being supposedly capable of further enhancing the "you-are-there" feel of a movie or musical performance. However, certain problems with conventional stereo playback would always limit this enhanced realism to the space between the loudspeakers. Even with the addition of digital delays and other ambience-restoring equipment or loudspeaker systems, perceived realism was still a problem.

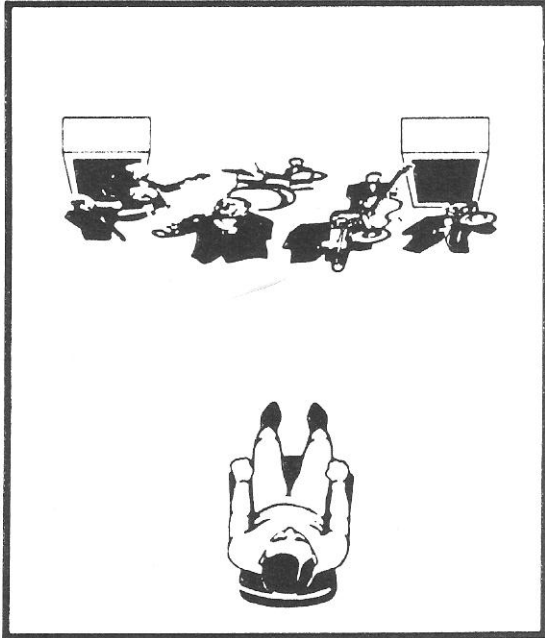
Conventional stereo does not begin to approach the sound quality of a live sonic event. Stereo reproduction is subject to fundamental distortions of spatial perspectives that just do not occur in real life. Everyone has become accustomed to the limits of stereo and has learned to listen to normal stereo imaging because they enjoy the music, not because it sounds like a real live performance. But remember, the ultimate goal of a stereo sound

system is not just to play back good sounding music. The ultimate goal of a sound system is to re-create the performance.

Bob Carver researched the way people perceive sound and applied the research to the stereo listening experience. CARVER's logical problem solving breakthrough brings an actual improvement in the quality of listening through complex processing of the stereo signals, and a change in relationship between the listener and loudspeakers. Now, instead of flat, "between-the-loudspeaker" imaging associated with conventional stereo, CARVER's Sonic Holography® paints a sonic picture that is remarkably believable and convincing. Refer to Figure 5 and 6. A listener can actually pinpoint the location of individual artists and instruments far beyond the limits of the standard left/right loudspeaker arrangement. At times, sound even seems to come from outside the listening room.

The ambience or acoustic signature of a recording's location is vital to the sound of a live musical event but masked in conventional stereo playback. With Sonic Holography® the tonal effect makes your favorite music a full, three-dimensional experience of unparalleled realism and creates a sense of being there.

Figure 5



**Conventional stereo:** The sound is heard, more or less on a flat curtain of sound between the two speakers. There are Volume differences only and the timing cues are gone.

Figure 6



**Sonic Holography:** The sound is reproduced much like that of a concert performance, complete with timing, phase and amplitude cues.

## Correct Loudspeaker Placement

**NOTE:** To fully generate and enjoy three dimensional musical images in Sonic Holography® follow the instructions and recommendations for positioning your loudspeakers, as well as the recommended listening area.

Making Sonic Holography® work properly requires attention to many factors that usually are not considerations for normal stereo playback. The two most important factors are the accurate relationships between the loudspeakers and your listening chair, and dealing with reflected sounds off of various surfaces in the listening room i.e., windows, doors, drapes, etc.

It may be that the initial loudspeaker/listening chair placement will not work on a day-to-day basis in your listening room. While the relationship between the loudspeakers and the listening chair must always be the same, there are compromises that should suit the specific needs of your listening space, yet provide for good imaging.

To perform the set-up you will need a tape measure and a listening chair. To arrange your loudspeaker system and listening position for Sonic Holography,® follow these three steps:

### Steps for Loudspeaker and Chair Placement

**Step One:** Move your Loudspeakers away from the side walls, rear wall, and other reflective surfaces as shown in Figure 7. The loudspeakers should be at least three feet from reflecting surfaces - measure from the wall behind the speakers, side walls and nearby adjoining corners.

