

# OPERATING INSTRUCTIONS

AM/FM MULTIPLEX STEREO TUNER AMPLIFIER

## SANSUI MODEL 500A



*Sansui*<sup>®</sup>

SANSUI ELECTRIC COMPANY LIMITED

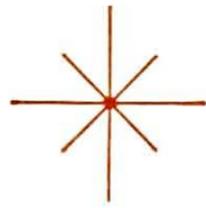
# CONTENTS

---

FEATURES .....	3, 4
SPECIFICATIONS .....	5
CHARACTERISTICS .....	6
CONNECTIONS .....	7, 8, 9, 10
SWITCHES AND CONTROLS .....	11, 12, 13, 14
OPERATIONS .....	15, 16
MAITENACE .....	17, 18, 19, 20
SCHEMATIC DIAGRAM.....	21

# SANSUI

## AM/FM MULTIPLEX STEREO TUNER AMPLIFIER



## MODEL 500A

Now you can step into the marvelous world of stereo on the right foot with the impressive performer pictured above—the Model 500A.

The most outstanding feature with Model 500A is its super-sensitivity. This enables you to pull in far-away stations both AM and FM. Model 500A is, of course, free from any noises, hums, groans and whines. All you hear is just what's on tape or record or radio. It also gives you greater, clearer sound fidelity that you would never expect from a stereo with such a low price tag.

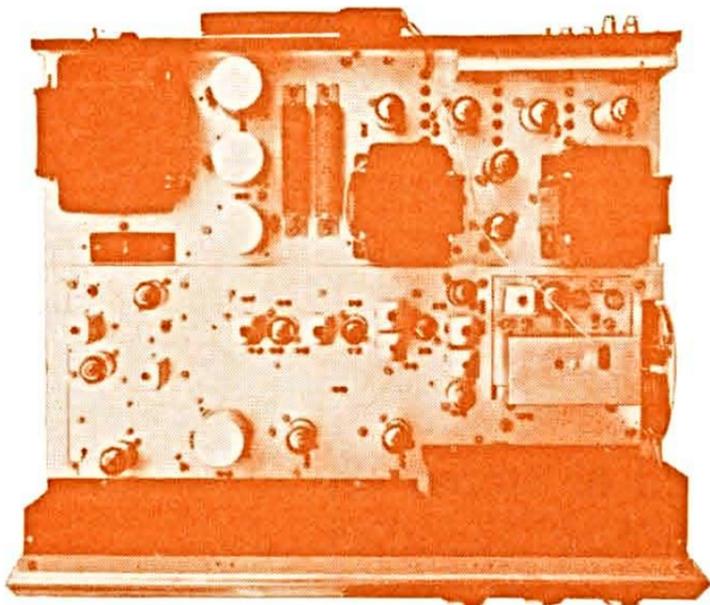
And on top of this, Sansui's hardworking, top-quality silicon transistors in the head amplifier completely eliminate bothersome hums and other irritating noises.

The 500A offers a whole host of other conveniences too. Investigate them yourself. Then take a giant step forward. Walk away with the new Model 500A. This booklet explains the steps necessary for operating and caring for your new Model 500A. Read this carefully and retain for future use.

# FEATURES

## USE OF 7189A POWER TUBES IN CLASS AB<sub>1</sub> P.P.

The use of 7189A power tubes in Class AB<sub>1</sub> P.P., super-wide-band output transformer plus distortion-free fixed bias system provides 50 watts IHFM music power, 23/23 watts RMS power and 20 watts × 2 stereo RMS power. In addition, the negative feedback of more than 20 dB leads to clear tone at the highest output levels.



## PRECISION TRANSISTOR HEAD AMPLIFIER

The top-quality silicon transistors are used in the head amplifier to raise the amplifier characteristics as well as to completely eliminate hums and noises, enemies of stereo. The hum and noise is -70 dB (IHFM) at the PHONO terminal.

## PERFECT FM TUNER SECTION FOR CLEAR RECEPTION

(1) The front end and IF section are the highest in gain as well as the smallest in size, featuring a cascode system of 2 low-noise nuvistors and a 3-gang variable capacitor, giving  $2\mu\text{V}$  ( $\pm 3$  dB IHFM) sensitivity. (2) The noise limiter is a double limiter including a ratio detector to eliminate any noise from the strong electrical field as well as the weak one. (3) The built-in muting switch automatically cuts off the meter-frequency amplifier stage when the receiver input is reduced below a certain value. Even if the dial indicates a point between two stations no noise is generated, enabling quiet tuning on your selection. (4) The AFC circuit maintains long stabilized FM reception, once the dial is set to your desired station. (5) The SCA filter clips off the interference of the SCA broadcast.

## FM MULTIPLEX SEPARATION OF MORE THAN 35 dB

The FM multiplex circuit incorporates the most advanced switching matrix system available, providing the channel separation above 35 dB while keeping distortion below 1% at 1000 cps.

## AUTOMATIC FM STEREO-MONO SWITCHING AND STEREO INDICATOR

The Model 500A is automatically switched between FM stereo and mono by means of a transistor. Sansui's exclusive FM multiplex indicator glows white when a stereo program is being received; it glows green during mono reception. In addition, the tuning meter aids in pinpointing your desired station.



### AM BUILT-IN FERRITE BAR ANTENNA

The AM tuner section incorporates a super sensitivity ferrite bar antenna for clear AM reception.

### CENTER-CHANNEL OUTPUT FOR BETTER STEREO EFFECT

The Model 500A is equipped with an extra terminal for connecting a center-channel amplifier. The 3-dimensional stereo effect is easily obtained by connecting it to an additional monophonic amplifier.

### OTHER CONVENIENCE FEATURES

The Model 500A incorporates all the stereo and hi-fi circuits including the low filter for cutting down rumble from a noisy turntable mechanism, the high filter for filtering the very high frequencies from old or worn discs, the loudness control for restoring audible balance at low volume, the tape monitor switch that enables you to hear a tape while you are recording it, the DIN standard tape recording plug for one-touch direct recording, and the front-panel headphone jack for private listening without disturbing others as well as to prevent outside noises from interfering with the listening.

# SPECIFICATIONS

## AUDIO SECTION

<b>Power Output</b>	
Music Power (IHFM)	50 watts total
RMS Power (right/left)	23/23 watts
Stereo RMS Power (Both)	20 watts x 2
Harmonic Distortion	1%
Power Bandwidth (IHFM)	30~15,000 cps
Frequency Response (AUX)	20~20,000 cps ( $\pm 1.5$ dB)
<b>Channel Separation</b>	
Phono	50 dB
Aux	45 dB
<b>Hum and Noise</b>	
Phono	70 dB below rated output
Aux	75 dB below rated output
Output Impedance	8 ohm, 16 ohm
Damping Factor	10
<b>Input Sensitivity (for rated output)</b>	
Phono (Mag)	50 K $\Omega$ 2.5mV $\pm 3$ dB
Tape	150 K $\Omega$ 2.0mV $\pm 3$ dB
Aux	250 K $\Omega$ 180mV $\pm 3$ dB
Tape Monitor (PIN)	250 K $\Omega$ 180mV $\pm 3$ dB
Tape Monitor (DIN)	250 K $\Omega$ 180mV $\pm 3$ dB
<b>Recording Output</b>	
REC out (PIN)	36 dB for PHONO ( $\times 60$ )
REC out (DIN)	18 dB for PHONO ( $\times 8$ )
Center-Channel Output	5V (for rated output)
<b>Equalizer</b>	
Phono (Mag)	RIAA. NF type
Tape	NAB. NF type
<b>Controls and Switches</b>	
Bass control	50 cps +12 dB ~ -13 dB
Treble control	10,000 cps +8 dB ~ -12 dB
Loudness control	50 cps +10 dB, 10,000 cps, +4dB (volume control at -30 dB.)
High filter	-9 dB. 10,000 cps
Low filter	-11 dB. 50 cps
Mode switch.	1. STEREO 2. MONO
Function switch	1. TUNER 2. PHONO 3. TAPE HEAD 4. AUX
Band Selector	1. AM 2. FM-MONO 3. FM-AUTO
<b>Other Special Features</b>	
Direct tape monitor.	Head phone jack. Din connector.
Center channel Output.	

