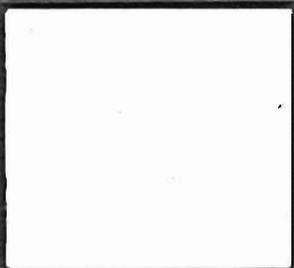


McIntosh[®]
OWNER'S MANUAL

**MX 118
A/V TUNER
CONTROL
CENTER**



OW/ER'S 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.

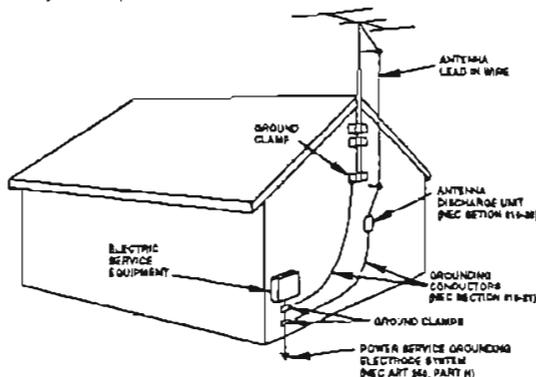
WARNING: TO REDUCE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS INSTRUMENT TO RAIN OR MOISTURE.

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 owner's 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. Power Lines - Locate any outdoor antenna away from power lines.

14. Outdoor Antenna Grounding - If an outdoor antenna is connected to the antenna terminal, be sure the antenna system is grounded to provide some protection against voltage surges and built up static charge. In the U.S.A., section 810 of the National Electrical Code, ANSI/NFPA No. 70-1978, provides information on the proper ground for the mast and supporting structure, ground for the lead-in wire to an antenna discharge unit, and size of ground conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

For ground wire:

- a) Use No. 10 AWG (5.3mm²) copper No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel, bronze wire, or larger as ground wire.
 - b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.2 meters) to 6 feet (1.83 meters) apart.
 - c) Mount antenna discharge unit as closely as possible to where lead-in enters house.
 - d) Use jumper wire not smaller than No. 6AWG (13.3 mm²) copper or equivalent when separate antenna grounding electrode is used.
15. Nonuse Periods - Unplug the power cord from the AC power outlet when left unused for a long period of time.
 16. 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.
 17. Servicing - Do not attempt to service beyond that described in the operating instructions. All other service should be referred to qualified service personnel.



18. 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.

19. **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.

Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.



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

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

CAUTION: TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE 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.

**IMPORTANT
SAFETY
INSTRUCTIONS**

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

**THANK
YOU**

Decision to own this piece of McIntosh Stereo Equipment ranks you at the very top of discriminating music listeners. You now have "The Best". The McIntosh dedication to quality, is assurance that you will receive thousands of hours of musical enjoyment from

It takes 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 piece of McIntosh. This will enable you to receive all the performance benefits this instrument can offer you, and that will make it come a highly valued part of your home music system.

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	

In any application, McIntosh Laboratory provides a Service Contract to the original purchaser. Your McIntosh Authorized Service Agency can expedite repairs when you provide them with the Service Contract.

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INTRODUCTION

The MX118 has the added feature of the McIntosh designed HALL and STADIUM operating modes. This feature allows you to enhance the realism of two channel stereo program sources such as a compact disc. The Left and Right stereo signals are reproduced through the Left and Right Front loudspeakers. The same signals are combined and fed to the Center channel loudspeaker as mono center fill. The combined Left and Right signals are also fed to a digital processor with two optional time delays for the Surround loudspeakers. The shorter HALL time delay simulates a concert hall, and the longer STADIUM time delay simulates a larger listening area similar to a stadium. If a subwoofer is used in the system, it can operate in all four modes. The MX118 includes a 25-pin connector on the rear panel to fit a single subminiature "D" (DB25) computer type cable that will fit a similar connector on a McIntosh MC7106 Six Channel Power Amplifier. This cable carries all six audio signals and AC power control to the McIntosh MC7106 for a McIntosh Home Theater System. You can also connect the computer type cable to a matching connector on the MC7108 Eight Channel Power Amplifier. The Six channel signals and power control will feed to six of the eight channels, leaving two amplifier channels for other applications.

Data ports are provided for use with the optional McIntosh Model RCT-2 Remote Control Translator, the HC-1 Home Controller, a laser disc player, two CD players and one external Video accessory component. The Model RCT-2 Remote Control Translator is a learning device that will allow the MX118 to remotely control other brands of products.

The MX118 includes six pairs of high-level audio inputs in addition to the built-in AM-FM tuner. A total of fifty station presets are available in any combination of AM and FM stations. Whenever a preset is selected, the tuner automatically switches to the appropriate AM or FM band according to the preset memory. Four pairs of Audio inputs have matching Video inputs. The MX118 will simultaneously switch the four video and corresponding audio signals. The MX118 Video switching functions are amplified and impedance matched. You will experience no deterioration in video picture quality when an MX118 is operating in your Audio/Video system.

The MX118 uses digital logic integrated circuits to drive Electromagnetic Switches for all input, output and operating functions. This is the most reliable and distortion-free switching available.

Two Tape Monitor circuits allow you to use two audio or VCR recorders. A pair of Tape Copy switches allow you to copy either audio or video tapes from one recorder to the other. A continuously variable Active Loudness control allows loudness compensation to be selected for any setting of the volume control. The Loudness control circuit elements are removed from the circuit path when the control is in the flat or fully counterclockwise position.

Bass and Treble tone controls provide 12dB of boost or cut. At the center "Flat Response" or detent position of the tone controls, all tone control circuit elements are removed from the signal path. Other features include a precision multi-channel volume control and Balanced outputs for the Left and Right Front output signals. A front panel headphone output is also provided. The McIntosh MX118 "Classic McIntosh" all glass front panel has all control, switch and pushbutton nomenclature illuminated.

The McIntosh MX118 AV Tuner Control Center interconnected with a McIntosh multi-channel power amplifier, or selection of separate amplifiers, feeding a set of McIntosh HT Series Home Theater loudspeakers will make an ideal **"McIntosh Quality"** Home Theater system. Your McIntosh dealer can help you in setting up all the various components of your McIntosh Home Theater to ensure you will receive the best possible performance.

Dolby Surround, Pro Logic and the Double-D Symbol are registered trademarks of Dolby Licensing Laboratories Incorporated.

The MX118 can be placed upright on a table or shelf, standing on its own plastic feet. It also can be installed in an optional McIntosh L72 equipment cabinet.

The MX118 can also be custom installed in a piece of furniture or cabinet of your choice. In this type of installation, the one inch plastic feet are removed from the bottom of the unit. It is then essential to provide a cutout in the mounting shelf for proper ventilation.

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

Refer to the drawings on a page further back in this manual for mounting dimensions and dimensions for the ventilation cutout in the mounting shelf.

The trouble free life of any electronic instrument is greatly extended by providing sufficient ventilation for adequate cooling. Always provide adequate ventilation for your MX118, even though it develops very little heat. Do not install your MX118 directly above a heat generating component such as a high power amplifier. In a system stack, the power amplifier should always be at the top. 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 their coolest possible operating temperatures.

All movies produced by major film companies have soundtracks that are encoded with Dolby Surround Sound. The decoding process is called Dolby Pro Logic and results in four separate soundtracks which are Left Front, Center, Right Front, and Surround sound. The Dolby Pro Logic decoded surround signals are monaural, but are reproduced by a non directional loudspeaker on each side of the listening area. The Dolby Surround concept is the heart of the Home Theater audio and video experience.

The MX118 provides five audio channels to take full advantage of the exciting sound reproduction capabilities of a Dolby Surround encoded movie soundtrack, plus the addition of a Subwoofer channel. Dolby Surround encoding is also used for MTS and satellite broadcasts as well as other audio-only program sources, such as compact discs. Use the MX118 CINEMA mode with its Dolby Pro Logic processing to enjoy listening to these other program sources.

Descriptions of the functions of each channel of a Dolby Surround soundtrack as decoded by Dolby Pro Logic will help you to better understand the use of the various controls, switches and operating procedures of your MX118.

DOLBY PRO LOGIC LEFT FRONT and RIGHT FRONT

These two channels are stereo channels in the traditional sense. The left and right signals provide ambience, depth and spaciousness for reproduction of music and sound from a Dolby Pro Logic decoded movie soundtrack. The front channels also reproduce similar information from a two channel stereo source such as a compact disc or audio tape.

DOLBY PRO LOGIC, CENTER FRONT

Dolby Surround movie soundtracks are encoded with a Center channel, which also includes dialog information, to increase the realism of the home theater experience. The Dolby Pro Logic decoded Center channel is reproduced through a loudspeaker placed in the front center location, either above or below the viewing screen. A Center loudspeaker provides greater intelligibility of a movie dialog and also contributes to the overall sound realism.

HOW TO INSTALL THE MX118

HOME THEATER AUDIO CHANNEL CONFIGURATION WITH DOLBY SURROUND, PRO LOGIC PROCESSING

**HOME THEATER
AUDIO
CHANNEL
CONFIGURATION
WITH DOLBY
SURROUND,
PRO LOGIC™
PROCESSING**

DOLBY PRO LOGIC, LEFT and RIGHT SURROUND

Dolby Surround movie soundtracks are encoded with a specially processed surround sound signal. When decoded by Dolby Pro Logic processing circuits, the surround sounds can include all types of acoustical information and sound effects that enhance the listening enjoyment of a movie. The Dolby Pro Logic decoded surround sound channel is monaural, however, it is reproduced through two separate loudspeakers placed on the left and right walls of the listening area. The surround loudspeakers should radiate sound in a non directional manner, allowing the listeners to hear only the sound that is reflected off the wall surfaces and not directly from the loudspeakers. Properly installed surround loudspeakers will provide ambience, and should not distract from the direct sound reproduced by the front loudspeakers.

