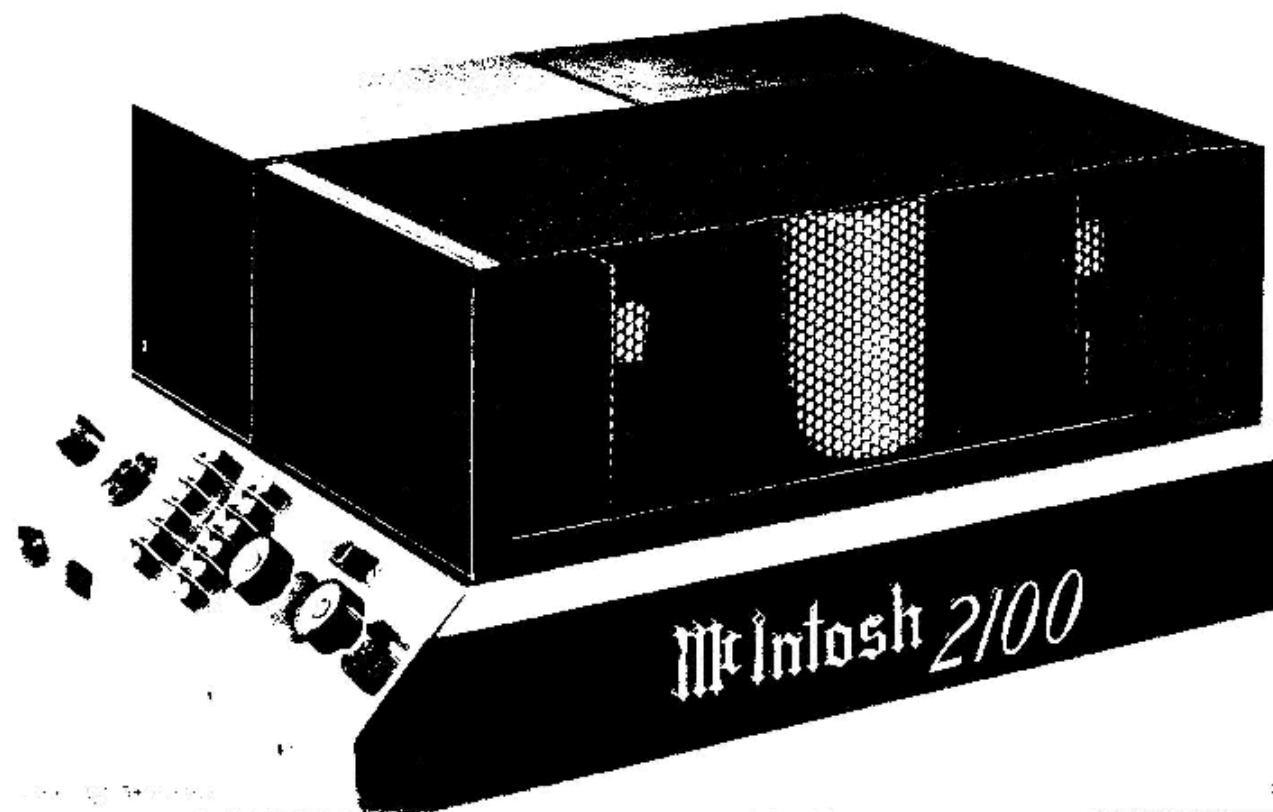


# OWNER'S MANUAL



Model MC 2109 Stereo Amplifier  
will give you many years of pleasant  
and satisfactory performance. If you  
have any questions, please contact:

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

**WARNING: TO PREVENT FIRE OR SHOCK  
HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN  
OR MOISTURE.**

**Take Advantage of 3 years  
of FREE Service . . .  
Fill in the Application NOW.**

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

The terms of the contract are:

1. 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. For your protection McIntosh selects only dealers who have technical competence to guide purchasers fairly, and provide service when necessary. To receive the SERVICE CONTRACT your purchase must be made from a McIntosh franchised dealer.
6. Your completely filled in application for a SERVICE CONTRACT must be postmarked within 30 days of the date of purchase of the instrument.
7. To receive the SERVICE CONTRACT all information on the application must be filled in. The SERVICE CONTRACT will be issued when the completely filled in application is received at McIntosh Laboratory Incorporated in Binghamton, New York.

