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CARVER

Powerful • Musical • Accurate

Premiere AV-705x
Home THX[®] 5-Channel Power Amplifier

Owner's Manual

CARVER

1. Safety Instructions

1. Read Instructions — All the safety and operation instructions should be read before the Carver Component is operated.

2. Retain Instructions — The safety and operating instructions should be kept for future reference.

3. Heed Warnings — All warnings on the Component and in these operating instructions should be followed.

4. Follow Instructions — All operating and other instructions should be followed.

5. Water and Moisture — The Component 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 Component should be situated so that its location or position does not interfere with its proper ventilation. For example, the Component should not be situated on a bed, sofa, rug, or similar surface that may block any ventilation openings; or placed in a built-in installation such as a bookcase or cabinet that may impede the flow of air through ventilation openings.

7. Heat — The Component should be situated away from heat sources such as radiators, or other devices which produce heat.

8. Power Sources — The Component should be connected to a power supply only of the type described in these operation instructions or as marked on the Component.

9. Power Cord Protection — Power-supply cords should be routed so that they are not likely to be walked upon or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit the Component.

10. Cleaning — The Component should be cleaned only as recommended in this manual.

11. Non-use Periods— The power cord of the Component should be unplugged from the outlet when 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 are not spilled into the inside of the Component.

13. Damage Requiring Service — The Component should be serviced only by qualified service personnel when:


- A. The power-supply cord or the plug has been damaged; or
- B. Objects have fallen, or liquid has spilled into the Component; or
- C. The Component has been exposed to rain; or
- D. The Component does not appear to operate normally or exhibits a marked change in performance; or
- E. The Component has been dropped, or its cabinet damaged.

14. Servicing — The user should not attempt to service the Component beyond those means described in this operating manual. All other servicing should be referred to qualified service personnel.

15. Power Lines — An outdoor antenna should be located away from power lines.




CAUTION




RISK OF ELECTRIC SHOCK
DO NOT OPEN

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




The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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

PORTABLE CART WARNING



Carts and stands - The Component should be used only with a cart or stand that is recommended by the manufacturer. A Component and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the Component and cart combination to overturn.

16. 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.

Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, un prise de courant ou une autre sortie de courant, sauf si les lames peuvent être insérées à fond sans laisser aucune partie à découvert.

17. Grounding or Polarization — Precautions should be taken so that the grounding or polarization means of the Component is not defeated.

18. Internal/External Voltage Selectors — Internal or external line voltage selector switches, if any, should only be reset and re-equipped with a proper plug for alternate voltage by a qualified service technician. See an Authorized Carver Dealer for more information.

19. Attachment Plugs for Alternate Line Voltage (Dual voltage models only) — See your Authorized Carver Dealer for information on the attachment plug for alternate voltage use. This pertains to dual-voltage units only.

This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

ATTENTION — Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le règlement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.

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

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

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

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2. Prelude

Your choice of Carver Corporation's Premiere AV-705x power amplifier carries with it a heritage of over 15 years of audio research, development and design refinements. Carver engineers make use of the latest advances in electronics manufacturing techniques to provide state-of-the-art high-value audio products which emphasize innovative technologies and features at an affordable price.

Carver has its roots in the Pacific Northwest, and began by introducing products in the early 80s such as the C-4000 preamplifier with Auto-Correlator™ and Sonic Holography™, the TX-11 with ACCD™ (Asymmetrical Charge-Coupled Detector) and the M-1.5 stereo power amplifier, one of the most powerful amplifiers available at the time for home hi-fi use. Through the years, other useful features have been developed and implemented as technology has grown. Carver was one of the first to introduce products for home theater applications with the landmark CT-17 Preamp/Tuner Dolby Pro Logic decoder. We knew home theater was going to become popular, so we continued introduce new products and develop new technologies for home theater, including the Power Steering™ system used in the Premiere. The Carver name remains synonymous with leading edge technologies.

But therein lies a danger – the danger of using technology for the sake of technology alone. At Carver, technology is regarded as a tool, a tool used for one purpose only, to advance the science of reproducing audio recordings. Every Carver employee has this common goal, from our CEO and Board of Directors, our Engineering, Sales and Marketing, Accounting and Finance, Customer Service and Technical Support Staff to the Manufacturing and Quality Control people who actually put the products together here in Lynnwood, Washington. We love music, and the

vigilant pursuit of providing quality and reliable products aimed at reproducing audio with absolute musical accuracy – whether it be LP, CD or cinema soundtrack – is our corporate vision.

To this end, the Carver Premiere was developed with a number of important design features and goals in mind. A power amplifier has the responsibility of amplifying the audio signal. That's all it does. The signal that comes out should be the same as the signal that goes in, only bigger. In reality, there are subtle ways in which the signal can be changed by an amplifier, which are described by measurements such as THD, Noise, DC Offset, Crosstalk and Phase Shift. All these technical terms boil down to one thing – the signal has been changed (distorted) in some way from its original form by the amplifier.

There are a number of ways to minimize this distortion, and one of them is to minimize the signal path. It is easy to say, but to actually accomplish it in a circuit design is another matter. Our engineers went to great lengths to shorten the signal path (pun intended!) as much as humanly possible. A short signal path prevents corruption of the signal from the effects of EMI, strayfield magnetic radiation and cumulative reactance in the critical signal conductors. The result is a much cleaner and nearly perfect reproduction of the signal at the amplifier's output.



The Premiere has the capacity to produce 125 watts per channel into 8 ohms with all five channels driven to full power. This is an extremely unlikely condition when playing real program sources of music or movies. Actually, the power level on each channel in a surround sound system is constantly changing, with one channel tending to dominate at any instant in time. This means that while one channel is being driven to full power, the other channels are idling and much of the capability of the power supply is being wasted. Carver engineers wondered if there was a way to divert this unused power to the channel that is being used.

Thus was born Power Steering™, a radical departure from other audio manufacturer's approach of applying 2-channel power amplifier design methods to multi-channel amplifiers. With Power Steering™, the power amplifier not only delivers its full rated power into all channels driven simultaneously, but as the directional cues in the program cause the signal to be 'steered' to a specific channel, the Carver Power Steering system can focus a greater portion of the power supply to the channel demanding the greatest output. In this way it can 'steer' over 200 watts to any channel to which the program material is steering the strongest signal. This ability to provide significant power gains into the most demanding channel on a continuous basis results in much greater authority, clarity and spaciousness than conventional power amplifiers.



In addition, avenues were pursued to improve the manufacturability of the Premiere, including the use of a modular design philosophy and open-frame architecture for efficient and cost-effective assembly. This has the added benefit of providing superior channel isolation, eliminating the detrimental effects of interchannel crosstalk. The enclosure was designed to provide open air access to the heatsinks. This affords more efficient dissipation of heat away from the triple-diffused planar high-current output devices, which results in greater reliability and longevity of the amplifier.

The THX logo on the front panel of the Carver Premiere is another important feature of the amplifier. THX certification means that the Premiere meets a set of strict performance standards which ensure that the Dolby Surround soundtrack's reproduction is faithful to the director's intent. The Carver Premiere can be used with other THX certified audio equipment to create a true Home THX Audio System.

Other features are included to provide convenience and flexibility such as variable input sensitivity controls, removable handles and front panel clipping indicators.