## FM SECTION

Frequency Range	88~108 Mc
Usable Sensitivity (IHFM)	2 $\mu$ V $\pm 3$ dB
Usable Sensitivity (S/N 20 dB quieting)	1.4 $\mu$ V $\pm 3$ dB
Selectivity	200 KC (-3 dB)
Image Ratio	40 dB
Signal to Noise Ratio	52 dB
Harmonic Distortion	1% (100% MOD. INPUT 60 dB)
Frequency Response	30~15,000 cps $\pm 2$ dB

## FM MULTIPLEX SECTION

Channel Separation	35 dB
Frequency Response	30~15,000 cps $\pm 2$ dB
Harmonic Distortion	1%

## AM SECTION

Frequency Range	535~1605 Kc
Usable Sensitivity (IHFM)	20 $\mu$ V $\pm 3$ dB at 1400 Kc
Selectivity	20 dB $\pm 10$ Kc
Image Ratio	30 dB at 600 Kc

### Other Special Features

Meter tuning. FM stereo indicator. Fly wheel tuning.

AM Ferrite bar antenna. FM Stereo-Auto. FM-AFC. FM-SCA Filter.

### TUBES. TRANSISTORS AND DIODES.

T: 6AQ8  $\times 3$ , 6BE6  $\times 1$ , 6BA6  $\times 2$ , 6BL8  $\times 4$ , 12AU7  $\times 2$ , 6AU6  $\times 1$ , 7189A  $\times 4$ .

TR: 2SC-650  $\times 2$ , 2SC-649  $\times 2$ , 2SC-372  $\times 2$ , 2SB-324  $\times 1$ .

D: OA-91  $\times 4$ , IS-351  $\times 1$ , SW-0.5 d  $\times 2$ , SW-0.5-02  $\times 1$ , IS-180  $\times 8$ .

### POWER REQUIREMENT

Power Voltage AC. 100, 117, 220, 240V, 50 and 60 c/s

Power Consumption MAX 270VA.

### DIMENSION

Width 18 $\frac{3}{10}$ "

Height 5 $\frac{9}{10}$ "

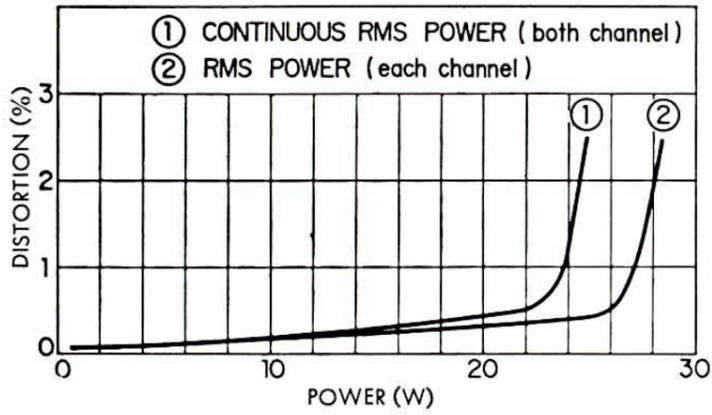
Depth 15.0"

### WEIGHT

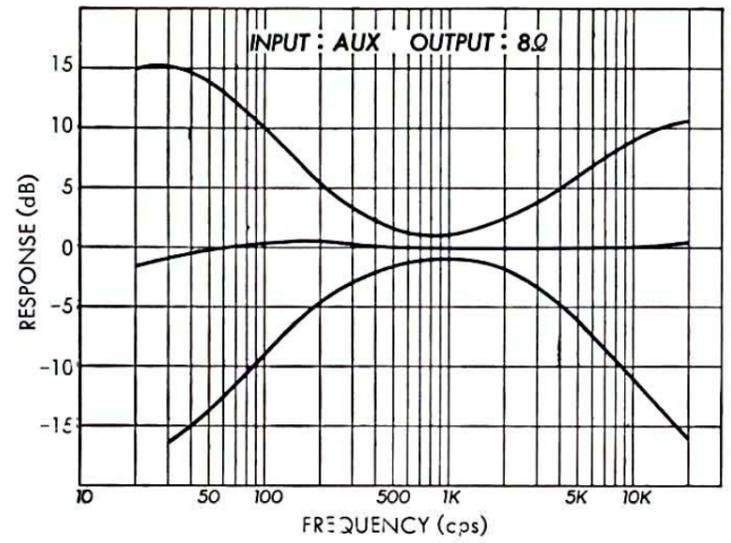
39.7 lbs

# CHARACTERISTICS

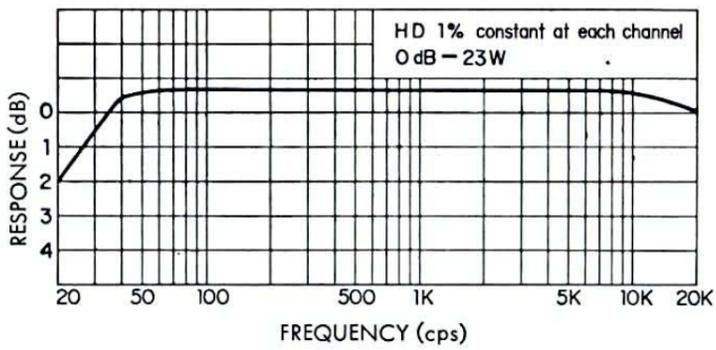
**POWER OUTPUT HARMONIC DISTORTION**



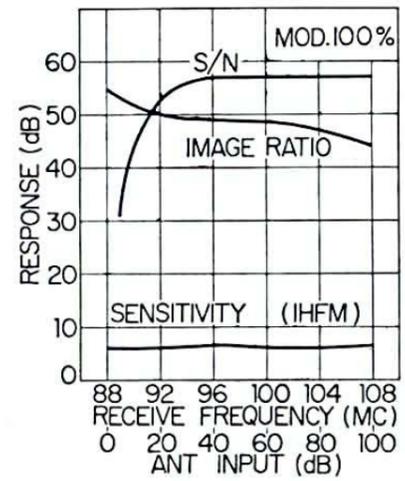
**TONE CONTROL**



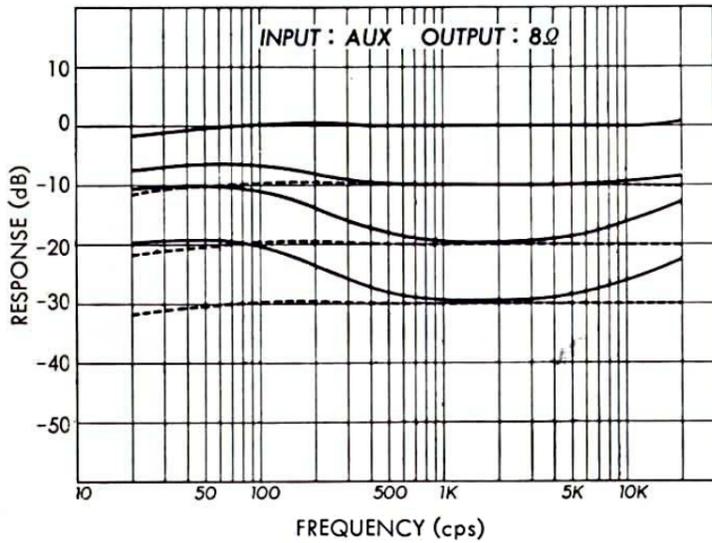
**POWER BANDWIDTH**



**FM SENSITIVITY IMAGE RATIO & S/N**



**LOUDNESS**



# CONNECTIONS

## ANTENNAS

### Built-in AM Ferrite Bar Antenna

As illustrated in Fig. 3 and Fig. 4, to use this antenna, turn the antenna unit toward you on the axis (a); loosen the screw (c); and finally, probing for your desired station signal, move the bar (B) to the best condition.

### AM Antenna

If the ferrite bar antenna is found to be insufficient for the AM reception, install an outdoor antenna by use of the PVC wire (supplied) as illustrated in Fig. 1 and, at the same time, ground the amplifier. Note that its sensitivity varies remarkably depending on how to install it. For safety reason, be sure to use a lightning arresting switch.

