ML-9 POWER AMPLIFIER

OWNER'S MANUAL

mark levinson®

AUDIO SYSTEMS

IMPORTANT

Please read these instructions carefully and completely before operating your ML-9 Power Amplifier.

A great deal of effort went into the design and construction of this precision device. Understanding its function will enable you to use it to its fullest potential.

Mark Levinson Audio Systems has been designing and producing audio components of the highest quality since 1972. The ML-9 Power Amplifier offers superb quality throughout thus continuing this tradition.

CIRCUIT DESCRIPTION

The ML-9 is a high quality Class AB_2 stereophonic amplifier designed to provide virtually the same sonic performance as the ML-3 in a component of about half the power, weight, size and price.

POWER SUPPLY:

Consists of a 1.2kVA toroidal transformer, a 30A bridge rectifier, and two 36,000uF capacitors. Four 520uF capacitors are used for added decoupling of the pre-driver stage.

PRE-DRIVER STAGE:

Consists of a differential amplifier with a cascode which drives a second differential amplifier with a cascode and a current inverter. The inverter converts from balanced to ground (differential) to unbalanced to ground while maintaining push-pull operation.

DRIVER STAGE:

Consists of a complimentary emitter follower, driving a second complimentary emitter follower.

OUTPUT STAGE:

Consists of four parallel complimentary push-pull emitter followers.

PROTECTION:

The on/off switch doubles as an electromagnetic circuit breaker to protect the amplifier from excessive current. The power stages are protected by an energy limiting circuit which monitors power dissipation versus time. Independent energy limiting for positive and negative information minimizes distortion while in the overload condition. This circuit offers excellent protection without effecting the sonic quality. The loudspeaker is protected by a D.C. sensing circuit that monitors the output of the amplifier. The D.C. sensing circuit is connected to the circuit breaker. Several other techniques have been employed to protect the ML-9 from external sources of damage.

SELECTABLE DAMPING FACTOR:

Loudspeakers, like all electrical devices, are not perfect. We have determined that certain loudspeaker characteristics can be effected by varying the damping factor of the amplifier. For this reason the ML-9 is equipped with selectable damping capability.

INSTALLATION

FOR YOUR PROTECTION

We strongly advise that your entire stereo system be disconnected from the AC mains before connecting or disconnecting ANY cables. This amplifier has no user serviceable parts and should NEVER be uncovered or disassembled by any person(s) other than factory authorized service personnel. Always keep electrical equipment out of the reach of children.

UNPACKING

Unpack your ML-9 Power Amplifier and retain all packing materials for future transport. Carefully inspect the product for damage and flaws. If any discrepancies are found, contact your Mark Levinson Audio Systems representative immediately.

LOCATION

The ML-9 should be located as close to your speakers as possible thus keeping speaker cables short. The amplifier may be placed in a cabinet or on a shelf; however, adequate ventilation must be provided to prevent overheating. A mechanical drawing has been included in this manual to help facilitate special installations or custom cabinetwork.

Note: This product can not be rack mounted without modification.

VOLTAGE SELECTION

The ML-9 is internally wired for 100, 120, 200, 220 or 240VAC mains. Check that the voltage tag on the rear of the amplifier coincides with your mains wiring. Your AC mains should be capable of supplying 18A @ 100VAC, 15A @ 120VAC, 9A @ 200VAC, 8A @ 220VAC, or 8A @ 240VAC, when no load other than the ML-9 is on this circuit. If other devices are connected, their additional power consumption must be taken into account. If you wish to change the amplifier voltage, contact your Mark Levinson Audio Systems representative.

SIGNAL CONNECTIONS

The ML-9 Power Amplifier incorporates Camac connectors for signal connection. The Camac connector is a precision, high reliability device used as a standard by the European Center for Nuclear Research. A detailed pamphlet entitled "Why Camac Connectors" is available from your Mark Levinson Audio Systems representative.

A wide variety of interconnect cables and Camac connectors are available to facilitate virtually any installation.

Connect the left channel main output (or adjustable output) of your preamplifier to the left channel (viewed from front) input of your ML-9 amplifier.

Connect the right channel main output (or adjustable output) of your preamplifier to the right channel of your ML-9 amplifier.

SPEAKER CONNECTIONS

Precautions: Never connect the amplifier to any device other than a loudspeaker.
Never short the amplifier outputs.
Never connect the left channel output to the right channel output.

In order to take full advantage of your ML-9 amplifier it is necessary to use high quality speaker cable. There are several such cables available including Mark Levinson Audio Systems HF10C. Ask your representative for his/her recommendations.

