



Loudspeaker System



XRT1K Owner's Manual


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 non-abrasive dry soft cloth.
7. Install in accordance with the manufacturer's instructions.
8. **This Loudspeaker is capable of producing extremely high sound pressure levels, even when connected to amplifiers of moderate power output. User caution is advised. Ear protection is recommended when playing at high volumes as continued exposure to high sound pressure levels can cause permanent hearing impairment or loss. The use of a Sound Level Pressure Meter will greatly aid in determining when high volume levels are occurring.**
9. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
10. Only use attachments/accessories specified by the manufacturer.
11. 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. 
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, 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.
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. **WARNING: When this Loudspeaker is connected to an amplifier that is Powered On, the connection terminals may have hazardous live voltages present with a risk of electric shock.**
15. **CAUTION: When this Loudspeaker is assembled it weighs 168 pounds (76.2 kgs). It requires three or more persons to safely move the Loudspeaker.**

Thank You

Your decision to own this McIntosh XRT1K Loudspeaker System 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 listening 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: 607-724-0549

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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General Information

Caution: The XRT1K weight is 168 pounds (76.2kg). It requires three or more persons to safely handle the Loudspeaker System.

- Loudspeaker Cables of adequate size are important to ensure that there will be no significant 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 the Loudspeaker Cables are 50 feet (38.1m) or less, use at least 12 Gauge (AWG) wire size or larger.
If the Loudspeaker Cables are 100 feet (76.2m) or less, use at least 10 Gauge (AWG) wire size or larger.*
- For additional connection information, refer to the owner's manual(s) for any component(s) connected to the XRT1K Loudspeaker.*
- The XRT1K's built-in speaker protection incorporates five automatic resetting solid-state devices in the crossover networks. One protects the tweeters, one for the midranges and three for the woofers. The protection allows a certain amount of overdrive but extended periods will trigger protection. If an obvious lack of high, mid or low frequencies is noticed, the Protection Device may have activated. These devices will automatically reset when the volume level is reduced significantly and kept low until the output of the affected Loudspeaker Element returns to normal.*
- When the XRT1K Loudspeaker System is driven by more than one amplifier, the output levels of the different amplifiers connected to the Loudspeaker System must be adjusted to achieve a proper balance between the low, midrange and high frequencies reproduced. This adjustment is best achieved through the use of audio test equipment operated by a qualified installer.*

Introduction

McIntosh Acoustic Engineers have further refined the concept of line source column in the XRT1K Loudspeaker to provide superior sound reproduction in a full range system. It uses the same acoustic technology found in the famous XRT2K Column Loudspeakers. The technology has been refined over the years and is now the 6th generation of the design and provides superior quality sound reproduction in a full range system.

The High Frequency Section utilizes a patented Column Design¹ with multiple three-quarter inch Titanium Dome Tweeters and two inch Midrange Inverted Titanium Dome Drivers. Refer to figures 1 and 2.

Since the audio power fed to a column is distributed among all the drivers, each driver does not have to work as hard, resulting in greater power handling capability and a dramatic reduction in distortion. The Sound Waves from the Column produce a Cylindrical Wave Front with a stable symmetrical horizontal sound dispersion to minimize undesirable floor and ceiling reflections that could detract from a stable sound image. In the illustration the Loudspeaker on the left side produces a Cylindrical Wave Front and the Loudspeaker on the right side produces a conventional Spherical Wave Front. Refer to figure 3.

The Low Frequency Section of the System consists of two 10 inch Woofers. They have a large magnet assembly and long cone excursions with very low levels of harmonic distortion and frequency response down to 16Hz. Refer to figure 4. The Woofer also incorporates McIntosh's Patented LD/HP² Magnetic Circuit Design. Finite Element Analysis and testing resulted in a design concept which utilizes a pair of aluminum shorting sleeves in the magnetic circuit. Refer to figure 5. The sleeves virtually elimi-

nate the negative influence of the fluctuating voice coil field on the permanent magnet field. This results in lower distortion due to more linear magnetic flux in the voice coil gap. Refer to figure 6. Additional benefits are less volume compression due to improved heat transfer through the sleeves and a cooler operating voice coil. Both measurements, as well as critical listening, reveal ten times less distortion than previous designs. A good example of this low distortion is incredible smoothness and clarity in the reproduction of the human voice.

The Crossover Network used in the XRT1K Loudspeaker System is designed to ensure an even frequency

response over the entire audible range. The Network utilizes both Second and Third Order design utilizing Capacitors and Inductors with high current capacity. Refer

to figures 7, 8 and 9. There are two different types of low loss (DCR) Inductors in the network, each one chosen not to exhibit any core saturation even at high power levels. This prevents the addition of distortion to the music at any frequency. The Capacitors used include low loss (ESR) Polypropylene and Mylar types. The Network also utilizes

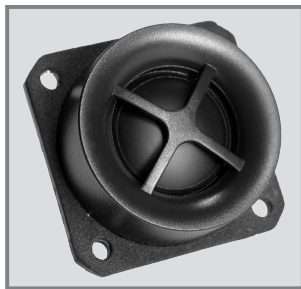


Figure 1



Figure 2

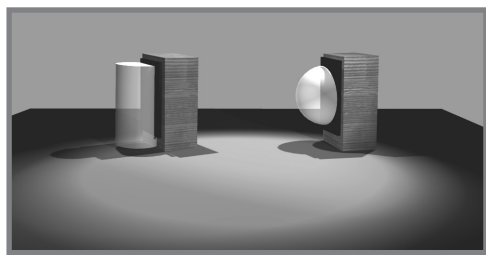


Figure 3



Figure 4



Figure 5

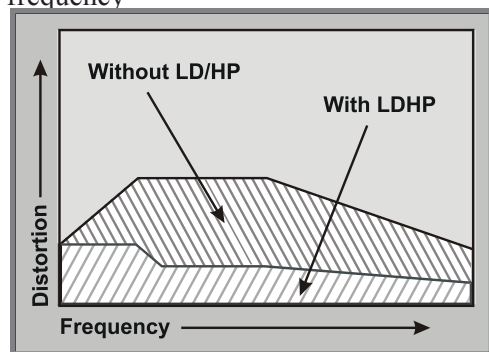


Figure 6

¹COLUMN Pat. No. 4,267,405

²LD/HP Pat. No 5,151,943

Performance Features

• Patented LD/HP Technology

The McIntosh Low Frequency Loudspeaker Elements feature the patented LD/HP Magnetic Circuit Design. This design, when compared to conventional Loudspeaker Elements, reduces distortion significantly. It also increases power handling and efficiency.