SUBWOOFER

Although movie soundtracks do not have a discrete subwoofer channel, a well designed subwoofer will reproduce the low frequency music and sound effects present in today's action movie soundtracks with dramatic impact. Using a discretely placed subwoofer also allows the optional use of somewhat smaller front loudspeakers.

A subwoofer loudspeaker is designed to reproduce only the lowest audio frequencies, which are essentially non-directional. The MX118 meets this requirement by combining the Left, Right and Center channel signals and feeding them through a filter that allows only the bass frequencies of 80Hz and lower to be fed to the subwoofer outputs. The non-directional sound characteristics of a subwoofer allow it to be placed in a wide range of room locations.

**FRONT PANEL
CONTROLS,
SWITCHES, AND
PUSHBUTTONS**

The MX118 can be remotely controlled. Most of the operating functions performed at the front panel, also can be done by the MX118 Hand Held Remote Controller. The following information refers only to the front panel. Another section of this manual explains the functions and operation of the MX118 Hand Held Remote Controller.

The last page of this manual folds out to show drawings of the front and rear panels of the MX118. This will help you in identifying and locating the front panel controls, switches, pushbuttons and the rear panel connectors and switches. The letters and numbers on the drawings refer to the information that follows.

A. BASS AND TREBLE

Provides 12dB boost and cut, with neutral flat response at the center detent position. The Bass and Treble controls affect the LEFT, and RIGHT Balanced Outputs, the LEFT FRONT, CENTER, RIGHT FRONT and SUBWOOFER Unbalanced Outputs.

The FIXED, TP/VCR1 and TP/VCR2 OUTPUTS are not affected by the Bass and Treble controls.

B. INPUT

Selects any of the five audio input signals that will feed the MAIN Balanced and Unbalanced Audio Outputs. The TV/VIDEO and LV/AUX audio signals will also have their corresponding Video signals selected.

DISPLAY WINDOW

C. AM - FM

Indicates the broadcast band selected in TUNER mode.

D. SIGNAL

Indicates the relative signal strength of either an AM or FM broadcast station.

E. STATION FREQUENCY

The numerical indication of the station frequency. AM indications are in Kilohertz and change in 10kHz steps. FM indications are in Megahertz and change in 100kHz steps.

FRONT PANEL CONTROLS, SWITCHES AND PUSHBUTTONS

F. PRESET

Indicates the number of the AM or FM station preset that has been selected.

G. ENTER

Indicates station preset programming.

H. MPX

Indicates when the tuned FM station is broadcasting in multiplex stereo.

I. MODE (Selects the operating configuration)

STEREO: Left channel signals are fed to the LEFT FRONT Unbalanced and the LEFT Balanced Outputs. Right channel signals are fed to the RIGHT FRONT Unbalanced and the RIGHT Balanced Outputs. The Left and Right signals of 80Hz and lower are combined and fed to the SUBWOOFER Output. The Subwoofer can be turned ON or OFF in STEREO mode with the rear panel SUB WOOF switch.

The Unbalanced CENTER Output, which contains the combined left and right channel signals can be activated by setting the rear panel CENTER FILL Switch, to the ON position. This allows a Center channel loudspeaker to be used during STEREO operation.

CINEMA: TO REPRODUCE DOLBY SURROUND, PRO LOGIC DECODED MOVIE SOUNDTRACKS

Audio signals from a Dolby Surround encoded movie soundtrack are fed to the MX118 Dolby Pro Logic processing and decoding circuits which produce the following different outputs.

Left audio signals are fed to the LEFT FRONT Unbalanced and LEFT BALANCED OUTPUTS. Right audio signals are fed to the RIGHT FRONT Unbalanced and RIGHT BALANCED OUTPUTS. The Dolby Pro Logic processing circuits also decode the center channel signals which include dialog, and feed them to the Unbalanced CENTER Output. (*For information on the three optional modes of Center speaker operation, refer to the manual section describing the rear panel CENTER SPEAKER switch.*). The Dolby Pro Logic processed monaural surround sound signals are fed to the LEFT Surround and RIGHT Surround outputs.

The Left, Right and Center signals of 80Hz and lower are also combined by the MX 118 and fed to the SUBWOOFER Output. The Subwoofer output is always ON in CINEMA mode, and is not affected by the rear panel SUB WOOF Switch.

The **Dolby Surround Pro Logic** Indicator on the MX118 front panel lights when the MODE Switch is in CINEMA position.

Dolby Surround encoding is also used for MTS and satellite broadcasts as well as other audio-only program sources such as compact discs. Use the MX 118 CINEMA mode with its Dolby Pro Logic processing to enjoy listening to these other program sources.

HALL and STADIUM:

These two modes of operation can be used to enhance the listening enjoyment of any two channel stereo program sources, such as a compact disc, tape or radio broadcast. The Left and Right signals are combined, fed through digital sound processor time delay circuits and then fed to both LEFT and RIGHT SURROUND Outputs. The time delay for the HALL mode simulates a typical concert hall. The slightly longer time delay for the STADIUM mode simulates the acoustics of a larger enclosure such as a stadium.

J. VOLUME/MUTING LED

Adjusts the volume level of all six Unbalanced Outputs and the two Balanced Outputs. The rear panel TP/VCR1, TP/VCR2 and FIXED Outputs are not affected by the VOLUME control.

A RED MUTING LED is included on the front panel just to the right of the Volume Control. MUTE all audio signals by pressing the MUTE pushbutton on the MX118 Hand Held Remote Controller. The MUTE LED to the right of the Volume control turns ON to indicate Muting is in effect. UNMUTE by pressing the MUTE pushbutton again.

FRONT PANEL CONTROLS, SWITCHES AND PUSHBUTTONS

K. LOUDNESS and BALANCE (concentric controls)

BALANCE control, (large outer knob): Adjusts the volume of the Left and Right channels relative to each other. The **BALANCE** control affects only the LEFT FRONT, RIGHT FRONT Unbalanced, LEFT and RIGHT BALANCED OUTPUTS. The **BALANCE** Control is effective in all modes of operation.

L, (Left): Turn the control to the left to accent the left channels by reducing the volume of the right channels.

R, (Right): Turn the control to the right to accent the right channels by reducing the volume of the left channels.

The VCR/TP1, VCR/TP2 and FIXED Outputs are not affected by the **BALANCE** Control.

LOUDNESS control, (small inner knob): Provides frequency response contoured to compensate for the behavior of the human ear at softer listening levels. At the fully counterclockwise detent position, the frequency response is perfectly flat and the loudness circuit components are removed from the signal path. Turn the control clockwise to modify the frequency response in the correct proportion required for softer listening levels. The compensated frequency response is not affected by changes in the volume control settings. First adjust the **VOLUME** Control for the desired listening level, then adjust the **LOUDNESS** Control to the setting you personally prefer.

The **LOUDNESS** Control affects the LEFT FRONT, CENTER, RIGHT FRONT, SUBWOOFER Unbalanced, and LEFT and RIGHT Balanced, Outputs. The **LOUDNESS** Control is effective in all four modes of operation.

The VCR/TP1, VCR/TP2, FIXED and SURROUND Outputs are not affected by the **LOUDNESS** Control.

NOTE: The flat frequency response setting of the LOUDNESS Control is at the FULLY COUNTERCLOCKWISE position, not at the center of 12 o'clock position where the BALANCE Control is neutral.

L. TAPE/VCR MON 1 and 2

Press either pushbutton to listen to programs from an Audio Tape Recorder, or a Video Tape Recorder. If a Video Recorder is connected into the system, the corresponding Video signals will also be selected.

M. 1▶2 TAPE/VCR COPY 2▶1

Copy Audio or Video tapes from either of two recorders, to the other. The TAPE/VCR COPY switches operate independently from the INPUT switch.

The TAPE COPY switches are electronically interconnected to prevent both circuits from being activated at the same time. If you press one of the TAPE COPY switches to start a copy procedure, you must press the same TAPE COPY switch again to turn off the first operation before pressing the other TAPE COPY switch.

HOW TO PROGRAM AM AND FM PRESETS

N. ENTER, Use to program Tuner station presets.

1. Select either the AM or FM broadcast band with the **AM/FM**, pushbutton.
2. Tune to the desired broadcast station frequency using the **TUNE**, pushbuttons.
3. Press the **ENTER** pushbutton. The **ENTER LED** on the right center of the upper front panel display window will light.

The MX118 will remain in the present ENTER mode for 10 seconds to allow the following preset programming steps.

4. Push the **PRESET**, pushbutton and scroll to the PRESET NUMBER (from 1 through 50) that you desire for that particular station.

5. Press the **ENTER** pushbutton a second time to activate the memory. The **ENTER LED** will turn off and the station selection preset will be memorized.

6. Repeat the above steps 1 through 5 to memorize presets for a total of 50 AM and FM station frequencies in any combination.

Whenever a preset is selected, the tuner automatically switches to the appropriate AM or FM band according to the preset memory.

