YAMAHA

MIXER
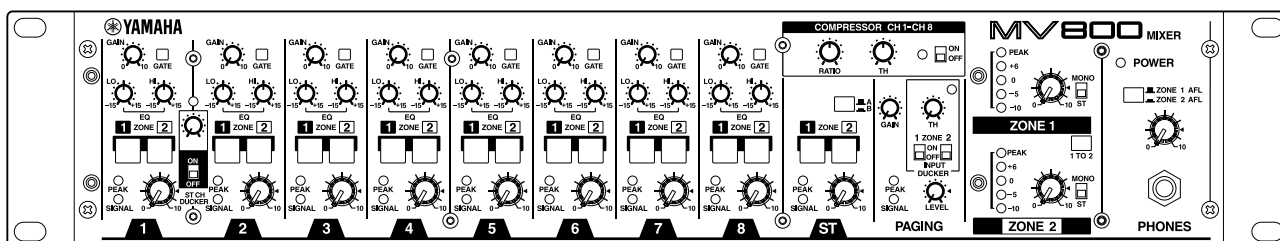
MV800

Owner's Manual

Thank you for purchasing the YAMAHA MV800.
The MV800 is an easy to operate mixer that offers an excellent balance between line input devices for BGM or Karaoke and microphone input. When the hall is divided into two zones, the MV800 also offers individual control of those two zones directly from the front panel without the need to change the wiring making it an excellent mixer for banquet rooms, etc.
In order to get the most out of your MV800 and its excellent functions, and to enjoy years of trouble-free use, please read this Owner's Manual thoroughly before using. And please keep it, in a safe place for future reference.

Keep This Manual For Future Reference.

E

Important

Read the following before operating the MV800

Warnings

- Do not place a container with liquid or small metal objects on top of this unit. Liquid or metal objects inside this unit are a fire and electrical shock hazard.
- Do not allow water to enter this unit or allow the unit to become wet. Fire or electrical shock may result.
- Connect this unit's power cord only to an AC outlet of the type stated in this Owner's Manual or as marked on the unit. Failure to do so is a fire and electrical shock hazard.
- Do not scratch, bend, twist, pull, or heat the power cord. A damaged power cord is a fire and electrical shock hazard.
- Do not place heavy objects, including this unit, on top of the power cord. A damaged power cord is a fire and electrical shock hazard. In particular, be careful not to place heavy objects on a power cord covered by a carpet.
- If you notice any abnormality, such as smoke, odor, or noise, or if a foreign object or liquid gets inside the unit, turn it off immediately. Remove the power cord from the AC outlet. Consult your dealer for repair. Using the unit in this condition is a fire and electrical shock hazard.
- Should this unit be dropped or the cabinet be damaged, turn the power switch off, remove the power plug from the AC outlet, and contact your dealer. If you continue using the unit without heeding this instruction, fire or electrical shock may result.
- If the power cord is damaged (i.e., cut or a bare wire is exposed), ask your dealer for a replacement. Using the unit with a damaged power cord is a fire and electrical shock hazard.
- Except for the safety cover, never remove anything else from this device. (Please refer to page 8 about the Euro-block connectors.) You could receive an electrical shock. If you think internal inspection, maintenance, or repair is necessary, contact your dealer.
- Do not modify the unit. Doing so is a fire and electrical shock hazard.
- If lightning begins to occur, turn off the power switch of the unit as soon as possible, and unplug the power cable plug from the electrical outlet.
- If there is a possibility of lightning, do not touch the power cable plug if it is still connected. Doing so may be an electrical shock hazard.

Cautions

- When rack-mounting the unit, allow enough free space around the unit for normal ventilation. This should be: 10 cm at the sides, 40 cm behind, and 30 cm above.
  For normal ventilation during use, remove the rear of the rack or open a ventilation hole.
  If the airflow is not adequate, the unit will heat up inside and may cause a fire.
- This unit has ventilation holes at the top, bottom, and sides to prevent the internal temperature rising too high. Do not block them. Blocked ventilation holes are a fire hazard.
- Hold the power cord plug when disconnecting it from an AC outlet. Never pull the cord. A damaged power cord is a potential fire and electrical shock hazard.
- Do not touch the power plug with wet hands. Doing so is a potential electrical shock hazard.

Operating Notes

- Using a mobile telephone near this unit may induce noise. If noise occurs, use the telephone away from the unit.
- XLR-type connectors are wired as follows:
  pin 1: ground, pin 2: hot (+), and pin 3: cold (-).
- Refer to the "Connector polarity" chart on page 7 for information on the pin wiring of the XLR connector and phone jack.
- The performance of components with moving contacts, such switches, rotary controls, faders, and connectors, deteriorates over time. The rate of deterioration depends on the operating environment and is unavoidable. Consult your dealer about replacing defective components.
- Use only the specific screws that are provided with the MV800 to attach the supplied security cover. Also, after wiring the Euro-block connectors, use the same screws that held the security cover in place when replacing the cover.
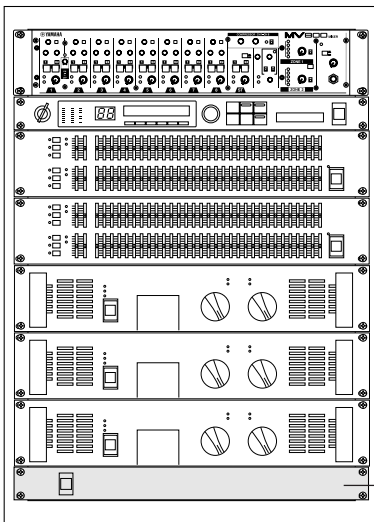 The use of any other screws may result in damage.

Features

- The MV800 provides 8 channels with monaural input jacks, A/B stereo line input jacks and two sets of stereo outputs that are selectable from the front panel.

- Monaural input jacks are equipped with an input select switch that allows compatibility with a wide range of sources such as dynamic microphones, condenser microphones that require an external power source, and line level devices.

- Each monaural channel is equipped with a separate noise gate switch that can be used to eliminate background noise.

- The mixer is equipped with a global compressor circuit that can be applied to the monaural channels to protect the equipment from feedback, sudden loud sounds, etc.

- The mixer is equipped with a ducker circuit on channels 1/2. This function automatically reduces the volume level of the stereo line input jacks when a microphone from channel 1 or 2 is used.

- Input channels 1-8 are equipped with INSERT IN/OUT jacks allowing separate effectors to be connected to individual channels.

