# PORTABLE PA SYSTEM STAGEPAS 250M

Owner's Manual

### Introduction

Thank you for your purchase of the Yamaha PORTABLE PA SYSTEM STAGEPAS 250M. The STAGEPAS 250M is a versatile, compact PA system consisting of a speaker and a mixer.

In order to get the most out of your new STAGEPAS 250M and its sophisticated functions, we suggest you read through this manual thoroughly. Also keep it in a safe place for future reference.

#### Features

#### Two-way, 10-inch (25 cm) speaker system

The built-in speaker delivers high-quality powerful sound from an exceptionally compact cabinet. The scratch-resistant speaker is rugged enough for outdoor use

#### Powered mixed

The powered mixer is a convenient, high-performance all-in-one unit that includes EQ and reverb. With two monaural inputs and four stereo inputs, the STAGEPAS 250M can be connected to a wide range of instruments and devices

#### Convenient storage

The STAGEPAS 250M can be used in even the most cramped quarters, inside or outside, since the mixer is built into the speaker cabinet.

#### Package Contents

Speaker (500S), mixer, power cord, speaker cable, Owner's Manual (this booklet)

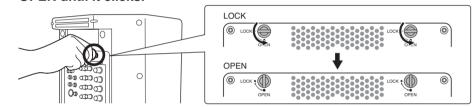
NOTE: The mixer is installed in the speaker when the STAGEPAS 250M leaves the factory.

# Before turning on the mixer

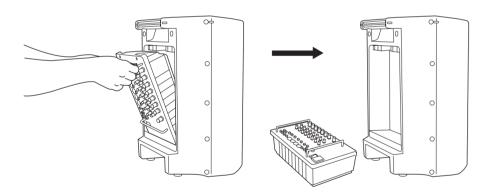
#### **Remove the mixer**

Be sure that the mixer's power switch is turned off.

Use a screwdriver or coin to turn each screw on the mixer from LOCK to **OPEN until it clicks.** 



Securely hold the mixer's handles to remove it from the speaker.



Use only the mixer's handles when removing the mixer from the speaker and when carrying the mixer separate from the speaker

NOTE: The mixer can also be used when installed in the speaker.

When you install the mixer into the speaker, make sure to match the indentations on the speaker cabinet to the corresponding parts on the mixer, and then turn each screw from OPEN to LOCK until it clicks

# Turning the power on/off

- Be sure that the mixer's power switch is turned off.
- Connect the included power cord to the [AC IN] jack, and plug the power cord into a power outlet.



- To avoid any loud, unexpected noise from the speakers, first turn on the power to those connected devices that are closest to the sound source.
- Example: Sound source (CD player or instrument)  $\rightarrow$  STAGEPAS 250M When turning off the power to the system, reverse the order described above
- · Before turning on the power, set the LEVEL controls and MASTER LEVEL control to their minimum setting (zero).
- Press the mixer's power switch to the ON position. The POWER indicator lights.

To turn the power off, press the power switch to the OFF position. The POWER indicator turns off.

# Troubleshoofing

#### Power does not turn on

Is the included power cord correctly connected to a power outlet?

#### Power shuts down suddenly

- Is the vent on the top panel of the mixer blocked? Since inadequate ventilation can result in overheating the mixer, the power may be turned off automatically and the mixer may reset itself.
- Is the LIMITER flashes continuously? If the internal power amplifier section is excessively overloaded, the power may be turned off automatically and the mixer may reset itself.

#### No sound is heard

- Are external instruments (including a microphone) or speakers correctly connected to the mixer?
- Are the LEVEL controls of all relevant channels and/or the MASTER LEVEL control set to appropriate levels?
- Is the SPEAKER jack connected to the included speaker (500S)?
- Is the POWER indicator flashing? There may be a short in the speaker cable or the connection may be faulty. Check that the speaker cable is correctly connected to the mixer and reapply the power
- Is the CLICK switch (for headphones) set to OFF?
- If sound is not still output, contact your Yamaha dealer.

