



PHIL JONES BASS

COMPACT PLUS

BG-450



OWNER' S MANUAL

Thank you for purchasing the PJB COMPACT PLUS. A great deal of dedication and passion went into designing and building this high-performance compact-combo amplifier, without compromising on any aspect. It was specifically created to cater to the needs of discerning bassists. By reading and following this manual, you will be able to achieve the best performance from the amplifier and ensure its longevity.

READ THIS FIRST

Before using the COMPACT PLUS, please read all the instructions carefully.

Upon receiving the product, inspect it for any signs of physical damage caused during shipping. If you notice any damage, contact your retailer immediately.

Ensure that the amplifier is not installed in a confined or built-in space such as a bookcase. The amp should remain in an open site with good ventilation, and the ventilation openings should never be obstructed by items such as newspaper, tablecloths, or curtains.

Warning: Use only attachments/accessories specified or provided by the manufacturer to avoid any potential hazards.

Warning: To avoid the risk of fire or electric shock, keep the amplifier away from rain or moisture. The amp should not be exposed to dripping or splashing liquids, and no objects filled with liquids should be placed on top of the amp.

When the amplifier is not in use or during transportation, take care of the power cord by tying it up with a cable tie. The power cord should be free from sharp edges that may cause abrasion. Before using it again, check that the power cord is not damaged. If any damages are found, replace it with a cord specified by the manufacturer or with the same specifications as the original one.

Correct disposal of this product: This marking indicates that this product should not be disposed of with other household waste throughout the EU. To prevent harm to the environment and human health from uncontrolled waste disposal, recycle it responsibly to promote sustainable reuse of material resources. To return your used device, use the return and collection systems or contact the retailer where you purchased the product for environmentally safe recycling.

Warning: The apparatus with CLASS I construction must be connected to a MAINS socket outlet with a protective earthing connection to ensure safety.

OVERVIEW OF THE COMPACT PLUS

Experience uncompromised and powerful performance with our latest model, which is based on the legendary PJB Suitcase amplifier. Our engineers have taken the iconic design and elevated it to new heights with a smaller physical size, greater acoustic output, less weight, and improved frequency response. Don't be fooled by its compact size; this amp packs a punch that cuts through the air like a hot knife through butter. With solid and powerful low-end response typically associated with much larger combos, it delivers an incredible sound that will leave you wanting more. Plus, it shares the same size as our popular Compact 4 enclosure, making it an ideal choice for any musician looking for a portable and versatile solution.

The PJB Suitcase Compact bass combo features a single channel preamp with a more extensive 5-band EQ. Finding "your sound" is simple with this EQ, as it offers incredible control and transparency, allowing you to hear the true character of your own playing and instrument.

At the heart of this amp is a formidable ultra-high-energy power supply that feeds an efficient class D power amplifier, utilizing nearly 95% of the energy to drive the four internal PJB Piranha speakers. The Compact Plus outputs a healthy 300 watts RMS onto its own speakers, and when paired with a Compact 4 cabinet, it becomes 500 watts.

Understanding power in a bass amplifier.

When amplifying a bass guitar, the relationship between power and loudness is crucial to understand. However, a higher-powered amplifier doesn't always mean a louder amplifier, as there are other factors involved such as speaker efficiency and amplifier frequency response. Nevertheless, the BG450 amplifier is undoubtedly louder than the BG400 for several reasons.

Firstly, the BG450 features a higher peak power output, enabling it to handle the dynamic range of the bass guitar signal and deliver a clean and powerful sound. Secondly, the BG450 has a higher continuous power output, providing the necessary headroom to ensure the sound remains clear and undistorted even at high volumes. Additionally, the BG450 boasts an advanced design with improved components and circuitry that enhances overall performance. The power supply is specifically designed to deliver more current to the amplifier, providing a stable and reliable power source even under heavy loads. This design allows the BG450 to drive speakers more effectively, resulting in a louder and more dynamic sound.

When choosing an amplifier for a bass guitar, it is vital to consider not only its continuous power output but also its peak power output and ability to handle the dynamic range of the instrument's signal. A high peak output amplifier can provide the necessary headroom and dynamic range to ensure that the bass guitar's sound is clear, powerful, and dynamic.

