STEREO RECEIVER

SX-300

FVW

OPERATING INSTRUCTIONS

PIONEER®

Thank you for selecting this quality stereo receiver.
You have made a sensible choice—used with other quality audio components, this reliable receiver will help you enjoy your favorite music to the full. In order that you avoid mistakes in operation, and become familiar with the wide range of capabilities incorporated into this product, you are requested to study the following instructions carefully.

SX-300 SPECIAL FEATURES

A Simple Yet Sophisticated FM Tuner Section

The front end utilizes a high frequency amplifier with a single highly efficient Field Effect Transistor and separate oscillator and converter components. These provide outstanding sensitivity and make for good image rejection and exceptional selectivity.
A proven switching system is used in the FM multiplex section – the part that decodes the radio signal into stereo – for stability you can rely on.

Attractive, Practical Design

The simple illuminated tuning scale enables anyone to tune in stations quickly and with pinpoint accuracy, thanks to the large, easy-to-use signal meter and the linear panel design.

Multipurpose Terminals

Multiple input and output terminals, including a 5-pin DIN rec/playback connector, enable you to connect virtually any sound source – turntable, tape deck or recorder (even a three-head machine!), or the audio output from a television set.
The two FM antenna inputs guarantee you trouble-free listening anywhere. The 300-ohm ribbon feeder is for standard operation while the 75-ohm coaxial cable input is particularly useful for cutting down pulse noise to a minimum in crowded areas. Pulse noise from car ignition systems and the like is a great problem for conventional receivers in down town areas.
The speaker inputs are arranged so that you can listen to either or both speakers by positioning the switch on the front panel.

Can Be Used In A 4-channel System

You need have no worries about converting to four channels with the SX-300 – just add another amplifier, a 4-channel decoder, such as the Pioneer QL-600A, and two more speakers and you have a quadradial system you can be proud of.

Uncluttered Design That Will Fit In Anywhere

The wooden cabinet and brushed steel front with a minimum of controls (for easy operation) blend pleasingly with the blue illuminated panel.
The result – a receiver that will be a credit to any interior decor.

CONTENTS

ASSEMBLING A STEREO SYSTEM

Model SX-300 is a Stereo Receiver, i.e. it combines an AM/FM stereo tuner, a preamplifier and a power amplifier in one unit. For a stereo system, you will need at least one pair of speaker systems and one program source such as a turntable, or a tape deck (open-reel or cassette). These should be of very high quality comparable to the SX-300.

- With the help of the Pioneer "Decoder" Amplifier, model QL-600A and an additional pair of speaker systems, the SX-300 can serve as the heart of an ultra modern 4-channel stereo system (see page 8).

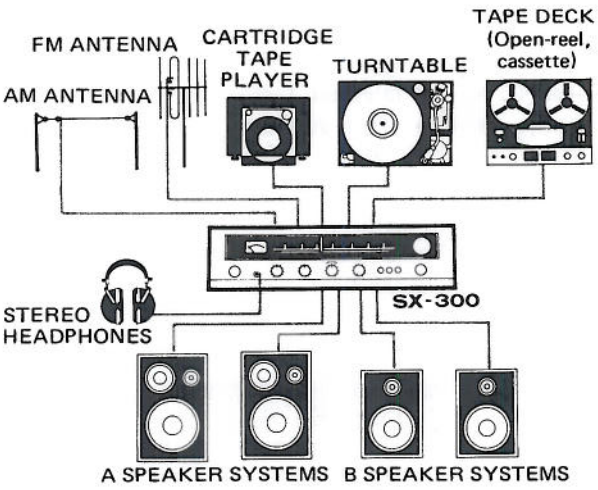


Fig. 1

WHERE TO PLACE THE MODEL SX-300

When selecting a place for your SX-300, avoid locations that are,

- near stoves or other heat sources,
- in direct sunlight,
- poorly ventilated, very moist or dusty,
- wobbly or slanted.

LINE VOLTAGE AND FUSE

CHANGING LINE VOLTAGE SETTING AND FUSE

To remove the fuse, turn the fuse cap located on the line voltage selector in the direction indicated by the arrow. Then remove the fuse plug from the unit. Put the fuse plug back so that the proper line voltage marking can be seen through the cut in the edge of the plug. Whenever the position of the selector switch is changed, check the rating of the fuse. A 0.5A fuse is to be used for either 220V or 240V operation and a 1A rating for 110V, 120V or 130V operation. If the rating of the fuse is correct, replace cap.

FUSE REPLACEMENT

If the fuse blows, remove the fuse cap and replace the fuse with a new one.

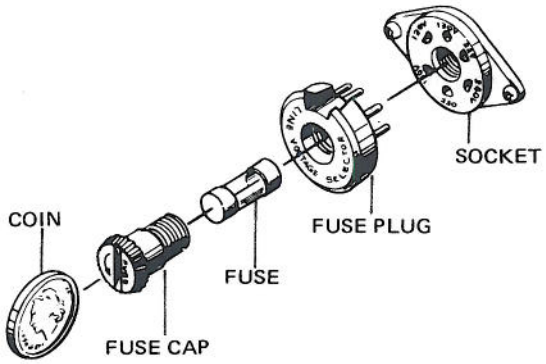


Fig. 2

CONNECTION OF SPEAKER SYSTEMS

The SX-300 has two sets of speaker output terminals (A and B) and can accept two pairs of speakers, connect them to the A speaker terminals as follows. See Fig. 3. Speaker wire is often supplied with the speaker.

