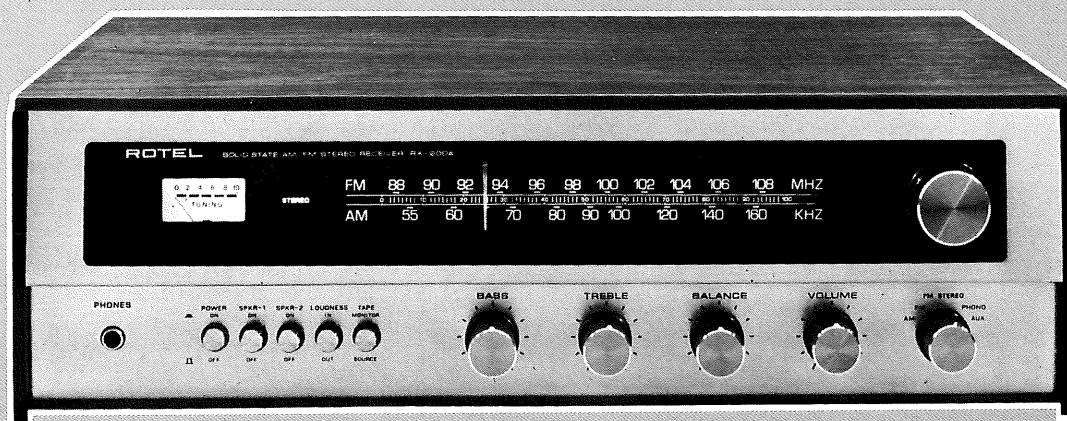


# ROTEL®

## RX-200A

AM/FM STEREO RECEIVER



## owner's manual

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**ROTEL®**

## INTRODUCTION

We would like to take this opportunity to thank you for purchasing our Stereo Receiver. With the high quality design and workmanship that goes into making this equipment, you can be assured of its flawless performance for many years to come.

We have fitted every control and feature you could conceivably need. Designed for both versatility and ease of operation, this piece of equipment will add professional studio flexibility to your Hi-Fi sound center. The performance is exceptional; it will allow you to experience

true high fidelity as never before. Its full and natural stereophonic reproduction offers you musical entertainment approaching that of live performances. We sincerely hope you will treasure this professional equipment. In order to obtain the maximum use out of your unit, please read the following pages of this Owner's Manual carefully.

Do not attempt to operate the unit until you have made all the necessary connections.

## INSTALLATION

**IMPORTANT:** Do not apply power to this unit without first making sure that speakers are connected properly and all the other necessary connections are made.

### AM ANTENNA CONNECTION

No external antenna will generally be required for AM, since a ferrite loopstick antenna is supplied at the rear of the receiver. For best reception, extend the loopstick fully out from the receiver chassis.

If you live in a difficult reception area, the use of an external wire antenna may be desirable. Connect the antenna lead to the terminal marked AM on the rear panel. The wire antenna should be as long as possible, and oriented for best reception. It must be kept away from large metal objects, power lines or electrical machinery to insure reception without extraneous noise.

### FM ANTENNA CONNECTION

Owing to the high sensitivity of the FM tuner section of the receiver, the wire antenna supplied is sufficient for most locations. Connect this to either FM aerial terminal marked 300 ohms, and mount horizontally, for instance by tacking to the shelf on which the receiver is mounted. In difficult reception areas, the use of an outdoor aerial may prove necessary. Follow its instructions for proper connection. 300 ohm balanced and 75 ohm unbalanced terminals are supplied. When using an external antenna, connect both leads of the antenna to the two 300 ohm FM antenna terminal posts on the rear chassis. When using a 75 ohm unbalanced coaxial cable for antenna, connect between 75 ohm and G terminal posts with the outer conductor or shield of the cable connected to the G terminal.

### SPEAKER CONNECTION

This unit is equipped with terminals for connecting two sets of speakers. Connect your main pair of speakers to the terminals marked SPKR-1. Ensure that your right speaker is connected to the SPKR-1 terminal marked "+", and that the ground (—) terminal on the right speaker is connected to the terminal marked "—". Similarly, connect your left speaker between the adjacent SPKR-1 terminals marked "+" and "—".

