

owner's manual

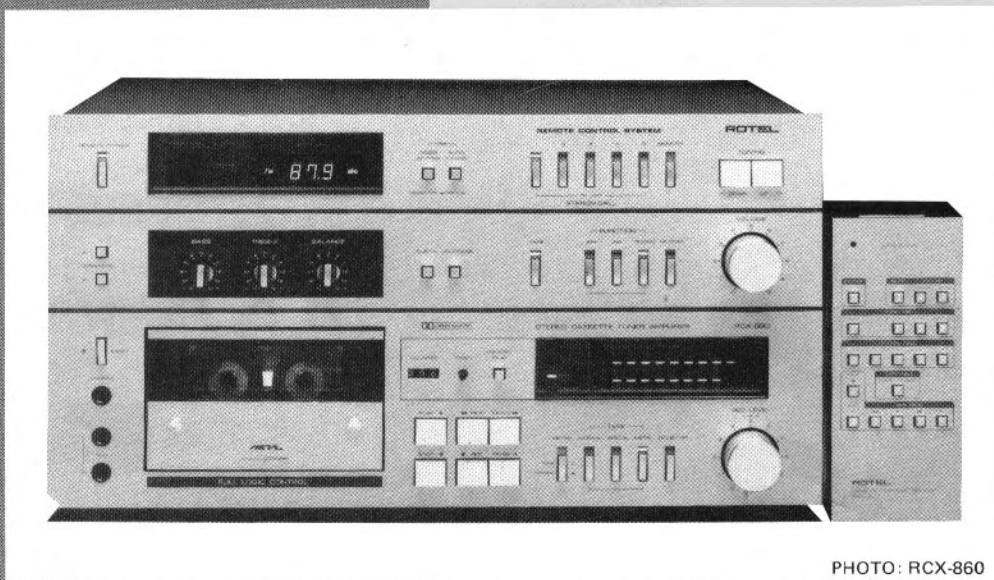


PHOTO: RCX-860

Quality Uncompromised

ROTEL

RCX-860

AM/FM STEREO CASSETTE TUNER AMPLIFIER
WITH TRANSMITTER UNIT RRT-2

RCX-860L

MW/LW/FM STEREO CASSETTE TUNER AMPLIFIER
WITH TRANSMITTER UNIT RRT-2

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WARNING

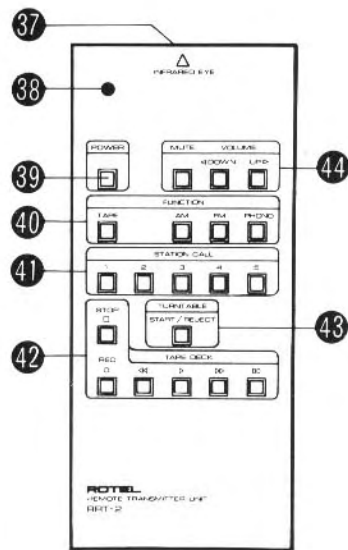
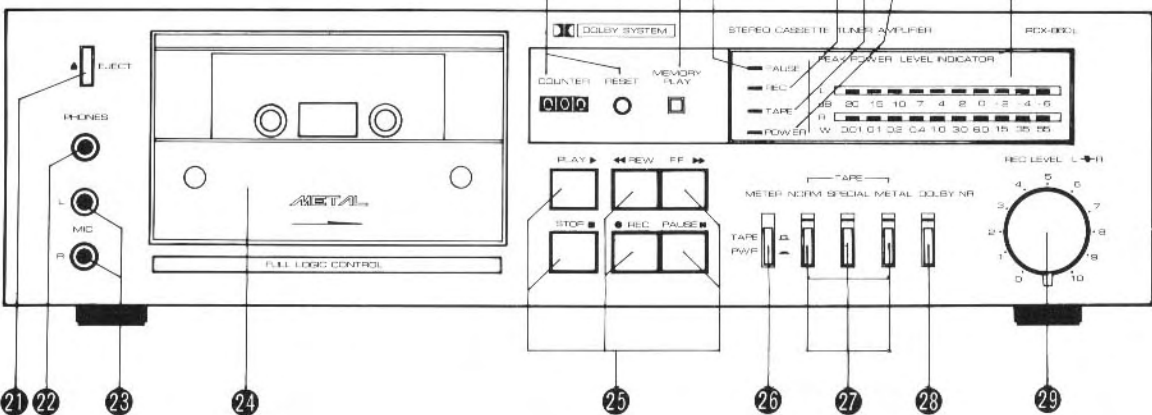
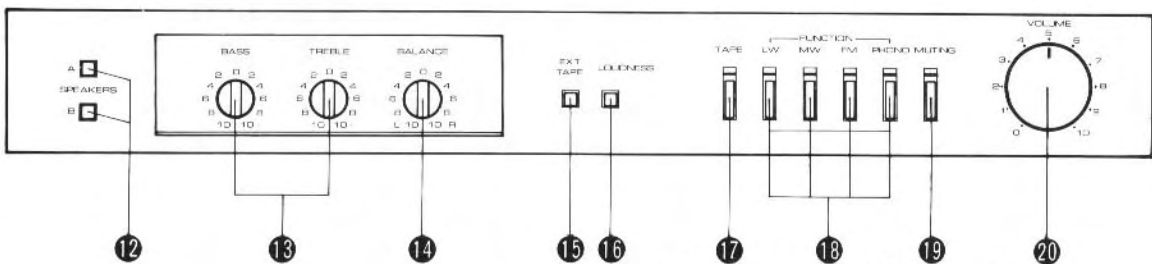
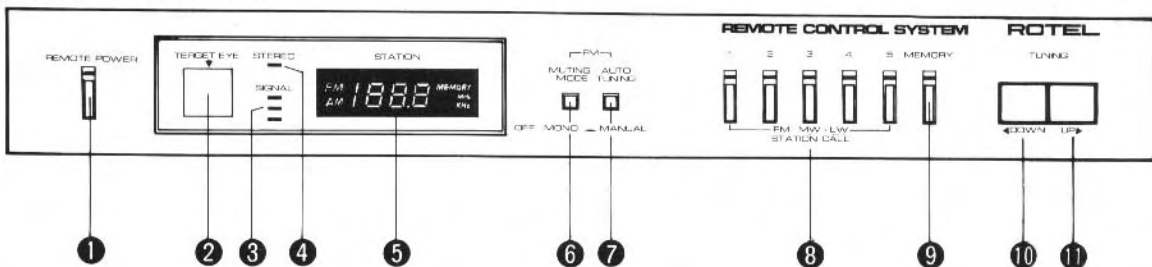
TO PREVENT FIRE OR SHOCK HAZARD,
DO NOT EXPOSE THIS APPLIANCE TO
RAIN OR MOISTURE

Write your SERIAL NUMBER here.

