

# OPERATING INSTRUCTIONS

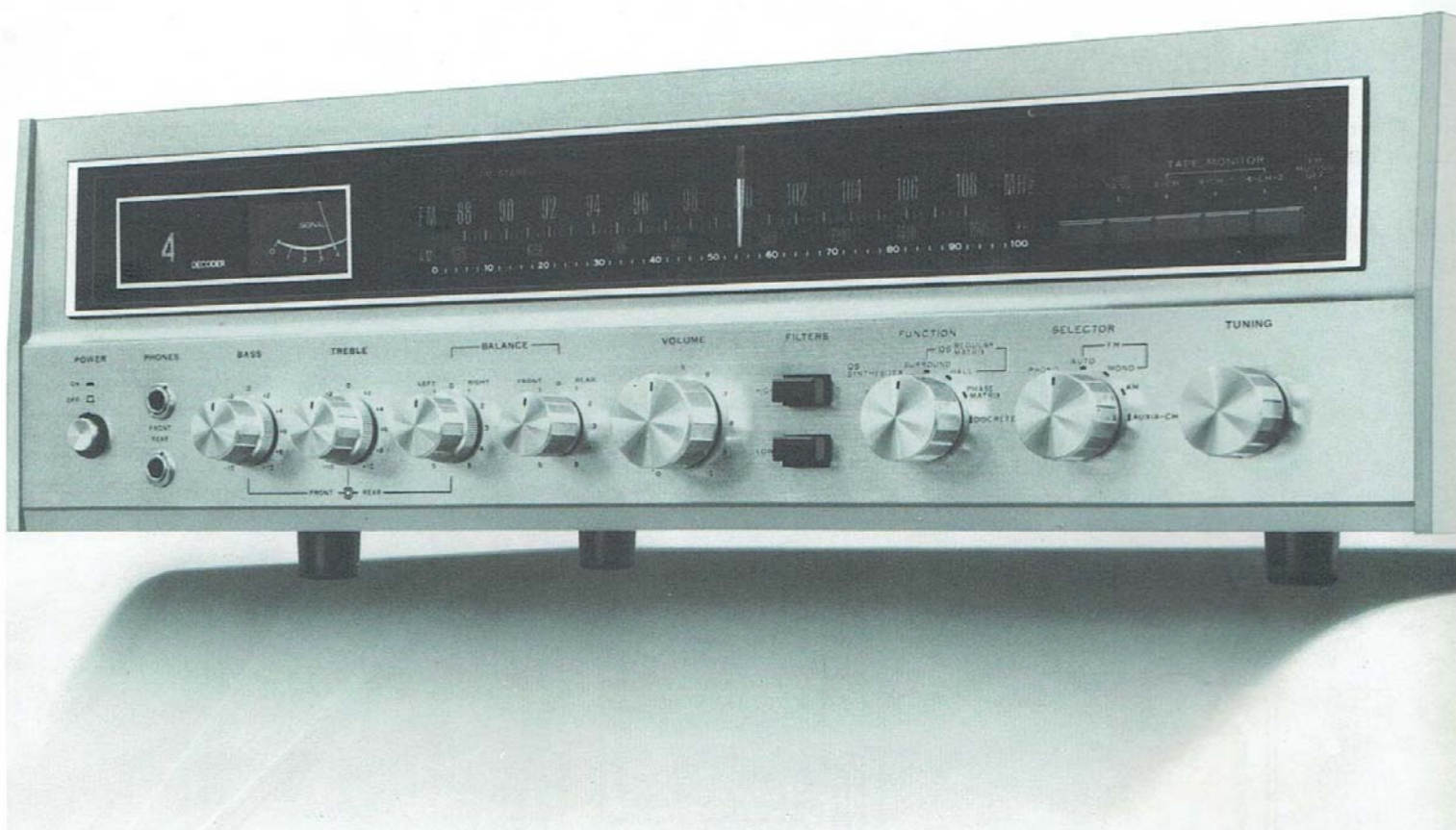
## 4-CHANNEL RECEIVER

# SANSUI QRX-3000



*Sansui*

SANSUI ELECTRIC CO., LTD.



## ● FUNCTIONAL FEATURES

- ◇ Includes the exclusive QS Synthesizer circuit to convert conventional 2-channel program sources into 4-channel stereo sound.
- ◇ The built-in QS regular matrix system 4-channel decoder reproduces a perfect 4-channel sound field from encoded 4-channel program sources.
- ◇ Offers two 4-channel tape record/playback circuits, and one 2-channel tape record/playback circuit.
- ◇ Four-channel front input can be exactly in the same manner as 2-channel inputs, for either ordinary 2-channel reproduction or 4-channel reproduction through the built-in QS Synthesizer/Decoder circuit.
- ◇ Provides for separate adjustment of the front and rear tone quality.

**QS** REGULAR MATRIX  
4-CHANNEL STEREO



# IMPORTANT PRECAUTIONS

To keep the set in top condition all the time, observe these precautions:

1. Install the set where there is a good circulation of air.
2. Do not obstruct the ventilation opening of the cabinet.
3. Avoid an extremely hot or dusty place.
4. If the set is placed on a shelf, be sure that the shelf board is thick and strong.

## ABOUT THE FM DE-EMPHASIS SWITCH

Use this rear panel switch only if you move to an area where the FM de-emphasis characteristic is different. It is adjusted to the correct de-emphasis characteristic of your area in our factory prior to shipment, so there is normally no need to touch it. The correct de-emphasis is  $50\ \mu\text{sec.}$  for Japan and Europe, and  $75\ \mu\text{sec.}$  for the U.S.A. and southeast Asia.



## ABOUT THE VOLTAGE ADJUSTMENT

Your set is adjusted to operate at the correct power supply voltage of your area prior to shipment from our factory.

If you move after purchasing it or sent it as a gift to a friend living in an area where the voltage is different, it may be necessary to adjust its Voltage Selector.

