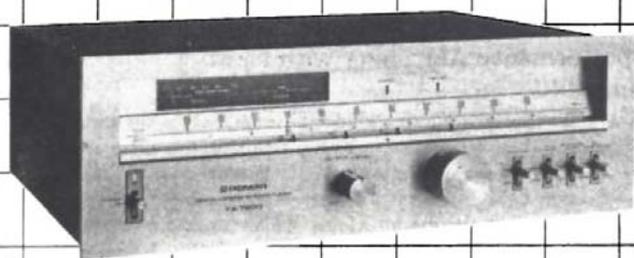


AM/FM STEREO TUNER

TX-7800

OPERATING INSTRUCTIONS

S
S/G
HG



These operating instructions are based on the S, S/G models, and they can be used for the HG model. The differences between the models are given below.

Power requirements

HG model: 220V/240V (switchable), 50Hz, 60Hz
S, S/G model: 110V/120V/220V/240V (switchable), 50Hz, 60Hz

NOTE:

Read through the section on the **IMPORTANT-LINE VOLTAGE** on page 12 before using your tuner and check that the voltage selector switch is set correctly for use in your area.

Power cords

HG model: This is configured as an AC inlet type. Use a separate power cord in order to connect the power supply.

S, S/G model: The power cord is mounted at the rear.

Cabinet

HG, S model: Black cabinet

S/G model: Walnut grained finished cabinet.

Others

HG model: The Aerial feeder connector for FM antenna is provided on the rear panel.

S, S/G model: The FM de-emphasis switch for FM Dolby reception is provided on the rear panel.

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Conditions Frequently Mistaken for Malfunctions	Insertion
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 PIONEER

FEATURES

FM-Servo Lock Circuit for Optimum Tuning Point and Touch Sensor Tuning System

The servo lock circuit eliminates once and for all tuning deviations in the reception frequency caused by fluctuations in the temperature and humidity, and it makes it possible for the tuner to maintain the optimum tuning point accurately. When the signals from the broadcasting station are picked up and the servo lock circuit swings into action, the tuning deviation is detected by the FM detector in the form of DC voltage. This is then amplified by the operational amplifier which boasts a high gain, the local oscillation frequency is controlled and the optimum tuning point is maintained accurately all the time.

A touch sensor tuning system is combined with the servo lock circuit. After a station has been tuned in and the respective knob released, the functional tuning lock system— another standard feature— makes sure that the servo lock circuit works for optimum reception.

FM Front End with 4-gang Variable Capacitor

The tuner's front end incorporates a 4-gang variable capacitor and dual-gate MOS FETs which are well-known for their high gain and low noise characteristics. These features provide a usable sensitivity of 1.6 μ V (MONO), which is high enough for all listening requirements, and also tip-top strong signal input characteristics. They are effective in the suppression of various kinds of interference and intermodulation distortion, and they guarantee stable FM broadcast reception even in weak-signal and strong-signal areas. Furthermore, slits are provided in the rotor of the local oscillation variable capacitor, and very fine and accurate tracking adjustments are performed in order to greatly improve the scale accuracy.

FM IF Section Designed for Low Distortion and High S/N Ratio

The FM IF amplifier packs a 6-element linear phase ceramic filter which provides the best in both selectivity and phase response. There is a buffer amplifier between the filters for a sufficiently high sensitivity, and stable reception is performed even in areas bothered by strong input interference adjacent to the station whose signals are being received. Last but not least, the completely new quadrature detector upgrades the distortion characteristics and also the signal-to-noise ratio.

MPX Circuitry Adopting PLL IC with Built-in Automatic Pilot Signal Cancelling Circuit

The FM demodulator employs a negative feedback PLL MPX IC with a built-in automatic pilot signal cancelling circuit. This enables the pilot signal to be canceled out automatically without compromising the high-range frequencies. As a result, the distortion is reduced considerably, the leak carrier level is suppressed, and the frequency response is extended over an even broader band.

High-performance AM Tuner with Newly Developed IC

The AM section incorporates a 2-gang variable capacitor tuned type of RF amplifier circuit and a highly sensitive, low distortion IC. These features increase the image interference and IF interference rejection capabilities of the tuner. An optimum AGC voltage is supplied to each section, providing stable reception with low spurious interference and distortion even in localities with strong field strength areas.

Selectable Bandwidth AM IF Amplifier

According to the signal conditions, the AM IF amplifier can be selected for a wide band (high fidelity) or a narrow band (high selectivity) mode. A wide-band filter is used in the wide band mode, making it possible to improve the band response and to receive AM programs with a good linearity and a high fidelity. On the other hand, a narrow-band filter is used in the narrow band mode for enhanced selectivity and more efficient rejection of interference.

Electronic Muting for Trouble-free Tuning

The built-in muting circuit features an IC in the audio section. This eliminates the click noise heard when the power switch is set to the ON or OFF position and when the stations are being tuned in. Another prime function of this circuit is to suppress the annoying interstation noise and popping noise for the best in trouble-free tuning.

