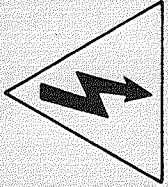
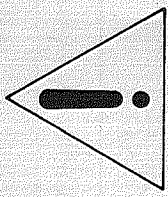


THE CARVER RECEIVER 900

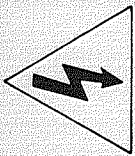
Operating Instructions

	<p>CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN</p>	
<p>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</p>		

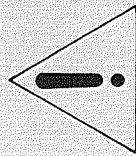
CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT

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.



WARNING
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CARVER RECEIVER 900

POWERFUL — MUSICAL — ACCURATE

Table of Contents

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CAUTION

To prevent shock hazard, electrical fires, and damage to the equipment, do NOT plug the receiver into any other power than a nominal 110VAC, 60Hz outlet. Do not expose this unit to moisture or rain. If the unit accidentally gets wet, disconnect the AC power cord until the unit is thoroughly dry, inside and out. Before changing any connections, power the receiver off and power off any other units that are in the system.

Do not remove the top or bottom covers with the power cord plugged in. There are no user-serviceable parts or adjustments inside. Unauthorized servicing may void the warranty.

Serial No. 50602429 H

Date Purchased 12-6-85

Store Name and Address

Sound Shop
528 South Tejon CS, CO. 80903

THE CARVER RECEIVER 900

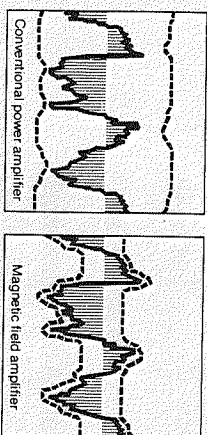
Redefines your expectations of receiver performance with the power you need for Compact Discs plus virtually noise-free stereo FM reception. A receiver with astonishing performance incorporating two highly significant technological breakthroughs: Bob Carver's Magnetic Field Power Amplifier and his Asymmetrical Charge Coupled FM Detector.

Essential Power

Your system needs an abundance of power to reproduce, without distortion, the dynamic range of music on Compact Discs and fine analog recordings.

The Magnetic Field Amplifier in your CARVER Receiver gives you 90 watts per channel* of pure, clean power with superbly defined, high fidelity reproduction.

The Magnetic Field Amplifier produces large amounts of power (absolutely necessary for the accurate reproduction of music at realistic listening levels) without the need for heavy heat sinks, massive transformers, and enormous power capacitors required by conventional amplifier design.



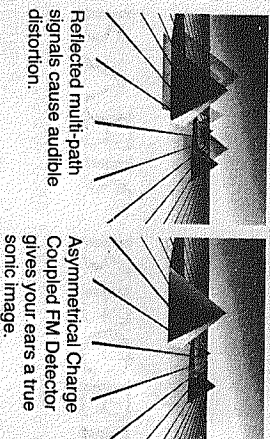
Solid line: audio output signal. Broken line: power supply voltage. Shaded area: wasted power. Vertical lines: power to speakers.

Unlike conventional amplifiers which produce a constant, high voltage level at all times, irrespective of the demands of the ever-changing audio signal (even when there is no audio signal in the circuit at all), the Magnetic Field Amplifier's power supply is signal responsive. Highly efficient, it produces *exactly and only* the power needed to carry the signal with complete accuracy and fidelity.

The 90 watts-per-channel* CARVER Receiver 900 is about the same size and weight of conventional receivers having merely 30 watts per channel!

Noise-Free Reception

The AM-FM CARVER Receiver 900 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 circuit, the stereo signal arrives at your ears virtually noise-free. You hear fully separated stereo with space, depth and ambience!

The Asymmetrical Charge Coupled FM Detector was first introduced in CARVER's TX-11 Stereo Tuner, receiving unparalleled critical acclaim:

"A major advance . . . Its noise reduction for stereo reception ranged from appreciable to tremendous. It makes the majority of stereo signals sound virtually as quiet as mono signals, yet it does not dilute the stereo effect."

Julian D. Hirsch, STEREO REVIEW
(December, 1982)

"Separation was still there; only the background noise has been diminished, and with it, much of the sibilance and hissy edginess so characteristic of multipath interference."

Leonard Feldman, AUDIO
(December, 1982)

"What distinguishes the TX-11 is its ability to pull clean, noise-free sound out of weak or multipath ridden signals that would have you lunging for the mono switch on any other tuner we know of."