The Carver Premiere is aptly named, for we believe it is the foremost contender in the multi-channel amplifier arena. It was designed and manufactured by people with a lifetime commitment to providing the world's finest components for music reproduction and home entertainment. Thanks for placing your confidence in Carver. We know your new amplifier will provide many years of listening enjoyment.

If you have access to the Internet, you can check out the full line of Carver products and company announcements on our World Wide Web page (<http://www.carver.com>).

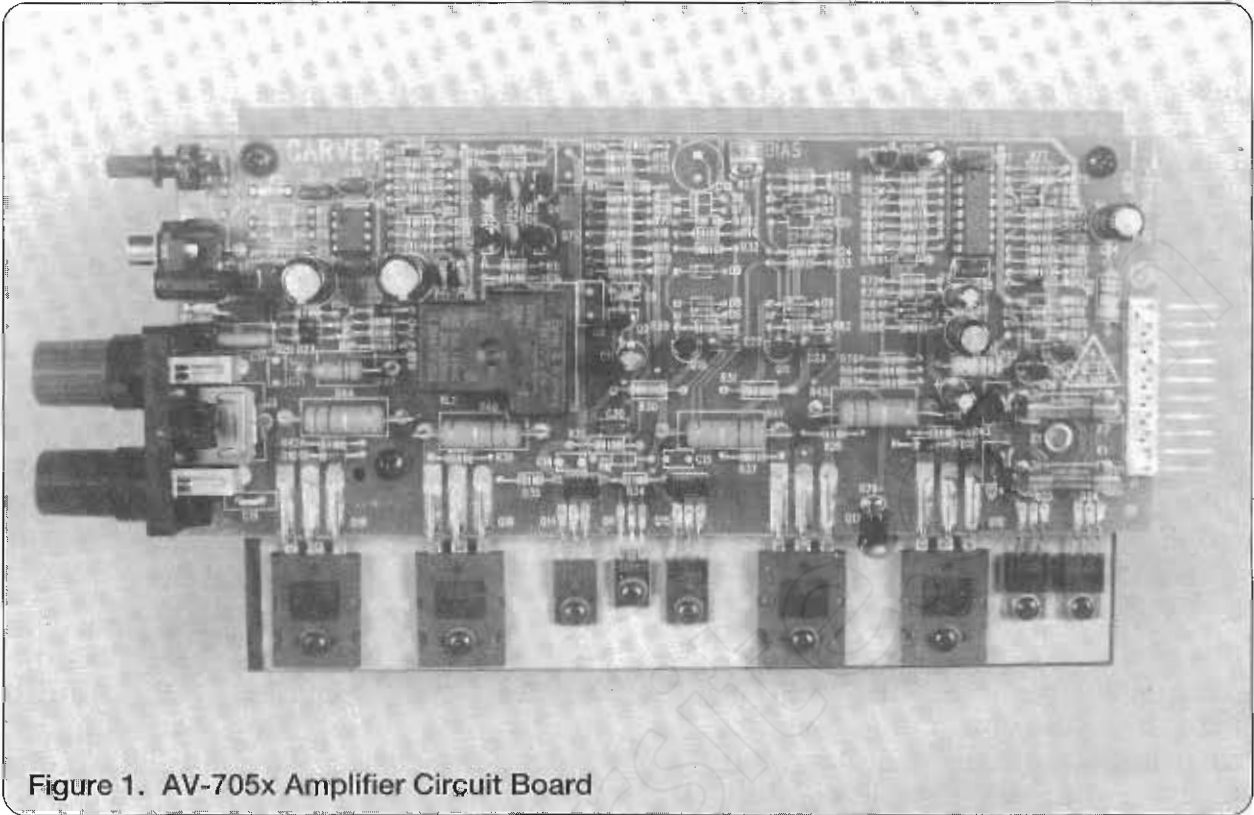


Figure 1. AV-705x Amplifier Circuit Board

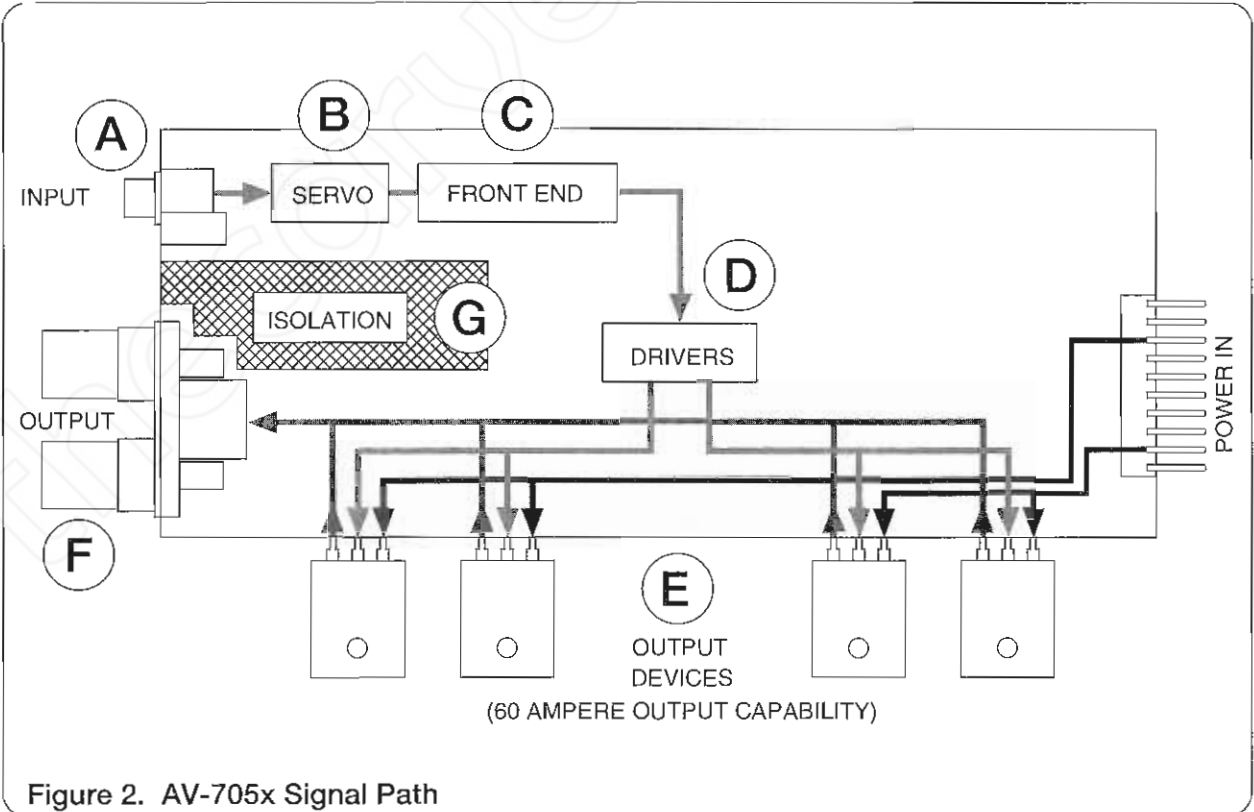


Figure 2. AV-705x Signal Path

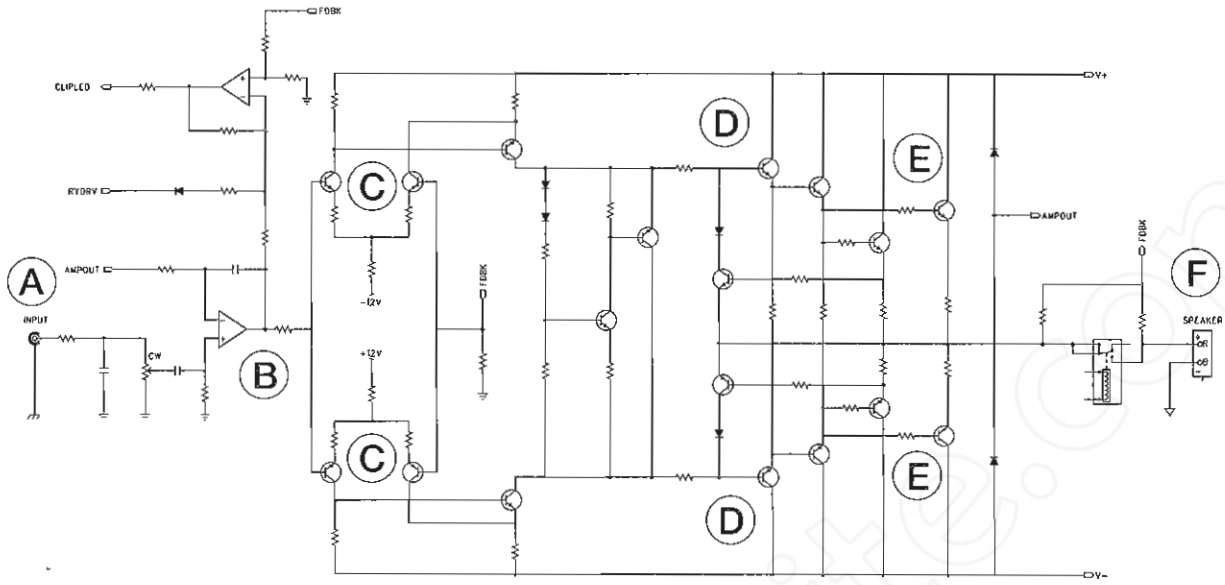


Figure 3. AV-705x Simplified Schematic Diagram

Technical Description of Signal Path and Circuit

The graphic artwork in Figure 2 allows even the nontechnical audiophile to appreciate the advantages of Carver's precision-designed and meticulously crafted signal path layout. Our corporate philosophy of absolute musical accuracy demands that our amplifiers do as little to the audio signal (besides amplifying it) as humanly possible. Each Carver amplifier employs a truly minimalist path for the audio signal, so that it cannot become corrupted by the effects of EMI, strayfield magnetic radiation, or reactance in the critical signal conductors.

The moment the audio signal enters the amplifier at the input jack (A), it immediately encounters the DC servo correction processor (B) which ensures optimum amplifier balance and freedom from residual DC output voltage that could otherwise "bias" your speakers, resulting in even-harmonic distortion from the drivers as well as other complex distortions caused by premature saturation of crossover inductors. A new Texas Instruments "Excalibur" operating point controller is used to perform this crucial task.

From this point, the audio signal travels by the shortest and most direct path possible to the front-end voltage amplifier stage (C). This is where the signal is actually "amplified" to the large voltage excursions needed to operate speakers. In the Carver design, there is nothing to corrupt or otherwise interfere with the precise operation of this balanced, fully-complementary class A design.

Having been boosted to exactly the desired level, the signal then is immediately applied to the driver stage (D). It is worthwhile to note that in the actual amplifier, the physical path is even shorter than shown on this diagram! The two-stage driver precisely interfaces the voltage-amplified signal to the output devices (E), which provide the massive amounts of current drive necessary to control a speaker system with absolute precision. Once again, this high-current signal travels the absolute minimum distance possible to reach the output connector (F). In competitive amplifiers, these signals are often forced to pass through inadequate and lengthy copper traces, bulky and resistive internal connectors, and cables routed past power supply and AC line voltage components, all of which can degrade the signal.

Of final note is the carefully tuned, double-stage ground isolation management system separating the amplifier's input from its output (G). This unique innovation offers an absolute solution to the problems of ground loops, separation loss, and parasitic oscillation so common in competitor's products. In fact, the AV-705x amplifier will operate cleanly with NO NEGATIVE FEEDBACK AT ALL while showing no signs of oscillation or input-to-output crosstalk or interference. No other method will allow minimum-signal-path construction while assuring total signal isolation.

