

ROTEL *hi fi*

RA931

Stereo Integrated Amplifier

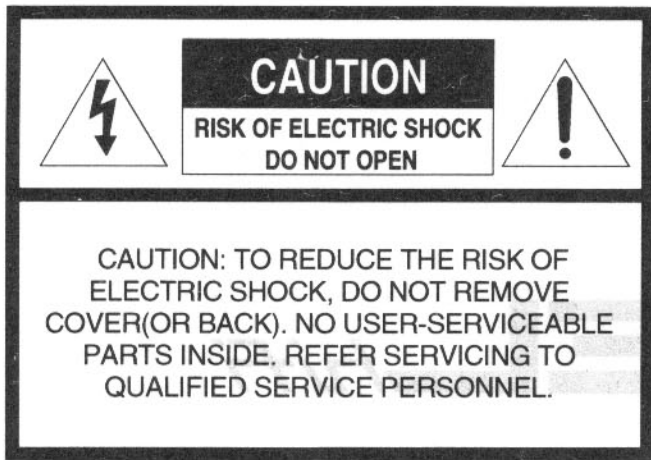
OWNERS MANUAL

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

Serial number _____ . Purchase date _____ .

ROTEL *hi fi* Authorized Dealer _____ .

SAFETY INSTRUCTIONS



• Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you 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 you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

APPLICABLE FOR USA, CANADA OR WHERE APPROVED TO THE USAGE

CAUTION : TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT, INSERT FULLY .

ATTENTION : POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

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 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, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimmingpool, etc.

6. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer.

PORTABLE CART WARNING



S3125A

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 Source - 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.

A WORD FROM ALL OF US AT ROTEL

Thank you for purchasing our RA 931 stereo integrated amplifier. We have been designing and manufacturing high quality, high performance audio electronics for more than 35 years. Rotels' passion for good sound and our love of music is well known worldwide. This integrated amplifier was designed to offer lifelike sound and is a natural extension of our love for music. We believe that the music played through this integrated amplifier will be a source of enjoyment to you for many years to come. We have designed this amp to be durable, easy to use and to have *high fidelity* to the original sound.

Please read this owners manual to ensure that your amplifier is properly installed and able to offer optimum performance. We appreciate being a part of your life.

FEATURES

This stereo integrated amplifier has been designed for high performance. It has Symmetrical Circuit Paths. These are utilized to ensure absolutely identical timing integrity between the two channels of the amplifier.

The power supply derives from a ROTEL *designed and manufactured toroidal power transformer*. We also utilize ROTEL custom designed capacitors to improve the speed and damping factor of the amplifier. We believe in *highly regulated power supplies* and build these into all of our products. We feel the extra expense of building in an excellent power supply is worthwhile because *it is good for the music*.

The BASS and TREBLE tone controls adjust the low bass or the high treble range of the music. We do not allow them to alter the all important middle ranges (vocal range) of the music. They are defeatable with a front panel switch, if you desire to bypass them.

INSTALLATION

Please place the unit on a **DRY**, level surface away from direct sunlight. *Avoid placing objects on top of the RA 931 that will block the cooling vents, as they may cause the amplifier to overheat.* If the amplifier is mounted inside a cabinet, please be certain that there is adequate air flow to ensure proper cooling. *Do not allow water or objects to fall into the amplifier 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 amplifier in furniture designed to house Hi Fi components. This will allow the amplifier to be on a separate shelf with nothing stacked on top of it. This will minimize heat and potential interference from other components in your system. Component furniture will also reduce or suppress vibration and *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.

ELECTRICAL REQUIREMENTS AND CLEANING

This amplifier is designed to work 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 will 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 with your **ROTEL hi fi Authorized Dealer** for confirmation of the correct voltage. Connect the Power Cord to your wall socket for AC power. We strongly recommend that the amplifier be connected to the mains wall socket, not an extension cord, for best sound quality.

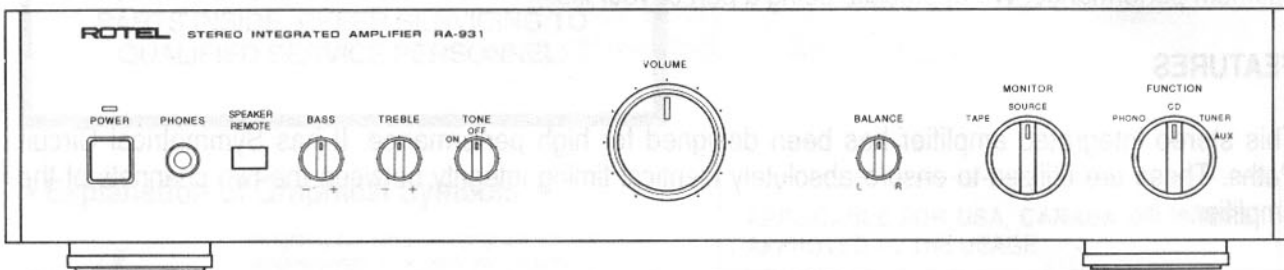
When you wish to disconnect the power cord from the wall always grasp the plug firmly and then pull it out of the wall socket. *Do not unplug the power cord from the wall by pulling the cord only.* This may

damage the power cord and create a hazardous condition.

