PS112 Powered Subwoofer

PS112

McIntosh Laboratory, Inc. 2 Chambers Street Binghamton, New York 13903-2699 Phone: 607-723-3512 FAX: 607-724-0549

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.

General:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. **Warning: To reduce risk of fire or electrical shock, do not expose this equipment to rain or moisture. This unit is capable of producing high sound pressure levels. Continued exposure to high sound pressure levels can cause permanent hearing impairment or loss. User caution is advised and ear protection is recommended when playing at high volumes.**
6. **Caution: to prevent electrical shock do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.**
   Attention: pour pevenir les chocs elecriques pas utiliser cette fiche polarisee avec un prolongateur, une prise de courant ou un autre sortie de courant, sauf si les lames peuvent etre inserees afond ans en laisser aucune partie a decouvert.
7. Unplug this equipment during lightning storms or when unused for long periods of time.
8. Only use attachments/accessories specified by the manufacturer.

Installation:

9. The equipment shall be installed near the AC Socket Outlet and the disconnect device shall be easily accessible.
10. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
11. Do not install near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.
12. Do not use this equipment near water.
13. 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.
14. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the equipment. When a cart is used, use caution when moving the cart/equipment combination to avoid injury from tip-over.

Connection:

15. Connect this equipment only to the type of AC power source as marked on the unit.
16. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the equipment.
17. 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.

18. Do not overload wall outlets, extension cords or integral convenience receptacles as this can result in a risk of fire or electric shock.
19. To completely disconnect this equipment from the AC Mains, disconnect the power supply cord plug from the AC receptacle.

Care of Equipment:

20. Clean only with a dry cloth.
21. Do not permit objects or liquids of any kind to be pushed, spilled and/or fall into the equipment through enclosure openings.
22. Unplug the power cord from the AC power outlet when left unused for a long period of time.

Repair of Equipment:

23. Refer all servicing to qualified service personnel. Servicing is required when the equipment 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 equipment, the equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.
24. Do not attempt to service beyond that described in the operating instructions. All other service should be referred to qualified service personnel.
25. When replacement parts are required, be sure the service technician has used replacement parts specified by McIntosh or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
26. Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

Thank You

Your decision to own this McIntosh PS112 Powered Subwoofer 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

Table of Contents

General Notes

1. *The following Connecting Cable is available from the McIntosh Parts Department:*
   Power Control Cable Part No. 170-202
   Six foot, 2 conductor shielded, with two 1/8 inch stereo mini phone plugs.
2. *For additional connection information, refer to the owner's manual(s) for any component(s) connected to the PS112.*
3. *In the event that the PS112 over heats, due to improper ventilation and/or high ambient temperature, the protection circuit will activate. The Front Panel Power Guard LED will continuously indicate ON and the audio will be muted. When the PS112 has returned to a safe operating temperature, normal operation will resume.*
4. *The PS112's Power Control will function with 5 to 20 volts applied to the Power Control Input. Use a 1/8 inch stereo mini phone plug to connect to the Power Control Input. Refer to figure 1.*

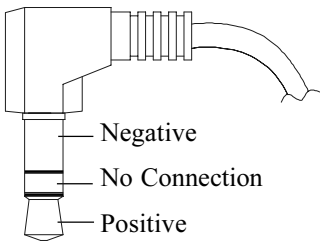


Figure 1

5. *To avoid damage, do not connect the speaker level output terminals from any receiver, amplifier or integrated amplifier to the inputs of the PS112 Powered Subwoofer.*

Introduction

The McIntosh PS112 Powered Subwoofer is designed for Home Theater and Music Reproduction. It has a 12 inch LD/HP[1] woofer, a 400 watt amplifier and built-in high and low pass filters.

The PS112 Powered Subwoofer's performance is equivalent to the quality of McIntosh's legendary line of Amplifiers, Preamplifiers, Signal Processors, Signal Sources and Loudspeakers, without imparting distortion or coloration of its own. It also complements the capabilities and the remarkably low distortion of McIntosh Power Amplifiers.

Many of today's loudspeakers are designed only for Home Theater applications. Not so with the PS112. It is also designed for the accurate reproduction of the low frequencies contained in music. Motion picture sound effects, explosions, and vehicle crashes require a wide dynamic range and high sound levels. These sounds are such that a speaker system having moderate distortion would reproduce them with little audible difference. This is not true with the reproduction of music. Music is by nature and definition harmonious. To reproduce it accurately, all forms of distortion, both harmonic and intermodulation, must be kept to a minimum. This has been the result of the design of the new McIntosh PS112 Powered Subwoofer. Each component in the device has been carefully designed for durability, efficiency, and above all, low distortion. The McIntosh PS112 Powered Subwoofer will reproduce music accurately and function as an excellent Home Theater Powered Subwoofer.

[1] *LD/HP Pat. No. 5,151,943*

Performance Features

- **Patented LD/HP Technology**

The McIntosh Loudspeaker Element features the patented LD/HP motor structure. This design, when compared to conventional Loudspeaker Elements, reduces distortion significantly. It also increases power handling and efficiency.

- **Power Guard**

The patented McIntosh Power Guard circuit prevents the PS112's Amplifier from being overdriven into clipping, with its harsh distorted sound that can also damage your valuable loudspeaker.

- **Flared Acoustic Bass Port**

The Acoustic Bass Port in the PS112 has Flared Front and Rear openings to eliminate air movement noise.

