

Model 7100

Seven-Channel Power Amplifier



Outlaw[®]

Owner's Manual

Please Read First



CAUTION: To reduce the risk of electric shock, do not remove the cover (or back). No user serviceable parts inside. Refer to qualified personnel.

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



The lightning flash with arrowhead, within an equilateral triangle, 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 electrical shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating maintenance (servicing) instructions in the literature accompanying the appliance.

Precautions

Verify The Line Voltage

Your new amplifier has been factory configured for 120 (+/- 3%) volt AC lines. Connecting the amplifier to a line voltage other than that for which it is intended can create a safety and fire hazard, and may damage the amplifier. If you have any questions about the voltage requirements for your specific model, or about the line voltage in your area, contact Outlaw Audio before plugging the unit into a wall outlet.

Verify AC Circuit Capacity

The high power output of your Outlaw amplifier may require heavy power draw under full load conditions. To insure proper performance, and to avoid potential safety hazards, we recommend that it be connected to a minimum 20 Amp capacity circuit. Connecting multiple amplifiers to the same circuit, or connecting it to a circuit used by other heavy power devices, such as air conditioners, may cause circuit breakers to trip.

NOTE: *It is always a good idea to avoid using any audio or video equipment on the same AC circuit as equipment with motors, such as air conditioners or refrigerators. This will lessen the possibility of power variation and electrical start-up noise affecting your sound system.*

Extension Cords and Power Strips

We do not recommend that extension cords be used with this product unless they are of sufficient gauge to pass the necessary current during full load conditions. Most inexpensive extension cords are not capable of such high-current loads.

Similarly, should you use a power strip, surge protector or any type of AC power line conditioning equipment, make certain that it is also able to handle the high current loads this product will produce.

Handle the AC Power Cord Gently

When disconnecting the power cord from an AC outlet, always pull the plug, never pull the cord. If you do not intend to use the amplifier for any considerable length of time, disconnect the plug from the AC outlet. If the power cord is replaced, make certain that it is of similar gauge. As with all electrical devices, do not run power cords under rugs or carpets or place heavy objects on them. Damaged power cords should be replaced immediately with cords meeting factory specifications.

Wiring

Cables that are run inside of walls should have the appropriate markings to indicate compliance with, and listing by the UL, CSA or other standards required by the UL, CSA, NEC or your local building. Questions about cables inside of walls should be referred to a qualified customer installer, or a licensed electrician or low-voltage contractor.

Installation Location

To assure proper operation and to avoid the potential for safety hazards, place the unit on a firm and level surface capable of supporting 100 pounds or more. When placing the amplifier on a shelf, be certain that the shelf and any mounting hardware can support the weight of the amplifier and any additional items in the equipment rack, or on the shelf.

When positioning the amplifier in its final location, make certain that it has adequate ventilation on all sides, as well as on the top and bottom. In particular, it is a good idea to provide at least two or three inches of room above the amplifier for air circulation. DO NOT place CDs, DVDs, videotapes, owner's manuals, or other paper on top of, or beneath, the unit, or in-between multiple amplifiers in a stack. This will block airflow, causing heat build-up, degraded performance, and may create a possible fire hazard.

If the unit is to be enclosed in a cabinet or rack, make certain there is adequate air circulation. Sufficient ventilation should be provided so that hot air may exit, and cool air may enter the cabinet. In some instances, a small cooling fan may be required to insure adequate airflow through the cabinet. If you are in doubt as to the ventilation requirements for your specific installation, please contact us. Also, do not place the amplifier directly on a carpeted surface, as this will inhibit airflow underneath as well as create a potential fire hazard.

Avoid installation in humid locations, in extremely hot or cold locations, or in areas that are exposed to direct sunlight or space heating equipment.

Loudspeaker Ratings

Your Outlaw Power Amplifier has adequate power to drive most loudspeakers without producing any distortion. Most modern speakers are rated at four to eight ohms nominal impedance, but within some frequency ranges, the impedance may drop to two ohms. The Outlaw is designed with ample power reserves to protect you from experiencing any problems at these low impedances unless you demand excessively high volume levels.

Due to the high power output capability of your power amplifier, it is important that it not be used with speakers not capable of handling the amplifier's power output. Before using the amplifier for the first time, make certain that your speakers are capable of handling its rated power output, at the impedance rating of your speakers. Outlaw Audio is not responsible for damage to any speaker system or other component that is caused by using products whose power rating is lower than that of the amplifier.