HOW TO ERASE OR CLEAR ALL STATION PRESETS FROM MEMORY

On the rear panel is a recessed **PRESET CLEAR** pushbutton which allows you to clear all tuner AM and FM presets previously stored in memory. Use a device such as a ball point pen or small screwdriver to press the **PRESET CLEAR** pushbutton. Press the pushbutton and hold it in for at least 5 seconds. The preset digits will start flashing on and off to indicate that the **PRESET CLEAR** function will occur. When the digits stop flashing, all the preset memories will then be instantly erased.

(If the MX118 AC line cord is disconnected, or the AC power is interrupted, the tuner power supply turns off. However, Tuner preset memory will be retained permanently.)

REVIEW THE STATION PRESETS WITH THE HAND HELD REMOTE CONTROLLER

Press **REVIEW** and the tuner will start the automatic 5 second audition of each of the preset stations stored in the **PRESET** memory. Only the presets stored in memory will be reviewed. If only five presets have been stored in memory, only those five will be reviewed. Press **REVIEW** a second time to stop on the desired preset station, and exit the **REVIEW** process. The **REVIEW LED** then turns off.

The **REVIEW** process can also be cancelled by pressing any other tuner function pushbutton.

O. AM/FM

Selects either the AM or the FM broadcast band.

P. HEADPHONES

Plug in a pair of high impedance headphones for private listening.

Q. PRESET

Press the **PRESET** button to cycle through the 50 presets available. The 50 presets can be AM, FM or any combination of AM and FM. The numerical indicator at the upper right corner of the display window indicates the number of the preset selected. Whenever a preset is selected, the tuner automatically switches to the appropriate AM or FM band according to the preset memory.

If you manually tune to a station that also has been stored as a preset, the preset number will appear in the front panel preset display window.

R. (▼) TUNE (▲)

Press either the **UP (▲)** or **DOWN (▼)** **TUNE** pushbutton to tune up or down frequency in either the AM or FM broadcast band. The AM band changes frequency in 10kHz steps and the FM band in 100kHz steps.

S. MONO

Press **MONO** to combine the left and right signals for monophonic operation. The Mono signals are fed to the **LEFT FRONT** and **RIGHT FRONT** Balanced and Unbalanced Outputs. The combined Mono signals of 80Hz and lower are also fed to the **SUBWOOFER** Output. The Subwoofer can be turned **ON** or **OFF** in the Mono mode with the rear panel **SUBWOOF** switch (28).

The Unbalanced **CENTER** Output can be activated in **MONO** mode by setting the rear panel **CENTER FILL** (26) switch to the **ON** position. This allows a Center channel speaker to be used in **MONO** mode.

FRONT PANEL CONTROLS, SWITCHES AND PUSHBUTTONS

HOW TO PROGRAM AM AND FM PRESETS

MX 118 HAND HELD REMOTE CONTROLLER

T. SYS CAL, (SYSem CALibrate)

Press SYS CAL to turn on the MX 118 built-in noise generator. This allows the Left Front, Center, Right Front and Surround channel volume levels to be accurately set and matched. (The Subwoofer channel level must be set manually during a listening session.) Calibration includes individual channel volume level adjustment or trimming which may be required due to room geometry or differences in amplifiers or speakers. The calibration can be done by automatic or manual switching of the noise generator to each channel, depending on the setting of the MX118 rear panel SYSTEM CALIBRATE switch. It is recommended that Surround Sound System Trim level calibration always be done in the CINEMA mode.

Surround Sound channel Volume Level calibration is described in the manual section HOME THEATER SURROUND SOUND LEVEL CALIBRATION.

U. POWER

Press POWER to turn on the MX118 system.

The descriptions and functions of the MX118 Remote Controller pushbuttons refer to the numbers on the drawing.

1. Select any of the 7 Audio and A/V program signals. TAPE 1 and TAPE 2 are the same as the front panel TAPE/VCR MON 1 and 2 switches.

2. These five pushbuttons operate when an optional McIntosh MVS-3 Audio/Video Selector is connected to the MX118. First press the VIDEO Input pushbutton, and then any of the desired five Video source pushbuttons.

3. Press HOME to operate the HC-1 Home Controller functions. Within five seconds press a pushbutton number from 0 to 9 to control the desired relays on the HC-1.

4. E, (ENTER or EXTRA), is used for controlling functions of an accessory component when an RCT-2 Remote Control Translator is being used.

5. Press SYS (SYSem) OFF to turn OFF the MX118 system.

6. Press POWER to turn ON the MX118 system.

7. Press ACC (ACCessory) OFF or AC On to control the AC Power of an accessory component that is being used in combination with an RCT-2 Remote Control Translator.

8. Select Tuner station presets or relay operation on the HC-1 Home Controller. To operate the HC-1, first press the HOME pushbutton (4) and then the desired pushbuttons 0 through 9 within five seconds, to activate the relays on the HC-1.

To operate the Tuner presets, first press TUNER, select AM or FM and then press any pushbutton from 0 through 9 either individually or in combinations to select the desired PRESET no. from 1 to 50.

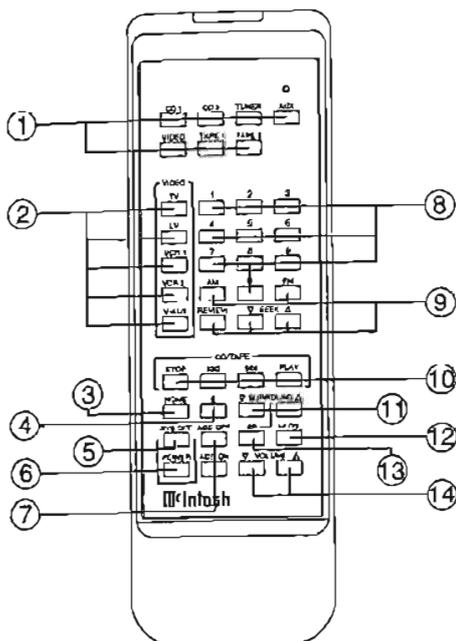
The number pushbuttons can also be used to operate accessory components when the RCT-2 Remote Control Translator is being used in the system.

9. Select Tuner functions of AM, FM, SEEK UP (▲) or SEEK DOWN (▼) or REVIEW. Press TUNER and then press REVIEW to start the automatic 3 second audition of each of the preset stations stored in tuner memory. Press REVIEW again to stop on the desired preset. Cancel the REVIEW process by pressing REVIEW a second time, or pressing any other Tuner function pushbutton. Press either SEEK (UP) or SEEK (DOWN) to cycle from one station to the next.

When an RCT-2 Translator is being used to control a TV set, the SEEK UP and DOWN pushbuttons can be used to change TV channels.

10. Select CD player, CD Changer or tape recorder functions.

Using a McIntosh **SINGLE DISC CD PLAYER**, STOP, BACK TRACK (◀◀), NEXT TRACK



(▶▶) and PLAY functions can be performed.

Using a McIntosh **CD CHANGER**, STOP, BACK TRACK (◀◀), NEXT TRACK (▶▶) and PLAY functions can be performed **while a disc is playing**.

When the CD changer is in the **STOP** position, BACK TRACK (◀◀) selects the SINGLE DISC and NEXT TRACK (▶▶) selects which of the other six discs you wish to play. After pressing STOP, the first time you press NEXT (▶▶), disc number 1 is selected. Press again as desired to select discs 2 through 6.

FOR EXAMPLE: To select disc number 6 from the single disc play mode, press STOP and the NEXT (▶▶) six times. To select disc number 2, press STOP and then press NEXT (▶▶) twice. To select the disc in the SINGLE disc slot, press STOP and then press BACK (◀◀) once.

11. Press either an UP (▲) or DOWN (▼) SURROUND pushbutton to change the level of the surround channels during listening and viewing.

These changes will stay in effect as long as the MX118 is left turned ON. When the MX118 is turned OFF, these surround level changes will be lost, and the surround levels will return to those set by the most recent surround level calibration procedure.

12. Press MUTE to mute all audio signals. A RED LED just to the right of the front panel Volume control turns ON to indicate Muting is active. To UNMUTE, press MUTE again.

13. Press the SP (Sound Processor) pushbutton to cycle through all four operating modes.

14. Press UP VOLUME (▲) or DOWN VOLUME (▼) to lower the listening volume. All channels are affected.

The TP/VCR1, TP/VCR2 and FIXED Outputs are not affected by the remote volume pushbuttons.

HOW TO INSTALL BATTERIES IN THE MX118 HAND HELD REMOTE CONTROLLER

Slide open the battery compartment. Insert two type AAA batteries into the compartment, making sure to observe that battery polarities indicated in the battery compartment.

When the batteries are nearing exhaustion, the effective range of the remote controller decreases, and MAY even fail to operate. In this case, replace both batteries with fresh one.

NOTE:

1. Do not mix old and new batteries. Use ONLY batteries that are new.
2. Make sure both batteries are of the same type and identical.
3. To prevent damage caused by possible battery leakage, remove the batteries from the remote controller if it is not going to be used for an extended time.
4. Never dismantle batteries or dispose of them in a fire, as they may explode. Dispose of old batteries in an approved method for proper safety.

MX118 HAND HELD REMOTE CONTROLLER

THE REAR PANEL AND HOW TO MAKE CONNECTIONS

Use high quality cables to interconnect the audio and video accessory equipment used with your MX118 A/V Tuner Control Center. This will ensure the best possible performance from your McIntosh Home Theater and Stereo system. Your McIntosh dealer can advise you on the types and lengths of cables best suited for your particular installation.

