

AM/FM STEREO TUNER

GAMMA 400

SAFETY INSTRUCTIONS INSTRUCTION MANUAL MODE D'EMPLOI



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FOR CUSTOMERS IMPORTANT FOR YOUR SAFETY

(APPARATUS THAT EMPLOYS A SUPPLY CORD TERMINATED WITH A POLARIZED TWO-PRONG ATTACHMENT PLUG)

*CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

*ATTENTION: POUR PRÉVENIR LES CHOCS ÉLECTRIQUES, NE PAS UTILISER CETTE FICHE POLARISÉE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ÊTRE INSÉRÉES A FOND SANS EN LAISSER AUCUNE PARTIE À DÉCOUVERT.

The space below is provided to record the Serial Number of this unit.
The Serial Number can be found on the back of the product.

Serial No.: _____

Retain this information for future reference.



CAUTION!
RISK OF ELECTRIC SHOCK.
DO NOT OPEN!



CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT REMOVE ANY COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



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



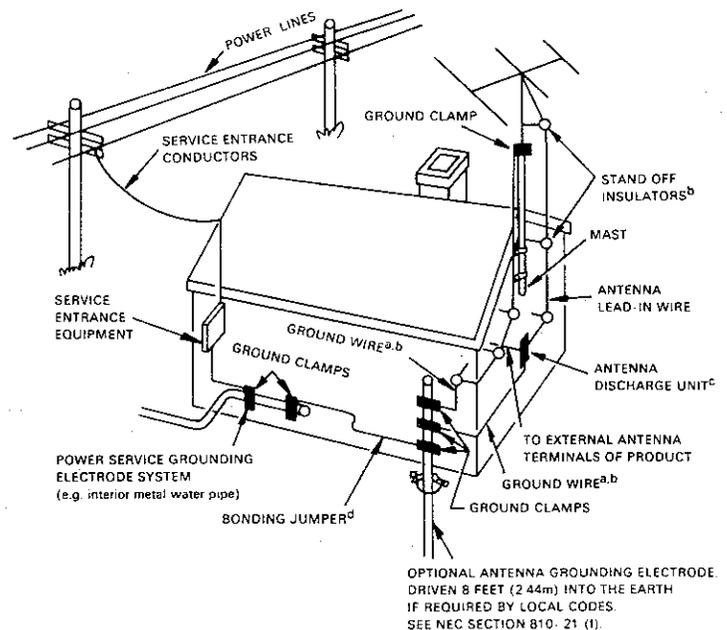
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

SAFETY INSTRUCTIONS

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Water and Moisture - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, and the like.
6. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer. An appliance and cart combinations should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn. 
7. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation opening; 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 appliance should be situated away from heat sources such as radiators, head registers, stoves, or other appliance that produce heat.
10. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.
11. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
12. Power Lines - An outdoor antenna should be located away from power lines.
13. 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 of static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, 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.
 - a. Use No. 10 AWG copper, No. 8 AWG aluminum, No. 17 AWG copper-clad steel, bronze wire, or larger as a ground wire.
 - b. Secure antenna lead-in and ground wires to house with stand-off insulators spaced 4-6 feet (1.22-1.83 m) apart.
 - c. Mount antenna discharge unit as close as possible to where lead-in enters house.
 - d. Use jumper wire not smaller than No. 6 AWG copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21(j).

14. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
15. 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 appliance.
16. Nonuse Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
17. Grounding or Polarization - The precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
18. Damage Requiring Service - The appliance 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 appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the enclosure damaged.
19. Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

EXAMPLE OF ANTENNA GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810- "RADIO AND TELEVISION EQUIPMENT"



ENGLISH

INTRODUCTION

Thank you for selecting the NIKKO AM/FM Stereo Tuner GAMMA 400. Please read and observe the instructions below in order to protect your amplifier from damage. Should you have any doubts or questions after reading this instruction manual carefully, please contact your nearest NIKKO dealer.

- Do not place the unit in a location exposed to direct sunlight and keep away from heat (stoves, etc.).
- Make sure the unit is well ventilated and is not exposed to moisture or dampness.
- Do not place the unit in a location with excessive dust.
- Make sure the unit is placed on a flat, stable surface, free from vibrations.
- Do not use alcohol, thinner, benzene, aerosol products, or other chemicals for cleaning the cabinet.
- Should your unit require service or maintenance, contact your nearest authorized NIKKO Service Center or your dealer.