- Equipped with two ZONE buses, that include not only monaural and stereo channels but also REC OUT and OUTPUT jacks, a single MV800 easily provides sound control for two rooms.

- Separate REC OUT jacks are supplied for both ZONES 1 and 2 allowing easy recording to a tape deck.

- Along with XLR and phone jacks, Euro-block connectors are also supplied for the main input and output jacks.

- The MV800 is equipped with a paging function for an emergency announcement system. It is also equipped with an input jack for an emergency announcement system's control signal (DC24V).

- A security cover is supplied to protect switches and settings on the control panel.

Contents

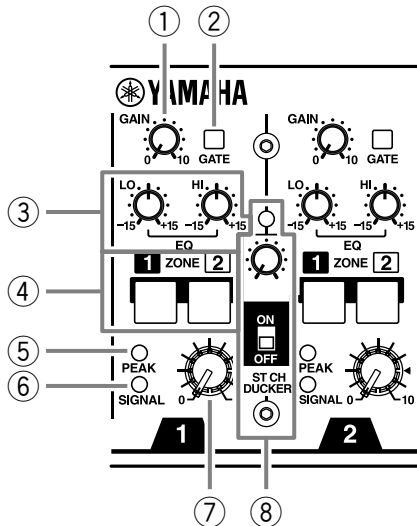
Caution: When the unit is installed in a rack

The main unit's power switch is located on the rear panel of the unit. When installed in a rack, please use the external power switch on a power distributor, etc.

Power distributor, etc.

Front & Rear Panels
Front Panel Section

Channels 1-8 (Monaural)

① GAIN Control

Adjusts the input level of the signal entering the mixer to an optimum level.

To obtain an optimum balance between the S/N ratio and dynamic range, adjust the level so that the PEAK Indicator ⑤ occasionally lights.

② GATE Switch

Turns the Noise Gate ON/OFF.

When the switch is ON (◢), the signal entering the channel's INPUT jack will only be allowed to pass through the circuit when the designated level is exceeded. This function can be used to effectively eliminate unwanted background noise (sounds that are lower than the designated level). (Refer to page 9 for more information.)

* To turn the switch ON/OFF, use an insulator that is smaller than the size of the switch.
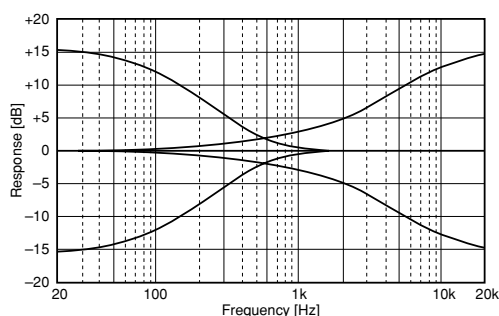
③ Equalizer

Provides +/-15dB of control over high and low frequency ranges at the center frequencies listed below.

    HIGH :   10kHz (shelving)
    LOW   :   100Hz (shelving)

Frequency response is flat when the knob is at its center position.

④ ZONE Select Switch

Sends each channel's signal to the ZONE 1 bus and/or ZONE 2 bus.

When the switch is ON (◢), the signal is sent to the relative bus.

⑤ PEAK Indicator

The indicator detects peaks in the signal after it has passed the EQ.

The indicator will light red when the level reaches +17dB to warn that clipping is imminent.

⑥ SIGNAL Indicator

The indicator lights when the signal's level exceeds that of the Noise Gate's threshold level post EQ.

The light will go off shortly after the signal is cut.

⑦ Channel Volume

Controls the output level of the channel's signal and adjusts the volume balance between channels.

* The volume on channels not being used should be lowered.

⑧ ST CH DUCKER (Stereo Channel Ducker)

Input channels 1 and 2 are equipped with a "DUCKER Function".

This function automatically decreases the ST Input signal's volume when the signal from channel 1 or 2 exceeds the designated level. (Refer to page 9 for more information.)

- **DUCKER ON/OFF Switch**
  Switches the DUCKER Function ON/OFF.
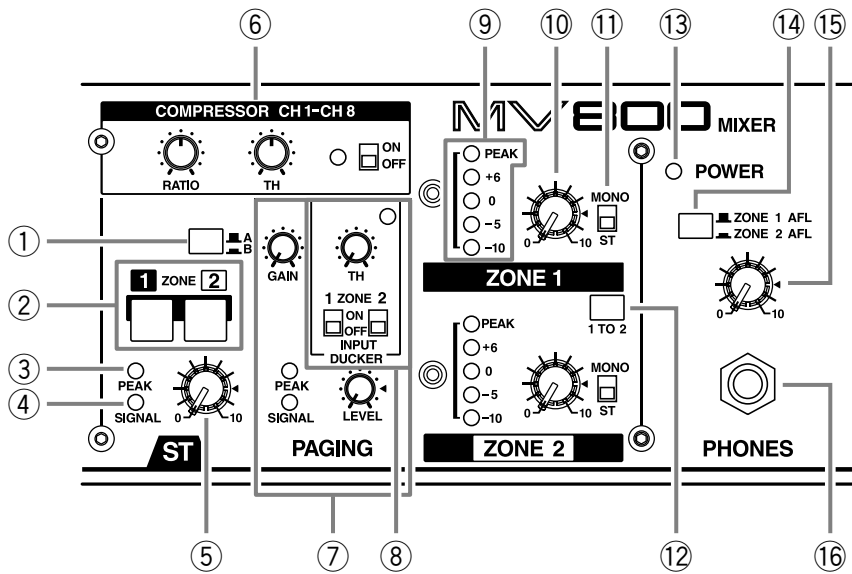
- **DUCKER Indicator**
  Lights when the DUCKER function is activated.

- **DUCKER Attenuator**
  Sets the volume level to which the signal from the ST input jacks will be lowered when the DUCKER Function is operating.
  Rotating the knob to the right decreases the volume.

Stereo Channel & Master Control Sections

① ST Input Select Switch

Selects which of the two input signals, from ST Input jacks A or B, will be used.

In the raised position (■), ST Input jack A is selected while the lowered position (▬) selects ST Input jack B.

② ZONE Select Switch

The same as number ④ on page 3.

③ PEAK Indicator

Indicates peaks in the signal of the post buffer amp.

The indicator will light red when the level reaches +17dB to warn that clipping is imminent.

④ SIGNAL Indicator

The indicator will light when the signal level exceeds -10dB in the post buffer amp.