Adequate ventilation extends the trouble-free life of electronic instruments. It is generally found that each 10° centigrade (18° F) rise in temperature reduces the life of electrical insulation by one half. Adequate ventilation is an inexpensive and effective means of preventing insulation breakdown that results from unnecessarily high operating temperatures. The direct benefit of adequate ventilation is longer, trouble-free life.

The suggested minimum space for mounting the MC 2100 is 20 inches deep x 9½ inches high x 12 inches wide. Always allow for air flow by either ventilation holes or space next to the bottom of the amplifier and a means for the warm air to escape at the top.

It is recommended that the MC 2100 be mounted in a normal or horizontal position. However with adequate ventilation, the amplifier can be mounted in any position except upside down. If the amplifier is to be installed on a vertical surface it is recommended that the autotransformers be on the down side. This position permits greater air flow around the transistors and component parts thereby extending the trouble-free life of the amplifier.



#### INPUT-STEREO

The shielded cable from the left output of the McIntosh preamplifier is plugged into the left jack. The shielded cable from the right output of the McIntosh preamplifier is plugged into the right jack. The INPUT switch must be in the STEREO position and the OUTPUT properly connected to the stereo loudspeakers or distortion and loss of power may result.

#### INPUT-MONO

The shielded cable from the program source is plugged into the right jack. The INPUT switch must be in the MONO position and the OUTPUT properly connected for mono loudspeaker operation or distortion and loss of power may result.

#### OUTPUT-STEREO OR TWIN AMPLIFIERS

For stereo or twin channel operation it is not necessary to use the same impedance loudspeaker on each output. Simply connect each channel for the impedance desired.

#### SPEAKERS

Speakers are connected at the barrier strips marked OUTPUT on the sloped panel of the amplifier. Use lamp cord, bell wire, or wire with similar type of insulation to connect the speakers to the amplifier. For the normally short distances of under 50 feet between the amplifier and speaker, #18 wire or larger can be used. For distances over 50 feet between the amplifier and speaker use larger wire.

The loudspeaker impedance is usually identified on the loudspeaker itself. Connect one of the leads from the left loudspeaker to the screw marked COM on the LEFT OUTPUT barrier strip. Connect the other lead from the left loudspeaker to the screw marked with the number corresponding to the speaker impedance on the LEFT OUTPUT barrier strip. Connect one of the leads from the right loudspeaker to the screw marked COM on the RIGHT OUTPUT barrier strip. Connect the other lead from the right loudspeaker to the screw marked with the number corresponding to the speaker impedance on the RIGHT OUTPUT barrier strip.

The only adverse effect on the operation of a McIntosh amplifier when it is improperly matched is a reduction in the amount of distortion free power available to the loudspeaker. Close impedance matching is desirable for maximum distortion-free power.

#### SPEAKER CONNECTIONS

Use this table to determine proper speaker connection:

If the speaker impedance is between:	Connect the speaker leads between COM and:
3.2 to 6.5 ohms	4 ohms
6.5 to 13 ohms	8 ohms
13 to 26 ohms	16 ohms

#### STEREO OUTPUT-CONNECTING TO BARRIER STRIPS

Use this table for stereo connections using the carrier strips:

If the speaker impedance is:	Connect one left speaker to screw:	Connect one right speaker lead to screw:
4 ohms	LEFT-4	RIGHT-COM and RIGHT-4
8 ohms	LEFT-8	RIGHT-COM and RIGHT-8
16 ohms	LEFT-16	RIGHT-COM and RIGHT-16

For 25 volt line operation connect one of the left leads to the screw marked COM on the LEFT OUTPUT barrier strip. The other left lead is connected to the screw marked 8 on the LEFT OUTPUT barrier strip. Connect the right leads in the same manner on the RIGHT OUTPUT barrier strip.