The BG450's peak power output is significant because it allows for short bursts of power when needed, resulting in a more dynamic and louder sound, even if the average power output is lower. This is due to the Class D amplifier design, which uses a switching circuit to rapidly turn the power transistors on and off, creating an amplified signal. This design allows for greater efficiency, resulting in less heat dissipation and a smaller amplifier size, while also enabling the amplifier to output higher peak power for short durations. For example, the BG450 amplifier may have a continuous RMS power output of 300 watts into 8 ohms, but it can deliver transient peak power output of over 500 watts (or 800 watts into 4 ohms) for short bursts to improve loudness and dynamic range.

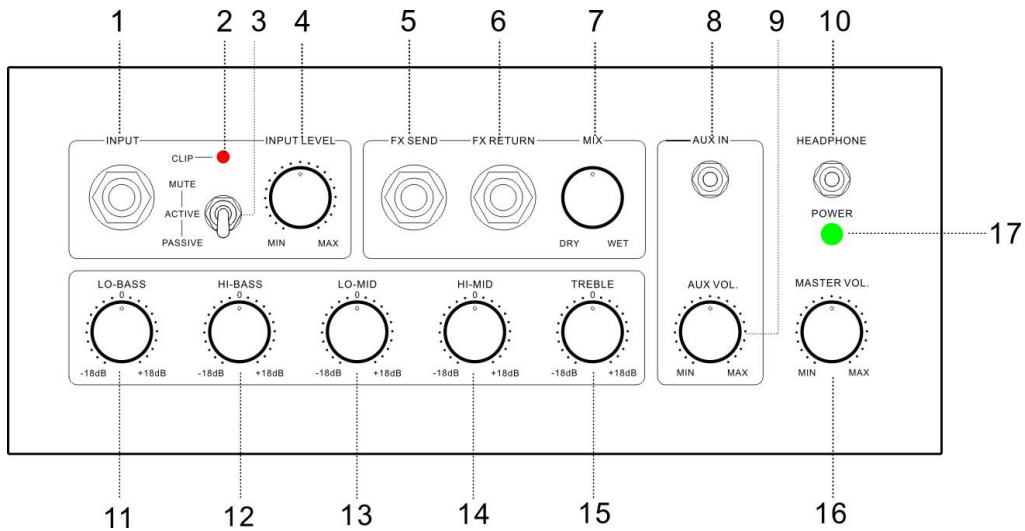
In conclusion, while power is not the only factor that determines the loudness of an amplifier, the BG450's higher peak and continuous power output, as well as its advanced design, make it undoubtedly louder and more capable of handling the dynamic range of a bass guitar signal than the BG400. Whether performing live or recording in the studio, the BG450 is an excellent choice for anyone seeking a powerful and dynamic bass guitar sound.

The Suitcase Compact bass combo is a prime example that the trend of amps moving towards "smaller and better" has already arrived.

FEATURES

- A switchable input for active (high-output) and passive (high pickup impedance) basses with mute function.
- Auxiliary input for other audio sources with volume control.
- Dedicated 5-Band EQ for total tonal control of instrument.
- A Balanced Line Output with ground lift.
- Line In.
- Line Out.
- EXT-Speaker Out.
- Sophisticated protection circuitry.
- Power output 300W at 8 Ohms/500W at 4 Ohms (MAX).
- Ultra-low noise pre-amplifier circuit.
- IEC universal AC input 100-240 volts AC. (Operates on all world voltages)

TOP PANEL OVERVIEW



TOP PANEL DESCRIPTION

1.INPUT JACK

This is a high impedance input and is designed for all passive and active instruments.

2.CLIP LIGHT

When the amplifier output is clipping, the LED will light up in red. When the amplifier is muted, the LED will light up in green.

3. INPUT SWITCH

MUTE: mute the input stage, when switch on, the clip LED will light up in green.

ACTIVE: lower sensitivity input setting for guitars with onboard electronics.

PASSIVE: higher sensitivity, high impedance input for passive guitars.

4. INPUT LEVEL CONTROL

Factors of different instruments, playing styles, and players all can affect the signal level. Adjust this control accordingly, so that the signal overload clip light does not light up. This optimizes the best signal to noise ratio between the amp and instrument, and will give you the full extent of the amplifiers tone and power.

5. FX SEND SOCKET

Connect the FX send to auxiliary FX unit input.

6. FX RETURN SOCKET

Connect the FX Return to auxiliary FX unit output.

7. MIX CONTROL

8. AUX INPUT

Stereo input for Drum machine or I-pad/ digital audio player.

9. AUX INPUT VOLUME CONTROL

Control the level of backing/rhythm track.

10. HEADPHONE SOCKET

This jack accepts 3.5mm stereo headphone jacks.