Do Not Open The Cabinet

There are no user serviceable components inside this product. Opening the cabinet may present a shock hazard, and any modification to the product will void your guarantee. If water or any metal object, such as a paper clip, coin or a staple, accidentally falls inside the unit, disconnect it from the AC power source immediately, and contact Outlaw Audio for further instructions.

IMPORTANT SAFETY NOTE

Before connecting a new component such as power amplifier to your audio or home theater system it is always good practice to make certain that all components are turned off, and preferably unplugged from their AC power source. Many modern electronics products feature automatic turn-on circuits that may be activated during an installation, causing the potential for damage to electronic components and/or speakers. Such damage is not covered by product warranties and Outlaw Audio specifically disclaims responsibility for any such damage.

For Future Reference

Record your amplifier's serial number and date of purchase here. It is found on the back panel.

Model Number _____

Serial Number _____

Date of Purchase _____

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Specifications are those in effect at the time of printing. Outlaw Audio reserves the right to change specifications or designs at any time without notice or liability to modify or upgrade units previously sold.

Model 7100 Seven-Channel Power Amplifier

Congratulations! As the owner of an Outlaw Model 7100 Seven-Channel Power Amplifier, you are in possession of a unique product. Designed and manufactured in the United States, it has been carefully designed to deliver the best possible sonic performance. We welcome you as a member of our Outlaw band, and hope that your new amplifier brings many years of enjoyable listening to your music or home theater system.

In order to receive the maximum enjoyment from your new amplifier, please take a few minutes to read this manual. This important information will help you make certain that the amplifier is properly configured for operation with the rest of the equipment in your system. This brief investment of time will provide major dividends by making certain that your amplifier is properly installed and optimized for the specifics of your installation.

If you have any questions about this product, its installation or operation, please contact us via e-mail at customerservice@outlawaudio.com or via telephone at 866-688-5292.

Features

The Outlaw 7100 is a state of the art, high performance, audio power amplifier. It is built utilizing totally complementary circuitry from input to output. The high current power supply is driven by a custom-designed 1.2 KVA toroidal transformer with two separate windings for each of the seven channels. Each channel has 4 discrete output devices, 20,000 uF total filter capacitance and is protected by an advanced Opto-coupled protection circuit. Heat management is provided by custom-designed heatsinks on each amplifier module, enabling the amplifier to function at full power without the need for noisy fans.