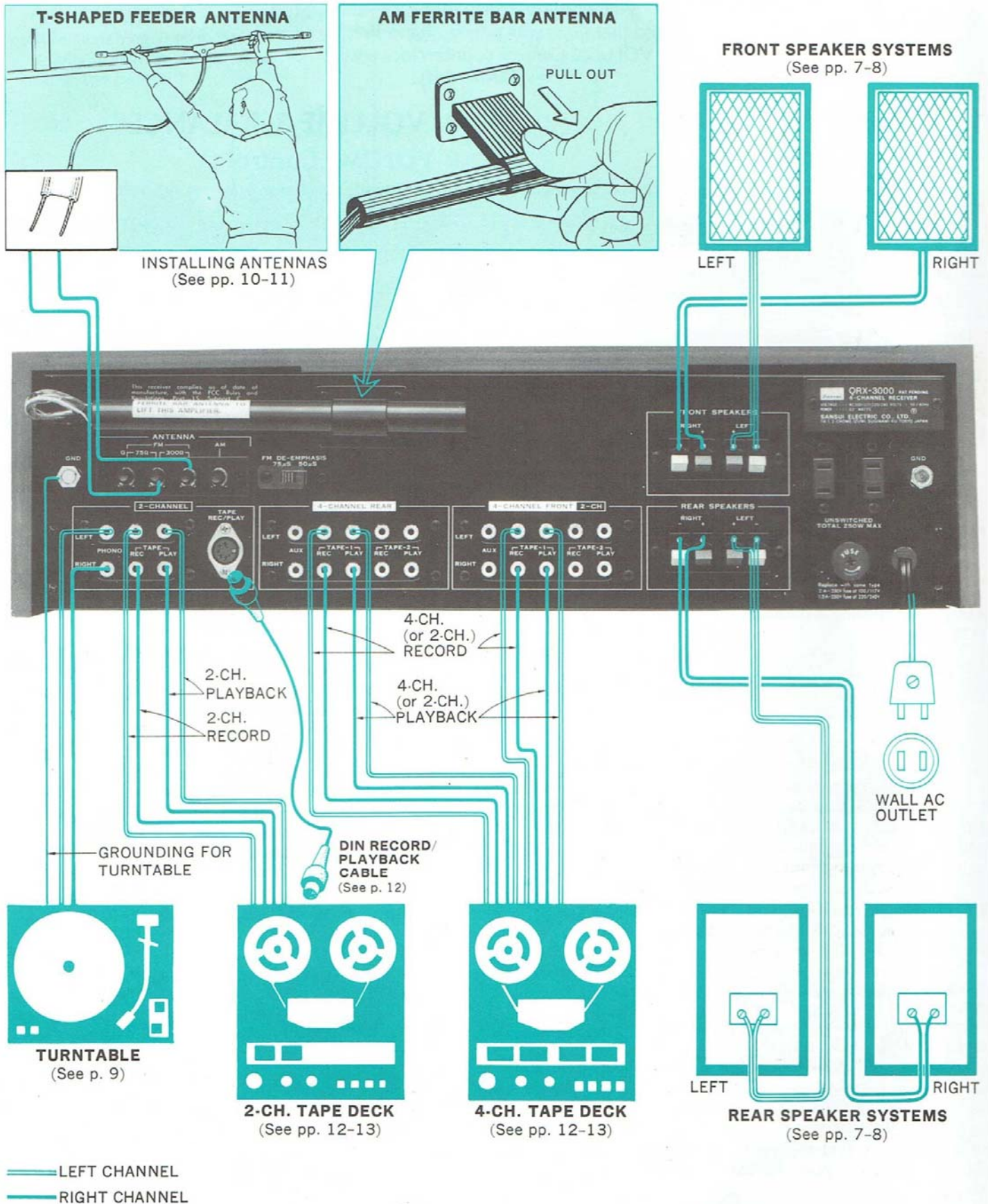
To adjust it, remove the two screws securing the name plate on the rear panel, then set the arrow mark on the Voltage Selector Plug to the correct voltage indication (100, 117, 220 or 240 volts). It may be necessary to replace the power fuse as well whenever the voltage has changed. For operation at 100 to 117 volts, use a 2-ampere fuse. For operation at 220 to 240 volts, use a 1.5-ampere one.



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# REAR-PANEL CONNECTIONS



● For detailed instructions on how to connect various instruments, turn to other pages.



# BASIC OPERATING PROCEDURES

- When you operate the various switches, it is suggested that you reduce the volume first by turning the VOLUME Control counterclockwise.

## 1. POWER

### ① POWER Switch

Push the POWER Switch once to turn the set on, once more to turn it off.

## 2. SELECTING PROGRAM SOURCES

### ② SELECTOR Switch

Adjust to the program source (except tape) you to hear.

**PHONO:** For playing records.

**FM AUTO:** For receiving FM stereo or mono broadcasts. When an FM stereo broadcast is received, the legend FM STEREO appears in the dial window. In this position, the set's QS Synthesizer Decoder is automatically adjusted for better FM reception.

**FM MONO:** If an FM stereo broadcast is disturbingly noisy for some reason, reset the switch to this position and hear it in mono. Noise decreases considerably.

**AM:** For receiving AM broadcasts.

**AUX (4-CH):** To reproduce whatever program source is connected to the rear-panel 4-CHANNEL AUX inputs. Whenever reproducing a 4-channel discrete source, be sure to set the FUNCTION Switch to DISCRETE.

### ③ TAPE MONITOR Switches

Use them to reproduce a recorded tape or to monitor a recording that you are making. Push the one that governs the record/playback circuit connecting the particular tape deck in use at the moment. At all other times, push it once more to restore it to the normal position.

**2-CH:** To play back on the 2-channel tape deck connected to the 2-CHANNEL TAPE inputs and outputs.

**4-CH-1, -2:** To play back on the 4-channel tape deck connected to the 4-CHANNEL TAPE-1 or -2 inputs and outputs.

◇ Set the SELECTOR Switch to a position other than FM AUTO whenever you push the 2-CH (or 4-CH) TAPE MONITOR Switch to reproduce a 2-channel recorded tape and Synthesize the reproduced sound into 4-channel, or if the tape contains an encoded 4-channel recording, to decode it back to 4-channel. In both cases, be sure to adjust the FUNCTION Switch also.

With the SELECTOR Switch set at FM AUTO, turning the FUNCTION Switch to QS SYNTHESIZER or QS REGULAR MATRIX automatically adjusts the set's Synthesizer Decoder to receive better FM reception.

## 3. VOLUME & BALANCE

### ④ VOLUME Control

Use to adjust the overall sound volume. Turn it clockwise to raise it.

### ⑤ Main Balance (FRONT-REAR) Control

### ⑥ Left-Right Balance (FRONT LEFT-RIGHT, REAR LEFT-RIGHT) Controls

The standard speaker arrangement for 4-channel sound reproduction is the so-called 2-2 system where four speaker systems are placed to form a square, with you, the listener, sitting at the dead center. This means the balance controls should normally be set at their respective center positions, but could be adjusted to suit your own speaker arrangement, listening position, the nature of program source or your personal taste.

The suggested procedure is to adjust the left-right balance separately in the front and rear, then balance the front and rear.

The left-right balance is adjusted with the LEFT-RIGHT BALANCE Controls. The outer knob part is for the front channels, the inner ring part for the rear channels. Turning these controls clockwise raises the sound volume from the respective left channels; turning them counterclockwise increases that from the right speaker systems.

The front-rear balance is adjusted with the MAIN BALANCE Control. Turning it clockwise increases the front channel sound volume, while turning it counterclockwise increases the rear channel sound volume.