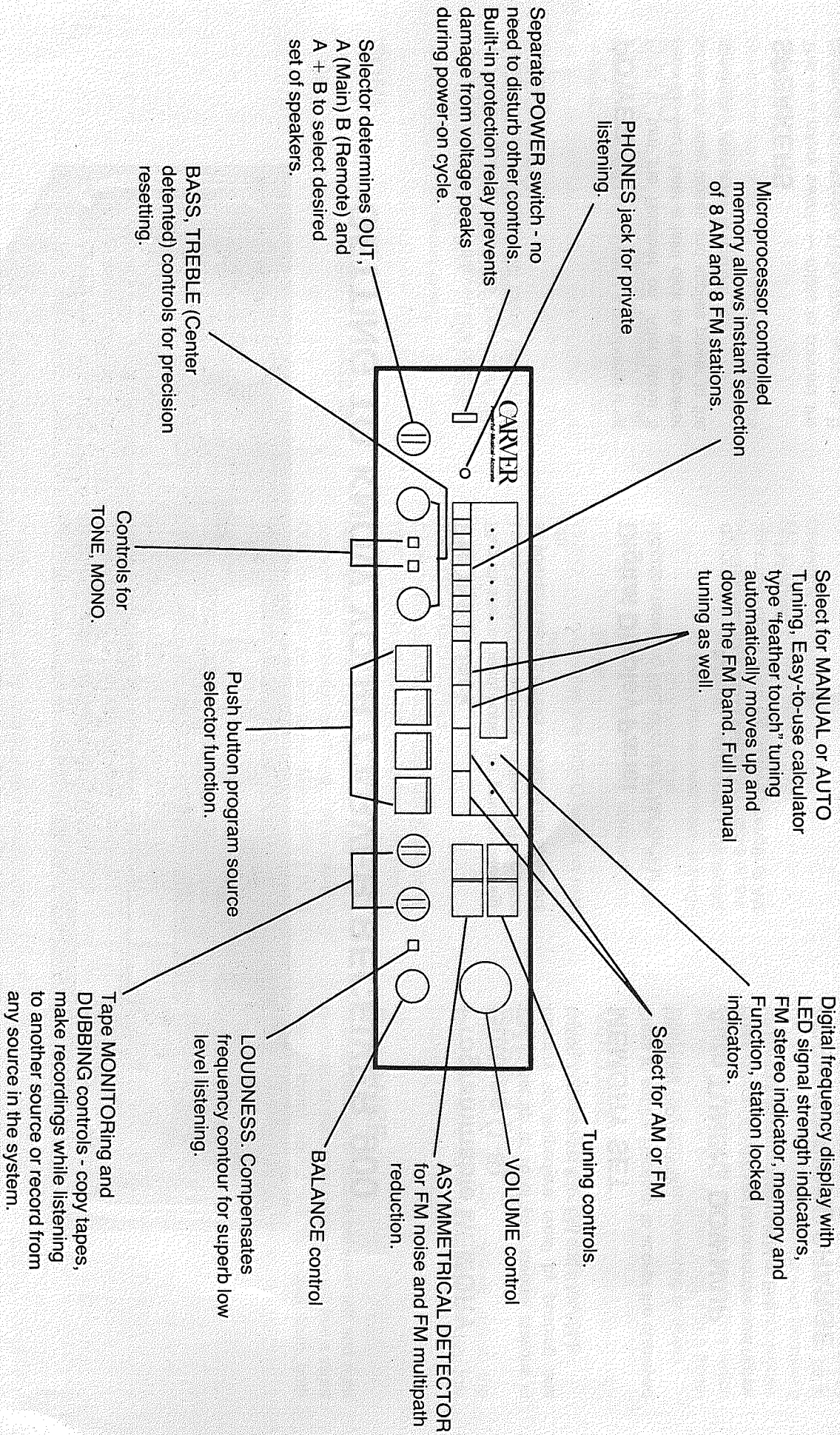
HIGH FIDELITY (January, 1983)

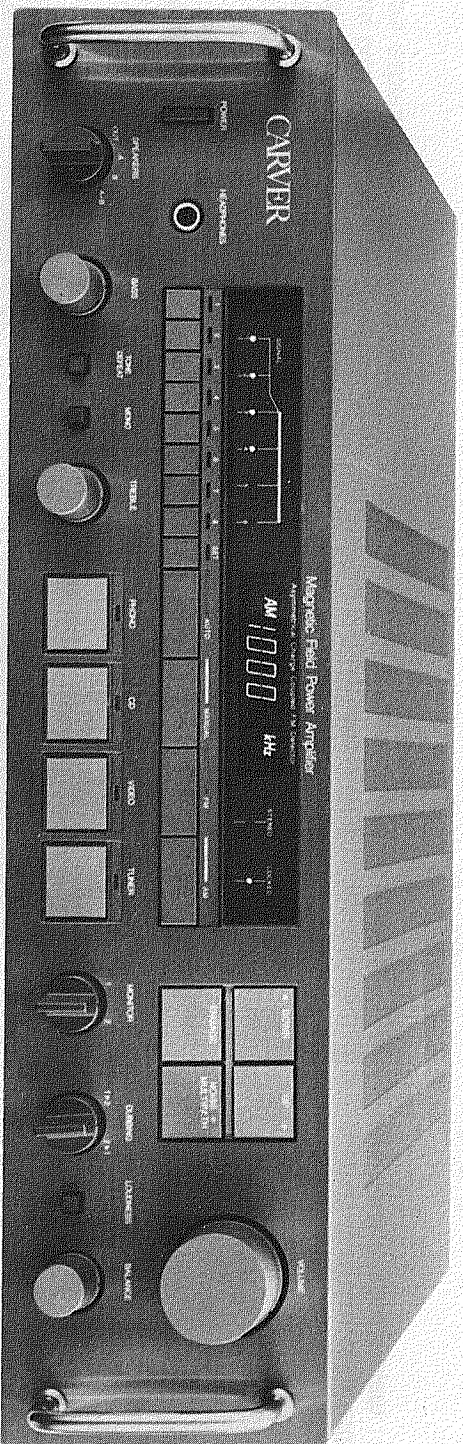
The CARVER Receiver 900 has been designed for fidelity, accuracy and musicality.

*90 watts per channel RMS into 8 ohms, 20 Hz to 20 kHz with no more than 0.15% total harmonic distortion.

CARVER Powerful • Musical • Accurate

Features and Functions





GETTING TO KNOW YOUR CARVER RECEIVER 900

Here's a quick overview of the versatile controls of your new Receiver. Complete instructions for installation and operation will follow later in the Manual.