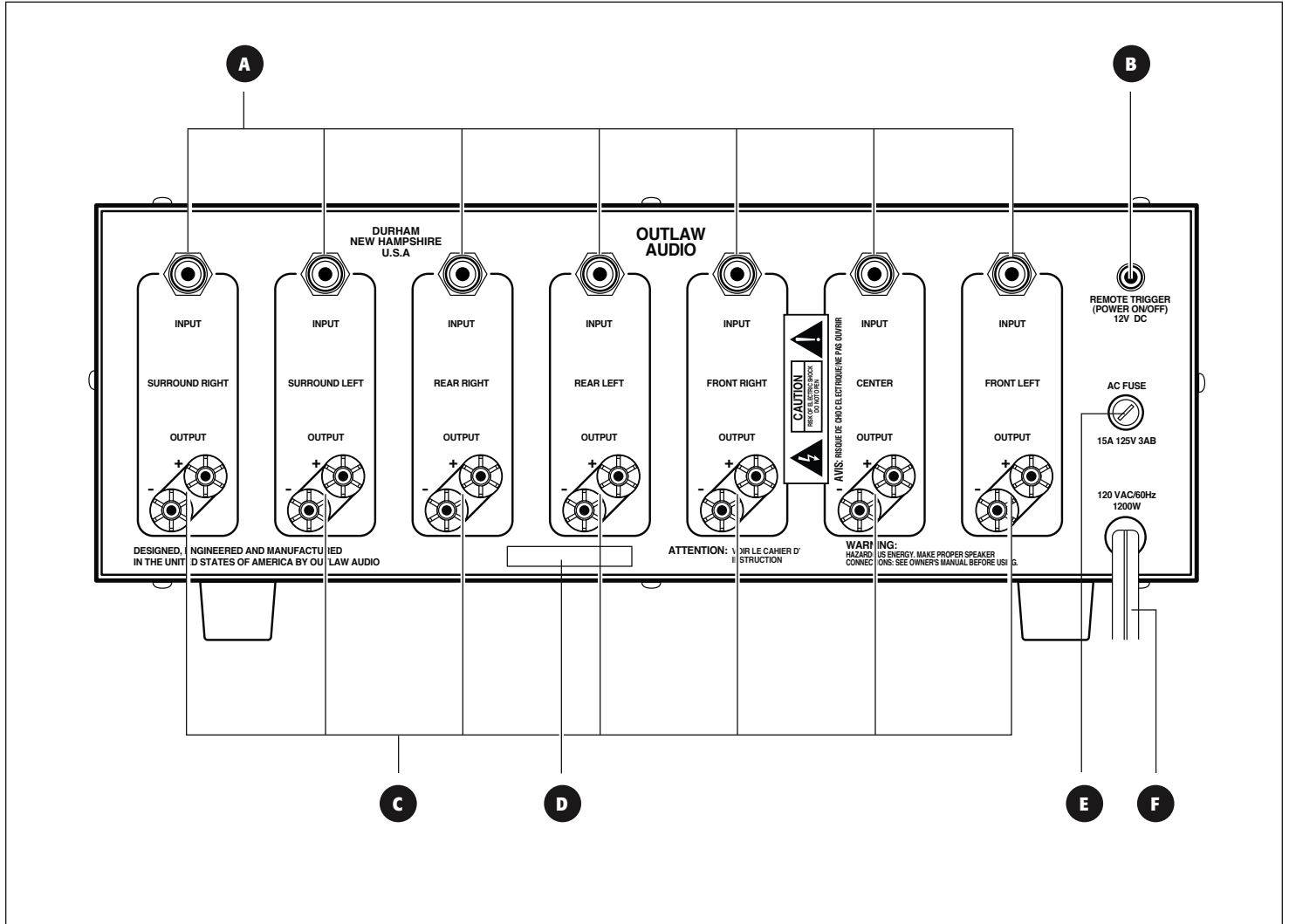
Unpacking

The carton and packing materials used in shipping your new amplifier were specially designed to cushion it from the shocks and vibration of shipping. We strongly suggest that you save the carton and packing materials to use if you move, or if the unit ever needs to be shipped back to us for any reason.

To minimize the size of the carton in storage, you may wish to flatten it by carefully opening the top and bottom flaps and folding the carton flat. Other cardboard inserts may be stored in the same manner. Packing materials that cannot be collapsed should be saved along with the carton in a plastic bag.

Your new amplifier has been engineered using heavy duty materials for high reliability and weighs 51 pounds. This substantial weight requires that you pay special attention to unpacking and installation of the unit. You may wish to have someone help you remove the unit from its carton and place it in the proper location.

Rear Panel



A Audio Inputs

Use the INPUT jacks to connect to the outputs of a surround processor, preamplifier, AV receiver with preout connections, DVD player with discrete five channel outputs, or HDTV product with built-in surround decoder. (page 5)

B Remote Trigger Input

Use the REMOTE TRIGGER jack to connect to a compatible processor or other product with a 3-32 VDC output. (page 8)

C Speaker Outputs

Use the OUTPUT binding posts to connect the amplifier to your speakers. (page 5)

D Product Serial Number

Write this number in the space provided on page 2 for future reference.

E AC Fuse

Protects both the amplifier and your speakers from damage. (page 8)

F AC Power Cord

Use the power cord to connect your amplifier to an AC power source. (page 7)

Connecting Your Amplifier

When making connections between any source components and the amplifier, or when making connections to any speaker, be certain that both the input devices and the amplifier are turned off. To assure that there will be no unwanted signal transients that can damage equipment or speakers, it is always best to unplug all equipment before making any connections. Modern electronic products often have a standby mode that may be activated even though the product may appear to be turned off.

Input Connections

Connecting the amplifier to your source equipment is simple. Using high-quality audio interconnect cables, match the output channel designations on the rear of your processor (or other source equipment) to the input jacks on the rear panel of your amplifier that have the same channel name (see the connections diagram on page 6). When making connections with RCA type plugs on interconnect cables, make certain to gently, but firmly insert the plug into the jack. Loose connections can cause intermittent sound and may damage your speakers. The barrel assembly of some high quality RCA plugs may be very tight, and it is important to assure a proper connection between the interconnection cable and the input jack.

Speaker Connections

To assure that the high quality signals produced by your Outlaw amplifier are carried to your speakers without loss of clarity or resolution, we recommend that you use high quality speaker wire. Many brands of wire are available; the choice may be influenced by the distance between your speakers and the amplifier, the type of speakers you use, personal preferences, or other factors.

