



ZT16280 EN

POWER AMPLIFIER

MA2120

Owner's Manual

First, please carefully read the "IMPORTANT SAFETY INSTRUCTIONS" on the reverse side.

Thank you for your purchase of the Yamaha MA2120 power amplifier. Please read through this manual carefully before beginning use, so that you will be able to take full advantage of the device's various functions. After you have read the manual, keep it in a safe place.

- The illustrations as shown in this manual are for instructional purposes only.
- The company names and product names in this manual are the trademarks or registered trademarks of their respective companies.

Features

- Complies with the ENERGY STAR international standard for energy efficient products.
- Supports both high-impedance and low-impedance speaker connections.
- Mixing/Routing function allows you to mix various sources and to output to one stereo channel, or two mono channels. Source and volume zoning capability for two zones in mono connection.
- Equipped with an auto-wake function that turns the power on after detecting an input signal when in standby mode.
- Various digital signal processing and effects, including reverb, compressor, EQ, leveler, ducker and feedback suppressor.
- Built-in "Speaker EQ" that allows for tuning the sound quality to be perfect for use with Yamaha speakers.
- Remote controllable with up to two DCP control panels.

Accessories (Please confirm that all items are included)

- Power cord
- Euroblock plugs (6-pin x 3, 3-pin x 1, both with a 3.5mm pitch)
- Setup Guide
- Owner's Manual (this sheet)

About Manuals

Owner's Manual (this leaflet)

Explains about precautions, controls and functions on the panel, attaching Euroblock plugs, connecting speaker cables, and connecting external devices.

Setup Guide (separated)

Provides setup examples, explains settings to make after installation, and connecting control panels and remote controller.

ENERGY STAR Certification

This device complies with the ENERGY STAR international standard for energy efficient products.

It automatically enters into standby mode when no input signal is detected for 25 minutes in order to save power while not in use.

In addition, a highly efficient amplifier circuitry design has been adopted to reduce energy consumption while the device is in use.



Auto-Standby and Auto-Wake Functions

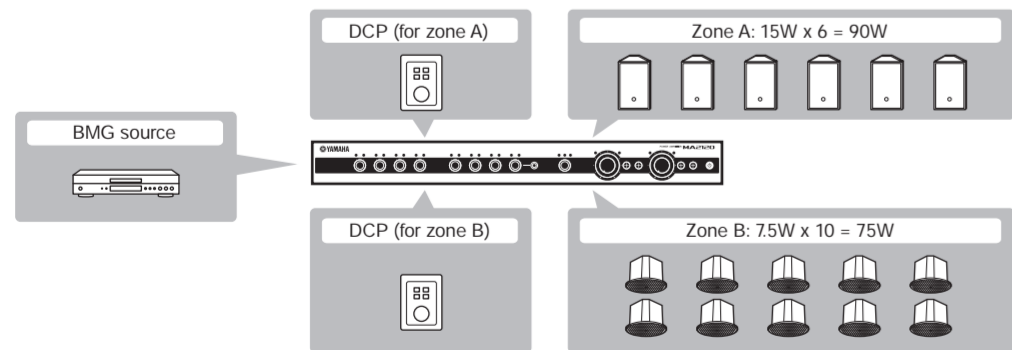
To reduce energy consumption, this device enters into standby mode when no input signal is detected for 25 minutes.

It is also equipped with an auto-wake function that automatically turns the power on when an input signal is detected while in standby mode. Even when the device has been put into standby mode by the auto-standby function, any microphone or BGM audio input will restore the power.

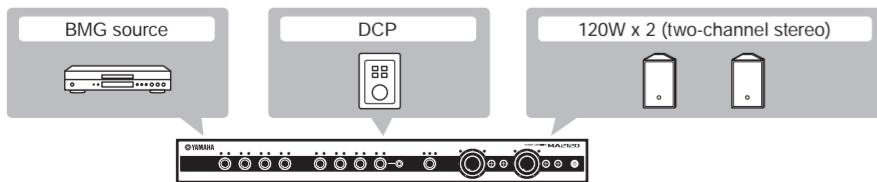
The auto-wake function is turned on by default. The auto-wake function can be turned on or off by changing the rear panel [SETUP] DIP switch setting. (Refer to "Controls and Functions.")

Setup Example

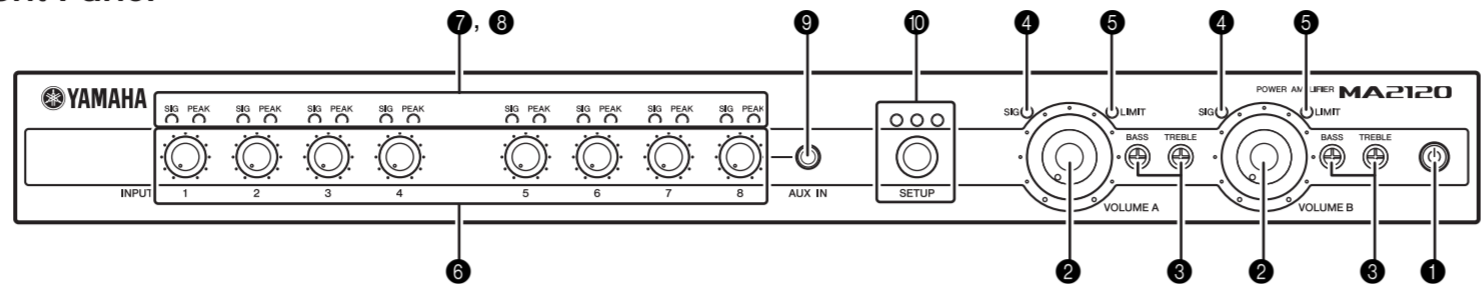
When multiple speakers are connected to the two zones: (MODE: MONO)



When two-channel stereo is used: (MODE: STEREO)



Front Panel



1 [O] button (Standby/On)

Switches the device mode between standby and on. On: Press the [O] button when in standby mode. The button lights in green to indicate that the device is on. Standby: Press and hold the [O] button for at least one second when the device is on. The button lights in orange to indicate that the device is in standby mode. The button lights in lime green for a few seconds while the status is switched between on and standby.

