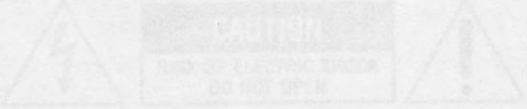


# SAFETY INSTRUCTIONS

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



**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.

## Explanation of Graphical Symbols

The lightning flash symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" which may be sufficient to cause electric shock to persons.

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

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions - The safety and operating instructions should be retained for future reference.

3. Read Warnings - All warnings should be read and heeded. Pay particular attention to all warnings which may apply to the use of the appliance.

4. Follow Instructions - All instructions should be followed exactly. Do not use the appliance in a manner not intended by the manufacturer.

5. Water and Moisture - The appliance should be used only with a cap or stand that is recommended by the manufacturer.

6. An appliance and part combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart to tip or to overturn.

7. Wall or Ceiling Mounting - The appliance should be mounted on a wall or ceiling only if the instructions so specify.

8. Ventilation - The appliance should be placed on a hard, level surface. Do not place the ventilation openings or panels in a closed position.

9. Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified factory-authorized service personnel.

10. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11. Grounding or Polarization - The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.

12. 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 and plugs, convenience receptacles and the point where they exit from the appliance.

13. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.

14. Nonuse Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

15. Entry - Care should be taken to avoid contact with the interior of the appliance. Do not attempt to disassemble the appliance. Service should be performed by qualified factory-authorized service personnel when:

- The power supply cord or the plug has been damaged, frayed, or broken.
- Object has fallen into, or liquid has been spilled into, the appliance.
- The appliance has been exposed to rain or moisture.
- The appliance does not appear to operate normally or exhibits a marked change in performance.
- The appliance has been dropped, or the enclosure damaged.

17. Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified factory-authorized service personnel.

# ROTEL *hi fi*

## RB 985

### 5 Channel Power Amplifier



## Owners Manual

English/French/German section included.

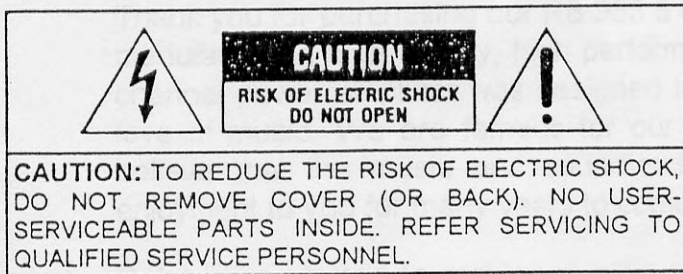
Please write the serial number, date of purchase and the name of your ROTEL *hi fi* AUTHORIZED DEALER in the spaces provided for your future reference.

Serial Number \_\_\_\_\_

Purchase date \_\_\_\_\_

# SAFETY INSTRUCTIONS

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



## Explanation of Graphical Symbols

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



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



1. **Read Instructions** - All the safety and operating instructions should be read before the appliance is operated.
2. **Retain Instructions** - The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** - All warnings on the appliance and in the operating instructions should be adhered to.
4. **Follow Instructions** - All operating and use instructions should be followed.
5. **Water and Moisture** - The appliance should not be used near water - for example, near a bathtub, kitchen sink, laundry tub, in a wet basement or near a swimming pool, etc.
6. **Carts and Stands** - The appliance should be used only with a cart or stand that is recommended by the manufacturer.
- 6A. An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart combination to overturn.
7. **Wall or Ceiling Mounting** - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation** - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance 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 that may impede the flow of air through the ventilation openings.
9. **Heat** - The appliance should be situated away from heat sources such as radiators, heat registers, stoves or other appliances (including amplifiers) that produce heat.



10. **Power Sources** - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. **Grounding or Polarization** - The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.
12. **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 and plugs, convenience receptacles and the point where they exit from the appliance.
13. **Cleaning** - The appliance should be cleaned only as recommended by the manufacturer.
14. **Nonuse Periods** - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
15. **Object and Liquid Entry** - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through the openings.
16. **Damage Requiring Service** - The appliance should be serviced by qualified factory-authorized service personnel when:
  - The power-supply cord or the plug has been damaged; or
  - Objects have fallen, or liquid has been spilled into the appliance; or
  - The appliance has been exposed to rain; or
  - The appliance does not appear to operate normally or exhibits a marked change in performance; or
  - The appliance has been dropped, or the enclosure damaged.
17. **Servicing** - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified factory-authorized service personnel.

APPLICABLE FOR U.S.A., CANADA OR WHERE APPROVED TO THE USAGE.

