UNiKA MP-Series MP-2800 Professional Power Amplifier Instruction Manual

UNiKA
Professional Power Amplifiers

User Instructions
This booklet contains important information concerning the proper and safe operation of your new amplifier..

MP-Series MP-2800 / MP-4000 / MP-5000
Made in Taiwan

This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.
CAUTION: Risk of the electrical shock – DO NOT OPEN!
CAUTION: To reduce the risk of electrical shock, do not remove the cover. No user-serviceable parts inside. Refer all servicing to qualified service personnel.
WARNING: To prevent electrical shock or fire hazards, do not expose this amplifier to rain or moisture. Before using this amplifier read the user manual for further warnings.

	**CAUTION** Do not open – risk of electric shock	

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. THERE ARE NO USER-SERVICEABLE PARTS INSIDE. REFER ALL SERVICES TO YOUR AUTHORIZED DEALER.

The lightning flash with an arrow triangular symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure, and
maybe of sufficient magnitude to constitute a risk of electric shock.

The exclamation point triangular symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the user manual accompanying the amplifier.

IMPORTANT PRECAUTIONS

- To reduce the risk of electrical shock or fire, do not expose this unit to rain or moisture.
- Do not spill water or other liquids into or onto your unit.
- Do not attempt to operate this unit if the power cord has been frayed or broken.
- Do not attempt to remove or break off the ground prong from the electrical cord. This prong is used to reduce the risk of electrical shock and f re in case of an internal short.
- Disconnect the main power before making any type of connection.
- Do not remove the cover under any conditions. There are no user-serviceable parts inside.
- Never plug this unit into a dimmer pack.
- Always be sure to mount this unit in an area that will allow proper ventilation. Allow about 6” (15cm) between this device and a wall.
- Do not attempt to operate this unit, if it becomes damaged.
- This unit is intended for indoor use only, use of this product outdoors voids all warranties.
- During long periods of non-use, disconnect the unit’s main power.
- Always mount this unit in a safe and stable manner.
- Power cords should be routed so they are not likely to be walked on, pinched by items placed upon or against them.
- Cleaning -The outside of the unit should be wiped down with a soft cloth and mild cleaner when needed.
- Heat -The amplifier should be situated away from heat sources such as radiators, heat registers, stoves, or

other appliances (including amplifiers) that produce heat.

- The fixture should be serviced by qualified service personnel when:

  A. The power-supply cord or the plug has been damaged.

  B. Objects have fallen, or liquid has been spilled into the unit.

  C. The appliance has been exposed to rain or water.

  D. The fixture does not appear to operate normally or exhibits a marked change in performance.

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INTRODUCTION

Congratulations and thank you for purchasing the MP-2800/MP-4000/MP-5000 amplifier. These amplifiers are a representation of UNiKA's continuing commitment to produce the best and highest quality audio products at an affordable price. These amplifiers are designed to provide a big impact in sound reproduction. Please read and understand this manual completely before attempting to operate your new amplifier. This booklet contains important information concerning the proper and safe operation of your new amplifier.

UNPACKING:

Every MP-2800/MP-4000/MP-5000 amplifier has been thoroughly tested and has been shipped in perfect operating condition. Carefully check the shipping carton for damage that may have occurred during shipping. If the carton appears to be damaged, carefully inspect your unit for any damage and be sure all accessories necessary to operate the system have arrived intact. In the event, that damage has been found or parts are missing, please contact your dealer for further instructions.

INSTALLATION:

These amplifiers are designed to mount into a standard 19" rack. The front panel provides four holes used to screw the unit into a rack. The unit also provides a way to rear mount the unit into a rack for added security. Rear mounting the unit is especially recommended if the unit is to mount into a mobile rack.

