

AM/FM STEREO TUNER

TX-5300

OPERATING INSTRUCTIONS

FA
FP
FV
GN



FEATURES

Selectivity FM Front End

Excellence is displayed in all characteristics important to high fidelity. Carefully tuned circuitry is employed in the junction type FET high frequency amplifier and between mixer circuits, leading to high selectivity, image rejection, spurious rejection, S/N and other specifications.

High Stability FM IF Section

A 3 stage differential amplifier, diode limiter, and quadrature detector circuit are employed in the IF amplifier. Combined with highly integrated circuits and two twin element phase linear ceramic filters, the high reliability design assures superior S/N and distortion characteristics, while capture ratio is particularly outstanding.

PLL FM Multiplex Section

An attention provoking phase locked loop (PLL) circuit is utilized in the IC stereo demodulator for always optimum stereo reception without regard to ambient temperature and passage of time. Advanced frequency response and separation increase the value of FM stereo as a program source.

High Performance AM Tuner

Improved selectivity and frequency response are achieved by incorporating IC and ceramic filter. Interference and distortion problems are virtually absent. The excellent spurious characteristics of the balanced mixer circuit allow stable AM broadcasts to be enjoyed even in strong signal areas.

Contemporary Styling Emphasizes Performance

The simple, clean panel layout is designed for operational convenience. The TX-5300 can also be combined with a matching stereo amplifier to form an easy to operate high performance stereo system.

INSTALLATION CAUTIONS

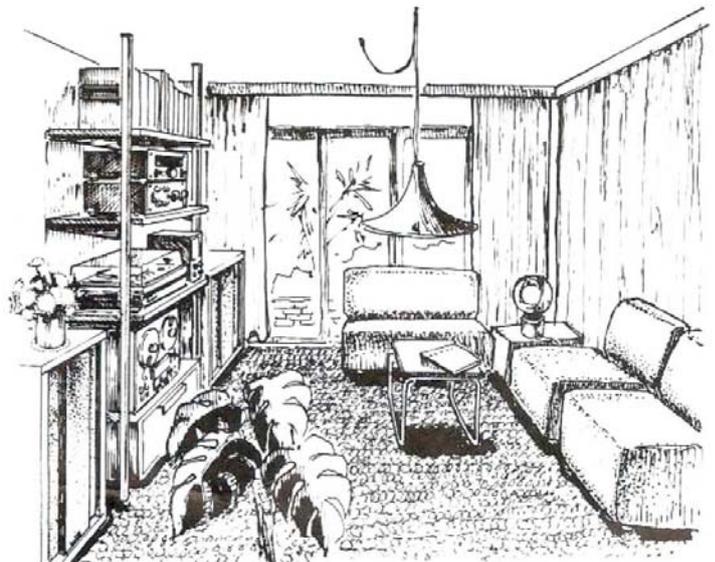
Avoid installing the TX-5300 in locations such as the following.

- In direct sunlight, near radiators or other heat sources.
- Above a large heat producing power amplifier, or near an amplifier power transformer.
- Humid or dusty surroundings
- Unlevel or unstable supports, or where subject to vibration.

