



Panasonic®

Before attempting to use the product, please read these instructions completely.

RAMSA

2-channel power amplifier

350W(RMS)+350W(RMS)/8 ohms,

WP-9440

Operating Instructions

FEATURES

- The WP-9440 is a 2-channel power amplifier providing a continuous outputs of 350W per channel (THD 0.05% or less with 8 ohm load, 20Hz to 20kHz).
- In bridge mono mode the WP-9440 provides a 700W output (THD 0.1% or less with 16 ohm load, 20 Hz to 20kHz).
- The amplifier front end is an electronically balanced circuit with wide bandwidth and excellent transient response. As a result, deterioration of signal quality and effects of induction noise are minimized.
- Each channel has an independent power supply to prevent operation of one channel from having any effect on the other.
- Three types of input connectors are provided XLR-type connectors (male, female) and 1/4" TRS phone jacks.
- Output level can be monitored by LED's.
- An auto DC offset control ensures that DC is never applied to the speakers.
- Remote connectors on each channel provide three functions:
 - 1) Remote VU meter outputs
 - 2) External access to a set of relay contacts
 - 3) Terminals for external muting of the amplifier
- The amplifier is protected by a VI-type energy limiter (voltage/current sensing protection circuit) that limits the power supply in the event of a short circuit and cuts off the output in the event of overheating or malfunction.
- The WP-9440 contains 20Hz and 40Hz switchable high-pass filters.

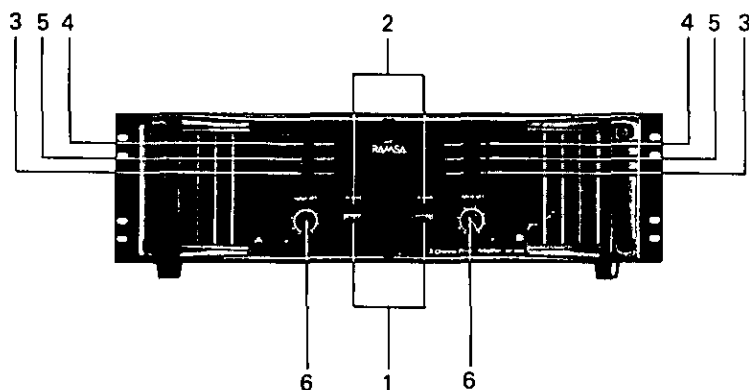
READ THE FOLLOWING INSTRUCTIONS BEFORE USE

- Do not stand the amplifier vertically on its back.
- The muting circuit operates for 6-8 seconds after turning on the power switch. This prevents potentially damaging click and pop sounds from being produced at power-up and allows the power supplies to stabilize.
- This amplifier draws 350W amps at rated output power. Be sure to use a power source capable of handling this current draw.
- Do not turn on the power of multiple power amplifiers at the same time. Never allow the ventilation holes on the top and bottom of the amplifier to get obstructed in any way.
- To clean the amplifier, wipe it with a dry cloth. If the case is very dirty, wipe it with a cloth dampened in water or mild soapy water, then wipe dry thoroughly. Never use solvents or chemical cloth; similarly, never spray insecticides as they may cause discoloration or peeling.
- If any trouble is found, disconnect the power cord and contact your dealer.
- The built-in air cooling fan operates at 2 speeds by detecting the temperature of the radiation plate. When cold, it rotates slowly, and when the temperature increases, it rotates fast.
- The WP-9440 has separate power switches for Ach and Bch. When using MONO or BRIDGE mode, push ON both power switches.

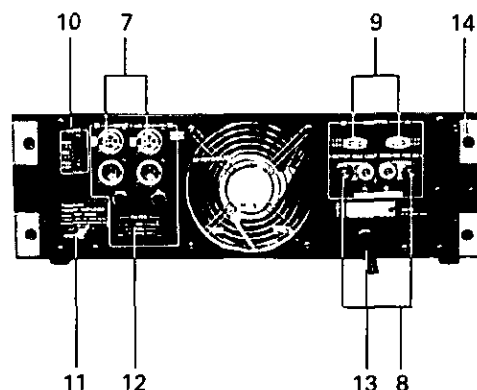
MAJOR OPERATING CONTROLS

■ WP-9440

● Front Panel:



● Rear Panel:



1. Power switch [POWER]

- Turns on power for each channel.

WHEN USING AMPLIFIER IN EITHER MONO OR BRIDGE MODE, BOTH POWER SWITCHES MUST BE TURNED ON.

CAUTION:

When using the WP-9440 in a system with other equipment such as a mixer, equalizer, crossover, etc., always turn the amplifier on last as switching noise from the other equipment can damage the speakers.

Similarly, at system power-down always turn the amplifier off first.