MP-2800/4000/5000 FRONT PANEL

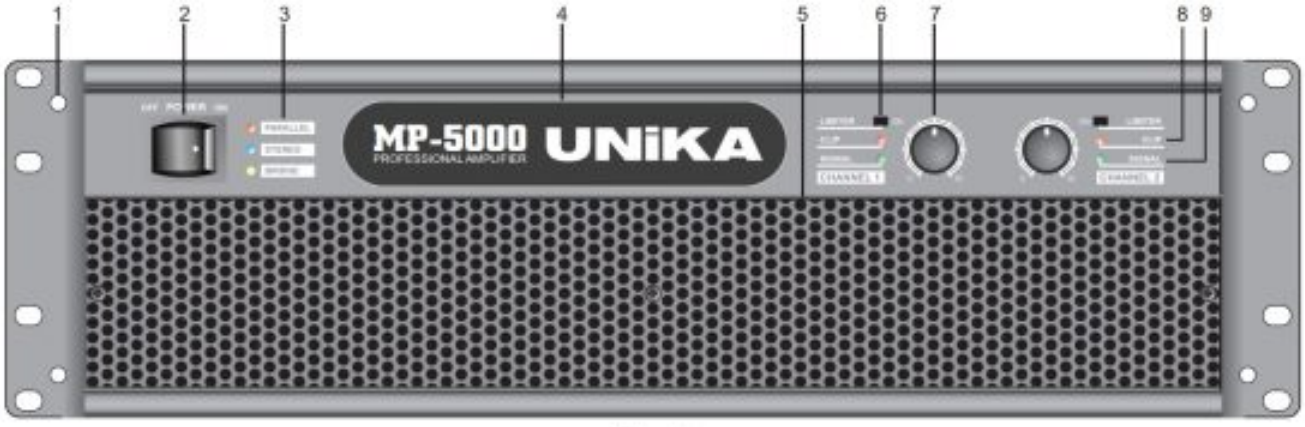


Figure 1

1. Rack Mounting Ears – Two front panel mounting holes are provided on each mounting ear.
2. AC Power Switch – MP Series amplifiers have a front-panel AC mains power switch.
3. Mode Indicated LED – Red LED indicates “Parallel” Mode, Green LED indicates “Stereo” Mode, Yellow indicates “Bridge” Mode.
4. UNiKA Logo and Model No – MP series have 3 types of 3U Models MP-2800 / MP-4000 / MP-5000.
5. Fan Inlet Grills and Filter – MP Series amplifiers are cooled by two rear-mounted fans. Cool air from the front grills is filtered and flows over the heat sinks and exhausts to the backside. Make sure these outlets remain clear to allow unrestricted airflow.
6. Limiter Switch – You can select limiter “ON” for limiter working, or turn “OFF” the limiter.
7. Input Attenuators – Two input attenuators adjust the level for their respective amplifier channels.
8. Clip LED – Illuminates at the clipping threshold. Continuous illumination also indicates that ACL (Active Clip Limiting) protection circuitry is engaged.
9. Signal LED – Illuminates to indicate that a signal (above a minimum threshold) is present at the amplifier input and that the signal is being amplified.

MP-5000 REAR PANEL

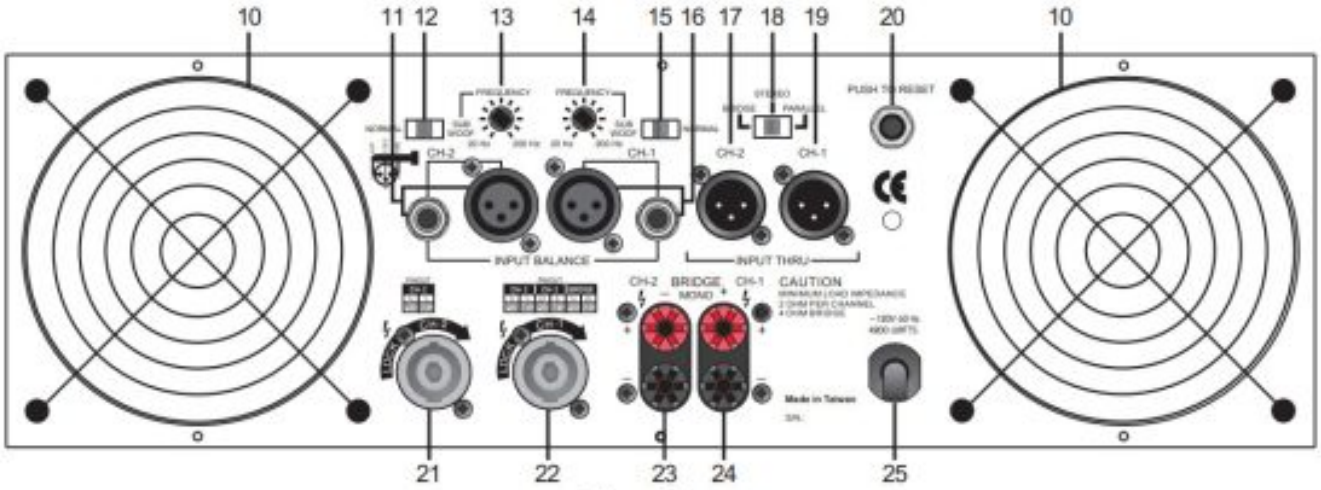


Figure 2

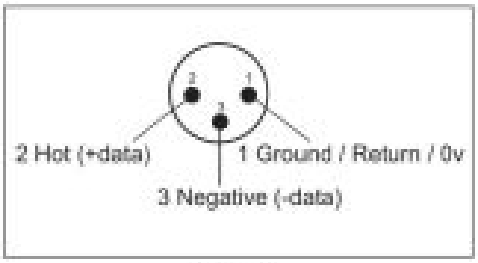
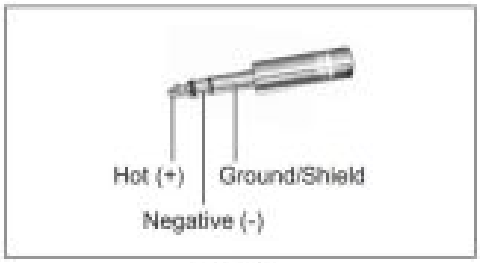
10. Fan Outlet Ports – Cooling air enters the amplifier through the front grills and exhausts through the fans. Be sure not to block these ports when installing the amplifier or other associated equipment. Air must flow unimpeded through these ports.
11. Channel 2 Balanced 1/4″ TRS & XLR Input Connectors – These connectors accept input signals on balanced TRS and XLR input plugs. See figures 3-5 for information on polarity. Connectors for each channel are in parallel; the unused connectors may be used for “loop through” connection to other amplifiers. XLR pin setting: Pin-3/signal Negative, Pin-2/signal Positive, Pin-1/Ground.
12. Channel 2 Subwoofer Mode On/Off Switch – Turns the subwoofer mode for channel two on and off.
13. Channel 2 Frequency Adj. – This pot adjusts the frequency level sent to your speaker on channel two when using your amplifier in subwoofer mode.
14. Channel 1 Frequency Adj.- This pot adjusts the frequency level sent to your speaker on channel one when using your amplifier in subwoofer mode.
15. Channel 1 Subwoofer Mode On/Off Switch – Turns the subwoofer mode for channel one on and off.
16. Channel 1 Balanced 1/4″ TRS & XLR Input Connectors – These connectors accept input signals on balanced TRS and XLR input plugs. See figures 3-5 for information on polarity. Connectors for each channel are in parallel; the unused connectors may be used for “loop through” connection to other amplifiers. XLR pin etting: Pin-3/signal Negative, Pin-2/signal Positive, Pin-1/Ground.