If you wish to connect a second pair of speakers, connect them to SPKR-2 terminals in the manner described above. **Caution:** Ensure that the speaker leads are fastened securely to the proper terminals, and that there are no stray strands which may cause shorting between terminals. If 2 sets of speakers are played simultaneously, the impedance of each unit should not be less than 8 ohms.

### PHASING:

When all connections have been made, and the unit is operating, a check on correct speaker phasing should be made. This is described in a later section.

### RECORD PLAYER CONNECTION

The shielded cables from your stereo record player should be terminated with RCA type phono plugs. To avoid loss in the high frequencies, the cables should not exceed 10 feet (3 m) in length.

Connect both leads from your record player to the LEFT and RIGHT PHONO input receptacles on the rear chassis. If your record player has a ground cable emerging besides two input cables, connect this ground cable to the ground terminal post marked GND on the rear chassis.

If your record player is equipped with a magnetic cartridge, use the input receptacles marked MAG on the rear chassis, and if it is equipped with a crystal (ceramic) cartridge use the CERA inputs.

### AUX CONNECTION

Your receiver has a pair of AUX input receptacles for use with high level program sources: tape recorder, cassette recorder, 8-track cartridge player, TV sound or a ceramic microphone. It should be noted that AUX is used only for the playback purpose, and for recording see TAPE RECORDER CONNECTION below.

When connecting a stereo tape recorder, connect both output cables to the AUX LEFT and RIGHT input jacks on the rear of the receiver. For cassette or 8-track cartridge, similar procedure is followed. When connecting a monophonic equipment, connect the single output lead to either of the AUX LEFT or RIGHT input jack.

### TAPE RECORDER CONNECTION

Terminals are supplied for connecting two tape recorders (which incorporate playback pre-amplifier). For a recorder with a separate playback head (i.e. Monitor facilities), connect its right and left output cables to the TAPE MONITOR terminals marked IN, and connect its right and left input cables to the TAPE MONITOR terminals marked OUT. If you have another tape recorder with DIN-type plug, connect it to the REC/PB DIN socket.

Additionally, the input terminals of TAPE MONITOR may be used for alternative sources, e.g. ceramic microphones or TV sound.

### SPEAKER 4-CHANNEL SWITCH

NORMAL position indicates that speaker systems SPKR-1 and SPKR-2 operate independently for main-remote operation. When switched to SPEAKER 4-CHANNEL position, SPKR-2 is activated as rear speakers in conjunction with SPKR-1 as front pair, giving simulated 4-channel effect.

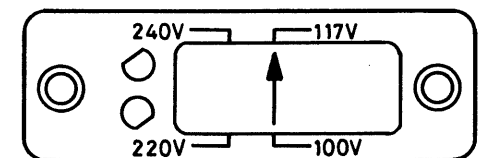
### AC OUTLET

Your receiver is equipped with an AC Outlet (switched) to provide power and switching control to whatever component you may wish to connect to the unit. However, the total load of equipment connected to the AC Outlet must not exceed 200 watts.

### VOLTAGE SELECTION

The receiver is a variable voltage equipment that can run on 100V, 117V, 220V or 240V power supply. Your unit comes already preset at the proper voltage for use in your area; however, if you move to an area where the power supply voltage is different, the voltage setting can be manually changed. **BE SURE THAT YOUR UNIT IS NOT CONNECTED TO THE POWER SOURCE BEFORE ATTEMPTING TO MAKE THIS CHANGE.**

To change the voltage setting, remove the cabinet and locate the VOLTAGE SELECTOR (see figure below and schematic diagram). Pull up the Voltage Selector plug which has a white arrow on its top. Reinsert the Plug to the Selector Base so that the head of the arrow lines up with the pointer line of the voltage you desire.



