



C 37 SYSTEM CONTROL CENTER

McIntosh[®]
OWNERS MANUAL

IMPORTANT SAFETY INSTRUCTIONS

THESE INSTRUCTIONS ARE TO PROTECT YOU AND THE McINTOSH INSTRUMENT. BE SURE TO FAMILIARIZE YOURSELF WITH THEM.

1. Read all instructions - Read the safety and operating instructions before operating the instrument.
2. Retain Instructions - Retain the safety and operating instructions for future reference.
3. Heed warnings - Adhere to warnings and operating instructions.
4. Follow Instructions - Follow all operating and use instructions.
WARNING: TO REDUCE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS INSTRUMENT TO RAIN OR MOISTURE.
5. Power Sources - Connect the power supply only to the type described in the operating instructions or as marked on the unit.
6. Power-Cord Protection - Route power-supply 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.
7. Ventilation - Locate the instrument for proper ventilation. For example, the instrument 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.
8. Heat - Locate the instrument away from heat sources such as radiators, heat registers, stoves, or other appliance (including amplifiers) that produce heat.
9. Wall or Cabinet Mounting - Mount the instrument in a wall or cabinet only as described in the owners manual.
10. Water and Moisture - Do not use the instrument near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
11. Cleaning - Clean the instrument by dusting with a dry cloth. Clean the panel with a cloth moistened with a window cleaner.
12. Object and Liquid Entry - Do not permit objects to fall and liquids to spill into the instrument through enclosure openings.
13. Nonuse Periods - Unplug the power cord from the AC power outlet when left unused for a long period of time.
14. Damage Requiring Service - **Service must be performed by qualified service personnel when:**
 - A. The power supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the instrument; or
 - C. The instrument has been exposed to rain; or
 - D. The instrument does not appear to operate normally or exhibits a marked change in performance; or
 - E. The instrument has been dropped, or the enclosure damaged.
15. Servicing - Do not attempt to service beyond that described in the operating instructions. All other service should be referred to qualified service personnel.
16. Grounding or Polarization - Do not defeat the inherent design features of the polarized plug. Non-polarized line cord adaptors will defeat the safety provided by the polarized AC plug.
17. **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 PREVENIR LES CHOCS ELECTRIQUES PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.



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.



CAUTION: TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.



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.

The serial number, purchase date, and McIntosh Laboratory Service Contract number are important to you for possible insurance claim or future service. Record this information here.

Serial Number

Purchase Date

Service Contract Number

Upon application, McIntosh Laboratory provides a Service Contract to the original purchaser. Your McIntosh Authorized Service Agency can expedite repairs when you provide the Service Contract with the instrument for repair.

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Your C 37 System Control Center will give you many years of satisfactory performance. If you have any questions, please contact,

CUSTOMER SERVICE

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

**Take Advantage of 3 Years of
Contract Service. . .
Fill in the Application NOW.**

McINTOSH THREE YEAR SERVICE CONTRACT

An application for A THREE YEAR SERVICE CONTRACT is included with this manual.

The terms of the contract are:

1. If the instrument covered by this contract becomes defective, McIntosh will provide all parts, materials, and labor needed to return the measured performance of the instrument to the original performance limits free of any charge. The service contract does not cover any shipping costs to and from the authorized service agency or the factory.
2. Any McIntosh authorized service agency will repair all McIntosh instruments at normal service rates. To receive the free service under the terms of the service contract, the service contract certificate must accompany the instrument when taken to the service agency.
3. Always have service done by a McIntosh authorized service agency. *If the instrument is*

modified or damaged as a result of unauthorized repair the service contract will be cancelled.

Damage by improper use or mishandling is not covered by the service contract.

4. The service contract is issued to you as the original purchaser. To protect you from misrepresentation this contract cannot be transferred to a second owner.
5. Units in operation outside the United States and Canada are not covered by the McIntosh Factory Service Contract, irrespective of the place of purchase. Nor are units acquired outside the USA and Canada, the purchasers of which should consult with their dealer to ascertain what, if any, service contract or warranty may be available locally.

McIntosh has earned world renown for its technical contributions for improved sound. When you bought McIntosh, you bought not only high technology, but also technological integrity proven by time. The McIntosh C 37 System Control Center is the newest evidence of McIntosh technological superiority.

Music reproducing instruments that carry the McIntosh name have always been designed for technological leadership. They also maintain the McIntosh reputation for the best sound, the best durability and the longest possible operating life. Dedication to achieving these performance goals since 1949, has earned McIntosh the reputation as the foremost line of products in the stereo industry.

McIntosh products have always been designed to be maximum user friendly. The McIntosh classic appearance design has been recognized as the most outstanding in the industry. McIntosh design policy has always been to provide products that are easy to maintain or repair.

The C 37 System with Remote Control provides the best sound, extensive operating capabilities along with complete ease of operation. All but three of the C 37 control capabilities can be operated by the HR 37 hand held remote controller. When used in conjunction with the accessory MVS-1 or MVS-2 Video Selector, the C 37 provides both video and audio switching capability.

The C 37 has many useful features to enhance your listening and video enjoyment. These include:

- 8 pairs of high level inputs to accommodate the traditional program sources as well as the latest audio sources. These can include CD players, as well as the high quality audio from video recorders and the audio signals from Laser Video Disc players.

- A specially designed ELECTRO MAGNETIC input switching system insures maximum reliability and lowest possible noise.

- Any one of 9 input sources can be selected. These are CD Player, Laser Video Disc audio, TV audio, AM-FM Tuner, 2 auxiliary inputs, 2 inputs for Audio Tape recorders or the audio signals from Video Tape recorders and a Magnetic Phono player.

- Electronic Tape Monitor switches are provided for two audio tape recorders or the audio from two video recorders, or one of each. Tape Copy capability from either recorder to the other is also

provided.

- Volume is controlled by an analog potentiometer with Left-Right volume tracking held to a fraction of a dB. It can be adjusted by a front panel knob. When the hand held remote controller is used, the volume potentiometer is moved up and down by a precision internal electric motor.

- Speaker Push Button switches select either or both of two pairs of loudspeakers when the optional accessory SCR 3 speaker control relay is added. Two additional rear panel preamplifier outputs are also controlled by these switches for feeding additional power amplifiers that may be used in other listening areas.

- These input and switching facilities may be selected either at the preamplifier front panel, or from the hand-held infrared remote controller.

- Two additional listening areas can be remotely controlled by adding 2 remote sensors that are easily connected to the C 37 with conventional RG-59/U coaxial cable.

- An active circuit loudness control operates independently of the main volume control. Close conformity to the Fletcher-Munson equal loudness curves can be attained regardless of the volume control setting.

- A five-band program equalizer permits the adjustment and improvement of the loudness contrast of the five most important frequency ranges. Musical balance of any source material can be compensated for variables such as room characteristics or personal listener preferences.

- Rear panel switching jacks provide input and output facilities for signal processors in both the Tape outputs as well as the normal listening outputs.

- A built-in headphone amplifier provides power to the front panel headphone jack.

- Electronically regulated power supplies maintain stable operation under all line voltage conditions.

- Professional XLR output connectors are provided to allow a balanced line output to be used if desired. This will provide the best signal to noise operation in demanding applications.

This outstanding C 37 System Control Center will serve you best when you understand its functions and performance capabilities. Some time invested in reading this manual will be valuable in obtaining the most from your C 37.

INTRODUCTION 3

The trouble-free life of an electronic instrument is greatly extended by providing sufficient ventilation to prevent the build-up of high internal temperatures that cause deterioration. Allow enough clearance so that cool air can enter at the bottom of the cabinet and be vented from the top. With adequate ventilation the instrument can be mounted in any position. The recommended minimum space for installation is 15 inches (38.1 cm) deep, 17 inches (43.2 cm) wide, and 6 inches (15.2 cm) high.

