

ROTEL *hi fi*

RC 970BX Mk II Stereo Control Amplifier

Owners Manual

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

SERIAL NUMBER _____ PURCHASE DATE _____

ROTEL *hi fi* AUTHORIZED DEALER _____

SAFETY INSTRUCTIONS

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Explanation of Graphical Symbols

The lightning 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 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 use instructions should be followed.
- 5. Water and Moisture** - The appliance should not be used near water - for example, near a bathtub, 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.
- 6A.** An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart combination to overturn.
- 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 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, heat registers, stoves or other appliances (including amplifiers) 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. Grounding or Polarization** - The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.
- 12. 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 and plugs, convenience receptacles and the point where they exit from the appliance.
- 13. Cleaning** - The appliance should be cleaned only as recommended by the manufacturer.
- 14. Nonuse Periods** - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
- 15. Object and Liquid Entry** - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through the openings.
- 16. Damage Requiring Service** - The appliance should be serviced by qualified factory-authorized service personnel when:
 - The power-supply cord or the plug has been damaged; or
 - Objects have fallen, or liquid has been spilled into the appliance; or
 - The appliance has been exposed to rain; or
 - The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - The appliance has been dropped, or the enclosure damaged.
- 17. Servicing** - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified factory-authorized service personnel.

APPLICABLE FOR U.S.A., CANADA OR WHERE APPROVED TO THE USAGE.

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

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

A WORD FROM ALL OF US AT ROTEL

Thank you for purchasing our RC 970BX Mk II preamplifier. We have been designing and manufacturing high quality, high performance audio electronics for more than 30 years. This preamplifier was designed to offer lifelike sound and is a natural extension of our love of music. We are famous for our passion for good sound and our love of music. We believe that the music and soundtracks played through the RC 970BX Mk II will be a source of enjoyment to you for many years to come.

Rotel is committed to making quality products to enhance your life. We have designed this amplifier to be durable, easy to operate and to have *high fidelity to the original sound*. Please read the owners manual to ensure that the preamplifier is properly installed and able to offer optimum performance. We appreciate being a part of your life.

FEATURES OF THE RC 970BX Mk II

This preamplifier has been designed to complement the RB 970BX Mk II power amplifier and the RQ 970BX external phono stage. Many people use CD players as the main source these days and the need for a built in phono stage has diminished. We felt that the RQ 970BX phono section could be optimized for higher performance if it was a separate unit. The highly musical performance of the RC 970BX Mk II was achieved at a lower price for the people who don't want a phono section. With this idea in mind, we deleted the phono section in this preamplifier.

The dual preamplifier outputs on the back panel make it easy to use two power amplifiers with this preamplifier. The circuits in the Printed Circuit Board (PCB) are all symmetrical. The timing of the music is preserved by equal length circuit traces. We have used metal film resistors and film type polypropylene and polystyrene capacitors in critical circuit locations to enhance sound quality. We use the PCB traces to transfer signals in preference to jumper wires as we feel we achieve greater consistency and better sound quality by doing this.

We have a *highly regulated power supply* in this preamplifier. This gives it ample reserves to recreate all the power and the delicate nuances of your favorite music. This is more expensive than other methods of design but *it is good for the music*.

INSTALLING THE RC 970MK II

Please be sure to place the preamplifier on a flat DRY surface where it is free from humidity, vibration, high temperature and not exposed to direct sunlight. We recommend installing this preamplifier in *hi fi* component furniture. This will allow the RC 970BX Mk II to be installed on its own shelf with nothing stacked on top of it. *Do not stack this preamplifier on the power amplifier as this will obstruct the ventilation of the power amplifier and cause both to operate at an elevated temperature*. Audio component furniture will minimize or suppress vibration and all audio components will sound better when free from external vibration. Ask your **ROTEL *hi fi* AUTHORIZED DEALER** for advice about installation of audio components in your system. Please store your box and pack the unit into the box if you need service or move.

During installation, please be certain to arrange the power cords, the digital and the analog cables in a way that will minimize interference in your system. *Proper installation will increase the potential sound quality of your system and a properly functioning system will be a source of great pleasure to you and your friends*.

ELECTRICAL REQUIREMENTS

This equipment is designed to work with **AC** voltage. Check the voltage rating by looking at the rear panel name plate. Never plug the unit into voltage different in value than the label as this will create a serious fire hazard and damage to the equipment. Consult your **ROTELhi fi AUTHORIZED DEALER** if you are in doubt about the voltage setting of your unit.

