

# owner's manual

Quality Uncompromised

## ROTEL<sup>®</sup>

# RA-820BX4

STEREO INTEGRATED AMPLIFIER

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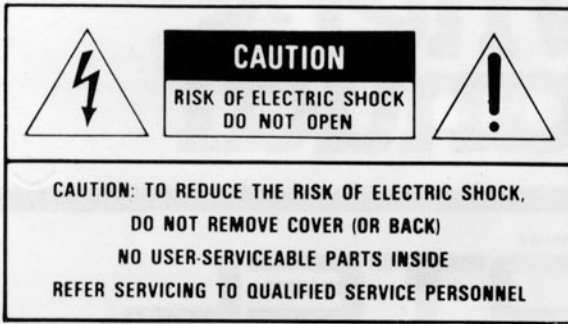
**WARNING**

**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.

# SAFETY INSTRUCTIONS



The lighting 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 (servicing) 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 other instructions should be followed.
5. **Water and Moisture** — The appliance should not be used near water — for example, near a bathtub, wash-bowl, 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.
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 impede the flow of air through the ventilation openings.
9. **Heat** — The appliance should be situated away from heat sources such as radiators, stoves, or other appliances 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. **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 at plugs, convenience receptacles, and the point where they exit from the appliance.
12. **Cleaning** — The appliance should be cleaned only as recommended by the manufacturer.
13. **Nonuse Periods** — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
14. **Object and Liquid Entry** — Care should be taken so that objects do not fall into and liquids not spilled into the inside of the appliance.
15. **Damage Requiring Service** — The appliance should be serviced by qualified service personnel when:
  - A. The power-supply cord or the plug has been damaged; or
  - B. Objects have fallen, or liquid has been spilled into the appliance; or
  - C. The appliance has been exposed to rain; or
  - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
  - E. The appliance has been dropped, or the cabinet damaged.
16. **Servicing** — The user should not attempt to service the appliance beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.
17. **Grounding or Polarization** — The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.

# ENGLISH

## STEREO INTEGRATED AMPLIFIER RA-820BX4

### 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 house-hold 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 thinners 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.

#### CAUTION:

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.

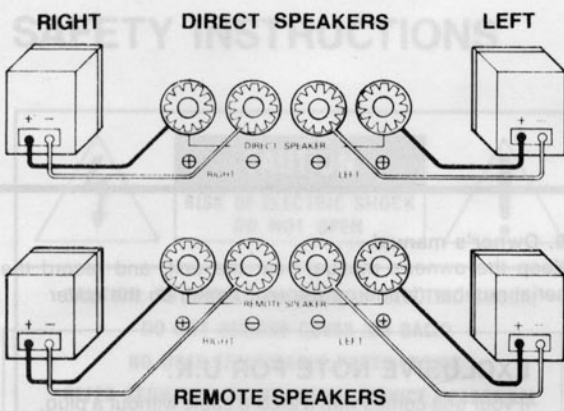
### SPEAKERS

Use speaker systems with impedance ratings of 4-16 ohms, when you hook up 2 sets of speaker systems, be sure to speakers with ratings of 8-16 ohms. Before hooking up your speaker system, check its impedance, which should be indicated either on the back of the speaker, or in the speaker instruction manual.