There are two recommended methods for connecting the speaker cable to the amplifier. A spade or hook type lug soldered to the cable is preferred. Your representative may stock this part.

The "pigtail" is another method of connection. A short piece of 14 gauge wire is soldered to the speaker cable. The other end is inserted through the hole in the amplifier terminal. See the instructions on the following page.

Note: Banana plugs are not recommended.

Connect the left channel output (viewed from front) to your left speaker (red to positive and black to negative).

Connect the right channel output (viewed from front) to your right speaker (red to positive and black to negative).

Apply power to your preamplifier and allow it to stabilize. Stabilization time will vary from one product to another.

Connect the ML-9 power cord to the mains outlet.

The amplifier may now be switched on.

SELECTABLE DAMPING

The ML-9 amplifier allows you to select the appropriate damping factor for your loudspeakers. The selection is accomplished via two toggle switches (one per channel) at the rear of the amplifier. The three damping factor positions are nominally designated low, normal and high.

The actual damping factor for each position was determined by extensive listening with a wide variety of high quality loudspeakers. Our tests clearly indicated the advantages of selectable damping for high power audio applications.

Select the position that offers the best sonic performance with your loudspeakers.

Many lug connectors can be crimped onto the cable. However soldering will insure a good electrical connection.

SPADE LUG

HOOK LUG

PIGTAIL CONNECTION

If you have no soldering experience, please contact your representative for assistance.

Begin with 3" of 14 gauge copper wire.

Strip ⅝" of insulation from one end and ½" from the other.

Strip ½" of insulation from the speaker cable.

Gently slide the (⅝") bare end of the 14 gauge wire into the center of the bare speaker cable. Be careful not to spread the individual wires of the speaker cable.

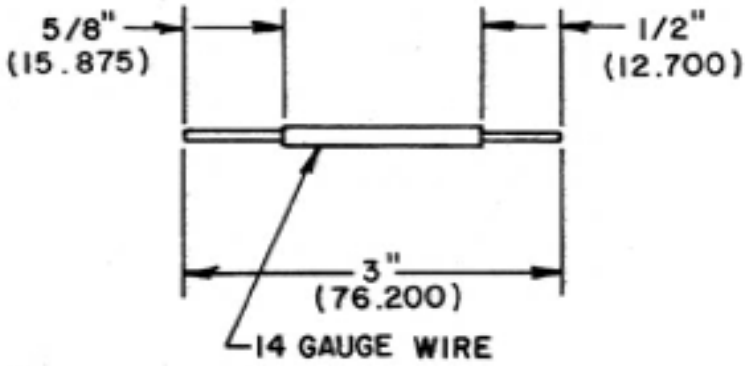
Solder this connection. A soldering gun may be necessary for adequate heat.

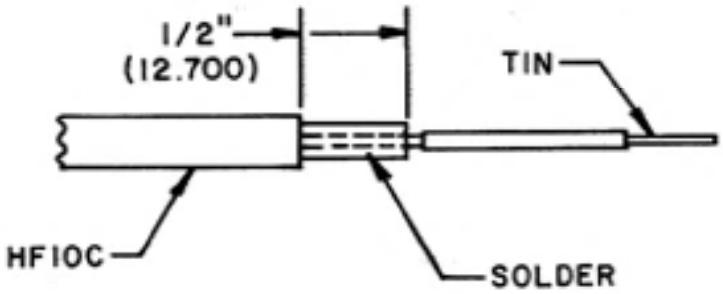
Lightly tin the remaining (½") bare end of the 14 gauge wire.

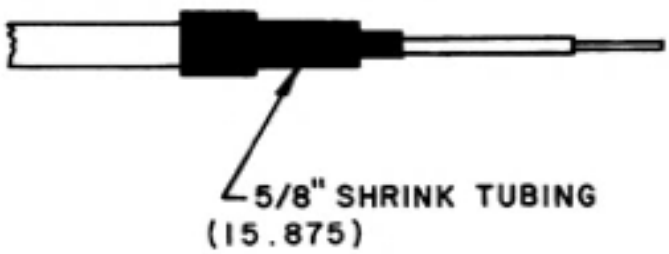
Slide a 1" length of shrink tubing (⅝" diameter tubing for HF10C) over the connection and heat to shrink. Colored shrink tubing is available for polarity identification.

Follow this procedure for the three remaining speaker connections.

This procedure may also be used for the speaker end of the cable depending upon the type of speaker terminal.







MAINTENANCE

Poor connections cause sonic degradation; therefore, we recommend that you clean all speaker connections with alcohol at least once a year. If the connections are oxidized, an abrasive such as steelwool may be used.

