

WR-S216

**Panasonic**

Before operating this set, please read these instructions completely

**RAMSA**

**STEREO MIXING  
CONSOLES**

**WR-S208**

**WR-S212**

**WR-S216**

**Operating  
Instructions**

## GENERAL

Whether you're mixing sound for a band, school auditorium, theater, A/V production studio, or night club, RAMSA audio mixing consoles can enhance the quality of your mix. That's because the new RAMSA audio mixing consoles offer features that are usually found on larger, more expensive consoles.

The new RAMSA audio mixing consoles are available in three different configurations: the eight-input WR-S208, twelve-input WR-S212 and sixteen-input WR-S216. But whatever size console your application demands, all three models offer a variety of features designed for optimum performance.

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# FEATURES

## Overall

- Each of the three types of stereo mixers have two stereo input channels, which accept phono inputs and tape/aux inputs, and are designed to be more compact than ever before despite the number of inputs provided.

	Mic	Phono	Tape/Aux
WR-S208	x8	x2	x2
WR-S212	x12	x2	x2
WR-S216	x16	x2	x2

The WR-S208 has the same number of inputs as a 12-input mixer.

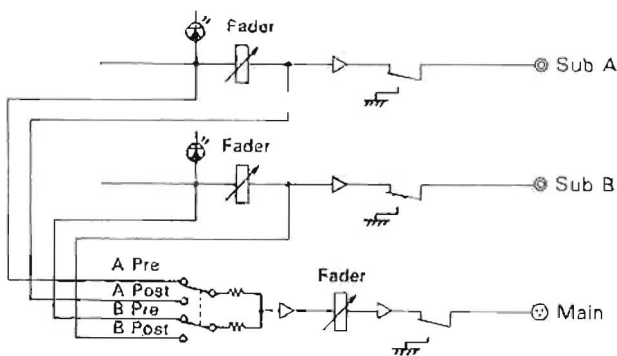
The WR-S212 has the same number of inputs as a 16-input mixer.

The WR-S216 has the same number of inputs as a 20-input mixer.

- Separate microphone and line inputs are provided, eliminating the need for repatching. Both microphone and line inputs are electronically balanced.
- The three send circuits can be used for effects and monitoring, further widening the range of applications.

Monitor output:	Pre-fader level
Effect output:	Post-fader level
Send output:	Pre-/post-fader level (switchable)

- Stereo output circuits (Sub A and B) and one mono output (Main) circuit are provided. The main out is the combination of Sub A and Sub B output signals. This signal can be derived pre- or post- sub output fader.



- A phantom power supply of +48 V is provided for condenser microphones.
- Aluminum diecast end panels insure mechanical stability.
- The WR-S208 can be mounted in a rack, using optional rack fittings.

- The semi-modular input structure combining four channels together eases repair and testing.

## Mono Input Section

- Exclusive microphone input connectors and line input jacks are provided. Microphone/line input selection is accomplished with mechanically-interlocked pushbutton switches.
- Three-band equalizers are provided. Turnover frequencies are 10 kHz, 400 Hz – 6.3 kHz (sweepable), and 100 Hz for High, Mid, and Low respectively.

High:	Shelving type $\pm 15$ dB
Mid:	Peaking type $\pm 15$ dB
Low:	Shelving type $\pm 15$ dB

- A peak indicator LED is provided for each input for monitoring input signal level.
- Each input is provided with a solo switch for individual monitoring.
- An insertion circuit is provided for connecting effects devices to individual input channels.
- Three send circuits are provided.

Monitor:	Pre-fader level
Effect:	Post-fader level
Send:	Pre-fader level/post fader level (selectable)

## Stereo Input Section

- A microphone input connector, phono input jacks, and tape/aux input jacks are provided so that patch work is no longer necessary.
- Phono and tape/aux input levels can be independently controlled.
- The microphone input has a separate on/off switch.
- A Mono/Stereo selector switch is included on Stereo input channels.
- Two-band stereo equalizers are provided with turnover frequencies of 10 kHz (High) and 100 Hz (Low).

High:	Shelving type $\pm 15$ dB
Low:	Shelving type $\pm 15$ dB

- Two send circuits are provided.
 

Monitor:	Pre-fader level
Effect:	Post-fader level
- A monaural solo switch is provided for input monitoring.
- Peak indicator LEDs are provided for monitoring input signal level.

- The fader is a 60 mm carbon type stereo fader which controls the left and right channels simultaneously.

## Output Section

- 12-point LED bar-graph meters (peak meters) display all outputs  
 WR-S208: Three 12-point LED bar-graph meters:
  - (1) Sub A/Monitor
  - (2) Sub B/Send
  - (3) Main/Effect and Solo
 WR-S212, WR-S216: Four 12-point LED bar-graph meters:
  - (1) Sub A/Effect
  - (2) Sub B/Send
  - (3) Monitor
  - (4) Main and Solo
- The solo indicator LED shows that the solo level is indicated on the 12-point LED bar-graph meter.
- Two effect return circuits are provided, each with a return input level control and a pan-pot control.

- The WR-S212 and WR-S216 employ 60 mm carbon faders for the monitor and send outputs.
- The WR-S212 and WR-S216 are provided with stereo output jacks for control room monitoring.
- Solo level can be adjusted with the solo control knob, and the solo indicator LED is located near the solo control knob to confirm solo monitoring.
- The output circuit contains a built-in summing peak indicator LED, which indicates distortion when multiple input signals are mixed.

## IMPORTANT NOTICE

- The mixer outputs are available in a few seconds after turning on the power switch. It takes approximately 5 minutes for the mixers performance to be fully stabilized. Click sounds might be heard before it is fully warmed up.

- When using the input selector switch while the phantom power is turned on, turn the output fader down to avoid any popping noise which might damage the speakers or other equipment connected to the mixer.

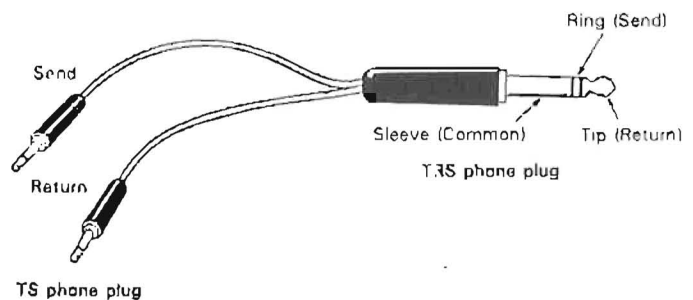
### CAUTION:

Do not connect unbalanced microphones to the mixer when using phantom power. Power supply and microphone may be damaged.

- The phantom power supply for mic inputs employs a slow start system to avoid click sounds from being produced. Allow 1 minute after pressing phantom power switch for voltage to stabilize.

- When connecting and disconnecting a microphone while the phantom power is turned on, click sounds may be heard. Be sure to turn on the phantom power after connecting the microphones to the mixer. When disconnecting microphones, wait at least 20 sec. after turning phantom power off.

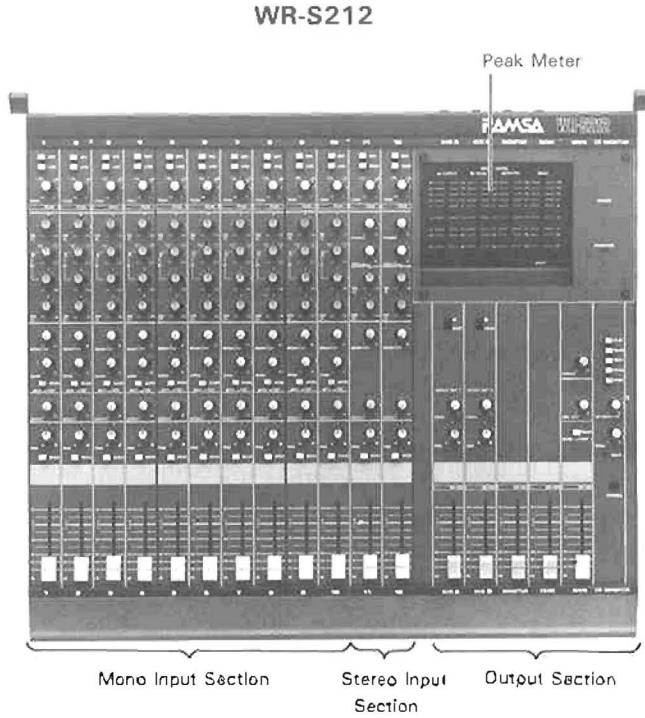
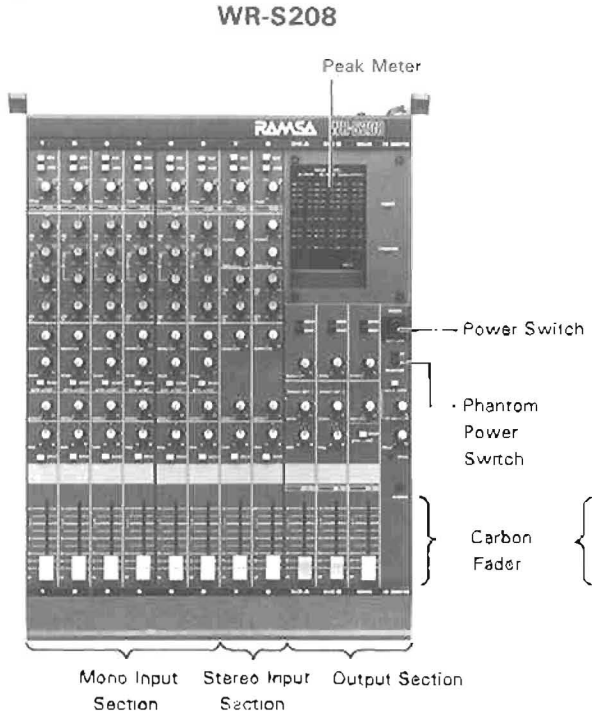
- For insertion at the input patch points, use a Y-shaped adaptor cord, wired as tip; return, ring; send and sleeve; common on a 1/4" TRS phone plug.



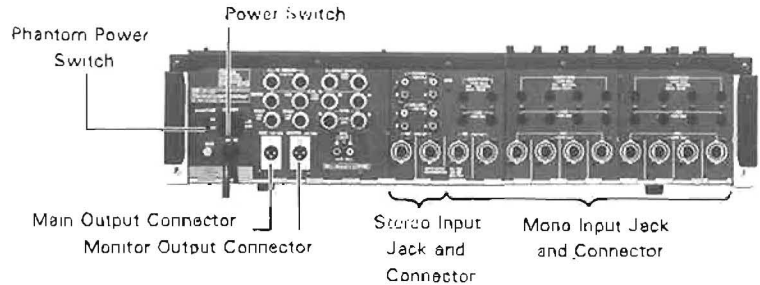
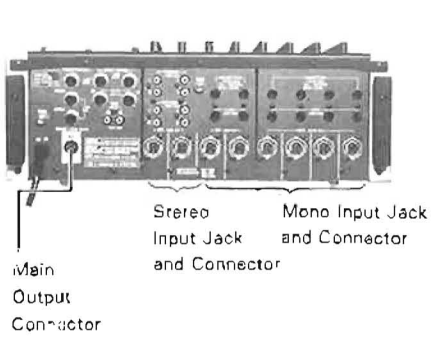
- All the meters are calibrated to 0 VU = +4 dBm. The solo meter indicates actual summing bus level, which is -10 dBm. To set signal to nominal level using the solo meter, adjust trim control for meter reading of -14 dB.

