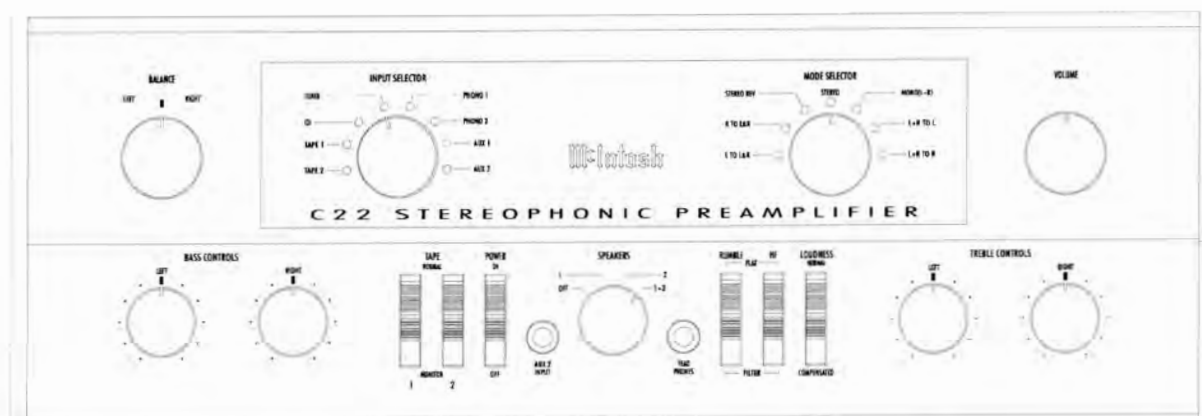




OWNER'S MANUAL

Stereo Preamplifier



C22



Thank You, Please Take A Moment, Customer Service and Table of Contents

Thank You

For your decision to own this McIntosh C22 Stereo Preamplifier 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 C22. This will ensure that you receive all the performance benefits this equipment can offer you, and that it will become a highly valued part of your home entertainment system.

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 serial number is located on the rear panel of the equipment. The spaces below have been provided for you to record that information:

Serial Number:

Purchase Date:

Dealer Name:

Customer Service

If at any time you have questions about your C22 Preamplifier, please contact:

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

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IMPORTANT SAFETY INSTRUCTIONS!

PLEASE READ THEM BEFORE OPERATING THIS EQUIPMENT.



WARNING SHOCK HAZARD - DO NOT OPEN.



AVIS RISQUE DE CHOC - NE PAS OUVRIR.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
ATTENTION
DANGER D'ELECTROCUTION
NE PAS OUVRIR
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL

General:

1. Read all the safety and operating instructions, contained in this owner's manual, before operating this equipment.
2. Retain this owner's manual for future reference about safety and operating instructions.
3. Adhere to all warnings and operating instructions.
4. Follow all operating and use 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. To avoid burns, do not physically touch the hot tubes.**
Attention: pour prevenir les chocs electriques 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 a fond sans en laisser aucune partie a decouvert.
7. For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning or power line

surges.

8. Do not use attachments not recommended in this owner's manual as they may cause hazards.

Installation:

9. Locate the equipment for proper ventilation. For example, the equipment should not be placed on a bed, sofa, rug, or similar surface that may block ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet, that may impede the flow of air through the ventilation openings.
10. Locate the equipment away from heat sources such as radiators, heat registers, stoves, or other appliance (including amplifiers) that produce heat.
11. Mount the equipment in a wall or cabinet only as described in this owner's manual
12. Do not use this equipment near water; for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool, etc.
13. Do not place this product on an unstable cart, stand, tripod, bracket, or table. The equipment may fall, causing serious injury to a person, and serious damage to the product.

Connection:

14. Connect this equipment only to the type of AC power source as marked on the unit.
15. Route AC power cords so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the instrument.
16. Do not defeat the inherent design features of the polarized plug. Non-polarized-line cord adapters will defeat the safety provided by the polarized AC plug. If the plug should fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
17. Do not overload wall outlets, extension cords or integral convenience receptacles as this can result in a risk of fire or electric shock.

