STEREO AMPLIFIER
KA-6004
INSTRUCTION MANUAL

KENWOOD

To the New KA-6004 Amplifier Owner:

Because Kenwood Electronics, Inc., takes great pride in the long tradition of quality components the name Kenwood represents, your purchase of a Kenwood amplifier places you in a distinguished family of connoisseurs of superb high-fidelity sound reproduction.

The purpose of this manual is to acquaint you with the operating features of your new amplifier. You will notice that in every detail of planning, engineering, styling, operating convenience, and adaptability, we have sought to anticipate your needs and desires.

We suggest that you read this manual carefully. Knowing how to set up your amplifier to best advantage will enhance your listening pleasure right from the start. You will also become aware of the ease with which you can adjust your amplifier to meet your special requirements.

Turn the pages and become acquainted with the exciting features of your new amplifier, features that will remain new for endless hours of listening pleasure.

CONTENTS

KA-6004 FEATURES

1. Pure-Complementary Direct Coupling Power Amplifier with Constant Current Driving Circuits.
   Wideband, low distortion amplifier capable of 80 watts RMS continuous power stereo, 40 watts per channel operating into 8 ohm loads at 20 Hz.

2. Can-type Transistor and Nichrome spattered Metal Film Resistors in Preamplifier
   Outstanding preamplifier signal-to-noise ratio improvement due to utilization of can-type transistors and nichrome spattered metal film resistors.

3. Designed for Top Reliability and Performance
   Nothing has been overlooked — down to the smallest detail — to create an engineering masterpiece.

4. Bass and Treble tone controls permit 2 dB step tone adjustments. The tone circuits are deactivated when these controls are set to OFF. A perfectly flat frequency response is then obtained.

5. Low filter switches at two cut-off points, 40 Hz and 80 Hz (12 dB/octave), are provided. Moreover, a high filter switch provides 7 kHz, 6 dB/octave cut-off control.

6. Input Jacks to Accommodate Any Program Source
   Plenty of input jacks are available: 2 pairs each of AUX, PHONO and TAPE PLAY plus separate input for TUNER.

7. Tape Monitor and Dubbing Switch for Two Tape Recorders.

8. Two Sets of Stereo Speaker Terminals and Front Panel Speaker Selector Switch.

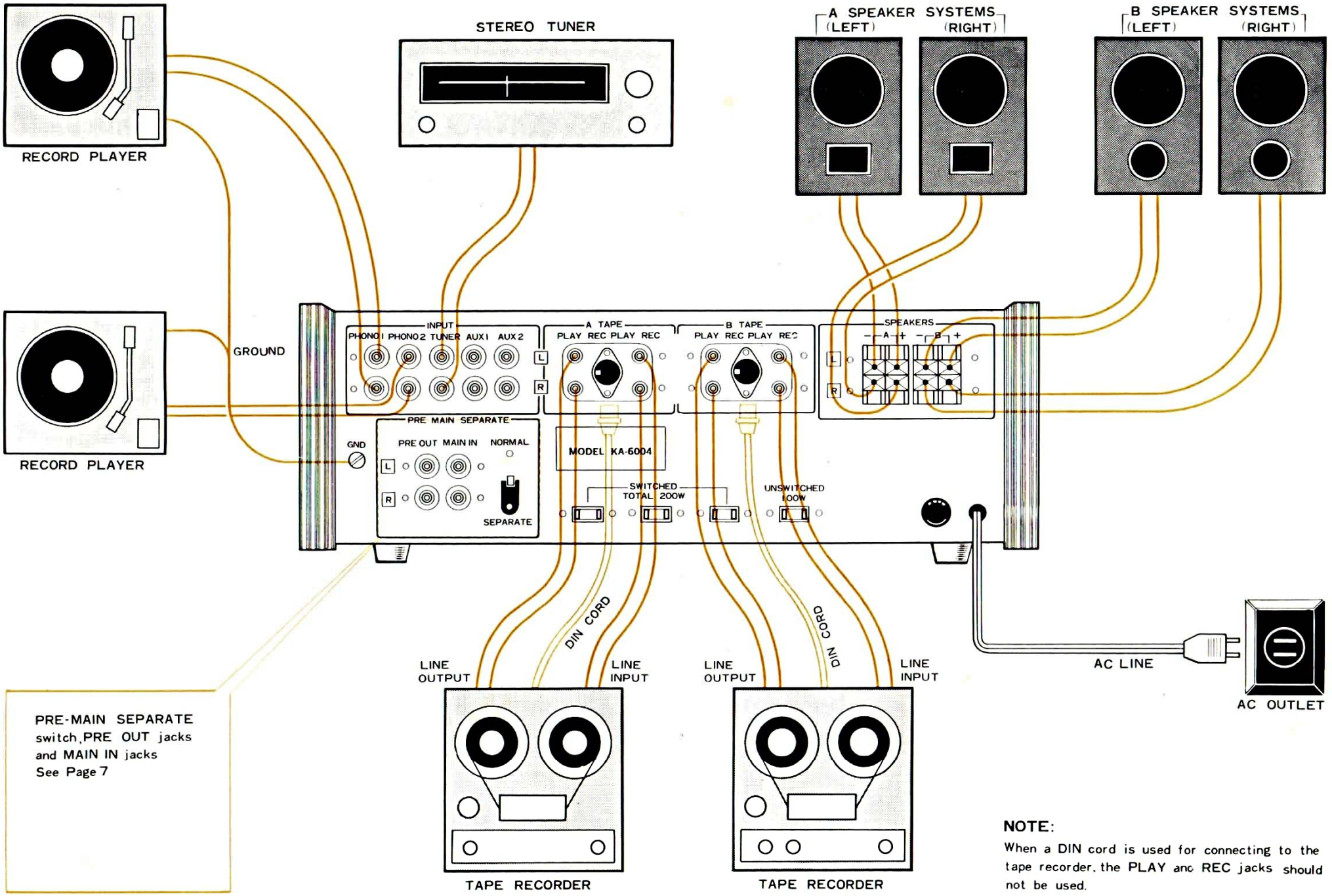
9. Lever-type Muting Switch
   20 dB Muting Switch permits instantaneous silencing during telephone calls, etc.