Unless your loudspeakers are designed to rest on the floor, place them on stands. The ideal height occurs when the midrange/high-frequency drivers are ear level with the seated listener. Move the speakers three to five feet from center-to-center. The loudspeakers should be positioned to place the listening chair on the axis with direct sound from each.

**Step Two:** Place the listening chair six to ten

feet in front of the loudspeakers. It is ideal to have a rear wall one to four feet behind the chair. If this is not practical, move the chair closer to the loudspeakers, not up against the rear wall.

**Step Three:** Measure the distance from the left loudspeaker's top/center to the center of the listening chair. Repeat the measurement for the right loudspeaker, making both distances (D1 and D2 in Figure 7) exactly the same. Accuracy within ¼ inch is desired. For odd shaped speakers measure from the center of the midrange driver to the chair.

### System Verification

When you have established the correct initial relationship between your loudspeakers and your listening chair, you will be able to experience Sonic Holography® almost right away. We recommend you take a couple of minutes to properly check your stereo system:

- 1 Visually check and confirm that all of your components are connected in-phase - all left channel outputs to the left channel inputs, right-channel outputs to right channel inputs.
- 2 Check and confirm that the loudspeakers are properly wired correctly in-phase. Positive (+) loudspeaker output from the amplifiers should be connected to the positive terminals usually RED on the loudspeakers and negative (-) amplifier outputs to the negative terminals usually BLACK on the loudspeakers.
- 3 If your system uses an external equalizer to flatten room response, we recommend that it be switched out of the stereo system's signal path upon initial set-up. The simple act of moving the loudspeakers to the proper position will drastically alter room response. Any room curve that your equalizer has developed will no longer be valid. Experiment with Sonic Holography® before re-equalizing the room. Room response will also be altered by any sound treatments used to reduce any unwanted room reflections, so wait until all phases of the set-up are completed before readjusting the equalizer.