POWER

Push to turn the Receiver on. After about 5 seconds, you'll hear a faint click as the speaker protection relay closes and applies power to the speakers. Press again to turn off.

SPEAKERS

This is a rotary switch — rotate to connect the desired pair of speakers. A is for "main" speakers. B is for "remote" speakers. A + B is for both "main" and "remote" speakers. When using headphones, you'll probably want to set "OUT" position for private listening.

PHONES Jack

Plug in stereo headphones for private listening. Leave SPEAKERS switches in the "OUT" position so you don't disturb others (this turns the Speakers off).

Digital Display Panel

Indicates receiving frequency and "AM" or "FM".

SIGNAL STRENGTH

Six amber LED's show the relative strength of AM or FM signal.

FM Stereo Indicator

This LED lights up if the MONO button is set for stereo (out) and you are tuned to a stereo FM signal.

Programmable MEMORY Buttons (1-8)

Use to set up to 16 of your favorite stations in memory for immediate recall by pushing one button. (You can set 8 for FM and 8 for AM.)

MEMORY SET

Press to set the Receiver to accept the displayed frequency into memory.

Auto TUNING DOWN/UP

Press UP (or DOWN) key to scan to the next higher (or lower) frequency station (AM or FM).

ASSYMETRICAL CHARGE COUPLED DETECTOR

When engaged, these controls will virtually eliminate noise and multipath from weak FM stereo signals.

MEMORY SET LED

Shows the Receiver is ready to memorize a station frequency after you press MEMORY SET button.

TUNING

Selects the Auto or Manual Tuning mode: press for the desired mode.

MONO

PRESSING THE MONO button defeats stereo operation, the resulting signal is a composite (Left + Right).

LOUDNESS

When listening at low volume settings, press in the LOUDNESS button. This overcomes the human ear's reduced sensitivity at low listening levels by compensating the low frequencies.

ZONE

Pressing this button engages the BASS and TREBLE controls.

Source Selector Function Push-Buttons

Determine the desired program source.

AM: Activates the AM tuner.

FM: Activates the FM tuner.

PHONO: Activates the PHONO 1 jacks on the rear panel. The turntable connected to these inputs must have a magnetic phono cartridge.

CD: Activates the CD jacks on the rear panel. Connect any compact disc player.

VIDEO: Activates the VIDEO jacks on rear panel.

TAPE DUBBING

Controls the tape dubbing (duplicating) functions.

With switch in center (off) position, both sets of TAPE OUT jacks will carry the same signals as determined by the Function switch. Use 1 \blacktriangleright 2 position to dub directly from TAPE 1 IN to TAPE 2 OUT, and 2 \blacktriangleright 1 position to dub from TAPE 2 IN to TAPE 1 OUT.

TAPE MONITOR

Lets you monitor signals connected to TAPE 1, TAPE 2, or the program SOURCE determined by the FUNCTION Push-buttons. Switch must be in center position if you wish to hear your Receiver's sound (AM, FM, PHONO, etc.). To monitor signals connected to TAPE 1 IN, use position 1; for monitoring TAPE 2 IN, use position 2. This switch will be of special benefit when used with a three-head tape deck (one with monitoring facilities).

VOLUME

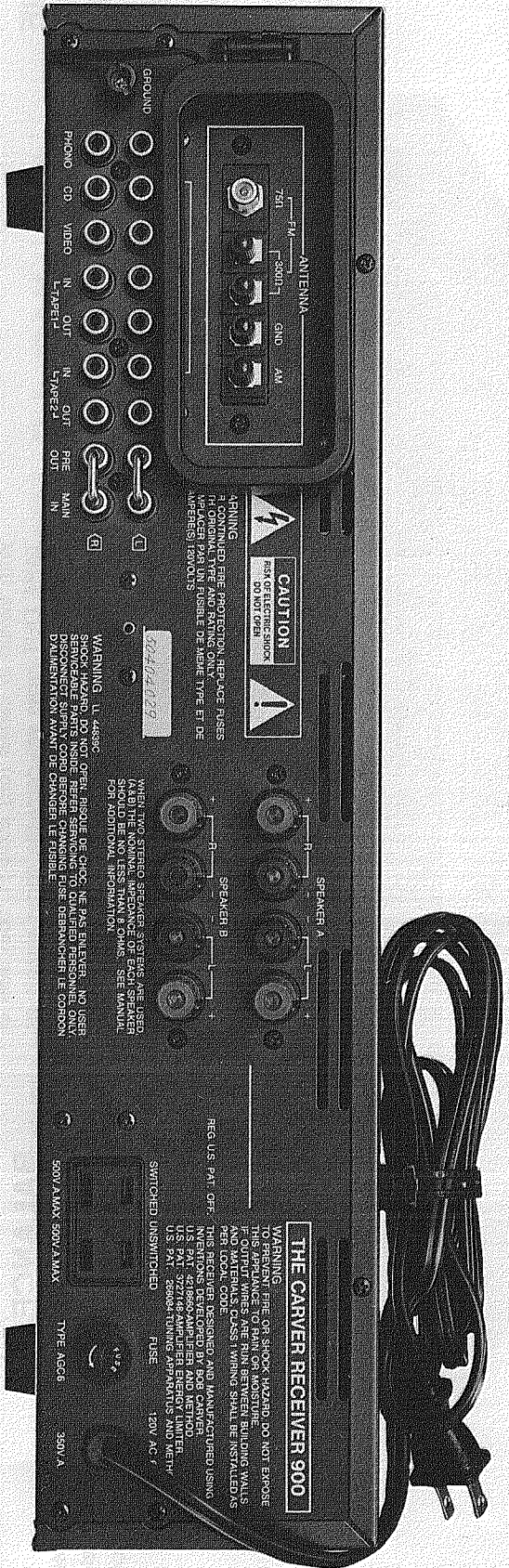
Adjusts volume of sound from both channels.