The number is located near the name
plate on the rear panel.

- SWITCHES AND CONTROLS
- BEDIENUNGSELEMENTE
- ORGANES DE COMMANDE ET COMMUTATEURS
- SCHAKELAARS EN REGELAARS
- CONMUTADORES Y CONTROLES
- INTERRUITORI E CONTROLLI
- OMKOPPLARE OCH KONTROLLER
- KYTKIMET JA SÄÄTIMET
- OMSKIFTERE OG KONTROLLER
- BRYTERE OG KONTROLLER

RCX-860L



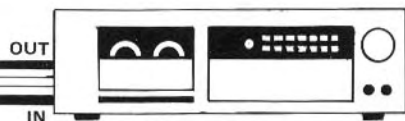
- SPEAKER (RIGHT) — LAUTSPRECHER (RECHTS)
- HAUT-PARLEUR (DROITS)
- LUIDSPREKER (RECHTS)
- ALTAVOZ (DERECHA)
- DIFFUSORE (DESTRA)
- HÖGTALARE (HÖGER)
- KAIUTIN (OIKEA)
- HÖJTTALER (HØJRE)
- HØYTTALER (HØYRE)

- * RCA PIN CORD
- CHINCH-STECKERKABEL
- CORDONS A FICHES RCA
- RCA-SNOER
- CABLE RCA
- CAVO RCA
- RCA-SIGNALKABLAR MED STIFTKONTAKTER
- RCA JOHDIN
- RCA STIK
- PHONOKABEL (RCA)

- ** DIN-TYPE CORD
- DIN-KABEL
- CORDON DIN
- DIN-TYPE SNOER
- CABLE DIN
- CAVO DIN
- DIN-SLADD
- KAUKOSÄÄ
- DIN LEDNIN
- DIN-KABEL

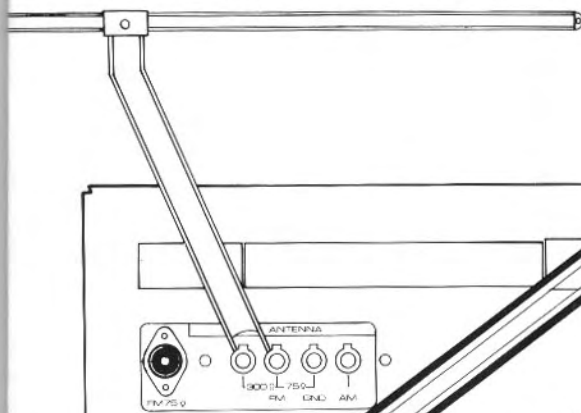
EXTERNAL TAPE DECK
 EXTERNES CASSETTENECK
 PLATINE SEPARÉE
 AFZONDERLIJK TAPE DECK
 GRABADORA EXTERNA

PIASTRA DI REGISTRAZIONE ESTERNA
 YTTRE KASSETTDÄCK
 ERILLINEN KASSETTIDEKKI
 SEPARAT TAPE DECK
 UTVENDIG TILKOPLET BÄNDOPPTAKER

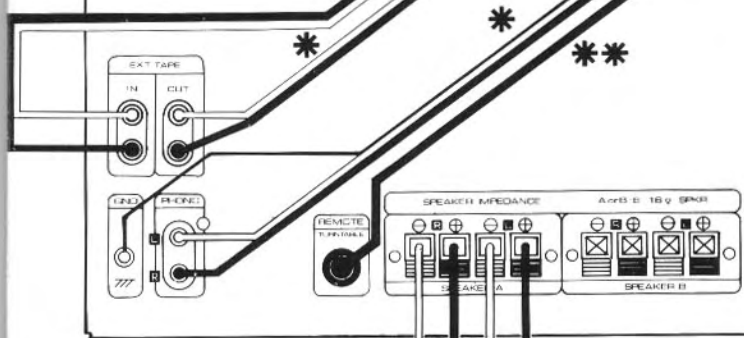


- CONNECTING FM T-SHAPED ANTENNA (300Ω)
- ANSCHLUSS DER UKW T-FÖRMIGEN-ANTENNE (300Ω)
- RACCORDMENT DE L'ANTENNE MF EN FORME DE T (300Ω)
- AANSLUITING VAN DE T-VORMIGE FM-ANTENNE (300Ω)
- CONEXION DE LA ANTENA FM TIPO T (300Ω)
- COLLEGAMENTO DELL'ANTENNA FM A FORMA DI T (300Ω)
- ANSLUTNING AV FM-DIPOLSANTENN (300Ω)
- T-MUOTOISEN FM-ANTENNIN KYTKENTÄ (300Ω)
- FORBINDELSE AF FM T-FORMET ANTENNE (300Ω)
- TILKOPLING AV DEN T-FORMEDE FM-ANTENNEN (300Ω)

- CONNECTING TURNTABLE
- ANSCHLUSS EINES PLATTENSPIELERS
- BRANCHEMENT DE LA TABLE DE LECTURE
- AANSLUITEN VAN PLATENSPELER
- CONEXION DEL GIRADISCOS
- COLLEGAMENTO DEL GIRADISCHI
- ANSLUTNING AV SKRIVSPELARE
- LEVYSOITTIMEN LIITÄNTÄ
- TILSLUTNING AF PLADESPILLER
- TILKOPLING AV PLATESPILLEREN



