



Power Amplifier



MC352 Owner's Manual

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 electric shock to persons.



AVIS RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR.

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


WARNING - TO REDUCE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

To prevent the risk of electric shock, do not remove cover or back. No user serviceable parts inside.

IMPORTANT SAFETY INSTRUCTIONS!

PLEASE READ THEM BEFORE OPERATING THIS EQUIPMENT.

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. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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.
15. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
16. To completely disconnect this equipment from the a.c. mains, disconnect the power supply cord plug from the a.c. receptacle.
17. The mains plug of the power supply cord shall remain readily operable.

Thank You

Your decision to own this McIntosh MC352 Power Amplifier ranks you at the very top among discriminating music listeners. You now have “The Best.” The McIntosh dedication to “Quality,” is assurance that you will receive many years of musical enjoyment from this unit.

Please take a short time to read the information in this manual. We want you to be as familiar as possible with all the features and functions of your new McIntosh.

Please Take A Moment

The serial number, purchase date and McIntosh Dealer name are important to you for possible insurance claim or future service. The spaces below have been provided for you to record that information:

Serial Number: _____

Purchase Date: _____

Dealer Name: _____

Technical Assistance

If at any time you have questions about your McIntosh product, contact your McIntosh Dealer who is familiar with your McIntosh equipment and any other brands that may be part of your system. If you or your Dealer wish additional help concerning a suspected problem, you can receive technical assistance for all McIntosh products at:

McIntosh Laboratory, Inc.
2 Chambers Street
Binghamton, New York 13903
Phone: 607-723-1545
Fax: 607-723-3636

Customer Service

If it is determined that your McIntosh product is in need of repair, you can return it to your Dealer. You can also return it to the McIntosh Laboratory Service Department. For assistance on factory repair return procedure, contact the McIntosh Service Department at:

McIntosh Laboratory, Inc.
2 Chambers Street
Binghamton, New York 13903
Phone: 607-723-3515
Fax: 607-723-1917

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Important Information

1. The following Connecting Cable is available from the McIntosh Parts Department:
Data and Power Control Cable Part No. 170-202
Six foot, shielded 2 conductor, with 1/8 inch stereo mini phone plugs on each end.
2. For additional connection information, refer to the owner's manual(s) for any component(s) connected to the MC352 Amplifier.
3. There is a built-in turn on delay which will mute the speaker outputs for approximately two seconds when the amplifier is turned on.
4. It is very important that loudspeaker cables of adequate size be used in your music system, to ensure that there will be no power loss or heating. Cable size is specified in Gauge numbers or AWG (American Wire Gauge). The smaller the Gauge number, the larger the wire size:
If your loudspeaker cables are 50 feet (38.1m) or less, use at least 14 Gauge (AWG) wire size or larger.
If your loudspeaker cables are 100 feet (76.2m) or less, use at least 12 Gauge (AWG) wire size or larger.
5. In the event that MC352 Power Amplifier over heats, due to improper ventilation and/or extremely high ambient temperature, the built in protection circuits will activate. The MC352 Front Panel Power Guard LED's will both continuously indicate On and the audio input signal will be muted. When the temperature of the MC352 has returned to a safe condition, sound will return and the Power Guard Indicators will return to normal operation.



Connector Information

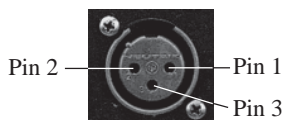
XLR Connectors

Below is the Pin configuration for the XLR Balanced Input Connectors on the MC352. Refer to the diagram for connection:

PIN 1: Shield/Ground

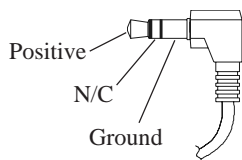
PIN 2: + Input

PIN 3: - Input



Power Control and Trigger Connectors

The MC352's Power Control Outputs provide a 5 volt signal. Use a 1/8 inch stereo mini phone plug to connect to the Power Control Input on other McIntosh Components.



Introduction

Now you can take advantage of traditional McIntosh standards of excellence in the MC352 Power Amplifier. Two 350 watt high current output channels will drive any high quality loudspeaker system to its ultimate performance. The MC352 reproduction is sonically transparent and absolutely accurate. The McIntosh Sound is "The Sound of the Music Itself."

Performance Features

● Power Output

The MC352 consists of two separate power amplifier channels, each capable of 350 watts into 2, 4 or 8 ohm speakers with less than 0.005% distortion.

