

KENWOOD
220W (IHF 4 Ω)
STEREO
AMPLIFIER

KA-6004



the sound approach to quality

 **KENWOOD**

Exceptional Stability of Amplification achieved Constant Current Driving System

The KA-6004 achieves an over-all high level of reliability in every performance phase. If only the strictest requirements are met by each component, then they are included in the full assembly potential of this outstandingly unique amplifier. For example, the pre-amplifier uses a new type of can seal (metal cased) transistor which is capable of off-setting usual characteristic deterioration in signal-to-noise ratio resulting from humidity and temperature wear. Low noise PNP transistors have been attached to the top of the equalizer circuit. Also, super-high nichrome evaporated metal film resistors have been used in the feedback circuit in the equalizer stage. Each error thus occurs only within $\pm 1\%$. These same resistors are also equipped in all other significant circuits to vastly improve S/N and block S/N age deterioration.

Linear Frequency Power Output Kept 40W in 20Hz to 20KHz.

KENWOOD has been improved in output indication. In the conventional way, output was indicated in just one point of 1KHz. However, in KENWOOD's latest way of improving over-all quality guaranteed output is indicated in the entire range of audio frequency of 20Hz to 20KHz, i.e. the output is indicated in "minimum point", but not in "maximum point".

The maximum output is a performance figure that implies the dynamic range of the power amplifier, therefore, only the output of 1KHz will imply the imperfect performance of the amplifier because the output of any amplifier is usually best near 1KHz. However, as described in the preceding, KA-6004 has the circuits to allow the simultaneous indication of entire performance. With an all stages direct-coupled circuit provided, the output linearity in low pass will be shown by power output data.