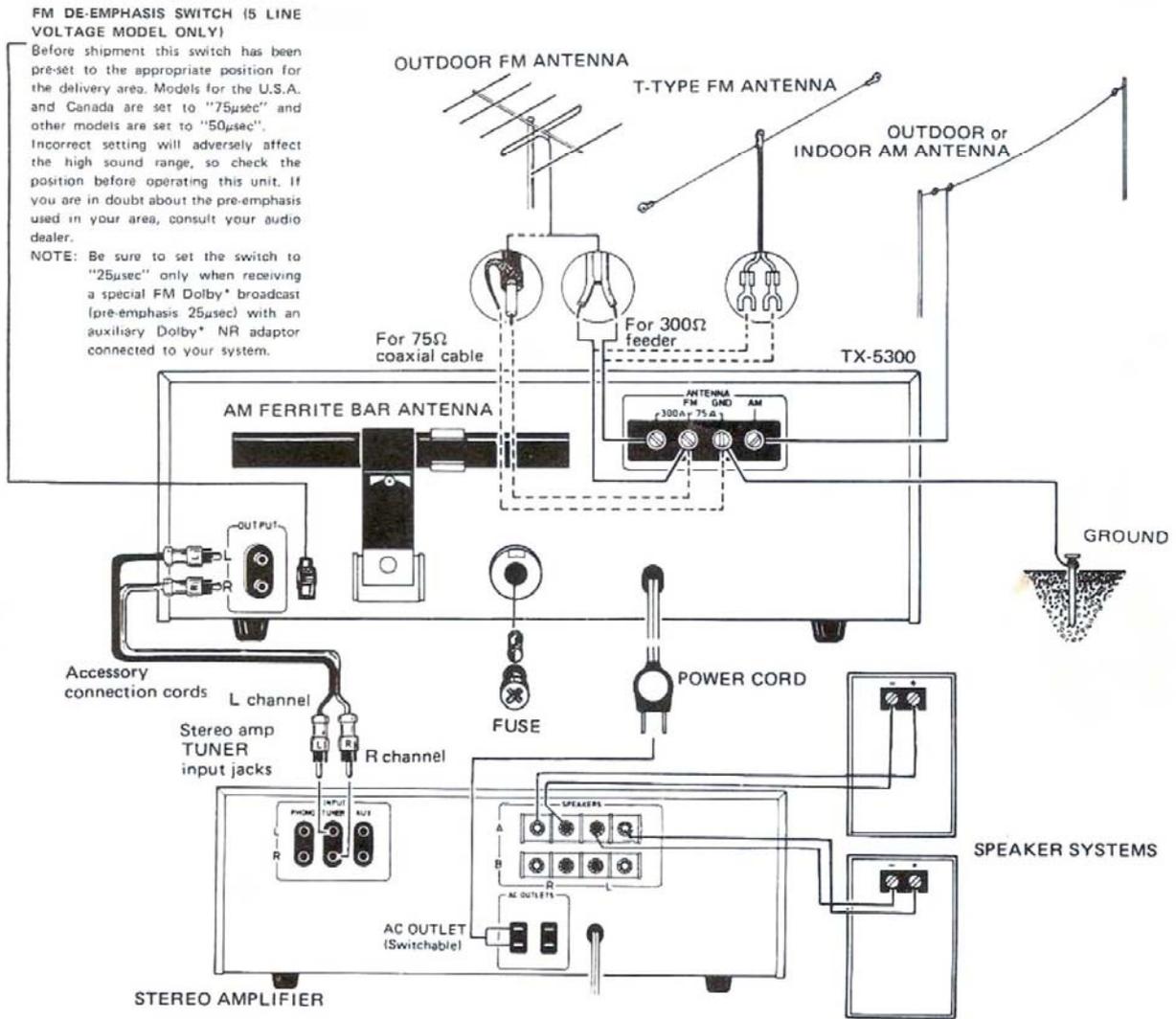
Mutual interference can be caused if located too close to an AM radio or TV set, allow for adequate spacing.

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CONNECTION DIAGRAM



LINE VOLTAGE AND FUSE AND REAR PANEL

Each design of LINE VOLTAGE and FUSE of this model differs according to each destination to be delivered. How to operate the TX-5300 is quite the same for each version. However, each rear panel differs according to LINE VOLTAGE and FUSE designed for each version. Fig. A shows the LINE VOLTAGE of a 220V only model. Fig. B shows the LINE VOLTAGE and FUSE of a 5 line voltage (110V, 120V, 130V, 220V, 240V) whose line voltage and fuse can be changed and set as follows:

220V MODEL ONLY

5-LINE VOLTAGE MODEL

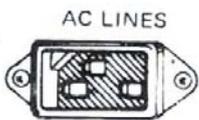


Fig. A



Fig. B

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 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

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

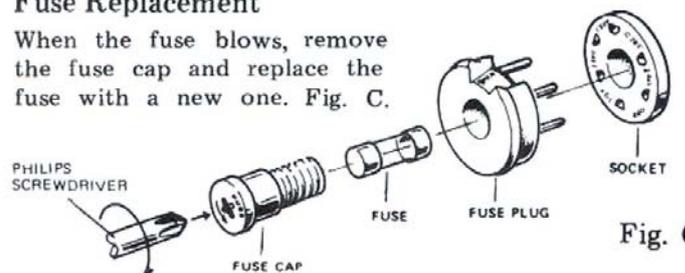


Fig. C

* The word "Dolby" is a trademark of Dolby Laboratories Inc.