- Connect the right channel speaker (the right-hand speaker when viewed from the front) to the speaker terminals marked "R" on the SX-300.
- Connect the left channel speaker (the left-hand speaker when viewd from the front) to the speaker terminals marked "L" on the SX-300.

Use common two-pole lead wire, preferable with the two different-colored leads for easy identification.

Be sure to connect the plus (+) terminal (red terminal) on the SX-300 to the (+) terminal on the speaker, and the minus (-) terminal (black terminal) on the SX-300 to the (-) terminal on the speaker. A second pair of speakers can be connected to the B speaker terminals in the same way.

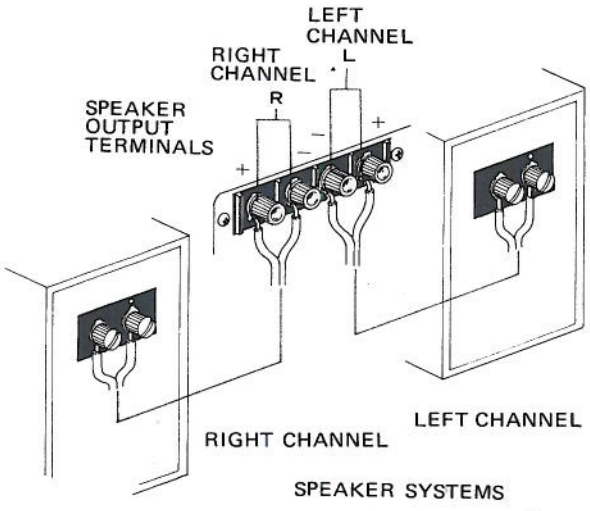


Fig. 3

NOTE:
When two pairs (A+B) of speakers are to be used at the same time, each speaker must have an impedance of 8 ohms or more.

PLACEMENT OF SPEAKER SYSTEMS

The listening room — its size, shape, materials of walls, floor and ceiling, draperies, furniture, etc. — have considerable influence upon the second: Generally, placing the speakers in corners or with their backs against the wall will improve bass response. If the room sounds too "live," i.e. with strong reverberations of high-range sound, it can be improved by heavy curtains and draperies, upholstered furniture and other sound-absorbing material. To obtain clear stereo channel separation, place the speakers sufficiently far apart. Your listening position and the two speakers should form an equal-sided triangle.

CONNECTION OF TURNTABLE

The stereo turntable with a moving magnetic (MM) phono cartridge can be connected to the PHONO input jacks (see Fig. 4). The upper jack is for the left channel output cable from the turntable, the lower jack for the right channel cable. The ground wire from the turntable should be connected to the GND terminal of the SX-300.

NOTE:
A moving coil (MC) phono cartridge of low output voltage can be used only in combination with a separate booster transformer or head amplifier.

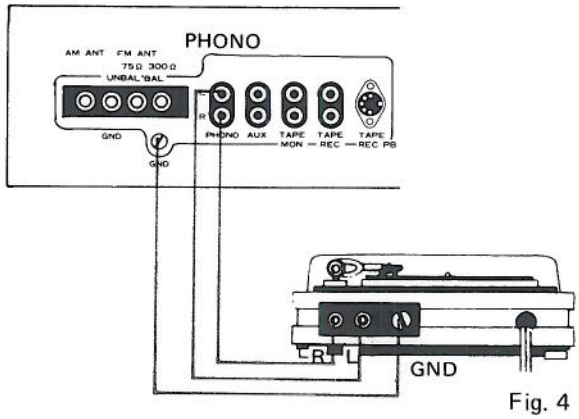


Fig. 4

ANTENNA AND GROUND CONNECTIONS

When using the SX-300 at a place of low field strength or distance from the station, select the most suitable FM and AM antennas as follows, and the efficiency of any antenna depends on its height more than its length.

FM ANTENNA

Outdoor FM Antenna: When using the SX-300 at a relatively long distance from the station, or within a building or house with respectively thick walls, or vicinity of tall buildings, erect an outdoor FM antenna, connect it to the FM Antenna terminals as shown in Fig. 5.

NOTES:

1. *FM antennas are available in any type. Select the best type after securing the advice of your audio dealer.*
2. *In heavy traffic areas, industrial zones or near high voltage electrical equipment a great deal of interference may enter despite careful antenna selection. In such a case, talk things over with your audio dealer. It may be advisable to use a 75Ω coaxial cable between the antenna and the SX-300. Connect the coaxial cable to the cable terminal as shown in Fig. 6.*

T-type Antenna: Reception is easier if the building is primarily of wood and is near the FM station, in this case, use the furnished T-type indoor antenna only. Unfold the horizontal section of the antenna to its full length, and determine best direction for the antenna while actually receiving an FM broadcast program. Attach the horizontal section to a wall or other place in the determined direction as shown in Fig. 7.

