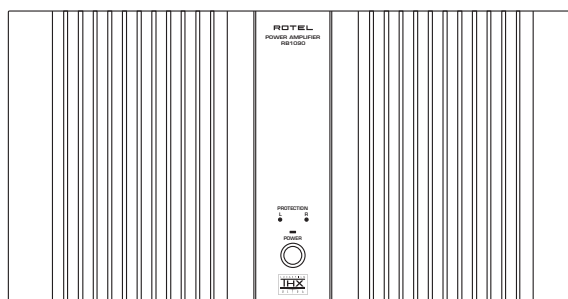


**ROTEL**

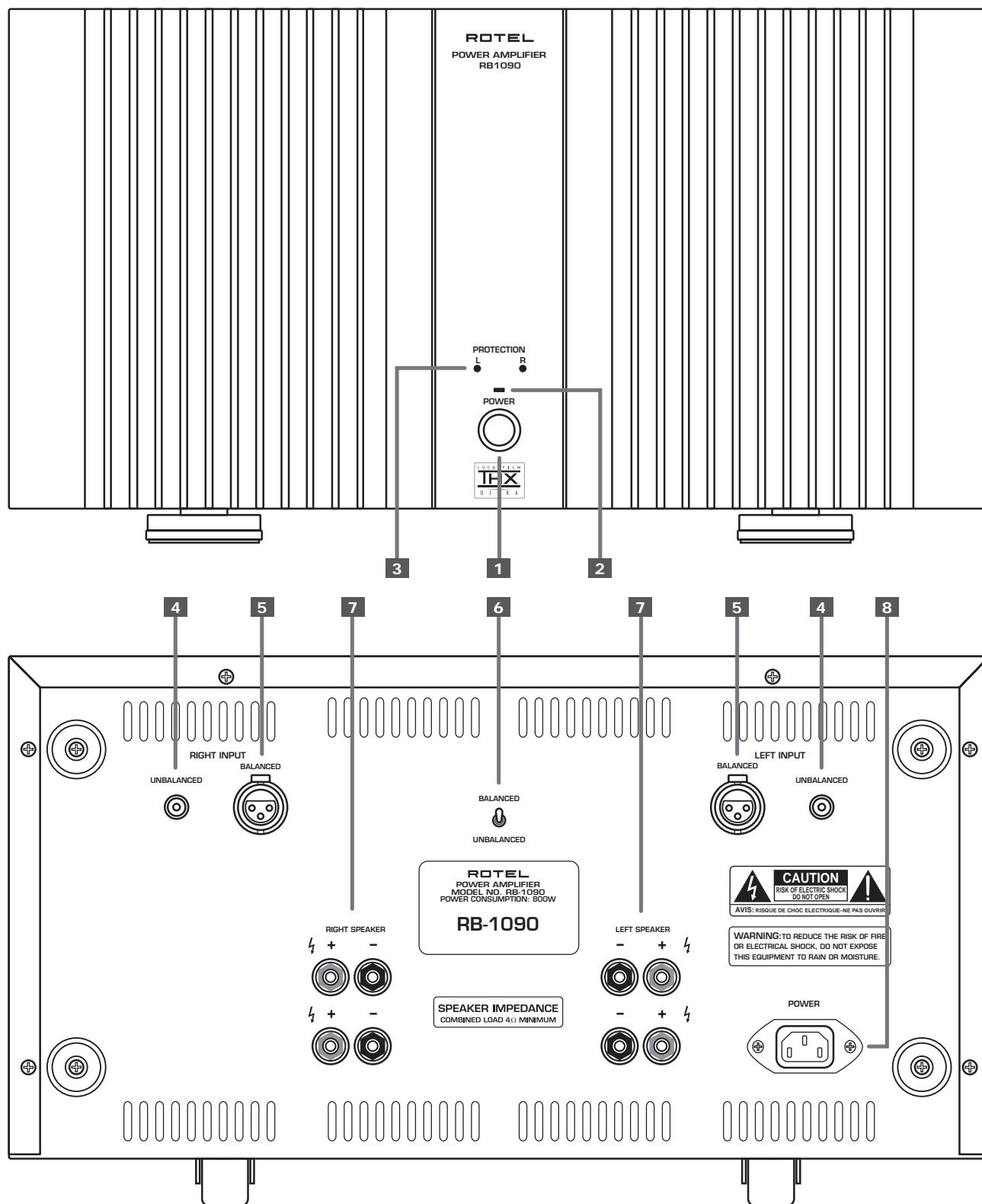
Owner's Manual  
Manuel d'utilisation  
Bedienungsanleitung  
Manuale di istruzioni  
Manual de instrucciones  
Gebruiksaanwijzing