● Full Balanced Circuitry

The MC352 is fully balanced from inputs to outputs. Each channel consists of two matched power amplifiers operating in push-pull with their outputs combined in a McIntosh Autoformer. The double balanced configuration cancels virtually all distortion.

● Power Guard

Both channels include the patented McIntosh Power Guard circuit that prevents the amplifier from being overdriven into clipping with its harsh distorted sound that can also damage your valuable loudspeakers.

● Sentry Monitor and Thermal Protection

McIntosh Sentry Monitor power output stage protection circuits ensure the MC352 will have a long and trouble free operating life. Built-in thermal protection circuits guard against overheating.

● Patented Autoformers

McIntosh designed and manufactured Output Autoformers provide an ideal match between the amplifier output stages and speaker loads of 2, 4 and 8 ohms. The Autoformers also give perfect DC protection for your valuable loudspeakers.

● Illuminated Power Meters

The illuminated power output watt meters on the MC352 are peak responding, and indicate the true power output of the amplifier. The Peak Hold Mode allows the meters to temporarily stay at the highest power output and then slowly decay.

Installation

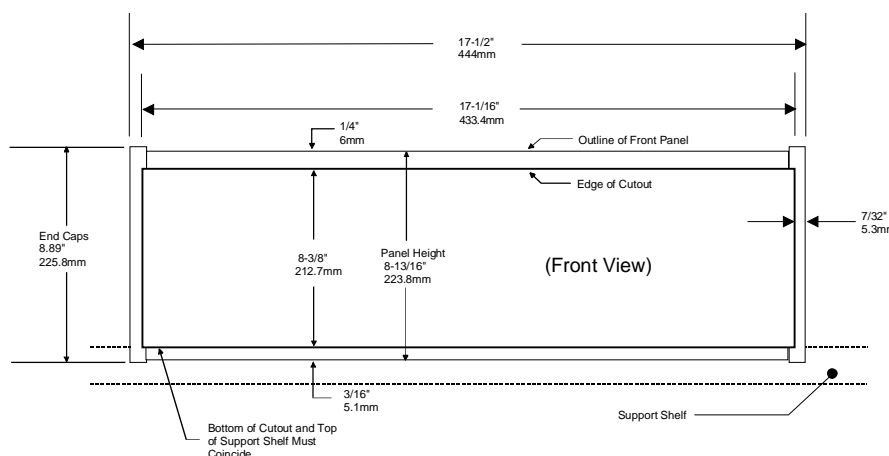
The MC352 can be placed upright on a table or shelf, standing on its four feet. It also can be custom installed in a piece of furniture or cabinet of your choice. The required panel cutout, ventilation cutout and unit dimensions are shown.

Always provide adequate ventilation for your MC352. Cool operation ensures the longest possible operating life for any electronic instrument. Do not install the MC352 directly above a heat generating component such as a high powered amplifier. If all the components are installed in a single cabinet, a quiet running ventilation fan can be a definite asset in maintaining all the system components at the coolest possible operating temperature.

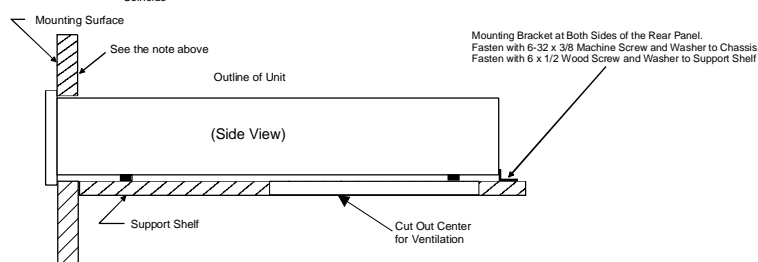
A custom cabinet installation should provide the following minimum spacing dimensions for cool operation. Allow at least 6 inches (15.24 cm) above the top, 2 inches (3.81cm) below the bottom and 1 inch (2.54 cm) on each side of the amplifier, so that airflow is not obstructed. Allow 21 inches (53.3 cm) depth behind the mounting panel, which includes clearance for connectors. Allow 1-1/8 inches (2.9 cm) in front of the mounting panel for knob clearance. Be sure to cut out a ventilation hole in the mounting shelf according to the dimensions in the drawing.

NOTE: In Europe, if the MC352 is custom mounted, an additional ventilation opening of 6 inch (15.24 cm) in height, running the full width of the front panel, needs to be directly above the front top of the MC352.