CLEANING

A feather duster may be used to remove dust. To remove dirt and finger prints, Isopropyl alcohol and a soft cloth are recommended.

SERVICE

Mark Levinson Audio Systems takes great pride in its representatives. Experience, dedication and integrity make these professionals ideally suited to assist with the needs of our customers.

RETURN AUTHORIZATION

In the event that a unit must be returned to the factory for service, return authorization must be obtained from the Mark Levinson Audio Systems, Technical Services Department.

The unit must be properly packaged, preferably in its original packing material, and marked with the proper return authorization number on the outer carton for easy identification.

Mark Levinson Audio Systems reserves the right to repackage any unit for shipment at the owner's expense.

The Technical Services Department is designed to solve technical problems with maximum efficiency. It is extremely important that information regarding a problem be explicit and complete. This helps us to locate and repair a defect with maximum expediency.

The philosophy of the Technical Services Department is based on the realization that our customers have made a substantial investment in order to obtain exceptional quality. It is the intent of the Technical Services Department to provide service commensurate with the investment.

LIMITED FIVE YEAR WARRANTY

The ML-9 Power Amplifier is warranted by Mark Levinson Audio Systems, to the original purchaser to be free from defects in material and workmanship under normal use for a period of five (5) years from the date of purchase. During the warranty period, and upon proof of purchase, any power amplifier exhibiting defects in materials and/or workmanship will be repaired or replaced, at our option, without charge for either parts or labor, at our factory. The warranty will not apply to any power amplifier that has been misused, abused or altered.

Any power amplifier not performing satisfactorily may be returned to the factory for evaluation. Return authorization must first be obtained by either calling or writing the factory prior to shipping the power amplifier. The factory will pay for return shipping charges only in the event that the power amplifier is found to be defective as above mentioned. There are other stipulations that may apply to shipping charges.

THERE IS NO OTHER EXPRESS WARRANTY ON THIS POWER AMPLIFIER. NEITHER THIS WARRANTY NOR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS, SHALL EXTEND BEYOND THE WARRANTY PERIOD. NO RESPONSIBILITY IS ASSUMED FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS AND OTHER STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THAT THE ABOVE LIMITATION OR EXCLUSION 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.