ROTEL RP-860

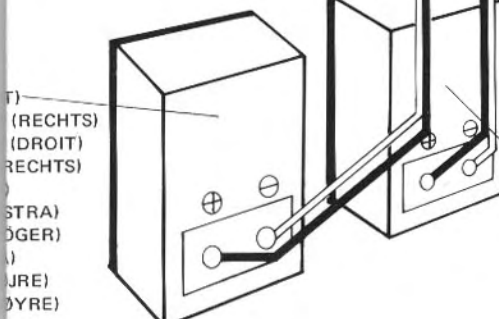


CAUTION FOR SAFETY PURPOSE DO NOT CONNECT EQUIPMENT OTHER THAN RFL'S SPECIFICALLY SPECIFIED EQUIPMENT TO THIS AC OUTLET

NOISE REDUCTION SYSTEM MANUFACTURED UNDER LICENSE FROM QUALITY LABORATORIES LIEKENSIS CORPORATION
 KÄÄNTÄMÄÄ: BATTERI VOIKOOPPEN DES GEMAKTES NETZGERÄTES ZEREN
 CAUTION TO PREVENT ELECTRICAL SHOCK DO NOT REMOVE COVER OR ANY SCREWS, NO USER SERVICEABLE PARTS, REPAIR REPAIR SERVICE TO QUALIFIED PERSONNEL

- HOOKING UP SPEAKERS
- ANSCHLUSS DER LAUTSPRECHER
- BRANCHEMENT DES HAUT-PARLEURS
- AANSLUITEN VAN LUIDSPREKERS
- CONEXION DE ALTAVOCES
- COLLEGAMENTO DEI DIFFUSORI
- HUR DU ANSLUTER HÖGTALARSYSTEM
- KAIUTTMIEN SJOITTAMINEN
- TILSLUTNING AF HÖJTALERE
- HVORDAN DU TILSLUTTER HÖYTALERSYSTEM

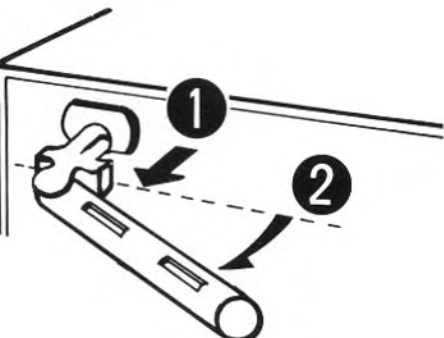
POWER CORD
 NETZKABEL
 CORDON D'ALIMENTATION
 NETSNOER
 CABLE DE ALIMENTACION
 CAVO DI ALIMENTAZIONE
 NÄTLEDNING
 VERKKOVIRRRAN LIITÄNTÄ
 STRÖMFORBINDELSE
 STRÖMFORSYNINGSKABEL



SPEAKER (LEFT) LAUTSPRECHER (LINKS) HÖYTALER (VENSTRE)
 SPEAKER (RIGHT) LAUTSPRECHER (RECHTS) HÖYTALER (RECHTS)
 HAUT-PARLEUR (GAUCHE) HÖYTALER (VENSTRE)
 LUIDSPREKER (LINKS)
 ALTAVOZ (IZQ.)
 DIFFUSORE (SINISTRA)
 HÖGTALARE (VÄNSTER)

PE CORD FOR REMOTE CONTROL
 BEL FÜR FERNBEDIENUNG
 ON DIN POUR COMMANDE A DISTANCE
 PE SNOER VOOR AFSTANDBEDIENING
 DIN PARA CONTROL REMOTO
 DIN PER CONTROLLO A DISTANZA
 ADD FÖR FJÄRRKONTROLLENHETENS ANSLUTNING
 SÄÄTIMEN DIN-LIITIN
 ONING TIL FJERNBETJENING
 BEL FOR FJERNKONTROLL

AM FERRITE BAR ANTENNA
 AM FERRITSTABANTENNE
 ANTENNE BARRE FERRITE MA
 AM FERRIETE STAAFANTENNE
 ANTENA DE BARRA DE FERRITA AM
 ANTENNA A STELO DI FERRITE AM
 AM FERRITSTAVANTENN
 AM FERRITTI TANKOANTENNI
 AM FERRIT STANGANTENNE
 AM FERRIT STAVANTENNE



ENGLISH

AM/FM STEREO CASSETTE TUNER AMPLIFIER RCX-860
MW/LW/FM STEREO CASSETTE TUNER AMPLIFIER RCX-860L

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 household 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 3-core cable without a plug, make certain live, neutral and (where appropriate) earth leads are connected to the proper terminals.

Check that the terminals are screwed down firmly and no loose strands of wire are present.

WARNING: THIS APPARATUS MUST BE EARTHED.

IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN/YELLOW: EARTH
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 GREEN/YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol , or coloured GREEN/YELLOW.

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.

The apparatus must be protected by a 3A fuse if a 13A (BS1363) plug is used. If other type of plug is used, a fuse of 5A or below must be used, either in the plug or adapter or at the distribution board.

SPEAKERS

The unit allows hookup of two speaker systems. Use speaker systems with impedance ratings of 8-16 ohms. Before hooking up your speaker system, be sure to check its impedance, which should be indicated either on the back of the speaker, or in the speaker instruction manual.

HOOING UP SPEAKERS

On the rear panel of the RCX-860 are two sets of speaker terminals, "A" and "B", to which two speaker systems may be connected. Connect the speaker leads of the right-hand speaker to terminals "R" of "A" (or "B"), and the speaker leads of the left-hand speaker to terminals "L" of "A" (or "B"). 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.

The terminals are the push-insert type. Insert the end of the lead into the hole while pushing on the button. Then release the button; the hole will close and the cord is firmly fixed.

CAUTION:

As long as the power cord is plugged into a wall outlet, power is supplied to the unit regardless of the setting of the unit's REMOTE POWER button and the POWER button on the remote transmitter unit.

CONNECTING TURNTABLE

To connect turntable, proceed as follows:

● Power Cord

The rear panel of the unit is provided with an AC outlet to supply power to the Rotel turntable RP-860 (or RP-700). Plug the power cord of the RP-860 (or RP-700) into this AC outlet. Turning on the unit's REMOTE POWER switch or the POWER switch on the remote transmitter unit will supply power to the turntable.

● RCA Pin Cords

The pin cords extending from the turntable connect with the PHONO terminals provided on the rear panel. Be sure to make L (left) and R (right) connections correctly.

The other cord extending from the turntable is the grounding wire. Connect this wire to the terminal labeled "GND" to the left of the PHONO terminals.