BASS, TREBLE

These controls let you precisely adjust the frequency response in two different ranges: low frequency and high frequency.

BALANCE

Adjusts balance of sound between left and right channels. At the center position (you'll feel a slight "catch" there) sound will be equal from both channels.



REAR PANEL

(1) Phono GND Screw

Connect the ground lead (typically green or black) from the Turntable/Record Changer to this screw (to reduce or eliminate hum).

(2) PHONO Jacks

Connect Turntable/Record Changer with magnetic cartridge to these jacks. These jacks are active when PHONO Push-button is pressed.

(3) VIDEO

Connect video audio to these jacks.

(4) CD Jacks

Connect output from any high-level source — a Compact Disc Player, third Tape Deck, etc. These jacks are activated when CD push-button Selector is pressed.

(5) TAPE IN 1 Jacks

Use as following (8) for a second Tape Deck. To activate these jacks, TAPE MONITOR must be set to 1.

(6) VENTED TOP COVER

Allow for air flow thru vents when installing unit.

(7) TAPE OUT 1 Jacks

Use as following (10) for a second Tape Deck.

(8) TAPE IN 2 Jacks

Connect from Tape Deck's Output jacks for tape playback. To activate these jacks, TAPE MONITOR must be set to 2.

(9) POLARIZED AC LINE PLUG

Insert into a polarized 120 volt AC/60 Hz outlet.

THE CARVER RECEIVER 900

WARNING - FIRE OR SHOCK HAZARD DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE BETWEEN BUILDING WALLS OR UNDER FLOOR CLASS FINISHING SHALL BE INSTALLED AS PER LOCAL ELECTRICAL CODES.

THIS RECEIVER DESIGNED AND MANUFACTURED USING COMPONENTS DEVELOPED BY BOB CARVER

U.S. PAT. 4288844 AMPLIFIER AND METHOD

U.S. PAT. 4288844 AMPLIFIER AND METHOD

U.S. PAT. 4288844 TUNING APPARATUS AND METHOD

SWITCHED UNSWITCHED FUSE 120V AC 1A

500V A/MAX 500V A/MAX TYPE AC66 350V A

WARNING - FIRE OR SHOCK HAZARD DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE BETWEEN BUILDING WALLS OR UNDER FLOOR CLASS FINISHING SHALL BE INSTALLED AS PER LOCAL ELECTRICAL CODES.

WHEN TWO STEREO SPEAKER SYSTEMS ARE USED SHOULD EMPLOY TWO SEPARATE CORDS FOR EACH SYSTEM. SEE MANUAL FOR ADDITIONAL INFORMATION.

SHOCK HAZARD. DO NOT OPEN. RISK OF SHOCK. NE PAS OUVRIER. NO USER SHOULD OPEN THIS RECEIVER. DISCONNECT SUPPLY CORD BEFORE CHANGING FUSES. D'ALLUMINATION AVANT DE CHANGER LE FUSIBLE.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

TUNING

TURNING OFF THE RECEIVER PROTECTS THE TUNING CIRCUITS FROM DAMAGE. ORIGINAL TUNING AND TUNING ONLY. IF LATER PARTS ARE USED THE TUNING CIRCUITS MAY BE DAMAGED.

GROUND

PHONO

CD

VIDEO

TAPE 1 IN

TAPE 1 OUT

TAPE 2 IN

TAPE 2 OUT

PRE MAIN IN

PRE MAIN OUT

SPEAKER A

SPEAKER B

REG. U.S. PAT. OFF.

500V A/MAX 500V A/MAX

TYPE AC66

350V A

(10) TAPE OUT 2 Jacks

Connect to the Tape Deck's Auxiliary Input for recording any one of the Receiver's program sources. The output from these and all TAPE jacks is unaffected by VOLUME, BALANCE, LOUDNESS or TONE CONTROLS.

(11) (12) PRE OUT/MAIN IN JACKS

As supplied, there are jumper wires between these jacks. If you want to operate a multi-channel system you can remove these jumpers and so use only the power amp circuits. Or, install a Frequency Equalizer system between the PRE OUT and MAIN IN jacks.

(13) A/B SPEAKERS

Terminals

(14) SWITCHED Convenience AC OUTLET

Plug in an audio accessory which you want turned on and off by front panel POWER switch. For example, connect a Tape Deck to this receptacle. Thus, when you turn the Receiver on and off, the Tape Deck will automatically be turned on and off at the same time. Power drawn from this receptacle should not exceed 300 watts.

(15) UNSWITCHED Convenience AC OUTLET

Can be used to power any audio accessory up to 300 watts. The front panel POWER switch does not affect this receptacle.

(16) AC Cord

Supplies the power. Plug the cord into any 120V AC, 60 Hz outlet. (220/240V AC, 50Hz for European and 240V AC, 50 Hz for Australian model.)

(17) Power FUSE

This is the power supply fuse. It protects the Receiver from voltage surges or other abnormal operating conditions. If the Digital Display or an LED Function Indicator does not go on when POWER is pressed, check the FUSE: if it is blown, replace with the same size and value.