#### Sound is distorted or noise is produced

- Are the LEVEL controls of all relevant channels and/or the MASTER LEVEL control set to appropriate levels?
- Are the MIC/LINE switches of each channels set appropriately?
- Are both XLR type and phone type jacks on channels 1–2 being used (connected) at the same time?
- Please connect to only one of these jacks on each channel.
- Is the input signal from the connected device set to an appropriate level?
- Use channels 1 or 2, and set the LIMIT/COMP switches to COMP (\_\_\_). Compression may be effective in preventing distortion

#### Sound is not loud enough

- Are the LEVEL controls of all relevant channels and/or the MASTER LEVEL control set to appropriate levels?
- Are the MIC/LINE switches of each channels set appropriately?
- Are both XLR type and phone type jacks on channels 1–2 being used (connected) at the same time? Please connect to only one of these jacks on each channel.
- Is the input signal from the connected device set to an appropriate level?
- Is the PHANTOM switch set to ON when using a condenser microphone?

#### Reverb is not applied to the sound

- Are the REVERB switches of each channels set to ON (\_\_\_\_)?
- Is the REVERB control set to an appropriate level?

#### Getting a more powerful sound from the speakers

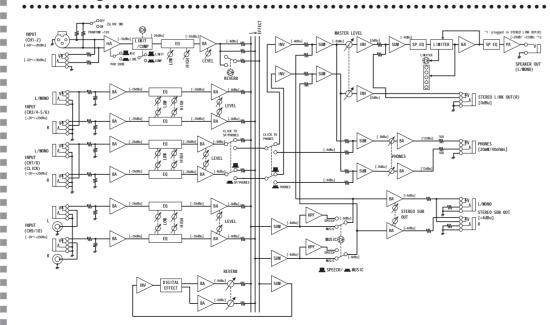
- Is the SPEECH/MUSIC switch set to MUSIC (\_\_\_\_)?
- Are the Equalizer controls (HIGH/LOW) set to appropriate levels?
- Getting a clearer sound for announcements
- Is the SPEECH/MUSIC switch set to SPEECH (\_\_\_)?
- Are the Equalizer controls (HIGH/LOW) set to appropriate levels?

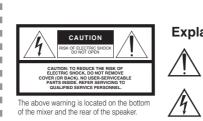
#### Outputting the signal to a main mixer

-----

 Connect a main mixer to the ST SUB OUT jack. The ST SUB OUT jack outputs the signal prior to routing through the MASTER LEVEL control. Adjust the level of output signal from the ST SUB OUT jack with the ST SUB OUT control. The ST SUB OUT control does not affect the MASTER LEVEL control. If only the L (left) ST SUB OUT jack is used, the mixer mixes the left and right signals and sends them to the jack.

# **Block Diagram**





# **IMPORTANT SAFETY INSTRUCTIONS** 1 Read these instruction

- 2 Keep these instructions 3 Heed all warnings
- 4 Follow all instruction: 5 Do not use this apparatus near wate
  - Do not block any ventilation openings. Install in accordance with the

Clean only with dry cloth.

- other apparatus (including amplifiers) that produce heat. Do not defeat the safety purpose of the polarized or grounding-type plug. A zed plug has two blades with one wider than the other. A grounding typ
  - prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet. WARNING



- · Use only the included power cord.

# Do not open

### Location

- can result in damage or injury. Depending on the condition of the connected devices, doing so may cause feedback and may damage the speakers.
- Do not expose the device to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel disfiguration or damage to the
- internal components
- accidentally fall over. Do not block the vents. This mixer has ventilation holes at the top to prevent the internal temperature from becoming too high. In particular, do not place the device on its side or upside down. Inadequate ventilation can result in overheating, possibly causing damage to the device(s), or even fire.