When connected as above the MC 2100 operates as a 135 watt per channel stereo amplifier.

### MONOPHONIC OUTPUT—CONNECTING TO CARRIER STRIPS

When the MC 2100 is to operate as a monophonic amplifier, the two channels are combined to produce a single 210 watt output. This chart lists the proper connections and interconnections for monophonic operation.

Speaker Impedance	Connect one speaker lead to the screw marked LEFT-COM and the other to:	Connect a wire between:
4 ohms	LEFT-4	LEFT-4 and RIGHT-4
8 ohms	LEFT-8	LEFT-8 and RIGHT-8
16 ohms	LEFT-16	LEFT-16 and RIGHT-16
For constant voltage		
25 volts	LEFT-8	LEFT-8 and RIGHT-8

When connected as above the MC 2100 operates as a 210 watt per channel monophonic amplifier.

### STEREO OUTPUT—CONNECTING TO THE OCTAL SOCKET

The octal socket marked OUTPUT can be used for all of the output impedances and voltages. Connections are made in the following fashion:

If the impedance is:	Solder the left channel leads between:	Solder the right channel leads between:
4 ohms	Pin 1 and 2	Pin 5 and 6
8 ohms	Pin 1 and 3	Pin 5 and 7
16 ohms	Pin 1 and 4	Pin 5 and 8
For constant voltage		
25 volts	Pin 1 and 3	Pin 5 and 7

When connected as outlined the MC 2100 operates as a 105 watt per channel stereo amplifier.

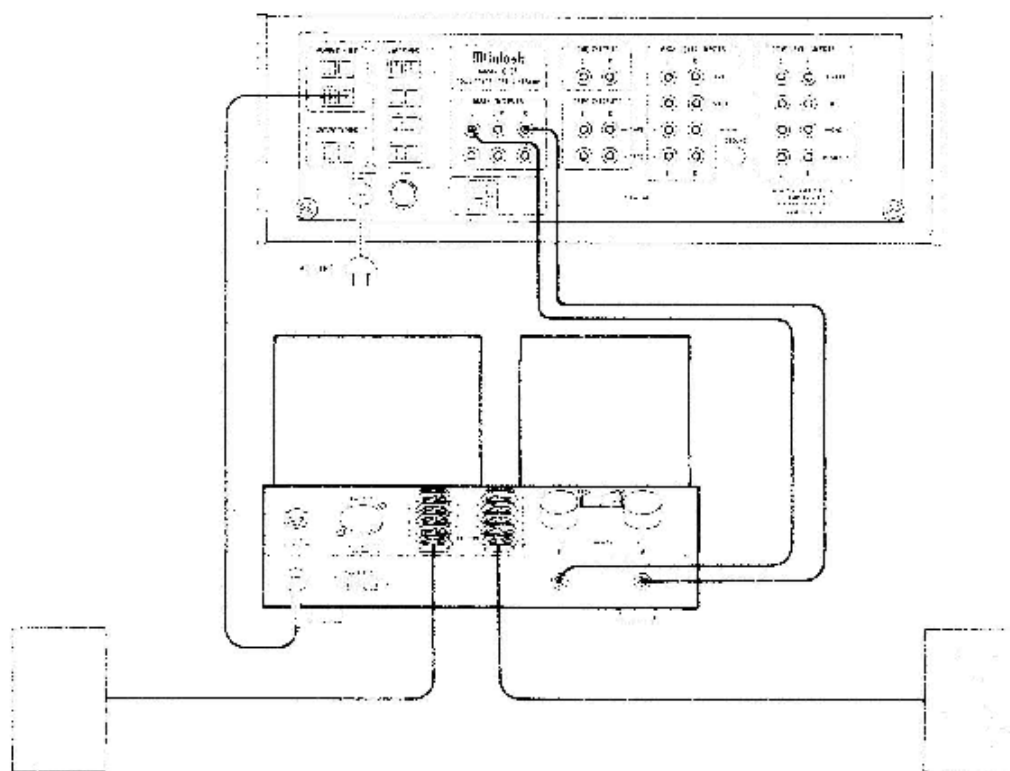
### MONOPHONIC OUTPUT—CONNECTING TO THE OCTAL SOCKET

If the impedance is:	CONNECT	Solder the leads to:
2 ohms	2 and 8	1 and 2
4 ohms	3 and 7	1 and 3
8 ohms	4 and 8	1 and 4
25 volts	3 and 7	1 and 3

