OPERATING MANUAL

ROTEL®

RX-200

SOLID STATE STEREO RECEIVER

INTRODUCTION

We would like to take this opportunity to thank you for purchasing our RX-200 Stereo Receiver. In RX-200 you have the finest equipment available in the Hi-Fi components field. With the quality workmanship that goes into making the RX-200, you can be assured of its flawless performance for many years to come.

The RX-200 is equipped with every conceivable control and feature any demanding audiophile ever hopes of having on his unit. The RX-200 was designed for both the versatility and ease of operation. It will add professional studio flexibility to your present music center.

The performance of RX-200 is exceptional; it will allow you to experience true high fidelity as never before. Its full and natural stereophonic reproduction offers you musical entertainment rivaling 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 all of the following pages of this Operation Manual carefully.

Do not attempt to operate the unit until you have made all the connections as specified in this Manual.

SPECIAL FEATURES

1) 3-gang FET Front End Tuner.

2) All Silicon Output Transistors.

3) Loudness Switch for boosting extremely low frequencies during low volume operation.

4) Tone Controls for Bass and Treble offer easy and accurate tone adjustment.

5) Tape Monitor Switch for tape playback and recording.

6) Mode Switch for selection of stereophonic or monophonic operation.

7) Front Panel Stereo Headphone Jack for easy use.

8) Inputs for two complete pairs of stereo speaker systems.

9) Illuminated Tuning Meter, Stereo Indicator Light.

10) Handsome Wood Cabinet.

INSTALLATION

IMPORTANT

Do not apply power to this unit without first making sure that both speakers are connected properly. Before attempting to operate the RX-200, please read the following instruction carefully. When all the necessary connections are made, the power may be applied.

FM ANTENNA CONNECTION

Due to the exceptionally high sensitivity of your receiver, the 48" wire that is supplied is sufficient for all but the most difficult locations. The balanced antenna input is designed to accept a 300Ω antenna, indoor or outdoor type. When using the antenna supplied, connect one end of the 48" wire antenna to either of the FM antenna terminals. Horizontal placement of the antenna will yield optimum reception. The antenna may be tacked onto the back of the molding behind the equipment or onto the shelf on which the RX-200 is placed.

As FM signals are in the same broadcast frequency range as TV signals, they are affected by the same external conditions. Just as TV reception is improved, you may improve your FM reception with an external antenna. When using an external antenna, connect both leads of the antenna wire to the two FM antenna terminal posts on the rear of the RX-200.

SPEAKER CONNECTIONS

The RX-200 has connections for two pairs of stereo speaker systems. Make sure that your main speakers are connected to the MAIN terminals and the remote speakers to the REMOTE terminals.

Connect the left hand speaker leads to the terminals designated LEFT SPEAKERS and the right hand speaker leads to the RIGHT SPEAKERS.

With the RX-200 any speaker system of 4, 8 or 16 ohm impedance can be used.

NOTE: Make sure that all the speaker leads are fastened securely to the proper terminals and that there are no stray strands shorting one terminal with another.

PHASING

In a stereophonic music reproducing system, the two speakers must be properly connected to assure complementary functioning. Make sure that the terminals on the speakers are connected to the corresponding terminals on the amplifier. If the two speakers are out of phase with each other, the stereophonic effect will suffer and the low frequency response will be particularly poor. Check to make sure that your speakers are in phase.

1. Push the MODE button "IN" for monophonic operation.
2. Play a monophonic source with solo singing or instrument.
3. If the speakers are in phase, the sound will appear to come from the exact center between the two speakers, and if the speakers are out of phase, the sound will appear to come from the two speakers separately.
4. If the speakers are out of phase, reverse the connections of the two speaker leads (from only one of the speakers, although it may be either one) at the RX-200's speaker terminals. The speakers will then be in phase with each other.

RECORD PLAYER CONNECTIONS

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 in length.

Connect both leads from your record player to the LEFT and RIGHT PHONO input receptacles on the rear of the RX-200. If your record player has a special ground wire emerging with two input leads, connect the ground wire to the ground terminal on the rear of the RX-200.

If your record player is equipped with a magnetic cartridge, use the inputs marked "MAG" on the back panel, and if it is equipped with a crystal (ceramic) cartridge use the "X'TAL" inputs.

TAPE RECORDER CONNECTIONS

Connect the two tape recorder output cables to the Left and Right AUX input jacks on the rear of the RX-200. For recording purposes, the tape recorder input cables should be connected to the Left and Right TAPE OUT jacks (RX-200 has two sets of TAPE OUT jacks).