3. Features and Specifications

Carver Premiere AV-705x Special Features

- ❑ One compact amplifier provides all the power needed for a high performance Home Theater System
- ❑ 125 watts into 8 ohms 5 channels driven
180 watts into 8 ohms 2 channels driven
- ❑ Certified by Lucasfilm, Ltd. for use in Home THX Audio Systems
- ❑ Power Steering™ provides in excess of 200 watts to any one channel as required by program demands
- ❑ Each channel protected by:
 - Individual fusing
 - DC fault sense
 - Shorted-load sense
 - Excess temperature sense
 - Power-on delay
- ❑ Minimal signal path design, with on-card I/O connectors eliminating internal inter-connect cables
- ❑ Precision passive components used in all critical signal paths (no electrolytic capacitors in signal path)
- ❑ Fully-complementary differential circuitry using low-noise, high speed transistors throughout
- ❑ DC Servo correction using new Texas Instrument Excalibur™ operating point controller
- ❑ Oversized power supply
- ❑ Double-stage ground isolation system prevents ground loops and RF interference
- ❑ Triple-diffused planar high-current output devices with a combined output safe operating capability of 600 watts per channel
- ❑ Gold-plated RCA input jacks
- ❑ International safety compliant binding posts
- ❑ Individual calibrated level trim controls for each channel
- ❑ Front panel MAXIMUM OUTPUT/MUTE indicators for each channel
- ❑ Removable handles for placement in 17" wide cabinet space
- ❑ Made in USA by Carver Corporation

Specifications

Power Output:

Continuous Average Output Power

Stereo Power:

180 watts each channel from 20Hz to 20kHz with no more than 0.08% THD

All Channels Driven:

125 watts per channel into 8 ohms from 20Hz to 20kHz, with no more than 0.08% THD

Power Steering Capability:

> 200 watts into 8 ohms

Dynamic Headroom:

1.1 dB @ 8 ohms (all channels driven)

Frequency Response:

20Hz to 20kHz (+0, -0.2 dB)

Separation:

> 70 dB (@1kHz)

Damping Factor:

> 300 20Hz to 20kHz

Input Impedance:

50K ohms in parallel with 120 pF

Sensitivity:

Per THX standard: 1.0V rms input for 100W output into 8 ohms (with Input Sensitivity controls fully clockwise)

Gain:

29.0 dB (± 0.5 dB)

Input to Output Phase:

0° ($\pm 10^\circ$) 20Hz to 20kHz

4. Unpacking and Paperwork

Distortion:

IM	< 0.01% CCIF
	< 0.03% SMPTE
THD	< 0.08% (@ 125W into 8 Ω)

Signal-to-noise ratio:

- > 114 dB A-weighted, referenced to rated power
- > 93 dB A-Weighted, referenced to 1W into 8 ohms

Rise Time: 2.2 μ S

Power Consumption:

- 100W at idle
- 600W with musical program
- 1100W at full power into 8 ohms

Power Requirements:

- 120VAC/60Hz USA and Canada
- (Other voltages available for export)

Dimensions (H x W x D):

- 5.75" x 19" x 18.7" (including handles and feet)
- 146mm x 483mm x 475mm
- 5.25" x 17" x 17.3" (w/out handles and feet)
- 133mm x 432mm x 439mm

Net Weight:

42.0 lbs. (19.1 kgs)

Shipping Weight:

47.0 lbs. (21.3 kgs)

Carver constantly strives to incorporate new methods, materials, and technologies in order to further improve the quality of our products. Thus all specifications and features are subject to change without notice.