- The device automatically enters standby mode when no input signal is detected for 25 minutes. The rear panel DIP switch can be set to enable the auto-wake function that turns the power on upon detecting an input signal.
- Rapidly turning the unit on and off in succession can cause it to malfunction. After turning the unit off, wait for about 6 seconds before turning it on again.

2 [VOLUME A] and [VOLUME B] knobs

Used to adjust [SPEAKER A] and [SPEAKER B] output levels.

3 [BASS] and [TREBLE] controls

Two-band equalizer used to adjust the tone of the output signal to [SPEAKER A] and [SPEAKER B]. They can be adjusted with a tool such as a screwdriver.

4 [SIG] indicator

Lights up when the output signal to [SPEAKER A] or [SPEAKER B] is -42dBFS (42dB lower than the maximum output) or higher.

5 [LIMIT] indicator

Lights up when the limiter that prevents excessive output to [SPEAKER A] and [SPEAKER B] compresses the signal more than 3dB, for example. Adjust the input and output levels as LIMIT indicators do not light.

6 Input level knobs 1 - 8

Adjusts the input levels for [INPUT 1] - [INPUT 8]. Turning to the right increases the input level. In usual mode, press the knob to blink the [SIG] indicator of the output which the pressed channel is assigned to. You can confirm the selected output by the [ROUTE] switch of the rear panel.

In setup mode, press the knob to select the function to adjust, or to select a channel for adjustment. For more information regarding setup mode, refer to the "Setup Guide".

7 [INPUT SIG] indicators 1 - 8

Light up when the [INPUT 1] - [INPUT 8] input signal levels exceed -40dBFS. Adjust the input levels to a point where these indicators light by the input level knobs.

8 [INPUT PEAK] indicators 1 - 8

Light up when the [INPUT 1] - [INPUT 8] input signal levels exceed -3dBFS.

9 [AUX IN] jack

Input jack of mini-stereo type (unbalanced input). Connect a stereo audio source such as portable audio players. The signal from the [AUX IN] jack mixes with the signal from the [INPUT] jack 8 in the same signal path.

10 [SETUP] encoder/indicators 1 - 3

Push encoders for the various inbuilt adjustment functions. Press and hold this button to enter setup mode. Indicators 1 - 3 show adjustment values for setup mode functions.

For more information regarding setup mode, refer to the "Setup Guide".

11 AC IN connector

Connect the supplied power cord.

⚠ Caution

- When connecting the power cord, connect the power cord to the connector and then plug it into an appropriate AC power outlet.
- Before connecting or disconnecting the power cord, make sure that the device power is in standby mode.

12 [SETUP] DIP switches

Set the following functions of the device. The setting change will be applied after carrying out a power cycle by pressing the [O] button on the front panel. DIP switch setting combinations are shown as follows.

DIP switches 1/2: Panel lock

Set knobs and controls to be locked on the panel.

1	2	Setting
<input type="checkbox"/>	<input type="checkbox"/>	Panel lock off (All controls are enabled)
<input type="checkbox"/>	<input type="checkbox"/>	Locks the [SETUP] knob
<input type="checkbox"/>	<input type="checkbox"/>	Locks controls other than [VOLUME] knobs
<input type="checkbox"/>	<input type="checkbox"/>	Panel lock on (All controls are disabled)

DIP switches 3/4: Auto-wake

Enable the function where the device automatically turns on from standby mode upon detection of an input signal.

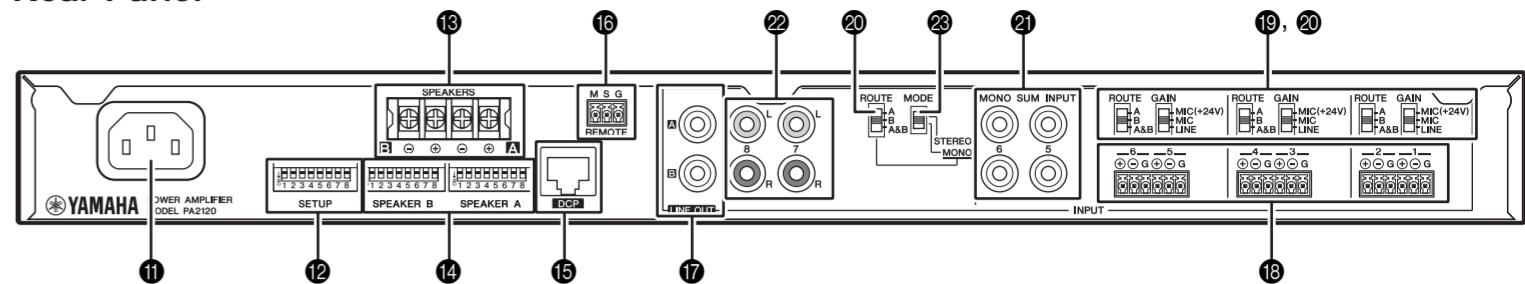
3	4	Setting
<input type="checkbox"/>	<input type="checkbox"/>	Auto-wake function on
<input type="checkbox"/>	<input type="checkbox"/>	Auto-wake function on. Only when the system is switched from AC off to standby mode due to insertion of the AC plug, or put into standby mode by the auto-standby function.
<input type="checkbox"/>	<input type="checkbox"/>	Auto-wake function off

NOTE The auto-wake function is completely disabled if the device has been put into standby mode through operation via the [REMOTE] connector.

Output Power (20msec Burst, THD+N=1%)	AMP MODE = 3	100W x 2ch
	AMP MODE = 4	120W x 2ch
	AMP MODE = 8	100W x 2ch
	AMP MODE = 70V/120V	120W x 2ch
	AMP MODE = 100V/120V	120W x 2ch
	AMP MODE = 70V/200V	200W x 1ch
Ampli er type (Output circuitry) THD+N	LINE IN to SPEAKER OUT, Half power@1kHz	0.2%
	AMP MODE = 3 , 4 , 8 LINE IN to SPEAKER OUT, Half power@1kHz	0.2%
AMP MODE = 70V, 100V/120V LINE IN to SPEAKER OUT, Half power@1kHz	0.2%	
	AMP MODE = 100V/200V LINE IN to LINE OUT, 20Hz-20kHz	0.2%

Controls and Functions

Rear Panel



DIP switch 5: A - B volume link

Sets whether [SPEAKER A] and [SPEAKER B] volume levels are independently controlled. When the link function is on, use the [VOLUME A] knob to control the volume.