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

SPECIFICATIONS

FM Tuner Section

Usable Sensitivity	9.2 dBf
50 dB Quieting Sensitivity	
STEREO	38.2 dBf
MONO	13.5 dBf
Signal-to-Noise Ratio	
STEREO	79 dB
MONO	86 dB
Total Harmonic Distortion (1 kHz)	
STEREO	0.05%
MONO	0.03%
Stereo Separation (WIDE)	
1 kHz	65 dB
Frequency Response	
30 Hz — 15 kHz	±1 dB
Capture Ratio	
WIDE	1.0 dB
NARROW	2.0 dB
Alternate Channel Selectivity	
WIDE	40 dB
NARROW	80 dB
Spurious Response Ratio (1/2 IF)	95 dB
IF Rejection Ratio	90 dB
AM Suppression Ratio	70 dB
Image Rejection Ratio	80 dB
Tuning Frequency Range	87.5—108.0MHz
Output Level	600 mV

AM Tuner Section

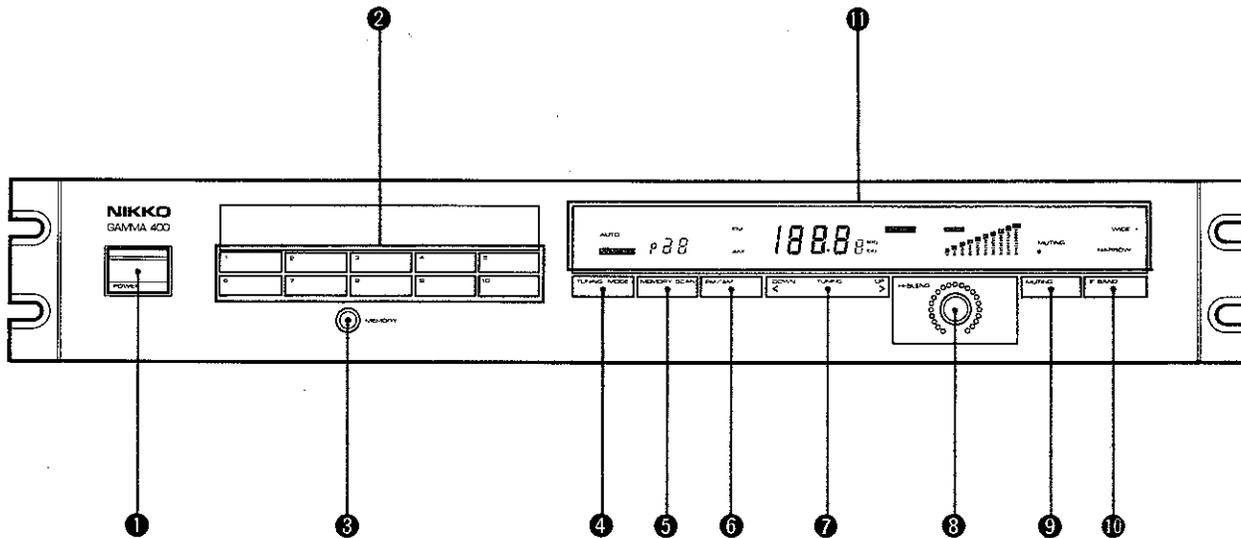
Usable Sensitivity	300 μ V/m
Selectivity	40 dB
Signal-to-Noise Ratio	50 dB
Image Rejection Ratio	40 dB
IF Rejection	65 dB
Total Harmonic Distortion	0.5%
Tuning Frequency Range	530—1610 kHz
Output Level	200 mV

General

Power Requirement	AC 120 V, 60 Hz
Power Consumption	14.5W
Dimensions	482 (W) x 80 (H) x 334 (D) mm (19" x 3-1/2" x 13-1/6")
Weight	4.1 kg (9 lbs)

* Specifications are subject to change without notice.

CONTROLS



❶ POWER ON/OFF Button

This button turns the power on and off. The indicator above the button lights up upon power on.