Output Power Characteristics

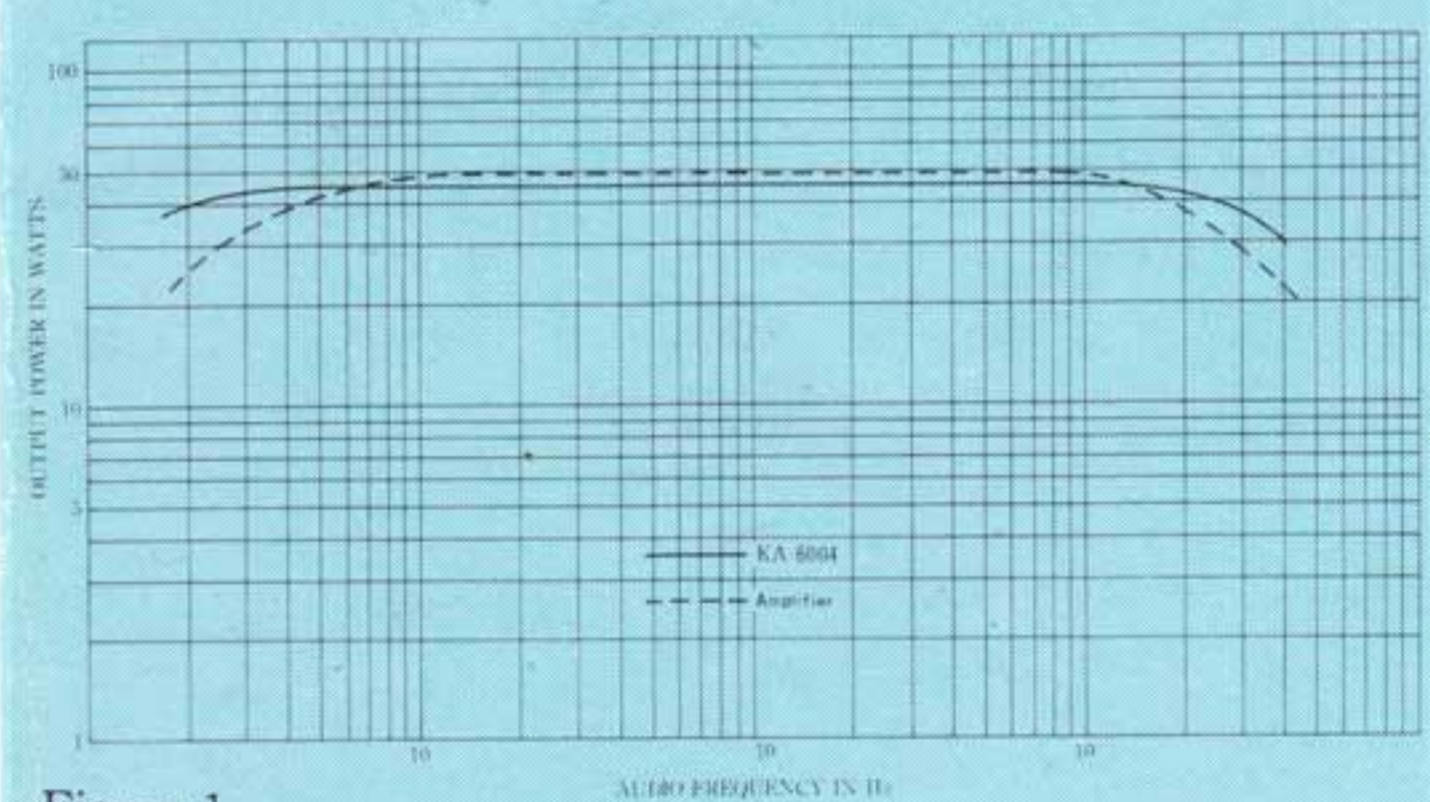


Figure 1

1 Pure-complementary Circuit + Constant Current Driving

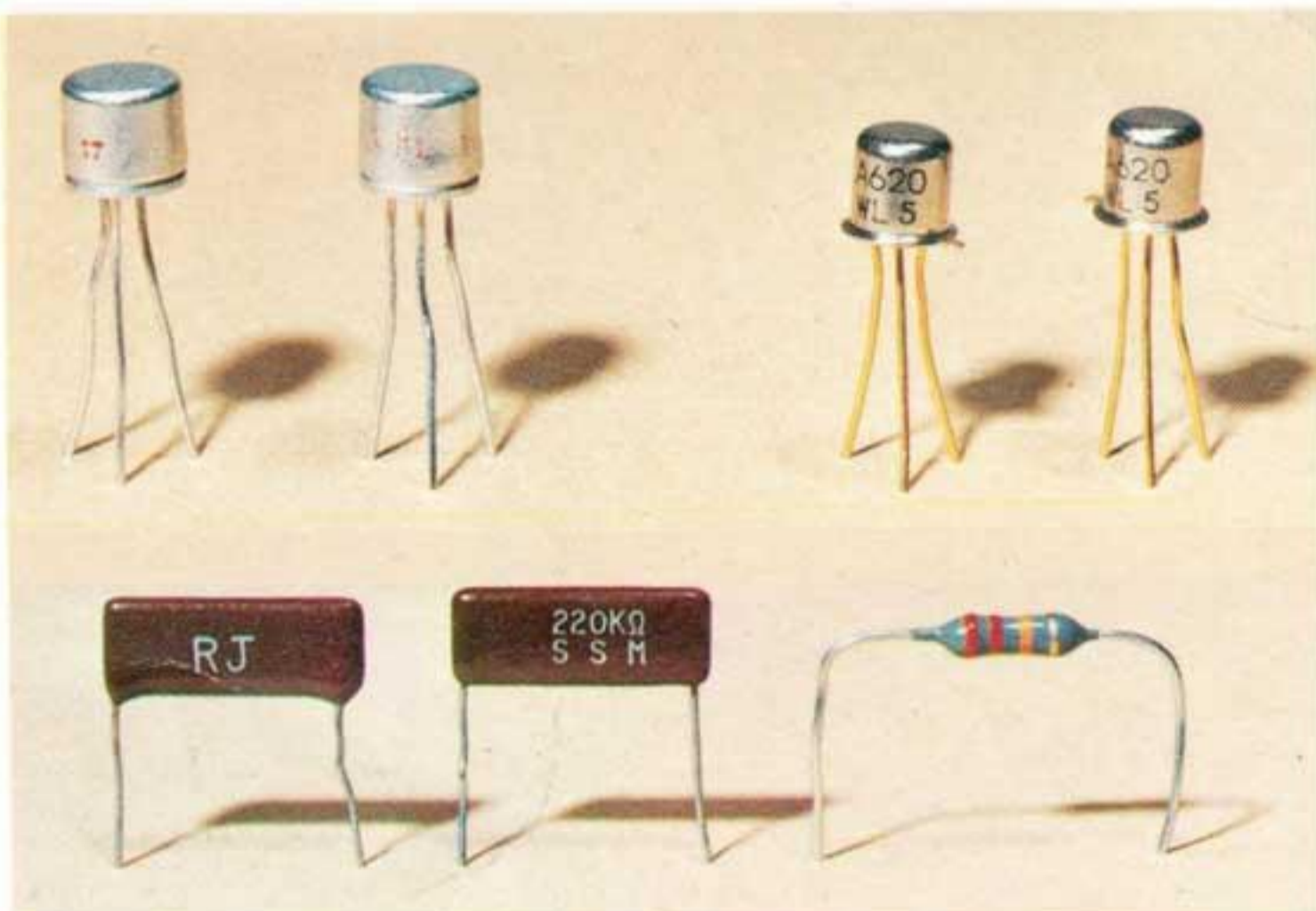
The KA-6004 employs KENWOOD's exclusive Constant Current Driving system in the pure-complementary and direct coupling driver stage. The highest stability in the amplification is now obtainable. By minimizing crossover distortion and by improving phase characteristics, the KA-6004 guarantees superb performance quality from ultra low range to far above the limit of audio frequency. It also prevents performance from deterioration caused by the deviation in power voltage. KENWOOD has overcome the last problem—instability—remaining in direct coupling amplification. The refined reproduction is fully enjoyable.