10. Power Transistor Protection Circuit.

11. Light up input indicators.

Do not connect the power cord to the AC outlet, before ascertaining that the position of AC Voltage Selector Switch on the rear panel corresponds with your line voltage. (see page 12.)

INTERCONNECTING DIAGRAM



PRE-MAIN SEPARATE switch, PRE OUT jacks and MAIN IN jacks
See Page 7

NOTE:

When a DIN cord is used for connecting to the tape recorder, the PLAY and REC jacks should not be used.

CONNECTING YOUR KA-6004

SPEAKER CONNECTIONS

CONNECTING ONE PAIR OF SPEAKERS —

USE "A" SPEAKERS TERMINALS

To connect only one pair of speaker systems, connect the speaker leads to the "A" SPEAKERS terminals as follows.

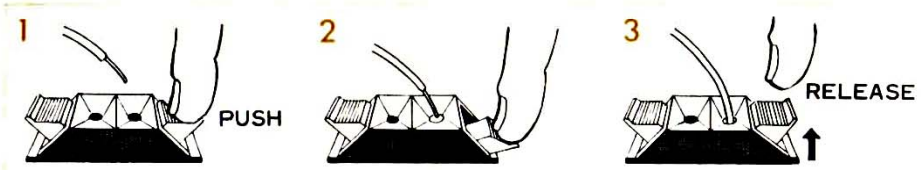
The (−) side lead of the left speaker should be connected to the L (−) terminal of "A" SPEAKERS, and the (+) side lead to the L (+) terminals. Similarly, connect the right speaker leads to the R terminals of "A" SPEAKERS. Be sure to connect (+) to (+) and (−) to (−).

CONNECTING TWO PAIRS OF SPEAKERS

To connect an additional pair of speaker systems to the KA-6004, connections to the "B" SPEAKERS terminals should be made as described above. Observe polarity at all times when making speaker connections.

NOTES:

1. When only one pair of speaker systems is used with connections made either to the "A" SPEAKERS terminals or "B" SPEAKERS terminals, sound cannot be heard when the A SPEAKERS switch and B SPEAKERS switch on the front panel are pressed at the same time.
2. Any speaker with an impedance of 4 to 16 ohms can be used.
3. When connecting the speaker leads to the SPEAKERS terminals, make sure that the bare wire strands at the ends of the speaker leads do not touch each other or adjacent terminals.

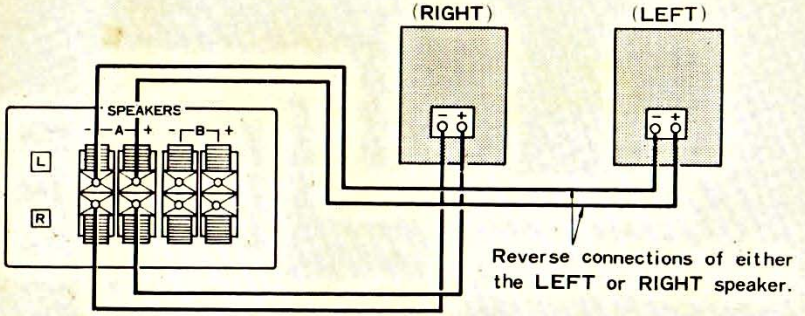


CONNECTION TO SPEAKER TERMINALS

PHASING OF THE SPEAKERS

Speaker phasing can be determined in the following manner:

1. Set the MODE switch to MIX.
2. Set the INPUT switch to PHONO 1 (PHONO 2) and adjust the VOLUME control to the desired listening level.
3. Play a familiar record.
4. If the sound is coming directly from the front, the speakers are in phase. If the sound comes from both sides and there is a noticeable loss in low frequencies, the speakers are out of phase. In this case reverse the leads on one speaker.



CONNECTING YOUR KA-6004

TUNER CONNECTION

Use the TUNER terminals for connection to an FM stereo or AM-FM stereo tuner.

Connect the left channel of the tuner to the "L" TUNER input jack, and the right channel of the tuner to the "R" TUNER input jack.

RECORD PLAYER CONNECTIONS

Connect the left channel of the record player to the "L" PHONO 1 input jack, and the right channel to the "R" PHONO 1 input jack.

If an additional record player is used in order to operate two record players, connect the left channel to the "L" PHONO 2 input jack, and the right channel to the "R" PHONO 2 input jack.

If the record player has a grounding terminal, connect it to this amplifier's GND terminal to prevent hum.

CONNECTIONS FOR TAPE RECORDER

RECORDING

A tape recorder can be connected as follows for recording.

Left channel input of the tape recorder to A TAPE "L" REC jack.

Right channel input of the tape recorder to A TAPE "R" REC jack.

PLAYBACK

A tape recorder can be connected as follows for playback.

Left channel output of the tape recorder to A TAPE "L" PLAY jack.

Right channel output of the tape recorder to A TAPE "R" PLAY jack.

DIN CONNECTOR (REC/PLAY CONNECTOR)

If your tape recorder is equipped with a DIN type 5-pin connector, connect it to the REC/PLAY connector with a DIN connecting cord. A DIN connector enables recording and playback with this single cord.

When a DIN cord is used for connecting to the tape recorder, the PLAY and REC jacks should not be used. For highest fidelity recording and playback sound, however, it is recommended that the tape recorder be connected to the PLAY and REC jacks instead of the DIN connector.

CONNECTION FOR ADDITIONAL TAPE RECORDER

If an additional tape recorder is used and two tape recorders are operated simultaneously, the same connections must be provided for B TAPE jacks.

AUX (AUXILIARY INPUTS)

When a tuner, tape recorder or other unit is connected here, it must have an output of at least 200 mV.