● DIN-Type Cord for Remote Control

A cord with a DIN-type 3-pin plug extending from the rear panel is provided for remote control of the turntable RP-860 (or RP-700). Connect it to the socket on the turntable provided especially for remote control wiring. Be sure to insert the plug all the way into the socket to make a firm connection.

Note 1: The AC outlet on the rear panel should be used only for powering the turntable RP-860 (or RP-700) when it is wired for remote-control. Never use this AC outlet to supply power to any other electric appliances.

Note 2: The owner's manual accompanying the turntable gives instructions for usage under normal circumstances only. When operating the turntable in conjunction with the RCX-860, first follow the instructions for connections and use of the equipment given in this booklet.

CONNECTING EXTERNAL TAPE DECK

The RCX-860 is built to allow hookup of a separate tape deck. The power cord of the tape deck should be plugged into a wall outlet.

● RCA Pin Cords

Connect the external tape deck to the RCX-860 using the 2 pairs of RCA pin cords. The LINE OUT (PLAY) terminals of the tape deck should be connected to the EXT. TAPE IN terminals of the RCX-860, and the LINE IN (REC) terminals of the tape deck should be connected to the EXT. TAPE OUT terminals of the RCX-860. Be sure L (left) and R (right) connections are made correctly.

ANTENNA INSTALLATION AND CONNECTION

■ FM Antenna

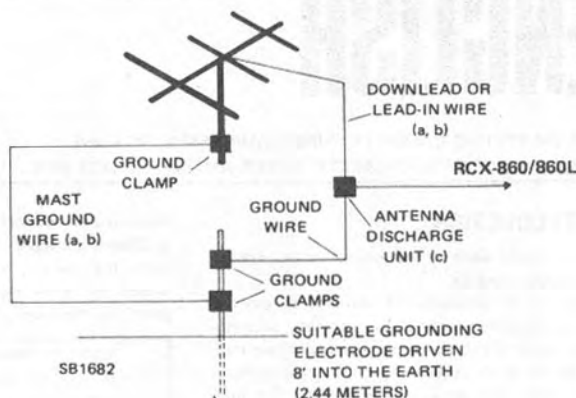
Proper installation of antenna is the key to smooth signal reception. To install the attached

EXCLUSIVE NOTES FOR THE U.S.A.

Outdoor Antenna Grounding

If an outside antenna is connected to the receiver/tuner, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1978, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See figure.

- Use No. 10 AWG copper or No. 8 AWG aluminum or No. 17 AWG copper-clad steel or bronze wire, or larger as ground wires for both mast and lead-in.
- Secure lead-in wire from antenna to antenna discharge unit and mast ground wire to house with stand-off insulators, spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.
- Mount antenna discharge unit as closely as possible to where lead-in enters house.



T-shape indoor antenna, stretch it taut and secure horizontally along a wall or the like in a location where signal reception is optimal. Securely connect the antenna to FM antenna terminals marked "300Ω" on the rear panel. If outdoor type FM antenna is installed, the T-shape antenna is not necessary. For proper use of your outdoor FM antenna, follow the instructions below.

1. Be sure to select the most appropriate type of antenna for the signal reception conditions in your area.

2. A 75-ohm coaxial cable is recommended in connecting the antenna to the unit.

3. Set the antenna in a position as high as possible if buildings, mountains or other obstructions nearby affect reception.

4. The 75-ohm coaxial antenna cable should be properly hooked up to the designated antenna terminals on the rear panel: Locate the terminals labeled "75Ω". Connect the center conductor of the cable to the left-hand terminal, and connect the outer braided conductor of the cable to the right-hand terminal (marked "GND").

The rear panel also has a coaxial connector which allows a simpler connection of the coaxial cable. Use either of the connecting methods as appropriate.

■ AM Antenna

To use the ferrite bar antenna provided on the rear panel, pull it towards you gently, and then place it in a position where signal reception is optimal.

If you install outdoor AM antenna, connect the antenna lead wire to the antenna terminal labeled "AM".

AUTOMATIC SHUTOFF SYSTEM OF CASSETTE DECK SECTION

To protect the RCX-860 motor and transport mechanism against unnecessary wear, an automatic shutoff device has been built into the unit. When either end of tape is reached in play, record, fast-forward, or rewind mode, the motor and mechanism will automatically shut off, disengaging the present mode.

CASSETTE TAPES

• To prevent possible trouble with the transport mechanism, use of large size cassette tapes,

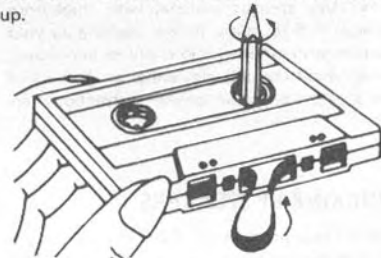
such as C-120, is not recommended.

• Handle cassette tapes with care. Keep them away from heat, circulating dust, or a magnetic field (e.g. on the TV set).

• Each cassette tape has safety tabs on its back edge to prevent accidental re-recording. The tabs are provided for both sides of cassette tape. You cannot record on the side whose tab has been removed. The tab can be removed with a screwdriver, etc. If you wish to record on the side with no tab, place a piece of adhesive tape, etc. over the opening where the tab has been, then you can record.



• A loosened tape may cause trouble in playback or recording. Check the tape before loading it into the deck. If it is slack, insert a pencil or the like into either of cassette's hubs, and rotate it carefully until the slack is taken up.



SWITCHES AND CONTROLS

(1) REMOTE POWER Button

Press this button to turn on the unit and the connected turntable. Press the button a second time to turn them off. When the power is on, the indicator above the button glows.

(2) Target Eye

Receives operating commands in the form of infrared beams emitted from the remote transmitter unit.

(3) Signal Strength Indicator

The three LEDs show incoming signal strength; the receiving condition is optimal when all three LEDs are illuminated.

(4) Stereo Indicator

Glow when stereo broadcasting signal is tuned in. Note that when stereo signal is very weak, the unit may give only monaural reproduction. In that case, the indicator will not light up even though the unit is tuned to a stereo program.

(5) Frequency Display

Indicates frequency currently tuned in, along with notations "FM" and "MHz" in FM reception, or "AM" and "kHz" in AM reception. The word "MEMORY" will appear when Memory Program button is pressed.

