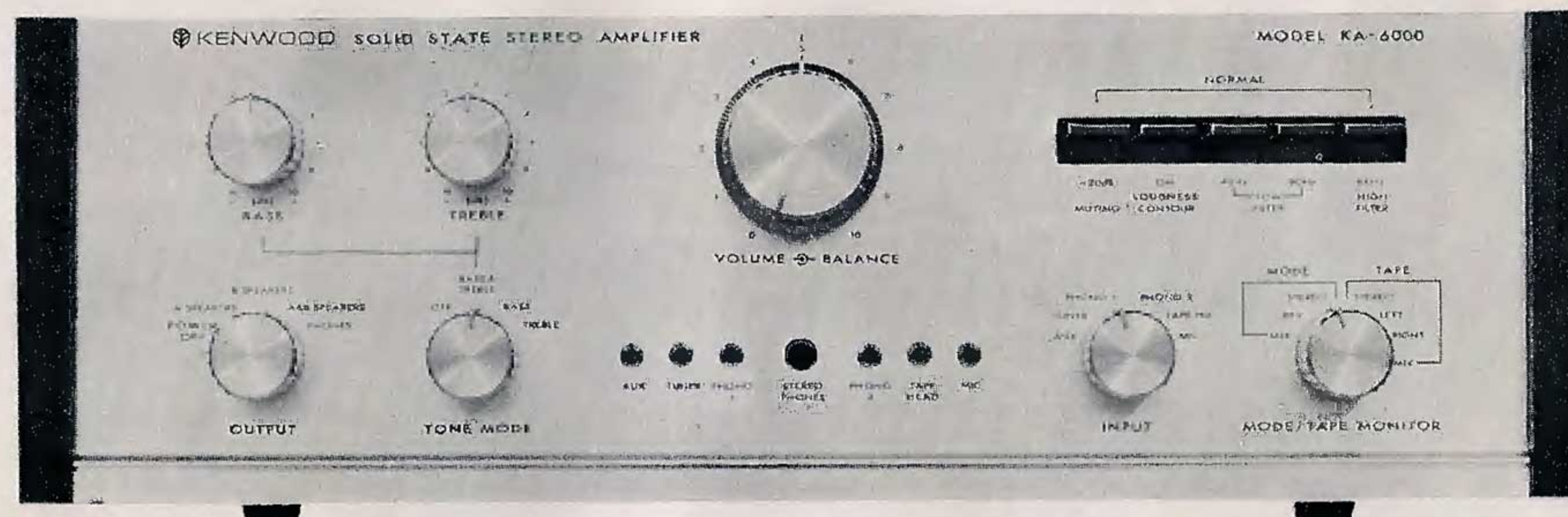


KA-6000

SOLID STATE STEREO AMPLIFIER

INSTRUCTION MANUAL





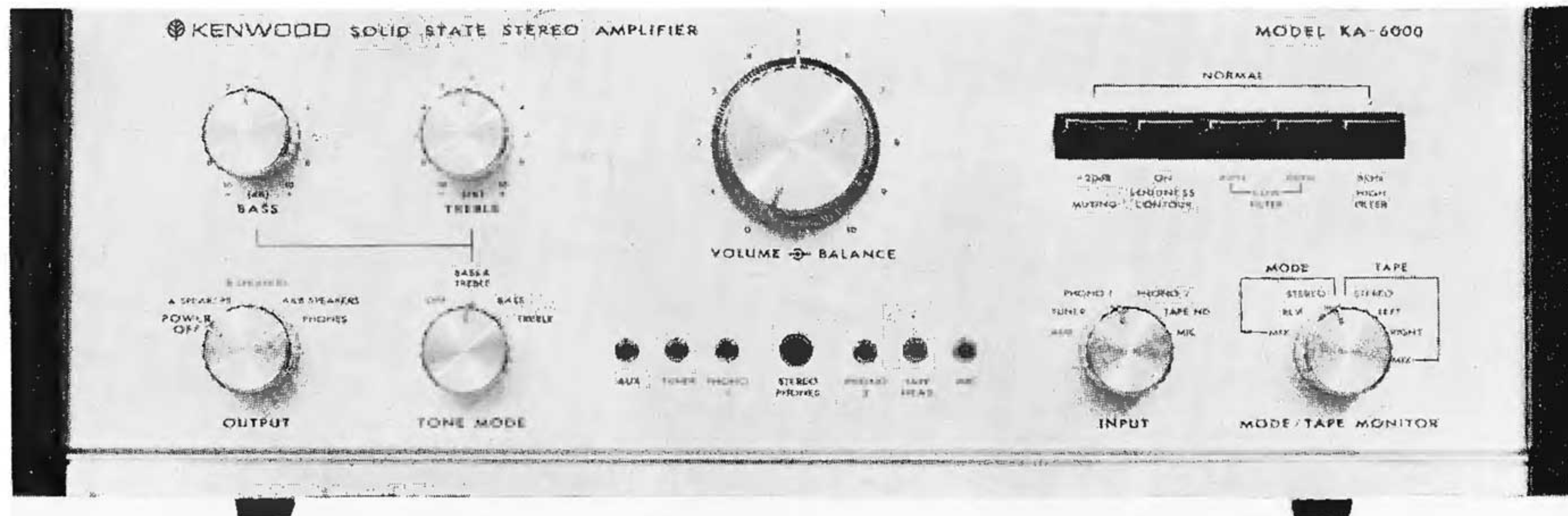
WELCOME TO KENWOOD'S ALL-NEW SOLID STATE CIRCUITRY

Your KENWOOD'S KA-6000 all transistor Stereo Amplifier is from KENWOOD'S new collection of precision-engineered units with space age solid state circuitry. Its superior performance is the result of KENWOOD engineers' many years of research in the transistorized field.

Your KA-6000 is transformerless from input to output terminals thus achieving playback perfection. Output power is 90 watts RMS. One of the most exciting and rewarding features is an all-new and exclusive safety circuit (U.S. Patent) which provides complete protection for power transistors preventing damage which might otherwise result from an excessive input signal or an output terminal short.