2. Power ON indicator lamp [POWER] (red)

Indicates that the amplifier is turned on.

3. Protect indicator lamp [PROTECT] (red)

This LED indicates that the muting circuit is activated and therefore sound cannot be produced at the output.

This occurs for 6 to 8 seconds when the amplifier is turned on, and also during overheating or any malfunction that may cause damage to the speakers.

4. Peak level indicator lamp [PEAK (red) **A** , **B**]

This light indicates that output signal is at clipping level. Should this light come on steadily, adjust accordingly either the output level of the equipment feeding the amplifier input or the amplifier input level control.

NOTE:

Due to the soft clipping characteristic of this amplifier, when occasional flashing of the peak lights occur, there will be no adverse effect on the sound. The result is an increase in apparent headroom.

5. Signal Indicator [SIGNAL (green) **A** , **B**]

Lights when the signal level reaches -20 dB below the rated output level.

6. Input level control (INPUT ATT **A** , **B**)

- When this control is at "0" the amplifier will reach its rated power output when the input signal is at a level of +4 dB.
- The calibrated markings on the front panel indicate the amount of attenuation applied to the input signal. This allows proper volume setting of the speakers when the input signal source is at its rated level.

7. Input connectors [INPUT **A** , **B**] +4 dB, 40 kΩ, balanced

- These input connectors are connected in parallel internally. This allows one signal to be "chained" to multiple power amplifiers.
- Do not connect more than one input signal to these connectors at the same time.

8. Output terminals [SPEAKER 8Ω MIN **A** , **B**]

■ WP-9440

- 8Ω 350W + 350W (RMS)
- Bridge 16Ω 700W (RMS)

- When using in bridge mode, the + side of the **A** CH output terminals becomes the hot side, and the + side of the **B** CH output terminal becomes the cold.

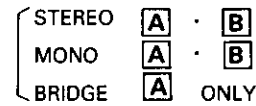
CAUTIONS:

- Do not connect the output channels in parallel.
- When using bridge connection, always use minimum 16Ω speakers. Never connect the speakers between + and - of **A** CH, or + and - of **B** CH.

9. Remote monitor output connector [MONITOR **A** , **B**] (6 pin)

This terminal is used for remote monitoring of amplifier status and remote muting (see page 5).

10. Mode selector, [MODE]



When using either MONO Mode or Bridge Mode the input signal must be applied to the **A** Channel only.

11. Ground terminal [GND]

An external amplifier ground terminal.

12. High pass filter

A selectable high-pass (low-cut) filter. Setting the filter appropriately protects speakers from DC and low-frequency transients and noise that can get into the system from a variety of sources (banging a microphone, accidentally unplugging the mixer, etc.). It also prevents wasting power on the amplification of inaudible low frequencies. The high pass filter is switchable between off, 20Hz and 40Hz.

13. AC Power cord

120V AC 60Hz-approx. 8.2 feet.

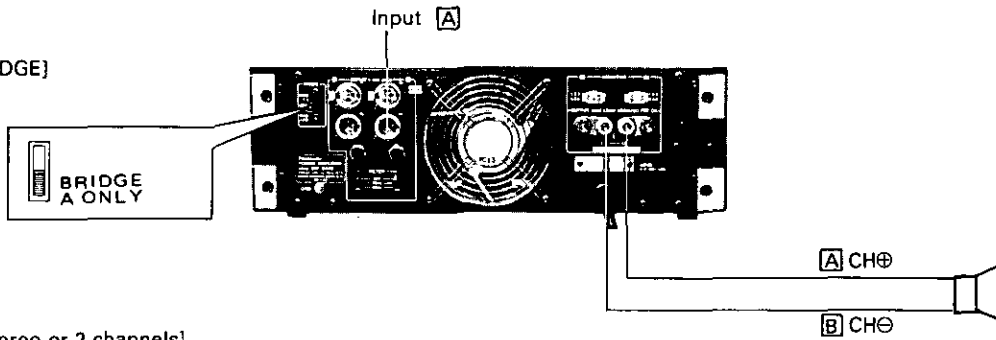
14. Rear Panel rubber feet.

These are rubber feet to protect the input and output terminals against damage. However, do not stand the power amplifier on them during performance.