# MAJOR OPERATING FEATURES

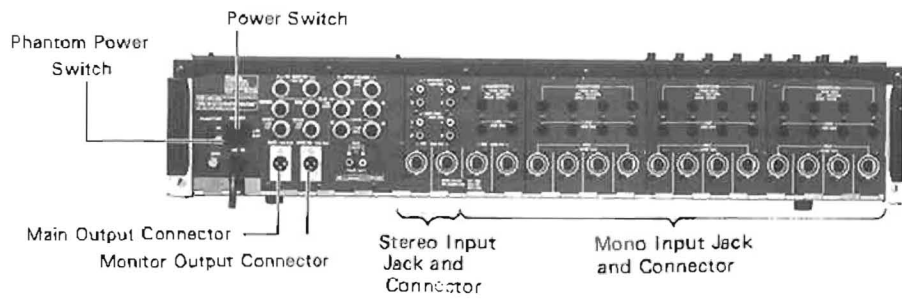
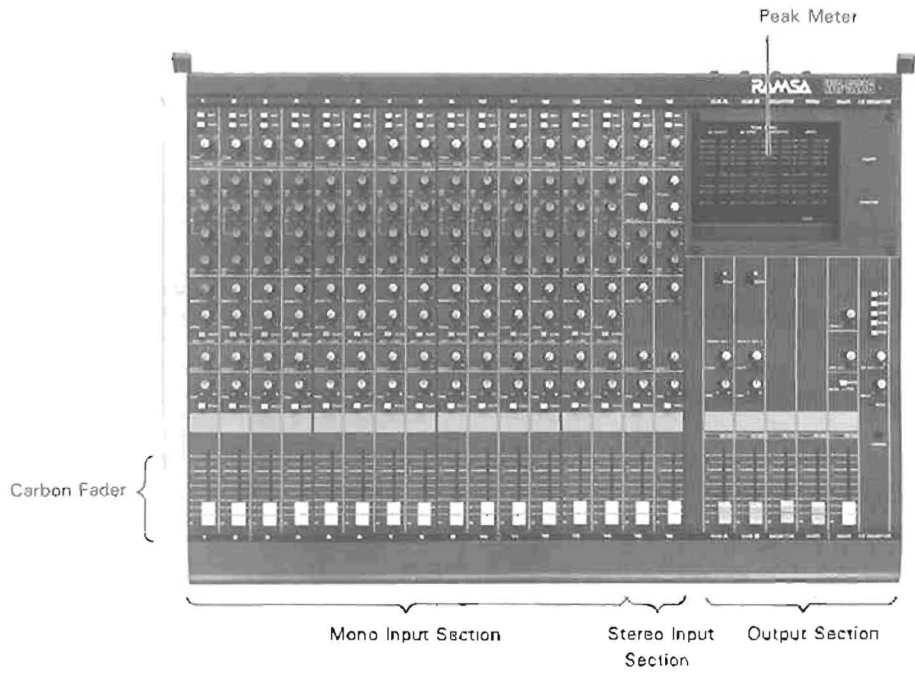
## • Top Panel



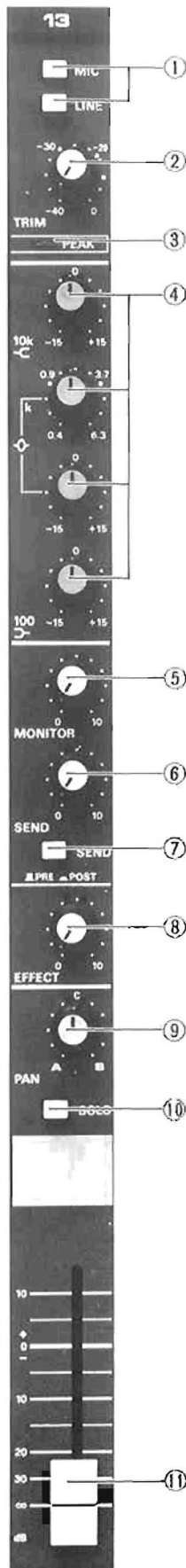
## • Rear Panel



# WR-S216



# MONO INPUT SECTION



## (1) Input Selector Switches (Mic/Line)

These selector switches are used for selecting either the microphone input or line input. Both microphone input and line input are electronically balanced.

If both the Mic and Line switches are simultaneously pressed, line input is selected.

## (2) Mic/Line Trim Control

A control to adjust the input level of a microphone or line input over a range of 40 dB:

	Trim at 0	Trim at -40
Mic	-60 dB	-20 dB
Line	-30 dB	+10 dB




## (3) Peak Level Indicator LED

When the level of an input signal reaches a value 6 dB lower than the maximum output level, the peak indicator LED will light.

The peak level is monitored at two points, at the preamplifier and after the equalizer. When this LED lights, the input signal will be distorted.

## (4) Equalizer

Three-band equalizer: The high and low bands are a shelving type with turnover frequencies of 10 kHz and 100 Hz respectively. The mid band is a peaking type with a variable frequency range of 400 Hz - 6.3 kHz.

High:	$\pm 5$ dB ( $\pm 12$ dB at 10 kHz)	Shelving type (  )
Mid:	$\pm 15$ dB (400 Hz to 6.3 kHz)	Peaking type (  )
Low:	$\pm 15$ dB ( $\pm 12$ dB at 100 Hz)	Shelving type (  )

## (5) Monitor Control

This control is used to adjust the level sent to the monitor bus line. Monitor signals are post-equalizer/pre-fader.

Used for foldback monitoring.

## (6) Send Control

This control is used to adjust the level to the Send output.

## (7) Send Selector Switch (Pre/Post)

This switch selects either pre-fader or post-fader signals for the Send output. Because Send output can be sent at either pre-fader or post fader level, it can be used as a monitor output or effect output in a variety of applications.

Pre: Used for foldback monitoring.

Post: Used for echo and other effects.

## (8) Effect Control

This is the level control to the effect output. Output signals are post-fader signals

## (9) Pan Control

This knob is used to divide the input signal between stereo outputs Sub A and Sub B.

## (10) Channel Solo Switch

A switch for monitoring individual input channels through the headphones. Pressing the solo switch on the WR-S217 or WR-S216 causes the control room monitor signal to be replaced by the solo signal.

## (11) Channel Fader

A 60 mm carbon fader to control output level of input channels. Fader should be at "0" for the rated output level.

# STEREO INPUT SECTION



**(1) Mic On/Off Switch**

This switch is used to turn the microphone input circuit on or off. The microphone input signal is a monaural signal divided equally between left and right of the stereo input channel.

**(2) Mono/Stereo Selector Switch**

This switch when pressed, combines the left and right inputs of the phono and tape/aux sections into a single monaural signal.

**(3) Trim Control**

This control is used exclusively for adjusting microphone input level. The control range is 40 dB.

Trim at 0    Trim at -40  
-60 dB    -20 dB

**(4) Peak Level Indicator LED**

This indicator is for microphone input level only. When the level of an input signal reaches a value 6 dB below the maximum output level, the peak indicator LED will light. When this LED lights, the microphone input signal may be distorted.



**(5) Phono Level Control**

This control is used for phono input level adjustment. It adjusts the left and right channel levels simultaneously.

**(6) Tape/Aux Level Control**

This control is used to adjust either tape input level or auxiliary input level. It adjusts the left and right channel levels simultaneously.

**(7) Equalizer**

High and low 2-band stereo equalizer. Both high and low are a shelving type.  
High:  $\pm 15$  dB ( $\pm 12$  dB at 10 kHz) (  )  
Low:  $\pm 15$  dB ( $\pm 15$  dB at 100 Hz) (  )

**(8) Monitor Control**

This control is used to adjust the level sent to the monitor bus line. Monitor signals are mixed monaural signals of Channels A and B at pre-fader level, used for foldback monitoring.

**(9) Effect Control**

This control is used to adjust the level sent to the effects bus line. Effect signals are mixed monaural signals of channels A and B at post-fader level, used for sending to effects devices.

**(10) Pan Control**

This control adjusts the balance of input signals between the stereo Sub A and Sub B outputs.

Inputs	Pan pot position	Output
Mic	Center	Sub A and Sub B
	Counterclockwise	Sub A
	Clockwise	Sub B
Phono	Center	Sub A - Phono L Sub B - Phono R
	Counterclockwise	Sub A - Phono L Sub B - No output
	Clockwise	Sub A - No output Sub B - Phono R
Tape/Aux	Center	Sub A - Tape/Aux L Sub B - Tape/Aux R
	Counterclockwise	Sub A - Tape/Aux L Sub B - No output
	Clockwise	Sub A - No output Sub B - Tape/Aux R

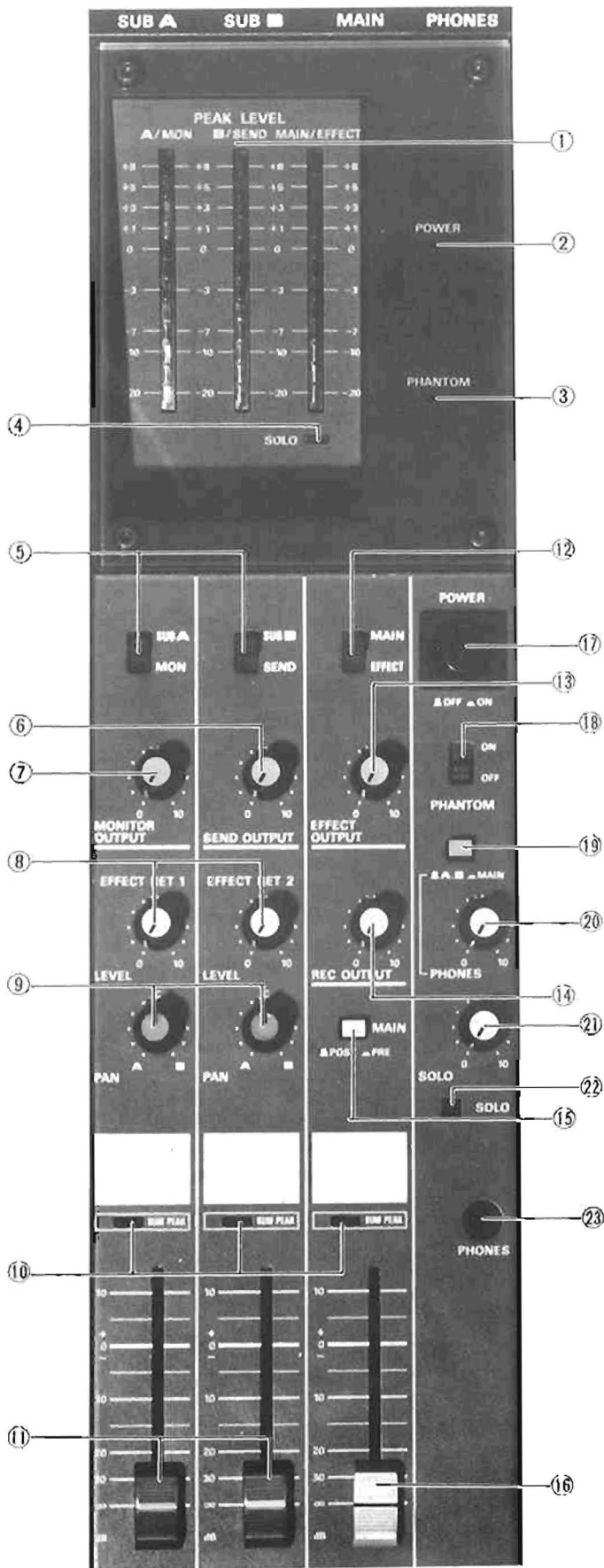
**(11) Channel Solo Switch**

A switch for monitoring individual input channels through the headphones. Pressing the solo switch on the WR-S212 or WR-S216 gives that channel's signal priority over any signal which might have been selected on the control room monitor section. Signals to be monitored are mixed monaural signals of Channels A and B.

**(12) Channel Fader**

A 60 mm carbon fader which simultaneously controls Channel A and Channel B. Used to adjust the level at which stereo input signals are sent.

# OUTPUT SECTION (WR-S208)



## (1) 12-point LED Bar-graph Meters (Peak Meter)

- A/Mon  
This meter displays Sub A output or monitor output level.
- B/Send  
This meter displays Sub B output level or Send output level.
- Main/Effect  
This meter displays Main output level or Effect output level and solo output level.  
When any input channel solo switch is turned on, this meter shows solo output level.

## (2) Power Indicator LED

When the power switch is turned on, this LED lights.

## (3) Phantom Power Indicator LED

When the phantom power switch is turned on, this LED lights.

The voltage slowly rises after turning the phantom power switch on, thus preventing microphone click noise.