Care of Equipment:

18. Clean the instrument by dusting with a dry cloth. Unplug this equipment from the wall outlet and clean the panel with a cloth moistened with a window cleaner. Do not use liquid cleaners or aerosol cleaners.
19. Do not permit objects of any kind to be pushed and/or



Safety Instructions can't, Introduction and Performance Features

fall into the equipment through enclosure openings.
Never spill liquids into the equipment through enclosure openings.

20. Unplug the power cord from the AC power outlet when left unused for a long period of time.

Repair of Equipment:

21. Unplug this equipment from the wall outlet and refer servicing to a qualified service personnel under the following conditions:
 - A. The AC power cord or the plug has been damaged,
 - B. Objects have fallen, or liquid has been spilled into the equipment,
 - C. The equipment has been exposed to rain or water,
 - D. The equipment does not operate normally by following the operating instructions contained within this owner's manual. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
 - E. The equipment has been dropped or damaged in any way,
 - F. The equipment exhibits a distinct change in performance - this indicates a need for service.
22. Do not attempt to service beyond that described in the operating instructions. All other service should be referred to qualified service personnel.
23. 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.
24. 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.

Introduction

The McIntosh C22 Preamplifier was without question the finest vacuum tube preamplifier ever offered to the public. It was originally produced from 1963 through 1968. The 1997 reissue of the C22 incorporates a several changes to the original preamplifier design to reflect technology advances and contemporary system requirements.

Performance Features

• Outputs

Balanced Outputs and three pairs of Unbalanced Outputs allow use with a wide variety of power amplifiers.

• Mode Switch

The classic McIntosh Mode Switch provides seven different channel output combinations.

• Inputs

Six high level inputs and two Moving Magnet Phono inputs accommodate all popular stereo source signals.

• Headphones

A built-in Headphone amplifier adds the convenience of private headphone listening.

• Speakers Selection Switch

A front panel Speakers switch operates in conjunction with the optional SCR3 Speaker Control Relay to switch two pairs of speakers. Rear panel Outputs 1 and 2 are also controlled by the switch.

• Tone Controls

Separate Feedback type Bass and Treble Switched Tone controls for each channel allow a wide range of tone shaping with no increase in distortion.

• Tape Facility

Inputs and outputs are provided for two tape recorders. Two separate front panel Tape Monitor Switches are included.

Installation

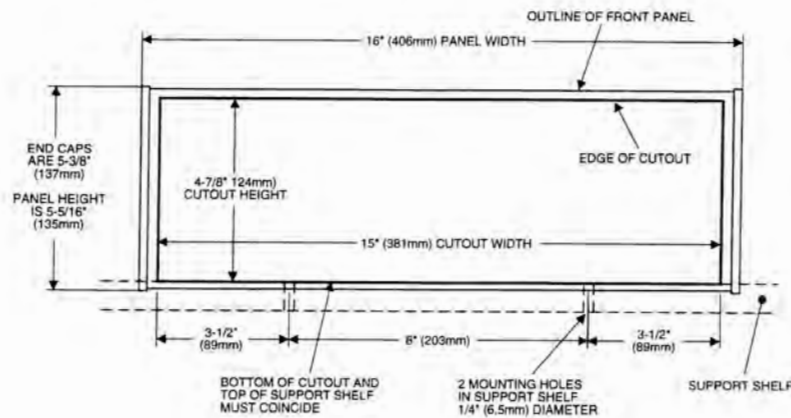
The C22 can be placed upright on a table or shelf, standing on its four feet. It also can be custom installed in a piece of furniture or cabinet of your choice. The required panel cutout, ventilation cutout and unit dimensions are shown.

