

# Mini-D Stereo Amplifiers

## INSTALLATION MANUAL

### Mini D1500.2



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**CAUTION:** Earthquake amplifiers are capable of generating high sound pressure levels. You should exercise caution when operating these amplifier systems. Long term exposures to high levels of sound pressure will cause permanent damage to your hearing. Sound pressure levels exceeding 85dB can be dangerous with constant exposure. Set your audio system to a comfortable loudness level. Earthquake Sound Corporation does not assume liability for damages resulting from the direct use of Earthquake amplifiers or other Earthquake products and urges users to play their music at moderate listening levels.

### SOUND LEVEL dBA

### DURATION PER DAY (HOURS)

90	8
92	6
95	4
97	3
100	2
102	1 - 1 1/2
105	1
110	1/2
115	1/4 OR LESS

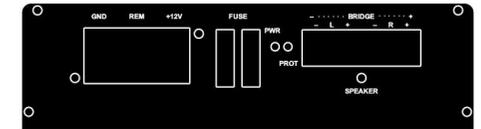
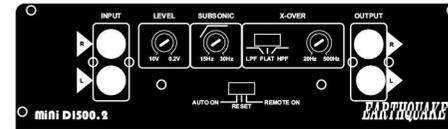
THIS CHART SHOWS THE U.S. GOVERNMENT'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS WHICH WERE IN EFFECT AT THE TIME OF THIS PUBLICATION FOR PERMISSIBLE NOISE EXPOSURE, PER 29CFR1910.95, TABLE G-16

## THANK YOU

Thank you for choosing Earthquake Sound's line of **mini D** amplifiers, the best way to enhance your factory mobile audio system. With proper installation and responsible listening, your amplifier(s) will give you years of near perfect sound reproduction.

We strongly recommend you to have your new amplifier(s) installed by an authorized Earthquake Sound dealer. Installation professionals employed by your dealer have the correct tools and knowledge to install your amplifier(s) neatly and successfully. Also, when your new products are installed by an authorized dealer, your products will include a **ONE (1) YEAR LIMITED WARRANTY**. If you choose to perform your own installation, your warranty will be subject to further limitations. Dealer policies on handling warranty requests may vary from one dealer to the next.

Please read the warranty information (located at the end of this booklet) in its entirety and use good judgment when making these vital decisions.



## mini-D I 500.2 INTRODUCTION

As the first two channel full-range amplifier of the MiniD series, the MiNi-D1500.2 has a lot to live up to. While in development its subwoofer-amp brethren has continued their successful tour of duty setting records and striking fear deep into the heart of the competition.

The MiNi-D1500.2 continues this legacy of excellence by being the perfect combination of power and finesse. Delivering enough power to satisfy even the hungriest full-range speakers all while remaining incredibly composed. The audiophile attributes are so refined that a panel of audio experts could not pick it out against esoteric home audio amplifiers.

### **Smaller - Stronger - Smarter**



**JOSEPH SAHYOUN**  
PRESIDENT AND CHIEF ENGINEER

Mini-D is a true next-gen amplifier - with features and a level of design sophistication years beyond the competition. With the Mini-D, Earthquake once again reasserts absolute dominance in the field of car amplifier technology.

To decisively leapfrog the car amplifier industry, would be no easy task. Earthquake's chief engineer, Joseph Sahyoun, descended into the Earthquake research laboratories determined to crack the code to the universe and design the car amplifier of the future!

It was clear that the amplifiers of the future would be smaller, stronger and smarter. However breaking through the technical barriers on the way would require considerable innovation. To decrease the size of an amplifier its necessary to increase efficiency. This requires intelligence and control. In the pursuit of these goals several new technologies were developed.

## mini-D I 500.2 INTRODUCTION



**OMEGA (Optical Multilevel Empirically Guided Aggregation)** is the highly evolved brain and central nervous system of the MiniD amplifier. Traditional amplifiers are comprised of many circuits, operating in blind autonomy. OMEGA adds intelligence and operational awareness to these functionsn - transforming autonomy into unity.

OMEGA is tapped into every circuit and transmits instructions in the optical plane with a speed of 500khz, making it deadly accurate. This enables constant optimization of power generation and amplification. The best example of efficiency gain due to OMEGA is the power supply and amplification section, previously operating without coordination. With OMEGA they operate in continued adaptive synchronization, almost doubling their output. In addition to adaptive synchronization OMEGA utilizes an optical multilevel feedback path operating in the digital domain - providing real time targeting data, enabling OMEGA to digitally steer voltage and current with absolute precision.