#### **Explanation of Graphical Symbols**

ntning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the ce of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient use to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature a

- 10 Protect the power cord from being walked on or pinched particularly at plugs convenience receptacles, and the point where they exit from the apparatu
  - 11 Only use attachments/accessories specified by the manufacture 12 Use only with the cart, stand, tripod, bracket, or table specifie
  - by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus cor
  - to avoid injury from tip-over.
    - 13 Unplug this apparatus during lightning storms or when unuse for long periods of time.
    - 14 Refer all servicing to qualified apparatus has been damaged in any way, such as power-supply cord or plug is lamaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally. or has been dropped.

D REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK. DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE

# PRECAUTIONS

# PLEASE READ CAREFULLY BEFORE PROCEEDING

\* Please keep this manual in a safe place for future reference.

## 

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

#### Power supply/Power cord

 Only use the voltage specified as correct for the device. The required voltage is printed on the name plate of the device.

Do not install near any heat sources such as radiators, heat registers, stoves, or

plug has two blades and a third grounding prong. The wide blade or the third

- Do not place the power cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.
- Be sure to connect to an appropriate outlet with a protective grounding connection. Improper grounding can result in electrical shock.

 Do not open the device or attempt to disassemble the internal parts or modify them in any way. The device contains no user-serviceable parts. If it should appear to be malfunctioning, discontinue use immediately and have it inspected by qualified Yamaha service personnel

#### Water warning · Do not expose the device to rain, use it near water or in damp or wet

- conditions, or place containers on it containing liquids which might spill into any openings. If any liquid such as water seeps into the device, turn off the power immediately and unplug the power cord from the AC outlet.
- Then have the device inspected by qualified Yamaha service personnel. · Never insert or remove an electric plug with wet hands.

#### If you notice any abnormality

- If the power cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during use of the device, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified Yamaha service personnel.
- If this device should be dropped or damaged, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by gualified Yamaha service personnel.

When turning on the AC power in your audio system, always turn on the

device should be turned off FIRST for the same reason.

device LAST, to avoid speaker damage. When turning the power off, the

• Do not insert your fingers or hands in any gaps or openings on the device

Avoid inserting or dropping foreign objects (paper, plastic, metal, etc.)

happens, turn off the power immediately and unplug the power cord from

into any gaps or openings on the device (vents, ports, etc.) If this

the AC outlet. Then have the device inspected by qualified Yamaha

• Do not use the device or headphones for a long period of time at a high

or uncomfortable volume level, since this can cause permanent hearing

loss. If you experience any hearing loss or ringing in the ears, consult a

• Do not operate the device if the sound is distorting. Prolonged use in this

Do not rest your weight on the device or place heavy objects on it, and

avoid use excessive force on the buttons, switches or connectors.

All full-range loudspeakers are fitted with a self-resetting poly switch that

power. If a loudspeaker cabinet loses high-frequency output, immediately

remove power from the unit and wait for two to three minutes. This should

e long enough to allow the poly switch to reset. Reapply power and chec

Using a cell phone near the speaker system can induce noise. If this occurs,

Air blowing out of the bass reflex ports is normal, and often occurs when the

Yamaha cannot be held responsible for damage caused by improper use

The performance of components with moving contacts, such as switches,

volume controls, and connectors, deteriorates over time. Consult qualified

The illustrations as shown in this manual are for instructional purposes

Yamaha service personnel about replacing defective components

only, and may be different from the ones on your equipment.

· The company names and product names in this manual are the

trademarks or registered trademarks of their respective companies

ase record the serial number of this unit in the space below

The serial number is located on the bottom or rear of the unit.

Retain this Owner's Manual in a safe place for future reference

move the cell phone further away from the speaker system.

speaker is handling program material with heavy bass content.

Always turn the power off when the device is not in use

the performance of the high frequency driver before continuing, with the

power reduced to a level that does not cause the poly switch to interrupt

protects the high-frequency driver from damage caused by excessive

condition could cause overheating and result in fire.

Protective Circuit (poly switch)

Interference From Cell Phones

or modifications to the device.