AM ANTENNA

AM Lead Antenna: Use the vinyl-sheathed lead wire attached as AM receiving antenna. As for the connection, connect one end of the lead wire to the AM antenna terminal and fix another end along the wall as shown in Fig. 5.

Outdoor AM Antenna: If reception is still poor, construct an outdoor antenna between two poles, etc., as shown in Fig. 7. Use vinyl-sheathed lead wire, and connect to the AM antenna terminal of the SX-300.

GROUND

The GROUND terminal does not greatly affect the performance of the receiver. However, it is desirable to ground the terminal from the viewpoint of stability.

- Connect the ground conductor leading to the earth to the GROUND terminal.

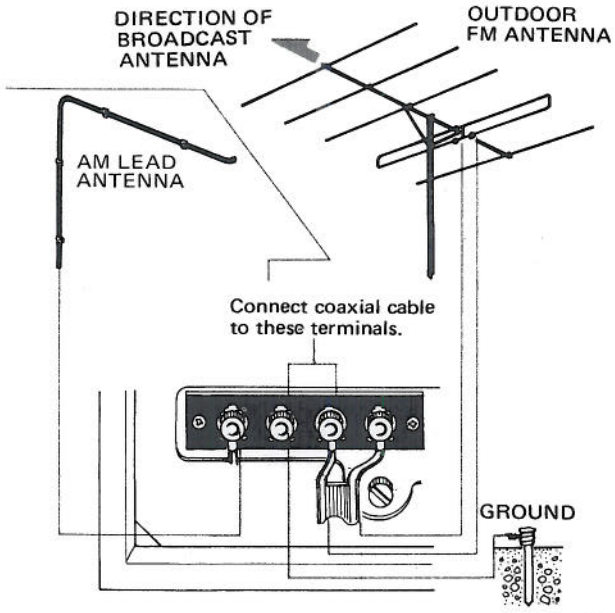
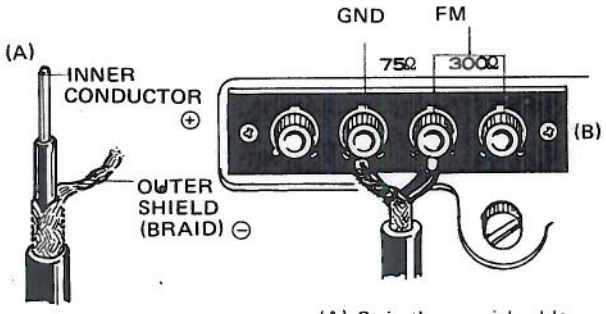


Fig. 5



(A) Strip the coaxial cable.
(B) Then tighten all screws for a connection.

Fig. 6

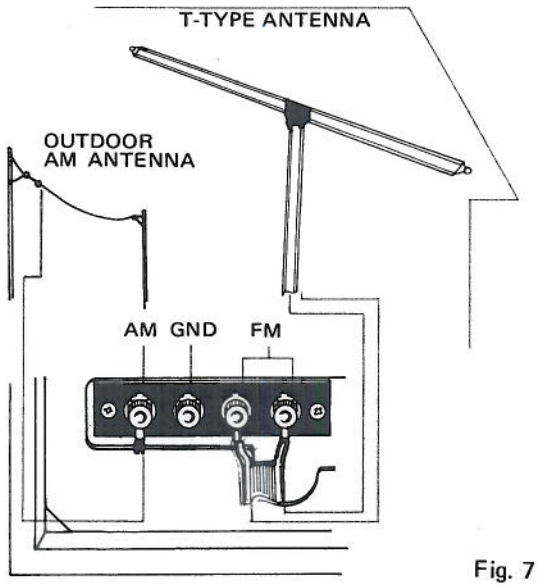


Fig. 7

CONNECTION OF TAPE DECK

The SX-300 can be connected to a stereo tape deck (open-reel or cassette) for recording and playback. Use connection cords usually supplied with the tape deck. For connections, use the following procedures. See Fig. 8.

RECORDING

Connect the LINE INPUT jacks of tape deck to the TAPE REC jacks of the SX-300.
Be sure that all connections are correct.

PLAYBACK

Connect the LINE OUTPUT (or TAPE MONITOR) jacks of tape deck to TAPE MON jacks of the SX-300.
Do the same confirmation as the above:

Connection via REC/PB Connector

Instead of the recording and playback connections just described, the tape deck can be connected to the TAPE REC/PB connector (DIN-type) of the SX-300 if an identical connector is provided in the tape deck, too. The required DIN-cable is available at all hi-fi and radio stores. The single cable completes all playback and recording connections at the same time. Use a DIN-cable for tape deck-to-amplifier connection.
Note that the REC/PB connector corresponds to TAPE MON and TAPE REC jacks — the signal must be controlled with the TAPE MONITOR switch on the SX-300.