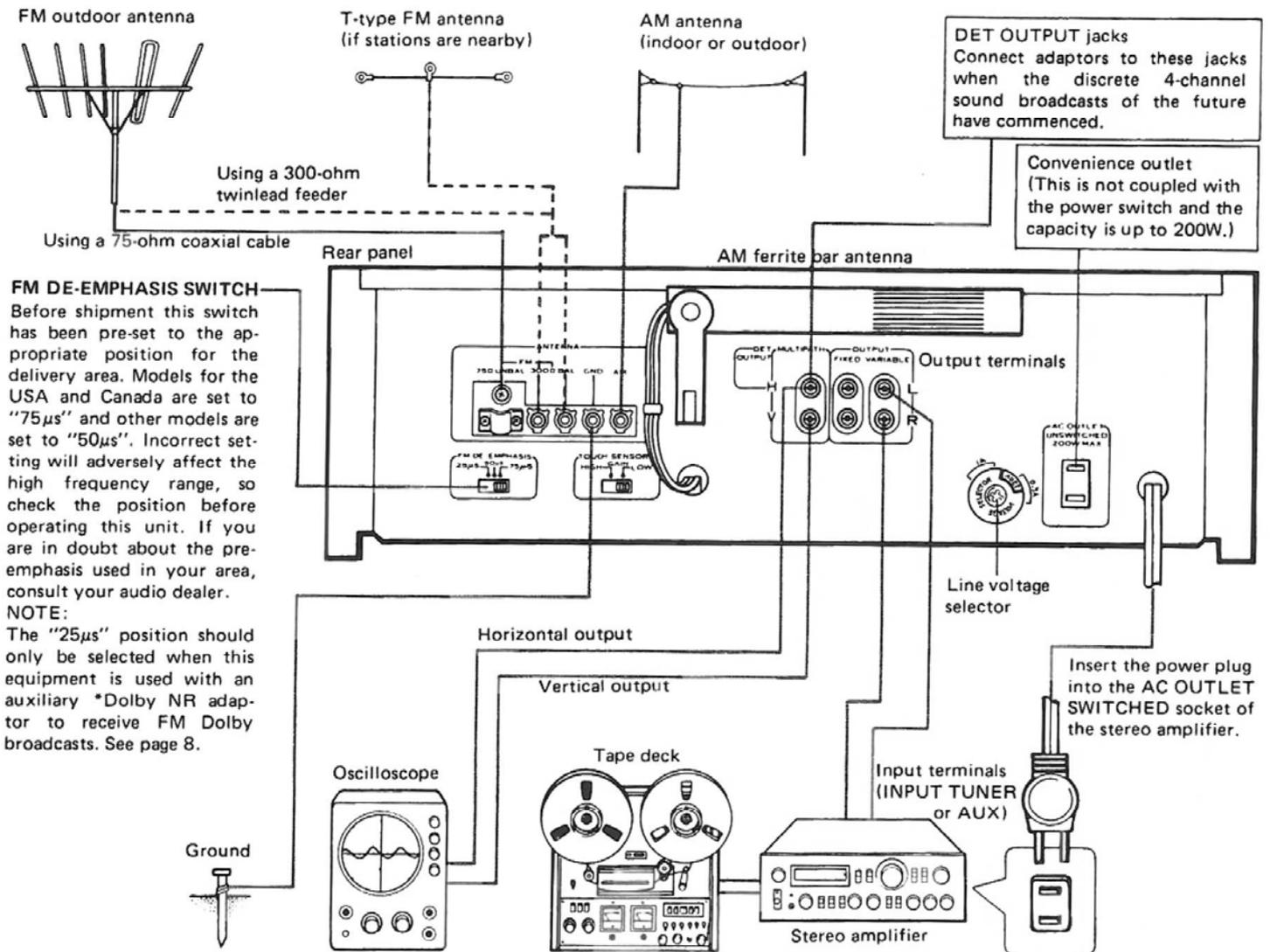
INSTALLATION PRECAUTIONS

To ensure a long and reliable performance, avoid installing this model in any of the following locations:

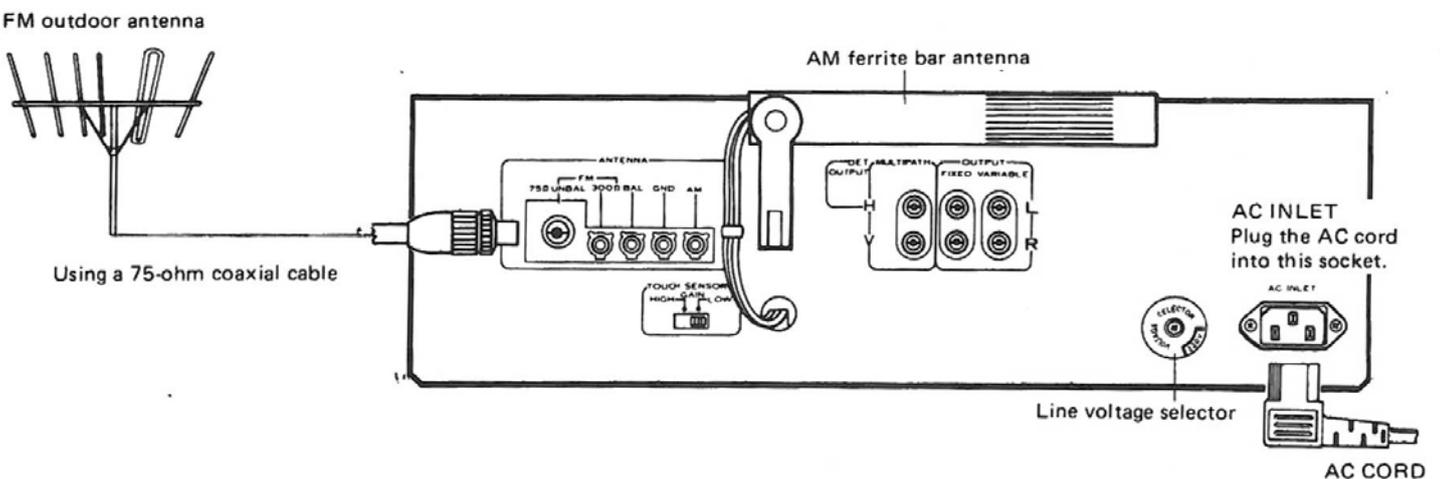
Locations to be avoided	Possible detrimental effects
1. Locations exposed to the sun or heat radiated by heaters, on top of heat-generating power amplifiers, near power transformers.	1. External heating can cause the circuit components to deteriorate and it may prevent stable operation.
2. Locations which are not properly ventilated, and locations with a high humidity or moisture content. Do not place vases or goldfish bowls on top of the tuner.	2. Humidity and moisture can cause defective insulation, and adversely affect the performance of the precision circuit components.
3. Locations where there are alcohol, benzene and other volatile chemicals in the vicinity. Take care not to bring sprays like insecticides near the tuner.	3. Chemicals can corrode the panels and chassis and change their coloring.

