

SOLID STATE AM/FM STEREO RECEIVER

SX-525

KCW
KUW
FVZW
FW



OPERATING INSTRUCTIONS

PIONEER[®]

FEATURES

ADVANCED CIRCUITRY WITH FET AND ICs

An FET (field-effect transistor) in the FM front end effectively raises sensitivity and image ratio while safeguarding against cross-modulation. The IF stretch is equipped with ICs (integrated circuits) and ceramic filters which vitally improve selectivity and capture ratio.

The MPX decoder — the circuit that separates the two channels of FM stereo programs — works on the highly accurate switching system and provides wide frequency response and stability while a discriminator amplifier assures sharp channel separation. In less technical terms: the SX-525 delivers finely balanced, dramatic stereo sound.

EFFECTIVE FM MUTING SWITCH

Unwanted irritating inter-station noise on FM is eliminated by the FM MUTING switch. This circuit also cuts out useless, too-weak FM station signals, leaving only strong, high-quality stations to be received.

SENSITIVE AM FERRITE LOOPSTICK ANTENNA

AM reception sensitivity profits greatly from the ferrite loopstick antenna.

PRECISION-ENGINEERED AMPLIFIER CIRCUITS

The audio amplifier is characterized by its extremely wide frequency response, its great power bandwidth, its low distortion figures and superb signal-to-noise ratio. It is exclusively equipped with low-noise silicon transistors.

FULL CHOICE OF PROGRAM SOURCES

All standard program sources can be connected, including one turntable, two tape decks, and an auxiliary sound source as well as a microphone.

TAPE-TO-TAPE DUPLICATING POSSIBLE

With the help of two (open reel or cassette) tape decks, copies of tapes can be made easily.

UP TO TWO PAIRS OF LOUDSPEAKERS

For easy comparison of speaker systems, or for main/remote speaker installations, up to two pairs of speakers can be connected and operated individually or A+B.

VERSATILE AUXILIARY CIRCUITS

These include click-stop tone controls, a loudness switch for more natural frequency response at low volume levels, a stereo/mono mode switch, and a signal strength meter for easy tuning.

DESIGN MATCHED TO OTHER PIONEER HI-FI COMPONENTS

The modernistic, unobtrusively elegant design with metallic front panel, large station dial and natural wood cabinet is perfectly matched to that of other PIONEER hi-fi components, permitting a total stereo system of uniform attractiveness to be assembled.

LINE VOLTAGE AND FUSE

The SX-525 is available in two models: one model operates only on 120V, and the other operates on one of the five line voltages; 110V, 120V, 130V, 220V and 240V. If your SX-525 is the latter model, set the unit to the proper line voltage by following the procedure described below.

CHANGING LINE VOLTAGE SETTING AND FUSE

To remove the fuse, turn the fuse cap located on the line voltage selector in the direction of 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 is changed, check the rating of the fuse. A 1A fuse is to be used for either 220V or 240V operation and a 2A fuse for 110V, 120V or 130V operation. If the rating of the fuse is correct, replace cap.

FUSE REPLACEMENT

When the fuse blows, remove the fuse cap and replace the fuse with a new one. See Fig. 1.

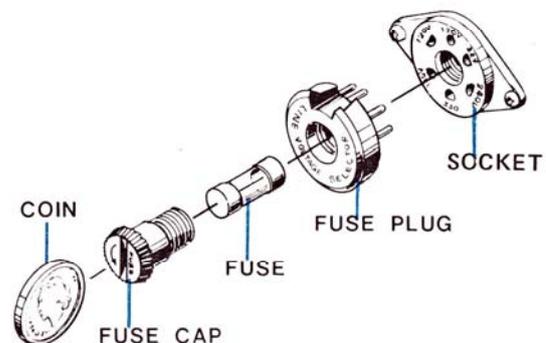


Fig. 1

ASSEMBLING A STEREO SYSTEM

- Model SX-525 is a Stereo Receiver, i.e. it combines an AM/FM stereo tuner, a preamplifier and a power amplifier in one unit. To obtain a complete stereo system, it can be combined with 2 or 4 speakers, 1 turntable, 1 or 2 tape decks, etc. See Fig. 2.
- With the help of the Pioneer "Quadralizer" Amplifier, model QL-600 and an additional pair of speaker systems, the SX-525 can serve as the heart of an ultra-modern 4-channel stereo system. See Fig. 3.

INSTALLATION

Do not install the SX-525 in the following places:

- In direct sunlight or near heating units.
- In damp, dusty places or where air circulation is poor.
- In vibration-prone, unstable places.