- **Shielded Magnetic Field**

The PS112 may be used in Home Theater Installations near a television receiver or monitor without causing the television image to degrade. McIntosh has designed special shielding around the magnetic structure of the PS112's Loudspeaker Element to prevent interference.

- **Remote Power Control**

The turn-on method uses a standard McIntosh Power Control jack to receive a turn-on signal from a McIntosh Control Center. The alternate turn-on method for the PS112 utilizes signal-sensing circuitry.

- **Low Distortion**

The PS112's Amplifier has very Low Total Harmonic Distortion. This THD rating combined with the low distortion of the McIntosh LD/HP Driver provides exceptionally smooth and clean low frequency response.

- **Bass Enhance**

The Bass Enhance Switch provides a Low Frequency Bass Boost for use with video sources to enhance the impact of low frequency sound effects.

- **Phase Switch**

The Phase Switch can be set to 0^0 or 180^0 to avoid phase cancellation.

- **Sub Frequency Filter**

The variable Sub Frequency Filter selects the low frequencies sent to the PS112's Power Amplifier when used with a full range source signal.

- **Hi-Pass Filter**

The variable Hi-Pass Filter selects the midrange and high frequencies sent to the Hi-Pass Out Jacks for use with an external power amplifier and loudspeakers.

- **Sentry Monitor and Thermal Protection**

McIntosh Sentry Monitor power output stage protection circuits ensure the PS112 will have a long and trouble free operating life. Built-in Thermal Protection Circuits guard against overheating.

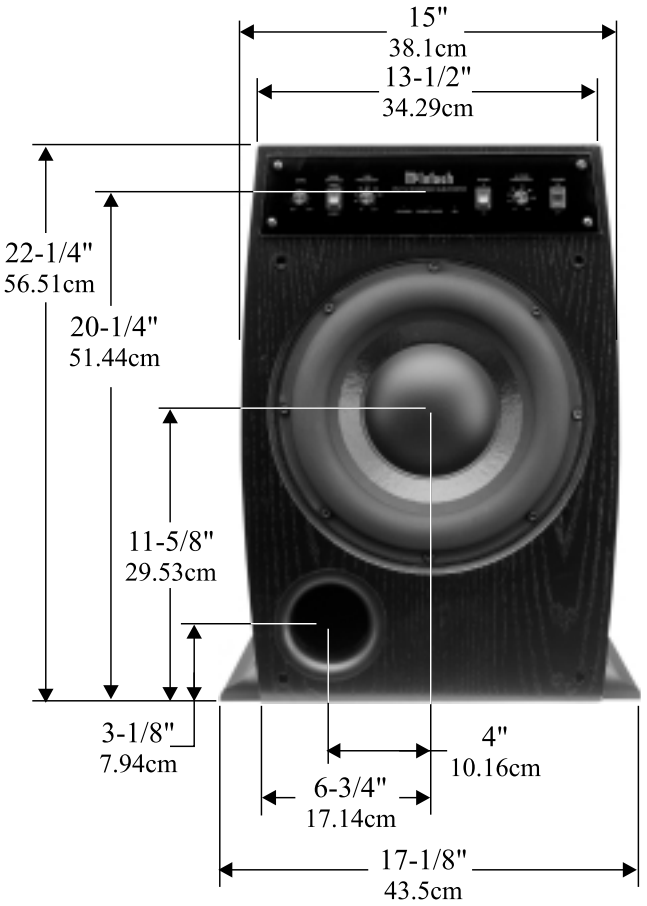
- **Gold Plated Input Connectors**

The PS112 input connectors are gold plated for superior corrosion resistance and high electrical conductivity.

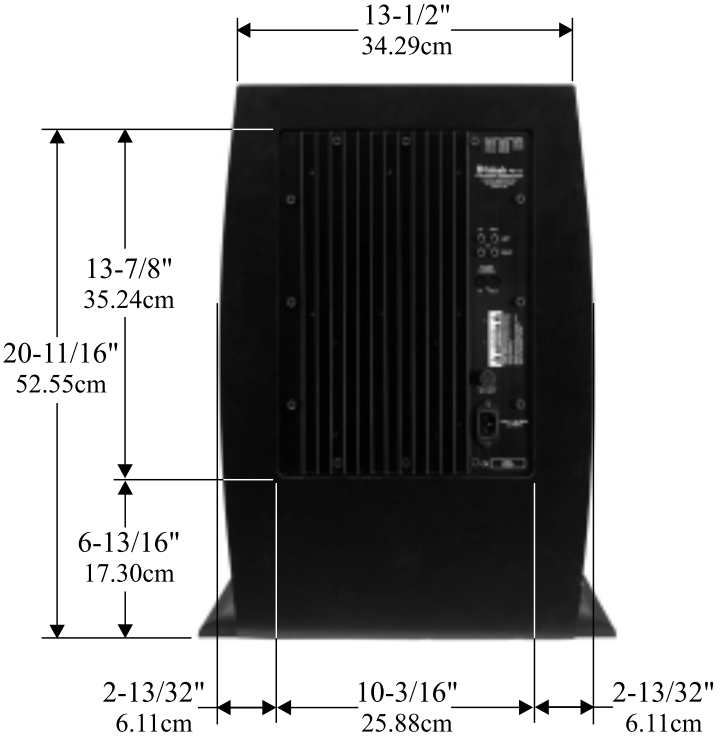
PS112 Dimensions

The following dimensions can assist in determining the best location for your PS112 Powered Subwoofer. There is additional information on page 8 pertaining to installing the PS112.