When connected as outlined the MC 2100 operates as a 210 watt monophonic amplifier.

### AC POWER:

The MC 2100 operates on 117 to 130 volt, 50/60 Hz. The amplifier will be turned on and off if its power cord is plugged in one of the auxiliary AC outlets on the program source.



## INPUT

The input of the MC 2100 has a two position switch which permit the amplifier to be used in any one of three ways:

1. As a monophonic 210 watt amplifier.
  2. As twin 105 watt amplifiers used with an electronic crossover network, or as two completely separate amplifiers.
  3. As a stereo amplifier used with a McIntosh pre-amplifier or other high output stereo program sources.
- In either position of the input switch the input sensitivity is 0.5 volts for full rated output. The input impedance is 200,000 ohms.

In the STEREO position each input is controlled by a GAIN control. The GAIN control allows signal sources of 0.5 volt up to 30 volts to be connected without overloading the input to the amplifier.

The MONO position of the input switch parallels the inputs of both amplifiers. When the outputs are properly connected the MC 2100 becomes a 210 watt monophonic amplifier. The RIGHT/MONO GAIN control permits connecting signal sources up to 30 volts without overloading the amplifier's input. To operate the MC 2100 as a 210 watt monophonic amplifier the INPUT switch must be in the MONO position and the OUTPUT must be properly connected for monophonic operation.

## OUTPUT

The two barrier terminal strips marked LEFT OUTPUT and RIGHT OUTPUT provide stereo connections for the normal speaker impedances of 4 ohms, 8 ohms, and 16 ohms, or monophonic operation connections for 2 ohms, 4 ohms, and 8 ohms. The terminal strips may also be connected for a constant voltage output of 25 volts in either stereo or mono.

## OUTPUT (Octal Socket)

The octal socket marked OUTPUT has stereo connections for 4 ohms, 8 ohms, 16 ohms, and 25 volts. For monophonic operation the octal socket provides connections for 2 ohms, 4 ohms, 8 ohms, and 25 volts.

## FUSE

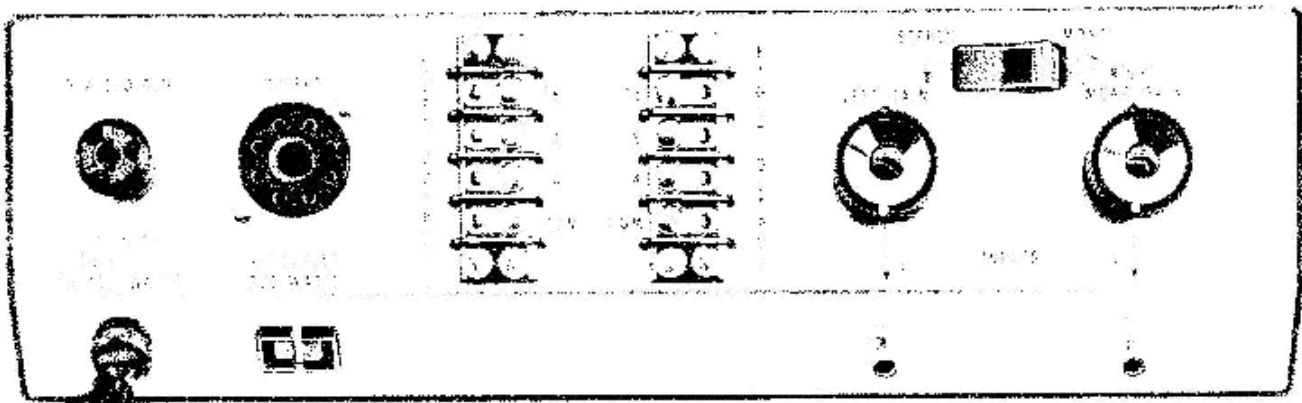
The MC 2100 uses a 5 ampere slo-blo type fuse. The auxiliary AC outlet is not fused.