### FM Antenna

As illustrated in Fig. 2, connect and install an FM antenna by using the feeder (supplied). For reception of nearby stations, install a T-shaped indoor antenna, choosing its direction so that it brings in broadcasts clearest. For reception of distant stations or for city dwellers who live in a thick-wall building, use an outdoor TV antenna or an antenna designed specifically for the FM band.

NOTE: To obtain the best antenna effect, pay a special attention to its height and direction rather than its length. It is recommended that one person should listen while another installs it to the proper position.

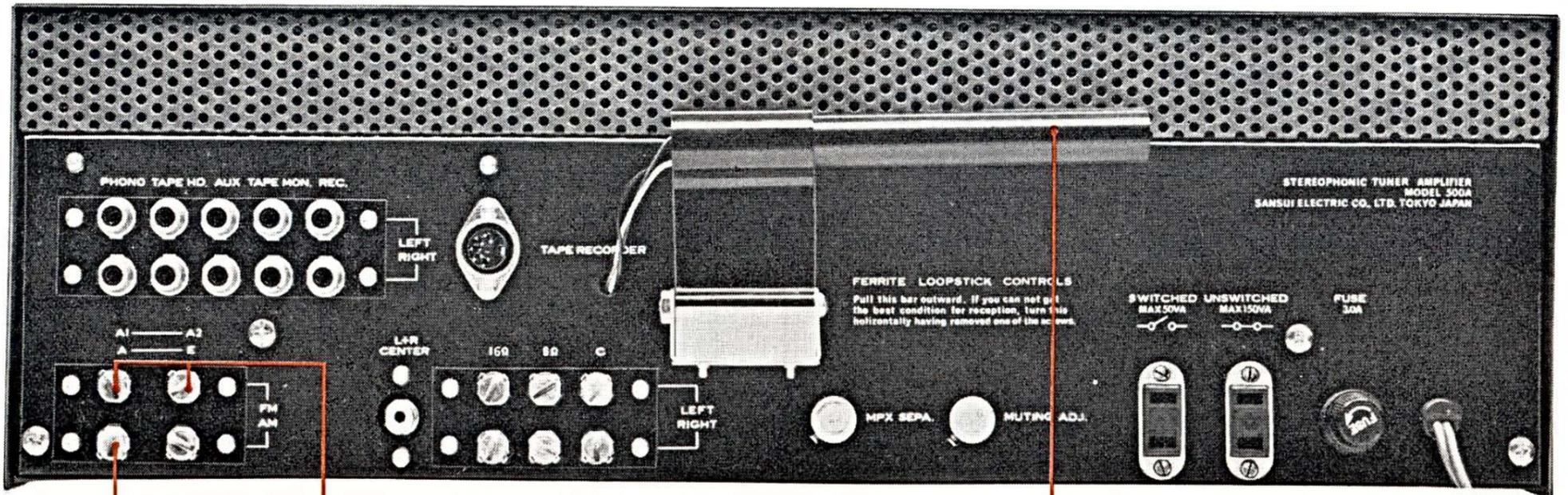
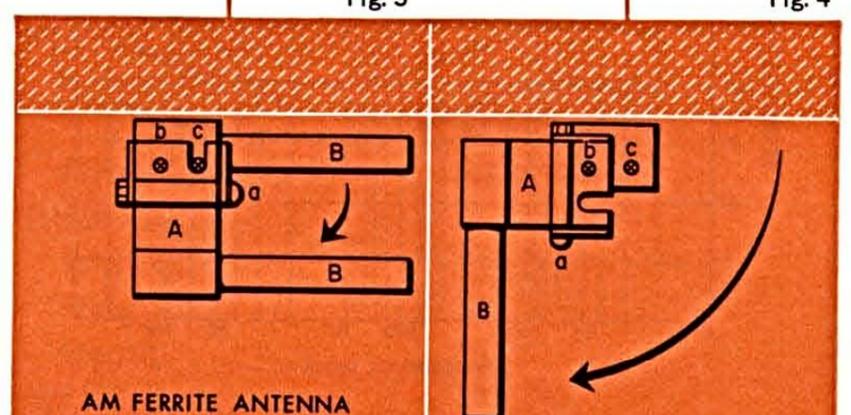
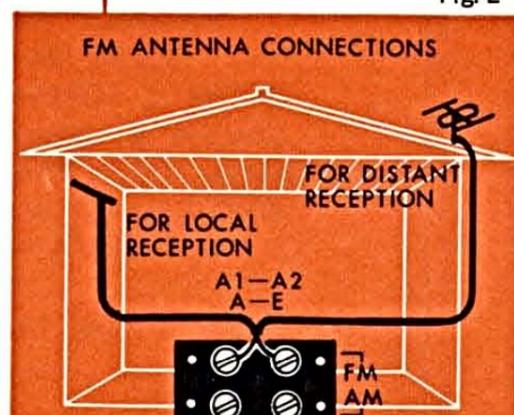
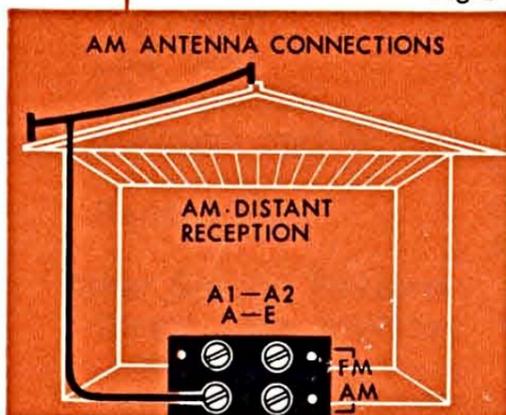


Fig. 1

Fig. 2

Fig. 3

Fig. 4

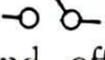


## RECORD PLAYER

1. Connect the left output of the record player to the PHONO CHAN-L input of this amplifier.
2. Connect the right output of the record player to the PHONO CHAN-R input of this amplifier.
3. Insert the power-cord plug of the record player into the receptacle of this amplifier.

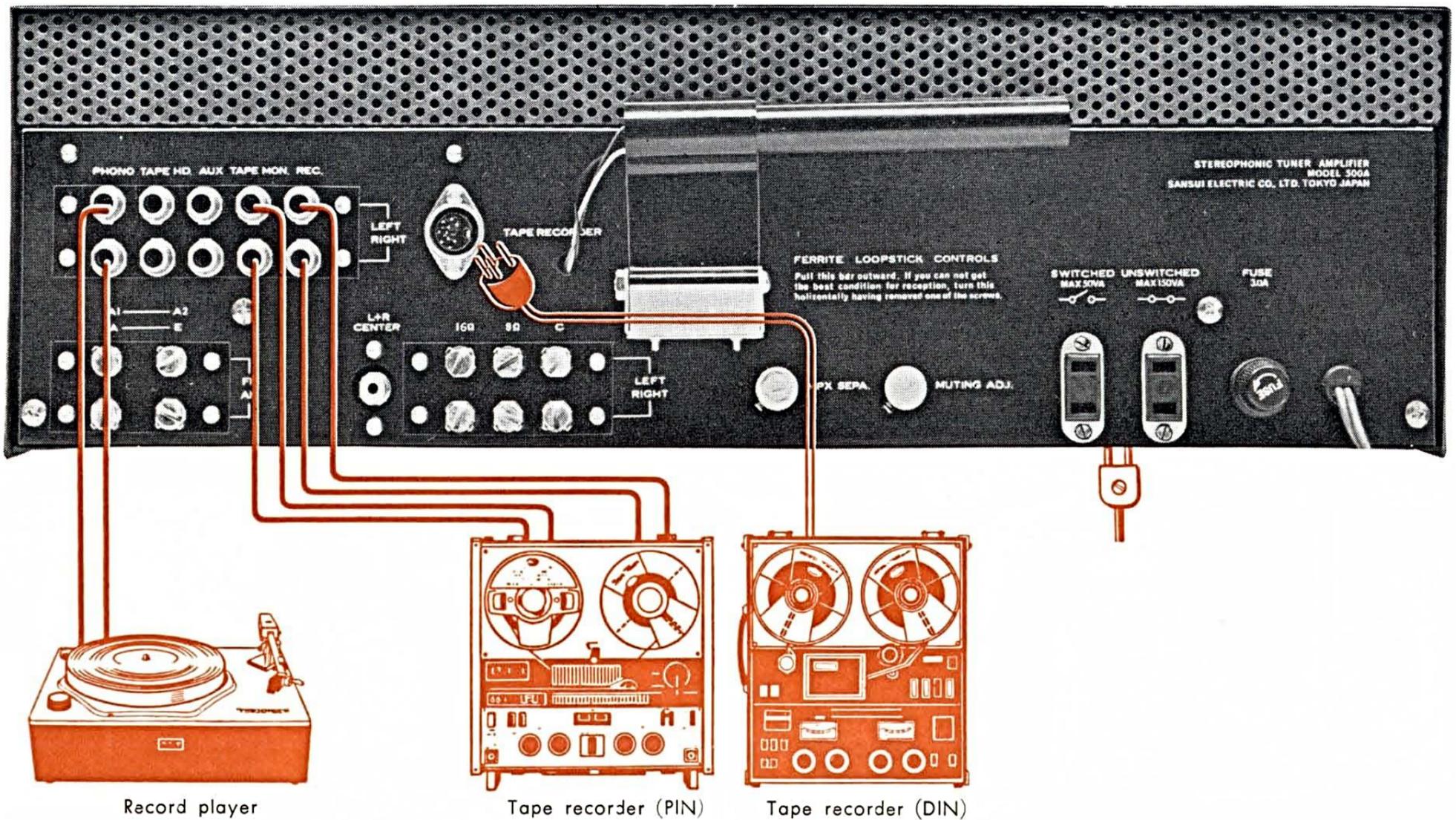
### NOTES:

1. There are two categories of pickups, one using a crystal element and the other using a magnetic circuit. The magnetic cartridge having the output voltage of 3 to 10 mV is recommended for use. If the crystal cartridge is used, connect the outputs of the record player to the AUX inputs of this amplifier.

2. In case of a monophonic record player, connect the output of the player to either PHONO input of this amplifier.
3. Plug into the receptacle marked with  and the record player is switched on and off by the power switch of this amplifier.

## TAPE RECORDER OR TAPE DECK

This amplifier can be used with a tape recorder for recording and playback and can also play tapes on the tape deck. If you use a three-head tape recorder which has separate record and playback heads, you can make recordings while listening to a reproduction of the recordings. In other words, this amplifier can be used as a



# CONNECTIONS

monitor which lets you know the quality of your recordings while they are being made.

1. Single-connection tape recorder (DIN standard)  
Connect the recording connector of the tape recorder to the TAPE REC receptacle of this amplifier.

2. Pin-jack tape recorder

A. To record

Connect the recording inputs of the tape recorder to "R" and "L" ("R" or "L" in case of mono) of the REC terminals of this amplifier. To connect, be sure to use shielded wires.

B. To play back

Connect the tape recorder outputs ("LINE") to "R" and "L" ("R" or "L" in case of mono) of the TAPE MON terminals of this amplifier.

3. To monitor on the 3-head tape recorder

Connect as in 1. and 2.

4. To play tapes on the tape deck

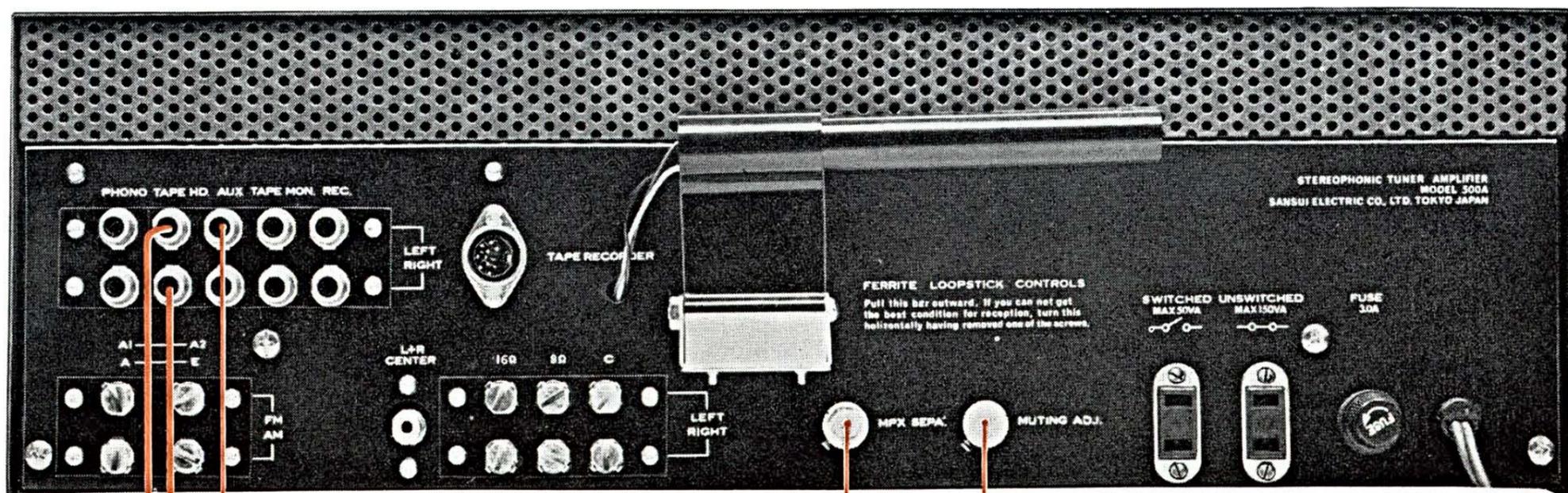
Connect the tape deck outputs to "R" and "L" ("R" or "L" in case of mono) of the TAPE terminals of this amplifier.

## SPEAKERS

### STEREO

1. Connect the (+) terminal of the left-hand speaker to one of the upper terminals marked 8 and 16 ohms of this amplifier, depending on the impedance of the speaker used. Then, connect the (-) terminal of the speaker to the upper "C" terminal of this amplifier.

2. Connect the (+) terminal of the right-hand speaker to one of the lower terminals marked 8 and 16 ohms of this amplifier, depending on the impedance of the speaker used. Then,



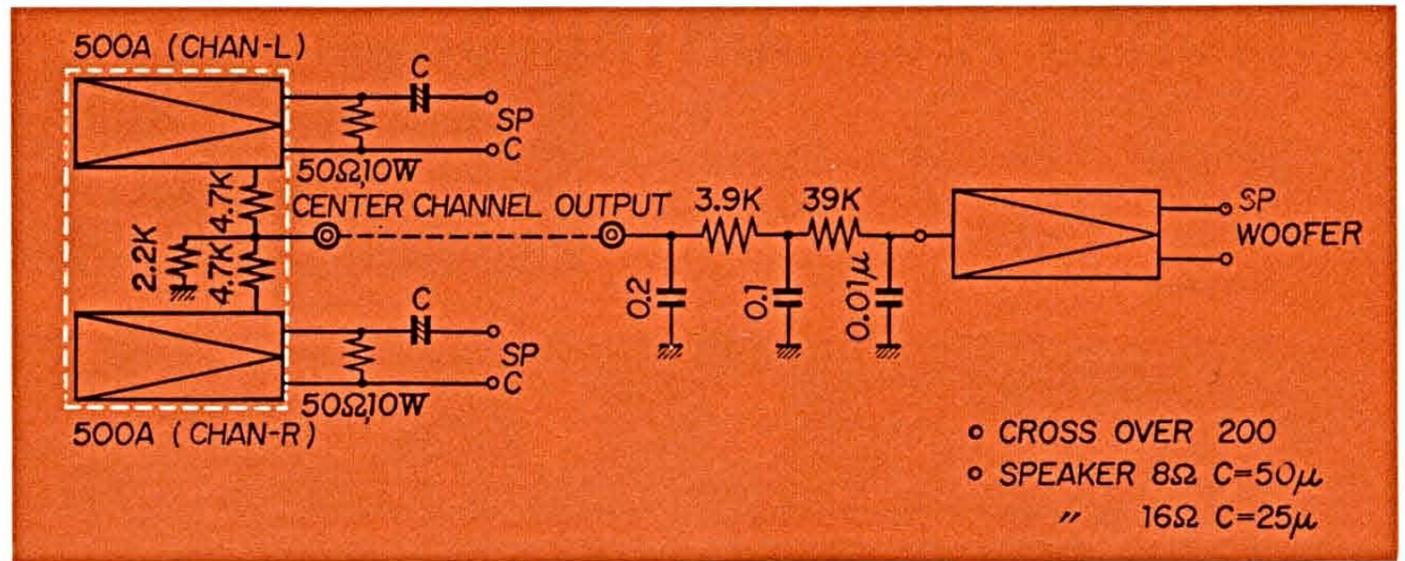
Connect the output of the crystal cartridge record player etc.