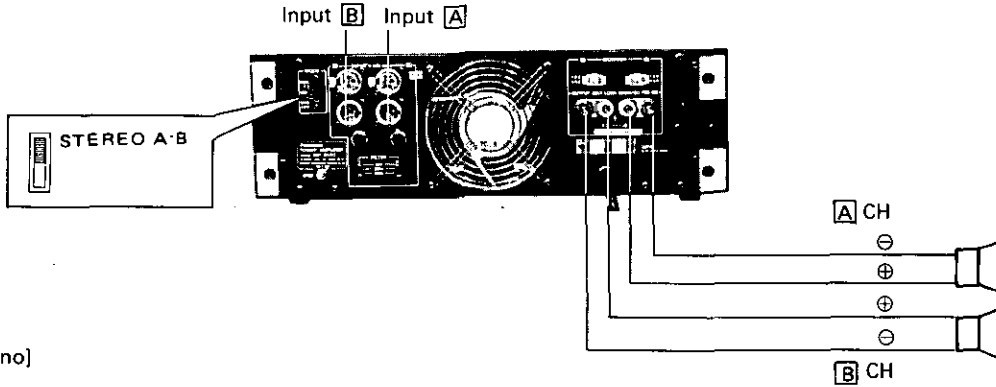
CONNECTIONS

■ WP-9440

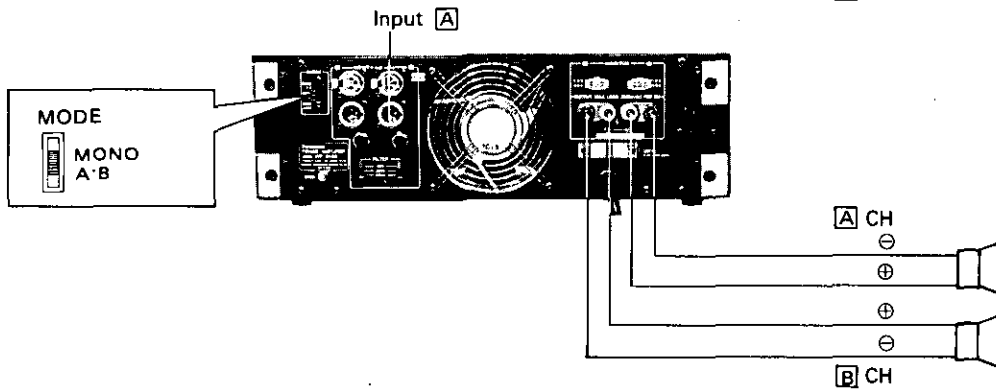
For 1 input: [BRIDGE]



For 2 inputs: [Stereo or 2 channels]



For 1 input: [Mono]



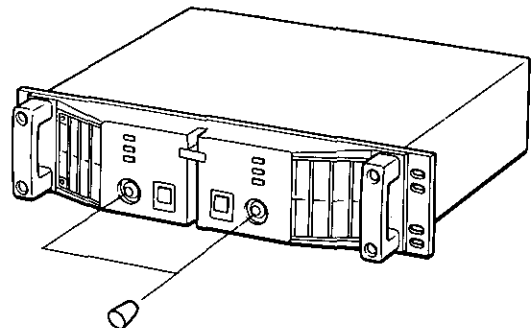
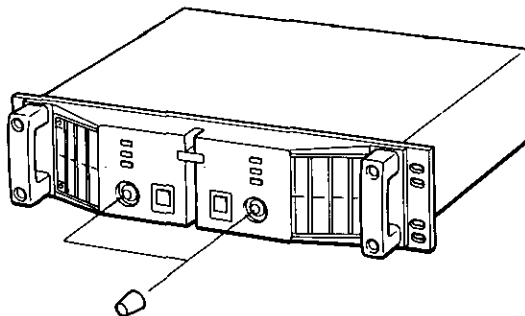
CAUTIONS:

- Connect the speakers after selecting either bridge, mono, or stereo.
- When using bridge connection, never connect the speakers between \oplus and \ominus or A CH or B CH.

■ Protective Cap Installation (OPTION)

After adjusting the input level controls, install the protective covers to protect the controls from tampering as follows.

1. Detach the knobs from the front panel.
2. Insert the protective caps (option) in the holes.

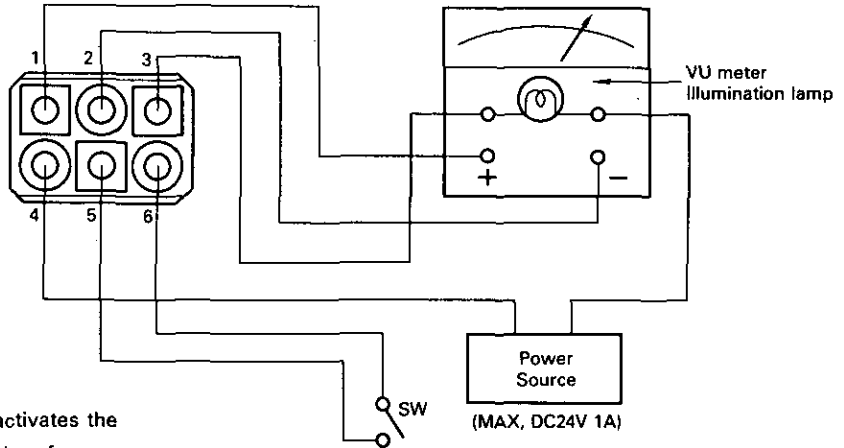


■ Connections of Remote Monitor Output Connectors:

