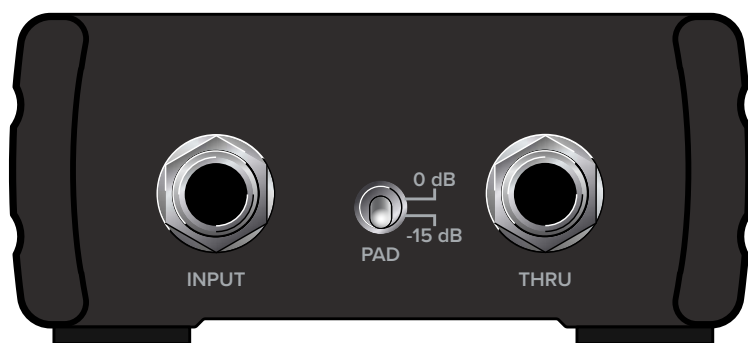
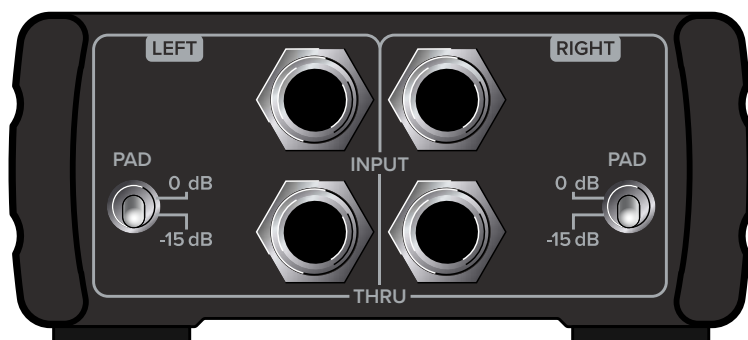


MDB™ SERIES DIRECT BOXES

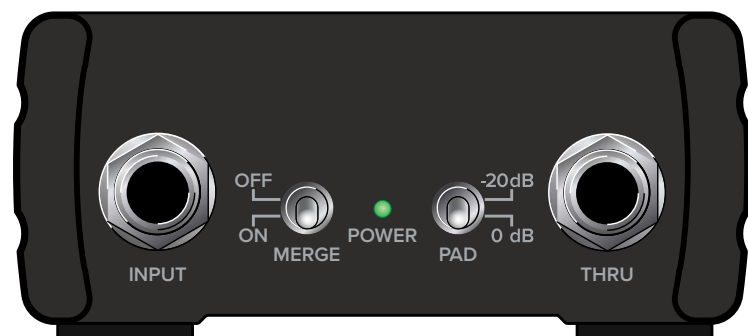
OWNER'S MANUAL



MDB-1P
PASSIVE DIRECT BOX



MDB-2P
STEREO PASSIVE DIRECT BOX



MDB-1A
ACTIVE DIRECT BOX

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. 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.
9. Only use attachments/accessories specified by the manufacturer.
10. 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.
11. This apparatus shall not be exposed to dripping or splashing, and no object filled with liquids, such as vases or beer glasses, shall be placed on the apparatus.
12. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

CAUTION: Changes or modifications to this device not expressly approved by LOUD Audio LLC could void the user's authority to operate the equipment under FCC rules.

WARNING — To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

13. This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiator & your body.

14. This apparatus does not exceed the Class A/Class B (whichever is applicable) limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

ATTENTION — *Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de class A/de class B (selon le cas) prescrites dans le règlement sur le brouillage radioélectrique édicté par les ministere des communications du Canada.*

15. This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

16. Exposure to extremely high noise levels may cause permanent hearing loss. Individuals vary considerably in susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a period of time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible noise level exposures shown in the following chart.

According to OSHA, any exposure in excess of these permissible limits could result in some hearing loss. To ensure against potentially dangerous exposure to high sound pressure levels, it is recommended that all persons exposed to equipment capable of producing high sound pressure levels use hearing protectors while the equipment is in operation. Ear plugs or protectors in the ear canals or over the ears must be worn when operating the equipment in order to prevent permanent hearing loss if exposure is in excess of the limits set forth here:

Duration, per day in hours	Sound Level dBA, Slow Response	Typical Example
8	90	Duo in small club
6	92	
4	95	Subway Train
3	97	
2	100	Very loud classical music
1.5	102	
1	105	Ryan screaming at Troy about deadlines
0.5	110	
0.25 or less	115	Loudest parts at a rock concert



Correct disposal of this product: This symbol indicates that this product should not be disposed of with your household waste, according to the WEEE directive (2012/19/EU) and your national law. This product should be handed over to an authorized collection site for recycling waste electrical and electronic equipment (EEE). Improper handling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, waste authority, or your household waste disposal service.

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Features

MDB-IP Passive Direct Box

- Perfect for guitars, basses, and more for stage and studio
- High-impedance 1/4" input with Thru output
- Balanced male XLR output connector with Ground Lift
- Ultra-low noise and distortion
- -15dB pad ensures distortion-free performance when connecting to high-output sources
- Built-Like-A-Tank™ construction

MDB-2P Stereo Passive Direct Box

- Perfect for stereo sources like keyboards and media players
- High-impedance 1/4" inputs with Thru outputs
- Balanced XLR outputs with Ground Lift
- Ultra-low noise and distortion
- -15dB pads ensure distortion-free performance when connecting to high-output sources
- Built-Like-A-Tank™ construction

MDB-1A Active Direct Box

- Active circuitry offers higher headroom for ultra-low noise and distortion-free performance
- High-impedance 1/4" input with Thru output
- Balanced XLR output with Ground Lift
- Low Cut and Polarity switches
- Merge switch allows connection of stereo sources which are then summed to mono at the output, perfect for stereo sources like keyboards and media players
- -20dB pad ensures distortion-free performance when connecting to high-level sources
- Powered via 48v Phantom Power
- Built-Like-A-Tank™ construction



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Introduction

MDB-IP Passive Direct Box

An essential tool for every musician and engineer, the MDB-IP Passive DI has everything you need to adapt unbalanced, high-impedance audio to a balanced, low-impedance output with minimal noise. Featuring a 1/4" high-impedance input and thru with -15db pad and a balanced XLR output with ground lift.