STEREO SYSTEM SET-UP

When combined with a stereo amplifier and two speaker systems, the TX-5300 will form the core of a complete stereo system, providing superb AM, FM monophonic and FM stereo reception.

CONNECTION TO STEREO AMPLIFIER

Employ the accessory cords to connect the OUTPUT jacks of the TX-5300 with the tuner input jacks of the stereo amplifier, as shown in Fig. 1.

Connection Notes

- Observe the L & R jacks of the TX-5300 and stereo amplifier, and be sure to connect L to L, and R to R.
- Insert connecting plugs firmly. Loose connections can cause absence of sound or noise.

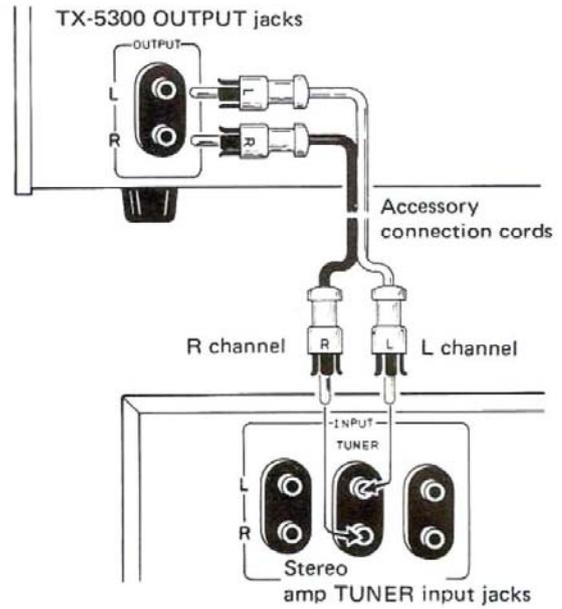


Fig. 1

ANTENNA AND GROUND CONNECTIONS

FM BROADCAST ANTENNA

FM broadcast signals are sharply affected by intervening mountains, buildings, and inside metal framed structures. Care is thus needed in selecting an appropriate FM antenna to match surrounding conditions and field strength.

Outdoor FM Antenna

Normally, install antenna as follows.

- Connect antenna feeder wire to the 300Ω antenna terminals of the TX-5300 as shown in Fig. 2.
- While listening to broadcasts, as described on P. 6, install the antenna and determine best location for optimum reception. Secure antenna firmly.

Connection with Coaxial Cable

In urban locations where traffic is heavy, industrial zones, or when nearby high voltage power lines are present, an ordinary FM antenna may not be adequate to prevent noise. The problem can often be solved by using a special FM antenna and 75Ω coaxial cable to connect it to the TX-5300. Connect the cable to the 75Ω antenna terminal as shown in Fig. 2.