17. Channel 2 XLR THRU Jack – This Jack is used to send a parallel signal from the channel 2 input jack to another device or amplifier.
18. Mode Selection Switch – This recessed, three-position switch configures the amplifier for Stereo, Parallel or Bridged Mode operation. Amplifiers are factory-configured for Stereo Mode. See section on Mode Selection for more information.
19. Channel 1 XLR THRU Jack – This Jack is used to send a parallel signal from the channel 1 input jack to another device or amplifier.
20. Reset Button – This button is used to reset the breaker.
21. Channel 2 Speakon Output – Use pins 1+ and 1- of this 4-pole Speakon connector to connect to your speaker's input jack.
22. Channel 1 Speakon Output – Use pins 1+ and 1- of this 4-pole Speakon connector to connect to your speaker's input jack.
23. Channel 2 Output Jack / 5-Way Binding Post – Connect to your speaker's input jack. Red is a positive signal and Black is a negative signal.
24. Channel 1 Output Jack / 5-Way Binding Post – Connect to your speaker's input jack. Red is a positive signal and Black is a negative signal.
25. AC POWER Cord – Plug this cable into a standard 110V or 220V wall outlet. Be sure that the supplied voltage in your area matches the amplifiers' required voltage. Never plug your amplifier into a wall outlet that does not match the required voltage of your amplifier, serious damage may occur to your unit.

SET UP

INPUTS –

The MP-2800/MP-4000/MP-5000 amplifier allows you to use two types of input connectors per channel, an XLR female jack for balanced connections and a 1/4" TRS female jack that will accept balanced and unbalanced connectors. Use these connections to connect the output signal from a mixer, cross-over or EQ to your MP-2800/MP-4000/MP-5000 amplifiers. A balanced connection is recommended for cable runs longer than 20ft. When constructing your own XLR cables follow the pin configuration described below for proper connections. For cable runs shorter than 20ft., you may choose the 1/4" TS unbalanced input option. The 1/4" TS unbalanced input option may be more convenient for most users due to the abundant supply of prefabricated cables available at your local audio dealer. You may use the two XLR "Input Thru" jacks to jump a parallel connection to another amplifier or other device. For example: Connect an XLR cable to the input of channel one. You may now connect an XLR cable from the channel one "Input Thru" jack to the input jack of another amplifier's channel one input. This will reduce the use of "Y" cables.

Male XLR Pin Configuration	Balanced TRS 1/4" Plug	U
 Figure 3	 Figure 4	

OUTPUTS –

BINDING POST/BANANA PLUG: Connect your speakers to the binding post outputs on the rear of the amplifier.

The speaker wire may be connected by bare wire (directly connected, usually for permanent connections), banana plug, or spade connector. Connections are made to channel one and channel two outputs for Stereo Mode or across the red terminals of channel one and channel two for Mono Bridge Mode.

IMPORTANT NOTICE: Although a speaker will operate with the positive and negative leads plugged into either terminal on the amplifier binding post, be sure to plug the negative lead into the black terminal and positive lead into the red terminal. Ensuring proper polarity will avoid speakers being out of phase that can cause a loss of bass response.

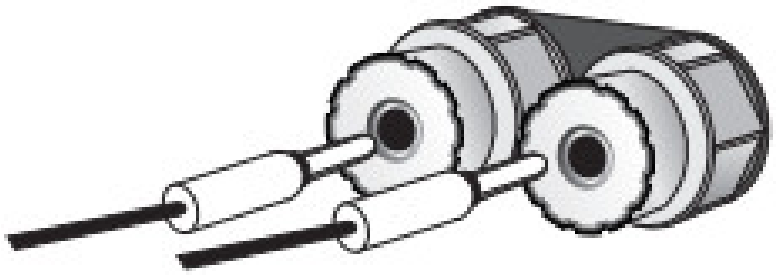


Figure 6

BANANA PLUG: (Figure 6)

When connecting your speakers to the amplifier using the banana plug, be sure that the red and black caps on the binding post are completely screwed in. Insert the banana plug into the caps of the binding post, be sure that the banana plug is inserted securely to avoid the risk of popping out.

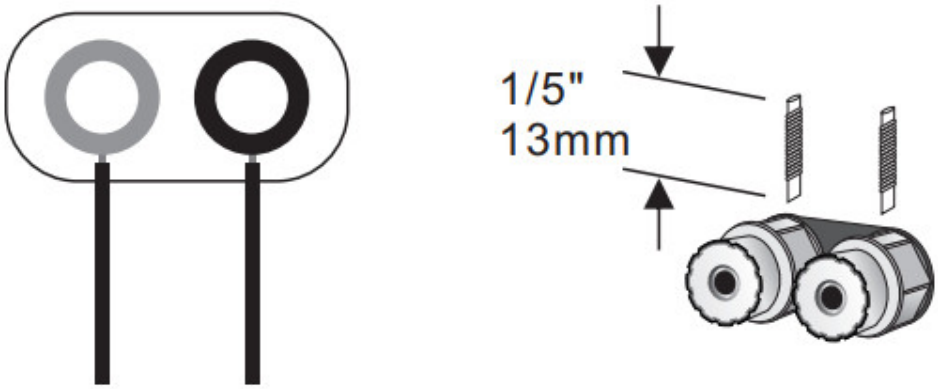


Figure 7

Typical speaker output using bare wire. Insert bare wire into the binding post and tighten.

BARE WIRE CONNECTION: (Figure 7)

When connecting your speakers to the amplifier using bare wire, unscrew the red and black caps on the binding post, be sure not to completely remove or unscrew the red and black caps. Strip back the wire insulation ½" (13mm). Insert the bare wire into the hole that was revealed by unscrewing the binding post cap. After inserting the wire into the binding post hole, screw the binding post cap down on the wire. To reduce the risk of shock or damage to your amplifier, be sure that the wire connected to one binding post does not come in contact with that of another.