# RB-1090

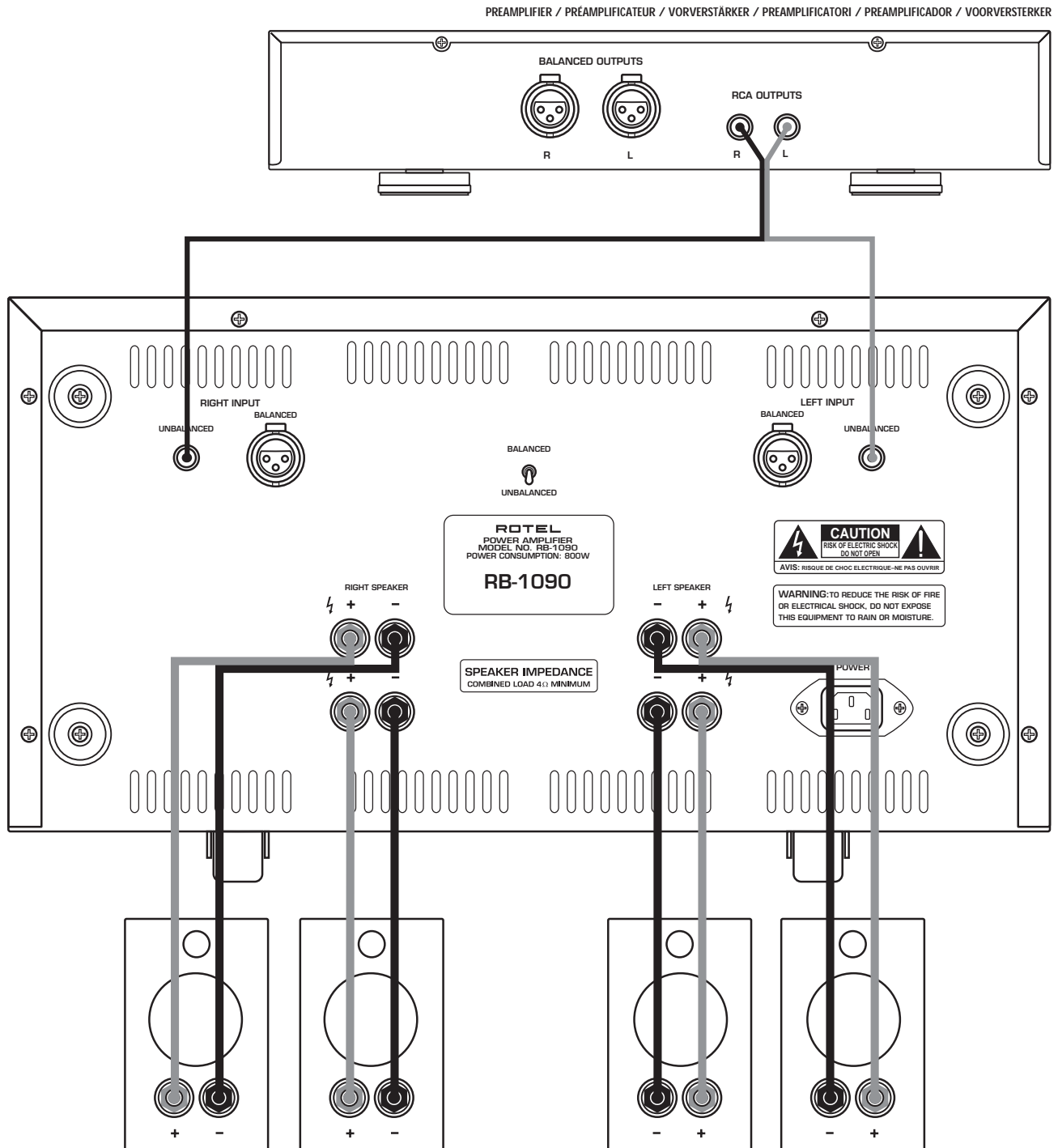
Stereo Power Amplifier  
Amplificateur de Puissance Stéréo  
Stereo-Endstufe  
Finale di Potenza Stereo  
Etapas de Potencia Estereofónica  
Stereo Eindversterker