1. HIGH PASS FILTERS

First set the SUBWOOF Switch to ON. (You must have the SUBWOOF Switch ON before the HIGH PASS FILTERS Switch will function). Next, set the HIGH PASS FILTERS switch to ON. This will remove all low frequencies below 80Hz from the Left Front, Center and Right Front speakers. This mode of operation is preferred when all three front speakers are small and compact. A Subwoofer will then be necessary to handle all bass frequencies of 80Hz and lower. Set the switch to OFF when full range front speakers are used. The HIGH PASS FILTERS switch, functions in all operating modes.

The Subwoofer will turn ON automatically in CINEMA Mode, regardless of the position of the SUBWOOF Switch.

2. SYSTEM TRIM

These controls are used to adjust the level match of the SURROUND channels, the CENTER channel and the SUBWOOFER channel, relative to the FRONT LEFT and RIGHT channels. Refer to the manual section HOME THEATER SURROUND SOUND LEVEL CALIBRATION for details.

3. 6 CHANNEL OUTPUT

This connector accepts a 25 conductor shielded subminiature "D" (DB25) male-to-female computer type cable that feeds all six program signals and the AC power control signal to the matching 6 channel (THX) connector on the rear panel of a McIntosh MC7106 Six Channel Power Amplifier. A single cable connection between an MX118 and MC7106 makes an easy and convenient installation for a McIntosh Home Theater system.

Audio signals are fed simultaneously to all the discrete output connectors as well as the 6 CHANNEL OUTPUT connector.

ALL SIGNALS FED TO THE SIX DISCRETE OUTPUTS ALSO APPEAR AT THE MX118 REAR PANEL 6 CHANNEL OUTPUT CONNECTOR AND ARE FED THROUGH AN OPTIONAL 25 CONDUCTOR SUBMINIATURE "D" (DB25) MALE-TO-FEMALE COMPUTER TYPE CABLE TO A MATCHING CONNECTOR ON A McINTOSH MC7106 SIX CHANNEL POWER AMPLIFIER OR MC7108, EIGHT CHANNEL POWER AMPLIFIER. THE CHANNEL ALLOCATION IS AS FOLLOWS.

CHANNEL 1: Center Front

CHANNEL 2: Left Surround

CHANNEL 3: Left Front

CHANNEL 4: Right Front

CHANNEL 5: Subwoofer

CHANNEL 6: Right Surround

(Channels 7 and 8 on the MC7108 will be free for other power amplifier applications.)

4. SUR (SURround) OUTPUTS

Connect a pair of cables from the SURround AUDIO OUTPUT jacks to the Inputs of the power amplifier channels which will feed left and right surround sound loudspeakers.

5. CENTER OUTPUT

Connect a cable from the CENTER AUDIO OUTPUT jack to the amplifier channel that will feed the CENTER channel loudspeaker.

6. SUBWOOF (SUBWOOFer) OUTPUT

Connect a cable from the SUBWOOF AUDIO OUTPUT jack to the amplifier channel feeding a subwoofer loudspeaker. This output includes only audio frequencies of 80Hz and lower. If you are using a powered subwoofer, connect the SUBWOOFer AUDIO OUTPUT to the input of the subwoofer power amplifier.

7. FRONT OUTPUTS

Connect a pair of cables from the FRONT AUDIO OUTPUT jacks to the left and right front amplifiers. Use these outputs if you are operating the MX118 as a conventional two channel stereo control center. If you are using a powered subwoofer, connect the SUBWOOFer AUDIO OUTPUT to the input of the subwoofer power amplifier.

8. TP/VCR1, TP/VCR2 OUTPUTS

Connect cables from the MX118, TP/VCR1 and TP/VCR2 AUDIO OUTPUT jacks to the high-level audio inputs of two VCR units or two audio tape recorders. These connections allow you to record the audio portion of ANY input selected by the INPUT switch.

9. FIXED OUTPUTS

Any audio signal selected by the INPUT switch appears at the fixed outputs. The output levels depend on the levels of the incoming signals and are not affected by any of the MX118 Volume, Balance, Loudness or Tone controls.

10. TP/VCR1 and TP/VCR2 INPUTS

Connect cables from the Audio Outputs of VCR units, audio tape recorders or other similar AV Tuner Control Center accessories to these two AUDIO INPUTS.

11. AUX/LV (Laser Video) INPUTS

Connect a pair of cables from a Laser Video Disc player, Audio Outputs, to the LV AUDIO INPUTS. You can also connect the audio outputs from any similar accessory component to these inputs.

12. VIDEO/TV INPUTS

Connect a pair of cables from the Audio Outputs of a TV set, TV Monitor, TV Tuner or any similar audio/video accessory component to the VIDEO/TV INPUTS.

13. CD1, CD2 INPUTS

Connect a pair of cables from the output of two CD players to the CD1 and CD2 INPUTS. For example, CD1 Inputs could be used for a single disc player, and CD2 Inputs for a CD changer.

When the MX118 is used with the CR10 Remote Control System, only the CD2 Input feeds to the CR10 for use in remote areas. The MX118 CD1 Input normally will be used with a CD player in the MX118 home area.

14. LOOPSTICK ANTENNA

When the MX118 is packed for shipping, the AM loopstick antenna is folded flat and taped against the rear panel. Remove the securing tape and fold it out, away from the panel for pro-

THE REAR PANEL AND HOW TO MAKE CONNECTIONS

per AM reception. The AM loopstick antenna is directional so it is designed to be easily moved to a wide range of positions. This allows you to move the loopstick to the position for the best possible reception of your favorite AM stations.

(See Number "29", AM ANTenna for information on adding an external AM antenna.)

15. AC OUTLETS (Total of Two)

The SWITCHED AC outlet turns ON whenever the MX118 is turned ON. The UNSWITCHED AC outlet stays on as long as the MX118 AC power cord is connected to a live AC wall outlet.

To expand the number and current capability of any of the three AC outlets, a power control relay such as the R612, R612A or PC-2 can be used.

**TOTAL CURRENT CAPACITY OF BOTH MX118 REAR PANEL
AC OUTLETS IS 1400 WATTS OR 11.6 AMPERES**

16. POWER CONTROL

This connector supplies a DC Power Control signal to feed to a Power Control Input on a McIntosh Power Amplifier or other compatible accessory, to turn its AC power on and off.

The Interconnect cable from the MX118 POWER CONTROL output Jack to a POWER CONTROL IN Jack uses single conductor shielded wire with 1/8" mini phone plugs. Connections are to the sleeve (-) and tip (+) of the plug.

17. EXTERNAL SENSOR

A coaxial connector is provided to add an external IR sensor or keypad. This feature is useful in an installation where the MX118 is mounted behind a cabinet door, blocking access to the front panel IR sensor.

18. ANT/CABLE, TV and MODULATOR

These connections and switch are designed to accommodate a conventional TV set that has no separate audio and video connectors. The TV could be used in the home theater area, or in a remote area away from the main system.

ANT/CABLE: Connect a coaxial cable from a TV Antenna or Cable Output to the ANT/CABLE Coaxial connector.

TV: Connect a coaxial cable from the MX118 TV coaxial output to the coaxial antenna input of a TV receiver being used as a monitor. Whenever the MX118 is turned OFF, the RF signals feed from the ANT/Cable connector directly through to the TV connector and on to the TV set for normal TV reception.

When the MX118 is turned ON, and any of the VIDEO signal sources are selected, the signal from the ANT/CABLE is turned off and the TV will receive only the audio/video signals selected by the MX118. The MX118 MODULATOR feeds only mono audio signals to the TV.

The audio volume level to the TV from the MODULATOR will change with the MX118 VOLUME control. This feature is convenient if the TV set speaker is being used for the Center channel in a Home Theater system.

TV AUDIO (Control): Adjust the TV AUDIO volume control for the desired audio level from the TV. Further volume changes can also be made with the volume control on the TV set.

CHANNEL 3 - 4: Set this switch to select which channel on the TV you would like to receive the audio/video signals.

19. PRESET CLEAR

The PRESET CLEAR is a recessed pushbutton used to clear all tuner AM and FM presets

previously stored in memory. Use a device such as a ball point pen to press the PRESET CLEAR pushbutton. Press the pushbutton and hold it in for at least 5 seconds. The front panel preset digits will start flashing on and off to indicate that the PRESET CLEAR function will occur. When the digits stop flashing, all the preset memories will then be instantly erased.

20. DATA PORTS

The HOME DATA PORT is provided for connecting to the McIntosh HC-1 Home Controller. This allows you to control accessories such as lights or viewing screen motors by pressing appropriate pushbuttons on the MX118 Hand Held Remote Transmitter.

The SUM DATA PORT is used for connecting to the McIntosh Model RCT-2 Remote Control Translator. Any IR signal transmitted to an MX118 sensor results in data signals at this port. The RCT-2 is a learning device that will allow the MX118 to remotely control most major brands of accessory components.

The VIDEO DATA PORT is used to connect to the optional McIntosh MVS-3 Audio/Video Selector. This allows you to connect Video accessory units and switch both their Audio and Video signals simultaneously.

The CD1, CD2, VIDEO/TV and AUX/LV DATA ports can connect to data ports on other compatible accessories to allow you to operate them by sending signals from the accessory hand held controller to the MX118 front panel IR sensor.

Connect a cable from a CD DATA PORT to the Data Port on a McIntosh MCD7009 CD Player. Connect the AUX/LV DATA PORT to the Data Port on a McIntosh MLD7020 Laser Disc player. This allows you to operate these players with the MX118 hand held controller.

