



POWER AMPLIFIER

PA2120

Owner's Manual

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

Thank you for your purchase of the Yamaha PA2120 power amplifie . 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 p oducts.
- Supports both high-impedance and low-impedance speaker connections. 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
- Able to be remotely controlled by connecting a DCP series control panel.
- Built-in "Speaker EQ" that allows for tuning the sound quality to be perfect for use with Yamaha speakers.

Accessories (Please confirm that all items are included)

- Euroblock plugs (6-pin x 1, 3-pin x 1, both with a 3.5mm pitch)
- Technical Specifications (English only): includes block diagrams, dimensions, and input/output specifications
- Owner's Manual (this sheet)

ENERGY STAR Certification

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

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 c cuitry design has been adopted to reduce energy consumption while the device is in use.



Auto-Standby and Auto-Wake Functions

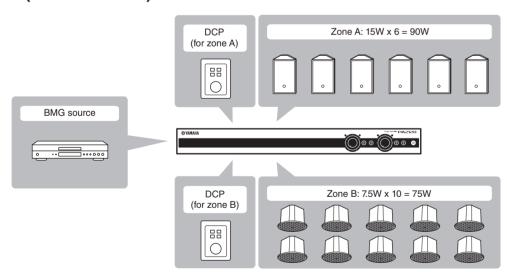
To reduce energy consumption, this device enters into standby mode when no input signal is detected for

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 autostandby function, any microphone or BGM audio input will restore the power.

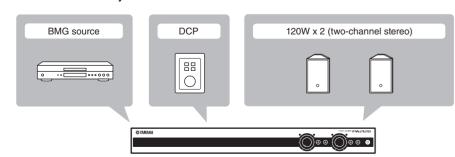
The auto-wake function is turned on by default. The auto-wake function can be turned on or off by changing the rear panel [SETUP] DIP switch setting. (Refer to "Controls and Functions.")

Setup Example

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



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



Connections

Attaching Euroblock Plugs

Approx. 5 mm -Slotted Terminal

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 connection, stranded wires may be prone to breakage because of metal fatique 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.

• Ensure that load is not applied to the speaker cable.

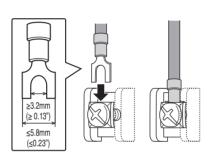
• This device uses a BTL (Balanced Transformer-Less) connection method for the amplifier output. As the amplifier output is sent to the positive and negative connectors, any contact with other terminals or the device chassis may lead to

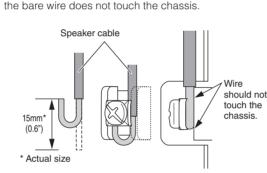
NOTE Connect the cables so that the amplifiers "+" and "-" symbols match those of the speaker. If they are reversed, the phase will be reversed and the sound will not be output correctly.

When using a spade lug

Loosen the screw, insert 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





100W x 2ch

120W x 2ch

100W x 2c

120W x 2c

120W x 2ch

200W x 1ch

200W x 1ch

Class D

≤ 0.2%

≤ 0.2%

≤ 0.2%

Connecting External Devices

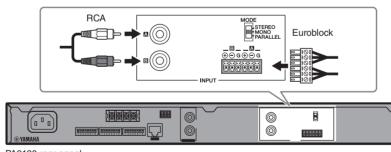
Connect a BGM (background music) tuner, a CD player, a portable audio player, etc. to the stereo input jacks of this device. After finishing all connections, connect the power co d to an AC outlet.

Output Powe

(20msec Burst, THD+N=1%)

Amplifier type (Output circuitry)

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



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

AMP MODE = 3Ω

AMP MODE = 4Ω

 $\overline{AMP\ MODE} = 8\Omega$

 $AMP\ MODE = 70V/120V$

 $AMP\ MODE = 100V/120W$

AMP MODE = 70V/200W

 $AMP\ MODE = 100V/200W$

LINE IN to SPEAKER OUT Half power@1kHz

 $\underline{\mathsf{AMP}\,\mathsf{MODE}} = 3\Omega,\,4\Omega,\,\underline{8\Omega}$ LINE IN to SPEAKER OUT

AMP MODE = 70V, 100V/120W LINE IN to SPEAKER OUT,

AMP MODE = 70V, 100V/200W

Half power@1kHz

Half power@1kHz

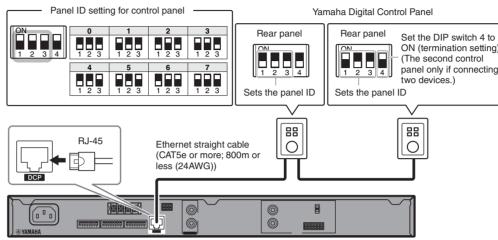
Connecting a Control Panel

Connecting Yamaha Digital Control Panel (DCP1V4S, DCP4V, DCP4V4S) to PA2120 enables you to control the volume remotely. You can connect up to two control panels. The total length of the cables from the PA2120 to the last control panel must not exceed 800 meters in the case of 24AWG.