VOLTAGE SELECTOR

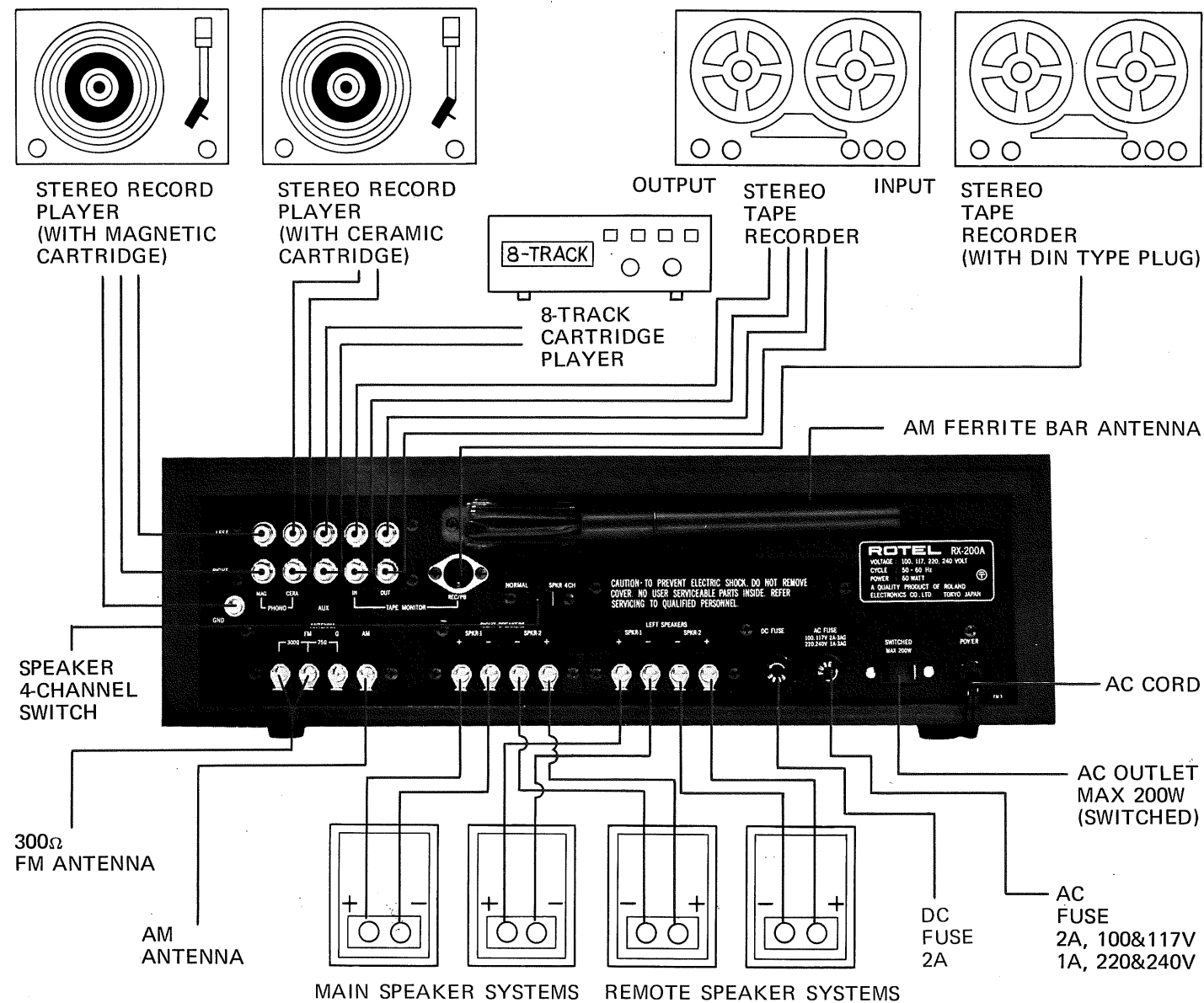
### CONNECTING TO POWER SUPPLY

Before connecting up ensure that the voltage selector is set correctly for your supply, and a suitable plug fitted. If you need to fit a plug, ensure live, neutral and (where appropriate) earth leads are connected to the proper terminals. Ensure the terminals are screwed down firmly, and no loose strands of wire are present.