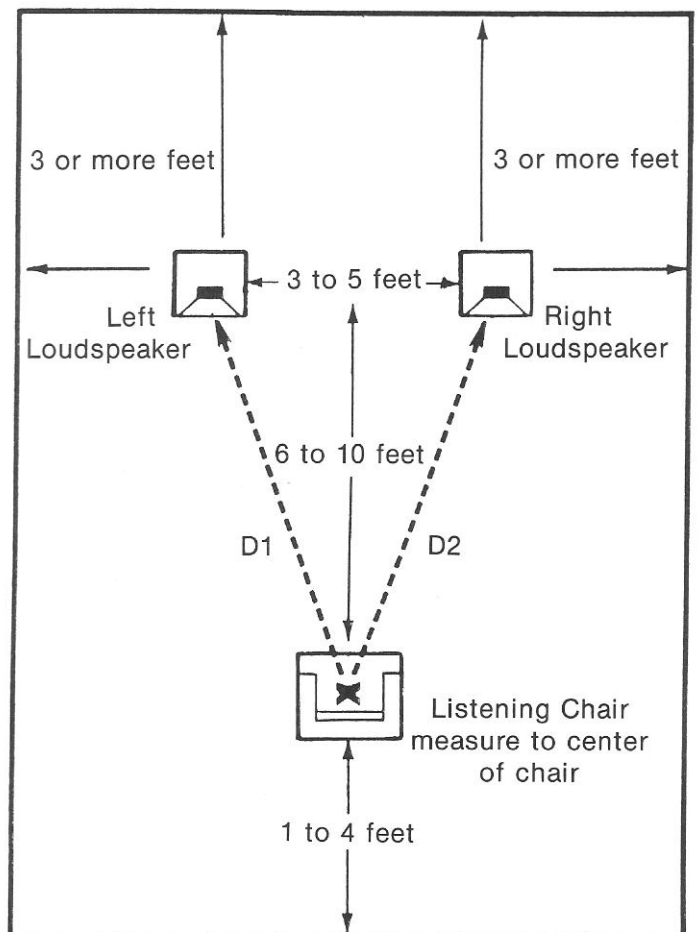


Figure 7

- 4 If you use a turntable, inspect the phono stylus and cartridge for proper phasing, wear, and tracking. Other than possibly damaging your valuable LPs, a worn cartridge/stylus can upset the balance of the recording before it gets to the stereo system. This can simulate certain acoustic problems that cause strong one-sided imaging, with weak imaging on the other.
- 5 Set the BALANCE control of your Receiver to the center balance position.
- 6 Be sure that the program material used during the initial set-up is really recorded in stereo. If you have selected older recordings, either LP or CD format, be sure to check the liner notes or jacket to confirm this. Recordings that are labeled "re-channeled for stereo playback" are just monaural recordings; you will not create a successful Holographic image with only a few

instruments and the human voice for first-time attempts at Sonic Holography®

### *What to Listen For*

The musical instrument symbols in Figure 6, identify individual sound sources instruments, vocal artist, etc.

Musical instruments and other sound sources will be spread out in a large arc in front of you with the arc's angle ranging from 45° to 90°. Sound images will exist to the left and right, extending well beyond the limits of the loudspeakers and, occasionally, all the way to the extreme left and right. You will be able to perceive a sonic sound stage depth of 10 to 20 feet with sound images clearly floating behind and, from time to time, in front of the loudspeakers. You can actually turn your head and look at the sound images; these images will seem to linger in space. Some sound images will seem to clearly emerge from outside the walls of the listening room. From your listening chair, you get the feel of the sonic signature or ambience of a location where the recording was made.

### *Sonic Holography®*

Select music for your turntable or your CD Player. Engage the SONIC HOLOGRAM switch on the front panel of your Receiver or use your Remote Control. Sit back, relax and enjoy the amazing depth and renewed life that Sonic Holography® restores to your music.

Sonic Holography® requires a brief period of time to learn to hear the full effect and may also require a few adjustments to fully optimize the listening room's acoustics for the best results. If you have performed the initial set-up instructions described above, you should get a Holographic image right away. If this is not happening, go back and make sure that the loudspeakers and your listening chair are accurately positioned as shown in Figure 7. Retrace your steps and repeat the instructions to achieve the desired result.

Because Sonic Holography® is a totally unique and pleasurable experience, it is worth the time spent to insure that it is properly set-up.

### *Fine Tuning the Holographic Image*

After listening to Sonic Holography® with your stereo system properly set up, you will be in a position to begin fine tuning the complete system - in short, the room, loudspeaker placement, your ears, and the room's acoustics. The subject of loudspeaker/listening room interactions, and how our ear/brain perceive this interaction, is somewhat complex.

Different listening rooms, as well as loudspeaker systems have variations in response or interaction with each other. We recommend that you use the same musical selection during each listening session while fine tuning Sonic Holography®. Your Remote Control will assist in your evaluation process. As soon as you have acoustically located the musical images in space, switch OFF the Sonic Hologram feature with your Remote Control. The effect you should hear is that of the soundstage falling back, or collapsing flat. When you re-engage the Sonic Hologram feature, you will instantly notice the soundstage developing a renewed sense of depth. This effect is especially pleasing when used with state of the art movie soundtracks.

In some instances, undesired room reflections may cause the hologram to perform poorly. Acoustically absorbant material such as thick carpet, heavy drapes and overstuffed furniture all help reduce reflections. The relative position of open doorways or hallways in relation to loudspeaker placement will affect holographic imaging. Feel free to experiment with furniture placement and positioning of the speakers relative to doorways.

From the stunning reverberation of a gothic cathedral to the subtle sonic signature of a recording studio, this sense of definition helps to make the Sonic Hologram a convincing experience.



# 6

## Technical Information and Service Assistance

### *Troubleshooting Guide*

**WARNING:** NEVER replace or check a fuse while the unit is plugged into an AC outlet. The Receiver must be turned OFF for at least one minute before any AUDIO cables may be disconnected.