Front View of PS112 with Grille Removed

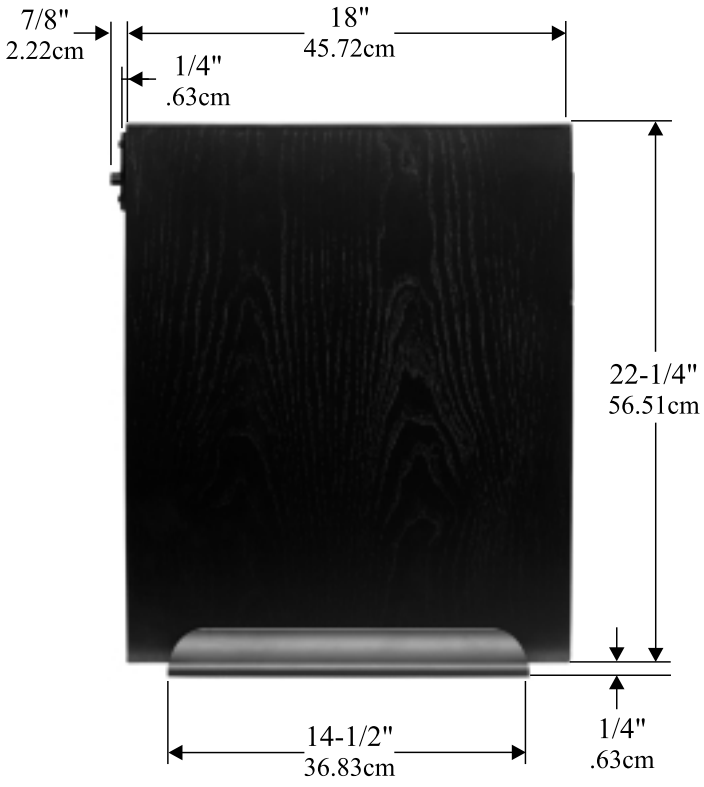


Rear View of PS112



Side View of PS112 with Grille

Side View of PS112 with Grille Removed



Installation

Locating the PS112

Always provide adequate ventilation for the PS112 Powered Subwoofer. Cool operation ensures the longest possible life for any electronic instrument. An installation should provide at least 2 inches spacing on all sides of the PS112, so that airflow is not obstructed.

The optimal method for selecting speaker locations includes the use of a real time spectrum analyzer (RTA) operated by an experienced system installer. An uncompromising installation would take into consideration the floor, wall and ceiling coverings, the type and placement of furniture and can even include the architectural design of the room and its construction materials. The frequencies reproduced by the PS112 Powered Subwoofer are non-directional. The PS112 does not have to be placed aiming directly at the listener; however, it will sound best located toward the front of the room and away from corners. Refer to figure 2.

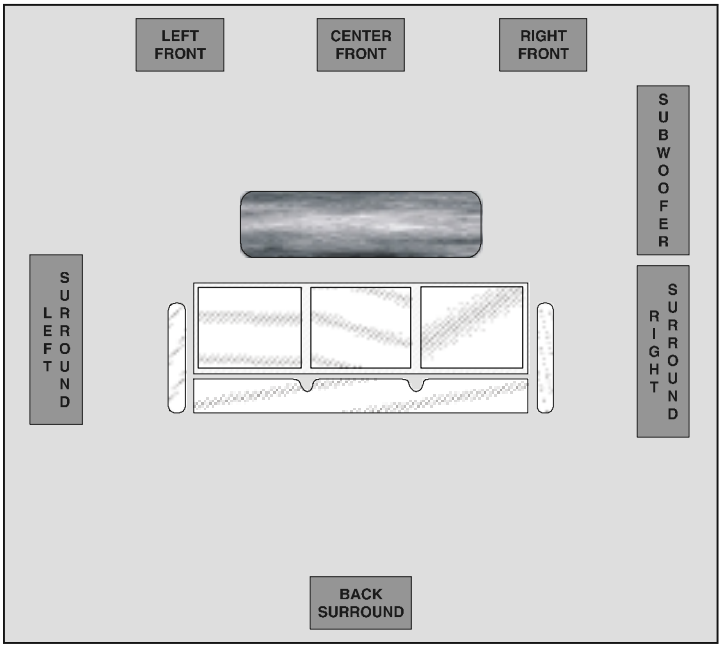
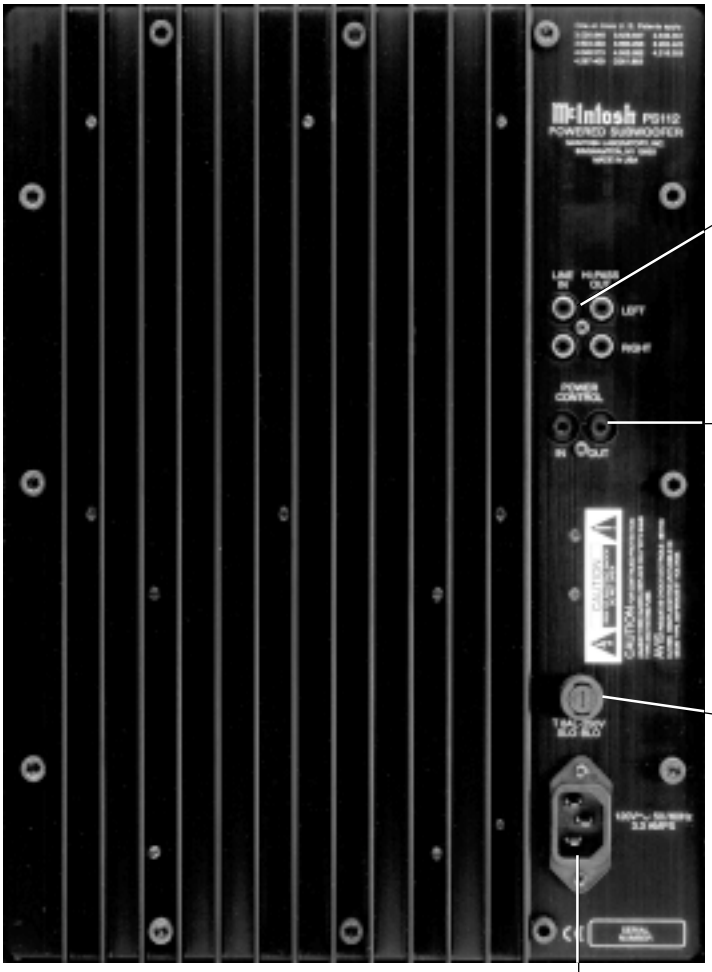