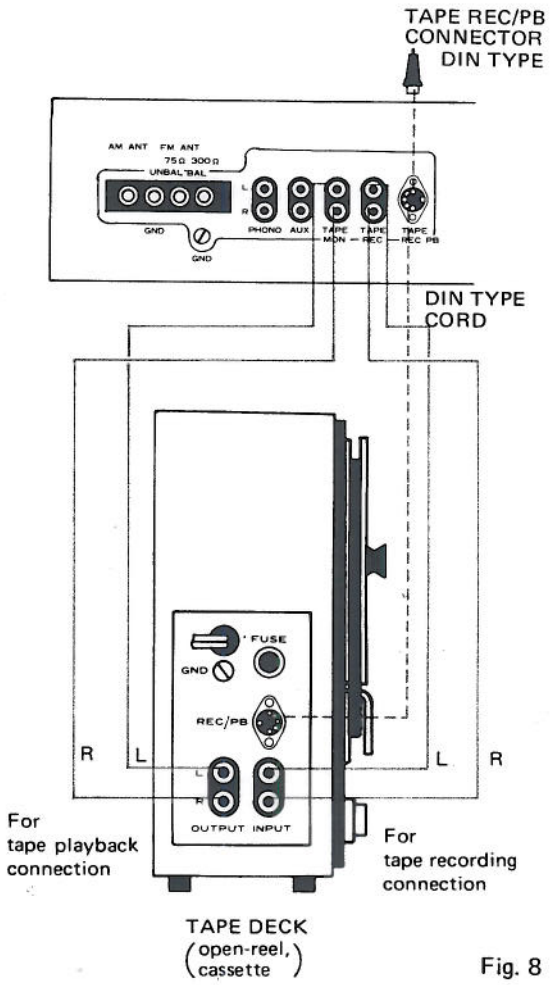
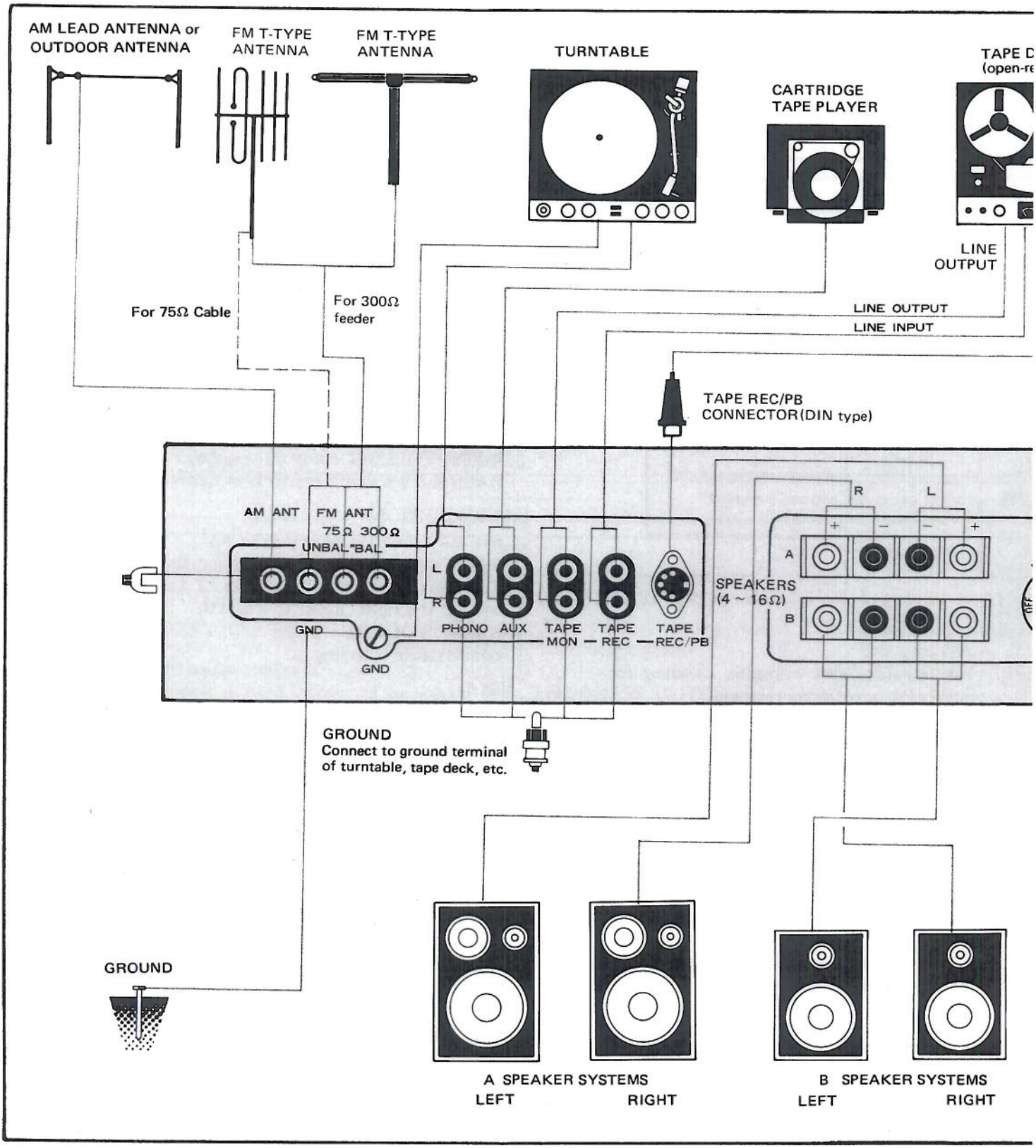


Fig. 8

AUX INPUT JACKS

These jacks are auxiliary input terminals. They may be used for connecting stereo output leads from a cartridge tape player and sound track from a TV set.
The upper jack is for the left channel, the lower jack for the right channel.