5	Setting
<input type="checkbox"/>	Link off ([SPEAKER A] and [SPEAKER B] volume levels are independently controlled)
<input type="checkbox"/>	Link on ([SPEAKER A] and [SPEAKER B] volume levels are both controlled via the [VOLUME A] knob)

NOTE If you turn on "A - B volume link" when the function to allow control of the line out volume A and B by the [VOLUME] knob is enabled in setup mode, [LINE OUT] A and B are also linked.

DIP switch 6: DCP volume link

Sets whether the [SPEAKERS] and [LINE OUT] jack output levels are linked, when changing the volume via the DCP.

6	Setting
<input type="checkbox"/>	Link off ([SPEAKERS] and [LINE OUT] jack volume levels are controlled separately)
<input type="checkbox"/>	Link on ([SPEAKERS] and [LINE OUT] jack output is controlled together)

NOTE When the link function is on, you can control the volume by using both of [SPEAKER] and [LINE OUT] on the control panel.

DIP switches 7/8: Ducker

Configure the settings for the Ducker function. This can mute the microphone input of other channels, and lower the volume of line input when signals are input to [INPUT 1] or [INPUT 3].

7	8	Setting
<input type="checkbox"/>	<input type="checkbox"/>	Ducker off
<input type="checkbox"/>	<input type="checkbox"/>	Ducker on when signals are input to [INPUT 1].
<input type="checkbox"/>	<input type="checkbox"/>	Ducker on when signals are input to [INPUT 3].
<input type="checkbox"/>	<input type="checkbox"/>	Ducker on when signals are input to [INPUT 1] or [INPUT 3]. If signals are input to both of them, [INPUT 1] is given precedence.

13 [SPEAKERS] output terminals

Barrier strip type speaker output connectors. Output connectors A and B are available. Refer to "Connecting Speaker Cables" for the installation instructions.

14 [SPEAKER A] and [SPEAKER B] DIP switches

Sets the amplifier mode and speaker EQ to match the type of speakers that are connected. The setting change will be applied after carrying out a power cycle by pressing the [O] button on the front panel. DIP switch setting combinations are shown as follows.

DIP switches 1, 2, and 3: Ampli er mode setup

Sets the amplifier output power and impedance.

NOTICE

If the DIP switch settings do not match the actual speaker impedance or input power rating, the device may have poor performance, and it may even lead to malfunction or sound dropout. Always ensure that appropriate settings are chosen.

1	2	3	Setting
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Amplifier output 120W, High-impedance 100V
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Amplifier output 120W, High-impedance 70V
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Amplifier output 200W, High-impedance 100V, Output only from [SPEAKERS] output terminal A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Amplifier output 200W, High-impedance 70V, Output only from [SPEAKERS] output terminal A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Amplifier output 100W, Low-impedance 8 or more
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Amplifier output 120W, Low-impedance from 4 to less than 8
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Amplifier output 100W, Low-impedance from 3 to less than 4
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Output muted

DIP switches 4, 5, and 6: Speaker EQ

Sets the speaker EQ that corrects the output signal to match the type of speakers that are connected.

4	5	6	Setting
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Off
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High pass filter 150Hz
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low pass filter 150Hz
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Low pass filter 200Hz
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Frequency correction tailored for Yamaha VX5 series speakers
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Frequency correction tailored for the Yamaha VX510S/VX510ST subwoofer (45-150Hz)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Frequency correction tailored for Yamaha VX3 series speakers

15 [DCP] connector

Allows you to connect up to two DCP1V4S, DCP4S, or DCP4V4S Yamaha Digital Control Panels.

For more information regarding the connection method, refer to "Connecting a Control Panel" in the "Setup Guide".

16 [REMOTE] connector

A Euroblock 3-pin plug can be inserted to remotely carry out control such as muting all channels or putting the device in and out of standby mode. For more information, refer to "Using the [REMOTE] Connector (Euroblock 3-pin)" in the "Setup Guide".

17 [LINE OUT] jacks

RCA type line output jacks (unbalanced output). The same signal that is output by the [SPEAKERS] jacks is output to these jacks. Output jacks A and B are available. The audio signal inputs for each [INPUT] connectors are passed through the built-in effects and mixed together. Then, the output is generated at the line level. These jacks can be used to connect an additional amplifier when the number of speakers is too much for this device to handle alone.

18 [INPUT] connectors 1 - 6

Euroblock 3-pin input connector (balanced). Connect the line output connector of a microphone or other external device.

19 [GAIN] switches

Set the gain for [INPUT] connectors 1 - 6. Each switch controls two channels.

Switch	Setting
MIC(+24V)	Microphone level, phantom power (+24V) on.
MIC	Microphone level, phantom power off.
LINE	Line level, phantom power off.

⚠ Caution

- Only switch the phantom power on/off when the [VOLUME A] and [VOLUME B] knobs are turned all the way down.
- Keep the phantom power turned off when it is not required, or if you wish to connect a non-supporting device.
- Do not connect or disconnect the cable while phantom power is left on.

NOTE When the [GAIN] switch is set to "MIC(+24V)" or "MIC", a noise gate (-72dBFS) is automatically applied to the input. This automatically reduces surrounding noise when the microphone is not being used. A noise gate is also applied to the [MONO SUM INPUT] when the [GAIN] switch for input 5 and 6 is set to "MIC(+24V)" or "MIC". Please set the [GAIN] switch to "LINE" when using the [MONO SUM INPUT] jacks. When changing the [GAIN] switch during the power standby status, the change will only be reflected after the power is turned on. Therefore, the Auto-wake function may not work properly because of an absence of input level depending on the previous gain setting. Be sure to set the gain properly for the Auto-wake function to work properly.