1: Controls and Connections / Commandes et branchements / Bedienelemente und Anschlüsse  
 Controlli e collegamenti / Controles y Conexiones / De bedieningsorganen en aansluitingen



**2: RCA Inputs & Dual Speakers / Entrées Cinch-RCA et sorties enceintes doubles**  
**Anschlußdiagramm (Cinch-Eingänge und zwei Lautsprecherpaare)**  
**Ingressi RCA e Seconda coppia di diffusori**  
**Entradas RCA y Conexión de dos parejas de Cajas Acústicas**  
**De cinch- en luidsprekerverbindingen**



### 3: Balanced Inputs & Bi-wire Speakers

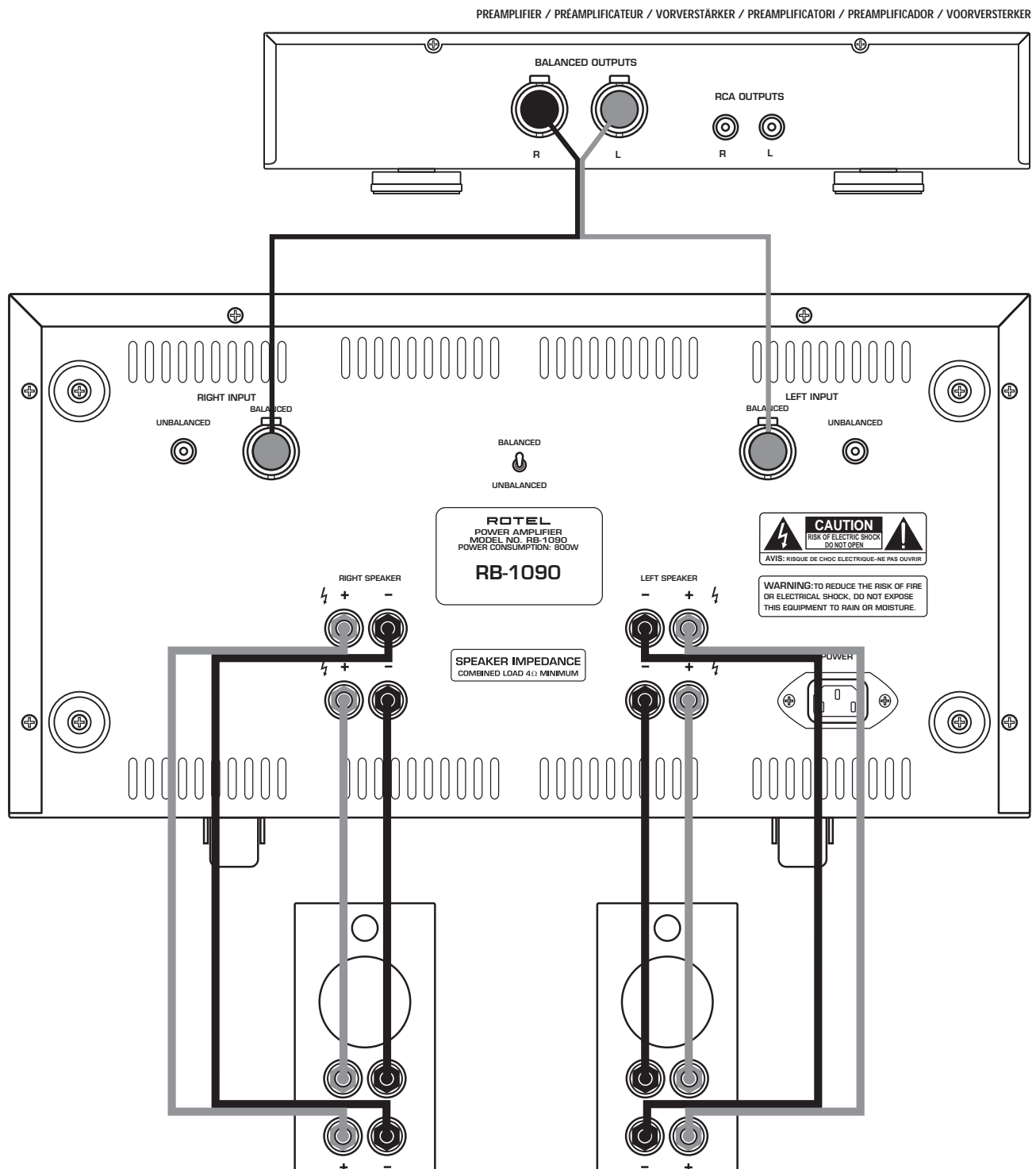
Entrées symétriques et bi-câblage des enceintes acoustiques