**MARS (Magnetically Actuated Reanimation System)** is a new type of protection system that enables the use of all amplifier power resources without compromising the survival of the amplifier under catastrophic conditions. Typical protection systems rely on fuses or relays that complicate the signal path thus degrading audio quality. MARS is different as it

is not in the signal path, but works by sensing the electromagnetic field of the conducting wires. Like OMEGA, the internal communication of MARS is optical rather than electrical. MARS does not use any relays or other damping-factor reducing mechanical switches that can wear out or fail over time. Instead, a specially designed circuit instantly shuts off the output drive. In the event a short-circuit activates the MARS protection system, it continuously re-scans the output every 10 seconds. Normal operation automatically resumes as soon as the short-circuit condition is removed.

## Mini-D I 500.2 INTRODUCTION



**VE-TAT** (Velocity Enhancing Transistor Augmentative Technology ) is an enhanced transistor dead-time controller. Where OMEGA is a macro overlay system - VE-TAT works at the component level.

A critical area for efficiency in a Class D amplifier is the speed and precision by which the transistors can be opened and closed. VE-TAT dramatically increases transistor velocity, thus eliminating dead-time losses and increasing efficiency. The addition of VE-TAT makes the Earthquake Gen 3 Enhanced Class D output topology the most efficient Class D technology on the planet today.

### Unprecedented Placement Possibilities



Reclaim your trunk space! The new micro form-factor of the MiniD opens up a new realm of placement possibilities - Under car seats, inside door or chassis panels. It is no longer necessary to stuff your trunk with amplifiers to get great sound.

### Real-World Benefits

The real world benefits of these technologies are significant. In comparison to a traditional Class AB amplifier with an efficiency of 45 percent, the MiniD at 96 percent will use less than half the power playing at the same volume. Or it will play 3 db louder with the same amount of power. 3 DB is the same as adding an extra woofer to the system. With MiniD even a staunch system will be able to operate with just the stock battery and alternator. As MiniD is very competitively priced against inferior rivals - all this extra power is basically FREE.

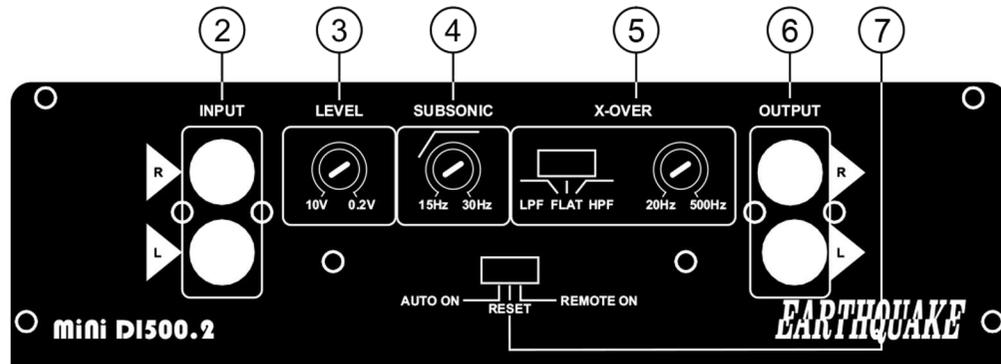
## Mini-D I 500.2 INTRODUCTION

### FEATURES

- **Clip Suppression Technology.** The Mini-D will avoid hard clipping , so in the event of excessive input the sound will not get harsh.
- **Fan free operation.** The stellar efficiency of the MiniD negates the need for noisy fans. Even when driven continuously 2 db into clip the MiniD will not overheat.
- **Variable Subsonic filter** option to protect speakers from unwanted low frequency content.
- **Auto ON signal sensing switch.** Amplifier can wake up on signal and fall asleep when not in use.
- **RCA line outputs** for daisy chaining multiple amplifiers.
- **User selectable high & low pass crossovers** with variable crossover frequency.
- **MARS status LED.** Lights up when MARS has detected an anomaly and when the unit is initially powered up and going through self analyzing mode.