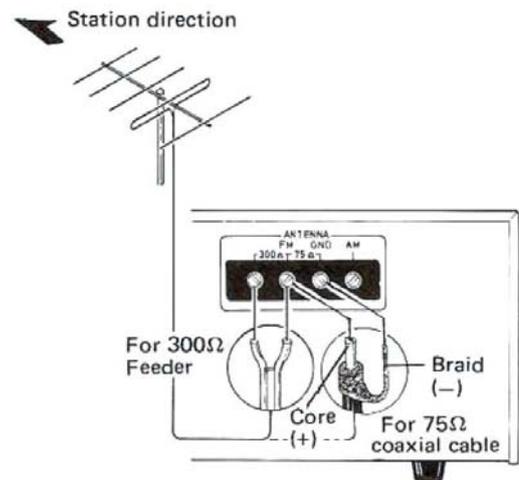


Fig. 2

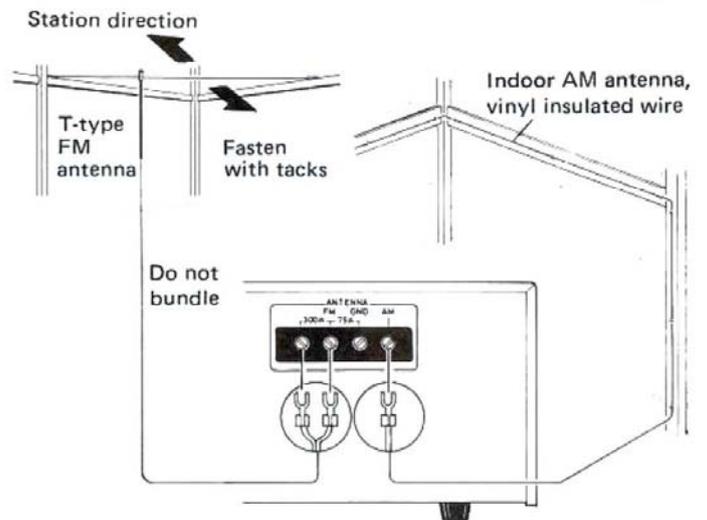


Fig. 3

T-type Antenna

When stations are nearby, and in wooden frame buildings etc. where FM signals are strong, the accessory T-type antenna can be employed.

- As shown in Fig. 3, connect the T-type antenna to the 300Ω antenna terminals. Spread the 2 arms of the antenna horizontally and while listening to an FM station, position them for best reception. The antenna can then be taped to a wall or ceiling.

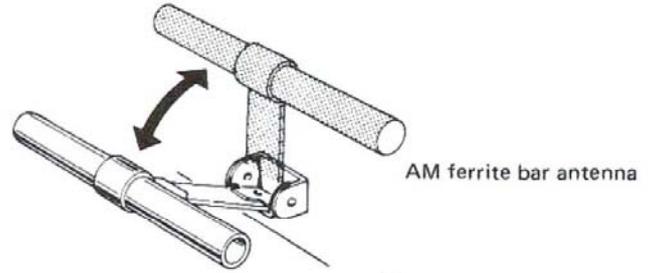


Fig. 4

NOTE:

Consult audio dealer for detailed information on FM antennas and coaxial cable installations.

AM BROADCAST ANTENNA

Normally, position the ferrite bar antenna (Fig. 4) for best reception while listening to an AM station.

Indoor AM Antenna

If reception is difficult with the bar antenna, an indoor AM antenna can be erected with vinyl-insulated wire as shown in Fig. 3.

Outdoor AM Antenna

For optimum AM reception, an outdoor AM antenna using vinyl-insulated wire can be erected as shown in Fig. 5.

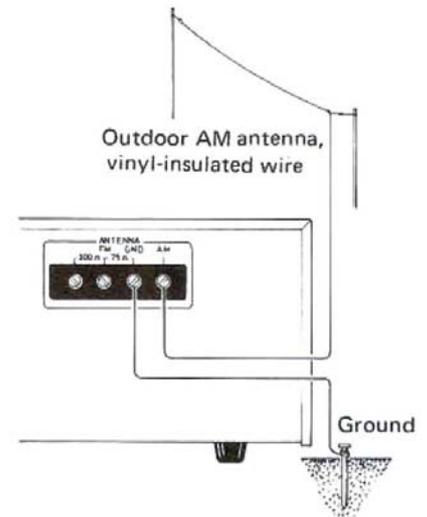
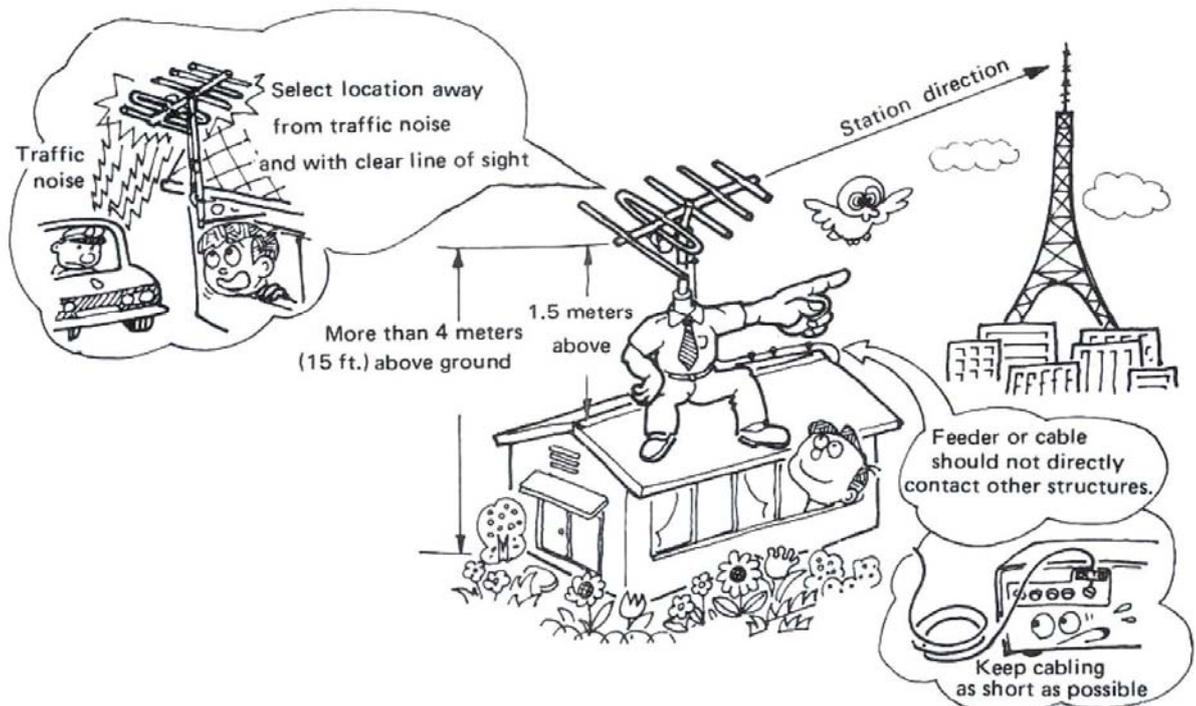