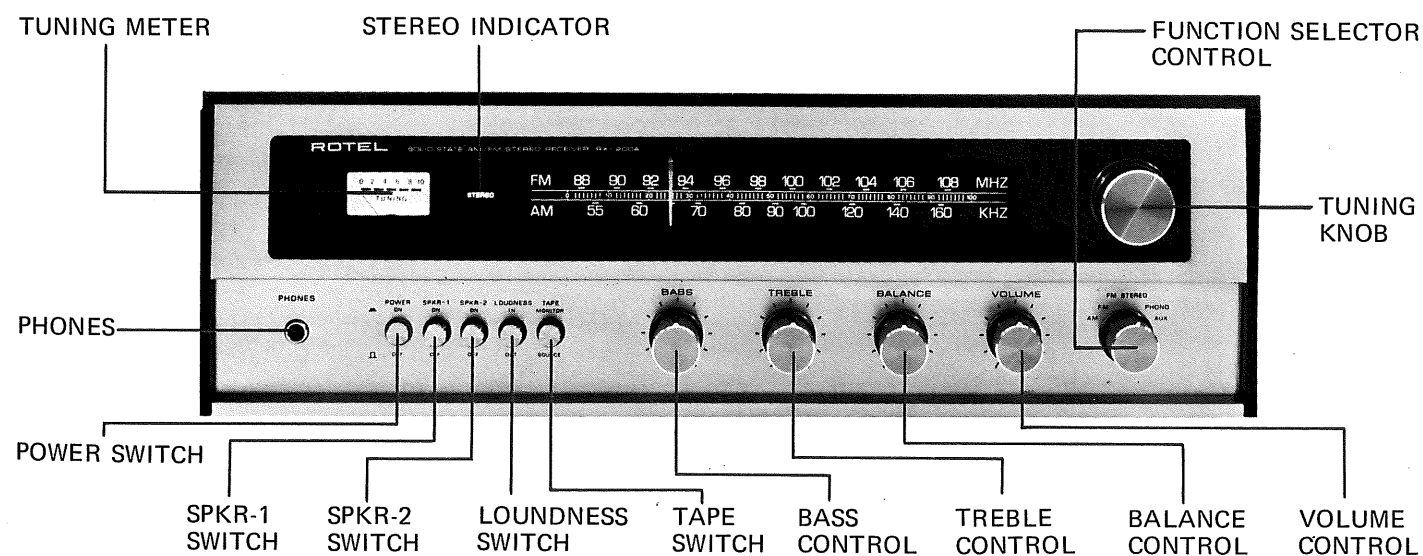
The unit is protected with a 2 amp fuse in the AC input circuit. In addition, one 2 amp fuse protect the DC circuits. When replacing a fuse, be sure to use a fuse of the same rating. **DO NOT** replace with a fuse of higher rating. Protection will be lost, and severe damage to the unit may result.

If in any doubt about connecting to the power supply, consult a qualified electrician.

## REAR PANEL CONNECTIONS



## FRONT PANEL CONTROLS



**VOLUME CONTROL:** regulates the sound level of any program material fed into the receiver. The control affects both channels equally, eliminating regular balancing. Rotate clockwise for increase in sound level.

**BALANCE CONTROL:** regulates the relative outputs from the two channels. Normally the balance control is adjusted to provide the effect of a mono signal coming from a point midway between the speakers. When balanced in this way, the maximum stereo effect will be achieved. Rotate clockwise for increase in sound level from the right channel, and counterclockwise for the left channel.

**TREBLE CONTROL:** regulates high frequency sounds, as desired, to suit personal taste, speaker characteristics etc. The center position gives normal (flat) frequency response. Rotating clockwise increases the treble, and counterclockwise reduces the treble.

**BASS CONTROL:** regulates low frequency sounds, and operates in the same manner as the treble control.

**FUNCTION SELECTOR:** enables you to select the function you desire from AM, FM, FM STEREO, PHONO and AUX.

**TUNING KNOB:** heavy flywheel action allows easy and precise tuning on both AM and FM stations.

**TUNING METER:** provides indication of optimum reception on both AM and FM. Tune for maximum deflection to the right.

**STEREO INDICATOR:** automatically lights up "STEREO" on the dial glass to visually indicate whenever an FM stereo broadcast is tuned.

*The push button switches used are all of the PUSH/PUSH type; that is push in to activate the circuit and push again to release or deactivate the circuit. In describing these switches we will consider the "IN" position to be "ON" and the "OUT" position to be "OFF"*

**LOUDNESS SWITCH:** in "ON" position activates a circuit which boosts low frequency sounds at low volume control settings. This compensates for the ears loss of sensitivity to bass notes at low listening levels.

**SPKR-1 SWITCH:** in "ON" position activates main speakers connected to SPKR-1 terminals.

**SPKR-2 SWITCH:** in "ON" position activates remote speakers connected to SPKR-2 terminals.

**POWER SWITCH:** performs the function as its name denotes. It supplies power to the receiver and to the switched AC outlet. When the switch is "ON", function dial scale will be illuminated.