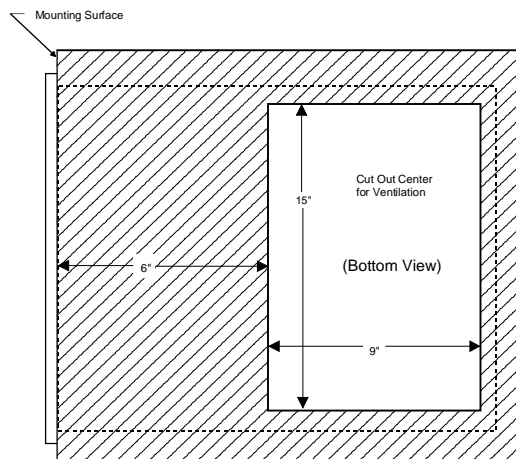
**Front View of the MC352
custom installed**



**Side View of the MC352
custom installed**

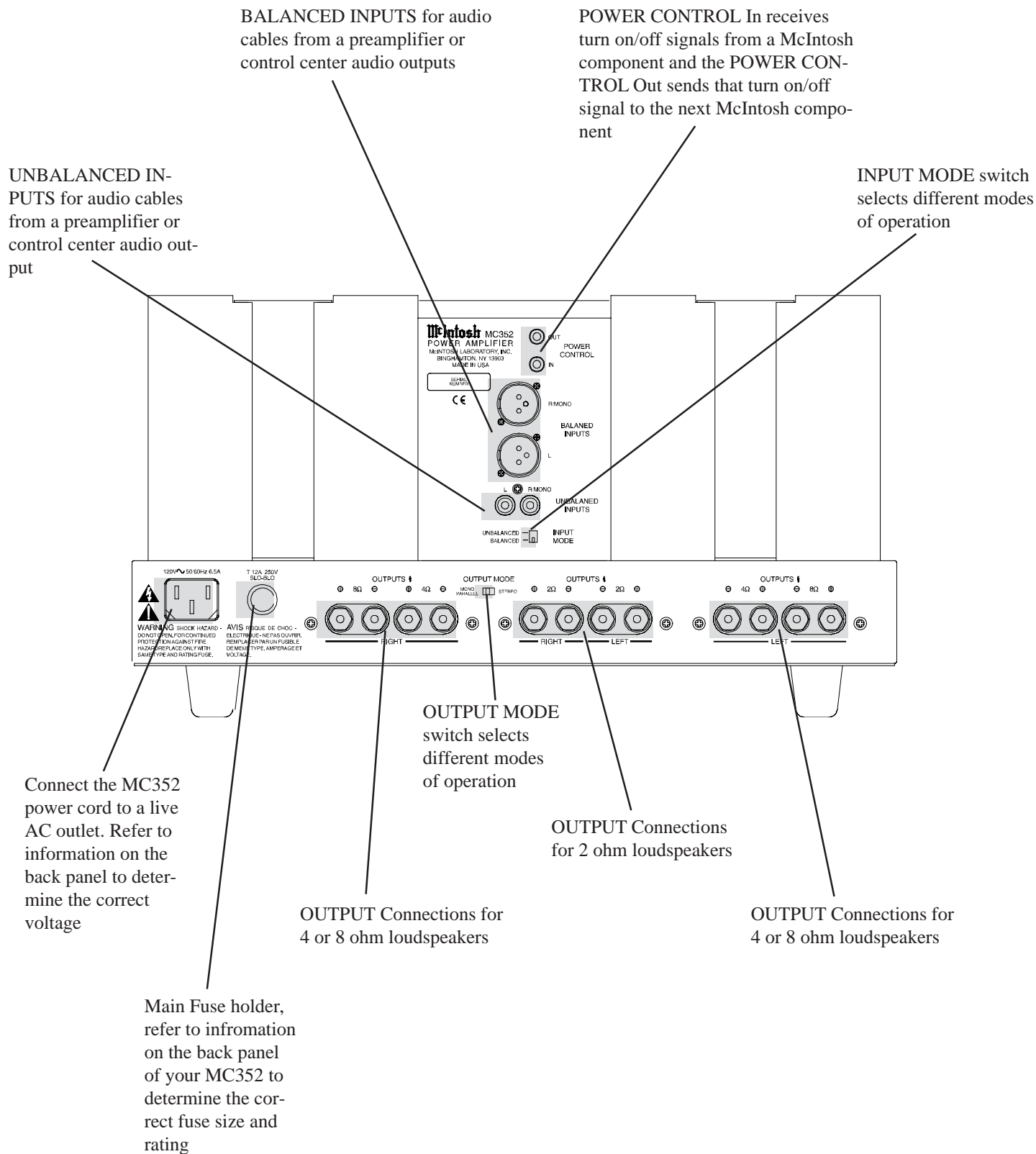


**Bottom View of the MC352
custom installed**





Rear Panel Controls and Connections



How to Connect in Stereo

1. Connect the MC352 power cord to a live AC outlet.
2. Connect a power control cable from the control center Power Control Out to the MC352 Power Control In.
3. Prepare the loudspeaker hookup cables as follows:

A. Carefully remove sufficient insulation from the loudspeaker cable ends to just fit within the binding post with no exposed wire accessible. Refer to figure 1.

B. If the cable is stranded, carefully twist the strands together as tightly as possible. Refer to figures 2 & 3.

Note: If desired, the twisted cable section can be tinned with a solder iron to keep the strands together and/or attach appropriate connector ends.

C. Insert the bare section of the cable end or connector into the access hole, and tighten the terminal nut clockwise until the cable is firmly clamped into the terminal so the wires cannot slip out. Refer to figure 4.

D. Insert the bare section of the cable end or connector into the access hole, and tighten the terminal nut clockwise until the cable is firmly clamped

into the terminal. Refer to figures 5 & 6.

Note: The bare sections of the cable ends or the non insulated part of the connectors must not be exposed on either side of the terminal access hole.

E. Repeats Steps A through D for each speaker cable used with the amplifier.

4. Connect the loudspeaker cables to the appropriate terminals for your loudspeakers, being careful to observe the correct polarities. Output impedance connections of 2 ohms, 4 ohms and 8 ohms are provided.

If the impedance of your loudspeakers is rated at other than the listed impedance connections, use the nearest lower connection.

5. Install the plastic protective loudspeaker terminal covers that were supplied with your amplifier. Refer to figure 7.

6. Connect a cable from the balanced outputs of a control center to the MC352 balanced Input connectors for both audio channels and power control.

Note: An optional hookup is to use unbalanced cables from a McIntosh Control Center to Unbalanced Inputs of the MC352.