Regardless of the brand or type of speaker wire selected, we recommend that you use a wire constructed of fine, multi-strand copper with a gauge of 14 or less. Remember that in specifying wire, the lower the number, the thicker the cable. Wire with a gauge of 16 may be used for short runs of less than ten feet. We do not recommend that you use any wires with an AWG equivalent of 18 or higher due to the power loss and degradation in performance that will occur.

To connect the amplifier to your speakers a pair of binding posts is provided for each channel output. These posts will accept bare wire, spade lugs or banana type plugs, when they are permitted by local safety agencies.

If bare wire is used for the connections, strip approximately 1/2 inch to 3/4 inch (20mm) of insulation from the end of each wire and carefully twist the strands of each conductor together. Be careful not to cut the individual strands or twist them off. For optimal performance, all strands must be used.

Correct polarity connections are important to maintain proper speaker phasing. When speaker phasing is correct, all speakers move in and out at the same time, preserving the imaging of the program material. Out-of-phase connections mean that some speaker cones will be moving in, while others move out. This will cause indistinct or confused imaging, and muddled and cloudy sounds. To avoid incorrect phasing or polarity, be certain to use cable that has distinct markings, colors, stripes, wording, or grooves on each side of the speaker cable. When making connections to the amp and speakers, adhere to a consistent pattern of using one side of the wire to the red terminals and

the other side to the black terminals. When using cable with markings on one side only, traditional convention is to consider the marked side of the wire as the red, or positive (+) connection, and the non-marked side as the black or negative (-) connection.

Next, loosen the knobs of the amplifier's speaker output terminals, far enough so that the passthrough hole is revealed. Note that one conductor of the speaker cable should have no markings, and the other should have a red line, brand name markings, a colored thread, or some other positive indication. Follow the proper connection instructions for your system with regard to which terminals are used. Once the connections are made, twist the cap back so that the connection is secured, but do not over tighten or use tools, as this may break the delicate wire strands and decrease system performance.

If you are using spade lugs, connect them to the speaker wire using the manufacturer's instructions, then loosen the caps on the speaker terminals. Place lugs between the plastic cap and the back of the terminal. Be sure to observe proper polarity, using the appropriate speaker hook-up icons for your system's configuration. Using your fingers, tighten to obtain a positive contact.

When using banana plugs, connections may be made by simply inserting the jack affixed to your speaker wire into the hole provided on the rear of the colored screw caps on the binding posts. Before using banana type jacks make certain that the plastic screw caps are firmly tightened down by turning them in a counter clockwise direction until they are snug against the chassis. This will insure that the maximum surface area of the plug is in contact with the jack. Be certain to observe proper polarity.

Run the cables to the speaker locations. It is recommended that the length of wire connecting any pair of speakers be similar. For example, make certain that the wire length connecting the left and right front, or the left and right rear (surround) speakers are similar in length, even though one speaker may be physically closer to the amplifier than the other. Do not coil any excess cable, as this may become an inductor that creates frequency response variations in your system.

Finally, connect the wires to the speakers, again being certain to observe proper polarity. Remember to connect your negative, or black wire, to the matching terminal on the speaker. The positive, or red wire, should be connected to the matching terminal on the speaker.

NOTE: While most speaker manufacturers adhere to an industry convention of using red terminals for positive connections and black terminals for negative, some manufacturers may vary from this configuration. To assure proper phase connections, and optimal performance, consult the identification plate on your speaker terminals, or the speaker's manual to verify polarity. If you do not know the polarity of your speaker, consult the speaker's manufacturer for further information.

Troubleshooting Guide

Problem	Solutions
Amplifier will not turn on	Master Power Switch turned off (No power light LED) Turn on Master Power Switch
Amplifier will not turn on	Remote trigger cable not properly connected Verify connection of trigger cable at both ends
Amplifier turns on, but no audio from one or more channels	Input plugs not connected to proper jack or are loose Check input connections
No audio from one or more channels	Speakers not connected properly Check speaker connections at amp and speaker
Audio levels differ	Improper settings or output levels from the processor or controller Check the settings on your preamp, processor or controller
Audio plays, then cuts off	Amplifier shorted Check speaker connections for short circuit at amp and speaker

Troubleshooting

Your Outlaw Model 7100 Seven-Channel Amplifier is designed for trouble free operation. If you follow the instructions in this manual you should enjoy many years of high quality listening enjoyment. However, as with any sophisticated electronic device, there may be occasional problems upon initial installation, or during the life of the unit. The items on this list are a brief guide to the minor problems that you may be able to correct yourself. If these solutions do not rectify a problem, or if the problem persists, contact us for assistance.