When a headphone is connected to the jack, the speakers will be muted.

11. LOW BASS EQ CONTROL

This will adjust the fundamental tones of E and A strings on 4 string basses and B, E & A on 5 string basses.

12. HIGH BASS EQ CONTROL

This will adjust the fundamental tones of D and G-strings on 4 & 5 string basses.

13. LOW MID EQ CONTROL

14. HIGH MID EQ CONTROL

15. TREBLE EQ CONTROL

16. MASTER VOLUME CONTROL

This is the master volume control, which determines how much power is sent to the speakers and the line out socket at the back of the amp. When setting up your tone or plugging in your instrument, it is recommended to start this control at a low level. Output from different instruments' pickups can vary greatly, and likewise, players may play softly or with great force.

17. POWER LED INDICATOR

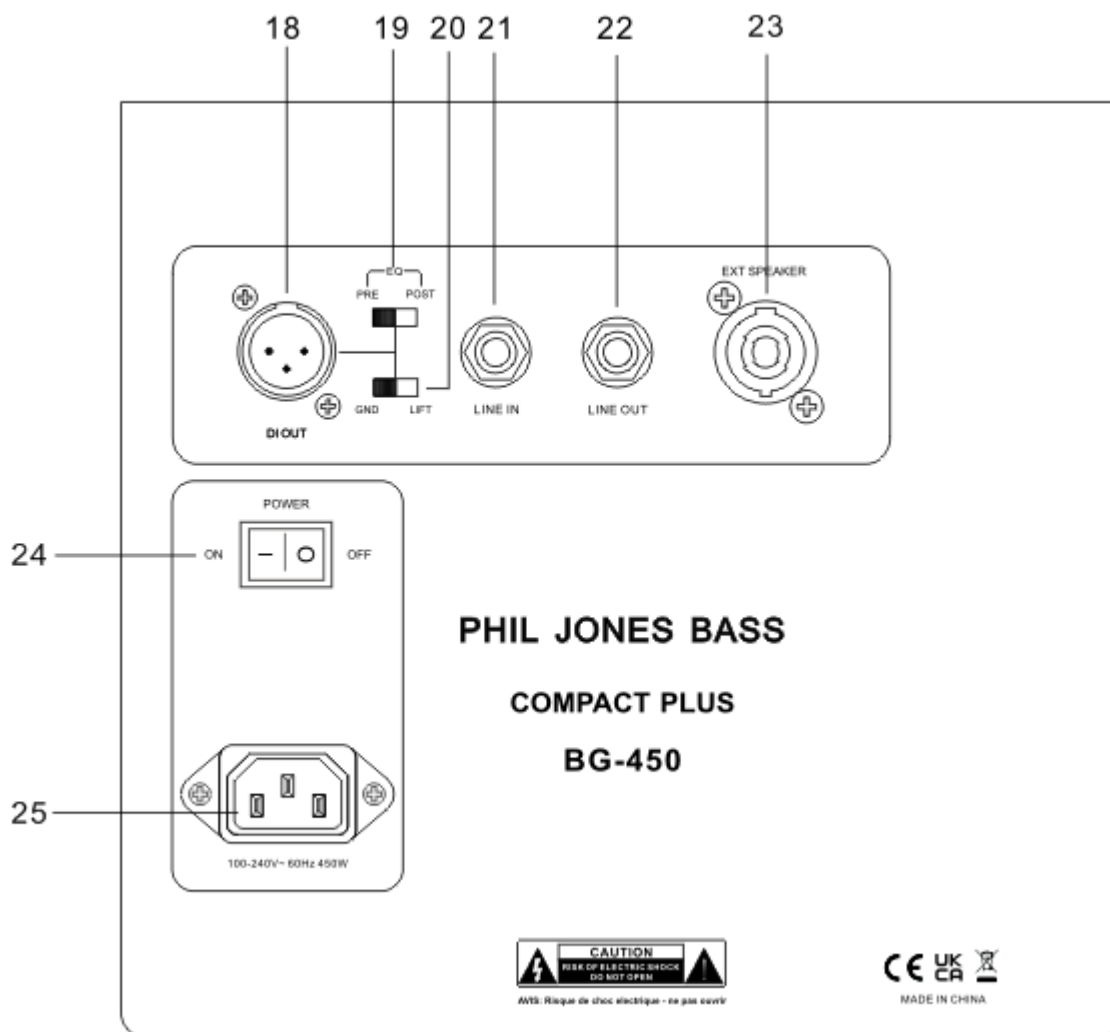
When power is switched, on the LED light will turn bright green.