(6) FM Muting/Mode Button

When this button is pressed to ON, any FM broadcast is received monaurally. Be sure to leave the button in the released (OFF) position during normal stereo FM reception. In the OFF position, interstation noise generated when tuning in an FM station will be reduced.

(7) FM Auto/Manual Button

When this button is in the released position, you can tune in FM stations in automatic tuning mode. In the depressed position, tuning is made in manual mode, for either FM or AM reception.

(8) Station Buttons

These buttons are used to tune in to desired preset stations, or to enter favorite station frequencies into the unit's memory. The indicator provided above each station button lights up when the button is pushed.

(9) Memory Program Button

To enter a given station frequency into the unit's memory circuit, press this button first, and then press the desired station button.

(10) Tuning Button, DOWN

Used when tuning in a station whose frequency is lower than the reading on the frequency display.

(11) Tuning Button, UP

Used when tuning in a station whose frequency is higher than the reading on the frequency display.

(12) Speaker Buttons (A, B)

By these buttons you may select speaker system you wish to use. Press button A to activate the speaker system connected to

speaker terminals A on the rear panel, and button B for the system connected to speaker terminals B. Depressing both A and B buttons will activate both speaker systems. When only one speaker system is hooked up, press the corresponding button only, and release the other button to OFF. Otherwise no sound will be produced.

(13) Tone Controls

Two separate tone controls regulate bass and treble respectively: knob labeled BASS is for low frequency range and TREBLE for high frequency range. Rotate the knob clockwise to boost the response, and counterclockwise to cut it. Achieve the sound you like best by using those controls effectively.

(14) Balance Control

In the central position, sound is produced in equal level from both speakers, while turning it to the right decreases the sound from the left speaker, and turning it to the left decreases the sound from the right speaker.

(15) EXT. TAPE Button

Depress this button only when you wish to play back a tape from a separate tape deck connected to the EXT. TAPE terminals on the RCX-860 rear panel. Make sure this button is in the released position when listening from other sources, including the tape deck section of the RCX-860.

(16) Loudness Button

The human ear has a tendency to become less sensitive to very low or high frequencies when listening at reduced volume levels. This button activates a compensation function that boosts those frequencies so that a more natural sound is heard.

(17) Tape Monitor Button

Press this button when you wish to play back a prerecorded tape in the RCX-860 tape deck section. The indicator above the button glows when the button is activated. To listen to other sources, press the button a second time. The indicator glow will go out.

(18) Function Selector

The function selector is used to select program sources you wish to listen to. Note that the selector does not work when the tape monitor button is activated. Be sure the indicator on the tape monitor button is off before using the function selector.

To listen to AM broadcast, press AM button on the function selector. (On RCX-860L, AM reception is made either in MW or LW mode: press MW button for middle wave reception, and LW button for long wave reception.) Press FM button to listen to FM broadcast, and press PHONO button to get signal from the connected turntable.

The indicator above each button lights up when the respective buttons are pressed.

(19) Audio Muting Button

Pressing this button will immediately cause a large reduction in volume level of the sound, and pressing it a second time will restore the previous volume. This button is most useful when you wish a temporary period of quieter sound. When the audio muting is in operation, the LED indicator above the button glows.

(20) Volume Control

Used to regulate the volume level. Rotate the knob clockwise to raise volume level, and counterclockwise to reduce it.

This control contains a motor which, when the

UP or DOWN button on the remote transmitter unit is activated, will operate to turn the knob automatically, providing for remote-control of volume setting.

(21) Eject Button

Press this button to open the door of cassette compartment when inserting or removing a cassette tape. To close the door, gently push it back. Do not attempt to press the eject button while the tape is running.

(22) Headphone Jack

Plug your headphones into this jack for private listening. When using headphones, both A and B speaker buttons should be in released (OFF) position so that sound is emitted only from the headphones. Volume level of headphone sound can be controlled with the volume control.

(23) Microphone Jacks (L, R)

When making live recording with stereo microphones, insert the microphone plugs into these jacks. Make sure the right-hand microphone is connected to the right channel jack, and the left-hand microphone to the left channel jack. Be sure to unplug the microphones when recording from other sources.

(24) Tape Holder

Cassette tape is loaded into this holder.

(25) Cassette Controls

PLAY Button

Press this button to start the cassette for playback of recorded tape.

REW Button

For rapid tape rewind, press this button.

F.FWD Button

Press this button to advance the tape rapidly forward.

STOP Button

Press this button to stop the tape in any mode: record, playback, rewind, or fast-forward. This button will disengage any transport mode currently engaged.

REC Button

To record, press this and PLAY button. The unit is now in the recording mode, and the tape should be winding.

PAUSE Button

Press this button to stop the tape temporarily during recording or playback. Pressing the button a second time will restart the tape in the interrupted mode.

(26) Meter Selector Button

This button is used to select the display mode of the peak-power/level indicator. When the button is depressed, the indicator displays the power output levels of the unit, and released, it displays recording or playback levels of cassette tape.

(27) Tape Selector

Used to select the appropriate recording bias and playback equalization, according to type of cassette tape used. Use the METAL button for metal particle tape, the SPECIAL button for chromium dioxide tape, and the NORMAL button for normal tape. See TAPE SELECTOR SETTING GUIDE for details of different brands of cassette tapes and their proper setting positions.

The indicator above each button glows when the button is pressed.

(28) Dolby NR Switch

Press this button to switch in the built-in Dolby NR circuit provided for high-frequency range noise reduction when you wish to record or play back through Dolby NR circuit. The indicator above the button glows when the Dolby NR circuit is in operation.

(29) Recording Level Control

Used to control the recording level of incoming signals, such as from the unit's tuner section, turntable, or microphones. This is a dual concentric knob which permits either separate or combined adjustment of both channels.

(30) Tape Counter and Reset Button

The three-digit tape counter indicates the amount of tape travel. Push the reset button to set the counter to "000". This counter is convenient in finding the beginning of a specific section of the tape or checking the amount of tape remaining on the cassette.

(31) Memory Play Switch

Use this button to repeat playback of a specific section. Depress it and the unit memorizes "000" position on the tape counter. If you press the REW (◀) button in this state, the tape will rewind to the "999" position on the counter, and it will then start replay from there. Note, however, that when the counter reads between "900" and "999", pressing the REW (◀) button will not start rewind; it will start playback.