If you wish to clean the cabinet, we suggest that you clean it with a 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 liquid or residue falls inside the amplifier.

There is **NO** user serviceable part inside the RA 931. **Please do not open the cabinet as this will expose you to the risk of potentially dangerous high voltage and the risk of shock.** This could also damage the circuits and possibly void your warranty.

FRONT PANEL



FRONT PANEL CONTROLS

We have designed this integrated amplifier to be easy to use. The controls are simple but comprehensive.

The **POWER** button will turn the amplifier **ON** and **OFF**. Push it in and the amplifier will turn ON. The POWER indicator light will illuminate at the same time. If you push the POWER button again the amplifier will go OFF and the power indicator light will extinguish.

We have included speaker switching on this amplifier. The label **SPEAKER REMOTE** refers to the way this switch operates. The SPEAKER REMOTE switch will turn the REMOTE labeled speaker terminals ON or OFF. If you listen with Headphones and would like to be able to turn your speakers OFF *when* using headphones then we suggest they be connected as the REMOTE pair of speakers. The SPEAKER REMOTE switch will *not* turn the **DIRECT** labeled speaker terminals OFF. (See Connections.)

To adjust the bass and treble content of the music, set the **TONE** switch to the **ON** position. This will allow the **BASS** and **TREBLE** controls to function. When the Tone switch is set to the **OFF** position the tone controls are removed from the circuit. Turning the BASS or TREBLE controls *to the right will increase* the bass or treble. Turning the controls *to the left will decrease* the bass or treble.

The **HEADPHONE** jack will provide a convenient connection for your headphones. If you have headphones with a 3.5 mm mini plug you should ask your **ROTEL hi fi Authorized Dealer** for an adapter plug to convert them for use with the headphone jack on the RA 931.

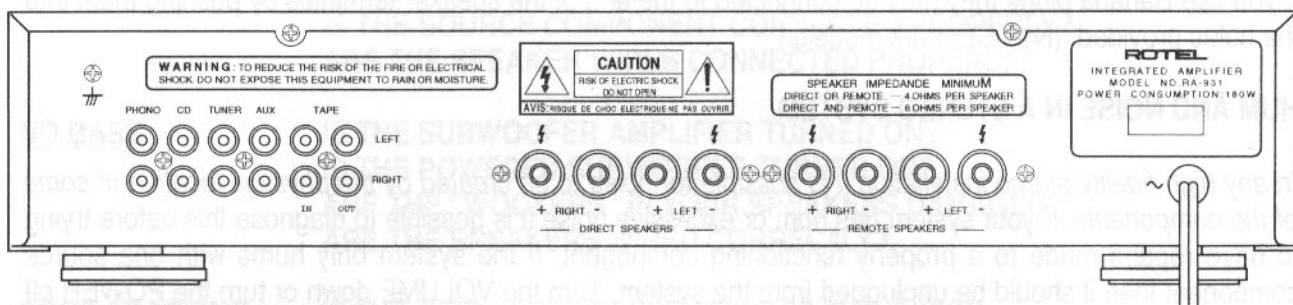
The **VOLUME** control will allow you to turn the LEFT (**L**) and RIGHT (**R**) channels of music up or down in level at the same time. This is a dual concentric design and is adjustable for individual volume levels as well. Hold the volume control for the front or rear section and rotate the other section to raise or lower the volume in the channel you wish to adjust. Once the relative volume level between the two channels has been adjusted you will be able to raise or lower the volume in both channels simultaneously. Rotation *clockwise* will increase the volume, rotation *counterclockwise* will decrease the volume.

The **MONITOR** selector switch will allow you to choose the source (normal operation) or to listen to a recording during playback. If you have a 3 head cassette deck, 3 head reel to reel tape deck or a DAT recorder capable of reading and writing *at the same time*, the MONITOR switch will allow you to immediately compare the source to the recording in progress.

We suggest the **RECORDING** control be set to the **OFF** position if you are not recording. This setting ensures maximum fidelity and freedom from interference.