If your tape recorder has a special "monitor head", connect the two tape recorder output cables to the Left and Right TAPE IN jacks. This will enable you to monitor your tapes as they are being recorded.

You may use TAPE IN jacks like AUX without using it for monitoring purpose. For monitoring there is a special procedure to follow (refer to Operation Section).

VOLTAGE SELECTION

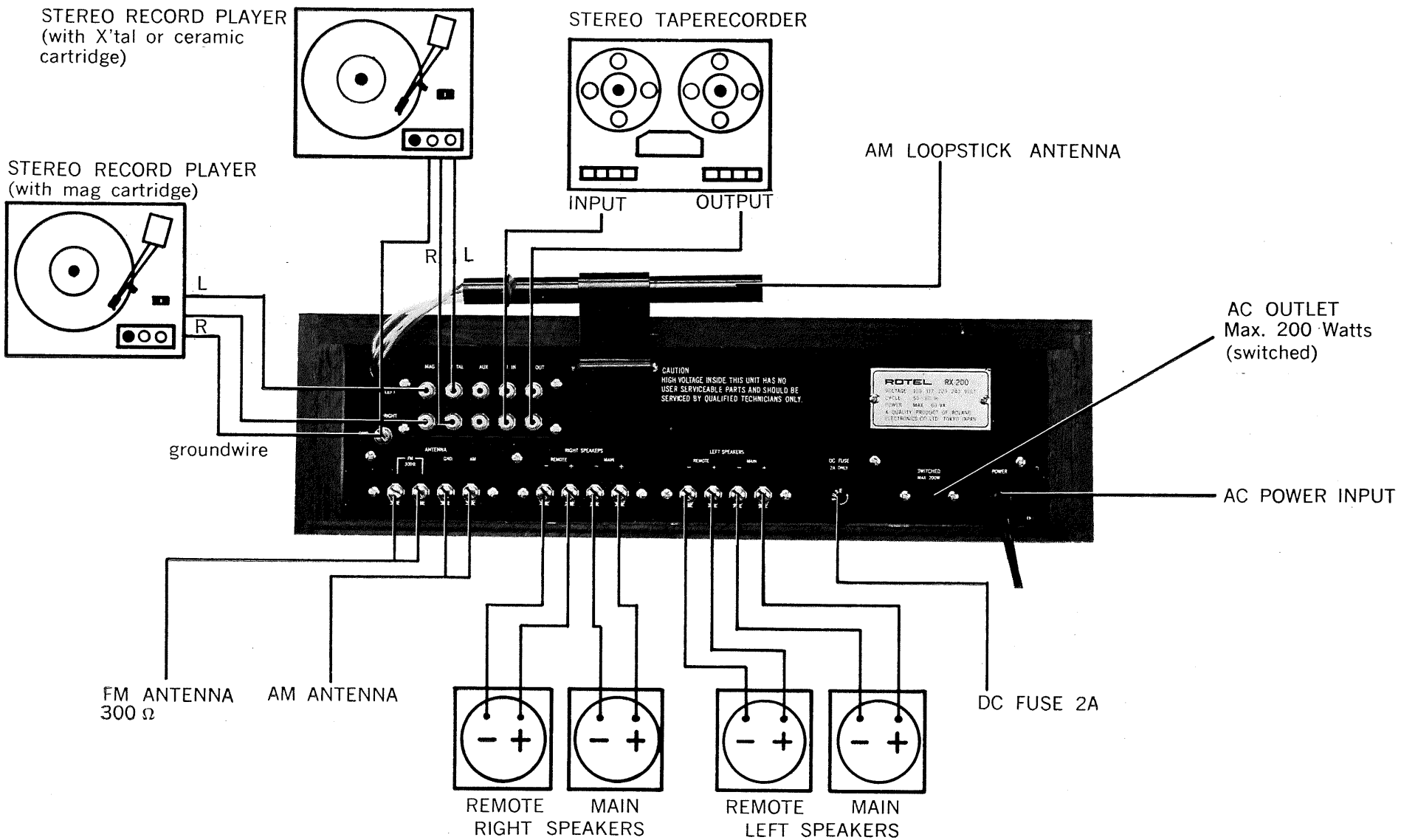
Your RX-200 comes preset at the proper voltage for use in your area; however, if you move to an area where the power supply voltage is different, simply change the voltage setting. The RX-200 is a variable voltage amplifier that can run on 100 V, 117 V, 220 V and 240 V power supplies.