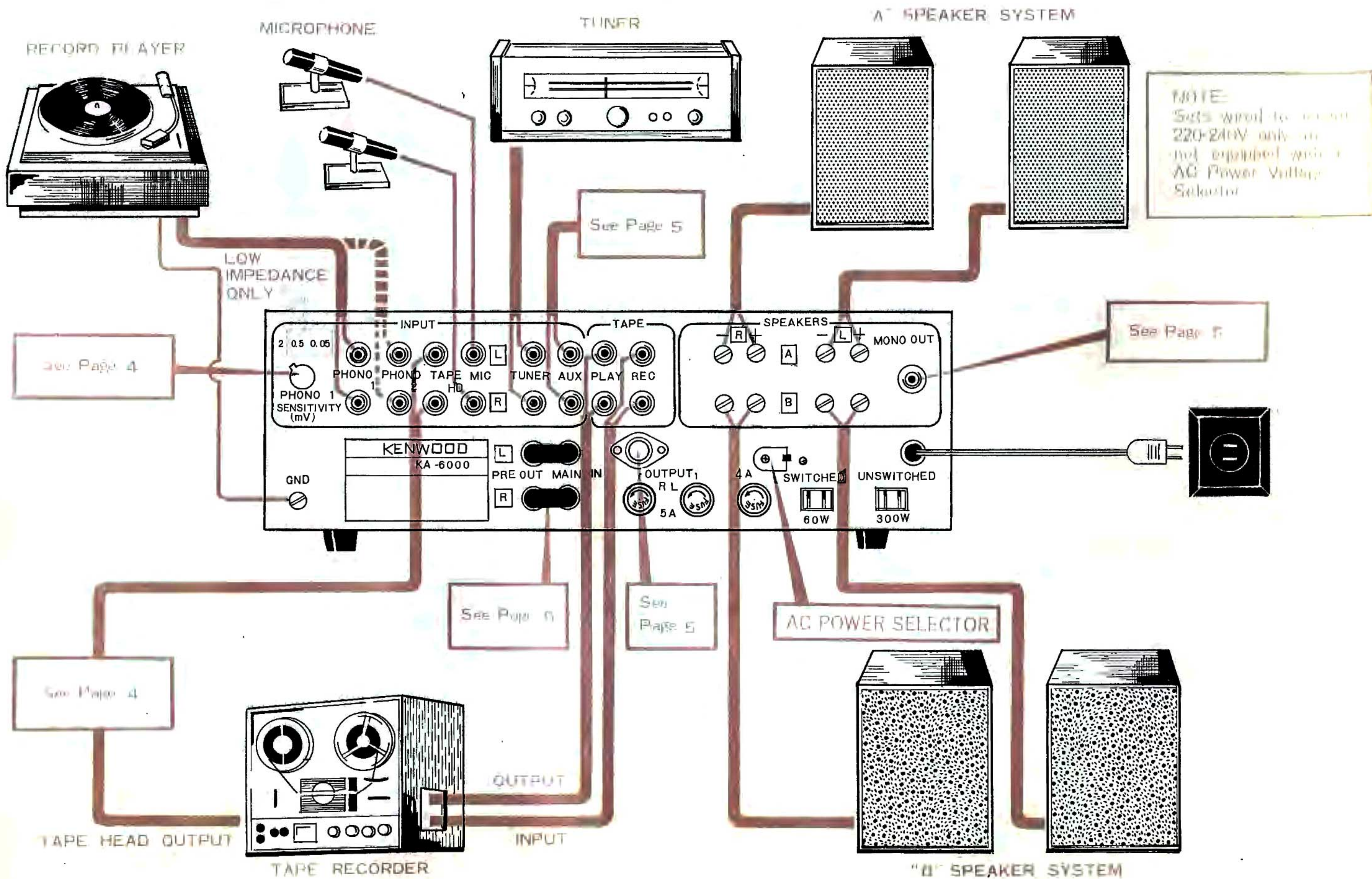
Go ahead — enjoy it! Your new KENWOOD KA-6000 expects rugged use. It was designed and engineered to take it.

SPECIAL KA-6000 FEATURES



1. The wide power bandwidth of 10 Hz to 50,000 Hz with very low IM distortion.
2. KENWOOD'S exclusive low level phono inputs for low level output phono cartridges of 2 mV, .5 mV or .05 mV (Such as moving coil cartridge, Ortofon SL-15T without transformer, Grado Model "A" without transformer, etc.)
3. Lever type — 20 dB muting switch of quick response for momentary quietness during telephone call, etc.
4. 2 dB step type tone controls with tone mode switch.
5. Blue light indicators for input selector switch.
6. Pre-amplifier outputs for use with other power amplifier or multi-channel system.
7. Main amplifier inputs for the use with other components such as a pre-amplifier, tuner or tape recorder with pre-amplifier. Also these inputs enable you to drive the main amplifier directly.
8. Speaker terminals for 2 sets of stereo speakers and front panel speaker selector switch (A Speakers, B Speakers, A & B Speakers and Phones.)

INTERCONNECTING DIAGRAM



CONNECTIONS TO COMPONENT PARTS

SPEAKER CONNECTIONS

A special circuitry has been incorporated in this unit so that more than one set of speakers (in different rooms, for instance) can be hooked up.

4, 8, or 16 ohm speakers are suitable. In connecting only one set of speakers, connect the right speaker to right speaker terminals and left speaker to left speaker terminals of "A" terminals. Should plus or minus of either right or left channel be reversely connected, sounds from the center section will be affected by a lack of separation. To connect a second set of speakers, connect right speaker to right speaker terminals and left speaker to left speaker terminals of "B" terminals.

"A & B SPEAKERS" position of the OUTPUT selector switch will not work unless both A speakers system and B speakers system are connected.

PHASING OF THE SPEAKERS

Correct phasing is important in a stereophonic system. If the speakers are out of phase, they will work in opposition to each other and there will be a noticeable loss in low frequencies. Use the following procedure to make adjustments:

- a. Set the INPUT SELECTOR to PHONO, MODE switch to MIX and set VOLUME for desired listening level.
- b. Play a monophonic record containing heavy bass passages.
- c. After your speakers are connected, listen to the intensity of the bass tone. Then reverse the lead connections of the speakers and listen to the sound again. The position of the lead connections where the bass intensity was the greatest is the proper one and the speakers will then be permanently in phase.

STEREO HEADSET JACK

Enjoy the wonderful sounds of stereo without disturbing others or monitor the playback of tapes as you record them with your stereo headset. Plug the headset into the STEREO PHONES JACK and turn the OUTPUT selector switch to PHONES position.

STEREO RECORD PLAYER

The two lines of shielded cord from your stereo record player should be terminated with phono plugs. Cord should not exceed ten feet in length. (An excess will create a loss in high frequency range.)

Two pairs of stereo phono inputs have been incorporated in this unit so that two sets of stereo record players can be hooked up. When operating Phono 1 (or Phono 2), switch the INPUT selector switch to Phono 1 (or Phono 2).

When connecting to Phono 1, be sure to set the sensitivity selector switch to correspond to your cartridge's output power.

2 mV — for high level output magnetic pick-ups.

.5 or .05 mV — for low level output and **low impedance phono cartridges**, such as Ortofon SL-15T without transformer, Grado Model "A" without transformer and other moving coil pick-ups.

Do not use .5 mV or .05 mV switch positions when a high level magnetic type pick-up is connected. It will cause distortion.

TAPE HD

Tape recorder with direct tape head output should be connected to the TAPE HD inputs. As the output voltage of a tape head is very low, the cable will pick up hum; therefore the cable should be carefully positioned to eliminate this hum.

CONNECTIONS TO COMPONENT PARTS

MICROPHONE

When connecting microphone be sure to use a low impedance microphone only, such as a Dynamic Microphone. For stereo, connect one microphone to right (or left) and the other to left (or right), but in case of monaural you can use either input, left or right.

TUNER

Use the TUNER terminals for connection to an FM stereo or an AM-FM Stereo Tuner. For Monophonic operation, connections may be made to either the Right or Left terminals. Always use shielded cable for making these connections.

AUX

Auxiliary inputs which provide the same sensitivity as the Tuner input can be used for a second tuner, tape recopying, etc.

R & P 5-PINS CONNECTOR

Normally for most recording and playback, separate cables must be connected to their respective input jacks on the amplifier; however, if your tape recorder is equipped with R & P (Record and Playback) 5-Pins connector type patch cord, a special jack (connector) is provided on the KA-6000 enabling both recording and playback with this single cable.

TAPE RECORDERS

You may tape FM MONAURAL, FM STEREO, AM and RECORDS by connecting the output jack of TAPE REC to the input jack of the tape recorder. Play back your recordings by simply connecting the output of your tape recorder to the TAPE PLAY jack of your KA-6000 (Diagram, page 3).

TAPE RECOPYING

For tape to tape recordings follow connections as shown in Fig. 1. Then set INPUT selector switch at AUX; set MODE/TAPE MONITOR switch to any position of the TAPE MONITOR side and operate your equipments simultaneously.