(18) AM Loop Antenna

Is adequate in most areas for AM reception. Move around on its swivel for best reception.

(19) AM Antenna Screw Terminals

Connect an external AM antenna here for long distance AM reception. In most areas the built-in antenna will provide excellent reception. The ground terminal is optional, and may be used for extreme long distance reception.

(20) FM Antenna 300 Ohm Screw Terminals

Connect the Dipole Antenna (provided), or connect external FM antenna here using standard 300 ohm lead-in.

(21) FM Antenna 75 Ohm Terminal

Connect external antennas here using 75 ohm coaxial lead-in. Coaxial cable provides extremely high immunity for static and other noise.

Adding Your CARVER Receiver to Your System

Before making connections,

be sure the POWER switch is "OFF" and the AC power cord is not connected.

Note: To reduce hum, use shielded audio cable for all connections except speakers. For speaker connections use lamp cord or speaker cable.

Speakers

Your CARVER Receiver output is designed for use with 4—16 ohm speakers. If you plan to have both A (main) and B (remote) speakers, you should use 8 or 16 ohm speakers to prevent overload.

Note: Be sure to observe proper wiring "polarity". Most speaker wire is clearly marked with a raised line along one conductor, or has one wire a different color from the other. Connect the (+) Receiver output to the (+) or "marked" (color dot or other marking) Speaker terminal. Do not allow stray strands of wire to touch adjacent terminals or the metal chassis.

Phonograph

Connect the turntable leads to the PHONO input. If the turntable has a ground wire (usually black or green) connect it to the PHONO GND screw. Plug the turntable AC cord into the AC convenience outlet or wall socket.

Tape Deck(s)

Connect your Recorder's inputs (usually labeled AUX or LINE IN) to the Receiver's TAPE OUT 1 jacks. The Receiver's TAPE IN 1 jacks should be connected to your Recorder's PRE AMP OUTPUT or LINE OUTPUT jacks. You can connect a second Recorder's inputs to the Receiver's TAPE OUT 2 jacks and the Recorder's output to the Receiver's TAPE IN 2 jacks.

Auxiliary Equipment

The CD and Video inputs may be used with any high level source — Compact Disc Player, Video Audio, a second tuner, an additional tape player or recorder, shortwave radio, etc.

Antennas

Your receiver comes with an FM Dipole Antenna and an AM Loop Antenna. For FM reception, connect the Dipole to 300-ohm antenna terminals on the rear. Tack it to the back of a record cabinet or onto a wall — the higher the better. For the best FM reception, you should use an external antenna.

For AM reception use the Loop Antenna supplied or you may connect an external antenna to the AM terminal.

Before Plugging In Your CARVER Receiver

- Double-check all connections — especially the Speaker connections — to assure that they are all secure and that there are no shorts.
- Set the Volume control to minimum (counterclockwise) position.
- All push buttons should be out.

Now, connect the power cord to a source of AC power and you are ready for fantastic sound!

Using Your CARVER Receiver 900

Power On

Press **POWER** button to turn the Receiver on. Note: After about 5 seconds, you'll hear a faint click as the protection relay closes. This pause before the output stages are activated protects your speakers and the Receiver's internal circuitry from high-level switching pops and voltage peaks during the power-on cycle. The faint click is your reminder of this vital safety feature. If at any time during operation the protection relays are activated (by a short across the speaker terminals for example), the Receiver will become silent. If this happens, check for improper connection or overheating.

Speakers/Headphones

Set **SPEAKERS** Selector to A or B (or A + B). For private listening, set **SPEAKERS** to **OUT** and plug a pair of headphones into **PHONES**.

Select the Source

Press the desired Selector push-button: **TUNER**, **PHONO**, **VIDEO**, or **CD**.

AM/FM Reception

Press **AM** or **FM** push-button.

Auto Tuning

Press the **AUTO TUNING** button and press either **UP** or **DOWN TUNING** button. The Receiver will automatically stop at the next station. To continue or make another choice, press either **TUNING** button again. The locked **LED** will indicate perfect tuning. When you reach the highest frequency (1620 [or 1611] kHz AM, 107.9 [or 108.00] MHz FM) in **UP TUNING** mode, it will automatically start over. The Receiver will continue to scan the band over and over again. The **Auto TUNING** will only stop at strong signals on **AM** and **FM**. If you want to tune weaker stations, you will have to tune manually. Push the **Manual Tuning** button to

Manual position for manual tuning. You may find weaker **FM** stations noisy. To improve quality, engage the **Asymmetrical Detector**. If the stations still sound noisy or distorted, push the **Noise/Multipath** button.

Manual Tuning

Press the **Manual Tuning** button. Press **UP** or **DOWN** button until you find the desired station. If you press and hold the **UP (DOWN)** button for **3 seconds** or more, the Receiver will start a **rapid scan** (will not automatically stop on stations).

How to Set the Memory

A total of 16 frequencies can be set into the Receiver's Memory (eight for **FM**, eight for **AM**).

1. Press either **AM** or **FM** push-button.
2. Tune to desired station (either Automatically or Manually).
3. Press the **MEMORY SET** button. The **MEMORY LED** will be lit.
4. Press **MEMORY 1**; the **MEMORY LED** will turn off.
5. Repeat steps 2 - 4 until all the stations you want are set into the Memory.
6. Select the other band (**AM** or **FM**) and repeat as above for six more frequencies.

Want to change the stations you've stored in Memory? Simply add new stations as in steps 1 - 6 and old ones are automatically erased.