CONNECTION DIAGRAM



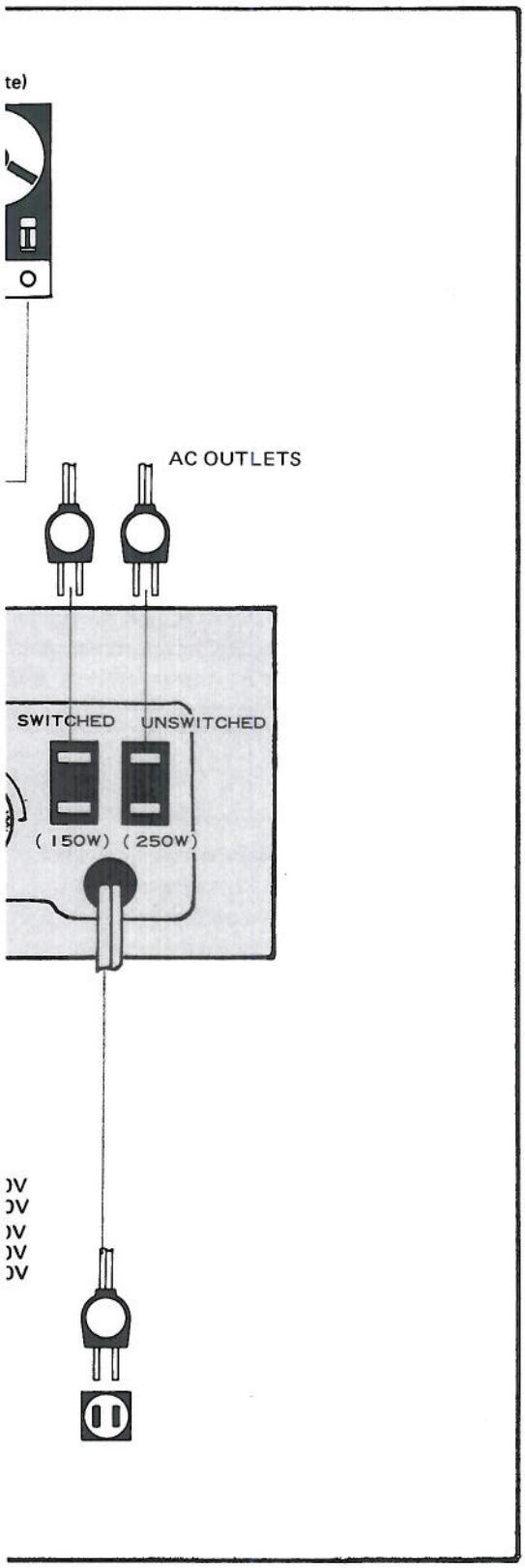
4-CHANNEL STEREO SYSTEM

Compared to 2-channel stereo reproduction, a 4-channel system offers numerous advantages. It can reproduce a life-like sound field including indirect and reverberated sound as heard in a concert hall. It can give distinct localization of sound sources at the front and rear sides. It can create special effects such as "surround sound" and motion of sound sources in any desired direction.

Where a 2-channel system will recreate only what takes place on the stage, a 4-channel system can re-build the total musical environment.

Such a 4-channel system can be built, as shown in Fig. 9, by adding the Pioneer 4-channel decoder amplifier model QL-600A, and another pair of speakers for the rear channels.

For connections and operational details, see the operating instructions furnished with model QL-600A.



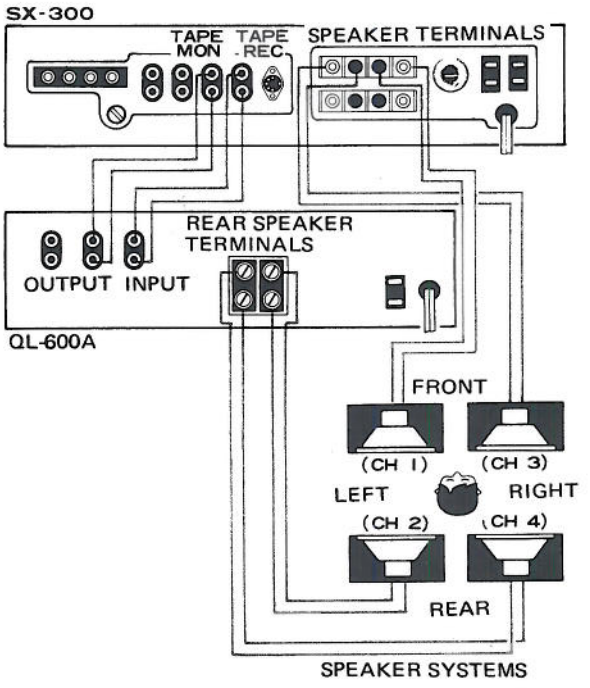


Fig. 9

USING THE AUX TERMINALS

Employ the following procedure when playing components connected to the AUX terminals.
1. Set the FUNCTION switch to AUX.
2. Operate component.
3. Adjust VOLUME, BASS and TREBLE controls for comfortable listening.