⑤ Channel Volume

The same as number ⑦ on page 3.

⑥ COMPRESSOR

The COMPRESSOR controls the signal's volume level when the level set with the TH (Threshold) Control is exceeded.

The Compressor is effective on input channels 1-8. (Refer to page 9 for more information.)

- **COMPRESSOR ON/OFF Switch**
  Switches the COMPRESSOR ON/OFF.

- **COMPRESSOR Indicator**
  Lights when the COMPRESSOR is activated.

- **TH Control**
  Sets the input level (Threshold level) at which the compressor will function. Rotating the control to the right allows the compressor to function at lower volume levels.

- **RATIO Control**
  Sets the ratio of compression that is applied to the signal when it exceeds the threshold level. Rotating the knob to the right increases the amount of compression.
  When the knob is turned fully to the left, the signal will not be compressed.

⑦ PAGING

The PAGING function terminates all signals from each of the INPUT channels (1-8, ST), INSERT IN and STACK IN input jacks and only allows the signal from the PAGING MIC/LINE input jack to be produced. This function can also be used with a control signal from an emergency announcement system. (Refer to page 9 for more information.)

- **PAGING GAIN Control**
  Controls the input sensitivity of the PAGING MIC/LINE input jack.
  An optimum balance between the S/N and dynamic range is achieved when the PEAK indicator lights occasionally.

- **PAGING PEAK Indicator**
  Indicates post head amp level peaks in the PAGING MIC/LINE signal.
  The indicator will light red when the level reaches +17dB to warn that clipping is imminent.

- **PAGING SIGNAL Indicator**
  The indicator will light when the PAGING MIC/LINE's post head amp signal level exceeds -10dB.

• **PAGING LEVEL Control**

Controls the output level of the PAGING MIC/LINE input and adjusts the volume.

⑧ **PAGING INPUT DUCKER**

• **PAGING TH Control**

Sets the level at which the mixer switches to its PAGING function. Rotating the knob to the right lowers the level at which the mixer will switch to the paging function.

• **PAGING Indicator**

The indicator lights when the paging function is in use.

• **PAGING ZONE Select Switch**

Selects the zone to which the PAGING MIC/LINE signal will be sent. The PAGING MIC/LINE signal is sent to the zone output jacks (ZONE 1, 2) that are switched ON.

⑨ **LEVEL Meter**

This LED indicates the level of the output signal for each of the ZONE output jacks (ZONE 1,2).
"0" indicates a nominal level, and the PEAK indicator will light red to warn when clipping is imminent.

⑩ **ZONE Volume**

Controls the volume level of the signal that is sent to the ZONE output jacks (ZONE 1, 2).

⑪ **ST/MONO Select Switch**

Set the switch to ST when the signal from the ST Input jack is to be sent to the ZONE output jacks (ZONE 1, 2) as a stereo signal. Set the switch to MONO when the L and R channels are to be mixed as a monaural signal.

⑫ **ZONE 1 TO 2 Switches**

Set the switch to its ON (▬) position to send the signal from ZONE 1 (pre-volume) to ZONE 2 (pre-volume). In this case, the ZONE 1 (pre-volume) signal will be sent to the ZONE 2 output jacks and that signal's volume can be adjusted with the ZONE 2 Volume control.

⑬ **POWER Indicator**

The indicator will light when the unit's power is ON.

⑭ **ZONE AFL Select Switch**

Selects the signal that is sent to the PHONES jack. Press the switch to select either ZONE 1 (■) or ZONE 2 (▬).

⑮ **HEADPHONE Volume**

Controls the signal level that is sent to the PHONES jack.

⑯ **PHONES Jack**

This is a stereo phone type jack for connecting a pair of headphones (nominal output/impedance of 30mW/40Ω).

■ **Attaching the Security Cover**

The MV800 is supplied with a security cover for channels 1-8, the ST channel, and the compressor and paging sections. If the security cover is needed to protect knobs and switches from being tampered with, attach the security cover after connecting and setting up the microphones and line devices, etc.

1. Attach the post screws to the attachment holes (4 locations) on the front panel.

Post screw

Front panel

Attachment hole
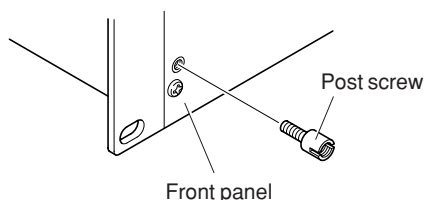
2. Align the holes in the security cover with the post screws and attach the cover with the set screws.

Security cover

Set screw
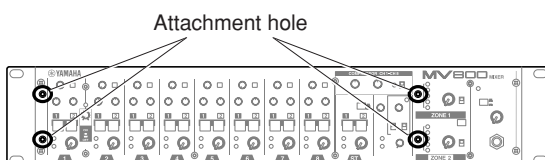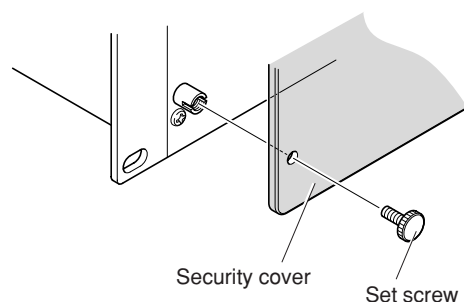
Rear Panel Section
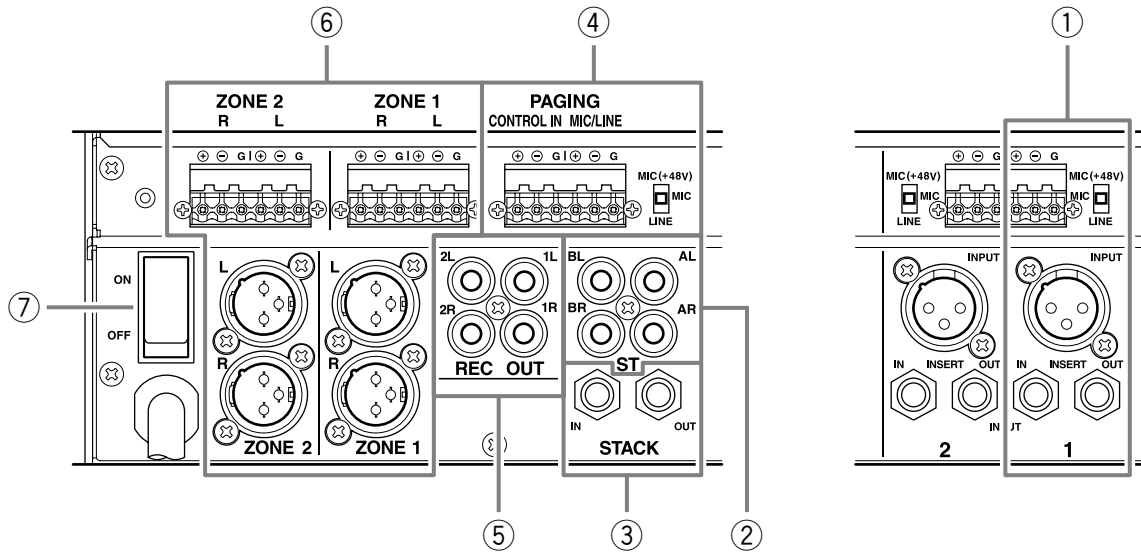
① Channel Inputs (1-8)