Figure 2



LINE IN Jacks accept signal from output of a control center and the HI-PASS OUT Jacks send hi-pass filtered signals to an additional amplifier and speakers

POWER CONTROL IN receives turn on/off signals from a McIntosh component and the POWER CONTROL OUT sends the turn on/off signal to the next McIntosh component

Main Fuse holder, refer to information on the back panel of your PS112 to determine the correct fuse size and rating

Connect the PS112 power cord to a live AC outlet. Refer to information on the back panel to determine the correct voltage

How to Connect for Home Theater

The McIntosh PS112 Powered Subwoofer may be turned On or Off by two different methods. The preferred method is to utilize the Power Control Signal from a McIntosh A/V Control Center or Surround Decoder. If the Power Control Signal is not available, the PS112 has built-in signal-sensing circuitry which will automatically turn-on the subwoofer.

1. Connect a power control cable from the McIntosh A/V Control Center or Surround Decoder Power Control Out Jack to the McIntosh Power Amplifier Control In Jack.
2. Connect a power control cable from the McIntosh Power Amplifier Out Connector to the McIntosh PS112 POWER CONTROL IN Jack.

   Note: If two or more McIntosh PS112 Powered Subwoofers are being used in the same system, connect the POWER CONTROL OUT from the first PS112 to the next PS112 POWER CONTROL IN Jack.
3. Connect an audio cable from the McIntosh A/V Control Center or Surround Decoder Subwoofer Out to the McIntosh PS112 RIGHT or LEFT LINE IN.

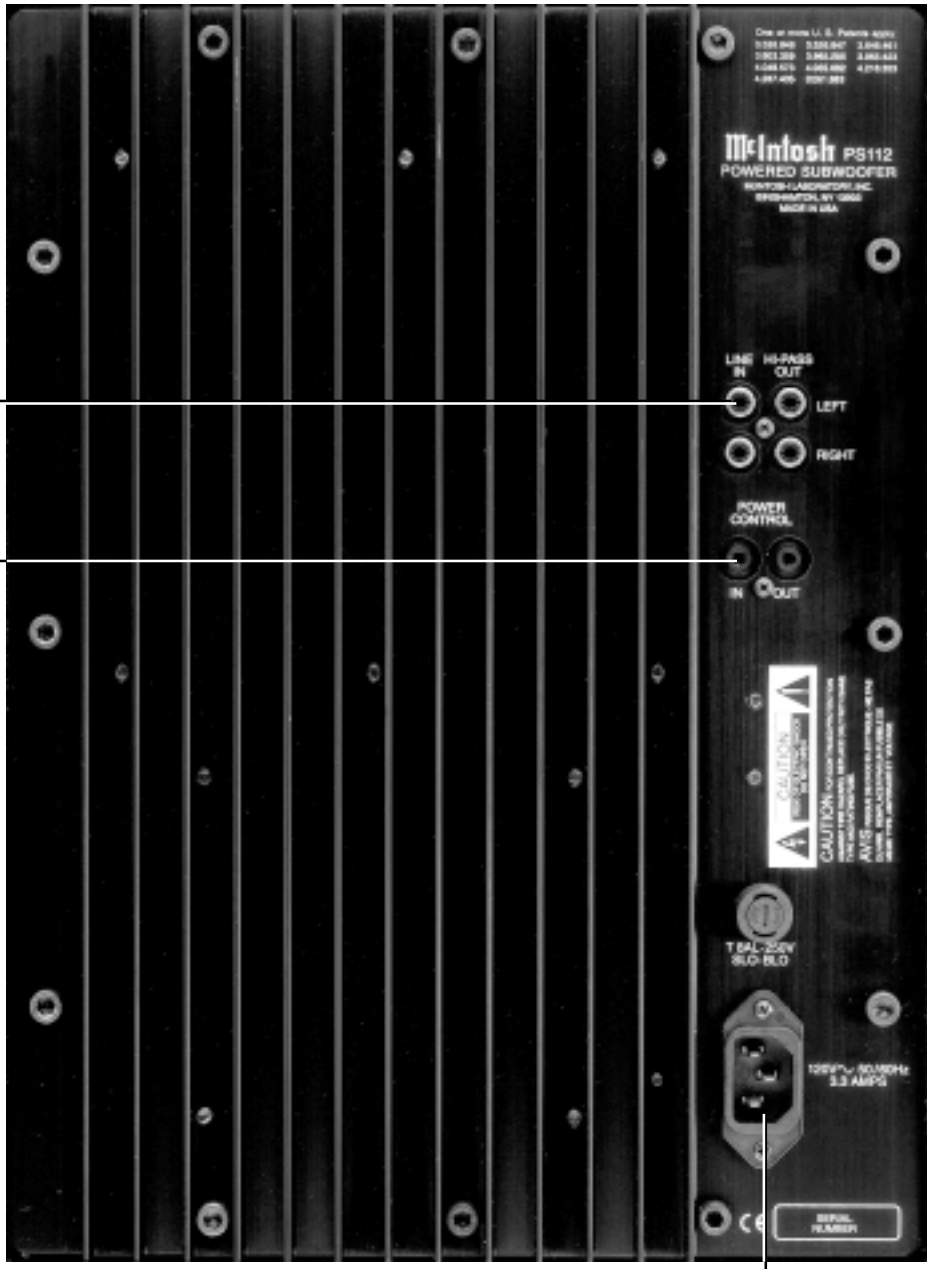
   Notes: 1. If two or more McIntosh PS112 Powered Subwoofers are being used in the same system, use a "Y" Adapter to connect audio cables from the McIntosh A/V Control Center or Surround Decoder Subwoofer Out to the McIntosh PS112 LINE IN on both subwoofers.