All DATA cables connected from the MX118 DATA ports use single conductor shielded wire with 1/8" mini phone plugs. Connections are to the sleeve (-) and tip (+) of the plug.

(If you are using a McIntosh MCD7009 CD Player, use either the DATA PORT connection, or the CONTROL connection, but not both at the same time.)

21. VIDEO OUTPUTS, (MONITOR, VCR2 and VCR1)

MONITOR: Connect cables from MONITOR VIDEO OUTPUT to the Video Input on a TV monitor for video signals selected by the INPUT switch. The corresponding audio signals will be switched simultaneously.

VCR1: Connect cables from the VCR1 VIDEO OUTPUT to the Video Inputs of a VCR.

VCR2: Connect cables from VCR2 VIDEO OUTPUTS to the Video Inputs of a second VCR.

22. CD1/CD2 CONTROL

Connect a McIntosh CD Control cable (Part No. 170-147, supplied with each McIntosh CD player or changer), from the CD1 or CD2 CONTROL socket to a matching connector socket on a McIntosh CD player or changer. This allows you to control CD player functions with the MX118 Hand Held Remote Controller transmitting to an MX118 sensor. You could use CD1 for a single play CD player and CD 2 for a CD changer.

23. VIDEO INPUTS (VCR1, VCR2, AUX/LV and VIDEO/TV)

Connect cables from the video outputs of four separate video accessories to the appropriate video inputs. These four video inputs can be selected by the INPUT switch or the TAPE/VCR MONITOR pushbuttons. The corresponding audio signals are also selected simultaneously.

24. SYSTEM CALIBRATE (AUTO-MANUAL)

Set this switch to the AUTOMATIC position for the built-in noise generator to automatically switch its signal in sequence to the Left Front, Center, Right Front, and Surround loudspeakers. This allows you to trim all the surround channel volume levels. It is recommended that level

THE REAR PANEL AND HOW TO MAKE CONNECTIONS

calibration or trim be done only in the CINEMA mode. (The Subwoofer level is adjusted separately while listening to program material.)

Set the switch to the MANUAL position for manually switching the built-in noise generator to the Left Front, Center, Right Front and Surround loudspeakers.

Press the SYS CAL pushbutton (S) to start the calibration process in either Manual or Auto mode.

Refer to the manual section HOME THEATER SURROUND SOUND VOLUME LEVEL CALIBRATION for detailed information on the surround System Trim level calibration procedure.

25. CENTER SPEAKER (NONE, SMALL, LARGE)

The CENTER SPEAKER Switch is effective only in the CINEMA mode when reproducing a Dolby Pro Logic decoded soundtrack.

NONE: Set the CENTER SPEAKER SWITCH to the NONE position when no center speaker is being used. All the Left and Right channel signals are sent to the Left and Right front channel loudspeakers to maintain the Phantom Center Channel effect.

SMALL. Set the switch to the SMALL position when a small compact speaker is used for Center channel reproduction. This switch setting includes a low pass filter that allows only decoded center channel frequencies above 100Hz to be fed to the small center speaker. All Center low frequencies below 100Hz are then fed to the respective Left and Right Front loudspeakers.

LARGE: Set the switch to the LARGE position when a full size, full range speaker such as the McIntosh HT-1 is used for the Center channel.

26. CENTER FILL (ON, OFF)

Set the switch to ON to activate the Center channel output when using the STEREO, HALL or STADIUM modes of operation. The center channel outputs in this configuration are the Left and Right channel stereo signals combined. This switch has no effect when using the CINEMA mode of operation.

27. TO MULTI-ROOM CONTROLLER

Connect a 25 conductor shielded subminiature "D" (DB25) male-to-male computer type cable from the MX118 TO MULTI-ROOM CONNECTOR to the matching connector on a McIntosh CR10 or CR12 Remote Control System. As many as four additional remote audio zones can be controlled using CD2, TUNER, VIDEO and AUX signal sources from the MX118. You can listen to audio from TAPE 1 and TAPE 2 in the remote zones but cannot control them due to the Tape Monitor switching configuration on the MX118.

28. SUBWOOFER (OFF-ON)

This switch turns the subwoofer channel on or off in STEREO, HALL and STADIUM operating modes. The subwoofer channel always operates in THE CINEMA mode, regardless of this switch setting.

29. AM ANTenna

A DIN connector socket is provided to allow an external AM antenna to be added for greater AM signal pickup sensitivity. This can be either a long single lead wire, or a shielded loop cable.

Connect a long line AM antenna to terminal number "4" on a male 7 pin DIN plug and insert the plug into the AM ANTenna socket on the MX118 rear panel.

A shielded loop consists of a length of shielded microphone cable or coax cable, arranged in a single turn loop. For best reception, orient the loop vertically. It may be attached around the frame of a window, behind a curtain, on the back of the equipment cabinet or in some

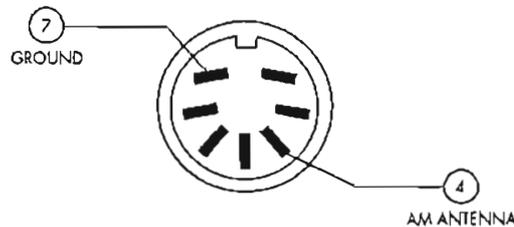
THE REAR PANEL AND HOW TO MAKE CONNECTIONS

similar manner. Signal strength is proportional to the size of the loop. The larger the loop, the greater is the signal strength.

To prepare the loop antenna from the shielded cable, strip 3/4 of an inch of outer insulation from each of the cable ends. At one end, completely remove the 3/4" of shield, since the shield is not connected at this end of the cable. Then remove 3/8" of insulation from the center conductor. On the other end of the cable, leave the shield intact and strip 3/8" of insulation from the center conductor. On this end only, twist the center conductor and the shield together so they make a good electrical connection.

At the cable end with the exposed center conductor and no shield, connect only the center conductor of the cable to terminal number "4" on a male 7 pin DIN CONNECTOR PLUG. Connect the other end of the cable, with the center conductor and shield connected together, to terminal number "7" on the DIN plug. Terminal number "7" is also chassis ground. Insert the DIN plug into the AM ANTenna socket on the MX118 rear panel to connect the loop.

AM ANTenna Connector Terminals.
(Shown facing rear panel)



30. 75Ω (ohm) FM ANTenna

Coaxial "F" type connector for a 75 ohm FM antenna. Four different types of FM antennas can be used with the MX118.

1. The flexible 75 ohm indoor dipole antenna supplied with your MX118 makes a convenient antenna for urban or high signal strength areas. Extend the two dipole sections as straight as possible. The antenna can be tacked behind the enclosure cabinet, placed under a rug or along the wall. Since the antenna is directional, you may have to experiment with the correct position for best reception of your favorite FM stations. An indoor antenna may not prove effective in houses or buildings with metal siding or insulation.
2. An all channel (UHF-VHF-FM) antenna can be connected. This type of antenna will be similar to the flexible dipole in reception, but may be more convenient to install.
3. An outdoor antenna designed specifically for the FM broadcast band is the best for optimum reception in all areas. In fringe areas, a directional FM antenna with a rotor is recommended. A rotor allows you to position the antenna for the best possible reception of a specific FM station. Consult your McIntosh dealer for assistance if you decide to install an outdoor FM antenna system.
4. A signal from your local cable company can also be connected. Consult your McIntosh dealer and the cable company for installation assistance.

All coaxial connections use either RG59U or RG6 coaxial cable.

HOW TO SETUP YOUR McINTOSH HOME THEATER

A Home Theater combines the newest high fidelity surround sound audio concepts with the high quality video reproduction of the latest big screen TV sets and monitors. All the excitement of the special audio and video effects of today's action movies are now possible in your own home using a laser video disc player or VCR as a source.

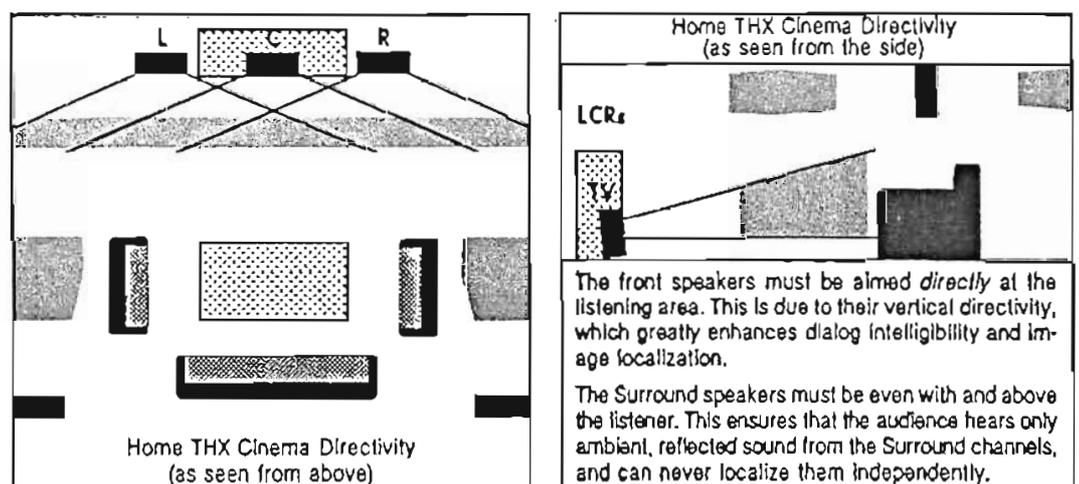
All movies produced by major film companies have soundtracks that are encoded with Dolby Surround Sound. The decoding process is called Dolby Pro Logic and results in four separate soundtracks which are Left Front, Center, Right Front, and Surround. This concept is the heart of the Home Theater audio experience.