**IMPORTAN** 

Model

Serial No.

# 

Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the device or other property. These precautions include, but are not limited to. the following:

Handling caution

(vents., ports, etc.).

service personnel.

physician.

the signal

#### Power supply/Power cord

- Remove the electric plug from the outlet when the device is not to be used for extended periods of time, or during electrical storms When removing the electric plug from the device or an outlet, always hold
- the plug itself and not the cord. Pulling by the cord can damage it.

#### Before moving the device, remove all connected cables

 When setting up the device, make sure that the AC outlet you are using is easily accessible. If some trouble or malfunction occurs, immediately turn off the power switch and disconnect the plug from the outlet. Even when the power switch is turned off, electricity is still flowing to the product at the minimum level. When you are not using the product for a long time, make sure to unplug the power cord from the wall AC outlet.

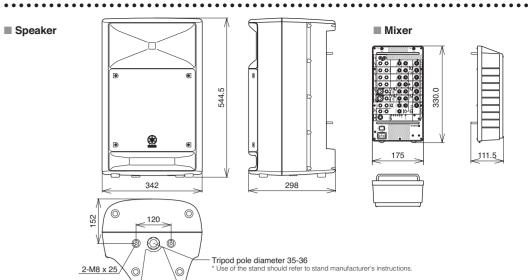
Do not use the device in a confined, poorly-ventilated location. Make sure that there is adequate space between the mixer and surrounding walls or other devices: at least 30 cm at the sides. 30 cm behind and 30 cm above. If the mixer is to be used installed into the speaker cabinet, make sure to allow adequate space between the speaker and the surrounding walls or other devices; at least 30 cm at the sides, 30 cm behind and 30 cm above. Inadequate ventilation can result in overheating, possibly causing damage to the device(s), or even fire.

- Do not use the speaker's handles for suspended installation. Doing so
- Do not place the device in an unstable position where it might
- Do not use the device in the vicinity of a TV, radio, stereo equipment. mobile phone, or other electric devices. Doing so may result in noise.
- both in the device itself and in the TV or radio next to it.

# Connections

- Before connecting the device to other devices, turn off the power for all devices. Before turning the power on or off for all devices, set all volume. levels to minimum
- For the SPEAKER jack, use only the included speaker (500S) and speaker cable. Use of other types of speakers and cables may result in damage to the device(s), or even fire.

Dimensions



#### **Specifications** Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.

#### General Specifications

Maximum Output Powe

250 W (±10 %)/4Ω @ 10 % THD at 1 kHz (SPEAKER)  $\geq$  200 W/4 $\Omega$  @ 1 % THD at 1 kHz (SPEAKER)

#### Maximum Output Level

### 116 dB (1 m)

Frequency Response (Nominal output level @ 1 kHz) 3 dB, 0 dB, +1 dB @ 20 Hz-20 kHz (MUSIC/SPEECH=MUSIC) (ST SUB OUT) -3 dB, 0 dB, +1 dB @ 80 Hz-20 kHz (MUSIC/SPEECH = SPEECH) (ST LINK OUT) 3dB, 0dB, +1 dB @ 20 Hz-20 kHz, 1 W Output (MUSIC/SPEECH=MUSIC, without Speake EQ) (SPEAKER)

#### Total Harmonic Distortion

≤ 0.5 % @ 20 Hz, 1 kHz, 20 kHz +14 dBu GAIN= nominal (ST SUB OUT, ST LINK OUT) Hum & Noise (Equivalent Input Noise, Rs = 150Ω, MIC/LINE = MIC)

≦ -106 dBu (CH1/2)

≦ -65 dBu Residual output noise (SPEAKER)

Crosstalk (1 kHz)  $\leq$  -70 dB between input channels

Phantom Voltage

+15 V (CH1-2)