CONNECTION AND INSTALLATION OF SPEAKER SYSTEMS

CONNECTION

- As shown in Fig. 4, connect the lead wires of the speaker system to the supplied speaker plugs. Be sure to observe the correct polarity and no short between \oplus and \ominus .
- For the main set of speakers, use the A speaker sockets. Connect the right-channel speaker (the right-hand speaker when viewed from the front) to the socket marked R, and the left-channel speaker to the socket marked L.
- For the second set of speakers, use the B speaker sockets. Connect in the same way as for the first set.

NOTE: When using both sets of speakers simultaneously (with the SPEAKERS switch set to A + B, make sure that the impedance of each set is at least 8 Ω).

INSTALLATION

Optimal stereo effect is obtained when the listener is at the vertex of the regular triangle whose base is the line connecting the left and right speakers (approx. 3ft to 8ft apart). Wherever possible, install the speakers at the same height; if the difference in height is too great, stereo effect deteriorates.

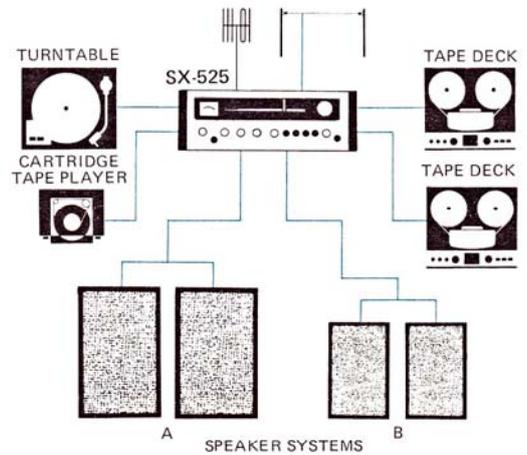


Fig. 2

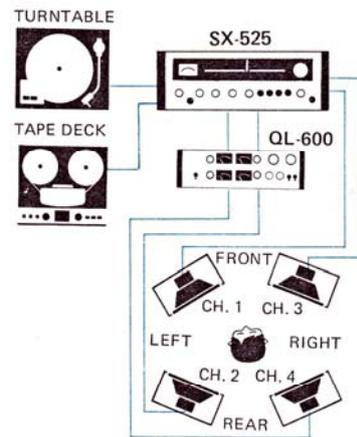


Fig. 3

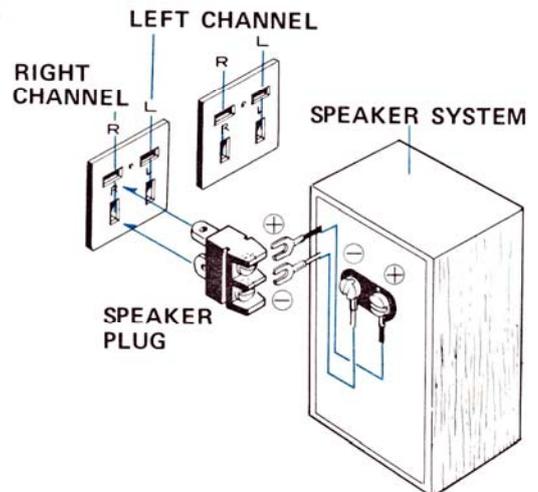


Fig. 4

ANTENNA AND GROUND CONNECTIONS

FM ANTENNA

FM broadcast signals are attenuated somewhat by mountains, buildings, and other obstacles. Therefore, even if a station is nearby, a high-gain antenna may be required. Select the antenna in accordance with the following:

- If the receiver is to be located in a wooden building and stations are nearby, use the T-type antenna which comes with the SX-525. As shown in Fig. 5, connect the feeder terminals of the antenna to the FM antenna terminals. Stretch out the antenna proper and secure it to the ceiling or a wall in such a manner that pickup is optimum, as determined by listening to the station to be received. Refer to "FM Reception" on page 8.
- If orientation of the T-type antenna does not eliminate background noise, connect an outdoor antenna to the antenna terminals shown in Fig. 6. In lieu of an antenna, a combination FM/TV antenna may be used.

NOTES:

1. A number of FM antennas are available. Consult your sales dealer for selection.
2. In location adjacent to heavily traveled streets, around factories, or near high-voltage power transmission lines, use of an FM antenna may not give the desired noise attenuation. In such cases, consult your sales dealer concerning a coaxial cable feeder (75-Ω) for the FM antenna. When coaxial cable is used, make connection to the receiver as shown in Fig. 7.