To experience the maximum pleasure from your McIntosh Home Theater System, the electronics and loudspeakers should be set up as closely as possible to the recommended configurations.

Reproducing Dolby Surround movie soundtracks with Dolby Pro Logic decoding requires a specific selection and location of loudspeakers. McIntosh has introduced the HT Series Home Theater line of loudspeakers specifically designed for Home Theater use. These loudspeakers include models for Left Front, Center and Right Front, Surround Sound and a Subwoofer. The McIntosh HT Series loudspeakers are ideal for reproducing Dolby Surround encoded movie soundtracks using Dolby Pro Logic decoding. These loudspeakers also reproduce normal stereo music sources such as a compact disc with outstanding fidelity. The owner's manual included with the McIntosh HT Series, Home Theater Loudspeakers, gives detailed information on loudspeaker placement.

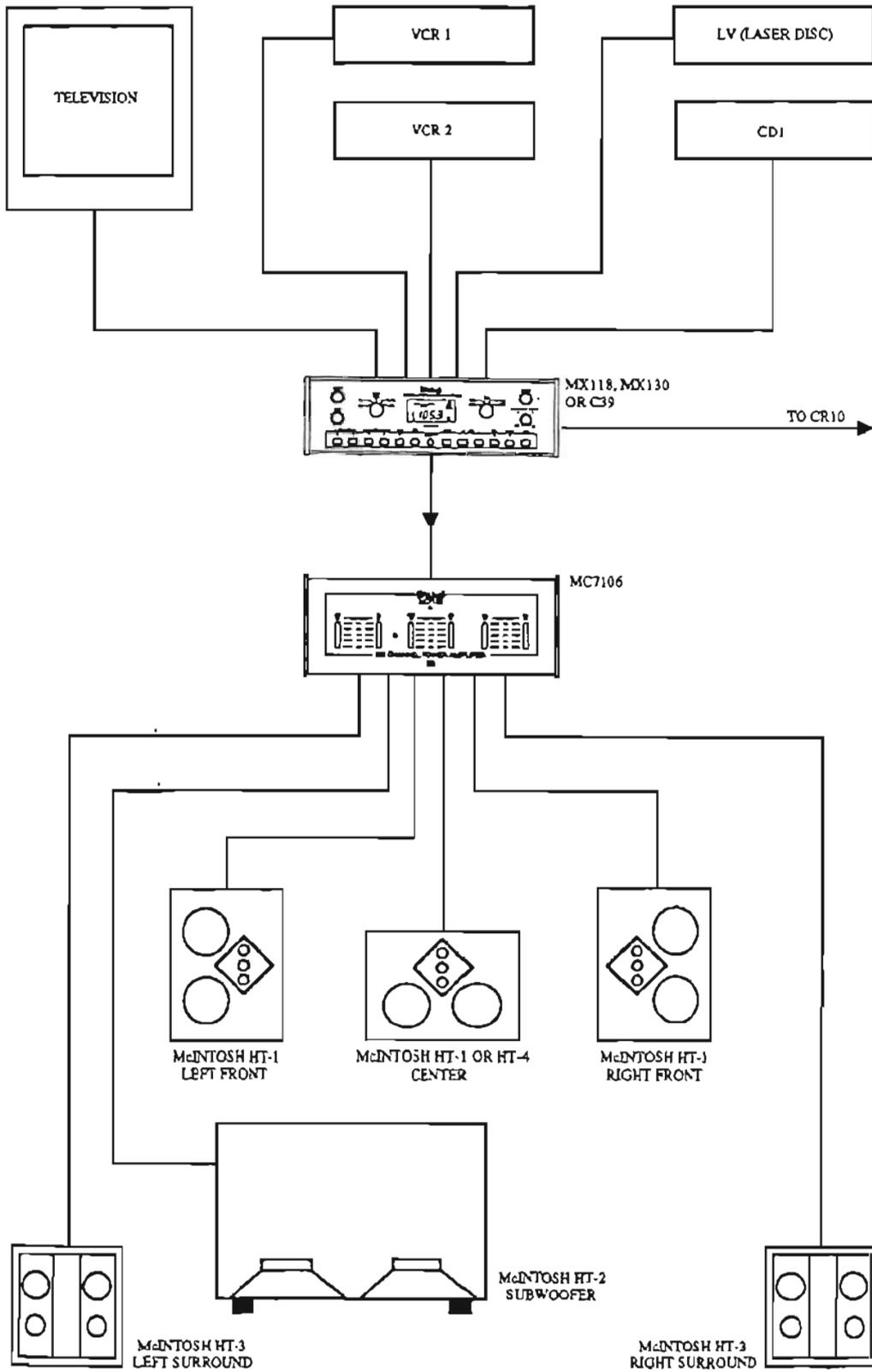
McIntosh is also manufacturing the Model MC7106, six channel power amplifier, specifically designed for Home Theater use. The MC7106 accepts all six audio channels and AC power control from the MX118. The McIntosh MC7108, 8 Channel, 5 way Power Amplifier can also be used in the five channel mode with the MX118 in a Home Theater System.

You may find it convenient to take advantage of the technical knowledge and experience of your McIntosh dealer to assist you in the setting up of your McIntosh Home Theater System.



These drawings, courtesy of Lucasfilm Ltd., show a typical Home Theater room layout

HOOKUP DIAGRAM



McINTOSH HOME THEATER SURROUND SOUND LEVEL CALIBRATION

The McIntosh MX118 has a convenient built-in noise generator to allow trimming and matching volume levels for Left Front, Center, Right Front and Surround channels in a Home Theater System.

The easiest and most effective method to calibrate your Home Theater Surround levels requires two people. One person should be located in the general listening-viewing area to determine the proper sound levels for each channel. The second person should be at the MX118, with access to the front and back panels, to adjust the various level controls required for the calibration process.

(The Dolby Reference Level is 200mV at the input.)

MANUAL CHANNEL CYCLING FOR CINEMA, DOLBY PRO LOGIC SURROUND SOUND LEVEL CALIBRATION

It is recommended that Surround Sound Level Calibration always be done in the CINEMA mode, and that initially all the channels be trimmed as closely as possible to the same volume levels.

1. Set the MODE Switch to CINEMA, and the BALANCE Control to the neutral or center default position.
2. Set the MX 118 VOLUME control to approximately 1/3 of maximum to establish a starting reference level from the Front Left and Right channels. Adjustment of the other channel levels is performed, relative, to the original front channel settings.
3. Set the rear panel SYSTEM CALIBRATE Switch to MANUAL.
4. Press the SYS CAL surround level calibration pushbutton. This starts the built-in noise generator and feeds it first to the LEFT FRONT channel to begin the level calibration process. If you wish to change the LEFT FRONT channel level from the initial starting reference setting, adjust the MX118 volume control as desired at this time.

After the LEFT FRONT channel reference level is set with the MX118 Volume control, do not change it until all the other channels have been adjusted and you have exited the Calibration mode.

(Each further press of the SYS CAL pushbutton feeds the noise generator signal to the other channels in the following order; CENTER, RIGHT FRONT and SURROUNDS.)

5. Press SYS CAL again to feed the noise generator to the CENTER channel. Adjust the rear panel CTR SYSTEM TRIM control so the Center speaker level is as close as possible to that of the Left Front.
6. Press SYS CAL again and the noise signal will appear in the Right Front channel. It should be the same level as the Left Front and Center channels. (The Left and Right Front channel levels were initially set with the MX118 Volume Control).
7. Press SYS CAL again and the noise signals will appear in both Surround channels. The decoded Surround channel signal is mono, so both surround channels are identical and are set simultaneously. Adjust the rear panel SUR SYSTEM TRIM Control until the surround channel levels are as close as possible to the three Front channels.
8. Press SYS CAL again to exit the surround calibration mode.
9. Adjust the level of the Subwoofer with the rear panel SYSTEM TRIM SUBWOOF control while listening to music.

The dimensions and shape of the listening room can affect bass frequencies reproduced by a subwoofer. You may have to experiment with different locations for the subwoofer until you find one that works best in your room.

You may repeat the SYSTEM TRIM level calibration process as often as desired until you are satisfied with the results.

AUTOMATIC CHANNEL CYCLING FOR CINEMA, DOLBY PRO LOGIC SURROUND LEVEL CALIBRATION

It is recommended that Surround Sound level calibration always be done in the CINEMA mode, and that initially all the channels be trimmed as closely as possible to the same volume levels.

1. Set the MODE Switch to CINEMA and the BALANCE Control to the neutral or center detent position.
2. Turn the MX 118 VOLUME control to approximately 1/3 of maximum to establish a starting reference level from the Front Left and Right channels. Adjustment of the other channel levels is performed, **relative**, to the original front channel settings.
3. Set the rear panel SYSTEM CALIBRATE Switch to AUTO.
4. Press the SYS CAL Surround Level calibration pushbutton to start the automatic channel cycling for the calibration process. The built-in noise generator turns on and automatically feeds a signal for two seconds, to the channels in the following order: LEFT FRONT, CENTER, RIGHT FRONT, and SURROUNDS.
5. When the channel cycling switches to the LEFT FRONT channel, if you wish to change the channel level from the initial starting reference setting, adjust the MX 118 volume control as desired at this time.