The C 37 may be installed in a McIntosh cabinet or custom installed in furniture of your choice. Always provide adequate ventilation. Never place it above heat generating components such as high powered amplifiers. Provide 1½ inches (3 cm) of space above the preamplifier so as not to interfere with a cooling air flow.

CUSTOM INSTALLATION

The PANLOC system of installing equipment conveniently and securely is a product of McIntosh research. The PANLOC buttons on the front panel will lock the unit firmly in place when they are turned approximately one quarter turn clockwise. A counterclockwise turn of the PANLOC buttons unlocks the chassis from its mounting.

To install the instrument in a McIntosh cabinet, follow the instructions that are enclosed with the cabinet. For any other type of installation, follow these instructions:

1. Unpack from Carton

Open the carton and remove the PANLOC brackets, hardware package, and mounting template. Remove

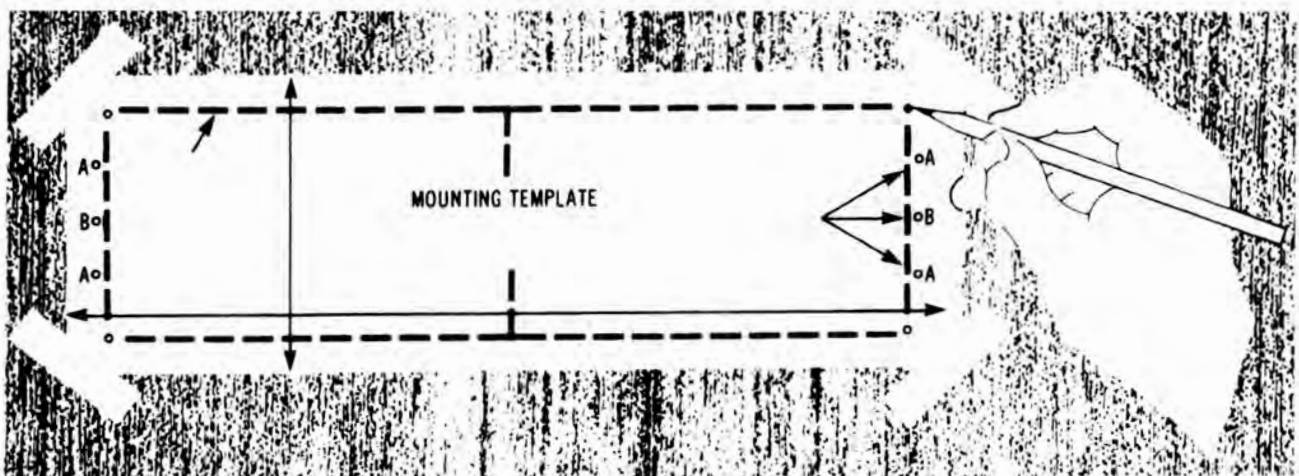
the instrument from its plastic bag and place it upside down on the shipping pallet. Unscrew the four plastic feet from the bottom of the chassis.

2. Mark the Cabinet Panel

Tape the mounting template in position on the cabinet panel where the instrument is to be installed. The broken lines that represent the outline of the rectangular cutout also represent the outside dimensions of the chassis. Make sure these lines clear shelves, partitions, or any equipment. With the template in place, first mark the six A and B holes and the four small holes that locate the corners of the cutout. Then, join the four corner markings with pencil lines, using the edge of the template as a straightedge.

3. Drill Holes

Use a drill with a 3/16 inch (5 mm) bit held perpendicular to the panel and drill the six A and B holes. Then, using a drill bit slightly larger than the tip of your saw blade, drill one hole at each of two diagonally opposite corners. The holes should barely touch the inside edge of the penciled outline. Before taking the next step, make sure that the six A and B holes have been drilled.



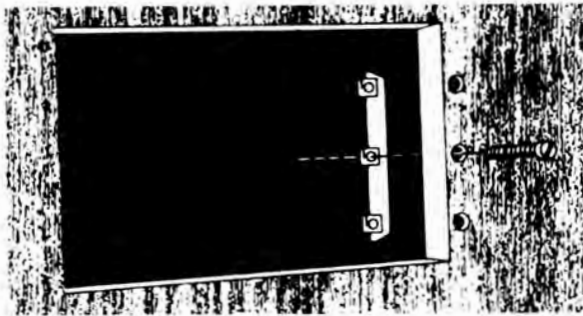
4 INSTALLATION

4. Saw the Panel Cutout

Saw carefully on the inside of the penciled lines. First make the two long cuts and then the two short cuts. After the rectangular opening has been cut out, use a file to square the corners and smooth any irregularities in the cut edges.

5. Install the Mounting Strips

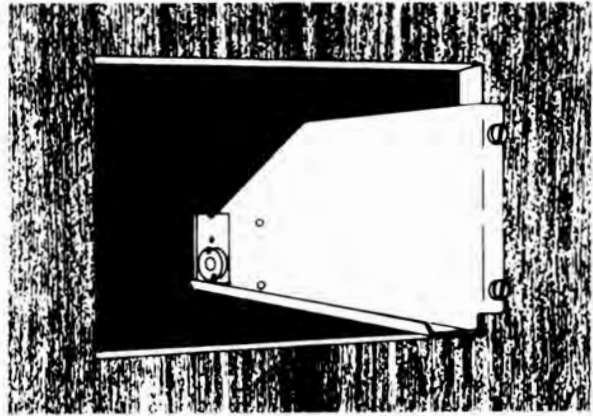
In the hardware package are two mounting strips, and two 1-1/4" (31.8mm) black long screws that have a flat head. Use these screws, one on each end, to fasten the mounting strips. They are attached through the center hole, marked B on the template. Make sure the screw heads are drawn flush or slightly into the wood before attaching the Panloc brackets.



6. Attach the PANLOC Brackets

In the hardware package are two sets of screws. For panels less than 1/2" (12.7mm) thick, use the 3/4" (19.1mm) long screws; for thicker panels, use the 1-1/4" (31.8mm) long screws.

Using two screws of the proper length in the A holes on each side, attach the PANLOC brackets to the cabinet panel; the short flange is mounted against the front (face) of the cabinet panel. The screws pass through the PANLOC bracket flange, the cabinet panel, and then through the mounting strips previously mounted.



7. Install the Instrument

Guide the AC power cord through the panel opening to the back of the cabinet; then, slide the instrument into the opening carefully so that the rails on the bottom of each side of the chassis engage the tracks on the mounting brackets. Continue to slide the instrument into the cabinet until the front panel is flush with the cabinet panel. Turn the PANLOC buttons at the lower left and right corners of the instrument panel clockwise to lock the unit firmly in the cabinet. Turn the PANLOC buttons counterclockwise to unlock the instrument. It can then slide outward to permit the removal.

The back cover of this manual folds out to show photographs of the front and rear panels of the C 37. Fold it out to assist you in locating the connectors. The numbers refer to the paragraphs that follow.

There are five fields of audio connectors on the back panel of the C 37 for use with associated equipment: AUDIO INPUTS, EXTERNAL PROCESSORS, AUDIO OUTPUTS, BALANCED OUTPUTS and REMOTE CONTROL FACILITIES. On the front panel is an output jack for headphones.

Use good quality shielded cables to interconnect the associated equipment used with the preamplifier. Your dealer can advise you on the kind and lengths of cable best suited to your installation. Preamplifier cables should be positioned as far as possible from speaker cables or AC power cords.

The first field of connectors is marked:

AUDIO INPUTS

1. PHONO:

Connect the cable from the turntable left channel to the left PH (Phono), INPUT. Connect the right channel to the right PH (Phono), INPUT.

2. GND (Ground):

The GND (Ground) terminal on the rear panel is provided for grounding a turntable or record changer that has a separate ground cable in addition to the normal left and right signal cables.