20 [ROUTE] switches

Set the output destination for the signals from [INPUT] connectors 1 - 6. Each switch controls two channels. For [INPUT] jacks 7 and 8, these switch set the output destination only when the [MODE] switch is set to "MONO."

Switch	Setting
A	Output to A
B	Output to B
A&B	Output to A and B

21 [MONO SUM INPUT] jacks 5 and 6

RCA type line input jacks (unbalanced input). Two lines can be connected to [INPUT 5] and [INPUT 6]. All input signals are mixed to mono. All signals are mixed, even when there is simultaneous input via a Euroblock plug on [INPUT] connectors 5 and 6.

22 [INPUT] jacks 7 and 8

RCA type line input jacks (unbalanced input). Connect the line output connector of an external device.

23 [MODE] switch

Sets the method in which input signals from [INPUT 7] and [INPUT 8] are sent as output to the [SPEAKERS] or [LINE OUT].

Switch	L channel output destination	R channel output destination
STEREO	Zone A	Zone B
MONO	The L/R channel signals are mixed to mono. The resulting mono signal output destination depends on the [ROUTE] switch setting.	

Specifications

Frequency Response	LINE IN to SPEAKER OUT, 50Hz to 20kHz@1W AMP MODE = 3 , 4 , 8	0dB, -3.0dB, +1.0dB
	LINE IN to SPEAKER OUT, 90Hz to 20kHz@1W AMP MODE = 70V, 100V/120V	0dB, -3.0dB, +1.0dB
AMP MODE = 70V, 100V/200V	LINE IN to SPEAKER OUT, 90Hz to 20kHz@1W	0dB, -3.0dB, +1.0dB
	LINE IN to LINE OUT, 20Hz-20kHz	0dB, -2.5dB, +1.0dB
Crosstalk	MIC/LINE IN to other MIC/LINE IN	-70dB
AC Power Requirement	100V, 120V, 230V-240V 50Hz/60Hz (*1)	
*1 It has confirmed that it is working with ± 10% of the voltage of the rated supply voltage.		
Power Consumption	Standby, default setting AMP MODE = All	1W
	Idle AMP MODE = 3 , 4 , 8	15W
AMP MODE = 70V, 100V	Idle	20W
	1/8 Output, Pink noise AMP MODE = 4	60W
AMP MODE = 70V/120V	1/8 Output, Pink noise	60W

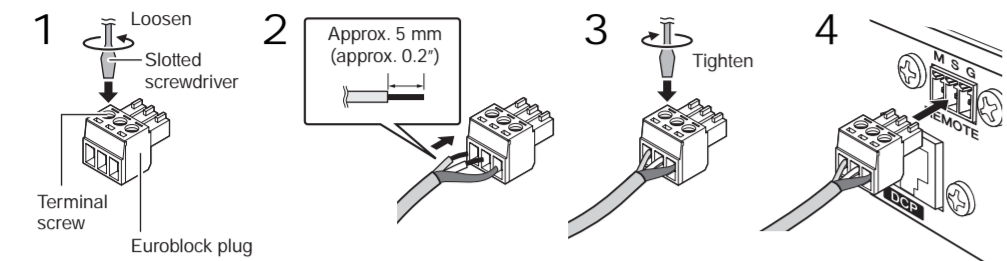
ENERGY STAR	<ul style="list-style-type: none"> It automatically enters into standby mode when no input signal is detected for 25 minutes in order to save power while not in use. Amplifier efficiency: 44% and more. Less than 1W in standby.
Operating temperature	0°C to +40°C
Storage temperature	-20°C to +60°C
Dimensions (W x H x D, not including knob)	480 x 44 x 351mm (18.90 x 1.73 x 13.82 inch)
Net Weight	4.9kg
Included Accessories	AC power cord (2.0m) x1, 3.5mm Euroblock plug (6pin) x3, 3.5mm Euroblock plug (3pin) x1, Owner's Manual x1, Setup Guide x1
Optional accessories	Digital Control Panel (DCP1V4S-US/EU, DCP4V4S-US/EU, DCP4S-US/EU)

* The contents of this manual apply to the latest specifications as of the printing date. Since Yamaha makes continuous improvements to the product, this manual may not apply to the specifications of your particular product. To obtain the latest manual, access the Yamaha website then download the manual file. Since specifications, equipment or separately sold accessories may not be the same in every locale, please check with your Yamaha dealer.

European models
Purchaser/User Information specified in EN55103-2:2009.
Conforms to Environments: E1, E2, E3 and E4

Connections

Attaching Euroblock Plugs



NOTE • You must use the supplied Euroblock plugs. If the plugs have been lost, please contact your Yamaha dealer.
 • To prepare the cable for attachment to a Euroblock connector, strip the wire as shown in the illustration using stranded wire to make connections. With a Euroblock connector, stranded wires may be prone to breakage because of metal fatigue due to the weight of the cable or due to vibration. When rack mounting your device, use a lacing bar when possible to bundle and fasten the cables.
 • Do not tin (solder) the exposed end.

- Loosen terminal screws.
- Insert cables.
- Securely tighten terminal screws.
- Insert the Euroblock plug into a terminal of this device.

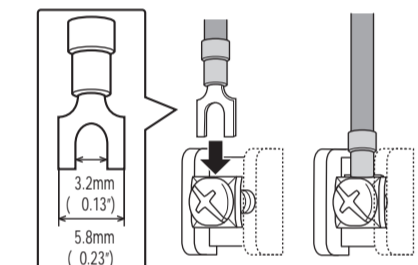
Connecting Speaker Cables

The [SPEAKERS] output connectors on the rear panel are barrier strip type connectors. The connections are described below for two methods: using a spade lug and using a bare conductor.