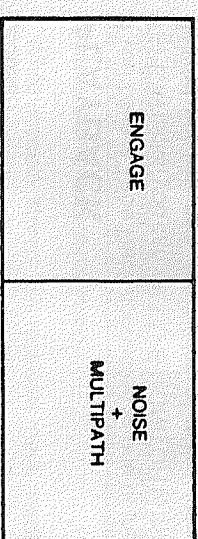
Note: You may want to put a small stick-on label next to each **MEMORY** button to show the call letters of the stations set into Memory.

Memory Receive

To tune a frequency programmed into Memory, just press the desired Memory button, 1 through 8. If **AM** push-button is pressed, you'll receive the **AM** frequency; if in the **FM** mode, you'll receive the **FM** frequency.

Note: When the Receiver is unplugged, a built-in Time Constant Circuit will keep the pre-set frequencies in Memory for a few hours. If the Receiver is unplugged for more than a few hours, you'll have to re-enter stations into Memory.

Asymmetrical Detector



The engage button engages the circuit. Simply push for quiet **FM** reception.

The **NOISE** button is a two position switch that allows you to optimize the circuit for a particular reception problem. In the "**OUT**" position, the circuit will reduce weak station noise. When the button is pushed to the "**N**" (**Multipath**) position, the circuit will reduce both weak station noise and multipath distortion. Ordinarily, optimum performance is obtained when the button is positioned "**OUT**", except for those reception conditions where multipath distortion is present. Feel free to experiment with either position and choose the best.

Listening to Records

Press **PHONO** push-button and adjust the **VOLUME**, **BALANCE**, **BASS**, and **TREBLE** controls.

Note: For the best fidelity and longest record life, make sure the cartridge on your turntable is operating within the recommended tracking force. Too light or too heavy tracking forces cause distortion and record wear.

Auxiliary Sources

Inputs are provided for Compact Discs and Video Audio, but these jacks will accept any high-level input from auxiliary equipment. Typical auxiliary equipment would be: tape player, a UHF or VHF tuner, ham radio, etc. Connect such sources to the rear panel CD or Video inputs and press the corresponding push-button.

VOLUME and BALANCE

Increase or decrease the VOLUME control for a pleasant listening level. You can monitor the power available to the speakers by observing the two POWER METERS. If necessary, adjust BALANCE for best stereo effect and channel balance, or to compensate for slightly off-center listening positions.

Tone Control Settings

Your Receiver gives you unusually precise control over the frequency response. You're probably familiar with the use of bass and treble controls. To increase bass or treble response, rotate the appropriate control clockwise; to decrease, rotate control counterclockwise. In center position, controls are removed from the circuit for a flat, unadjusted response.

Or, you can leave the controls set for your favorite sound compensation and just press TONE when you want to engage the controls.

For Low Listening Levels

Press LOUDNESS. This increases low frequencies to overcome the human ear's lack of sensitivity at low listening levels.

Tape Functions

Your Receiver has two sets of Tape Input and Output jacks on the rear, plus DUBBING and MONITOR switches on the front panel. This makes it easy to copy tapes, make dual recordings or record any program source without changing rear panel connections.

Recording

Set the Function switch to the desired source — you can record any program source being played through your receiver. Set TAPE DUBBING to center (off) position. Adjust Volume, Balance and tone controls for your preference — they will not affect the output to your Recorder. If you have a 3-head tape deck, you can set TAPE MONITOR switch to 1 (or 2) to hear the recording immediately after it passes the recording head.

When TAPE DUBBING and MONITOR switches are set to their center (off) positions, the signal you are listening to (AM, FM, PHONO, etc.) will appear at both TAPE 1 and TAPE 2 OUT jacks. So, you can record via either or both jacks.

If you set TAPE MONITOR to other than OFF, it will interrupt the "source" signal and connect the Receiver's input to the TAPE IN jacks selected by the position on the TAPE MONITOR switch.

To Duplicate (Dub) Tapes:

Let's say you have Tape Deck "A" connected to TAPE 1 IN and OUT jacks. And you have Tape Deck "B" connected to TAPE 2 IN and OUT jacks.

Put Tape Deck "A" into Play function. Set DUBBING to 1 \blacktriangleright 2 and Record with Tape Deck "B". If Tape Deck "B" is a 3-head machine, you can monitor its recording by setting TAPE MONITOR to 2.

You can also record onto Tape Deck "A", when Tape Deck "B" is in the Play mode. Just set DUBBING to 2 \blacktriangleright 1. Then, to monitor the recording made on Tape Deck "A" (assuming "A" is a 3-head machine), set MONITOR to 1. As you use and experiment with these jacks and front panel switches, you'll soon begin to appreciate the unusual flexibility and versatility of these inputs and outputs.

Dubbing While Listening to Another Source:

It's possible to dub tapes (from Tape 1 to Tape 2 or Tape 2 to Tape 1) while you are listening to another source (AM, FM, PHONO, VIDEO, or CD). This surprising feature is possible because the TAPE IN/OUT circuits are independent from the rest of the circuitry under the following conditions:

- (a) TAPE MONITOR switch must be set to center (off) position.
- (b) TAPE DUBBING switch must be set to 1 \blacktriangleright 2 or 2 \blacktriangleright 1 position, depending on which deck is in playback mode and which is in record mode.

So now if you're doing a lot of dubbing and it gets tedious, you're free to listen to whatever source you choose.