To change the voltage setting, remove the bonnet cover and locate the Voltage Selector (CAUTION: Be sure to disconnect your unit from the power source before attempting to remove the bonnet cover). The Voltage Selector Plug has a white arrow on its top. Reinsert the Voltage Selector Plug so that the arrow lines up with the Pointer Line of the voltage you desire.

AC OUTLET

The RX-200 is equipped with an AC Outlet (switched) to provide switching control and power to whatever component you may wish to connect to the RX-200.

INTERCONNECTING DIAGRAM



OPERATION

When all the connections have been made according to the preceding instructions, you may apply the power by pushing "IN" the POWER button. Select the speaker system you wish to activate by pushing either "IN" for REMOTE pair of speaker systems or "OUT" for MAIN pair of speaker systems.

NOTE: If the Tuner Dial Light fails to light, remove and check the fuse. If no sound were heard even when all the buttons and controls are placed at their correct positions, remove and check the fuse. If the fuse is blown, check for possible reasons for the blow-out (e.g., short at the speaker leads, etc.) and replace the fuse.

BASS AND TREBLE CONTROLS

The BASS and TREBLE tone controls on your receiver provide the full range of tonal adjustment necessary for stereo high fidelity listening. The tone control range is considerable and can adequately adjust the low and high frequencies in accordance with your listening preference, speaker characteristics and room acoustics.

BALANCE CONTROL

The Balance Control is used to adjust the sound level of each channel in relation to each other.

The nature of stereophonic reproduction is such that it requires two identical channel placement to obtain the optimum stereo effect. As there may be slight differences between the location of the two speakers, tape heads, cartridges, etc., the balance control is provided to permit re-balancing of the overall system even in extreme cases where unbalance exists.

It should be noted that the Balance Control may be set anywhere within its range of adjustment to attain system balance.

RECORD PLAYER

Set the SELECTOR to PHONO position, and push the MODE button "IN" for Mono or leave the button "OUT" for Stereo, depending upon your records. In Stereo the RX-200 is set for normal stereophonic operation; in Mono, it is limited to normal monophonic operation.

PLAYBACK OF TAPE RECORDING

1. When using AUX inputs

Turn the SELECTOR knob to 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 SELECTOR control is irrevelant in this case and may be left at any position.

MAKING TAPE RECORDINGS

To make off-the-air recordings, turn the SELECTOR knob to AM, FM or FM Stereo, and to record off phono records, set to PHONO. To "dubb" 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 tape.

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.

LOUDNESS SWITCH

Whenever your system is operated at low levels, the sound will not seem as full as it is at higher levels. This is because the human ear does not perceive as well the low frequency sounds when the volume is low. The LOUDNESS button is used to compensate for this deficiency. Whenever the volume is reduced, push this button "IN", and the extreme low frequency sounds will be effectively boosted.

HEADPHONES

To listen through a pair of headphones, simply plug the headphone lead into the PHONES jack on the front panel and if only the main pairs of speaker systems are connected to the RX-200 and you wish to deactivate them, simply push "IN" the SPEAKER button.

SELECTING FM MONOPHONIC OR STEREOPHONIC BROADCASTS

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

The RX-200 is equipped with a stereo sensing circuit which can automatically determine if your unit is receiving monophonic or stereophonic broadcasts, and automatically adjust the mode of operation.

If the station is transmitting in stereo, your receiver will automatically switch in 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 reproduction.

Should you receive a weak stereo signal whose quality is degraded by noise or poor signal conditions, and you wish to listen to this stereo broadcast monophonically, place the function Selector knob in the FM position.

FUSE

The RX-200 is protected with one 2-amphere fuse in the DC output circuits. Replacing with a fuse of higher rating will not protect the unit any more effectively, rather it may result in severe damage to the unit.

CONTROLS AND THEIR FUNCTIONS

SPEAKER in "IN" position activates the REMOTE pair of speaker systems and in "OUT" position activates the MAIN pair of speaker systems.

TUNING METER indicates the strength of the signal being received. It is used to tune for best posible reception of both AM and FM broadcasts.

STEREO INDICATOR LIGHT automatically lights up "STEREO" to indicate whenever the unit is tuned to an FM Stereo broadcast.