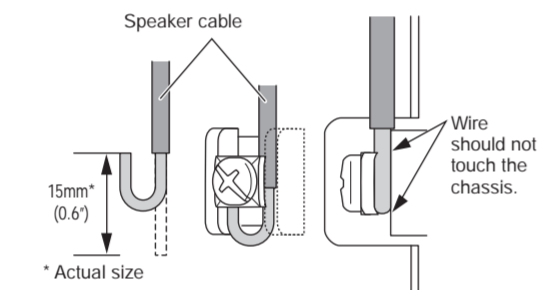
- CAUTION**
- Ensure that load is not applied to the speaker cable.
 - This device uses a BTL (Balanced Transformer-Less) connection method for the amplifier output. As the amplifier output is sent to the positive and negative connectors, any contact with other terminals or the device chassis may lead to malfunction.

NOTE Connect the cables so that the amplifier's "+" and "-" symbols match those of the speaker. If they are reversed, the phase will be reversed and the sound will not be output correctly.

When using a spade lug
 Loosen the screw, wrap the spade lug all the way from below, and tighten the screw.



When using a bare conductor
 Loosen the screw, wrap the conductor wire around the barrier strip terminal, and tighten the screw. Be sure that the bare wire does not touch the chassis.

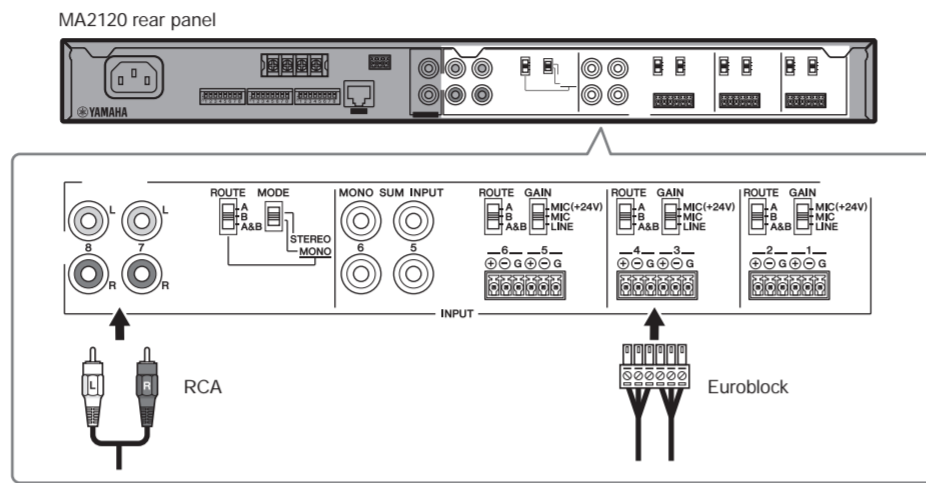


Connecting External Devices

Connect a BGM (background music) tuner, a CD player, a portable audio player, etc. to the stereo input jacks of this device. After finishing all connections, connect the power cord to an AC outlet.

Warning

When connecting the power cord to an AC outlet, an input signal will turn on the power of this device by the auto-wake function. To avoid unexpected loud sounds, be sure to connect microphones and external devices with the power off status.



NOTE Refer to "Attaching Euroblock Plugs" for Euroblock plug installation.

Precautions for Rack Mounting

This unit is rated for operation at ambient temperatures ranging from 0 to 40 degrees Celsius. When mounting the unit with other MA2120 unit(s) or other device(s) in an EIA standard equipment rack, internal temperatures can exceed the specified upper limit, resulting in impaired performance or failure. When rack mounting the unit, always observe the following requirements to avoid heat buildup:
 • When mounting the unit in a rack with devices such as power amplifiers that generate a significant amount of heat, leave more than 1U of space between the MA2120 and other equipment. Also either leave the open spaces uncovered or install appropriate ventilating panels to minimize the possibility of heat buildup.

- To ensure sufficient airflow, leave the rear of the rack open and position it at least 10 centimeters from walls or other surfaces. If the rear of the rack can't be left open, install a commercially available fan or similar ventilating option to secure sufficient airflow. If you've installed a fan kit, there may be cases in which closing the rear of the rack will produce a greater cooling effect. Refer to the rack and/or fan unit manual for details.