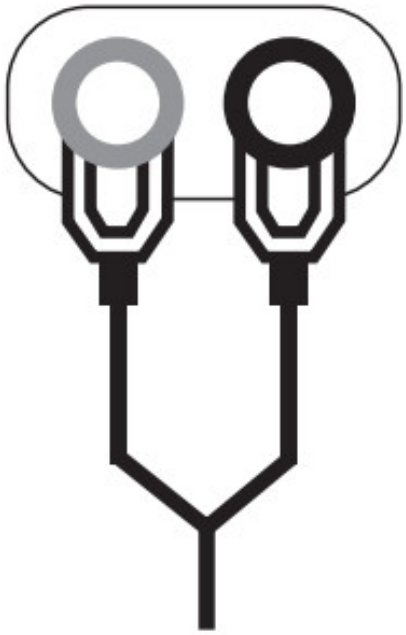


Figure 8

Typical speaker output using spade connectors.
Insert bare wire into the binding post and tighten.

SPADE CONNECTOR: (Figure 8)
When connecting your speakers to the amplifier using a spade connector, unscrew the red and black caps on the binding post, be sure not to completely remove or unscrew the red and black caps. Insert the spade connector into the binding post and tighten the caps down on the spade connector. To reduce the risk of shock or damage to your amplifier, be sure that the wire connected to one binding post does not come in contact with that of another.
MONO BRIDGE CONNECTIONS:
Mono bridge operation connections will follow the above descriptions, however, when operating in mono bridge operation the speaker connections will run between the two positive (red) leads. Use channel two positive output terminal for the speaker's negative connection and channel one positive output terminal for the speaker's positive connection.
STEREO CONNECTIONS USING THE NEUTRIK SPEAKON OUTPUT CONNECTORS:
Recent regulatory requirements in Europe have outlawed the use of the dual banana plug and force amplifier users to terminate their speaker cables with spade lugs or bare wire ends. This is not advantageous to most users that want to reconfigure their systems or quickly change out an amplifier. The Neutrik Speakon connector provides the most convenient solution to this problem, eliminating the need for spade lugs or bare wire end cables. Major speaker manufacturers have been using Speakon connectors on their products for years, so chances you are ready to use the Speakon connection. With Speakon connectors, you can connect straight from the amplifier to the speaker. The Speakon connector used on this amplifier meets all known safety regulations. Once wired correctly, the connector cannot be plugged in backward, causing the type of inverted polarity situations that have become common with banana hookups. This connection will provide a safe, secure, and reliable method of connecting your speakers to your new amplifier. You can purchase the Speakon NL4FC connectors from your local audio dealer.

SPEAKON ASSEMBLY:

You will need a pair of Neutrik Speakon NL4FC connectors. You will also need a high-quality two or four-conductor Speakon cable, a pair of needle-nosed pliers, and a 1.5-mm Allen key to assemble the Speakon connectors to your speaker wire. To assemble the Neutrik Speakon NL4FC connector, complete the following steps:

1. Strip back 3/4-inch of the cable casing. Strip off 1/4-inch from the end of each of the conductors down to the bare wire, and insert the brass fittings (Figure 9).

Figure 9

2. Slide the wire tensioner (D) and the Speakon coupler (E) through the cable end. See Figure 10.

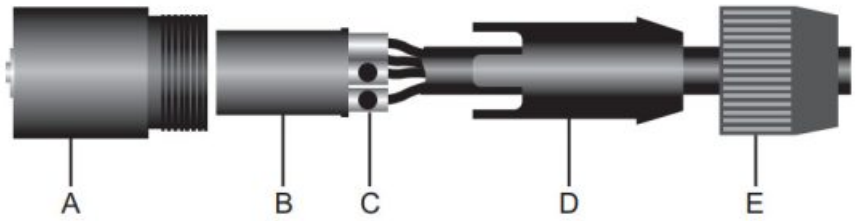


Figure 10

3. Insert each wire with the brass fittings into the top of the appropriate slot of the connector insert (B) as shown in Figure 11. Use a 1.5-mm Allen key to tighten the connection (Figure 12).

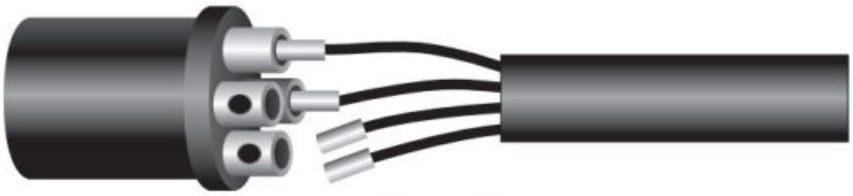


Figure 11

Figure 12

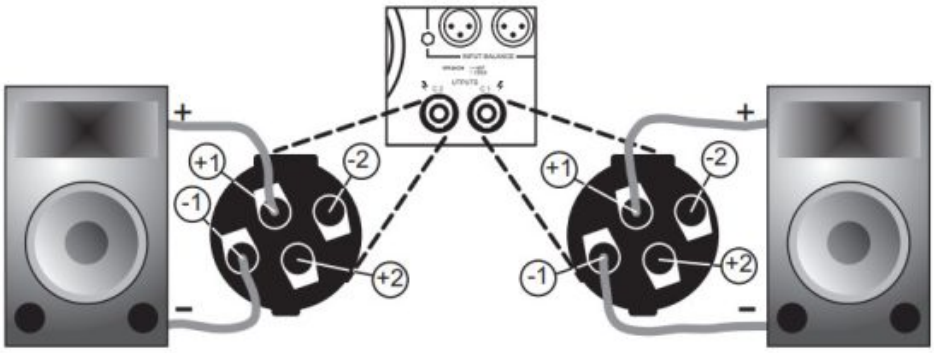


Figure 13

4. Be sure to properly match the positive (+) and negative (-) leads of each wire (Figure 13).
5. Slide the connector insert (B) into the connector housing (A), making sure that the large notch on the outer edge of the insert lines up with the large groove on the inside of the connector housing. The insert should slide easily through the housing and out the other side until it extends approximately 3/4-inch from the end of the housing.
6. Slide the cable tensioner (D) along the cable and insert into the housing (A), making sure that the large notch lines up with the large groove on the inside of the connector housing (A). The cable tensioner (D) should slide easily into the housing until only 3/8-inch of the tensioner (D) extends from the back end of the connector.
7. Slide the coupler (E) along the cable and screw it onto the end of the housing (A). Before tightening, you may want to test the connector to make sure it has been assembled properly.