NOTE When connecting control panels via DCH8, the total length of the cables to the final cont ol panel must be less than 200m (according to DCH8 specifications). If you need a longer connection, we ecommend not using the DCH8, but connecting the devices in a daisy-chain configuration

Precautions when connecting two control panels:

- Connect them in a daisy-chain configuration
- Set the panel IDs separately. (0 or 1)
- Set the second control panel DIP switch 4 to ON. (termination setting)
- This setting is only for the second device when connecting two devices. • Ensure that the total Ethernet cable length does not exceed 800 meters in the case of 24AWG.



■ Functions Operated Via the Control Panel

DCP1V4S

Encoder	Switch 3	Switch 4
Volume control	Encoder operation target: SPEAKER A	Encoder operation target: SPEAKER B

DCP4S

Switch 1	Switch 2	Switch 3	Switch 4			
/olume up: SPEAKER A	Volume down: SPEAKER A	Volume up: SPEAKER B	Volume down: SPEAKER B			

DCP4V4S

Encoder 3	Encoder 4
Volume control: SPEAKER A	Volume control: SPEAKER B

NOTE • Controls not listed here will not work.

• Settings by using control panels will be retained even if the control panels have been disconnected.

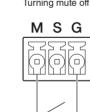
Using the [REMOTE] Connector (Euroblock 3-pin)

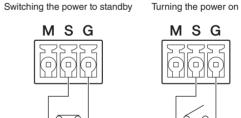
You can connect switches to the rear panel [REMOTE] connector, and use them to remotely mute/unmute all channels, or switch the power standby/on status.

From the left, the [REMOTE] connector consists of M (mute all), S (standby), and G (ground) pins. The [REMOTE] connector uses a Euroblock plug. For details on how to connect Euroblock plugs, refer to "Attaching Euroblock Plugs."

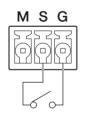
Muting/unmuting all channels

urning mute on	Turning mute		
M S G	M S (
666			





Switching the power standby/on status



NOTE • When the device is put into standby mode via the [REMOTE] connector, it is not possible to turn the power back on by pressing the [0] button on the front panel, or by the auto-wake function with input signal detection. The power can only be turned on via the [REMOTE] connecto

• When the device is put into mute mode via the [REMOTE] connector, the [O] button will flash in green.

Appendix

High-Impedance and Low-Impedance Connections

For a high-impedance connection, a speaker transformer that raises the impedance to several hundred or thousand ohms is added to the speaker system. This allows the speaker system to be effectively driven with much lower current than is required for a low-impedance connection. Therefore, a large number of speaker systems can be connected. Even over long distances, there is very little transmission loss due to the cable resistance being negligible in relation to the impedance of the speaker system. High-impedance speaker connections usually operate at a specific maximum power amplifier voltage of 100 or 70 volt The more orthodox low-impedance connection does not use a speaker transformer. The speaker systems

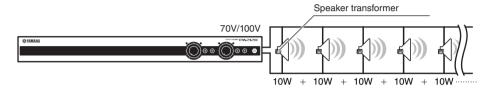
are directly connected to the power amplifier with a rated impedance generally a ound 4 - 16 ohms. For short distances over which cable resistance is insignificant, low-impedance connections deliver a sound quality that is superior to high-impedance connections.

The differences between connection methods are explained as follows.

■ Multiple Speaker System Drive Capability

High-Impedance Connections

As long as the total nominal power input rating for all speakers is within the power output capability of the amplifie, any number of speaker systems can be connected in parallel. The power input rating is determined by the speaker systems and speaker transformers used. It is also possible to connect speaker systems that have different input power ratings. In the case of speaker systems that are capable of changing their input power rating (Yamaha VXC and VXS series, etc.), this can be utilized to vary the volume of each speaker.