**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.

## A WORD FROM ALL OF US AT ROTEL

Thank you for purchasing our RB 985 5 channel power amplifier. We have been designing and manufacturing high quality, high performance audio electronics for more than 30 years. This 5 channel power amplifier was designed to offer lifelike sound and is a natural extension of our love of music. We are famous for our passion for good sound and our love of music. We believe that the music and soundtracks played through the RB 985 will be a source of enjoyment to you for many years to come.

Rotel is committed to making quality products to enhance your life. We have designed this amplifier to be durable, easy to operate and to have *high fidelity to the original sound*. We have chosen to certify this amplifier for use in a THX® system as we feel this exemplifies the finest in sound and performance for surround sound systems. Please read the owners manual to ensure that the amplifier is properly installed and able to offer optimum performance. We appreciate being a part of your life.

## DESIGN FEATURES OF THE RB 985 POWER AMPLIFIER

The power supply is derived from a large, toroidal power transformer. The RB 985 has a *highly regulated power supply* to ensure maximum power capability into difficult speaker loads. There are three separate diode bridges to provide ample power to the electrolytic capacitors. This type of design is more expensive to manufacture but it is *better for the music*. This amplifier will drive 4 ohm speakers very well. RB 985 meets the stringent standards for THX® certification and is compatible for use in all THX surround sound systems. It would be an excellent choice for Bi-amping a set of high performance two way speakers and a sub woofer if used in a stereo system.

We have designed the PCB boards with Symmetrical Circuit Traces. This insures that the precise timing of the music is maintained and faithfully recreated. Circuit traces of different lengths change the timing between the channels slightly. This is unacceptable to us. The PCB transfers the signals as we feel this is more consistent than the sound quality of wire jumpers. The PCB contains metal film resistors and polystyrene or polypropylene capacitors in sonically selected applications. All aspects of this design have been examined with the goal being faithful reproduction of music.

## WHAT IS THE THX® SYSTEM?

Why have we at Rotel designed the RB 985 to meet the specifications for THX certification? What benefit will you receive from this?

THX specifications were designed by the THX Division of Lucasfilm Ltd. to ensure the finest reproduction of Surround Sound movies. With a THX system, the Surround Sound encoded movies you watch are reproduced in a realistic recreation of the way they were mixed on the sound stage. *This faithful recreation of the movies will allow you to experience the excitement and the entertainment intended by the directors of your favorite films.* Rotel has designed the RB 985 to meet THX Division performance specifications so that you may have an accurate recreation in your living room or home theater system. This will assure you that our equipment is compatible with other Rotel THX products or with THX products from other companies.

The THX standard may be considered to yield the best home theater systems you can have because of the tight adherence to specifications that is a part of the certification process. Rotel are famous for high performance and high value for money engineering and manufacturing. We



for your enjoyment. You will receive the highest quality reproduction of Surround Sound movies with a THX system.

## INSTALLATION OF THE RB 985

Please place the unit on a **DRY**, level surface away from direct sunlight. Please do not stack other components on top of the RB 985 as *they may cause the amplifier to overheat*. If the amplifier is installed inside a cabinet, please be certain that there is adequate air flow to ensure proper cooling. We suggest 75 mm (~3") as a minimum clearance above the RB 985. *Do not allow water or objects to fall into the RB 985 as these will damage the circuitry*. Avoid installing the amplifier in a location where excessive humidity, vibration or moisture will be a problem.

We recommend installing the RB 985 in furniture designed to house Hi Fi components. This will allow the amplifier to be on its own shelf with *nothing stacked on top of it*. This will minimize heat and potential interference from other components in your system. Component furniture will reduce or suppress vibration. All audio components will provide improved sound when free from vibration. Ask your **ROTEL hi fi AUTHORIZED DEALER** for advice about component furniture and proper installation of audio components.

Please be careful to keep the power cords, digital and signal cables separate in your installation. This will minimize the chance of interference from the power cords or digital cables getting into the analog signal cables. We recommend high quality, *shielded* cables in surround sound systems for this reason as well.

## ELECTRICAL REQUIREMENTS

This amplifier is designed to operate on AC voltage and the correct voltage is displayed on the Back Panel. *Do not attempt to operate the amplifier on incorrect voltage as this will damage the circuitry and void your warranty*. If you are in doubt about the correct voltage for this amplifier we suggest that you please read the label on the back panel, the label on the packing carton or consult your **ROTEL hi fi AUTHORIZED DEALER** for confirmation of the correct voltage.

Connect the POWER CORD to your wall socket for AC power. When you wish to disconnect the power cord from the wall, hold the plug firmly in your hand and then pull it out of the wall socket. *Do not unplug the power cord from the wall by pulling the cord only. This may damage the power cord and create a hazardous condition*. We strongly recommend that the amplifier be connected to the main's wall socket or an AC power line filter, not an extension cord.