Always provide adequate ventilation for your C22. Cool operation ensures the longest possible operating life for any electronic instrument. Do not install the C22 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 op-

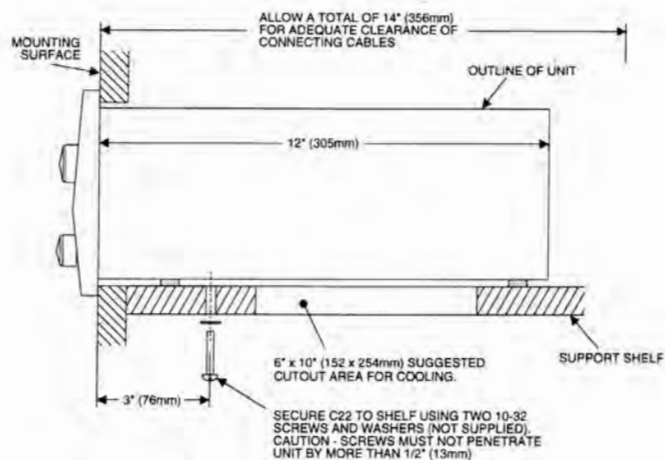
erating temperature.

A custom cabinet installation should provide the following minimum spacing dimensions for cool operation. Allow at least 1-1/2 inches (3.8cm) above the unit so airflow is not obstructed. Allow 17-1/2 inches (44.5cm) depth behind the mounting panel, which includes clearance for connectors. Allow 1-1/8 inches (2.9cm) 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.