PLAYBACK

If you have a Tape Deck connected to one of the TAPE IN jacks, you can set TAPE MONITOR to the desired position and, regardless of which input source you're using, you will hear the tape being played.

Note: If you have set TAPE MONITOR to 1 or 2 without a signal source being connected to TAPE IN 1 or TAPE IN 2, the Receiver's sound will cease. TAPE MONITOR (1 or 2) interrupts the signal flow through the Receiver and activates TAPE IN 1 or TAPE IN 2 for the input source. So if the Receiver is "dead", be sure MONITOR is not set to 1 or 2.

ASYMMETRICAL CHARGE COUPLED DETECTOR

YOU HAVE PURCHASED AN ABSOLUTELY UNIQUE RECEIVER THAT WILL ALLOW YOU TO RECEIVE NOISE-FREE AND MULTIPATH FREE STEREO FM RECEPTION FROM MANY STATIONS THAT YOU HAVE PREVIOUSLY FOUND TO BE UNLISTENABLE.

The FM Stereo Problem

The fundamental FM stereo problem is simple: the broadcast system was designed over 30 years ago before the advent of stereo. When stereo came along, two channels were forced to fit where one channel went before. The result: a giant step backwards in terms of noise-free, distortion-free reception for all but nearly ideal and perfect reception conditions. Enter the CARVER Receiver.

Your CARVER Receiver can drastically reduce multipath and distant station noise and still provide fully separated stereo reception with space, depth and ambience. We're tempted to say, sound **quality** as it was intended over 30 years ago. Back then, FM was a noise-free, wide-band alternative to static-filled AM. But it was in mono. Unfortunately, the stereo transmission system selected to augment mono FM ended up degrading the ratio of signal noise FIFTEEN TIMES! (More than 23 dB.)

That's the system we live with today: hiss and often multipath, distortion-filled unless you're in a direct line with a strong station.

Understanding FM

Stereo frequency modulation transmission is a lot more complicated than you might think. But understanding it will clarify both the problems and CARVER's solution.

Stereo FM, is not like a 2-track cassette with separate signals next to each other. Rather, there is a Left-Minus-Right and a Left-Plus-Right signal. A receiving circuit adds and subtracts sums and differences to get Left-only and Right-only signals (As you might have guessed, Left-Plus-Right comes in just fine on mono receivers because it IS mono.) It's that Left-Minus-Right signal that's to blame.

These signals are transmitted at different parts of the audio spectrum and unfortunately L-R is extremely prone to mishaps on the way to your home.

Audio Ghosting

To get stereo FM perfectly, you'd have to be the only house in the middle of a vast flat plain with no other buildings anywhere on the plain.

Because any protruding mass — hills, mountains, skyscrapers, other antennas, even bridges — looms up to reflect signals while on their way to your tuner.

Then you get TWO signals, one directly, and one or more a fraction of a second later, after it's taken a longer angular path of bouncing off something. (This happens with TV and AM, too. AM isn't audibly

affected, but you can see the frustrating result on TV: a second, third and fourth image.)

These additional images are disastrous to FM reception because they reinforce and then remove part of the signal alternately. As the main signal deviates in frequency, it beats with the reflective signal, causing constructive and destructive interference patterns which bear no resemblance to the original signal. An engineer calls these "beats" phase and amplitude modulation.

While modern stereo FM receivers have made much of correcting the amplitude modulation component of this interference, they have never addressed the truly audible distortion caused by the phase modulation part.

Without waxing too technical, suffice it to say that all other FM receivers are tricked into reading phase modulation as frequency modulation, which is decoded and made into a brand new signal.

Thus instead of just degrading the existing signal, multipath reception problems actually CAUSE NEW AUDIBLE SOUNDS. And we've all heard how bad these sounds sound.

Your CARVER Receiver eliminates these distortions whenever the ASSYMETRICAL DETECTOR button is engaged. We recommend leaving the ENGAGE button "IN" all the time and the NOISE button "OUT" for normal listening. For severe multipath reception problems, push the NOISE button "IN" to additionally activate the multipath reduction mode of the circuit.

SPECIFICATIONS

PRE-AMPLIFIER & AMPLIFIER

Minimum Audio Output Power at no more than 0.15% Total Harmonic Distortion into 8 ohms, over the audio spectrum 20 - 20,000 Hz	: 90 watts per channel (RMS power, both channels driven)
Frequency Response (20 - 20,000 Hz)	: Flat
IM Distortion	: 0.05%
Gain: PHONO	: 35dB
AMPLIFIER	: 26dB
TUNER, VIDEO	: 17dB
TAPE IN 1, 2	: 17dB
Tone Control Action	BASS (100 Hz) : ± 8dB
	TREBLE (10 kHz) : ± 8dB
Signal-to-Noise Ratio	
PHONO	: 82dB
AUX and TAPE IN 1, 2	: 90dB
TAPE OUT 1, 2 Level	: 140mV
FM TUNER	
Sensitivity (IHF)	: 1.8 µV
Sensitivity for 50 dB Quieting	: 3.1 µV, 5.0 µV
Limiting Sensitivity (-3dB)	: 1.5 µV
Signal-to-Noise Ratio (1mV)	: 74dB
Image Rejection	: 82dB
IF Rejection	: 80dB
Capture Ratio	: 1.0 dB
Harmonic Distortion	
Mono	: 0.15%
Stereo	: 0.2%
AM Suppression	: 80dB
Stereo Separation (1 kHz)	: 40dB
AM TUNER	: 20 µV
Sensitivity Terminal	: 250 µV
	: 250 µV/m for 20 dB S/N
Radiated	: .9%
Distortion (5mV/M)	: 42dB
Selectivity	: 45dB
Image Rejection	: 34dB
IF Rejection	: 34dB
AGC Figure of Merit	: 50dB