After the LEFT FRONT channel reference level is set with the MX 118 Volume control, do not change it until all the other channels have been adjusted and you have exited the Calibration mode.

6. When the signal switches to the CENTER channel, adjust the level with the rear panel SYSTEM TRIM CTR control.
7. When the signal switches to the RIGHT FRONT channel, the level should be the same as the left front since this was previously set with the MX 118 front panel VOLUME control.
8. When the signal reaches the SURROUND channels, adjust the level with the rear panel SYSTEM TRIM CTR control.

The decoded Surround channel signal is mono, so both surround channels are identical and are set simultaneously. Adjust the rear panel SUR SYSTEM TRIM Control until the surround channel levels are as close as possible to the three Front channels.

9. The Automatic channel switching will continue to cycle through the four channels to allow you to make a satisfactory system level trim.

After the channels have been trimmed and matched, exit the automatic channel cycling calibration mode by pressing the SYS CAL pushbutton again.

**McINTOSH
HOME THEATER
SURROUND
SOUND
LEVEL
CALIBRATION**

10. Adjust the level of the Subwoofer with the rear panel SYSTEM TRIM SUBWOOF control while listening to music.

The dimensions and shape of the listening room can affect bass frequencies reproduced by a subwoofer. You may have to experiment with different locations for the subwoofer until you find one that works best in your room.

You may repeat the SYSTEM TRIM level calibration process as often as desired until you are satisfied with the results.

SURROUND LEVEL ADJUSTMENTS DURING LISTENING

During the actual listening and viewing session, you may wish to adjust the SURROUND channels to volume levels different from those set during the Trim calibration process. Do this by pressing the UP (▲) or DOWN (▼) SURROUND pushbuttons on the MX 118 Hand Held Remote Controller until you are satisfied with the results. These changes will remain as long as the MX 118 continues to operate.

When the MX 118 is turned off, the surround sound volume level changes you made during listening are canceled and all the original calibrated levels are restored.

If you wish to permanently recalibrate to different channel trim levels, repeat the calibration process to set your new preferred surround sound levels.

(AUDIO)

SPECIFICATIONS

FREQUENCY RESPONSE

MONO and STEREO MODES

LEFT, CENTER and RIGHT FRONT Channels, ± 0 , -0.5dB from 20Hz to 20,000Hz

HALL MODE

LEFT, CENTER and RIGHT FRONT Channels, ± 0 , -0.5dB from 20Hz to 20,000Hz
LEFT and RIGHT SURROUND channels, ± 0 , -3dB from 50Hz to 7000Hz

CINEMA (DOLBY PRO LOGIC) MODE

LEFT, CENTER and RIGHT FRONT Channels, $\pm 0.5\text{dB}$ from 30Hz to 16,000Hz
LEFT and RIGHT SURROUND Channels, $\pm 1\text{dB}$ from 50Hz to 6300Hz, -3dB at 7000Hz

ALL MODES

SUBWOOFER Channel low pass 10Hz to a corner frequency of 80Hz with a 24dB per octave rolloff.

With the rear panel HIGH PASS switch ON and the SUBWOOF Switch ON, the LEFT, CENTER and RIGHT FRONT channels include high pass filters with a 12dB per octave rolloff and a corner frequency of 80Hz.

RATED OUTPUT

2.5V at LEFT FRONT, CENTER, RIGHT FRONT, LEFT SURROUND, RIGHT SURROUND and SUBWOOFER Unbalanced.

2.5V at LEFT and RIGHT FRONT Balanced.

OUTPUT IMPEDANCE

Less than 200 ohms at all outputs

MAXIMUM OUTPUT VOLTAGE

6V RMS from all outputs.

TOTAL HARMONIC DISTORTION

MONO, STEREO and HALL MODES

LEFT, CENTER and RIGHT FRONT Channels, 0.005% from 20Hz to 20,000Hz.

(HALL MODE only) LEFT and RIGHT SURROUND Channels, 0.1% from 50Hz to 7000Hz.

CINEMA (DOLBY PRO LOGIC) MODE

LEFT, CENTER and RIGHT FRONT Channels, 0.05% from 80Hz to 16,000Hz.

LEFT and RIGHT SURROUND channels, 0.1% from 50Hz to 7000Hz.

SENSITIVITY

HIGH LEVEL: 500mV for 2.5V output, (100mV IHF)

DOLBY LEVEL: 200mV input.

SIGNAL-TO-NOISE RATIO, A-WEIGHTED

MONO, STEREO and HALL MODES

LEFT, CENTER and RIGHT FRONT Channels.

HIGH LEVEL: 90dB below rated output (85dB IHF).

CINEMA (DOLBY PRO LOGIC) MODE

All outputs greater than 70dB below reference level

MAXIMUM INPUT SIGNAL

HIGH LEVEL: 5V MONO and STEREO, 2.1V HALL, STADIUM and CINEMA (DOLBY PRO LOGIC)

SPECIFICATIONS

INPUT IMPEDANCE

HIGH LEVEL: Greater than 22K ohms

VOLTAGE GAIN

HIGH LEVEL to TAPE: 0dB

HIGH LEVEL to MAIN: 14dB

STONE CONTROLS

BASS and TREBLE variable, 12dB boost to 12dB cut

(FM SECTION)

USEABLE SENSITIVITY

11.25dB which is 1uV across 75 ohms.

50dB QUIETING SENSITIVITY

Mono: 15dB_F which is 1.6uV across 75 ohms.

Stereo: 37dB_F which is 20uV across 75 ohms.

SIGNAL TO NOISE RATIO

Mono: 80dB.

Stereo: 75dB.

FREQUENCY RESPONSE

Mono: +0, -1dB, 20Hz to 15,000Hz

Stereo: +0, -1dB, 20Hz to 15,000Hz.

HARMONIC DISTORTION

Mono: 0.08% at 100Hz.

0.08% at 1000Hz

0.12% at 10,000Hz.

Stereo: 0.08% at 100Hz.

0.08% at 1000Hz

0.12% at 10,000Hz.

INTERMODULATION DISTORTION

Mono: 0.08%

Stereo: 0.12%

CAPTURE RATIO

1.5dB.

ALTERNATE CHANNEL SELECTIVITY

70dB.

SPURIOUS RESPONSE

100dB.

IMAGE RESPONSE

80dB

RF INTERMODULATION

65dB

STEREO SEPARATION

45dB at 100Hz

50dB at 1000Hz

35dB at 10,000Hz

SCA REJECTION

65dB

(AM SECTION)**SENSITIVITY**

20 μ V External Antenna Input, 50 ohm generator

SIGNAL TO NOISE

50dB at 30% modulation

60dB at 100% modulation

HARMONIC DISTORTION

0.5% Maximum at 50% modulation

FREQUENCY RESPONSE

50Hz to 6000Hz NRSC

ADJACENT CHANNEL SELECTIVITY

45dB Minimum IHF

IMAGE REJECTION

75dB Minimum from 540KHz to 1600KHz

IF REJECTION

68dB Minimum

(AC POWER AND MECHANICAL)**AC POWER OUTLETS**

2 Switched for accessories

1 Unswitched

POWER REQUIREMENTS

120 Volts, 50/60Hz, 35 watts

SIZE

Front Panel: 17-1/2 inches (44.4cm) Wide, 5-3/8 inches (13.7cm) High. Depth behind front panel including clearance for connectors, 17-1/2 inches (44.5cm). Knob clearance required in front of the mounting panel is 3/4 inch (1.9cm).

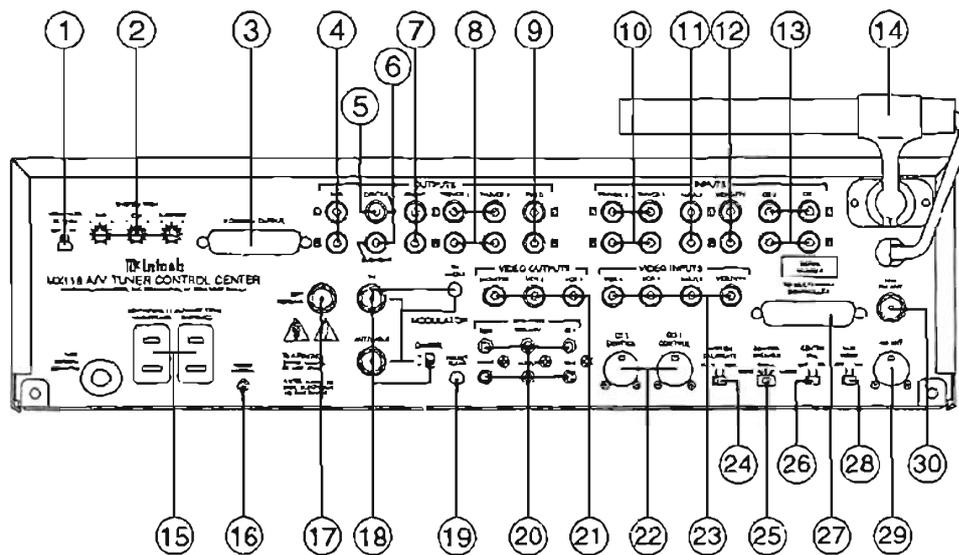
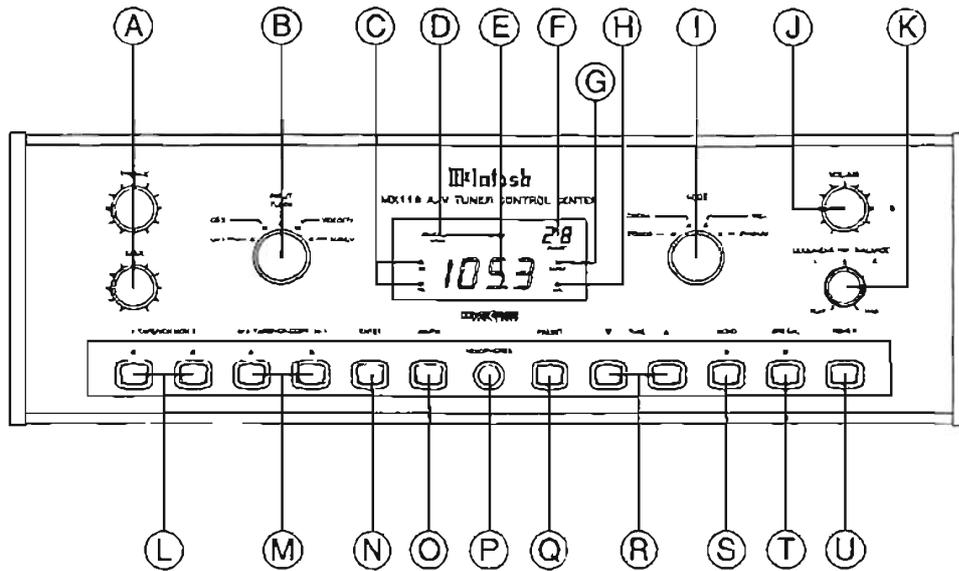
FINISH