CONNECTION DIAGRAM

This rear panel is based on the S, S/G models



This rear panel for the HG model



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

CONNECTIONS

Connection Precautions

- The tuner's output jacks as well as the connecting jacks on the stereo amplifier, one being for the left (L) channel and the other for the right (R) channel. Make sure that you connect L to L and R to R correctly.
- Plug the connecting cords firmly into the jacks; loose connections can generate noise.
- Do not bundle the input and output cords with the power and speaker cords. Also avoid using cords which are longer than required and bunching them. These practices can result in noise, impaired sound quality, and possible operating difficulties.

CONNECTIONS TO A STEREO AMPLIFIER

Use the accessory pin plug connecting cords to connect the TUNER or AUX jacks of the stereo amplifier with the output jacks (VARIABLE) of the tuner.

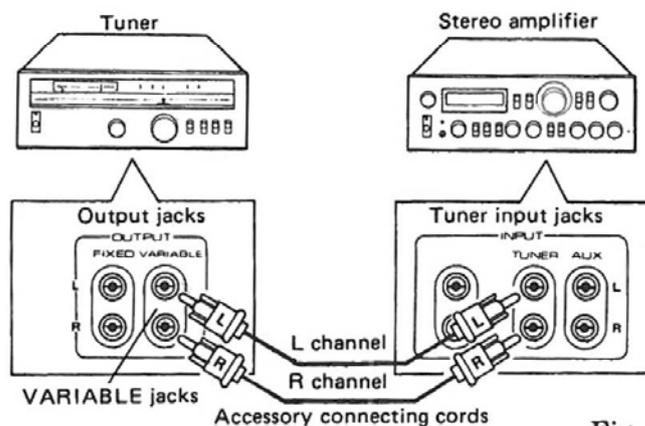


Fig. 1

ANTENNA AND GROUND CONNECTIONS

FM ANTENNAS

There are two methods you can use when connecting the FM antenna to the antenna input terminals: you can use a 300-ohm twinlead feeder or a 75-ohm coaxial cable.

Pioneer recommends the 75-ohm coaxial cable (RG59U, etc.) if you want your tuner to display its capabilities to the full. The coaxial cable is more effective than the twinlead feeder in safeguarding against external interference noise from impairing the sound quality. In other words, twinlead feeders are liable to pick up external noise, and this is why they are not recommended.

CONNECTIONS USING A 75-OHM COAXIAL CABLE

Refer to Fig. 2 and follow the procedure. Prepare the tip of the coaxial cable and connect it to the antenna input terminal (75Ω-UNBAL).

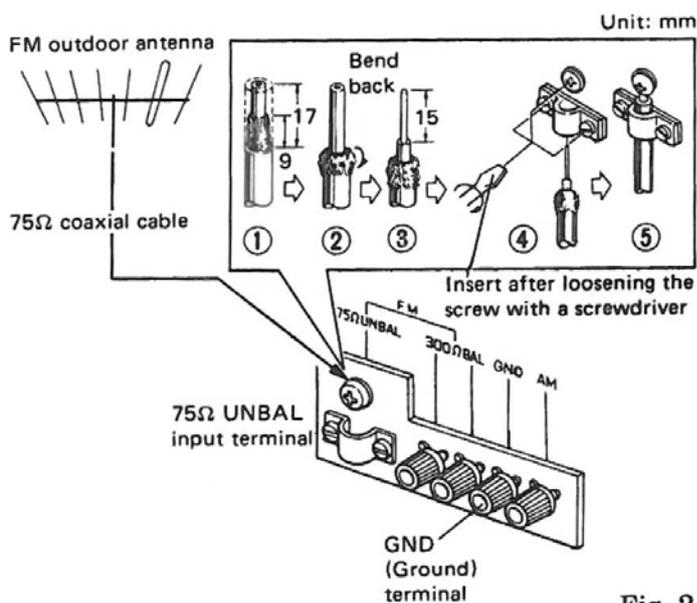
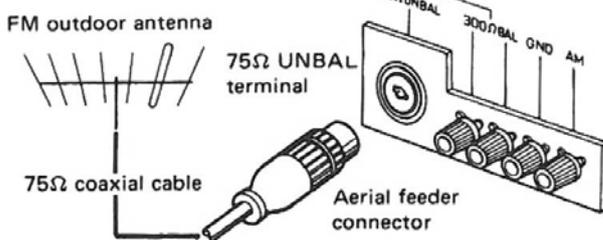


Fig. 2

Connection using the aerial feeder connector (HG model only)

In such cases, do not prepare the tip of the coaxial cable



CONNECTIONS USING A 300-OHM TWINLEAD FEEDER

In cases where it is only possible to use a twinlead feeder with a community receiving system antenna, refer to Fig. 3 and follow the procedure. Prepare the ends of the twinlead feeder and attach them to the 300Ω-BAL antenna input terminals. Then make the twinlead feeder as short as possible but do not bundle the wires or run them loose on the floor.

ACCESSORY T-TYPE ANTENNA

This antenna is designed to allow you to receive FM programs in areas where strong signals are beamed by broadcasting stations until you install your FM antenna. As shown in Fig. 3, attach the antenna to the 300Ω-BAL antenna input terminals and then tune into an FM station, following the instructions listed under "LISTENING TO BROADCASTS" on page 7. Extend both ends of the antenna horizontally, locate the optimum receiving location by moving the antenna to the left or right, or up or down, and then secure it to the ceiling or wall.

AM ANTENNAS

While listening to AM stations (see AM Reception on page 7), move the rear panel ferrite bar antenna and position it for best reception.

