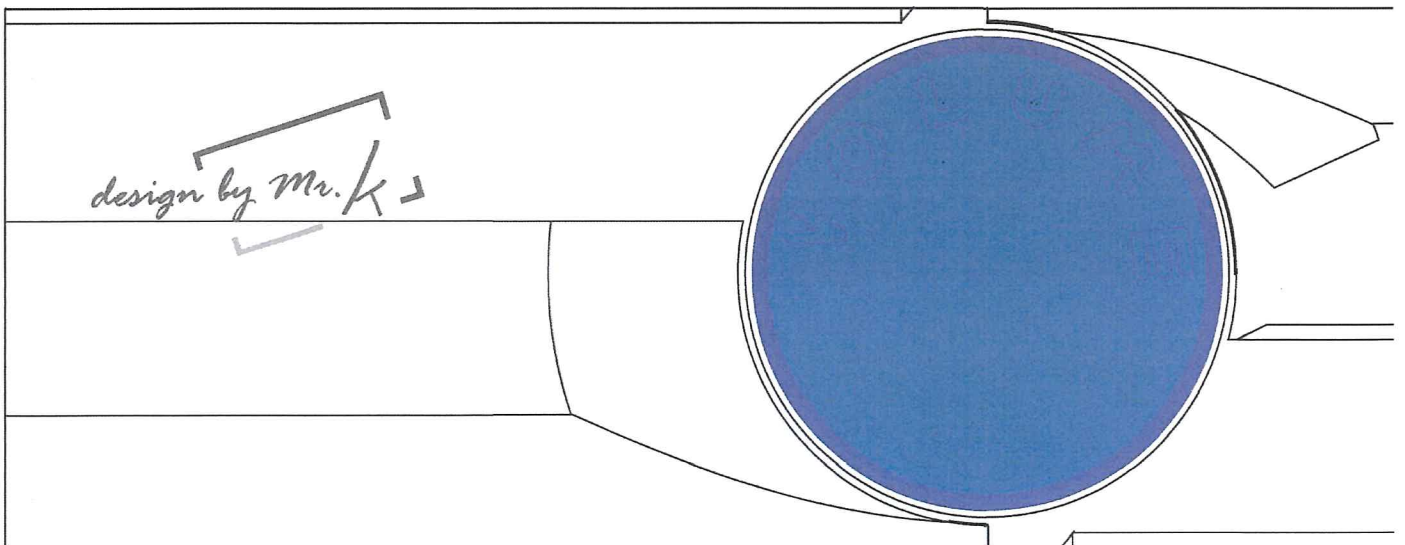


design by Mr. K

PPA-02B
Balanced Passive Preamplifier
Owner's manual



Introduction of the Passive Preamplifier

Our company thanks you for purchasing the Passive Preamplifier, PPA – 02B. Our PPA - 02B is of a high quality range and a breakthrough in the design of passive pre-amplifiers. Its performance can satisfy all music lovers. Please be informed of its key features below.

- *Selectable Gain Control Switch Specials*

In electromagnetics, when an external magnetic field is applied to a ferromagnet (e.g. iron), and the atomic dipoles align themselves with it, a physics phenomenon called *Magnetic Hysteresis* occurs. In such a case, even when that external magnetic field is removed, part of the alignment retains. As a result, that ferromagnet material becomes magnetized.

Magnetic Hysteresis theory is also applied in our PPA – 02B design, by winding coil around the transformer core. When current/voltage passes through the coil, magnetic force is induced throughout our *59 steps autotransformer (C Core)*, a *slightly delay effect on the sound quality* will result. This makes the transformer volume very different. That explains why tube amplifier usually produce sound quality superior to that of solid-state amplifier.

With *1x, 3x, 5x and 10x* gain options (*0.5x, 1.5x, 2.5x and 5x in XLR*), this PPA - 02B provides the following high built quality of sound:

Gain Options		Sound Descriptions
RCA	XLR	
1X	0.5X	Accurate Positioning, High Quality
3X	1.5X	Sweet Treble, High Quality
5X	2.5X	Sweet Treble, Thick Bass
10X	5X	Extraordinary Thick (Suitable for digital-sounded / piercing devices)

- Differ from conventional passive amplifiers, this product wisely adopted a **59 steps autotransformer (C Core)** design. With a material we keep confidential, our transformer adopted the new **“cool-melted method”** technology, without having to **use metal clamps**. In conventional transformer design, metal clamps having material mismatch can cause a drop in sound quality.

- **59 steps Mechanical Volume Control Switch**

Typically, a passive preamplifier consists of a VR-connected transformer. In our product, **only one 59 steps autotransformer (C Core)**, is used, and that makes this kind of 59 steps mechanical volume control switch special and the sound feature gorgeous.