# CONTROLLING SOUND TO YOUR TASTE

## SIGNAL METER

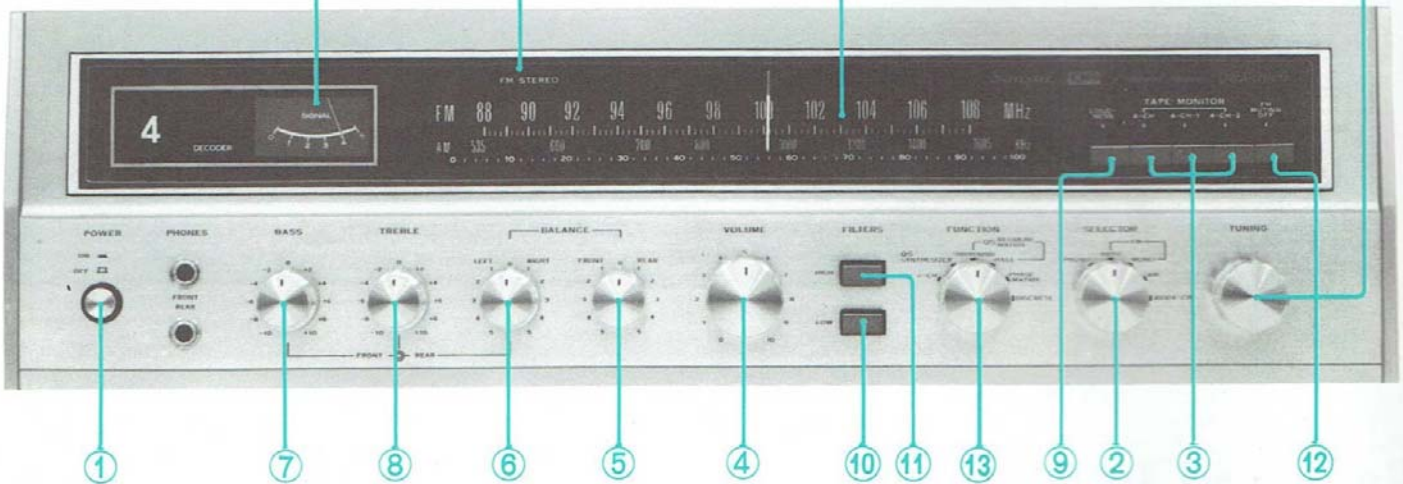
(Tune in desired FM or AM station while watching this meter. Adjust Tuning Control for maximum deflection of the pointer.)

## FM STEREO INDICATOR

(Lights when set is tuned in on FM station broadcasting in stereo)

## DIAL SCALE

## TUNING CONTROL



## TONAL QUALITY

### ⑦ BASS Control

### ⑧ TREBLE Control

The strength of low-frequency sound, such as is produced by a bass, is adjusted with the BASS Control. Turning it clockwise from the center emphasizes the lows, and turning it counterclockwise de-emphasizes them. On each control, the outer knob part adjusts the front channels, while the inner ring part adjusts the rear channels.

Likewise, the strength of high-frequency sound, such as generated by cymbals, is adjusted with the TREBLE Control. Operation is the same as for the BASS Control.

To emphasize the middle-frequency sound, such as human voice, turn both the BASS and TREBLE Controls counterclockwise for reduced bass and treble strengths. If you feel the sound volume is low after this adjustment, raise the overall volume with the VOLUME Control.

### ⑨ LOUDNESS Switch

Pushing this switch when listening at a low volume level accents the lows and highs properly to render the reproduced sound more realistic. This compensates for the fact that the human ear becomes insensitive to the lows and highs as the sound volume is reduced.

## ELIMINATING NOISE

### ⑩ LOW FILTER Switch

### ⑪ HIGH FILTER Switch

Use the LOW FILTER Switch to eliminate low-frequency noise. Pushing it reduces disturbing low-frequency noise such as may be produced by a turntable motor.

If high-frequency noise disturbs you, push the HIGH FILTER Switch. Surface noise from a worn record, fluorescent lamp noise and other kinds of high-frequency noise will be reduced.

◆ If no low- or high-frequency noise disturbs you, be sure to keep both switches off. Both switches affect all four channels.

### ⑫ FM MUTING OFF Switch

When turning on the FM band, noise is usually heard between stations that is peculiar to FM broadcasting. However, as an FM muting circuit is built into this set, no such noise will be normally heard as you tune in an FM station, **unless** you push the FM MUTING OFF Switch.

When the built-in FM muting circuit is at work, it is possible that weak or distant FM stations are muted along with the noise, making it impossible to tune them in. If this happens, release the muting circuit by pushing the FM MUTING OFF Switch first and then tune



# 2-CHANNEL VS. 4-CHANNEL

**DIGITAL INDICATOR**  
(Indicates whether set is operating in 2- or 4-channel mode)



## 2-CHANNEL TO 4-CHANNEL CONVERSION/4-CHANNEL REPRODUCTION

### ⑬ FUNCTION Switch

Use to select the sound reproduction mode most appropriate for your 2-channel or 4-channel program source.

**2-CH:** To hear the sound from the front two speakers only in 2-channel stereo.

**QS SYNTHESIZER:** To convert (synthesize) a conventional stereo program source into 4-channel sound. The exclusive built-in QS Synthesizer operates to transform your room into a concert hall, theater or jazz club.

**QS REGULAR MATRIX:** To 'decode' and reproduce 4-channel program sources (records, tapes and their broadcasts) encoded into a 2-channel form with the QS regular matrix system, back into 4-channel sound.

Select the HALL or SURROUND mode to suit the type of music or your personal preference. The QS Vario-Matrix circuit, another exclusive with Sansui, will reconstruct the original music performance more faithfully than ever.

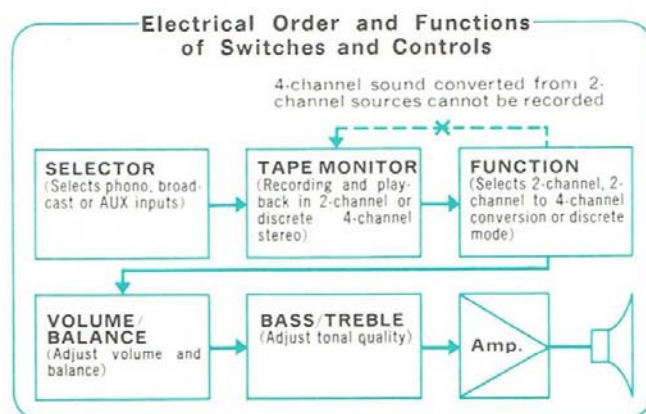
**HALL:** To enjoy the full effect of concert hall performances that you would experience if you were seated front and center in a concert hall in person. The orchestra or the singer will be reproduced in the front, and the hall ambience (indirect sounds reflected by the walls, ceiling, chairs and other objects inside the hall) in the rear.

**SURROUND:** To surround yourself with the performing orchestra or band. The musical instruments will be positioned all around you. The QS regular matrix is particularly effective in this mode.

**PHASE MATRIX:** To reproduce program sources encoded with the CBS SQ system. The front-back logic of the QS Vario-Matrix circuit will work in coordination with an extra circuit.

**DISCRETE:** Set to this position whenever you wish to reproduce discrete 4-channel sound from program sources connected to 4-CHANNEL AUX or TAPE inputs on the rear panel.

In such a case, it is also necessary to adjust the SELECTOR Switch or the 4-CHANNEL TAPE MONITOR Switch to select the desired program source.

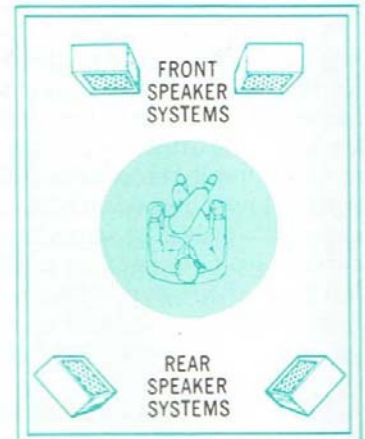


# PLACEMENT OF SPEAKER SYSTEMS

The placement of your four speaker systems is a very important consideration to enjoy 4-channel sound at its very best. Three basic placement systems will be described below. Experiment with them and find one that best suits the type of music or the layout of your room.