   2. The PS112's Power Control will function with 5 to 20 volts applied to the Power Control Input. Use a 1/8 inch stereo mini phone plug to connect to the Power Control Input.

   3. If the input signal is insufficient for proper system balance, connect the cable from the McIntosh A/V Control Center or Surround Decoder Subwoofer Out to a "Y" adapter and connect the "Y" adapter outputs to both the LEFT and RIGHT LINE IN Jacks. This will increase the input gain of the PS112 by 6dB.
4. Connect the PS112 power cord to an active AC outlet.

McIntosh A/V Control Center

McIntosh Six Channel Power Amplifier

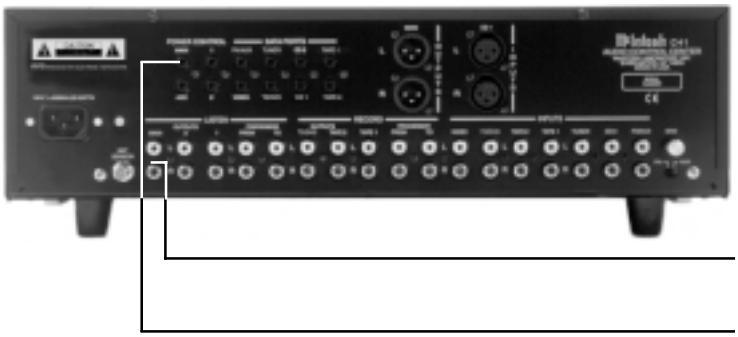

McIntosh PS112
POWERED SUBWOOFER
LINE IN
HI-PASS OUT
LEFT
RIGHT
POWER CONTROL
IN
OUT
CAUTION
T 6AL 250V
SLO-BLO
To AC
Outlet

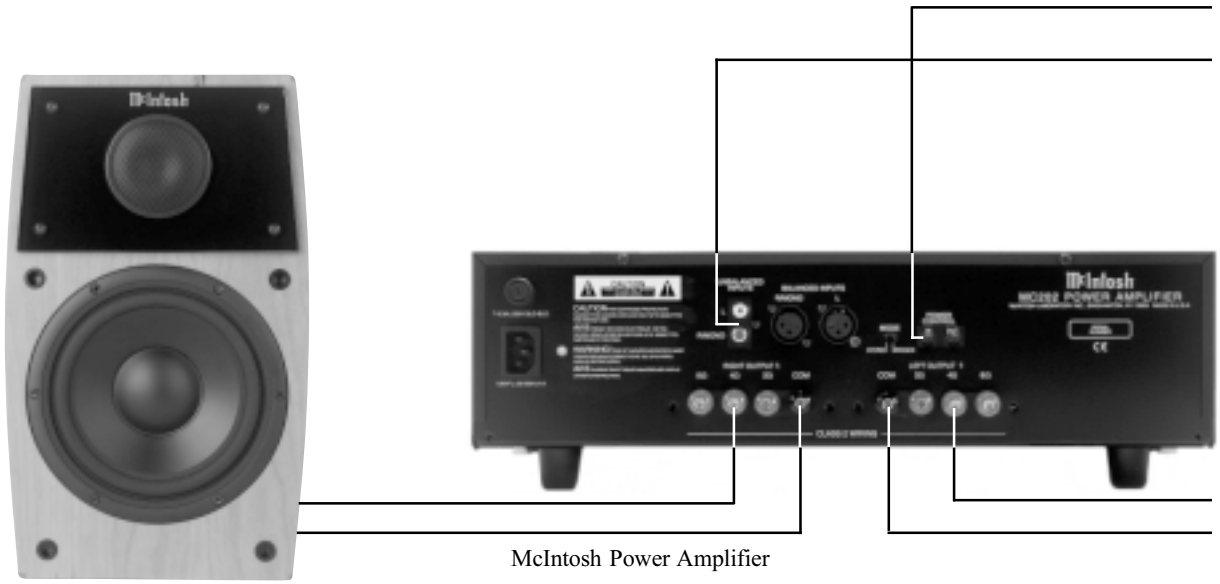
How to Connect for Stereo

The McIntosh PS112 Powered Subwoofer may be turned On or Off by two different methods. The preferred method is to utilize the Power Control Signal from a McIntosh Audio Control Center or Preamplifier. If the Power Control Signal is not available, the PS112 has built-in signal-sensing circuitry which will automatically turn-on the subwoofer.

