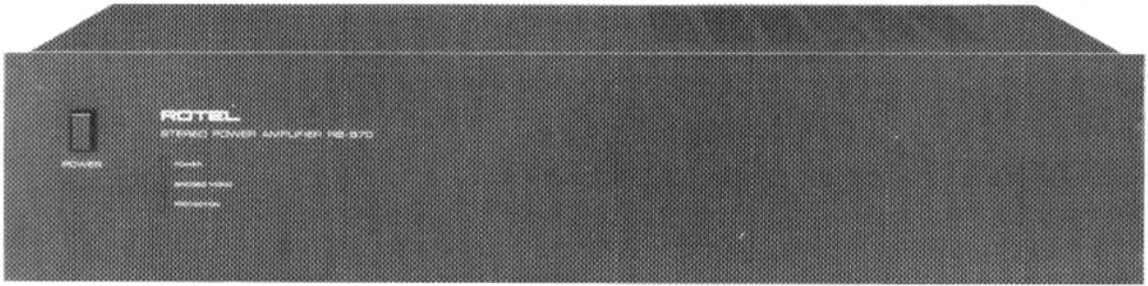


# owners manual



Quality. Uncompromised.

# ROTEL<sup>®</sup> RB-870

STEREO POWER AMPLIFIER

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

Write your SERIAL NUMBER here.  
The number is located near the name  
plate on the rear panel.

# ENGLISH

## STEREO POWER AMPLIFIER RB-870

### INTRODUCTION

We at Rotel want to thank you for purchasing our audio product.

Rotel audio products are designed to use the latest electronic technology, and they incorporate our long experience as a specialist manufacturer of audio equipment. We are confident that you will find satisfaction in the high quality sound and top performance, and that you will find pleasure in the functional beauty achieved through human-engineering concept. Before starting operation, please read this instruction manual thoroughly and acquaint yourself with the proper mode of using the unit and all its connections.

We hope you will enjoy top-notch performance for many years to come.

### BEFORE ENJOYMENT/ POWER SUPPLY

Follow the instructions below for maximum safety:

#### 1. Use a wall outlet for power supply

Be sure to connect the AC line cord to a household wall outlet. Be certain that the outlet voltage matches the electrical rating of the unit, found on the rear panel name plate.

#### 2. Connecting and removing AC cord

Be sure to connect or disconnect the AC line cord only after turning off the power switch to prevent possible shock noise or damage to the speakers.

#### 3. Ventilate the unit well

Never block any ventilation holes at the top and bottom of the unit. Be sure also to provide ample ventilation space around the unit. Poor ventilation may result in damage due to excessive heat.

#### 4. Do not open the cabinet

In order to avoid electric shock or damage to the component, never open the cabinet. If a foreign object falls inside the unit by mistake, turn the power off, disconnect the wall plug, and consult a qualified electrician or your dealer.

#### 5. Installation

Be sure to place the unit in a level and flat place where it is free from humidity, vibration, high temperature and not exposed to direct sunlight. Be careful not to place the unit in a highly enclosed place such as near a wall or on a bookshelf. A poor ventilation will cause undesirable effects to the unit.

#### 6. Moving the unit

When transporting, remove the AC cord from the wall outlet and all other connected cords on the rear panel to prevent wire breakage and short circuits.

#### 7. If the unit gets wet

If the unit should get wet, immediately disconnect the AC cord, and consult your dealer or a qualified electrician.

#### 8. Cleaning and maintenance

Do not use chemicals such as benzine or thin-

ners on the front panel. Always use a soft, dry cloth to clean the unit.

#### 9. Owner's manual

Keep the owner's manual near the unit, and record the serial number (found on the rear panel) on the cover.

### EXCLUSIVE NOTE FOR U.K.

If your unit comes with a 2-core cable without a plug, make certain live and neutral leads are connected to the proper terminals. Check that the terminals are screwed down firmly and no loose strands of wire are present.

**IMPORTANT:** The wires in this mains lead

are coloured in accordance with the following code:

BLUE: NEUTRAL

BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows. The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLUE or BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured BROWN or RED.

### SPEAKERS

Use speaker systems with impedance ratings of 8-16 ohms. Before hooking up your speaker system, be sure to check its impedance, which should be indicated either on the back of the speaker, or in the speaker instruction manual.