Troubleshooting

Symptom	Cause	Solution
The power does not turn on.	The power cord is disconnected. The protection function of the device is activated.	Connect the power cord. Pull out the power cord to turn off the power, and make sure the connection is secure. Wait several minutes, and then turn on the power again. Be sure to install the device in a location not subject to high temperatures, such as a shaded, well-ventilated place.
The power turns off.	The [S] and [G] pins of [REMOTE] connector are shorted. The auto-power-off function has activated.	Use the controller connected to the [REMOTE] connector to turn on the power. When there is no input signal for 25 minutes, the system automatically switches to standby mode. This function cannot be disabled.
The power automatically turns on.	The auto-wake function has activated.	The auto-wake function is turned on by default. If you wish to turn it off, set [SETUP] DIP switches 3 and 4 to their downward positions while the system is in standby mode. Then, turn the power on by the [O] button.
No sound is heard.	The volume is lowered too much with the [VOLUME A] or [VOLUME B] knobs. No audio signal is being input. The input level has been lowered too much with the [INPUT] level knob. Zone selection is not appropriate. Phantom power is turned off, even when using a condenser microphone. Zone B is being used while the amplifier output is set to 200W. The settings via a control panel are retained.	Turn the applicable knob to the right. Check the output signal from an external device that has been connected. Turn the [INPUT] level knob for the corresponding input channel to the right. Check the input channel [ROUTE] switch setting. Set the [GAIN] switch for the condenser microphone channel to "MIC(+24V)." When the amplifier output is set to 200W, there is no signal output from zone B. To initialize the settings, refer to "Initializing the settings via connected control panels (DCP Setup)" in the Setup Guide.
The volume is low.	The device is set to low-impedance connection; however, speakers with high-impedance input have been connected. The device is set to line level, even though a microphone has been connected.	Match the impedance settings of this device and the connected speakers. Set the [GAIN] switch for the input channel to "MIC."
The sound is distorted.	The input level from microphones or external devices is too high. The EQ level is too high.	Turn the [INPUT] level knob to the left and adjust the volume. Adjust the output level of the external device. For the input EQ, press and hold the [SETUP] knob for at least one second. Then, select input level 3 (BASS) or input level 4 (TREBLE). Select the desired input channel and appropriately adjust. For the output EQ, use a tool such as a screwdriver to adjust the [BASS] and [TREBLE] controls on the front panel.
The setting does not change even when turning a knob.	The panel is locked.	Turn off the panel lock, switch all [SETUP] DIP switches 1 and 2 to the upward position, then use the [O] button to reset the device.
The setting does not change even when turning the [SETUP] knob.	The [SETUP] knob is locked.	
The setting does not change even when turning knobs other than the [VOLUME] knob.	Knobs other than the [VOLUME] knob are locked.	
The stereo sound connected to INPUT7 or INPUT8 is not providing a valid stereo signal.	The [MODE] switch is set to MONO.	Set the [MODE] switch to STEREO.
The stereo sound connected to INPUT7 or INPUT8 is not being played correctly in each zone.	The [MODE] switch is set to STEREO.	Set the [MODE] switch to MONO, then set the [ROUTE] switch to an appropriate setting.
DIP switch settings are not applied to the device.	The [O] button has not been used to turn the device on.	Changes to DIP switch settings are only applied after the device has been turned on by the [O] button. They are not applied if the power is turned on by the auto-power-on function, or by control via the [REMOTE] connector. Use the [O] button on the front panel to turn the device on.
The sound drops out, and the [O] button and [LIMIT] indicator flash three times.	The device is set to high-impedance connection; however, speakers with low-impedance input have been connected or too many speakers are connected. When the device is set to low-impedance connection, the total impedance of the connected speakers is less than the impedance setting of this device. The speaker cable is shorted.	Match the impedance setting and the input rating setting of this device and the speakers. Match the impedance settings of this device and the connected speakers. Inspect the connection of the speaker cables.
The [O] button and [LIMIT] indicator continue to flash. The sound goes off.	The internal temperature of the device is extremely high. Heat dissipation slits are covered or the device is placed in a confined place with poor ventilation. The device settings do not match speaker impedance. Loud sound that exceeds the performance specifications of the device is continually generated.	Pull out the power cord, leave the device at a well-ventilated place, and turn the device back on several minutes later. The protection function of the device is activated. Check the installation location and surrounding environment. Be sure to install the device in a location not subject to high temperatures, such as a shaded, well-ventilated place. The protection function of the device is activated. Match the impedance settings of this device and the connected speakers. Lower the volume.

- Refer also to the Yamaha Pro Audio website that provides a FAQ (a list of frequently asked questions, with answers). <http://www.yamahaproaudio.com/>
- If taking the above steps does not solve the problem, contact your Yamaha dealer for repair.

PRECAUTIONS

PLEASE READ CAREFULLY BEFORE PROCEEDING

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

WARNING

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

- Power supply/power cord**
- 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.
 - Only use the voltage specified as correct for the device. The required voltage is printed on the name plate of the device.
 - Use only the supplied power cord/plug.
 - If you intend to use the device in an area other than in the one you purchased, the included power cord may not be compatible. Please check with your Yamaha dealer.
 - Check the electric plug periodically and remove any dirt or dust which may have accumulated on it.
 - 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, as long as the power cord is not unplugged from the wall AC outlet, the device will not be disconnected from the power source. When installing in a rack, connect a power cut-off device additionally to power off the device handily.
 - Remove the electric plug from the outlet when the device is not to be used for extended periods of time, or during electrical storms.
 - Be sure to connect to an appropriate outlet with a protective grounding connection. Improper grounding can result in electrical shock, damage to the device(s), or even fire.

Do not open

- This device contains no user-serviceable parts. Do not open the device or attempt to disassemble the internal parts or modify them in any way. 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 it on any containers (such as vases, bottles or glasses) 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.

Hearing loss

- Avoid setting all equalizer controls and volume controls to their maximum. Depending on the condition of the connected devices, doing so may result in feedback that can cause hearing loss and damage the speakers.
- Do not use speakers 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 physician.
- When turning on the AC power in your audio system, always turn on the device LAST, to avoid hearing loss and speaker damage. When turning the power off, the device should be turned off FIRST for the same reason.

Fire warning

- Do not place any burning items or open flames near the device, since they may cause a fire.

If you notice any abnormality

- If any of the following problems occur, immediately turn off the power switch and disconnect the electric plug from the outlet.
 - The power cord or plug becomes dry and/or damaged.
 - Unusual smells or smoke are emitted.
 - Some object has been dropped into the device.
 - There is a sudden loss of sound during use of the device.
 - Cracks or other visible damage appear on the device.
- Then have the device inspected or repaired 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 qualified Yamaha service personnel.

CAUTION

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:

Power supply/power cord

- 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.

FCC INFORMATION (U.S.A.)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!
 This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.

2. IMPORTANT:
 When connecting this product to accessories and/or other product use 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.

3. NOTE:
 This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.
 Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter(s).
 In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.
 If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

The above statements apply ONLY to those products distributed by Yamaha Corporation of America or its subsidiaries.

Location

- Do not place the device in an unstable position where it might accidentally fall over and cause injuries.
- Do not block the vents. This device has ventilation holes at the top/sides 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.
- When attempting to dissipate heat on the device, when installing it:
 - Do not cover it with any cloth.
 - Do not install it on a carpet or rug.
 - Make sure the top surface faces up; do not install on its sides or the top surface down.
 - Do not use the device in a confined, poorly-ventilated location.
- Inadequate ventilation can result in overheating, possibly causing damage to the device(s), or even fire. Make sure that there is adequate space around the device: at least 10cm above, 10cm at the sides and 10cm behind.
- Do not place the device in a location where it may come into contact with corrosive gases or salt air. Doing so may result in malfunction.
- Before moving the device, remove all connected cables.
- If the device is mounted in an EIA standard rack, carefully read the section "Precautions for Rack Mounting" on page 1.

Connections

- Before connecting the device to other devices, turn off the power for all devices. Also, before turning the power of all devices on or off, make sure that all volume levels are set to the minimum. Failing to do so may result in electric shock, hearing loss, or equipment damage.
- Use only speaker cables for connecting speakers to the speaker jacks. Use of other types of cables may result in fire.

Maintenance

- Remove the power plug from the AC outlet when cleaning the device.