Fig. 5

GROUNDING

For maximum safety and noise reduction, connect the GND terminal to an earth ground (Fig. 5).

FM ANTENNA INSTALLATION NOTES



FRONT PANEL FACILITIES

POWER SWITCH

Switch for turning AC power ON and OFF.

AM/FM METER

Meter for indicating proper station tuning.

AM: Tune for maximum deflection toward the right.

FM: Tune for center of scale indication.

FM STEREO INDICATOR

With the FUNCTION switch set to FM AUTO, red lamp lights when stereo broadcast is being received.

FUNCTION SWITCH

Switch for selecting type of broadcast reception.

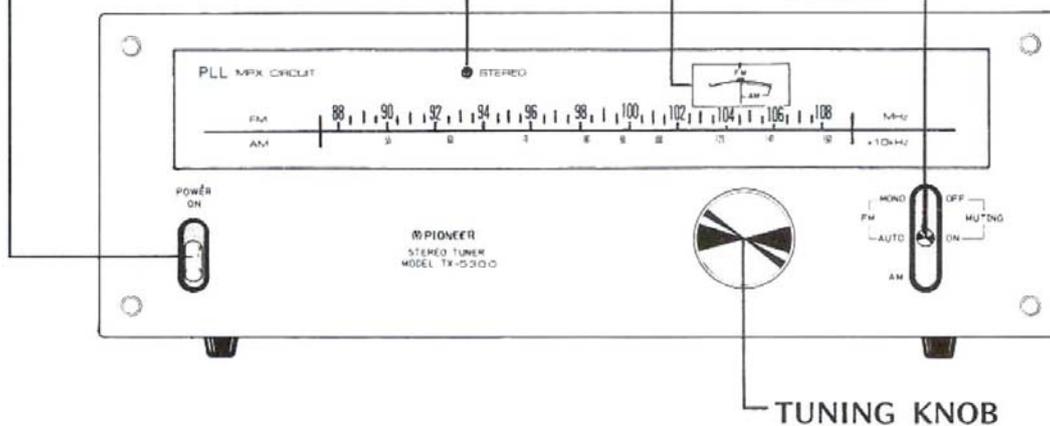
AM: To receive AM broadcasts

FM AUTO: To receive FM stereo broadcasts. When an FM monophonic signal is being received, tuner automatically switches to monophonic operation. FM STEREO indicator lights during stereo reception.