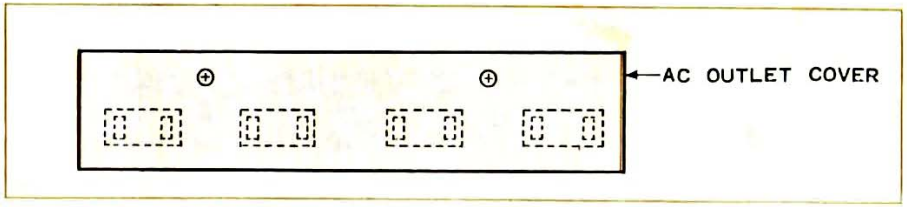
AC OUTLETS

The AC outlets on the rear panel of the amplifier may be used to supply power to other components such as a record player, tape recorder, etc.

1. SWITCHED outlets
   These outlets are controlled by the POWER switch on the front panel. (The total capacity is 200 watts maximum.)
2. UNSWITCHED outlet
   This outlet is available at all times. (The capacity is 100 watts maximum.)

NOTE:

When AC convenience outlets are covered on your set as shown in this diagram, consult your dealer or serviceman when they are needed.



CONNECTING YOUR KA-6004

PRE-AMPLIFIER OUTPUTS AND MAIN AMPLIFIER INPUTS

Preamplifier output signals are available at the PRE OUT jacks when the PRE MAIN SEPARATE switch is set to NORMAL position. However, it is not possible to feed an input signal to the MAIN IN jacks.

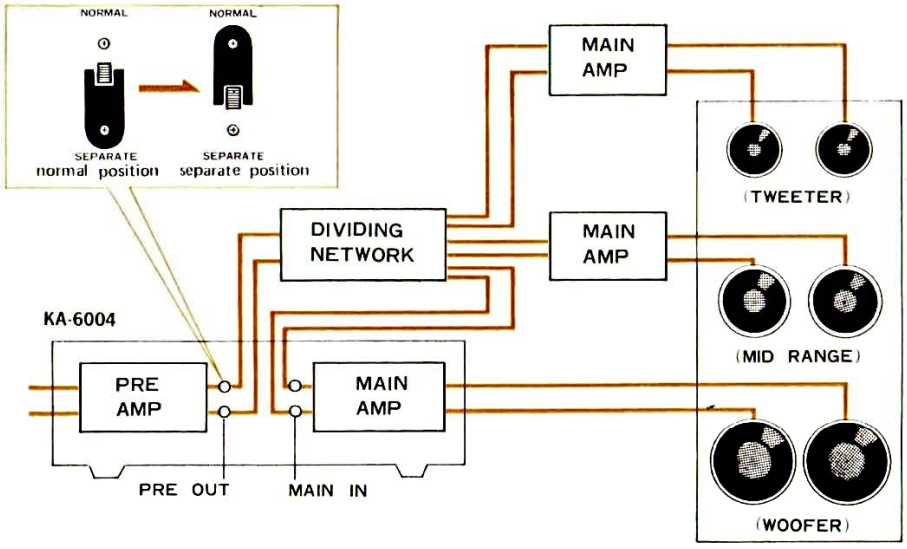
When the PRE MAIN SEPARATE switch is set to SEPARATE position, the preamplifier and main amplifier sections of this unit become completely separate and independent units. The output of the preamplifier will then be available at the PRE OUT jacks and any input can be connected to the MAIN IN jacks. This means, for example, that another main amplifier or any other component (tape recorder, etc.) can be connected to the PRE OUT jacks. Also another preamplifier or source components providing an output of about 1 V can be connected to the MAIN IN jacks. This feature widens the versatility of this unit, making it very useful for multi-channel system and 4-channel system applications.

The PRE MAIN SEPARATE switch is preset at the factory in NORMAL position. It can be reset as follows when necessary.

1. Remove the black plate which holds the PRE MAIN SEPARATE switch in place.
2. Reset the switch to the SEPARATE position for preamplifier and/or main amplifier only function.
3. Reattach plate to hold switch in place on the opposite side.

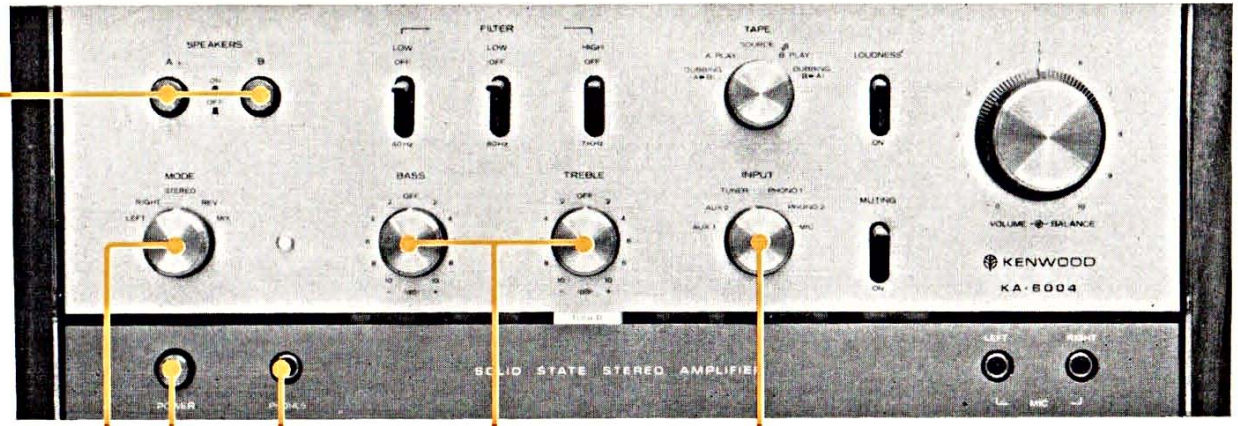
NOTE:

The PRE MAIN SEPARATE switch should always be at NORMAL position except when it is desired to use the preamplifier and the main amplifier separately.