**NOTE:** Please refer to Startup Mode for Front Panel Controls in this section before you begin to troubleshoot.

Problem	Probable Cause	Solution
No display LEDs	No power to receiver. Fuse is blown.	Check 120 volt AC cord connection. Replace fuse. Check the wall outlet.
No sound on AM/FM	AUTO TUNING is not engaged. TUNER function is not engaged.	Use MANUAL TUNING or tune to stronger station. Engage TUNER function.
No sound on AM	No AM loop antenna connected.	See System Configuration.
No sound on CD, PHONO, or AUX inputs	Selected function is not engaged.	Select desired function. Check connection for selected input.
No sound from speakers	SPEAKER select button is not engaged. Speakers wired incorrectly. TAPE selector not in OFF position.	Engage desired SPEAKER button.  Refer to System Configuration diagram for proper wiring. Select TAPE OFF position.

<b>Problem</b>	<b>Probable Cause</b>	<b>Solution</b>
No sound in one channel	BALANCE control is not centered. Speaker wired incorrectly.	Center BALANCE control. Refer to System Configuration Diagram.
Thin shrill or distorted sound	TREBLE control set too high. Speaker wired incorrectly.	Readjust TREBLE control for desired sound. See System Configuration Diagram.
Hum or buzz when PHONO selected	Missing ground wire from turntable.	See System Configuration Diagram.
REMOTE CONTROL is dysfunctional	Dead or missing batteries. Using REMOTE too far from REMOTE SENSOR window.	Insert or replace with new AA batteries.
	Signal is blocked or not aimed at REMOTE SENSOR window.	Correctly aim REMOTE CONTROL.
No sound in TAPE1 or TAPE2 OR TAPE1 or TAPE2 will not record	Tape decks wired incorrectly.	See System Configuration Diagram.  Select appropriate TAPE.
No stereo sound	MONO is engaged.	Disengage MONO button.
Won't retain stations in memory	Receiver unplugged for more than 3 days	Power up Receiver at least every 3 days. Leave Receiver plugged into live AC outlet and use Receiver Power Switch to power up accessory equipment.
Won't receive any stations OR AUTO TUNING won't stop at any stations.	No FM antenna connected or it is improperly connected.	See System Configuration Diagram.
FM stations sound weak	ACCD not engaged Poor antenna or mis-oriented antenna	Engage ACCD Install outdoor antenna or re-orient antenna for maximum signal strength.
Insufficient VOLUME from Receiver	MUTE is engaged on REMOTE CONTROL.	Turn VOLUME down and then disengage MUTE button on REMOTE CONTROL.
REMOTE CONTROL does NOT control CD player	Not using CARVER DTL 50, 200, or newer models of CARVER CD's.	Use your REMOTE CONTROL included with your CD.

<b>Problem</b>	<b>Probable Cause</b>	<b>Solution</b>
No sound from VIDEO 1 VIDEO 2	VIDEO function not selected. VIDEO 1 or VIDEO 2 incorrectly connected Wrong VIDEO selected.	Select VIDEO function button. Check System Configuration Diagram. Select VIDEO which is connected.
VIDEO 1 will not record to VIDEO 2	Incorrectly wired VIDEO connections.	See System Configuration Diagram.
VIDEO 2 will not record to VIDEO 1	VIDEO 2 is the only deck which can be used for recording.	Only record from VIDEO 1 to VIDEO 2.
AUDIO from VIDEO 1 functions correctly but no picture	Incorrectly wired VCR cables or TV monitor cable.	Check System Configuration Diagram.
No power to SWITCHED outlets	POWER switch not engaged	Engage POWER switch on front panel.
Accessory units stay ON all the time	Accessory unit plugged into UNSWITCHED outlet.	Move accessory plug to SWITCHED outlet on REAR panel of Receiver.

### *Specifications (Nominal)*

**Preamplifier and Power Amplifier Sections:**  
125 Minimum continuous watts per channel (RMS), both driven into 8 ohms, from 20 Hz to 20 kHz with less than 0.1% Total Harmonic Distortion.

140 Minimum continuous watts per channel (RMS), both channels driven into 4 ohms, from 20 Hz to 20 kHz with less than 0.1% Total Harmonic Distortion.