MDB-2P Stereo Passive Direct Box

Great for stereo sources like keyboards and synthesizers, the MDB-2P is an essential tool for electronic musicians, live sound venues, and recording studios. The MDB-2P Stereo Passive DI features dual 1/4" high-impedance inputs with Thru outputs and -15db pads, and dual low-impedance XLR outputs with ground lift.

MDB-1A Active Direct Box

Great for active instruments like guitars and basses with active pickups and preamps, the MDB-1A Active DI features increased headroom and distortion-free operation.

Featuring a 1/4" high-impedance input and thru with -20db pad plus a Merge switch that turns the Thru jack into a second input, perfect for summing a stereo source to a mono output.

The balanced XLR output features switches for Polarity, Low Cut, and Ground Lift. For maximum convenience, the MDB-1A is powered by 48v phantom power.

How to Use This Manual

After this introduction, a getting started guide will help you get things set up fast. The hookup diagrams show typical setups.



This icon marks information that is critically important or unique to the MDB Series Direct Boxes. For your own good, read and remember them.



There's an illustration of a microscope, so, of course, you're going to get more detailed information when you see this little guy.

There are explanations of features and practical tips listed here.



It's a good idea to pay attention to text displayed next to a note icon, as this icon draws attention to certain features and functions relating to the usage of the MDB Series Direct Boxes.

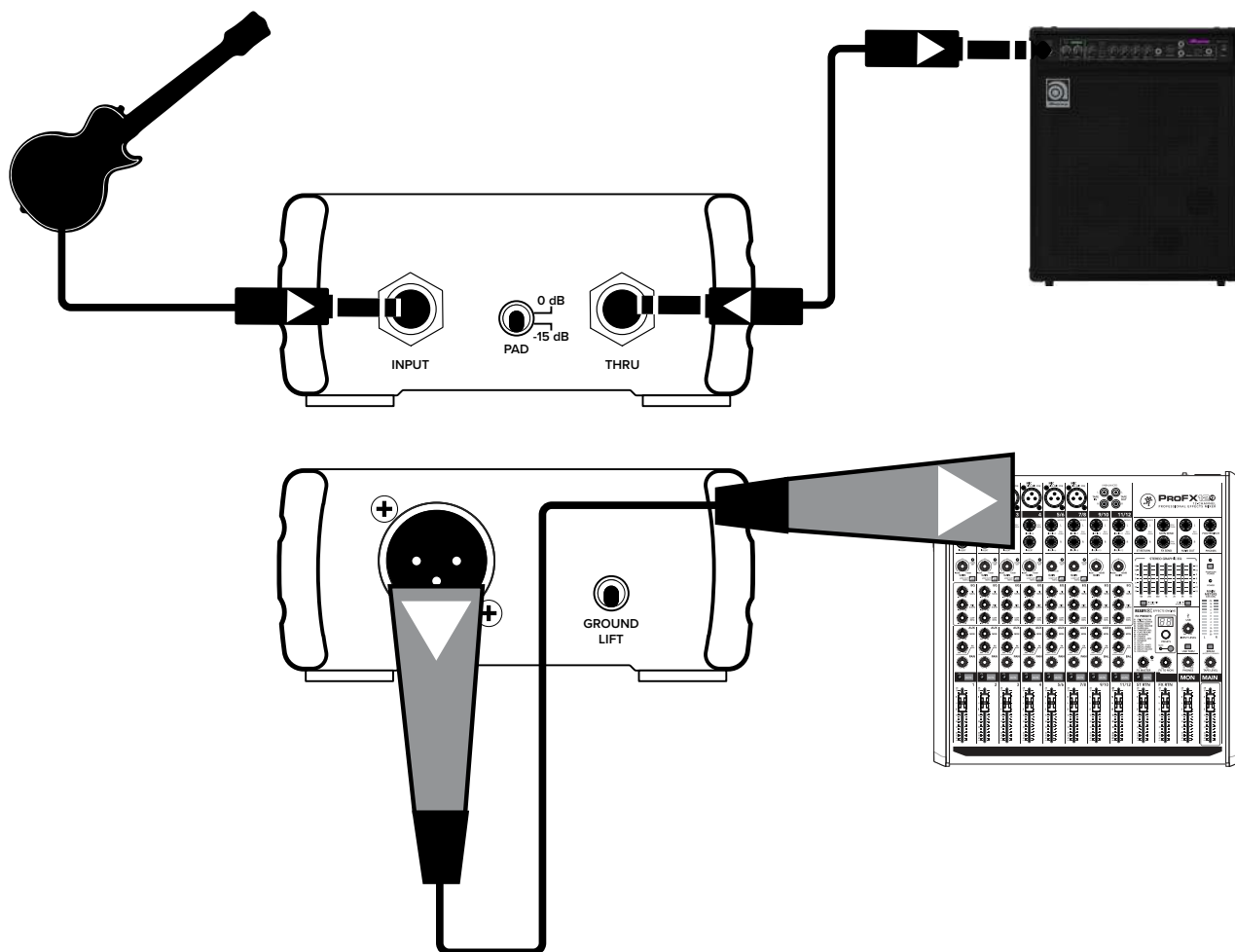
Getting Started

The following steps will help you set up your MDB Series Direct Box quickly.

1. Turn down all level knobs on all connected gear.
2. Connect an instrument to the input jack with a 1/4" instrument cable.
3. Connect a cable from the outputs of the MDB Series Direct Box to the inputs of a mixer.
4. Connect cables from the thru to an instrument amplifier or other source.
5. Turn the mixer and/or amplifier on.
6. Be sure that the volume of the input is the same as it would be during normal use.
7. Slowly bring up the level knob of the mixer to a comfortable listening level.

Things to Remember

- Never listen to loud music for prolonged periods. Please see the Safety Instructions on page 2 for information on hearing protection.
- Save the shipping boxes and packing materials! You may need them someday. Besides, your hamster will love playing in them and jumping out at you unexpectedly. Remember to pretend like you are surprised!
- Save your sales receipt in a safe place.