## (4) Solo Indicator LED

This LED lights when any input solo switch is pressed. In this case the 12-point LED bar-graph meter for Main/Effect shows solo signal level.

## (5) Meter Selector Switches

These switches are used for selecting signals to be displayed on the 12-point LED bar-graph meters.

## (6) Send Output Control

Master level control for Send output.

## (7) Monitor Output Control

Master level control for Monitor output.

## (8) Effect Return Controls

These knobs are used to adjust input signal levels returning from effects devices.

## (9) Pan Controls

These controls are used to divide the incoming effect return signal between the stereo Sub A and Sub B outputs.



Input	Pan pot position	Output
Effect Return 1	Center	Sub A and Sub B
	Counterclockwise	Sub A
Effect Return 2	Clockwise	Sub B
	Center	Sub A and Sub B
Effect Return 2	Counterclockwise	Sub A
	Clockwise	Sub B

#### (10) Sum Peak Indicator LEDs

These LEDs light at +14 dB, which is 6 dB down from the summing point pre-fader clipping level (+20 dB). When this LED lights, output signals will be distorted. In this case, lower all input faders so that LED does not light.

#### (11) Sub A/Sub B Output Faders

60 mm carbon faders, used to adjust Sub A and Sub B output levels. Position 0 represents the rated output level.

#### (12) Meter Selector Switch

This switch selects either the Main or Effect signal to be displayed on its respective bar-graph meter. When any solo switch is on, the meter displays solo level regardless of the switch position.

#### (13) Effect Output Control

Master level control for Effect output.

#### (14) Record Output Control

Record output level adjusting knob. Channel A and Channel B are simultaneously adjusted. Sub A and Sub B pre-fader level signals feed this control.

#### (15) Main Output Pre/Post Selector Switch

This switch sets the Main output to the pre-fader level or post-fader level of Sub A and Sub B. Pressing the switch down sets Main output to pre-fader level, and pressing it again to the up position returns Main output to post-fader level.

Pre: Main output signal is derived pre-Sub A/Sub B faders. This mode allows separate stereo and mono mixes simultaneously.

Post: Main output signal is derived post-Sub A/Sub B faders. This is useful for sub grouping of inputs.

#### Note:

In "Post" position Sub A and Sub B faders must be raised for output signal to be present at Main output.

#### (16) Main Output Fader

A 60 mm carbon fader for adjusting Main output level. Position 0 represents the rated output level. The Main output signal is a summed monaural signal from Sub A and Sub B.

#### (17) Power Switch

When this switch is pressed, mixer power is turned on and the power indicator LED lights.

A muting circuit is provided for protecting the devices connected to the output from click noise. The unit is ready for operation about 5 or 6 seconds after switching power on.

#### (18) Phantom Power Switch

This power switch is for condenser microphones, and turns DC 48 V on and off.

Be sure to use a balanced type condenser microphone because DC 48 V is applied to pin 2 (hot) and pin 3 (cold) of the microphone connector and DC 0 V to pin 1 (Common).

Turn all output faders to the minimum position to prevent click noise before turning the phantom power switch on or off.

#### Note:

The power switch (17) and phantom power switch (18) on the WR-S208 are located on the operation panel because the WR-S208 may be mounted in a rack.

When connecting a microphone to the microphone connector, make sure that phantom power is off.

#### (19) Headphone Selector Switch

This switch is used for selecting signals to be monitored with the headphones.

When this switch is pushed down, Main output can be monitored monaurally. When the switch is pushed again to the up position, Sub A and Sub B outputs can be monitored in stereo.

#### (20) Phones Control

This knob is used for adjusting headphone monitor level. Sub A and Sub B signals are simultaneously adjusted.

#### (21) Solo Control

This control adjusts the level of the solo signal present at the headphone output.

#### (22) Solo Indicator LED

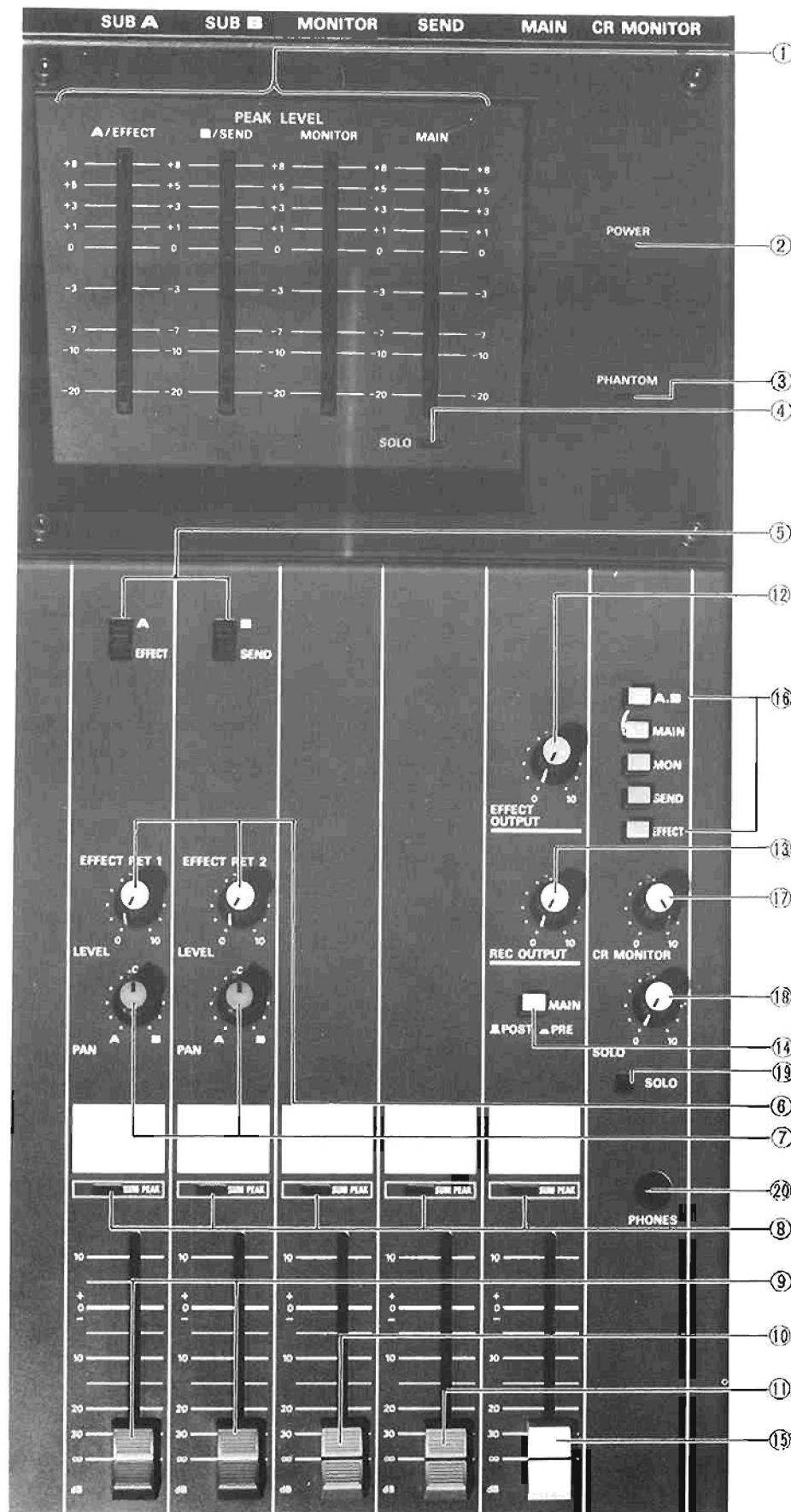
This LED lights if any one of the input solo switches is on.

#### (23) Phones

1/4" TRS phone jack for headphones.

Maximum output is 1.2 W + 1.2 W/8 ohms.

# OUTPUT SECTION (WR-S212/S216)



- (1) Four 12-Point LED Bar-graph Meters (Peak Level Meters)
- A/Effect: This meter displays Sub A output level or Effect output level.
  - B/Send: This meter displays Sub B output level or Send output level.
  - Monitor: This meter displays Monitor output level.
  - Main: This meter displays Main output level or solo level.

- (2) Power Indicator LED  
This LED lights when the power switch is turned on.

- (3) Phantom Power Indicator LED  
This LED lights when the phantom power switch is turned on. The voltage slowly rises after the phantom power switch is turned on, thus preventing microphone click noise.

- (4) Solo Indicator LED  
This LED lights when any input solo switch is turned on. The Main 12-point LED bar-graph meter displays solo signal level when any solo switch is depressed.

#### (5) Meter Selector Switches

These switches are used for selecting signals to be displayed by the 12-point LED bar-graph meters (A/Effect and B/Send).

Meter	Switch	Indication
A/Effect	A Effect	Sub A output Effect output
B/Send	B Send	Sub B output Send output

#### (6) Effect Return Controls

These controls are used for adjusting the level of input signals returning from the various effects devices.

#### (7) Pan Controls

These controls are used to divide the incoming effect return signal between the stereo Sub A and Sub B outputs

Input	Pan pot position	Output
Effect Return 1	Center	Sub A and Sub B
	Counterclockwise	Sub A
	Clockwise	Sub B
	Effect Return 2	Center
Counterclockwise		Sub A
	Clockwise	Sub B

#### (8) Sum Peak Indicator LEDs

These LEDs light at +14 dB, which is 6 dB down from the summing point (pre-fader level) clipping level (+20 dB). If this LED lights, output signals will be distorted. Lower each input fader so that the LED will not light.

#### (9) Sub A and Sub B Output Faders

60 mm carbon faders for adjusting the master output levels of Sub A and Sub B. Position 0 represents the rated output level.

#### (10) Monitor Output Fader

A 60 mm carbon fader for adjusting master monitor output level. Position 0 represents the rated output level.

#### (11) Send Output Fader

A 60 mm carbon fader for adjusting master Send output level. Position 0 represents the rated output level.

#### (12) Effect Output Control

This control is used for adjusting the master Effect output level. Position 10 (fully clockwise) represents the rated output level.

#### (13) Record Output Level

This control is used for adjusting record output level. Channel A and Channel B are simultaneously adjusted. Sub A and Sub B pre-fader level signals feed this control.

#### (14) Main Output Pre/Post Selector Switch

This switch is used for switching Main output signals to Sub A and Sub B pre-fader signals or post-fader signals.

Depressing the switch to the down position selects pre-fader level, and pressing it again to the up position selects post-fader level.

Pre: Signals before the Sub A and Sub B fader are sent to the Main output.

Post: Signals after the Sub A and Sub B faders are sent to the Main output.

#### Note:

In "Post" position Sub A and Sub B faders must be raised for signal to be present at Main output.

#### (15) Main Output Fader

A 60 mm carbon fader for Main output level adjustment.

Position 0 represents the rated output level.

Main output signal is a monaural signal summed from Sub A and Sub B signals.

#### (16) Control Room Monitor Selector Switch

This switch is used for selecting control room monitor output and headphone signals.

Signals that can be selected are: Sub A/B output, Main output, monitor output, Send output, and Effect output.

If the channel solo switch is pressed, solo signals are selected regardless of switch position.

#### (17) Control Room Monitor/Phones Control

This control is used for control room monitor output level adjustment.

Headphone monitor level is also adjusted.

#### (18) Solo Control

This control adjusts the level of the solo signal present at the control room and headphone outputs.

#### (19) Solo Indicator LED

This LED lights if any one of the input channel solo switches is on.