## 2-2 System

This is the standard 4-corner placement system, and is effective for hearing quiet background music, popular music, rock music and others. It is recommended for reproducing QS-encoded 4-channel records or discrete 4-channel tapes.



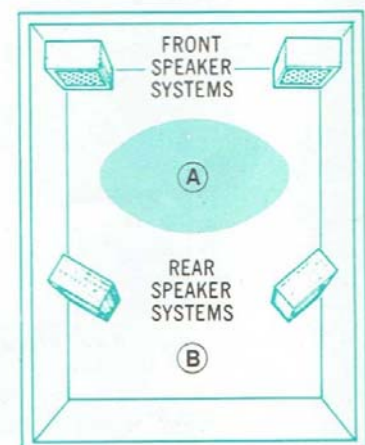
## Front 2-2 System

This system moves the rear two speakers to your front, and is good for objective appreciation of music.



## 2-2/ Front 2-2 Compatible System

If your room is deep, you can place the rear speaker systems as illustrated and enjoy either system. To create the 2-2 system, situate yourself near point (A); to enjoy the front 2-2 system, sit near point (B).





# CONNECTION OF SPEAKER SYSTEMS

## CONNECTING SPEAKER SYSTEM

This set connects a speaker system with an impedance of 4 to 16 ohms in each of the four channels. Connect the front two speaker systems to the FRONT SPEAKERS terminals on the rear panel, and the rear two speaker systems to the REAR SPEAKERS terminals. Be sure not to confuse the left and right channels, the plus and minus polarities at the terminals of the set and on the systems.

If you wish to connect two pairs of speaker systems, in parallel, either to the speaker terminals, it is absolutely important that each speaker system has an impedance of 8 ohms or more. The impedance of a speaker system is usually indicated on its back, so be sure to check it out before connecting. If a speaker system with a lower impedance is ever connected, it could eventually cause the set to break down. This is because connecting two speaker systems in parallel, one or both of which has a lower impedance than 8 ohms, is equivalent to connecting a speaker system having an impedance lower than 4 ohms to the set.

## CONNECTING HEADPHONES

Headphones are connected to the PHONES jacks on the front panel. To hear the front-channel sound, plug a pair of headphones into the FRONT jack. To hear rear-channel sound, plug one into the REAR jack. When a pair of headphones is connected, the sound from the speaker systems will be automatically cut off.

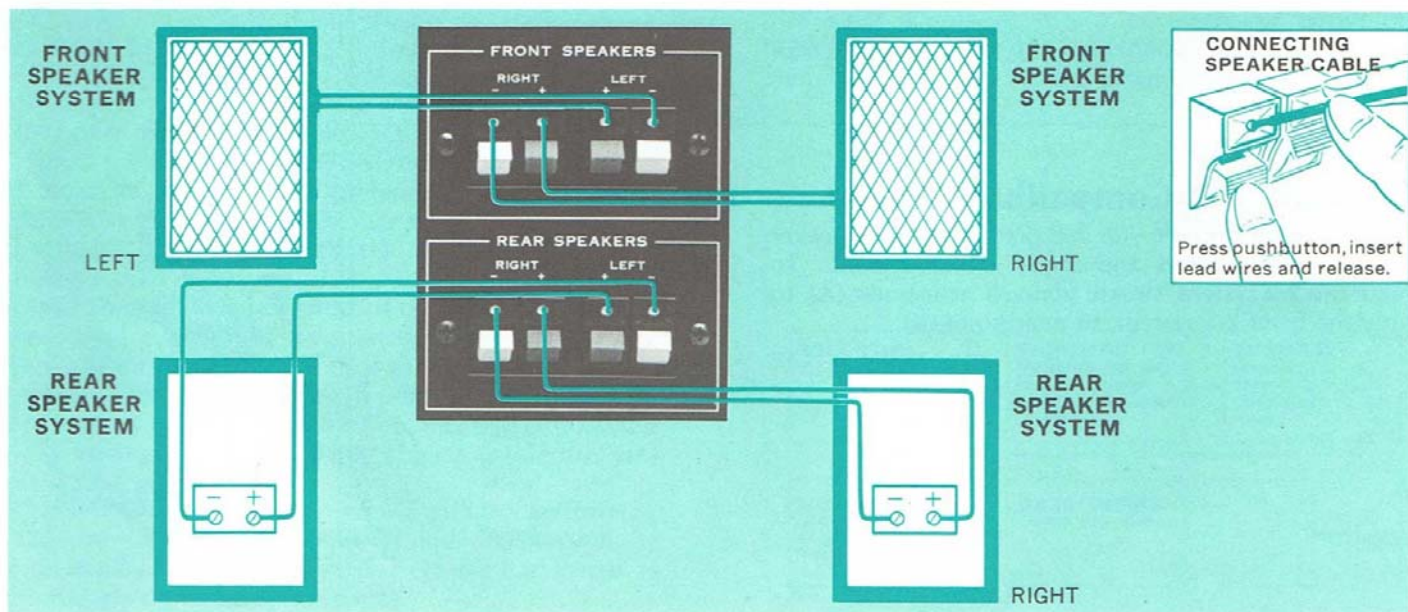
## IF SPEAKER SYSTEMS ARE OUT OF PHASE

If you were careless when connecting the speaker systems and the plus and minus polarities are not in the same order for the left speaker system and the right speaker system, they would be reverse-phased. This will cause a 'drop-out' of sound at the extreme ends and the middle of the line between the two speaker systems, creating a sense of discontinuation and damaging the sense of stereo perspective. Also, the bass sound would lose much of its powerfulness and become rather unnatural.

While wrong connection of plus and minus polarities is most commonly seen at the speaker terminals, it could also happen in the phono cartridge or at the time of connecting various program source components.

Once that condition is corrected and the polarities are in order, you can detect it by reproducing a mono source (such as an AM broadcast). Sound will seem to come from a point halfway between the two speakers.

## CONNECTIONS





# PLAYING RECORDS

## SELECTOR

PHONO



1. Set the SELECTOR Switch to PHONO.
2. Operate your turntable to play the record.
3. Adjust the FUNCTION Switch to hear the record in either 2-channel or 4-channel stereo. In other words:

\* If you want to hear in 2-channel stereo using only the front speaker systems, set the control to 2-CH. Use the same position for any monophonic record also.

If you want to convert your stereo record to 4-channel, set the control to QS SYNTHESIZER.

To listen to a 4-channel record produced with the Regular Matrix System, set the control to QS REGULAR MATRIX.

To hear a 4-channel record produced with the SQ system, set it to PHASE MATRIX.

If you have a discrete 4-channel disc demodulator coupled to the 4-CHANNEL AUX inputs, and want to hear a discrete 4-channel record, set the control to DISCRETE. The SELECTOR Switch must be turned to 4-CH AUX at the same time.