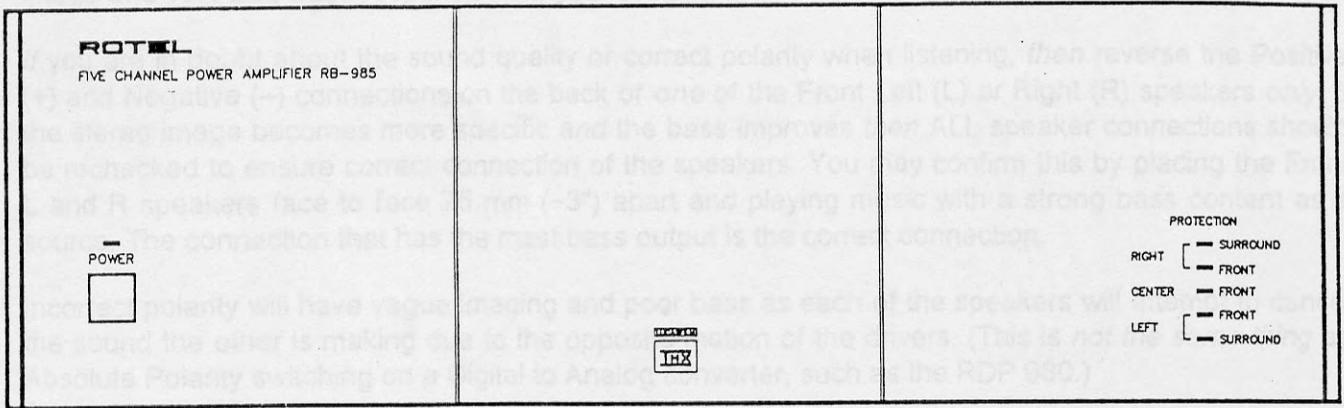
If you wish to clean the cabinet of the RB 985, we suggest a clean, soft DRY cloth. *Never use cleaning compounds or solvents to clean the cabinet as they may damage the finish or remove the labels*. This could also damage the circuitry if any residue falls inside the amplifier.

There is **NO** user serviceable part inside the RB 985. **Please do not open the cabinet as this will expose you to the risk of potentially dangerous voltage and the risk of shock.**

## FRONT PANEL CONTROLS AND FEATURES OF THE RB 985

The front panel includes a **POWER** button, a POWER indicator light, and 5 LED indicator lights for the **PROTECTION** circuit. Press the POWER button once, the amplifier will turn ON and the POWER and PROTECTION indicator lights will illuminate. Press it again, the amplifier will turn OFF and all the indicator lights will extinguish. The PROTECTION indicator lights will only light up briefly when the POWER is turned ON. This is normal and indicates that the PROTECTION circuit is functioning properly. The PROTECTION indicators will also illuminate if the amplifier

overheats. No sound will be heard until the RB 985 has cooled down to a safe operating temperature, if this happens.

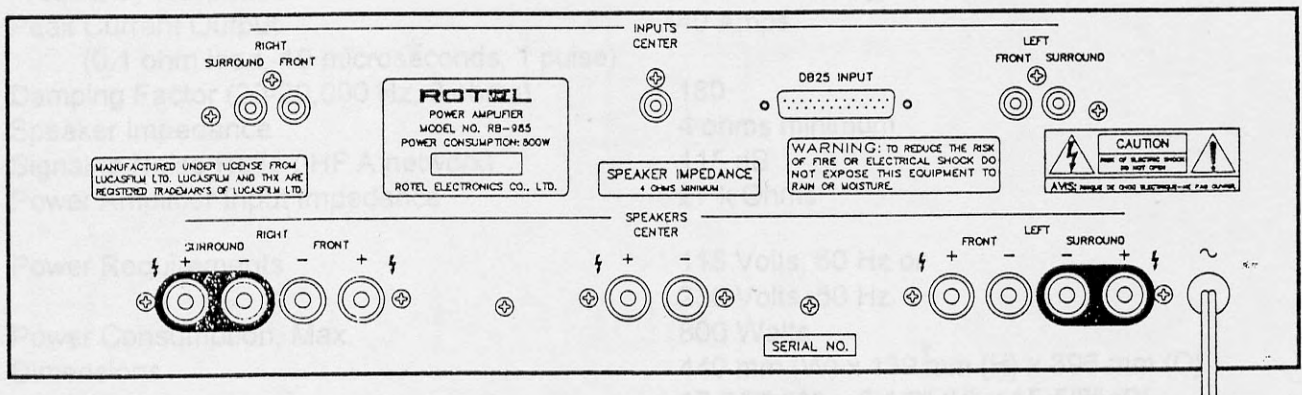


Please refer to this drawing of the front panel for clarification of the control features.