- **INPUT Jacks**
  Both balanced XLR type and Euro-block connectors are supplied.

  - **XLR Type (1:Ground, 2:Hot, 3:Cold)**
  - **Euro-block connectors**
    ($\oplus$: Hot, $\ominus$: Cold, G: Ground)

- **Input Select Switch**
  Use the Input Select Switch to match the input with the type of mic or device connected to the INPUT jack.

  - **MIC (+48V)**
    This position allows the connection of a condenser microphone, etc. to the jack.
    DC+48V power is supplied between pins 2 and 1, and pins 3 and 1 on XLR type connectors, and between the $\oplus$ and GND, and $\ominus$ and GND pins on the Euro-block connectors.

    * When the MIC (+48V) setting is not needed, make sure the switch is set to the MIC or LINE position.

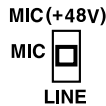 > *NOTE:* When the switch is in the MIC (+48V) position, there should be no problem connecting balanced dynamic microphones or line level devices however, hum or malfunction may occur when connecting unbalanced devices or devices with which the center of the transformer is ungrounded.

- **MIC:** Compatible with 50-600Ω microphones.
- **LINE:** Compatible with 600Ω line level devices.

- **INSERT IN Jack**
- **INSERT OUT Jack**
  These are input/output jacks that are positioned between the noise gate and channel volume of the input channel. The INSERT IN jack is a balanced phone type jack with a nominal input/impedance of 0dB/600Ω. The INSERT OUT jack is balanced phone type jack with a nominal output/impedance of 0dB/10kΩ. These jacks can be used to connect a graphic equalizer, compressor, noise filter, etc.

② STEREO Input (ST AL/AR, BL/BR)
These are RCA phono type stereo line input jacks. They are compatible with 600Ω line level devices. Two devices, A and B, can be connected and selected for use with the ST Input Select Switch on the front panel.

③ STACK IN/OUT Jacks
- **STACK IN**
  This is an unbalanced phone type output jack with a nominal input/impedance of 0dB/600Ω. The signal carried by the Tip is sent to the ZONE 1 bus while the signal that is carried by the Ring is sent to the ZONE 2 bus.
  These jacks can be used as auxiliary inputs. Also, they can be used to receive the return signal from an external effector such as a reverb, delay, etc.

・ **STACK OUT**

This is an unbalanced phone type output jack with a nominal input/impedance of 0dB/10kΩ.
It sends the ZONE 1 and ZONE 2 bus signals that have passed through the compressor circuit. The ZONE 1 signal is sent to the Tip while the ZONE 2 signal is sent to the Ring. When multiple MV800s are connected together, this jack sends the signal to the main MV800. It can also be used to send the signal to an external device.

④ **PAGING Input**

● **MIC/LINE Input Jack**

Connect the source device (cassette deck, etc.) or microphone that will be used when the paging function is in use.
This jack is compatible with 50Ω to 600Ω microphones or 600Ω line level devices.

● **Input Select Switch**

Selects the type of microphone or device connected to the MIC/LINE input jack. This switch functions in the same manner as the Input Channel's Input Select Switch ①.

● **CONTROL IN Jack**

This is the input jack for the emergency announcement system's control signal (DC24V).

⑤ **REC OUT (1L/1R, 2L/2R) Jacks**

With an external DAT recorder or cassette recorder connected to these jacks, you can record the same signal that is sent from the ZONE OUT jacks. The signal from ZONE 1 is sent to the 1L and 1R jacks while the ZONE 2 signal is sent to the 2L and 2R jacks. The signal sent from these jacks is not affected by the ZONE volume controls. Make recording level adjustments on the recording device. Also, the ZONE 1 TO 2 switch is ineffective with these jacks.

⑥ **ZONE OUTPUT Jacks (ZONE 1 L/R, ZONE 2 L/R)**

These jacks deliver the stereo output of the mixed signal and are connected to a power amplifier, etc. that drives the main speakers.
Two types of jacks are provided; balanced XLR type and Euro-block connectors.

・ **XLR type (1: Ground, 2: Hot, 3: Cold)**

Nominal output/impedance +4dB/600Ω

・ **Euro-block connector (⊕ : Hot, ⊖ : Cold, G: Ground)**

Nominal output/impedance +4dB/600Ω

⑦ **POWER Switch**

When the switch is in the ON position, the unit is powered.
When turning the power ON, first turn on the MV800, then turn on the power amp or powered speakers that are connected to the device.
Also, when turning the power OFF, turn off the power amp or powered speakers before turning off the MV800.

Connector polarity

INPUT, ZONE OUT	Pin 1: ground Pin 2: hot (+) Pin 3: cold (−)	INPUT OUTPUT
INSERT IN INSERT OUT	Tip: hot (+) Ring: cold (−) Sleeve: ground	Ring
STACK IN STACK OUT	Tip: ZONE 1 Ring: ZONE 2 Sleeve: ground	
PHONES	Tip: L Ring: R Sleeve: ground	Sleeve Tip

About the Accessories

Euro-block Connectors

If you decide to use Euro-block connectors, please use the supplied connectors and attach as shown in the illustration below.

① Turn the POWER switch OFF.