AM ANTENNA

- Refer to "AM Reception" on page 8. With an AM station tuned in, position the ferrite antenna for optimum pickup. See Fig. 8.
- If positioning of the ferrite antenna does not yield satisfying results, stretch out the AM lead antenna (vinyl-insulated wire) and connect it to the AM antenna terminal. Keep the other end of the antenna lead as high as possible.
- If the lead antenna does not give satisfying results, erect an outdoor antenna and connect it as shown in Fig. 6. Special construction is not required: vinyl-insulated wire may be stretched between two masts or other supports.

GROUNDING

- A ground lead may not be necessary for reception. Still, from a viewpoint of safety and elimination of noise, one should be used.

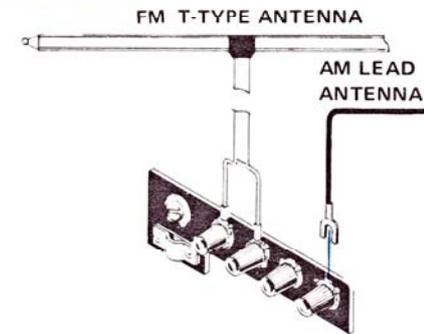


Fig. 5

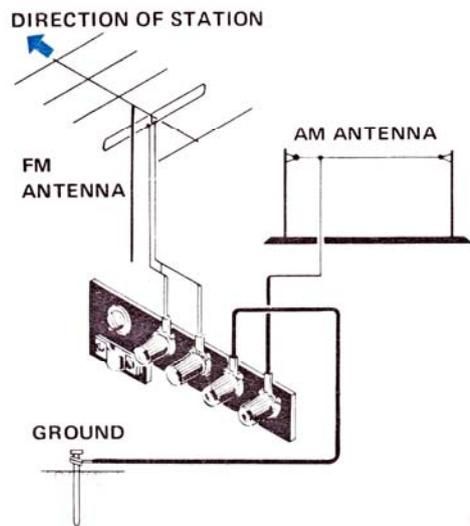


Fig. 6

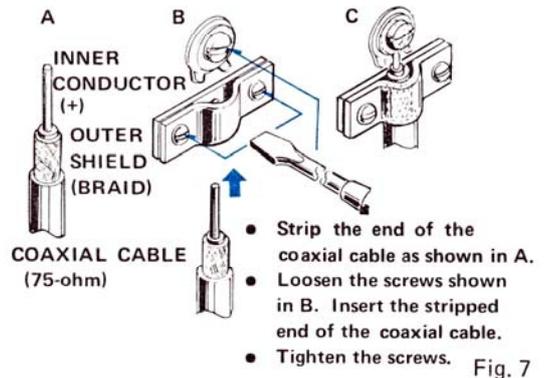


Fig. 7

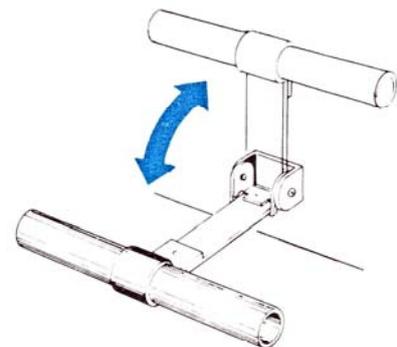


Fig. 8

CONNECTION OF TURNTABLE

- Plug the output from the turntable equipped with moving-magnet phono cartridge into PHONO input jacks. The upper jack is for the left channel, and the lower jack for the right channel.
- When a turntable equipped with ceramic or crystal phono cartridge is used, plug the output from the turntable into AUX input jacks.

NOTE: If the plug of the output cord of the turntable does not fit into the PHONO input jack, use the pin plug furnished with the SX-525 instead.

CONNECTION OF CARTRIDGE TAPE PLAYER

- Plug the output leads into the AUX jacks.

CONNECTION OF TAPE DECK

RECORDING

- Plug the recording input terminals (LINE INPUT) of the tape deck into the TAPE 1 REC jacks of the SX-525. The upper jack is for the left channel, the lower jack for the right channel. Use the connecting cord supplied with the tape deck.