CONNECTION FOR MULTI-CHANNEL SYSTEM

CONTROLS AND THEIR FUNCTIONS



SPEAKERS switches

Pressing these push buttons switches the speakers on and off (they are connected to the speaker push connectors located on the rear panel).
A – Pressing this push button turns on the speakers connected to the A SPEAKERS terminals. Releasing this button (pressing it again) turns them off.
B – Pressing this push button turns on the speakers connected to the B SPEAKERS terminals. Releasing this button turns them off.

MODE switch

Switch positions and functions are as follows:
LEFT – The left channel is heard from both speakers.
RIGHT – The right channel is heard from both speakers.
STEREO – This provides stereophonic reproduction of any stereo program source. The left channel is heard from the left speaker, and the right channel is heard from the right speaker.
REV – This reverses positions of two speakers. The left channel is now heard from the right speaker, and the right channel from the left speaker.
MIX – The left and right channels are mixed together and are heard from both speakers.

POWER switch

Push the POWER switch to turn the amplifier on. Push it again to turn the amplifier off.

PHONES jack

Plug a stereo headphone into this jack for private listening. The speakers are silenced when the SPEAKERS switches are set to OFF position.

BASS control

Turning it clockwise increases bass tone and counterclockwise decreases it. OFF position provides flat frequency response with tone control circuit deactivated.

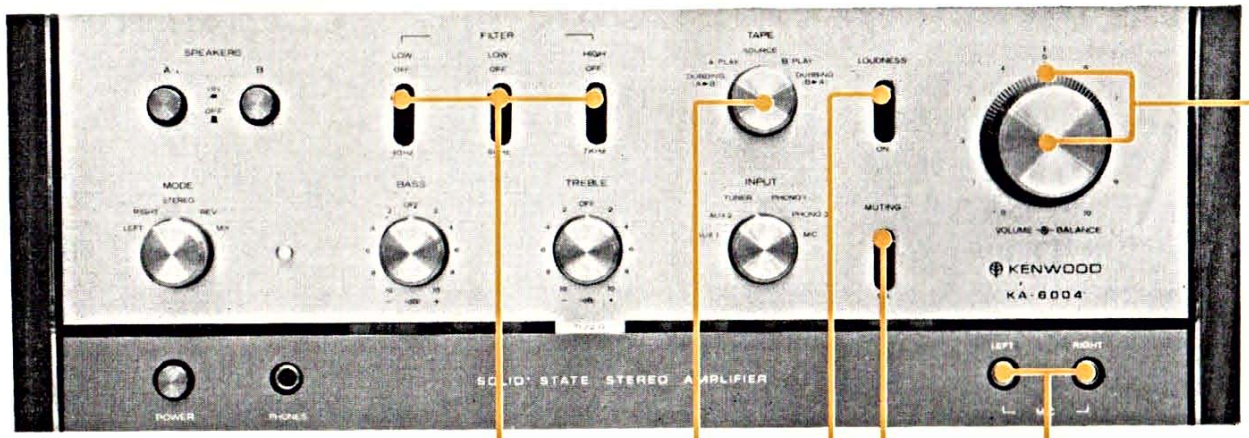
TREBLE control

Turning it clockwise increases treble tone and counterclockwise decreases it. OFF position provides flat frequency response with tone control circuit deactivated.

INPUT switch

Switch positions and functions are as follows:
TUNER – In this position the tuner is available if connected to the TUNER input jacks on the rear panel.
PHONO 1 – In this position the record player is available if connected to the PHONO 1 input jacks on the rear panel.
PHONO 2 – In this position the record player is available if connected to the PHONO 2 input jacks on the rear panel.
AUX 1 – Selects source connected to the AUX 1 jacks.
AUX 2 – Selects source connected to the AUX 2 jacks.
MIC – In this position, reproduction of microphone source signals becomes available. One or two microphones may be used. Make connections to LEFT and/or RIGHT MIC jacks on the front panel (see under MIC jacks next page).

CONTROLS AND THEIR FUNCTIONS



LOW and HIGH FILTER switches

LOW FILTER – Setting these switches to on (40Hz or 80Hz position) reduces low frequency noise such as turntable rumble, hum, etc., on program materials. Generally, these filters should be used only when necessary

HIGH FILTER – Setting this switch to on (7kHz position) reduces high frequency noise such as tape hiss, record scratch, etc. Generally, this switch should be used only when necessary. .

TAPE switch

Switch positions and functions are as follows:

SOURCE – The source signal is heard.

A PLAY – For monitoring a recording or for playback on a tape recorder connected to the A TAPE jacks.
Sound recorded on the tape is heard.

B PLAY – For monitoring a recording or for playback on a tape recorder connected to the B TAPE jacks.
Sound recorded on the tape is heard.

DUBBING (A▸B) – For dubbing from a tape recorder connected to the A TAPE jacks into a tape recorder connected to the B TAPE jacks.

DUBBING (B▸A) – For dubbing from a B tape recorder to A.

The TAPE switch should be kept switched to SOURCE unless monitoring or tape reproduction is performed.

LOUDNESS control

The LOUDNESS control boosts bass and treble tones at low listening levels. Our ears have less sensitivity to low and high frequencies at low listening levels and the LOUDNESS control compensates for this deficiency. This control should be switched off when listening at normal and high levels.

MUTING switch

This switch reduces volume level momentarily as during a telephone call, etc. Output power is reduced 20 dB without touching the VOLUME control. Setting this switch to off returns volume level to original level.

MIC jacks

When microphones are connected to both jacks simultaneously, stereophonic response from both speakers is obtained. (left channel from left speaker, right channel from right speaker).
When a microphone is connected only to the LEFT MIC jack, monophonic response from both speakers is obtained.
When a microphone is connected only to the RIGHT MIC jack, response is obtained only from the right speaker.

Set the INPUT switch to MIC for microphone operation.

VOLUME control

The VOLUME control performs simultaneous adjustment of volumes in both channels (right and left). Set it to your own most satisfactory listening level.