Handling caution

- Do not touch or carry this device until it returns to normal temperature, if the device has become excessively hot during use or after using immediately. Prolonged contact may cause low-temperature burns.
- Do not insert your fingers or hands in any gaps or openings on the device (vents, panel, etc.).
- Avoid inserting or dropping foreign objects (paper, plastic, metal, etc.) into any gaps or openings on the device (vents, panel, etc.). If this happens, immediately turn off the power, unplug the power cord from the AC outlet, and have the device inspected by qualified Yamaha service personnel.
- 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 to prevent injuries.

Yamaha cannot be held responsible for damage caused by improper use or modifications to the device.

NOTICE

To avoid the possibility of malfunction/ damage to the product, damage to data, or damage to other property, follow the notices below.

Handling and maintenance

- Do not use the device in the vicinity of a TV, radio, AV equipment, mobile phone, or other electric devices. Otherwise, the device, TV, or radio may generate noise.
- Do not expose the device to excessive dust or vibration, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day), in order to prevent the possibility of panel discoloration, unstable operation, or damage to the internal components.
- Do not place vinyl, plastic or rubber objects on the device, since this might discolor the panel.
- When cleaning the device, use a dry and soft cloth. Do not use paint thinners, solvents, cleaning fluids, or chemical-impregnated wiping cloths.
- Condensation can occur in the device due to rapid, drastic changes in ambient temperature—when the device is moved from one location to another, or air conditioning is turned on or off, for example. Using the device while condensation is present can cause damage. If there is reason to believe that condensation might have occurred, leave the device for several hours without turning on the power until the condensation has completely dried out.
- Do not use this device for any purpose other than driving loudspeakers.

Always turn the power off when the device is not in use.
 Even when the [O] (Standby/On) switch is in standby status (power lamp is off/display is off), electricity is still flowing to the instrument at the minimum level. When you are not using the instrument for a long time, make sure you unplug the power cord from the wall AC outlet.

Information

About this manual

- The illustrations as shown in this manual are for instructional purposes only.
- The company names and product names in this manual are the trademarks or registered trademarks of their respective companies.

OBSERVERI

Apparaten kopplas inle ur växelströmskällan (nätet) så länge som den är ansluten till vägguttaget, även om själva apparaten har stängts av.
ADVARSSEL: Nödspegländingen till detta apparat er IKKE afbrudt, sålænge nedlæggningen sidder i en stikkontakt, som er tændt — også selvom der er slukket på apparatets afbryder.
VAROITUS: Laitteen toimispiirini kytketty käyttökytkin ei irroita koko laitetta verkosta.

(standby)

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord
WARNING: THIS APPARATUS MUST BE EARTHED
IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:
 GREEN-AND-YELLOW : EARTH
 BLUE : LIVE
 BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
 The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol or colored GREEN or GREEN-AND-YELLOW.
 The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
 The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

(3 wires)

In Finland: Laitte on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
 In Norway: Apparatet må tilkoples jordat stikkontakt.
 In Sweden: Apparatens skall anslutas till jordat uttag.

(class I Hukou)

(class B Korea)

Information for Users on Collection and Disposal of Old Equipment

This symbol on the products, packaging, and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling of old products, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC.

By disposing of these products correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

[For business users in the European Union]
 If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

[Information on Disposal in other Countries outside the European Union]
 This symbol is only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.

(weee_en_01)

Explanation of Graphical Symbols

CAUTION
 RISK OF ELECTRIC SHOCK
 DO NOT OPEN

CAUTION:
 TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICE TO QUALIFIED SERVICE PERSONNEL.

The above warning is located on the top of the unit.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude 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 accompanying the product.

IMPORTANT SAFETY INSTRUCTIONS

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third 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.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or cable is damaged, 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.

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

(ULI60065_03)

For details of products, please contact your nearest Yamaha representative or the authorized distributor listed below.