#### FCC INFORMATION (U.S.A.) IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT! This product, when installed as

- odifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product. . IMPORTANT: When connecting this only high quality shielded cables. Cable/s supplied with this product MUST be
- used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA. . NOTE: This product has been tested and found to comply with the requirements liste FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these
- quirements provides a reasonable level of assurance that your use of this product in residential environment will not result in harmful interference with other electronic evices. This equipment generates/uses radio frequencies and, if not installed and ding to the instructions found in the users manual, may cause interfer harmful to the operation of other electronic devices. Compliance with FCC regulatio

#### IMPORTANT NOTICE FOR THE UNITED KINGDOM

necting the WARNING: THIS APPARATUS MUST BE EARTHED The wires in this mains lead are colou



or details of products, please contact your nearest Yamaha representative or the authorized distributor listed belo

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#### Weight 13 kg (Speaker + Powered Mixer)

ON = Comp, OFF = Limit (CH1/2)

Unit: mm

Stereo Input Channel Equalization ±15 dB HIGH 10 kHz shelving

LOW 100 Hz shelving

55 Hz-20 kHz (-10 dB)

LF: 10" (25 cm) Cone

I to be the source of interference, which can be determined b

ead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable

ivision, 6600 Orangethorpe Ave, Buena Park, CA90620

ation of America or its subsidiaries.

The wire which is coloured GREEN-and-YELLOW must be or

nterference.

nd-YELLOW.

letter N or coloured BLACH

letter L or coloured RED.

nstall AC line filter/s

OFF" and "ON", please try to eliminate the problem by using one of the follow

Speaker Unit

LIMIT/COMP switc

Power Consumption

35 W

#### Speaker (500S) Enclosure

2 way bass-reflex type, Polypropylene, Black Crossover Frequency

4.0 kHz (LF: 12 dB/oct, HF: 12 dB/oct) Frequency Range

HF: 1" (2.54cm) Compression Driver

not guarantee that interference will not occur in all installations. If this product is

s:Relocate either this product or the device that is being affected by the

ilize power outlets that are on different branch (circuit breaker or fuse) circuits o

in the case of radio or TV interference, relocate/reorient the antenna. If the antenna

If these corrective measures do not produce satisfactory results, please contact the

opriate retailer, please contact Yamaha Corporation of America, Electronic Servi

ked by the letter E or by the safety earth symbol 🕀 or colored GREEN or GREEN

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ocal retailer authorized to distribute this type of product. If you can not locate the

The above statements apply ONLY to those products distributed by Yamaha

As the colours of the wires in the mains lead of this apparatus may not correspond with the

The wire which is coloured BLUE must be connected to the terminal which is marked with the

ared markings identifying the terminals in your plug proceed as follows

The wire which is coloured BROWN must be connected to the terminal which is man

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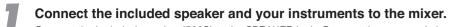
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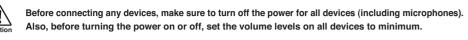
# **Ould**x **Ould**a

# Getting sound out of the system

Using the included speaker, set up the system and try it out.



Connect the included speaker (500S) to the SPEAKER jack. Connect the sources (microphone, other instruments) to the input jacks. For details, see "Connection Example."



NOTE: For best results when connecting an electric guitar or bass guitar to the mixer, use a direct box, preamp (guitar amp), or amp simulator.

Set the mixer's LEVEL controls and MASTER LEVEL control to the minimum (zero).

# MASTER 0 1 2 3/4 5/6 7/8 9/10

# Depending on the device used, set the MIC/LINE switch to MIC (I) or LINE (**....)** as appropriate.

For low-level signals (such as that of microphones), set the switch to the MIC (III) position For high-level signals (such as keyboard instruments and audio equipment), set the switch to the LINE (\_\_\_\_) position



NOTE: When using a condenser microphone, set the PHANTOM switch to ON.

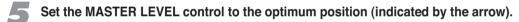
## Turning the power on

First, turn on the power to any connected devices, then turn the STAGEPAS 250M power on. If you've connected powered speakers to the mixer, turn on the power of the mixer first, then the powered speakers.