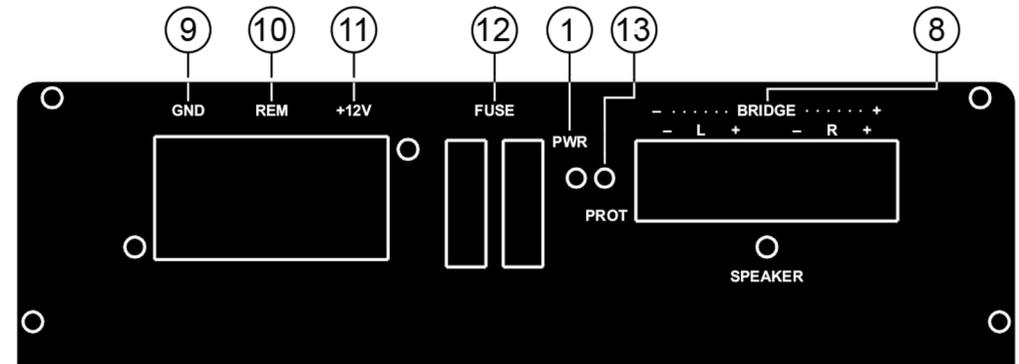


## mini-D I 500.2 FUNCTIONS AND FEATURES



- 1. POWER LED:** When lit up, the amplifier is functioning properly.
- 2. RCA INPUT:** Low level inputs of D1500.2 is 0.2V to 10V RMS. Be sure to use a HIGH LOW LEVEL adaptor if the head unit has only speaker output.
- 3. LINE LEVEL CONTROL:** Ranged between 0.2V to 10V RMS.
- 4. SUBSONIC FILTER:** Used to protect the speakers from harmful low frequencies and DC Voltage. Note that the subsonic filter only takes effect when the amplifier is in full range mode.
- 5. XOVER SWITCH & FREQUENCY ADJUST:** Used to adjust the boosted center frequency.
- 6. RCA OUTPUT**
- 7. SIGNAL SENSING SWITCH:** Please refer to page 10-11 for the explanation of this feature.

## mini-D I 500.2 FUNCTIONS AND FEATURES



- 8. SPEAKER CONNECTION:** Each amplifier has bridgeable speaker outputs. Note that the minimum impedance in bridged mode is 4-Ohm.
- 9. GROUND TERMINAL:** Connect to vehicle's chassis/ground using a short 4 gauge cable (2 feet maximum in length).
- 10. REMOTE TERMINAL:** Connect remote cable to the head unit's remote terminal. If multiple amplifiers are installed in the same system, additional relays may be necessary.
- 11. +12V BATTERY TERMINAL:** Connect to battery positive (+) using a 4 gauge cable.
- 12. FUSES:** Used as an added protection from damaging excessive current. Be sure to use the proper fuse rating in your installation. The D1500.2 uses two (2) 30A fuses.
- 13. PROTECTION LED:** When lit up upon powering on, the amplifier may be in self-test mode. If this LED stays on, shut down the amplifier and locate what may have triggered the amplifier to protection mode. If problem persists, call or e-mail our technical support team for further assistance.

**NOTE:** Be sure to follow the wiring preparations/guidelines as listed on the next page to ensure proper installation.

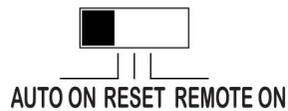
## SIGNAL SENSING FEATURE - AUTO ON/REMOTE ON

The **Mini-DI 500.2** amplifier features a special AUTO SIGNAL SENSING Feature which allows installers to turn on the amplifier without using the remote wire.

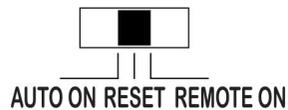
By simply connecting the RCA or Speaker level inputs to the amplifier, it will turn on automatically when it senses an audio signal. This feature makes upgrading the sound system in many of the latest model vehicles easier for installers as it eliminates the need to connect a remote turn on wire to the amplifier.

Before you proceed, please note the following:

- This feature may not be compatible with all latest model vehicles.
- If your vehicle is going to be parked for over 4 weeks, then you should disconnect the main fuse of the amplifier.
- Be sure to follow the connection instructions and illustrations shown.



When the switch is on **AUTO ON**, the amplifier will automatically detect an incoming signal when the stereo is turned on. If the amplifier does not detect any signal after 20 minutes, the amplifier will automatically turn off.