IM Distortion: 0.05%

PHONO Gain: 36 dB

Tone Control Turnover Frequency: 100 Hz, 1 kHz, 10 kHz

Tone Boost/Cut: 8 dB

PHONO Signal-to-Noise Ratio: 85 dB

AUX/TAPE Signal-to-Noise Ratio: 90 dB

#### **TUNER SECTION**

FM IHF Usable Sensitivity: 10.3 dBf (1.8 uV)

FM Sensitivity for 50 dB quieting (mono): 4.0 uV

FM Signal-to-Noise Ratio: 78 dB

FM IF Rejection: 85 dB

FM Capture Ratio: 1.5 dB

FM Harmonic Distortion: 0.09%

AM Suppression: 62 dB

Stereo Separation: 46 dB

AM THD (2mV) 30% modulation: 0.4%

AM Selectivity: 20 dB

AM Image Reject: 46 dB

AM IF Rejection: 60 dB

Weight: 35 lb

Depth: 18"

Width: 19"

Height: 5½"

## Patent Notice

The circuitry and application of the CARVER Sonic Holography® Sound Processing System are protected by United States Patent 4,218,585 and corresponding foreign patents. Purchase of the CARVER Model 6250 Receiver gives you an implied license to use it to play recordings, but not to make recordings.

## Startup Mode for Front Panel Controls

1 Follow directions for System Configuration.

2 Preset controls as follows:

VOLUME - Fully OFF  
POWER - In  
SPEAKER A - In position  
SPEAKER B - Out position  
MONO - Out position  
BASS - Center position  
MIDRANGE - Center position  
TREBLE - Center position  
TUNER - Engaged  
MANUAL TUNING - Engaged  
MULTIPATH NOISE - Out  
LOUDNESS - Out  
SONIC HOLOGRAM - Not engaged  
TAPE SELECTOR - Off  
BALANCE - Center position  
FM - Engaged  
VIDEO 1 - Engaged  
VOLUME - 1/10 volume

If your unit was configured correctly and you followed the above Startup Mode, you should now hear FM hiss. Tune to your favorite station and enjoy the music.

If you are not receiving a broadcast or seeing any display LEDs, then refer to the Troubleshooting Guide.

## Care of Your Model 6250 Receiver

Never short circuit the output terminals of the Receiver. When connecting the loudspeakers, avoid speaker wires touching at the terminals of the Receiver or the speakers. Protect your Receiver from moisture and excessive dust. Avoid dropping your Receiver. Never replace the fuse with one other than the specified rating.

The front panel may be cleaned with a soft cloth and a solution of diluted ammonia to remove fingerprints and film buildup. Never use detergents or abrasives. If you suspect a problem, try some simple troubleshooting first. Frequently, a problem lies elsewhere in the system or even in the connection cables.

## Service Assistance

**NOTE:** Fill out and mail the WARRANTY REGISTRATION CARD which is enclosed in a separate envelope with the CARVER LIMITED WARRANTY.

If your CARVER product should require service, we suggest you contact the Dealer from whom you purchased your unit. Should the Dealer be unable to take care of your needs, you may contact CARVER Customer Service Department by phoning (206) 775-6245, or by writing CARVER CORPORATION, Customer Service Department, P.O. Box 1237 Lynnwood, WA 98046. We will then direct you to one of our National network of factory trained and authorized Warranty Service Centers, or give you detailed instructions on returning the product to us for prompt appropriate action.

We suggest you read the LIMITED WARRANTY completely to fully understand what your warranty/service coverage is, and the duration. You must promptly complete and return the WARRANTY REGISTRATION CARD to validate your LIMITED WARRANTY.

We wish you many hours of musical enjoyment. If you should have questions or comments, please write to:

**CARVER CORPORATION**  
**Customer Service Department**  
**P.O. Box 1237**  
**Lynnwood, WA 98046**  
**(206) 775-6245**

Ask your CARVER Dealer to show you the CARVER family of stereo components for your home audio reproduction. Selected CARVER electronics that can accompany your 6250 Receiver are:

Speakers  
Compact Disc Player



CARVER CORPORATION, P.O. Box 1237, Lynnwood, WA 98046