PPA - 02B is also an entirely passive design with literally zero extra power sources plugged in to the audio signal path, meaning:

- **NO** power required;
- **NEITHER** distortion nor interference are added by active components or power lines to this device;

Last but not least, this device is designed and manufactured in **Hong Kong**.

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Important Safety Instructions

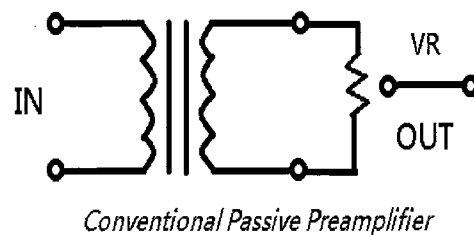
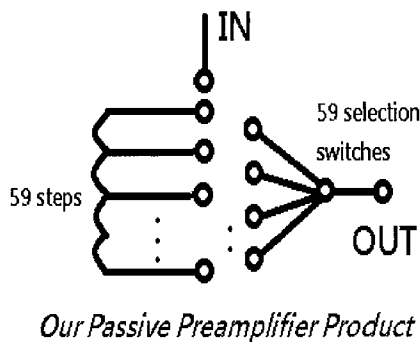
Note: Please read the following instructions carefully before operating your PPA - 02B.

- ***DO NOT*** connect this device to Power Amplifiers/Integrated Amplifiers with input impedance lower than $10\text{k}\Omega$, otherwise malfunctions will be led due to the minimum output impedance of $10\text{k}\Omega$ on this device.
- ***DO NOT*** plug in any power sources to this device.
- ***DO NOT*** attempt to place any heavy objects ($> 3\text{kg}$) on top of this device.
- ***DO NOT*** attempt to repair this device. If repair is needed, please contact us. Contact details are listed in the last session.
- ***DO NOT*** expose this device to extremely high or low temperatures.
- ***DO NOT*** operate this device with the cover removed.
- ***DO NOT*** allow any liquid to contact the device.
- ***DO NOT*** use this device without authorizations. Keep it away from children.
- ***DO NOT*** place this device within 10cm next to the isolation transformer or power amplifier.
- Each port of input can plug with RCA/XLR ***ONLY***.
- ***ALWAYS*** set this device down gently.

Special Design Features and Philosophies

- 59 Steps Autotransformer

Conventional passive preamplifier usually uses a traditional VR-connected transformer with single input and output ports in the design. Our Passive Preamplifier however leads a special design by using *only one 59 steps autotransformer*. It is an *ALL-IN-ONE design*.



This clever all-in-one design gives music lovers the experience of *direct-mechanical selection and control of transformer output*. Unlike the conventional passive preamplifier, its output is usually controlled by a digital switch-connected external remote device which worsens the sound quality.

Installation Instructions

Please read through the following instructions for the first-time installation.

1. Placement

Place the PPA - 02B near to the source, input or output components when connecting your Passive Preamplifier to the system. That can minimize the negative effects of long cable connections.

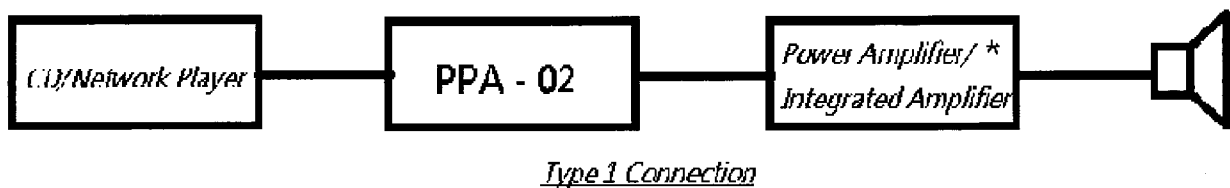
2. Turn off Associated Components

To avoid the potential damages caused by other components during the PPA – 02B connection.

3. Connections

3.1 Installations Methods

PPA – 02B can provide 3 different connection methods to allow varying sound qualities:



Type 1 Connections

CD/Network player → **PPA - 02B** → Power Amplifier/Integrated Amplifier

* Power Amplifier/Integrated Amplifier

Applicable to both tube amplifier and solid-state amplifier.



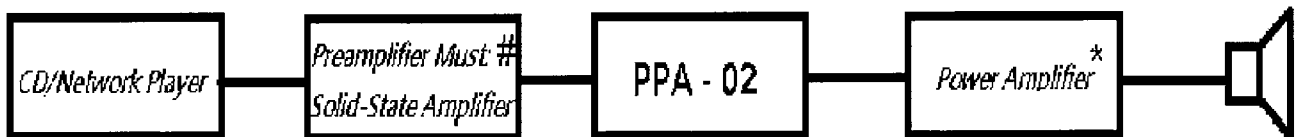
Type 2 Connection

Type 2 Connections

CD/Network player → **PPA - 02B** → Preamplifier → Power Amplifier

* Power Amplifier/Preamplifier

Applicable to both tube amplifier and solid-state amplifier.