- Select the desired AM station, and move the bar antenna around in every direction and then set it at the position where the best reception is obtained.
- In cases when the bar antenna is insufficient for adequate reception, an indoor AM antenna can be made from a length (5 to 6 meters) of vinyl insulated wire. As shown in Fig. 5, connect one end of the wire to the AM antenna terminal and suspend the free end from a wall or ceiling at as high a location as possible.
- If reception is still difficult with an indoor antenna, use vinyl insulated wire to erect an outdoor AM antenna between two supports as shown in Fig. 5.

GROUNDING

From the viewpoint of both safety and reduced noise, Pioneer recommends that you employ a ground as shown in Fig. 5. Connect the ground lead to the GND terminal of the tuner. Never connect it to a gas pipe or other dangerous location.

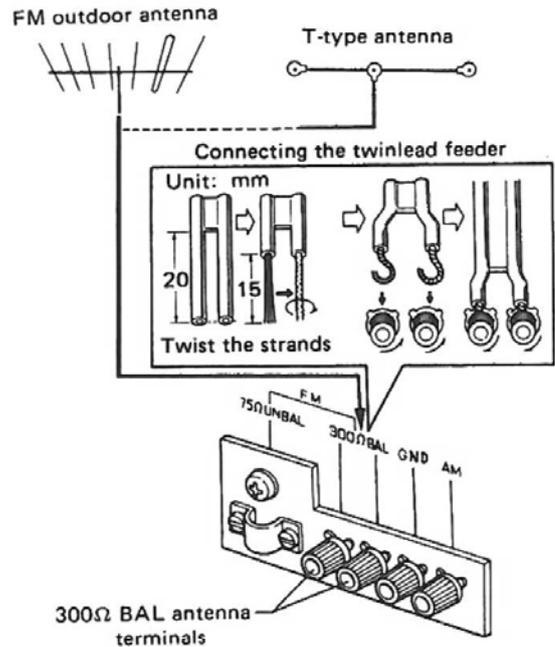


Fig. 3

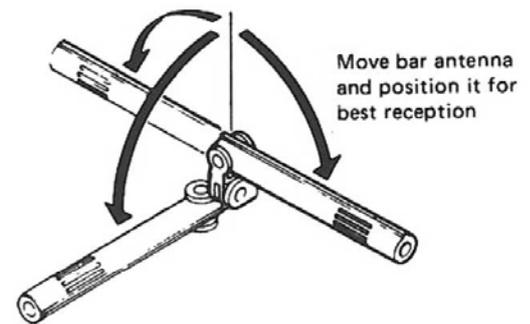


Fig. 4

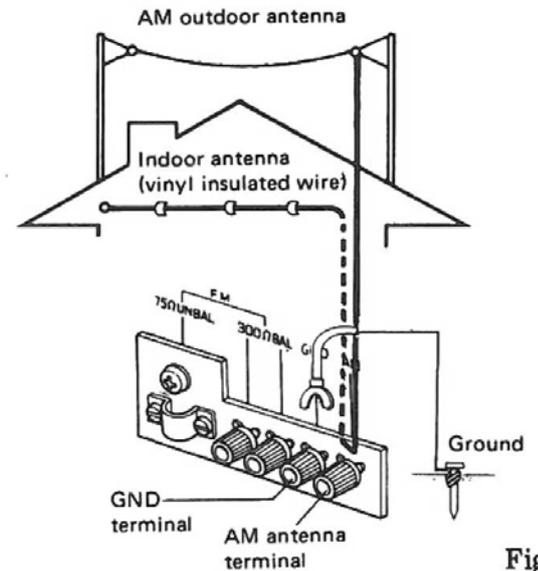


Fig. 5

FRONT PANEL FACILITIES

POWER SWITCH

Set to ON position to turn on power. Pilot lamp will light.

SIGNAL METER

This meter indicates the antenna input level of the AM and FM broadcasting waves. The higher the input level, the more the meter deflects toward right. When selecting the desired station, find the position of the tuning knob which effects the maximum deflection of the meter pointer. When selecting an FM station, also observe the tuning meter to determine the optimum tuning point.

MEMORY MARKERS

Convenient for designating most often tuned in stations. Slide markers with fingertip to desired positions.

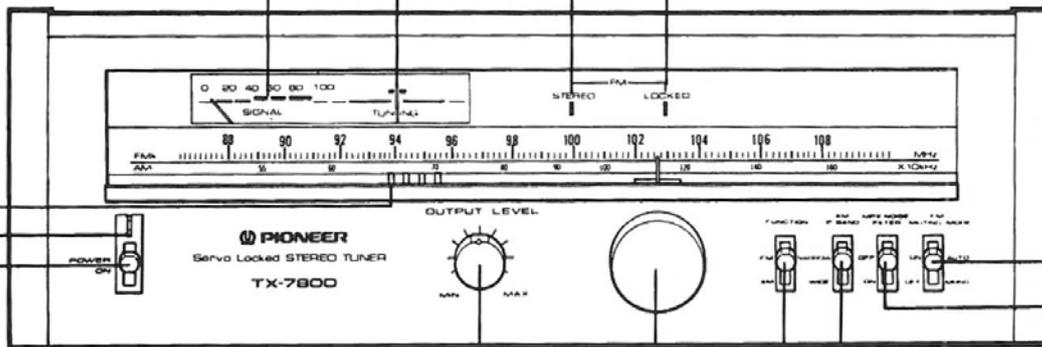
TUNING METER

This meter indicates the optimum tuning point irrespective of the field strength when selecting an FM station. With no signal, the pointer remains at the center; as a signal is tuned in, it deflects to the right or left; when the signal is tuned in accurately, the pointer will correctly move to the center of the scale. If the tuning knob is adjusted further, the pointer deflects to the right or left; as the signal moves off completely, the pointer returns to the center position again.

FM-STEREO INDICATOR

This indicator lights up when the tuner is receiving a stereo program if the FM MUTING/MODE switch is set to AUTO.