MUTING ADJ.  
(See "HINTS ON USE" in the page 17)

MPX SEPA.  
(See "HINTS ON USE" in the page 17)



Tape deck



connect the (-) terminal of the speaker to the lower "C" terminal of this amplifier.

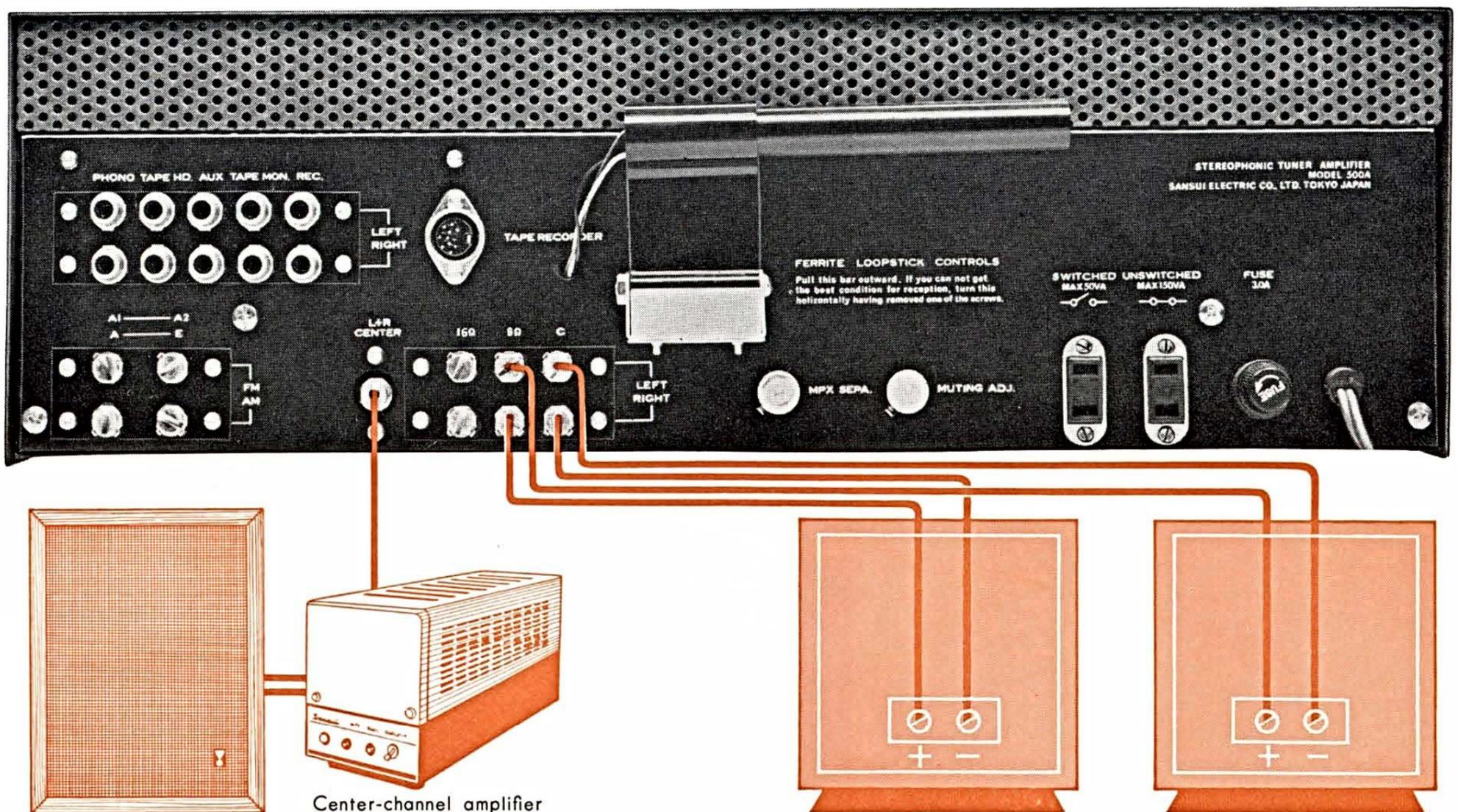
## MONO

If a two-speaker system (8 ohm each, for instance) is used as mono, connect the upper and lower 16-ohm terminals ("R" and "L"), and then the (+) terminal of the speaker to them; connect the upper and lower "C" terminals ("R" and "L"), and then, the (-) terminal of the speaker to them.

### NOTES:

1. The two speakers or groups of speakers must be properly phased. The speakers for the two channels must push the sound waves out together. If one pushes while the other pulls, there is sound cancellation at some frequencies or in some listening locations. If so, reverse the

2. The proper connection of the speakers is vital to the long life and high performance of the stereo amplifier. After connection, make sure the upper and lower terminals are not in touch with each other.
  3. This amplifier is equipped with an extra terminal for connecting the center-channel amplifier\*. The center channel mixes the right and left sounds to produce the so-called 3-D effect. To do this, connect the input terminal of the center-channel amplifier to the pin jack at the left of the speaker terminal board of this amplifier. Then, connect an 8 to 12-inch woofer to the center-channel amplifier.
- \* The bass amplifier, in which a filter circuit is employed on the input side of the main amp., is preferable.



# SWITCHES AND CONTROLS

## ① TUNING INDICATOR (FM MULTIPLEX INDICATOR)

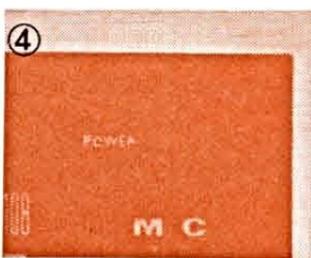
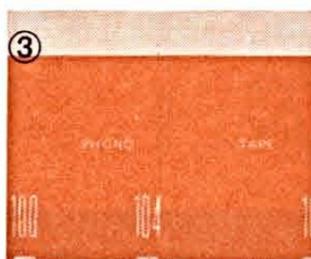
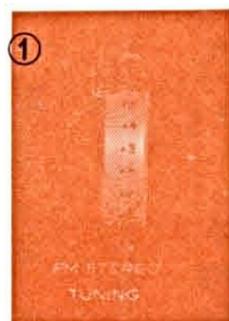
This indicator gives a visual indication of correct FM/AM tuning and reception of FM multiplex broadcasts. Adjust the tuning knob so that the needle in the tuning indicator window will move to as right as possible. When the tuner receives signals from an FM MPX station, the indicator lamp glows white to show that a stereo broadcast being received. For reception of FM monophonic broadcasts, it remains green.

## ② DIAL SCALE

The upper scale is the FM station-tuning dial and the lower one is the AM station-tuning dial. Select your desired station by means of the tuning knob at the right.

## ③ FUNCTION INDICATOR

When the function switch is set to "PHONO" this indicator glows green on its left side. When set to "TAPE H.D.", it glows red on its right side.