Anschlußdiagramm (Symmetrische Eingänge und Bi-Wiring)

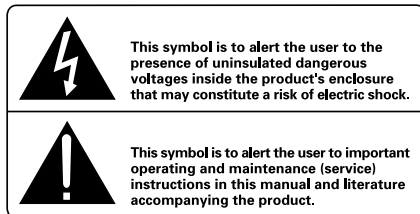
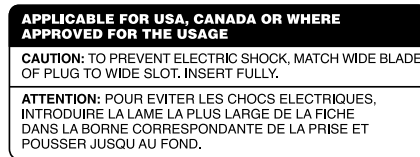
Ingressi bilanciati e Diffusori con bi-wire

Entradas Balanceadas y Conexión de Cajas Acústicas en Bicableado

De gebalanceerde ingangen en dubbele luidsprekerbedrading



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**WARNING:** There are no user serviceable parts inside. Refer all servicing to qualified service personnel.

**WARNING:** To reduce the risk of fire or electric shock, do not expose the unit to moisture or water. Do not allow foreign objects to get into the enclosure. If the unit is exposed to moisture, or a foreign object gets into the enclosure, immediately disconnect the power cord from the wall. Take the unit to a qualified service person for inspection and necessary repairs.

Read all the instructions before connecting or operating the component. Keep this manual so you can refer to these safety instructions.

Heed all warnings and safety information in these instructions and on the product itself. Follow all operating instructions.

Clean the enclosure only with a dry cloth or a vacuum cleaner.

You must allow 10 cm or 4 inches of unobstructed clearance around the unit. Do not place the unit on a bed, sofa, rug, or similar surface that could block the ventilation slots. If the component is placed in a bookcase or cabinet, there must be ventilation of the cabinet to allow proper cooling.

Keep the component away from radiators, heat registers, stoves, or any other appliance that produces heat.

The unit must be connected to a power supply only of the type and voltage specified on the rear panel of the unit.