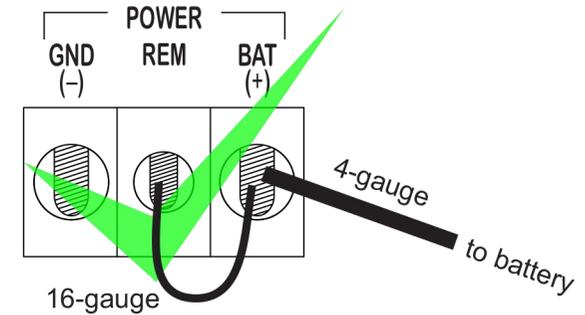


In case the system goes into protection, simply turn off the audio source and slide the switch to **RESET** then back to **AUTO ON** position.

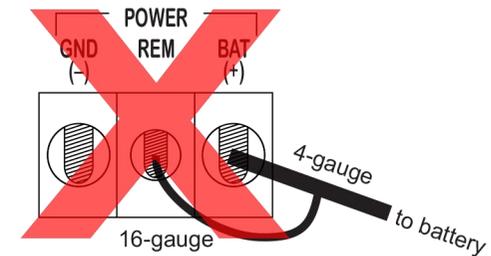


When the switch is on **REMOTE ON**, the amplifier relies on the remote wire to detect the signal and turn the amplifier on or off.

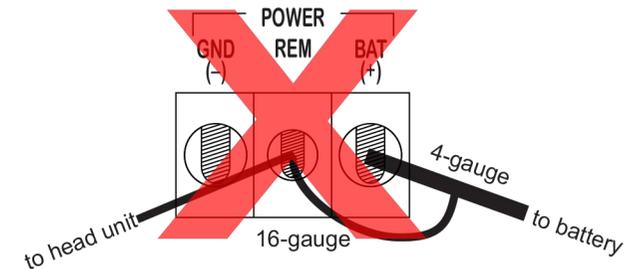
The proper power and remote wire connection when using the Auto Signal Sensing is illustrated below.



**(!) DO NOT** connect the remote wire to the battery wire as this will make the amplifier's auto sensing feature not work properly.