② Loosen the screws holding the cover in place and remove the cover.
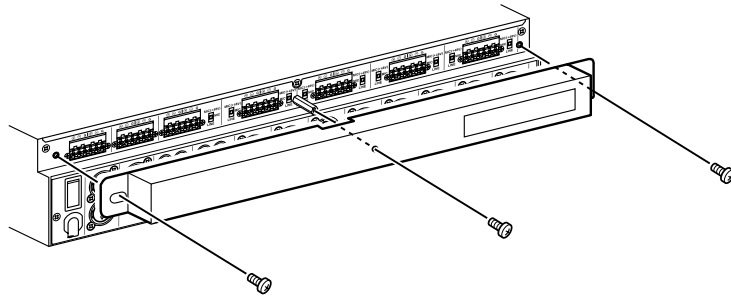
③ Attach the Euro-block connectors.

Secure with a minus (-) driver.

Euro-block connector
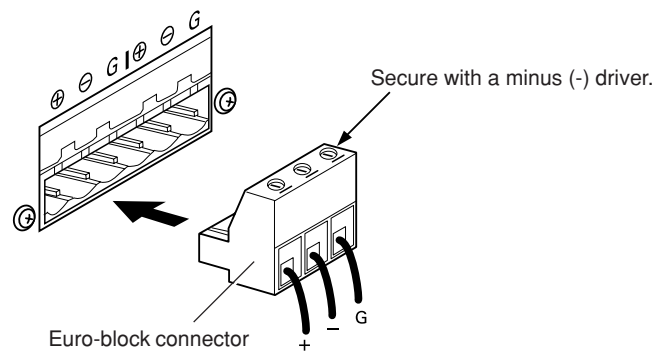
1. If the hole for the wire is closed, turn the screw on the top of the connector to the left to open.
2. Insert the wires according to the jack's pole display, and turn the upper screw to the right to secure the wire.
3. Connect the Euro-block connector to the mixer's jack.

④ Replace the cover and re-attach it in its original location.

Caution: **Electric shock may occur if the Euro-block connectors are used without the cover attached.**

Feet

Four rubber feet are supplied with the mixer.
According to the orientation that the device is installed, attach the rubber feet to the surface that is at the "bottom" of the mixer.
After wiping any dust and grime on the surface of the mixer, remove the adhesive's protective cover on the top of the feet and attach to the mixer.

About the MV800's Functions

■ About the NOISE GATE Function

An unused microphone often picks up unwanted background noise. One way to prevent the problem is to turn the microphone off or set its channel volume on the MV800 to "0" when necessary. An easier way to solve the problem is to use the NOISE GATE.

The mixer will automatically accept input from the microphone only when the designated level is exceeded. If the level is not exceeded (such as that produced by background noise) the microphone will not operate. Effective use of this function eliminates unnecessary mixer operation and controls feedback.

Press the GATE Switch to the ON (▃) position to activate. Also, we recommend that the switch be set to the OFF (■) position when someone is talking with a quiet voice.

■ About the Compressor Function

When someone is speaking or singing and suddenly their voice becomes loud can be irritating. The volume must be reduced but by the time you make the necessary adjustment, its already too late. In such a case, the Compressor Function is very useful.

This function is used to control the signal's output level when it's input level exceeds a designated amount.

Set the Compressor ON/OFF switch to "ON".

The input level setting that determines from when the compressor will function is set with the TH (Threshold) control. Also, the setting that determines the ratio of compression used to keep the signal's volume under control is set with the RATIO control. When the RATIO control is rotated fully to the left, the output volume will not be controlled (minimum compression ration 1:1), as the control is rotated to the right, the amount of compression applied to the signal increases (maximum compressions ratio ∞:1)

■ About the STEREO CHANNEL DUCKER Function

When BGM is playing in the room, and the MC or a guest starts to speak, it is often difficult to hear the speaker over the music. In this case, it is necessary to reduce the BGM volume, raise the microphone's volume or both. If so, it is impossible to safely leave the mixer for any length of time. In such cases, the Stereo Channel Ducker Function is very useful.

This function automatically reduces the volume of the BGM source that is connected to the ST Input jacks (A/B) when a signal enters Channel 1 or 2 through its microphone. However, the Stereo Channel Ducker Function can only be used in conjunction with Channels 1 and 2, not with sources connected to Channels 3-8.

Shortly after the source from Channel 1 or 2 is terminated, the volume of the BGM source will be returned to its original level.

To setup the Ducker, set the ST CH DUCKER Switch, located between Channels 1 and 2 on the front panel, to its "ON" position. Use the Attenuator, located above the ST CH DUCKER ON/OFF Switch, to set the level to which the BGM's volume will be reduced. Rotate the knob to the right to reduce the volume level.

■ About the PAGING Function (Input Ducker for Emergency Announcement Systems)

This function terminates the signals from each of the INPUT Channels (1-8, ST) as well as the INSERT IN and STACK IN input jacks to give priority to the signal from the mic/line source that is connected to the PAGING MIC/LINE Input jack.

If a cassette deck or microphone for emergency announcements is connected to the PAGING MIC/LINE Input jack, the microphone or tape deck can be given priority for announcements in the event of an emergency. A PAGING CONTROL IN jack is also supplied on the Rear Panel that is compatible with a DC24V control signal for emergency announcement systems.

The GAIN control is used to set the PAGING MIC/LINE input's gain setting. Use the LEVEL control to set the volume. Use the TH (Threshold) control to set the input level that determines from when the Paging function will operate. Rotate the TH control to the right allows the Paging function to operate from lower volume levels.

The Paging function can be set ON/OFF in ZONEs 1 and 2 separately.

Applications

Example) When Using Two Zones

In this example, the MV800 is used to control the sound in two rooms, a banquet room and a Karaoke room.

> **Before making any connections, make sure that power switches on the MV800 and any connected devices are turned OFF.**

<Connections: ZONE 1>

Assign the banquet room to ZONE 1.

① Connect microphones to the INPUT jacks of channels 1-4.

   * If a condenser microphone is used, set the Input Select Switch to its "MIC(+48V)" position, if a microphone other than a condenser microphone is used, set the switch to its "MIC" position.

② Connect a reverb unit between the INSERT IN/OUT jacks on Channels 3 and 4.

③ Connect a DVD player for Karaoke to the ST channel's AL/AR INPUT jacks, and a CD player for BGM to the ST BL/BR INPUT jacks.

④ Connect the main power amp that drives the main speakers to the ZONE 1 output jacks.

   * A cassette deck connected to the REC OUT jacks 1L/1R can be used to record the party or Karaoke songs sung by the party guests.
   * A pair of headphones connected to the PHONES jack can be used to monitor the overall volume balance, etc.