## ④ POWER INDICATOR

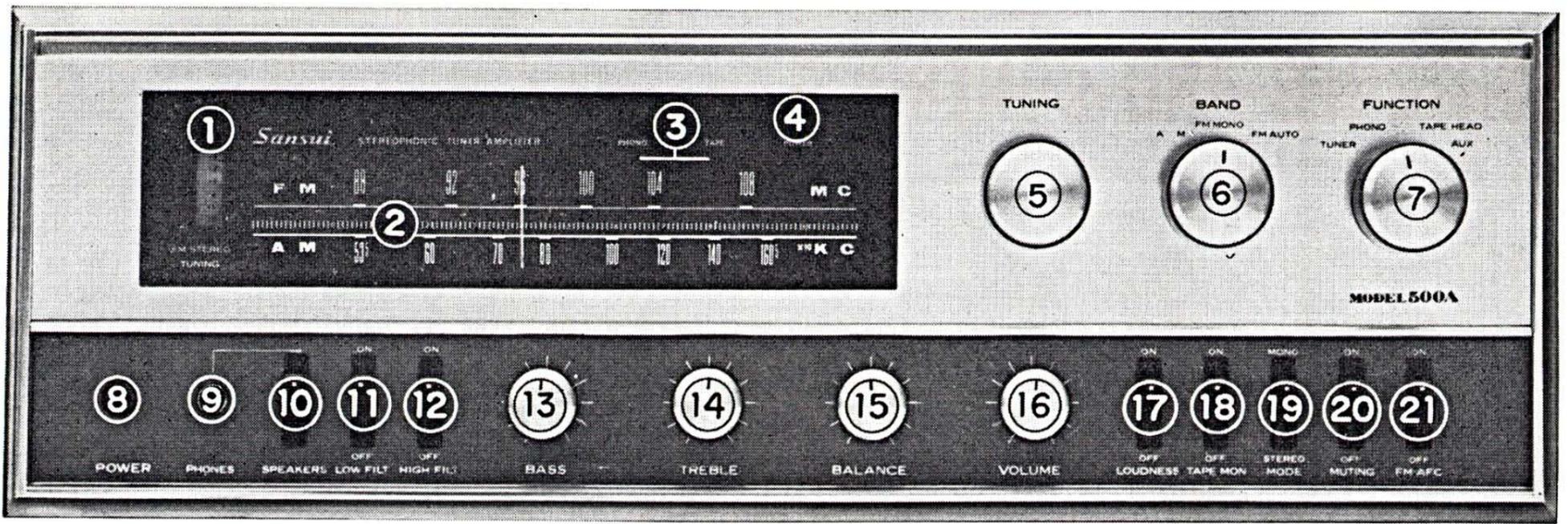
When this amplifier is switched on, the power indicator is lit to show that it is functioning.

## ⑤ TUNING KNOB

This knob is used to select your desired FM or AM station.

## ⑥ BAND SELECTION SWITCH

AM: For reception of AM broadcasts.  
FM MONO: For reception of FM monophonic broadcasts.  
FM AUTO: For reception of FM multiplex stereo broadcasts.



## ⑦ FUNCTION SWITCH

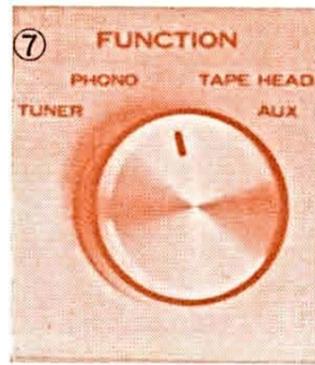
This switch is used to select your desired sound program:

TUNER: For radio reception.

PHONO: For record playing.

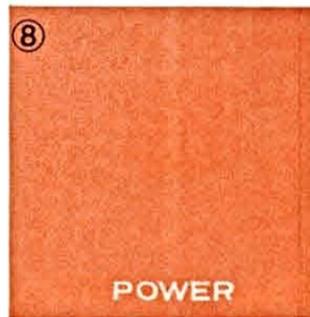
TAPE H.D.: For play back on a tape deck.

AUX: For record playing by use of a crystal cartridge and sound reproduction by other inputs.



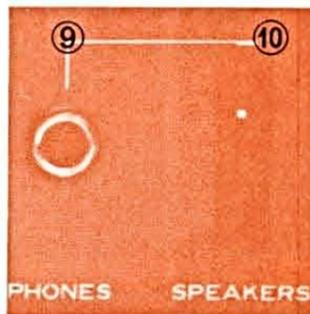
## ⑩ SPEAKER-HEADPHONE SWITCH

When listening over headphones without disturbing anyone, set this switch to "PHONES". And the speakers are disconnected.



## ⑧ POWER SWITCH

Push the button; the power is on. Push it again; the power is off. It also switches on and off the plug receptacle (marked with  $\text{---} \circ \text{---}$ ) on the back of the amplifier.



## ⑪ LOW FILTER

This filter is used to cut down rumble from a noisy turntable mechanism and other noises at relatively low frequencies.



## ⑨ HEADPHONE JACK

When you want to enjoy private listening without disturbing anyone or when you use the amplifier as a monitor, insert headphones into the headphone jack. You can use any kind of headphones if their plugs fit into the jack. But dynamic stereo headphones are recommended for use.



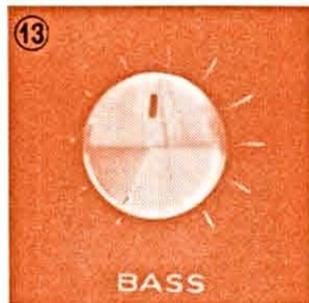
## ⑫ HIGH FILTER

This filter is used to cut down annoying noises produced by old or worn discs, fluorescent lamp and others.

# SWITCHES AND CONTROLS

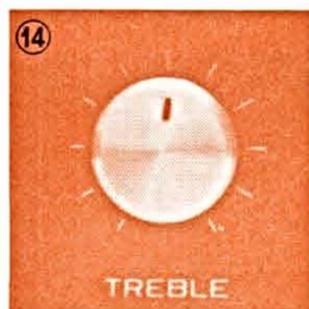
## ⑬ BASS CONTROL

As this control is turned from "FLAT" to right, the bass notes are more emphasized. As it is turned from "FLAT" to left, they are less emphasized.



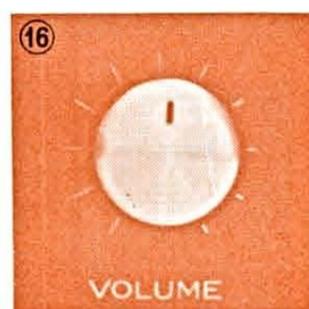
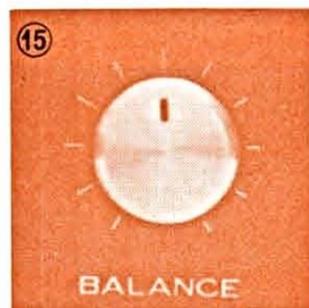
## ⑭ TREBLE CONTROL

As this control is turned from "FLAT" to right, the high notes are more emphasized. As it is turned from "FLAT" to left, they are less emphasized.



## ⑮ BALANCE CONTROL

This control is used to keep the volume balance proper between the two speaker groups. Adjust it so that the sound is heard equally from the right and left speakers.



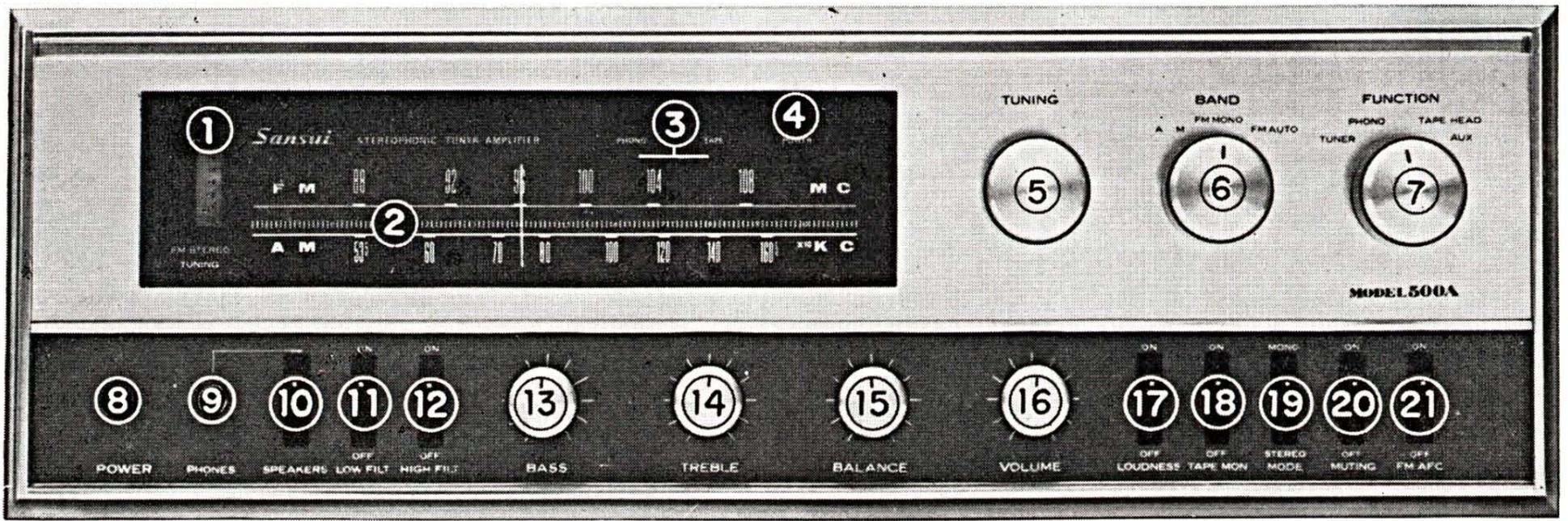
## ⑯ VOLUME CONTROL

This control is used to adjust the volume of the broadcasts, record playing, tape playback, etc. As it is turned clockwise, the volume is increased, or vice versa.