• Neodymium-Iron-Boron Alloy Magnets

The 44 two inch Midranges and 28 three-quarter inch Dome Tweeters all use this Alloy. The Neodymium-Iron-Boron Alloy has the highest flux density per unit of volume and helps to keep the Column weight to a minimum.

• Low Harmonic and Intermodulation Distortion

The XRT1K Loudspeaker System is capable of reproducing the full dynamic range of a symphony orchestra with very low audible distortion of any kind.

• Large Long Low Frequency Port

The XRT1K Loudspeaker System utilizes a very large 6 inch diameter port to increase bass output, reduce distortion and improve the overall efficiency of the Loudspeaker.

• High Power Handling

The Loudspeaker Elements and Crossover Components of the XRT1K are all chosen for use with powerful amplifiers up to 1,200 watts.

• Superior Imaging

Locating the Tweeters between the two rows of Midranges generates a symmetrical horizontal polar response for superior imaging.

• Versatile Operation and Placement

In addition to the regular connections, the XRT1K Loudspeaker System provides separate connections for Bi-Amplification and Tri-Amplification hookups, as well as Bi-Wiring and Tri-Wiring.

• Extruded Column

The Column enclosure is extruded thick aluminum construction with non-parallel internal sides and is given a High Gloss Black Piano Type Finish.

• Gold Plated Input Connectors

The XRT1K input connectors are gold plated for superior corrosion resistance and high electrical conductivity.

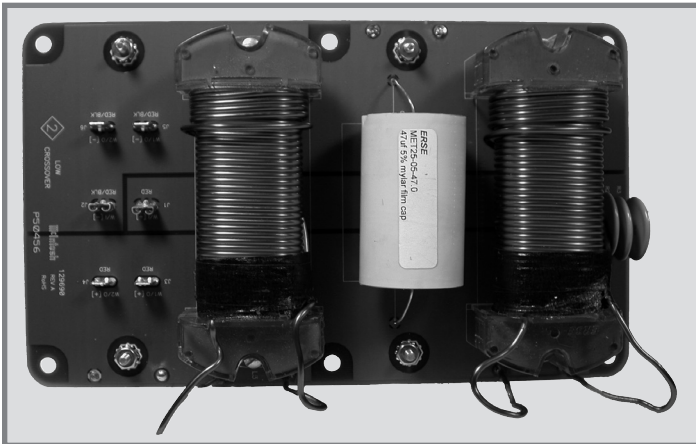


Figure 7



Figure 8

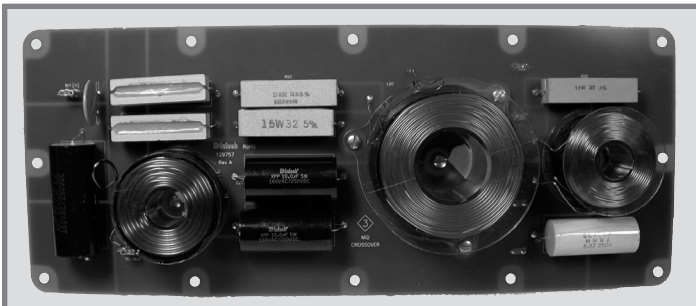


Figure 9

self resetting high current Poly-Switches to provide an extra measure of protection.

The enclosure is an important part of the XRT1K Loudspeaker System. The Loudspeaker System utilizes a massive extruded aluminum enclosure that houses the Loudspeaker Drivers. Refer to figure 10. It also has multiple front to back internal braces to form a dampened rigid Column Structure. The Column's small footprint allows for a variety of different placements in a room.

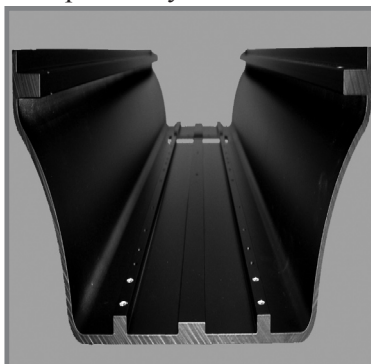
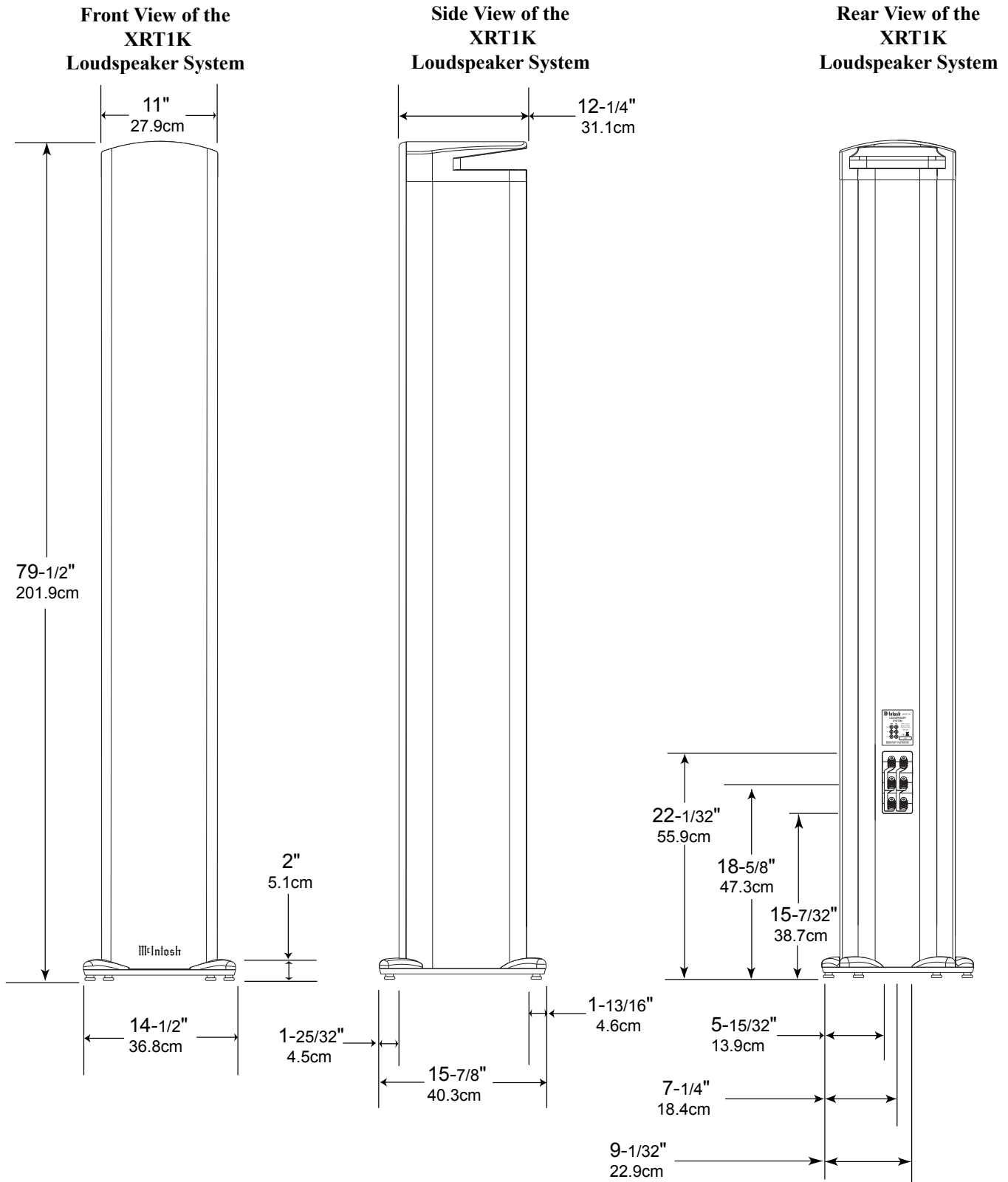