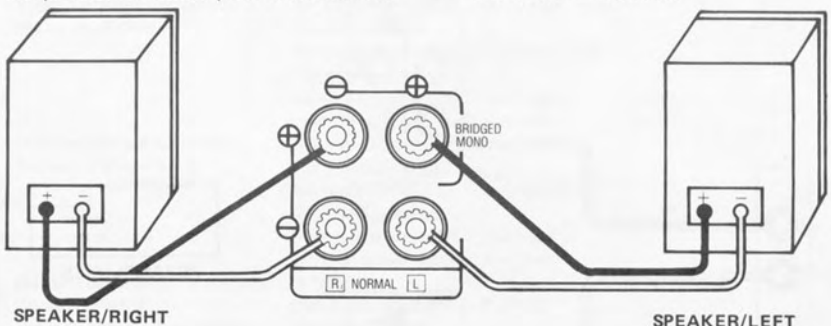
### HOOKING UP SPEAKERS

Connect speaker system to the speaker terminals provided on the rear panel of the unit.

mode of connection differs depending on whether you use it as a stereo power amplifier or as a monaural power amplifier in bridged connection (BTL connection).

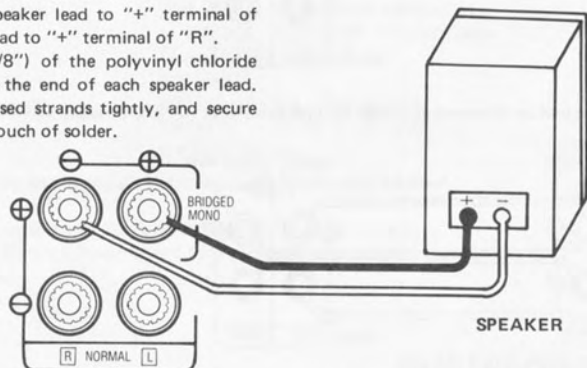
#### A. When using the unit as a stereo power amplifier:

Connect the speaker leads of the right-hand speaker to "+" and "-" of terminals of "R", and the speaker leads of the left-hand speaker to "+" and "-" of "L". Make sure each "+" speaker lead is connected to "+" terminal, and "-" lead to the "-" terminal.



#### B. When using the unit as a monaural power amplifier (BTL connection)

Connect "+" speaker lead to "+" terminal of "L", and "-" lead to "+" terminal of "R". Strip 1.0cm (3/8") of the polyvinyl chloride insulation from the end of each speaker lead. Twist the exposed strands tightly, and secure the end with a touch of solder.



To connect speaker lead to the speaker terminal of the amplifier, rotate the speaker terminal knob counterclockwise to loosen, insert the

stripped end of the lead, and firmly tighten the knob onto the lead. Do not allow the stripped end of the lead to touch another lead, other terminal or other metal part.

## CONNECTING PREAMPLIFIER

Connect preamplifier to the RB-870. The mode of connection differs depending on usage of the unit; you may use the unit 1) as a stereo power amplifier, 2) as a monaural power amplifier in bridged connection (BTL), or 3) as a monaural power amplifier used in combination with ROTEL stereo integrated amplifier RA-870 in bridged connection (BTL). Please make correct connection in accordance with your usage of the unit.

### 1. When using the unit as stereo power amplifier

Locate NORMAL/BRIDGED MONO selector above the INPUT/OUTPUT terminals on the rear panel, and set it to NORMAL position. Using RCA pin cords, connect preamplifier output terminal "L" (left) with the RB-870's INPUT terminal "L", and the preamplifier output terminal "R" (right) with the RB-870's INPUT terminal "R". The OUTPUT terminals of the RB-870 are not used.

### 2. When using the unit as monaural amplifier (bridged connection)

Locate NORMAL/BRIDGED MONO selector

above the INPUT/OUTPUT terminals on the rear panel, and set it to BRIDGED MONO position. In this mode, the INPUT terminal "R" (right) of the RB-870 becomes a monaural input terminal. To this terminal, connect preamplifier output terminal "L" (left) or "R" (right), using a pin cord. The RB-870's INPUT terminal "L", and OUTPUT terminals are not used.

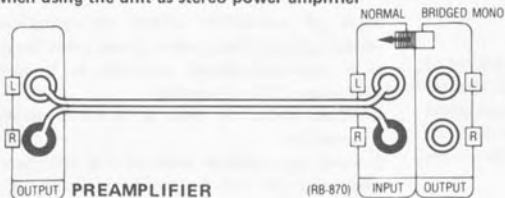
### 3. When using the unit as monaural amplifier for operation with RA-870 (bridged connection)

Set NORMAL/BRIDGED MONO selectors provided on the rear panels of RB-870 and RA-870 to BRIDGED MONO position respectively. In this mode, the signal fed through the INPUT terminal "L" (left) of the RB-870 will be reversed in phase, and the signal fed through the INPUT terminal "R" (right) is used for monaural reproduction. RB-870's OUTPUT terminal "L" will transmit in-phase signal that has been fed through the INPUT terminal "L", and the OUTPUT terminal "R" will transmit signal that has been fed through the INPUT terminal "L" and reversed in phase. Using RCA