Type 3 Connection

4. Type 3 Connections

CD/Network player → Solid-State Amplifier → **PPA - 02B** → Power Amplifier

Due to the concern of the high output impedance for tube amplifier, we recommend the preamplifier type of solid-state amplifier.

* Power Amplifier

Applicable to both tube amplifier and solid-state amplifier.

3.2 Input Port Connections

Connect the *audio players output*(Source Component)to your *Passive Preamplifier input*. With 3 different input ports(Port A, B and C), audio players can be freely to be connected, to the corresponding RCA (Red and White Ports)/XLR. Audio players can be CD players, networking players, radio sets etc.

3.3 Output Port Connections

Connect the *output amplifier input* to your *Passive Preamplifier output*, to the corresponding RCA (Red and White Ports)/XLR. Since the minimum output impedance of PPA – 02B is $10\text{k}\Omega$ ($20\text{k}\Omega$ if using XLR and RCA together), your output amplifiers should not be lower than $10\text{k}\Omega$ with the input impedance. Some amplifiers in the markets applied a 600Ω transformer for input impedance, this will cause function defect if these types of amplifiers are used for connections.

5. Switch on Source Component

Turn on your audio players(Source Component) and start playing your music.

6. Switch on Power Amplifier

Turn on you power amplifier.

7. Turn it up

Now, you may slowly increase your PPA – 02 Bvolume/gain control switch. Enjoy your music!

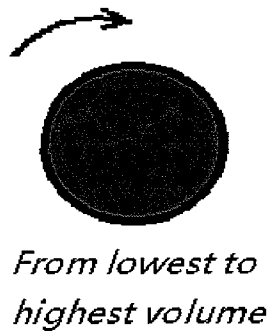
Operations

- Front Panel



1. Volume Control Switch

The high-quality and machined knob allows up to *59 steps of absolute mechanical volume control*, ranging from the lowest to the highest volume by turning from far left to far right.



2. Gain Control Switch

Condition

Make sure the **VOLUME CONTROL SWITCH** is selected to the **LOWEST VOLUME** before using this gain control switch.

The special and unique gain control knob gives a *selectable 4 choices of gain value*. With the application of Magnetic Hysteresis from the coil in the 59 steps autotransformer (C Core), the PPA - 02B sound quality varies. Under *1x, 3x, 5x and 10x* gain options (*0.5x, 1.5x, 2.5x and 5x in XLR*), you can definitely experience *superior build quality of sound at different volume levels*, so as to achieve the best control.

Gain	RCA	1X	3X	5X	10X
	XLR	0.5X	1.5X	2.5X	5X
Sound Quality		Accurate Positioning, High Quality	Sweet Treble, High Quality	Sweet Treble, Thick Bass	Extraordinary Thick
Preferred Amplifier Type		Tube Amplifier	Tube Amplifier / Solid-State Amplifier	Solid-State Amplifier	
Coil Ratio		1:1.00	1:31.0	1:4.97	1:10.39



1X
0.5X



3X
1.5X



5X
2.5X



10X
5X

RCA
XLR

3. Input Selector

To select one of the three sources of input (Ports A, B and C) using the input selector switch.



Input Port A

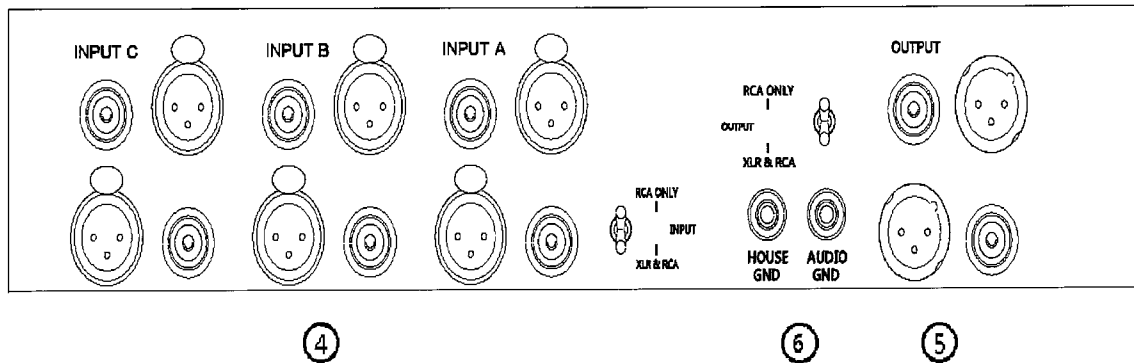


B



C

- **Rear Panel**



4. Source Inputs

Receive outputs from audio players (Source Component), with 3 input ports choices (Ports A, B and C).