Outlaw Service Information

If you follow the instructions in this manual you should enjoy many years of trouble free operation and, of course, high quality listening enjoyment. The Outlaw 7100 does not contain any user serviceable parts. If you suspect a problem that may require service assistance, contact us at customerservice@outlawaudio.com, or by phone at 866-688-5292.

It is important that any repairs be carried out only by a service agent that we authorize. This will assure proper service and preserve the protection of your Limited Warranty. Keep your sales slip or receipt in a safe place with this manual so that it will be available to verify the purchase date, should you experience a problem covered by our warranty.

Main Amplifier Fuse

The Outlaw 7100 uses internal fuses to protect both the amplifier and your speakers from damage. In the event that a fuse replacement is required, be certain that a fuse of the original rating is used. If a fuse continues to fail, your unit may have developed a fault. In this event, please contact us for assistance.

WARNING: Always turn the amplifier off and remove the power cord from the source of AC Power before replacing the fuse.

Protection Mode

Under some conditions, such as a shorted speaker wire, DC voltage on an input connection or thermal overload, the Outlaw 7100 will place itself in a protect mode to prevent damage to the amplifier. When this happens the amplifier will mute to protect both the amplifier and speakers from damage. Should this occur, IMMEDIATELY turn the unit off, using the Power Switch, and disconnect the AC power cord. Examine all speaker connections to make certain that there are no shorts. Turn the unit back on. If the unit continues to go into the protect mode, contact us for assistance.

A Few Words About Hum and Noise

Audible hum, or a discernable low frequency noise, is one of the most common problems in audio/video systems. This hum, which may be present even when the volume is at a low level or when the power is off, is usually caused by a problem known as "ground loops." A ground loop occurs when there is a difference in ground voltages between two or more components that are connected electrically. This, in turn, creates multiple current paths and causes the low-level noise, or hum.

The growing sophistication of home theater systems, and the increased number of components used to create these systems has dramatically increased the potential for the possibility of ground loops. While it is natural to suspect that the components in your system are the cause of the hum, in many cases the cause may be due to other conditions. In particular, cable TV connections from outside the house have become a major source of hum.

In most cases, one of the following suggestions should help you to solve a hum problem in your system. Please try these steps in the sequence shown, proceeding from one step to the next if the prior suggestion does not eliminate the problem.

Potential Ground Loops in a Complex A/V System

Suggestion #1

To determine if a cable TV connection is responsible for the hum, first turn all components off. Disconnect the cable TV feed to your system at the first place where it connects to your components. Alternatively, disconnect the cable TV wire where it is connected at the wall outlet. Turn your system back on, and listen if the hum has disappeared. If removing the cable TV feed has eliminated the hum, you will need to insert a Ground Loop Isolator before reconnecting the cable TV feed, or contact your cable TV operator to see if they can better isolate your cable feed.

Suggestion #2

Turn off all components in your system, and then disconnect the input cables at the amplifier. Turn the amplifier back on, and see if the hum is still present. If the hum disappears, the fault may be in the input cables used. Try replacing them with cables that have better shielding, and make certain that the input cables are not running on top of any AC power cords. Change the cables one at a time to determine if one, or all cables is responsive. If the hum disappears when the input cables are disconnected, but returns after the cables are changed and the system re-connected, the problem may be caused by your processor, receiver or preamplifier.

Suggestion #3

Ground loop problems may also be caused by poor grounding of the electrical system in your home, particularly when there are multiple components with three prong, grounded, power cords. Try unplugging these components one at a time, and see if one or all of them is causing the problem. The ultimate solution to this type of problem is to re-wire your house with an isolated, star type grounding configuration. We recognize, however, that this may be imprac-

tical and expensive. In some cases, the use of an approved AC Power Isolation Transformer of sufficient capacity may solve this problem.

Warning: if you suspect that the grounding system in your home's electrical wiring is causing the hum problem, it is important that you do not make any changes to the wiring yourself. Only a licensed electrician should make any changes to household wiring, and they must be made in full compliance with all local building, safety and electrical codes.