Connect the component to the power outlet only with the supplied power supply cable or an exact equivalent. Do not modify the supplied cable in any way. Do not attempt to defeat grounding and/or polarization provisions. Do not use extension cords.

Do not route the power cord where it will be crushed, pinched, bent at severe angles, exposed to heat, or damaged in any way. Pay particular attention to the power cord at the plug and where it exits the back of the unit.

The power cord should be unplugged from the wall outlet if the unit is to be left unused for a long period of time.

Immediately stop using the component and have it inspected and/or serviced by a qualified service agency if:

- The power supply cord or plug has been damaged.
- Objects have fallen or liquid has been spilled into the unit.
- The unit has been exposed to rain.
- The unit shows signs of improper operation
- The unit has been dropped or damaged in any way

Place the unit on a fixed, level surface strong enough to support its weight. Do not place it on a moveable cart that could tip over.



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## About Rotel

A family whose passionate interest in music led them to manufacture high fidelity components of uncompromising quality founded Rotel over 30 years ago. Over the years that passion has remained undiminished and the goal of providing exceptional value for audiophiles and music lovers regardless of their budget, is shared by all Rotel employees.

The engineers work as a close team, listening to, and fine tuning each new product until it reaches their exacting musical standards. They are free to choose components from around the world in order to make that product the best they can. You are likely to find capacitors from the United Kingdom and Germany, semi-conductors from Japan or the United States, and toroidal power transformers manufactured in Rotel's own factory.

Rotel's reputation for excellence has been earned through hundreds of good reviews and awards from the most respected reviewers in the industry, who listen to music every day. Their comments keep the company true to its goal – the pursuit of equipment that is musical, reliable and affordable.

All of us at Rotel thank you for buying this product and hope it will bring you many hours of enjoyment.

## Getting Started

Thank you for purchasing the Rotel RB-1090 Stereo Power Amplifier. When used in a high-quality music or home theater system, your Rotel amplifier will provide years of musical enjoyment.

There is nothing understated about the RB-1090. It is a massive two-channel power amplifier, capable of providing extremely high power output in the most demanding applications. In fact, the limiting factor in the RB-1090's output levels will often be the capacity of your home's electrical supply. Discrete output devices, a massive power supply with dual toroidal transformers, premium components, and Rotel's Balanced Design ensure superb sound quality. High current capability allows the RB-1090 to drive difficult speaker loads with ease, including 2 ohm speakers.

Be aware that the RB-1090 is capable of high power levels, in excess of 400 watts per channel into 8 ohms and 700 watts into 4 ohms. Make sure that your speakers can handle the power of the RB-1090. If in doubt about your speakers, ask your authorized Rotel dealer for advice.

The RB-1090 is straightforward in its installation and operation. If you have experience with other stereo power amplifiers, you shouldn't find anything perplexing. Plug in a pair of high-quality RCA cables from your preamp into the amplifier inputs, wire up your speakers, and enjoy.

Alternatively, the RB-1090 provides an optional pair of balanced inputs for use with preamps or processors that offer these low-noise XLR-connections. If you choose this option, you will need to reset a back panel switch selecting the balanced inputs. Again, nothing very confusing.

### A Few Precautions

Please read this manual carefully. In addition to basic installation and operating instructions, it provides valuable information on various RB-1090 system configurations as well as general information that will help you get optimum performance from your system. Please contact your authorized Rotel dealer for answers to any questions you might have. In addition, all of us at Rotel welcome

Save the RB-1090 shipping carton and all enclosed packing material for future use. Shipping or moving the RB-1090 in anything other than the original packing material may result in severe damage to your amplifier.

Be sure to keep the original sales receipt. It is your best record of the date of purchase, which you will need in the event warranty service is ever required.

## Placement

The RB-1090 generates heat as part of its normal operation. The heat sinks and ventilation openings in the amplifier are designed to dissipate this heat. The ventilation slots in the top cover must be open. There should be 10 cm (4 inches) of clearance around the chassis, and reasonable airflow through the installation location, to prevent the amplifier from overheating.