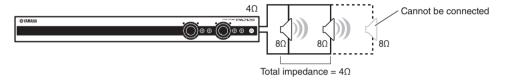


Low-Impedance Connections

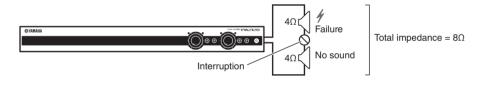
When connecting multiple low-impedance speaker systems to a single channel, the following methods are

Parallel Connection

When multiple speaker systems having the same impedance are connected in parallel, the total impedance becomes the individual speaker system impedance divided by the number of systems connected.



When connected in series, the total impedance is simply the sum of the impedances of the speaker systems connected. However, if one speaker system happens to fail, the electrical signal will not be passed on and subsequent speaker systems will be affected.



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 PA2120 unit(s) or other device(s) in an EIA standard equipment rack, internal temperatures can exceed the specified upper limit, esulting 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 significan amount of heat, leave more than 1U of space between the PA2120 and other equipment. Also either leave the open spaces uncovered or install appropriate ventilating panels to minimize the possibility of
- To ensure sufficient ai flo , 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 ai flo . 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

Specifications

Frequency Response	LINE IN to SPEAKER OUT, 50Hz to 20kHz@1W AMP MODE = 3Ω , 4Ω , 8Ω	0dB, -3.0dB, +1.0dB	
	LINE IN to SPEAKER OUT, 90Hz to 20kHz@1W AMP MODE = 70V, 100V/120W	0dB, -3.0dB, +1.0dB	
	LINE IN to SPEAKER OUT, 90Hz to 20kHz@1W AMP MODE = 70V, 100V/200W	0dB, -3.0dB, +1.0dB	
	LINE to THRU OUT, 20Hz-20kHz	0dB, -2.5dB, +1.0dB	
AC Power Requireme	nt	100V, 120V, 230V-240V 50Hz/60Hz (*1)	
*1 It has confi med th	at it is working with ± 10% of the volta	ge of the rated supply voltage.	
Power Consumption	Standby, default setting AMP MODE = All	≤ 1W	
	Idle AMP MODE = 3Ω , 4Ω , 8Ω	15W	
	Idle AMP MODE = 70V, 100V	20W	
	1/8 Output, Pink noise AMP MODE = 4Ω	60W	
	1/8 Output, Pink noise AMP MODE = 70V/120W	60W	
ENERGY STAR		 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 e ficiency: 44% and mo e. 	

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	4.8kg
Included Accessories	AC power cord (2.0m) x1,
	3.5mm Euroblock plug (6pin) x1,
	3.5mm Euroblock plug (3pin) x1,
	Owner's Manual x1,
	Technical Specifications x
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 amaha makes continuous improvements to the product, this manual may not apply to the specifications of your pa ticular product. To obtain the latest manual, access the Yamaha website then download the manual file. Since specifications, equipment or separatel 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

YAMAHA

1 [U] button (Standby/On)

tches the device mode between standby and on On: Press the [0] 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.

NOTE • 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

 Bapidly 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

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

(3) [BASS] and [TREBLE] controls vo-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

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

6 [LIMIT] indicator

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

6 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

evice power is in standby mode. [SETUP] DIP switches

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

DIP switch 1: Panel lock

Set whether to lock knobs and controls on the pane

	1	Setting
		Panel lock off (controls are enabled)
		Panel lock on (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
			Auto-wake function on
			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.
		-	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] connecto

DIP switch 5: A - B volume link

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Sets whether SPEAKER A and SPEAKER B volume is linked. When linked, the volume for both speakers can be controlled with the [VOLUME A] knob.

	5	Setting
		Link off (SPEAKER A and SPEAKER B volume levels are independently controlled)
		Link on (SPEAKER A and SPEAKER B volume levels are both controlled via the [VOLUME A] knob)

DIP switch 8: DCP setup

When turning on the power, this sets whether resuming the settings of connected control panels or initializing.