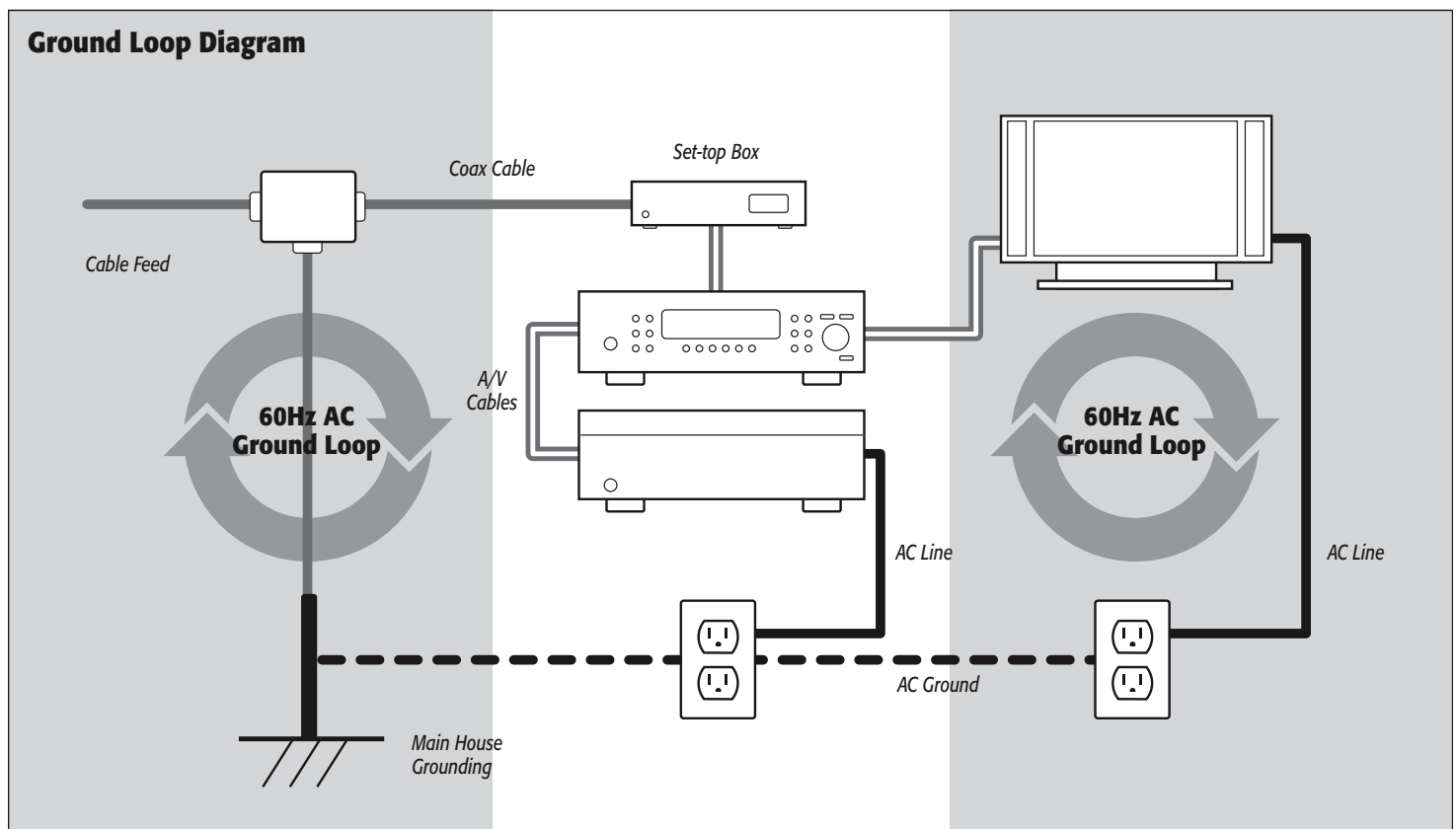
Suggestion #4

Hum may also be caused by faulty earth grounds in your home's electrical system. In the past, cold water pipes were often used for the earth ground, so it is important to make sure that your ground connection is still valid and has not become loose or corroded. The cold water pipe method may no longer be valid in some locations due to requirements that the water meter be isolated from the water mains with a length of PVC pipe, thus interrupting the ground circuit. The safest, and most reliable, approach may be to provide your own ground. This can be accomplished by having a licensed electrician drive at least five feet of copper-jacketed steel grounding rod into the earth, and using that for your grounding connection.