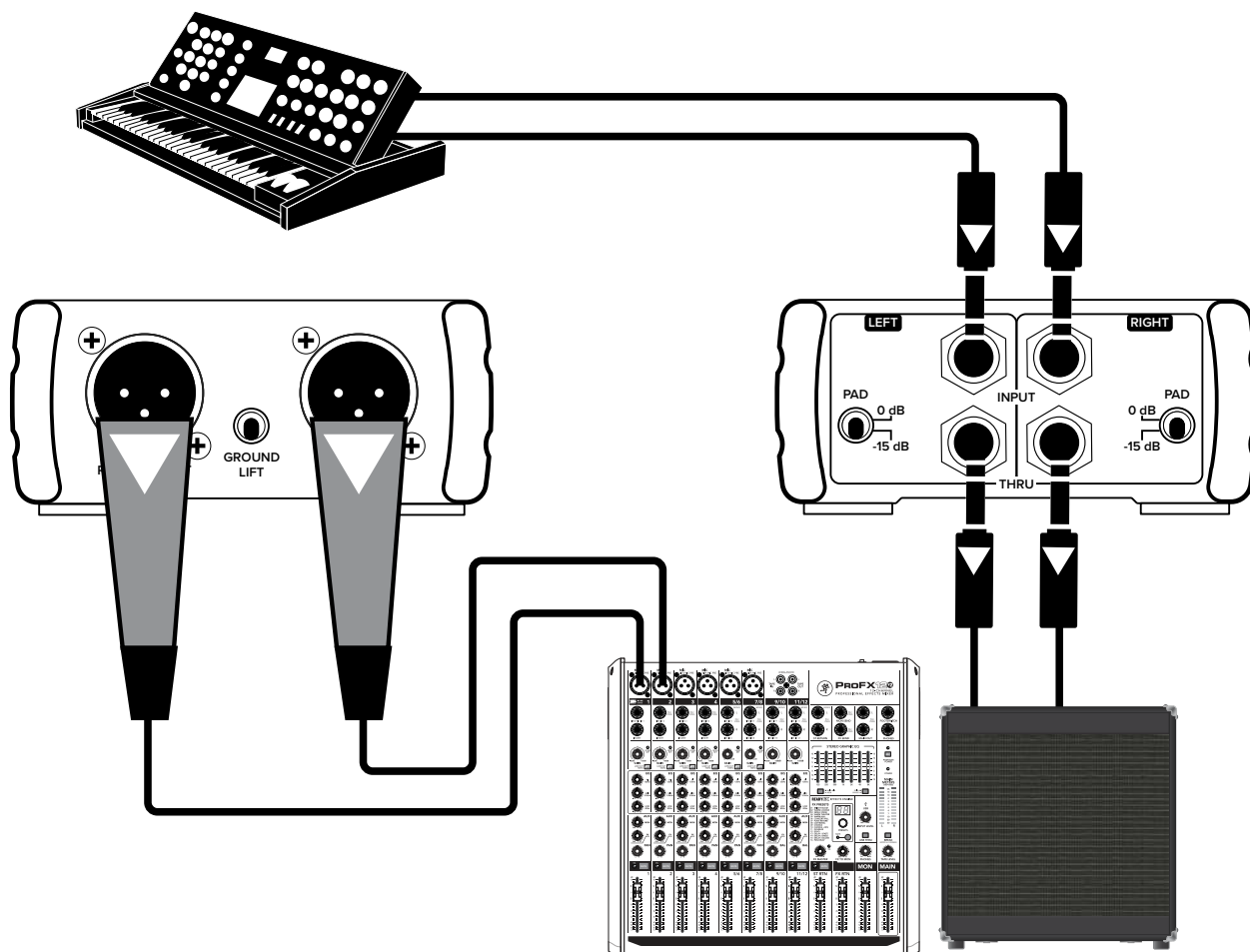
The MDB-IP is a convenient direct box for musicians – especially bass players – to add to the chain. Let's look at the front panel connections first. Start by simply connecting your instrument to the MDB-IP input jack. And end by simply connecting a cable from the thru jack to your amplifier's input jack. Front panel connections made!

The rear panel connection is as straightforward as the front panel connections. Here we connected an XLR cable from the MDB-IP output jack to a mixer's input jack.

That was our part. The next part is up to you... the audience is waiting!

Note: While we used a Mackie ProFX12v2 mixer in this example, you could connect the output of the MDB-IP to the input jack of an audio interface instead. The Mackie Big Knob Studio and Studio+ come to mind!

