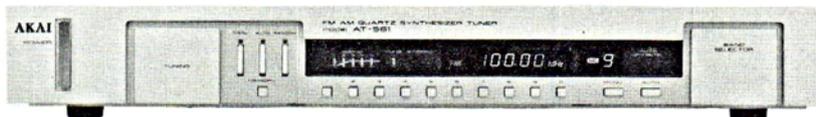


AT-S61/L

FM AM QUARTZ SYNTHESIZER TUNER

- Note:** • This manual is applicable to both silver and pearl shadow panel models.
- Remarque:** • Ce manuel s'applique aussi aux modèles avec panneaux argent et gris-perle.
- Opmerking:** • Deze gebruiksaanwijzing is van toepassing op modellen met zilver en parel-grijs paneel.
- Anmärkning:** • Bruksanvisningen gäller både för modellerna med silverpanel och modellerna med pärlgrå panel.
- Anmerkung:** • Diese Betriebsanleitung gilt auch für die Ausführung mattsilber und perl-schattenfarbig.
- Nota:** • Este manual cubre ambos modelos, el de panel plateado y el de panel color perla oscura.



WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

Operator's Manual..... Page 1-7

AKAI

Operator's Manual

WARNING

POWER REQUIREMENTS

Power requirements for electrical equipment differ from area to area.

Please ensure that your machine meets the power requirements in your area.

If in doubt, consult a qualified electrician.

120V, 60 Hz for USA and Canada

220V, 50 Hz for Europe except UK

240V, 50 Hz for UK and Australia

110V/220V/240V, 50/60 Hz internally switchable for other countries.

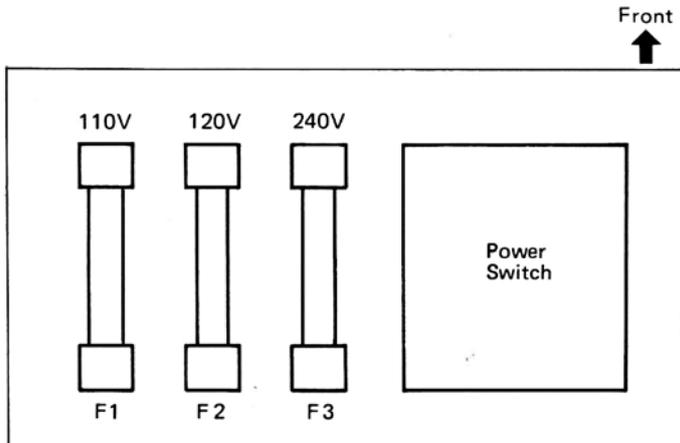
VOLTAGE CONVERSION

Do not attempt this conversion yourself.

Models for Canada, USA, Europe, UK and Australia are not equipped with this facility.

Each machine is preset at the factory according to destination, but some machines can be set to 110V, 220V or 240V as required. If your machine's voltage can be converted, refer the following voltage conversion to a qualified Service Repair Shop or professional service personnel.

1. Disconnect the power cord.
2. Loosen the holding screws and remove the top panel.
3. Remove the Line Voltage Fuse and insert the required Line Voltage Fuse onto the proper Fuse Holder, explicitly following the printed instructions.



F1 : 400mA

F2 : 200mA

F3 : 200mA



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**



The lightning flash with arrowhead symbol superimposed across a graphical representation of a person, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

PRECAUTIONS

1. Use only household AC power sources. Never use DC power sources.
2. Touching the plug with wet hands risks dangerous electric shocks. Always pull out by the plug and never the cord.
3. Make sure the power consumption of each audio component does not exceed wattage specified on the rear panel. Only connect other audio components.
4. Only let a qualified professional repair or reassemble the equipment. An unauthorized person might touch the internal parts and receive a serious electric shock.
5. Never allow a child to put anything, especially metal into this equipment. A serious shock or malfunction may occur.
6. If water is spilled on this equipment, disconnect and call your dealer.
7. Make sure the equipment is well ventilated and away from direct sunlight.
8. Keep away from heat (stoves, etc.) to avoid damage to the external surface and internal circuits.
9. Avoid spray-type insecticides which will damage the equipment and may ignite suddenly.
10. To avoid damaging the finish never use alcohol, paint thinner or other similar chemicals.
11. Always place the equipment on a flat and solid surface.
12. Please read this manual in its entirety and keep it handy for further reference.

FOR CUSTOMERS IN THE UK IMPORTANT FOR YOUR SAFETY

The flex supplied with your machine will have either two wires or three as shown in the illustrations.