USING THE TAPE DECK

TAPE RECORDING

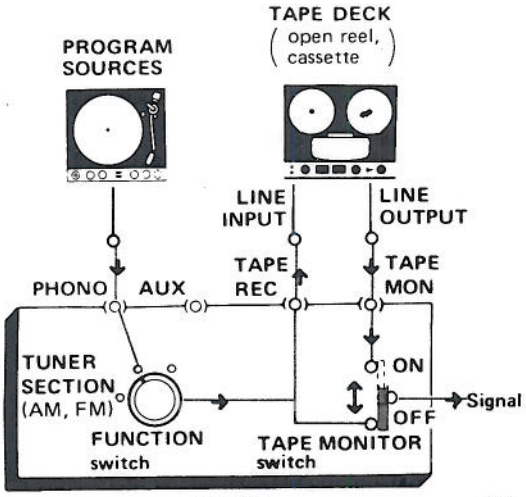
The signal being played over the amplifier is always present at the TAPE REC outputs for recording on tape, as shown in Fig. 11. Select the program source with the FUNCTION switch as usual. Please note that the VOLUME, BASS and TREBLE controls have no effect upon the signal at the TAPE REC outputs. The signal is recorded as it comes from the program source. Recording levels must be adjusted with the controls on the tape deck.

Monitoring of a recording in progress

If the tape deck is a three-head type or equipped with monitor circuits, a recording in progress can be monitored by pushing the TAPE MONITOR switch on the SX-300 as shown in Fig. 11.

TAPE PLAYBACK

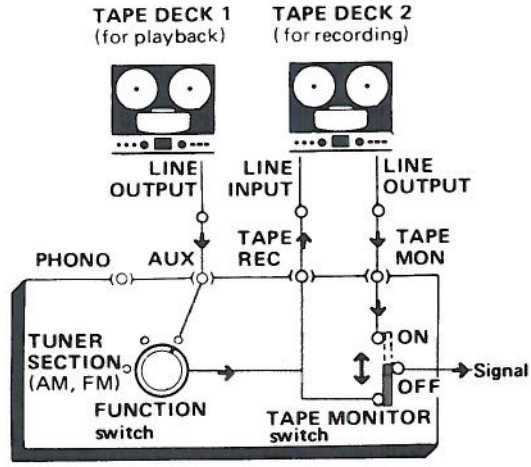
Push the TAPE MONITOR switch to ON for playing back tape. During tape playback, adjust VOLUME, BASS and TREBLE controls of the SX-300 function as usual. The FUNCTION switch, however, is meaningless during tape playback as shown in Fig. 11.



SX-300 Fig. 11

TAPE DUPLICATING

With two tape decks, you can duplicate tape-to-tape, or edit recordings while re-recording. For example, you can first tape a complete FM stereo program, with announcements and commercials, and later re-record on another tape while cutting out unwanted portions.
For duplicating proceed as follows:
1. Connect two tape decks as shown in Fig. 12.
2. Set the FUNCTION switch to AUX, and reproduce a recorded program by operating the tape deck plugged into the AUX inputs.
3. Record the program in the way you want by operating the tape deck plugged into TAPE REC (MON) jacks. Operating the TAPE MONITOR switch allows you to monitor a recording now in progress.



SX-300 Fig. 12

CONDITIONS FREQUENTLY MISTAKEN FOR MALFUNCTION

Noise: There are a variety of noises relating to the operation of a hi-fi unit. These are generally divided into two types; (1) the unit is faulty (a transistor or part has deteriorated) and (2) an external source is adding to the unit.
When a hi-fi unit produces an unpleasant noise, it is often assumed that the unit is faulty, but statistical records indicate that the majority of noises produced in hi-fi acoustic units result from external sources of noise: Due to the inherent high sensitivity and the high fidelity in reproduction, the unit amplifies and reproduces extraneous noises, however small, into definite output noise. If your receiver produces a noise, check according to the following table and trace out the source of noise for the appropriate corrective action.