### HOOKING UP SPEAKERS

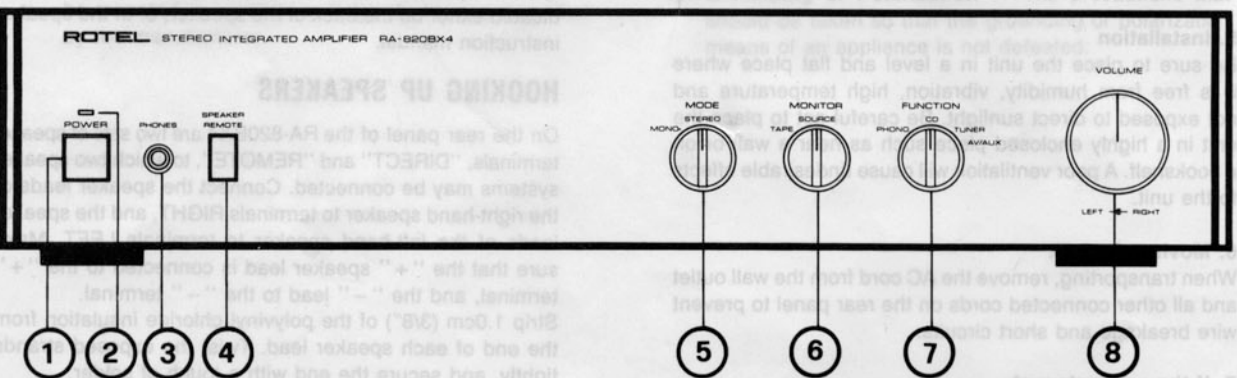
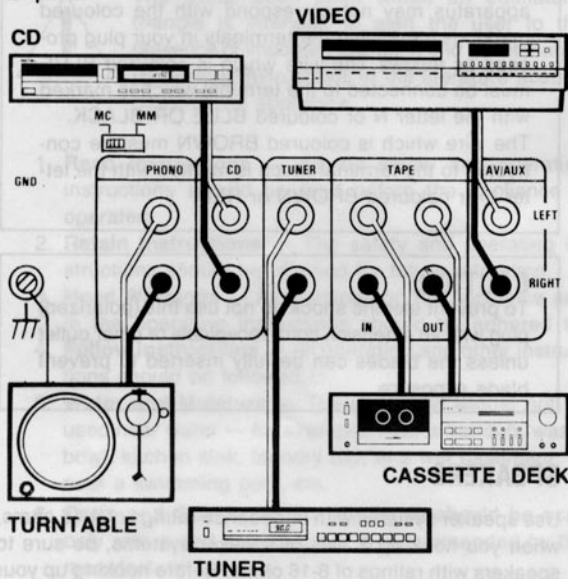
On the rear panel of the RA-820BX4 are two sets of speaker terminals, "DIRECT" and "REMOTE", to which two speaker systems may be connected. Connect the speaker leads of the right-hand speaker to terminals RIGHT, and the speaker leads of the left-hand speaker to terminals LEFT. Make sure that the "+" 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.

**Note:** When only one pair of speakers is used, be sure to connect them to DIRECT terminals, which is "straight-path", so headphone circuit is not connected. If wish to listen to headphone and privately, connect the remote speaker terminals and use the speaker remote button on front panel to turn speaker off.



## CONNECTING PREAMPLIFIER

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.



## 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.

## SWITCHES AND CONTROLS

### (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

Glows when power is turned on with the power button.

### (3) Headphones Jack

Connect headphones to listen through the headphones. When the SPEAKER REMOTE button is at OFF, the sound from the speakers connected to the REMOTE SPEAKERS terminals is cut off and you can adjust the headphone volume with the VOLUME control.

If a speaker system is connected to the DIRECT SPEAKERS terminals, however, the sound from those speakers cannot be cut off, so listening through the headphones only is impossible.

To listen through the headphones alone, do not connect any speakers to the DIRECT SPEAKERS terminals.

### (4) Speaker Remote Button

Press the button to activate the speaker system connected to REMOTE speaker terminals on the rear panel. Release the button OFF to cut off sound from remote speakers.

### (5) MODE Selector

With the selector at MoNo position, all the signals are output in mono.

At the STEREO position, all the signals are output in STEREO.

### (6) Tape Monitor Selector

Used to listen to a signal supplied from the tape deck. Set the selector to TAPE position for the signal from a tape deck connected to TAPE terminals on the rear panel.

Be sure to set this selector to SOURCE when listening to a source selected by the input selector.

### (7) Function Selector

Select the program source to play or record.

PHONO: Turntable connected to the PHONO terminals.

CD: CD player connected to the CD terminals.

TUNER: Tuner connected to the TUNER terminals.