Choose RCA ONLY if not using XLR.

5. Preamplifier Output

Receive inputs from output amplifier.

Choose RCA ONLY if not using XLR.

6. GND

House GND

This GND enables metal contact for wire connection.

Audio GND

This GND is RCA output ground connected.

Connect the House GND and Audio GND ports to the ground box if it is being use; otherwise, you can short both the House GND and Audio GND together by connecting a jumper wire.

Specifications

- **Transformer**

Core Type	C Core
Core Material	<i>Confidential</i>

- **Voltage Steps** 59 steps

- **Output Range**

Measuring Condition

Connect output amplifiers with input impedance not lower than 10kΩ to avoid malfunctions(20kΩ if using XLR and RCA together), as the output impedance of this PPA – 02B is 10kΩ.

Output Range +20dB – 80dB

- **Gain Range**

Gain(RCA)	1X	3X	5X	10X
Gain(XLR)	0.5X	1.5X	2.5X	5X
Coil Ratio	1:1.00	1:3.10	1:4.97	1:10.39

- **Frequency Response**

Measuring Condition

Turn to the highest volume level with a 10kΩ resistor loading.

Frequency Response 20 – 20kHz (+/- 3dB) at 1X gain

- **Audio Connections**

Inputs	3 RCA, 3 XLR
Outputs	1 RCA, 1XLR
GND	1 Housing Ground, 1 Audio Ground

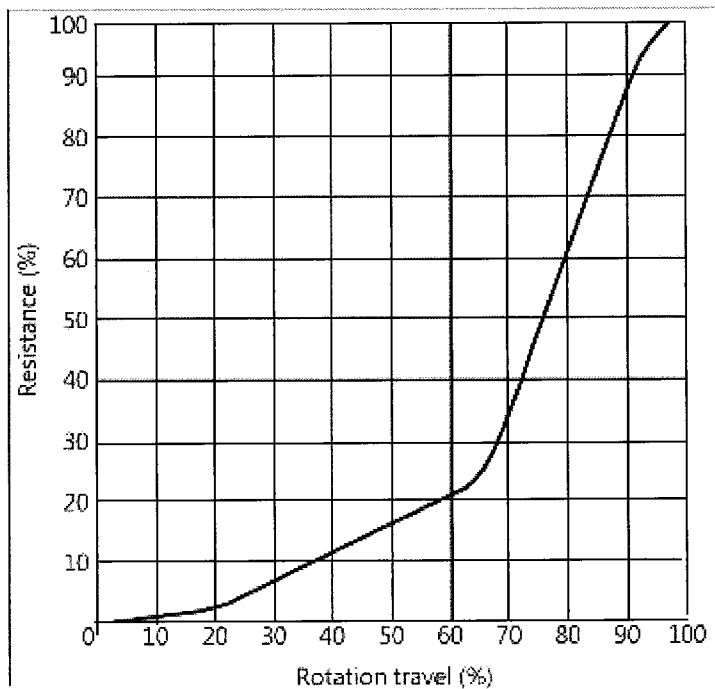
- **Overall Dimensions**

Width	350mm
Depth	280mm
Height	80mm

- **Weight**

Net Weight	5.6kg
Gross Weight	8.0kg

- **Series Type Stepped Attenuators/ 15A Resistance Taper (For 1X Gain)**



Warranty and Contact Details

The PPA – 02B is covered by a lifetime warranty plan from the date of purchase under normal circumstances. This lifetime warranty plan expires only when all our manufacturing components are exhausted. But our company guarantees the availability component supply for no less than two years from the date of you purchase your unit.

- **Warranty Coverage**

The warranty provided by our company in this statement applies only to product purchased from our authorized distributors and authorized resellers. Warranty coverage commences from the date of purchase.

Our company *warrants* the Product according to the following terms:

a) Against defects in material or workmanship only, but *not* Product appearance.

b) *not* the cost of shipping or transportation for maintenance.

- **Warranty Limitations**

This warranty shall not apply when:

a) Defects caused by the operation outside the usage parameters stated in the owners manual.

b) malfunctions caused by misuse or abuse, improper installation, operation or maintenance, improper connections or peripherals, use of spare parts not from this company, service modifications or repair performed by a person not authorized by us or other conditions unrelated to defects in Product material or workmanship.

c) Malfunctions or failure caused by accidental or intentional damage.

d) Defects resulting from normal wear and tear.

- **Contact Details**

If you believe you need warranty service, please contact us through the following means:

Telephone: (+852) 2889 1924

Fax : (+852) 2889 2493

E-mail: info@designbymrk.com

Facebook: <https://www.facebook.com/Design-by-Mr-K-386812875128890>

Website: www.designbymrk.com

Preliminary instruction manual.

Data changed without notice.

Version 1.3 Date: 1st March., 2023

Design by Mr. K