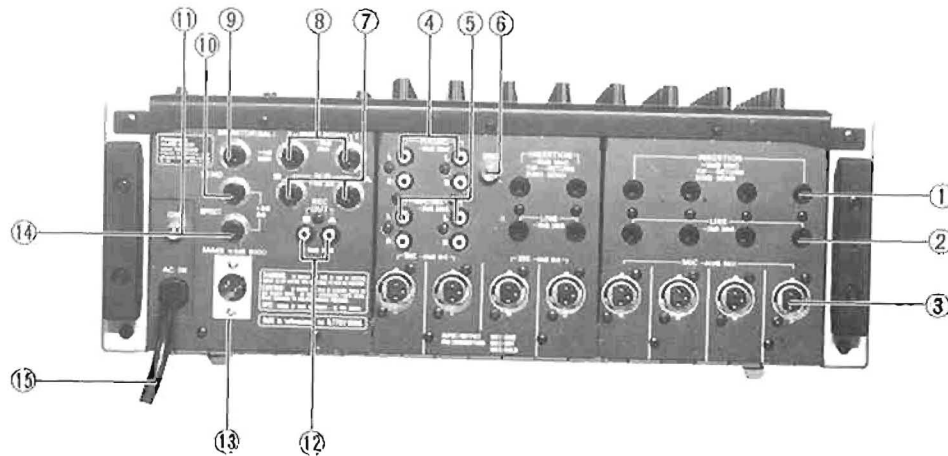
#### (20) Phones

1/4" TRS phone jack for headphones.

Maximum output is 1.2 W + 1.2 W/8 ohms.

## REAR PANEL

### • WR-S208



#### (1) Insertion Jacks

1/4" TRS phone jacks, -10 dB, 10 kohms, unbalanced

A post-equalizer and pre-fader patch-point

Tip: Return, Ring: Send, Sleeve: Common

Signal processing devices can be connected to each input.

The number of the Insertion Jacks are:

6 (WR-S208), 10 (WR-S212), 14 (WR-S216)

#### (2) Line Input Jacks

1/4" TRS phone jacks, -30 dB to +10 dB, 20 kohms, electronic balanced

Tip: Hot, Ring: Cold, Sleeve: Common

The number of the Line Input Jacks are:

6 (WR-S208), 10 (WR-S212), 14 (WR-S216)

#### (3) Mic Input Connectors

3-pin XL-type connectors, -60 dB to -20 dB, 5 kohms, electronic balanced

Input connector exclusively for connecting a microphone

Pin No.1: Common, Pin No.2: Hot, Pin No.3: Cold

The number of the Mic Input Connectors are:

8 (WR-S208), 12 (WR-S212), 16 (WR-S216)

#### (4) Phono Input Jacks

RCA pin jacks, -56 dB, 50 kohms, unbalanced

To be connected with the output of a turntable.

Two turntables may be connected.

#### (5) Tape/Aux Input Jacks

RCA pin jacks, -20 dB, 20 kohms, unbalanced

Connect a tape recorder or auxiliary line-level input device to this jack.

#### (6) GND Terminal

GND terminal for turntables

#### (7) Sub A/Sub B Output Jacks

1/4" TS phone jacks, +4 dB, 3 kohms, unbalanced

Output jacks for Sub A and Sub B signals.

#### (8) Effect Return 1, Effect Return 2 Input Jacks

1/4" TS phone jacks, -20 dB, 20 kohms, unbalanced, for connecting the outputs of effects devices.

#### (9) Monitor Output Jack (WR-S208) or Connector (WR-S212/WR-S216)

WR-S208: 1/4" TRS phone jack, +4 dB, 600 ohms, balanced

WR-S212/WR-S216: 3-pin XL type connector, +4 dB, 600 ohms, balanced

Output jack for pre-fader monitor signals.

#### (10) Send Output Jack

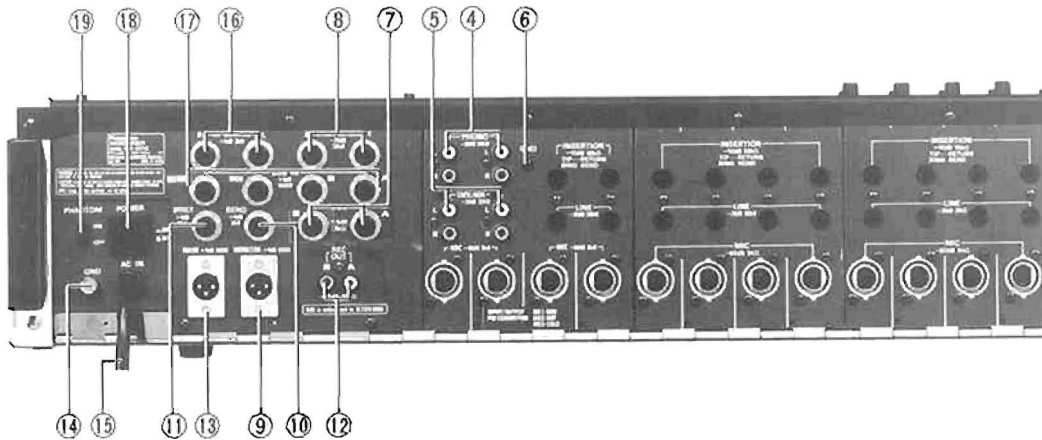
WR-S208: 1/4" TS phone jack, +4 dB, 3 kohms, unbalanced

WR-S212/WR-S216: 1/4" TRS phone jack, +4 dB, 600 ohms, balanced

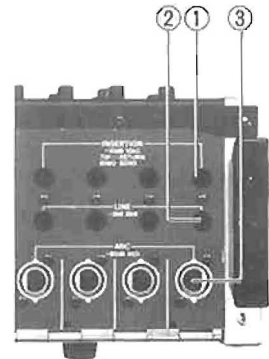
Output jack for pre-fader level or post-fader level signals on the monaural input channels selected by the Send selector switch.

When pre-fader level is selected, the same signals as monitor output signals are sent. When post-fader level is selected, the same signals as Effect output signals are sent.

•WR-S212



•WR-S216



**(11) Effect Output Jack**

1/4" TS phone jack, +4 dB, 3kohms, unbalanced  
Connect the output of this jack to the input of effects devices.

**(12) Rec Output Jacks**

RCA pin jacks, -10 dB, 10 kohms, unbalanced  
Sub A and Sub B pre-fader level signals for sending to tape recorder.

**(13) Main Output Connector**

3-pin XL type connector, +4 dB, 600 ohms, balanced  
Output jack for mono output. Main output is summed from Sub A and Sub B signals.

**(14) GND terminal**

**(15) AC Power Cord**

**(16) Control Room Monitor Output Jacks**

1/4" TS phone jacks, +4 dB, 3 kohms, unbalanced  
Jack for signals to be monitored in the control room.

**(17) Sub Input Jacks**

1/4" TS phone jacks, +4 dB, 100 kohms, unbalanced  
The jacks for connecting the output of the second mixing console  
Sub Input A: Mixed with Sub A pre-fader signals  
Sub Input B: Mixed with Sub B pre-fader signals  
Sub Input Monitor: Mixed with monitor pre-fader signals  
Sub Input Send: Mixed with Send pre-fader signals

**(18) Power Switch**

Power is switched on when this switch is pressed. The power indicator LED will light.  
The muting circuit operates to protect the device connected to the output from damage by click noise.  
The mixer is ready for use about 5 or 6 seconds after switching power on.

**(19) Phantom Power Switch**

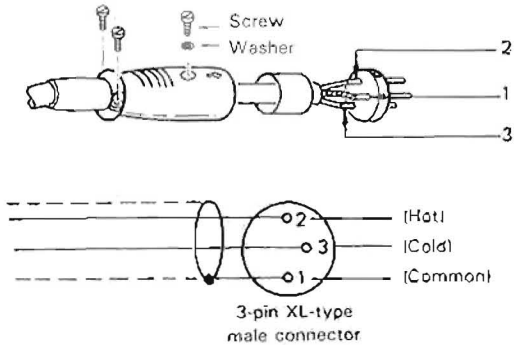
The power switch for condenser microphones to switch DC 48 V on and off.  
Be sure to use a balanced type condenser microphone because DC +48 V is applied to pin 2 (hot) and pin 3 (cold) of the microphone connector, and DC 0 V to pin 1 (GND). (Common).  
Before turning this switch on or off, be sure to shift each output fader to the minimum position to prevent click noise.

# CABLE CONNECTIONS TO IN/OUT CONNECTOR

- XL-type connectors

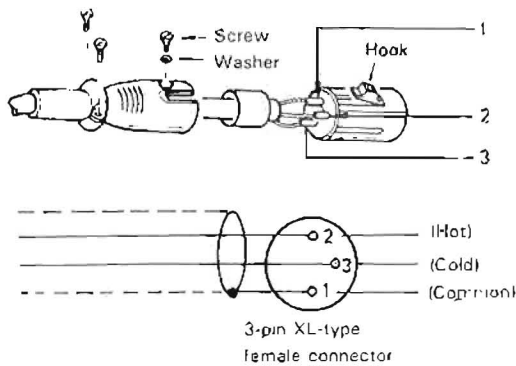
a. Balanced Connection (Input)

Connect 2-conductor shielded cable as shown below.



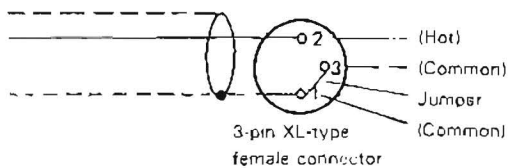
b. Balanced Connection (Output)

Connect 2-conductor shielded cable as shown below.



c. Unbalanced Connection

When connecting unbalanced equipment to the mixer, connect follows: Pin 1 – Common, Pin 2 – Hot, Pin 3 – Common

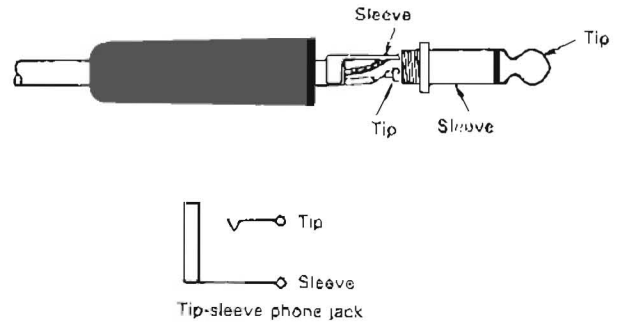


**CAUTION:**

Do not connect unbalanced microphones to the mixer when using phantom power. Power supply and microphone may be damaged.

- 1/4" Tip-sleeve phone plug (Input and Output)

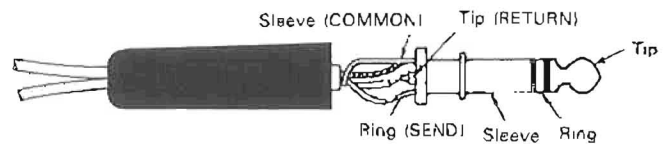
Connect single-conductor shielded cable as shown below.



- 1/4" Tip-ring-sleeve phone plug

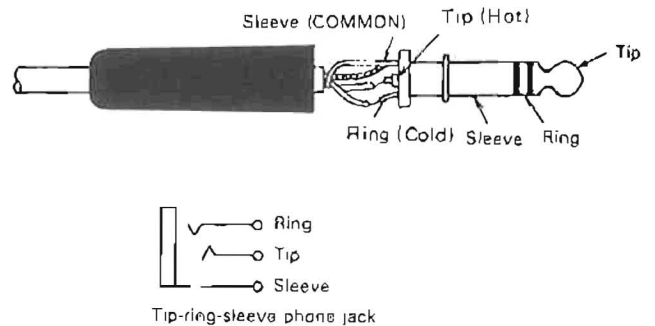
a. Insertion In/Out

Connect 2 single-conductor shielded cables as shown below.



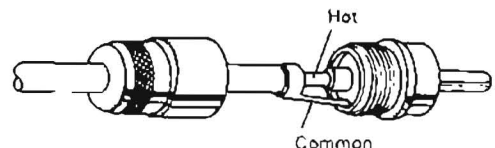
b. Input and Output

Connect 2-conductor shielded cables as shown below.