Carefully unpack your Carver Premiere and keep the original carton and packing materials for future moving, shipment or long-term storage.

After opening the box, please check for any visible signs of damage that were not apparent from the outside of the box. If you do encounter what appears to be concealed damage, please consult your Carver Dealer before proceeding to further unpack or install the unit.

Important Paperwork

Make sure to save your sales receipt. Your receipt is extremely important to establish the duration of your Limited Warranty, and for insurance purposes. Next, make a note of the serial number which is located on the back of the Premiere. Record it in the space provided below for convenient reference.

Model: **Premiere AV-705x**

Serial Number: _____

Purchased at: _____

Date: _____

Finally, take a moment to fill out the Customer Registration Card packed with the Premiere and return it to Carver. This allows us to keep you informed of new products and technologies as they become available.

5. Installation

Location and General Precautions

Observe the following precautions when choosing a location for the Premiere:

- Do not expose the unit to rain or moisture.
- Protect from prolonged exposure to direct sunlight.
- Avoid excessive exposure to extreme cold or dust.
- Avoid exposure to electrostatic discharge.
- Do not place heavy objects on the unit.
- Do not place magnetic storage media such as audio or video tapes near the amplifier. All power amplifiers contain transformers that are surrounded by a magnetic field which can erase magnetic tapes (or floppy disks).
- Protect from heat and **allow adequate ventilation**. Place away from direct sources of heat, such as heating vents and radiators.

Due to the compact size and high power capability of the Premiere, proper cooling is important.

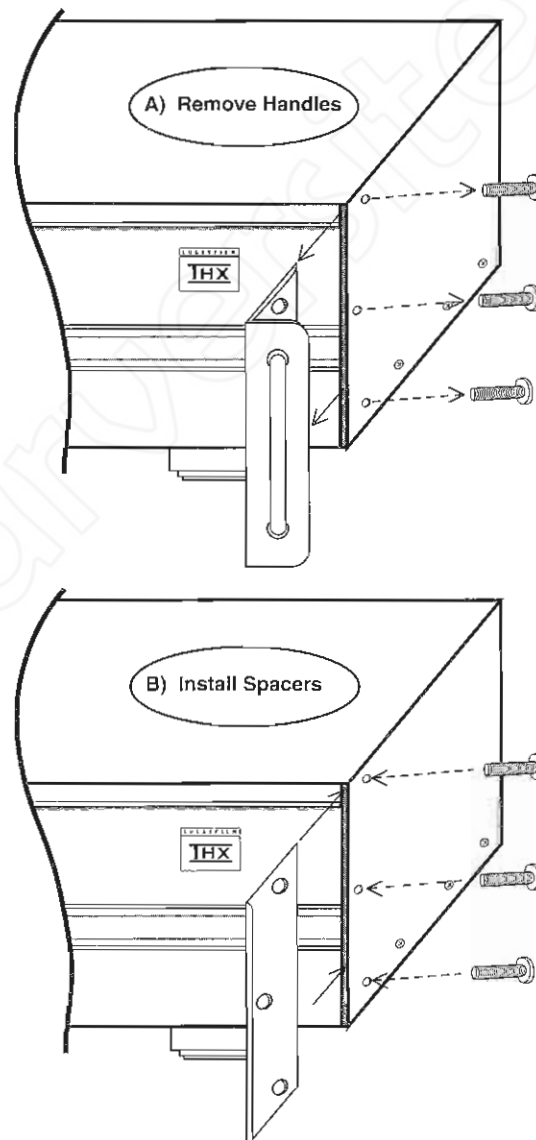
All components produce some heat during operation, so make sure that ventilation holes are not covered, and that air is allowed to circulate freely behind, beside and above the unit. The Premiere will become fairly warm, even when idle. This is normal.

The Premiere can be placed in an equipment rack or cabinet which has adequate ventilation. If your shelves do not have open backs, make sure there are vent holes in them. The situation you want to avoid is placing your power amplifier in a sealed cubbyhole. That creates a static air space where temperatures can rise quickly.

- Allow at least 3 inches of air space above the unit, and at least 1 inch on either side.
- Do not place the Premiere on carpeting or any surface that may block air flow to the bottom of the chassis.

- If possible, place the Premiere in its own shelf space, separate from other components.

If a fluid or foreign object should enter the unit, disconnect the power plug and contact an authorized dealer or service center. Do not pull out the plug by pulling on the cord; grasp the plug firmly.



Handle Removal

The Premiere is shipped with the handles installed. To remove the handles, use a Phillips screwdriver to remove the three screws on each side of the chassis just behind the front panel. Remove the handles and install the spacers provided as shown in Figure 4. Reinstall the three screws on each side of the chassis to secure the spacers in place.

Store the handles in a safe place for future use.

Figure 4. Handle Removal

AC Power Considerations

Ensure that the Premiere is plugged into an outlet capable of supplying the correct voltage specified for your model and enough current to allow full-power operation of all the components connected to it.

Although the Premiere can draw momentary peaks of 1400 watts or more, with musical programs the amplifier will typically require an average of 600 watts or less (when powering 8 ohm speakers).

Connection Tips

Before launching into the actual cable-connection frenzy of setting up your new system, consider the following tips.

- Make sure all components are OFF before making any connections. It's a good idea to plug in your AC power cord last to avoid accidentally turning on the unit while installing.
- Make sure that your connections end up the way you intend. Trace each wire from the preamplifier outputs to the amplifier inputs, and from the amplifier outputs to the corresponding speaker. Verify that each speaker ends up with its appropriate signal (left speaker receives left front channel signal, right speaker receives right front channel signal, center speaker receives center channel signal, etc.).
- Whenever possible, keep power cords away from signal cables (inputs from CD player, tape deck, etc.) to prevent hum. While hum is less of a problem today than it was in the past, noise can still find its way into your system if a component's power cord becomes too intimately involved with a hook-up cable. Carver components' power cords and convenience outlets are all on the right side of the chassis (when viewed from the back). This allows you to bundle all the component power cords and keep them separate from signal connections.

- Choose reliable hook-up cables (also called interconnects, patch cords or RCA cables). There are lots of different grades of hook-up cables. Consult your Carver dealer for advice on appropriate cables for your system. Before you send a component in for service, swap hook-up cables to see if they're the culprit.
- DON'T PANIC! While there are ten different connections on the back of the Premiere, matching them up with your existing equipment is simple if you make the connections methodically, one at a time. This is the safest way to avoid cross-connecting channels or confusing signal inputs with outputs.

Rear Panel Connections and Controls

A. INPUT Connectors

These RCA jacks connect to the line level audio output jacks of a preamp or surround sound decoder. See page 14 for the recommended method of connecting a surround sound system to the Premiere.