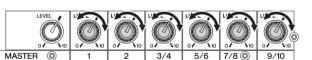
To avoid any loud, unexpected noise from the speakers, first turn on the power to those connected devices that are closest to the sound source.

Example: Sound source (CD player or instrument)  $\rightarrow$  STAGEPAS 250M  $\rightarrow$  (Power amplifier) When turning off the power to the system, reverse the order described above.



#### ÓÓ Q.Q $| \bigcirc$ 2 3/4 5/6 7/8 🔘

While playing your instrument or singing into the microphone, adjust the LEVEL control of the corresponding channel. Adjust the LEVEL Control of the corresponding channel so that the "0" LED lights up momentarily.



Use the MASTER LEVEL control to adjust the overall volume.

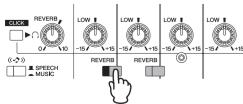
If the LIMITER indicator flashes continuously, the internal power amplifier section is being excessively overloaded and may malfunction

# Applying reverb or echo to the sound

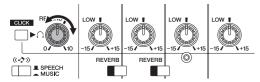
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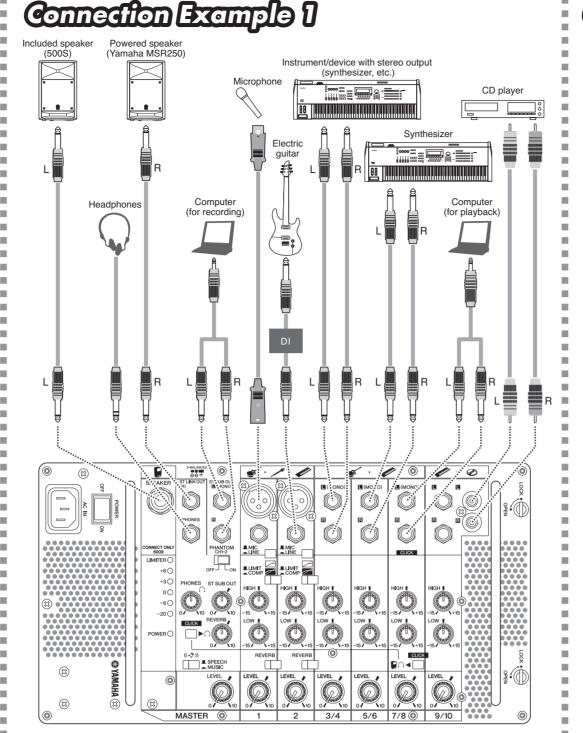
Reverb recreates the warm ambience of an actual performance space, such as a concert hall or a night club.

For each channel you want to apply reverb, set the corresponding REVERB switch to ON (-----)

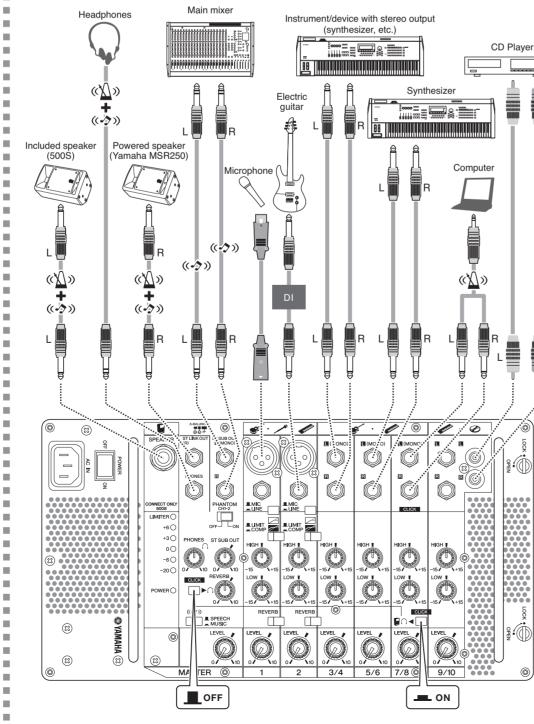


Use the REVERB control to adjust the overall reverb.