PLAYBACK

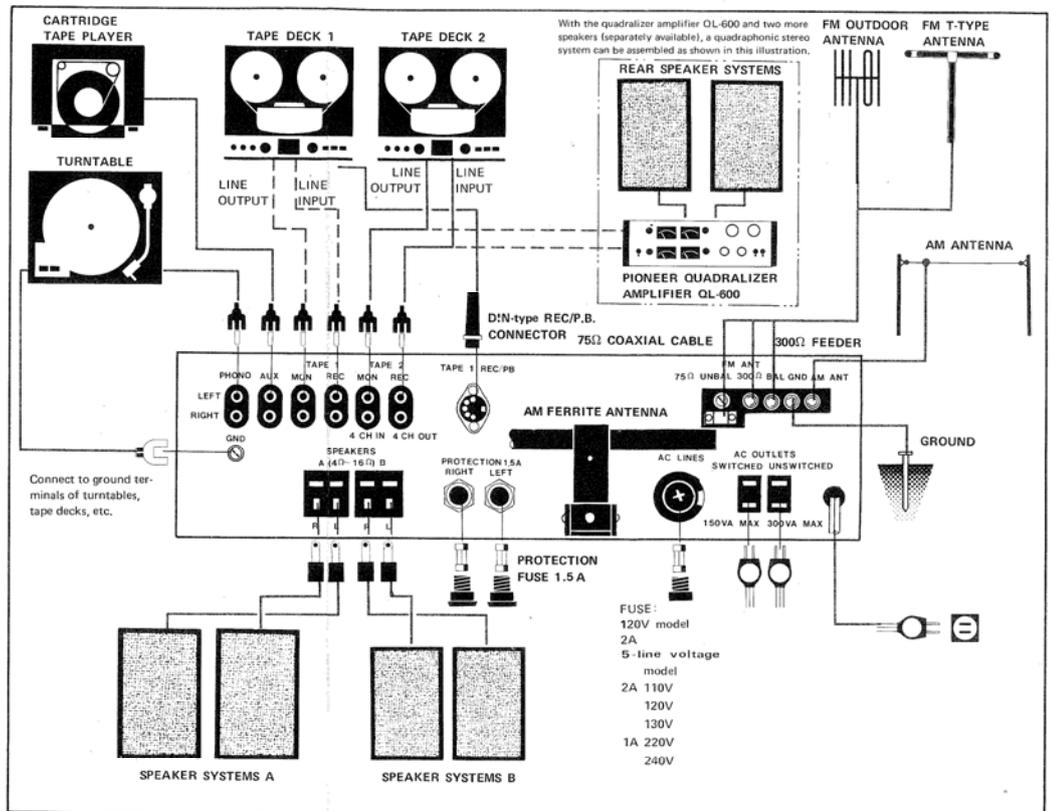
- Plug the playback output terminals (LINE OUTPUT or TAPE MONITOR) of the tape deck into the TAPE 1 MON jacks of the SX-525. Connection is the same as for recording.
- With a monophonic tape deck, plug in either the upper or lower jack and set MODE switch to MONO position.

NOTES: 1. Where the tape deck is provided with a DIN type connector, connecting this to the REC/P.B. connector of the SX-525 by means of a separately available recording/playback cord (Pioneer PP-101) completes both connections.
2. For using two tape decks, plug the second into the TAPE 2 REC and TAPE 2 MON jacks. Connection is similar to that for the TAPE 1 jacks. There is no recording/playback connector for the TAPE 2 jacks.