## ⑰ LOUDNESS SWITCH

When the sound volume is at low level, you feel as if bass and treble are missing. In such a case, turn this switch on to compensate bass and treble. This will make you feel as if you were present at an actual concert.





### ⑱ TAPE MONITOR SWITCH

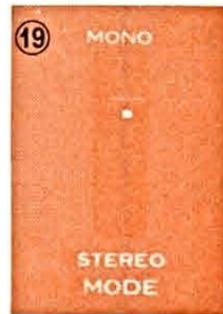
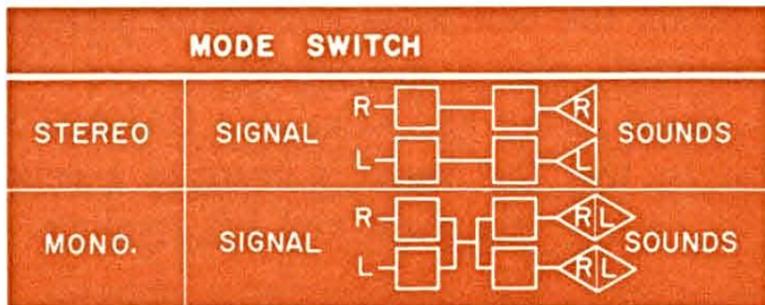
When recording through a 3-head tape recorder, turn on this switch to make the tape monitor circuit. It enables you to hear a tape while you are recording it. Also when playing back, turn it on. Except for the above uses, it must be in OFF position.

### ⑲ MODE SWITCH

To enjoy FM multiplex stereo broadcasts, stereo records or stereo tape, set this switch to "STEREO".

To enjoy monophonic broadcasts, records or tapes, set it to "MONO".

Even if the input signals come from either or both of channels, the output signals equally drive the right and left speakers. During AM or FM reception, the sound is heard from both speakers even if the switch is in either "STEREO" or "MONO" position.



### ⑳ MUTING SWITCH

Even if the dial indicates a point between two FM station channels, no noise is generated with this switch on, enabling quiet channel selection. However, if the muting switch is kept on when you receive weak signals, the sound may be distorted or reception may become impossible. In such a case, switch off the muting circuit.

### ㉑ FM-AFC

This prevents signals from FM station with drifting. This is likely to happen because of the very high frequencies used. If it occurs, the tonal quality deteriorates or you cannot hear the program at all. To avoid this, switch on the FM-AFC after tuning in the station of your choice. If you switch on the FM-AFC before tuning, you may not be able to tune the tuner accurately. If the FM-AFC is kept on even when there are a number of nearby stations, you may suffer from their interference. In such a case, switch off the FM-AFC.

# OPERATIONS

## RADIO RECEPTION

### A) FM

1. Set the FUNCTION switch to "TUNER" position. And the tuning meter will glow green.
2. Set the BAND SELECTOR to "FM MONO".
3. Leave the MODE switch in either "MONO" or "STEREO".
4. Turn off the FM-AFC switch.
5. Select your desired station by means of the tuning knob and the tuning meter.
6. Turn on the MUTING switch, if noise comes out during channel selection.
7. After the channel selection, switch on the FM-AFC.
8. Use other controls and switches according to your need.

### B) AM

1. Set the FUNCTION switch to "TUNER".
2. Set the BAND SELECTOR to "AM".
3. Leave the MODE switch in either "MONO" or "STEREO".
4. Select your desired station by means of the tuning knob and the tuning meter.
5. Use other controls and switches according to your need.

### C) FM Stereo

1. Set the FUNCTION switch to "TUNER".
2. Set the BAND SELECTOR to "FM AUTO".
3. Set the MODE switch to "STEREO".
4. Select your desired station by means of the tuning knob and the tuning meter. The tuning indicator lamp changes in color from green to white when a stereo program is received.
5. Use the MUTING and the FM-AFC switches as indicated in the section (A) FM.

6. Adjust the balance of the right and left speakers with the BALANCE control.
7. Use other controls and switches according to your need.

## RECORD PLAYING

1. Set the FUNCTION switch to "PHONO".
2. Set the MODE switch to "STEREO".
3. Switch on the record player at proper speed or rpm.
4. Place a pickup on the record.
5. Adjust the balance of the right and left speakers with the BALANCE control.
6. Adjust the VOLUME control properly.
7. Use other controls and switches according to your need.

### NOTES:

1. When you play a monophonic record on a stereo record player, follow the same procedure as for stereo records. This will give you better results.
2. To obtain the best balance of sound between both channels, play a monophonic record just like a stereo record and adjust the BALANCE control so that the sound is heard at a point midway between the right and left speakers.

## TAPE RECORDING AND PLAYBACK

### A) RECORDING

1. Set the FUNCTION switch to the proper position according to the program source you are going to record on the tape.

- 
2. Set the MODE switch to "STEREO" for stereo recording or to "MONO" for monophonic recording.
  3. Set the tape recorder for recording.
  4. Operate the tape recorder and, at the same time, properly use other controls and switches of this amplifier.

## B) PLAYBACK

1. a) Tape deck  
Set the FUNCTION switch to "TAPE H.D."
- b) Tape recorder  
Switch on the TAPE MONITOR.
2. Set the MODE switch to "STEREO" for stereo playback or "MONO" for mono.
3. Set the tape recorder for playback.
4. Adjust other controls and switches of this amplifier according to your need.

## C) MONITORING

To monitor through a 3-head tape recorder, follow the same procedures as for playback.

### NOTES:

1. The sound level to be recorded on the tape is not controlled by the amplifier knobs.
2. To obtain the best recording result, record on the tape through the amplifier rather than through a microphone placed in front of the speakers.
3. Before use of the tape recorder, be sure to look up the manufacturer's instructions.
4. The TAPE MONITOR switch must be in OFF position except for tape monitoring and playback.
5. The tape recorder can be connected by using either a single-connection plug or pin-jacks. The single-connection plug conforms with

German DIN standard specifications. It makes easier to connect the tape recorder to the amplifier because it has a five-pin plug for recording and playback.

# MAINTENANCE

## FM MULTIPLEX SEPARATION

If you feel the channel separation is poor during FM reception, adjust the MPX SEPARATION volume with a small screwdriver so that the clearest channel separation is obtained.

**CAUTION:** Never attempt to turn it without reason because this volume has been adjusted in our factory before shipping.



## MUTING ADJUSTER

As described in the preceding chapters, the muting switch is used to eliminate any noise made at a point between two FM station channels during the FM channel selection. In a weak signal area, the use of the muting switch badly affects the reception of FM stations. In such a case, adjust this volume, according to the strength of FM signals in your area, so that the FM stations are well received even with the switch on.

**CAUTION:** Never attempt to turn it without reason.



## HOW TO ELIMINATE RADIO NOISE

### A) AM BROADCASTS

An AM radio noise is often eliminated simply by replacing the antenna.

Usually the noise is heard in the area where the station signal is too weak due to topography, buildings, etc. To eliminate it, connect PVC wire to the AM antenna terminal of this amplifier and put it up on the wall of your listening room. If the noise is still heard or the sensitivity of the amplifier is still poor, an outdoor antenna should be installed.