	8	Setting
		Resume (keeps the previous settings)
		Initialize (initializes the settings when turning on the power)

NOTE [SETUP] DIP switches other than the ones described above are not used 8 [SPEAKERS] output terminals

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

[SPEAKER A] and [SPEAKER B] DIP switches

ets 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: Amplifier 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

1	2	3	Setting
			Amplifier output 120W, High-impedance 100V
			Amplifier output 120W, High-impedance 70V
			Amplifier output 200W, High-impedance 100V, Output only from [SPEAKERS] output terminal A
			Amplifier output 200W, High-impedance 70V, Output only from [SPEAKERS] output terminal A
			Amplifier output 100W, Low-impedance 8Ω or more
			Amplifier output 120W, Low-impedance from 4Ω to les than 8Ω
			Amplifier output 100W, Low-impedance from 3Ω to less than 4Ω
			Output muted

DIP switches 4, 5, and 6: Speaker EQ

Sets the speaker EQ that corrects the output signal to match the type of

4	5	6	Setting
			Off
			High pass filter 150Hz
			Low pass filter 150Hz
			Low pass filter 200Hz
			Frequency correction tailored for Yamaha VXS series speakers
			Frequency correction tailored for the Yamaha VXS10S/ VXS10ST subwoofer (45–150 Hz)
			Frequency correction tailored for Yamaha VXC series speakers

(DCP) connector

ows 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.'

[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

[THRU OUT] jacks

RCA type line output jacks (unbalanced output). Output jacks A and B are available. The unaltered audio signal input from the [INPUT] connectors is output 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

(B) [INPUT] jacks/connectors

CA type and Euroblock 3-pin line input jacks/connectors (RCA: unbalanced; Euroblock 3-pin: balanced). Two channels (A and B) are vailable. Connect the line output connector of an external device.

[MODE] switch

ets the method in which input signals from [INPUT A] and [INPUT B] are sent as output to the [SPFAKERS] output to

STEREO A B	Switch	INPUT A output destination	INPUT B output destination
MONO Output to A and B with INPUT A and INPUT B signals mixed as mono		^	P.
MONO as mono	STEREO	A	D
as mono	MONO	Output to A and B with INPUT A and INPUT B signals mixed	
PARALLEL A and B Muted		as mono	
	PARALLEL	A and B	Muted

Troubleshooting Cause he power does not turn or he power cord is disconnected Connect the power cord. The protection function of the device is activated 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 [S] and [G] pins of [REMOTE] connector are shorted. 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 he auto-power-off 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 The power automatically turns on The auto-wake function has activated. wnward positions while the system is in standby mode. Then, turn the power on by the [也] butto The volume is lowered too much with the [VOLUME A] or [VOLUME B] knobs. Turn the applicable knob to the right. No sound is heard No audio signal is being input. Check the output signal from an external device that has been connected. Check the [MODE] switch setting of [INPUT] Zone B is being used while the amplifier output is set to 200W. When the amplifier output is set to 200W, there is no signal output from zone B. The settings via a control panel are retained. To initialize the settings, switch the [SETUP] DIP switch 8 to the downward position, then use the $[\circlearrowleft]$ button to reset the device. The volume is low. The device is set to low-impedance connection; however, speakers with high-Match the impedance settings of this device and the connected speakers impedance input have been connected. The input level from an external device is too high The sound is distorted. Adjust the output level of the external device he EQ level is too high Use a tool such as a screwdriver to adjust the [BASS] and [TREBLE] controls on the front panel. To turn off the panel lock, switch all [SETUP] DIP switches 1 and 2 to the upward position, then use the [\emptyset] The setting does not change even when turning the The panel is locked [VOLUME] knob. The [MODE] switch is not set to STEREO The stereo source connected to the INPUT is not Set the [MODE] switch to STEREC providing a valid stereo signal. The stereo source connected to the INPUT is not The [MODE] switch is not set to MONO Set the [MODE] switch to MONO being played correctly in each zone. DIP switch settings are not applied to the device. The $[\circlearrowleft]$ 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 [0] 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 [\circlearrowleft] button on the front panel to turn the device on. The sound drops out, and the [也] button and The device is set to high-impedance connection; however, speakers with low-Match the impedance setting and the input rating setting of this device and the speakers. [LIMIT] indicator flash three times mpedance input have been connected or too many speakers are connected. When the device is set to low-impedance connection, the total impedance of the Match the impedance settings of this device and the connected speakers. onnected speakers is less than the impedance setting of this device. he speaker cable is shorted. Inspect the connection of the speaker cables The [\circlearrowleft] button and [LIMIT] indicator continue to The internal temperature of the device is extremely high Pull out the power cord, leave the device at a well-ventilated place, and turn the device back on several minutes flash. The sound goes off. Heat dissipation slits are covered or the device is placed in a confined place with 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. ne device settings do not match speaker impedance he protection function of the device is activated. Match the impedance settings of this device and the connected speakers Loud sound that exceeds the performance specifications of the device is continually Lower the volume

· Refer also to the Yamaha Pro Audio website that provides a FAQ (a list of frequently asked questions, with answers).