Higher Reliability Achieved by Strictly Selected Components

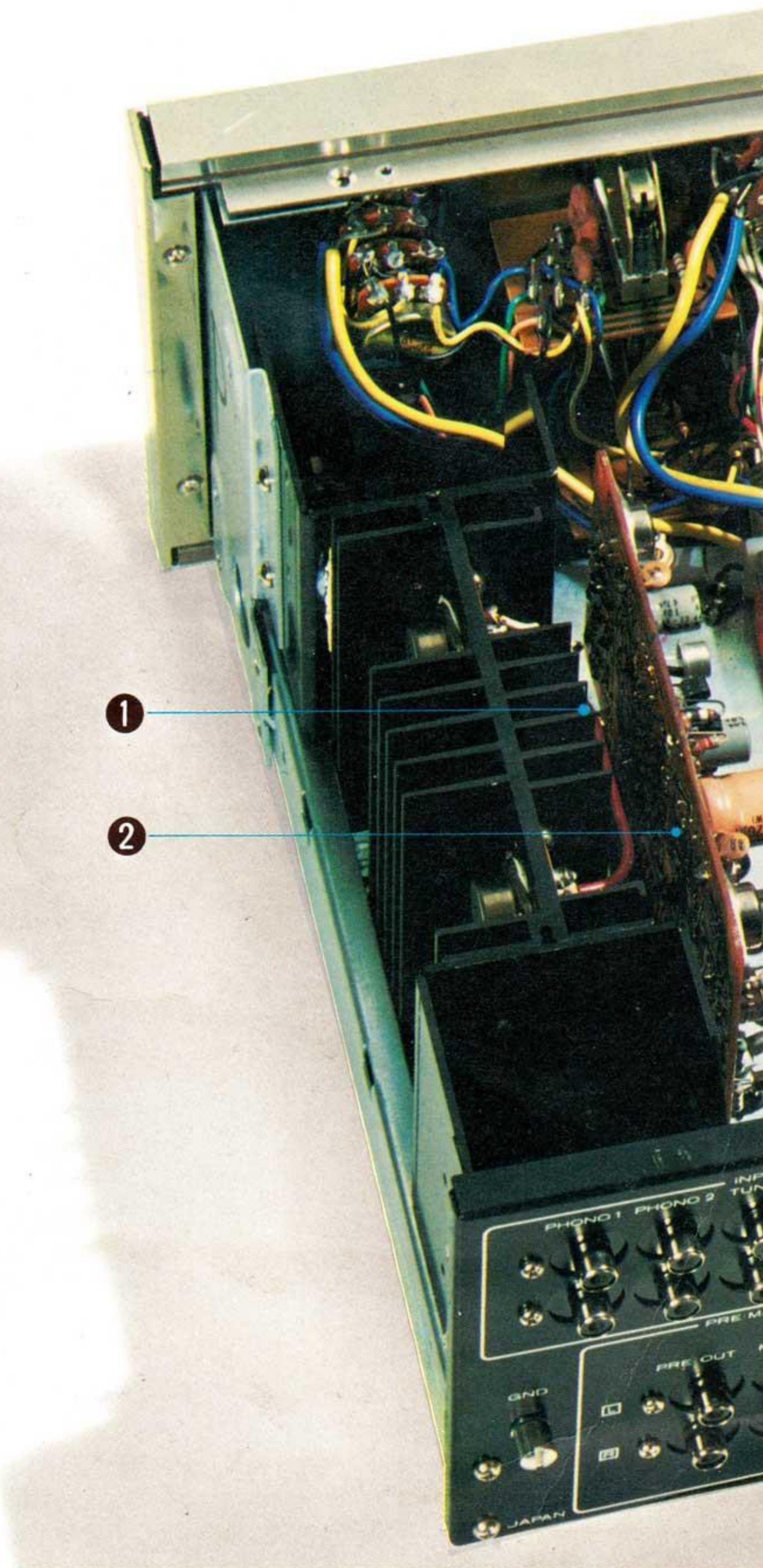
The pre-amplifier employs a new type of can seal (metal cased) transistors that are capable of precluding the characteristic changes, i.e. the characteristic deterioration of S/N caused by humidity and temperature. At the top of equalizer circuit, low noise type PNP transistors are equipped.