FM MONO: To receive FM monophonic broadcasts. Recommended also when FM AUTO reception is noisy and when receiving extremely weak stations.

NOTE:

In the FM MUTING ON position, inter-station noise is suppressed when tuning FM stations.



TUNING KNOB

Employ for selecting stations. Observe AM/FM meter when tuning.

FM RECEPTION

1. Set the FUNCTION switch to FM AUTO.
 2. Rotate the TUNING knob to select the desired station. Adjust for center indication of the AM/FM meter (Fig. 6).
- Employ the controls of the connected stereo amplifier for adjusting volume and tone.
 - The FM STEREO indicator lights when a stereo broadcast is being received. It does not light during monophonic reception.

If Reception at FM AUTO is Noisy or Absent

Operation of the FM muting circuit when the FUNCTION switch is set to FM AUTO can occasionally prevent reception of a weak stereo broadcast. In this case, or if reception at FM AUTO is noisy, change the FUNCTION switch to FM MONO. This will disengage the muting circuit and permit reception of weak signals, although interstation noise will then become apparent during tuning.

- It is usually preferable to reduce the stereo amplifier volume when tuning FM MONO and AM station.

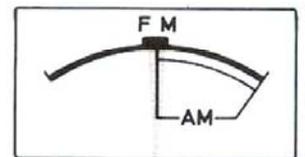
AM RECEPTION

1. Set the FUNCTION switch to AM.
 2. Rotate the TUNING knob to select the desired AM station. Adjust for maximum deflection of the AM/FM meter toward the right (Fig. 6).
- Employ the controls of the connected stereo amplifier to adjust volume and tone.

NOTE:

If AM or FM reception is exceptionally noisy, inspect antenna installation and connections by referring to P. 4.

FM reception: Meter will normally indicate center of scale when FM broadcasts are not being received. As the TUNING knob is rotated, the indicator will deflect toward the left or right, and will again indicate center of scale when the station is properly tuned in.



AM reception: During AM reception, carefully adjust the TUNING knob for maximum deflection of the meter toward the right.