3. CD:

Connect the cable from a CD (Compact Disc) player left channel output to the left CD INPUT. Connect the right channel output to the right CD INPUT.

4. LASER:

These inputs will accommodate the audio output of a laser vision disc player. Connect the cable from the left channel laser audio output to the left LASER INPUT. Connect the right channel audio output to the right LASER INPUT.

5. TV:

These inputs will accommodate the audio output from a stereo TV set or monitor. Connect the cable from the left channel audio output of a TV set to the left TV INPUT. Connect the right channel output to the right TV INPUT. Connect the output of a monophonic TV set to either the right or left TV INPUT and press the front panel MONO Switch for monophonic operation. The

monophonic signal will then be heard from both left and right channel outputs. Do not connect a cable from a different program source to the unused input jack.

6. TUNER:

Connect the cable from the left channel output of a tuner to the left TUNER INPUT. Connect the right channel output to the right TUNER INPUT.

7. AUX 1 and AUX 2:

Audio from any high level audio source can be connected to the AUX (Auxiliary) inputs. These might be a second CD player, a tape recorder or player or another TV set. Connect the cable from the source unit left channel output to the left AUX 1 INPUT. Connect the right channel output to the right AUX 1 INPUT. Connect cables from another high level source to the AUX 2 INPUTs in a similar manner.

8. VCR1/TAPE1:

These inputs allow audio tape playback, or the ability to monitor the audio tape while recording with the use of a 3 head recorder.

The audio outputs from a video tape recorder can also be connected to these inputs.

Connect the cable from the left channel output of an audio tape recorder, or the audio output of a video recorder, to the left VCR1/TAPE1 INPUT. Connect the similar right channel recorder output to the right channel VCR1/TAPE1 INPUT. Connect a second recorder to the VCR2/TAPE2 INPUTS in a similar manner.

It is possible that one set of inputs will be used for an audio tape recorder and the other set for a video recorder. If the VCR has only a single mono output, connect the single cable to either the left or right VCR/INPUTs 1 or 2. Then depress the front panel MONO switch for monophonic operation. Do not connect another cable to the unused input jack.

OPTIONAL METHOD FOR MONOPHONIC SIGNALS:

Another method for handling monophonic signals from any input source is to use a "Y" connector and connect the outputs to both left and right inputs.

The second field of connectors is marked:

EXTERNAL PROCESSORS

9. EXTERNAL PROCESSORS:

There are two pairs of EXTERNAL PROCESSOR

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jacks on the C 37. The TAPE pair affects the program signals fed to the VCR/TAPE 1 and 2 OUTPUT jacks. The MAIN pair affects the program signals fed to the MAIN and SWITCHED AUDIO OUTPUT jacks.

Use the EXTERNAL PROCESSOR jacks to add a noise reduction unit or any similar signal processing unit.

Be sure to match the proper left and right signal cables when connecting a processor.

The EXTERNAL PROCESSOR-FROM jacks have built-in switching contacts to allow signals to pass directly through when there are no cables plugged into them. When a signal processor is properly connected, the program signals go from the C 37 EXTERNAL PROCESSOR TO jacks, to the processor, and back to the C 37 at the EXTERNAL PROCESSOR FROM jacks.

(The following connection information applies to both the MAIN and TAPE EXTERNAL PROCESSOR circuits.)

Connect the cable from the left channel signal processor output to the left EXTERNAL PROCESSOR FROM jack. Connect the right channel signal processor output to the right EXTERNAL PROCESSOR FROM jack.

Connect the cable from the left channel processor input to the left EXTERNAL PROCESSOR TO jack. Connect right channel processor input to the right EXTERNAL PROCESSOR TO jack.

When an external signal processor is connected to the C 37, it must be turned on and operating for the program to be heard through the system.

The third field of connectors is marked:

AUDIO OUTPUTS

10. VCR1/TAPE1 and VCR2/TAPE2:

To record VCR audio or audio tape signals, connect the cable from the left channel VCR1/TAPE1 OUTPUT to the left channel high level recorder input. Connect the right channel VCR/TAPE1 OUTPUT to the right channel recorder high level input. Connect a second recorder in a similar manner to the VCR2/TAPE2 OUTPUTS.

11. MAIN:

Connect a cable from the left C 37 MAIN OUTPUT jack to the left channel power amplifier input jack. Connect a cable from the right channel C 37 MAIN OUTPUT jack to the right channel power amplifier input jack.

12. SWITCHED 1 and 2:

Two additional stereo power amplifiers may be connected to the AUDIO OUTPUT SWITCHED 1 and 2 jacks. Audio output signals are fed to these jacks only when the front panel SPEAKER 1 and/or SPEAKER 2 switches are pressed. This arrangement is useful for systems where additional power amplifiers are connected to the C 37 and used with speakers at remote locations.

Additional power amplifiers can serve remote areas such as selected living locations, workshop or outdoor recreation facilities. Other devices can also be controlled with these switched outputs, such as a rear channel reverberation unit.

BALANCED OUTPUTS

13. BALANCED OUTPUTS:

Modern technology has made it possible to build preamplifiers and power amplifiers with the high signal to noise ratios necessary for the proper reproduction of compact discs or any other wide dynamic range program sources. It is possible for conventional interconnecting cables to pick up electrical interference from other equipment, AC cables or electrical appliances. The balanced outputs of the C 37 provide an additional 40dB more protection against such noise pickup.

Use 2 conductor shielded cables with XLR type connectors to connect between the preamplifier and the power amplifier.

The maximum effect of balanced cables is realized when both the preamplifier and the power amplifier have similar XLR balanced connectors.

Connect the left BALANCED OUTPUT cable from the preamplifier to the left BALANCED INPUT of the power amplifier. Connect the right BALANCED OUTPUT cable from the preamplifier to the right BALANCED INPUT of the power amplifier.

Pin Configuration for the XLR OUTPUT connectors on the C 37:

PIN 1: Shield and ground.

PIN 2: + Output.

PIN 3: - Output.

In stereo installations where the amplifier and preamplifier are close to each other and require interconnecting cables of six feet or less, using

quality unbalanced connecting cables is usually perfectly satisfactory. If the units are farther apart and require longer interconnecting cables, using balanced cables will give extra protection from noise or interference.

REMOTE CONTROL FACILITIES

14. TO CR8:

This connector allows a McIntosh CR8 remote control module to be incorporated in the system without need of other accessories. A second power amplifier can then be used to feed speakers in a remote area along with an additional IR sensor for remote controlling of the system. Additional CR8 modules with power amplifier and speakers, can be added for each area in which remote control is desired.

CR8 PREAMP INPUT SWITCH:

This switch allows you to choose the program signal for the third CR8 source. This can be the VCR1-TAPE1 program, the AUX1 program, or whatever program source is currently selected by the C 37.

15. TUNER CONTROL:

A multi pin computer-type connector is provided to interconnect the C 37 with McIntosh tuners designed for remote control. When connected, the McIntosh HR37 Remote Controller, (supplied with the C 37), will operate the following functions of the tuner.

You can select to use the tuner, select from the preprogrammed stations (Presets), search sequentially for the programmed stations, or scan UP the entire broadcast band on either AM or FM.

16. CD CONTROL:

A DIN connector is provided to interconnect the C 37 with a McIntosh Compact Disc Player. When connected, the HR37 Remote Controller will perform the following functions on the CD player.

1. Select to use the CD player.
2. Play a disc.
3. Move to the next track.
4. Back up a track.
5. Raise or lower the volume.
6. Mute the program.
7. Stop the playing of a disc.

17. VIDEO CONTROL: (Optional accessory)

The McIntosh VIDEO SELECTOR MVS 1 or

MVS 2 allows the C 37 to control video signals as well as audio. A cable from the MVS Selector matches the computer type connector on the C 37 rear panel. Follow the instructions with the MVS 1 or MVS 2 for the proper connections of your video equipment. The MVS 2 is identical to the MVS 1, but has the additional capacity to allow switching of 5 VIDEO signals.