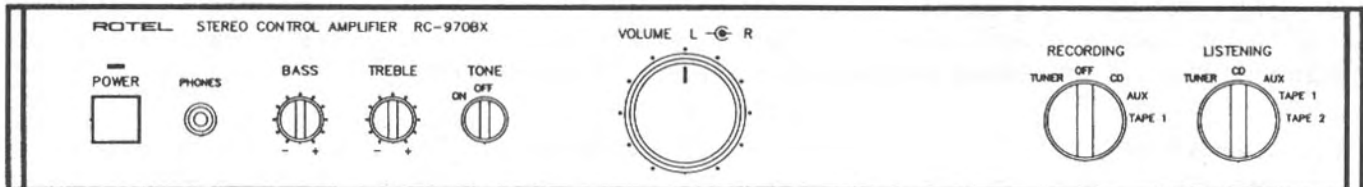
Always handle the **POWER CORD** with care. When plugging in or unplugging the power cord hold the plug itself. Do not unplug the power cord by pulling on the wire only. This could cause a hazardous condition. There is **NO** user serviceable part inside this preamplifier. Do not attempt to open the cabinet as this will expose you to the risk of shock from high voltage.

North American models of the RC 970BX Mk II have two sets of AC outlets on the back panel. These are for source components such as a tuner or CD player. Each outlet is *switched*, so turning the preamplifier on or off will also remove or supply power to the source component. The maximum power consumption should not exceed 200 watts. *Never plug a power amp into these outlets for power.*

CLEANING YOUR PREAMPLIFIER

If your preamplifier becomes dirty, wipe it gently with a clean, soft, **DRY** cloth. Avoid getting the preamplifier wet as this could damage the circuits inside. Please don't use cleaning compounds as they may remove the labels.

SWITCHES AND CONTROLS ON THE FRONT PANEL



Please refer to this front panel during installation of the RC 970BX Mk II.

Press the **POWER** button to turn power ON and OFF for RC-970BX. The POWER indicator light will illuminate when the preamplifier is ON and will extinguish when it is OFF.

Plug your headphones into the **HEADPHONE** jack to listen privately. The volume knob will control headphone volume. If you wish to listen without using your speakers, turn the power off to your power amp. If the jack is the wrong size, consult your **ROTELhi fi AUTHORIZED DEALER** for an adapter.

The **BASS** control will increase or decrease the amount of BASS you hear. Rotate to the right to increase BASS. Rotate to the left to decrease BASS. The **TREBLE** control works in the same way. Rotate to the right to increase TREBLE, rotate to the left to decrease TREBLE. The center position provides flat frequency response.

If you wish to bypass the **TONE CONTROLS** for the purest possible signal, then set this switch to the OFF position. The tone controls will be defeated and will have no effect when the switch

is in the OFF position. To use the tone controls turn this switch to the ON position and adjust the tone controls for the desired sound.

The **VOLUME** control will increase the volume of sound if you rotate it to the right and decrease the volume of sound if you rotate it to the left. It is possible to control one or both channels at the same time. If you wish to control only one channel for volume you are able to do so. Hold the front (or rear) half of the knob still and rotate the other half to the desired volume. This will allow you to adjust the balance between channels or to play only one channel at a time. We use a high quality volume control that allows a wide range of adjustment for the quiet settings as well as offering ample voltage output to achieve high volume levels, if you wish. The actual volume settings you use will depend on other associated equipment and the sensitivity of your speakers.

The **RECORDING** selector switch permits the choice of recording any input into the preamplifier when set to the appropriate position. The connections are labeled Tape 1 and Tape 2. Please note that the Tape 1 input may be recorded by Tape 2 but that the Tape 2 input is *not* able to be recorded by Tape 1. This is why Tape 2 is not labeled on the RECORDING selector switch. It is possible to listen to any other input (or the input being recorded) while recording. If you do not intend to record, we suggest setting the RECORDING selector switch to the OFF position to ensure the best possible sound. This removes the switch from the signal path entirely. This selector is independent from the Listening selector switch.

The **LISTENING** selector switch allows the choice of input you wish to hear. This switch is independent of the RECORDING selector and you are able to listen to any input (either the same as you are recording or different) while recording at the same time.

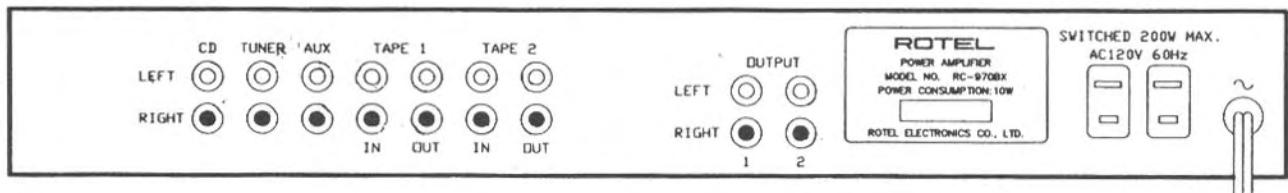
Before commencing operation, check to see if all connections are properly made. Always turn down the volume to the minimum position before turning on the Power switch. Make sure the Recording selector is at the Off position when not recording, for best possible sound.