Typical MDB-IP Setup



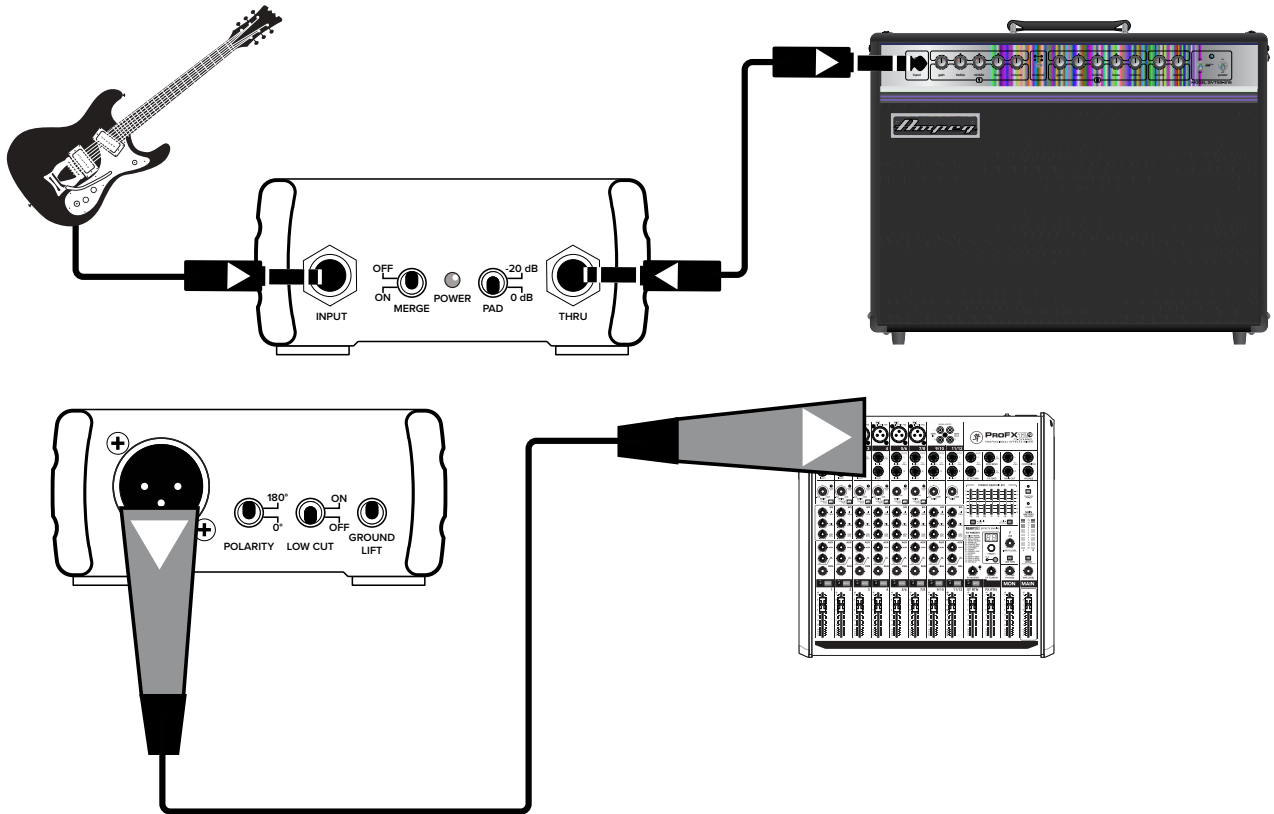
The MDB-2P direct box works great for musicians with stereo instruments. In this example, we connected a synthesizer to the MDB-2P left and right input jacks. The thru jacks are then connected to the keyboard amplifier's input jacks.

Unlike the other MDB Series Direct Boxes, the rear panel of the MDB-2P has dual L/R output jacks for connecting XLR cables between the MDB-2P and a mixer's input jacks.

Your fantastic fans await your mesmerizing music and tasteful tunes. Time to stop reading...

Note: While we used a Mackie ProFX12v2 mixer in this example, you could connect the outputs of the MDB-2P to the input jacks of an audio interface instead. The Mackie Big Knob Studio and Studio+ come to mind!

Typical MDB-2P Setup



Here we connected a six-string guitar to the input jack of the MDB-IA. The thru jack is then connected to an amplifier, BUT... you have options! If the merge switch is turned on, the thru jack works as a second input which works great for stereo instruments such as synthesizers and other media players.

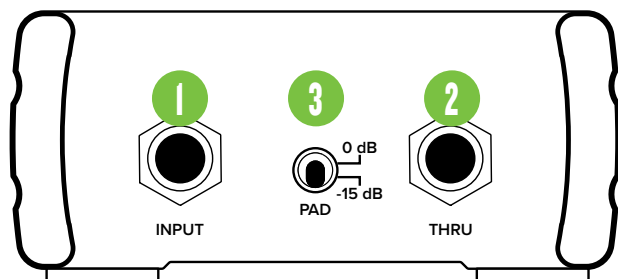
The rear panel of the MDB-IA is exactly the same as the MDB-IP except with two additional switches. Like the MDB-IP, we connected a single XLR cable from the MDB-IA output jack to a mixer's input jack.

Listen to the sound to determine if the polarity switch should be at 0° or 180° and if the low cut switch should be turned on or left off.

Note: While we used a Mackie ProFX12v2 mixer in this example, you could connect the output of the MDB-IA to the input jack of an audio interface instead. The Mackie Big Knob Studio and Studio+ come to mind!

Typical MDB-IA Setup

MDB Series Direct Boxes: Front Panel Features



MDB-IP Front Panel

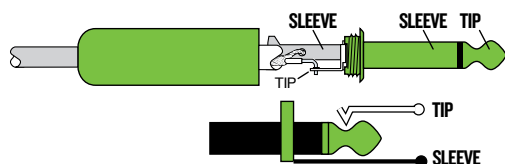
1. Input Jacks

The signal output from an instrument (active or passive) may be connected to this unbalanced line-level 1/4" input by means of a shielded instrument cable. This includes guitar, bass, keyboard, media players and more.

They are wired as follows, according to standards specified by the AES (Audio Engineering Society):

Unbalanced 1/4" Input Connector

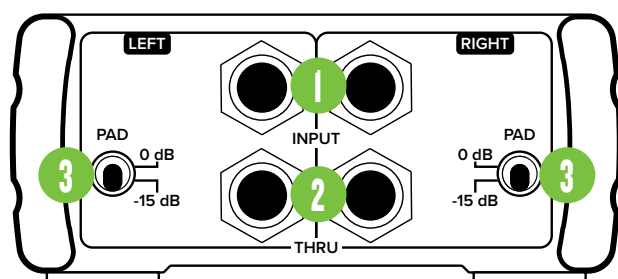
Tip – Positive (+ or hot)
Sleeve – Shield (ground)



Unbalanced 1/4" Connectors



VERY IMPORTANT NEVER connect the output of an amplifier directly to an MDB Series Direct Box's input jack. This could damage the input circuitry and we wouldn't want that now, would we?



MDB-2P Front Panel

2. Thru Jacks

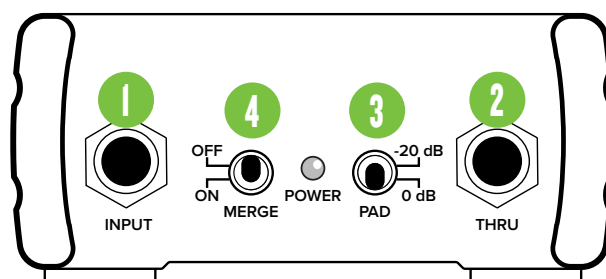
The Thru jack may be connected to the input of an instrument amplifier or instrument-level parallel effects device (such as an FX device chain, processors, or tuner). This output is unaffected by the MDB Series Direct Box's circuitry.