**(!) DO NOT** connect the remote wire to the head unit as this will damage your sound system.

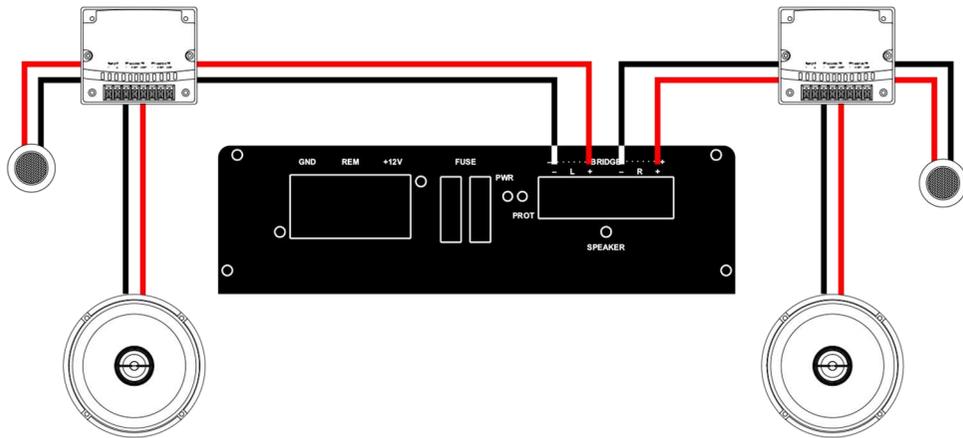


**NOTE:** RCA outputs must be inserted in CH1/2 for the amplifier to detect any incoming signal.

## Mini-D I 500.2 WIRING CONFIGURATIONS & PREPARATIONS

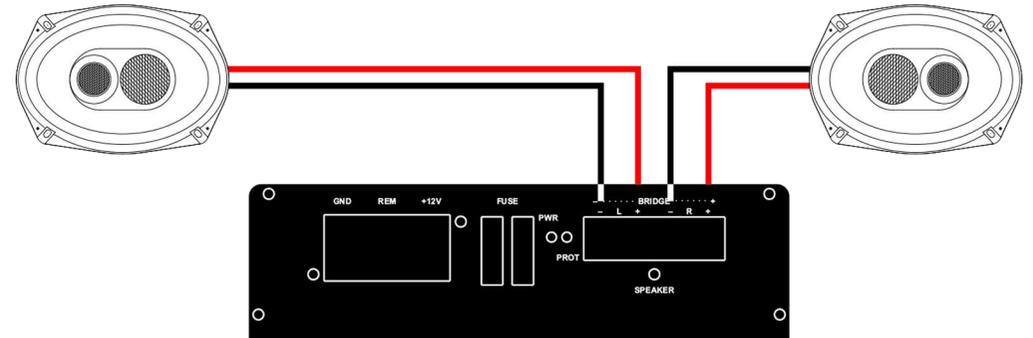
- ☒ Test the alternator output. Factory alternators will produce 60 - 80 amperes at best. Wear and heat will reduce the output by 40%.
- ☒ Alternator ground (-) must be reinforced. Use a 4-gauge cable instead of the factory 8-gauge.
- ☒ Alternator positive (+) to battery (+) must be reinforced. Use 4-gauge cables.
- ☒ Check your battery condition as batteries degrade after a while.
- ☒ Battery (+) to amplifier (+) must be connected using a 4-gauge cable.
- ☒ Ground amplifier to vehicle's chassis (bare metal) using 4-gauge cable, keep the cable short (2 feet max).
- ☒ Use 1 Farad capacitor to compensate for surges in demand.
- ☒ We recommend the use of one (1) auxiliary battery.

### FRONT STEREO WITH THE **DI 500.2**

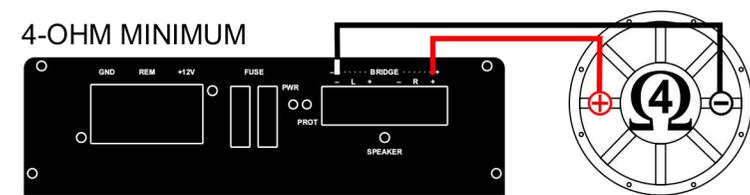


## Mini-D I 500.2 WIRING CONFIGURATIONS

### REAR FILL WITH THE **DI 500.2**



### BASS APPLICATION (BRIDGED) WITH THE **DI 500.2**



For more technical support, please contact:

- E-mail: [support@earthquakesound.dk](mailto:support@earthquakesound.dk)
- Tel: +45 2343 8007

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The information is subject to change without notice.

Earthquake Sound Corporation assumes no responsibility for errors that may appear within this document.

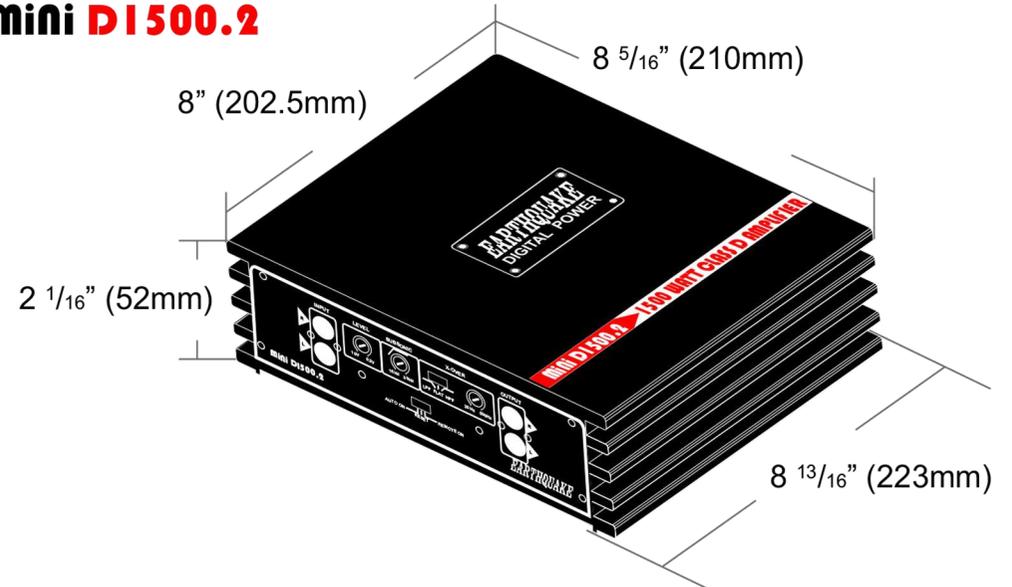
## Mini-D I500.2 SPECIFICATIONS

	<b>Mini DI500.2</b>
Amplifier Class	D
Number of Channels	2
Max Power Output	1500 Watts
Power Output @ 4-Ohm	2 x 130 WRMS
Power Output @ 2-Ohm	2 x 180 WRMS
Power Output - Bridged	1 x 360 WRMS @ 4-Ohm
THD+N	.01%
Channel Separation	80dB
Crossover Frequencies	20 - 500 Hz
Bass Boost Gain Level	N/A
Subsonic Filter	15 - 30 Hz
Signal-to-Noise Ratio	>110dB
Fuse Rating	2 x 30A (included)