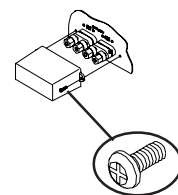
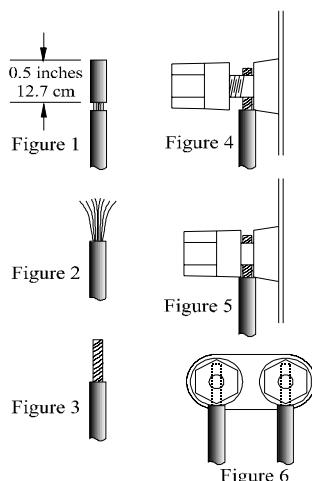
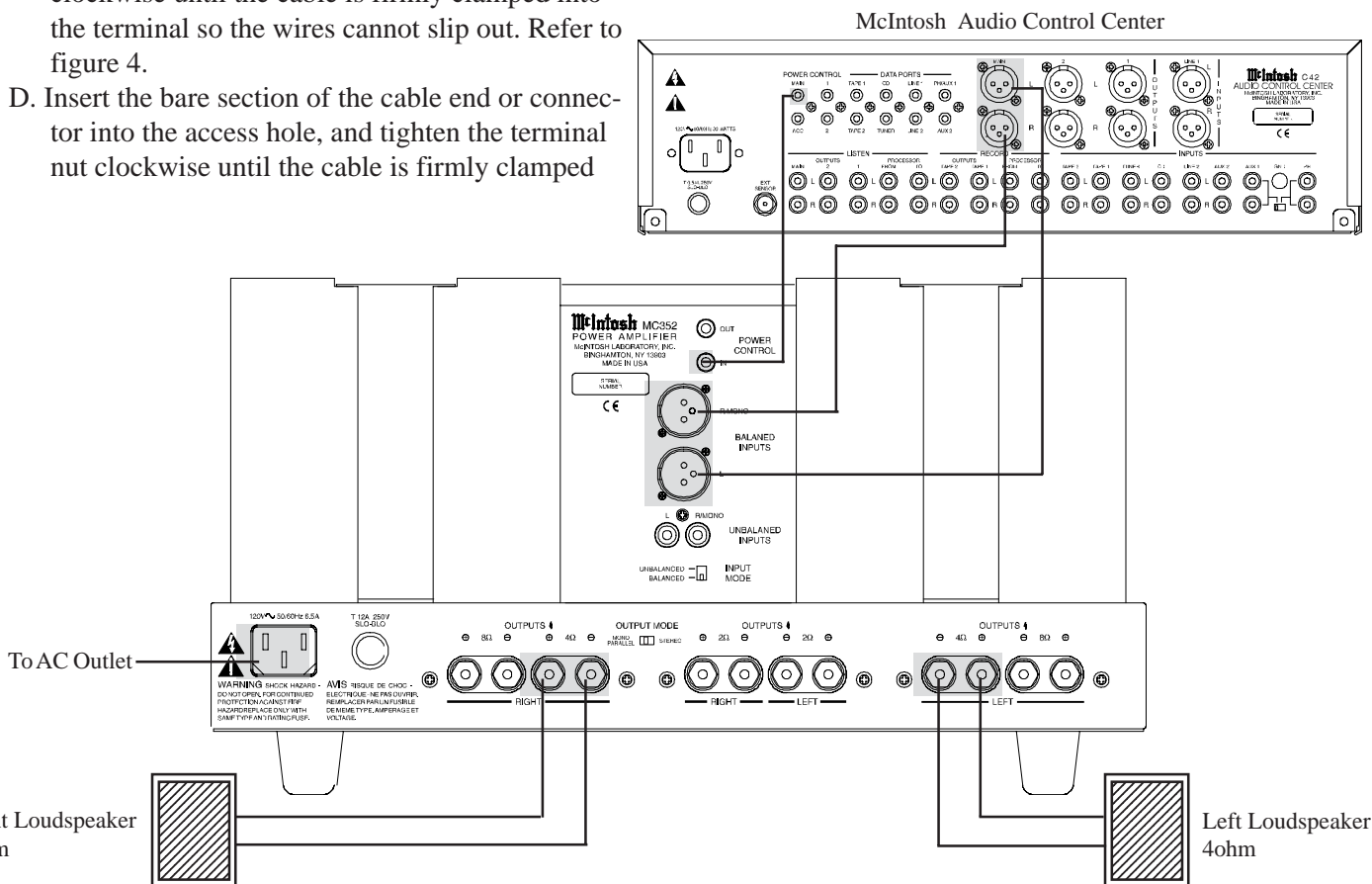
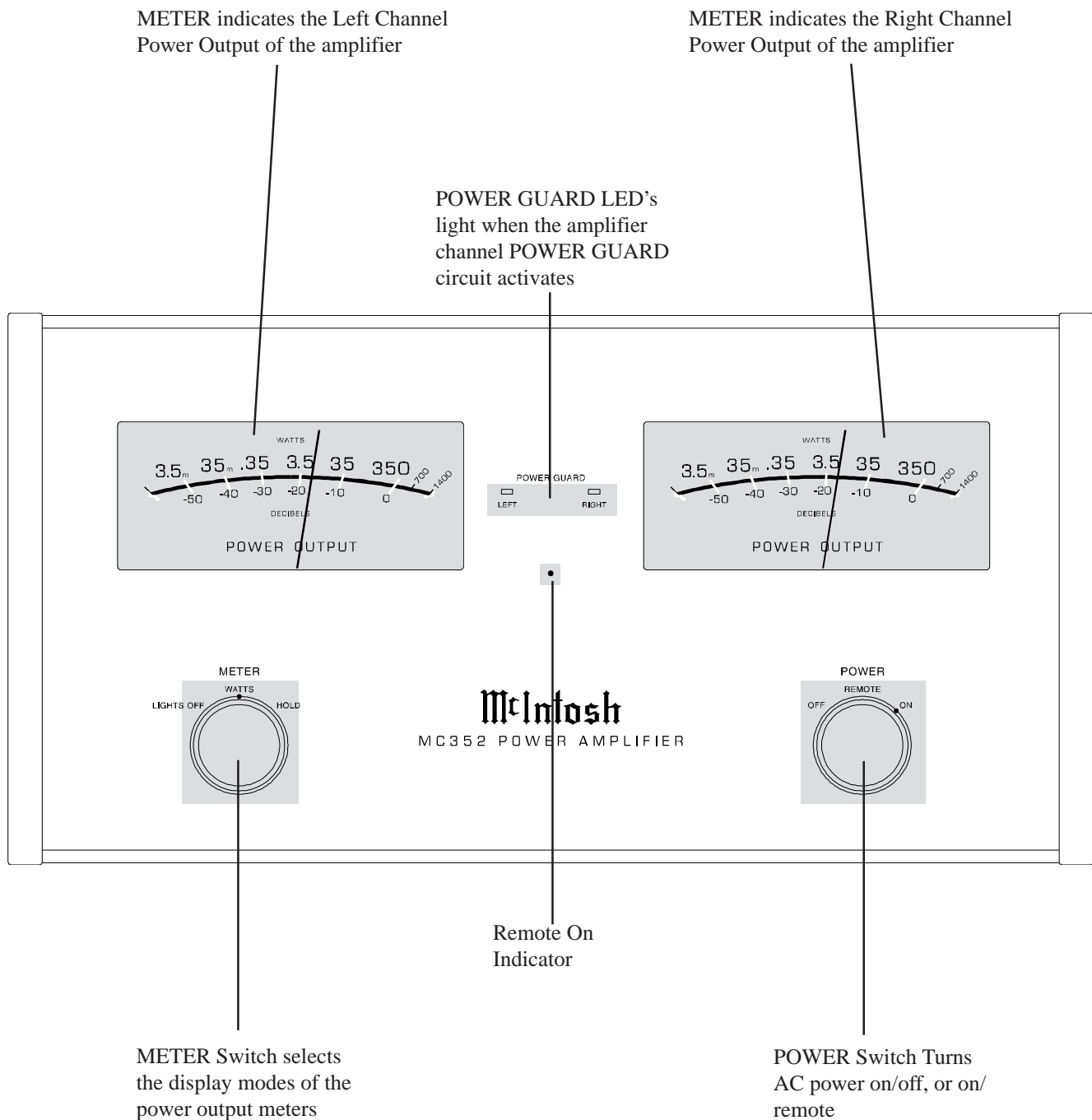