# Connection Example 2













**2** CLICK switch

# Controls and Eurations

Connect the included power cord here. Be sure to use the included power

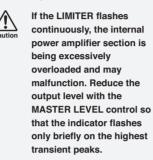
cord. Use of other cords may result in malfunction, heat generation, or

#### **2** POWER switch

For turning the power to the mixer on and off.

# **22** LEVEL meter

The LEVEL meter shows the level of the output signal from the SPEAKER jack.



### 23 POWER indicator

This lights when the POWER switch is ON. When the indicator flashes, the protection circuit is operating. Check that the speaker cable is correctly connected to the mixer and reapply the power.

## **3** SPEAKER jack

(for included speaker 500S only) This outputs the mixed monaural L+R signal channels from 1 to 9/10 and the level is adjusted with the MASTER LEVEL control. Connect only the included speaker (500S).

## **4** ST LINK OUT R jack

This outputs signals from R (even) channels only. When inserting a plug to this jack, only signals from the L (odd) channels are supplied to the SPEAKER jack. The output level is adjusted with the MASTER LEVEL control. Used with the SPEAKER jack, this lets you output the signals in stereo from the speakers.

#### **5** PHONES jack

This outputs the mixed signal channels from 1 to 9/10, and the level is adjusted with the PHONES control. Connect a set of headphones here

#### **6** ST SUB OUT L (MONO) / R jacks

These output the mixed signal channels from 1 to 9/10, and the level is adjusted with the ST SUB OUT control. You can use these jacks, for example, to connect a main mixer. These impedance balanced jacks allow a longer cable to be connected with the use of a balanced cable.

#### **7** ST SUB OUT control

## Determines the signal level output from the ST SUB

OUT jacks **NOTE:** The MASTER LEVEL control does not affect the signal via the ST SUB OUT control.

#### 8 PHONES control

Determines the signal level output from the PHONES jack.

NOTE: The MASTER LEVEL control does not affect the signal via the PHONES control



#### 9 Channel input jacks (CH 1, 2)

For connecting a guitar, microphone, keyboard or other instrument/device. Set the MIC/LINE switch to MIC or LINE for channels 1, 2, depending on the level of the input signal.

XLR-type connectors are wired as follows (IEC60268 standard): pin 1: ground, pin 2: hot (+), and pin 3: cold (-).

NOTE: On any given channel, you may use either XLR or phone jack, but not both. Please connect to only one of these jacks on each channel.

#### **1** Stereo channel input jacks (CH 3/4, 5/6, 7/8, 9/10)

Input the left and right channels of a stereo signal into the respective odd and even channels of the mixer. These inputs are intended mainly for use with instruments and equipment having stereo outputs, such as a synthesizer or CD player.

NOTE: The channel 9/10 input provides two sets of jacks-both phone jacks and RCA-pin jacks. Either one of these jacks may be used, but not both at the same time. Please connect to only one of these jacks on each channel.

#### **MIC/LINE** switch

Set this switch to MIC or LINE for channels 1, 2, depending on the level of the input signal. For low-level signals (such as that of microphones), set the switch to the MIC (\_\_\_) position. For high-level signals (such as keyboard instruments and audio equipment), set the switch to the LINE (\_\_\_\_) position.