**TAPE SWITCH:** is used in conjunction with a tape recorder connected to the TAPE MONITOR terminals on the rear panel, and serves a dual function. For playback, set the switch to MONITOR. This overrides the function selected on the function switch. For recording on a machine with a separate playback head, setting the switch to SOURCE allows you to hear the program being recorded, and setting to MONITOR allows a comparison with your tape recording.

**PHONES RECEPTACLE:** Simply plug in your head-phone lead and switch off unwanted speakers for private listening.

## OPERATION

Having made all connections according to the preceding instructions and become familiar with the functions of the receiver, you are ready to operate the equipment. Apply power by plugging into the power source and pushing "IN" the POWER button. Select the speakers you wish to use by turning "ON" either SPKR-1 or SPKR-2 switch, or both according to requirements.

### PRELIMINARY CHECKS:

1. If the receiver dial light has failed to illuminate, remove and check the AC fuse.
2. If no sound is heard when all switches and controls are correctly positioned, remove and check the DC fuse. If a fuse is blown, check possible reasons for the blow-out (e.g. short at speaker leads, etc.) and replace the fuse.
3. The phasing of the speakers should be checked. If the two speakers are out of phase, the stereophonic effect will suffer. Check as follows:
  - a) Set the function selector control to AM or FM.
  - b) Tune in a program with a distinct solo part (e.g. voice).
  - c) If the speakers are in phase (correct connection) the

solo will appear to come from the center point between the speakers. If they are not in phase, the sound will appear to come from the two speakers separately.

- d) If the phasing is wrong, reverse the RIGHT and GND speaker connections.

### RECEIVING FM AND AM BROADCASTS

Under normal use for all FM broadcasts the function selector control should be placed in the FM STEREO position.

Your receiver is equipped with a stereo sensing circuit which will automatically determine whether your unit is receiving monophonic or stereophonic broadcasts, and then automatically adjust the mode of operation.

If the station is transmitting stereo, your receiver will automatically switch on the multiplex section and you will hear the broadcast in full stereo. Should the station conclude broadcasting in stereo, your receiver will automatically switch back to monophonic reception.

Should you receive a weak stereo signal whose quality has been degraded by noise or poor signal conditions, and you wish to listen to this stereo broadcast monophonically,

place the function selector control in the FM position. For AM broadcasts the function selector control should be placed in the AM position. Set the SPKR-1 switch to "ON" if you wish to activate the speaker system that is connected to the terminals marked 'SPKR-1' on the rear panel, or set the SPKR-2 switch to "ON" if you wish to activate the speaker system that is connected to the terminals marked 'SPKR-2'. Set both switches to "ON" if you wish to activate both speaker systems. Tune for the desired station with the Tuning knob, using the Tuning Meter to assure the strongest possible reception.

RECORD PLAYER

Set the function selector control to the PHONO position.

PLAYBACK OF TAPE RECORDING

- 1. When using AUX inputs  
Turn the function selector control to the AUX position, and set the MODE to your choice.
- 2. When using TAPE MONITOR inputs  
To listen to a playback of pre-recorded tape, push the TAPE MONITOR button "IN". The setting of the function selector control is irrelevant in this case and may be left at any position.

MAKING TAPE RECORDINGS

To make off-the-air recordings, turn the function selector to AM, FM or FM Stereo, and to record off phono records, set to PHONO. To "dub" off another tape recorder, set to AUX. (The back panel connections should be made so that the "recording" tape recorder is connected to the TAPE IN and TAPE OUT jacks and the "playback" tape recorder to the AUX jacks.) Same procedure applies for recording off cassette or 8-track cartridge.