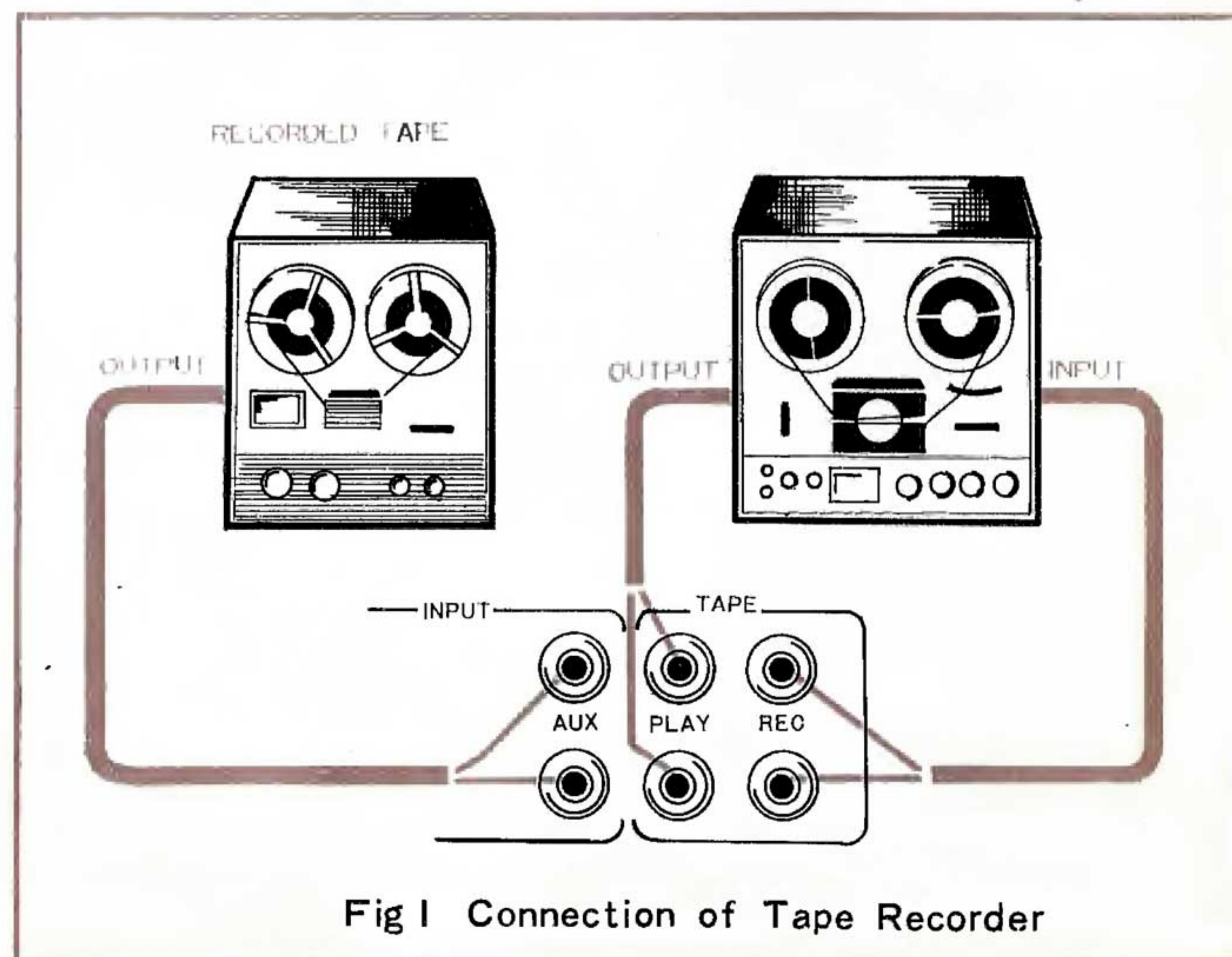
PRE OUTPUTS AND MAIN INPUTS

Stereo pre-amplifier outputs and stereo main amplifier inputs are incorporated in this unit. When using this amplifier either as a pre-amplifier or a main amplifier, remove the attached jumper connector and connect the other main or pre-amplifier to it. When making a multi-channel system with this amplifier, remove the attached jumper connectors and connect a dividing network between the main amplifier inputs and pre-amplifier outputs. The input impedance of the main amplifier is 50 K ohms and its input sensitivity is 100 mV.

When using this KA-6000 as a pre-main amplifier, do not remove the jumper connector from the unit. (Fig. 2, page 6)

MONO OUTPUT

The output power of this jack is about 1 V (at 1 K ohms output impedance), for the combined mixed monaural signal of the left and right channels. Connect this to the AUX input jack of the monaural amplifier to drive the extra speaker. (Fig. 3, page 6)



CONNECTIONS TO COMPONENT PARTS

POWER

Be sure to confirm that the AC operating voltage of this amplifier (shown at the backside) corresponds to the line voltage in your area before you plug the AC line cord into the supply outlet.

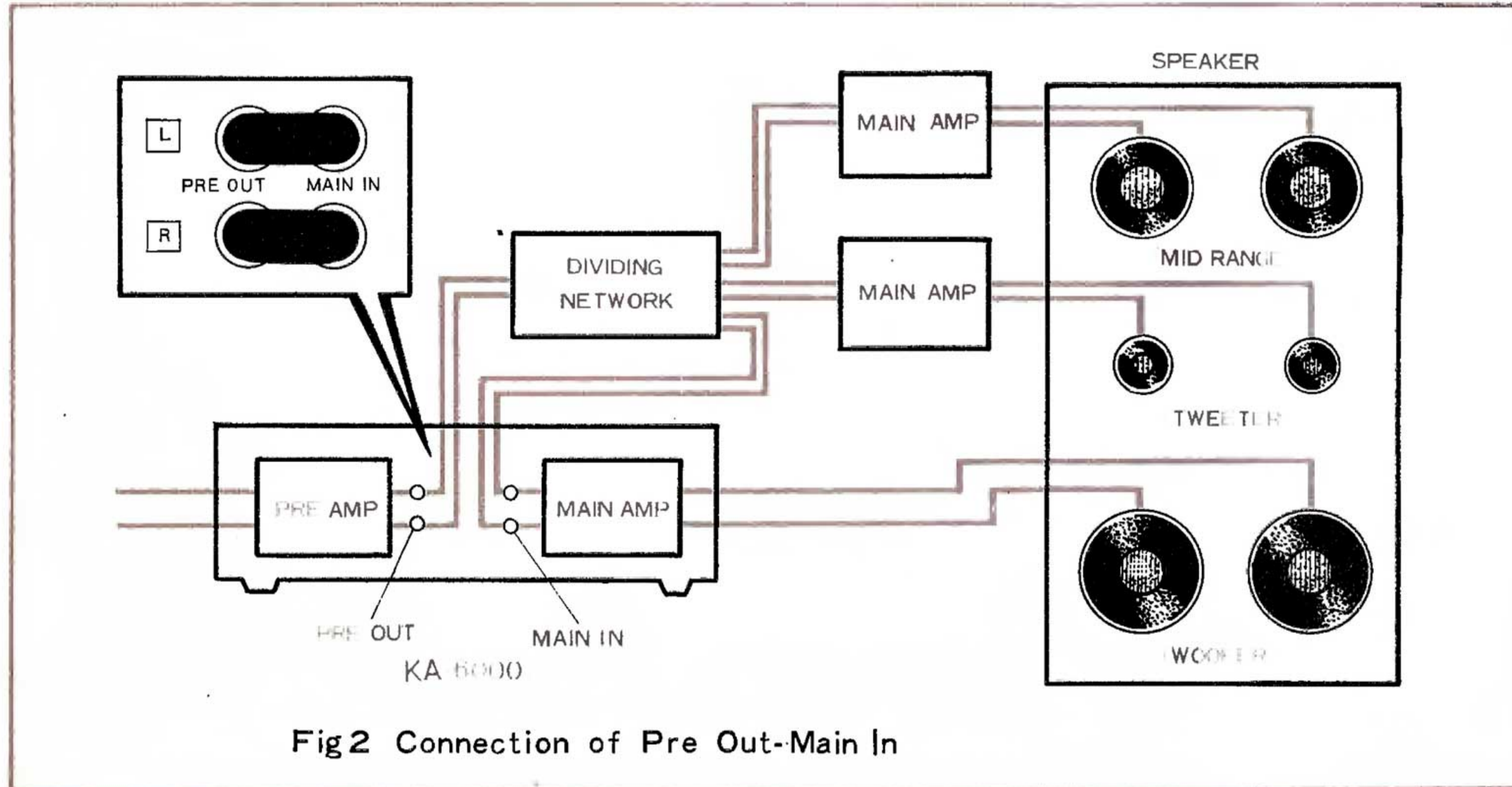
The AC outlets on the back of the amplifier may be used to supply power to other components, such as a record player, tape recorder, etc.