Pilot lamp



OUTPUT LEVEL KNOB

This knob is used to adjust the output level of the variable output jacks. When it is rotated in the direction of MAX, the output level is increased. For further details, refer to "OUTPUT LEVEL KNOB" on page 8.

TUNING KNOB

This knob is used for selecting stations. When selecting an AM station, observe the signal meter, and when selecting an FM station, observe both the signal meter and the tuning meter.

FUNCTION SWITCH

This switch is used to select the type of broadcasting waves.

- FM For reception of FM broadcasting
- AM For reception of AM broadcasting

AM IF BAND SWITCH

AM IF (intermediate frequency) passband can be set to for wide or narrow.

This switch is used to select between NARROW (narrow band) and WIDE (wide band). In this way, it is possible to change over the pass bandwidth of the intermediate frequency signals.

NARROW . . . When tuning in the desired station, and if adjacent station interference is a problem at the WIDE setting, set switch to this position.

WIDE Set the switch to this position after the desired station was received without adjacent station interference.

For further details, refer to "AM IF BAND switch" on Page 8.

—FM-LOCKED INDICATOR

With the function switch set at FM and the FM muting/mode switch set at ON, this indicator lights up when you take your hand off the tuning knob at the optimum tuning point. This light indicates that the servo locking circuit has been activated by the built-in touch sensor detector circuit and the frequency of the circuit is locked to the frequency of the station.

—FM MUTING/MODE SWITCH

When this switch is set to ON, unpleasant interstation noise is eliminated, which makes selection of stations easier. However, if the muting switch is set to ON in areas where the field strength is extremely weak, the station being received may also disappear. In such areas, therefore, the muting switch should be turned OFF by pressing it.

This switch also serves as the MODE switch, and the FM locked indicator will not be lighted if it is set to OFF. In addition, monaural reception will be obtained even though the station is broadcasting a stereo program.

—MPX NOISE FILTER SWITCH

If a comparatively high frequency noise is noticed during reception of a stereo program, this switch is set to ON. Stereo separation will thereby somewhat deteriorate. This switch should normally be kept OFF.

LISTENING TO BROADCASTS

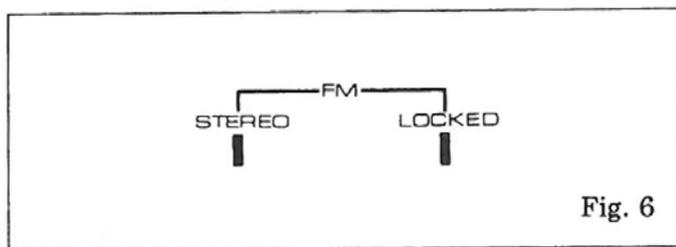


Fig. 6

FM RECEPTION

1. Set the power switch to ON.
2. Set the function switch to FM.
3. Set the FM muting switch to ON.

4. Turn the tuning knob to select the desired station. Operate the tuning knob so that the signal meter pointer deflects toward the far right and also the tuning meter will indicate the center of the scale, as shown in Fig. 7. When a stereo program is being received, the stereo indicator comes on; if a monaural program is being received, this indicator will remain off.
5. Take your hand off the tuning knob; then, the FM locked indicator will light, indicating that the tuner frequency has been locked to the FM station transmitting frequency.

NOTE:

When touching the tuning knob, do not touch the front panel or tuner body with your other hand. If you touch the front panel or tuner body with your other hand, the touch tune lock system may malfunction.

- If a comparatively high frequency noise is noticed during the reception of stereo program, depress the MPX noise filter switch setting it to the ON position.
- If accurate tuning cannot be obtained even though the signal meter is deflecting, set the FM muting/mode switch to OFF, and begin the tuning process again.

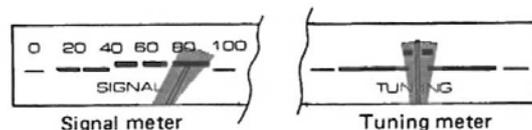


Fig. 7

AM RECEPTION

1. Set the power switch to ON.
2. Set the function switch to AM.
3. Set the AM IF band switch at NARROW. If the desired station can be received clearly without adjacent channel interference, set this switch to WIDE after selection. For further details regarding this operation, refer to "AM IF band switch" on page 8.
4. Select the desired station by adjusting the tuning knob. The signal meter pointer will strongly deflect toward the right when accurate tuning is obtained, as shown in Fig. 8.

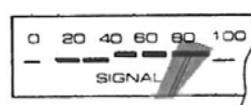


Fig. 8

ACCESSORY FUNCTIONS

FM MUTING/MODE SWITCH

This switch is used to eliminate unpleasant interstation noise which occurs during selection of FM broadcasting stations. The muting circuit suppresses this noise, and makes FM selection easier.

- In the areas where the distance from the FM station is comparatively small, set this switch to ON.
- In the areas where the field strength is very weak, set this switch to OFF during selection. A distant, weak station can be received even though the noise becomes greater.
- If recording of a stereo FM program onto monaural tape is desired, set this switch to MONO.

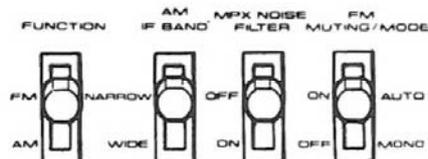


Fig. 9

AM IF BAND SWITCH

The AM IF band switch is used to switch the intermediate frequency signal pass band width of AM between NARROW (narrow band) and WIDE (wide band). If there is a station close to the desired station, set this switch to NARROW; the selectivity will become sharp, and interference will be avoided. On the other hand, if there is not a station close nearby, set this switch to WIDE; the sound quality of the received program will be improved. Further, the behavior of the signal meter pointer varies according to the switch position; WIDE or NARROW. When set to WIDE, the width of the tuning point is comparatively large, and the pointer moves slowly. At NARROW position, the pointer moves sharply as the width of the tuning point is very narrow.