Likewise, remember the weight of the amplifier when you select an installation location. Make sure that the shelf or cabinet can support its considerable bulk. Again, use common sense.

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**NOTE:** The RB-1090 has caster wheels at the rear to help position it.

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## About THX Ultra™

THX is an exclusive set of standards and technologies established by the world-renowned film production company, Lucasfilms Ltd. THX grew from George Lucas' personal desire to make your experience of the film soundtrack, in both movie theaters and in your home theater, as faithful as possible to what the director intended.

Movie sound tracks are mixed in special movie theaters called dubbing stages and are designed to be played back in movie theaters with similar equipment and conditions. The soundtrack created for movie theaters is then transferred directly onto Laserdisc, VHS tape, DVD, etc., and is not changed for playback in a small home theater environment. THX engineers developed patented technologies to accurately translate the sound from the movie theater environment into the home, correcting the tonal and spatial errors that occur.

Before any home theater component can be THX Ultra certified, it must incorporate the THX technologies and also pass a rigorous series of quality and performance tests. Only then can a product feature the THX Ultra logo, which is your guarantee that the Home Theater products you purchase will give you superb performance for many years to come.

## AC Power and Control

### AC Power Input 8

Because of its high power rating, the RB-1090 can draw considerable current and may tax your home's electrical circuit. Therefore, it should be plugged directly into a 3-pin polarized wall outlet. Do not use an extension cord. A heavy duty multi-tap power outlet strip may be used, but only if it (and the wall outlet) is rated to handle the current demanded by the RB-1090.

---

**NOTE:** The RB-1090 has a built-in surge attenuator to prevent opening the electrical circuit's breaker or fuse at turn-on.

---

Be sure the **POWER SWITCH** on the front panel of the RB-1090 is turned off (in the out position). Then, connect the supplied power cord to the **POWER CONNECTOR** on the back panel of the amplifier and to the AC power outlet.

Your RB-1090 is configured at the factory for the proper AC line voltage in the country where you purchased it (either 115 volts AC or 230 volts AC with a line frequency of either 50 Hz or 60 Hz). The AC line configuration is noted on a label on the back panel.

---

**NOTE:** Should you move your RB-1090 to another country, it is possible to configure your amplifier for use on a different line voltage. Do not attempt to perform this conversion yourself. Opening the enclosure of the RB-1090 exposes you to dangerous voltages. Consult a qualified technician or the Rotel factory service department for information.

---

If you are going to be away from home for an extended period of time such as a month-long vacation, it is a sensible precaution to unplug your amplifier while you are away.

### Power Switch 1 Power Indicator 2

The power switch is located in the center of the front panel of your amplifier. To turn the amplifier on, push the switch in. The LED indicator above the switch will light, indicating that the amplifier is turned on. To turn the amplifier off, push the button again and return it to the out position.

### Protection Circuitry 3

The RB-1090 features a thermal protection circuit that protects the amplifier against potential damage in the event of extreme or faulty operating conditions. Unlike many designs, the RB-1090's protection circuit is independent of the audio signal and has no impact on sonic performance. Instead, the protection circuit monitors the temperature of the output devices and shuts down the amplifier if temperatures exceed safe limits.

In addition, the RB-1090 includes overcurrent protection which operates only when load impedances drop below 2 ohms. This protection is independent of the left and right channels with separate front panel **PROTECTION LEDS** for each.

Most likely, you will never see this protection circuitry in action. However, should a faulty condition arise, the amplifier will stop playing and the **PROTECTION LEDS** on the front panel will light.

If this happens, turn the amplifier off, let it cool down for several minutes, and attempt to identify and correct the problem. When you turn the amplifier back on, the protection circuit will automatically reset and the **PROTECTION LEDS** should go out.