The **FUNCTION** selector switch will select the source that you wish to hear. We have provided inputs for **PHONO**, **CD**, **TUNER**, and **AUX**.

REAR PANEL



BACK PANEL CONNECTIONS

The back panel has **INPUT**, **OUTPUT** and **SPEAKER** terminals for connecting source components and speakers in your stereo system. The **INPUTS** are clearly labeled. The **LEFT** and **RIGHT** channels are clearly designated. Please be certain that the **LEFT** channel and **RIGHT** channel connections are not reversed. This will not harm anything but it will make the orchestra sound backwards for classical music fans.

AUX will be ideal for the connection of a stereo TV monitor with audio output jacks, a DVD player, a Laser Disc player, a CD ROM or DVD ROM drive. The **CD** and **TUNER** connections are clearly labeled for your convenience. **PHONO** connections are for a moving magnet (MM) phono cartridge. A ground terminal is included for your turntables' phono cable to minimize hum in the phono signal.

The **TAPE** connections have **IN** and **OUT** connections. These are to send a signal to (**OUT**) the recorder and then to receive a signal back from (**IN**) the recorder. Check all connections and read the owners' manual for your recorder if you are in doubt about the labels.

The **SPEAKER** terminals will accept two pairs of speakers. The **DIRECT** connection has the shortest signal path for the clearest possible sound. If you listen to headphones we suggest the use of the **REMOTE** speaker terminals for your convenience. **Speakers should be 4 ohms minimum combined load for two pairs of speakers, or 4 ohms minimum if only one pair of speakers are connected.** (CONNECTION NOTE: The **DIRECT** speaker terminals are always on and will *not* be turned off by the **SPEAKER REMOTE** switch or the **HEADPHONE** jack on the front panel.)

You may connect the speakers with bare wire or banana plugs. (Non CE mark models) Please be certain to observe the correct polarity of the wires as well as the left and right channel connections. The **RED (+)** speaker terminals are to be connected to the **RED** or **POSITIVE** terminals on your speakers. The **BLACK (-)** speaker terminals are to be connected to the **BLACK** or **NEGATIVE** terminals on your speakers. If you make these connections incorrectly you will have a vague stereo image and very little bass response from your speakers.

If you are in doubt about the sound when listening then you should reverse the positive and negative connections on the back of one speaker only. If the stereo image becomes more specific and the bass improves the speaker connections should be rechecked to ensure correct connection. You may also confirm this by placing the speakers face to face 75 mm apart (~3") and playing music with strong bass content as a source. The connection that has the most bass output is the correct connection. *The incorrect connection will have very little sound output as each of the two speakers will attempt to cancel the sound the other is making due to the opposite polarity of the drivers.*

If you connect your speakers with bare wire, strip approximately 1 1/2 mm (~1/2") of the insulation from the end of the wire and connect to the terminal of the amplifier by turning it around the center post of the speaker terminal. The speaker terminal knob should be turned *counterclockwise* to extend the terminal for connecting. When you have wrapped the wire around the post, tighten the speaker terminal by turning the knob *clockwise* to grasp the wire FIRMLY.

Ensure that **NO LOOSE WIRE** is outside the terminal housing. Repeat this operation for all the terminals. If you use Banana plugs they may be connected to the end of the speaker terminals by pushing them into the holes provided. (Non CE mark models.)

HUM AND NOISE IN A STEREO SYSTEM

In any high fidelity stereo installation it is possible for noise to be created by the physical location of some of the components. If your system has hum or excessive noise it is possible to diagnose this before trying to have repairs made to a properly functioning component. If the system only hums with one source component then it should be unplugged from the system. Turn the VOLUME down or turn the POWER off before you unplug the suspected component.

If the system still hums after the suspected component has been removed, you may require service. First though, you should disconnect all the other components, *except* the speakers. If there is no hum after this, something in the system is either in need of physical relocation or repair. Connect the components one by one until the problem reappears. If you are unable to locate the source of the problem then you should consult your **ROTEL hi fi AUTHORIZED DEALER** for advice or service.