<Connections: ZONE 2>

Assign the Karaoke room to ZONE 2.

① Connect microphones to the INPUT jacks of channels 5 and 6.

   * If a condenser microphone is used, set the Input Select Switch to its "MIC(+48V)" position, if a microphone other than a condenser microphone is used, set the switch to its "MIC" position.

② Connect a reverb unit between the INSERT IN/OUT jacks on channels 5 and 6.

③ Connect a DVD player for Karaoke to the Channel 7 and 8 INPUT jacks and set their Input Select Switches to the "LINE" position.

④ Connect the power amp that drives the ZONE 2 main speakers to the ZONE 2 output jacks.

   * A cassette deck connected to the REC OUT jacks 2L/2R can be used to record Karaoke songs sung by the party guests.
   * A pair of headphones connected to the PHONES jack can be used to monitor the overall volume balance, etc.
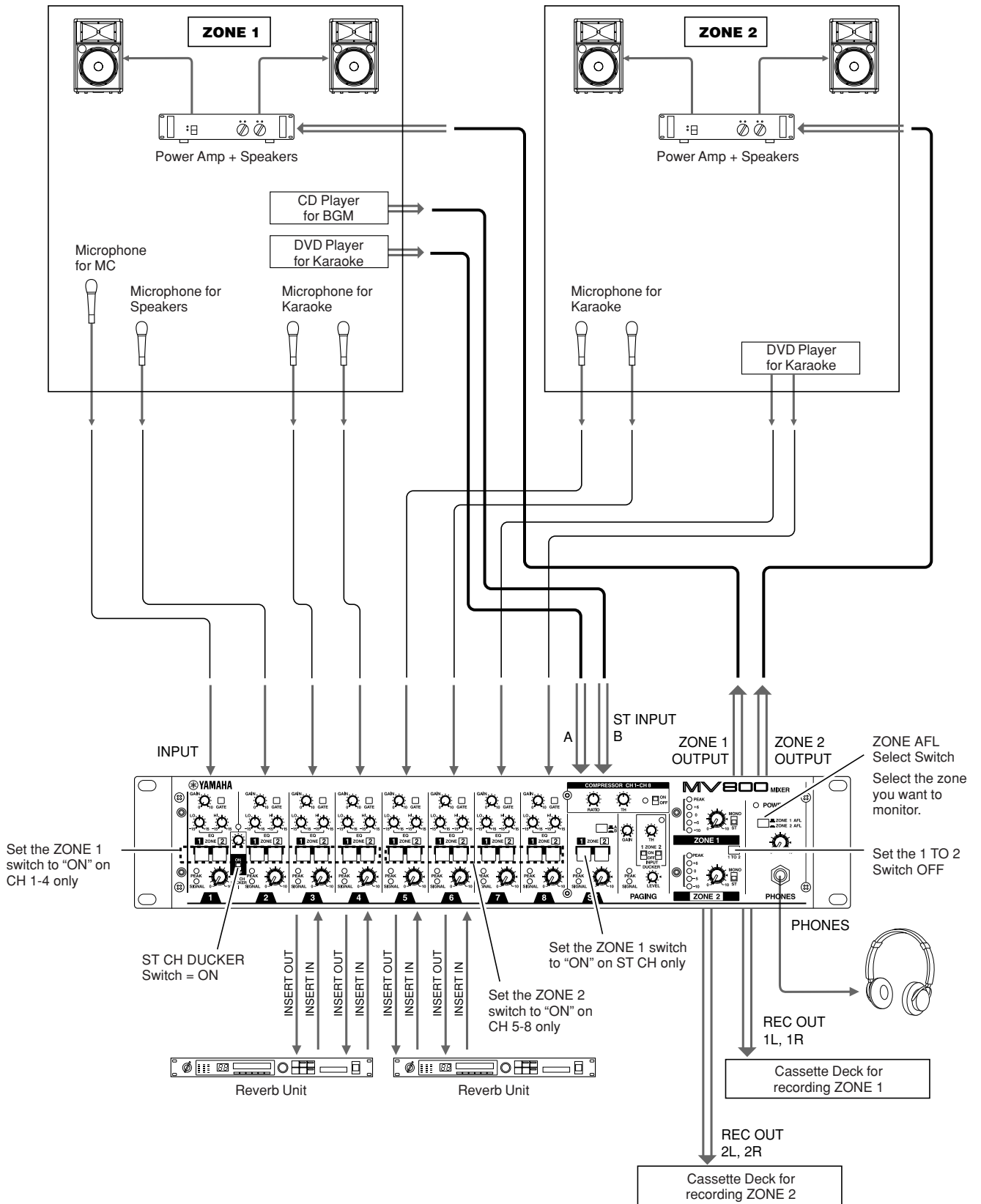
After all connections have been made, turn the power on starting with the input devices.
In this case, turn the devices on in the following order.

   Karaoke DVD Player → BGM CD Player → Reverb Unit → MV800 → Cassette Deck → Power Amp

ZONE 1

ZONE 2

Power Amp + Speakers

Power Amp + Speakers

CD Player
for BGM

DVD Player
for Karaoke

Microphone
for MC

Microphone for
Speakers

Microphone for
Karaoke

Microphone for
Karaoke

DVD Player
for Karaoke

INPUT

ST INPUT
A B

ZONE 1
OUTPUT

ZONE 2
OUTPUT

ZONE AFL
Select Switch

Select the zone
you want to
monitor.

Set the ZONE 1
switch to "ON" on
CH 1-4 only

Set the 1 TO 2
Switch OFF

ST CH DUCKER
Switch = ON

INSERT OUT
INSERT IN
INSERT OUT
INSERT IN
INSERT OUT
INSERT IN
INSERT OUT
INSERT IN

Set the ZONE 1 switch
to "ON" on ST CH only

PHONES

Set the ZONE 2
switch to "ON" on
CH 5-8 only

REC OUT
1L, 1R

Reverb Unit

Reverb Unit

Cassette Deck for
recording ZONE 1

REC OUT
2L, 2R

Cassette Deck for
recording ZONE 2

* If necessary, setup the compressor or paging functions.

\<Setting: ZONE 1\>

● Channel 1-4 Settings

1. Make the following settings. Channel Volume = ◀, Gate Switch = ON (▬), ZONE Select Switch = only set "1" to ON (▬), ZONE 1's ZONE Volume = ◀, ST/MONO Select Switch = "ST".