Front View of the C22 custom installed



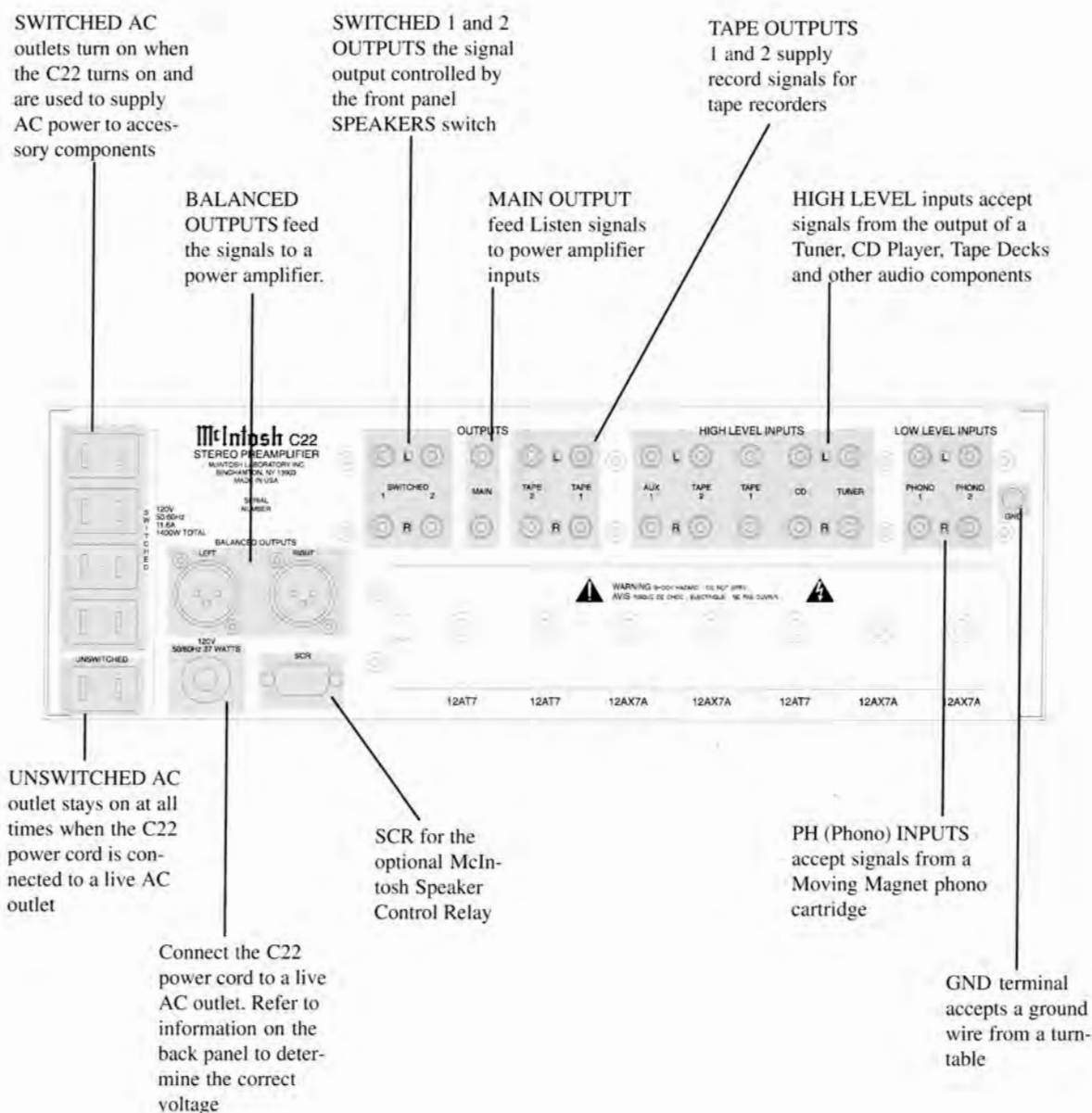
Side View of the C22 custom installed





C22 Rear Panel Connections

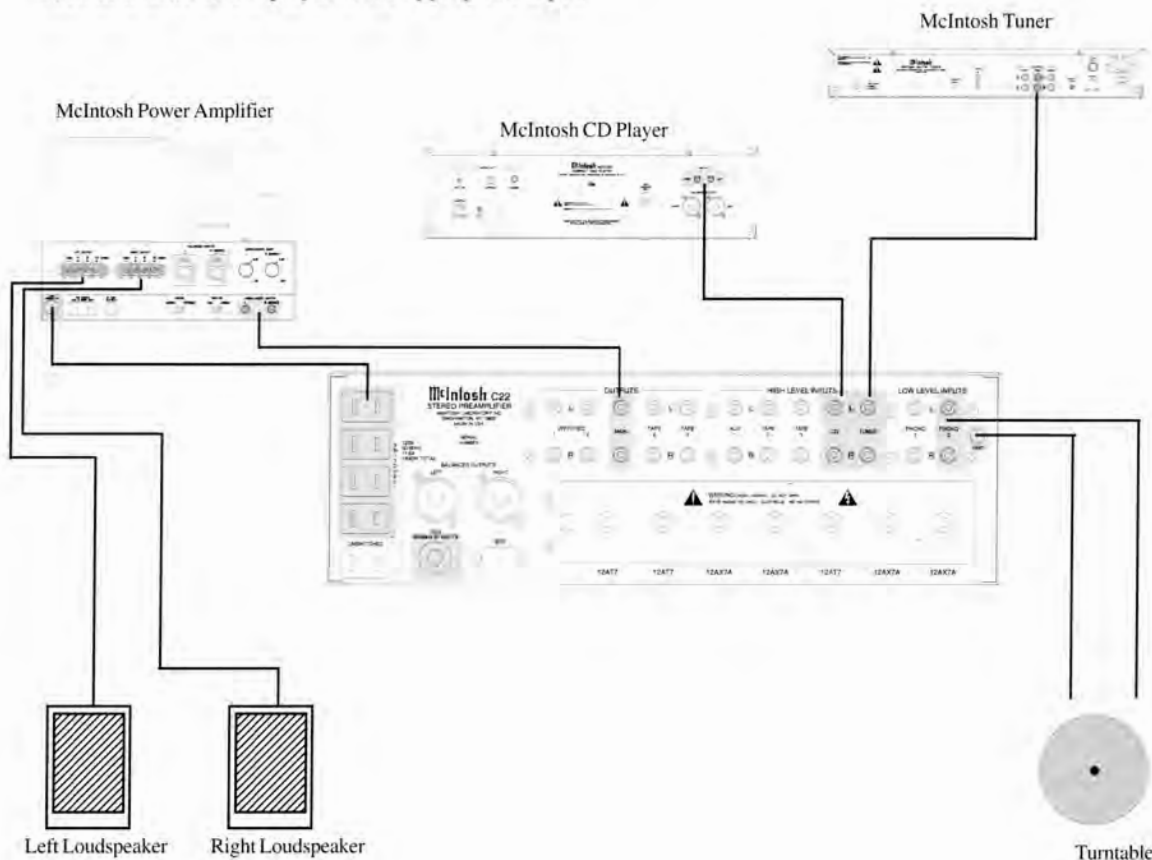
C22 Rear Panel Connections



How to Connect the C22

How to Connect the C22

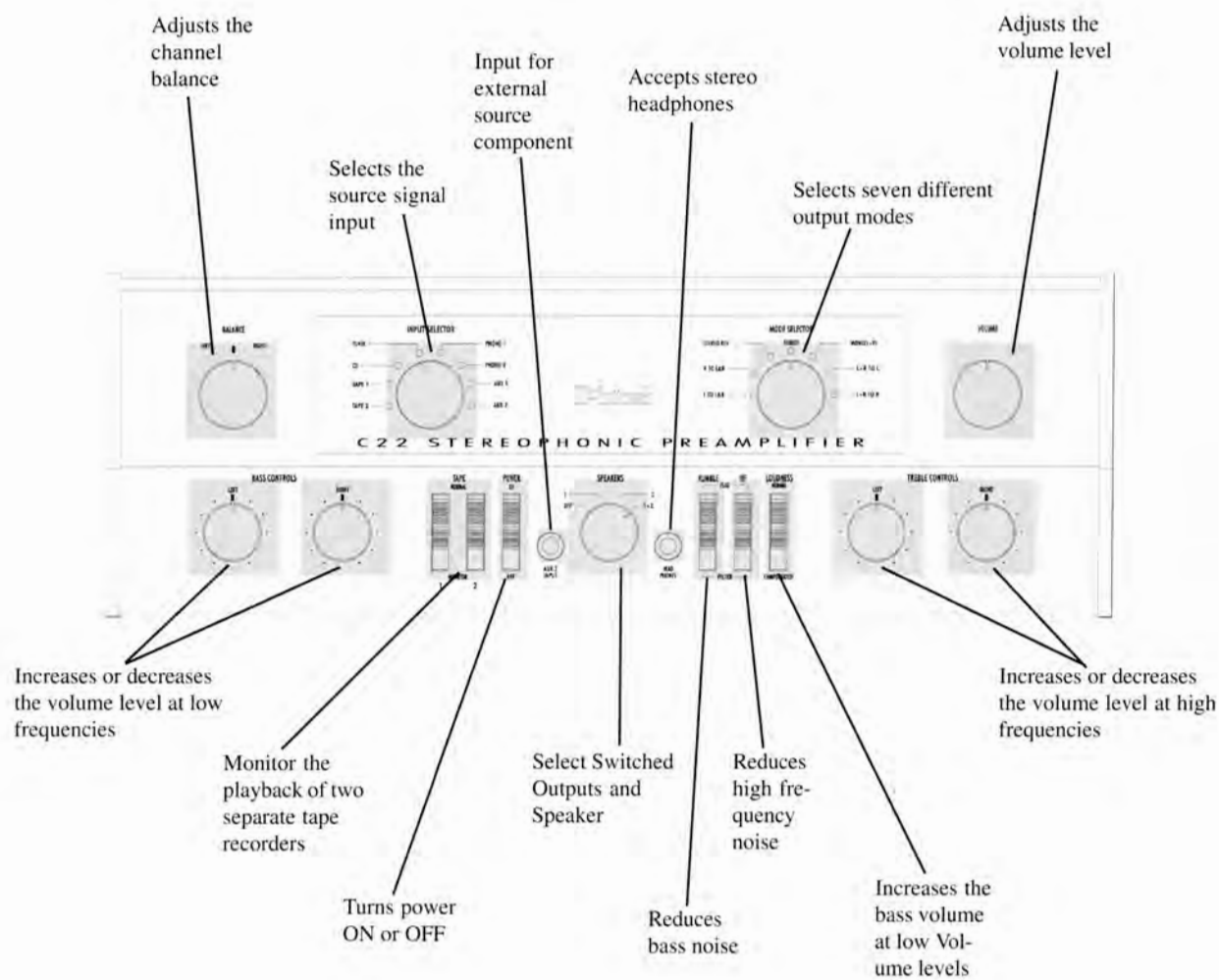
1. When using a power amplifier with Balanced Inputs, connect Balanced XLR cables from the Balanced Outputs to the amplifier Balanced Inputs.
2. When using a power amplifier with Unbalanced Inputs, connect the Main Unbalanced Outputs to the Unbalanced power amplifier inputs.
3. Connect cables from the Switched 1 and 2 Outputs to two additional power amplifiers. Select the 1 or 2 Output with the front panel Speakers Switch.
4. Connect cables from high level source components such as a tuner or CD player to the appropriate input.
5. Connect cables from a turntable or record player with a Moving Magnet cartridge to the Phono 1 or Phono 2 inputs.
6. Connect the ground wire from a turntable to the GND terminal.
7. Connect the C22 power cord to a live AC outlet. Refer to information on the back panel to determine the correct voltage.