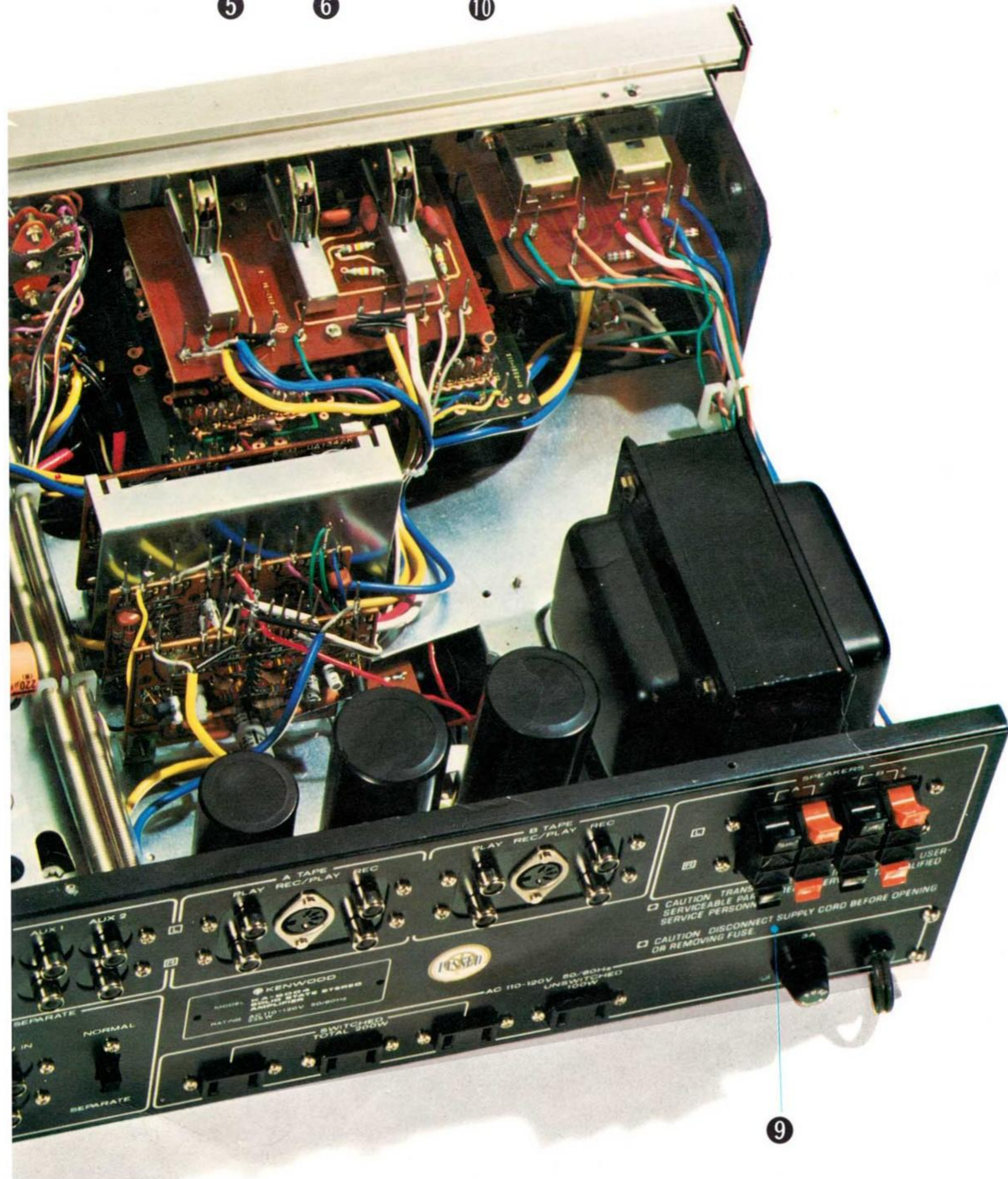
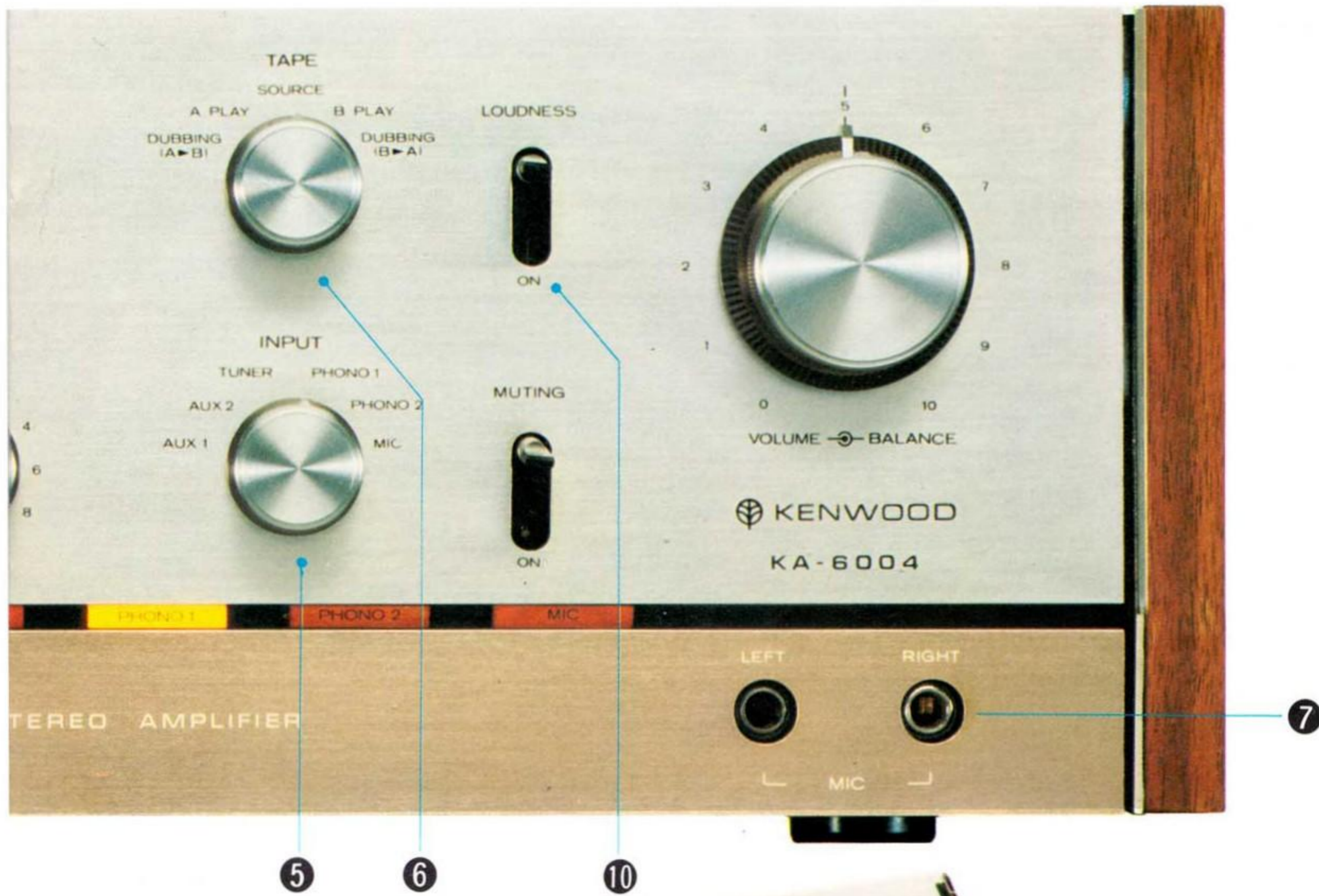
The feedback circuit in the equalizer stage employs super-high precision nichrome evaporated metal film resistors, each error within $\pm 1\%$. The nichrome evaporated metal film resistors are equipped in all other important circuits to prominently improve S/N and preclude age deterioration of S/N.



2 Protection Circuit

All stages direct-coupled circuit in KA-6004 includes constant current driver circuit capable of amplifying from DC. The driving way will amplify faithfully the superlow pass, i.e. plus minus several Hz of the frequency picked up by cartridge on bowed record plate and wow-fluttered turn table, thus the faithful amplification will permit unnecessary critical load on speaker. In addition, if direct current input should be applied, burning of voice coil may be caused. To prevent the preceding troubles in KA-6004, a protecting circuit is employed to cut superlow pass of 10Hz or less in order to protect speaker against overload.