OPERATING MODES

STEREO OPERATION: Page 8/ Figure 14 details an example of a typical stereo set-up. Connect your inputs into channels one and two of the amplifier. Connect your speakers to the outputs on the rear of the amplifier. Be sure that your front gain controls are turned down to their lowest level (fully counterclockwise). Turn your amplifier on. Turn your input source level up. Use your front gain controls to regulate the output volume. Be sure not to raise the volume to the clip level, however, an intermittent clip signal is acceptable.

MONO BRIDGE OPERATION: Page 9/ Figure 15 details a mono bridge set-up. Be sure your amplifier and all other audio equipment are powered down. Flip the Parallel/Stereo/Mono Bridge switch to the Mono Bridge position. Connect the input signal to channel one. Connect your speaker across the red output binding post on the rear of your amplifier. Turn your equipment on (your amplifier should always be the last item you turn on). Apply an input source signal to your amplifier. Use the channel one gain to regulate your amplifier output.

PARALLEL MONO: Parallel ties the two-channel line inputs together, so that they will both be driven by the same signal, without the need for external jumpers or wiring. Both amplifier channels will operate independently. Though they carry the same signal, their gain controls affect only their respective channels, and they both must use their respective speaker outputs. Never attempt to parallel the speaker outputs, this may cause serious damage to your amplifier! This mode is recommended when using the MP-2800/MP-4000/MP-5000 to run bass speakers, to achieve a better low end. To run in parallel mono mode connect your system as you would if you were going to run in stereo mode. Then flip the mode switch to Parallel. Be sure the amplifier is off or the power is disconnected before making any changes.