BALANCE control

This BALANCE adjusts unequal volume from any program source in right and left channels. The left channel is accentuated when this adjuster is turned from center "5" toward the left side, and conversely.

OPERATING INSTRUCTIONS

AM-FM RECEPTION

1. Set the INPUT switch to TUNER.
2. Set the MODE switch to STEREO and the TAPE switch to SOURCE.
3. Adjust the VOLUME control to the desired listening level.
4. Use the BASS, TREBLE, FILTERS and LOUDNESS controls to adjust sound as desired and to match the acoustic conditions of your room.

PHONO OPERATION

1. Two pairs of phono input jacks, PHONO 1 and PHONO 2, are provided to enable connections to two record players. To reproduce the output of the record player that is connected to PHONO 1 jacks, set the INPUT switch to PHONO 1. To reproduce the output of the record player that is connected to PHONO 2 jacks, set the INPUT switch to PHONO 2.
2. Set the MODE switch to STEREO and the TAPE switch to SOURCE.
3. Adjust the VOLUME to the desired listening level.
4. Use the BASS, TREBLE, FILTER and LOUDNESS controls to adjust the sound to your preference and to the acoustic conditions of your room.

TAPE RECORDER OPERATION

TAPE MONITORING

If you use the KA-6004 with 3-head type tape recorders, you can check the sound quality of the recording that is being made by momentarily comparing the recorded signal with the source signal as follows. Set the TAPE switch to A PLAY (or B PLAY) to monitor the recorded sound. Set the TAPE switch to SOURCE to monitor the source signal before it is recorded.

WHEN RECORDING WITH ONE TAPE RECORDER

Connect the tape recorder to either the A TAPE jacks or B TAPE jacks on the rear panel.

1. Set the INPUT switch to the desired program source. To monitor the recording, set the TAPE switch to A PLAY or B PLAY, whichever side the tape recorder is connected.
2. Recording level should be adjusted with the volume control of your tape recorder.
3. Recording is not affected by the VOLUME, BASS, TREBLE, FILTERS, LOUDNESS, etc., controls of the amplifier.

SIMULTANEOUS RECORDING WITH TWO RECORDERS

Connect one tape recorder to A TAPE jacks and the other to B TAPE jacks on the rear panel.

1. Set the INPUT switch to the desired program source.
2. Recordings can now be made into both tape recorders simultaneously. To monitor these recordings, use the TAPE switch as follows. Set it to A PLAY to monitor the recording being made with the tape recorder connected to A TAPE jacks. Set it to B PLAY to monitor the recording being made in the tape recorder connected to B TAPE jacks.
3. Recording levels should be adjusted exactly as described previously for single tape recorder operation.

OPERATING INSTRUCTIONS

PLAYBACK

1. The INPUT switch can be at any position.
2. Set the TAPE switch to the corresponding position (A PLAY or B PLAY).
3. Adjust volume and tone quality.

DUBBING

Tape recordings may be easily duplicated from one tape recorder to another with minimal loss of quality by setting the TAPE switch to DUBBING (A → B) or DUBBING (B → A) as follows.

1. The INPUT switch can be at any position.
2. Set the TAPE switch to DUBBING (A → B) when it is desired to copy recorded material on the tape recorder A for re-recording on the tape recorder B.

   Set the TAPE switch to DUBBING (B → A) when it is desired to copy a recording on the tape recorder B for re-recording on the tape recorder A.

   The recording can be monitored.
3. Operate both tape recorders simultaneously.

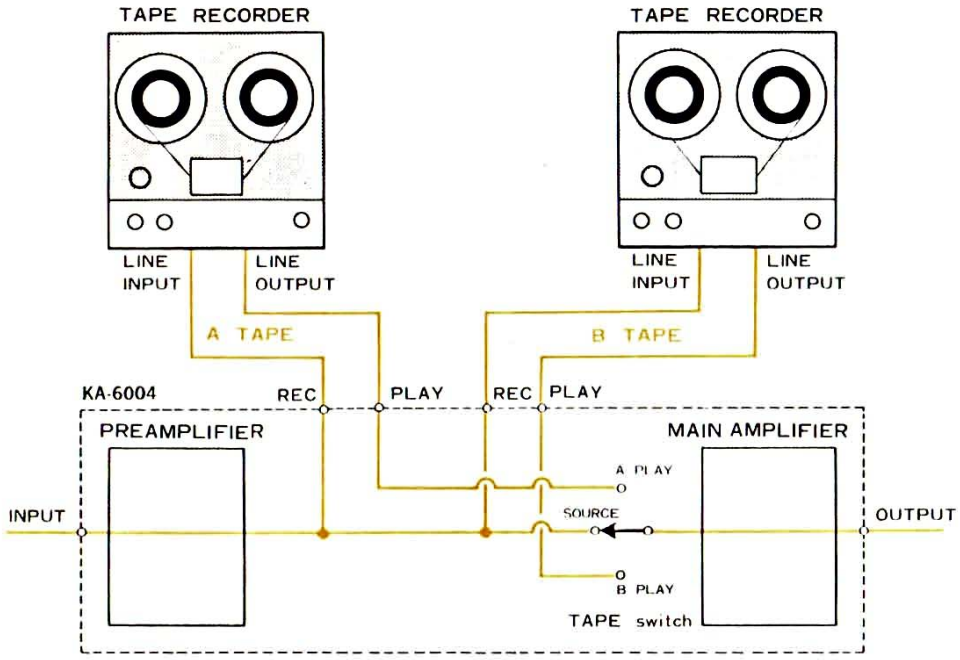
MIC

1. Set the INPUT switch to MIC for microphone operation.
2. Set MODE switch to STEREO.
3. Connect a microphone or microphones as follows to the front panel MIC jacks.

   FOR STEREO — When microphones are connected to both jacks simultaneously, stereophonic response from both speakers is obtained. (left channel from left speaker, right channel from right speaker).