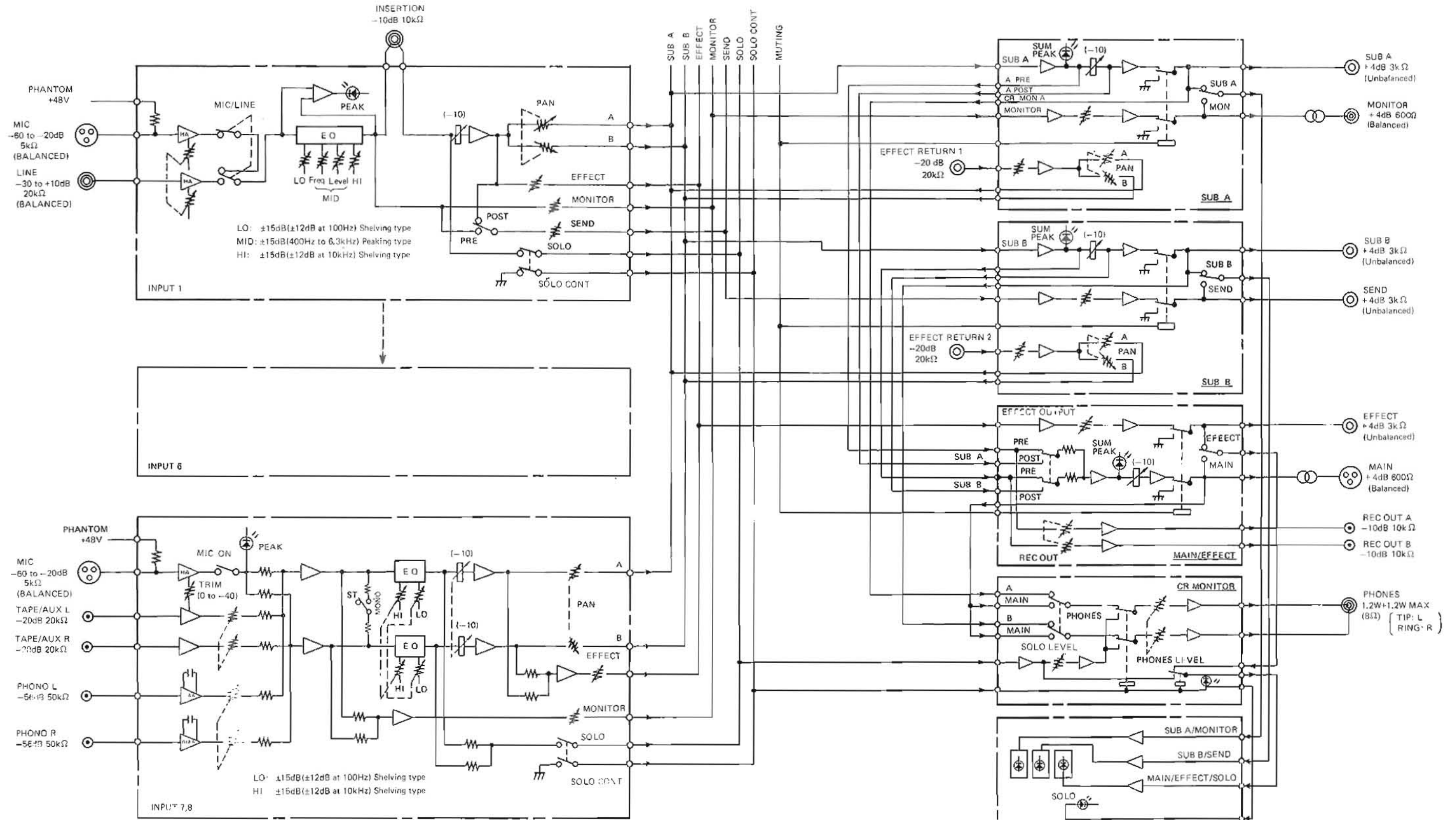


- RCA pin-plug (Input and Output)

Connect single-conductor shielded cable as shown below.



# BLOCK DIAGRAM (WR-S208)



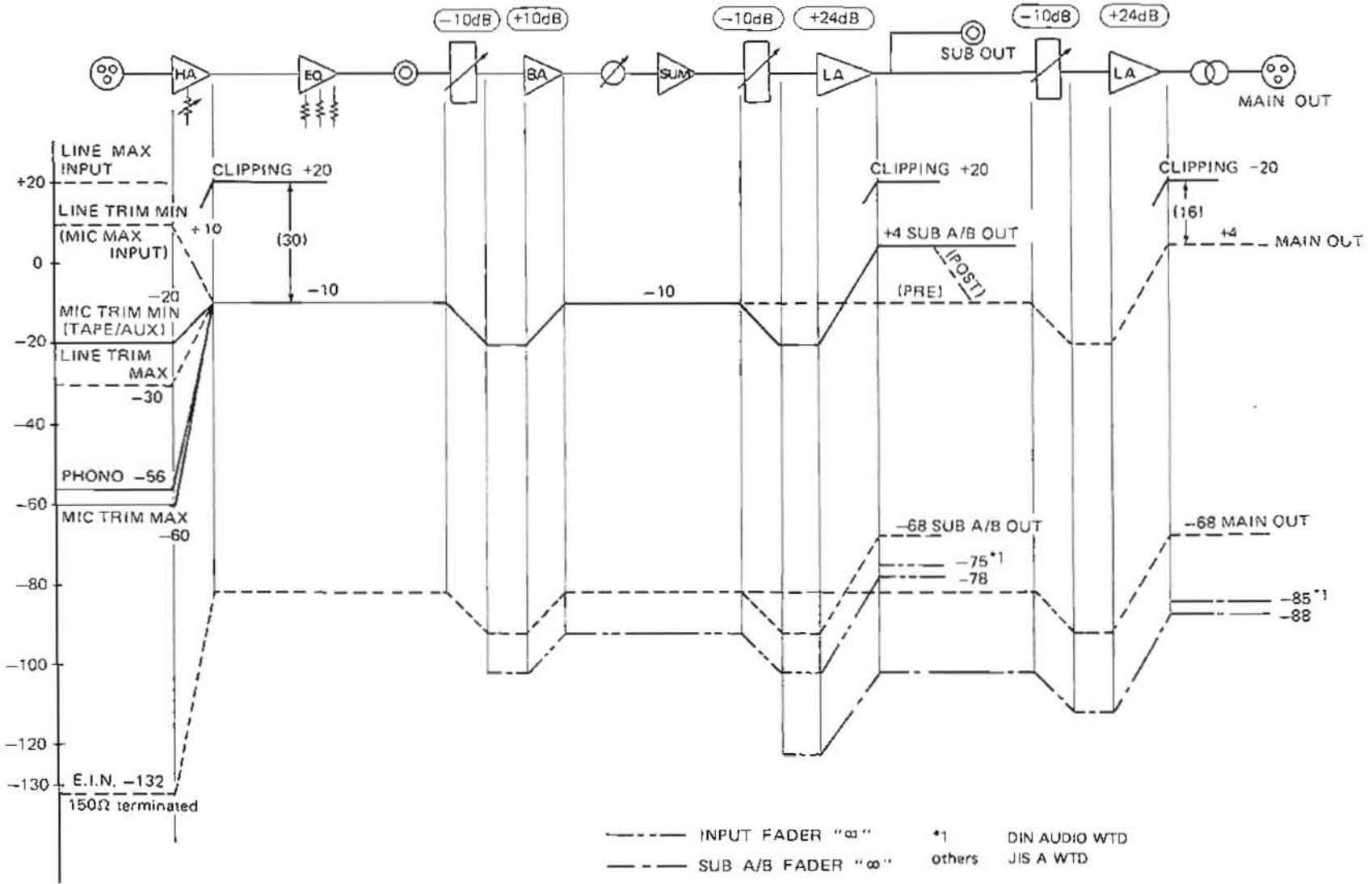
NOT:

- XL-TYPE CONNECTOR
- TRS PHONE JACK
- TS PHONE JACK
- RCA PIN JACK

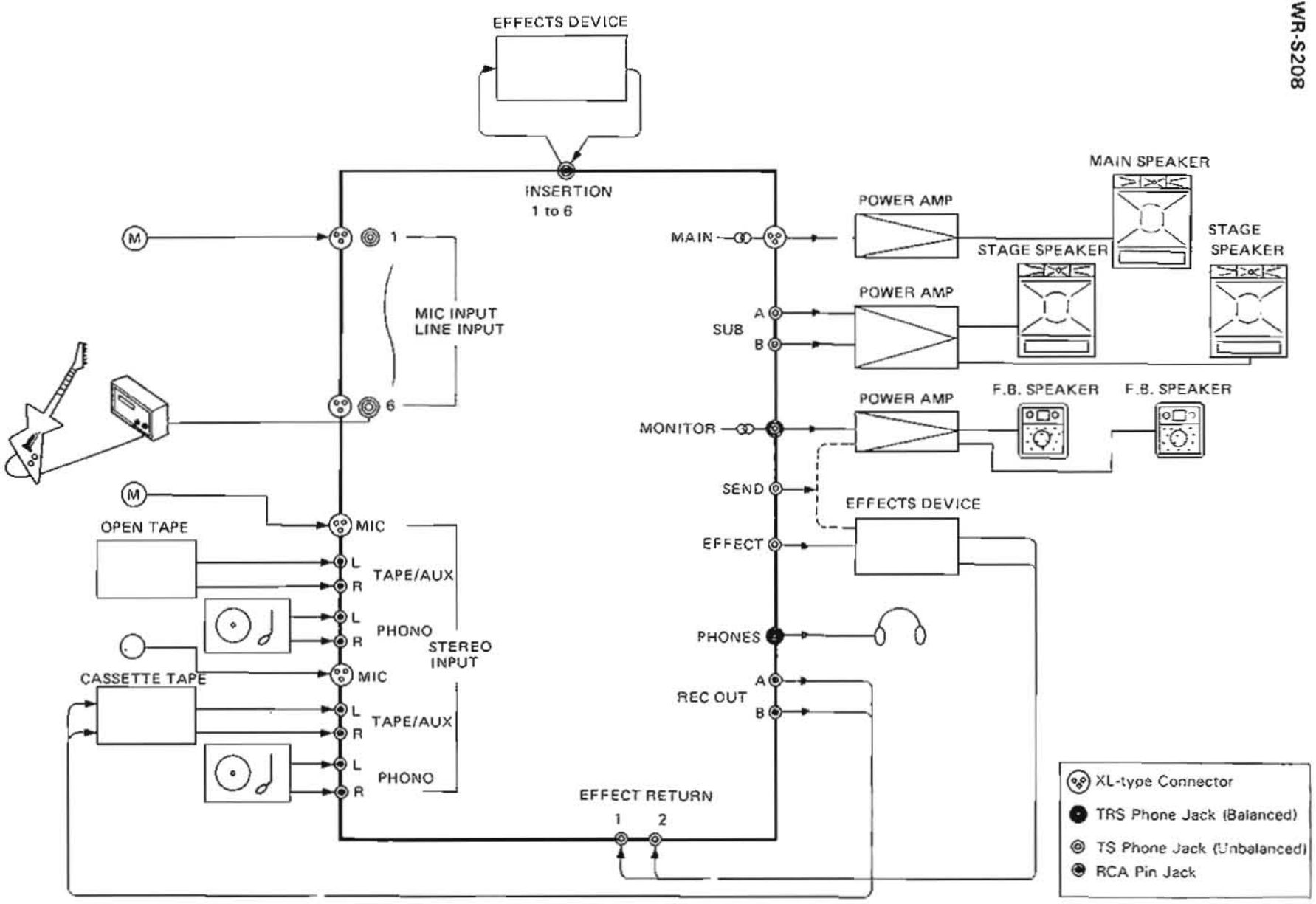


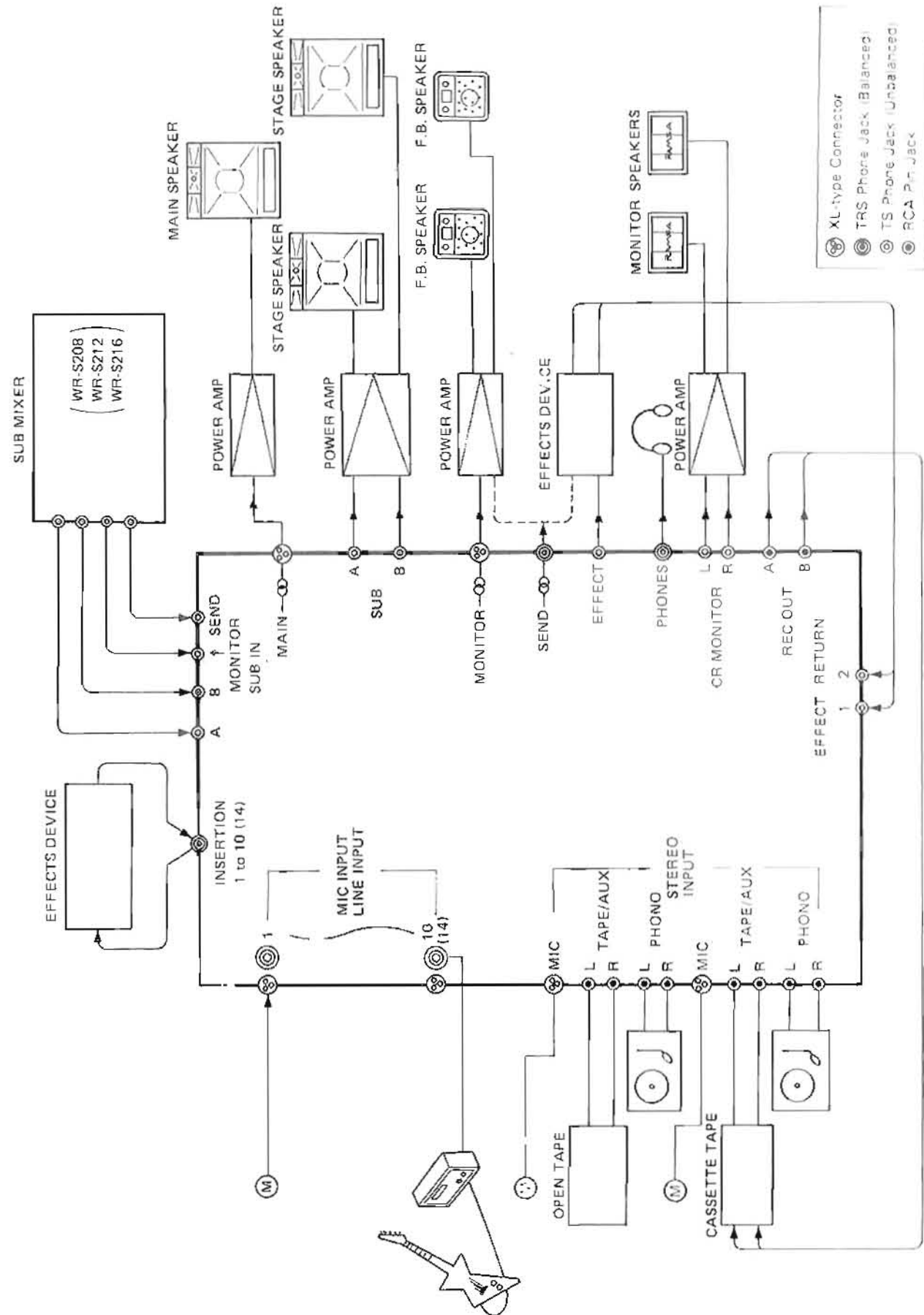


LEVEL DIAGRAM



SYSTEM APPLICATIONS

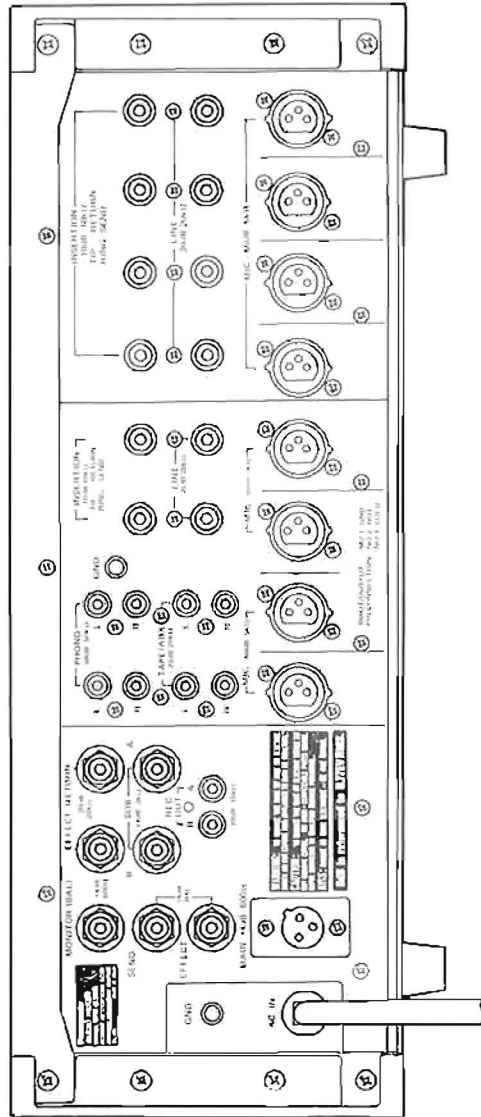




PLANNING TABLE

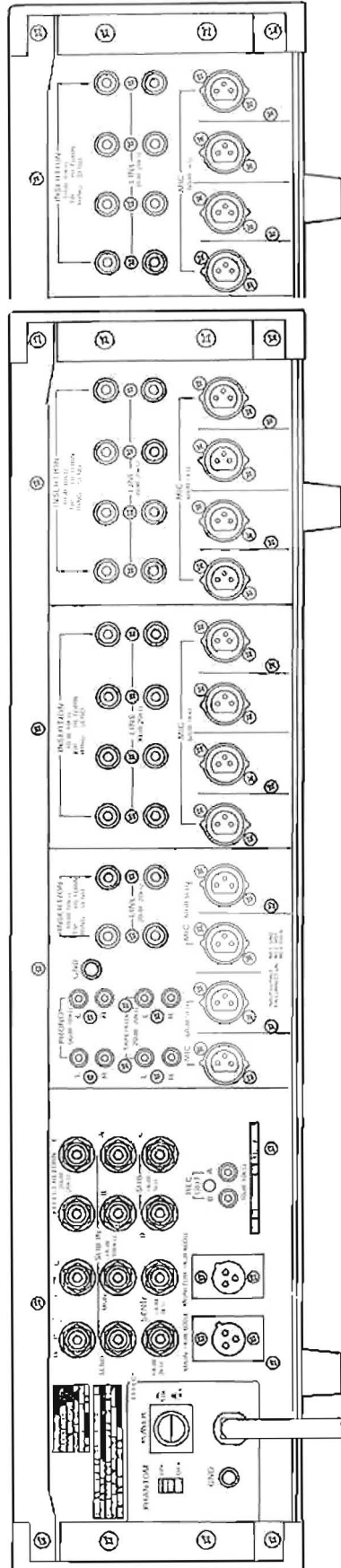
INPUTS		INSERTION	1
<b>Mono</b>		INSERTION	2
MIC/LINE	1	INSERTION	3
MIC/LINE	2	INSERTION	4
MIC/LINE	3	INSERTION	5
MIC/LINE	4	INSERTION	6
MIC/LINE	5	INSERTION	7
MIC/LINE	6	INSERTION	8
MIC/LINE	7	INSERTION	9
MIC/LINE	8	INSERTION	10
MIC/LINE	9	INSERTION	11
MIC/LINE	10	INSERTION	12
MIC/LINE	11	INSERTION	13
MIC/LINE	12	INSERTION	14
		OUTPUTS	
MIC/LINE	13	SUB A	
MIC/LINE	14	SUB B	
<b>Stereo</b>		REC OUT A	
1	MIC	REC OUT B	
	PHONO	SEND	
	TAPE/AUX	EFFECT	
2	MIC	MONITOR	
	PHONO	CR. MONITOR R*	
	TAPE/AUX	CR. MONITOR L*	
EFFECT RETURN 1		MAIN	
EFFECT RETURN 2			
<b>SUB INPUTS (WR-S212, WR-S216)</b>		* . . . . . WR-S212, WR-S216 ONLY	
SEND*			
MONITOR*			
SUB A*			
SUB B*			

# SYSTEM CONFIGURATION (WR-S208)



\*Use this page to record your system configuration.

# SYSTEM CONFIGURATION (WR-S212/WR-S216)



\*Use this page to record your system configuration.

## TECHNICAL SPECIFICATIONS

<b>Power Supply:</b>	120V AC, 60 Hz
<b>Power Consumption:</b>	WR-S208: 40 W WR-S212: 44 W WR-S216: 48 W
<b>Frequency Response:</b>	Mic/Line/Phono/Tape/Aux Input: 20 Hz to 20 kHz, +0.5 to -1.0 dB Transformer Output: 40 Hz to 20 kHz, +0.5 to -1.0 dB
<b>THD:</b>	0.03% (at 50 Hz to 15 kHz, +18 dB, 64 dB Gain) 0.1% (at 20 Hz to 20 kHz, +18 dB, 64 dB Gain)
<b>Equivalent Input Noise:</b>	-128 dB Max (-132 dB Typical)
<b>Maximum Gain:</b>	Mic: 84 dB Line: 57 dB
<b>Crosstalk:</b>	60 dB at 1 kHz
<b>CMRR:</b>	80 dB Typical at 1 kHz
<b>Phantom Power:</b>	+48V DC Regulated
<b>Input Channel Equalizer:</b>	Mono Inputs High: ±15 dB (±12 dB at 10 kHz) Shelving type Mid: ±15 dB (400 Hz to 6.3 kHz) Peaking type Low: ±15 dB (±12 dB at 100 Hz) Shelving type Stereo Inputs High: ±15 dB (±12 dB at 10 kHz) Shelving type Low: ±15 dB (±12 dB at 100 Hz) Shelving type
<b>Maximum Output Level:</b>	+20 dB
<b>Peak Meters:</b>	12-point LED bar-graph meter WR-S208: 3 meters WR-S212/WR-S216: 4 meters
<b>Phones:</b>	250 mW ± 250 mW/Hi-Z
<b>Input Faders:</b>	60 mm carbon fader
<b>Main Output Fader:</b>	60 mm carbon fader
<b>Dimensions:</b>	WR-S208: 16-15/16"(W) x 5-7/8"(H) x 20-3/4"(D) [430(W) x 150(H) x 528(D) mm] WR-S212: 25-5/8"(W) x 5-7/8"(H) x 20-3/4"(D) [650.5(W) x 150(H) x 528(D) mm] WR-S216: 30-9/16"(W) x 5-7/8"(H) x 20-3/4"(D) [776.5(W) x 150(H) x 528(D) mm]
<b>Weight:</b>	WR-S208: Approx. 33 lbs (15 kg) WR-S212: Approx. 40 lbs (18 kg) WR-S216: Approx. 47 lbs (21.5 kg)

## • Input Specifications

Connection	Input Level		*4 Sensitivity at maximum gain	Actual Load Impedance	Indicated Impedance	Nominal Impedance of Products Connected	Connector Used	Mating Connector (not provided)
	*7 Nominal	Maximum before Clip						
MIC IN 1 to 8*1 1 to 12*2 1 to 16*3	-60dB to -20dB	-30dB to +10dB	-90dB to -50dB	4.7k $\Omega$	5k $\Omega$	150 $\Omega$ to 600 $\Omega$ mics	3-pin XL-type female connector or equivalent, Electronically- balanced	3-pin XL-type male connector or equivalent
LINE IN 1 to 6*1 1 to 10*2 1 to 14*3	-30dB to +10dB	0dB to +20dB	-60dB to -20dB	22k $\Omega$	20k $\Omega$	600 $\Omega$ to 20k $\Omega$ lines	Tip-ring-sleeve phone jack, Electronically- balanced	Tip-ring-sleeve phone plug
PHONO IN L, R x2	-56dB	-26dB	-86dB	50.5k $\Omega$	50k $\Omega$	600 $\Omega$ to 50k $\Omega$	RCA pin jack	RCA pin plug
TAPE/AUX IN L, R x2	-20dB	+10dB	-50dB	21k $\Omega$	20k $\Omega$	600 $\Omega$ to 20k $\Omega$ lines		
SUB IN*2 *3 x4	+4dB	+34dB	-16dB*5 -6dB*6	110k $\Omega$	100k $\Omega$	600 $\Omega$ to 100k $\Omega$ lines	Tip-sleeve phone jack, Unbalanced	Tip-sleeve phone plug
EFFECT RETURN 1 to 2	-20dB	+10dB	-40dB	20k $\Omega$	20k $\Omega$	600 $\Omega$ to 20k $\Omega$ lines		
INSERTION RETURN 1 to 6*1 1 to 10*2 1 to 14*3	-10dB	+20dB*7	-40dB	8.7k $\Omega$	10k $\Omega$	600 $\Omega$ to 10k $\Omega$ lines	Tip-ring-sleeve phone jack, Unbalanced	Tip-ring-sleeve phone plug

\*1 WR-S208

\*2 WR-S212

\*3 WR-S216

\*4 These values are obtained when the input fader and output faders (Sub A, Sub B, and Main) are set at the maximum position and the Main output is +4dB.