· 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, fire 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
- Only use the voltage specified as cor ect 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 up the device, make sale that the Ac other you are using is easily accessible. If some trouble or malfunction occurs, immediately turn off the power switch and disconnection 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 an AC power strip to
- make power on/off operations easier and more convenient.
 Remove the electric plug from the outlet when the device is not to be used for extended periods of time, or during electrical
- 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 fi e.

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 amaha service personnel

Water warning

 Do not expose the device to rain, use it near water or in damp or wet conditions, or place on it 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, urn 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 nearing 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 nearing loss. If you experience any hearing loss or ringing in
- 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 fi e.

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 frayed 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 amaha 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

FCC INFORMATION (U.S.A.)

. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT! is product, when installed as indicated in the instructions ntained in this manual, meets FCC requirements. difications not exp essly approved by Yamaha may void our authority, granted by the FCC, to use the product.

. IMPORTANT: hen connecting this product to accessories and/o

another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow al stallation instructions. Failure to follow instructions could oid your FCC authorization to use this product in the USA.

his product has been tested and found to comply with the ents listed in FCC Regulations, Part 15 for Class B" digital devices. Compliance with these requirements rides a reasonable level of assurance that your use f this product in a residential environment will not result n harmful interference with other electronic devices. This stalled and used according to the instructions found in he users manual, may cause interference harmful to the pperation of other electronic devices. Compliance with FCC egulations does not guarantee that interference will not occ all installations. If this product is found to be the source of erference, which can be determined by turning the unit OFF" and "ON", please try to eliminate the problem by using one of the following measures

elocate either this product or the device that is being affected by the interference.

Jtilize power outlets that are on different branch (circuit reaker or fuse) circuits or install AC line filter/s n the case of radio or TV interference, relocate/reorient ne antenna. If the antenna lead-in is 300 ohm ribbon lead.

ange the lead-in to co-axial type cable.

these corrective measures do not produce satisfactory sults, please contact the local retailer authorized to stribute this type of product. If you can not locate the ppropriate retailer, please contact Yamaha Corporation of nerica, Electronic Service Division, 6600 Orangethorpe ve, Buena Park, CA90620

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

- Do not place the device in an unstable position where it might
- Do not block the vents. This device has ventilation holes at the
 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
- ssibly causing damage to the device(s), or even fi e. hen 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 Do not use the device in a confined, poorly-ventilated
- Inadequate ventilation can result in overheating, possibly causing damage to the device(s), or even fi e. 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
- 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. Inadequate ventilation can result in overheating, possibly
 causing damage to the device(s), malfunction, or even fi e.
- Connections fore 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 he 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 fi e. Maintenance
- Remove the power plug from the AC outlet when cleaning the

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 ow-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
- inspected by qualified amaha 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

unplug the power cord from the AC outlet, and have the device

Yamaha cannot be held responsible for damage caused by

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

- 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 possibilit of panel disfiguration, unstable operation, or damage to the
- ernal 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 imprograph of which is a large solvent. mpregnated 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
- Always turn the power off when the device is not in use Even when the [(d)] (Standby/On) switch is in standby status (power lamp is off/ display is off), electricity is still flowing to

cord from the wall AC outlet. Information

The illustrations as shown in this manual are for instructional

the instrument at the minimum level. When you are not using the instrument for a long time, make sure you unplug the power

The company names and product names in this manual are the trademarks or registered trademarks of their respective

OBSERVERA! Apparaten kopplas inte ur växelströmskällan (nätet) så länge som den ar ansluten till vägguttaget, även om själva

VAROITUS: Laitteen toisiopiiriin kytketty käyttökytkin ei irroita

IMPORTANT NOTICE FOR THE LINITED KINGDOM

apparaten har stängts av. ADVARSEL: Netspændingen til dette apparat er IKKE afbrudt, sålænge netledningen sidder i en stikkontakt, som e tændt — også selvom der er slukket på apparatets afbryder

(standby

Connecting the Plug and Cord WARNING: THIS APPARATUS MUST BE EARTHED IMPORTANT. The wires in this mains lead are coloured in GREEN-AND-YELLOW: EARTH

: NFUTRAL As the colours of the wires in the mains lead of this apparatus ay not correspond with the coloured markings identifying he terminals in your plug proceed as follows:

he wire which is coloured GREEN-and-YELLOW must be

the terminal which is marked with the letter N or coloured

nnected to the terminal in the plug which is marked by the etter E or by the safety earth symbol 🔑 or colored GRÉEN o GREEN-and-YELLOW. The wire which is coloured BLUE must be connected to

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured

In Norway: Apparatet må tilkoples jordet stikkontakt

있습니다

(class B)

이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수

In Finland: Laite on liitettävä suojamaadoituskoskettimilla

(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

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]

f you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further

[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.