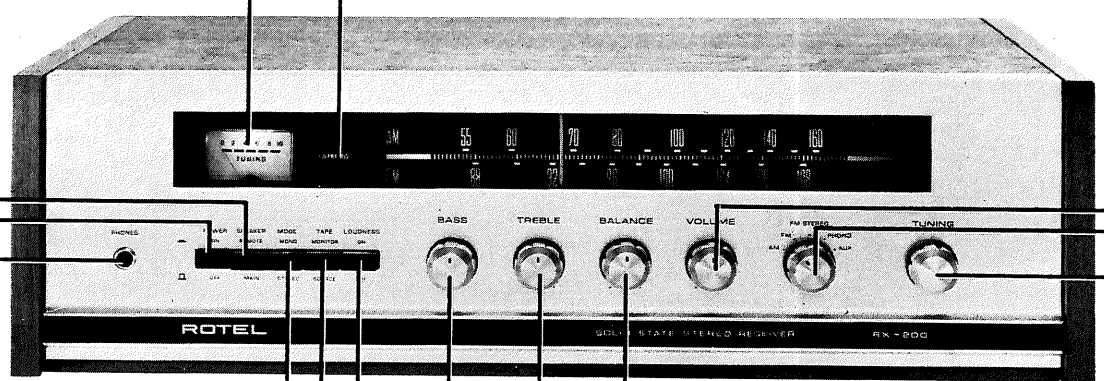
VOLUME modifies the sound level of the system. Set to suit your taste.

FUNCTION SELECTOR allows you to select whatever function you wish to operate at, whether "AM", "FM" "FM STEREO ", "PHONO" or "AUX".

POWER in "IN" position activates the system.

PHONES allows you to listen to your headphones by simply plugging in the lead.

TUNING KNOB allows you to tune for whatever AM or FM station you wish to hear.



MODE in "IN" position is for monophonic program material, and in "OUT" position it is for stereophonic program material.

BALANCE modifies the sound level of each channel in relation to each other. Set to adjust for unequal sounds caused by room acoustics or faulty program material.

TAPE MONITOR in "IN" position allows you to listen to playback of a tape recording, and if your tape recorder is equipped with a separate playback head, it allows you to monitor a tape recording.

LOUDNESS in "IN" position introduces a circuit that boosts the extreme low frequency sounds for listening at low volume levels; it compensates for the natural deficiency of the human ear.

BASS modifies low frequency sounds. Set to suit your taste.

TREBLE modifies high frequency sounds. Set to suit your taste.

SPECIFICATIONS

TUNER SECTION:

FM:	**ANTENNA IMPEDANCE:**	300 ohms balanced, 75 ohms unbalanced.
	SENSITIVITY (IHF):	8 μ V.
	HARMONIC DISTORTION:	less than 1% (400 Hz 100% Mod).
	SIGNAL TO NOISE RATIO:	better than 60 dB.
	CAPTURE RATIO:	5 dB.
	IMAGE REJECTION:	better than 60 dB.
	IF REJECTION:	better than 70 dB.
	SELECTIVITY (IHF):	20 dB.
	STEREO SEPARATION:	better than 30 dB at 1,000 Hz.
	SPURIOUS RESPONSE REJECTION:	70 dB.
AM:	**SENSITIVITY (IHF):**	30 μ V at 1,000 kHz.
	IMAGE REJECTION:	40 dB at 1,000 kHz.
	SELECTIVITY:	better than 25 dB.

AMPLIFIER SECTION:

TOTAL MUSIC POWER (IHF):	50 watts at 4 ohms, 26 watts at 8 ohms.
CONTINUOUS POWER (RMS):	13 watts at 4 ohms,
EACH CHANNEL DRIVEN:	10 watts at 8 ohms.
DISTORTION, IM:	less than 0.5% at rated output,
HARMONIC:	less than 0.2% at rated output.
FREQUENCY RESPONSE:	0 $\sim$ $-$1.5 dB 30 — 20,000 Hz @ 10 watt.
POWER BRANDWIDTH (IHF):	30 — 20,000 Hz.
INPUT SENSITIVITY:	MAG 2 mV, TAPE MONITOR 250 mV, X'TAL 200 mV, AUX 130 mV.
INPUT IMPEDANCE:	MAG 35 kohm, TAPE MONITOR 13 kohm, X'TAL 150 kohm, AUX 50 kohm.
HUM AND NOISE:	PHONO 60 dB, AUX 70 dB, RESIDUAL 1 mV.
SQUARE WAVE RISE TIME:	3.5 Microseconds.
DAMPING FACTOR:	30 at 8 ohms.
SPEAKER IMPEDANCE:	4, 8, 16 ohms.
BASS CONTROL:	+12 $\sim$ $-$14 dB at 50 Hz.
TREBLE CONTROL:	+13 $\sim$ $-$12 dB at 10,000 Hz.
POWER VOLTAGE:	AC 100, 120, 200, 240 V, 50/60 Hz.
DIMENSIONS:	14¼″ W, 4″ H, 8¼″ D.
WEIGHT:	11 lbs.

SCHEMATIC DIAGRAM