THREE CORE FLEX

WARNING THIS APPARATUS MUST BE EARTHED. IMPORTANT

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

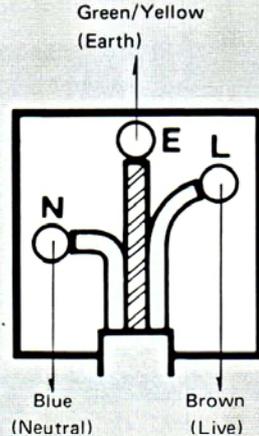
Green-and-yellow: Earth
Blue: Neutral,
Brown: Live

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

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

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

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



TWO CORE FLEX

IMPORTANT

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

Blue: Neutral,
Brown: Live

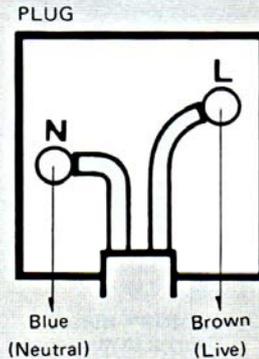
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

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

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

* Do not connect any wire to the larger pin marked E or \equiv when wiring a plug.

Ensure that all terminals are securely tightened and that no loose strands of wire exist.



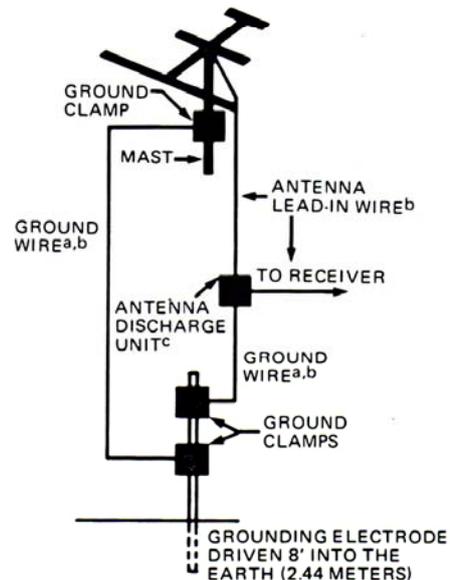
FOR CUSTOMERS IN THE U.S.A.

SAFETY INSTRUCTIONS

1. Read Instructions — All the safety and operating instructions should be read before the equipment is operated.
2. Retain Instructions — The safety and operating instructions should be retained for future reference.
3. Heed Warnings — All warnings on the equipment and in the operating instructions should be adhered to.
4. Follow Instructions — All instructions for operating and use should be followed.
5. Water and Moisture — The equipment should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. Carts and Stands — The equipment should be used only with a cart or stand that is recommended by Akai.
7. Wall or Ceiling Mounting — Akai does not recommend mounting the equipment on a wall or a ceiling.
8. Ventilation — The equipment should be situated so that its location or position does not interfere with its proper ventilation. For example, the equipment should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat — The equipment should be situated away from heat sources such as radiators, heat registers, stoves, or other equipments (including amplifiers) that produce heat.
10. Power Sources — The equipment should be connected to a power supply only of the type described in the operating instructions or as marked on the equipment.
11. Grounding or Polarization — The precautions should be taken so that the grounding or polarization means of an equipment is not defeated.
12. Power-Cord Protection — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the equipment.
13. Cleaning — The equipment should be cleaned only as recommended by the manufacturer.
14. Power Lines — An outdoor antenna should be located away from power lines.
15. Outdoor Antenna Grounding — If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1981, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure 1.
16. Nonuse Periods — The power cord of the equipment should be unplugged from the outlet when left unused for a long period of time.
17. Object and Liquid Entry — Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
18. Damage Requiring Service — The equipment should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the equipment; or
 - C. The equipment has been exposed to rain; or
 - D. The equipment does not appear to operate normally or exhibits a marked change in performance; or
 - E. The equipment has been dropped, or the enclosure damaged.
19. Servicing — The user should not attempt to service the equipment beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Fig. 1