NOTE: When power is on, the indicator will light up. If no signal comes in after 30 minutes, the **standby function** will activate, and the power indicator LED will light up in red. When a signal comes in from INPUT or AUX socket, the amplifier will restart in about 2 seconds.

This **standby function** is regulated by the European Union's (EU) Ecodesign Directive, which sets minimum energy efficiency standards for a wide range of products, including all consumer electronics. Under the directive, manufacturers are required to ensure that their products consume no more than 0.5 watts of power in standby mode, and must also provide an automatic shut-off feature after a set period of time. These regulations have been implemented across the EU and apply to all electronic devices, The aim of these regulations is to reduce energy consumption and promote energy efficiency in consumer electronics, which can have a significant impact on reducing greenhouse gas emissions and addressing climate change.

PJB is a company concerned about our planet's health, so we have implemented this feature on models sold in and outside Europe. Other first world countries will be adapting similar laws in the near future.

BLACK PANEL OVERVIEW



BACK PANEL DESCRIPTION

18. XLR-DIRECT OUTPUT SOCKET

19. This is an ultra-low impedance (200Ω) balanced line output intended for use with recording or PA mixing consoles. Unlike the volume control, the level of this output is not adjustable. However, the level of the DI output will vary depending on the level of your instrument."

19. BALANCED LINE PRE/POST EQ

By toggling this switch, you can activate or deactivate the EQ on the balanced line. This allows you to decide whether you want to use the tone settings on your amplifier for live performances or recordings, or if you prefer to apply external EQ adjustments on the mixing console that the signal is being sent to.

20. BALANCED LINE OUT GROUND LIFT SWITCH

Sometimes AC hum is induced into a sound system when both the PA and bass amp are connected to different ground potentials, which is known as a ground loop. This switch can disconnect the amp's grounding from the PA or recording system to eliminate this hum. It allows the grounding of the balanced out socket to be disconnected, which is useful if you are experiencing hum caused by grounding loop problems.

21.LINE IN

This input allows for a high signal output from a source, such as the preamp out from another amplifier or a mixer output, so that the BG450 can function as a slave unit. It bypasses the internal preamp.

22. LINE OUT

Can be used for driving a second amplifier or powered monitor speaker.

23.EXTENSION SPEAKER OUT

The output is designed for driving an additional 8 ohm speaker, such as the PJB Compact-4. Using a speaker with an impedance lower than 8 ohms will cause the amp to overheat and shut down. To connect the speaker, use a "Speakon" connector instead of a conventional jack. This is necessary because the amplifier's output is strong and capable of delivering higher currents than jack sockets can handle. This socket can also power the PJB EAR-BOX (See notes in this manual under operating and positioning.)

24. POWER ON/OFF SWITCH

This switch controls the main power supply for the amplifier, allowing you to turn it on or off as needed. Upon turning on the power, there will be a 2-second delay to protect the speaker. To ensure the longevity of the amplifier and prevent any potential damage, avoid leaving it plugged into a power source for extended periods when not in use. It is recommended to unplug the amplifier or turn off the power switch when not in use.

25.AC INPUT SOCKET

This accepts grounded IEC cables. This amp can work on any AC voltage from 100- 250volts.

OPERATION & POSITIONING

Before plugging in your instrument, turn the volume down and switch the input on the COMPACT PLUS to mute.

CAUTION: To prevent loudspeaker failure, it is essential to avoid extreme overload on the amplifier. Although the COMPACT PLUS is designed to deliver optimal bass performance, it is important to ensure that the amplifier is not pushed beyond its limits. If you hear any distortion from the speakers, immediately turn down the master volume control until the distortion disappears. Please note that the amplifier is rated for a power output of 250W at 8 Ohms or 450W at 4 Ohms, without audible distortion. While the amplifier can handle even more power on transient inputs, exceeding this limit may cause distorted sound waves from over-driven amplifiers. Amplifier clipping, which is caused by overloading the amplifier, is one of the most common causes of loudspeaker failure. Please note that any damage resulting from misusing the amplifier by overloading it is not covered by the warranty

The amplifier has a power output of 250W at 8 Ohms / 450W at 4 Ohms with no audible distortion. However, please note that the amplifier is not limited to 250W at 8 Ohms / 450W at 4 Ohms, and the power with distortion could be double the wattage. Overdriven amplifiers producing distorted sound waves are the primary cause of loudspeaker failures, which are considered misuse and are not covered under the warranty. It is imperative to use the amplifier with care and avoid pushing it beyond its limits to ensure maximum performance and longevity of the equipment.