## AC OUTLET

The auxiliary AC outlet can be used to supply power to other equipment in the system. The outlet will provide a maximum of 300 watts of power. The AC outlet is not fused.

## LINE VOLTAGE

The MC 2100 operates on any line voltage between 117 volts and 120 volts, 50 to 60 Hz.



## SETTING THE GAIN CONTROLS:

To set the GAIN controls for a stereo system use a monophonic signal from the program source. A monophonic signal supplies the same voltage to both channels. Turn the volume control on the source equipment to the 12 o'clock position (half rotation).

Turn up the LEFT GAIN control until the loudness

in the room is about as loud as you like to listen. Then turn the GAIN control on the RIGHT INPUT until it is equally as loud as the left channel. The system is now balanced for loudness and provides the greatest range of operation and loudness change when using the volume control on the source equipment.

**NOW SIT BACK AND ENJOY YOUR McINTOSH**

Performance Limits are the maximum deviation from detection permitted for a McIntosh instrument. We promise you that the MC 2100 you buy must be capable of performance at or exceeding these limits or you get your money back. McIntosh is the only manufacturer that makes this guarantee.

McIntosh audio power ratings are in accordance with the Federal Trade Commission Regulation of November 4, 1974 concerning power output claims for amplifiers used in home entertainment products.

#### POWER OUTPUT

##### STEREO

105 watts minimum sine wave continuous average power output, per channel, both channels operating into 4 ohms, 8 ohms, or 16 ohms load impedance, which is:

20.5 volts RMS across 4 ohms

29.0 volts RMS across 8 ohms

41.0 volts RMS across 16 ohms

##### MONO

210 watts minimum sine wave continuous average power output, operating into 2 ohms, 4 ohms, or 8 ohms load impedance, which is:

20.5 volts RMS across 2 ohms

29.0 volts RMS across 4 ohms

41.0 volts RMS across 8 ohms

#### OUTPUT LOAD IMPEDANCE

##### STEREO

4 ohms, 8 ohms, or 16 ohms; separate terminals are provided for each output

##### MONO

2 ohms, 4 ohms, 8 ohms; separate terminals are provided for each output

#### RATED POWER BAND

20 Hz to 20,000 Hz

#### TOTAL HARMONIC DISTORTION

##### STEREO

0.25% maximum harmonic distortion at any power level from 250 milliwatts to 105 watts per channel from 20 Hz to 20,000 Hz, both channels operating

##### MONO

0.25% maximum distortion at any power level from 250 milliwatts to 210 watts from 20 Hz to 20,000 Hz

#### INTERMODULATION DISTORTION

##### STEREO

0.25% if instantaneous peak power output is 210 watts or less per channel with both channels operating for any combination of frequencies, 20 Hz to 20,000 Hz

##### MONO

0.25% if instantaneous peak power output is 420 watts or less per channel with both channels operating for any combination of frequencies, 20 Hz to 20,000 Hz