A noise may be heard depending time, frequency, station, etc. To eliminate such a noise, connect a ground wire to the amplifier or turn the power plug upside down.

### B) FM BROADCASTS

There are two trouble-sources in the FM radio noises: one is caused by the insufficient antenna input and the other is caused by other electrical appliances placed near the amplifier. The poor antenna input is due to badly installed antenna or remoteness from the station. Change the height and direction of the FM antenna (supplied). If the noise is still heard, use an indoor TV antenna or an outdoor one. When the FM antenna is used together with the TV antenna, make sure the TV picture is not affected.

Note that an excessively long antenna may rather cause a noise.

The sensitivity of the amplifier varies depending on the transmitting conditions of the station. It happens, therefore, that one station signal is well received but the other station signal is ill received.

### **C) NOISE COMMON TO FM AND AM BROADCASTS**

If you live in a closely built-in area, noises may be caused by some outside factors. To eliminate, install a noise arrester with the electrical appliances or the power source of the amplifier.

### **D) FM MPX STEREO**

To eliminate a noise in the FM multiplex stereo, switch on the HIGH FILTER and adjust the TREBLE control to FLAT or turn it further to left.

## **FM MPX STEREO ON MONO**

You can enjoy FM MPX stereo broadcasts just like mono by setting the MODE switch to MONO and the FUNCTION switch to FM. This method is recommended if the station signal is weak and the FM MPX stereo program is impaired by noises.

## **FM BROADCASTS**

The FM broadcasts are characterized by more faithful reproduction of sound than the AM broadcasts. There is no noise and no jamming. One disadvantage in the FM is that the selected station is tuned off from time to time while listening. To prevent it, your Model 500A possesses a built-in FM-AFC circuit. Be sure to select your desired station and then turn on the FM-AFC switch.

There are two systems in the FM MPX stereo broadcasts: FCC system (AM-FM system) and FM-FM system. Your Model 500A is designed to receive the FM stereo of the FCC system.

In the FCC system, also called "single wave

AM-FM system", the signal that contains the sum of the right and left stereo channels (R+L) is frequency-modulated in the main channel, while the signal that is the difference between the right and left channels (L-R) is amplitude-modulated in the sub-channel.

For easier demodulation, the FCC system employs the Compatible System of the composite signals in which a 19-kc pilot carrier and a 67-kc sub-signal of the SCA channel signal are added to the Main signals of R+L and R-L. This system assures clear and noiseless Hi-Fi music.

## **TO CONNECT TAPE RECORDER TO AMPLIFIER**

To connect a tape recorder, record player, etc. to this amplifier, be sure to use shielded wires. The use of an ordinary cord or PVC wire may cause hum or buzz. The maximum length of the shielded wire is 5 feet.

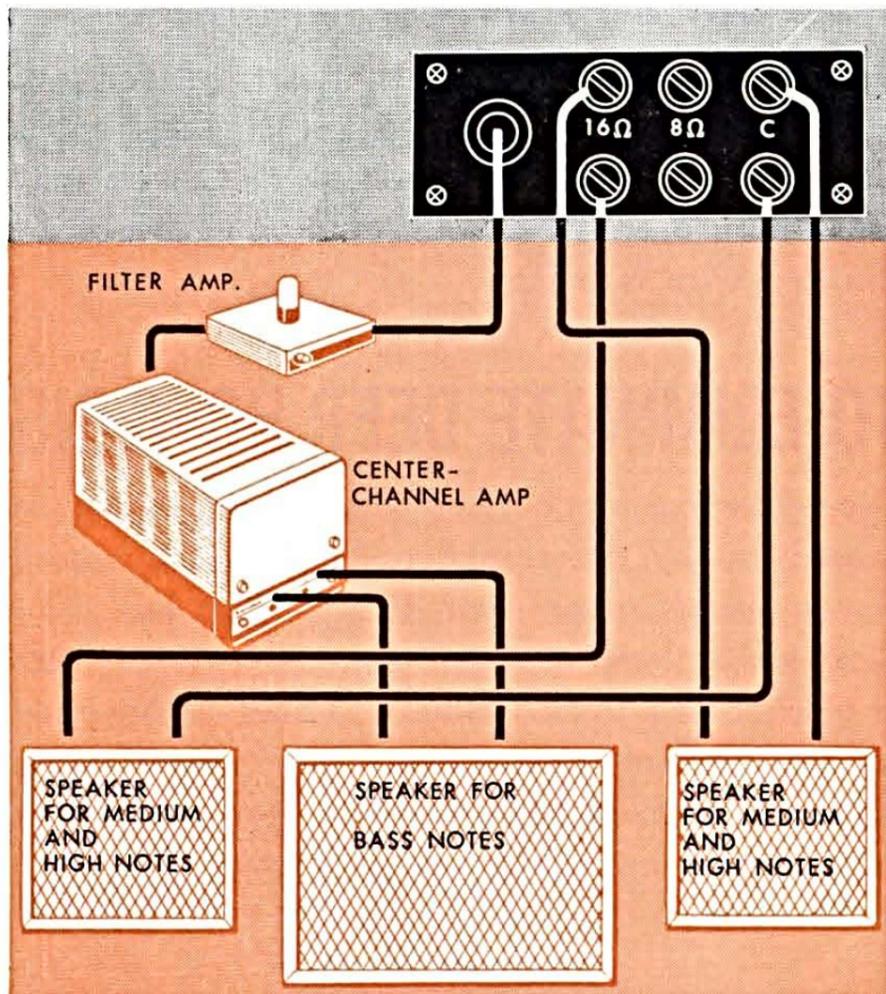
## **TO ELIMINATE DEEP HOWLING**

Deep howling or buzzing on record playing is caused not by the amplifier, but by the record player placed on or near the speaker box. To eliminate it, keep a proper distance between them or place it on a thick cushion. Other causes may be the use of other than the shielded wire, defective connecting wire, improper connection or no grounding of the record player.

# MAINTENANCE

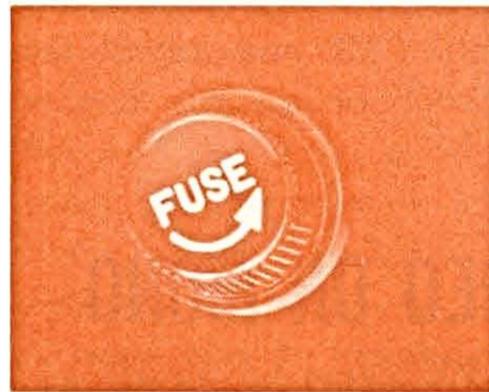
## 3-D STEREO SYSTEM

The 3-D stereo system has become popular in the increasing number of stereo fans. The speaker arrangement for this new system is characterized by a woofer installed at a point midway between right and left groups of tweeter/midrange speakers. This idea is based on the fact that human ears are not sensitive to the direction of sound whose frequency is less than 200 to 300 cps. Therefore, only one woofer is good enough for this system. You can enjoy the 3-D stereo system by connecting a bass amplifier together with a woofer to the center-channel terminal of this amplifier as described in Section "SPEAKERS".



## FUSE

If the amplifier does not function at all due to the blown fuse, remove its line cord from the outlet and then replace the fuse. Use a 3-ampere cartridge fuse. Never attempt to use a wire or a fuse with improper capacity. Before replacing, be sure to trace the trouble source and repair.



## WRONG PHASED SPEAKERS

Incorrect phasing is evidenced by loss of bass when you are listening to a monophonic record on a stereo record player at a point midway between the two speaker systems. To phase correctly, reverse wires of either speaker system.

## CONNECTION MUST BE PERFECT

Lead wires must be connected correctly and firmly to the speaker outputs and inputs. Loose and wrong connection may cause noises and malfunction of the amplifier. Before the connection, be sure to look up manufacturer's instructions of the record player and tape recorder used.







*Sansui*<sup>®</sup>



SANSUI ELECTRIC COMPANY LIMITED



Head Office; 14-1, 2-chome, Izumi Suginami-ku, Tokyo, Japan. TEL. 323-1111

---

Printed in Japan (O8500M5)