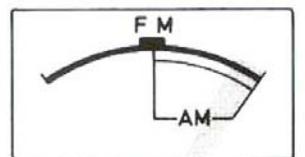
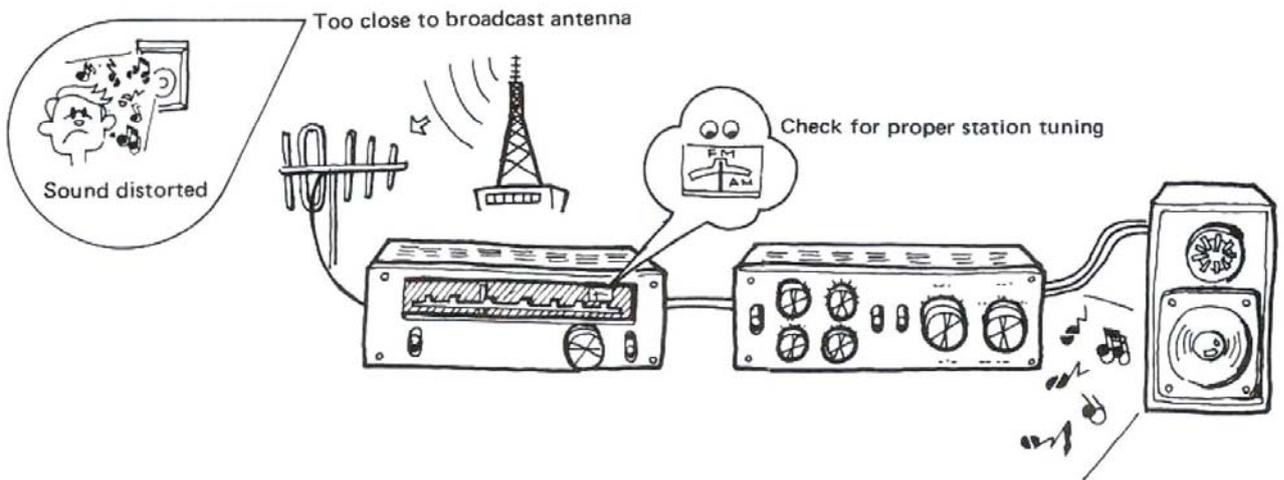
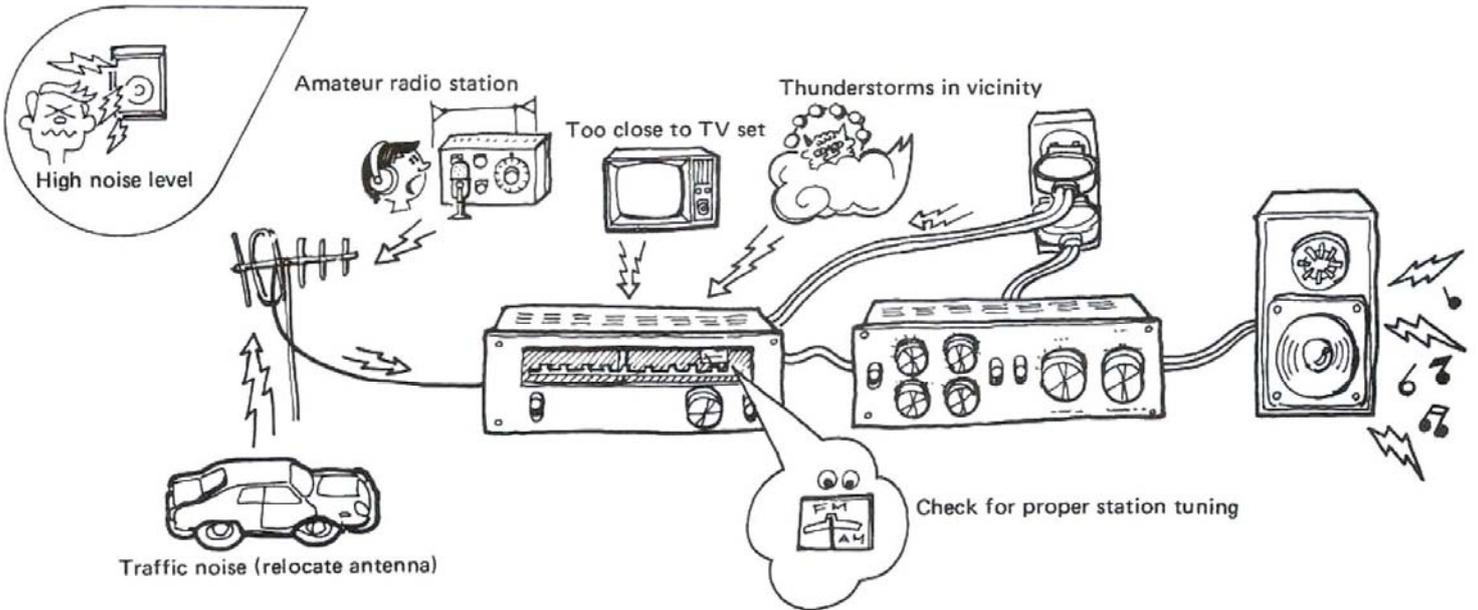
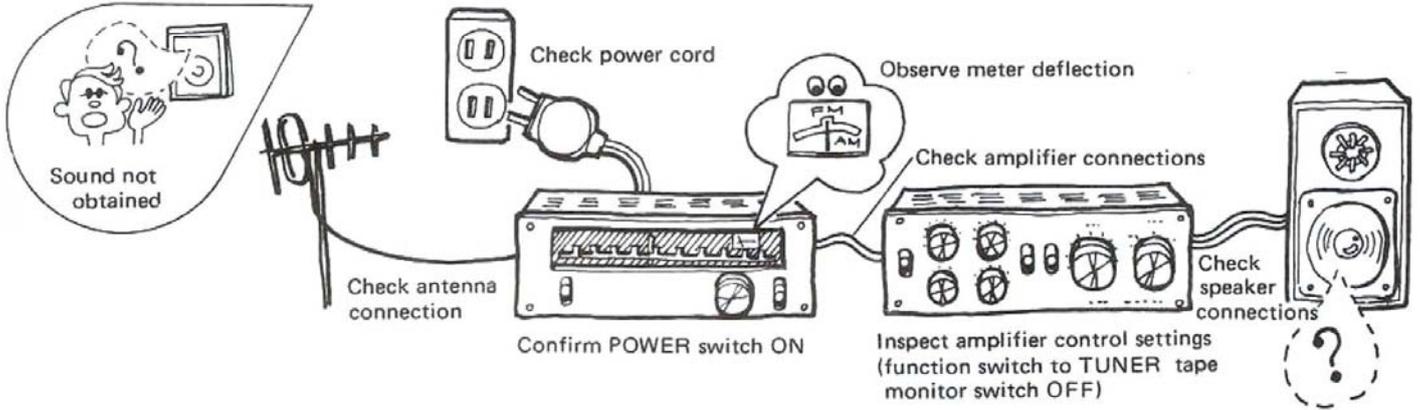