18. AREA SENSORS, 1 and 2: (Optional accessories)

Connectors are provided to add two additional McIntosh R649 infrared sensors. This added convenience permits complete control of the stereo system in areas remote from the C 37 location. Remote sensors are connected with RG-59/U coaxial cable.

When a McIntosh R649 remote IR sensor is used with the C 37, function indications are illuminated. If the C 37 system is turned on, there is a continuous red indicator showing on the sensor itself. When the C 37 system is turned off, the sensor is dark. If the C 37 has been switched into MUTE, the red indicator on the sensor blinks.

19. DATA OUT:

This connector provides a data out signal to connect to accessory equipment such as a video laser disc player or many types of tape recorders. When connected, the accessory equipment hand held remote controller can transmit its signals to the accessory through the C 37 IR sensors.

20. AC POWER:

Plug the C 37 AC power cord into a 120 volt 60Hz wall outlet. The plug blades are polarized so be certain the plug is fully inserted in the outlet to prevent blade exposure.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THE POLARIZED AC PLUG ON THIS UNIT ON AN EXTENSION CORD OR OTHER AC OUTLET THAT IS NOT ALSO DESIGNED TO ACCEPT POLARIZED PLUGS. THE PLUG MUST BE FULLY INSERTED TO PREVENT BLADE EXPOSURE WITH THE LINE POLARITY MAINTAINED.

Three types of AC outlets are provided on the C 37 back panel. The outlet nearest the C 37 AC cord is on at all times when the C 37 AC cord is plugged in a wall outlet. This outlet can be used with accessories that have their own AC power switches. For example a VCR plugged into this

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outlet will be able to record TV programs when the main audio system is turned off. This outlet can also be used for a record changer which has its own automatic shutoff feature.

The three SWITCHED AC outlets are switched on and off whenever the C 37 is turned on or off. Use these to provide AC power to accessory units used with the system such as CD players, tuners or tape recorders. The outlet marked POWER AMP is for the main power amplifier used with the system. The main power amplifier is powered only when the C 37 is turned on. If you are using a system incorporating one or more CR8 units in a remote location, and turn on the system at the remote location, only the amplifier dedicated to that location turns on. The main power amplifier and the C 37 stay off. The two program sources selected for use with the CR8 will turn on for the remote location listening. The total power capacity of all the outlets is 1500 watts. Whenever the power consumption of the system exceeds 1500 watts, an optional McIntosh SCR 3 (SPEAKER/AC CONTROL RELAY) must be used.

21. SCR: (Optional accessory)

The SPEAKER CONTROL RELAY, SCR 3, is designed to provide switching for two pairs of speakers as well as high current AC switching. The two AC outlets on the SCR 3 provide additional current capacity of 1800 watts which is controlled by the AC power switch on the C 37. Use these outlets to supply AC power to other components such as large power amplifiers, when the current demands exceed the 1500 watt rating of the C 37 AC switching.

Plug the computer type connector on the cable coming from the SCR 3 into the SCR socket on the rear panel of the C 37. Plug the heavy AC cable from the SCR 3 directly into a wall socket.

DO NOT PLUG THIS CABLE INTO THE AC SOCKETS ON THE C 37.

When the C 37 is turned on, a control voltage from the preamplifier will turn on a relay in the SCR 3 which connects the two AC outlets in the SCR 3 directly to the AC line.

Two pairs of speakers can be turned on or off with the SCR 3 by using the C 37 front panel buttons SPEAKER 1 and 2. As an example, use the SPEAKER 1 terminal strip on the SCR 3 to connect

the speakers in the main listening area. Then use the SPEAKER 2 terminal strip for a pair of speakers that may be located in another listening area. Either pair of speakers can be switched on or off with the C 37 front panel SPEAKERS 1 or 2 push buttons or from the HR 37. Be sure to maintain left and right configuration and like polarity for each pair of speakers.

INSERTING THE BATTERIES IN THE HR 37 REMOTE CONTROLLER

Your McIntosh C 37 System Control Center is provided with the HR 37 hand held remote controller. In your hand you have the ability to control most of the functions of the preamplifier.

The following preamplifier functions are controlled only at the C 37 front panel. These are LOUDNESS, VCR/COPY, MONO and EQUALIZER.

The hand held remote controller runs on two AA, 1.5 volt batteries. Slide open the cover on the back of the controller and insert the batteries as shown in the diagram in the battery compartment. Slide the cover closed.

Battery life is normally about one year. Remove the batteries as soon as they are dead to prevent damage by possible battery leakage. Remove the batteries if the remote controller is not to be used for a length of time.

The back cover of this manual folds out to show photographs of the front and rear panels of the C 37. Fold it out to assist you in identifying and locating the controls and switches on the C 37 front panel. The letters on the photograph refer to the paragraphs that follow.

The glass upper part of the C 37 front panel is the message center. It indicates the signal source, the volume setting, mode of operation, tape facilities in use and the connected operating speakers. The infrared sensor which accepts information from the HR 37 hand held remote controller is just to the left of the VOLUME indicator.

The black anodized aluminum lower part of the front panel contains the function control buttons.

A. SOURCE:

The message center will display whichever program source you have selected with the front panel push buttons or the HR 37 remote controller.

B. SENSOR:

This infrared sensor receives the signals from the HR 37 remote controller.

C. % VOLUME:

The VOLUME indicator on the message center is a two digit LED display whose numbers represent the percentage of available volume. The numbers read from "0" to a maximum of "99", for accurate and repeatable volume settings. When the system is turned on, the last volume setting used will be displayed.

D. PANLOC:

McIntosh developed PANLOC mounting brings a professional installation technique to home stereo systems. When the front panel PANLOC buttons are turned approximately one quarter turn clockwise, the unit is locked into the cabinet. Turning the PANLOC buttons counterclockwise unlocks the C 37, allowing it to be removed.

E. MONITOR:

IMPORTANT. WHEN THE C 37 IS OPERATED IN MONITOR MODE WITH VCR/T1 OR VCR/T2 LIGHTED IN THE MESSAGE CENTER, THE PROGRAM HEARD WILL BE THAT FROM THE TAPE RECORDERS ONLY. ANY OTHER SOURCE WILL NOT BE HEARD.

The C 37 is designed to be used with two tape recorders, either audio or video, or one of each. The four buttons, MONITOR VCR/T1, VCR/T2, VCR/T COPY, 1 ► 2, 2 ► 1, control the signals in and out of the recorders.

MONITOR VCR/T1: Depress this button to listen to a signal from the tape recorder connected to the INPUT VCR/TAPE1 inputs. The VCR/T1 indicator will illuminate on the message center.

MONITOR VCR/T2: Functions the same as VCR/T2 button.

The MONITOR switches are electronically interlocked to prevent simultaneous monitoring from two tape recorders. They permit recordings to be monitored while recording or copying tapes. It is possible to listen to either recorder or a completely different program source during the recording process.

F. VCR/COPY:

The 1 ► 2 button connects the outputs from tape recorder 1 to the inputs of tape recorder 2 without affecting the program being heard from the speakers. The 1 ► 2 indicator will light on the message center. A copy of the program on tape recorder 1 will be made on tape recorder 2. To monitor the original program, press the MONITOR VCR/T1 button. To monitor the copy, press MONITOR VCR/T2 button.

The 2 ► 1 button connects the outputs from tape recorder 2 to the inputs of tape recorder 1 without affecting the program being heard from the speakers. The 2 ► 1 indicator will light on the message center. A copy of the program on tape recorder 2 will be made on tape recorder 1. To monitor the original program, press MONITOR VCR/T2. To monitor the copy, press MONITOR VCR/T1.

G. MONO:

The mono button adds the left and right program signals together to provide a monophonic signal at the MAIN, SWITCHED 1 and SWITCHED 2 OUTPUTS. MONO does not affect the TAPE outputs.