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS



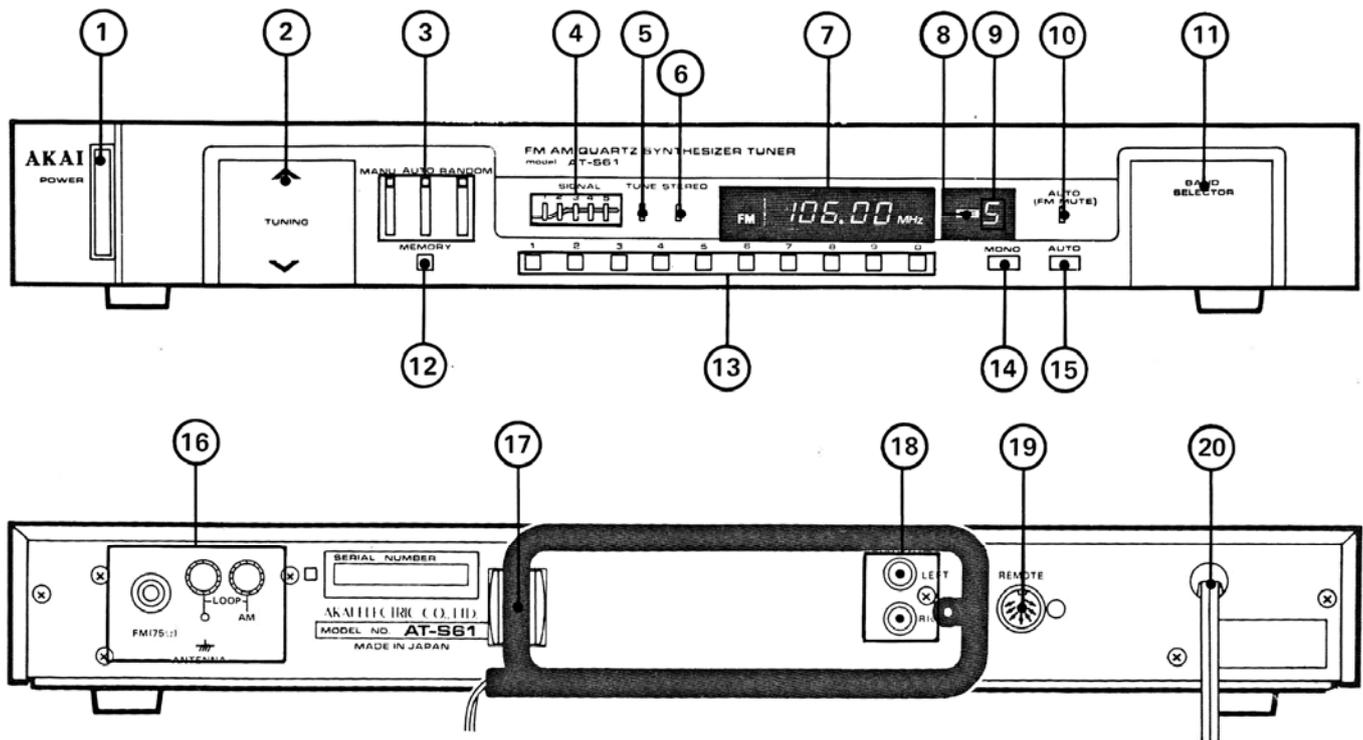
- a. Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as ground wire.
- b. Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 m) to 6 feet (1.83 m) apart.
- c. Mount antenna discharge unit as close as possible to where lead-in enters house.

FOR CUSTOMERS IN AUSTRALIA

If your machine comes with a three core power cord, FOR YOUR SAFETY:

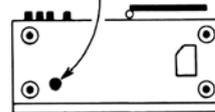
1. Insert this plug only into an effectively earthed three-pin plug socket outlet.
2. If any doubt exists regarding the earthing, consult a qualified electrician.
3. Extension cords, if used, must be three-core correctly wired.

CONTROLS



1. **POWER Switch**
Depress to turn on the power and depress again to turn off the power.
2. **TUNING Button**
▲ : Depress to scan the frequencies upwards.
▼ : Depress to scan the frequencies downwards.
* If continuous pressure is applied to the TUNING button, scanning will be continuous.
3. **Tuning Mode Buttons with Indicators**
MANUAL: Depress this button to manually tune in a station.
AUTO: Depress this button to automatically tune in a station.
RANDOM: Depress this button to directly key in a station.
4. **SIGNAL Strength Indicators**
The strength of the signal is indicated by the number of indicators lit. Therefore, when tuning in a station manually, tune for indication as far as possible towards the right.
5. **TUNE Indicator**
FM station is tuned in correctly when this indicator lights.
6. **STEREO Indicator**
Lights when FM stereo broadcast is being received.
7. **Digital FL Display**
The band and the frequency are shown.
8. **Memory (ME) Indicator**
Lights for 5 seconds when the MEMORY button is depressed. Depress one of the Preset Station buttons within this 5 seconds to memorize a station.
9. **Preset Station Number Display**
Number, corresponding to the Preset Station button depressed will be displayed.
10. **AUTO (FM MUTE) Indicator**
Lights when the FM AUTO button is depressed.
11. **BAND SELECTOR**
Repeatedly depress this selector until the desired band is displayed on the Digital FL Display.
FM: FM band
AM: AM band (for AT-S61 only)
MW: MW band (for AT-S61L only)
LW: LW band (for AT-S61L only)
12. **MEMORY Button**
Depress to memorize a station.
13. **Preset Station Buttons**
Use these buttons to recall a preset station or to directly key in a station during Random Tuning mode.
14. **MONO Button**
Depress this button to listen to FM stereo broadcasts in monaural. Left and right channels are mixed and emitted from both the left and right OUTPUT jacks. When FM signals are too weak for stereo separation, monaural reception facilitates better audibility.
15. **FM AUTO Button**
Depress this button and the AT-S61/L will automatically receive any FM broadcasts in stereo or monaural. Noise is cut between FM stations and disturbances from weak inputs.
16. **FM, AM and AM LOOP ANTENNA Terminals**
Refer to CONNECTIONS and ANTENNA INFORMATION on page 4 and 5.
17. **AM Loop Antenna Holder**
Refer to AM LOOP ANTENNA on page 4.
18. **OUTPUT Jacks**
Connect to the tuner input jacks (TUNER) of an amplifier.
19. **REMOTE Jack**
Connect to an optional audio timer for absentee recording or timed playback of a radio broadcast.
20. **Power Cord**