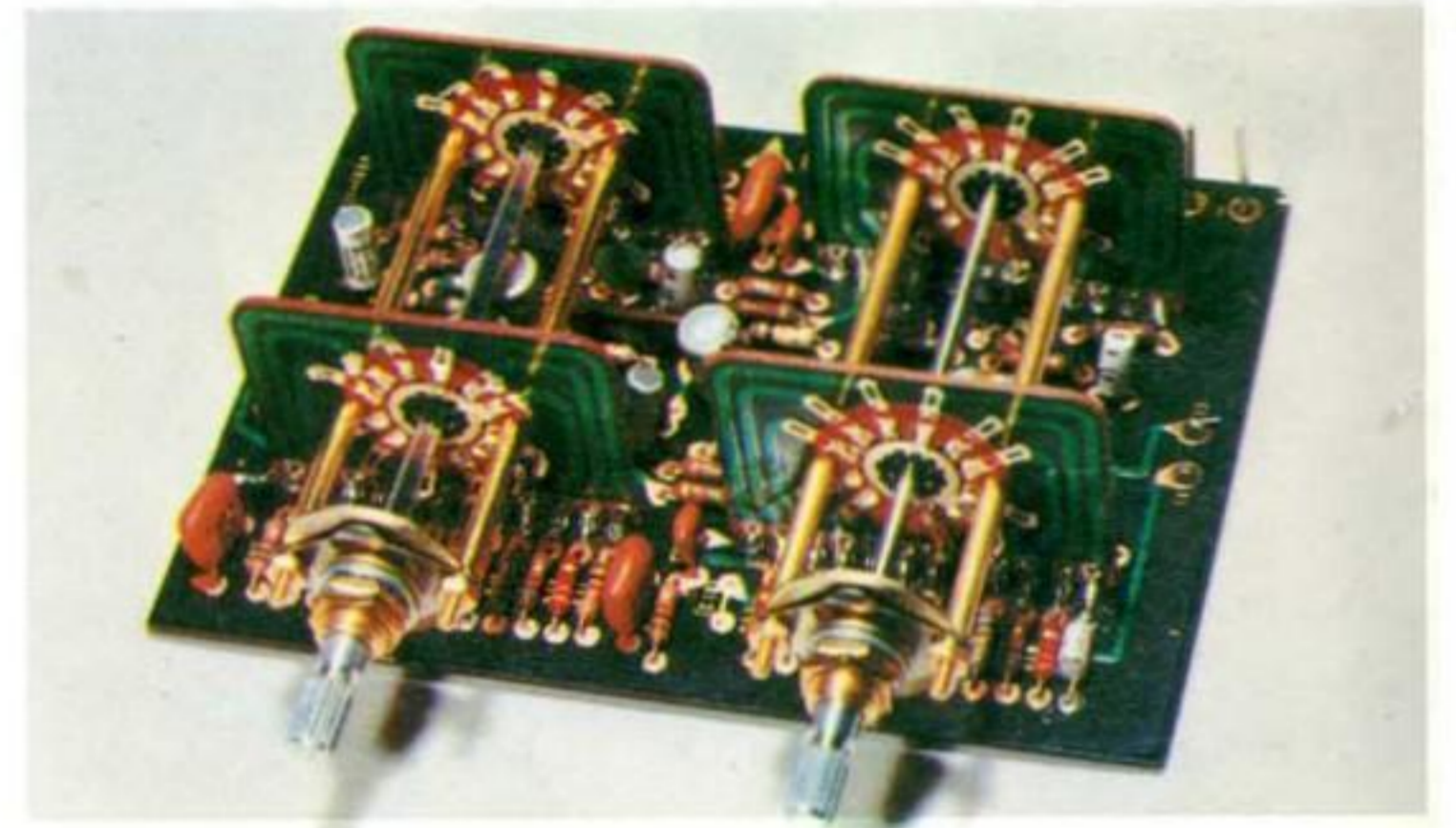
Exceptional Dynamic Range

The equalizing stage of preamplifier has been entirely redesigned to obtain exceptionally wide dynamic range. The KA-6004 assures 420mV p-p maximum input level (at 1KHz). Any fortissimo peak can faithfully reproduced without saturation. Further, thanks to the minimized RIAA deviation of within $\pm 0.2\text{dB}$, playback with real high fidelity is guaranteed.

③ Attenuator Type Tone Control

Attenuator is employed in tone control. +10dB to -10dB is covered by 2dB controlled. Left and right characteristics are correctly coincided, so that no unbalance will be caused in tone control.

In conventional volume type, frequency characteristic is not perfectly flat even at zero degree, but is waved. In KA-6004, with tone control positioned at "OFF", tone control circuit is neglected, so that frequency characteristic is kept correct.



④ Noise Filter

Low cut filter has two turnover points, i.e. 40Hz and 80Hz controlled, and sharp attenuation characteristic of 12dB/oct. The filter will also protect speaker, with protection circuit associated, against large signal inputted in low pass.

High cut filter has a higher turnover point, i.e. 7KHz which will reduce noise only without damaging desired tone, and an easy attenuation characteristic of 6dB/oct.

⑤ Input Selector

The KA-6004 is versatile for input program sources. It features input jacks for 2 pairs of phono, 2 pairs of AUX, tuner and microphone. A program source on operation is shown by luminous indicator on the front panel.

⑥ Two Systems of Tape Monitor

Two systems of tape monitor circuits, i.e. A and B are provided to allow simultaneous activation of two decks.

Mutual dubbing is easily allowed by switching only.

⑦ Microphone Input

MIC input terminals are equipped on front panel, so that right-side two systems of microphones will allow so easier operation. Since selector positions are independent, the input may be used sufficiently for microphone amplifier.