2. Adjust the GAIN control so that the PEAK Indicator lights when you speak loudly into the microphone.

3. If necessary, use the equalizer (LO, HI) to adjust sound quality.

● ST Channel Settings

1. Make the following settings. Channel Volume = ◀, ZONE Select Switch = only set "1" to ON (▬).

2. Set the ST Input Select Switch to "A" (■) and playback a DVD with the Karaoke DVD player. Adjust the DVD player's output volume so that the PEAK Indicator lights when the DVD player plays a louder passage.

3. Set the ST Input Select Switch to "B" (▬) and adjust the CD player's output volume in the same manner as the DVD player.

● Overall Controls

· We recommend that the compressor be switched "ON". Use the RATIO and TH controls to adjust the amount of compression.

· Set the Stereo Channel DUCKER Switch to "ON" and adjust the attenuator while producing some sound through the system.

· Use the Volume Control for each channel to adjust the balance between the channels.

· Use the ZONE 1 Volume to adjust the overall output level. Adjust the level so that the level meter's PEAK lamp lights when a large signal is present. Use the volume control on the power amp to adjust the volume delivered by the speakers.

· If necessary, setup the PAGING system.

· Connect a pair of headphones to the PHONES jack and set the ZONE AFL Select Switch to "ZONE 1 AFL" (■) to monitor the final output.

\<Setting: ZONE 2\>

● Channel 5 and 6 Settings

1. Make the following settings. Channel Volume = ◀, Gate Switch = ON (▬), ZONE Select Switch = only set "2" to ON (▬), ZONE 2 ZONE Volume = ◀, ST/MONO Select Switch = "ST".

2. Adjust the GAIN control so that the PEAK Indicator lights when you speak loudly into the microphone.

3. If necessary, use the equalizer (LO, HI) to adjust sound quality.

● Channel 7 and 8 Settings

1. Make the following settings. Channel Volume = ◀, Gate Switch = ON (▬), ZONE Select Switch = only set "2" to ON (▬).

2. Playback a DVD with the Karaoke DVD player. Adjust the DVD player's output volume so that the PEAK Indicator lights when the DVD player plays a louder passage.

3. If necessary, use the equalizer (LO, HI) to adjust sound quality.

● Overall Controls

· Use the Volume Control for each channel to adjust the balance between the channels.

· Use the ZONE 2 Volume to adjust the overall output level. Adjust the level so that the level meter's PEAK lamp lights when a large signal is present. Use the volume control on the power amp to adjust the volume delivered by the speakers.

· Connect a pair of headphones to the PHONES jack and set the ZONE AFL switch to "ZONE 2 AFL" (▬) to monitor the overall output.

Supplement

Specifications

■ General specifications

Frequency response (ZONE OUTPUT)	20Hz—20kHz 0+1dB, -3dB @+4dB, 600Ω (INPUT GAIN Control at minimum level)	
Total harmonic distortion (ZONE OUTPUT)	<0.1% (THD+N) @+14dB, 20Hz—20kHz, 600Ω	
Hum & Noise	-128dB	Equivalent input noise
(Rs=150Ω, 20Hz—20kHz, INPUT GAIN Control=Max., INPUT PAD=OFF, Input Sensitivity=-60dB)	-97dB	Residual output noise
* Measured with 12.7kHz, 6dB/oct. low pass filter. (Equivalent to 20kHz, ∞dB/oct. filter.)	-64dB (68dB S/N)	ZONE OUT: Master volume and one channel volume at nominal level.
	-92dB (96dB S/N)	ZONE OUT: Master volume at nominal level, all channel assign switches OFF.
Maximum voltage gain	60dB INPUT (MIC) to INSERT OUT 16dB INSERT IN to ZONE OUT 76dB INPUT (MIC) to ZONE OUT 66dB INPUT (MIC) to STACK OUT 10dB STACK IN to ZONE OUT 58.2dB INPUT (MIC) to REC OUT 23.8dB ST INPUT to ZONE OUT 76dB PAGING INPUT to ZONE OUT	
Monaural input pad switch (LINE)	26dB	
Monaural input gain control	44dB variable	
Crosstalk at 1kHz	-70dB adjacent input -70dB input to output (CH INPUT) -50dB between L and R (ST CH INPUT)	

Monaural input equalizer's characteristics	±15dB Maximum
	    HIGH 10kHz shelving
	    LOW 100Hz shelving
	      * Turn over/Roll off frequency of shelving: 3dB below maximum variable level.	

Paging input pad switch (LINE)	26dB	
Paging input gain control	44dB variable	
Monaural input indicator	PEAK (red): Each channel, the indicator will light when the post EQ signal exceeds +17dB. SIGNAL (green): Each channel, the indicator will light when the post EQ signal level exceeds that of the noise gate's threshold level.	
Stereo input indicator	PEAK (red): The indicator will light when the post buffer amp signal level exceeds +17dB. SIGNAL (green): The indicator will light when the post buffer amp signal level exceeds -10dB.	
Compressor indicator	Orange: When the compressor is activated the indicator will light.	
Stereo channel ducker indicator	Orange: When the Stereo Channel Ducker is activated the indicator will light.	
Paging indicator	PEAK (red): The indicator will light when the post head amp signal level exceeds +17dB. SIGNAL (green): The indicator will light when the post head amp signal level exceeds -10dB. PAGING ON (Orange): When the ZONE Input Ducker is ON the indicator will light.	
Level meters	5 points (PEAK, +6, 0, -5, -10) x 2, 0=+4dB ZONE OUT @600Ω	
Phantom power	+48V (balanced)	
Accessories	• Feet x 4 • 3-pin Euro-block connectors x 14 • Security Cover Set (Security Cover, Post Screws x4, Set Screws x4)	
Power supply	USA and Canadian: 120V AC 60Hz General: 230V AC 50Hz	
Power consumption	45W	
Dimensions (W x H x D)	479 x 88 x 325 mm (without accessories)	
Weight	7.2kg	

For European Model 0dB=0.775Vrms
Purchaser/User Information specified in EN55103-1 and EN55103-2.
Inrush Current: 7A
Conformed Environment: E1, E2, E3 and E4