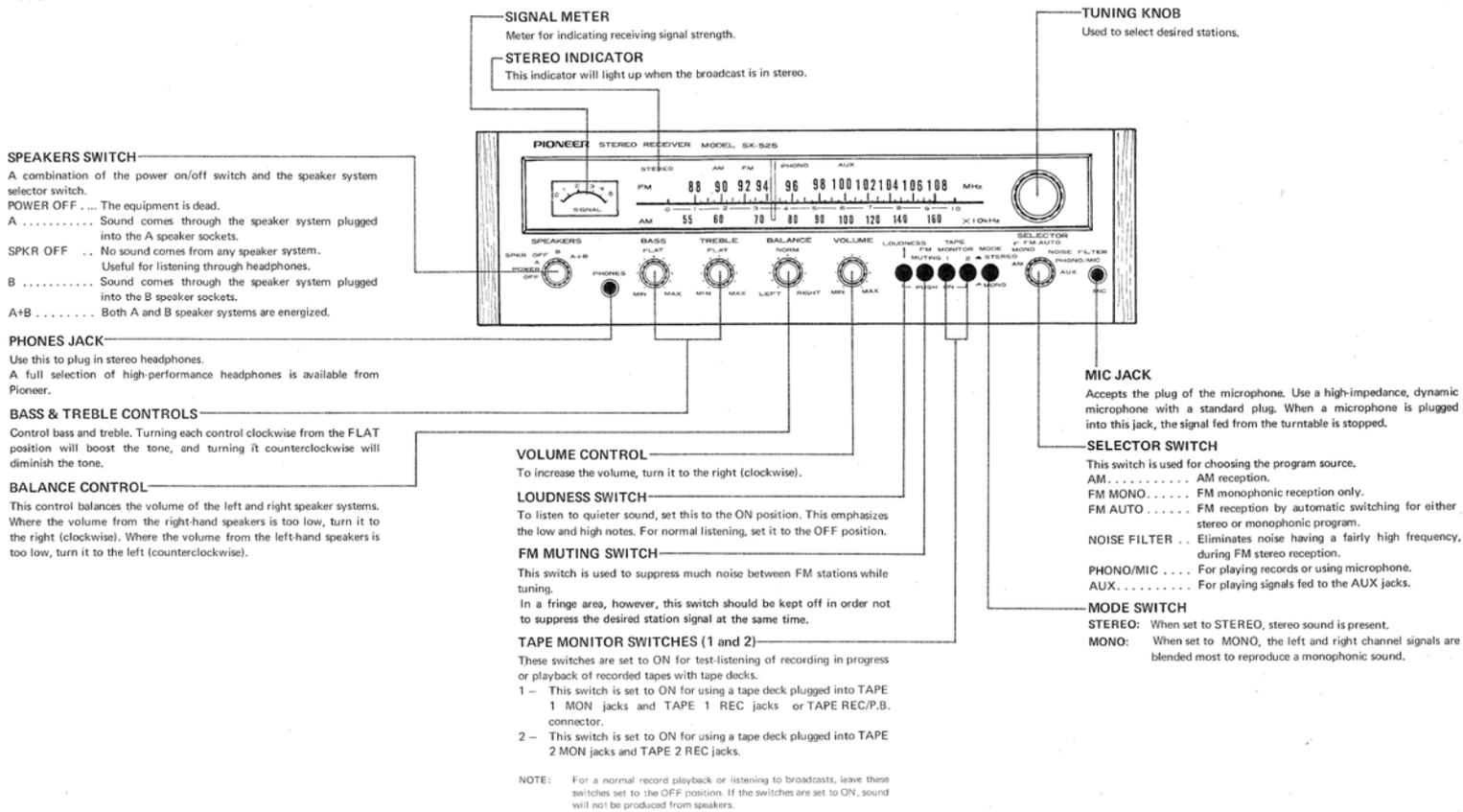
CONNECTION FOR DUPLICATING OR EDITING

- Connect the two tape decks as explained in the "Recording" and "Playback" sections above.

CONNECTION DIAGRAM



FRONT PANEL FACILITIES



BEFORE SWITCHING THE POWER ON

Set the SPEAKERS switch to the position A after checking the following:

1. VOLUME control is at MIN.
2. MODE switch is at STEREO.
3. BASS, TREBLE controls are at FLAT.
4. BALANCE control is at NORM.
5. TAPE MONITOR switches (1, 2) are set at OFF except for tape playback.

FM RECEPTION

1. Set the SELECTOR switch to FM AUTO.
2. Set the FM MUTING switch to OFF. See Notes.
3. Turn the TUNING knob to tune the desired station. Adjust it so that the reading of the SIGNAL meter peaks.
4. When the receiving program is in stereo, the STEREO indicator will light up. If not stereophonic but monophonic, the indicator will not light. If the reception is very weak or noisy, automatic switching to monophonic reception takes place.
5. Adjust the volume and tone through the use of VOLUME, BASS and TREBLE controls.

NOTES:

1. To eliminate background hiss between stations and undesired remote (weak) stations, set the FM MUTING switch to ON. To receive very weak signals, set switch to OFF.
2. In the case of very weak signals, much noise will be heard when the SELECTOR switch is set to the FM AUTO position. To limit this noise, set the SELECTOR switch to FM MONO. Note, however, that stereo broadcasts will be received in monophonic form.
3. To eliminate high noise during stereo reception, turn the SELECTOR switch to the NOISE FILTER position.
4. In some countries, model SX-525 is delivered with a selector switch for adjusting the FM de-emphasis from 50 to 75 μ sec. If your unit is equipped with such a switch at the right of the chassis, and if the high sound range gives an impression of weakness move the de-emphasis switch to its other position.

AM RECEPTION

1. Set the SELECTOR switch to AM.
2. Turn the TUNING knob to tune the desired station, peaking the SIGNAL meter.
3. Adjust the VOLUME, BASS and TREBLE controls as required.

PLAYING RECORDS

1. Set the SELECTOR switch to PHONO/MIC.
2. Start the turntable.
3. Adjust the volume and tone through the use of the VOLUME, BASS and TREBLE controls.