⑧ Push Button Type Speaker Selector

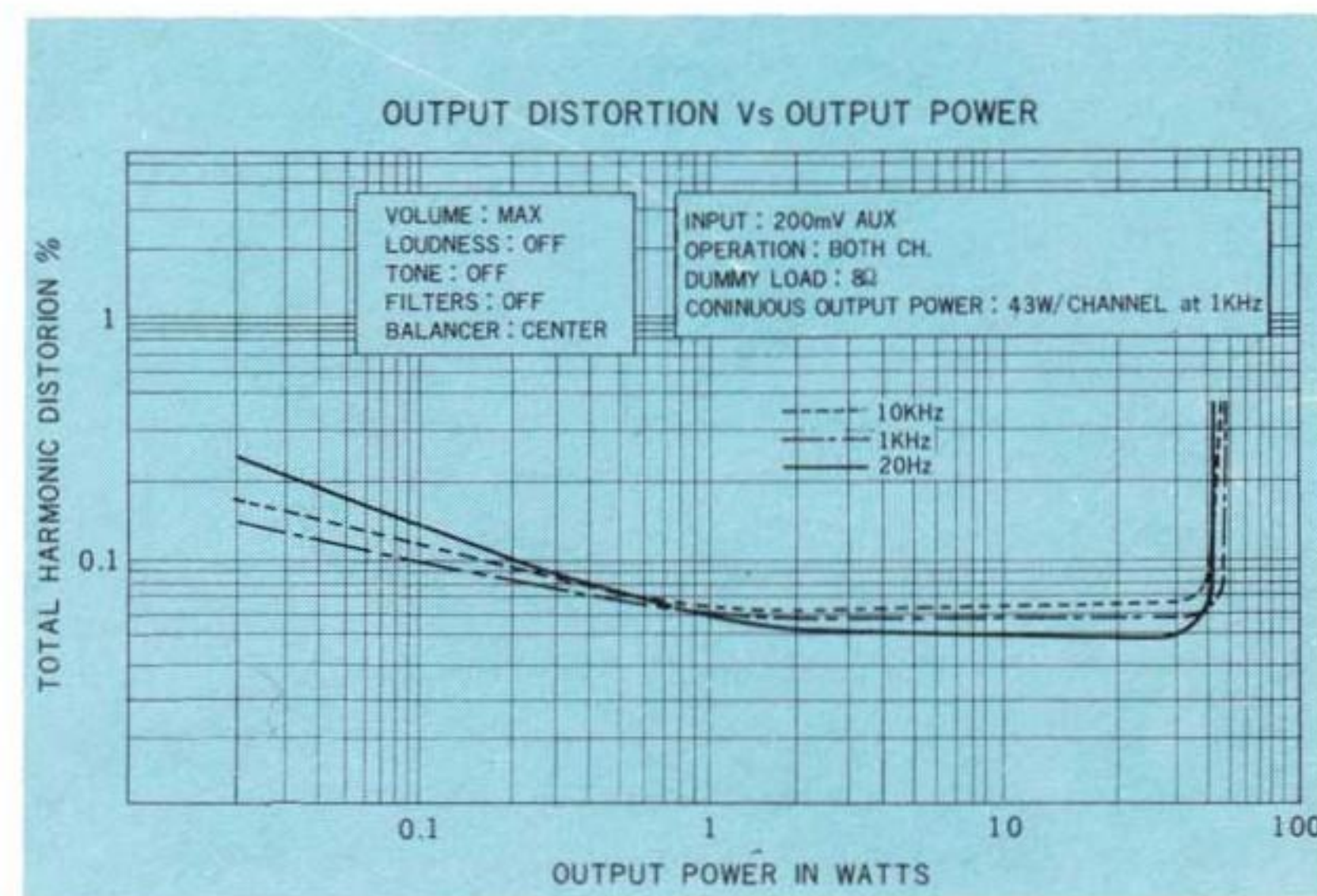
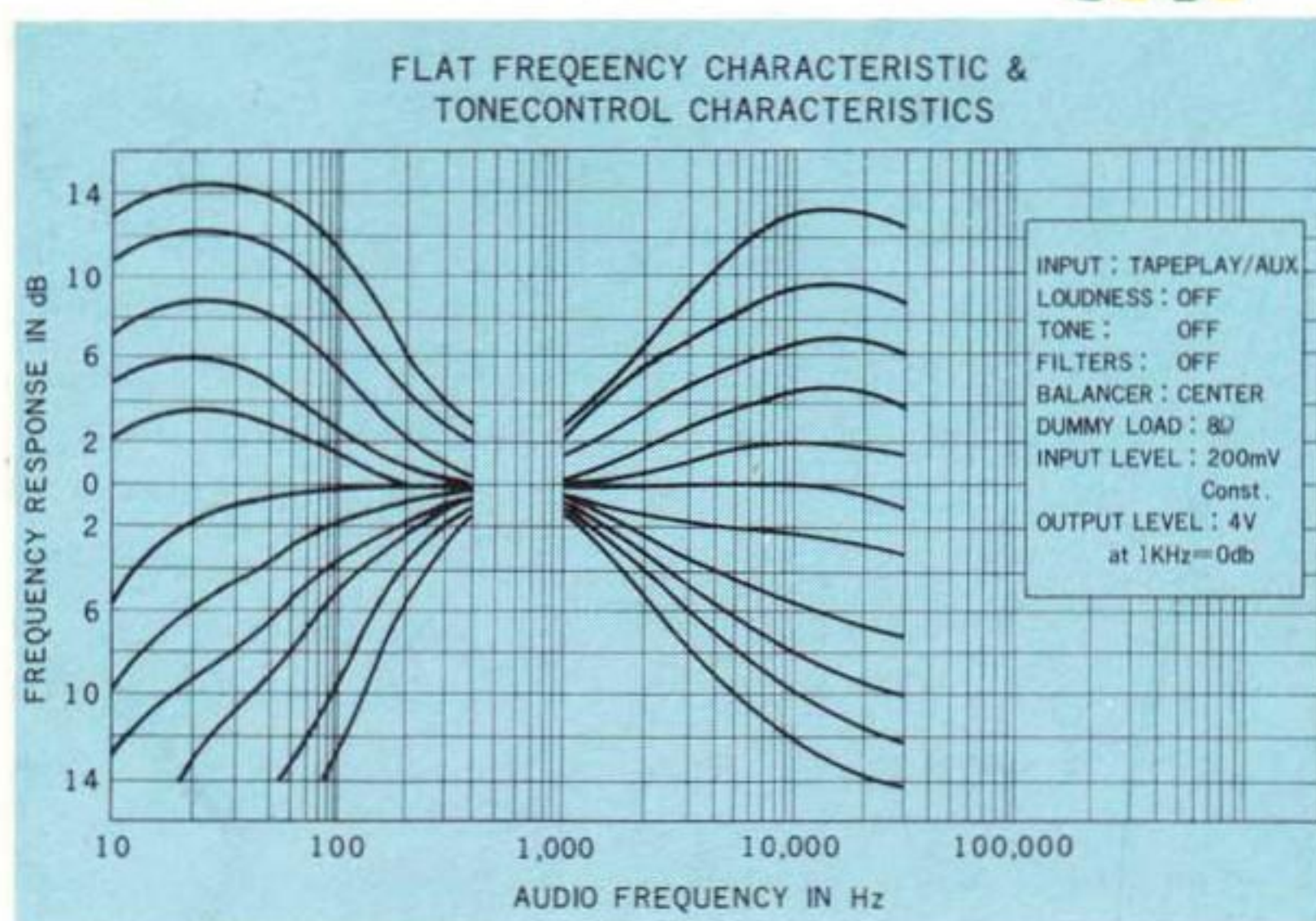
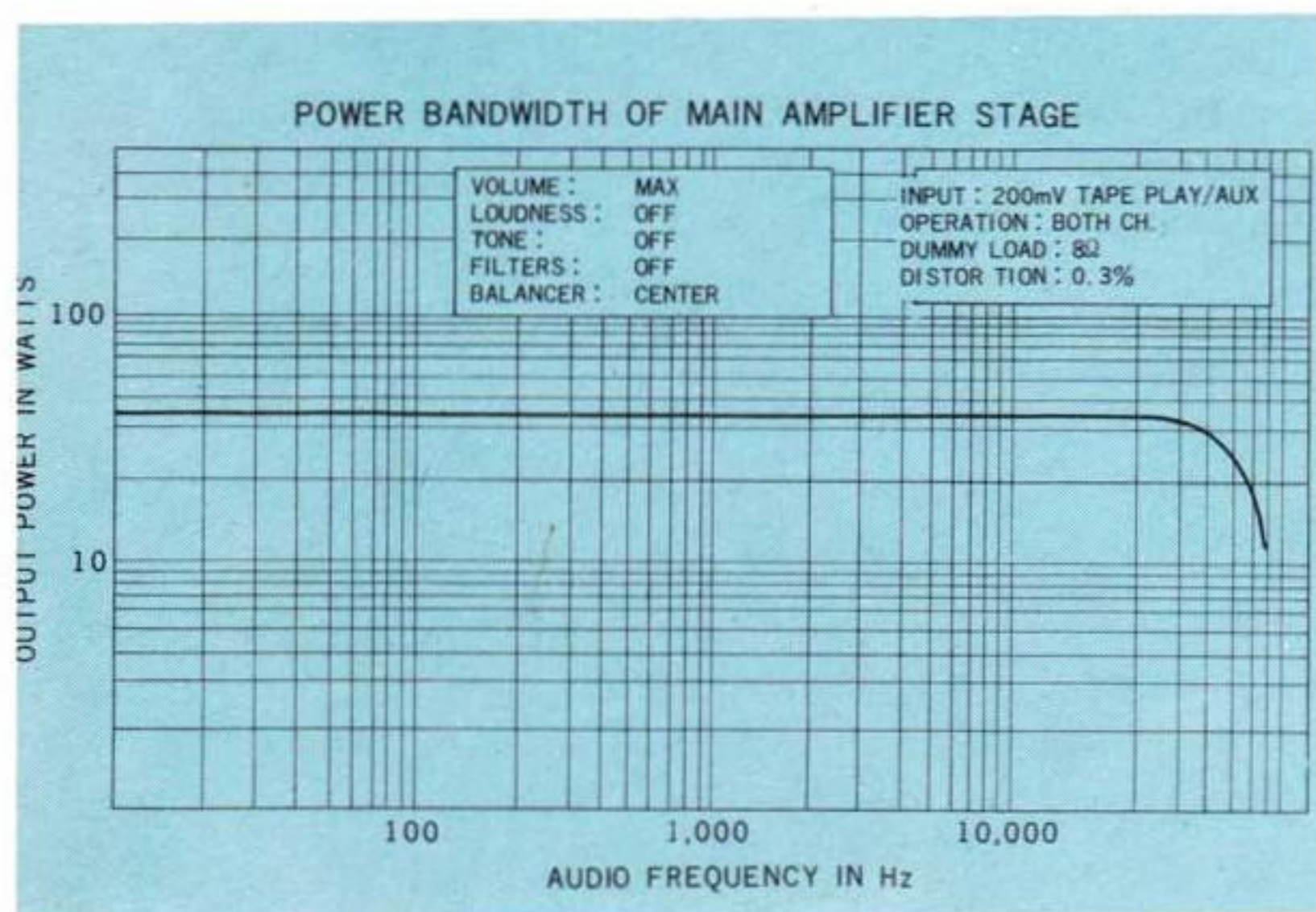
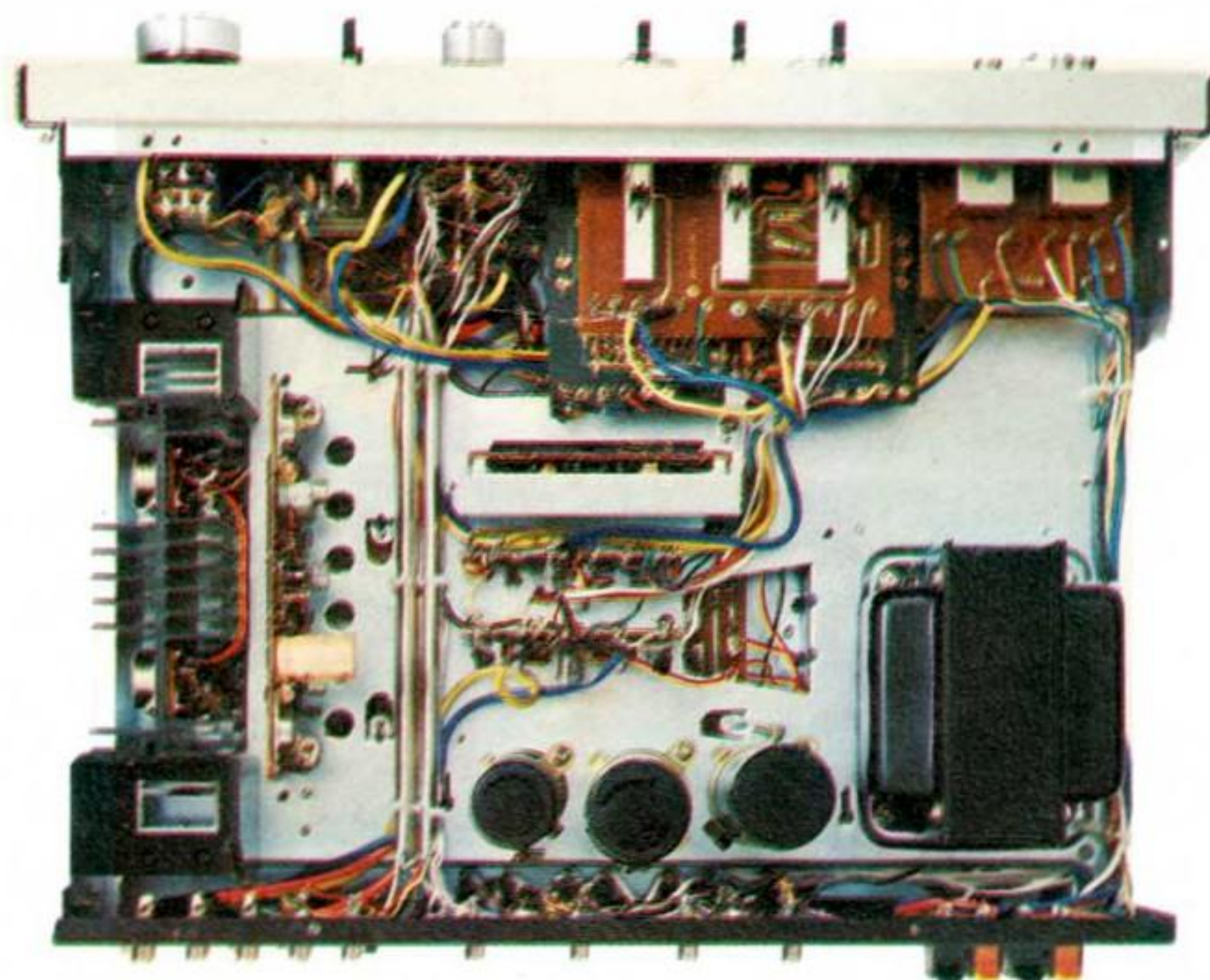
Two pair of speaker terminals, i.e. A and B may be changed by push-button correctly locked. With A and B pushed at the same time, simultaneous activation is allowed.