OUTPUT LEVEL KNOB

The Tuner is provided with variable output jacks whose output level can be varied by adjusting the output level knob on the front panel, and is also provided with fixed output jacks whose output level is fixed.

Using the VARIABLE jacks

The output level can be adjusted using the output level knob, thereby making it possible to bring the output levels of the Tuner and of the other components connected to the stereo amplifier in line with each other.

FM-DOLBY RECEPTION

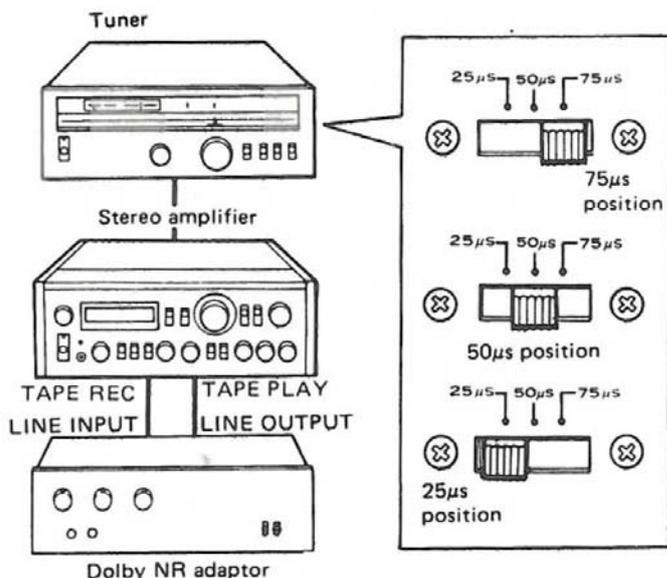


Fig. 10

The FM de-emphasis switch is provided to allow reception of FM-Dolby broadcasts in locations where these programs are being transmitted. A separately sold adaptor must be connected to the stereo amplifier in this case, then proceed according to the following steps:

1. As shown in Fig. 10, connect the Dolby NR adaptor to the tape (record & play) jacks of the stereo amplifier.
2. Set the rear panel FM de-emphasis switch to 25 μ s.
3. Set the tape monitor switch of the stereo amplifier to ON.
4. Set the function switch to the FM position and use the tuning knob to tune in to an FM-Dolby broadcast. Tuning is performed in the same manner as described in "LISTENING TO BROADCASTS."
5. Operate the adaptor and set for reception. Adjust the volume and tone with the controls of the stereo amplifier.

NOTES:

- Refer to the Dolby NR adaptor operating instructions regarding connection and operation.
- When not listening to FM-Dolby broadcasts, be sure to set the FM de-emphasis switch to 50 μ s or 75 μ s.

INSTALLING THE FM ANTENNA

It is necessary to choose the installation location for the FM antenna prudently so that you will be able to receive FM stereo broadcasts with both optimum stability and sound quality.

Bear in mind the items below, and then find the best location (height and direction).

1. The ideal place for the antenna is somewhere where it will pick up the signals directly from the transmitting antenna of the FM broadcasting station. If you install the antenna between high-rise blocks or on the other side of buildings or similar obstacles where it will not be able to pick up the signals directly, you will find that multipath distortion is caused by the effects of the reflected radio waves bouncing off those obstacles. This means that the channel separation is sometimes impaired.

Refer to the sections on page 10 on "FM MULTIPATH DISTORTION" and choose a height and direction for the antenna where the effects of multipath distortion are minimal.

2. Install your antenna as far away as possible from roads and highways so the ignition noise of automobiles will not interfere with reception. Also, set your antenna at a distance from high-tension power transmission lines and neon signs.
3. Install the antenna at a distance of not less than 2 meters from a metal roof, concrete buildings, and TV antennas.

FM MULTIPATH DISTORTION

Multipath distortion occurs when FM signals are reflected by mountains, buildings and other obstacles lying in the path of the signals and enter the antenna from various directions, as shown in the accompanying figure. Due to the different distances travelled by the reflected signals, the slight time difference with which they strike the antenna causes mutual interference. This results in phase distortion, distortion of the received sound, reduced channel separation, and a downgraded signal-to-noise ratio. The tuner is liable to be affected by this phenomenon when the radio waves are weak.

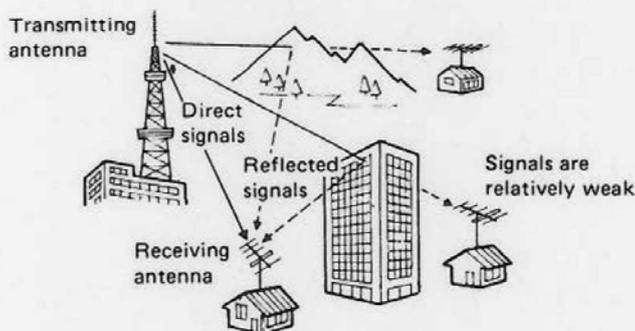
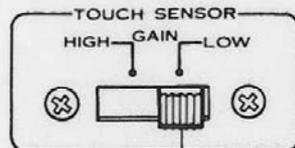


Fig. 11

USING THE TOUCH SENSOR SENSITIVITY SELECTOR FOR FM TUNING

The touch tuning sensor used with this model works with the inductive hum from the body. Depending on the ambient conditions during operation, however, the touch sensitivity may undergo great change.

To compensate for this, the rear panel of the model is equipped with a touch sensor sensitivity selector switch. When the model is shipped, this switch is set to the LOW position for use under normal conditions. However, when for some reason, the inductive hum from the body is at a low level, even if you touch the tuning knob, the FM-locked indicator will light up when a program is being received. In cases like this, set the selector switch to the HIGH position.