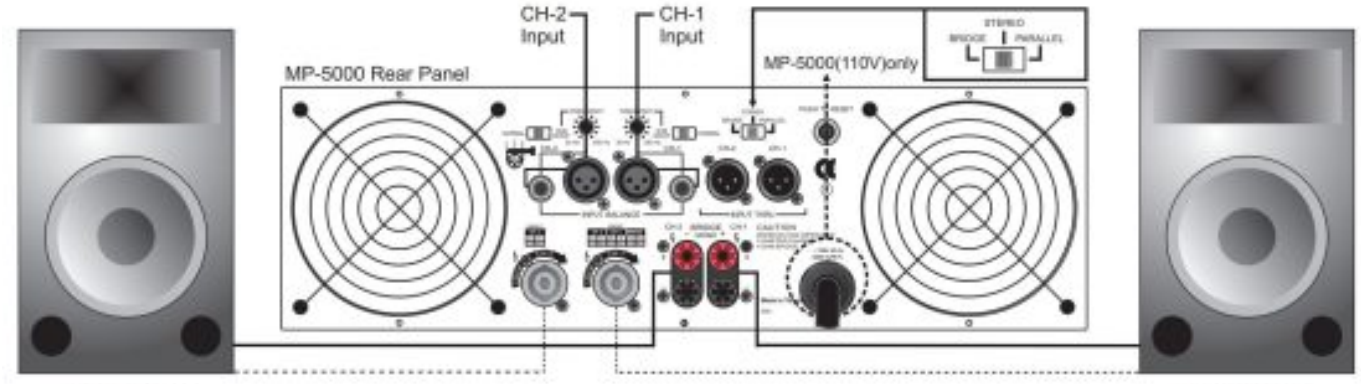


Figure 14 **TYPICAL STEREO OUTPUT CONNECTIONS**

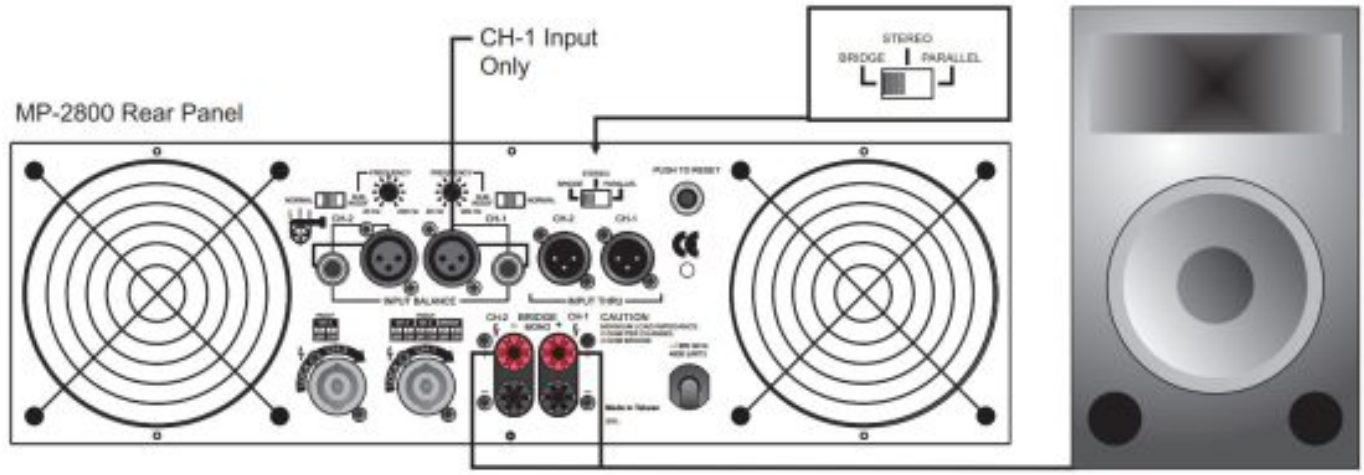


Figure 15 **TYPICAL MONO BRIDGE SET-UP**

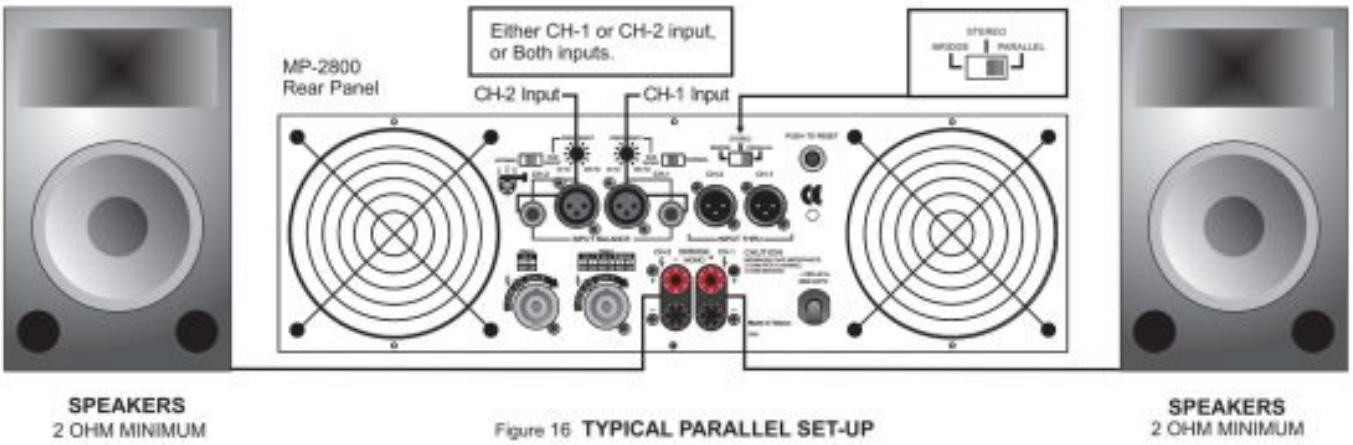


Figure 16 **TYPICAL PARALLEL SET-UP**

SUBWOOFER MODE: This mode sends low frequencies to your speakers without the use of an external crossover. The subwoofer operation can be operated in stereo, parallel, or bridged modes. Change the different operating modes by flipping the mode switch on the rear of the unit to your desired operating mode. Also, set the subwoofer mode switch to the ”SUBWOOFER” position. Use the frequency selector to adjust the subwoofer output frequency from 20Hz to 200Hz. The different subwoofer modes are listed as follows:

BRIDGE SUBWOOFER – This operation allows you to get the most possible power out of your amplifier for the sole purpose of running a high-powered subwoofer loudspeaker in mono. To avoid amplifier overheating, never run the amplifier below 4 ohms in this mode. In this mode you may use the frequency adjustment on the rear of the amplifier, to control the frequency output level. Frequencies may be adjusted from 20Hz to 200Hz. Page 10 / Figure 17 details a typical Bridge Subwoofer set-up.

STEREO SUBWOOFER – This operation is similar to the Bridge Subwoofer operation but in stereo. This operation allows you to run several subwoofers down to a minimum of 2 ohms. To avoid amplifier overheating, never run the amplifier below 2 ohms in this mode. Set up this mode as you would a standard Stereo set-up. Be sure both channels are set to “SUBWOOFER.” In this mode you may use the frequency adjustment on the rear of the amplifier, to control the bass frequency output level. Frequencies may be adjusted from 20Hz to 200Hz. Page 11 / Figure 18 details a typical Stereo Subwoofer set-up.

PARALLEL SUBWOOFER – This operation is similar to the Stereo Subwoofer operation but in parallel. When running subwoofers, it is usually recommended to run them in mono mode to achieve a cleaner tighter low end. This operation allows you to run several subwoofers down to a minimum of 2 ohms. To avoid amplifier overheating, never run the amplifier below 2 ohms in this mode. Set up this mode as you would a standard Stereo set-up. Be sure both channels are set to “SUBWOOFER” and the mode switch is set to “Parallel.” In this mode you may use the frequency adjustment on the rear of the amplifier, to control the bass frequency output level. Frequencies may be adjusted from 20Hz to 200Hz.

ONE CHANNEL NORMAL / ONE CHANNEL SUBWOOFER (BI-AMP) – You may also use your amplifier to bi-amp your system. You may use one side of the amplifier to power a subwoofer and the other side to power a full-range speaker. Follow the setup guides listed above to mix and match your operations.

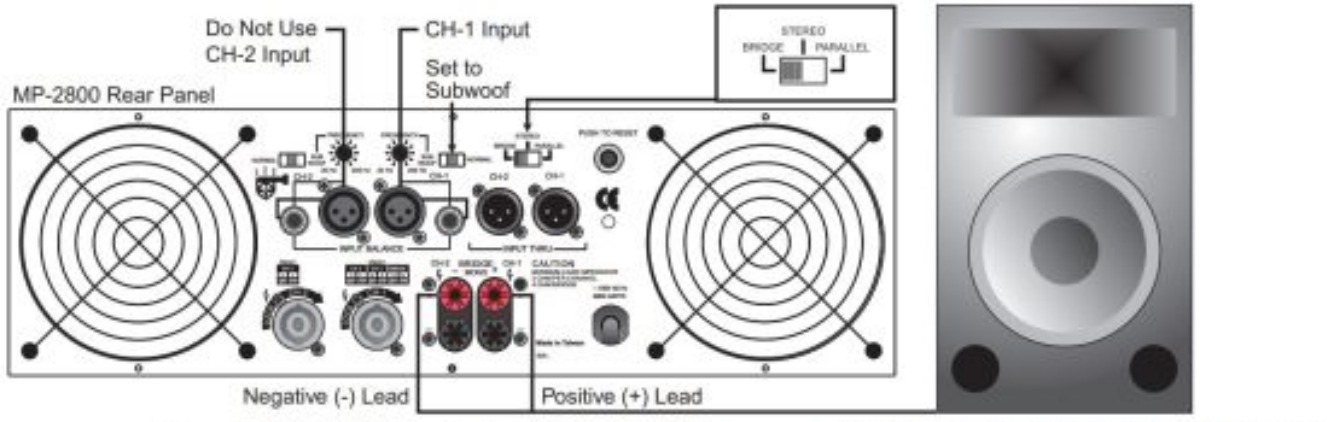


Figure 17 **Bridge Subwoofer Mode Speaker Set-Up**

Use the two red terminal from the Binding Post to power a subwoofer speaker in mono-bridge mode.