In most cases, the protection circuitry activates because of a fault condition such as shorted speaker wires, or inadequate ventilation leading to an overheating condition. In very rare cases, highly reactive or extremely low impedance speaker loads could cause the protection circuit to engage.



## Input Signal Connections

The RB-1090 gives you a choice of two different kinds of input connections — conventional unbalanced RCA type connections (such as found on nearly all audio equipment) or balanced XLR-type connections for use with some high-end preamps or digital processors featuring this lower noise connection.

### Input Selector Switch **6**

A toggle switch in the middle of the RB-1090's rear panel selects which type of input signal to use. The operation of this switch is self-evident. Put the switch in the *unbalanced* position when you are using the RCA-type inputs. Put the switch in the *balanced* position when using XLR-type connections.

---

**NOTE:** To prevent loud potentially damaging noises, make sure the amplifier is turned off when you make any signal connections.

---

### RCA Inputs (unbalanced) **4**

See Figure 2

When a component with RCA connectors — such as a preamplifier or surround sound processor — supplies signals to the RB-1090, the RCA-type phono plug inputs should be used.

Select high quality audio interconnect cables. Connect the left channel output of your preamp to the left channel **UNBALANCED INPUT** on the RB-1090. Connect the other cable to the right channel **UNBALANCED INPUT**. Make sure that the input selector switch is in the **UNBALANCED** position.

### XLR Inputs (balanced) **5**

See Figure 3

If you are using one of the high-end preamplifiers or processors with low-noise balanced signal outputs to drive your RB-1090, you may choose to use these low-noise XLR-type connections. See your authorized Rotel dealer for the appropriate cables.

Connect the left channel output of your preamp to the left channel **BALANCED INPUT** on the RB-1090. When properly seated, the connector should click into the connection.

Connect the other cable to the right channel **BALANCED INPUT**. Make sure that the **INPUT SELECTOR SWITCH** is in the *balanced* position.

## Speakers

The RB-1090 has two sets of **SPEAKER CONNECTORS** for each channel. These can be used to connect two pairs of loudspeakers, or to connect one pair of loudspeakers with bi-wire connections.

### Speaker Selection

The nominal impedance of the loudspeaker(s) connected to the RB-1090 should be at least 4 ohms. When driving multiple pairs of speakers in parallel configuration, the effective impedance the amplifier sees is cut in half. For example, when driving two pair of 8 ohm speakers, the amplifier sees a 4 ohm load. When driving multiple speakers in parallel, select speakers with a nominal impedance of 8 ohms or higher. Speaker impedance ratings are less than precise. In practice, very few loudspeakers will present any problems for the RB-1090. See your authorized Rotel dealer if you have any questions.

### Speaker Wire Selection

Use insulated two-conductor stranded wire to connect the RB-1090 to the speakers. The size and quality of the wire can have an audible effect on the performance of the system. Standard speaker wire will work, but can result in lower output or diminished bass response, particularly over longer distances. In general, heavier wire will improve the sound. For best performance, you may want to consider special high-quality speaker cables. Your authorized Rotel dealer can help in the selection of appropriate cables for your system.

### Polarity and Phasing

The polarity — the positive/negative orientation of the connections — for every speaker and amplifier connection must be consistent so all the speakers will be in phase. If the polarity of one connection is mistakenly reversed, bass output will be very weak and stereo imaging degraded. All wire is marked so you can identify the two conductors. There may be ribs or a stripe on the insulation of

one conductor. The wire may have clear insulation with different color conductors (copper and silver). There may be polarity indications printed on the insulation. Identify the positive and negative conductors and be consistent with every speaker and amplifier connection.

### Connecting the Speakers **7**

See Figure 2

The RB-1090 has two pairs of color coded binding posts per channel. These can be used to connect two pairs of loudspeakers by connecting one pair to the first speaker and the second pair to the other speaker. Alternatively, they may be used for bi-wire connections by connecting one pair to the high-frequency input on the speaker and the other pair to the low-frequency speaker input.

