



PHIL JONES BASS





Qualcomm[®]
aptX[™] HD

DOUBLE FOUR PLUS (BG-80)
COMBO AMPLIFIER

OWNER'S MANUAL

Thank you for purchasing the PJB DOUBLE FOUR PLUS BG-80. A great deal of dedication and passion went into designing and building this no-compromise, high performance combo amplifier. It was conceived to be a dedicated amplifier for the "connoisseur" bassist. Reading and following this manual will enable you to get the best performance from the amp and ensure its longevity.

READ THIS FIRST

- **Before using the DOUBLE FOUR PLUS please read ALL the instructions carefully.**
- Upon receiving the product, inspect it for any signs of physical damage that may have occurred during shipping. If you notice any damage, please contact your retailer immediately.
- Ensure that the amplifier is not installed in a confined or built-in space, such as a bookcase. The amplifier should be kept in an open area with good ventilation, and the ventilation openings should never be obstructed by items such as newspapers, tablecloths, or curtains.
- Warning: To avoid any potential hazards, use only attachments and accessories specified or provided by the manufacturer.
- Warning: To prevent the risk of fire or electric shock, keep the amplifier away from rain or moisture. The amplifier should not be exposed to dripping or splashing liquids, and no objects filled with liquids should be placed on top of it.
- 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 damage is found, replace it with a cord specified by the manufacturer or with the same specifications as the original one.
-  The marking "Correct Disposal of this product" indicates that this product should not be disposed of with other household waste throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, it should be recycled responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.
-  Warning: The apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

OVERVIEW OF THE DOUBLE FOUR PLUS

The DOUBLE FOUR PLUS is a single channel bass amplifier that has an auxiliary input for iPad/iPod, smart phone or drum machine. It features 3 band EQ that is perfectly tailored for bass guitar, a stereo headphone out jack and a line out for recording, it can also play music with the Bluetooth(V5.1 with Qualcomm® aptX™ HD) function. It is ideal for all kinds of basses, and can handle the open B string on a 5-string bass with ease.

The Enclosure

It is well known that big speakers are capable of reproducing true fundamental bass frequencies. But as you decrease the physical size of a speaker, the bass response will fade away. This is the reason why Violins are small and Double Basses are big!

So how do you get a big bass sound from a small speaker cabinet? With our know-how of using smaller drivers to get the ultimate bass sound, we applied our vast experience to an even smaller driver which is just 4 inches across. Built with Swiss watch precision, it can cope with the extreme signals from an amplified bass guitar. Using our extensive R&D facilities which include the largest anechoic chamber in the bass guitar amplifier industry and the KLIPPEL transducer measurement system (it uses lasers!), we were able to develop the perfect 4-inch loudspeaker. We analyzed the cone behavior at all frequencies in 3D representation, cone suspension and frame, etc. until we achieved a transducer beyond what anyone would have ever thought possible. Then we looked at the acoustic loading using the acoustic simulation software and calculated the total power cone displacement at every frequency.

We designed a custom Rectangular Auxiliary Low Frequency Radiator (RALFR®). That is a pneumatically coupled radiator loaded to the rear of the two 4-inch speakers that operates at the lowest bass frequency only. It augments the output of the loudspeakers at frequencies from 30 to 150 Hz. It also reduces the cone excursion of the speakers, allowing greater power handling.

The proprietary PJB “long-throw” 4-inch speakers have a full frequency range to the highest audio frequencies. Not only does this give greater clarity and transparency to your instrument, but also a high-fidelity sound to any backing track fed into the auxiliary input.

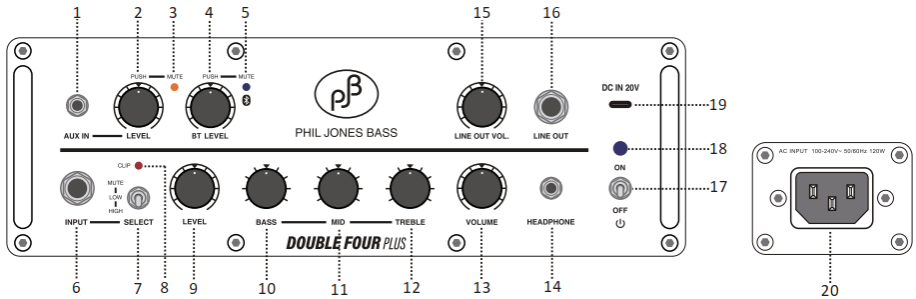
The cabinet may be as small as a shoe box, but it is built to the same high quality as all PJB cabinets, What you hear from the DOUBLE FOUR PLUS is the closest to the original sound of the instrument.