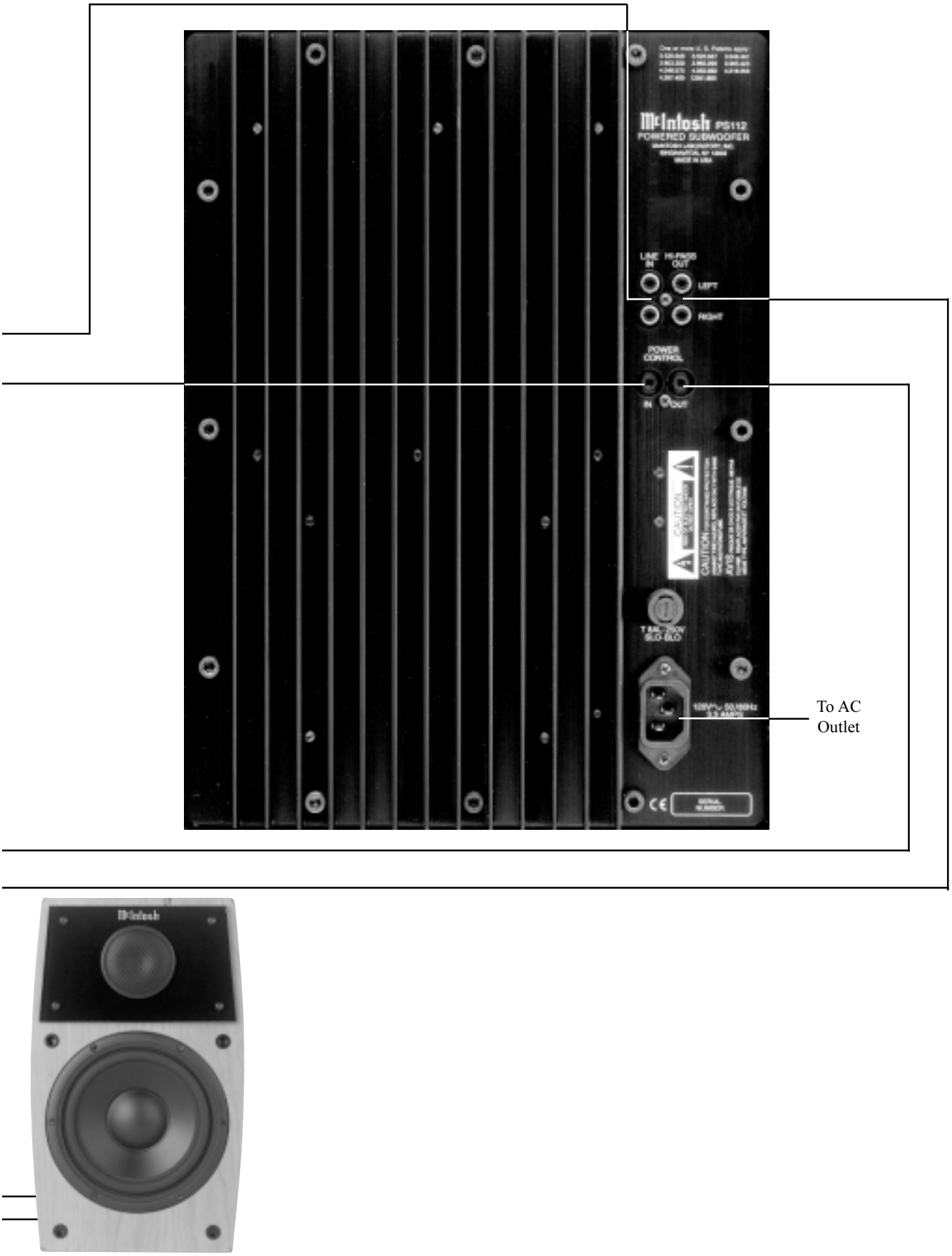
1. Connect a power control cable from the McIntosh Audio Control Center or Preamplifier Power Control Out Jack to the McIntosh PS112 POWER CONTROL IN Jack.
2. Connect a power control cable from the McIntosh PS112 POWER CONTROL OUT Jack to the McIntosh Power Amplifier Power Control In Jack.
   Note: If two or more McIntosh PS112 Powered Subwoofers are being used in the same system, connect the POWER CONTROL OUT from the first PS112 to the next PS112 POWER CONTROL IN Jack, and then on to the McIntosh Power Amplifier Power Control Jack.
3. Connect an audio cable from the McIntosh Audio Control Center or Preamplifier Main Outputs to the McIntosh PS112 LEFT and RIGHT LINE IN Jacks.
   Notes: If two or more McIntosh PS112 Powered Subwoofers are being used in the same system, use a "Y" Adapter to connect audio cables from the McIntosh Audio Control Center or Preamplifier Main Output to the McIntosh PS112 LINE IN on both subwoofers.
4. Connect an audio cable from the McIntosh PS112 LEFT and RIGHT HI-PASS OUT Jacks to the McIntosh Power Amplifier Left and Right Input Jacks.
5. Connect the PS112 power cord to an active AC outlet.