(32) PAUSE Indicator

Glow when "pause" mode is used to temporarily stop tape travel.

(33) REC Indicator

Glow when in tape recording mode.

(34) Tape Level Position Indicator

Glow when the meter selector button is set in released position to show that the peak-power/level indicator is displaying tape recording or playback levels.

(35) Power Output Position Indicator

Glow when the peak-power/level indicator is displaying the power output levels of the unit.

(36) Peak-Power/Level Indicator

The peak-power/level indicator consists of two banks of ten LEDs each. In the power output displaying mode, the indicator allows direct reading of power output levels of the unit in a range from 0.01 watts to 55 watts; in the tape recording/playback level displaying mode, it shows levels from -20dB to +6dB, for left and right channels respectively.

(37) Infrared Eye

To send operating command, the infrared eye transmits an infrared beam to the target eye on the RCX-860.

(38) Indicator Lamp

This indicator glows when the remote transmitter unit is emitting an infrared beam.

(39) POWER Button

Press this button to turn on power in RCX-860 and the turntable. Press the button a second time to turn them off.

(40) Function Selector

Selects the desired program source; press TAPE button for sound from tape deck section of the RCX-860, AM button for AM broadcast from tuner section, FM button for FM broadcast, and PHONO button for sound from turntable.

(41) Station Buttons

These buttons are used to call up pre-stored stations stored in the memory of the tuner section. The numbers 1 through 5 above the respective buttons correspond to the station button numbers on the tuner section.

(42) Cassette Control Buttons

These buttons are used to control the tape transport mechanism. Press **■** button to disengage playback, record, fast-forward, or rewind mode.

Use **●** button when you wish to record: press this button to put the deck in the recording standby state, and then press **II** button to start the tape.

Press **◀** button to rewind tape.

Press **▶** button to play back tape.

Press **▶▶** button to advance tape rapidly forward.

Press **II** button for temporary suspension of tape motion during recording or playback. Pressing the button a second time will restart the tape, returning the tape deck section to mode before interruption.

(43) Start/Reject Button

Use this button to control the turntable. Press the button to start the play, and press it a second time to stop the play, and the tone arm returns to the arm rest.

(44) Volume Control Buttons/ Audio Muting Button

The VOLUME UP and DOWN buttons regulate the volume level. Keep the UP button pressed to raise the level, and the DOWN button pressed to reduce it. The volume control knob on the RCX-860 will turn automatically by means of the built-in motor in response to the activation of the volume control buttons on the remote transmitter unit.

The MUTE button is used to cause an immediate, large reduction in volume level. Pressing the button a second time will restore the previous volume level.

OPERATION

- The RCX-860 is a stereo-cassette-tuner-amplifier featuring a tuner section that has a quartz PLL synthesizer, tape deck section with full-logic tape transport control, and separate remote transmitter unit.

The RCX-860L can receive AM broadcasts in either LW or MW modes.

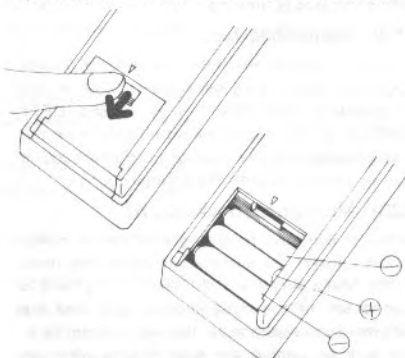
- The front panel controls govern all available functions. With the separate remote transmitter unit, you can control power on/off, volume, selection of sources, recalling of preset broadcast stations, starting and rejecting of record play, and cassette transport mechanism — all with no need to move to the equipment and handle it directly.

- The power source of the memory circuit in the tuner section is the capacitor back-up type. If the power cord is unplugged, or if there is a power failure, the electric energy accumulated in the capacitor while the unit was on will retain station frequencies stored in the memory for up to approximately 12 hours. But note that the contents of the memory will be lost after that time has elapsed. (The memory is retained as long as the power cord is plugged into an AC outlet, regardless of the setting of power switch.)

- The tuner section memory preset allows one AM and one FM station frequencies to be entered per station button. Therefore a total of

10 stations (five AM and five FM) can be stored. On RCX-860L, five MW or LW station can be stored for AM.

- Fit three SUM-3 ("AA") dry batteries into the remote transmitter unit, correctly matching the polarity markings "+" and "-". The life expectancy of the batteries in the unit should be about two years. If the indicator lamp does not light up even if the control buttons are operated, or if the unit malfunctions, the cause



may be dead or weak batteries. Replace all three batteries with new ones.

- When you use the remote transmitter unit to control the system, the infrared eye of the unit should be oriented towards the target eye on the RCX-860. If there is an obstacle between the transmitter and the target eye that blocks the path of the light beam, or if you are too far away from the RCX-860, remote control is impossible. Be sure that you are in a position where you can see the RCX-860 without obstruction, and not more than six meters away from the RCX-860.

- Before beginning operation, make sure that power cord connection for each component, DIN type cord connections for remote-control, and RCA cord connections, etc. are all correct.

- Always be sure to set the volume control to the minimum position before turning on power.

- Select speaker button A or B (or both) for the speaker system(s) you are going to use.

- When using headphones, set both speaker buttons to released (OFF) position.

- Set the tone controls, loudness button, balance control, etc. as desired.

Listening to FM or AM Broadcast

1. Set the tape monitor button to OFF.
2. Press FM or AM button on the function selector. On RCX-860L, press FM, MW or LW button.
3. Tune in to the desired station by means of tuning buttons or station buttons.
4. Raise the volume to the desired level.

TUNING:

The unit is designed to permit three modes of tuning: auto tuning, manual tuning, and preset memory tuning.

• Auto Tuning (for FM Reception Only)

Set FM auto/manual button to the released position. Press Tuning button, UP or DOWN. Automatic scanning of FM band begins. Scanning stops when it reaches a point where the input signal exceeds a certain acceptable level. The receiving frequency is held on the readout. To tune in to another station, press DOWN or UP button according to the frequency of the desired station.