	SYMPTOM	SUSPECTED SOURCE OF NOISE	DIAGNOSIS AND REMEDY
WHEN LISTENING TO BROADCASTS	Continuous or intermittent noise like jjjjjj or zzzzzz.	· Static (lightning) · Fluorescent lamp, motor, or thermostat may be in use in house or in the vicinity of the house.	In many cases, it is very difficult to remove the source of noise. In order to make the radio input larger than the noise level, set up a good outdoor antenna and make a complete grounding.
	When a station is tuned in, hum is mixed in the program.	· Poor fluorescent lamp, motor, or electric heater may be in use in house or near the house.	Reversing the line plug may occasionally alleviate this noise problem. Usually it is very difficult to eliminate the noise.
	Hissing sound noise in AM (medium wave) reception.	· The frequency of an adjacent station is interfering with that of the station being tuned in (10kHz beat interference). · TV set is on in the same house with the receiver.	Impossible to remove such interference. If the case of such noise is in the TV set, increase the distance between the TV set and receiver.
	Static noise (in particular, when automobiles run close to the house).	· White noise generated from automobile engines. · High frequency sewing machine or welding machine being used near your house.	In an area surrounded by hills or high buildings, the FM input signals are very weak. Thus the noise limiter in the circuit loses its function. Set up an FM outdoor antenna having many director elements.
	Reception of FM stereo program contains more noise than FM mono program.	· Note that the service area covered by an FM stereo broadcast is about 50% of that of a regular mono broadcast.	Increasing FM input signal may alleviate this problem. Use an exclusive FM outdoor antenna instead of the indoor T-type antenna.
WHEN PLAYING RECORDS	Hum or buzz. When switched to radio reception, the noise disappears.	· Poor connection of shielded wire. (a) · Jack connection is loose. (b) · Line cord of fluorescent lamp is near the shielded wire. (c) · Poor grounding. (d) · Ham transmitting station or TV transmitting station is near your house. (e)	Correct the conditions stated in (a), (b), (c) or (d). In case of (e), report it to an official activity.
	Output tone quality is poor and mixed with noise. Treble is not clear.	· Stylus wears out. (a) · Record wears out. (b) · Dust adheres to stylus. (c) · Stylus is improperly mounted. (d) · Stylus pressure is not proper. (e) · The TREBLE level is too high.	Check (a) through (e) and correct the condition. Lower the TREBLE level.

WATCH FOR THE FOLLOWING CONDITIONS; THESE ARE ALSO APT TO BE MISTAKEN FOR MALFUNCTIONS.

	SYMPTOM	SUSPECTED SOURCE OF NOISE	DIAGNOSIS AND REMEDY
	Power is not turned on although the power switch is set to ON.	· Fuse blows. (a) · Line plug is loose, (b)	Check (a) and (b) and correct the condition.
	Power ON but speakers produce no sound.	· Blown-out PROTECTION fuse.	Replace with the supplied PROTECTION fuse.
	In playing a record, increasing the volume causes howling.	· Distance between the turntable and the speakers is too short. · The place on which the turntable or speakers are set is unstable.	Change the distance or rearrange the installation increase of the unit and speakers. (Installing the turntable on a firm, solid stand may alleviate this problem.) Do not enhance the BASS sound level excessively.

SPECIFICATIONS

Semiconductors
FET 1
Transistors 31
Diodes 23

Amplifier Section
Continuous Power Output
1kHz (Both channels driven) . . . . . 7W+7W (8Ω), 7W+7W (4Ω)
1kHz (Each channel driven) 10W/10W (8Ω), 12W/12W (4Ω)
Harmonic Distortion (Continuous Power Output) . . . . . Less than 1%
(1W+1W, Power Output) Less than 0.2%
Intermodulation Distortion (Continuous Power Output) . . . . . Less than 1%
(1W+1W, Power Output) . . . . . Less than 0.5%
Power Bandwidth (IHF, Both channels driven) . . . . . 25Hz~60kHz (T.H.D. 1%)
Output: Speaker . . . . . A, B, A+B (4~16Ω)
Headphones . . . . . 4~16Ω
Damping Factor (1kHz, 8Ω) . . . . . More than 20
Residual Hum & Noise (8Ω Pre & Power amplifier) . . . . . Less than 0.6mV
Input Sensitivity/Impedance
PHONO 2.5mV/50kΩ
AUX 150mV/100kΩ
TAPE MONITOR 150mV/100kΩ
TAPE MONITOR (DIN connector) 150mV/100kΩ
Output Level/Impedance
TAPE REC 150mV
TAPE REC (DIN connector) 30mV/80kΩ
Frequency Response
PHONO (RIAA equalization) . . . 30Hz~15kHz±1dB
AUX, TAPE MON . . . . . 30Hz~20kHz±1dB
Tone Control
BASS . . . . . +9dB, -9dB (100Hz)
TREBLE . . . . . +8dB, -11dB (10kHz)
Loudness Contour (Volume control set at -40dB Position) . . . . . +10dB (100Hz), +5dB (10kHz)
Hum & Noise (IHF, short-circuited, A Network)
PHONO . . . . . More than 70dB
AUX, TAPE MON . . . . . More than 80dB