## HOW TO USE AUX INPUTS

The term AUX is an abbreviation of the English word 'auxiliary.' If your turntable is equipped with a crystal or ceramic cartridge, connect it to these inputs.

The AUX inputs have the same electrical function as the TAPE PLAY inputs, and so may be used, if necessary, to connect a tape deck or tape player. Use them if the TAPE PLAY inputs of the set are already occupied for some other purpose. Tape playback—but not recording—will become possible.

Of course, a tuner or an amplifier-equipped adaptor may also be connected there. Since the AUX inputs have an input sensitivity of 150mV, almost any audio instrument having an output voltage of 150mV or so can be connected. To see if any particular instrument can be connected to the AUX inputs or not, consult its operating instructions (especially, its specifications) or check with our dealer.

Of the four inputs marked 4-CHANNEL AUX, the FRONT ones may be used in the same manner as the 2-channel inputs. Furthermore, any 2-channel signals fed into these FRONT inputs may be converted to 4-channel by the matrix circuit built into this set.

## CONNECTIONS



**TURNTABLE**  
(with Magnetic Cartridge)

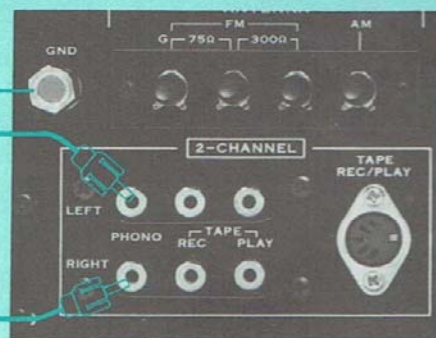
LEFT

RIGHT

### GROUNDING WIRE

Be sure to connect grounding terminal (or lead) of turntable or other instrument to GND terminal of set. Hum noise may be suppressed.

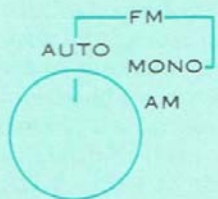
● If your turntable has crystal or ceramic cartridge, connect it to AUX inputs instead of PHONO inputs.





# RECEIVING RADIO BROADCASTS

## SELECTOR



1. Set the SELECTOR Switch to FM AUTO or AM (to FM AUTO to receive an FM broadcast, to AM to receive an AM broadcast). If the received broadcast is stereophonic, the legend FM STEREO will appear in the black dial window.
2. Tune in the desired station by adjusting the Tuning Control. If you wish to tune in a distant station, it may be wise to push the FM MUTING OFF Switch first.
3. If an FM stereo broadcast is received but disturbingly noisy, turn the SELECTOR Switch over to FM MONO and hear it in mono.
4. Adjust the FUNCTION Switch to hear the broadcast in 2-channel or 4-channel stereo. In other words:  
 If you are receiving an AM or FM mono broadcast (with the FM STEREO indicator remaining unit), set the control to 2-CH.  
 To hear a regular FM stereo broadcast in 2-channel stereo, set it to 2-CH. To convert such a stereo broadcast to 4-channel, set it to QS SYNTHESIZER.

To receive a 4-channel FM broadcast of the Regular Matrix System, set the control to QS REGULAR MATRIX. To receive a similar broadcast of the SQ system, set it to PHASE MATRIX. Tuning the SELECTOR Switch to FM AUTO adjusts the QS Synthesizer and QS Regular Matrix circuits in the set and prepares them for FM stereo reception.

## INSTALLING ANTENNA

### AM ANTENNA

Simply slide out the ferrite bar antenna built into the rear panel of the set.

### FM ANTENNA

Connect the T-shaped feeder cable antenna (supplied) to the FM 300Ω terminals on the rear panel. Stretch it to a full T shape while actually receiving your favorite FM station, and adjust its direction and position until the best reception is obtained.

## CONNECTIONS

The diagram illustrates the antenna connection process. On the left, the rear panel of the receiver is shown with the antenna terminals labeled 'ANTENNA' (FM 300Ω, AM) and 'GND'. A note above the terminals reads: 'This receiver complies, as of date of manufacture, with the FCC Rules and Regulations - Part 15, Subpart C - FERRITE BAR ANTENNA DO NOT LIFT THIS AMPLETTOR.' Below the terminals, an 'INDOOR FM ANTENNA' is shown being installed by a person. On the right, an 'AM FERRITE BAR ANTENNA' is shown being pulled out from the rear panel, with the instruction 'PULL OUT ANTENNA'.

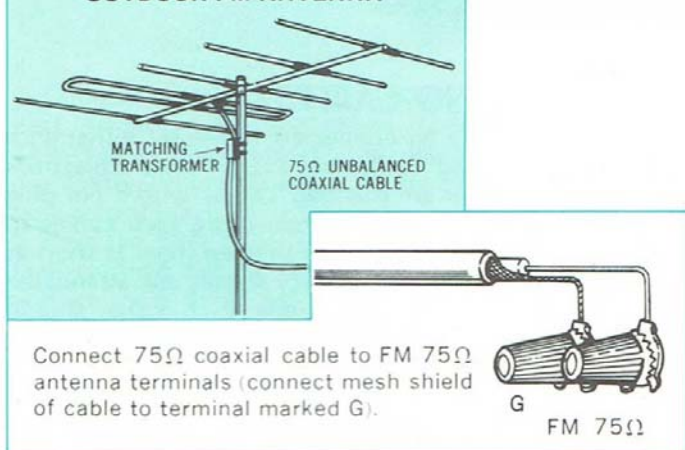
● If possible at all, it is always advisable to install an outdoor FM antenna.



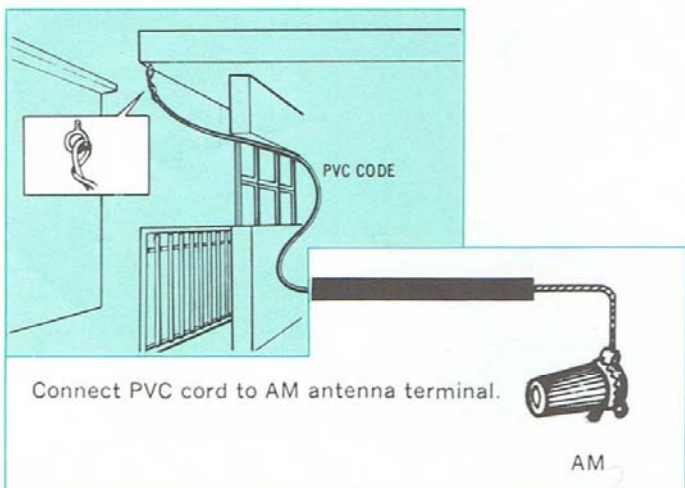
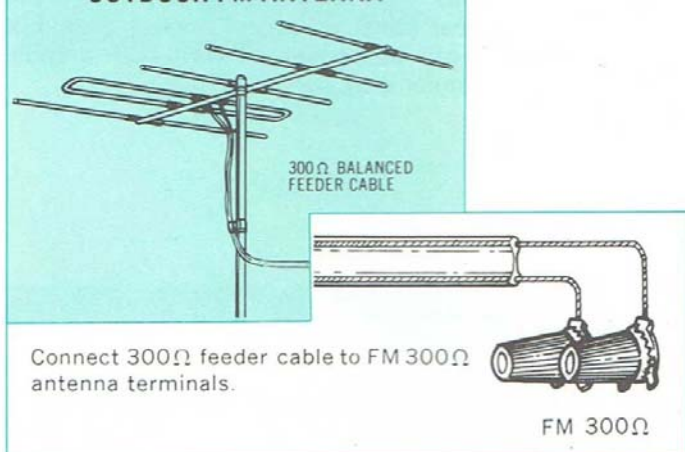
# HINTS FOR BETTER RECEPTION

It is always recommended to install outdoor antennas so that you may receive noise-free FM and AM broadcasts in good tonal quality. You will find an outdoor antenna—especially one for FM—particularly effective if you are remote from broadcasting or surrounded by high mountains, buildings or other obstacles.