※ Reset button

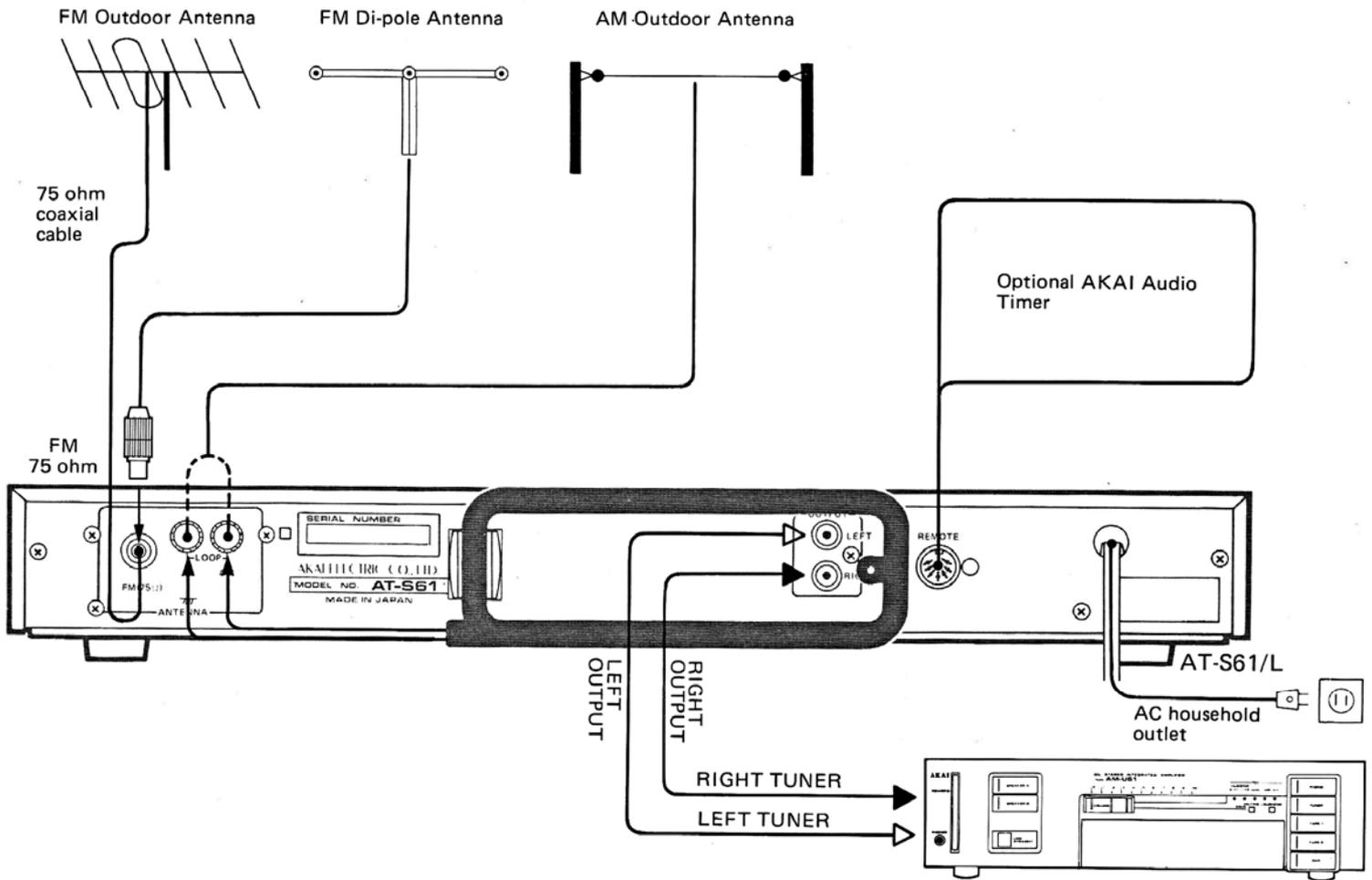


Front panel

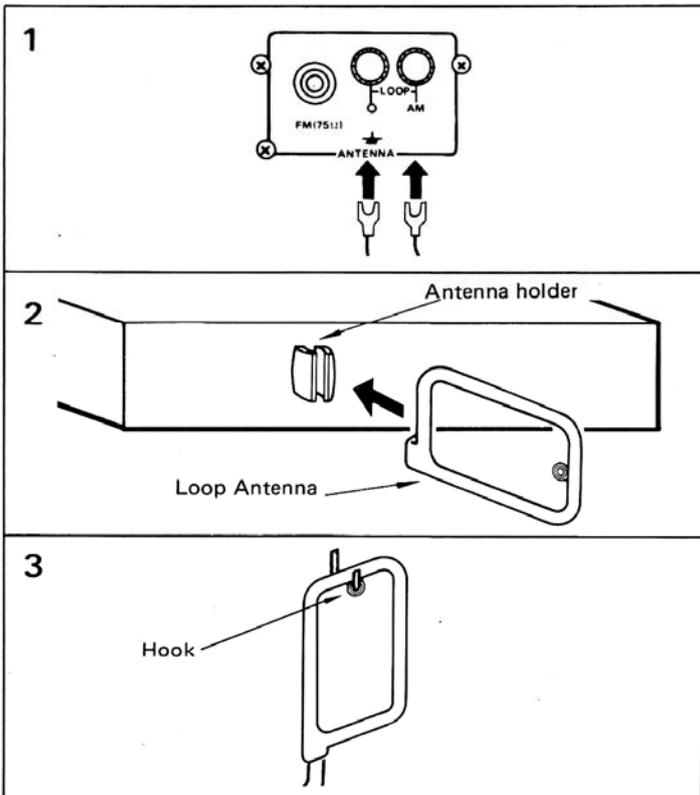
When the power to the AT-S61/L is turned on, the station that was tuned in before the power was turned off, will be tuned in again automatically. In case nothing is displayed or an unexpected frequency is displayed, turn the POWER switch on and off. If a proper frequency is still not displayed, depress the Reset button on the bottom of the unit. Do the same in case of malfunction.