1. Switched outlet (60 watts)

This is switched with the power switch on the amplifier. **IMPORTANT!** Do not connect any electrical equipment with a power consumption of more than 60 watts.

2. Unswitched outlet (300 watts)

This is not switched to the power switch on the amplifier. **IMPORTANT!** Do not connect any electrical equipment with a power consumption of more than 300 watts.

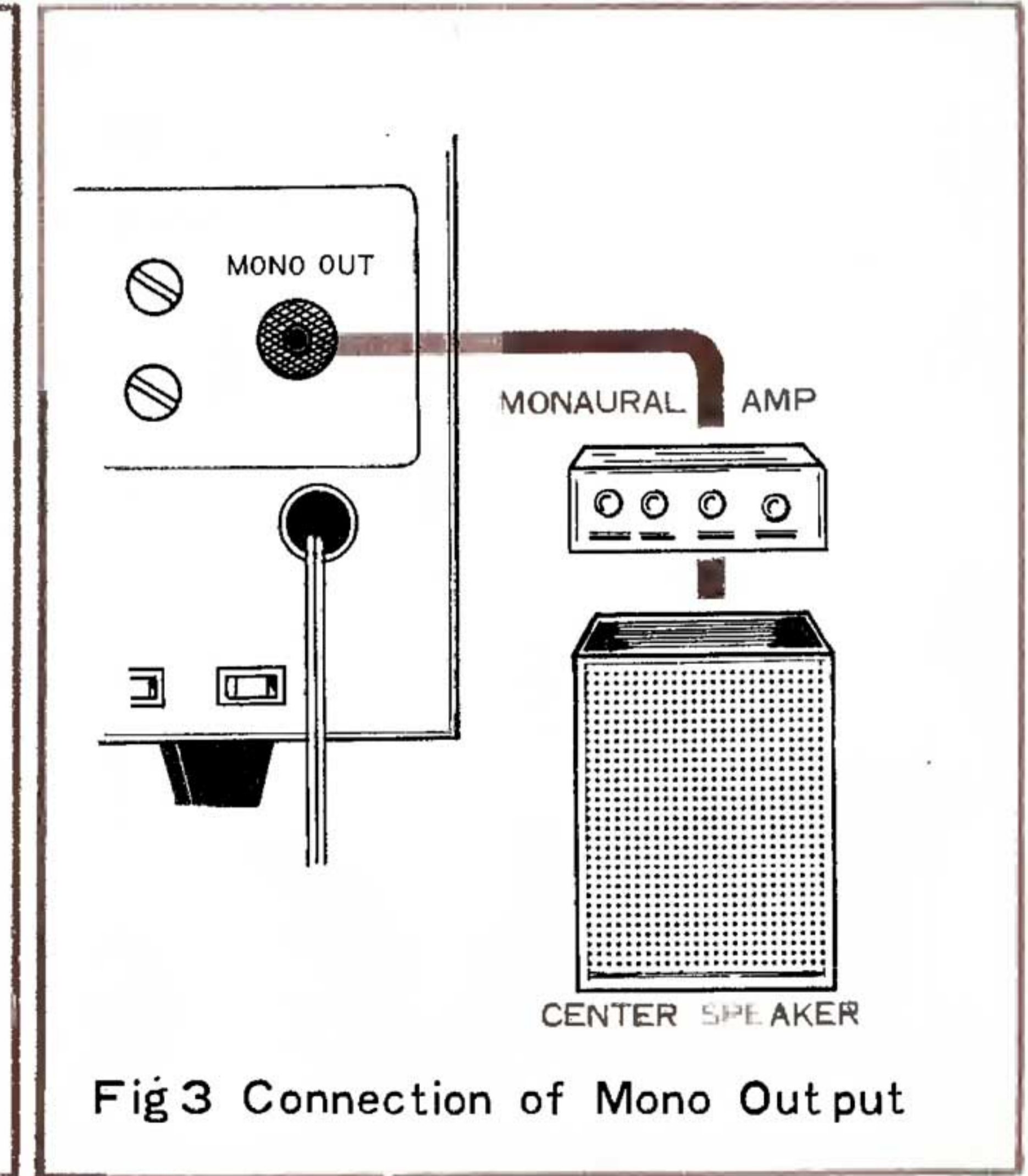


PROTECTION CIRCUIT

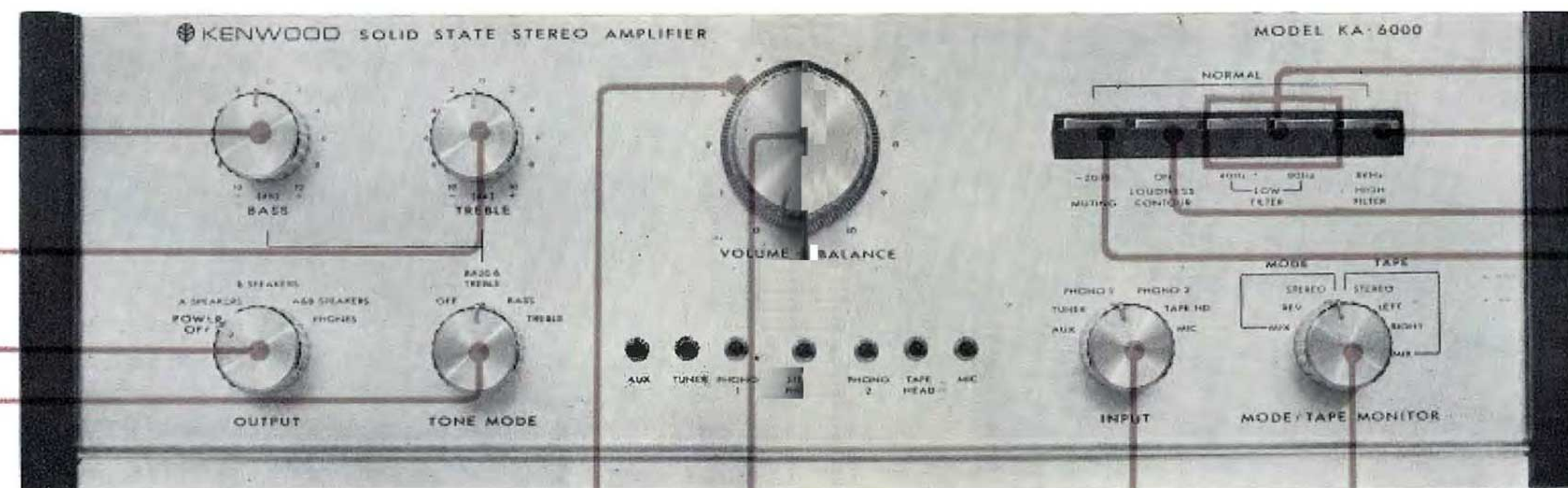
The newly developed protection circuit is completely effective and prevents damage which may be caused by short circuits at the speaker outputs or the electrical overloading point. When a short circuit occurs this protection circuit will function automatically to protect the transistors. The program sound will be heard intermittently about every one second. In this case, there is no fear of damaging the transistors. Just switch off the supply line and check the connections. The fuse in the speaker output circuit will also prevent damage to the speaker voice coil.