H. SPEAKERS 1 and 2:

The SPEAKER 1 and 2 buttons switch on or off the program signals at the SWITCHED 1 and 2 AUDIO OUTPUT jacks on the C 37 rear panel. When the optional SCR 3 speaker relay is being

10 FRONT PANEL CONTROLS

used with the C 37, the pairs of speakers connected to the relay terminals 1 and 2 will also be switched on or off. The message center indicators will light to show which switched outputs have been selected.

An example of one use of this feature is to control a rear channel reverberation unit. Connect the SWITCHED 1 outputs to the input of a reverberation unit connected to another amplifier and pair of speakers. The reverberation signals can be switched on or off with the SPEAKER 1 button.

The MAIN OUTPUT is always ON, with the same signals that appear at the selected SWITCHED outputs.

I. POWER:

The red button turns the C 37 system on. The message center will illuminate to indicate the program source that has been selected, any special operating modes and the VOLUME setting.

J. MUTE:

Should you desire to silence the system briefly, touch the MUTE button on either the C 37 or the HR 37 remote controller. A red indicator above the MUTE button will light, and the program will be silenced at the MAIN, SPEAKER 1 and SPEAKER 2 outputs. Press either button to un-mute. The mute does not affect the tape outputs.

K. HEADPHONES:

The C 37 has sufficient built-in power capability to feed a pair of low impedance dynamic headphones connected to the HEADPHONES jack.

L. EQUALIZER FREQUENCY:

Each of the five EQUALIZER FREQUENCY controls raises or lowers the amplitude by 12dB of the band of frequencies centered on the frequency marked above the control. Both left and right channels are affected. The center or flat response position of the controls has a detent for easy reference. In the center detent position, the entire circuit for that particular control is removed from the program channel by an electronic ground. If you want perfectly flat response set all equalizer controls at the detent position. You may also wish to use the EQUALIZER FREQUENCY controls to modify the frequency balance of a program to suit your individual preferences.

Adjustment to:

Make deep bass louder
Make all bass louder
Reinforce voices
Brighten violins and trumpets
Emphasize cymbals

Equalizer correction:

Raise 30
Raide 30 and 150
Lower 150 and raise 500
Raise 1500
Raise 10K

M. BALANCE:

The BALANCE and LOUDNESS controls are concentric. The BALANCE control, (large outer knob), adjusts the volume of the channels relative to each other.

L, (left): Turning the control to the left accents the left channel by reducing the volume of the right channel.

R, (right): Turning the control to the right accents the right channel by reducing the volume in the left channel.

N. LOUDNESS:

The LOUDNESS control, (small center knob), provides frequency response contoured to compensate for the behavior of the human ear at lower listening levels. This contour is accurately modeled after the family of "equal loudness" curves identified by Fletcher and Munson. At the fully counterclockwise detent flat position, the loudness contour is electrically flat. As the control is turned clockwise, both bass and treble frequencies increase in the correct proportion for proper listening at softer volume levels. The frequency balance is not affected by changes in the volume control settings. First adjust the volume for the desired listening level. Then adjust the LOUDNESS control for the preferred compensation.

O. VOLUME:

Volume may be adjusted by using the front panel volume control, or the up ▲ or down ▼ push buttons on the HR 37 remote controller.

PERFORMANCE LIMITS

Performance limits are the maximum deviation from perfection permitted for a McIntosh instrument. We promise you that when you purchase a new C 37 from a McIntosh franchised dealer, it will be capable of or can be made capable of performance at or exceeding these limits or you can return the unit and get your money back.

FREQUENCY RESPONSE

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

RATED OUTPUT

2.5V at MAIN and SWITCHED 1 and 2 Outputs.

OUTPUT IMPEDANCE

Balanced 600 ohms.
Unbalanced 600 ohms.

MAXIMUM VOLTAGE OUTPUT

Main and Switched 1 and 2 outputs, 8V from 20Hz to 20,000 Hz.

TOTAL HARMONIC DISTORTION

0.002% maximum from 20Hz to 20,000 Hz at rated output.

SENSITIVITY

Phono: 2.5mV for 2.5V rated output, (0.5mV IHF).
High Level: 250mV for 2.5V rated output (50mV IHF).

SIGNAL TO NOISE RATIO, A-WEIGHTED

Phono: 90dB below 10mV input, (84dB IHF).
High Level: 105dB below rated output (95dB IHF).

MAXIMUM INPUT SIGNAL

Phono: 90mV.
High Level: 10V.

INPUT IMPEDANCE

Phono: 47k ohms and 65pf capacitance.
High Level: 22k ohms.

VOLTAGE GAIN

Phono to Tape: 40dB.
Phono to Main: 60dB.
High Level to Tape: 0dB.
High Level to Main: 20dB.

EQUALIZATION CONTROLS

Variable 12dB boost to 12dB cut at center frequencies of 30, 150, 500, 1500, and 10,000Hz.

AC POWER OUTPUTS

3 Switched, 1 main power amp, and 1 unswitched.

POWER REQUIREMENTS

120 Volts, 50/60Hz, 25 watts.

MECHANICAL INFORMATION

SIZE

Front panel measures 16 1/8 inches wide (41 cm) by 5 7/16 inches high (13.8 cm). Depth is 13 inches (33 cm) including connectors. Knob clearance required in front of the mounting panel is 1 3/8 inches (3.5 cm).

FINISH

The top section of the front panel is glass with gold/teal nomenclature illumination. The bottom section is anodized gold and black aluminum. The chassis is black.