Figure 10

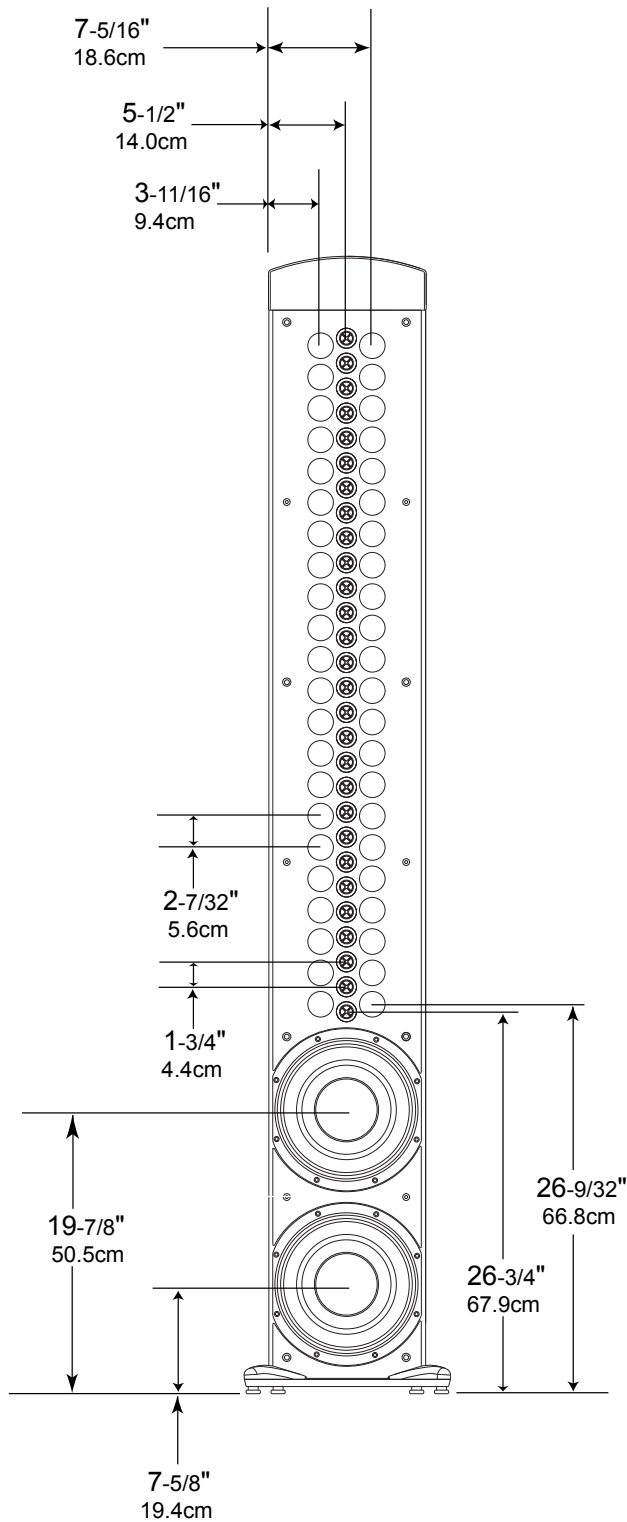


Dimensions

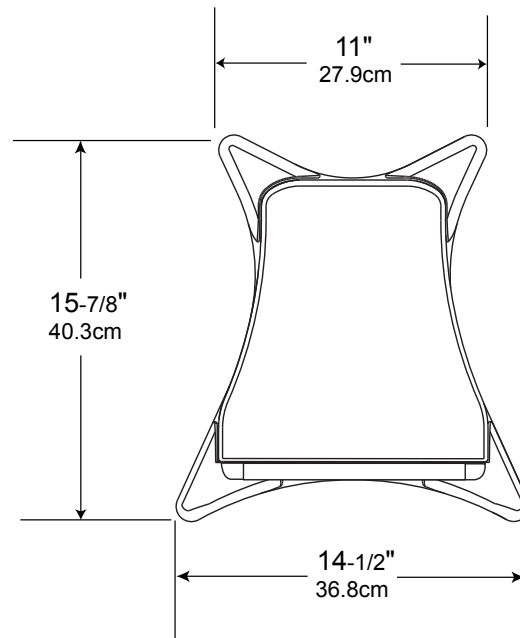
The following dimensions can assist in determining the best location for your XRT1K Loudspeaker System.



**Front View of the
XRT1K
Loudspeaker System**



**Top End View of the
XRT1K
Loudspeaker System**



Note: The base is an integral part of the Loudspeaker Enclosure and is not removable for custom installation

Installation

Loudspeaker Placement

Loudspeaker placement in a room can greatly affect performance. The XRT1K Loudspeaker is designed for both Music and Home Theater Systems. The optimal method for selecting speaker locations includes the use of a real time spectrum analyzer 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. In those instances where placement in the room is fixed, an environmental equalizer may be needed to restore proper musical balance.