\*5 Sub in A and Sub in B.

\*6 Sub in Monitor and Sub in Send.

\*7 Input fader set at the nominal position "0".

• Output Specifications

Connection		Output Level		Indicated Impedance	Nominal Impedance of Products Connected	Connector Used	Adaptable Connector (not provided)
		Nominal	Maximum before Clip				
SUB OUTPUT A, B		+4dB	+20dB	3kΩ	3kΩ or higher impedance lines	Tip-sleeve phone jack, Unbalanced	Tip-sleeve phone plug
MAIN OUTPUT		+4dB		600Ω	600Ω or higher impedance lines	3-pin XL-type male connector or equivalent, Transformer-balanced	3-pin XL-type female connector or equivalent
MONITOR OUTPUT	WR-S208	+4dB		600Ω	600Ω or higher impedance lines	Tip-ring-sleeve phone jack, Transformer balanced	Tip-ring-sleeve phone plug
	WR-S212 WR-S216			600Ω		3-pin XL-type male connector or equivalent, Transformer-balanced	3-pin XL-type female connector or equivalent
REC OUTPUT A, B		-10dB		10kΩ	10kΩ or higher impedance lines	RCA pin jack, Unbalanced	RCA pin plug
SEND OUTPUT	WR-S208	+4dB		3kΩ	3kΩ or higher impedance lines	Tip-sleeve phone jack, Unbalanced	Tip-sleeve phone plug
	WR-S212 WR-S216			600Ω	600Ω or higher impedance lines	Tip-ring-sleeve phone jack, Transformer-balanced	Tip-ring-sleeve phone plug
EFFECT OUTPUT				3kΩ	3kΩ or higher impedance lines	Tip-sleeve phone jack, Unbalanced	Tip-sleeve phone plug
CR. MONITOR <sup>*2</sup> OUTPUT L, R <sup>*3</sup>				10kΩ	10kΩ or higher impedance lines	Tip-ring-sleeve phone jack, Unbalanced	Tip-ring-sleeve phone plug
INSERTION SEND 1 to 6*1 1 to 10*2 1 to 14*3				-10dB	10kΩ	10kΩ or higher impedance lines	Tip-ring-sleeve phone jack, Unbalanced
HEADPHONES		—	+11dB 1W (8Ω) 12mW (600Ω)	8Ω	8Ω to 600Ω phones	Tip-ring-sleeve phone jack	Tip-ring-sleeve phone plug

## RACK MOUNTING (WR-S208 only)

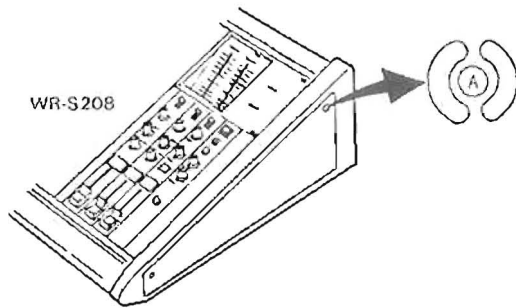
The WR-S208 can be mounted on an EIA (19") rack using the Rack Mount Adaptor WR-Q208 (option).

### Componets of WR-Q208

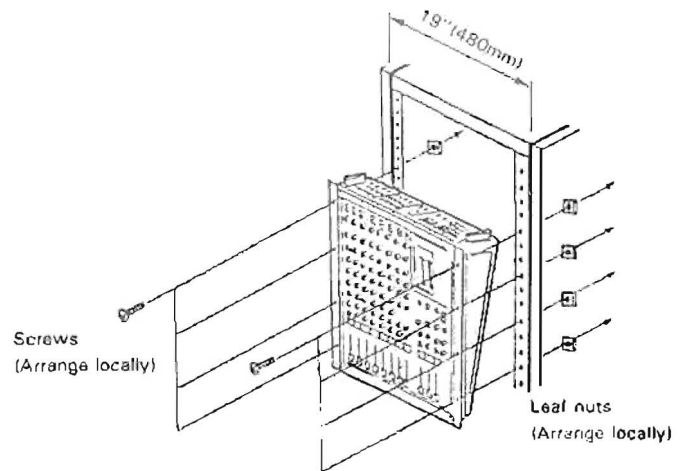
Rack Angles .....	2
Blank Panel (3H)[5-3/16"(132mm)] .....	1
Screws (M4x10, black).....	4

### Setting

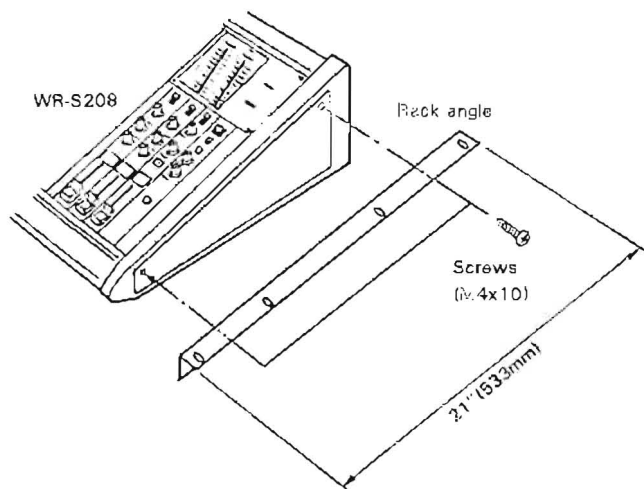
1. Remove the four screw hole blind plates (A) on both sides of the WR-S208.



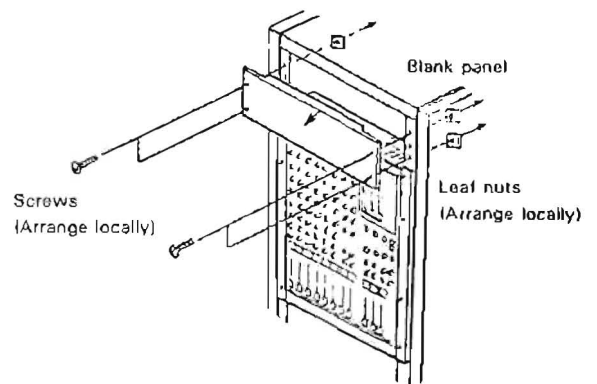
3. Install the WR-S208 on the rack.



2. Mount the rack angles on the WR-S208.



4. Mount the blank panel above the mixer.

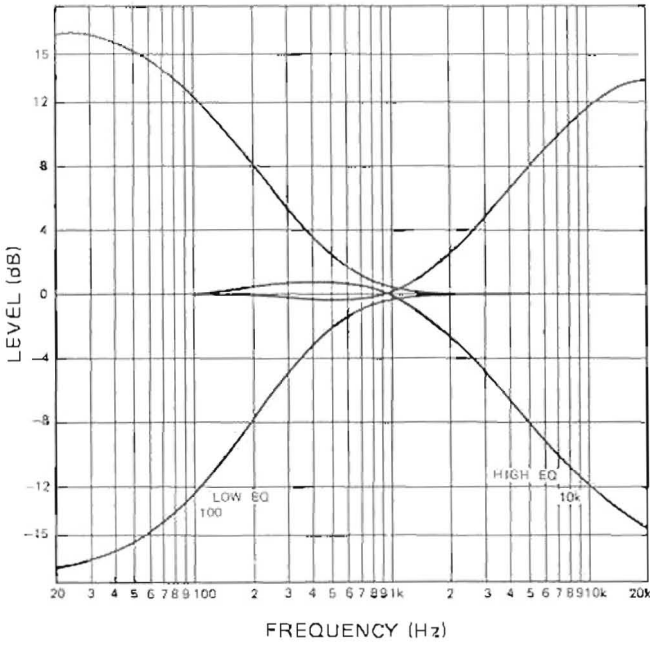




# TYPICAL PERFORMANCE

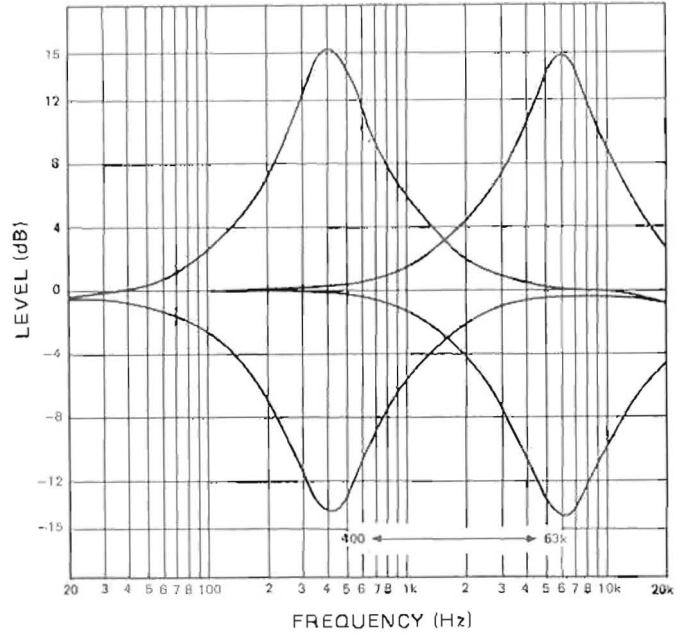
**Chart 1**

Input Equalizer (Low and High)



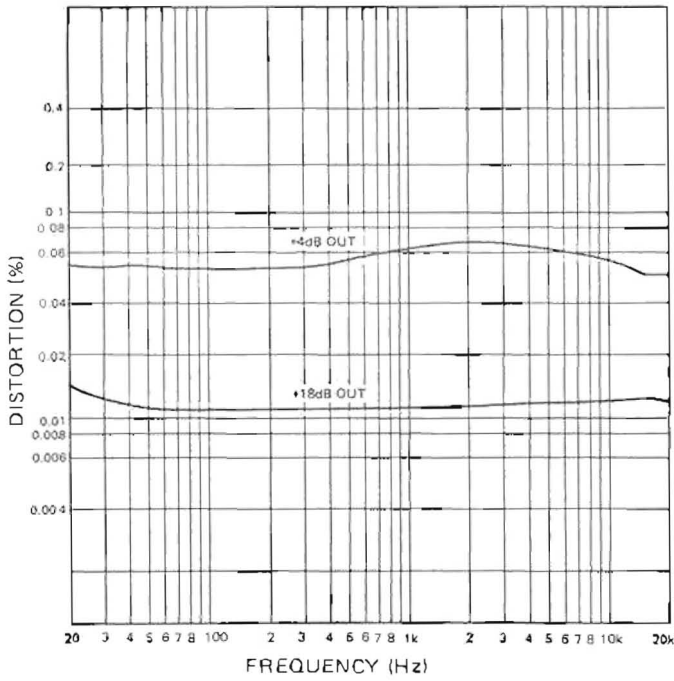
**Chart 2**

Input Equalizer (MID)