   FOR MONO — When a microphone is connected only to the LEFT MIC jack, monophonic response from both speakers is obtained.

   FOR SINGLE SIDE RESPONSE — When a microphone is connected only to the RIGHT MIC jack, response is obtained only from the right speaker.
4. Adjust volume and tone quality.



INTERCONNECTING DIAGRAM FOR TAPE MONITORING AND FOR TAPE PLAYBACK

MAINTENANCE

CONCERNING TRANSISTORS

Transistors differ fundamentally from radio vacuum tubes and require special attention to ensure their full performance capabilities. Given proper care, transistors will provide years of practically trouble-free performance.

(a) Avoid locations subject to direct sunlight.

(b) Avoid high or low temperature extremes.

(c) Keep the amplifier away from heat radiating sources.

(d) Avoid placing anything, including the tuner, on top of the amplifier. This will assure free air circulation.

PROTECTION CIRCUIT

The newly developed protection circuit is completely effective and prevents damage which may be caused by short-circuiting at the speaker outputs or the electrical overloading point. When a short-circuit occurs, this protection circuit will function automatically to protect the power output transistors. The program sound will be heard off and on intermittently about evey four seconds. If this occurs, there is no danger of damaging the power output transistors. Just switch off the supply line and check the speaker connections.

ACOUSTIC FEEDBACK

Occasionally a disturbing howling sound caused by acoustic feedback, may be heard. This is generally caused by the relative positions of the turntable and speaker enclosures. The sound pressure radiated from the speaker box surrounds and vibrates the turntable. This vibration is picked up by the cartridge, sent to the amplifier as an electrical signal, and returned to the speaker. This again causes the speakers to radiate vibration which induces sympathetic vibrations in the turntable and cartridge. Sympathetic vibration are reinforced with each repeating cycle and result in an undesirable sound called oscillation or "howling". To prevent it, keep your turntable away from your speakers. Also mounting your turntable on shock-absorbing pads may help.

AC VOLTAGE SELECTION AND POWER FUSE

The KA-6004 operates on 110—120 volt AC or 220—240 volt AC. The AC Voltage Selector Switch on the rear panel is set to the voltage that prevails in the area to which the amplifiers are shipped. Before operating this amplifier, make sure that the position of the AC Voltage Selector Switch matches your line voltage. If not, it must be changed to the proper setting.

To change, first turn the amplifier off. Then remove the stopper plate and slide the AC Voltage Switch to the opposite side. Then re-attach the stopper plate to the other side.

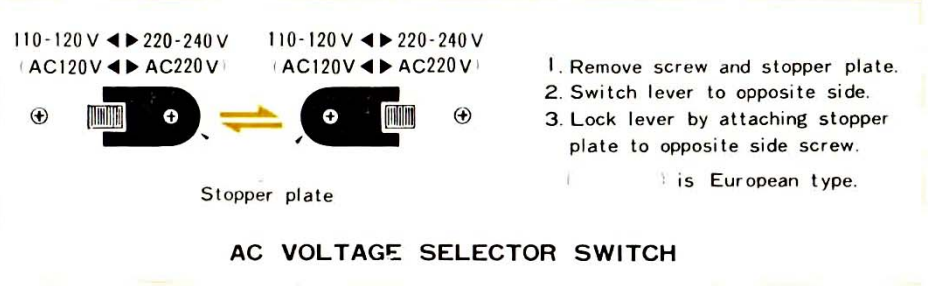
When the position of the AC Voltage Selector Switch is changed, it is also necessary to change the power fuse. For 110 — 120 volt operation a 3 ampere fuse should be used. For 220 — 240 volt operation a 1.5 or 1.6 ampere fuse should be used.

If the power fuse fails, remove blown fuse and replace with the same type fuse of the same capacity. Any trouble in the power supply circuit will cause the fuse to blow again. In such a case, consult a qualified serviceman.

When you replace the fuse, turn the fuse holder in the direction of the arrow using a Phillips screw driver. In some districts, the set will be provided with another type of fuse holder, which allows easy replacement of the fuse without using the Phillips screw driver.

NOTES:

1. Always disconnect power supply before replacing a fuse.
2. Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC Voltage Selector Switch.



AC VOLTAGE SELECTOR SWITCH

KA-6004 SPECIFICATIONS

POWER OUTPUT:

80 Watts RMS continuous power stereo, 40 Watts per channel, both channels operating simultaneously into 8 ohm loads at any frequency from 20 Hz to 20,000 Hz.
70/70 Watts. Each channel operating into 4 ohms at 1,000 Hz.
55/55 Watts. Each channel operating into 8 ohms at 1,000 Hz.
57 + 57 Watts. Both channels operating into 4 ohms at 1,000 Hz.
43 + 43 Watts. Both channels operating into 8 ohms at 1,000 Hz.
220 Watts IHF total Dynamic Power into 4 ohms.
130 Watts IHF total Dynamic Power into 8 ohms.

Harmonic Distortion:
Less than 0.5% at rated output from 20 Hz to 20,000 Hz.
Less than 0.05% at −3 dB rated output.

Intermodulation Distortion (60 Hz & 7,000 Hz 4:1):
Less than 0.3% at rated output.
Less than 0.05% at −3 dB rated output.

Power Bandwidth (IHF):
10 Hz to 50,000 Hz.

Input Sensitivity, Input Impedance (for rated output, at 1,000 Hz):
PHONO 1: 2.5 mV, 50 K ohms.
PHONO 2: 2.5 mV, 50 K ohms.
MIC: 3 mV, 50 K ohms.
TUNER: 200 mV, 100 K ohms.
AUX 1 & 2: 200 mV, 100 K ohms.
TAPE PLAY, A & B (Pin): 200 mV, 100 K ohms.
MAIN AMP. INPUT: 1 V, 50 K ohms.

Recording Output (below rated input):
TAPE REC, A & B: 200 mV.
DIN CONNECTOR: 40 mV.