Placement near a wall, corner, floor, ceiling or any intersecting surfaces will reinforce or diminish some bass frequencies. The bass frequencies that are altered by placement in a particular location is dependent on the dimensions of the room. If professional measurement equipment is not available, listen to the Loudspeaker. Try various locations by listening to music containing continuous bass and finding a location where there is an over all musical balance in the sound and the bass content is does not predominate.

The XRT1K Column's Smooth Frequency Response may be altered by a large object(s) located in the sound waves path or by locating the column too close to a side wall. There should be an unobstructed area in front of the column of at least 30 degrees either side from the center axis for the best performance. Refer to figure 1.

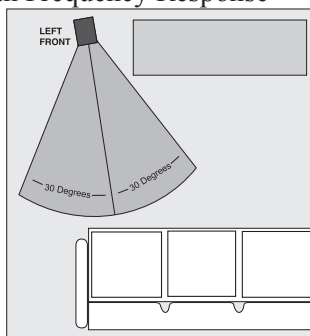


Figure 1

Locating Loudspeakers for use in Home Theater

In a Home Theater application, the placement of Left and Right Front Loudspeakers can be limited by such considerations as the size and location of the video monitor. The locating suggestions in the "for use in a Music System" section below can still be helpful as a starting place. Refer to figure 2.

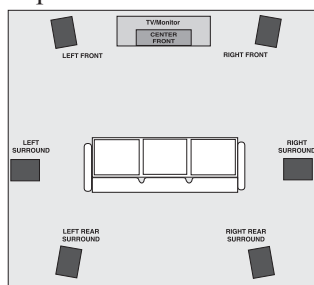


Figure 2

Locating Loudspeakers for use in a Music System

When used in a Music System the distance between the

Loudspeakers and the listener to the Loudspeakers should form an equilateral or an acute isosceles triangle. If the speakers are too far apart relative to the listener, some imaging can be lost. Refer to figure 3.

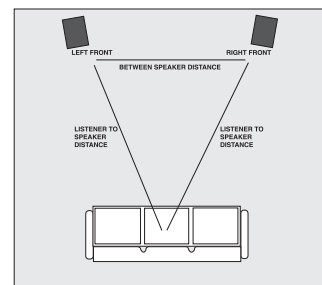


Figure 3

Unpacking the Loudspeaker

To protect the fine finish of the XRT1K Loudspeaker System during the installation process, it is advisable to prepare a suitable adjustment area. A freshly vacuumed carpeted area covered with a soft, clean fabric, such as a large bed linen or blanket would be suitable.

It is recommended that the Professionals at your McIntosh Dealer, who are skilled in all aspects of installation and operation, install the XRT1K Loudspeaker System and any associated audio equipment.

CAUTION: This Loudspeaker weighs 168 pounds (76.2 kgs). It requires three or more persons to safely handle the Loudspeaker.

1. Orient the XRT1K shipping carton with the arrows on the outside of the carton pointing upward.
2. Remove the banding material from the shipping carton and lift off the top of the shipping carton and set it aside.
3. Remove the Top Foam pieces from the Loudspeaker and lift up on the rear of the Loudspeaker and place it on the prepared working area. Refer to figure 4.
4. Stand the Loudspeaker upright and remove the Blue Protective Cloth Cover.
5. Place the Loudspeaker in the desired location. Retain the shipping carton, foam packing material and cloth cover for possible future use.

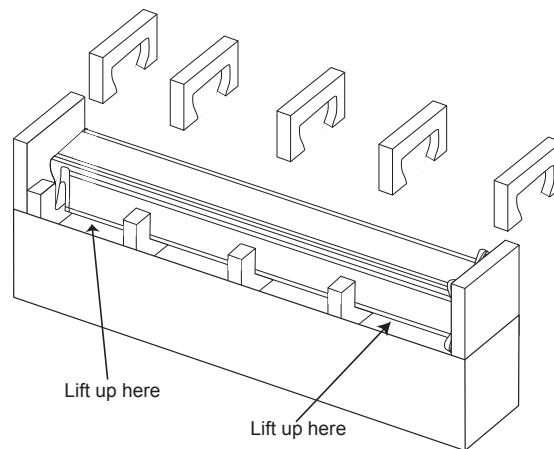


Figure 4

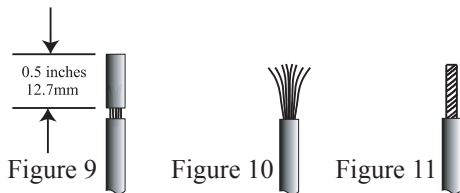
How to Connect using a single Amplifier

Caution: The AC Power Cord should not be connected to the Power Amplifier until after the Loudspeaker Connections have been made. Failure to observe this could result in Electric Shock.

1. Prepare Loudspeaker cables by choosing one of the methods below:

Bare wire cable ends:

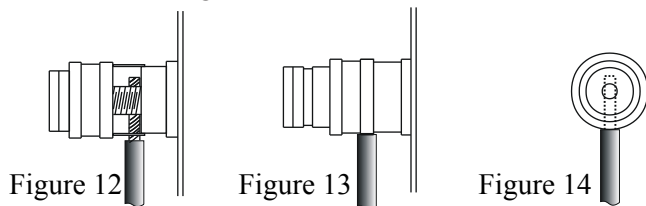
Carefully remove sufficient insulation from the cable ends, refer to figures 9, 10 & 11. If the cable is stranded, carefully twist the strands together as tightly as possible.