3. Pad Switch

Put this switch in the down position to reduce the input signal by 15 dB and compensate for higher output sources. This attenuation is suited for use with instruments that have active electronics or high-output pickups.



It is a 20 dB pad on the MDB-IA and the switch is reversed from the MDB-IP and MDB-2P; -20 dB in the up position, 0 dB when the switch is down.



MDB-IA Front Panel

4. Merge Switch [MDB-IA]

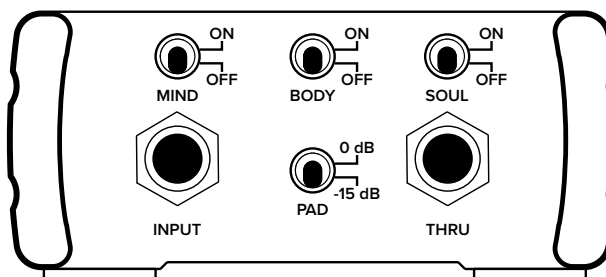
When the Merge switch is in the OFF position (switch up), the Thru jack works as normal (see #2 description, bottom-left).

When the Merge switch is in the ON position (switch down), the Thru jack works as an additional input. It will be summed with the main input to create a mono output source. This is a perfect solution for stereo sources like keyboards and media players.

Additionally, the associated LED will illuminate when merge is on.

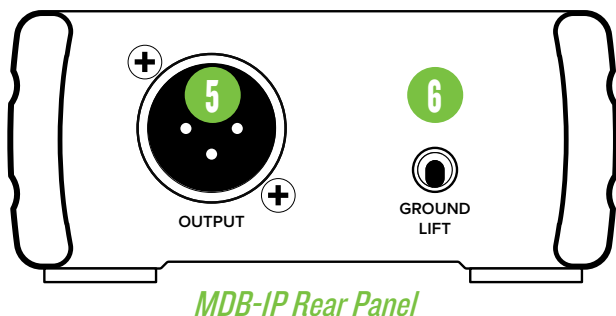
MBS On / Off Switches

The rare and highly sought after MBS-FNMA and MBS-GNMA Direct Boxes come with switches to turn off your mind, body and soul when any (or all) of them need it. When will you know? Oh, you'll know. When it's there, simply flip the switch to off and when you're feeling good again, go ahead and flip the switch back to the on (up) position.



MBS-FNMA & GNMA

MDB Series Direct Boxes: Rear Panel Features



MDB-1P Rear Panel

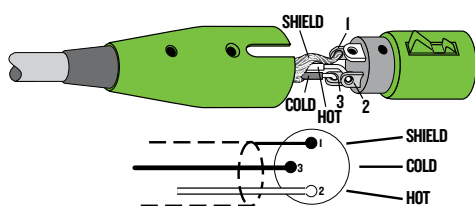
5. XLR Output Jacks

These XLR connectors provide a balanced line-level signal that is designed to connect to the inputs of a mixer or audio interface.

They are wired as follows, according to standards specified by the AES (Audio Engineering Society):

Balanced XLR Output Connector

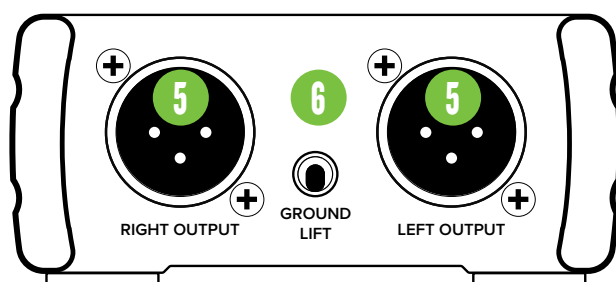
- Pin 1 – Shield (ground)
- Pin 2 – Positive (+ or hot)
- Pin 3 – Negative (– or cold)



Balanced XLR Connectors

6. Ground Lift Switch

The ground lift separates the chassis ground from the signal ground at the balanced output jacks. The default position is ground. You may attempt to remedy system ground loop hum by moving the switch to lift.



MDB-2P Rear Panel

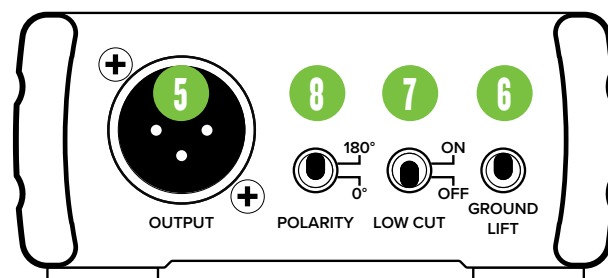
7. Low Cut Switch [MDB-1A]

When on, the low-cut switch (often referred to as a high-pass filter) cuts bass frequencies below 120 Hz.

We recommend that you use low-cut on every microphone application except kick drum, bass guitar, or bassy synth patches. These aside, there isn't much down there that you want to hear, and filtering it out makes the low stuff you do want much more crisp and tasty. Not only that, but low-cut can help reduce the possibility of feedback in live situations, and it helps to conserve amplifier power.



Another way to consider low-cut's function is that it actually adds flexibility during live performances. With the addition of low-cut, you can safely use low equalization on vocals. Many times, bass shelving EQ can really benefit voices. Trouble is, adding low EQ also boosts stage rumble, mic handling clunks and breath pops from way-down low. Applying low-cut removes all those problems, so you can add low EQ without blowing the woofers.



MDB-1A Rear Panel

8. Polarity Switch [MDB-1A]

When this switch is up, it reverses the polarity of the signal by 180°.

There is no right or wrong setting for this switch. Listen to the overall blend with the rest of the system and select the switch position that gives you the best sound for your audience. In fact, your system may vary when positioned differently and in alternate venues. Don't be afraid to experiment with the position of the polarity switch.

Appendix A: Service Information

If you think your MDB Series Direct Box has a problem, please check out the following troubleshooting tips and do your best to confirm the problem. Visit the Support section of our website (www.mackie.com/support) where you will find lots of useful information such as FAQs and other documentation. You may find the answer to the problem without having to part with your MDB Series Direct Box.