## OUTDOOR FM ANTENNA



## OUTDOOR FM ANTENNA



## FM ANTENNAS

Outdoor FM antennas are commercially available with three, five or seven 'elements'. The more elements an antenna has, the farther distance it is generally intended to cover. You may connect an antenna to your set either by means of coaxial cable (75-ohm unbalanced) or feeder cable (300-ohm balanced). The former is more expensive but more effectively keeps off external noise—especially the ignition noise of nearby automobiles—and transmit the signals more efficiently.

It is advised that you decide on the type of antenna and cable to use after consultation with your Sansui dealer. Depending on the type of antenna, you may require an impedance matching transformer between the antenna and the connecting cable, and this too should be found out from the dealer.

**How to connect:** Connect the antenna to your set as illustrated in the diagram.

If you are using coaxial cable, connect it to the FM 75Ω terminals; if you are using feeder cable, connect it to the FM 300Ω terminals.

### <Note for Installing>

- ◆ To avoid ignition noise produced by automobiles and motor-cycles, install the antenna as far away from the street as possible.
- ◆ As an antenna is directional, adjust its height and direction while actually receiving your favorite FM station.
- ◆ Be careful so that the antenna or the lead-in cable does not touch the electrical power line around your house.
- ◆ It is always advisable to keep the lead-in cable as short as possible.

## AM ANTENNA

Connect the PVC cord (supplied) to the AM antenna terminal, then stretch it to outside of your house.

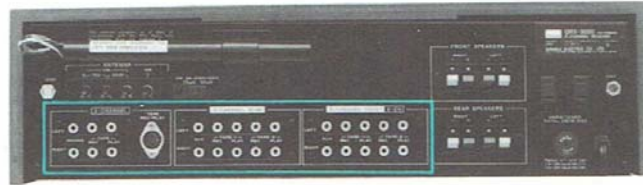
## GROUNDING

If you connect a grounding lead to the grounding terminal marked GND on the rear panel, the noise contained in radio broadcasts may decrease. It may also keep external noises from creeping into the set.

The grounding lead may either be standard PVC cord or enameled wire. Attach a small copper plate or carbon rod to its end, and bury it deep underground. Or if there is a special grounding wire or terminal in your room, or if your water piping is of iron, the grounding lead may be connected to them. But never connect it to your gas piping as it is dangerous.



# TAPE RECORDING & PLAYBACK



**Playback Procedure:** 1. Push either the 2-CH, 4-CH or 4-CH-2 TAPE MONITOR Switch, depending on which tape playback circuit is connecting the tape deck in use.  
2. Operate the tape deck to play the tape deck.  
3. If you want to, you may transform the reproduced sound into 4-channel by adjusting the FUNCTION Switch. If the tape is already recorded in discrete 4-channel, be sure to set the FUNCTION Switch to DISCRETE.

**Recording Procedure:** 1. Prepare the program source you wish to record and keep it ready to go. The SELECTOR Switch must be adjusted.

2. Operate the tape deck and start recording. Adjust the record levels with controls provided on the tape deck. The FUNCTION Switch, the volume and tone controls on the set do not affect the sound to be recorded. If you wish to convert 2-channel sound to 4-channel, it should be done at the time of playback.

3. To monitor the sound being recorded, follow the same procedure as for playback after making certain that the tape deck itself is adjusted to permit monitoring. If the tape deck only has a combined record/playback head, keep the TAPE MONITOR Switch off (protruding) and hear the sound before it is recorded.

## CONNECTING CABLES

Tape decks may be connected to the set either with so-called pin plug cables or a DIN record/playback cable. The former are shielded cables with a pin plug soldered on each end. If you are using such cables to connect your tape deck(s), try to keep them as short as possible because high-frequency signals are attenuated as they travel in a long cable. Each cable should never be longer than two meters (8 feet). If pin plug cables are supplied with your tape deck(s), it is advisable to use them.

The latter, a DIN record/playback cable, is a combined 2-channel record/playback cable manufactured to the German industrial standard and has a 5-pin plug on each of its ends. This set is equipped with a 5-pin socket on the rear panel to accept such a plug, but your tape deck can be connected with such a cable only if it has a similar plug also.

## CONNECTIONS

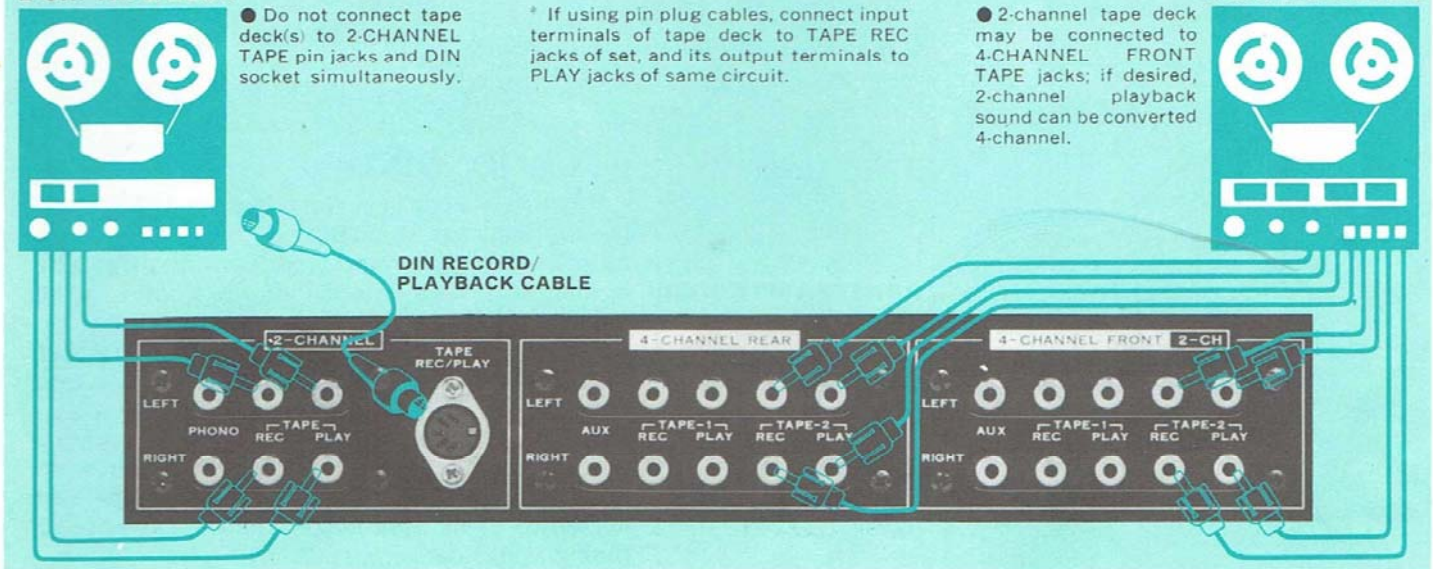
### 2-CH. TAPE DECK

● Do not connect tape deck(s) to 2-CHANNEL TAPE pin jacks and DIN socket simultaneously.