#### FREQUENCY RESPONSE (at 1 watt output)

20 Hz to 20,000 Hz  $\pm 0 - 0.25$  dB

10 Hz to 100,000 Hz  $\pm 0 - 3.0$  dB

#### NOISE AND HUM

90 dB below rated output

#### OUTPUT VOLTAGES

STEREO AND MONO

25 volts for distribution lines

#### DAMPING FACTOR

20 at 4 ohms output

14 at 8 ohms output

11 at 16 ohms output

#### INPUT IMPEDANCE

200,000 ohms

#### INPUT SENSITIVITY

0.5 volt. Level control provided for higher input voltage

#### POWER REQUIREMENTS

120 volts, 50-60 Hz, 50 watts at zero signal output, 450 watts at rated output

#### SEMICONDUCTOR COMPLEMENT

32 silicon transistors

14 rectifiers and diodes

#### SIZE

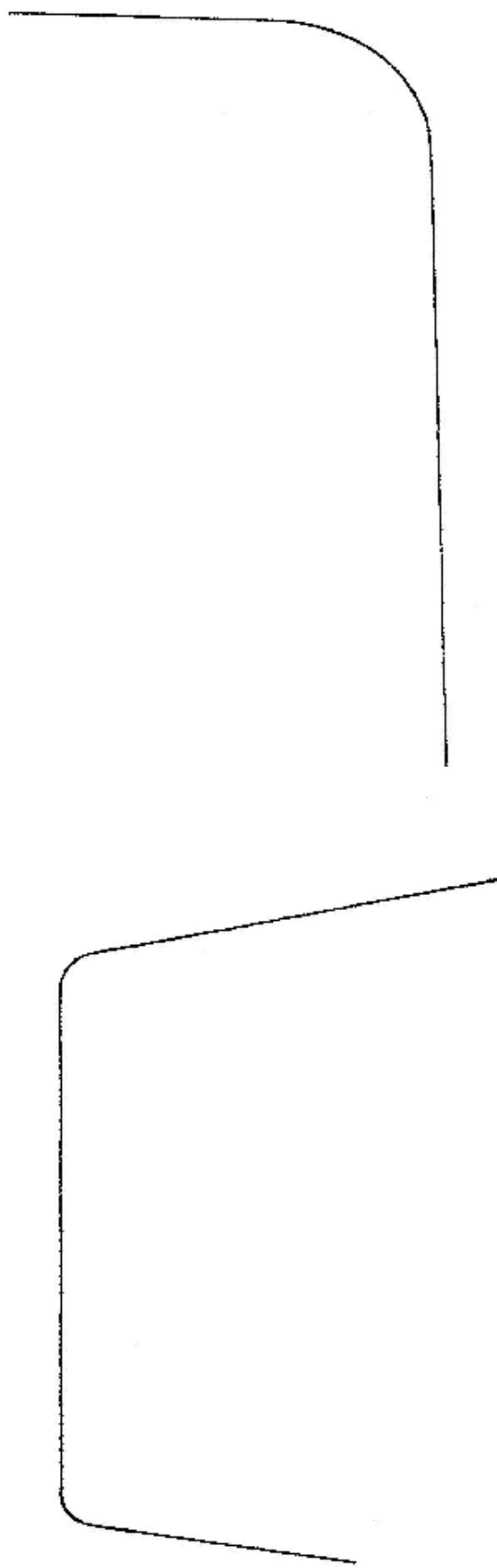
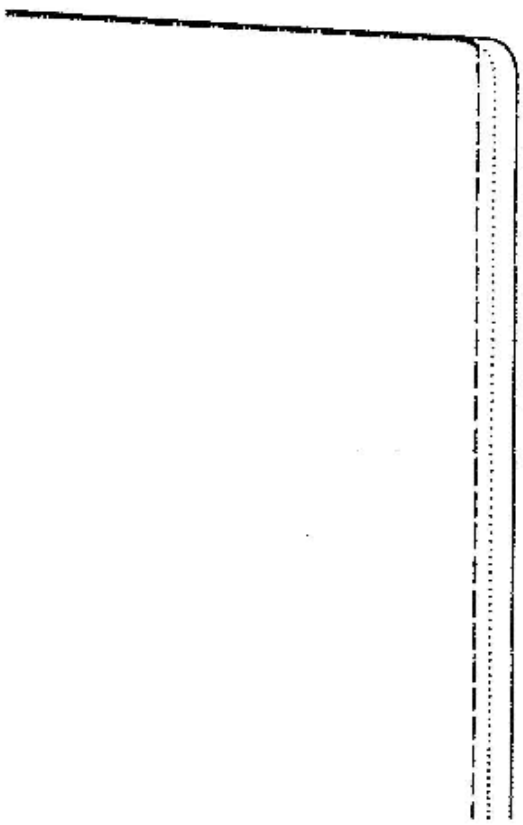
7 $\frac{1}{2}$  inches high (19.69 cm), 11 $\frac{3}{4}$  inches wide (29.85 cm), 17 inches deep (43.18 cm)