Troubleshooting

No sound

- Is the level knob for the input source turned all the way down? Verify that all the volume controls in the system are properly adjusted. Look at the level meter to ensure that the mixer is receiving a signal.
- Is the signal source working? Make sure the connecting cables are in good repair and securely connected at both ends. Make sure the output level control on the mixing console is turned up sufficiently.
- Make sure the mixer does not have a mute on or a processor loop engaged. If you find something like this, make sure the level is turned down before disengaging the offending switch.

Poor sound

- Is it loud and distorted? Make sure that you're not overdriving a stage in the signal chain. Verify that all level controls are set properly.
- Be sure all connections are secure.

Hum

- Whenever possible, plug all the audio equipment's line cords into outlets which share a common ground. The distance between the outlets and the common ground should be as short as possible.

Repair

For warranty service, refer to the warranty information on page 14.

Non-warranty service is available at a factory-authorized service center. To locate the nearest service center, visit www.mackie.com/support/service-locator. Service for MDB Series Direct Boxes living outside the United States may be obtained through local dealers or distributors.

If you do not have access to our website, please call our Tech Support department at 1-800-898-3211 (normal business hours, Pacific Time), to explain the problem. They will tell you where the nearest factory-authorized service center is located in your area.

Please write the serial numbers here for future reference (i.e., insurance claims, tech support, return authorization, make dad proud, etc.)

Purchased at:

Date of purchase:

Appendix B: Technical Information

MDB Series Direct Box Specifications

Audio Performance

Frequency Response	20 Hz – 20 kHz , ±0.5 dB [MDB-IA] 20 Hz – 20 kHz , ±0.2 dB [MDB-IP • MDB-2P]
Signal-to-Noise Ratio	90 dB [MDB-IA]
Dynamic Range	130 dB [MDB-IA] 128 dB [MDB-IP • MDB-2P]
Total Harmonic Distortion	0.02% THDF @1 kHz [MDB-IA] 0.002% from 1000 Hz [MDB-IP • MDB-2P]
Pad	-20 dB [MDB-IA] -15 dB [MDB-IP • MDB-2P]

Input / Output

Input Type	Female 1/4" Unbalanced
Input Impedance	330 k Ω unbalanced [MDB-IA] 140 k Ω unbalanced [MDB-IP • MDB-2P]
Impedance Ratio (Input to Output)	350:1 [MDB-IP • MDB-2P]
Output Type	Male XLR Balanced 1/4" Unbalanced (Thru)
Output Impedance	150 Ω balanced [MDB-IA] 400 Ω unbalanced [MDB-IP • MDB-2P]

Power

Input Type	48 V Phantom [MDB-IA]
Current Draw	<4.0mA DC [MDB-IA]

Display LEDs

Front Merge on/off [MDB-IA]

Physical Properties

Height:	1.5 in / 38 mm
Width:	3.4 in / 86 mm
Depth:	5.8 in / 147 mm
Weight:	0.8 lb / 0.4 kg

Disclaimer

Since we are always striving to make our products better by incorporating new and improved materials, components, and manufacturing methods, we reserve the right to change these specifications at any time without notice.

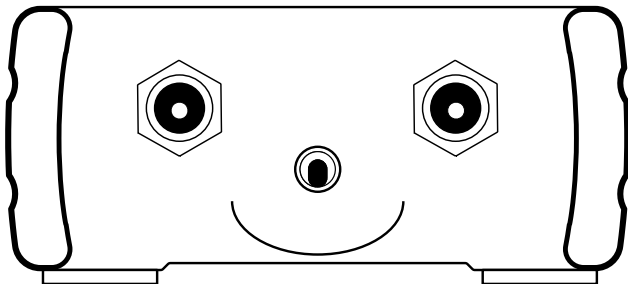
The "Running Man" figure is a registered trademark of LOUD Audio, LLC.

All other brand names mentioned are trademarks or registered trademarks of their respective holders, and are hereby acknowledged.

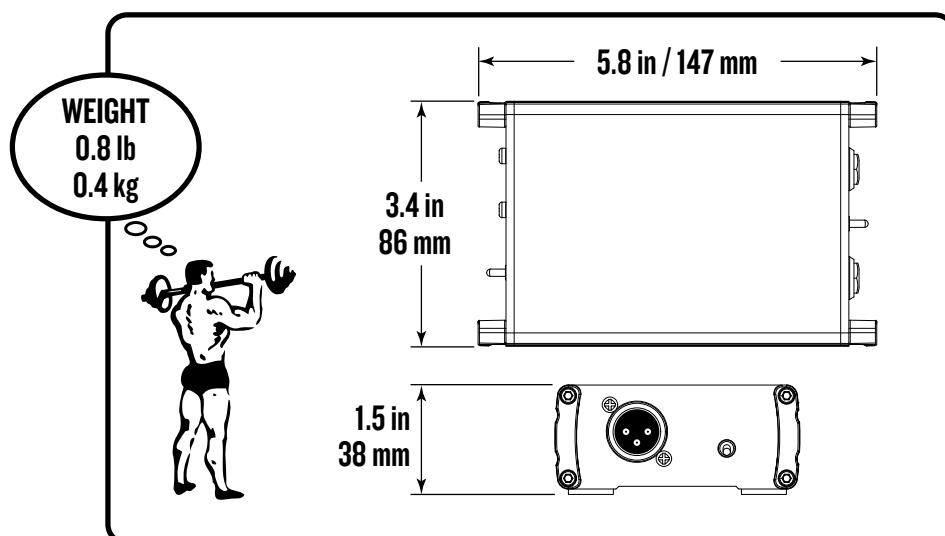
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Warning