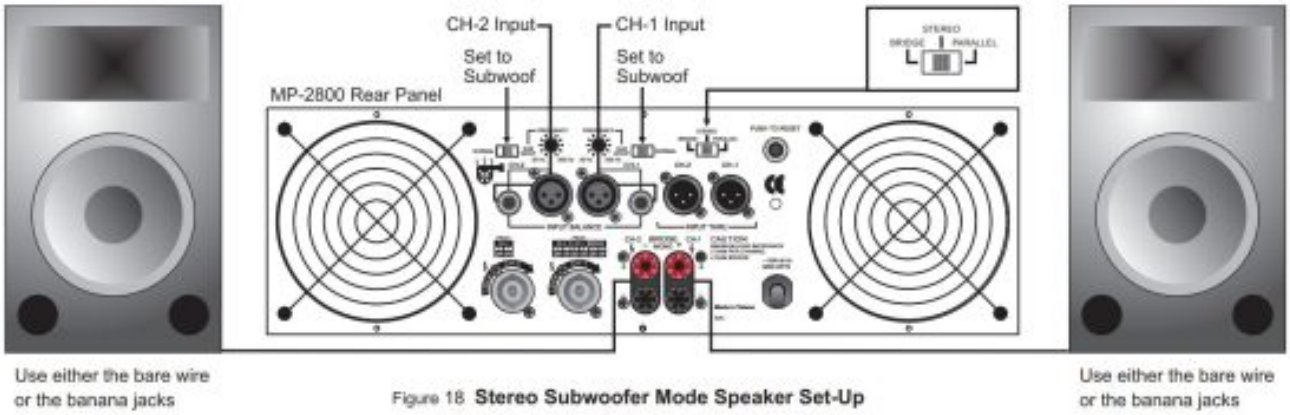


Figure 18 **Stereo Subwoofer Mode Speaker Set-Up**

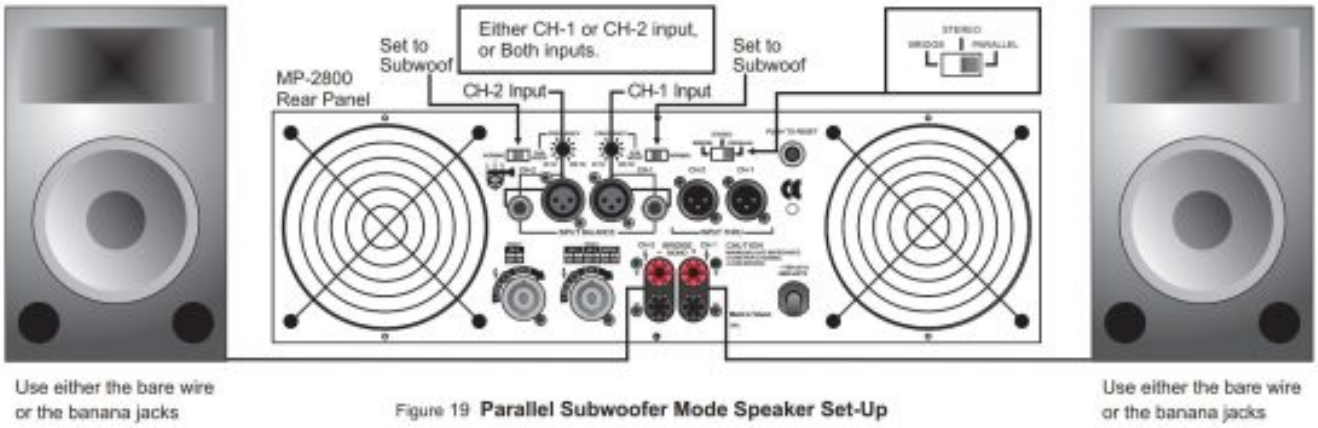


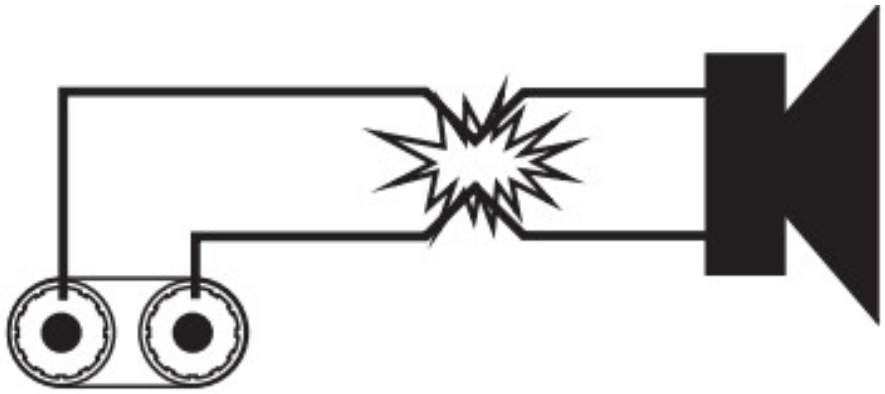
Figure 19 **Parallel Subwoofer Mode Speaker Set-Up**

PROTECTION

LIMITER – The MP-2800/MP-4000/MP-5000 amplifiers come with a built-in limiter. When the input signal overloads, the “CLIP LED” indicates a signal overload, at this time, the volume should be lowered to reduce distortion. If the input gain level is not reduced the built-in limiter will activate. During signal overload, the limiter will reduce the input audio signal enough to minimize the amount of clipping. A limiter takes the gain of an overloading signal and reduces it, the reduction in gain reduces distortion that can cause damage to your speakers and amplifier. During normal operation below clipping, and momentary clips on peaks, the limiter does not affect the audio signal and is inaudible. It will allow brief clipping of peaks and will only activate when continuous hard clipping occurs. During excessive clipping, the limiter will reduce the audio signal enough to minimize the amount of clipping. When the input signal decreases enough that clipping ends, the limiter will deactivate and cease its gain reduction. The limiter has a fixed threshold and can not be adjusted.