USING A MICROPHONE

1. Plug the microphone into the MIC jack.
2. Set the SELECTOR switch to PHONO/MIC.
3. Adjust the volume by slowly turning up the VOLUME control to the right. The BASS and TREBLE controls should normally be set at FLAT.

NOTES:

1. While using the microphone, only monophonic sound is heard from the left and right speaker systems.
2. Use a high-impedance, dynamic-type microphone fitted with a standard plug.
3. Howling may result if the VOLUME control is turned too high if the microphone is close to the speakers.
4. When a microphone is plugged into the MIC jack, turntable can not be used.

USING A CARTRIDGE TAPE PLAYER

1. Set the SELECTOR switch to AUX.
2. Start the cartridge tape player.
3. Adjust the volume and those tones as required.

USING A TAPE DECK

RECORDING

As shown in Fig. 9, during playing the signal is always present at the TAPE 1 REC and TAPE 2 REC jacks. Operate the SX-525 as explained in the sections "Playing Records and FM and AM Reception" on page 8.

NOTE: Adjusting the VOLUME, BASS and TREBLE controls on the SX-525 does not affect the signal present of the TAPE 1 REC and TAPE 2 REC jacks. Recording level must be adjusted on the tape deck itself.

• TAPE MONITOR

If the tape deck is of the 3-head type or is fitted with a tape monitor circuit, the recording can be monitored by setting the TAPE MONITOR switches (1, 2) to ON. The recording and playback connections must both be left attached.

PLAYBACK

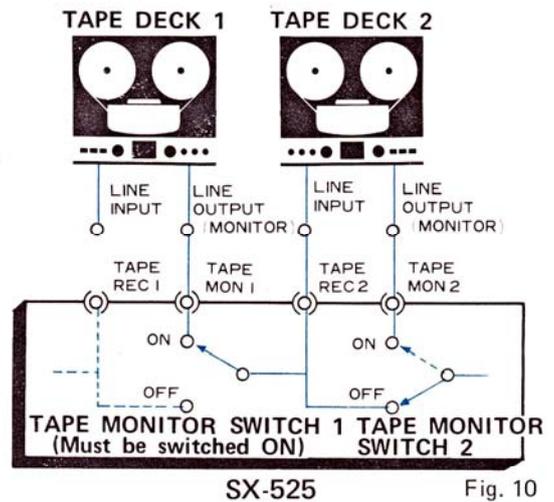
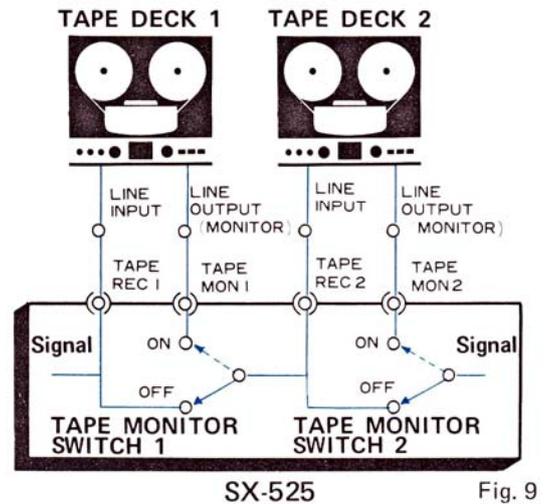
As shown in Fig. 9, setting the TAPE MONITOR switch 1 to ON permits playback of the tape on tape deck 1, and setting TAPE MONITOR switch 2 to ON permits playback of the tape on tape deck 2. During playback, volume and tone can be adjusted by the VOLUME, BASS and TREBLE controls on the SX-525. Playback is possible regardless of which the SELECTOR switch is positioned.

DUPLICATING OR EDITING RECORDING TAPES

With the SX-525, it is possible to record, say, an FM stereo broadcast and then re-tape the parts of the broadcast one wishes to keep onto a separate tape.

1. Connect two tape decks as shown in Fig. 10.
2. Turn the TAPE MONITOR switch 1 to ON.
3. Play back the recorded tape on tape deck 1 and record it onto the tape deck 2.
4. You can monitor the tape during recording by setting the TAPE MONITOR switch 2 to ON.

NOTE: Duplicating and editing can be carried out very easily by using a tape deck equipped with a PAUSE switch for the recording side.



A WORD ABOUT ROOM ACOUSTICS

The quality of reproduced sound varies according to the size and shape of the room, the materials of walls, floor and ceiling and the amount and arrangement of furniture. Too "harsh" or "bright" a sound usually results from too many hard reflecting surfaces, and/or too low a ceiling. This condition is improved by having ample carpet area or covering the wall (especially that facing the speakers) with a thick curtain.