McIntosh Audio Control Center





McIntosh Power Amplifier


McIntosh PS112
POWERED SUBWOOFER
LINE IN
HI-PASS OUT
LEFT
RIGHT
POWER CONTROL
IN
OUT
To AC Outlet

BASS ENHANCE boosts low frequency bass when set to VIDEO

STANDBY LED indicates the unit is not active and is ready to accept a power control command

POWER GUARD LED lights when the amplifier POWER GUARD circuit activates

The ON LED indicates when the amplifier is on

LEVEL Control allows adjustment of acoustic output to balance with the other loudspeakers

SUB FREQUENCY Filter selects the low frequencies sent to the PS112's Power Amplifier

PHASE reversing switch to help avoid phase cancellation

HI PASS FREQUENCY Filter selects the lowest of the frequencies sent to the HI PASS OUT Jacks

POWER Switch Turns AC power On/Off

How to Operate the PS112 in Home Theater

Level Control
Start with the LEVEL CONTROL in the center position and perform the system level calibration on the A/V Control Center or Surround Decoder for the subwoofer level. If the subwoofer level can not be set, adjust the PS112's LEVEL CONTROL to provide adequate range during calibration.

Bass Enhance
Set the BASS ENHANCE Switch to VIDEO to add a low frequency bass boost to enhance the impact of low frequency sound effects.

Sub Frequency
When the PS112 is used with a discrete Sub Out from a Home Theater Control Center, the SUB FREQUENCY Control should be set to OUT, as the signal should contain only low frequency information.

Hi-Pass Frequency
When the PS112 is used with a discrete Sub Out from a Home Theater Control Center, the HI-PASS FREQUENCY Control is not used.

Phase
The PHASE Switch sets the acoustic output phase of the PS112 to either 0 or 180 degrees relative to its input. This switch is to help avoid phase cancellation (characterized by a loss of bass information) between the PS112 and any other low frequency producing speaker in the system. Careful listening with this circuit switched to 0 and then listening with it switched to 180 will help you determine if this effect will be beneficial to the system. Set the switch to the desired bass.

Power
When the POWER SWITCH is set to the OFF position, the PS112 can not be turned on by a Remote Power Conrol input or audio input signal sensing.

Remote Power Control
The turn-on method uses a turn-on signal from a McIntosh Control Center or Preamplifier. When a Power Control Cable is connected between the Control Center or Preamplifier and the PS112, the signal-sensing circuit is disabled and the PS112 will always be on whenever the Control Center or Preamplifier is on. The PS112 also has a Power Control OUTput jack for triggering additional subwoofers or other McIntosh component(s).

The PS112 utilizes signal-sensing circuitry for its turn-on method. In this mode, the PS112 turns on when a music signal is detected at the Line INput(s). A time delay of thirty minutes is incorporated in the circuit to prevent the PS112 from turning off during a music or movie passage where there is little low frequency activity. This turn-on method is beneficial when running an additional Power Control Cable is not feasible.

How to Operate the PS112 in Stereo

Level Control
Start with the LEVEL CONTROL in the center position and adjust until the subwoofer volume is matched to the rest of the system when listening to a full-range source.

Bass Enhance
Set the BASS ENHANCE Switch to MUSIC, turning the BASS ENHANCE effect off. Careful listening with this circuit switched to MUSIC and then listening with it switched to VIDEO will help determine if this effect will be beneficial to the system.

Sub Frequency
When used with a full-range input, the SUB FREQUENCY Control should be set to the highest frequency the subwoofer is to reproduce.

Hi-Pass Frequency
When used with a full-range input, the PS112 could be used with a preamplifier, a separate amplifier and a pair of loudspeakers. The HI-PASS FREQUENCY Control should be set to the lowest frequency the left and right loudspeakers are to reproduce.

Phase
The PHASE Switch sets the acoustic output phase of the PS112 to either 0 or 180 degrees relative to its input. This switch is to help avoid phase cancellation (characterized by a loss of bass information) between the PS112 and any other low frequency producing speaker in the system. Careful listening with this circuit switched to 0 and then listening with it switched to 180 will help you determine if this effect will be beneficial to the system. Set the switch to the desired bass.

Remote Power Control
The turn-on method uses a turn-on signal from a McIntosh Control Center or Preamplifier. When a Power Control Cable is connected between the Control Center or Preamplifier and the PS112, the signal-sensing circuit is disabled and the PS112 will always be on whenever the Control Center or Preamplifier is on. The PS112 also has a Power Control OUTput jack for triggering additional subwoofers or other McIntosh component(s).