Positioning the COMPACT PLUS for Best Sound

Often, your bass instrument will sound different in various venues due to the acoustics of the space, which can influence the low-frequency waves emitted by your speaker. Bass waves are larger, and room dimensions can heavily impact them when sound waves are reflected by walls, causing them to either add together or cancel each other out. As a result, some fundamental notes (the ones you feel more than hear) may ring out louder than others, while some may be hardly audible at all.

To enhance your comprehension of the fundamental bass frequencies' location, here is an overview of the estimated frequencies and corresponding acoustic wavelengths of open strings:

F# string	24Hz	46 feet: (Sometimes used on 7 or more strings)
B string	31Hz	36 feet: (lowest string on 5-string bass)
E string	41Hz	27 feet (lowest string on 4- string bass)
A string	55Hz	20 feet
D string	73Hz	15 feet
G string	98Hz	11 feet
C string	130Hz	9 feet

The frequencies of the open strings provide an idea of which notes might be causing excessive resonance or reduced volume compared to others. For instance, if you place your speakers five feet away from a wall, you might notice that the open A string sounds weak. This could be due to the reflected sound from the wall traveling the exact same distance as the direct sound from the speaker, resulting in cancellation of that frequency. Essentially, the reflected sound waves and the direct sound waves meet each other at the same point, which results in a decrease in the perceived volume of that particular frequency. To overcome this, you can try different solutions, such as moving the speaker or instrument to another location, or using sound-absorbing materials to minimize reflections. Experimenting with different positions until you find the optimal spot where the bass response is balanced and even is the best course of action.

The position of the COMPACT PLUS can have an impact on its ability to produce low-frequency sounds. To achieve the best possible sound quality, it is recommended that you place the COMPACT PLUS on the floor. If you place the speaker on objects that are not on the floor, it can result in a weaker bass sound and a lack of impact in the lower frequencies.

In contrast, if you place the COMPACT PLUS with its back near a wall, it can help to reinforce the lower notes, creating a more robust and powerful bass sound. Similarly, placing the speaker in a room corner can further enhance the low notes, providing an even more powerful and impactful bass experience. Therefore, the position of the speaker is crucial to obtaining the best possible sound quality from the COMPACT PLUS. This reinforcement effect is due to the waveguide property of the corner, which channels the sound waves in a specific direction. The corner directs the bass frequencies towards the center of the room, where they can accumulate and create a more powerful and impactful bass sound.

Bass frequencies are omnidirectional, meaning that they radiate equally in all directions from the source. This is because the longer wavelengths of bass frequencies can diffract around objects and fill a room more easily. In contrast, mid-range and high frequencies tend to be directional and beam like headlights on a car. This is because the shorter wavelengths of these frequencies are less able to diffract around objects and are more easily absorbed or reflected by surfaces.

When you stand in front of your bass guitar amplifier, it can affect the sound for other people listening in the room. This is because your body can absorb and reflect sound waves, which means that the sound waves from your amplifier will be partially absorbed or reflected by you. As a result, the sound can be quieter and less clear for people standing farther away from you, especially in the mid-range and high frequencies.

Furthermore, you may hear a different sound than the other listeners in the room because you're hearing a more direct sound, while they're hearing a combination of direct and reflected sound waves. This can make it hard for you to really hear your playing due to room acoustics and the position of you and your amp.

Fortunately, there's a solution to this problem: the EarBox (EB200) by PJB. This is a small loudspeaker that can be mounted on a straight microphone stand and positioned close to you at ear level. The EarBox fills in the critical mids and highs that you may be missing when you're not in the axis of the front of your amplifier. It's directly connected to the speaker out or link from your extension speaker, and won't affect the amplifier load. This greatly enhances your listening experience and also eliminates any sonic latency if you're a distance from your amplifier. Information can about the EarBox can be found on our website.

www.pjbworld.com/cms/index.php/product-eb-200/

It's important to note that sound travels at approximately 1 foot per millisecond, so if you're standing 15 feet from your amp, you're hearing the sound 15 milliseconds later. This can affect how you play, just like the latency effect that keyboard players can experience with MIDI.