The sound is huge for its size and it is unbelievable that all the sound from your bass is just coming out of such a tiny jewel.

AMPLIFIER FEATURES

- Digital Amplifier with 90Watts (2x45W) 1% THD
- Switchable high gain input OR low gain stage with mute function
- Independent level control and mute function to both Aux and Bluetooth input
- One stereo input for Drum machines or iPod/Smartphone players
- 3-Band EQ
- Line Output for recording or driving another amplifier
- Bluetooth 5.1 with Qualcomm® aptX™ HD codec
- Use under any AC voltage worldwide. (90~240V)
- DC input (USB Type-C port) connection supports Portable charger of USB PD (Power Delivery) Protocol.

PANEL OVERVIEW



1. Auxiliary Input Jack (3.5mm stereo)

This is a stereo mini jack that can receive any signal from iPod, iPad, smart phones or drum machines.

2. Auxiliary Input Level

Rotate: increase or decrease the AUX input level.
Press: mute/unmute AUX input.

3. Auxiliary Mode Indicator

Orange light steady lit: AUX input is mute.
Light off: normal playing state.

4. Bluetooth Input Level

Rotate: increase or decrease the Bluetooth input level.
Press: mute/unmute Bluetooth input.
Press and hold: disconnect Bluetooth

5. Bluetooth Mode Indicator

Blue light flashes: wait for pairing.
Blue light steady lit: connected.
Orange light steady lit: Bluetooth input is mute.

6. Instrument Input Jack

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

7. Mute/ Active/ Passive selector switch

Mute: mute the input stage; when switched on, the clip LED will light up in green.
Low: lower sensitivity input setting for guitars with onboard electronics.
High: higher sensitivity and high impedance input for passive guitars.

8. Clip Light

When the power amplifier is overloaded and causes distortion, the clip light will light up in red. When the amplifier is muted, the LED will light up in yellow.

9. Level Input Control

The signal size of the input level will be affected by different instruments, players and playing styles. And the input level can be adjusted to avoid the overload indicator from lighting up during the vigorous playing. This optimizes the best signal-to-noise ratio between AMP and instrument and will give you the full extent of the amplifiers' tone and power.

10. Bass EQ Control

Boosting or cutting this will have a significant effect on the tone.

11. Mid EQ Control

Boosting or cutting mid-range.

12. High EQ Control

Boosting or cutting treble.

13. Master Volume Control

This controls the volume of Speakers and Headphone output.

14. Headphone Jack

You can use all kinds of stereo headphones through this jack but you will only hear good sound if your headphones are high-quality.

15. Line Out Control

Adjust the output signal for Line Out.

16. Line Out

It can be used for driving a second amplifier or loudspeaker.

17. Power Switch

Blue light steady lit: power on.

Note: 1. For Safety, we advise you to unplug the power supply from the AC power if you do not intend to use the DOUBLE FOUR PLUS for long periods.
2. Before switching on the product, set the VOLUME, LEVEL, LINE OUT VOL. to the minimum.

18. Power Indicator

Blue light flashes: although it is connected successfully to a PD protocol, the power is not turned on.

Blue light steady lit: it is successfully connected to an AC power and power is turned on.

NOTE: When power is on, the indicator will light up. With no incoming signal, the standby mode will activate after 30 minutes, the power indicator LED will light up red. With a signal coming in from the INPUT, over BT or from the AUX connection, or with long pressing the AUX LEVEL/BT LEVEL button, the amplifier will restart in about 2 seconds.

19. Type-C Port

DC input (USB Type-C port) connection supports Portable charger of USB PD (Power Delivery) Protocol.

1. This port is only used for power input but not for power supply.
2. Supports USB PD Protocol (20V/3A and above).
3. After it is successfully connected to a PD Portable charger, the power indicator will flash during the shutdown. The product is ready for use.
4. When the power of the Portable charger is lower than 10%, it may cause the sound to cut off or be intermitted.
5. The maximum power output of the power source and speakers:
DC 20V/3A/Speaker: 2x25W Max.
DC 20V/5A/Speaker: 2x40W Max.
6. The discharge time when using the power bank via Type-C (for reference):
About 8 hours continue working with a 20000mAh power bank output 20V/3A.
About 5 hours continue working with a 20000mAh power bank output 20V/5A.

20. AC Input Socket

Connect to your AC power. (90~240V)

Connect to a grounded outlet in accordance with the input power voltage and frequency specified below the power inlet.

OPERATION & POSITIONING

TURN THE VOLUME DOWN on the DOUBLE FOUR PLUS before plugging in your instrument. You may notice the clip light blinks once on turn on. This is normal and the amplifier is operating correctly. It is just a character of the circuit.