• Manual Tuning

Set FM auto/manual button to the depressed position. A tap of the tuning button, DOWN or UP, will shift the tuning frequency in specified increments. If you keep the button pressed down, the frequency will change continuously. Release the button to stop frequency change.

• Preset Memory Tuning

Tune in to the desired station in either auto or manual tuning mode. Press the Memory Program button. The word "MEMORY" will appear on the frequency display. Then, press any station button, 1 through 5, to enter the frequency into the memory circuit. Thereafter, you may recall the same frequency any time simply by pressing the same button.

Note that the word "MEMORY" remains on the display panel for several seconds only; you should tap the appropriate station button to enter the station frequency during that time. If the word "MEMORY" disappears before you press the station button, entry cannot be made. In that case start again, following the above procedures. The above procedures should also be followed to change the station preset for a given station button.

Note 1: If you have turned off the unit, and turn it on again, the unit will tune in to the station frequency to which it was tuned immediately before turn-off.

Note 2: To go directly into the manual tuning mode from the auto tuning mode, depress the FM auto/manual button, and then press the tuning button, UP or DOWN. Scanning stops and you are now in the manual tuning mode.

Note 3: The remote transmitter unit permits preset memory tuning only.

Listening from Turntable

1. Set the tape monitor button to OFF.
2. Press PHONO button on the function selector.
3. Start the play, then raise the volume.

Note: The remote transmitter unit allows you to start and reject record play. Before operating the turntable by remote transmitter unit, make sure the speed and size selectors of the turntable are set properly according to the record to be played.

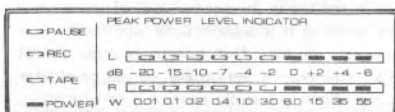
Playback and Recording using RCX-860 Tape Deck Section

• Tape Playback

1. Press the tape monitor button to ON.
2. Start playback.
3. Raise the volume to the desired level.

• Recording Program Source

1. Record the desired program source according to the procedures mentioned above.
2. Press REC (●) button to put the tape deck section in recording standby state.
3. Adjust the recording level for left and right channels with the recording level control so that the level indicator reading does not exceed 0dB position frequently or only briefly.



4. After adjusting recording level, press PLAY button on the RCX-860, or **II** (pause) button on the remote transmitter unit to start the tape.

Note 1: When you wish to record or play back using Dolby NR circuit, set the Dolby NR

switch to ON.

Set the tape selector appropriately according to type of tape used.

Note 2: When recording with microphones, the microphone plugs must be inserted properly into the left and right microphone jacks. Be sure to unplug the microphones when recording from other sources.

Note 3: During recording, operation of volume control, tone controls, etc. will have no effect on the signal being sent to the tape deck section.

Note 4: The remote transmitter unit allows control of STOP, REC, REW, PLAY, F.FWD and PAUSE functions.

Note 5: It is impossible to go directly into recording mode from playback mode. If you wish to record, be sure to press STOP (■) button first to stop the tape motion, and then go into the recording mode.

CAUTION:

Turning off unit power during playback or recording may damage the tape transport mechanism. Never cut the power without first making sure the tape is stopped.

External Tape Deck Playback and Recording

• **Playback**

1. Depress EXT. TAPE button.
2. Put external tape deck in playback mode.
3. Raise the volume to the desired level.

• **Recording**

1. On RCX-860, receive radio broadcast or play turntable.
2. Put the external tape deck in recording mode; recording will then begin.

• **Dubbing**

Dubbing (tape-to-tape copying) is possible only from external tape deck to the tape deck section of the RCX-860, not the other way.

1. Put the external tape deck in playback mode.
2. Put RCX-860 in recording mode (refer to the instructions for recording).

Note 6: The EXT. TAPE button should be depressed only when playing back the external tape deck. Be sure this button is in released position when listening from any other source.

HEAD CLEANING

The most frequent cause of failure to record in one or both channels, or of weak, distorted sound, is dirty tape heads and capstan. So, be sure to clean the heads, capstan, pinch roller and tape guides as often as possible using a "Q" tip dipped in ordinary rubbing alcohol or commercial liquid tape head cleaner. Thoroughly wipe the surface of the heads, capstan, roller and tape guide.

HEAD DEMAGNETIZING

The tape heads, capstan and tape guides gradually become magnetized with use, which will eventually affect the sound quality of your tapes. Demagnetizing should follow cleaning, but need not take place as often as cleaning, once after every 20 to 30 hours of use should suffice.

A demagnetizer may be purchased at a moderate cost from any dealer carrying tape recording accessories. Follow the instruction supplied with the demagnetizer.

Caution: Be sure to turn off the unit before you attempt demagnetizing.

PROTECTION CIRCUIT

The RCX-860 incorporates all possible safety measures by combining multiple protection circuits to prevent accident or damage.

If for some reason the protection circuit is activated, there will be a sudden cut-off of sound from the speakers.

If no sound is produced, the reason may be due to the functioning of the protection circuit.

First, turn off the power and disconnect the plug from the electrical outlet, and check to be sure that the speaker cables are not short-circuited. Also check to make sure the impedance of each speaker is 8 ohms or over (if it is below 8 ohms, the unit will be overloaded due to low impedance).

After checking the above points, turn the power on, and the protection circuit will be automatically deactivated and the unit will start functioning again.

If the protection circuit is activated again despite taking the above action, cut off the power supply from your entire audio system and consult your dealer or a qualified electrician.

Note: The protection circuit will normally operate to prevent a popping noise from being generated upon turning on the power. No sound is produced for several seconds after turn-on.

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 a 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.