(Example)

- 1 +14dB 300Ω
(optimum impedance 7.5kΩ)
- 2 Ground
- 3 Relay contact
- 4 (contact capacity up to DC24V 1A)
By wiring a lamp to the relay contacts as shown, the lamp will turn off if the amplifier goes into protect mode.
- 5 } Mute control
- 6 }

[Monitor output terminals A, B]



VU meter
(with built-in rectifier)

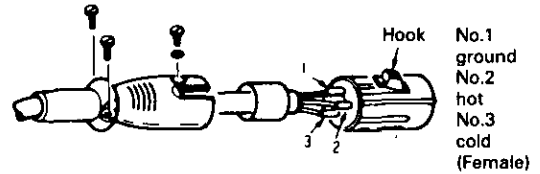
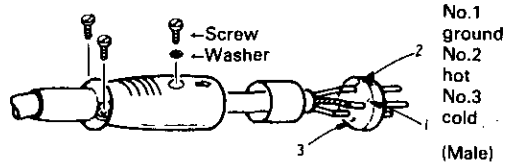
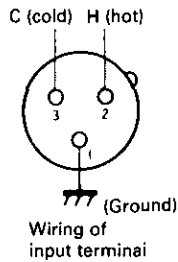
Note:

VU meter will not operate when muting circuit is active.

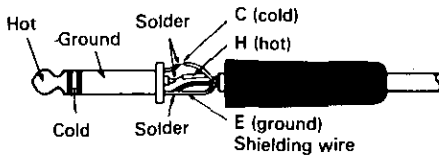
- Shorting together pins 5 and 6 of the connector activates the muting circuit. This opens the relay contacts and therefore no signal may be passed.

■ Connection of Plugs and Connectors:

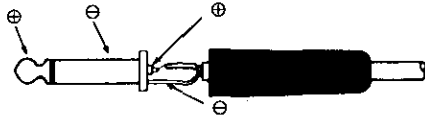
1. Input connector (3-pin XLR-type connectors, male and female)