C22 Front Panel Controls and Switches

C22 Front Panel Controls and Switches



How to Operate the C22

Power

Press the POWER switch to ON. The front panel lights will turn on and illuminate the nomenclature.

Source Selection

Select the desired listening source with the INPUT SELECTOR.

Volume Control

Adjust the VOLUME control for the desired listening level.

Rumble Filter

Set the RUMBLE switch to the FILTER position to reduce undesirable low frequency noise such as turntable rumble or low frequency acoustic feedback. The filter reduces bass frequencies below 30Hz.

HF Filter

Set the HF (High Frequency) switch to the FILTER position to reduce undesirable high frequency noise such as tape hiss, static or record noise. The filter reduces high frequencies above 7000Hz.

Loudness

Set the Loudness switch to COMPENSATED to increase bass response to compensate for human hearing loss at lower volume levels.

Bass and Treble Controls

Adjust the bass and treble controls to achieve the desired tone balance. Each click stop changes response by 4dB. In the flat settings, all frequency compensating circuit components are removed from the signal path.

Balance Control

Turn the control to the left to accent the left channel by reducing the right channel output. Turn the control to the right to accent the right channel by reducing the left channel output.

Tape

Two tape recorders can be connected to the C22 for both record and playback using the Tape Inputs and Outputs. Any source signal selected by the Input Selector will appear at both Tape Outputs for recording purposes. A prerecorded tape can be played back from either of two recorders by setting the appropriate Tape switch to the Monitor position. When using a 3 head tape recorder, you can also monitor the recorded tape signal during the recording operation by using the Tape Monitor switches.

Copy tapes from one recorder to another by selecting the playback recorder with the Input Selector. Its output will appear at the Tape Outputs and will be sent to the input of the second recorder.

Mode Selector

- L TO L&R: Left channel input signals will appear at both the Left and Right Outputs.
- R TO L&R: Right channel input signals will appear at both the Left and Right Outputs.
- STEREO REV: The normal stereo channels are reversed. The Left channel input signals will appear at the Right Output, and the Right channel input signals will appear at the Left Output.
- STEREO: Normal operation with Left and Right channel input signals appearing at their proper outputs.
- MONO (L+R): Left and Right channel input signals are combined to monophonic and appear at both the Left and Right Outputs.
- L+R TO L: Both Left and Right channel input signals are combined to monophonic and appear at only the Left Output.
- L+R TO R: Both Left and Right channel input signals are combined to monophonic and appear at only the Right Output.