\* If using pin plug cables, connect input terminals of tape deck to TAPE REC jacks of set, and its output terminals to PLAY jacks of same circuit.

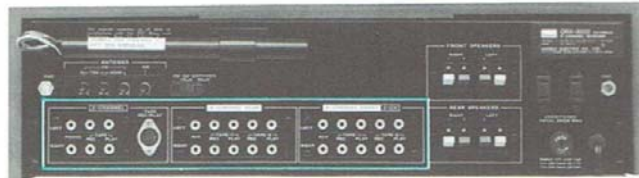
### 4-CH. TAPE DECK

● 2-channel tape deck may be connected to 4-CHANNEL FRONT TAPE jacks; if desired, 2-channel playback sound can be converted 4-channel.





# COPYING A RECORDED TAPE

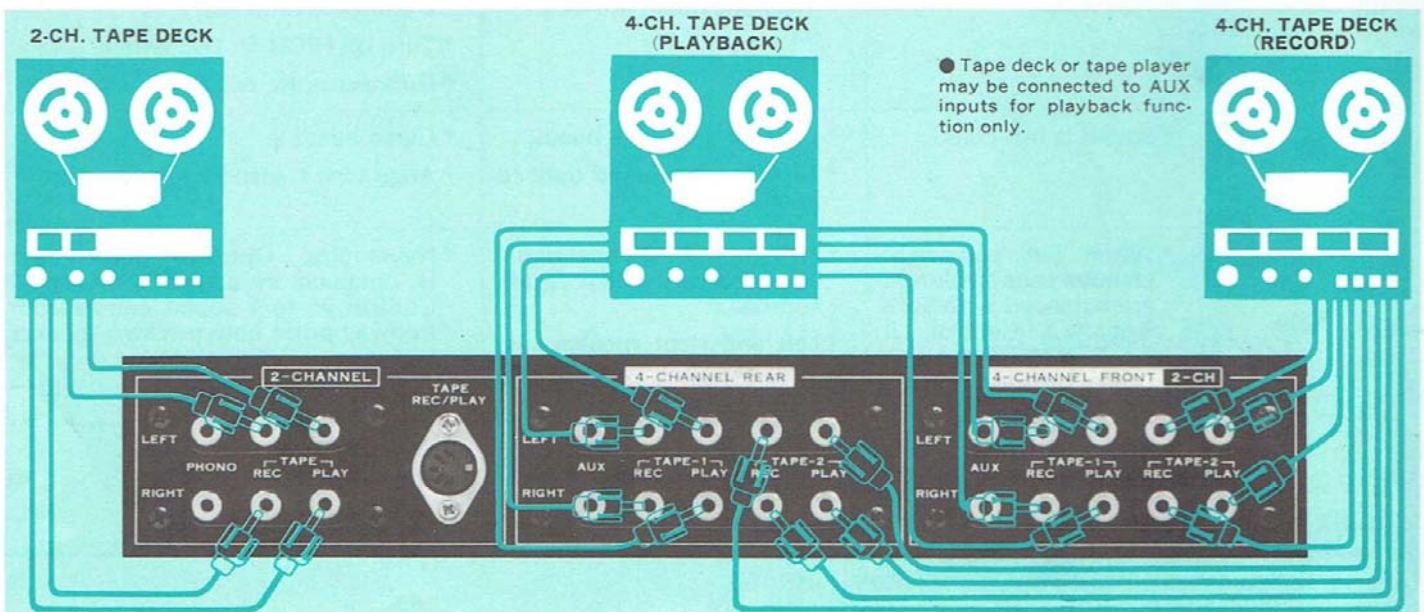


1. Connect the tape deck that you wish to use for playback, to either the 2-CHANNEL TAPE or 4-CHANNEL TAPE-1 jacks; then connect the one that you wish to use for recording to either of the two unused sets of tape record/playback jacks.
  2. Push the TAPE MONITOR Switch that represents the tape record/playback jack connecting the tape deck you are going to use for playback.
  3. Operate the two tape decks and start copying the recorded tape from one tape deck onto the other.
  4. If you wish to monitor the copying process, push the TAPE MONITOR Switch that represents the tape record/playback jacks connecting the tape deck are using to record.
- If that switch is kept off (protruding), you'll hear the sound recorded on the original tape before it is copied onto another tape.

## Note

1. The three tape record/playback circuits in this set are located in this set in the order of 2-CH, 4-CH-1 and 4-CH-2. Copying of a recorded tape is therefore possible from the 2-CH to the 4-CH-1 circuit, from the 2-CH to the 4-CH-2 circuit, or from the 4-CH-1 to the 4-CH-2 circuit. However, a 2-channel recorded tape cannot be converted to 4-channel during this copying process and copied onto a 4-channel tape deck.
2. If you are using either the 4-CH-1 or 4-CH-2 circuit to connect a 2-channel tape deck, be sure to use the FRONT jacks.
3. If you have a stereo tape deck connected to the 2-CHANNEL TAPE (or 4-CHANNEL FRONT TAPE) jacks and wish to convert a stereo recorded tape to 4-channel in playback, be sure to set the SELECTOR Switch to a position other than FM AUTO. But if the tape contains music recorded off FM, the Switch should be turned to FM AUTO. The reason for this caution is because turning the SELECTOR Switch to FM AUTO automatically adjusts the QS Synthesizer and QS regular matrix circuits to prepare them for optimum FM stereo reception.