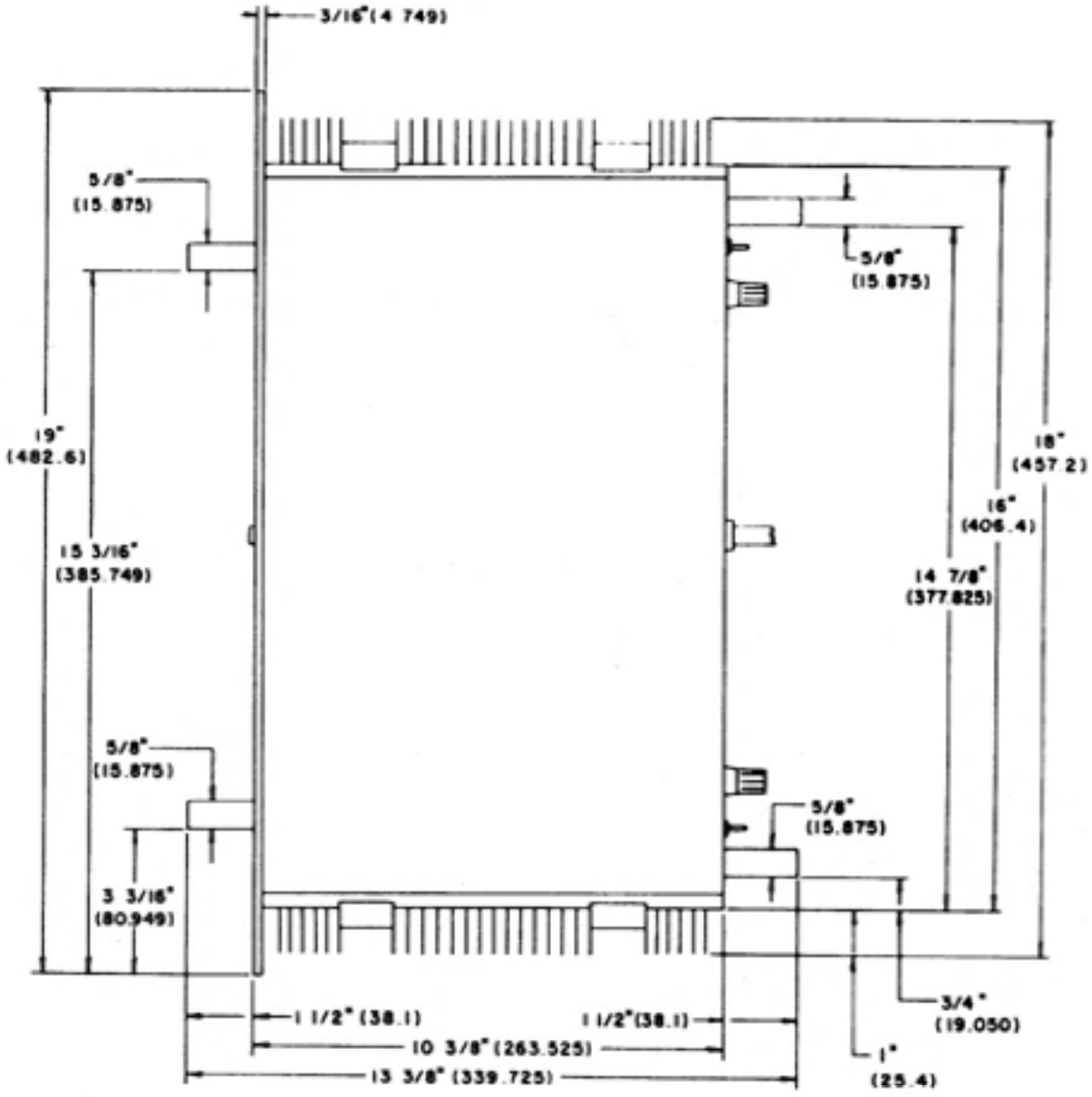
SPECIFICATIONS

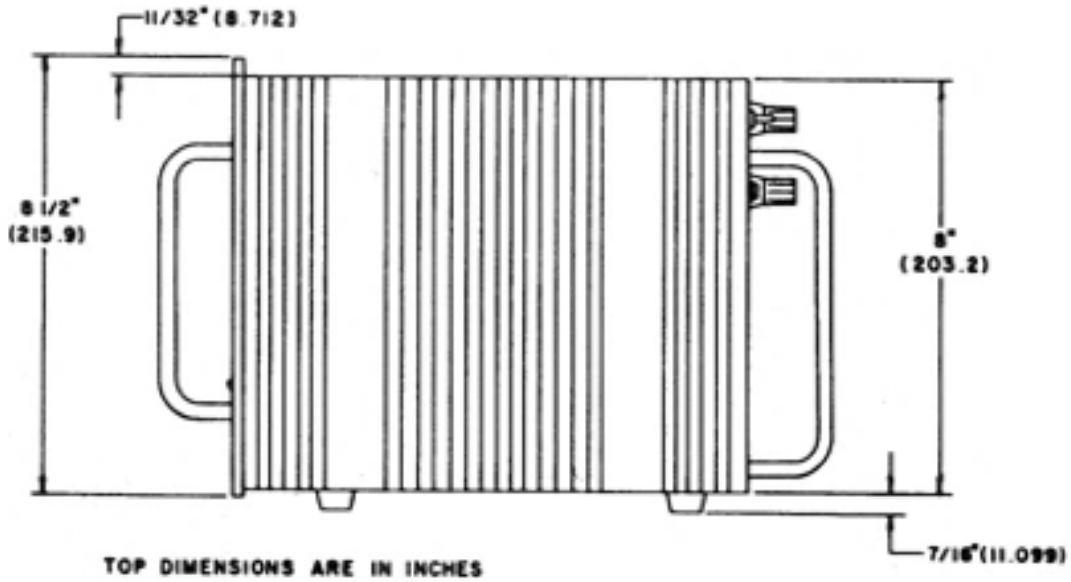
The correlation between published specifications and sonic quality is unreliable. A list of numbers reveals virtually nothing. All technical measurements must be subject to qualitative as well as quantitative interpretation.

Measurements of the ML-9 yield excellent results by any standards. However, only those specifications that apply to the actual operation of the amplifier are included here.

Rated Power:	100 watts continuous sine-wave power per channel into 8 ohms, with both channels driven from 20Hz to 20kHz with no more than .2% THD.
Frequency Response:	(−3dB) 3Hz, 44kHz (ultra sonic filter is a modified Bessel alignment).
Input Impedance:	50k Ohms
Voltage Gain:	26dB
Power Consumption:	400W * rated output * 8 Ohms, 50Hz to 400Hz 100W at idle
Overall Dimensions:	See the following page
Weight:	65 lbs. (29.48kg)
Connector Complement:	2 Camac coaxial connectors 4 binding posts

DIMENSIONS





TOP DIMENSIONS ARE IN INCHES
BOTTOM DIMENSIONS ARE IN MILLIMETERS

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