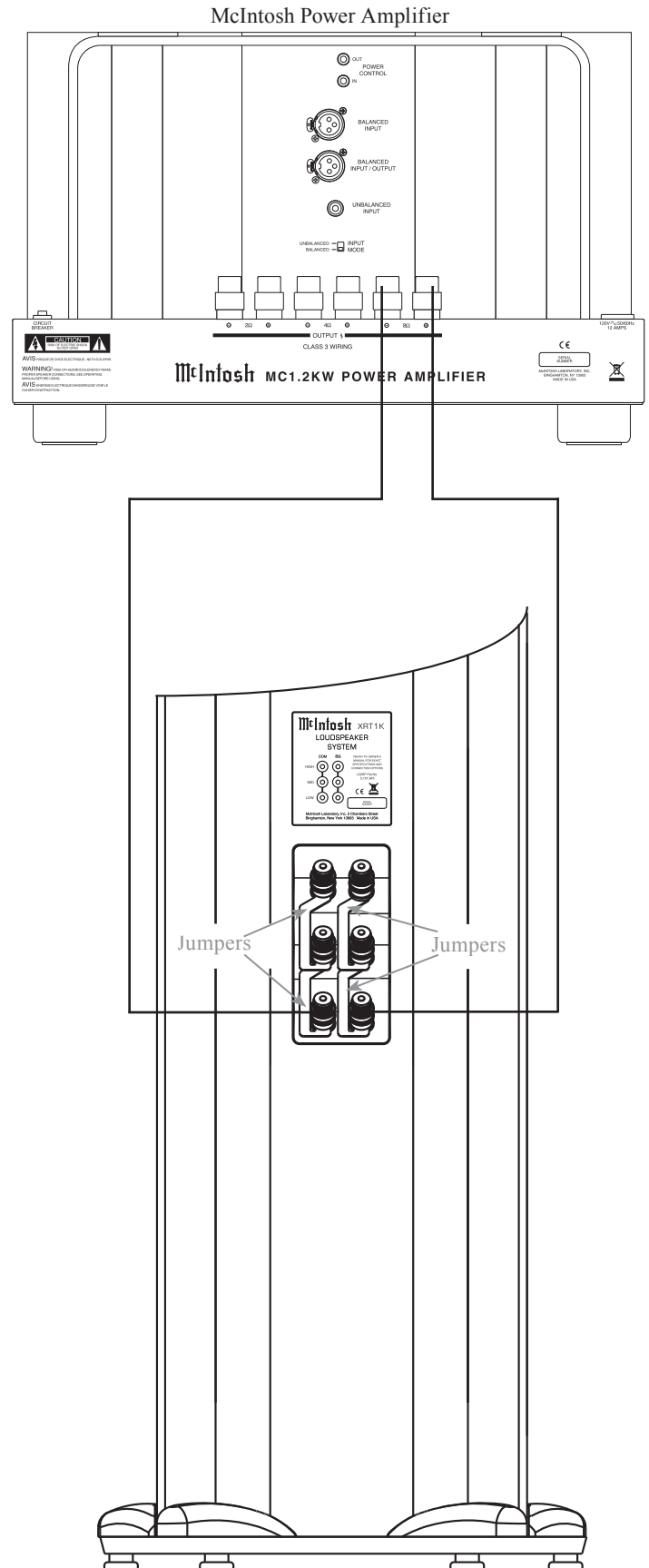
Note: If desired, the twisted ends can be tinned with solder to keep the strands together or attach spade lugs.

Spade lug or prepared wire connection:

Insert the spade lug connector or prepared section of the cable end into the terminal side access hole, and tighten the terminal cap until the cable is firmly clamped into the terminal so the wires cannot slip out. Refer to figures 12, 13 & 14.



2. Connect a Loudspeaker cable from the XRT1K LOW Frequency COM (-) Binding Post to the (-) Binding Post of the Power Amplifier.
 - Notes: 1. It is important to maintain the correct polarity at both ends of the Loudspeaker cables.*
 - 2. For proper operation the metal jumpers must be installed between the Loudspeaker Terminal Posts as illustrated.*
3. Connect a Loudspeaker cable from the XRT1K LOW Frequency 8Ω (+) Binding Post to the (8 ohm) Binding Post of the Power Amplifier.
4. Tighten all of the Loudspeaker and Amplifier Binding Posts.



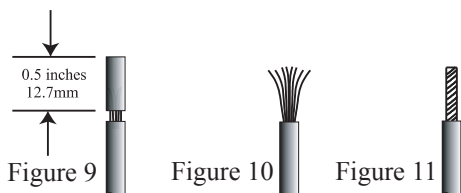
How to Connect using a two Amplifiers

Caution: *The AC Power Cord should not be connected to the Power Amplifier until after the Loudspeaker Connections have been made. Failure to observe this could result in Electric Shock.*

1. Prepare Loudspeaker cables by choosing one of the methods below:

Bare wire cable ends:

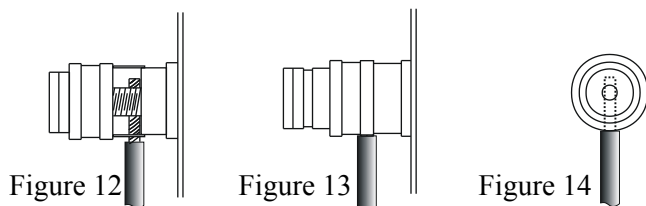
Carefully remove sufficient insulation from the cable ends, refer to figures 9, 10 & 11. If the cable is stranded, carefully twist the strands together as tightly as possible.



Note: If desired, the twisted ends can be tinned with solder to keep the strands together or attach spade lugs.

Spade lug or prepared wire connection:

Insert the spade lug connector or prepared section of the cable end into the terminal side access hole, and tighten the terminal cap until the cable is firmly clamped into the terminal so the wires cannot slip out. Refer to figures 12, 13 & 14.



2. Remove the metal jumper between the Loudspeaker LOW Frequency COM (-) Binding Post and MID Frequency COM (-) Binding Post.
3. Remove the metal jumper between the Loudspeaker LOW Frequency 8Ω (+) Binding Post and MID Frequency 8Ω (+) Binding Post.
4. Connect a Loudspeaker cable from the XRT1K LOW Frequency COM (-) Binding Post to the (-) Binding Post of the Power Amplifier number one.