Touch sensor sensitivity selector

FM MULTIPATH DISTORTION

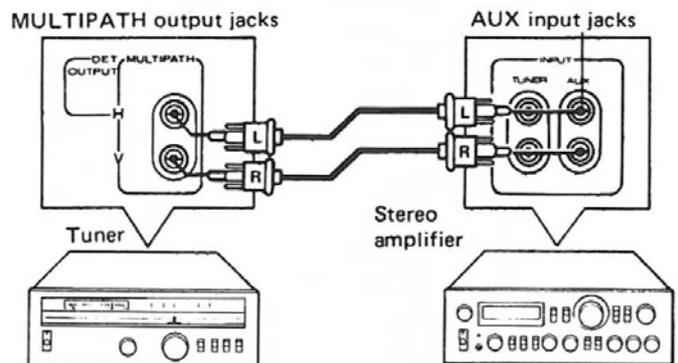
Just like when erecting an FM antenna, it is very difficult to choose the right direction for optimum reception by yourself. Get somebody to give you a hand and perform the following adjustments.

Adjustments when using a stereo amplifier

1. As shown in Fig. 12, connect "H" (Horizontal) multipath output jack of the tuner to the AUX input L (left) channel jack of the stereo amplifier, and "V" (Vertical) multipath output jack to the AUX input R (right) channel jack.
2. Set the function switch to AUX of the stereo amplifier.
3. Turn down the volume of both stereo amplifier channels and tune in to an FM station. Next, increase the volume a little at a time. Through the left channel will be heard the sound of signals with an accentuated treble, while through the right channel will be heard the multipath distortion noise (AM components formed by the reflected radio waves).
4. Turn down the sound of the left channel using the stereo amplifier's balance control, and adjust the direction of the antenna so that the multipath distortion is reduced to the minimum, all the while listening to the sound through the right channel.

Adjustments when using an oscilloscope

1. As shown in Fig. 13, connect the H (Horizontal) multipath output jack at the rear of the tuner to the horizontal axis input jack on the oscilloscope and the V (Vertical) multipath output output jack to the Vertical axis input jack with good quality shielded wires.
2. Tune into an FM station so that the tuner is perfectly tuned.
3. Adjust the oscilloscope controls and observe the wave-forms.
4. The multipath wave-forms appear in a number of differing patterns in accordance with the height and direction of the antenna and with the strength of the radio waves. In addition, they are undergoing variations all the time due to the strength of the audio signals. The wave-forms illustrated in Photo A of Fig. 14 are an example of what you can expect to observe when the multipath distortion is relatively high. In order to reduce the multipath distortion, adjust the height and direction of the antenna so that the patterns become linear (see Photo B of Fig. 14).



The multipath distortion can be heard through the right-hand speaker. **Fig. 12**

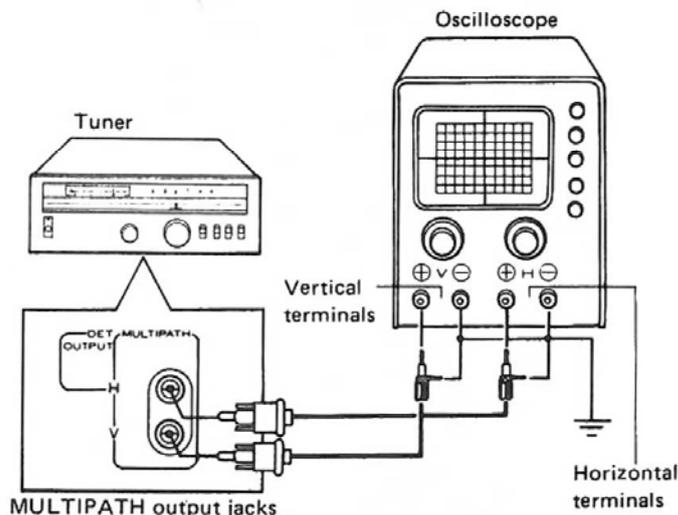


Fig. 13

Photo A: a high level of multipath distortion.

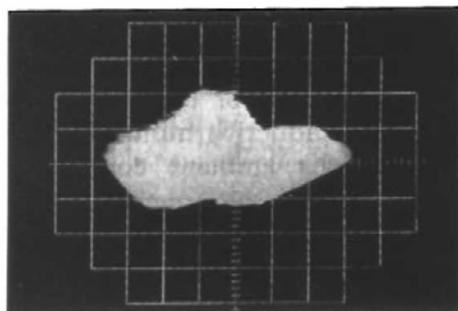


Photo B: no multipath distortion.

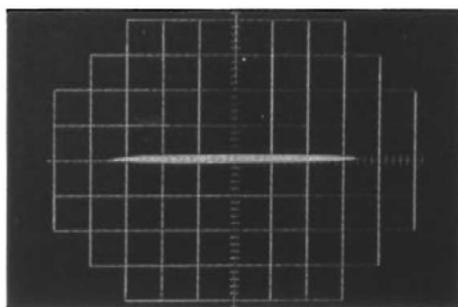


Fig. 14

SPECIFICATIONS

Semiconductors

ICs	7
FETs	2
Transistors	11
Diodes	30

FM Section

Usable Sensitivity	MONO:	9.3dBf (1.6 μ V)
50dB Quieting Sensitivity	MONO:	15.5dBf (3.3 μ V)
	STEREO:	37.1dBf (39.2 μ V)
Sensitivity (DIN)	MONO;	(1.1 μ V)
	STEREO;	37 μ V
Signal-to-Noise Ratio at 65dBf	MONO:	83dB
	STEREO:	79dB
Signal-to-Noise Ratio (DIN)	MONO;	76dB (unweighted)
	STEREO;	67dB (unweighted)
Distortion at 85dBf	MONO:	100Hz 0.08%
		1kHz 0.05%
		10kHz 0.06%
	STEREO:	100Hz 0.1%
		1kHz 0.08%
		10kHz 0.3%
Capture Ratio		1.0dB
Alternate Channel Selectivity		75dB
Stereo Separation	1kHz:	50dB
	20Hz to 10kHz:	35dB
Frequency Response	20Hz to 15kHz	± 0.2 dB
Spurious Response Ratio		95dB
Image Response Ratio		85dB
IF Response Ratio		100dB
AM Suppression Ratio		65dB
Subcarrier Product Ratio		70dB
Muting Threshold		19.2dBf(5 μ V)
De-Emphasis Switch (S, S/G model only)		
		25 μ s, 50 μ s, 75 μ s (Switchable)
Antenna Input		300ohms balanced
		75ohms unbalanced