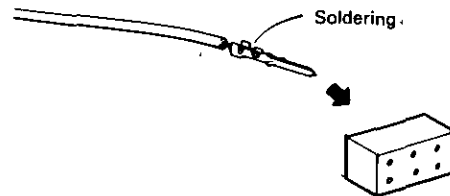
2. Tip-ring-sleeve phone plug



3. Tip-sleeve phone plug (Speaker output terminal)

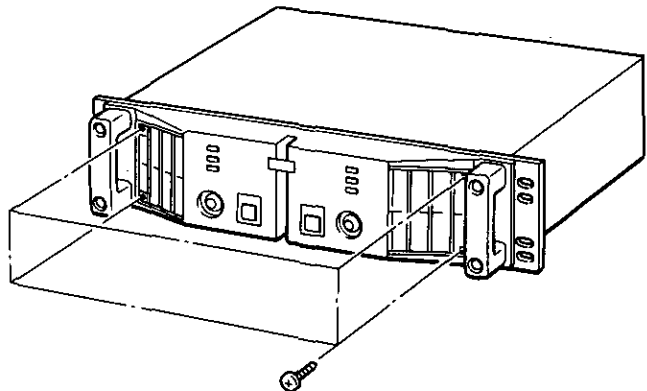


4. Nylon connector for monitor output (6-pin) (option)



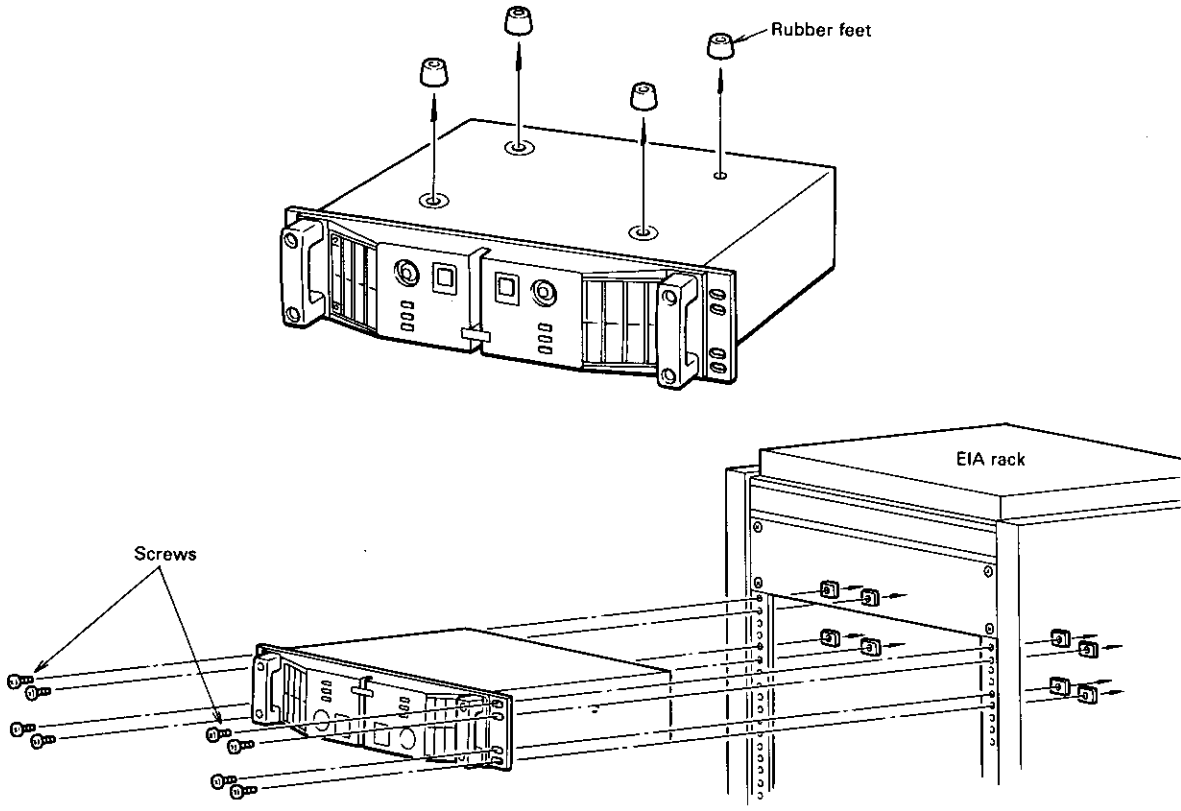
AIR FILTER CLEANING

1. Remove the 4 screws and remove the grills.
*The air filter can now be removed.
2. Wash the filter with water and dry thoroughly.
3. Reinstall the filter and grill in their original position and replace the screws.



RACK MOUNTING

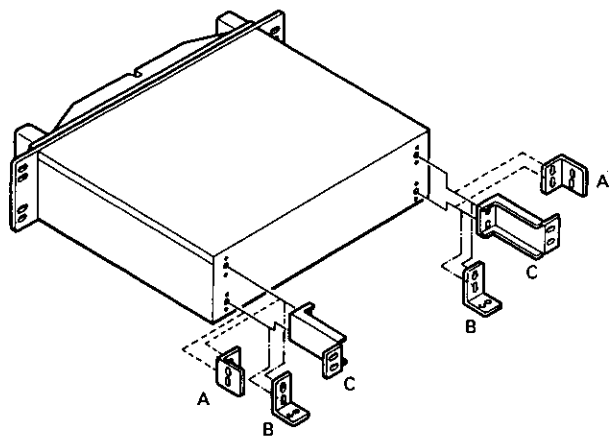
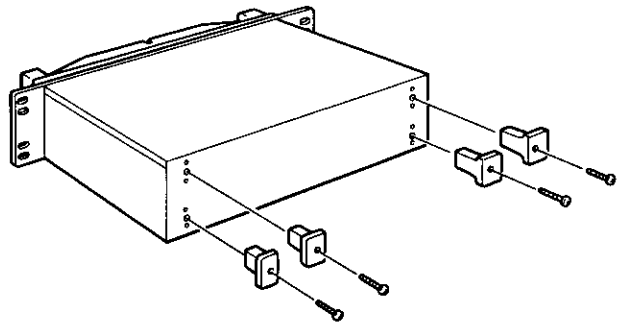
1. Remove the screws and detach the four rubber feet from the bottom.
2. Remove the rear panel rubber stays.
3. Mount the power amplifier to the rack with eight rack mounting screws (M5 × 12).