FUSE

Shield fuses are used; 4A fuse for AC power supply and 5A fuse for speaker outputs. Rotate the fuse holder counter-clockwise for replacing. When a fuse blows out, check carefully the reason for the blow-out and then replace the fuse. When something is wrong with the supply circuit, the fuse will blow again. Do not, in any case, use copper wire in place of the specified shield fuse.



CONTROLS AND THEIR FUNCTIONS



BASS CONTROL

Turning clockwise increases bass tone and counterclockwise decreases it while Center setting is at Flat. One position to left or right makes a ± 2 dB change of bass tone at 100 Hz.

TREBLE CONTROL

Turning clockwise increases treble tone and Counter-clockwise decreases it while Center setting is at Flat. One position to left or right makes a ± 2 dB change of treble tone at 10 kHz.

OUTPUT

POWER OFF—This position shuts off the power of the unit.
A SPEAKERS—The power is on and sound can be heard from the first set of speakers only.
B SPEAKERS—Reception is heard through the second set of speakers only.
A & B SPEAKERS—For listen to program source through both sets of speakers.
PHONES—Accommodates head phones for monitoring or private listening.

TONE MODE

OFF—To obtain flat response of 20 ~ 50,000 Hz without being affected by tone Controls.
BASS (TREBLE)—Regardless of the position of treble (bass) Control, high (low) frequency will be at flat. Only bass (treble) Control will affect the tone Control Circuit.

BALANCE

This Control provides a simple means of adjusting the levels of both channels for proper balance during stereophonic reproduction.

VOLUME

The single Control designated **VOLUME** adjusts the level of both channels simultaneously. To adjust one channel only, use the **BALANCE** Control.

INPUT

TUNER—When a tuner is to be used.
PHONO1—When a High or Low level output Cartridge is to be used.
PHONO2—When a High level output magnetic Cartridge is to be used.
TAPE HD—This position is used only for tape playbacks directly from the tape head.
MIC—When microphones are to be used.
AUX—For auxiliary inputs such as the audio signal from a TV Set.

MODE/TAPE-MONITOR

(MODE)STEREO—This provides stereophonic reproduction of any stereo program source.
REV—This reverses positions of the two speakers.
MIX—Mixes left and right channels.
(TAPE) For monitoring of the recording and playback of the recorded tape. (see, page 10.)

MUTING

When you wish to lower the volume momentarily during a telephone-call, etc., press this lever switch and you will reduce the output power to 1/100 without changing the Volume Control. Taking the switch off will return the volume to its original level.

LOUDNESS CONTOUR

This switch provides the frequency response change (bass and treble boost) if required by individual at low listening levels and permits the **VOLUME** Control to function as a Compensated loudness Control.

HIGH FILTER

This switch induces a filter into the circuit and reduces the high frequency noise. 8,000 Hz Cutoff 12 dB per octave.

LOW FILTER

This switch induces a low frequency filter into the Circuit and reduces the rumble from a noisy turntable or changer with minimum effect on program material. 40 Hz Cutoff, 12 dB/octave. 30 Hz Cutoff, 12 dB/octave.

OPERATING INSTRUCTIONS

CONTROL OPERATION	INPUT TERMINALS	OUTPUT SELECTOR SWITCH	INPUT SELECTOR SWITCH	MODE/TAPE MONITOR SWITCH	BASS & TREBLE CONTROL	KEY TYPE SWITCH	STONE MODE SWITCH	PHONO 1 SENSITIVITY SWITCH
TUNER	TUNER	SPEAKERS or PHONES	TUNER	MODE STEREO or MIX	"O" POSITION	NORMAL	OFF or BASS & TREBLE	—
RECORD PLAYER (with high level output P.U.)	PHONO 1 or PHONO 2	SPEAKERS or PHONES	PHONO 1 or PHONO 2	MODE STEREO or MIX	"O" POSITION	NORMAL	OFF or BASS & TREBLE	2 mV
RECORD PLAYER *(with low level output P.U.)	PHONO 1	SPEAKERS or PHONES	PHONO 1	MODE STEREO or MIX	"O" POSITION	NORMAL	OFF or BASS & TREBLE	.5 mV or .05 mV
TAPE HEAD (from Tape Head output)	TAPE HD	SPEAKERS or PHONES	TAPE HD	MODE STEREO or MIX	"O" POSITION	NORMAL	OFF or BASS & TREBLE	—
MICROPHONE	MIC	SPEAKERS or PHONES	MIC	MODE STEREO or MIX	"O" POSITION	NORMAL	OFF or BASS & TREBLE	—
TAPE RECORDER (from line output)	AUX	SPEAKERS or PHONES	AUX	MODE STEREO or MIX	"O" POSITION	NORMAL	OFF or BASS & TREBLE	—
	TAPE PLAY	SPEAKERS or PHONES	ANY POSITION	TAPE STEREO or MIX	"O" POSITION	NORMAL	OFF or BASS & TREBLE	—

Note: This chart shows the most usual operations. Tone Mode Switch, Bass Control, Treble Control and Key Switches can be set to your listening desire.

* Low impedance cartridge only.

OPERATING INSTRUCTIONS

For monitoring of the recording and playback of the recorded tape.



The KA-6000 incorporates a Tape Monitoring circuitry enabling you to monitor while you record. Connections to the tape recorder are made as explained in the section dealing with "Interconnecting Diagram".

FOR TWO-HEAD TAPE RECORDERS

Ordinary two-head type tape recorders are not equipped with a separate playback monitor amplifier to enable tape recording and simultaneous monitoring.

Therefore, when recording, set the MODE switch to STEREO position, and feed the signal to be recorded through the KA-6000.

And, for playback of the recorded tape through the KA-6000 speaker system, set the TAPE MONITOR switch to STEREO (Stereo-playback), LEFT or RIGHT (Mono playback).

FOR THREE-HEAD TAPE RECORDERS

Three-head type tape recorders have separate recording and playback heads and their respective separate amplifiers. This enables simultaneous playback monitoring of the recording. For operating the KA-6000 in conjunction with three-head type tape recorders, set the TAPE MONITOR switch to STEREO, LEFT or RIGHT position. This enables monitoring the recording and fully controlling level, acoustic balance, microphone position, etc.

SPECIFICATIONS

Power Output:

Output Power: 225 watts ± 1 dB at 4 ohms
210 watts ± 1 dB at 8 ohms
Dynamic Power (IHF): 180 watts at 4 ohms load
170 watts at 8 ohms load
Continuous Power: (at any frequency from 20 — 20,000 Hz)
Each channel driven
64/64 watts at 4 ohms load
58/58 watts at 8 ohms load
42/42 watts at 16 ohms load
Both channels driven
41/41 watts at 4 ohms load
45/45 watts at 8 ohms load
34/34 watts at 16 ohms load

Harmonic Distortion:

Less than .5% at rated output from 20 Hz to 20,000 Hz.