B. LEVEL Controls

These calibrated controls are used to adjust the input sensitivity of each channel. When using the Premiere in a THX system, leave these controls in the fully clockwise position. Each channel will then provide a sensitivity of 1V Input = 100 watts Output that is required for a Home THX Audio System. Individual channel adjustments are then made using the balance controls provided on the THX controller.

For non-THX systems, the LEVEL controls on the Premiere can be used to adjust and fine tune the balance between the various channels in your surround sound system.

NOTE: For THX Audio Systems, leave the LEVEL controls on the Premiere in their fully clockwise position.

6. Operation

C. SPEAKER Output Connectors

These international safety approved binding posts are used to connect the loudspeakers to the amplifier outputs. The red terminals are the signal connection (“+”) and the black terminals are the signal return connection (“-”).

Please check the *Speaker Connection* instructions on page 15 for information on cable selection and connections to your loudspeakers.

D. AC Linecord

Connect to a properly configured outlet providing the line voltage specified for your model.

Front Panel Features

1. POWER switch

When this switch is turned on, the indicating LED illuminates green.

When the Carver Premiere is first turned on, the output is muted for about four seconds to allow the amplifier to stabilize. During this time the MAXIMUM OUTPUT/MUTE LEDs illuminate red. This delay circuit helps prevent speaker-damaging thumps when powering up.

During normal operation, these LEDs do not light up. If an LED should begin to blink occasionally, it indicates that you are driving that channel to its full power capacity. If an LED should stay illuminated continuously, it indicates a fault condition that should be investigated (see *In Case of Difficulty* on page 18).