AM Section

Sensitivity	
IHF, ferrite antenna	300 μ V/m
IHF, external antenna	15 μ V
Selectivity	
	WIDE;15dB
	NARROW;50dB
Signal-to-Noise Ratio	50dB
Image Response Ratio	45dB
IF Response Ratio	50dB
Antenna	Ferrite Loopstick Antenna

Audio Section

Output (Level/Impedance)	
FM (100%MOD.)	FIXED: 650mV/4.2k Ω VARIABLE: 0mV to 1.3V/3.6k Ω
AM (30%MOD.)	FIXED: 200mV/4.2k Ω VARIABLE: 0mV to 400mV/3.6k Ω
Multipath	
V(Vertical)	300mV/10k Ω (AM 1kHz 30% MOD.)
H(Horizontal)	400mV/7k Ω (FM 1kHz 100% MOD.)

Miscellaneous

Power Requirements	S, S/G model; AC 110V, 120V, 220V, and 240V (switchable) 50/60Hz HG model; AC 220V, 220V (switchable) 50/60Hz
Power Consumption	S, S/G models ; 20W HG model ; 23W
Dimensions	S, HG models ; 420(W)x150(H)x390(D)mm 16-9/16 x 5-7/8 x 15-3/8 in S/G model ; 453(W)x155(H)x390(D)mm 17-11/16 x 6-1/8 x 15-3/8 in
Weight	S, HG model ; 7.5kg (16lb 9oz) S/G model ; 8.3kg (18lb 5oz)

Furnished Parts

FM T-type antenna	1
Connection Cord with Pin Plugs	1
Fuse (S, S/G model only)	1
	(1A or 500mA)
Operating Instructions	1

NOTE:

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

IMPORTANT—LINE VOLTAGE

These models are designed to accept different line voltages, according to the country in which they are to be used, although the operation of the various models is the same in every respect. Fig. 15 shows the model designed to operate at any of two pre-selected voltages (220V, 240V).

Fig. 16 shows the model designed to operate at any of four selected voltages (110V, 120V, 220V, 240V).

Line voltage and fuse can be changed and set as follows:

220V and 240V MODEL

1. Disconnect the power cord.
2. Use Phillips screwdriver to loosen mounting screw, then remove SELECTOR plug (Fig. 15).
3. Reinstall the SELECTOR plug with its cut out section exposing the correct voltage indication.
4. Insert and tighten mounting screw.

110V, 120V, 220V and 240V MODEL

1. Disconnect the power cord.
2. Use a Phillips screwdriver to take out the FUSE CAP and fuse (Fig. 16).
3. Pull out the SELECTOR plug from the socket.
4. Put the selector plug back so that the appropriate line voltage marking can be seen through the cut in the edge of the plug.
5. Change the fuse in accordance with the table.
6. Replace the fuse and FUSE CAP.

220V, 240V model

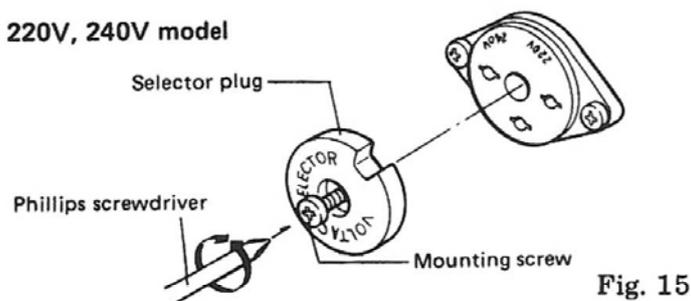


Fig. 15

110V, 120V, 220V, 240V model

Table

VOLTAGE	FUSE
110V, 120V	1A
220V, 240V	0.5A

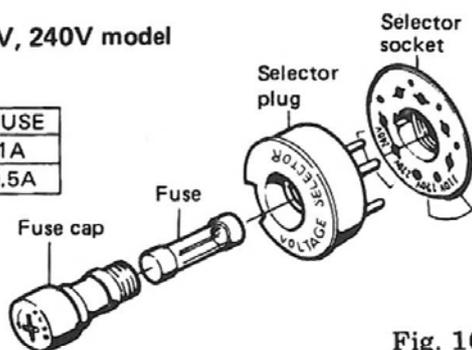


Fig. 16

IMPORTANT

To prevent electric shock, do not remove cover. No user serviceable parts inside, refer servicing to qualified service personnel.

Always disconnect all the equipment from the mains supply when disconnecting the signal leads. The power cord should be disconnected last, make sure that the power switch is off. First, insert the female appliance connector of the mains cord into the AC INLET, then plug the cord to the wall socket. Be sure that the appliance connector is fully inserted into the AC INLET.

Unplug the set from the wall socket when it is not to be used for an extended period of time.

WARNING: THIS APPARATUS MUST BE EARTHED.

FOR YOUR SAFETY

1. Insert this plug only into effectively earthed three-pin plug-socket outlet.
2. If any doubt exists regarding the earthing, consult a qualified electrician.
3. Extension cords, if used, must be three-core correctly wired.

FOR USE IN UNITED KINGDOM AND AUSTRALIA

CAUTION 240V: Mains supply voltage is factory adjusted at 240V.

FOR USE IN UNITED KINGDOM

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

Green-and-Yellow: Earth
Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows.

The wire which is coloured green-and-yellow must be connected to the terminal which is marked with the letter E or with the safety earth symbol \perp or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminals which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminals which is marked with the letter L or coloured red.