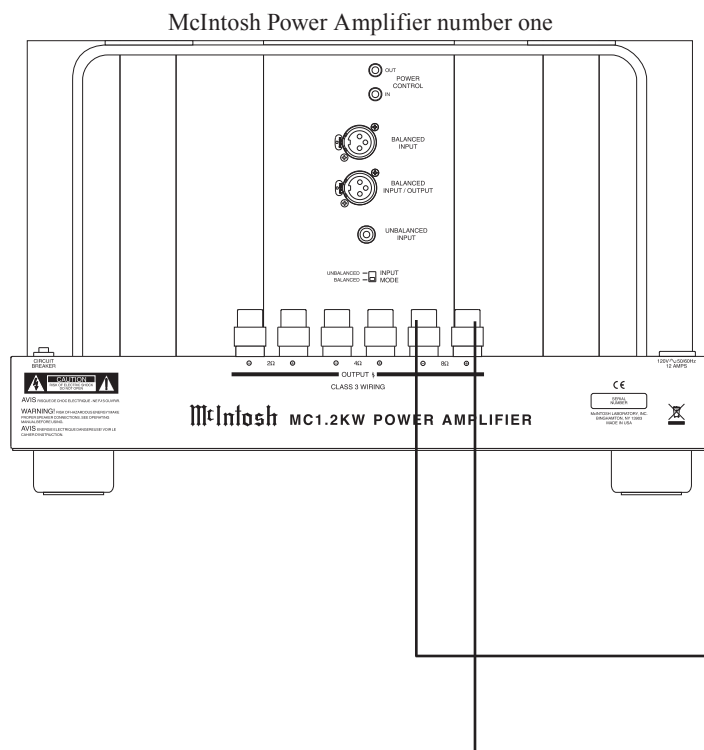
Notes: 1. It is important to maintain the correct polarity at both ends of the Loudspeaker cables.

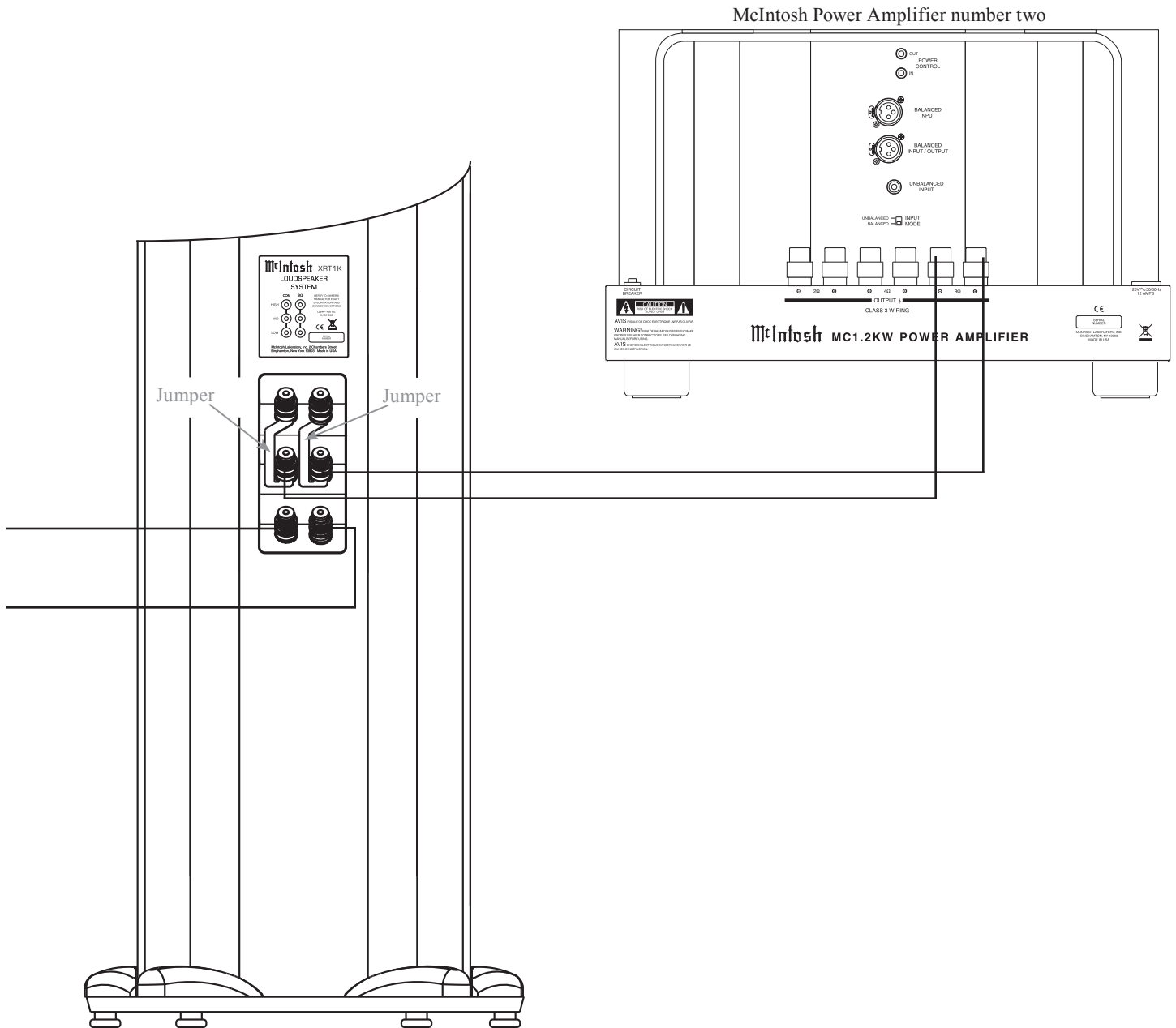
2. For proper operation the metal jumpers must be installed between the Loudspeaker Terminal Posts as illustrated.

5. Connect a Loudspeaker cable from the XRT1K LOW Frequency 8Ω (+) Binding Post to the (8 ohm) Binding

Post of the Power Amplifier number one.

6. Connect a Loudspeaker cable from the XRT1K MID Frequency COM (-) Binding Post to the (-) Binding Post of the Power Amplifier number two.
7. Connect a Loudspeaker cable from the XRT1K MID Frequency 8Ω (+) Binding Post to the (8 ohm) Binding Post of the Power Amplifier number two.
8. Tighten all of the Loudspeaker and Amplifier Binding Posts.





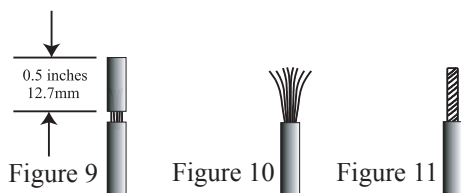
How to Connect using a three Amplifiers

Caution: *The AC Power Cord should not be connected to the Power Amplifier until after the Loudspeaker Connections have been made. Failure to observe this could result in Electric Shock.*

1. Prepare Loudspeaker cables by choosing one of the methods below:

Bare wire cable ends:

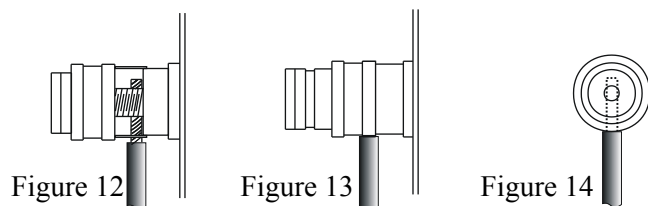
Carefully remove sufficient insulation from the cable ends, refer to figures 9, 10 & 11. If the cable is stranded, carefully twist the strands together as tightly as possible.