RECORDING

Set the Recording selector switch to the source that you want to record. Adjusting the Volume and Tone controls will not affect the recording process. If you have a three head cassette deck that permits this function, you may monitor your recording by setting the Listening selector to the same setting as the Recording selector.

When two tape decks are connected to RC-970BX it is possible to copy recordings from one recorder to the other. (Note that **dubbing** is *From* Tape 1 *To* Tape 2.) When dubbing recordings the operation of the tone and volume controls will not affect the recording process.

CONNECTING COMPONENTS TO YOUR PREAMPLIFIER



Please refer to this rear panel drawing during set up of your RC 970BX Mk II.

The source components should be attached to the INPUTS for AUX, CD, TUNER, TAPE 1 and TAPE 2 on the back panel of the RC 970BX Mk II. We suggest that high quality RCA cables be used as they can have a beneficial effect on sound quality. If you wish to have phono then the RQ 970BX is an excellent external phono stage and should be connected to AUX as an input. Please observe correct **LEFT** and **RIGHT** channel connections to preserve the correct stereo sound image.

Connect your power amp to **Output 1** on the back panel of the preamplifier. Please be sure that the channels are correctly matched for the LEFT and RIGHT channels from the preamplifier. If you wish to connect two power amplifiers at the same time, connect the second amp to **Output 2**. Output 1 and 2 are electrically connected in parallel, so using two identical power amps allows you to Bi-amplify a set of speakers with the appropriate terminals. Consult the owner's manual for your speakers if you are in doubt about this. You may use two power amps to run speakers in the main room and a remote set in another room, or the **RSS 900** speaker switcher for multiple rooms. You may also choose to use one power amp for the main speakers and another to run a sub woofer. Consult your **ROTEL hi fi AUTHORIZED DEALER** for further advice.

When connecting only one recorder (cassette, DCC, DAT, MD, *HiFi* VCR or CDR recorder, etc.), use the Tape 1 inputs and outputs. When connecting two recorders, use the Tape 2 connections for the deck you wish to record *TO* from the other recorder. Connect the recorder you wish to record *FROM* to the Tape 1 connections. Be sure to observe and connect the left (L) and right (R) channels properly when making these connections. We have the labels **IN** and **OUT** on the back panel for TAPE 1 and TAPE 2. IN is for the signal *from* the recorder and OUT is for the signal *to* the recorder.

In any high fidelity system it is possible for hum to be created due to the layout of cables or the physical layout of the components of the system in relation to each other. Wiring and grounding arrangements must also be considered if difficulty is experienced. Hum may be from patch cables running through a strong electrical hum field such as the one near a power amp's transformer. Lights with rheostat controls and fluorescent lights may also cause noise to enter into a system. Rearrange the components with respect to each other if hum or noise is experienced.

A FINAL WORD ABOUT THIS PREAMPLIFIER

We have designed this preamplifier to be a high performance design by using sophisticated test equipment *and the human ear*. We realize this is time consuming but it helps us make stereo components that are superb value for the money. We believe both test equipment and the human ear are essential to the design process. We realize there are many choices available these days. We thank you again for buying this ROTEL preamplifier.

SPECIFICATIONS: RC-970BX Mk II

Total Harmonic Distortion (20-20 kHz)	≤ 0.004%.
Intermodulation Distortion (60 Hz: 7 kHz = 4:1)	≤ 0.004%.
Usable Headphone Impedance	8- 2,000 ohms
Input Sensitivity / Impedance	150 mV / 24 kohms
Output Sensitivity / Impedance	1.0 Volt / 100 ohms
Frequency Response	4 Hz-100 kHz +0, -3 dB
Tone Control Range:	
Bass	± 6 dB (100 Hz)
Treble	± 6 dB (10 kHz)
Signal to Noise Ratio (IHF, A Network)	95 dB
Power Requirement	115 Volts 60 Hz <i>or</i> 230 Volts 50 Hz
Power Consumption	10 Watts
Dimensions (overall)	440 (W) x 72 (H) x 286 (D) mm 17-3/8" (W) x 2-7/8" (H) x 11-1/4" (D)
Net Weight	4.0 kg / 8.8 lbs

Rotel reserves the right to make improvements without notice.