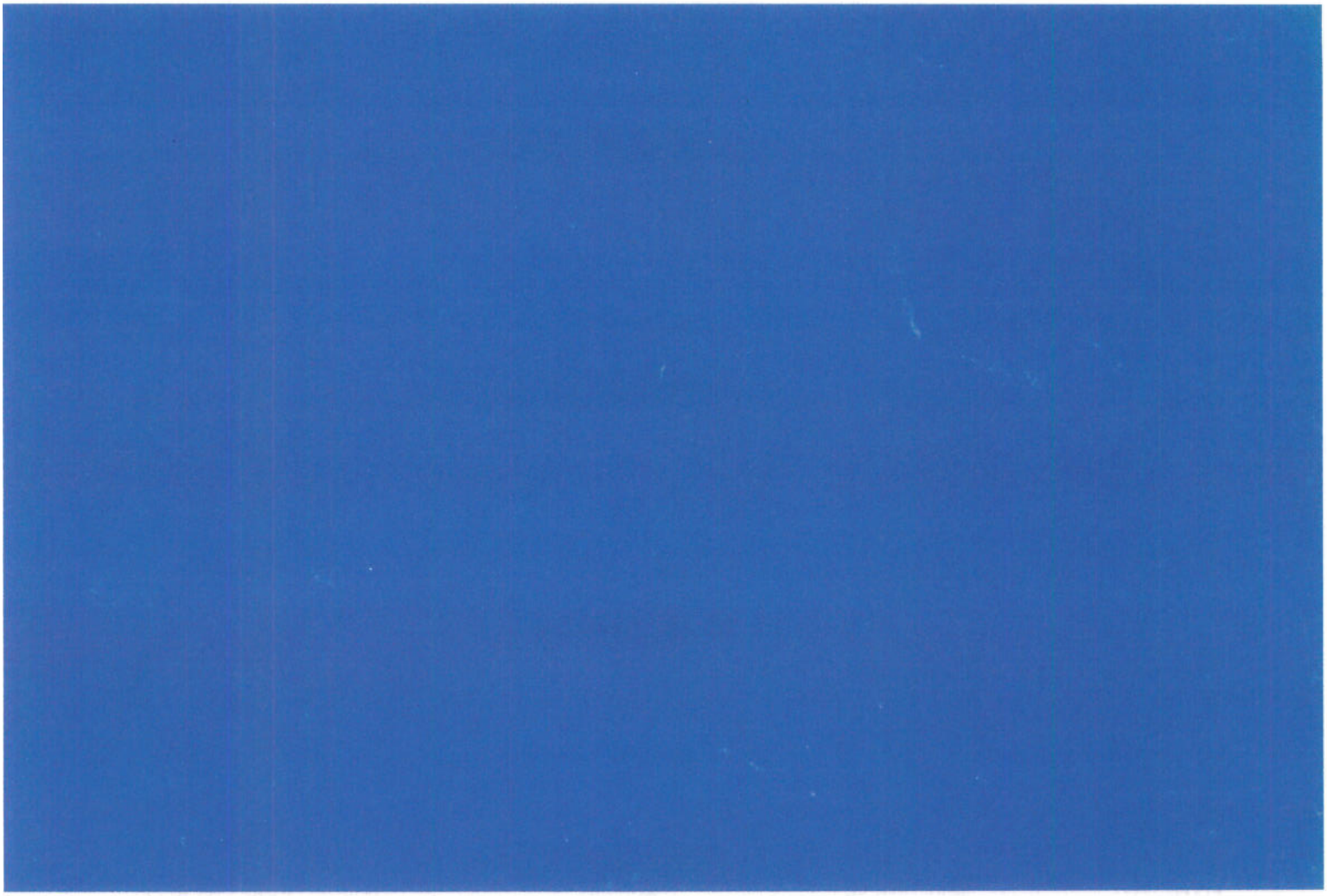
FM Tuner Section
Usable Sensitivity (IHF) . . . 2.3μV
Capture Ratio (IHF) 3.5dB
Signal-to-Noise Ratio 65dB
Image Rejection (98MHz) . . More than 50dB
IF Rejection (98MHz) . . . . More than 80dB
Spurious Rejection . . . . . More than 70dB
AM Suppression 45dB
Harmonic Distortion
Mono . . . . . Less than 0.6%
Stereo . . . . . Less than 0.8%
Stereo Separation
1kHz . . . . . More than 40dB
Sub carrier Suppression . . . 35dB
Antenna Input . . . . . 300Ω Balanced, 75Ω Unbalanced

AM Tuner Section
Sensitivity
(IHF, Ferrite antenna) 300μV/m
(IHF, Ext. antenna) 15μV
Signal-to-Noise Ratio 50dB
Image Rejection . . . . . More than 45dB
IF Rejection . . . . . More than 35dB
Antenna . . . . . Built-in Ferrite Loopstick Antenna

Miscellaneous
Power Requirements . . . . . AC 110V, 120V, 130V, 220V and 240V (Switchable) 50 Hz or 60 Hz
Power Consumption 65W
AC Outlets . . . . . Switched 1, Unswitched 1
Dimensions . . . . . 441(W) x 132(H) x 324(D)mm 17-3/8 x 5-3/16 x 12-3/4 in.
Weight: Without package . . . 6kg (13 lb)
With package . . . . . 8kg (18 lb)

Furnished Parts
FM T-type Antenna 1
Operating Instructions 1

NOTE:
Specifications and the design subject to possible modification without notice due to improvements.



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Printed in Japan
09F01J> (ARB-091-0)