#### CHASSIS

Chrome and black

#### WEIGHT

57 pounds (25.86 kg) net, 63 pounds (28.58 kg) in shipping carton



1 stage preamplifier with three transistors in parallel increases the input voltage 16 dB.

Each of the 18 transistors in each power amplifier section of the two stage preamplifier is fed to a pair of 18 transistors arranged as an emitter coupled pair with two inputs and one output. The signal from the preamplifier section connects to one of these. Both AC and DC negative feedback are applied to the input. This large quantity of feedback is required to reduce noise and distortion. The signal is then amplified by a voltage amplifier. The voltage amplifier is followed by two driver transistors.

The output section is arranged as a series push-pull pair. The power transistors used in the output section of your MC 2100 are selected for their high dissipation capability, wide frequency response, and "safe operating area." In addition, each transistor is given four separate tests before it is used in your MC 2100. This additional testing makes your MC 2100 will deliver its rated power from 20 Hz to 20 kHz with low distortion and complete reli-

ability. The power transistors are mounted on oversized copper heat sinks. The heat sinks assure that under normal operation the transistors will operate at a low temperature. If temperatures increase due to a shorted load or restricted ventilation, an automatic temperature sensing device turns off the MC 2100. The MC 2100 operates automatically at a preset temperature. The MC 2100 will turn on again when the temperature returns to normal limits. This additional feature assures your MC 2100 complete reliability under the most adverse operating conditions.

The output stages are matched to the load by the use of an autoformer. The McIntosh autoformer is carefully designed using McIntosh trifilar winding and interleaving techniques. Trifilar winding and interleaving assure autoformers exceptional bandwidth. The autoformers properly match the power transistors to the 16 ohm loads at all audio frequencies.

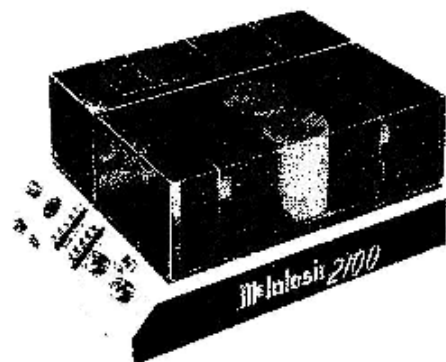
The use of the McIntosh designed trifilar autoformer in the McIntosh solid state amplifiers the only amplifiers that deliver FULL POWER AT ALL SPEAKER LOADS. You have not been power penalized for the use of loudspeakers when using the McIntosh MC 2100.

Another of the advantages of the autoformers is the ability to provide output for a constant voltage distribution system. With the MC 2100 several sets of speakers can be used independently throughout your home.