ALL OUTPUT POWER MEASUREMENTS ARE MADE WITH DUMMY LOAD FOR THE RMS MEASUREMENTS. DUMMY LOADS ARE HARDER TO DRIVE THAN SPEAKERS AND DEMAND MORE POWER SUPPLY CURRENT

## Mini-D I500.2 SPECIFICATIONS

### Mini DI500.2



Earthquake warrants the original purchaser that all Factory Sealed New Audio Products be free from defects in material and workmanship, under normal and proper use, for a period of **one (1) year from the date of purchase** (as shown on the original sales receipt with serial number affixed/written on it).

The one (1) year warranty period is valid **only if the product is properly installed by an Earthquake authorized party**, and the warranty registration card is properly filled out and sent to Earthquake Sound Corporation.

**If the product is installed by a non-authorized party, a thirty (30) day limited warranty period applies.**

**(A) One (1) year limited warranty plan coverage guidelines:**

Earthquake pays for labor, parts, and ground freight (only in US mainland, not including Alaska and Hawaii) back to customer.

**(B) Warning:**

- Products (sent for repair) that are tested by Earthquake technicians and deemed to have no problem, will not be covered by the limited warranty. Customer will be charged a minimum of one (1) hour of labor (ongoing rates) plus shipping charges back to customer.
- If products were received with improper protective packaging, customer will be charged product repackaging in addition to labor, parts and shipping charges.

**(C) Earthquake agrees to repair or replace - at our option - all such defective products/parts subject to the following provisions:**

- Defective products/parts have not been altered or repaired by other than an Earthquake factory approved technician.
- Products/parts are not subjected to negligence, misuse, improper use, or accident, damaged by improper line voltage, used with incompatible products, or have its serial number or any part of it altered, defaced, removed, or have been used in any way that is contrary to Earthquake's written instructions.

**(D) Warranty Limitations:**

Earthquake warranty does not cover products that have been modified and/or abused, including but not limited to the following:

- Fading, deterioration of speaker components & finish due to improper exposure to elements.
- Bent amplifier casing, damaged finish on the casing due to abuse, misuse, or improper use of cleaning material.
- Burnt tracers on PCB.
- Product/part damaged due to poor packaging or abusive shipping conditions.
- Subsequent damage to other products.

A warranty claim will not be valid if the warranty registration card is not properly filled & returned to Earthquake with a copy of the sales receipt.

**(E) Service Request:**

To receive product(s) service, contact Earthquake Sound's service department at (510) 732-1000 and request an RMA number (Return Material Authorization), item(s) shipped without a valid RMA number will be refused. Make sure you provide us with your complete and correct shipping address, a valid phone number, and a brief description of the problem you are experiencing with the product. In most cases, our technicians might be able to resolve the problem over the phone, thus eliminating the need to ship the product.

**(F) Shipping Instructions:**

Product(s) must be properly packaged to minimize transport damage and avoid repackaging charges. Shipper claims regarding item(s) damaged in transit must be presented to the carrier. Earthquake Sound Corporation reserves the right to refuse improperly packed product(s). A copy of original sales receipt must accompany product(s) returned for service. We encourage you to include a written description of the problem inside the package. Ship product to:

Earthquake Sound Corp.  
2727 Mc Cone Avenue  
Hayward, CA 94545  
Tel: (510) 732-1000

You are responsible for the cost of shipping the product to Earthquake Sound Corporation.

**(G) Disputes Resolution:**

All disputes - between clients and Earthquake Sound Corporation - resulting from the one (1) year limited warranty policy must be resolved according to the laws & regulations of the county of Alameda, California.

We strongly suggest keeping a copy of your sales receipt and note the model and serial numbers of your amplifier here for future reference.

Model No.

**mini D** \_ \_ \_ \_ . \_ \_

Serial No.

SERIAL NUMBER  
\_ \_ \_ \_ \_ \_ \_ \_ \_ \_

Date of Purchase.

MM / DD / YYYY