ANTENNAS

AM: Loop Antenna
 FM: Dipole antenna
 Plus terminals for external antennas.
POWER REQUIREMENTS
 120V AC, 60 Hz (350 watts max.)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

CARVER LIMITED WARRANTY

This equipment is warranted against defects for two years from date of purchase. Within this period, we will repair it without charge for parts and labor. Simply write to or call Carver Corporation (Attention: Customer Service Department), P.O. Box 1237, 19210 33rd Ave. W., Lynnwood, Washington 98036, 206-775-1202. You will be directed to an authorized Carver Corporation Service Station or receive instructions to ship the unit to the factory. Please save the original shipping carton and packing materials in case shipping is required. Please do not ship by Parcel Post. Be sure you have received authorization from Carver Corporation and include a complete description of the problem, the associated components and connections, and a copy of the purchase receipt. Initial shipping costs are not paid by Carver Corporation; return shipping costs will be prepaid if repairs were covered by the scope of this Warranty.

Carver Corporation's liability is limited to the repair or replacement, at our option, of any defective product and shall not, in any event, include property or any other incidental or consequential damages which may result from the failure of this product. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. We suggest that you attach your purchase receipt to this Warranty and keep these in a safe place. Thank you for your choice of a Carver Corporation product.

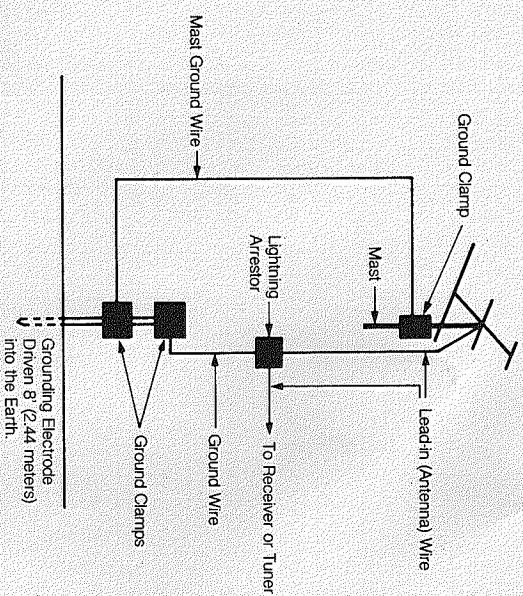
Notice: The preceding warranty information is exclusive to the United States. Please see your local Carver dealer or distributor for the correct information for your area and locale.

SAFETY INSTRUCTIONS

READ BEFORE OPERATING THE EQUIPMENT

This product was designed and manufactured to meet strict quality and safety standards. There are, however, some installation and operation precautions which you should be particularly aware of:

1. Read instructions — Read and follow all the safety and operating instructions before operating the equipment.
Save the Owner's Manual for future reference.
2. The equipment 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.
3. The equipment should not be located near heat sources such as radiators, heat registers, stoves, or other appliances that produce heat.
Position the equipment so that its proper ventilation is not interfered with. For example, the equipment should not be placed on a bed, sofa, rug, or similar surface that may block the ventilation openings.
Except as described in the Owner's Manual, don't place the equipment in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
4. The equipment should be used only with a cart, stand, or rack specifically designed to hold stereo equipment. If the equipment is to be mounted in a wall or ceiling, care should be taken to assure a stable and solid installation; professional assistance should be sought in difficult installation situations.
5. The equipment should be connected to a power source of the same type described in the Owner's Manual and also on the equipment. The power cord should be routed so it won't be walked on or pinched by objects placed upon or against it. Pay particular attention to power cords where they connect to plugs, convenience outlets and the equipment itself.
6. To avoid a possible shock hazard situation:
 - A) Don't remove the center (ground) conductor, if any, from the power plug.
 - B) Don't tangle down a conductor of a power plug so it will fit into an extension cord.
7. If an outdoor antenna is used in your system, it should be located away from power lines. The outdoor antenna should be grounded to provide protection against lightning and built-up static charges. Figure A illustrates a typical installation. A lightning arrestor can be obtained from stereo stores and electronic shops. Instructions will be included with the lightning arrestor.



- A) Use No. 10 AWG (5.3 mm²) copper or No. 8 AWG (8.4 mm²) aluminum or No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger as ground wires for both mast and lead-in.
- B) Secure lead-in wire from antenna to lightning arrestor and mast ground wire to house with stand-off insulators, spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.
- C) Mount lightning arrestor as closely as possible to where lead-in enters house.

Fig. A. Typical Installation for Lightning Arrestor

8. Care should be taken so that objects do not fall and liquids are not spilled into the equipment. The equipment should be cleaned only as described in the CLEANING section of the Owner's Manual.
9. The power cord of the equipment should be unplugged from the outlet if the unit won't be used for a long period of time.
10. You should not attempt to service the equipment beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.
The equipment should be serviced by qualified service personnel whenever any of the following occurs:
 - A) The power supply cord or the plug has been damaged.
 - B) Objects have fallen, or liquid has been spilled into the equipment.
 - C) The equipment has been exposed to rain.
 - D) The equipment does not appear to operate normally or exhibits a marked change in performance.
 - E) The equipment has been dropped or the case damaged.
11. Heed Warnings — All warnings on the appliance and in the operating instructions should be adhered to.