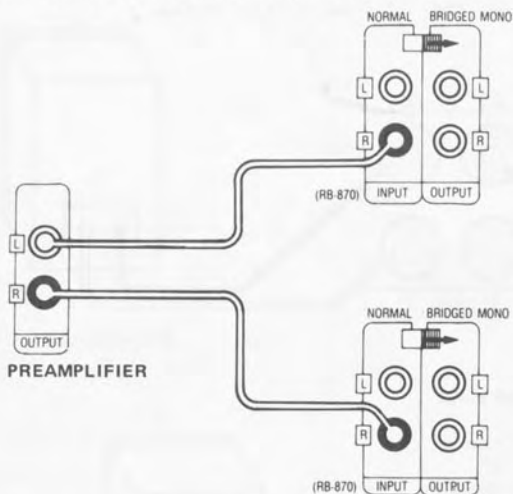
pin cords, connect RA-870's PRE OUT terminal "L" with the RB-870's INPUT terminal "L", and RA-870's PRE OUT terminal "R" to RB-870's INPUT terminal "R". Also connect RB-870's OUTPUT terminal "L" with RA-870's MAIN IN terminal "L", and RB-870's OUTPUT terminal "R" to the RA-870's MAIN IN terminal "R". In this fashion, the RB-870 drives right channel speaker, and the RA-870's main amplifier section drives left channel speaker independently. Each amplifier works as a monaural power amplifier, with the rated power-output capability of each unit greater than twice the single-unit rating.

**Caution:** When using the RB-870 in combination with the ROTEL stereo integrated amplifier RA-870 for bridged connection (BTL), never supply power to the RB-870 through the AC outlet provided on the RA-870. Be sure to connect the RB-870 power cord to a wall outlet.

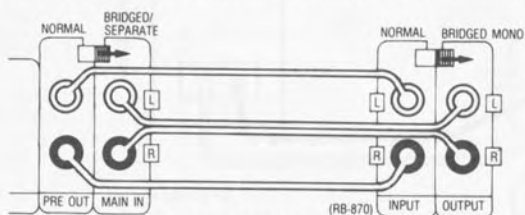
#### When using the unit as stereo power amplifier



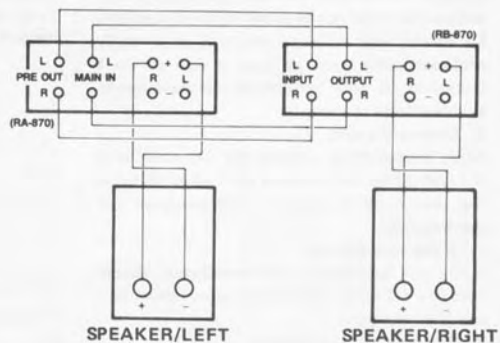
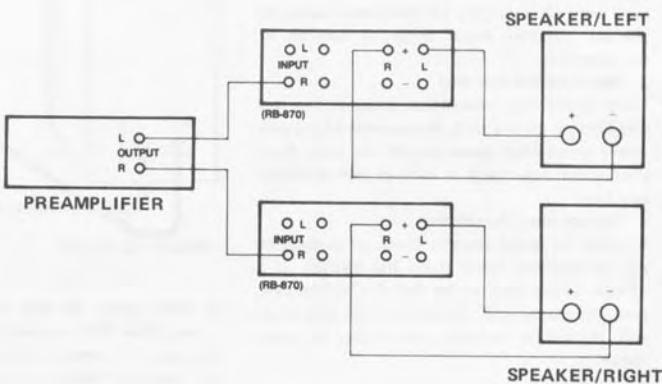
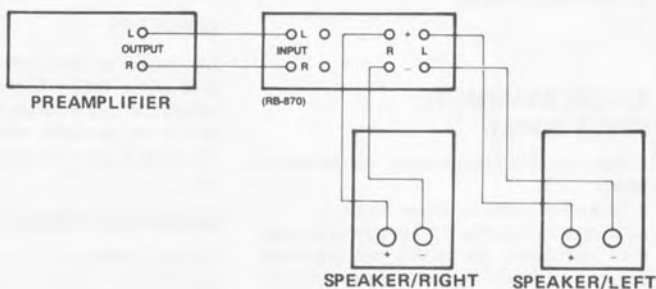
#### When using the unit as monaural amplifier (bridged connection)



#### When using the unit as monaural amplifier for operation with RA-870 (bridged connection)



#### INTEGRATED AMPLIFIER RA-870



## SWITCHE AND INDICATORS

### (1) Power Button

Depress this button to turn on the power in the unit. Press the button a second time to release it and to cut off the power.

### (2) Power Indicator

Glowes when power is turned on with the power button.

### (3) Bridged Mono Indicator

Glowes when NORMAL/BRIDGED MONO selector on the unit's rear panel is set to BRIDGED MONO position to use the unit as monaural power amplifier in bridged connection (BTL).