Signal to Noise Ratio (below rated output):
PHONO 1 & 2: 68 dB.
MIC: 70 dB.
TUNER: 75 dB.
AUX 1 & 2: 75 dB.
TAPE PLAY A & B: 75 dB.
NOISE AT MINIMUM VOLUME CONTROL: 0.3 mV at 8 ohm loads 0.000012 milliwatts.

Damping Factor: 64 at 16 ohms load.
32 at 8 ohms load.

Speaker Impedance: accepts 4 to 16 ohms.
Bass Control: ±10 dB at 100 Hz with 2 dB step switch.
Treble Control: ±10 dB at 10,000 Hz with 2 dB step switch.
Low Filter: 40 Hz Cut off, 12 dB per octave.
80 Hz Cut off, 12 dB per octave.
High Filter: 7,000 Hz Cut off, 6 dB per octave.
Loudness Control (— 30 dB): +8 dB at 100 Hz.
+3 dB at 10,000 Hz.

GENERAL:

Switches:

SPEAKERS:	A, B (ON-OFF at push switch).
INPUT SELECTOR:	AUX 1, AUX 2, TUNER, PHONO 1, PHONO 2, MIC.
MODE:	LEFT, RIGHT, STEREO, REV, MIX.
TAPE MONITOR:	DUBBING (A → B), A PLAY.
	SOURCE, B PLAY, DUBBING (B → A).
OTHERS:	LOW & HIGH FILTER.
	LOUDNESS, MUTING, POWER.

AC Outlets: 3 switched & 1 unswitched.
Power Voltage: 110 —120 V AC/220 — 240 V AC, 50/60 Hz.
Power Consumption: 270 Watts at full power.
23 Watts at no signal.
103 Watts (Regulation law for electrical appliance and material)
Dimensions: 17-1/8″ W, 6-1/32″ H, 11-13/16″ D.
(435 W, 153 H, 300 D. mm.)
Weight: 25.4 lbs. (11.5 kg)

SPECIAL FEATURES:

* DIRECT Coupling Power Amplifier With Constant Current Driving Circuits.
* Tape monitor and Dubbing Switch, for 2 tape recorders.
* 2 sets Stereo Speaker terminals and front panel speaker selector switch.
* 12 dB per octave cutoff Low Filters and 6 dB per octave cutoff High Filter.
* 2 dB step type tone controls with tone control switch (150 Hz & 300 Hz, 2,000 Hz & 6,000 Hz).
* Perfect protection circuit for power transistors and speakers.
* HIGH QUALITY & RELIABILITY Design.
* Light up input indicators.