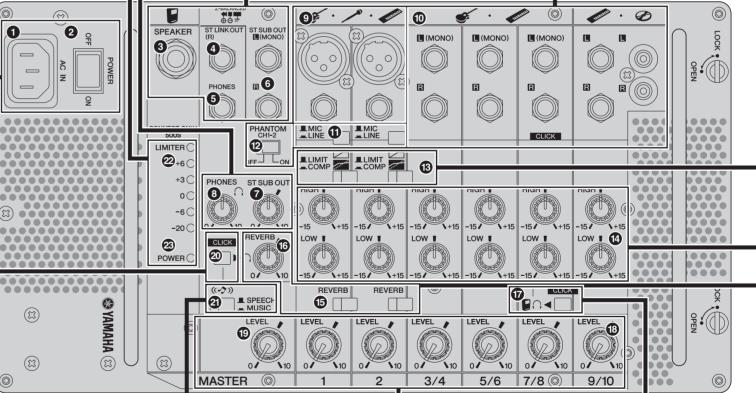
To avoid damage to speakers, be sure to turn off amplifiers (or powered speakers) before setting this switch to MIC or LINE. We also recommend that you turn the MASTER LEVEL control to the minimum setting before operating the switch, to avoid excessively loud noises that could cause hearing loss or device damage

#### **PHANTOM** switch

If you set the switch on, the mixer supplies phantom power on to the XLR mic input jacks on the channels 1, 2.



- phantom power When using phantom power, do not connect any devices other than condenser microphones to the XLR input jacks. Other devices may be damaged if connected to phantom power. This precaution does not apply to balanced dynamic microphones, however, as these will not be affected by phantom power.
- To avoid damage to speakers, be sure to turn off amplifiers (or powered speakers) before turning this switch on or off. We also recommend that you turn the MASTER LEVEL control to the minimum setting before operating the switch, to avoid excessively loud noises that could cause hearing loss or device damage.



# **B** LIMIT/COMP switch

Set this switch to COMP (\_\_\_\_) to apply compression, or set it to LIMIT (**III**) to apply limiting. By compressing excessive peaks of input signals and bringing up the level of overly soft parts, compression raises the overall volume without introducing distortion. Compression can be used to make a mix sound louder and have more punch. The Limiter is used to suppress excessive input signals and bring them down to an adequate level. The switch lights up in yellow when it is set to COMP (\_\_\_\_).

## 4 Equalizer

HIGH: Determines the level of the high frequency band for each channel. Rotating the knob clockwise boosts the high frequencies and produces a clearer, crisper sound. If you start getting feedback (a high-pitched squealing sound) or you want to make the sound soften and less harsh, turn the knob counterclockwise slightly. the level of the low fre for each channel. Rotating the knob clockwise boosts the low frequencies and produces a deeper, warmer sound. If you start getting feedback or you want to make the sound less boomy, turn the knob counterclockwise

### (for headphones)

Set this switch to ON to assign the click/metronome sounds to only the PHONES jack when the CLICK switch at the channel 7/8 is ON.

# 2 SPEECH/MUSIC switch

Set this switch to SPEECH (\_\_\_\_) to optimize the mixer settings and sound quality for speech purposes and announcements. Set this to MUSIC (\_\_\_\_) to optimize the mixer for musical performance. The switch lights up in yellow when it is set to MUSIC (-----).

# 18 LEVEL control

Use these controls to adjust the volume balance among the various channels.

> To reduce noise, set any LEVEL controls on unused channels to the minimum

# 19 MASTER LEVEL Control

Determines the volume of the signal output from the SPEAKER jack. This allows you to adjust the overall volume without changing the relative volume balance among the various channels (made with the LEVEL controls) or the tone settings (made with the Equalizer).

# **U**CLICK switch

(for headphones/speaker) Set this switch to ON to assign the click (metronome) sounds that sent to the channel 7/8 to the PHONES jack, SPEAKER jack, and ST LINK OUT R jack, but not to the ST SUB OUT jacks.

Setting this switch to ON lets the player monitor the click (metronome) sounds of a sequencer or a

synthesizer.

#### B REVERB switch

Set this switch to ON to recreate the rich ambience of various performance environments, such as a concert hall or a night club. The switch lights up in green when REVERB is ON (\_\_\_\_).

#### **1**6 REVERB control

Determines the overall level of the reverb or echo that is applied to the output signal. For best results, this level should not be set very high, to avoid possible feedback and to prevent the sound from becoming "muddy" with too much reverb.