SAFE POWER LEVELS AT DIFFERENT OUTPUT LOADS: 8-Ohm Loads: The amplifier can operate at its rated power level without the risk of overheating. However, it may cause excessive temperature if it is pushed hard enough to continually light the “CLIP” indicator, the amplifier’s average output power can reach its maximum peak. 4-Ohm Loads: If the “CLIP” indicator flashes occasionally, the amplifier is approaching its Maximum long-term power capacity. If it is lit about half the time, the amplifier channel will probably go into thermal protection within a few minutes. 2-Ohm Loads: Except for an occasional flash, keep the “CLIP” indicator dark to avoid overheating the amplifier channel. Clipping should be kept to a reasonable minimum. An amplifier’s peak current draw at full output power into 2 ohms is several times what the “normal ” draw is, but its various protection circuits will prevent this condition from lasting more than a minute or two.

SHORT CIRCUIT PROTECTION – The MP-2800/MP-4000/MP-5000 amplifiers come with built-in Output Short Circuit Protects. The Output Short Circuit Protection protects the output devices of the amplifier from short circuits and stressful loads. If your speaker lines are short, the amplifier automatically detects this problem and discontinued operation for that channel. If one side of your amplifier becomes shorted and goes into protect mode, the other side will continue to operate normally. Channel output during the “Short Circuit Protection” will be interrupted (i.e. no sound output). Short Circuit Protection can usually be traced back to the signal output line (i.e. speaker line). Check the line from the output terminal of the amplifier to the speaker. If this line is good, check the internal speaker connections and components. A short circuit will usually be traced to a bad cable or a bad speaker component and is rarely traced to the amplifier itself.



THERMAL PROTECTION – Dual 2-speed fans on the MP-2800/MP-4000/MP-5000 amplifiers provide adequate cooling. During low-level output, the fans run at normal speeds. During high output and as heat raises, (exceeding 50°C.), the fans will run at higher speeds to aid the cooling process. If the heatsink temperature exceeds 91°C., the amplifier will mute until the amplifier cools down. When the amplifier cools below 90°C., the amplifier will return to normal operations. Be sure not to operate your amplifier below the minimum load ratings to reduce the risk of overheating problems.

INPUT/OUTPUT PROTECTION – The input circuits are isolated by resistors. An ultrasonic network uncouples RF from the output and helps to keep the amplifier stable with reactive loads.
OPERATING VOLTAGE (AC MAINS) – On the rear panel will indicate the correct AC mains voltage. Connecting to the wrong voltage is dangerous and may damage the amplifier. Always be sure the source voltage for your areas matches the required voltage for your amplifier.
GAIN CONTROLS – The gain controls are located on the front panel and are calibrated in 2dB of attenuation from full gain. It is best to a d just the amplifier so no “hissing” is heard from speakers with no music being played, this will ensure the lowest possible distortion during normal operation.
AMPLIFIER FEATURES:
THRU – THRU will allow the user to daisy-chain one amplifier’s signal input into another amplifier. Plug the signal source outputs into the first amplifier’s input, patch from the amplifier’s THRU jacks to the next amplifier’s input, and so on, daisy-chaining as many amplifiers as there is no excessive level loss.
LED INDICATORS – Each channel has one red LED indicating signal clipping and one green LED indicating input signal is present.
FUNCTION INDICATORS – These green/red/yellow LED indicators to detail the amplifier’s current operating mode (Stereo, Parallel, or Bridge).

MP-SERIES AMPLIFIER SPECIFICATIONS

	MP-2800	MP-4000	MP-5000
R.M.S. Output Power 2 Ch Driven 2ohms/4ohms/8ohms	2ohms 1200W	2ohms 1600W	2ohms 2400W
	4ohms 1000W	4ohms 1400W	4ohms 2000W
1KHz 1% THD	8ohms 600W	8ohms 800W	8ohms 1200W
R.M.S. Output Power Bridged Mono 4ohms/8ohms 1KHz 1% THD	2400W/2000W	3200W/2800W	4800W/4000W
Input Sensitivity	1V	1V	1.2V
Frequency Response (20Hz-20KHz)	±0.2dB	±0.2dB	±0.2dB
Total Harmonic Distortion	<0.025%	<0.02%	<0.02%
Crosstalk @ 1KHz	>60dB	>60dB	>65dB
Damping Factor	>600	>550	>400
Signal To Noise Ratio below rated power 20Hz to 20kHz, A-Weighted	>100dB	>100dB	>100dB
Power Consumption @ Maximum Output Power 8ohms	1380W 12.54A@110y	1900W 17.27A@110y	2680W 24.36A@110y
Output Circuitry	CLASS H	CLASS H	CLASS H
Cooling System	Dual 2-speed fans and heat sinks	Dual 2-speed fans and heatsinks	Dual 2-speed fans and heatsinks
Dimensions (HxWxD)	133 x 483 x 465 mm	133 x 483 x 465 mm	133 x 483 x 465 mm
Weight	25.3kg	28kg	32.5kg
Rack Space	3U	3U	3U

UNiKA

Professional Power Amplifiers

Documents / Resources

	UNiKA MP-Series MP-2800 Professional Power Amplifier [pdf] Instruction Manual MP-Series, MP-2800, MP-4000, MP-5000, Professional Power Amplifier