Figure 7





How to Operate the MC352

Power On

To have the MC352 automatically turn on or off when a control center turns on or off, rotate the power switch to the remote position. For manual operation, rotate the power switch to the on or off position as desired.

Note: There must be a power control connection between the MC352 and the McIntosh Control Center, in order for the remote power turn on to function.

Meter Selection

Rotate the meter mode switch to select the meter operation mode you desire:

Lights Off - Meter lights are turned off and the meters will continue to indicate the power output.

Watts - The meters respond to all the musical information being produced by the amplifier and indicate to an accuracy of at least 95% of the power output of either amplifier channel with only a single cycle of a 2000Hz tone burst.

Hold - The meter pointer is locked to the highest power peak in a sequence of peaks. The meter is electronically held to this power level until another higher power peak passes through the amplifier. The meter pointer will then rise to the newer higher indication. If no further power peaks are reached, the meter pointer will very slowly return to its rest position or lower power level. The decay rate is approximately 6 dB per minute.

Note: The MC352 Power Output Meters indicate the actual wattage delivered to the loudspeakers by responding to the combination of current and voltage output.

Output Mode Switch

The Output Mode Switch allows the two MC352 channels to be used in two different operating configurations.

Stereo - Both channels operate independently as left and right 350 watt amplifiers for stereo applications.

Mono - The right channel input signal is sent to both amplifier channels, which are combined at the outputs for a 700 watt mono amplifier.

Input Mode Switch

The Input Mode Switch allows you to select either the Balanced or Unbalanced inputs.

How to Operate the MC352 in Mono

The MC352 can be operated in Mono Mode as a 700 watt amplifier with output impedances of 1, 2 and 4 ohms. Refer to the shaded areas in figure 8.

1. Set the Output Mode Switch to the MONO PARALLEL position.
2. Connect the cable from the signal source equipment to the R MONO Balanced or Unbalanced input and set the Input Mode switch to match.
3. Connect the loudspeaker cables to the appropriate terminals to match the impedance of your loudspeakers.

Note: Mono Parallel output connections require the chosen impedance Plus and Minus terminals of one channel be connected to the matching terminals on the other channel. Refer to the connecting chart below.