Fig. 6

CONDITIONS FREQUENTLY MISTAKEN FOR MALFUNCTION

In the event of trouble, first inspected the points indicated below. If this fails to correct the problem, contact a Pioneer Authorized Service Center. For further information, contact Pioneer Electronic Corp.



SPECIFICATIONS

Semiconductor

FET	1
IC(s)	3
Transistors	5
Diodes	6

FM Section

Circuitry 1 FET, 1-stage RF Amplifier, 3-gang Variable Capacitor, 5-stage Limiter, PLL MPX Circuit.

Sensitivity	
IHF	1.9 μ V
50dB Quieting	4.5 μ V (mono), 50 μ V (stereo)
Signal-to-Noise Ratio	70dB (mono), 68dB (stereo)
Total Harmonic Distortion	
100Hz	0.2% (mono) 0.4% (stereo)
1kHz	0.2% (mono) 0.4% (stereo)
10kHz	0.2% (mono) 0.6% (stereo)
Capture Ratio	1.0dB
Selectivity \pm 400kHz	60dB
Frequency Response	50Hz ~ 10kHz $\begin{smallmatrix} +0.2 \\ -0.5 \end{smallmatrix}$ dB
	20Hz ~ 15kHz $\begin{smallmatrix} +0.2 \\ -2.0 \end{smallmatrix}$ dB

Separation	
1kHz	35dB
50Hz ~ 10kHz	30dB
Image Rejection	60dB
IF Rejection	90dB
Spurious Rejection	75dB
AM Suppression	50dB
Sub Carrier Suppression	40dB
Muting Threshold	2.2 μ V
Stereo Threshold	2.2 μ V
De-emphasis	25 μ s/50 μ s/75 μ s switchable (5-line voltage model only)

AM Section

Circuitry 1-stage RF Amplifier, 2-gang Variable Capacitor

Sensitivity	
(IHF, Ferrite antenna)	300 μ V/m
(IHF, Ext. antenna)	15 μ V
Selectivity	35dB
Signal-to-Noise Ratio	50dB
Image Rejection	40dB
IF Rejection	50dB

Audio Section

Output Level/Impedance
OUTPUT 600mV/5k Ω

Miscellaneous

Power Requirements	AC 220V 50Hz/60Hz or AC 110V, 120V, 130V, 220V and 240V (Switchable)
	50Hz/60Hz
Power Consumption	12W
Dimensions	350(W) x 125(H) x 303(D)mm
	13-3/4 x 4-15/16 x 11-15/16 in.
Weight: Without Package	4.8kg (10 lb 9 oz)
With Package	5.9kg (13 lb)

Furnished Parts

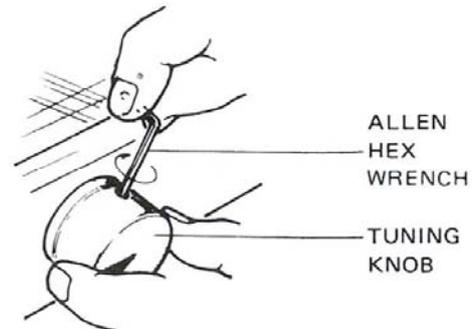
T-type FM Antenna	1
Connection Cord with Pin Plugs	1
Allen Hex Wrench	1
Operating Instructions	1
Fuse 0.5A	1
Fuse 1A (5-line voltage model only)	1

NOTE:

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

ALLEN HEX WRENCH

The accessory Allen hex wrench is provided for removing the TUNING knob or tightening its set-screw in event it becomes loose.



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