<p>NORTH AMERICA</p> <p>CANADA Yamaha Canada Music Ltd. 155 Milner Avenue, Toronto, Ontario, M1S 3R1, Canada Tel: +1-416-298-1311</p> <p>U.S.A. Yamaha Corporation of America 6600 Orangethorpe Avenue, Buena Park, CA 90620, U.S.A. Tel: +1-714-522-9011</p> <p>CENTRAL & SOUTH AMERICA</p> <p>MEXICO Yamaha de México, S.A. de C.V. Av. Insurgentes Sur 1647 Piso 9, Col. San José Insurgentes, Delegación Benito Juárez, México, D.F., C.P. 03900 Tel: +52-55-5804-0600</p> <p>BRAZIL Yamaha Musical do Brasil Ltda. Rua Fidêncio Ramos, 302 - Cj 52 e 54 - Torre B - Vila Olímpia - CEP 04551-010 - São Paulo/SP, Brazil Tel: +55-11-3704-1377</p> <p>ARGENTINA Yamaha Music Latin America, S.A., Sucursal Argentina Olga Cossetti 1553, Piso 4 Norte, Madero Este-C1107CEK, Buenos Aires, Argentina Tel: +54-11-4119-7000</p> <p>VENEZUELA Yamaha Musical de Venezuela, C.A. Av. Manzanas, C.C. Manzanas Plaza, Piso 4, Oficina 0401, Baruta, Caracas, Venezuela Tel: +58-212-943-1877</p> <p>PANAMA AND OTHER LATIN AMERICAN COUNTRIES/ CARIBBEAN COUNTRIES Yamaha Music Latin America, S.A. Edif. Torre Banco General, Piso 7, Urbanización Marbella, Calle 47 y Aquilino de la Guardia, Ciudad de Panamá, República de Panamá Tel: +507-269-5311</p> <p>EUROPE</p> <p>THE UNITED KINGDOM/IRELAND Yamaha Music Europe GmbH (UK) Sherbourne Drive, Tibrook, Milnes Keynes, MK7 5BL, UK Tel: +44-1908-366700</p> <p>GERMANY Yamaha Music Europe GmbH Siemensstrasse 22-34, 25462 Rellingen, Germany Tel: +49-4101-303-0</p> <p>SWITZERLAND/LIECHTENSTEIN Yamaha Music Europe GmbH, Rellingen, Branch Switzerland in Zürich Seefeldstrasse 94, 8008 Zürich, Switzerland Tel: +41-44-387880</p> <p>AUSTRIA/BULGARIA Yamaha Music Europe GmbH Branch Austria Schöberlgasse 20, 1100 Wien, Austria Tel: +43-1-66203900</p> <p>CZECH REPUBLIC/HUNGARY ROMANIA/SLOVAKIA/SLOVENIA Yamaha Music Europe GmbH Branch Austria Schöberlgasse 20, 1100 Wien, Austria Tel: +43-1-66203900</p> <p>POLAND/LITHUANIA/LATVIA/ESTONIA Yamaha Music Europe GmbH Sz. o.o. Oddział w Polsce ul. Wroclowska 14, 02-553 Warszawa, Poland Tel: +48-22-880-68-88</p>	<p>MALTA Olympus Music Ltd. Valletta Road, Msida MS9010, Malta Tel: +356-2133-2093</p> <p>NETHERLANDS/BELGIUM/ LUXEMBURG Yamaha Music Europe Branch Benelux Clarissenhof 5b, 4133 AB Vianen, The Netherlands Tel: +31-3473-589040</p> <p>FRANCE Yamaha Music Europe 7 rue Ambroise Croizat, Zone d'activités de Pariest, 7183 Crozet-Beauregard, France Tel: +33-1-6461-4000</p> <p>ITALY Yamaha Music Branch, Italy Viale Italia 88, 20020, Lainate (Milano), Italy Tel: +39-02-9577-71</p> <p>SPAIN/PORTUGAL Yamaha Music Europe GmbH Iérica, Sucursal en España Ctra. de La Coruna km. 17,200, 28231 Las Rozas de Madrid, Spain Tel: +34-91-639-88-88</p> <p>GREECE Philips Nakas S.A. The Music House 19th km. Leof. Lavriou 190 02 Pnaaa - Attiki, Greece Tel: +30-210-6686168</p> <p>SWEDEN/FINLAND/ICELAND Yamaha Music Europe GmbH Germany filial Scandinavia JA Wettergrensgatan 1, 400 43 Göteborg, Sweden Tel: +46-31-899-34-00</p> <p>DENMARK Yamaha Music Denmark, Filial of Yamaha Music Europe GmbH, Tyskland Genzertorvej 5C, ST. TH., 2860 Soborg, Denmark Tel: +45-44-92-49-40</p> <p>NORWAY Yamaha Music Europe GmbH - Norway Norwegian Branch Grini Næringspark 1, 1361 Osterås, Norway Tel: +47-6716-7800</p> <p>RUSSIA Yamaha Music (Russia) LLC. Room 37, entrance 7, bld 7, Kievskaya street, Moscow, 121059, Russia Tel: +7-495-626-5005</p> <p>OTHER EUROPEAN COUNTRIES Yamaha Music Europe GmbH Siemensstrasse 22-34, 25462 Rellingen, Germany Tel: +49-4101-3030</p> <p>AFRICA</p> <p>Yamaha Music Gulf FZE JAFZA-16, Office 512, P.O.Box 17328, Jebel Ali FZE, Dubai, UAE Tel: +971-4-801-1500</p> <p>MIDDLE EAST</p> <p>TURKEY Yamaha Music Europe GmbH Merkezli Alanya Türkiye Istanbul Subesi Paltanman, Başakşehir, 10330, Thailand Böl. No:3, Şişli/İstanbul, Turkey Tel: +90-212-999-8010</p> <p>CHINA Yamaha Music Europe GmbH Siemensstrasse 22-34, 25462 Rellingen, Germany Tel: +49-4101-303-0</p> <p>OTHER COUNTRIES Yamaha Music Gulf FZE JAFZA-16, Office 512, P.O.Box 17328, Jebel Ali FZE, Dubai, UAE Tel: +971-4-801-1500</p>	<p>ASIA</p> <p>THE PEOPLE'S REPUBLIC OF CHINA Yamaha Music & Electronics (China) Co., Ltd. 2F, Yundehua Building, 1818 Xizhuohu, Jing'an-q, Shanghai, China Tel: +86-400-651-7700</p> <p>INDONESIA Yamaha Music India Private Limited Spraezde Building, Grand Floor, Tower A, Sector 07, Gurgaon- Sohna Road, Gurgaon-122002, Haryana, India Tel: +91-124-485-3300</p> <p>INDONESIA Yamaha Musik Indonesia (Distributor) Yamaha Music Center Bldg. Jalan Jend. Gatot Subroto Kav. 4, Jakarta 12930, Indonesia Tel: +62-21-520-2577</p> <p>KOREA Yamaha Music Korea Ltd. SE, Donggung Bldg. 2F, Teheran-ro 87-gil, Gangnam-gu, Seoul, 135-880, Korea Tel: +82-2-3467-3300</p> <p>MALAYSIA Yamaha Music (Malaysia) Sdn. Bhd. No.8, Jalan Perbandaran, Kencana Jaya, 47301 Petaling Jaya, Selangor, Malaysia Tel: +60-3-78009000</p> <p>SINGAPORE Yamaha Music (Asia) Private Limited Block 202 Housgang Street 1, #02-00, Singapore 530202, Singapore Tel: +65-4740-9200</p> <p>TAIWAN Yamaha Music & Electronics Taiwan Co., Ltd. 2F, No.1, Yuanfong Rd. Bangiao Dist. New Taipei City 22063, Taiwan Tel: +886-2-7741-8888</p> <p>THAILAND Siam Music Yamaha Co., Ltd. 3, 4, 15, 16th Fl., Siam Motors Building, 891/1 Rama 1 Road, Wangmai, Pathumwan, Bangkok 10330, Thailand Tel: +66-2-215-2622</p> <p>VIETNAM Yamaha Music Vietnam Company Limited 15th Floor, Nam A Vietnam Tower, 201-203 Cach Mang Thang Tam St., Ward 4, Dist.3, Ho Chi</p>
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