### (4) Protection Indicator

Glowes when the built-in protection circuit is activated. The indicator normally lights for several seconds upon turning on the power. When the indicator goes off, it means the unit is in the normal operating state.

The indicator also glowes when abnormally high temperature is built up inside the unit due to low-impedance drive, etc. In such a case, the indicator will remain on until the temperature inside the unit drops to a normal level. When the indicator goes off, it indicates the unit has returned to the normal operating state.

## OPERATION

- Before commencing operation, check to see if all connections are properly made.

- Before turning on the power in the unit, always be sure to turn down the preamplifier volume control to minimum.

1. Turn on the preamplifier.
2. Turn on the RB-870.

3. Reproduce a desired source, and raise the volume level on the preamplifier.

## HUM AND NOISE

In any high fidelity installation, hum may be caused by the interconnection of a turntable, tuner and amplifier, and speakers as the result of wiring, different grounding or locations of components.

If hum is experienced with your unit, disconnect everything but the speakers from the unit. Plug in the turntable and if hum or howling appears, move the turntable away from the speakers as much as possible.

Note hum may also be induced by defective cable connections or by running the cables too close to a strong AC field.

When your unit picks up noise during the reception of broadcasts, causes are mostly due to external objects such as fluorescent lamps and house appliances using motor or thermostat, or others that may induce the noise.

Either relocating the unit away from the noise sources or using an improved outdoor antenna may readily solve the problem.

In the event you cannot find the cause, consult your dealer or a qualified electrician.

## PROTECTION CIRCUIT

The RB-870 incorporates all possible safety measures by combining multiple protection circuits to prevent accident or damage.

If for some reason the protection circuit is activated, there will be a sudden cut-off of sound from the speakers, and the protection indicator will light up.

If no sound is produced, the reason may be due to the functioning of the protection circuit. First, turn off the power and disconnect the plug from the electrical outlet, and check to be sure that the speaker cables are not short-circuited. Also check to make sure the impedance of each speaker is 8 ohms or over (if it is below 8 ohms, the unit will be overloaded due to low impedance).

After checking the above points, turn the power on, and the protection circuit will be automatically deactivated and the unit will start functioning again.

If the protection circuit is activated again despite taking the above action, cut off the power supply from your entire audio system and consult your dealer or a qualified electrician.

**Note:** The protection circuit will normally operate to prevent a popping noise from being generated upon turning on the power. No sound is produced for several seconds after turn-on.

## VOLTAGE SELECTION

### Not available for U.K., Canada and Scandinavia

The unit is a variable voltage equipment that can run on 120V, 220V or 240V power supply. Your unit should already be preset at the proper voltage for use in your area. However, if you move to an area where the power supply voltage is different, consult your dealer.

## SPECIFICATIONS

Continuous Power Output . . . . .	.60 watts* per channel, min. RMS both channels driven into 8 ohms from 20 to 20,000 Hz with no more than 0.03% total harmonic distortion.
DIN Output . . . . .	.118 watts per channel (1 kHz, 4 ohms, 1% THD)
Power Output (BTL) . . . . .	.120 watts (mono) min. RMS driven into 8 ohms from 20 to 20,000 Hz with no more than 0.03% total harmonic distortion.
Total Harmonic Distortion. . . . .	(20 to 20,000 Hz) .No more than 0.03% (continuous rated power output) No more than 0.03% (continuous 1/2 rated power output) No more than 0.05% (1 watt per channel power output, 8 ohms)
Intermodulation Distortion . . . . .	(60 Hz : 7 kHz = 4 : 1) .No more than 0.05% (continuous rated power output) No more than 0.05% (continuous 1/2 rated power output) No more than 0.05% (1 watt per channel power output, 8 ohms)
Output: Speaker . . . . .	.8-16 ohms
Damping Factor. . . . .	.280 (20 to 20,000 Hz, 8 ohms)
Input Sensitivity/Impedance. . . . .	.1.0V/25 kohms
Frequency Response . . . . .	.15 to 120,000 Hz, +0 dB, -1.0dB
Signal-to-Noise Ratio (IHF, A network) . . . . .	.116 dB
Power Requirement. . . . .	.120V/60 Hz, 220V/50 Hz, 240V/50 Hz, or 120, 220, 240V/50-60 Hz (switchable) (depending on destinations)
Power Consumption . . . . .	.500 watts
Dimensions (overall) . . . . .	.430 (W) x 91 (H) x 315 (D) mm 16-15/16" x 3-9/16" x 12-13/32"
Weight (net) . . . . .	.9.4 kg/20.68 lbs.

- Specifications and design subject to possible modification without notice.
- \*Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Claims for Amplifiers (applicable to the U.S.A. only).