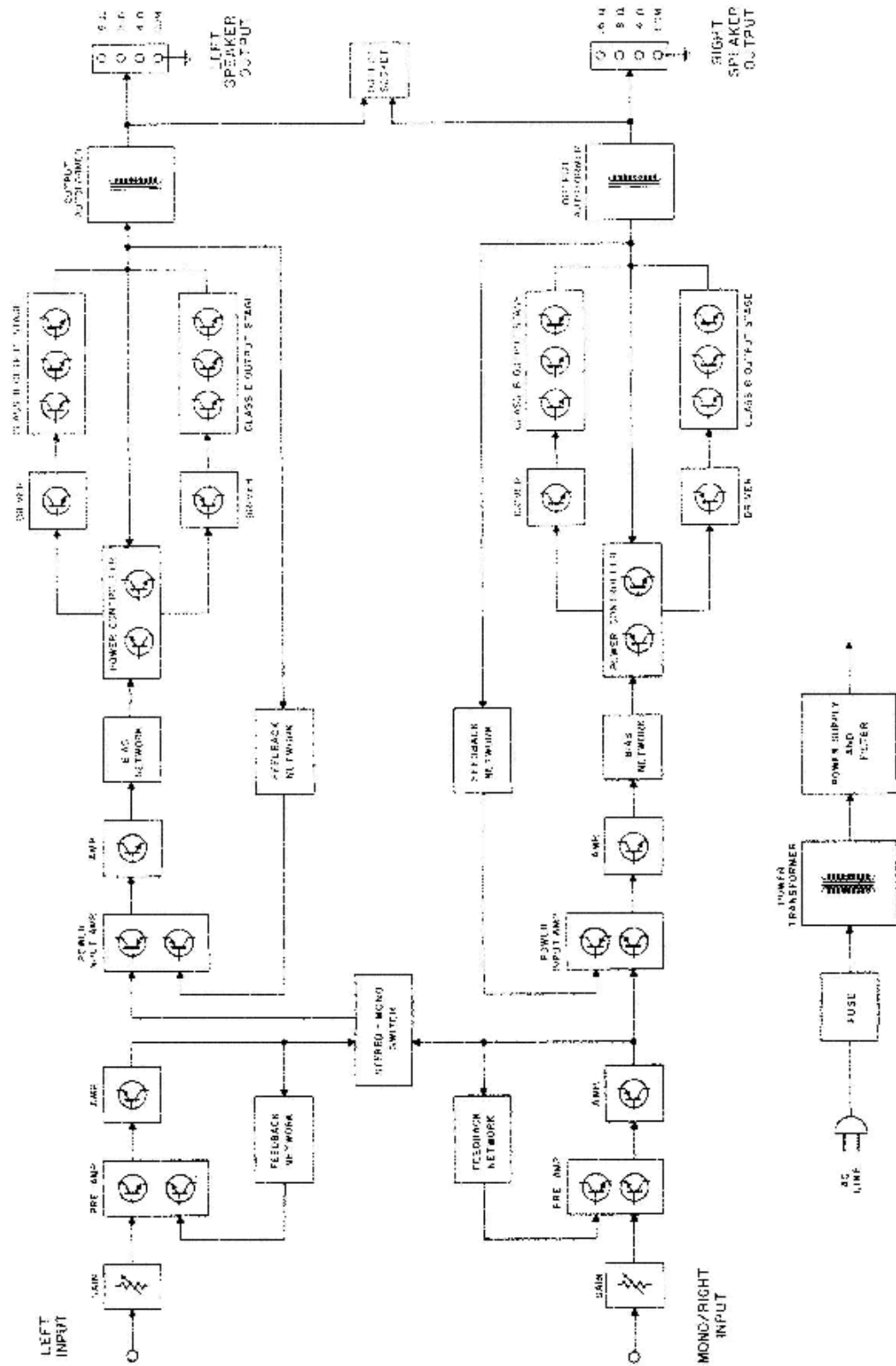
To further insure reliability a special power output SENTRY MONITORING CIRCUIT prevents failure of the power output transistors due to excessive mis-

match of the output. When your MC 2100 operates normally the SENTRY MONITORING CIRCUIT has no effect on signals passing through the power amplifier. If the power dissipation should rise above normal operation, the SENTRY MONITORING CIRCUIT restricts the drive to the output transistors. The SENTRY MONITORING CIRCUIT acts instantaneously for any input signal or load combination. This arrangement assures complete circuit reliability. Only McIntosh gives you this degree of protection.

There are three separate power supply sections. One positive and one negative high current supply is used for the output stages. The other positive supply is used for the driving amplifier stages. All supplies are full wave and use silicon rectifiers. Adequate filtering is used to assure an absolute minimum of hum. The power output stage filter capacitors have very high capacity, which allows full power output below 20 Hz. The power transformer is generous in size and runs cool, even under heavy use.







# McIntosh

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