Note: If desired, the twisted ends can be tinned with solder to keep the strands together or attach spade lugs.

Spade lug or prepared wire connection:

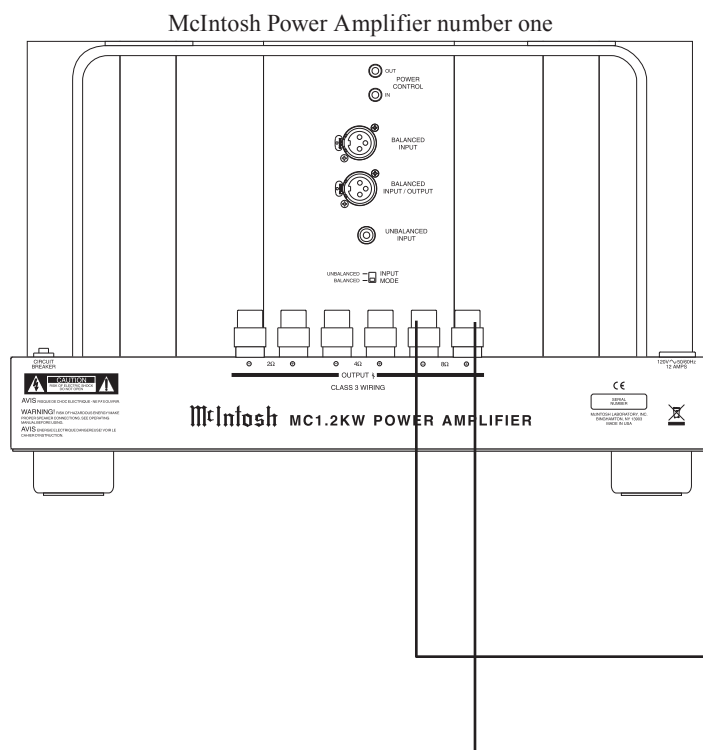
Insert the spade lug connector or prepared section of the cable end into the terminal side access hole, and tighten the terminal cap until the cable is firmly clamped into the terminal so the wires cannot slip out. Refer to figures 12, 13 & 14.

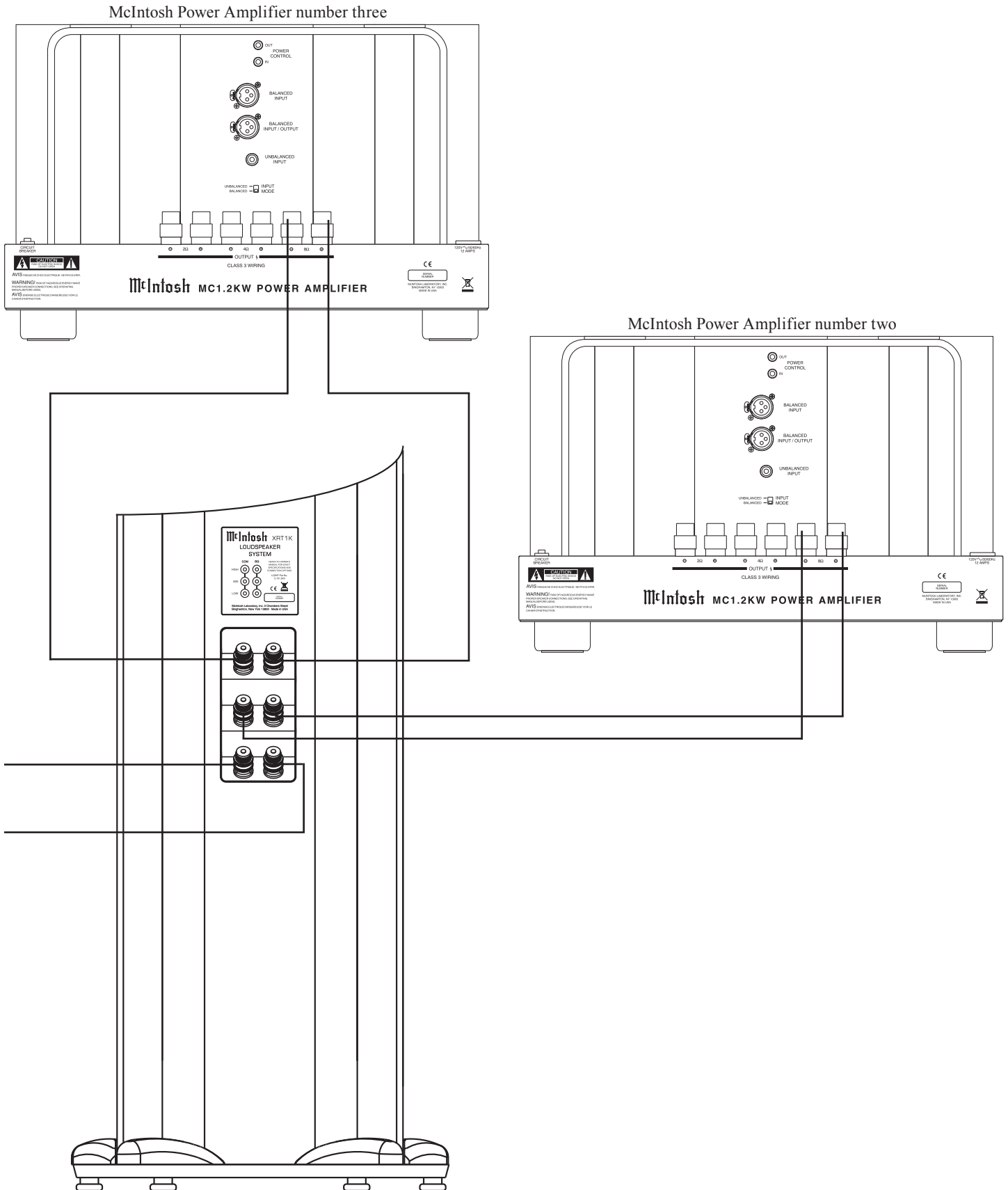


2. Remove all four metal jumpers between Loudspeaker Binding Posts.
4. Connect a Loudspeaker cable from the XRT1K LOW Frequency COM (-) Binding Post to the (-) Binding Post of the Power Amplifier number one.