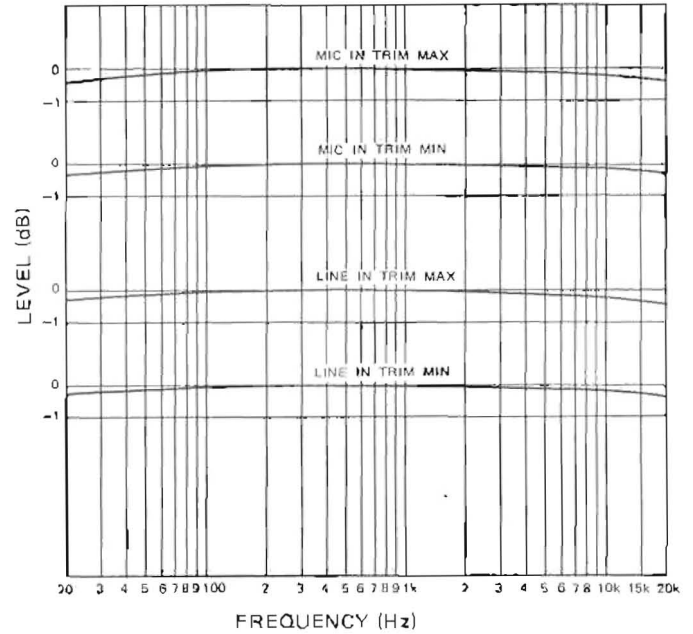
**Chart 3**

Frequency V.S THD Response [MIC to SUB A OUT]



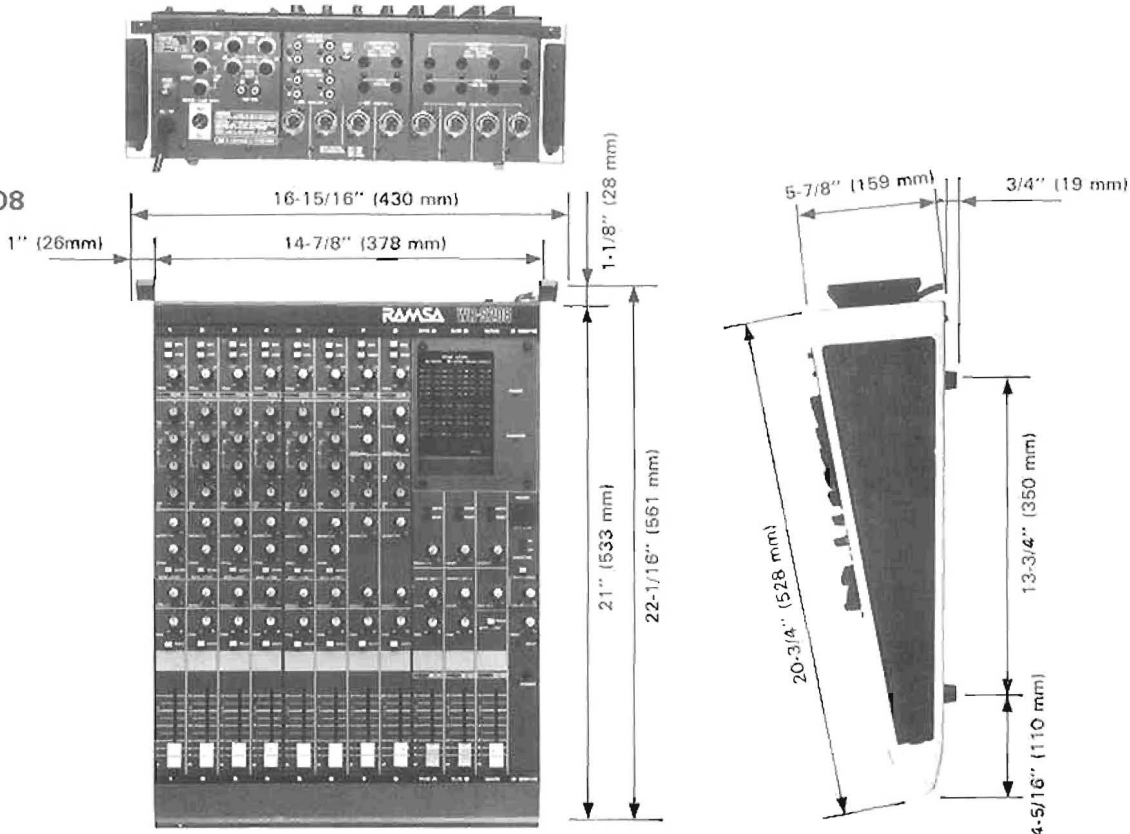
**Chart 4**

Frequency Response

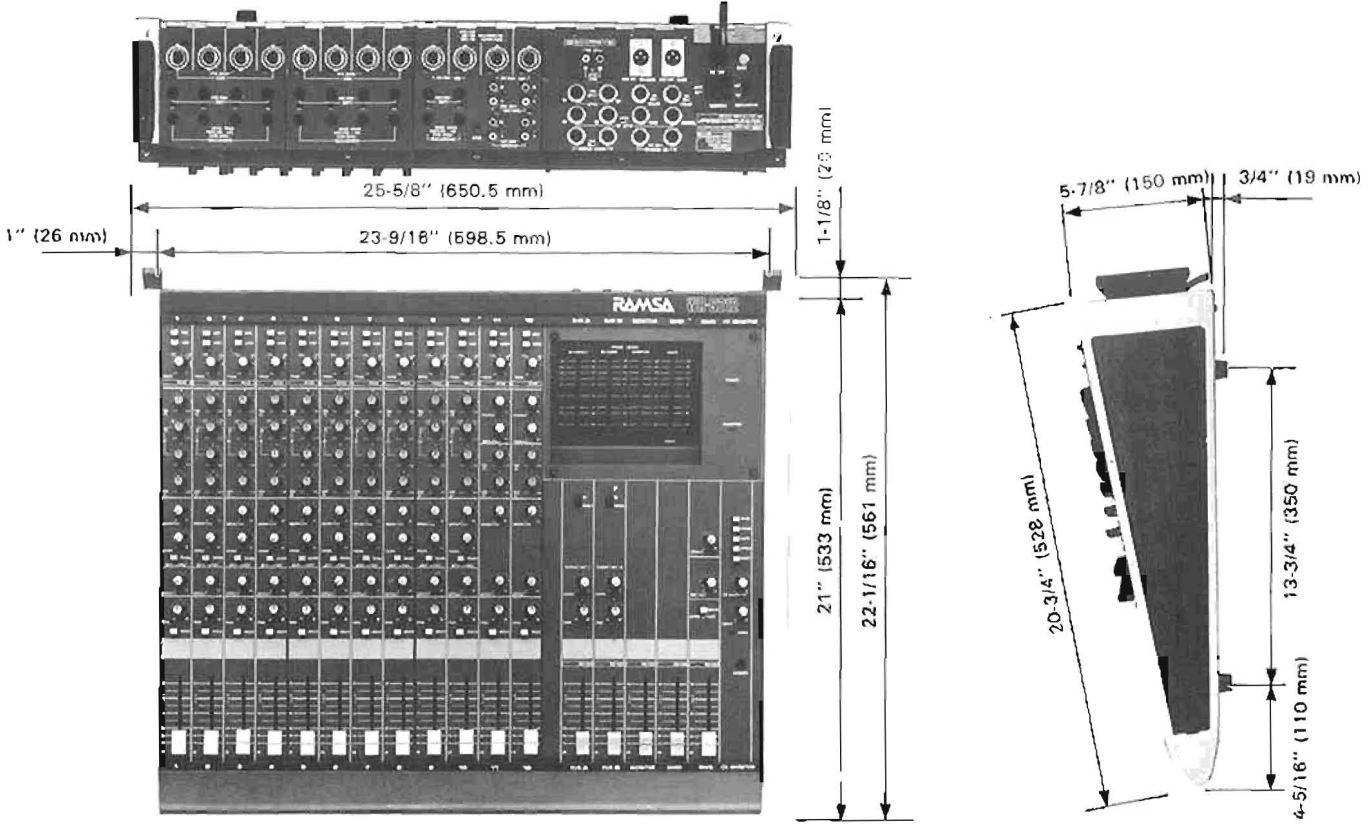


# APPEARANCE

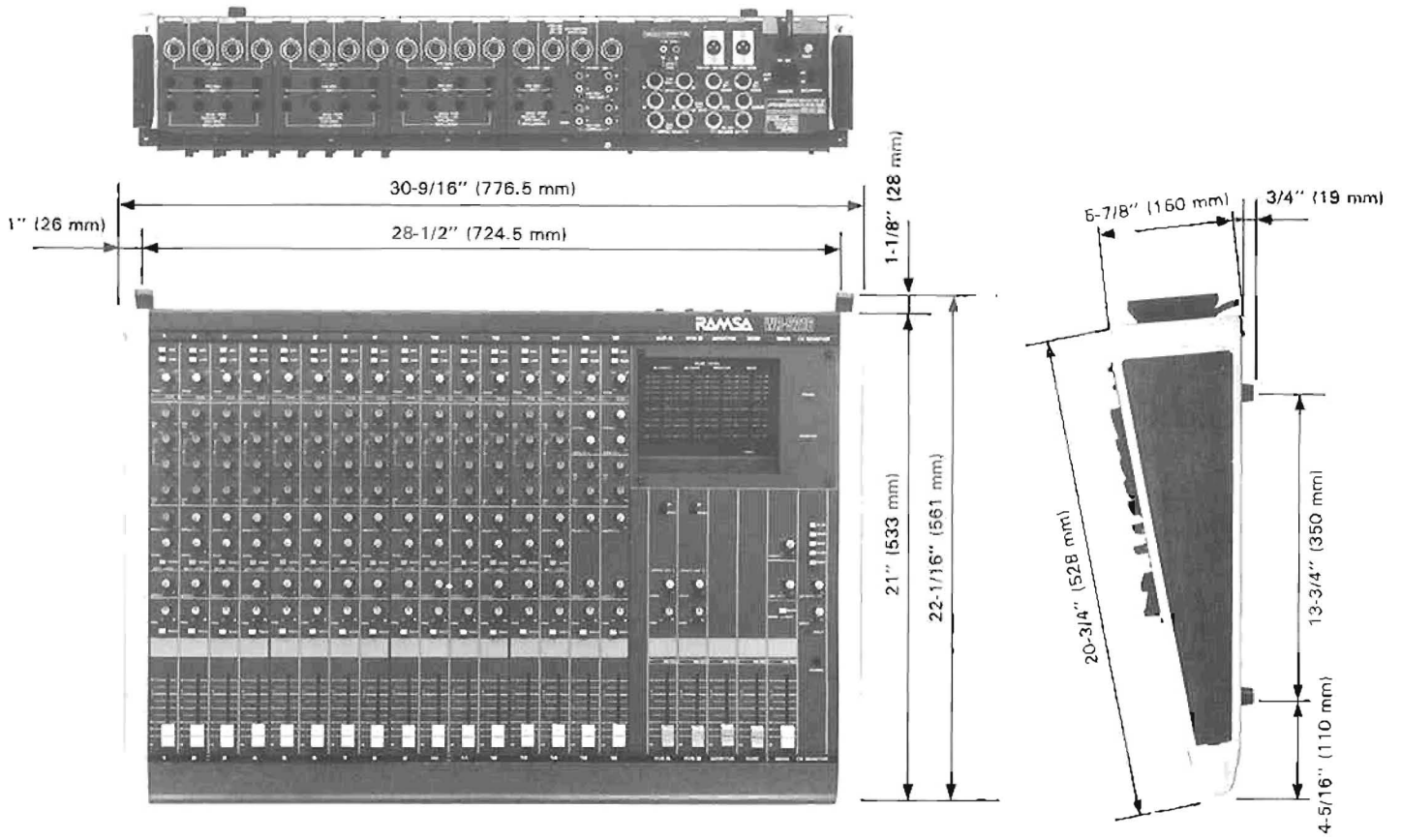
- WR-S208



- WR-S212



• WR-S216



# **Panasonic** **Industrial Company**

AUDIO-VIDEO SYSTEMS GROUP  
PROFESSIONAL AUDIO SYSTEMS  
One Panasonic Way, Secaucus, NJ 07094  
(201) 348-7470

INDUSTRIAL AUDIO DEPARTMENT  
MATSUSHITA ELECTRIC OF CANADA LIMITED  
5770 Ambler Drive  
Mississauga, Ontario, L4W 2T3 (416)624-5010