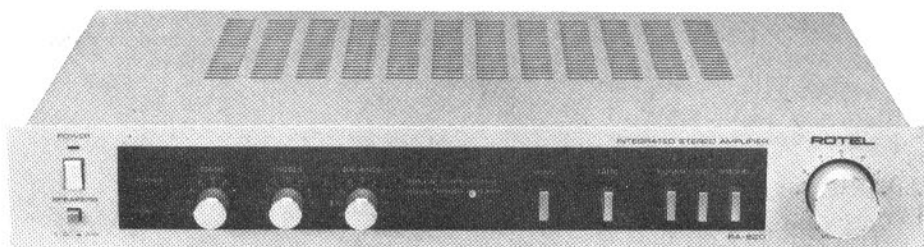


# owner's manual



Quality. Uncompromised.

# ROTEL<sup>®</sup>

# RA-820

STEREO INTEGRATED 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 INTEGRATED AMPLIFIER RA-820

### 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 directly to a household wall outlet, and not to an auxiliary outlet on another component. 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 benzene 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.

### SPEAKERS

The unit allows hookup of two speaker systems. 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.

### HOOING UP SPEAKERS

On the rear panel of the RA-820 are two sets of speaker terminals, SPEAKER A and B, to which two speaker systems may be connected. Connect the speaker leads of the right-hand speaker to terminals "R" of "A" (or "B"), and the speaker leads of the left-hand speaker to terminals "L" of "A" (or "B"). Make sure that the "+" speaker lead is connected to the "+" terminal, and the "-" lead to the "-" terminal. 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.

The terminals are the push-insert type. Insert the end of the lead into the hole while pushing on the button. Then release the button; the hole will close and the cord is firmly fixed.

#### Notes:

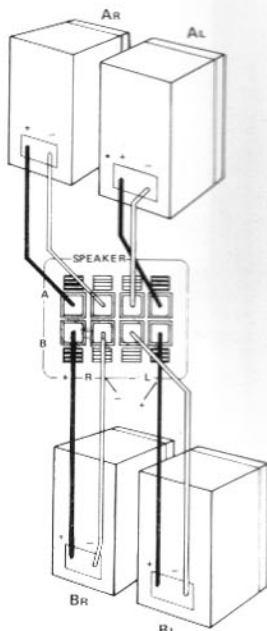
1. The SPEAKER A terminal is directly connected from the amplifier section for improved sound quality. This means the headphone circuit is bypassed, so that plugging headphones into the headphone jack will not cut off sound from the speakers connected to the SPEAKER A terminal.

2. If you have only one pair of speakers, always connect to the SPEAKER A terminal for best possible sound quality from the amplifier. However, if you frequently wish to listen to the headphones with the speakers turned off, connect your pair of speakers to the SPEAKER B terminal. This means when the headphones is

plugged, the sound from your speakers will be cut off.

3. If you have two pairs of speakers and have connected them to the both SPEAKER A and B terminals, you can either listen to the pair of speakers connected to the SPEAKER A terminal or to the both pairs of speakers simultaneously depending on positions of the speaker selector button on the front panel ("A" or "A + B").

If you wish to listen to the pair of speakers connected to the SPEAKER B terminal, disconnect the speakers connected to the SPEAKER A terminal and push the speaker selector button on the front panel to the "A + B" position.



AR: SPEAKER A/RIGHT  
AL: SPEAKER A/LEFT  
BR: SPEAKER B/RIGHT  
BL: SPEAKER B/RIGHT

### EXCLUSIVE NOTE FOR U.K.

If your unit comes with a 3-core cable without a plug, make certain live, neutral and earth leads are connected to the proper terminals. Check that the terminals are screwed down firmly and no loose strands of wire are present.