❷ PRESET STATION Buttons

To quickly tune in a station, press the button on which the desired station has been memorized. The frequency of the desired station has been memorized. The frequency of the tuned in a station will be shown on the frequency display ❶.

- Refer to page 4 for details on memorizing stations on the Preset Function.

❸ MEMORY Button

Use this button to program up to 10 FM and 10 AM stations on the preset buttons.

The preset stations will be retained in the memory even when the power is turned off. The stored information will last for a week in case of a power failure or if the power cord has been disconnected from AC outlet.

❹ TUNING MODE Button

Use this button to select between automatic and manual station tuning.

❺ MEMORY-SCAN Button

Pressing this button causes the preset stations to be scanned in order.

- Refer to page 4 for more detailed information on the MEMORY-SCAN function.

❻ FM/AM Button

Press the FM/AM button to select FM or AM broadcasting.

❼ TUNING Button

The displayed frequency increases when the right of the button is pressed and decreases when the left is pressed.

- When the TUNING MODE button ❹ is set to AUTO, pressing this button once causes the displayed frequency to increase or decrease continuously until a station is found.
- When the TUNING MODE button ❹ is set to MANUAL, the displayed frequency changes in small steps with each press. If the button is pressed for more than 0.5 sec., the frequency changes continuously until the button is released.

Note: If a station's signal is too weak, automatic tuning of this station is not possible. Tune in the station manually.

❽ HI-BLEND Knob

When this knob is rotated to the right, the high range becomes mono, and high-frequency noise is eliminated. If it is rotated to the left, this function is cut.

❾ MUTING Button

If noise is offensive to the ear when receiving an FM stereo broadcast, or if the signal is weak, press this button (to set it in the "MONO" position).

❿ IF BAND Button

Use this button to select between WIDE and NARROW IF BAND. For weak, noisy stations, set this button to NARROW.

⓫ MULTI DISPLAY

- **AUTO Indicator**
In AUTO Tuning Mode, the AUTO indicator lights up.
- **MEMORY Indicator**
This indicator starts when the MEMORY button - ❸ is pressed. While it is flashing, press one of the PRESET STATIONS buttons ❷ to memorize the tuned in station.
- **Function Indicator**
This indicator shows whether the received station is an FM or AM station.
- **Preset Channel Display**
Shows the channel number on which the station you are listening to has been preset. When power is turned off and then turned on again, the channel that was last selected will be shown.
- **Frequency Display**
Shows the tuned in FM or AM frequency with 4 digits.
- **STEREO Indicator**
This indicator lights up when FM stereo broadcasts are being received.
- **SIGNAL Strength Indicator**
This indicator shows the strength of AM and FM station signals.
- **MUTING Indicator**
Lights up when the muting is set.
- **WIDE/NARROW Indicator**
When the IF BAND is either WIDE or NARROW, the appropriate indicator lights up.

CONNECTIONS AND OPERATION

The Preset Function

A. TO STORE A STATION

- (1) Press the FM/AM button ⑥.
- (2) Use the TUNING button ⑦ to tune in the desired station. The station frequency is shown on the frequency display ①.
- (3) When the desired station has been found, press the MEMORY button ③.
- (4) The MEMORY indicator lights for 5 sec. Now press one of the PRESET STATION buttons ② (1 to 10) while the MEMORY indicator goes out. Up to 10FM stations and 10AM stations can be entered into the preset memory in this manner.

B. TO RECALL A PRESET STATION

- (1) Press the FM/AM button.
- (2) Press the PRESET STATIONS button ② on which the desired station has been memorized.

Note: If the unit has been disconnected from the power outlet for a week or more, the preset memory may be erased.

C. TO ERASE A PRESET STATION

In order to erase a station and memorize a new one, just follow steps 1 to 4 above. The previous station is thus erased and the new one is entered into the preset memory.

The MEMORY-SCAN Function

When the MEMORY-SCAN button ⑤ is pressed, the preset stations are automatically scanned in order, from the lowest to the highest memory number.

The preset stations' frequencies are displayed one after the other on the frequency display ① and the indicator corresponding to the PRESET STATIONS button on which the displayed frequency is memorized lights up simultaneously.