AV/AUX Video cassette recorder or video disc recorder connected to the AV/AUX terminal. Use this selector with the Tape Monitor selector at the SOURCE position.

### (8) Volume Control

Used to regulate the volume level. Turn clockwise to increase the volume, and counterclockwise to reduce it. This is a dual concentric knob which permits either separate or combined adjustment of both channels.

## Listening from turntable

1. Set Tape Monitor selector to SOURCE.
2. Select PHONO on the function selector.
3. Start playing turntable, and raise the volume to the desired level.



## Phono MM/MC Selector

The unit has a built-in MC head amplifier. This selector is used to receive MM (moving magnet) or MC (moving phono cartridge signal with an appropriate gain. In position, the built-in MC head amplifier is activated. When your turntable uses an MC cartridge, set the selector to MC position. When MM cartridge is used, set the selector to MM position.

## Listening from compact disc player or tuner

1. Set Tape Monitor selector to source.
2. To listen to a compact disc, set the Input selector to the CD position; set it to the TUNER position to listen to radio broadcasts.
3. Play the compact disc or tune in to the desired station, according to instructions given for the equipment.
4. Raise the volume to the desired level.

## Playing back tape deck

1. Set Tape Monitor selector to TAPE position according to the tape deck you are going to play back.
2. Start playback.
3. Raise the volume to the desired 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 will have no effect on the signal being sent through TAPE MONITOR OUT terminals.

## Playback with AV/AUX Equipment

The RA-820BX4 permits connection of one audio-visual or auxiliary components.

There are one set of audio inputs for a stereo AV component such as a video disc player or a TV.

This system allows high performance operation for optimal sound quality such as digital sound from a Hi-Fi video disc player.

Alternatively the inputs can be used for connection with an audio equipment such as another compact disc player.

## 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 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.

## 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	30 watts* per channel, min. RMS both channels driven into 8 ohms from 20 to 20,000 Hz with no more than 0.3% total harmonic distortion.
DIN Output	50 watts per channel (1 kHz, 4 ohms, 1% THD)
Music Power	110 watts
Total Harmonic Distortion (20 to 20,000 Hz, from AUX)	No more than 0.3% (continuous rated power output) No more than 0.1% (continuous 1/2 rated power output) No more than 0.2% (1 watt per channel power output, 8 ohms)
Intermodulation Distortion (60 Hz: 7 KHz = 4 : 1)	No more than 0.3% (continuous rated power output) NO more than 0.1% (continuous 1/2 rated power output) No more than 0.2% (1 watt per channel power output, 8 ohms)
Output: Speaker	4-16 ohms
Headphone	4-16 ohms
Damping Factor	100(20 to 20,000 Hz, 8 ohms)
Input Sensitivity/Impedance:	
PHONO MM	3.8 mV/47 kohms
MC	380 $\mu$ V/180 $\Omega$
CD	250 mV/20 kohms
TUNER	250 mV/20 kohms
TAPE	250 mV/20 kohms
AV/AUX	250 mV/20 kohms
Overload Level (T.H.D. 0.5%, 1k Hz):	
PHONO MM	170 mV
MC	20 mV
CD, TUNER, TAPE	5V
AV/AUX	5V
Frequency Response:	
PHONO	20 to 20,000 Hz, $\pm$ 0.3 dB (RIAA STD)
CD, TUNER, TAPE	10 to 100,000 Hz, +1.0 dB, -3.0 dB
AV/AUX	10 to 100,000 Hz, +1.0 dB, -3.0 dB
Signal to Noise Ratio(IHF, A network):	
PHONO MM	80 dB
MC	70 dB
CD, TUNER	93 dB
TAPE	93 dB
AV/AUX	93 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	180 watts
Dimensions (overall)	444(W) $\times$ 86(H) $\times$ 346(D)mm 17 $\frac{1}{2}$ " $\times$ 3 $\frac{13}{32}$ " $\times$ 12 $\frac{29}{32}$ "
Weight (net)	7 kg/15.4 lbs

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