CONNECTIONS

* Turn off all the components before connecting.



AM LOOP ANTENNA



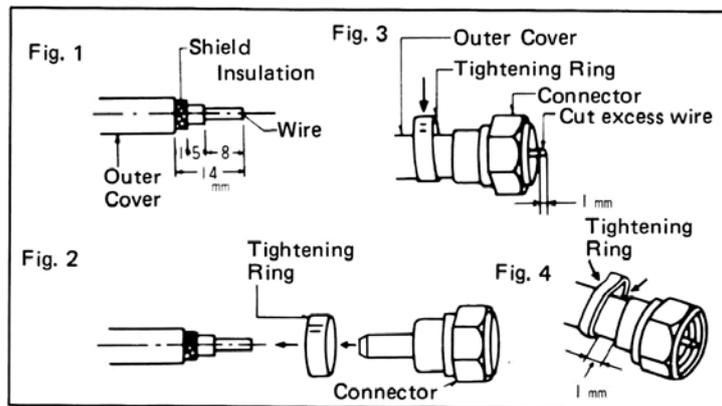
The AT-S61/L is equipped with a removable AM loop antenna which is effective against noise. Always use this antenna for AM (MW, LW for AT-S61L) reception.

1. Connect the lead wire of the antenna to the AM and Ground (⚡) terminals.
2. Insert the antenna into the Antenna Holder as shown in the illustrations.
3. If using the antenna away from the tuner, hang the antenna on a hook, for example, where best reception is obtained.

NOTES:

1. If heavy noise exists during AM (MW, LW for AT-S61L) reception, re-position the antenna. Maximum sensitivity is obtained when the SIGNAL Strength Indicators light completely. In congested areas of the city or in areas remote from the station, use an external antenna. Hanging the wire out of a window is advisable for better sensitivity. AM (MW, LW for AT-S61L) broadcasts are more susceptible to city noise than FM.
2. If humming exists during reception, re-locate the tuner and/or move the antenna until humming is kept to a minimum.

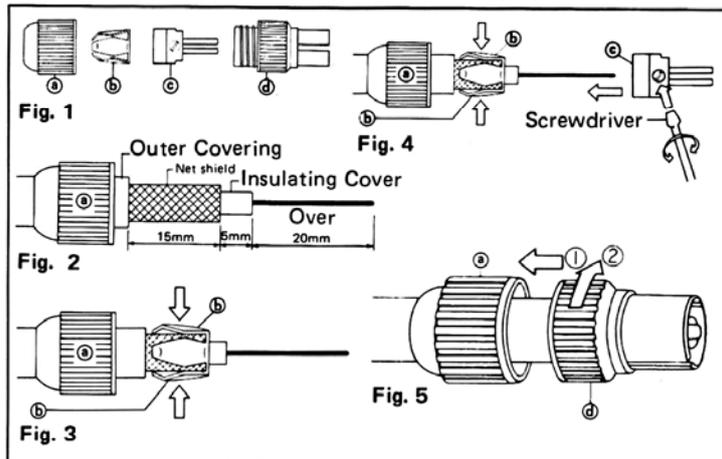
HOW TO WIRE AN EXTERNAL FM ANTENNA FOR THE 75 OHM TERMINAL



F-type connector (Models for Canada and USA)

* Available on the market.

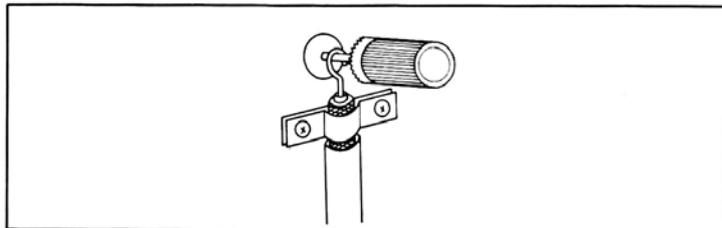
1. Prepare a 75 ohm coaxial cable, Fig. 1
2. Pass the prepared cable through the connector, Fig. 2
3. Cut the excess wire, Fig. 3
4. Tighten the tightening ring with pliers, Fig. 4.



DIN-type connector (Models for Europe and Australia)

* Available on the market.