The lightning flash with ar ownead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated



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
- 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.
- 8 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. I
- the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

 10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacle
- 11 Only use attachments/accessories specified by the
- 12 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 13 Unplug this apparatus during lightning torms or when unused for long periods of time
- 14 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 plug 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.

and the point where they exit from the apparatus O BEDLICE THE BISK OF FIRE OR FLECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO BAIN OR MOISTUR

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

NETHERLANDS/BELGIUM/

LUXEMBOURG

ITALY

Tel: +31-347-358040

SPAIN/PORTUGAL

Tel: +34-91-639-88-88

Tel: +30-210-6686168

DENMARK

RUSSIA

Tel: +49-4101-3030

Yamaha Music Gulf FZE

Tel: +971-4-801-1500

en España Ctra. de la Coruna km. 17,200, 28231 Las Rozas de Madrid, Spain

GREECE
Philippos Nakas S.A. The Music House
19th klm. Leof. Lavriou 190 02 Peania –

SWEDEN/FINLAND/ICELAND

NORWAY Yamaha Music Europe GmbH Germany-Norwegian Branch Grini Næringspark 1, 1361 Østerås, Norway Tel: +47-6716-7800

Yamaha Music (Russia) LLC. Room 37, entrance 7, bld. 7, Kievskaya street, Moscow, 121059, Russia Tel: +7-495-626-5005

OTHER EUROPEAN COUNTRIES

NORTH AMERICA CANADA Yamaha Canada Music Ltd.

M1S 3R1, Canada Tel: +1-416-298-1311

U.S.A. Yamaha Corporation of America 6600 Orangethorpe Avenue, Buena Park, CA 90620, U.S.A. Tel: +1-714-522-9011

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Insurgentes, Delegación Benito Juárez, México,
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BRAZIL

Yamaha Musical do Brasil Ltda.

Rua Fidêncio Ramos, 302 – Cj 52 e 54 – Torre B – Vila
Olimpia – CEP 04551-010 – São Paulo/SP, Brazil
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ARGENTINA Yamaha Music Latin America, S.A.,

Sucursal Argentina Olga Cossettini 1553, Piso 4 Norte, Madero Este-C1107CEK, VENEZUELA

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INDIA Yamaha Music India Private Limited Spazedge Building, Ground Floor, Tower A

INDONESIA
PT. Yamaha Musik Indonesia (Distributor)
Yamaha Music Center Bldg. Jalan Jend. Gatot
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Yamaha Music & Electronics Taiwan Co.,Ltd. 2F., No.1, Yuandong Rd. Banqiao Dist. New Taipei City 22063, Taiwan Tel: +886-2-7741-8888

891/1 Rama 1 Road, Wangma Pathumwan, Bangkok 10330, Thailand Tel: +66-2215-2622

OTHER ASIAN COUNTRIES

'el: +81-53-460-2312

The model number, serial number, power requirements, etc. may be found on or near the name plate, which is at the top of the unit. You should note this serial number in the space provided below and retain this manual as a permanent record of your purchase to aid identification in the event of theft Serial No

Yamaha Pro Audio global website http://www.yamahaproaudio.com/ http://download.yamaha.com/

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CAUTION

RISK OF ELECTRIC SHO DO NOT OPEN

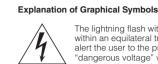
TO REDUCE THE RISK OF ELECTRIC SHOCK

DO NOT REMOVE COVER (OR BACK).

NO USER-SERVICEABLE PARTS INSIDE

SERVICING TO QUALIFIED SERVICE PE

(weee_eu_en_01)



"dangerous voltage" within the product's closure that may be of sufficient magnitude to constitute a risk of electric shock to persons

The exclamation point within an equilateral

(UL60065 03)

2F, Yunhedasha, 1818 Xinzha-lu, Jing Yamaha Music Europe Branch Benelux Clarissenhof 5b, 4133 AB Vianen, The Netherlands

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