On the other hand, too many absorbing surfaces will tend to "soak up" the sound, resulting in a certain "deadness." Furniture may be rearranged to provide irregular reflection of the sound. In any event, the true stereo effect is lost if the two speaker systems are placed too far apart. This may be corrected by angling them slightly toward each other or reducing the distance between them.

4-CHANNEL STEREO SYSTEM

Conventional 2-channel stereo systems are designed so that instrumental and vocal music can be reproduced in stereo through left and right speakers placed in front of the listener. In contrast, the newly developed 4-channel stereo system features a high degree of reproduction of full dimensional sound in concert halls, including applause and the hum of audience voices in addition to stereo sound from musical instruments, through the conventional two-speaker systems plus two more speakers one each at the rear left and rear right. Consequently, you can get magnificently lifelike quadrasonic sound far superior to that of 2-channel stereo.

Model QL-600, Quadralizer Amplifier, combined with your SX-525, gives you quadrasonic sound. See Fig. 11.

HOW TO USE THE QL-600, QUADRALIZER AMPLIFIER

To obtain quadrasonic sound, combine the Pioneer QL-600 with your SX-525.

The QL-600 has a quadralizer circuit for converting a 2-channel stereo signal into a 4-channel stereo signal plus amplifiers for driving the two rear speaker systems.

As shown in Fig. 12, the QL-600 can be plugged into the TAPE REC and TAPE MON jacks of your SX-525, giving you quadrasonic sound of the MATRIX or PHASE SHIFT type. With the MATRIX system, quadrasonic recording of FM stereo broadcasts are reproduced to perfection.

What's more, with a quadrasonic stereo tape deck (Pioneer QT-6600, for example) connected to the QL-600 as shown in Fig. 12, discrete 4-channel tapes can be reproduced.

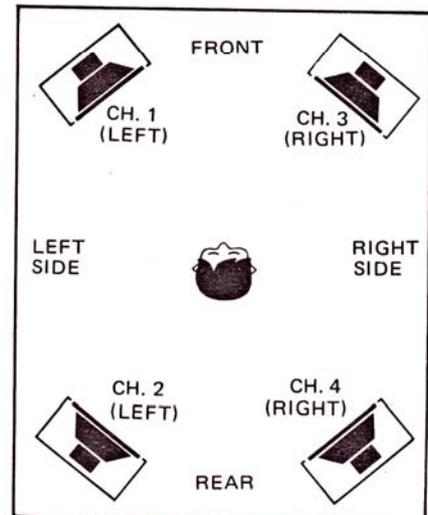


Fig. 11

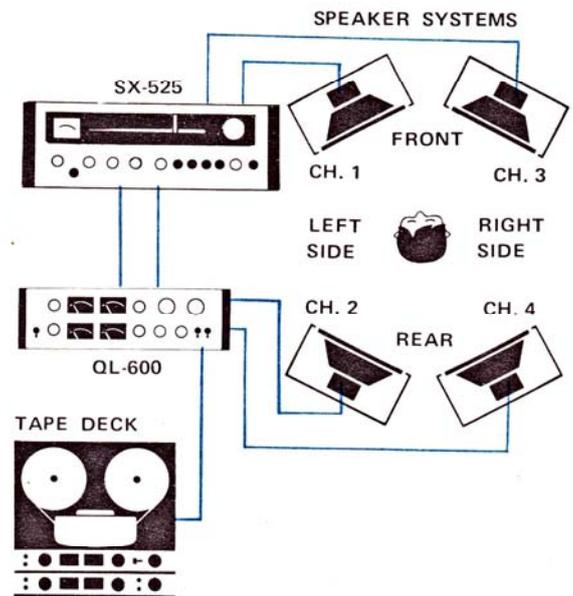


Fig. 12

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 pro-

duced 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.	<ul style="list-style-type: none"> ●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.	<ul style="list-style-type: none"> ●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.
	Static noise (in particular, when automobiles run close to the house).	<ul style="list-style-type: none"> ●White noise generated from automobile engines. ●Radio 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 or FM stereo program contains more noise than FM mono program.	<ul style="list-style-type: none"> ●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. Treble is not clear.	<ul style="list-style-type: none"> ●Poor connection of shielded wire (a) ●Jack connection is loose. (b) ●Line cord or 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.	<ul style="list-style-type: none"> ●Stylus wears out. (a) ●Record wears out. (b) ●Dust adheres to stylus. (c) ●Stylus is improperly mounted. (d) ●Stylus pressure is not proper. (d) ●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 MALFUNCTION.