### MAKING CONNECTIONS TO THE RB 985

When connecting the RB 985 choose *either* the RCA inputs *or* the **DB-25** (not both) female input connector. Please be certain to connect the Front Left and Right, the Center and the Surround Left and Right channel to the appropriate channels from your surround processor to avoid confusion during playback of your favorite music or movies.

The **SPEAKER** terminals are *color coded* on the RB 985 to help with you make correct connections. The Left Front speaker terminals are *blue* for Positive and *black* for Negative connections. The Center speaker terminals are *green* for Positive and *black* for Negative connections. The Right Front speaker terminals are *red* for Positive and *black* for Negative connections. The Left Surround speaker terminals are *blue* for Positive and *black* for Negative connections. The Right Surround speaker terminals are *red* for Positive and *black* for Negative connections. The Left and Right Surround channel speaker terminals have a *white ring* around them to highlight them during connection of the speaker wires. **Please ensure these connections are correct before turning the RB 985 ON for the first time.**



Please refer to this drawing of the rear panel when making Input or Speaker connections to the RB 985.

The **SPEAKER** terminals will accept spade connectors, bare wire, "banana" plugs or 4 mm plugs for speaker connection. Please observe proper channel connections. Regardless of the type of connection made, please be certain that no stray wires are touching between the **POSITIVE (+)** and the **NEGATIVE (-)** terminals for each channel. This will cause the amplifiers **PROTECTION** circuit to operate and the amplifier will not play.

The POSITIVE (+) terminal for each channel should be connected to the Positive or Red terminal on your speaker. The NEGATIVE (-) terminal for each channel should be connected to the Negative or Black terminal on your speaker. If you incorrectly make these connections you will have a vague stereo image and very little bass response from your system.

If you are in doubt about the sound quality or correct polarity when listening, *then* reverse the Positive (+) and Negative (-) connections on the back of **one** of the Front Left (L) or Right (R) speakers *only*. If the stereo image becomes more specific *and* the bass improves *then* ALL speaker connections should be rechecked to ensure correct connection of the speakers. You may confirm this by placing the Front L and R speakers face to face 75 mm (~3") apart and playing music with a strong bass content as a source. The connection that has the most bass output is the correct connection.

Incorrect polarity will have vague imaging and poor bass as each of the speakers will attempt to cancel the sound the other is making due to the opposite motion of the drivers. (This is *not the same thing* as Absolute Polarity switching on a Digital to Analog converter, such as the RDP 980.)

Connecting the Front speakers OUT OF PHASE, face to face, is an excellent way to "break in" new speakers. They will make very little sound when played at a *moderate* level while out of phase with each other. *Set your surround sound processor to stereo or bypass mode for this purpose*. Please remember to connect the speakers for correct polarity when finished. Ask your **ROTEL hi fi AUTHORIZED DEALER** for advice if you are uncertain about this.

## A FINAL WORD ABOUT THIS POWER AMPLIFIER

We have designed this amplifier for high performance using test equipment and the human ear. We believe both methods are useful in the design of high fidelity audio electronics. *This is time consuming but we feel the music benefits from this care and attention to detail*. With THX certification *and* our reputation for excellent sound quality, *you can be certain that the RB 985 represents excellent value for money*. We realize that there are many choices available in the market today and we thank you again for choosing the RB 985 for your system. Enjoy the music and movie soundtracks!

## SPECIFICATIONS: RB 985 5 CHANNEL POWER AMPLIFIER

Continuous Power Output	100 watts/ch (20-20kHz 8 ohms, $\leq$ 0.03% THD)
DIN Output	220 watts/ch (1 kHz 4 ohms, 1% THD)
Total Harmonic Distortion (20 Hz-20,000 Hz)	< 0.03%
Intermodulation Distortion (60 Hz : 7 kHz, 4:1)	< 0.03%
Frequency Response	10-80,000 Hz, $\pm$ 0.5 dB
Peak Current Output (0.1 ohm load, 10 microseconds, 1 pulse)	40 Amps
Damping Factor (20-20,000 Hz, 8 ohms)	180
Speaker Impedance	4 ohms minimum
Signal to Noise Ratio (IHF A network)	115 dB
Power Amplifier Input Impedance	27 k Ohms
Power Requirements	115 Volts, 60 Hz <i>or</i> 230 Volts, 50 Hz
Power Consumption, Max.	800 Watts
Dimensions	440 mm (W) x 139 mm (H) x 396 mm (D) 17-3/8" (W) x 5-1/2" (H) x 15-5/8" (D)
Weight	15.5 kg's, 34.1 lbs

All specifications are accurate at the time of printing. Rotel reserves the right to make improvements without notice.

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