⑨ One Touch Type Speaker Terminals

Speaker terminals are of one touch connection type which allow easy and correct coupling, so that the system will eliminate any trouble on speaker connection.

⑩ Loudness Control

On a level of -30dB, low pass is 100Hz with +8dB and high pass in 10KHz with +3dB, both provided higher than the conventional, so that the control will supplement low and high pitched tones.



SPECIFICATIONS

both channel driven 40/40 watts into 8 ohms at any frequency
from 20 to 20,000 Hz

43/43 watts into 8 ohms at 1,000 Hz

57/57 watts into 4 ohms at 1,000 Hz

each channel driven 55/55 watts into 8 ohms at 1,000 Hz
70/70 watts into 4 ohms at 1,000 Hz

Dynamic Power Output

(IHF) 130 watts into 8 ohms at 1,000 Hz
220 watts into 4 ohms at 1,000 Hz

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, (for rated output, at 1,000 Hz)

PHONO 1 2.5 mV, 50 Kohms

PHONO 2 2.5 mV, 50 Kohms

MIC 3 mV, 50 Kohms

TUNER 200 mV, 100 Kohms

AUX 1 & 2 200 mV, 100 Kohms

TAPE PLAY A & B (Pin) 200 mV, 100 kohms

MAIN AMP. INPUT 1 V, 50 Kohms

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 ohms load 0.000012 milli watts

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

Table 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)

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 FLITER
LOUDNESS, MUTING, POWER

AC Outlets 1 switched & 3 unswitched

Power Consumption 235 watts at full power
15 watts at no signal

Power Requirement 50/60 Hz, 220-240V

Dimensions W17-1/8" 435mm, H6-1/32" 153mm,
D11-13/16" 300 mm

Weight 25.4 lbs (11.5 kg)

Any of the specifications given here may be changed or modified without notice.

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TRIO ELECTRONICS, INC.
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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 \rightarrow B), A PLAY.

SOURCE, B PLAY, DUBBING (B \rightarrow 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.