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Specifications

Power Output
400 Watts Sine Wave Continuous Power

Dynamic Headroom
1.8dB

Input Sensitivity
0.4V for Rated Output

Total Harmonic Distortion
Maximum Total Harmonic Distortion at any power level from 250 milliwatts to rated power output is 0.05%

A-Weighted Signal To Noise Ratio
118dB Below Rated Output

Input Impedance
15,000 ohms

Maximum Input Signal
9V

Power Requirements
100 Volts, 50/60Hz at 4.0 amps
110 Volts, 50/60Hz at 3.6 amps
120 Volts, 50/60Hz at 3.6 amps
220 Volts, 50/60Hz at 1.8 amps
230 Volts, 50/60Hz at 1.8 amps
240 Volts, 50/60Hz at 1.8 amps

Low Pass Filter
40 - 120Hz Variable with the front panel control

Hi-Pass Filter
40 - 120Hz Variable with the front panel control

Level Control
Variable Level Control with the front panel control

Power Control In
5 - 20 VDC Trigger

Power Control Out
5 VDC

Enclosure Configuration
Front Firing Flared Port Design

Maximum Sound Pressure Level
115dB

Driver Complement
12 inch LD/HP Woofer

Standard Finish
Black Ash, Natural Cherry, Red Cherry

Premium Finish
Rosewood Gloss, Piano Black

Dimensions
22-1/2 inches (57.15cm) Height, 15 inches (38.1cm) Width, 19 inches (45.72cm) Depth (including Grille)

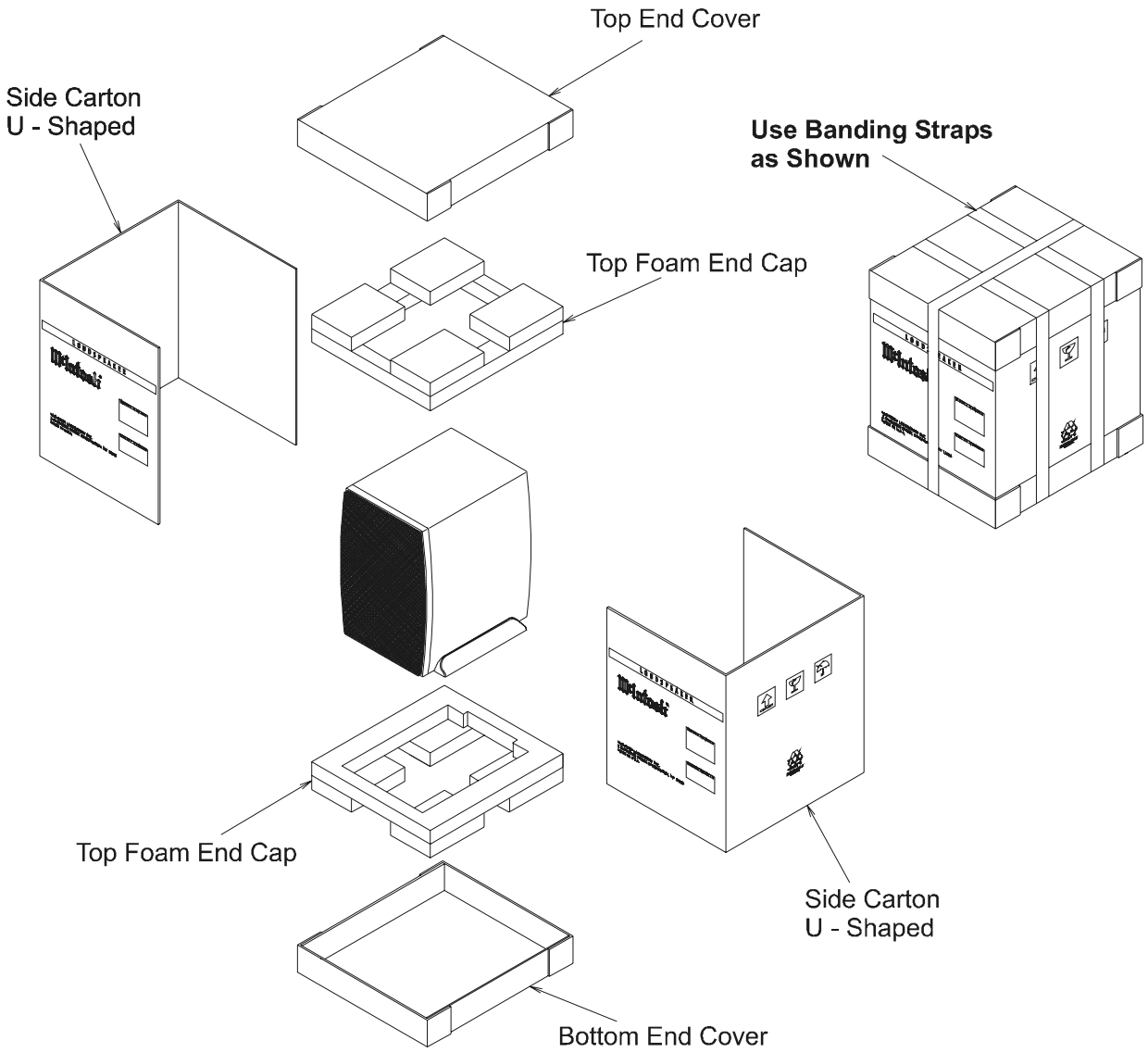
Weight
99 lb. (44.9kg) net, 119 lb (54kg) in shipping carton

Packing Instructions

In the event it is necessary to repack the equipment for shipment, the equipment must be packed exactly as shown below. Use banding straps to make sure box is held together securely.

Use the original shipping carton and parts only if they are in good servicable 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
2	034177	End Cover Top/Bottom
2	034153	Side Carton U - Shaped
1	034154	Top Foam End Cap
1	034155	Bottom Foam End Cap



McIntosh®

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Binghamton, NY 13903

McIntosh Part No. 040739