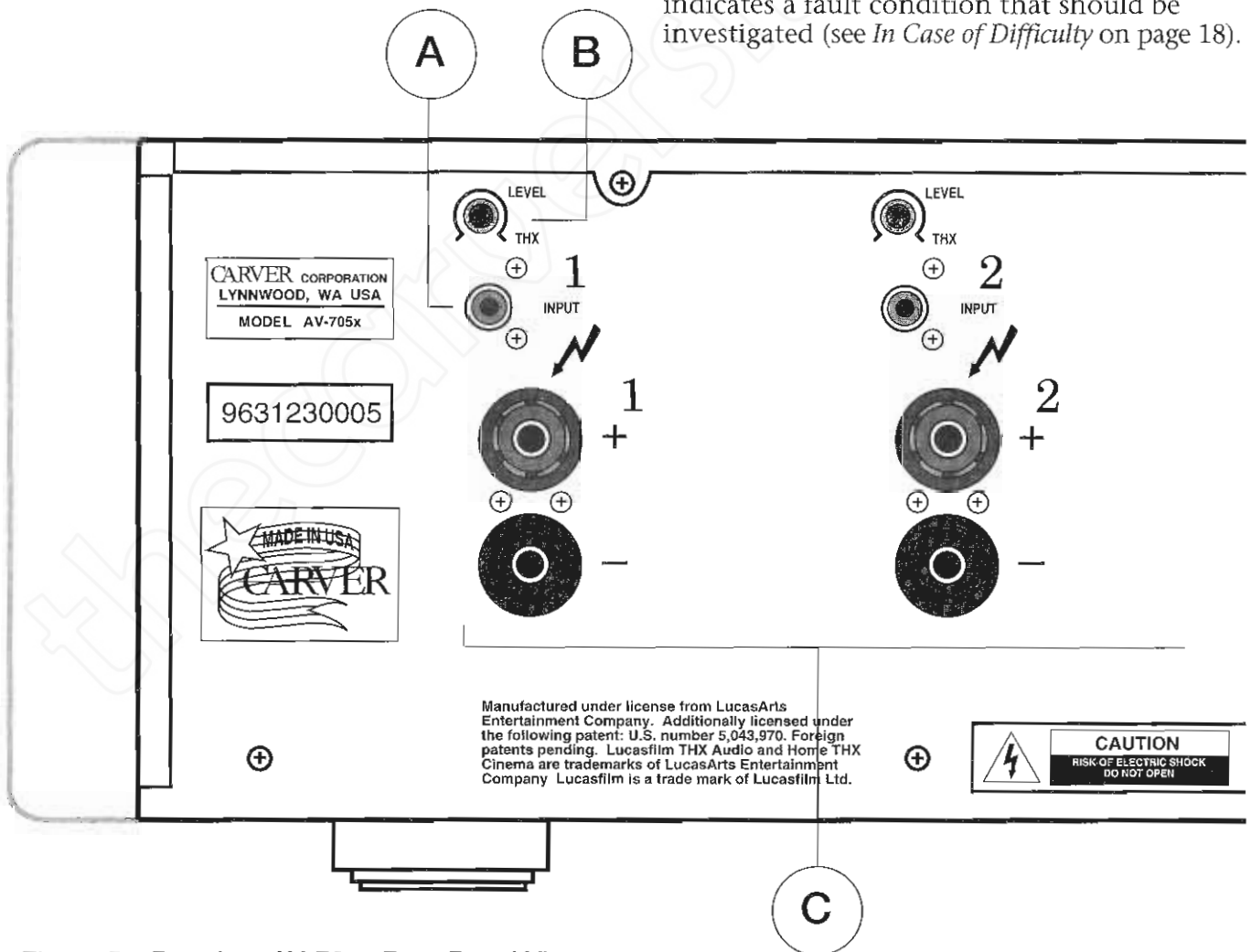


Figure 5. Premiere AV-705x Rear Panel View

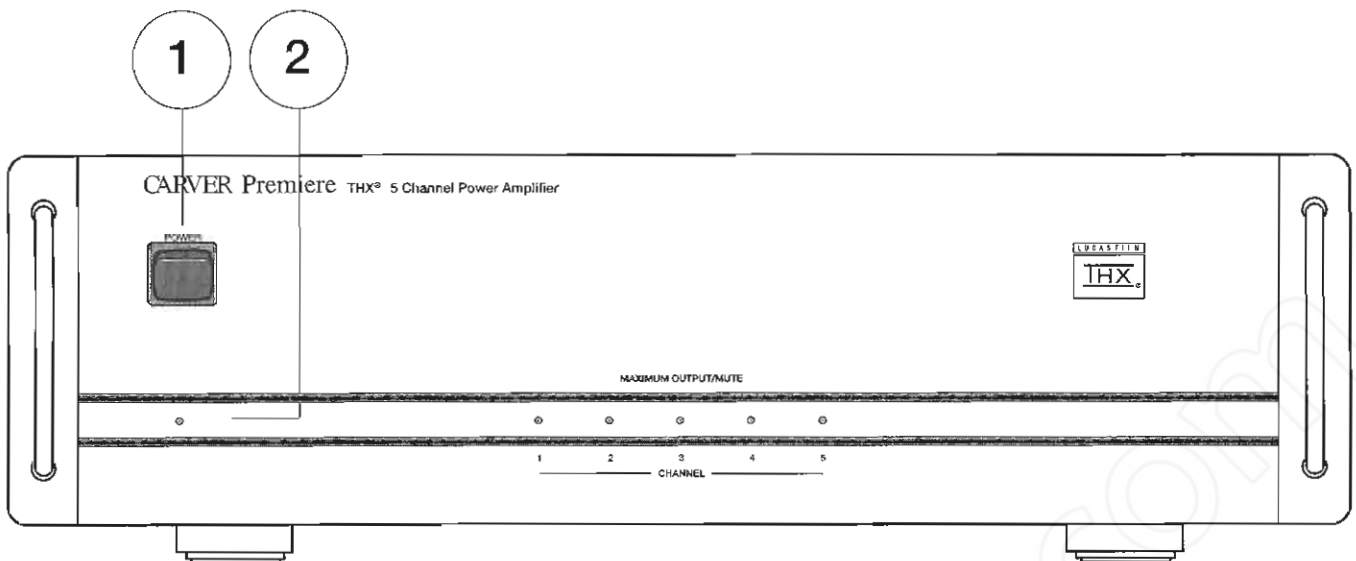
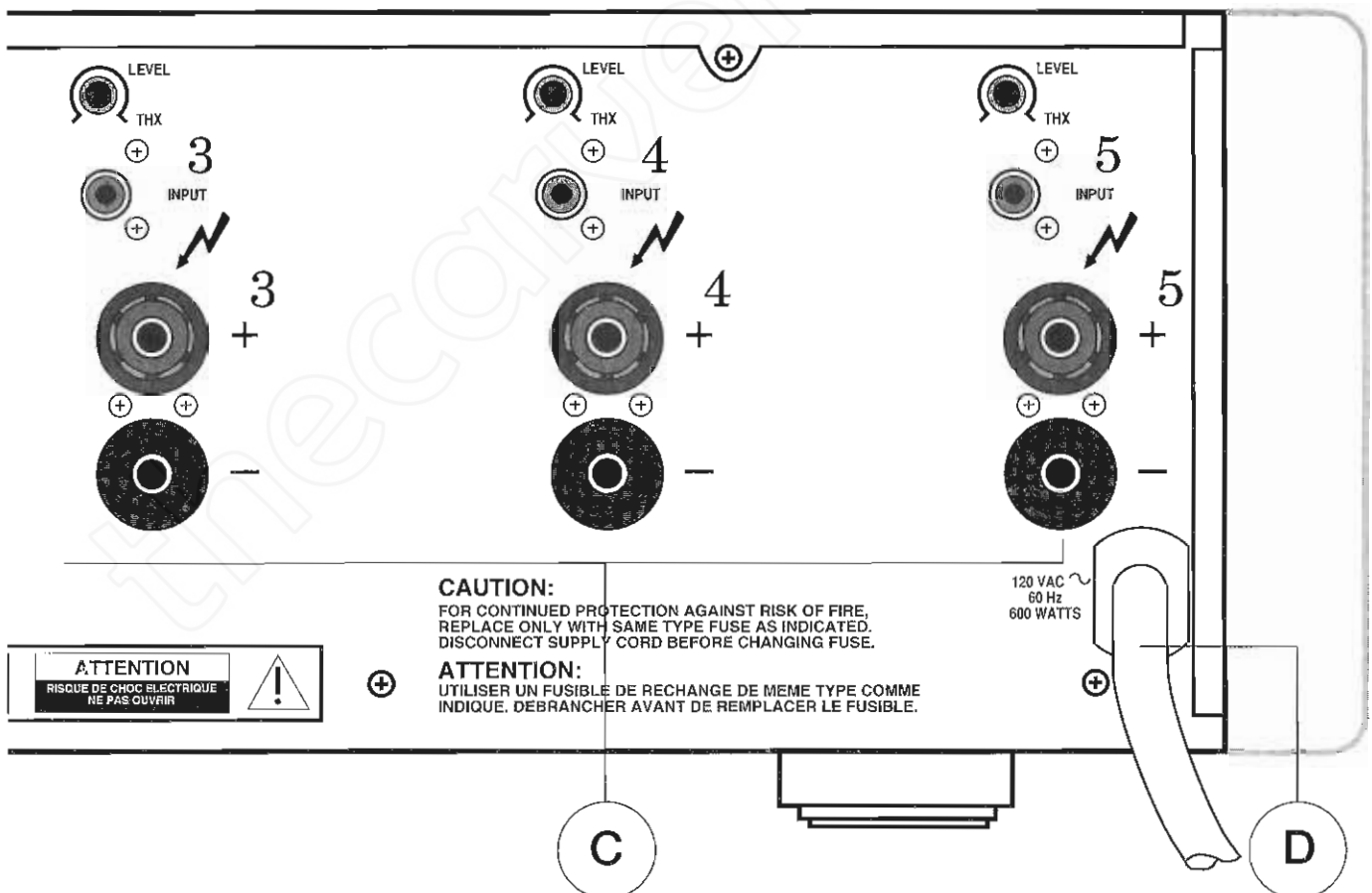


Figure 6. Premiere AV-705x Front Panel View



System Configuration

This drawing demonstrates how each of the inputs and outputs on the rear panel of the Carver Premiere can be used to configure a Home Theater System.