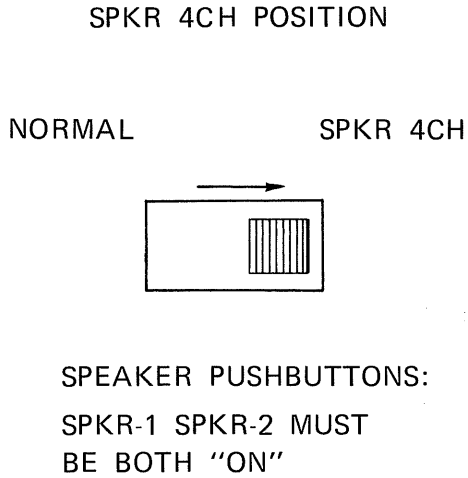
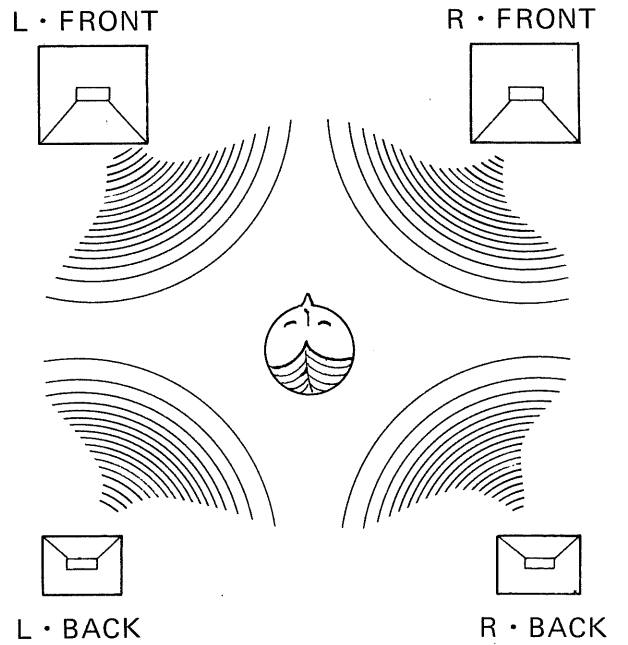
If your tape recorder is equipped with a separate playback head, pushing "IN" the TAPE MONITOR button will cause the input source to be bypassed and will permit you to listen to the recording being made on the tape. Leaving the TAPE MONITOR button "OUT" will permit you to listen to the input source. Thus, with the TAPE MONITOR button you may "monitor" or compare the recording being made with the source being recorded.

HUM AND NOISE

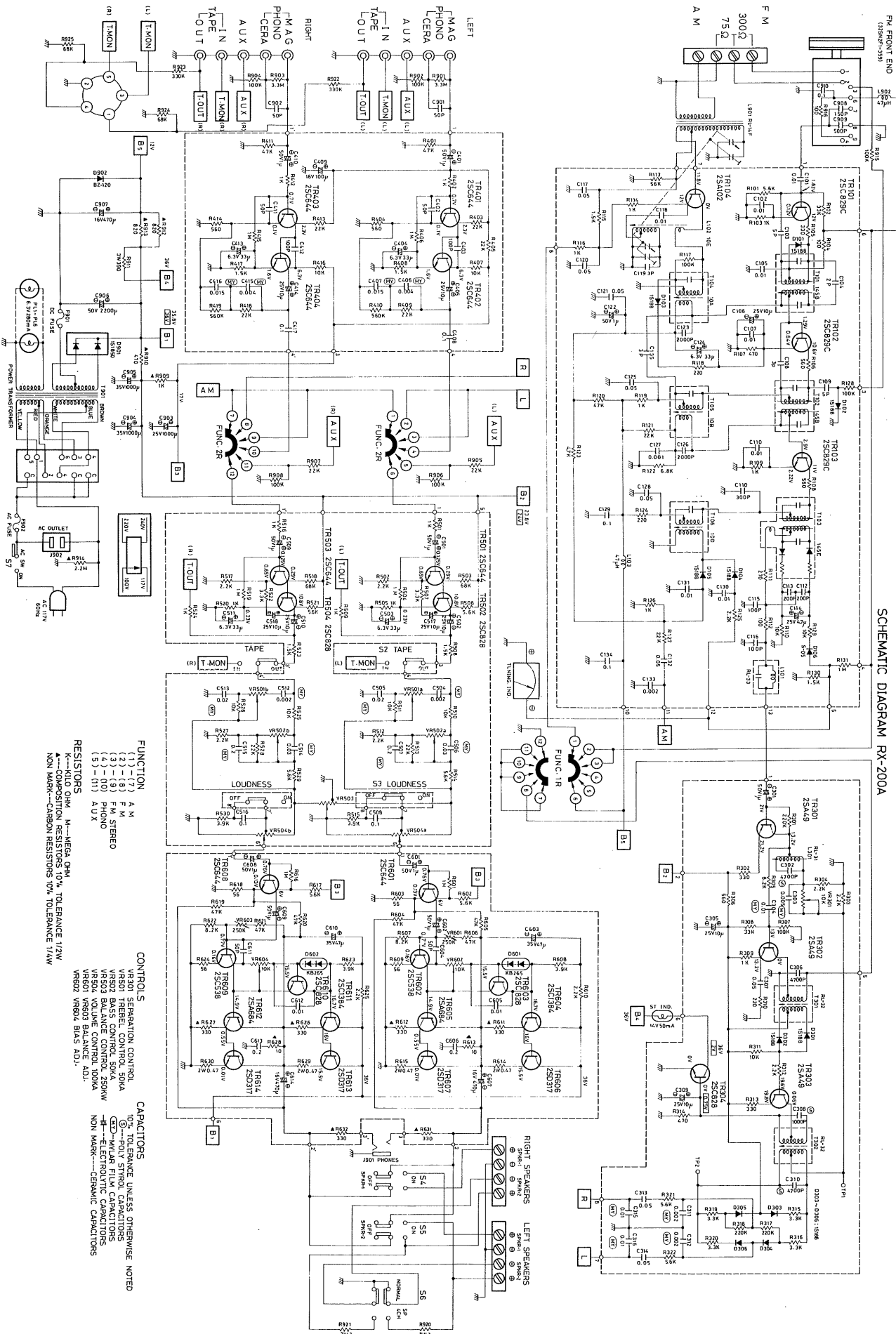
In any high fidelity installation, hum may be caused by the interconnection of a record player, tuner and amplifier, as a result of the cables and different grounds. If hum is experienced with your receiver, disconnect everything but the speakers from the receiver. If hum persists, reverse the AC line cord. Plug in the record player and if hum appears, reverse the record player power plug and connect a single lead from the record player chassis to the ground post on the rear of the receiver chassis. Connect your other devices in this manner. **Caution:** Hum may also be induced by defective connecting cables or by running these cables too close to a strong AC field.