Note: It is important to maintain the correct polarity at both ends of the Loudspeaker cables.
5. Connect a Loudspeaker cable from the XRT1K LOW Frequency 8Ω (+) Binding Post to the (8 ohm) Binding Post of the Power Amplifier number one.
6. Connect a Loudspeaker cable from the XRT1K MID Frequency COM (-) Binding Post to the (-) Binding Post of the Power Amplifier number two.
7. Connect a Loudspeaker cable from the XRT1K MID Frequency 8Ω (+) Binding Post to the (8 ohm) Binding Post of the Power Amplifier number two.

8. Connect a Loudspeaker cable from the XRT1K HIGH Frequency COM (-) Binding Post to the (-) Binding Post of the Power Amplifier number three.
9. Connect a Loudspeaker cable from the XRT1K HIGH Frequency 8Ω (+) Binding Post to the (8 ohm) Binding Post of the Power Amplifier number three.
10. Tighten all of the Loudspeaker and Amplifier Binding Posts.







Specifications

System Driver Complement

Two 10 inch LD/HP Woofers
Forty-four 2 inch Titanium Inverted
Dome Midranges
Twenty-eight 3/4 inch Titanium Dome Tweeters

Impedance

8 ohms Nominal

Frequency Response

16Hz - 45kHz

Sensitivity

88dB (2.8V/1m equivalent)

Crossover Frequencies

250Hz
2,000Hz

Power Handling

1,200 Watts Maximum

General Specifications

Finish Enclosures

High Gloss Black

Finish Grille

Black Knit Cloth with High Gloss Black Trim

Overall Dimensions

Height is 79-1/2 inches (201.9cm) including feet
Width is 14-1/2 inches (36.8cm)
Depth is 15-7/8 inches (40.3cm)

Weight

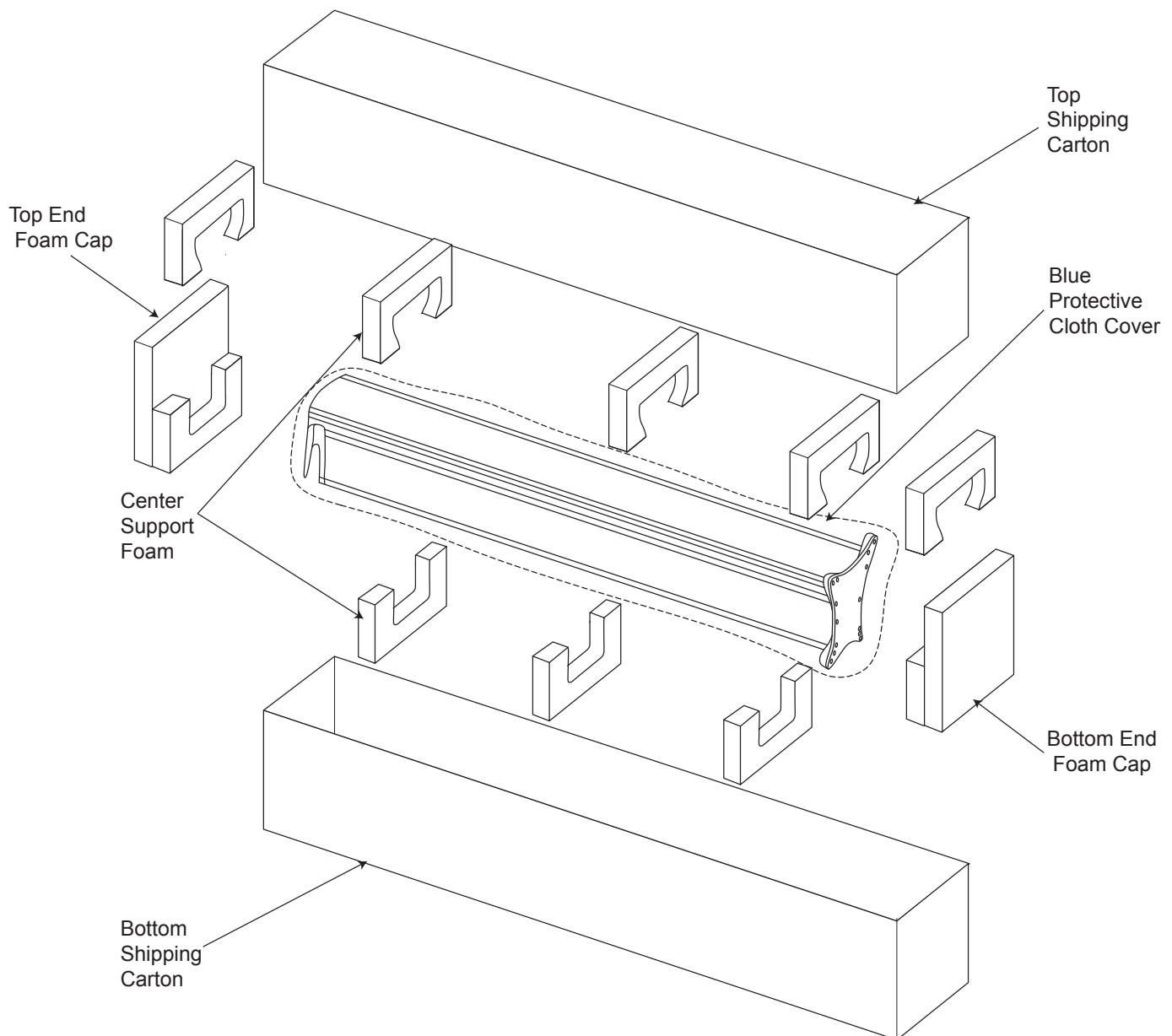
168 pounds (76.2 kg) net
241 pounds (109.3kg) in shipping carton

Packing Instructions

In the event it is necessary to repack the equipment for shipment, the equipment must be packed exactly as shown below. To protect the finish of the Loudspeaker it is advisable to place it in the original protective cotton blue cover before placing it into the shipping carton.

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	034376	Top shipping carton
1	034375	Bottom shipping carton
1	034371	Top end foam cap
1	034369	Bottom end foam cap
3	034370	Center support foam
1	034413	Blue Protective cloth cover





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