■ Input Specifications

Input connectors	PAD	GAIN Control	Input impedance	Nominal impedance	Input level			Connector type
					Sensitivity *1	Nominal	Max. before clipping	
CH INPUT (1-8)	MIC	MAX	3kΩ	50-600Ω mics & 600Ω lines	-72 dB (0.195mV)	-60 dB (0.775mV)	-40 dB (7.75mV)	XLR-3-31 type *2 Euro-block connector *2
	LINE				-46 dB (3.88mV)	-34 dB (15.5mV)	-14 dB (155mV)	
	MIC	MIN			-28 dB (30.9mV)	-16 dB (123mV)	+4 dB (1.23V)	
	LINE				-2 dB (0.616V)	+10 dB (2.45V)	+30 dB (24.5V)	
ST INPUT [L, R] (A, B)			10kΩ	600Ω lines	-22 dBV (79.4mV)	-10 dBV (316mV)	+10 dBV (3.16V)	RCA phono jack *3
PAGING	MIC	MAX	3kΩ	50-600Ω mics & 600Ω lines	-72 dB (0.195mV)	-60 dB (0.775mV)	-40 dB (7.75mV)	Euro-block connector *2
	LINE				-46 dB (3.88mV)	-34 dB (15.5mV)	-14 dB (155mV)	
	MIC	MIN			-28 dB (30.9mV)	-16 dB (123mV)	+4 dB (1.23V)	
	LINE				-2 dB (0.616V)	+10 dB (2.45V)	+30 dB (24.5V)	
CH INSERT IN (1-8)			10kΩ	600Ω lines	-12 dB (195mV)	0 dB (0.775V)	+20 dB (7.75V)	Phone jack (TRS) *2
STACK IN [ZONE1, ZONE2]			10kΩ	600Ω lines	-6 dB (388mV)	0 dB (0.775V)	+20 dB (7.75V)	Phone jack (TRS) *3

*1 Input sensitivity: the lowest level that will produce the nominal output level when the unit is set to maximum gain.
*2 XLR type connector, Euro-block connector, phone jack (TRS) (T=Hot, R=Cold, S=Gnd): balanced type.
*3 RCA phono jack, phone jack (TRS) (T=ZONE 1, R= ZONE 2, S=Gnd): unbalanced type.

• 0dB=0.775Vrms, 0dBV=1Vrms

■ Output Specifications

Output connectors	Output impedance	Nominal impedance	Output level		Connector type
			Nominal	Max. before clipping	
ZONE 1 OUT [L, R] ZONE 2 OUT [L, R]	150Ω	600Ω lines	+4 dB (1.23V)	+24 dB (12.3V)	XLR-3-32 type *1 Euro-block connector *1
CH INSERT OUT (1-8)	150Ω	10kΩ lines	0 dB (0.775V)	+20 dB (7.75V)	Phone jack (TRS) *2
STACK OUT	150Ω	10kΩ lines	0 dB (0.775V)	+20 dB (7.75V)	Phone jack (TRS) *3
REC 1 OUT [L, R] REC 2 OUT [L, R]	600Ω	10kΩ lines	-10 dBV (316mV)	+10 dBV (3.16V)	RCA phono jack *4
PHONES	100Ω	40Ω phones	30mW	75mW	Stereo phone jack (TRS) *5

*1 XLR type connector, Euro-block connector: balanced type.
*2 Phone jack (TRS) (T=Hot, R=Cold, S=Gnd): impedance balanced type.
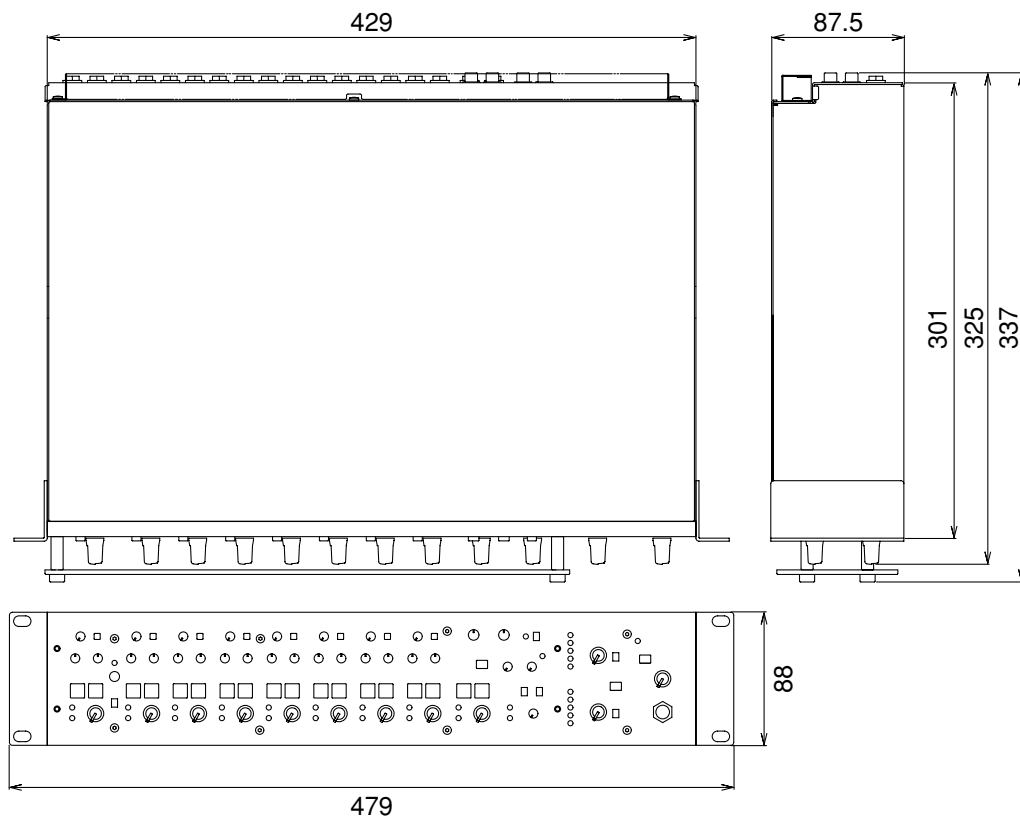*3 Phone jack (TRS) (T=ZONE 1, R=ZONE 2, S=Gnd): unbalanced type.
*4 RCA phono jack: unbalanced type.
*5 Stereo phone jack (TRS) (T=L, R=R, S=Gnd): unbalanced type.

• 0dB=0.775Vrms, 0dBV=1Vrms

Specifications are subject to change without prior notice.

Dimensions

429

87.5

301
325
337

88

479

Units: mm

Block and Level Diagrams

YAMAHA