Loudspeaker Impedance	⊖ (Negative) Output Terminal	⊕ (Positive) Output Terminal
1Ω (ohms)	Left & Right 2Ω	Left & Right 2Ω
2Ω (ohms)	Left & Right 4Ω	Left & Right 4Ω
4Ω (ohms)	Left & Right 8Ω	Left & Right 8Ω

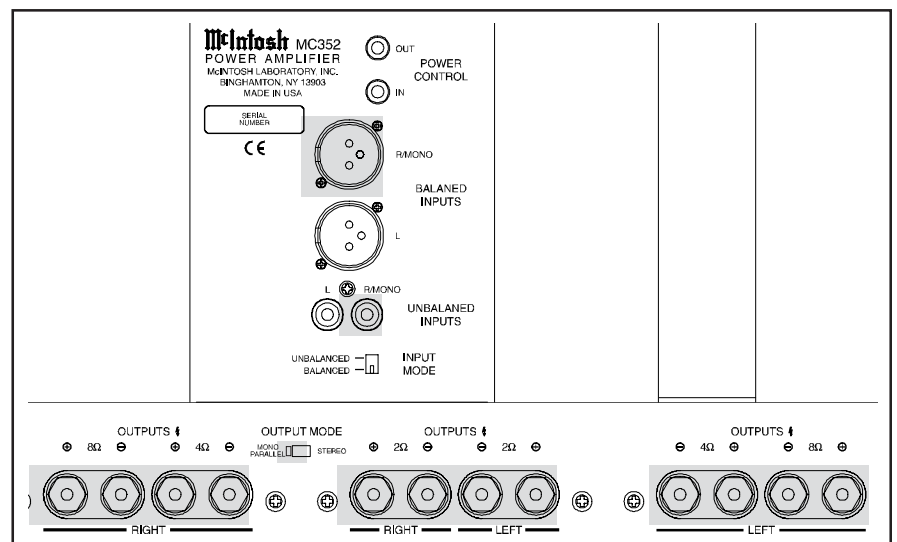


Figure 8



Specifications

Power Output Stereo

350 watts into 2, 4 or 8 ohm loads is the minimum sine wave continuous average power output per channel both channels operating.

Power Output Mono Parallel

700 watts into 1, 2 or 4 ohm loads is the minimum sine wave continuous average power output.

Output Load Impedance

2, 4 or 8 ohms (Stereo Mode)
1, 2 or 4 ohms (Mono Mode)

Rated Power Band

20Hz to 20,000Hz

Dynamic Headroom

2.1dB

Frequency Response

+0, -0.25dB from 20Hz to 20,000Hz
+0, -3dB from 10Hz to 100,000Hz

Total Harmonic Distortion

0.005% maximum at any power level from 250 milliwatts to rated power per channel from 20Hz to 20,000Hz, all channels operating.

Intermodulation Distortion

0.005% maximum if instantaneous peak output per channel does not exceed twice the rated output with all channels operating for any combination of frequencies from 20Hz to 20,000Hz.

Signal To Noise Ratio (A Weighted)

94dB Unbalanced (120dB below rated output)
98dB Balanced (124dB below rated output)

Sensitivity

1.9 Volts Unbalanced Input
3.8 Volts Balanced Input

Input Impedance

20,000 ohms Unbalanced
40,000 ohms Balanced

Damping Factor

Greater than 40

Power Requirements

100 Volts, 50/60Hz at 14.5 amps
110 Volts, 50/60Hz at 13.0 amps
120 Volts, 50/60Hz at 12.0 amps
220 Volts, 50/60Hz at 6.50 amps
230 Volts, 50/60Hz at 6.25 amps
240 Volts, 50/60Hz at 6.00 amps

NOTE: Refer to the rear panel of the MC352 for the correct voltage.

Dimensions

Front Panel: 17.50 inches (44.5cm) wide, 8.89 inches (22.58cm) high. Depth behind front mounting panel is 21 inches (53.3cm) including clearance for connectors. Panel clearance required in front of mounting panel is 1.125 inches (2.9cm).