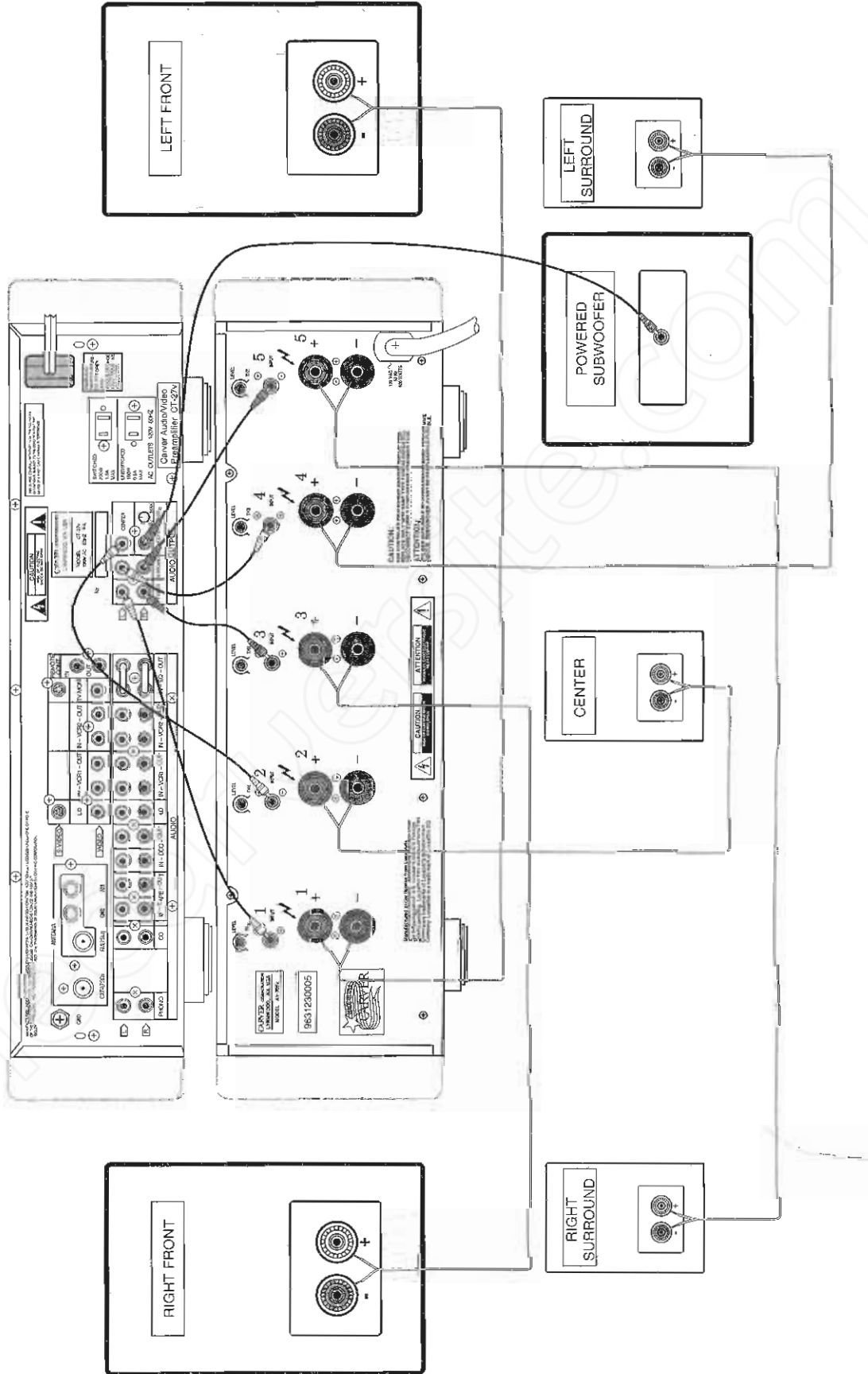


Figure 7. 5-channel Surround Sound Connection with Powered Subwoofer

We suggest you turn on the amplifier AFTER you have turned on your signal source equipment (preamplifier, LD player, tuner, etc.). Also make sure that a loud signal source is not playing when the amplifier is first turned on, or you'll be in for a big surprise when the muting circuit disengages.

Amp-to-Preamp Connections

The Premiere is designed to be compatible with virtually any quality preamplifier, preamplifier/tuner, surround sound processor or THX controller. Use standard RCA-type audio cables to connect the preamp outputs to the INPUTS on the Premiere. If using a THX controller, DB25 adapters are available from Home Theater System dealers to make the amp-to-preamp connections.

Amp-to-Speaker Connections

The Premiere is designed for use with any type of loudspeaker, including Home THX-certified Loudspeakers.

Wiring

Use thick wire for speaker connections. Your Carver dealer can recommend a brand of speaker cable. You may choose high quality, oxygen-free copper (OFC) cable. Or common "zip-cord" from a hardware store can be employed if care is taken to use the proper gauge. This will depend on the distance from the Premiere and your speakers. Use the following chart as a guide:

Wire Length	Gauge of Wire
Up to 15 ft.	18 gauge
15 to 25 ft.	16 gauge
25 to 40 ft.	14 gauge
40 to 60 ft.	12 gauge
60 to 100 ft.	10 gauge

The greater the distance between your

Premiere and speakers, the larger the diameter the wire should be (wire thickness specifications or "gauges" get larger as the wire gets thinner; thus 16-gauge wire is thicker than 22-gauge wire).

Hook-up

The Premiere speaker terminals are designed to accept bare wire or standard individual banana plugs.

For bare wire connections:

- 1) Strip 1/2" of insulation off each wire and make sure to carefully twist all the fine strands together. If even one is loose and can touch the opposite terminal, a short circuit may result.
- 2) Unscrew the binding post speaker terminals and insert the wire (see Figure 8). Tighten the connection down on the wire (finger-tight is fine; DO NOT use a wrench!).
- 3) Although the speaker terminals are designed to accept up to 10 gauge wire, larger-gauge "audiophile" speaker cables may be too thick to be inserted directly into the speaker terminals. They may require special adapters. Consult your Carver dealer for advice.

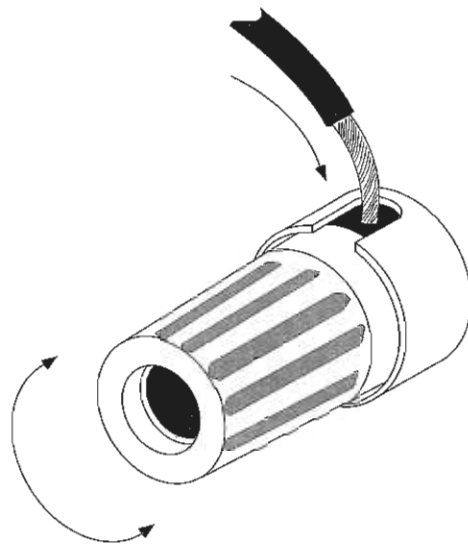


Figure 8. Bare Wire Connection

For banana plug connections:

Individual banana plugs can be attached to the end of the speaker cable and plugged directly into the Premiere's binding post sockets (see Figure 9). You can also purchase special speaker cable with banana connectors permanently attached or molded into the wire. This makes connecting and disconnecting speakers simple and quick. *Make sure the outer terminal is completely screwed down* (clockwise) when using banana plugs to provide maximum electrical contact.

⚡ **Note:** The binding posts are deliberately spaced 1" apart, so that double-banana plugs cannot be used (3/4" spacing). This is to comply with international safety standards.

Polarity

Loudspeakers must be connected with consistent polarity for correct phasing between them. Incorrect phasing will do no physical harm, but bass response will be diminished. The key is to make sure that all speakers connected to the speaker terminals are hooked up the same way.

Connect "-" at the Premiere speaker outputs to "-" on the back of the speaker, and "+" at the Premiere speaker outputs to "+" on the back of the speaker.



Figure 9. Banana Plug Connection

If you're using special speaker interconnects, "+" and "-" will be identified. If you're using plain appliance-type zip cord, the two conductors will be differentiated in one of several ways. They may be different colors (silver vs. gold). One may have fine grooves on its outside. Or one may have a piece of yarn included in one of the conductors (visible after you strip off the insulation). It doesn't matter which one you decide to call "+" or "-", just do the same for all the speakers.

Amplifier Protection

Fusing

All fusing is internal. There is an internal line fuse to protect the amplifier in case of a major internal failure (not likely). In addition, each channel has two internal fuses to protect the individual output stages.

Warning: These fuses are not user replaceable. If a fuse should blow, take the Premiere to a Carver Authorized Service Center for fuse replacement and testing to determine the reason for the failure.

Current Limiting

This protection mechanism safeguards the amplifier against very low impedances or short circuits at the speaker output terminals. If the amplifier is driven hard into a low impedance speaker, or the speaker wires should accidentally short together, the muting relay will switch off and the output of the amplifier will be turned off.

After several seconds the relay will turn back on and normal operation will resume. If the amplifier senses that the high current situation still exists, the relay will switch off again. If this cycle persists, check the output connections and wiring to make sure there are no shorts. If not, it may become necessary to either reduce the volume or change the total impedance of the speakers connected to the amplifier.

DC Offset

In the unlikely event that an amplifier channel should fail, a DC fault protection circuit prevents a potentially destructive amount of DC from damaging the speakers by immediately turning off the speaker relays.

Speaker Protection

If you are using speakers that do not have a power rating high enough to match the maximum power produced by the Premiere, we recommend that you install in-line speaker fuses between the amplifier and your speakers. Use the fuse value recommended by the speaker manufacturer.