1. Rotate the plug and take to bits as in Fig. 1.
2. Prepare a 75 ohm coaxial cable and pass it through section (a). Fold back the net shield and cut the insulating cover leaving about 5 mm, Fig. 2.
3. Put into part (b) so that the folded back net shield is at the top and use pliers to tighten (b) around it, Fig. 3.
4. Loosen the screw on part (c) and thread the core wire through completely. If the wire is still loose when the screws have been tightened, bend back the core until it fits firmly, Fig. 4.
5. Fit parts (a) and (d) together in the order shown in Fig. 5 and screw together.



Direct connection (Models for other countries)

1. Prepare a 75 ohm coaxial cable as in DIN-type connector and connect to the terminal as shown.

ANTENNA INFORMATION

When receiving broadcast signals, the antenna being used is of great importance. The position of the antenna is especially important when receiving stereo broadcasts. Incorrect antenna placement is often the cause of distortion or insufficient channel separation.

* When an FM or AM antenna is placed high in the air, use a lightning arrester to protect the unit.

FM ANTENNA

For FM broadcast reception, the use of a professional type FM outdoor antenna is most ideal, but when signals are strong, the standard accessory FM di-pole antenna will suffice. A variety of antennas are available on the market for use according to the specific area in which they are to be used. Typical examples are: **Indoor Antenna:** For about a 20 km (15 mile) radius from the station; **3-Element Antenna:** For about a 60 km (45 mile) radius from the station; **5-Element Antenna:** For about a 80 km (60 mile) radius from the station.

This model is equipped with 75 ohm impedance antenna terminal. Use to connect a 75 ohm coaxial cable from an outdoor FM antenna placed at a distance away from the unit.

* When using TV antenna feeder wire, keep in mind that the wire is susceptible to corrosion and lasts only a few years. Check wire periodically as defective lead-in wire can cause sound distortion or increased noise.

* A TV/FM antenna can also be used in place of an FM antenna.

NOTES:

1. Poor positioning of the antenna, a gust of wind can change the direction, can cause distortion so move the position of the antenna.
2. Heavy noise and poor SIGNAL Strength indicator response can be caused by broken or faulty wiring. Check at the output terminal of the antenna and the antenna terminals of the tuner. Check that the antenna is the correct size for the geographical area.
3. To prevent jamming in FM reception when cars are running

nearby, it may be necessary to install the antenna away from the highway or high in the air. It is also advisable for noise suppression to use an exclusive FM multi-element antenna for strengthening the wave and to use a 75 ohm coaxial cable in place of the TV feeder.

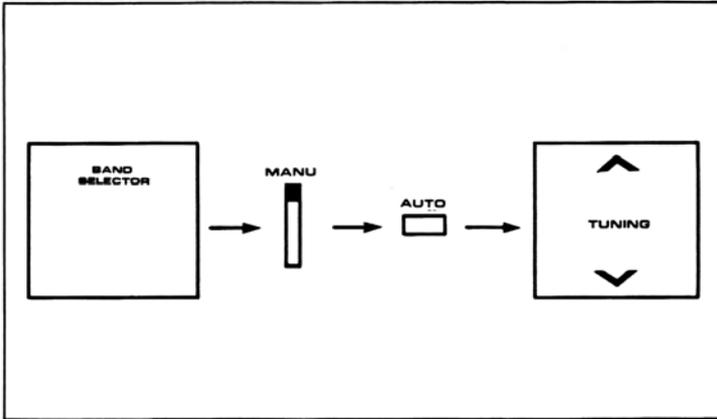
OPERATIONS

Confirm before operation:

- All the components are connected properly.
- All the components are turned on.