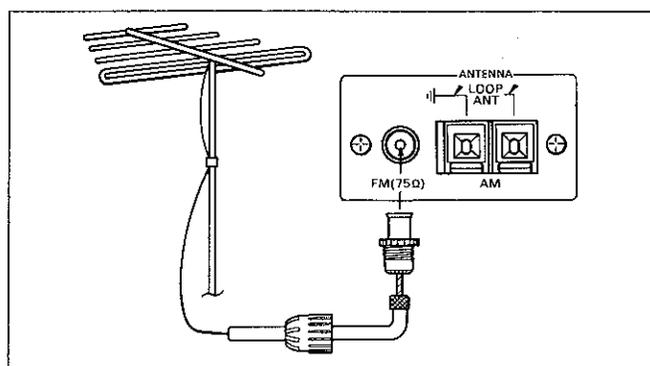
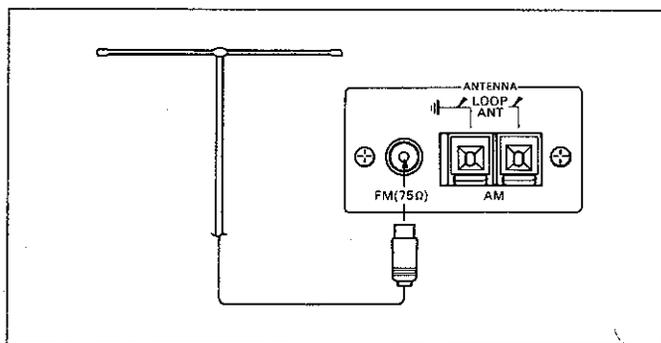
FM Operation

• FM antenna

- (1) Connect the supplied T-type antenna to the FM jack on the back panel.
- (2) Stretch out both ends of the antenna and slowly move the antenna around until the best reception position is found (use the SIGNAL strength indicator as a reference). Then fix the antenna onto a wall or the like in the same position.
The T-type antenna is used in areas with strong FM signals. If FM reception is poor, install an outdoor antenna with the correct number of elements for your area. When connecting an outdoor antenna, use 75 ohms coaxial cable.

• FM Reception

- (1) Press the FM/AM button ⑥ to FM reception mode.
- (2) Tune in the desired FM station using the PRESET STATIONS buttons ② or the TUNING button ⑦. Best reception is obtained when all the LED segments of the SIGNAL strength indicator ① are lit.
- (3) If the station is broadcasting in stereo, the STEREO indicator ① lights.



CONNECTIONS AND OPERATION

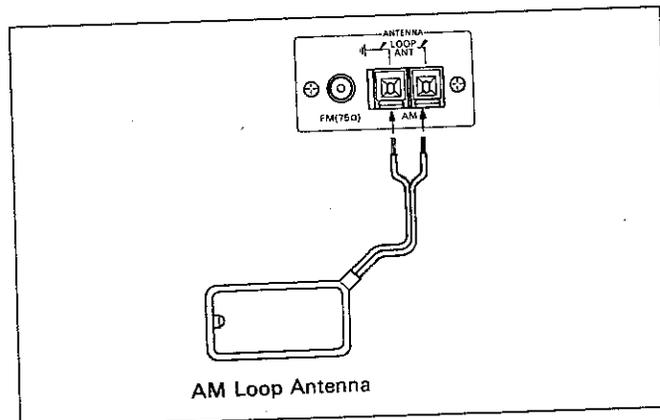
AM Operation

- **AM Antenna**

This unit incorporates a high performance loop antenna for AM reception. Use pins to fix it to the wall. This will assure you of the clearest possible signal.

- **AM Reception**

- (1) Press the FM/AM button **6** to AM reception mode.
- (2) Tune in the desired AM station using the PRESET STATIONS buttons **2** or the TUNING button **7**. Best reception is obtained when all the LED segments of the SIGNAL strength indicator **11** are lit.



ASTI PACIFIC CORPORATION

1318 Nishijima-cho, Hamamatsu, 430 Japan

ASTI NIKKO EUROPA VERTRIEBS GMBH

Haldesdorfer Str. 102·2000 Hamburg 71·West Germany

ASTI NIKKO TECHNOLOGY CORPORATION OF AMERICA

5830 South Triangle Drive Commerce, CA 90040 U.S.A.