Intermodulation Distortion: (60 Hz & 7,000 Hz, 4:1)

Less than .3% at rated output or at any level of less than rated output.
Less than .1% at -3 dB rated output.

Frequency Response:

Main Amp. Only: 10 Hz to 50,000 Hz ± 1 dB
High Level Input: 20 Hz to 50,000 Hz ± 1 dB

Sensitivity: (for rated output at 8 ohms load)

Phono 1: 2 mV, .5 mV, .05 mV (Switchable)
Phono 2: 2 mV
Tape Head: 2.3 mV
MIC: 2 mV
AUX: 200 mV
Tuner: 200 mV
Tape Play: 200 mV
Main Amp Input: 100 mV

Input Impedance: (at 1,000 Hz)

Phono 1 (2 mV): 50 K ohms
Phono 1 (.5 or .05 mV): 200 ohms
Phono 2: 50 K ohms
Tape Head: 100 K ohms

MIC: 100 K ohms
AUX, Tuner, Tape Play: 100 K ohms
Main Amp Input: 50 K ohms

Signal to Noise Ratio: (below rated output)

Phono 1 (2 mV): 65 dB
Phono 1 (.5 mV): 54 dB
Phono 1 (.05 mV): 45 dB
Phono 2: 65 dB
Tape Head: 63 dB
MIC: 67 dB
AUX, Tuner, Tape Play: 77 dB
Noise at minimum volume control: 1 mV at 8 ohms or .0125 milliwatts

Output Impedance: (at Speaker Terminal)

.275 ohms at 1,000 Hz
.39 ohm at 50 Hz
.275 ohm at 10,000 Hz

Damping Factor: (at 1,000 Hz)

58 at 16 ohms load
29 at 8 ohms load

Loudness Contour:

100 Hz +10 dB
10 kHz +5 dB

Low Filter: (for rumble)

40 Hz Cutoff, 12 dB per octave
80 Hz Cutoff, 12 dB per octave

High Filter: (for scratch)

8,000 Hz Cutoff, 12 dB per octave

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

SPECIFICATIONS

Inputs:

Pair of Phono 1, Phono 2, Tape Head, AUX Tuner, Tape Play, MIC and Main Amp. Inputs.

Outputs:

2 pairs of stereo speaker outputs (4 to 16 ohms), pre-amp outputs. Headphone Jack, Low level MONO output, Tape Recording outputs, DIN standard Tape Rec/Play connector, Switched and Un-switched AC outlets.

Controls:

Phono 1 Level Switch, Input Selector Switch, Mode/Tape monitor Switch, Tone Mode Switch, Output Selector Switch, Volume Control, Balance Control, Bass Control Switch, Treble Control Switch, Muting Switch (-20 dB), Loudness Contour Switch, Low Filter Switch, and High Filter Switch.

Special Features:

- * U.S. Pat. power transistor protection circuit.
- * 2 sets of Stereo Speaker terminals and front panel speaker selector switch.
- * 2 dB step tone controls with tone mode switch. (Cancel, Bass & Treble, Bass only, Treble only)
- * -20 dB muting switch.
- * Low level phono input (.05 mV, .5 mV) for Moving coil type or low level output cartridges.
- * Light-up input indicators.
- * Pre-amp. outputs.
- * Main amp. inputs.
- * Stereo phone jack.
- * Tape monitor switch.

Power Consumption:

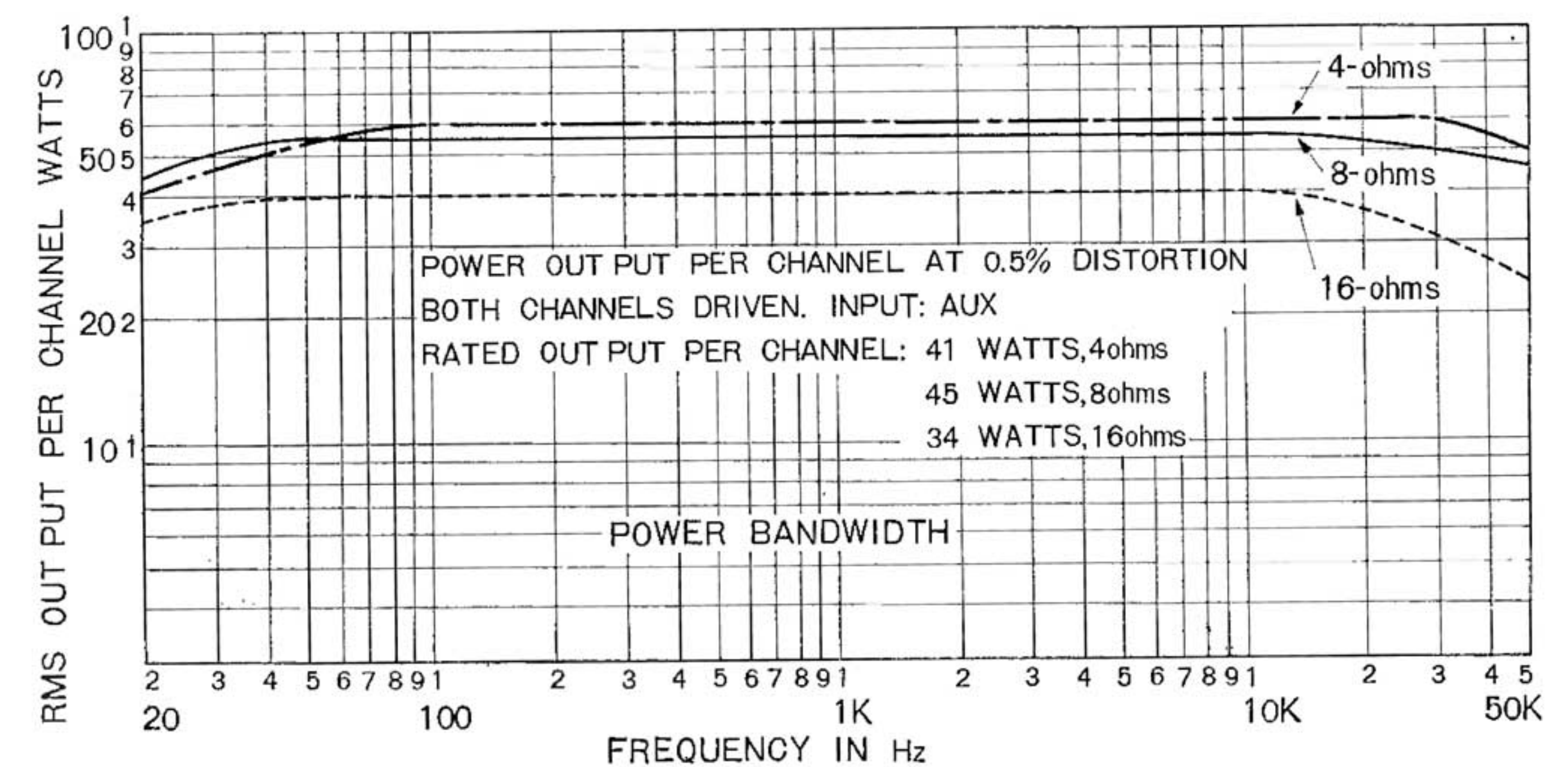
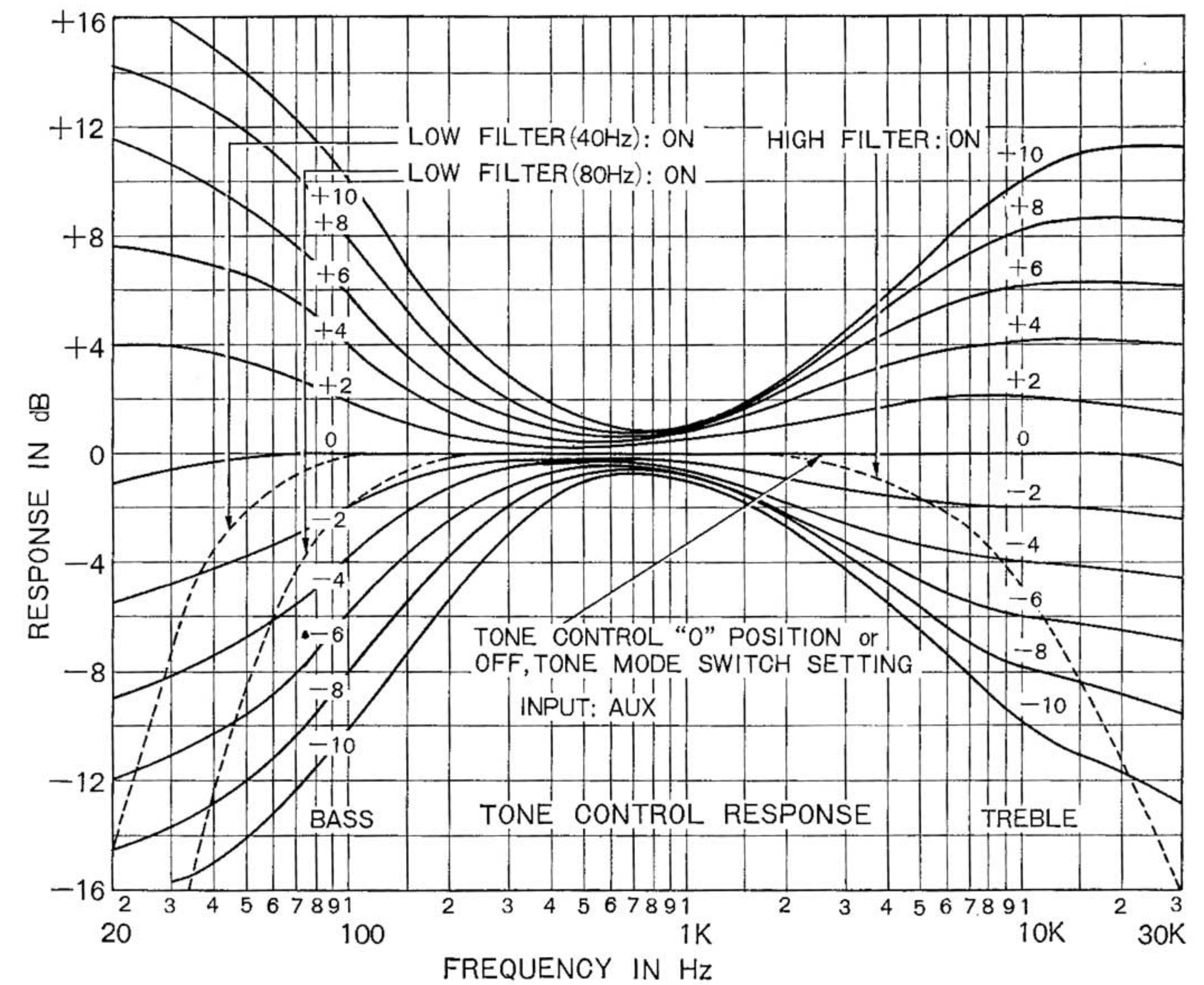
18 watts quiescent, 190 watts at full power