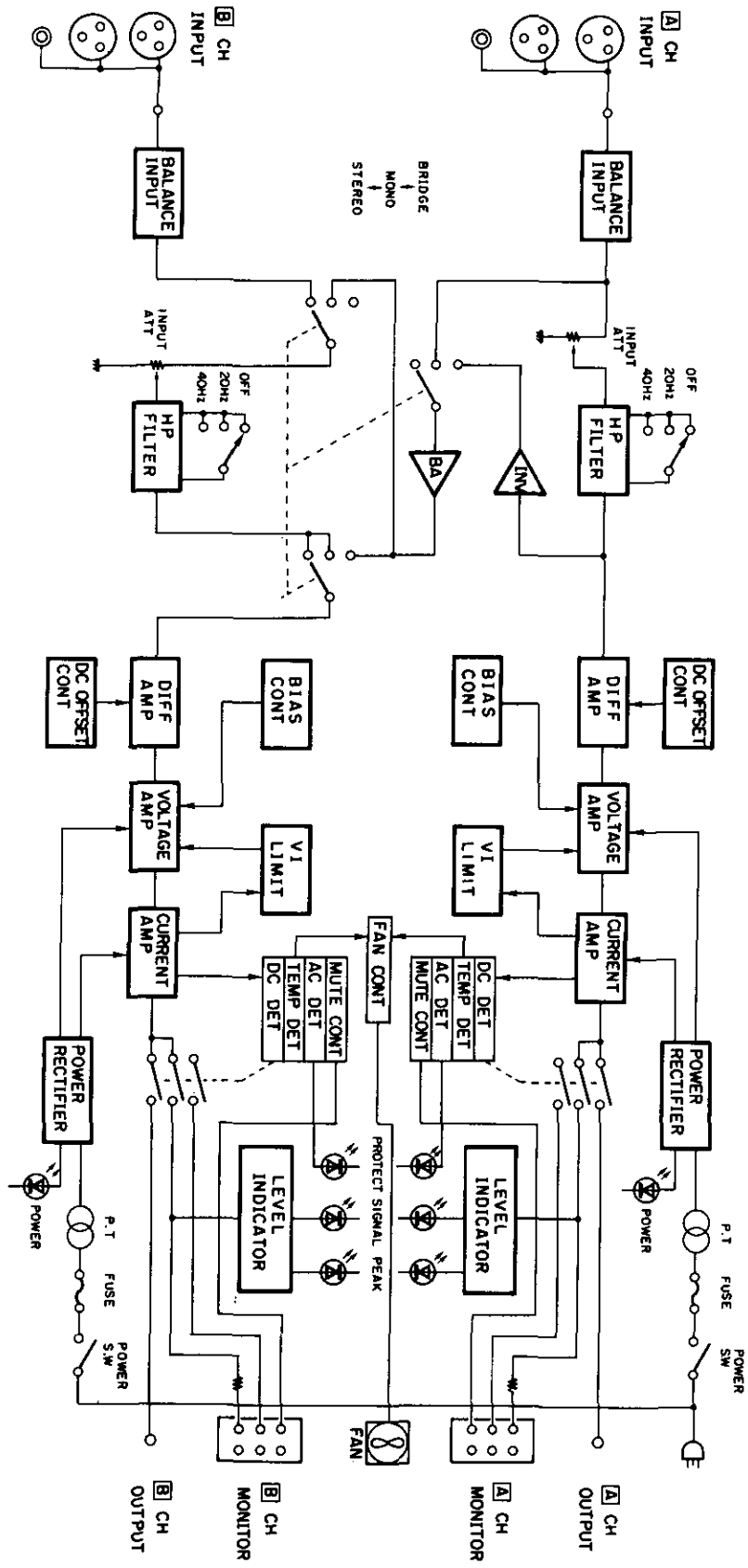
Remove the rear panel rubber stay.

Note:
 When transporting the amplifier while mounted in a rack, rear-fixing angles must be installed so that the rear of the amplifier will be secure during transportation. Use an angle with a thickness of at least 2 mm.

- Rear-fixing angle:**
- A ... Rear-fixing angle for mounting side of rack.
 - B ... Rear-fixing angle for mounting on bottom of rack.
 - C ... Rear-fixing angle for mounting on rear of rack.



BLOCK DIAGRAM



SPECIFICATIONS AND ACCESSORIES

● Specifications

Power supply:	120 V AC 60 Hz
Power consumption:	Approx. 1300W at the rated output of 350W + 350W 8Ω
Rated power output:	350W + 350W (8Ω Continuous output)
Bridge output:	700W (16Ω Continuous output)
Frequency response:	20 to 20 kHz ± 1 dB (at Rated Output)
Total harmonic distortion:	Less than 0.05% (8Ω, 350W + 350W, 20 to 20 kHz) Less than 0.1% (Bridge 16Ω, 700W, 20 to 20 kHz)
Crosstalk:	More than 60 dB (20 kHz)
Intermodulation distortion:	Less than 0.05% (8Ω, 350W, 60 Hz: 7 kHz = 4:1)
Damping factor:	More than 100 (8Ω, 1 kHz)
Signal-to-noise ratio:	More than 100 dB (IHF A WTD)
Input level:	+4 dB
Voltage gain:	32.5 dB
Input impedance:	40 kΩ (balanced)
Remote monitor output:	
VU meter output:	+14 dB 300Ω (7.5 kΩ optimum)
Relay terminals:	No-voltage make contact (contact capacity: DC 24V 1A)
Connectors:	Input: 3-pin XLR-type connector (male, and female), and 1/4" Tip-ring-sleeve phone jack (3-pin connection) Output: 5 way binding posts, and 1/4" tip-sleeve phone jack
High pass filter:	20 Hz, 40 Hz selectable.
Dimensions:	18-7/8" (W) × 5-7/8" (H) × 19-1/8" (D) [480 (W) × 149 (H) × 486 (D) mm] Height includes rubber feet and depth includes rear panel rubber stays.
Weight:	Approx. 73.9 lbs (33.5 kg) Cabinet: Dull black painting