If you can't find this information, the following formula provides a good rule-of-thumb to determine the speaker fuse value to use.

$$I = \sqrt{P/4R}$$

where I = current rating of fuse in amperes

P = maximum recommended peak power handling capability of the loudspeaker in watts

R = speaker impedance in ohms

Use a fast-acting type fuse, NOT a slo-blo type. Install the in-line fuseholder between the amplifier's (+) speaker terminal and the speaker's (+) terminal. See Figure 10 for a graphical representation of the above formula.

7. In Case of Difficulty

If you're having trouble or suspect a problem with the Premiere, try some simple troubleshooting before contacting your Carver dealer or an Authorized Carver Service Center. Most likely, the problem lies elsewhere in the system or with a button or control inadvertently left in the wrong position.

No Sound, No Power

This is usually an indication of a power supply problem, either the power line itself or the amplifier's power supply.

1. Premiere power is switched off.
2. Linecord is disconnected.
3. Poor fit between the plug and wall receptacle.
4. Power off at wall receptacle (check with tester or lamp).
5. Premiere is plugged into a switched outlet. Verify that the outlet is live.
6. Premiere fuse is blown. Refer to authorized Carver Service Center.

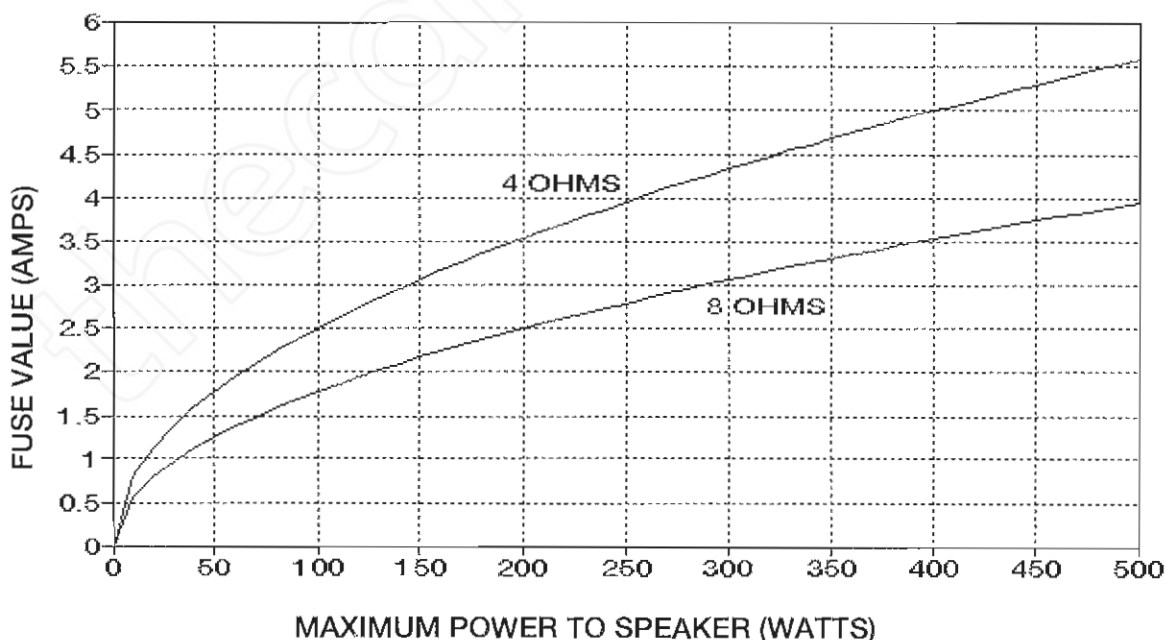


Figure 10. Fuse Protection for Speakers

No Sound, Power On

Low or no output problems are usually signal-source, bad cable or partial output short circuit related. If the items listed below check out, then the problem may be internal to the Premiere.

1. Check the input source to make sure it is working correctly. If the source unit has a headphone jack, you might use a set of headphones to check the operation of the source component.

Some preamplifier outputs are automatically disabled when headphones are plugged in. Try UNplugging the headphones.

2. Make sure that all preamplifier controls, especially the TAPE MONITOR button, are correctly set. (A TAPE MONITOR button accidentally pushed in is a frequent cause of total silence).
3. MUTE is activated.
4. Turn off your audio system and check preamplifier-to-power amplifier cable connections.
5. Move the input connections to another amplifier that you know is working to verify that it is not a source problem.
6. Turn the Premiere off. Check the speaker connections. Be sure that there are no small strands of wire touching similar strands coming from the other wire in the cable. If you use banana plugs, be sure that the setscrews in the plug are securely tightened.
7. If speaker fuses are installed in the loudspeakers or the speaker cables, verify that they are not blown.
8. Make sure the speakers are functioning correctly.

Sound is very faint, even with volume control all the way up

1. Inactive input is selected.
2. LD player or other sound source with independent volume control is turned down.
3. Tape Monitor switch or external processor switch on preamp/controller is unintentionally activated.

No Sound in one Channel

1. Defective or loose connection cable. Swap with a known good cable to locate the bad one.
2. Speaker wire loose or disconnected.
3. Balance control set fully left or right.
4. Speaker fuse blown (if installed).

Hum and Constant Noise

1. Defective or loose signal cables.
2. Improper fit between signal cable plugs and sockets.
3. Signal cables have been routed too closely to AC cables, power transformers or motors.
4. Try connecting another source to the power amplifier inputs. If the hum stops, the problem lies with the original source component.
5. Try disconnecting cable FM lead from tuner/preamp. If the hum stops, contact your cable provider to check the cable ground.

MAXIMUM OUTPUT/MUTE LED(s) always ON

1. Turn the Carver Premiere OFF and disconnect the speaker from the channel in question. Turn the amplifier back ON. If the LED goes off, there is a problem with either the speaker or the speaker wire.
2. Turn the Carver Premiere OFF and disconnect the input connection to the channel in question. Turn the amplifier back ON. If the LED goes off, there is a problem with the source component or cable supplying the signal to the amplifier.

Room lights dim slightly during loud musical passages

Because of the high current requirement of an audio amplifier at the loudest volume levels, this effect is not unusual and should not cause any harm. If you wish to reduce this dimming effect, try plugging the amplifier into an outlet operating from a different circuit than the one operating the lights.

8. Care and Service Assistance

Care

You'll want to wipe off the Carver Premiere's front panel and chassis from time to time with a soft, dry cloth. If you have something stubborn to remove, use a mild dish soap or detergent sparingly applied to a soft cloth. Don't use alcohol, ammonia, or other strong solvents.

Service Assistance

We suggest that you read the LIMITED WARRANTY completely to fully understand your warranty/service coverage. Please promptly complete and return the CUSTOMER REGISTRATION CARD. Also be sure to save the sales receipt in a safe place. It will be necessary for warranty service.

If your Carver Premiere 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 the Carver Technical Service Department by phoning 1-800-521-4333 or by writing to us at the Factory address shown at the right. We will then direct you to the nearest in our national network of Authorized Warranty Service Centers or give you detailed instructions on how to return the product to us for prompt action.

If you should have questions or comments, please write to the following Factory address. Please include the model and serial number of your Carver product, your complete address and a daytime phone number.

Factory Address

Carver Corporation
P.O. Box 1237
Lynnwood, WA 98046-1237

206-775-6245	<i>Customer Service and Technical Information</i>
or	
800-521-4333	
206-775-9180	<i>Customer Service Fax</i>
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