A FINAL WORD FROM ROTEL

We have designed this amplifier for high performance using test equipment and the human ear. We believe that extensive listening and test equipment are both useful in the design of audio electronics. *This is time consuming but we feel that the music benefits from this care and attention to detail.* We realize that there are many choices available and we thank you again for choosing our RA 931 stereo integrated amplifier to amplify your music. *Enjoy the music!*

SPECIFICATIONS :

Rated Power (20-20 kHz < 0.03%, 8 ohms)	30 Watts
DIN Output (1 kHz, 1% THD, 4 ohms)	50 Watts
Total Harmonic Distortion (20-20 kHz, 8 ohms)	< 0.03%
Intermodulation Distortion (60 Hz: 7 kHz, 4:1)	< 0.03%
Signal to Noise ratio, all inputs, IHF A	> 95 dB
Frequency Response	10-100,000 Hz +1 dB, -3 dB
Tone Control	
Bass	± 6 dB @ 100 Hz
Treble	± 6 dB @ 10 kHz
Power requirement	115 volts 60 Hz or 230 volts 50 Hz
Power consumption	260 watts, Max.
Dimensions, W x H x D mm	440 x 92 x 347
	17.38 x 3.63 x 13.69"
Weight (net)	6.4 kg, 14.08 Lb.

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

SYSTEM TROUBLESHOOTING HINTS

- NO POWER IS THE AC CORD CONNECTED TO A SWITCHED AC OUTLET?
IS THE SWITCHED AC OUTLET TURNED ON?
CHECK THE POWER FUSE FOR THE AC OUTLET.
- NO SOUND CORRECT INPUT SELECTED? IS THE AMPLIFIER
TURNED ON? IS THE SOURCE COMPONENT TURNED ON?
IS THE SOURCE COMPONENT CONNECTED PROPERLY?
ARE THE SPEAKER WIRES CONNECTED PROPERLY?
- NO BASS IS THE SUBWOOFER AMPLIFIER TURNED ON?
IS THE POWERED SUBWOOFER TURNED ON?
ARE THE "WOOFERS" IN YOUR SPEAKERS DAMAGED?
ARE THE SPEAKERS WIRED CORRECTLY?
- POOR TRACKING
(CD PLAYER) IS THE DISC DIRTY OR SCRATCHED? IS THE DISC
SEVERELY WARPED? IS THE DISC SEMI-TRANSPARENT OR
POORLY MADE WITH VISIBLE "PIN" HOLES?
- POOR, DULL SOUND
WOW & FLUTTER
(TAPE DECK) ARE THE HEADS DIRTY? HEADS MAGNETIZED FROM LONG
USAGE WITHOUT DEMAGNETIZING? ARE THE PINCH
ROLLER AND THE CAPSTAN DIRTY? *CLEAN WITH PURE
ALCOHOL, "Q" TIP COTTON BUDS OR A TAPE DECK
CLEANING KIT. DEMAGNETIZE THE HEADS WITH A HAND
HELD DEMAGNETIZER. DO NOT USE ABRASIVE DRY CLEANERS!*
- DISTORTED BASS OVERLOADING SMALL SPEAKERS?
TOO LOUD VOLUME "CLIPPING" YOUR AMPLIFIER?
- "HUM" IN SYSTEM AC CORD, VIDEO, DIGITAL AND AUDIO CABLES TOUCHING?
THE AC CORD SHOULD BE SEPARATE FROM SIGNAL CABLES
SIGNAL CABLES LAYING NEAR A LARGE POWER
TRANSFORMER, SUCH AS IN A POWER AMPLIFIER?
DEFECTIVE OR UNSHIELDED SIGNAL CABLES?
- OVERHEATING IS A COMPONENT STACKED ON THE AMPLIFIER?
IS THE AMPLIFIER ENCLOSED IN A SMALL SPACE? A
*MINIMUM OF 3 TO 4" (~8-10 CM) CLEARANCE IS NEEDED
ABOVE THE AMPLIFIER IN A SYSTEM. DO NOT STACK
COMPONENTS ON THE AMPLIFIER. AN AMPLIFIER NEEDS TO
"BREATHE" FREELY TO STAY COOL.*
- POOR RECEPTION
(FM RADIO) IS THE ANTENNA CONNECTED PROPERLY? IS THE
ANTENNA MOUNTED AS HIGH AS POSSIBLE? IS THE
ANTENNA ORIENTED FOR BEST RECEPTION? IS THE FM
STATION DISTANT? *AN OUTDOOR ANTENNA MAY BE
NECESSARY. ADJUST THE ANTENNA FOR BEST RECEPTION.*
- NOISY RECEPTION
(AM RADIO) IS THE ANTENNA CONNECTED PROPERLY? IS THERE A
LARGE ELECTRICAL MOTOR OR COMPRESSOR NEAR THE
TUNER OR ANTENNA? *NOISE IS EASILY RECEIVED IN THE AM
BAND. ADJUST THE ANTENNA FOR BEST RECEPTION AND
MINIMUM INTERFERENCE.*

CONTINUED PROBLEMS? ASK YOUR ROTEL *hi fi* AUTHORIZED DEALER FOR HELP.