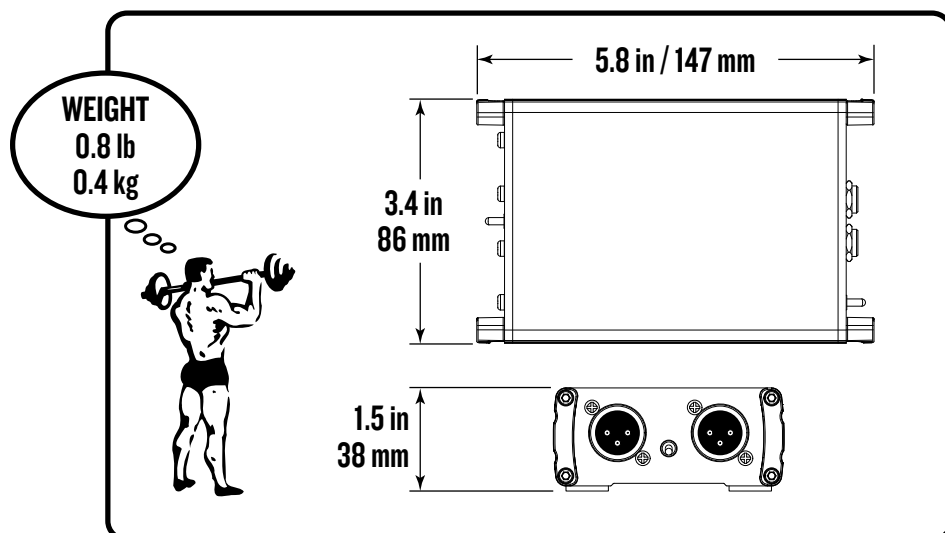
We don't take warnings lightly and neither should you. If you stare at the Direct Box too long, you might start seeing cute little creatures that you want to bring home with you. We implore you to not place this by your bedside or you'll want to cuddle. Definitely don't water it like a Chia™ Pet, waiting for chia sprouts to grow on its head. No sprouts will grow and you will have ruined a perfectly good Direct Box... and broken the warranty. Don't say we didn't warn you!



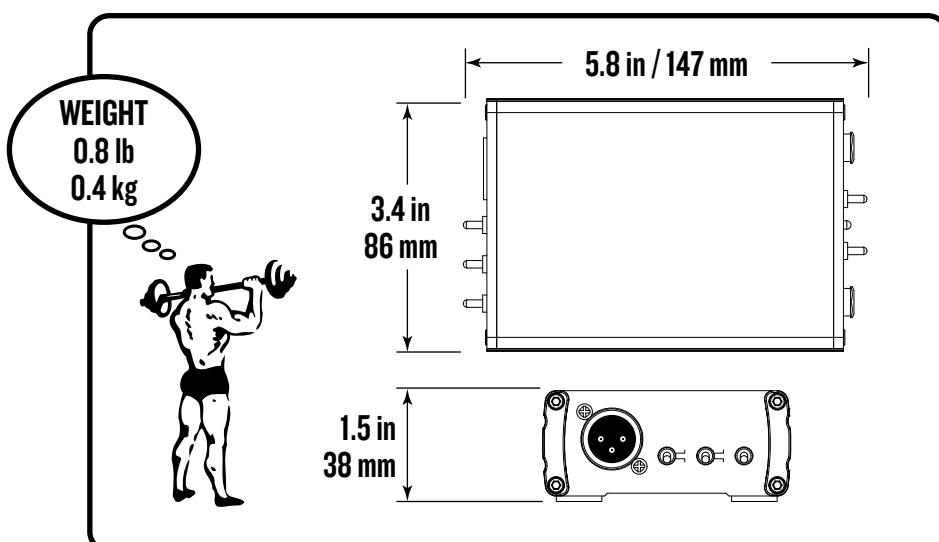
MDB-IP Passive Direct Box Dimensions



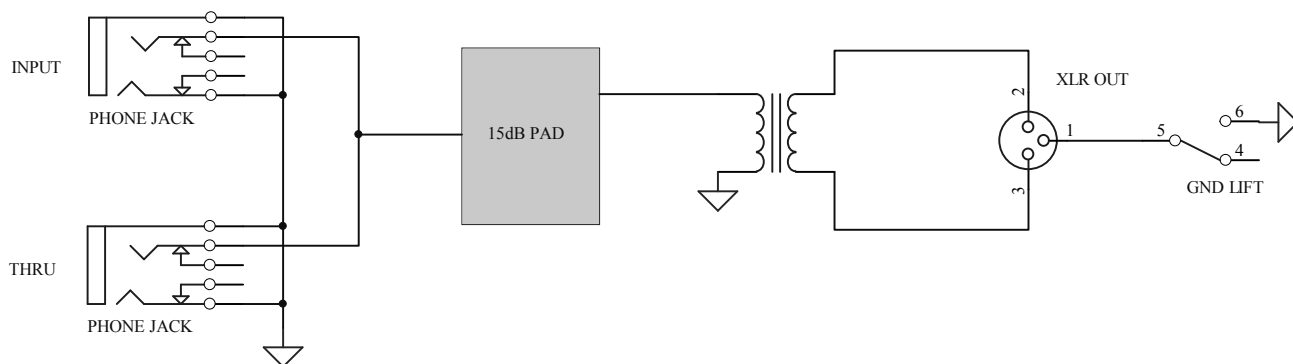
MDB-2P Stereo Passive Direct Box Dimensions