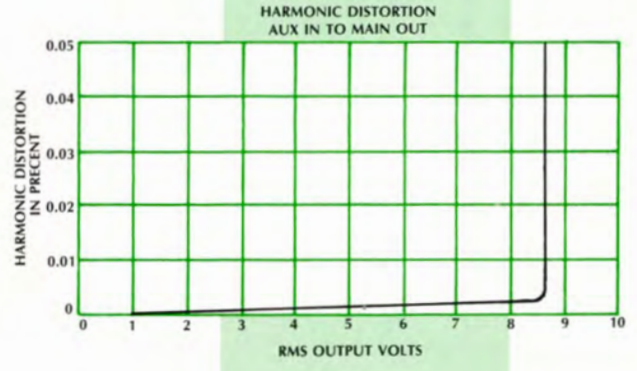
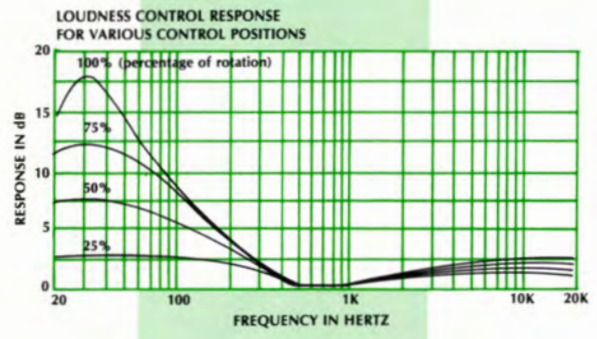
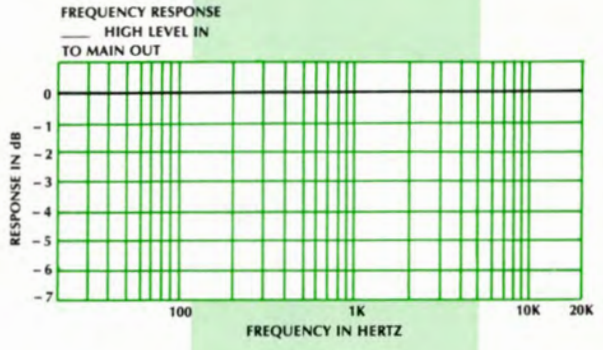
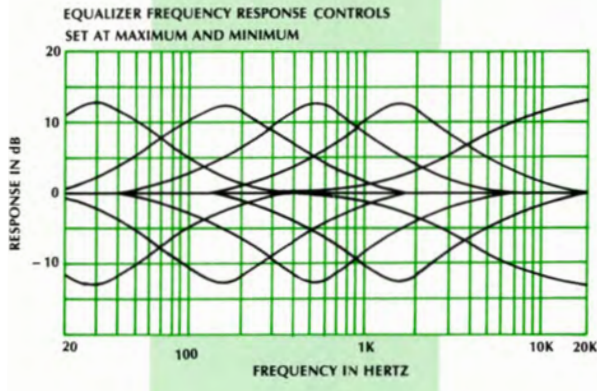
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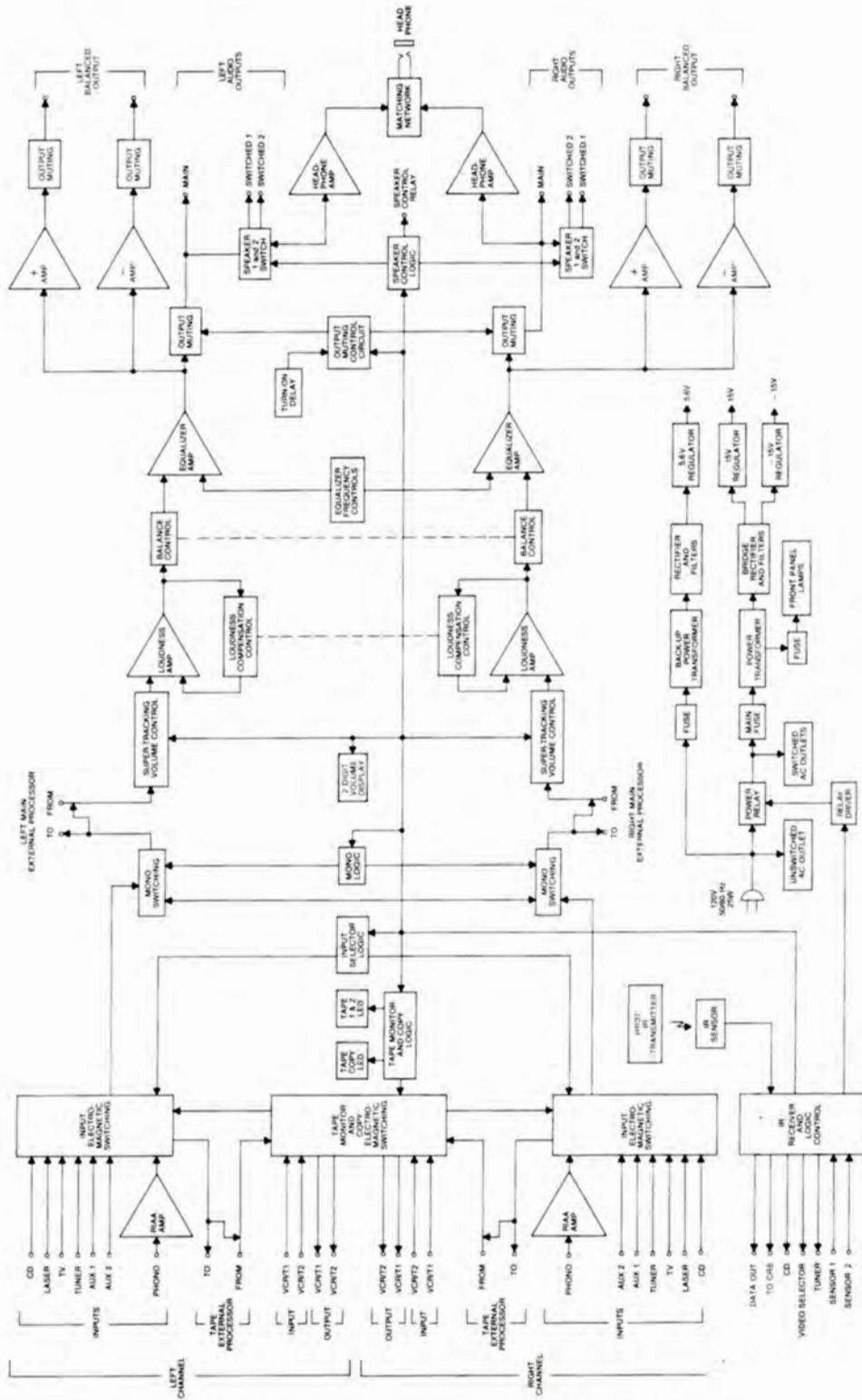
Exclusive McIntosh developed professional PANLOC.

WEIGHT

18 pounds (8.2 kg) net, 30 pounds (13.6 kg) in shipping carton.

12 PERFORMANCE LIMITS





14 BLOCK DIAGRAM

ELECTRO-MAGNETIC SWITCHING

All signal switching in the C 37 is done by ELECTRO-MAGNETIC methods. ELECTRO-MAGNETIC switching is an old and proven technology that has been blessed with modern materials and manufacturing methods.

Each switch consists of a glass tube that is filled with an inert oxygen-free atmosphere, and sealed with tiny leads protruding from either end. These leads extend into the tube and overlap one another with a separation of a few thousandths of an inch. The leads are made from a ferrous material that is influenced by a magnetic field. They are first plated with gold as a base material, then with rhodium and ruthenium. Ruthenium is the best contact material known. The glass assembly is then placed in the center of a multi-layer coil of copper wire. The entire assembly is molded together in a tough shock absorbing plastic. The switch and coil connections extend from the bottom in the form of printed circuit board terminals.

When a DC voltage is applied to the coil, current flows and creates a magnetic field. The force of the field causes the leads to bend and contact one another inside the sealed glass tube. The inert oxygen-free atmosphere inside the glass tube eliminates corrosion of the contacts, which insures a low resistance distortion free switch.

PHONO AMPLIFIER

The phono amplifier uses a high technology integrated circuit operational amplifier. Its differential input stage has been optimized for low noise and low distortion performance. Open loop gain of this integrated circuit is 100,000. With high open loop gain, a large amount of negative feedback can be used around the phono amplifier to further reduce noise and distortion. The feedback network also provides precision RIAA frequency compensation. The network uses 1% metal film resistors and 5% polypropylene film capacitors. To achieve low-noise performance it is essential that the feedback network have very low impedance. As a consequence, the preamplifier must be capable of operating as a power amplifier to drive this impedance. The actual power output capability of this preamplifier stage is more than 100 milliwatts, a great margin beyond that which is required.

Input sensitivity of the phono amplifier is 2.5 millivolts. The gain of the amplifier is 40dB at

1000Hz. The phono amplifier has a very wide dynamic range. At 1000Hz, the phono input circuit will accept 90 millivolts without overload, a voltage far greater than the output of any current magnetic phono cartridge. Phono input overload, therefore, is virtually impossible. A signal level of 10 millivolts at the phono input at 1000Hz will produce 1 volt at the tape output. The tape output has a source impedance of 200 ohms, designed to operate into a load impedance of 10,000 ohms or greater.

LOUDNESS AMPLIFIER

At the input to the high level or loudness amplifier, the signal passes through the electronic mono switch, then through the volume control, and into the loudness amplifier. In the past, loudness controls have typically used simple passive circuits connected to a tap on the volume control. As a consequence, compensation accuracy was dependent on many variables such as volume control position and differences in input level. The C 37 uses active loudness control circuitry. The same type of integrated circuit operational amplifier that is used in the phono amplifier is used here. It has two feedback loops. One feedback loop has flat response. The other feedback loop conforms to the Fletcher-Munson equal loudness compensation. A potentiometer is placed between these two feedback loops making it possible to select any combination of the two from a flat response to full loudness compensation. The overall gain of the loudness stages is 20dB and is not affected at mid frequencies by the position of the loudness control.