Suggestion #5

If you have hum in your video display device (bars that roll up through image at 12-14 second intervals), this may be related to hum you also experience in your audio system. The previous suggestion tips may help with this also. If not, try isolating the ground in the projectors video signal cable with a base-band video isolation transformer, such as the Jensen VB-1BB.

If the hum persists after all of the above suggestions have been tried, contact the Outlaw Audio customer service department for assistance.



The Outlaw Audio 30-Day Satisfaction Guarantee

This product is guaranteed to satisfy all your needs for a high performance power amplifier. If for any reason, you are not completely satisfied with it, please contact us at 866-OUTLAWS (688-5297) within 30 days of receipt of the unit and you will receive a return authorization.

Please save all of your packing material in that the amplifier is heavy and can get damaged in shipping without proper protection. We recommend that you keep the packing (even after 30 days) so that if you ever move, the unit will be adequately protected.

If you decide to return the amplifier, the only cost you will be responsible for is the shipping charge to return it to us. When your amplifier arrives, we will inspect it to insure that it was shipped back to us in original condition. Upon satisfactory inspection, we will issue a full credit for your original purchase price plus your original outbound freight cost.

Outlaw Audio Limited Warranty

This warranty protects the owner of the Outlaw 7100 Power Amplifier (the PRODUCT) for five (5) years from the date of purchase.

This warranty covers all defects in material and workmanship with the following specific exceptions. These are:

- Damage caused by improper installation or adjustment
- Damage caused by accident, unreasonable use or neglect
- Damage from failure to follow instructions contained in this Owner's Manual
- Damage from the performance of repairs by someone not authorized by Outlaw Audio
- Any unit on which the serial number has been effaced, modified, or removed
- Damage occurring during shipment
- Units which have been altered or modified in design, appearance or construction

This warranty covers only the actual defects within the PRODUCT itself. IT DOES NOT cover costs of installation in (or removal from) a fixed installation, or normal set-up, claims based on any misrepresentation by the seller, or performance variations resulting from installation related circumstances such as signal quality, AC power or incompatibilities with speakers and/or other system components.

During the warranty period, Outlaw Audio will, at its option, either repair the defect, or replace the defective product, or the defective parts, or components thereof at no charge to the owner for parts and labor covered by this warranty. If necessary repairs are not covered by this warranty, or if a unit is examined which is not in need of repair, you will be charged for the repairs and/or the examination. If non-warranted repairs are needed, we will notify you of the estimated cost and ask for your authorization to perform said repairs.

You must pay shipping charges incurred in getting your Product to the factory. We will pay the return shipping charges if the repairs are covered by the warranty. Please save the original shipping cartons as the unit MUST be returned in the original carton and packing.

(Replacement cartons are available at a modest charge.)

If your product needs service, please call Outlaw Audio at 866-OUTLAWS (688-5297) or 866-OUTLAWA (688-5292).

You will need to present the original bill of sale to establish the date of purchase. In the event that the proof of purchase cannot be established with the original receipt, the warranty period shall be determined by the earliest date of manufacture shown on the unit, provided that the serial number label has not been altered in any manner, or by our records relating to that serial number.

In the event that you wish to return your Outlaw amplifier back to us, for any reason, please call to arrange for a Return Authorization Number. This will insure that your problem is discussed with a service technician who will determine if there is a quick solution to your problem.

Outlaw Audio shall not be liable for, in any way responsible for, any incidental or consequential damages of any kind. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion of incidental or consequential damages, therefore, the limitations and exclusions stated herein may not apply to you. This warranty gives you specific legal rights; and you may also have other rights which vary from state to state.

THERE ARE NO WARRANTIES GIVEN BY OUTLAW AUDIO WHICH EXTEND BEYOND THE DESCRIPTION GIVEN HEREIN. ANY IMPLIED WARRANTIES OF FITNESS FOR PURPOSE SOLD, MERCHANTABILITY, DESCRIPTION, QUALITY OR ANY OTHER MATTERS ARE LIMITED TO THE TERMS OF THE EXPRESSED LIMITED WARRANTY STATED HEREIN.

Products are sold on the basis of specifications applicable at the time of sales. Outlaw Audio shall have no obligation to modify products once they have been sold.

This warranty is applicable only in the United States.

For applicability in other countries, please call Outlaw Audio.



Outlaw Audio