These **SPEAKER CONNECTORS** accept bare wire, connector lugs, or dual banana type connectors (except in the European Community countries where their use is not permitted).

Route the wire from the RB-1090 to the speakers. Give yourself enough slack so you can move the components enough to allow access to the **SPEAKER CONNECTORS**.

If you are using dual banana plugs, connect them to the wires and then plug into the backs of the **SPEAKER CONNECTORS**. The collars of the **SPEAKER CONNECTORS** should be screwed in all the way (clockwise).

If you are using terminal lugs, connect them to the wires. If you are attaching bare wires directly to the **SPEAKER CONNECTORS**, separate the wire conductors and strip back the insulation from the end of each conductor. Be careful not to cut into the wire strands. Unscrew (turn counterclockwise) the **SPEAKER CONNECTOR** collars. Place the connector lug around the shaft, or insert the bundled wire into the hole in the shaft. Turn the collars clockwise to clamp the connector lug or wire firmly in place.

---

**NOTE:** Be sure there are no loose wire strands that could touch adjacent wires or connectors.

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## Troubleshooting

Most difficulties in audio systems are the result of poor or wrong connections, or improper control settings. If you encounter problems, isolate the area of the difficulty, check the control settings, determine the cause of the fault and make the necessary changes. If you are unable to get sound from the RB-1090, refer to the suggestions for the following conditions:

### Front Panel Power Indicator Is Not Lit

No main power to the RB-1090. Check the front panel **POWER SWITCH**. Make sure that it is set to the **ON** position. Check AC power connections at the amplifier and the AC outlet.

### No Sound

If the amp is getting AC power, but is producing no sound, check the **PROTECTION INDICATORS** on the front panel. If lit, see below. If not, check all of your connections and control settings on associated components. Check the **INPUT SELECTOR SWITCH** on the RB-1090 back panel to be sure that its setting matches the type of input you are using.

### Protection Indicator Is Lit

The front panel **PROTECTION INDICATORS** light when the RB-1090 protection circuits have shut off the amplifier. Typically, this occurs only when the ventilation openings are blocked, when there is faulty speaker wiring, or after a period of extreme use. Turn off the system and wait for the amp to cool. Then push the front panel **POWER SWITCH** in and out to reset the protection devices. If the problem is not corrected or reoccurs, there is a problem with the system or the amplifier itself.

## Specifications

### Continuous Power Output

**(20-20 kHz, < 0.03%):**  
380 watts/ch into 8 ohms  
700 watts/ch into 4 ohms

**Total Harmonic Distortion  
(20Hz-20kHz, 8 ohms):**  
< 0.03%

**Intermodulation Distortion  
(60 Hz : 7 kHz, 4:1):**  
< 0.03%

**Frequency Response ( $\pm 1$  dB):**  
10Hz-100kHz

**Damping Factor (20-20,000 Hz, 8 ohms):**  
1000

**Speaker Impedance (combined load):**  
4 ohms minimum

**Signal to Noise Ratio (IHF A network):**  
125 dB

**Input Impedance/Sensitivity:**  
33 k Ohms/1.8volt

**Power Requirements:**  
115 Volts, 60 Hz (USA)  
230 Volts, 50 Hz (EC)

**Power Consumption:**  
800 Watts

**Dimensions (W x H x D):**  
440 x 240 x 398 mm  
17 3/8 x 9 1/2 x 15 3/4 in

**Weight (net):**  
38 kg, 83.6 lb.

*All specifications are accurate at the time of printing.*

*Rotel reserves the right to make improvements without notice.*

*THX and the THX logo are registered trademarks of Lucasfilm Ltd. All rights reserved.*

The Rotel logo consists of the word "ROTEL" in a bold, white, sans-serif font, with a registered trademark symbol (®) to the upper right of the letter "L". The logo is set against a solid black rectangular background.

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