Specifications

Specifications

Frequency Response

+0, -0.5dB from 20Hz to 20,000Hz

Rated Output

2.5V at Main, Switched 1 and 2

2.0V Balanced Outputs

Maximum Voltage Output

More than 8V at all outputs

Total Harmonic Distortion

0.02% maximum IHF, 0.2% maximum from 20Hz to 20,000Hz at rated output

Sensitivity

Phono: 2.2vM for 2.5V rated output, (0.45mV IHF)

High Level: 250mV for 2.5V rated output, (50mV IHF)

Signal-To-Noise Ratio

Phono: 80dB below 10mV input, (A-Weighted)

High Level: 90dB below rated output, (A-Weighted)

Input Impedance

Phono: 47K ohms and 65pf capacitance

High Level: 22K ohms

Voltage Gain

Phono to Tape: 41dB at 1000Hz

Phono to Main: 61dB at 1000Hz

High Level to Tape: 0dB

High Level to Main: 20dB

Tone Controls

Bass and Treble stepped, 20dB boost to 20dB cut

AC Power Outlets

4 switched and 1 unswitched, total capacity 1400 watts

Power Requirements

100V, 50/60Hz, 37 watts

110V, 50/60Hz, 37watts

120V, 50/60Hz, 37 watts

220V, 50/60Hz, 37 watts

230V, 50/60Hz, 37 watts

240V, 50/60Hz, 37 watts

Dimensions

Front Panel: 161, (40.6cm) wide by 5-7/161, (13.8cm) high

Chassis depth behind mounting panel, including clearance for connectors: 141, (35.6cm)

Knob clearance required in front of mounting panel: 1-1/21, (3.8cm)

Finish

Anodized gold and black front panel.

Weight

16 lbs. (7.3Kg) net, 22 lbs. (11.3Kg) in shipping carton.

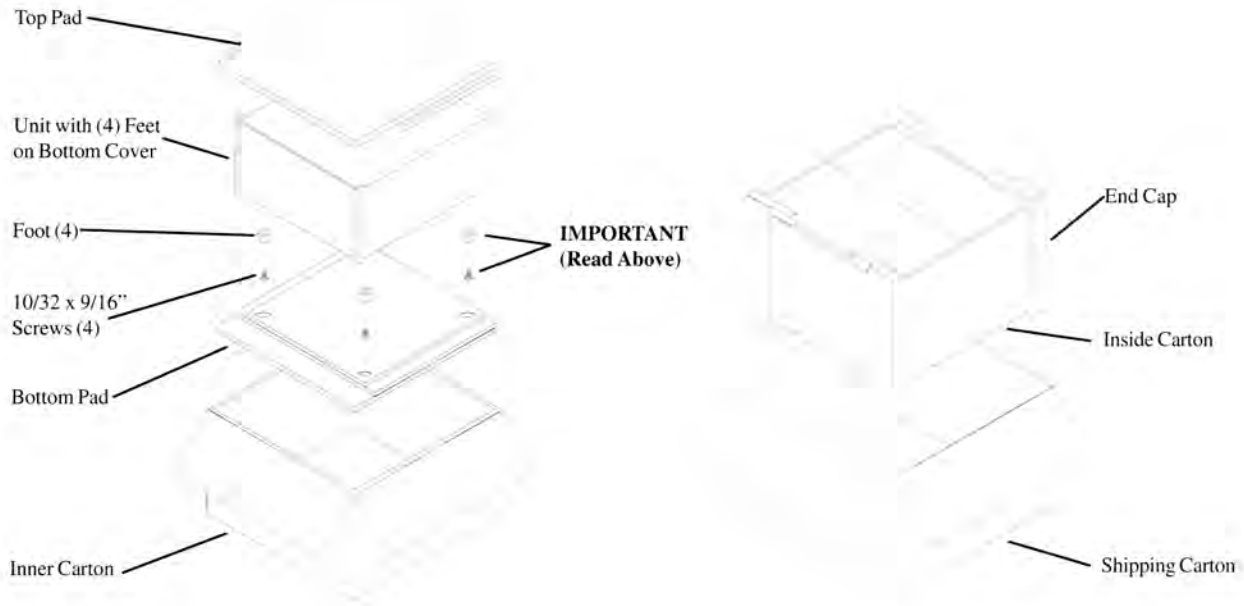
Packing Instructions

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. This will ensure the proper equipment location on the bottom pad. 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	034009	Shipping carton only
2	033884	End Cap
1	034010	Inside carton only
1	033885	Top Pad
1	033886	Bottom pad
4	017156	Plastic foot
4	100160	#10-32 x 9/16" screw



McIntosh®

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