To avoid these issues, it's best to position your amplifier so that it's not obstructed by your body or other objects, and to ensure that the sound is distributed evenly throughout the room by adjusting the positioning of the speaker and using equalization to balance the sound.

Therefore, when setting up a bass amplifier, it's important to consider the directional properties of different frequency ranges. Placing a bass loudspeaker in a corner or against a wall can help reinforce the bass frequencies by taking advantage of their omnidirectional nature. In contrast, mid-range and high frequency loudspeakers may need to be aimed or angled towards the listener to ensure optimal sound quality. Unfortunately, low frequencies are always challenging to control for bass players when room acoustics are present. The wavelengths of the notes being played often correspond to the room dimensions, causing the reflected sound from the walls to interfere with the sound from the speaker as the listener moves further away from it.

TRANSPORTING AND STORING THE COMPACT PLUS

When transporting the amplifier in a vehicle, it is recommended that you use an external case, or a heavy-duty cover to prevent it from damage.

Storage

- ❖ Keep in a dry location, preferably at room temperature.
- ❖ Do not store in temperatures below -20 Degrees C or above 40 Degrees C.
- ❖ Do not allow it to get wet. If this occurs, never turn it on in this condition.
- ❖ We recommend that you do not keep the COMPACT PLUS amplifier permanently connected to a power source as a safety precaution, particularly during thunderstorms. While it is not a common occurrence, during severe weather conditions, there is a risk that the electrical grid may experience high voltage spikes due to lightning strikes, which can cause damage to the amplifier

SPECIFICATIONS

Amplifier

Type: Class A pre-amplifier. Class D power amplifier with digital switch-mode power supply.

Power output: 300 W at 8 Ohms / 500W at 4 Ohms (MAX transient peak output 400 watts into 8 ohms / 800 watts into 4 ohms).

Signal to Noise Ratio

≥85 dB(A) (EQ off, Volume on Full.)

Impedance

Passive Input: >2M Ω /22pF

Active Input: >100K Ω /22pF

Line Input: >75K Ω :

Pre- Amp Line Out: < 2K Ω

Bal. Out: <200 Ω

Levels

Passive Input: 10mV-1.5V

Active Input: 20mV-4.5V

Pre-Amp Line Out: 1.2V

Balanced Line Out: Typical 500mV

Protection Circuits

1. AC line filter.
2. Loudspeaker Short-Circuit Protection.

Speaker

Computer Optimized Vented Enclosure: Increased bass output with reduced cone excursion.

Speaker Frequency Response: 35Hz-15KHz

Speaker Compliment: 4 x 5inch proprietary PJB, extended-range drivers

Speaker Sensitivity: 93dB/W/M

Internal Speaker Impedance: 8 Ohms

Dimensions: (WxHxD): 14.2x14.3x13.2 inch (361x362x336 mm)

Weight: 14.1kg (31 lbs.).

Included Parts:

Detachable IEC 6 ft AC Power Cord

Protective slip-on cover

SERVICE/WARRANTY INFORMATION

The COMPACT PLUS is covered by a 2-year limited warranty for parts and labor, which is valid only if the product is purchased from an authorized PJB dealer. The buyer must complete and return the enclosed warranty card within 15 days of purchase, or register online at www.pjbworld.com, to activate the warranty. This warranty covers any defects in materials or workmanship that occur during normal use. PJB will repair or replace any defective unit, free of charge for both labor and parts, during the warranty period. However, the buyer must use the unit strictly in accordance with the instructions provided in this manual and the amplifier manual to ensure warranty coverage

This warranty is non-transferable and is only provided to the original owner. Damage or defects caused by the following conditions are not covered under this warranty:

- Improper handling, neglect, or failure to operate the unit in compliance with the instructions provided in the user manual.
- Connection or operation in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- Speakers are not covered for damages caused by incorrect connection or when powered beyond the limits described in the user manual. Manufacturing defects are usually detected during early usage.
- Repairs or modifications carried out by anyone other than an authorized PJB service agent.
- Damages or defects caused by forces of nature or any other condition that is beyond the control of PJB.

IMPORTANT:

- In all warranty issues, the retailer you purchased the product from should be your first point of contact, even if you bought the product from an online source.
- When a local distributor is available, customers who prefer to purchase online from another country may be required to pay shipping charges to the retailer to obtain service.
- Warranty policies may differ in countries outside the USA. Please check with local distributors for warranty information in your region. Registering first with your local distributor, if available, will provide you with better and quicker service when needed.

Further questions, please contact your local distributors or PJB by email

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