TROUBLE SHOOTING

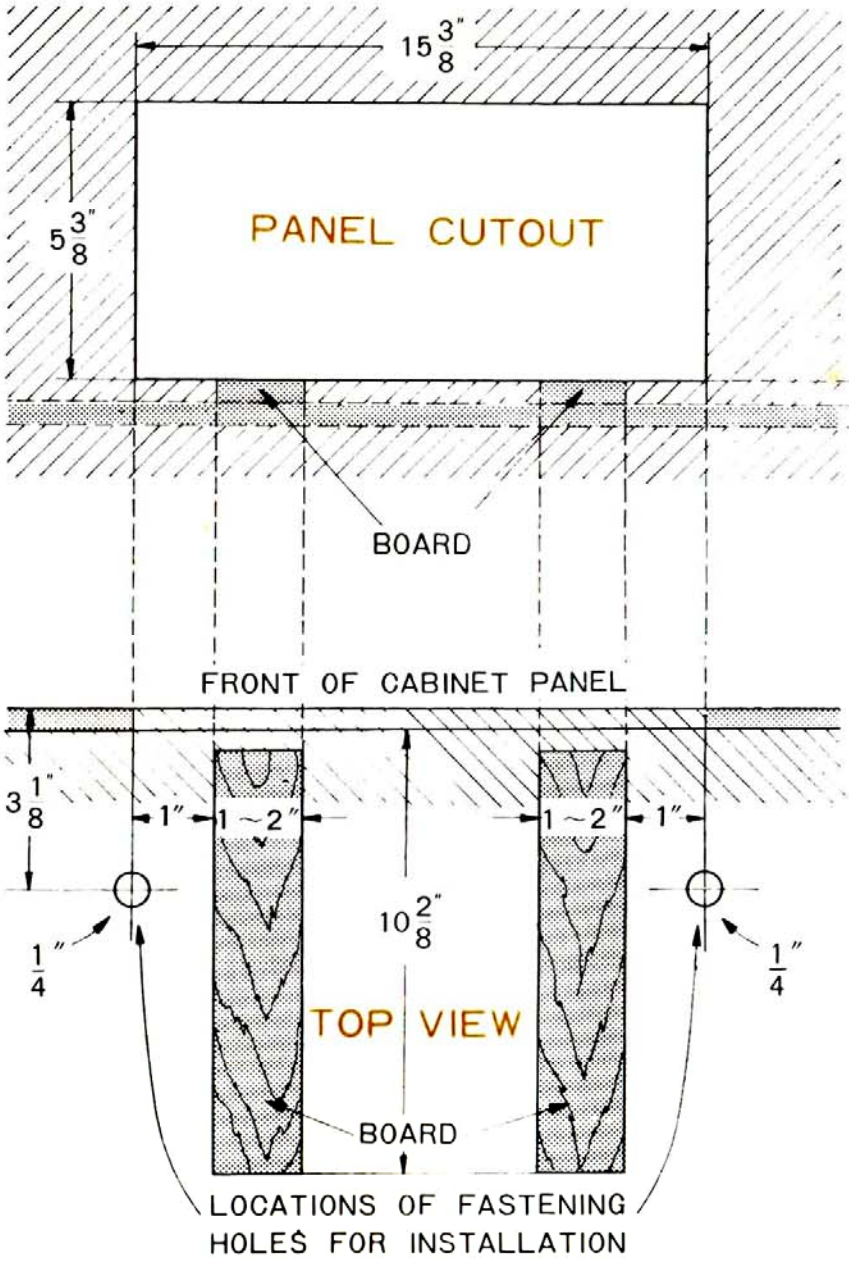
INDICATIONS

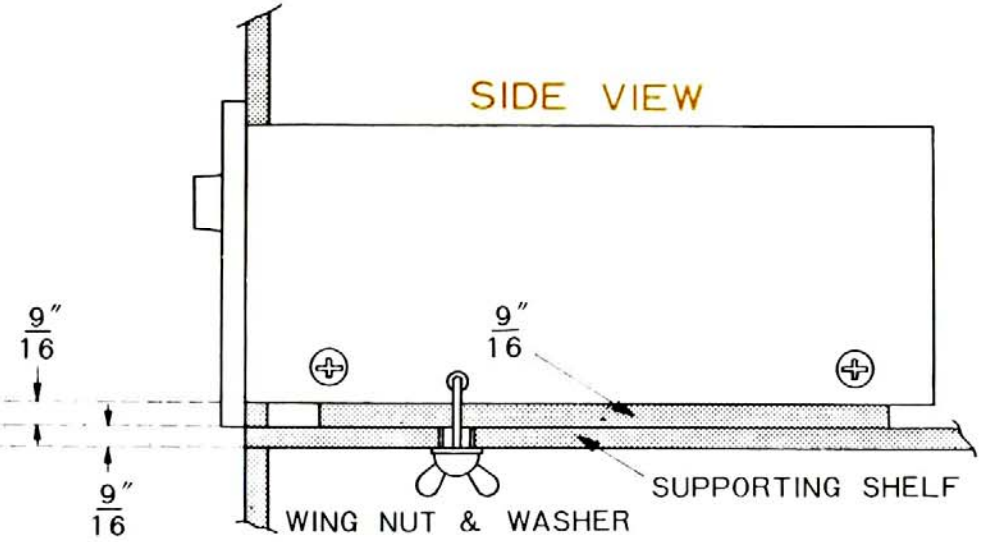
In initially installing this amplifier improper connections to a tuner or record player may result in one of the following indications of trouble. Their possible causes and corrective measures are listed below to facilitate installation.

During Tuner or Record Operation	Cause	Correction
No pilot lamp indication, no sound although AC is switched ON.	Poor AC plug connection. Blown fuse.	Check plug contact. Replace fuse. If it blows again, trouble must be corrected.
No sound from LEFT and RIGHT.	SPEAKERS switches to OFF (button release).	Push in the SPEAKER switch which activates the speaker systems desired.
	Speaker cords disconnected.	Check connections from amp. output to speakers.
	Volume Control at 0 (extreme left).	Set to appropriate volume level.
	TAPE switch at A PLAY (or B PLAY) or DUBBING position.	Always set to SOURCE except when using tape recorders.
	PRE-MAIN SEPARATE switch at SEPARATE position.	Always set to NORMAL except when using together with multi-channel system.
Sound only from one side.	Poor speaker cord connections. BALANCE control set to one extreme or other.	Check amp. output and speakers connections. Adjust BALANCE control.
Intermittent Response.	Protection Circuit indication of short circuit in the left or right output.	Check speaker cord connections.
Noise when AC is switched ON or when volume is adjusted immediately after.	Insufficient circuit warmup.	Allow 5 - 6 seconds interval after switching AC ON, before manipulating volume control.
Unbalance results when volume is lowered.	LEFT RIGHT resistor values unbalanced.	Adjust BALANCE control.
Difference in volume level of radio and phono.	Difference in received signal and phono output levels.	Set to appropriate volume level.

During Phono Record Operation Only	Cause	Correction
No sound from LEFT and RIGHT, or sound only from one side.	Player output disconnected.	See that player output cord is firmly plugged into amp. input.
Loud hum drowns out sound.	Poor Player output cord prong connections.	See that player output cord is firmly plugged into amp. input.
Sound audible but background hum occurs.	Player output cord picking up hum from AC cord.	Keep player output cord away from AC cords. Choose cord paths which keep hum at a minimum. Twist LEFT RIGHT player output cords together. Reverse player AC plug connections.
	Player not grounded.	Connect player ground wire to GND terminals.
Sound audible but continuous background buzz interferes.	TV signal picked up by player output cord. Frequently occurs near TV transmitting antenna.	Route player cord so buzz hum is minimized.
Howling noise occurs when volume is raised or bass response is increased.	Speaker vibrations induce feedback in pickup.	Increase distance between player and speakers. Choose speaker locations carefully. Remember, loose flooring induces howling.

MOUNTING TEMPLATE





DIRECTIONS FOR PANEL MOUNTING

1. First remove the wooden side boards which are attached to both sides of the amplifier's metal enclosure. This can be done by removing three screws from each side board. Put these long screws away until such time as you may wish to reattach the side boards later. They are *not* required for panel mounting.
2. The 4 short screws which are supplied with this unit are now used to join the amp chassis and its metal enclosure. Screw them into the two lower holes on each side of the metal enclosure. Never use the long screws that were removed with the side boards as this may damage the amplifier.
3. Locate the supporting shelf at the height you wish the amplifier positioned.
4. Remove the four bottom legs.
5. An air space must be made between the bottom of the set and the supporting shelf to assure good ventilation and cool operation. This space can be made by placing two boards which measure 9/16" thick by 1" to 2" width between chassis and the supporting shelf.
6. Cut out the cabinet panel in the dimensions of 5-3/8" x 15-3/8" as shown in above Panel Cutout. The bottom of the cutout should be flush with the bottom plate of the amplifier, as shown in the side view. The distance between the bottom of the cutout and the top of the supporting shelf is 9/16".
7. The amplifier is held in place by two bolts. The holes must be made in the shelf to correspond with the holes in the amplifier. Use the "Top View" template to locate these holes on the supporting shelf. The holes should be made 1/4" in diameter or somewhat larger.

KA-6004 Serial No.

Owner

TRIO

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