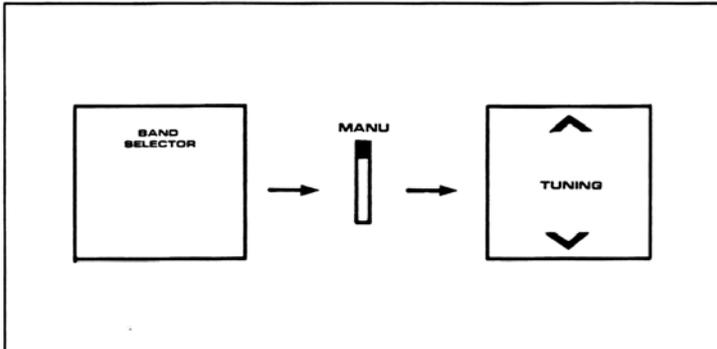
MANUAL TUNING

FM Station



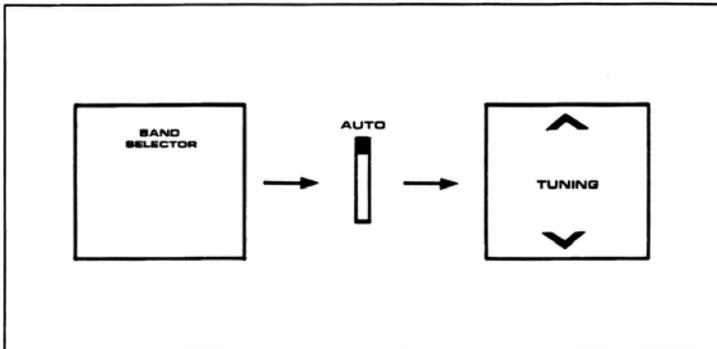
1. Repeatedly depress the BAND SELECTOR until 'FM' is displayed on the Digital FL Display.
2. Depress the MANUAL button.
 - * Its indicator will light.
3. Depress the FM AUTO button.
 - * The AUTO (FM MUTE) indicator will light.
 - * When signals are too weak for stereo separation, depressing the MONO button instead of the FM AUTO button facilitates better audibility.
4. Depress the \wedge or \vee part of the TUNING button and tune in the desired station. Tune until the TUNE indicator lights and the SIGNAL Strength indicators are lit as far as possible to the right.
 - * The STEREO indicator will light to confirm FM stereo reception.
 - * If continuous pressure is applied to the TUNING button, scanning will be continuous.
5. Adjust the controls of the amplifier.

AM (MW or LW for AT-S61L) Station



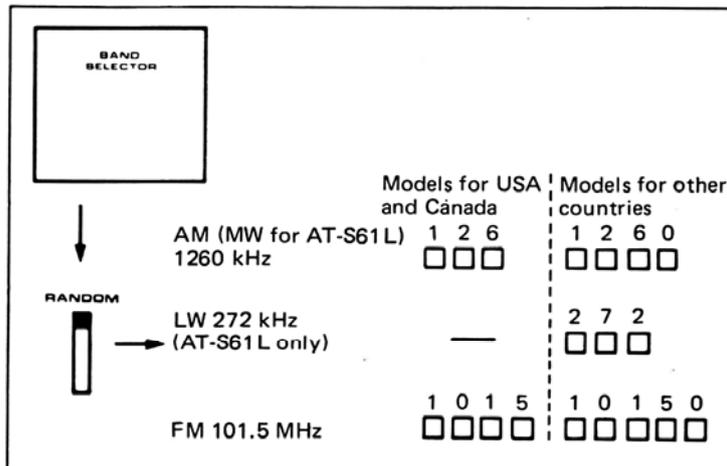
1. Repeatedly depress the BAND SELECTOR until 'AM' ('MW' or 'LW' for AT-S61L) is displayed on the Digital FL Display.
2. Depress the MANUAL button.
3. Depress the \wedge or \vee part of the TUNING button and tune in the desired station. Tune until the SIGNAL Strength indicators are lit as far as possible to the right.
4. Adjust the controls of the amplifier.
 - * As AM (MW or LW for AT-S61L) broadcasts are in monaural only, neither the MONO nor the FM AUTO button need be engaged.

AUTO TUNING



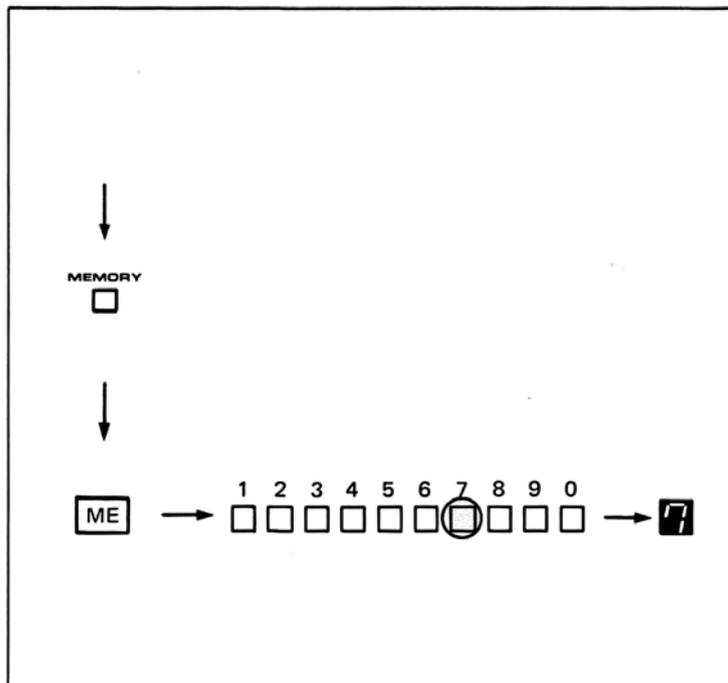
1. Select the desired band with the BAND SELECTOR.
2. Depress the AUTO button.
 - * Its indicator will light.
3. Depress the \wedge or \vee part of the TUNING button just once to start automatic scanning of the frequencies.
 - * The direction will be reversed automatically at either end of the scale.
4. When a station is tuned in, AT-S61/L will automatically stop scanning. To resume scanning, depress the TUNING button again.
 - * For FM reception, depress either the MONO or FM AUTO button.