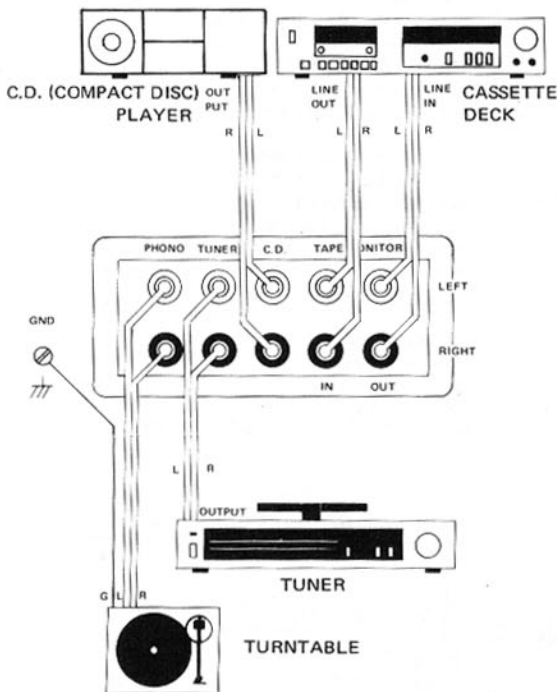
IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN/YELLOW: EARTH  
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 GREEN/YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  $\perp$ , or coloured GREEN or GREEN/YELLOW. The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK. The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

## CONNECTING COMPONENTS

Connect all necessary audio components to the rear panel of the unit, using RCA pin cords. See the illustration for properly completed connections. When connecting RCA pin cords, be sure that L (left) and R (right) markings on each component are matched correctly. Connect the grounding wire of the turntable to the terminal marked GND on the amplifier.



## SWITCHES AND CONTROLS

### (1) Power Button

This button turns on the unit. The LED indicator above it will glow when the power is on. Press the button a second time to turn off the power.

### (2) Speaker Selector Button

This button selects speaker systems connected to the speaker terminals on the rear panel. In the released position, the speaker system connected to terminal "A" is activated. When one more speaker system is connected to terminal "B", depressing the button simultaneously activates both speaker systems connected to terminals "A" and "B".

### (3) Headphone Jack

For headphone listening, plug your headset into this jack. The volume of the headphone sound

can be regulated with the volume control.

**Note:** Sound from speakers connected to speaker terminals "A" is not cut off even when a headset is inserted (see "note" in the section "HOOKING UP SPEAKERS").

### (4) Bass/Treble Tone Controls

Two separate controls regulate bass and treble respectively. BASS is for the low frequency range and TREBLE for high frequency range. Turn each knob clockwise to increase the response, and counterclockwise to reduce it. A flat response is obtained when both controls are at zero position. Use the controls effectively according to your taste or room conditions to achieve optimal sound performance.

### (5) Balance Control

In the central position, sound is produced in equal level from both speakers, while turning it to the right decreases the sound from the left

speaker, and turning it to the left decreases the sound from the right speaker.

### (6) Mono Button

Pressing this button will cause the unit to reproduce any input signal monaurally. When the button is released, the unit gives stereo reproduction.

### (7) Tape Monitor Button

Depress this button when you wish to listen to the signal from tape deck. In the released position, the unit operates in the mode selected by the function selector.

### (8) Function Selector

The function selector works only when the Tape Monitor button is released to off. It is used to select program sources: Depress PHONO button to reproduce signal from turntable, C.D. button for signal from compact disc player, and TUNER for signal from tuner.

### (9) Volume Control

This knob regulates the volume level. Rotate the knob clockwise to raise the volume level, and counterclockwise to reduce it. When the knob is tuned fully counterclockwise, no sound is produced. Always have the volume control set to minimum before you turn on power.

## OPERATION

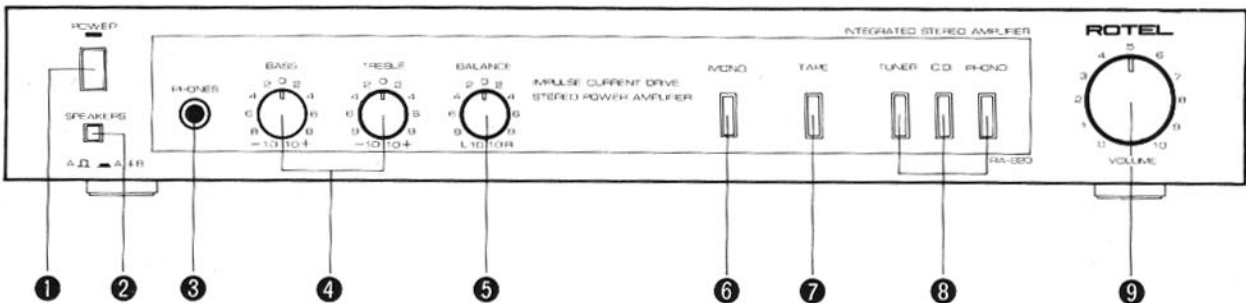
- Before commencing operation, check to see if all connections are properly made.
- Always be sure to set the volume control to the minimum position before turning on power.
- Set the speaker selector button to the appropriate position according to the speaker system(s) you are going to use.
- Set the Tone controls and Mono button as desired.