Positioning the DOUBLE FOUR PLUS for best Sound

Generally, playing in different venues will cause your bass to sound differently. This is partially due to the acoustics of the hall influencing the low-frequency waves that are coming from your speaker. Bass waves are large and room dimensions heavily influence them when the walls reflect the sound waves, causing them to collide by adding together or canceling each other out. This causes some fundamental notes (the ones you feel more than hear) to ring out louder than others and some notes not to be heard at all.

Below is an indication of what fundamental bass frequencies are, showing open string's approximate frequencies and acoustic wavelength:

B string	31Hz	36 feet
E string	41Hz	27 feet
A string	55Hz	20 feet
D string	73Hz	15 feet
G string	98Hz	11 feet
C string	130Hz	9 feet

This may give you some indication of the offending notes (frequencies) that may be booming or resonating louder or quieter than others. For example, if your speakers are five feet away from the wall, the open A string may sound weak.

That could be because the path length of the reflected sound off the wall from your speaker is exactly corresponding to half a wavelength on the open A string causing that particular note to cancel out.

The position where the DOUBLE FOUR PLUS is placed will ultimately affect your low- frequency limit. For best results, place the DOUBLE FOUR PLUS on the floor. Placing it on objects off the floor will cause it to sound thin and lack bass punch.

Placing the DOUBLE FOUR PLUS next to a wall will reinforce the lower notes. Placing it in a room corner will further enhance the low notes.

Room size makes a big difference in how deep the bass will sound. The further the distance to the listener the weaker the bass will be. This is due to the physics of acoustics not the unit itself.

Unfortunately for bass players, low frequencies are always very difficult to control with room acoustics. The reproduced wavelengths of the notes you are playing often correspond to the room dimensions, in which case the reflected sound off the walls interferes with the sound from the speaker as you get further away from it.

Getting the most from your DOUBLE FOUR PLUS

It is important to understand this is a quite different amplifier from the conventional analog amp. The controls transmit information to two internal microcomputers: one for the pre-amp and the other for the power amp.

This information is processed as EQ changes or level changes, so it takes a short time for the computers to act on changes to EQ and volume controls. This is known as latency and if you change control while playing simultaneously, you will notice a low delay as the changes are processed. It is simply the character of the processor and not the fault of the unit.

All amplifiers will be affected by the room they are in and it can make a huge difference to the sound where you place your amplifier. If you place the amp on a table far from any wall, this will give you the least bass (low frequency) output. Walls, Floors and Ceilings work like a mirror to the amplifier because the sound wave is reflected and it will magnify the sound. So placing the unit on a floor and close to a room corner will give you the most bass output. You should experiment to choose the best placement for the optimal sound.

Speakers are a bit like shoes, new ones are never as comfortable as old ones and in time speakers will "soften" up. The sound will become warmer and fuller in time and it's required to play for a break-in period to get the amp to perform its best. This can also be done just by playing music through the AUX input instead of playing.

TRANSPORTING AND STORING THE DOUBLE FOUR PLUS

When transporting in a vehicle, it is recommended that you use an external case or heavy-duty cover to prevent it being damaged by falling over or other objects falling on it.

Storing:

- Keep in a dry location preferably at room temperature in the gig bag.
- Do not store in temperatures below -4 F (-20 C) or above 104 F (40 C).
- Do not allow it to get wet. If this occurs, never turn it on in this condition.
- Do not leave the DOUBLE FOUR PLUS permanently connected to a power source.

SPECIFICATIONS

Amplifier

Amplifier Type: Full Digital with DSP

Power Output: 90 Watts(2x45W) 1% THD

Signal to Noise Ratio: $\geq 85\text{dB(A)}$ (EQ off, Volume on Full)

Impedance

Input: $\geq 270\text{K}\Omega$ / 22pF

Speaker

2xPJB 4-inch Full Range Speaker

1x Rectangular Auxiliary Low Frequency Radiator.

Usable Frequency Response: 40Hz to 17KHz

Levels

High Input: 120mV-2 V

Low Input: 400mV-3V

Aux Input: 200mV (MAX)

Bluetooth Input: 300mFFS

EQ Center Frequencies

Bass Shelf 100Hz, +/- 15dB

Mid 1KHz Bandwidth 120Hz-10KHz, +/- 15dB

Treble Shelf 10KHz, +/- 15dB

Included Parts

6 ft AC Power Cord, 5.5 ft Audio Cord.

Dimensions (W×H×D): 13×8×8.5 inch (329×203×215 mm)

Weight: 11.3 lbs / 5.1kg



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