TAPE SELECTOR SETTING GUIDE

TDK	.....	OD, AD	.....	NORMAL
FUJI FILM	.....	ER, DR	.....	NORMAL
SONY	.....	AHF, BHF	.....	NORMAL
MAXELL	.....	UD, XL-I	.....	NORMAL
SCOTCH	.....	MASTER I	.....	NORMAL
BASF	.....	Super LH-I, LH	.....	NORMAL

TDK	.....	SA, SA-X	.....	SPECIAL
FUJI FILM	.....	UR	.....	SPECIAL
SONY	.....	JHF	.....	SPECIAL
MAXELL	.....	XL-II, X II-S	.....	SPECIAL
SCOTCH	.....	MASTER II	.....	SPECIAL
BASF	.....	SCR	.....	SPECIAL

TDK	.....	MA	.....	METAL
FUJI FILM	.....	SUPER RANGE	.....	METAL
SONY	.....	METALLIC	.....	METAL
MAXELL	.....	NEW-MX	.....	METAL
SCOTCH	.....	METAFINE	.....	METAL

SPECIFICATIONS

AMPLIFIER SECTION

Continuous Power Output	40 watts* per channel, min. RMS both channels driven into 8 ohms from 20 to 20,000Hz with no more than 0.06% total harmonic distortion.
Continuous Power Output (DIN). . . . .	.60 watts per channel (1kHz, 4 ohms, 1% THD)
Total Harmonic Distortion. (20 to 20,000Hz, from AUX)	No more than 0.06% (continuous rated power output) No more than 0.06% (continuous 1/2 rated power output) No more than 0.06% (1 watt per channel power output, 8 ohms)
Intermodulation Distortion (60Hz : 7kHz = 4 : 1)	No more than 0.06% (continuous rated power output) No more than 0.06% (continuous 1/2 rated power output) No more than 0.06% (1 watt per channel power output, 8 ohms)
Output: Speaker	A or B (8-16 ohms)
Headphone.	4-16 ohms
Damping Factor. . . . .	.25 (20 to 20,000Hz, 8 ohms)
Input Sensitivity/Impedance:	
PHONO . . . . .	.27 mV/47 kohms
EXT. TAPE . . . . .	.150 mV/50 kohms
Output Level (EXT. TAPE) . . . . .	.330 mV/2.2 kohms
Frequency Response:	
PHONO . . . . .	.30 to 15,000Hz, ± 0.5 dB (RIAA STD)
Tone Control:	
BASS.	± 10 dB, 100Hz
TREBLE.	± 10 dB, 10kHz
Loudness Contour	+10dB (100Hz), +4dB (10kHz) (volume control set at -40dB position)
Signal-to-Noise Ratio (IHF, A network):	
PHONO . . . . .	.78dB

FM TUNER SECTION

Usable Sensitivity (mono) . . . . .	.10.8dBf/1.9 μ V 26dB, 75 ohms (DIN)
50dB Quieting Sensitivity:	
Mono . . . . .	.18.4dBf/4.6 μ V
Stereo . . . . .	.38.2dBf/45 μ V
Signal-to-Noise Ratio (at 65dBf):	
Mono . . . . .	.70dB
Stereo . . . . .	.65dB
Harmonic Distortion (at 65dBf):	
100Hz . . . . .	.0.2% (mono), 0.3% (stereo)
1kHz . . . . .	.0.4% (mono), 0.4% (stereo)
6kHz . . . . .	.0.6% (mono), 0.6% (stereo)
Frequency Response . . . . .	.30 to 15,000Hz, +0dB, -2.0dB
Capture Ratio . . . . .	.1.5dB
Alternate Channel Selectivity (± 400 kHz) . . . . .	.62dB
Spurious Response Ratio. . . . .	.60dB
Image Response Ratio . . . . .	.40dB
IF Response Ratio . . . . .	.90dB
AM Suppression Ratio . . . . .	.50dB
Stereo Separation . . . . .	.100Hz/1kHz/10kHz, 40dB/43dB/30dB
Subcarrier Product Ratio. . . . .	.55dB
SCA Rejection Ratio . . . . .	.60dB
Antenna Input. . . . .	.300 ohms balanced, 75 ohms unbalanced

AM TUNER SECTION

	MW	LW (RCX-860L)
Sensitivity . . . . .	.300 μ V/m	800 μ V/m
Selectivity . . . . .	.25dB	25dB
Signal-to-Noise Ratio . . . . .	.40dB	32dB
Image Response Ratio . . . . .	.35dB	58dB
IF Response Ratio . . . . .	.30dB	50dB
Antenna . . . . .	.Built-in ferrite bar antenna	

CASSETTE DECK SECTION

Heads: Rec/Play.	High B "super hard" permalloy
Erase.	Ferrite core
Track . . . . .	.4-track/2-channel
Tape Speed . . . . .	.4.8cm/sec.
Motor. . . . .	.Electronic DC Governor
Wow and Flutter . . . . .	.0.15% (DIN) .0.048% (WRMS)
Distortion (REC/PB, 400Hz) . . . . .	.1.2% (METAL)
Frequency Response (-20dB).	Normal, LH 50 to 15,000Hz ± 3 dB Chromium 50 to 15,500Hz ± 3 dB Metal 50 to 16,000Hz ± 3 dB
Signal-to-Noise Ratio (WTD. 0dB=580mV, Chromium)	Dolby NR in: 68dB Dolby NR out: 60dB
Input Sensitivity/Impedance.	MIC 0.4mV/10 kohms LINE 40mV/17 kohms
Fast Wind Time (C-60) . . . . .	.100 seconds
Tape Selector	BIAS EQUALIZER
Normal, LH . . . . .	.100% 120 μ s
Chromium . . . . .	.130% 70 μ s
Metal . . . . .	.200% 70 μ s

MISCELLANEOUS

Power Requirement. . . . .	.120V/60Hz, 220V/50Hz, 240V/50Hz, or 120, 220, 240V/50-60Hz (switchable, depending on destinations)
Power Consumption . . . . .	.250 watts
Dimensions (Overall) . . . . .	.430 (W) x 230 (H) x 320 (D) mm/ 16-15/16" x 9" x 12-19/32"
Weight (net) . . . . .	.11.9kg/26.18 lbs.

TRANSMITTER UNIT

Range of Operation. . . . .	.6m
IC . . . . .	.1
Transistor . . . . .	.3
Diode . . . . .	.2
Ceramic Oscillating Element. . . . .	.1
Infrared Light-Emitting Diode. . . . .	.2
Light Emitting Diode (LED). . . . .	.1
Power Requirement. . . . .	.SUM-3 (UM-3) dry battery (1.5VDC) x 3
Dimensions (Overall) . . . . .	.74 (W) x 24 (H) x 172 (D) mm 2-29/32" x 15/16" x 6-25/32"
Weight . . . . .	.185g/6.53 ozs.

- Specifications and design subject to possible modification without notice.
- Dolby and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.
Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

*Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Claims for Amplifiers (applicable to the U.S.A. only).