### Listening from turntable

1. Set Tape Monitor button in released (OFF) position.
2. Depress PHONO button on the function selector.
3. Start the play, then raise the volume.

### Listening from compact disc player or tuner

1. Set Tape Monitor button in released (OFF) position.
2. To listen to a compact disc, depress C.D. button on the function selector; depress TUNER button to receive radio broadcast.
3. Play the compact disc or tune in to the desired station, according to instructions given for the equipment.



4. Raise the volume level.

### Playing back tape deck

1. Depress Tape Monitor button to ON.
2. Start playback.
3. Raise the volume level.

### Recording program source

Play the desired program source according to the procedures mentioned above. The signal from the source will be sent through TAPE MONITOR OUT terminals on unit's rear panel. Put the tape deck in the record mode to record the signal. During recording, operation of Volume control, Tone controls, etc. will have no effect on the signal being sent through TAPE MONITOR OUT terminals.

### 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

To prevent accidental damage to the unit or speakers, a protection circuit is installed in the unit. If no sound is produced, a blown fuse may be the cause. Turn off the unit, disconnect the plug from the electrical outlet, and consult your dealer or qualified electrician.

### 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 . . . . .	.25 watts* per channel, min. RMS both channels driven into 8 ohms from 30 to 20,000 Hz with no more than 0.4% total harmonic distortion.
DIN Output . . . . .	.35 watts per channel (1 kHz, 4 ohms, 1% THD)
Music Power . . . . .	120 watts
Total Harmonic Distortion . . . . . (30 to 20,000 Hz, from AUX)	No more than 0.4% (continuous rated power output) No more than 0.4% (continuous 1/2 rated power output) No more than 0.4% (1 watt per channel power output, 8 ohms)
Intermodulation Distortion . . . . . (60 Hz : 7 kHz = 4 : 1)	No more than 0.4% (continuous rated power output) No more than 0.4% (continuous 1/2 rated power output) No more than 0.4% (1 watt per channel power output, 8 ohms)
Output: Speaker . . . . .	8-16 ohms
Headphone . . . . .	4-16 ohms
Damping Factor . . . . .	.20 (20 to 20,000 Hz, 8 ohms)
Input Sensitivity/Impedance:	
PHONO . . . . .	.25 mV/47 kohms
C.D. . . . .	.750 mV/70 kohms
TUNER . . . . .	.150 mV/33 kohms
TAPE MONITOR . . . . .	.150 mV/33 kohms
Overload Level (T.H.D. 0.5%, 1k Hz):	
PHONO . . . . .	100 mV
TUNER, TAPE . . . . .	.3V
Frequency Response:	
PHONO . . . . .	.20 to 15,000 Hz, $\pm 0.3$ dB (RIAA STD)
C.D., TUNER, TAPE . . . . .	.10 to 40,000 Hz, +1.0 dB, -3.0 dB
Tone Control:	
BASS . . . . .	$\pm 4$ dB, 100 Hz
TREBLE . . . . .	+4 dB, -7 dB, 10 kHz
Signal to Noise Ratio (IHF, A network):	
PHONO . . . . .	.75 dB
C.D., TUNER . . . . .	.95 dB
TAPE MONITOR . . . . .	.95 dB

### MISCELLANEOUS

Power Requirement . . . . .	120V/60 Hz, 220V/50 Hz, 240V/50 Hz, or 120, 220, 240V/50-60 Hz (switchable) (depending on destinations)
Power Consumption . . . . .	170 watts
Dimensions (overall) . . . . .	.430 (W) x .66 (H) x .271 (D) mm 16-5/16" x 2-19/32" x 10-11/16"
Weight (net) . . . . .	.55 kg/12.1 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).