● Accessories

Filter	2
Operating Instructions	1
Warranty Card	1
Service Center List	1

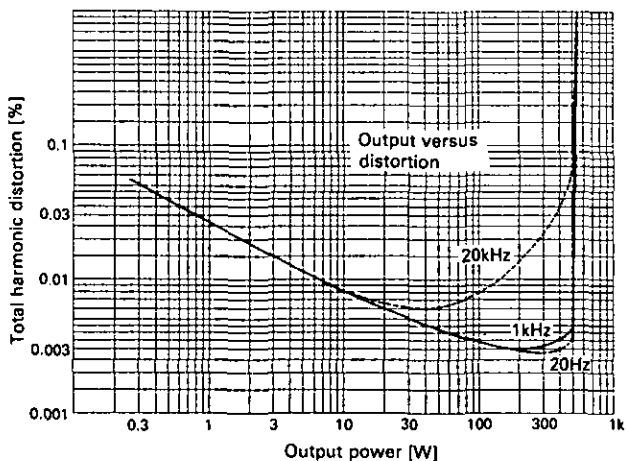
● Option (WP-Q02-Remote monitor output + connector)

Connector pin	12
Nylon connector	2
Protective cap (for input ATT control)	2

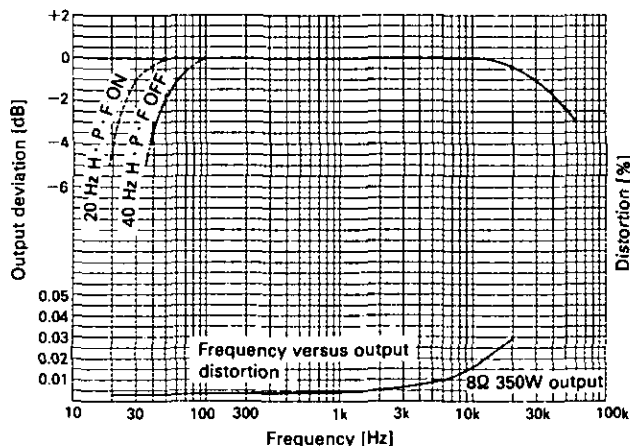