EQUALIZER AMPLIFIER

The equalizer amplifier uses high technology integrated circuit operational amplifiers. Its output stage has been optimized for the best transient performance and minimum distortion. Four other operational amplifiers are each arranged in a circuit configuration that is the equivalent of series tuned circuits, one at each of the five center frequencies. Each series tuned circuit is inserted via a control potentiometer into either the input circuit or feedback circuit of the operational amplifier, thereby, providing a boost and cut capability of 12dB for each band of frequencies. The overall gain of the stage is 0dB.

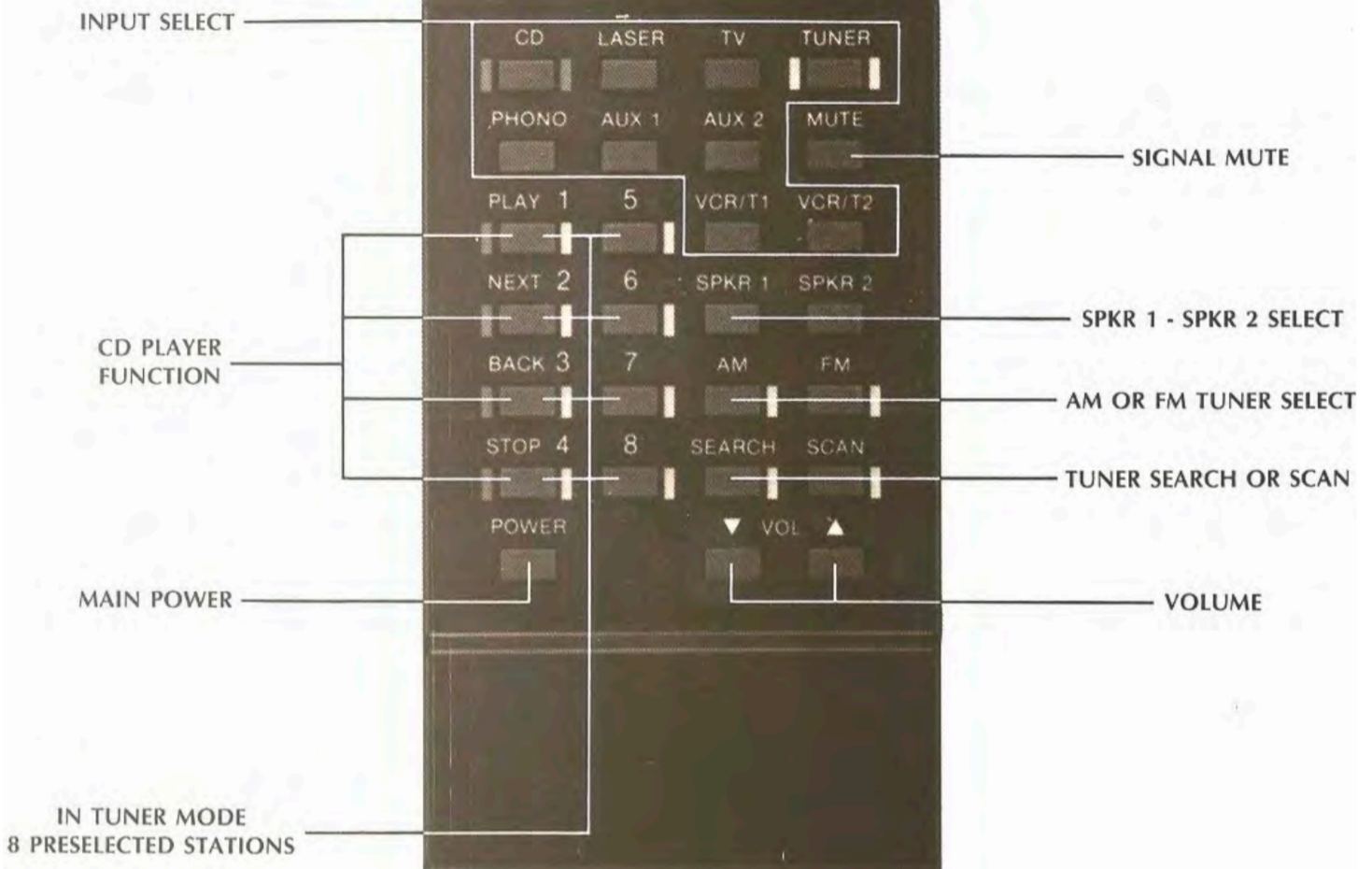
CONTROL LOGIC

All inputs, outputs, CD, Tuner, SCR, and Video

Selector lines are controlled by logic circuits in the C 37. The logic can be changed by front panel switches or by the infrared remote control system receiver in the C 37. The infrared receiver's information comes from the remote transmitter HR 37. Input selection, volume level, speaker selection, power on/off can be made at the C 37 front panel. McIntosh tuners and CDs are controlled from the remote transmitter. A back-up power supply keeps all selections memorized when the C 37 power switch is turned off as long as 120 volts AC power to the C 37 is not interrupted.