	SYMPTOM	SUSPECTED SOURCE OF NOISE	DIAGNOSIS AND REMEDY
	Power is not turned on although the power switch is set to ON.	<ul style="list-style-type: none"> ●Fuse blows. (a) ●Line plug is loose. (b) 	Check (a) and (b) and correct the condition.
	In playing a record, increasing the volume causes howling.	<ul style="list-style-type: none"> ●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 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

FETs	1
ICs	2
Transistors	33
Diodes	30

AMPLIFIER SECTION

Music Power Output (IHF)	72 Watts (4Ω) 52 Watts (8Ω)
Continuous Power Output (each channel driven)	26 W/26 W (4Ω) 20 W/20 W (8Ω)
Continuous Power Output (both channels driven)	21 W + 21 W (4Ω) 17 W + 17 W (8Ω)
Power Output in the Range of 20Hz to 20kHz (both channels driven)	13 W + 13 W (8Ω, Harmonic Distortion Less than 1 %)
Harmonic Distortion	Less than 1 % (Continuous power output) Less than 0.05 % (8Ω, 10 W/10W power output)
Intermodulation Distortion	Less than 1 % (Continuous power output) Less than 0.2 % (8Ω, 10 W/10 W power output)
Power Bandwidth (IHF)	10Hz to 45kHz (8Ω, Harmonic Distortion Less than 1 %)
Frequency Response	15 Hz to 30 kHz, ± 1 dB
Speakers	4 to 16 Ω
Damping Factor	40 (8Ω, 1 kHz)
Input Sensitivity/Impedance (1kHz, for rated output)	PHONO MAG 2.7mV/50 kΩ MIC 6mV/100 kΩ AUX 200mV/70 kΩ TAPE MONITOR 1, 2 200mV/70 kΩ
Recording Output	TAPE REC 1, 2 (Pin jack) 200mV TAPE REC (DIN connector) 30mV
BASS Control	-12 dB, + 12.5 dB/100 Hz
TREBLE Control	-8.5 dB, + 8 dB/10 kHz
Equalization Curve	PHONO: RIAA S.T.D.
Loudness Contour	+ 11.5 dB/100 Hz, + 6 dB/10 kHz with Volume Control set at -40 dB position.
Hum and Noise (IHF)	PHONO More than 75 dB AUX More than 85 dB

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

FM TUNER SECTION

Frequency Range	88 MHz to 108 MHz 87.5MHz to 108MHz (FTZ approved)
Usable Sensitivity (IHF)	2.2 μV
Capture Ratio (IHF)	3 dB
Selectivity (IHF)	More than 45 dB
Image Rejection	More than 50 dB (98 MHz)
IF Rejection	More than 80 dB (90 MHz)
Spurious Rejection	More than 80 dB (98 MHz)
AM Suppression	50 dB
Signal-to-Noise Ratio	65 dB
Harmonic Distortion	Mono: Less than 0.6 % (100% Mod.) Stereo: Less than 0.8% (100% Mod.)
Tuning Indicator	Signal strength meter
Muting	Switchable to ON-OFF
Stereo Separation	More than 40 dB (1 kHz)
Sub Carrier Suppression	More than 40 dB
Noise Filter	Switchable to ON-OFF
Antenna Input	Impedance 300Ω balanced and 75 Ω unbalanced.
De-emphasis Switch (Except FTZ approved and 120V model.)	50μS ↔ 75μS

AM TUNER SECTION

Frequency Range	525 kHz to 1,605 kHz
Usable Sensitivity (IHF)	15 μV
Selectivity (IHF)	More than 22 dB
Image Rejection	More than 45 dB (1,000 kHz)
IF Rejection	More than 35 dB
Signal-to-Noise Ratio	More than 50 dB
Antenna	Built-in Ferrite Loopstick Antenna

MISCELLANEOUS

Power Requirements	120V 60Hz or 110V, 120V, 130V, 220V and 240V (Switchable) 50-60Hz
Power Consumption	120 W (Max)
Dimensions (overall)	17-11/16 in./450mm (width) 5-11/16 in./145mm (height) 14-3/16 in./360mm (depth)
Weight	Without package 17 lb, 10 oz/8.0 kg With package 22 lb, 4 oz/10.1 kg
Furnished Parts	FM T-type Antenna 1 Pin Plug 2 Speaker Plug 4 Polishing Cloth 1 Operating Instructions 1

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