TYPICAL PERFORMANCE

■ WP-9440

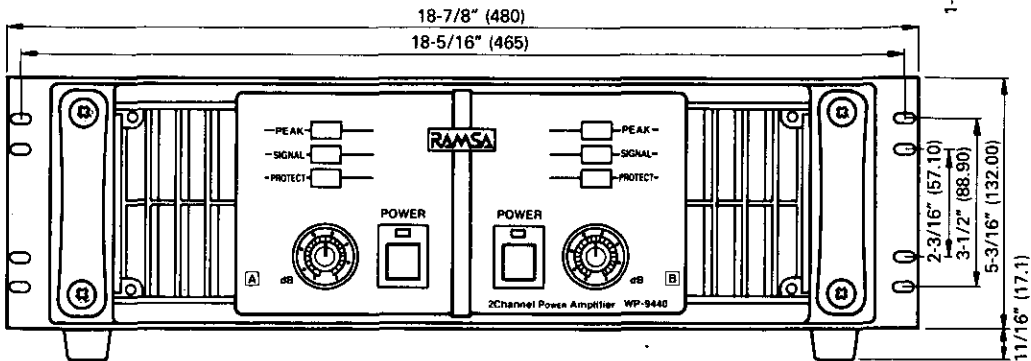
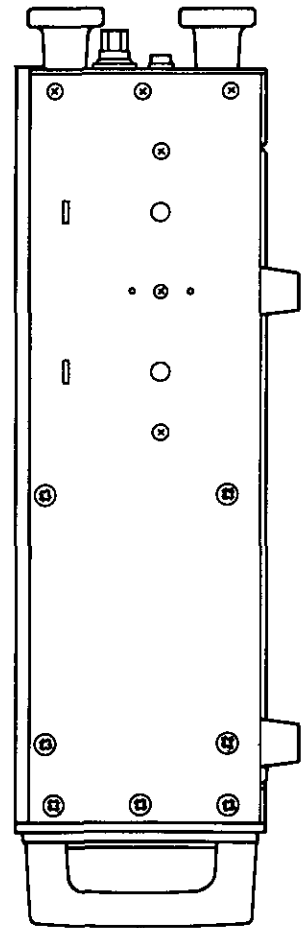
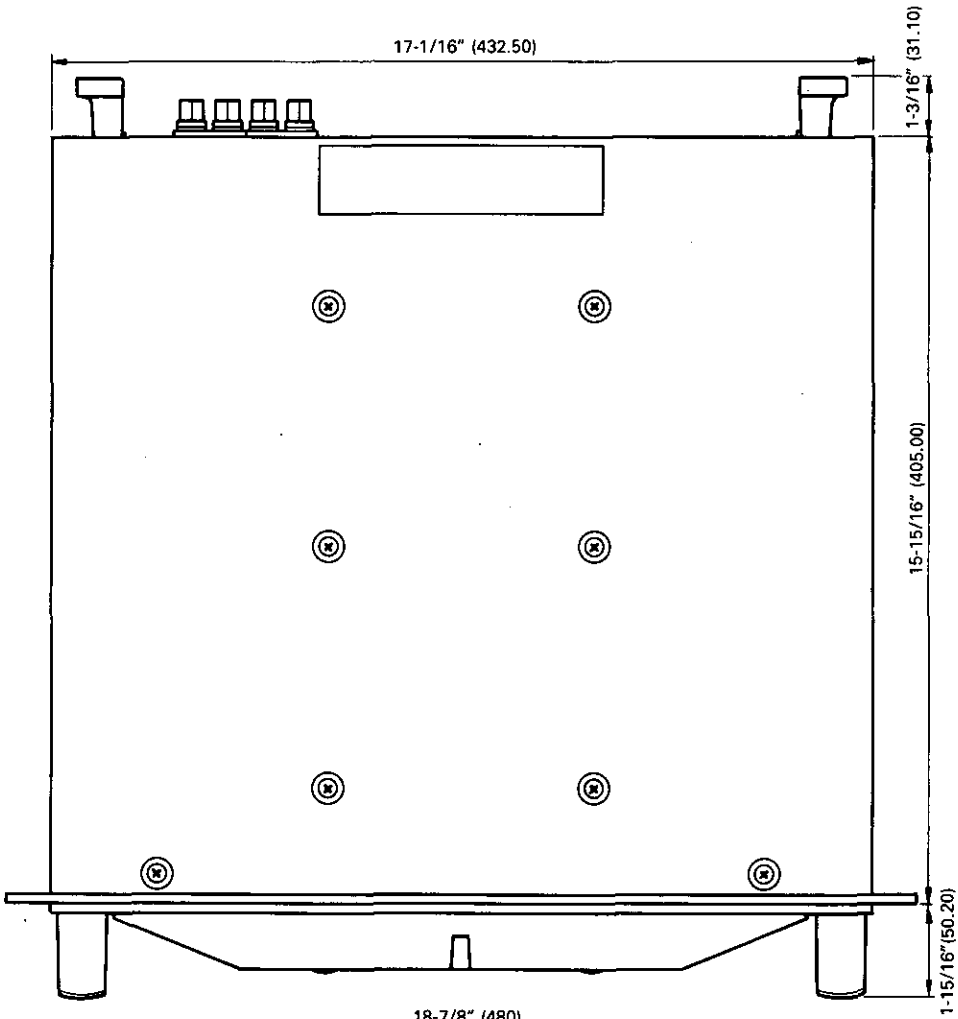
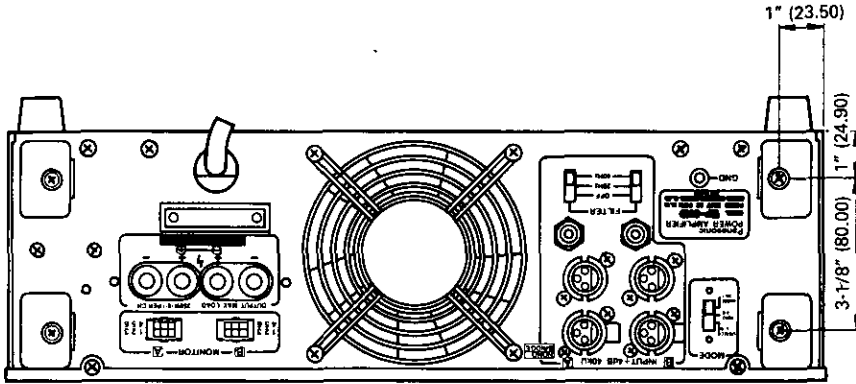
● Output versus distortion:



● Frequency versus output distortion:



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