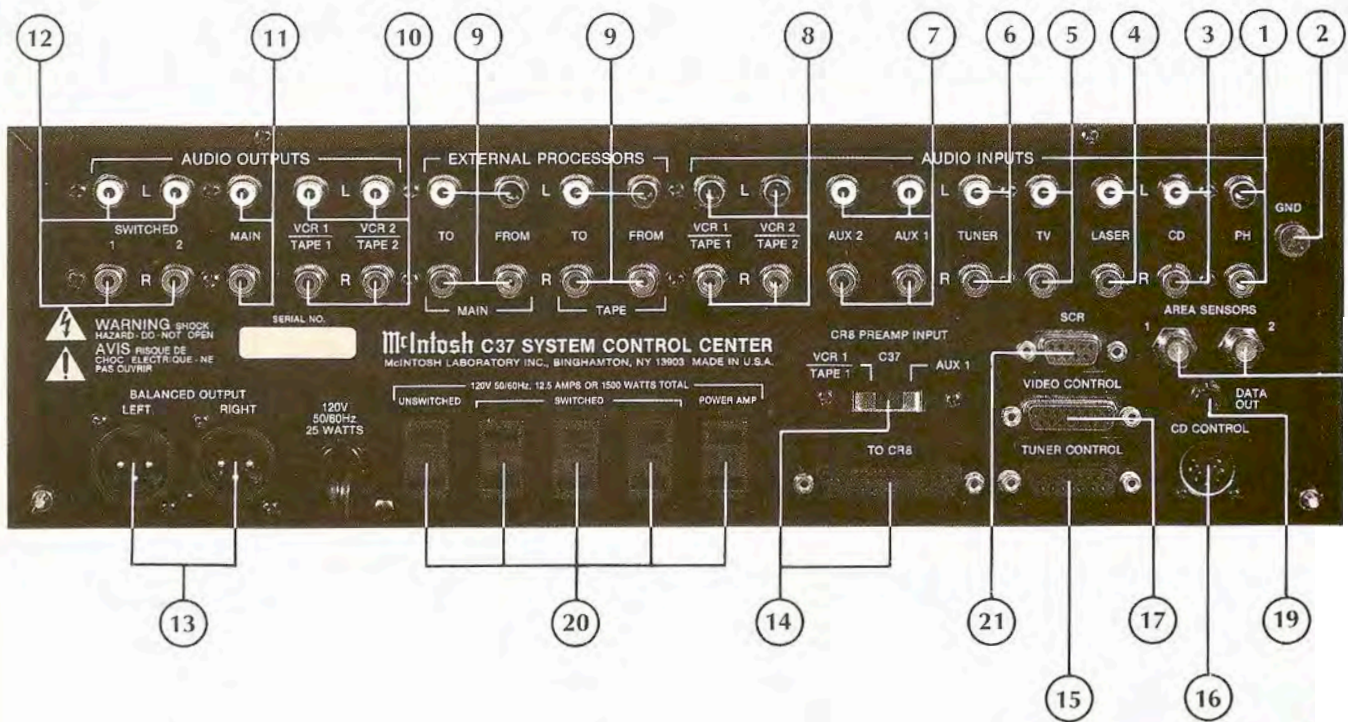
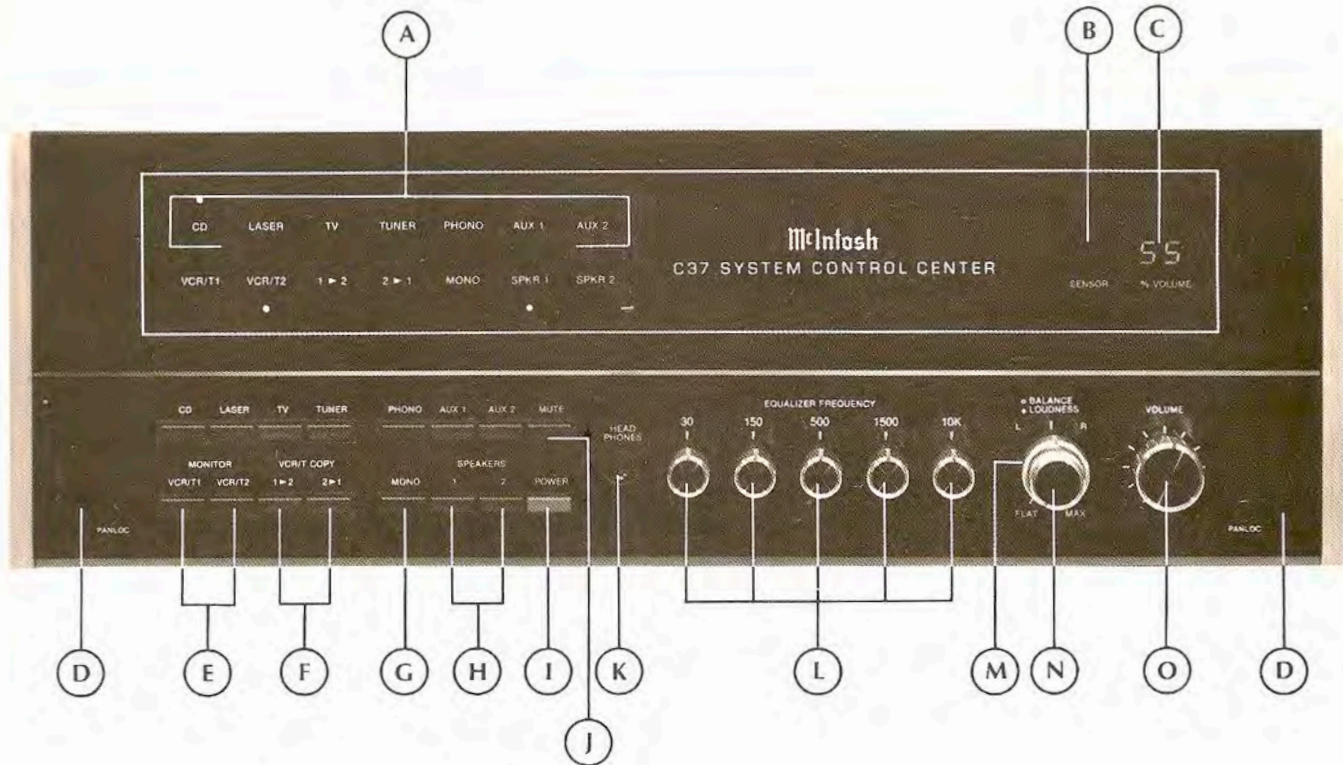
16 TECHNICAL DESCRIPTION

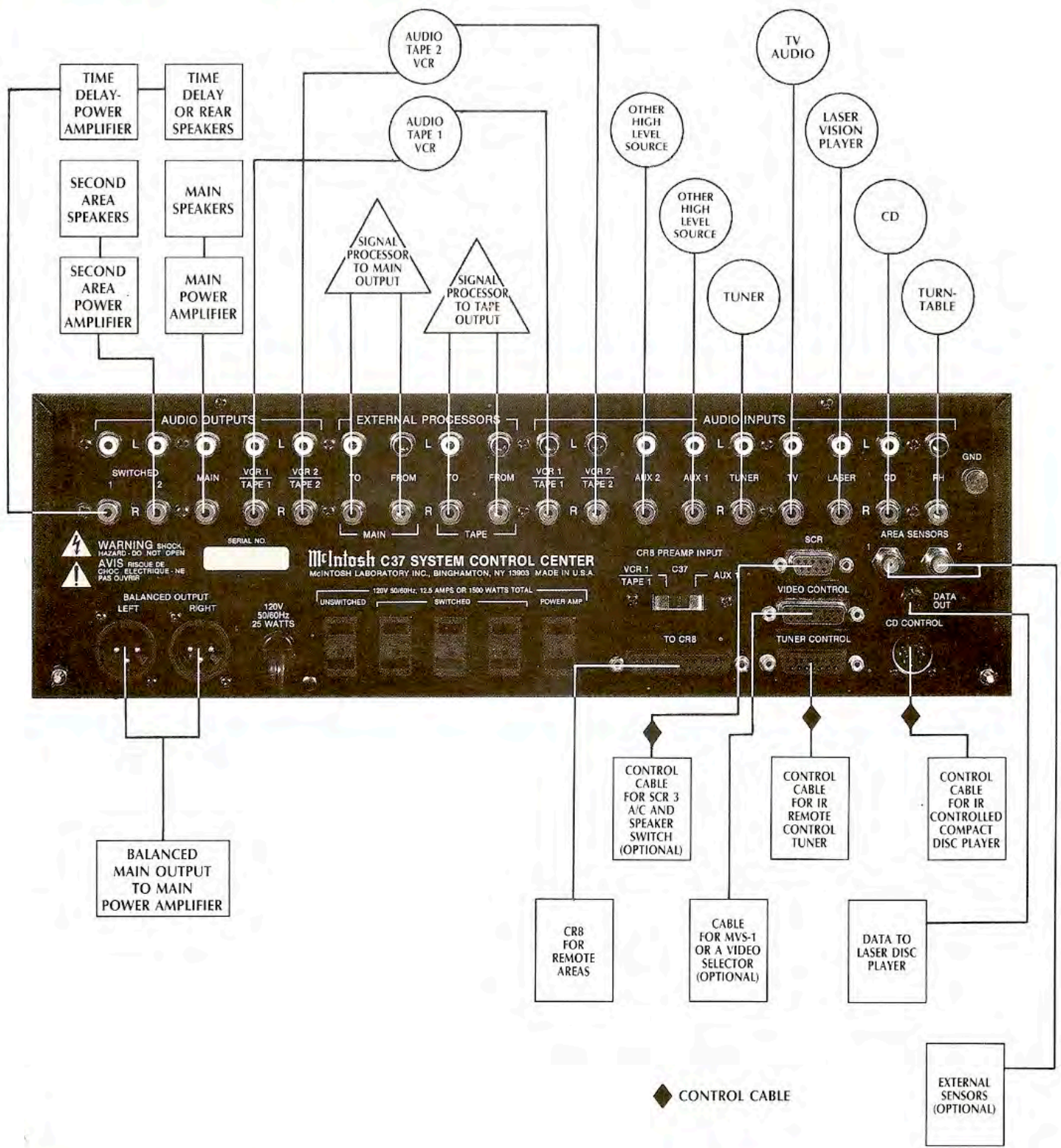
McIntosh HR37



THE LOCATION OF CONTROLS

The numbers and letters correspond to the paragraphs on pages 6 thru 11.





CONNECTING DIAGRAM 17



McIntosh[®]

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