Dimensions: (not including control knobs)

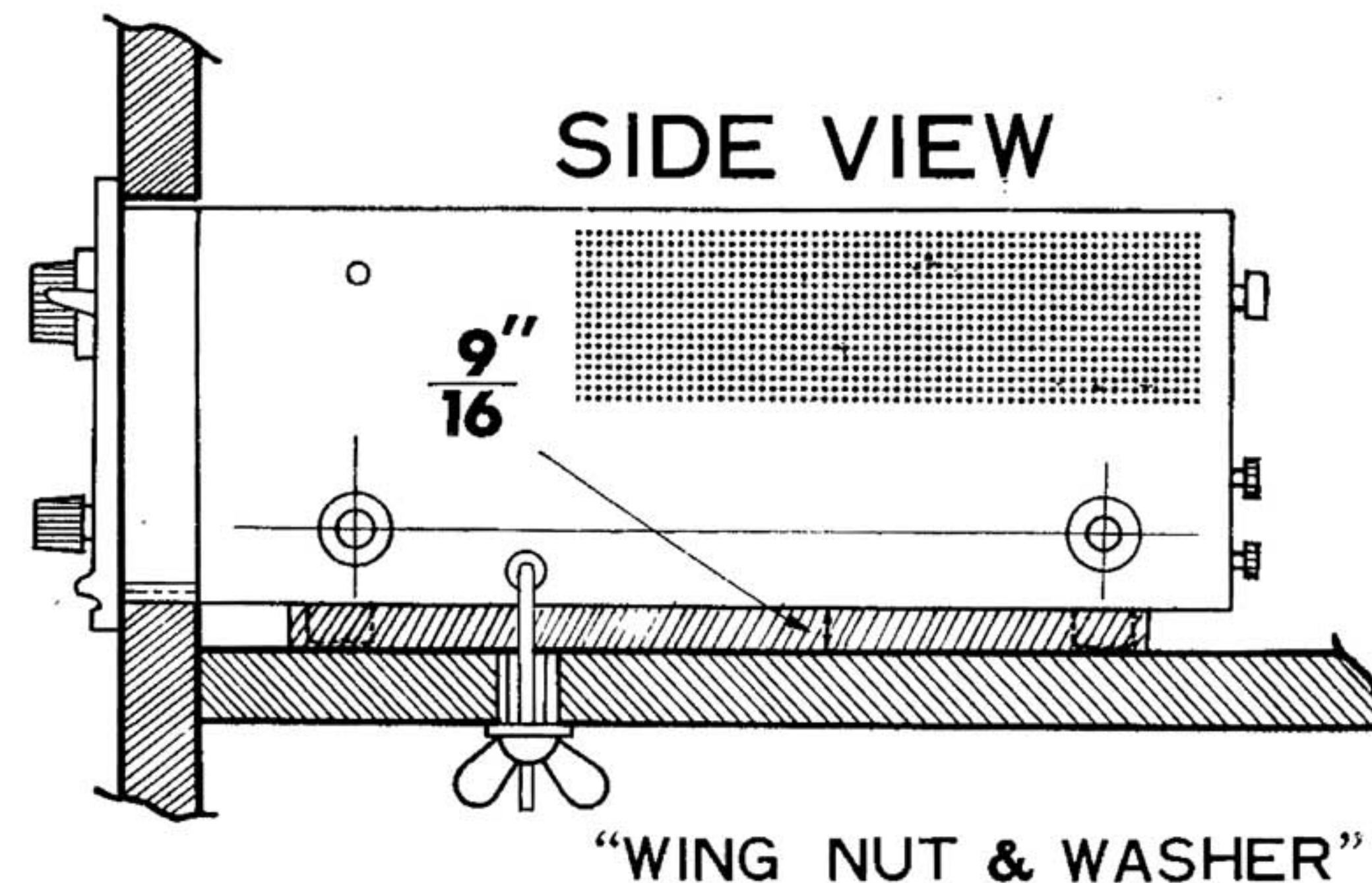
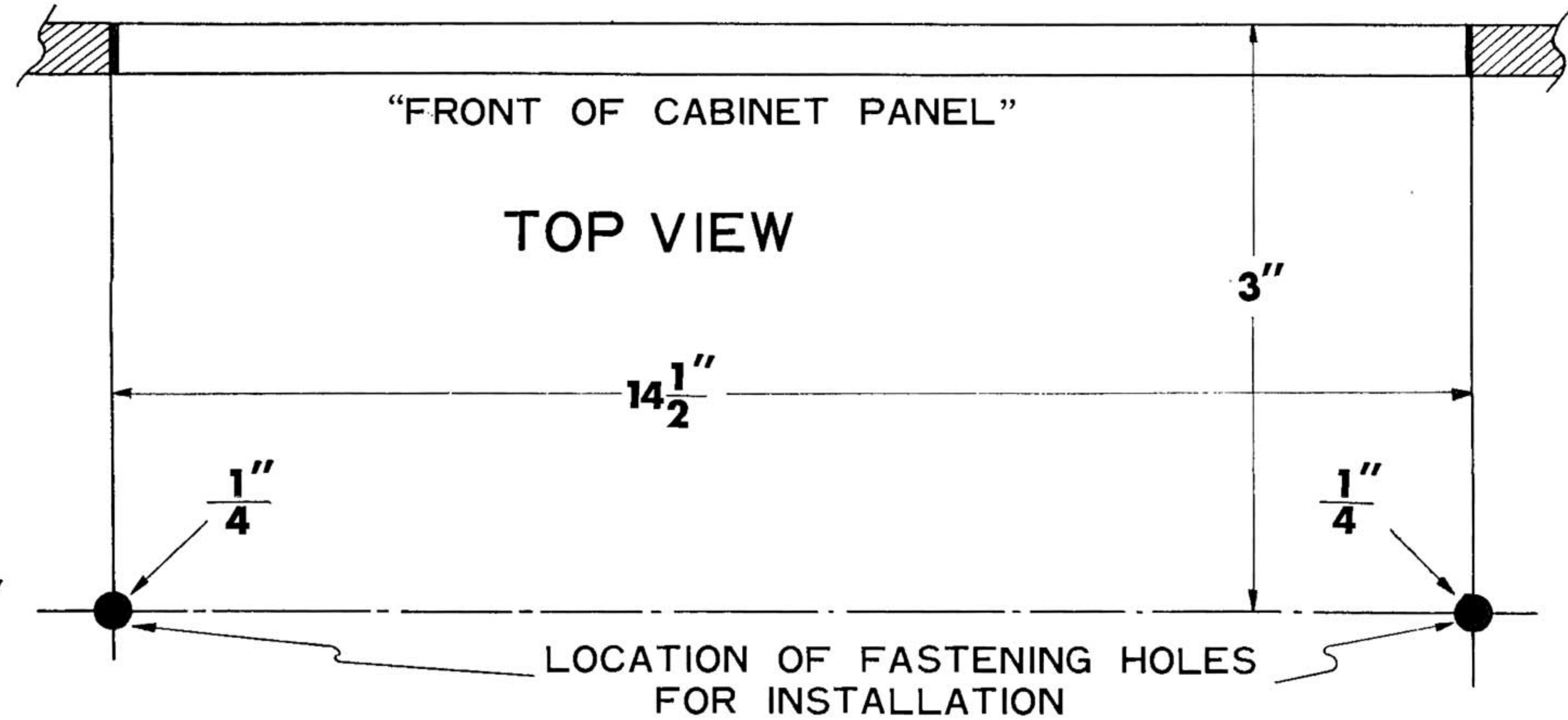
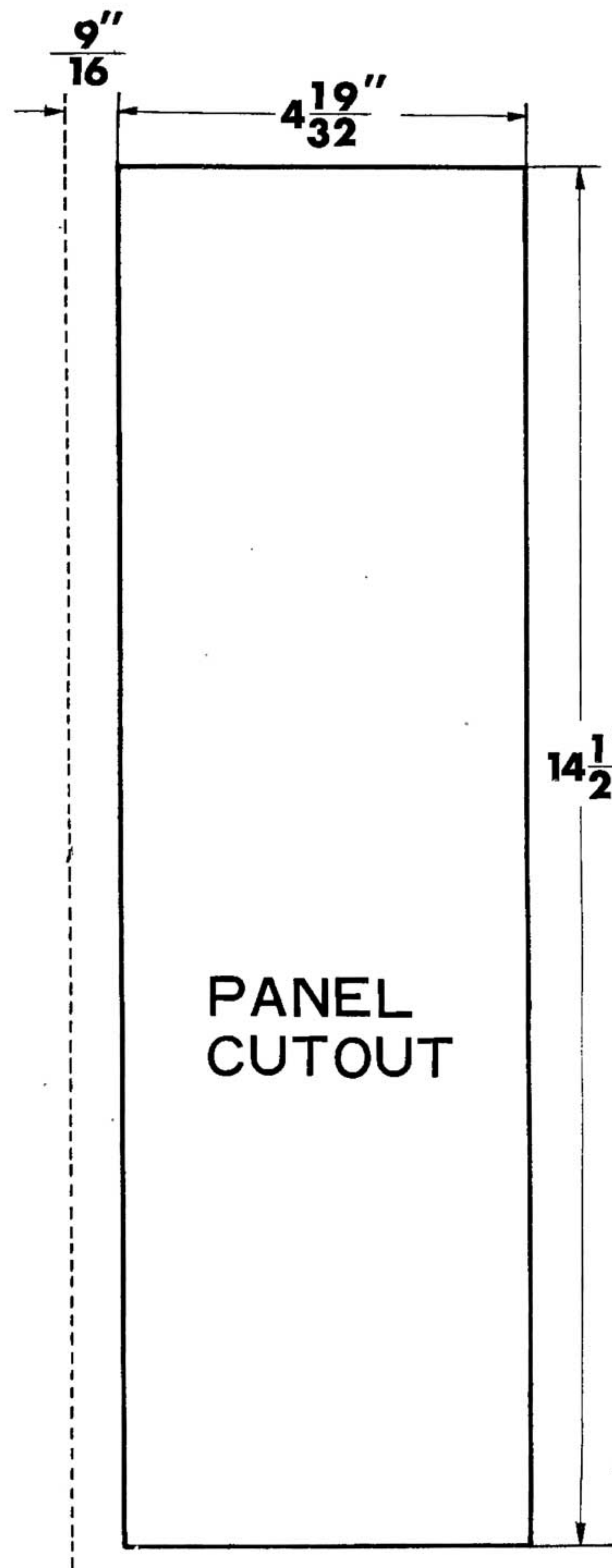
Width 16-5/16", Height 5-5/32", Depth 11-1/32".

Weight:

24.5 Lbs.



MOUNTING TEMPLATE



DIRECTIONS FOR PANEL MOUNTING

1. Locate the supporting shelf at the height you wish the receiver positioned.
2. Using the full scale "Cutout Template" make a 4-19/32" x 14-1/2" cutout in the cabinet panel. The bottom of the cutout should be flush with the bottom plate of the receiver, as shown in the side view. The distance between the bottom of the cutout and the top of the supporting shelf is 9/16."
3. The receiver is held in place by two bolts. The holes must be made in the shelf to correspond with the holes in the receiver. 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.
4. Remove the wooden side plate only from amplifier.
5. Remove the four bottom legs.
6. 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" width between chassis and the supporting shelf.

KA-6000 Serial No. _____

Owner _____



Manufactured by TRIO ELECTRONICS, INC., TOKYO, JAPAN.