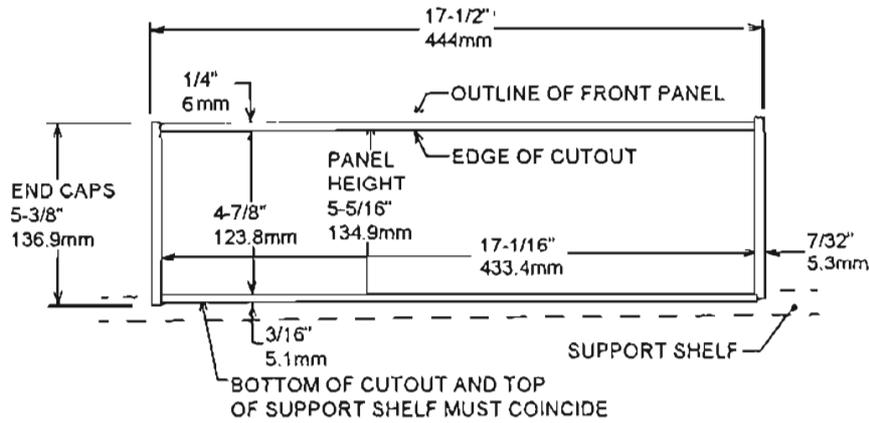
The front panel is al-glass with gold/teal nomenclature illumination. The chassis is black.

WEIGHT

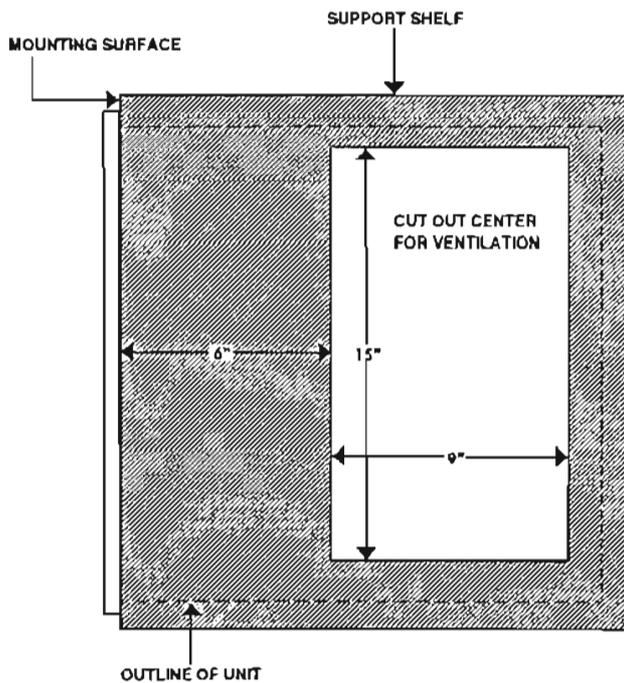
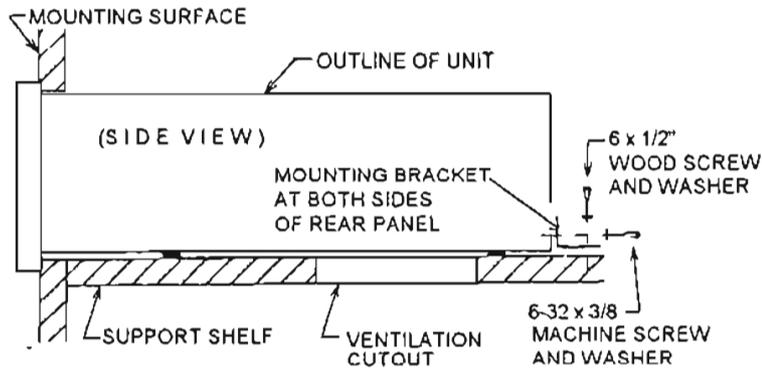
22 Pounds (9.6Kg) net, 37 pounds (16.8Kg) in shipping carton

SPECIFICATIONS



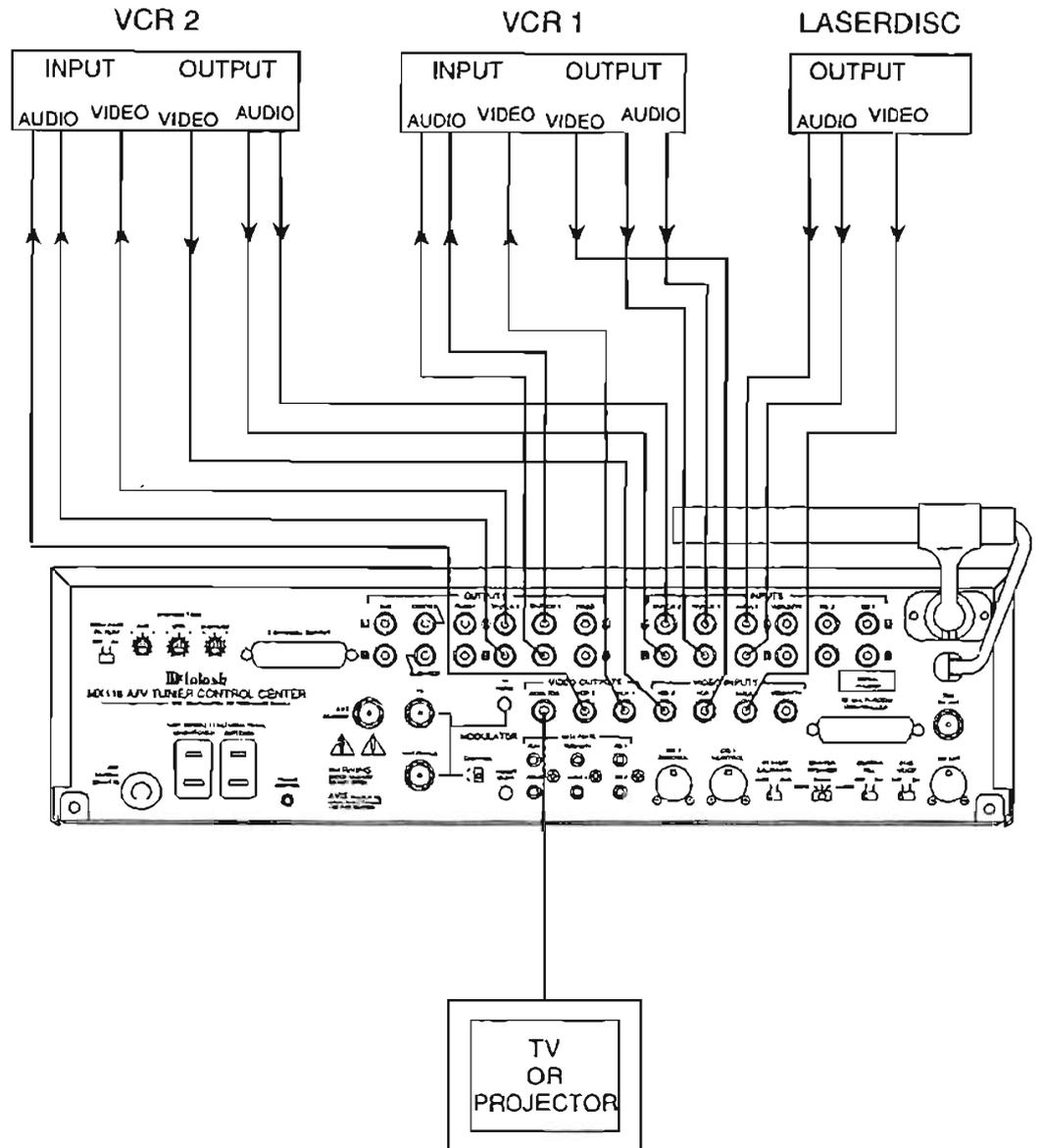


CUSTOM INSTALLATION DIAGRAM



RECOMMENDED VENTILATION CUTOUT IN MOUNTING SHELF

**HOW TO
CONNECT
TWO VCR'S
AND A
LASER DISC
PLAYER**



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