RANDOM TUNING



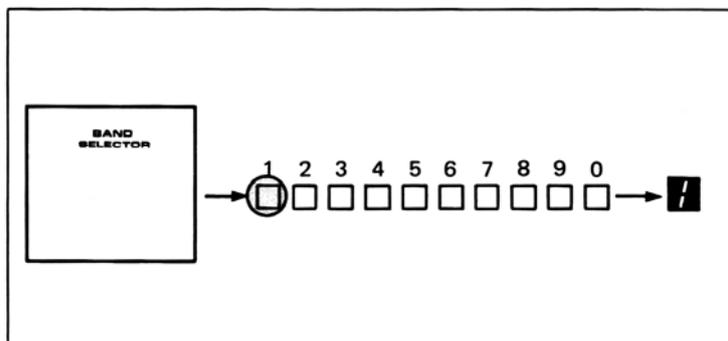
1. Select the desired band with the BAND SELECTOR.
2. Depress the RANDOM button.
 - * Its indicator will light.
3. Key in the desired station's frequency a digit at a time with the Preset Station buttons.
 - * A program pilot shows which digit in the Digital FL Display should be programmed next. The digit to be programmed next will flash on and off.
 - * Depress the 0 button first for FM less than 100 MHz and AM (MW for AT-S61L) less than 1,000 kHz.
 - * For FM reception, depress either the MONO or the FM AUTO button.
4. After a station is tuned in, the RANDOM button's indicator will go out and the AUTO button's indicator will light to indicate that the AT-S61/L is in the Auto Tuning mode. Therefore, to key in another station, repeat the whole procedure.
 - * If you key in a station incorrectly, the entire Digital FL Display will flash on and off. In such a case, repeat from step 2.

MEMORIZING A STATION



- AT-S61: 10 FM and 10 AM stations for a total of 20 stations can be preset.
 - AT-S61L: 10 FM and 10 MW and LW stations for a total of 20 stations can be preset.
1. Tune in the desired station.
 2. Depress the MEMORY button.
 - * The Memory (ME) indicator will light for 5 seconds.
 3. Depress the Preset Station button of your choice within this 5 seconds to memorize the station.
 - * The Preset Station number will be displayed.
 - * If the ME indicator goes out when a number is displayed, the station has been memorized. But if the ME indicator goes out when a number is not displayed, the MEMORY button must be depressed again.
 4. To reset a Preset Station button, repeat the above procedure.
 - * When using along with the optional timer exclusively for AT-S61/L, only preset stations 1 to 5 can be used for each band.

TUNING A PRESET STATION



1. Select the desired band with the BAND SELECTOR.
2. Depress the Preset Station button with the desired station.
 - * For FM reception, depress either the MONO or the FM AUTO button.

NOTES:

- When not using the AT-S61/L for more than one week; turn on the power for approximately half an hour to an hour before turning it off, in order to charge the capacitor for the preset memory backup.
- To prevent malfunction, if the AT-S61/L has not been used for more than one week, do not turn it off within 5 minutes of turning it on.
- Memory lasts for 20 days while the power is turned off. If the power is turned on within 20 days, the memory will last for another 20 days.

Should there be a problem with your machine, write down the model and serial numbers and all pertinent data regarding warranty coverage as well as a clear description of the existing

trouble and contact your nearest authorized Akai Service Station or the Service Department of Akai Company, Tokyo, Japan.

SPECIFICATIONS

FM TUNER SECTION

Tuning Frequency Range	87.4 to 108.1 MHz
Sensitivity	
Usable (S/N = 30 dB, Mono)	11.2 dBf
Quieting (S/N = 50 dB, Mono/Stereo)	16.2/37.2 dBf
Capture Ratio	1.0 dB
Selectivity (±400 kHz)	75 dB
Image Rejection	95 dB
IF Rejection	110 dB
Spurious Rejection	100 dB
AM Suppression	65 dB
Sub Carrier Suppression	65 dB
S/N (Mono/Stereo)	78/70 dB
T.H.D. (±75 kHz Deviation, Mono/Stereo)	0.06/0.09%
Stereo Separation (1 kHz)	55 dB
Frequency Response	25 Hz to 15 kHz +0.5 dB, -1 dB
Output Level (FM, 100% Modulation)	550 mV
Antenna Input Impedance	75 ohms

AM TUNER SECTION

	AM (MW for AT-S61L)	LW (AT-S61L only)
Tuning Frequency Range		
USA and Canada	530 to 1610 kHz	—
Others	522 to 1611 kHz	137 to 362 kHz
Usable Sensitivity (Loop)	300 μV/m	800 μV/m

Selectivity	35 dB	40 dB
Image Rejection	45 dB	45 dB
IF Rejection	65 dB	65 dB
S/N	40 dB	34 dB
T.H.D.	1.0%	2.0%

OUTPUT SECTION

Output Impedance	3.3 kohms
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OTHERS

Power Requirements	120V, 60 Hz for USA and Canada 220V, 50 Hz for Europe except UK 240V, 50 Hz for UK and Australia 110V/220V/240V, 50/60 Hz switchable for other countries
Dimensions	440(W) x 63(H) x 273(D) mm (17.3 x 2.5 x 10.7 inches)
Weight	3.3 kg (7.3 lbs)

STANDARD ACCESSORIES

FM Di-pole Antenna	1
AM Loop Antenna	1
Operator's Manual	1

* For improvement purposes, specifications and design are subject to change without notice.



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Ohta-ku, Tokyo, Japan



Printed in Japan

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