SPEAKER MATRIX 4-CHANNEL

In general the Speaker 4-Channel switch on the rear chassis should be set at NORMAL position for individual stereophonic operation of main speaker system and remote speaker system (SPKR-1 and SPKR-2). However, if you wish to listen to stimulated 4-channel sound, set the switch to the SPKR 4CH position and use your remote pair of speakers as the rear speakers of 4-channel system. You will be certain to enjoy a "surround effect" of this stimulated 4-channel, placing the speakers as suggested below.



SCHEMATIC DIAGRAM





## SPECIFICATIONS

### AMPLIFIER SECTION

Total Music Power (IHF) .....	40W at 4 ohms 26W at 8 ohms
Continuous Power (RMS) .....	13W/Ch at 4 ohms 10W/Ch at 8 ohms each channel driven
Harmonic Distortion .....	0.5% at rated output
IM Distortion .....	0.5% at rated output
Frequency Response .....	30 — 30,000 Hz
Power Bandwidth (IHF) .....	30 — 20,000 Hz
Input Sensitivity/Impedance	
PHONO MAG .....	2.2mV/45k ohms
PHONO CERAMIC .....	140mV/100k ohms
AUX .....	130mV/115k ohms
TAPE IN .....	250mV/15k ohms
TAPE DIN .....	330mV/100k ohms
Hum and Noise	
PHONO .....	65 db
AUX .....	70 db
RESIDUAL .....	1mV
Damping Factor .....	30 at 8 ohms
Bass Control .....	±12 db at 50 Hz
Treble Control .....	±12 db at 10k Hz
Loudness Control .....	+10 db at 50 Hz
Speaker Impedance .....	4, 8, 16 ohms

### TUNER SECTION

FM: Antenna Impedance .....	300 ohms balanced 75 ohms unbalanced
Sensitivity (IHF) .....	3 $\mu$ V
Harmonic Distortion .....	below 1%
Signal to Noise Ratio .....	better than 60 db
Capture Ratio .....	5 db
Image Rejection .....	60 db
IF Rejection .....	70 db
Spurious Response .....	70 db
Selectivity .....	30 db
Stereo Separation .....	34 db at 1k Hz
AM: Sensitivity (IHF) .....	30 $\mu$ V
Image Rejection .....	40 db
IF Rejection .....	40 db
Selectivity .....	25 db
POWER VOLTAGE .....	100, 117, 220, 240V 50/60 Hz
DIMENSIONS .....	16-1/4"(W) x 4"(H) x 8-1/4"(D)
WEIGHT .....	11 lbs/5 kg

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