## CONNECTIONS





# CONDITIONS MISTAKEN FOR BREAKDOWNS

PROGRAM SOURCE	SYMPTOM	PROBABLE CAUSE	WHAT TO DO
Tuner.	* Noise during AM reception.	* Interference by adjacent stations (called beat interference). * TV set is being used simultaneously.	* Peculiar to AM waves, and unavoidable to some extent. * Move TV set away from tuner and amplifier.
	* Noise heard at certain hours, in certain areas or over part of dial during AM reception.	* Interference by nearby electrical appliances.	* Attach noise limiter to appliance producing noise. * In some cases, can be eliminated by reversing power cord plug-AC outlet connections.
	* Pop noise during FM reception.	* Ignition noise from nearby automobile, motorcycle, etc.  Note: In many cases, high-frequency noise during radio reception cannot be entirely eliminated. Try turning on set's HIGH FILTER Switch or turning TREBLE Control counterclockwise.	* Adjust antenna location and height for maximum sensitivity. * Keep antenna away from streets.
Turntable.	* Hum noise.	* Unshielded cables used to connect turntable. * Minus (ground) wire of connecting cable is not connected completely. * Turntable motor or tonearm is not grounded.	* Use regular shielded cables. * Examine connecting cables, especially their plugs. * Connect grounding lead of turntable to amplifier's GND terminal.
	* Loud oscillating noise.	* Turntable is placed on top of or too close to speaker systems.	* Place thick cushion between turntable and speaker systems. * Change location of turntable and speaker systems.
	* Sound is shaky.	* Dust on record or pickup stylus. * Worn pickup stylus. * Improper stylus pressure.	* Clean record and pickup stylus. * Replace pickup stylus. * Adjust stylus pressure.
Tape Deck.	* Hiss noise.	* Magnetic heads are magnetized.	* Demagnetize heads. * Turn on HIGH FILTER Switch * Connect noise reduction adaptor.
	* Sound is not clear.	* Dust on magnetic heads. * Tape is not pressed tight to heads.	* Clean heads. * Align tape transport mechanism.
General.	* When left and right channel sound volumes are balanced with Set's BALANCE Control, it does not come to center position.	* Left and right channel signal strengths vary with program source. * Left and right speaker systems have different efficiencies.	* Never mind. Optimum stereo effect is obtained by adjusting BALANCE Control so that sound comes from midway point between two speaker systems.
	* Musical instruments and singer not located clearly.	* Left-right, plus-minus connections of speaker systems input cables are wrong.	* Examine connections one.



# SIMPLE MAINTENANCE HINTS

## AC OUTLETS

The two AC outlets provided on the rear panel of the set have a combined capacity of 250 watts. Be careful that the combined power consumption of the instruments you may connect to them does not exceed this figure. The power consumption of each instrument is usually indicated by its manufacturer.

The voltage supplied at these AC outlets is the same as the power supply voltage used for the set.

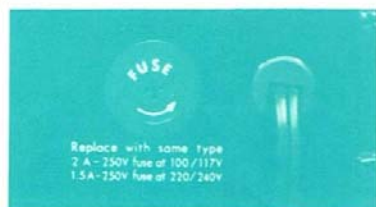


## SHOULD THE POWER FUSE BLOW

If no Selector Indicator should glow and the set simply remains dead even after you have turned on its POWER Switch, it is possible that its power fuse has blown.

If this happens, disconnect the power cord from the wall AC outlet at once and examine the power fuse on the rear panel. If you find it blown, replace it with a new glass-tubed fuse of the rated capacity (2-ampere for 100 to 117 volts, 1.5-ampere for 220 to 240 volts).

Never use a fuse of a different capacity or a piece of wire, even as a stop-gap measure, or serious danger could result.



## ABOUT THE QUICK-ACTING FUSES

When a Selector Indicator is glowing, if no sound comes out of one or more of the four speaker systems, examine their connections and operation once. If nothing is wrong with them, it is possible that the quick-acting fuse or fuses protecting the power transistor have blown.

If this should happen, disconnect the power cord from the wall AC outlet immediately and check the four quick-acting fuses inside the rear panel. To reach them, remove the wood case from the set. If you find any of them blown, discover and eliminate the cause of the blowout, and replace it with a new 2-ampere quick-acting fuse supplied. Probable causes of the blowout include excessively large input signals and a short-circuit at the speaker terminals.

## ABOUT SERVICING

Should anything ever go wrong with your set, or if you have any question about it, please contact the Sansui dealer from whom you purchased it or your nearest Authorized Sansui Service Station.



# SPECIFICATIONS

## AUDIO SECTION

### POWER OUTPUT

MUSIC POWER (IHF): 100 Watts into 4Ω  
76 Watts into 8Ω

CONTINUOUS RMS POWER (1kHz, each channel driven):  
19 Watts/Channel into 4Ω  
15 Watts/Channel into 8Ω

CONTINUOUS RMS POWER (1kHz, 4 channels driven):  
8 Watts × 4 into 8Ω

### TOTAL HARMONIC DISTORTION:

less than 0.5% at rated output

INTERMODULATION DISTORTION (70Hz: 7,000Hz=4:1  
SMPTE method): less than 0.5% at rated output

POWER BANDWIDTH (IHF): 20Hz to 30,000Hz

LOAD IMPEDANCE: 4Ω to 16Ω

DAMPING FACTOR: approximately 30 at 8Ω load

INPUT SENSITIVITY AND IMPEDANCE (1kHz, for rated  
output)

PHONO: 2.5mV 50kΩ

Max. Input Capability: more than 100mV at 0.5% distortion

AUX: 150mV 50kΩ

TAPE PLAY (PIN): 150mV 50kΩ

TAPE REC/PLAY (DIN): 150mV 50kΩ

### RECORDING OUTPUT

TAPE REC (PIN): 150mV

TAPE REC/PLAY (DIN): 30mV

FREQUENCY RESPONSE (at 1 Watt output, from AUX):  
30 to 30,000Hz ±1.5dB

EQUALIZATION: RIAA Curve (30 to 15,000Hz ±1dB)

CROSSTALK (1kHz, at rated output):  
better than 45dB

### HUM AND NOISE (IHF)

PHONO: better than 70dB

AUX: better than 75dB

### CONTROLS

BASS: ±12dB at 50Hz

TREBLE: ±12dB at 15,000Hz

LOUDNESS: +8dB at 50Hz, +3dB at 10,000Hz

### FILTERS

LOW: -10dB at 50Hz (6dB/oct.)

HIGH: -10dB at 10,000Hz (6dB/oct.)

SYNTHESIZER/DECODER: QS regular matrix system  
with Vario-Matrix circuit

## TUNER SECTION

### <FM>

TUNING RANGE: 88 to 108 MHz

SENSITIVITY (IHF): 2.5μV

TOTAL HARMONIC DISTORTION

MONO: less than 0.5%

STEREO: less than 0.8%

SIGNAL TO NOISE RATIO (mono):

better than 60dB

CAPTURE RATIO (IHF): less than 2.5dB

IMAGE REJECTION: better than 45dB

IF REJECTION: better than 60dB

SPURIOUS RESPONSE REJECTION:

better than 60dB

STEREO SEPARATION: better than 35dB at 1,000Hz

FREQUENCY RESPONSE: 30 to 12,000Hz  $\begin{matrix} +1dB \\ -2dB \end{matrix}$

ANTENNA IMPEDANCE: 300Ω balanced, 75Ω unbalanced

SELECTIVITY: better than 50dB

### <AM>

TUNING RANGE: 535 to 1,650kHz

SENSITIVITY (bar antenna): 50dB/m

IMAGE REJECTION: better than 80dB/m at 1,000kHz

IF REJECTION: better than 80dB/m at 1,000kHz

SELECTIVITY: better than 25dB

## POWER REQUIREMENTS

VOLTAGE: 100, 117, 220, 240V

CONSUMPTION: 62 Watts (rated), 110VA (max.)

DIMENSIONS:  
140mm (5 $\frac{9}{16}$ " H,  
505mm (19 $\frac{5}{16}$ " W,  
330mm (13" D)

WEIGHT: 11.5kg (25.4 lbs)

\* Design and specifications subject to change without notice for improvements.