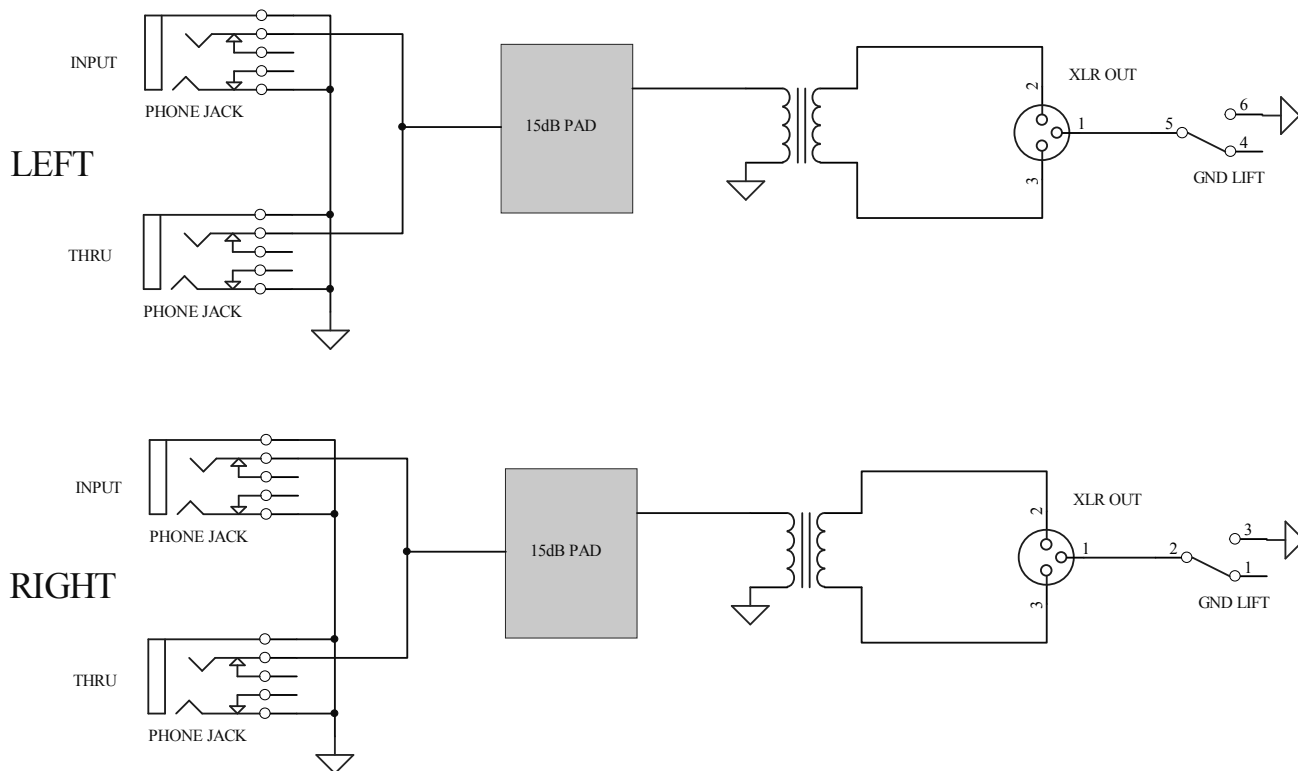
MDB-1A Active Direct Box Dimensions



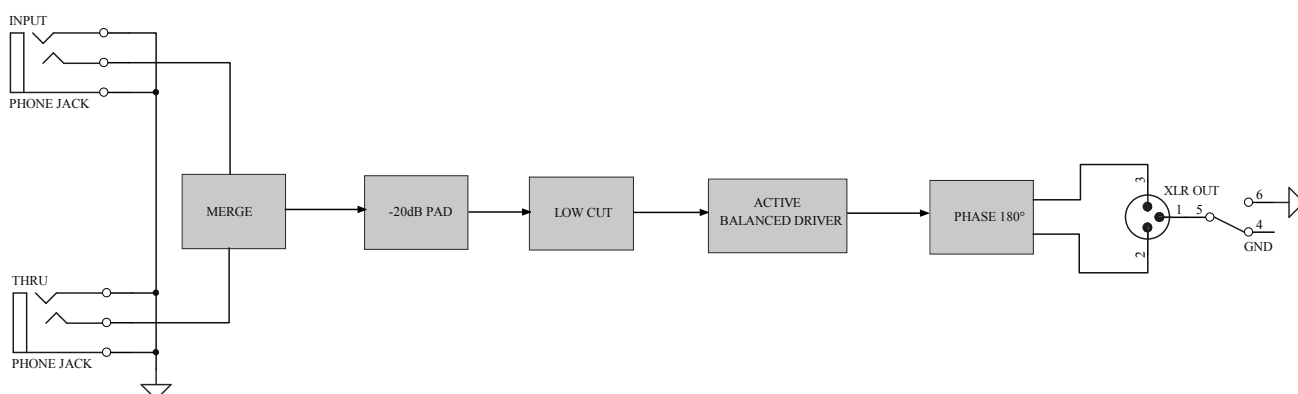
MDB-IP Passive Direct Box Block Diagram



MDB-2P Stereo Passive Direct Box Block Diagram



MDB-1A Active Direct Box Block Diagram



Limited Warranty

Please keep your sales receipt in a safe place.

This Limited Product Warranty ("Product Warranty") is provided by LOUD Audio, LLC ("LOUD") and is applicable to products purchased in the United States or Canada through a LOUD-authorized reseller or dealer. The Product Warranty will not extend to anyone other than the original purchaser of the product (hereinafter, "Customer," "you" or "your").

For products purchased outside the U.S. or Canada, please visit www.mackie.com to find contact information for your local distributor, and information on any warranty coverage provided by the distributor in your local market.

LOUD warrants to Customer that the product will be free from defects in materials and workmanship under normal use during the Warranty Period. If the product fails to conform to the warranty then LOUD or its authorized service representative will at its option, either repair or replace any such nonconforming product, provided that Customer gives notice of the noncompliance within the Warranty Period to the Company at: www.mackie.com or by calling LOUD technical support at 1.800.898.3211 (toll-free in the U.S. and Canada) during normal business hours Pacific Time, excluding weekends or LOUD holidays. Please retain the original dated sales receipt as evidence of the date of purchase. You will need it to obtain any warranty service.

For full terms and conditions, as well as the specific duration of the Warranty for this product, please visit www.mackie.com.

The Product Warranty, together with your invoice or receipt, and the terms and conditions located at www.mackie.com constitutes the entire agreement, and supersedes any and all prior agreements between LOUD and Customer related to the subject matter hereof. No amendment, modification or waiver of any of the provisions of this Product Warranty will be valid unless set forth in a written instrument signed by the party to be bound thereby.

Need help with the MDB Series Direct Box?

- Visit www.mackie.com/support to find: FAQs, manuals, addendums, and other documents.
- Email us at: www.mackie.com/support-contact
- Telephone 1-800-898-3211 to speak with one of our splendid technical support chaps (Monday through Friday, normal business hours, Pacific Time).



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Fax: 425.487.4337
www.mackie.com