Weight

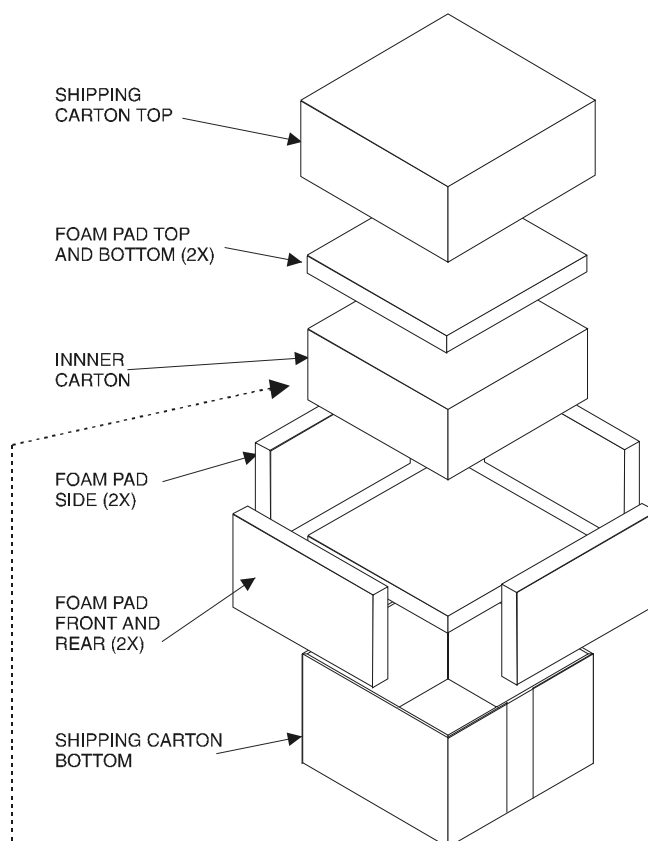
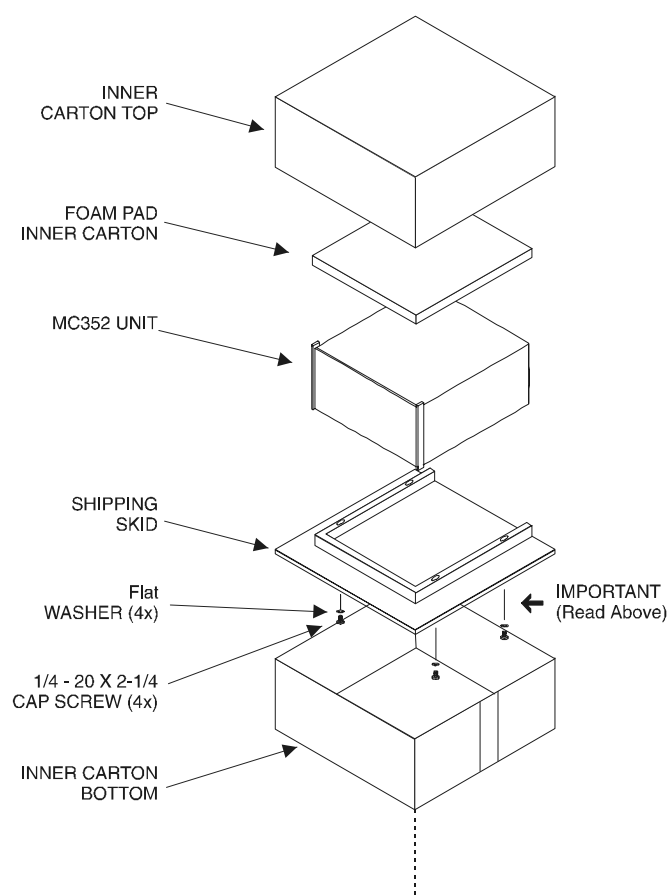
105 pounds (47.63Kg) net, 138 pounds (63Kg) in shipping carton

Packing Instructions

In the event it is necessary to repack the equipment for shipment, the equipment must be packed exactly as shown below. It is very important that the four plastic feet are attached to the bottom of the equipment. Four 1/4-20 x 2-1/4" cap screws and washers must be used to fasten the unit securely to the shipping skid. This will ensure the proper equipment location on the shipping skid. Failure to do this will result in shipping damage.

Use the original shipping carton and interior parts only if they are all in good serviceable condition. If a shipping carton or any of the interior part(s) are needed, please call or write Customer Service Department of McIntosh Laboratory. Please see the Part List for the correct part numbers.

Quantity	Part Number	Description
1	034051	Shipping carton bottom
1	034052	Shipping carton top
2	034054	Foam pad (front and rear)
2	034053	Foam pad (sides)
2	034055	Foam pad (top and bottom)
1	034050	Inner carton top
1	034049	Inner carton bottom
1	034048	Foam pad inner carton
1	034056	Shipping skid
4	101212	1/4-20 x 2-1/4" cap screw
4	104058	Flat washer
1	049289	Shipping carton complete with all the above parts





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Binghamton, NY 13903

The continuous improvement of its products is the policy of McIntosh Laboratory Incorporated who reserve the right to improve design without notice.

Printed in the U.S.A.

McIntosh Part No. 04062601