# INSTRUCTION MANUAL

## McINTOSH MODEL MC-30

## 30 WATT POWER AMPLIFIER

Type A-116B

Serial #9E341 and above

033-245

McINTOSH LABORATORY, INC

## GUARANTEE

We guarantee the performance of this equipment and the mechanical and electrical workmanship to be free of defects for a period of 90 days. This guarantee does not extend to components damaged by improper use nor does it extend to transportation to and from the factory.

## SERVICE INFORMATION

All McIntosh equipment is designed for long trouble free operation. All components are of highest quality and are conservatively operated. If trouble develops the amplifier may be serviced by your franchised dealer, a competent serviceman, or returned to the factory. Equipment will not be accepted at the factory unless factory return authorization is first received. The following chart of operating voltages and resistances is offered as a guide for servicing the unit. All voltages and resistences are measured to chassis except those with asterisk (*). These are measured to chassis with pin #2 of the 5U4GB grounded. Voltages are measured with high impedence VTVM. NOTE--UNIT MUST BE TURNED OFF WHEN MEASURING RESISTENCES.

### VOLTAGE AND RESISTANCE CHART

| Tube | Pin No. | DC Volts No Signal | DC Volts at 30W out | AC Volts at 30W out | Resistance Unit off |
|---|---|---|---|---|---|
| 12AX7 | | | | | |
| (Input) | 1 | 134 | 120 | 1.3 | 330K* |
| | 2 | 0 | 0 | 0.24 | 1M |
| | 3 | 1.2 | 1.1 | 0.22 | 3.3K |
| | 4&5 | Fil | 6.3 V. ac to Pin 9 | - | 0 to 70 |
| | 6, 7, 8 | - | - | - | - |
| | 9 | Fil | - | - | 0 to 70 |
| 12AU7 | 1 | 270 | 235 | 9 | 40* |
| | 2 | 134 | 120 | 13 | 330K* |
| | 3&8 | 138 | 126 | 0.57 | 18K |
| | 4&5 | Fil | 6.3 V. ac to Pin 9 | - | 0 to 70 |
| | 6 | 270 | 235 | 9 | 43K* |
| | 7 | 110 | 100 | 0 | 26M* |
| | 9 | Fil | - | - | 0 to 70 |
| 12BH7 | 1 | 355 | 295 | 132 | 12K* |
| | 2 | 0 | 0 | 9 | 220K |
| | 3&8 | 16 | 14 | 0.32 | 1.2K |
| | 4&5 | Fil | 6.3 V. ac to Pin 9 | | 0 to 70 |
| | 6 | 355 | 295 | 132 | 12K* |
| | 7 | 0 | 0 | 9 | 220K |
| | 9 | Fil | - | - | 0 to 70 |

## ELECTRICAL AND MECHANICAL SPECIFICATIONS

### Specifications for the McIntosh Model MC-30 Audio Amplifier

| | |
|---|---|
| Power Supply | 117/125 volts, 50/60 cycles |
| Power Consumption | 135 watts at 30 watts output<br>105 watts at zero signal output |
| Power Output | 30 watts continuous |
| Input level | Input #1 (pin jack and screw terminals and pin 5 of pre-amp socket) .5 volts to 30 volts, with gain control input #2 (pin 2 of pre-amp socket) 2.5 volts. (For use with McIntosh pre-amplifier equipment) |
| Frequency Range | 20 to 30,000 cycles ± .1 db at 30 watts output<br>15 to 50,000 cycles ± 5 db at 30 watts output<br>10 to 100,000 cycles ± 1 db at 15 watts output |
| Harmonic Distortion | Less than 1/3% at 30 watts output or less, 20 to 20,000 cycles |
| Intermodulation Distortion | Less than 1/2% if instantaneous peak power is below 60 watts for any combination of frequencies 20 to 20,000 cycles |
| Impulse Distortion | Negligible |
| Noise and Hum Level | 90 db or more below rated output |
| Damping Factor | 12 or better for 4, 8 and 16 ohm output, 16 for 600 ohms |
| Input Impedance | 0.5 meg for 0.5 volt input and 0.13 meg for 2.5 volt input, 20 cycles to 40 Kc |
| Output Impedance | 4, 8, 16, 166 (70.7 volts) and 600 ohms (600 ohm is balanced to ground) |
| Phase Shift | 20 cycles 3°<br>20,000 cycles 9° |
| Tube Complement | Pre-Amp: 12AX7<br>Phase Inverter: 12AU7<br>Voltage Amp: 12 BH7<br>Driver: 12AX7<br>Output: 2--6L6 GC/1614<br>Rectifier: 5U4-GA |
| Auxiliary Equipment connection ("Pre-Amp input" receptacle) | Designed to power C-8 and other McIntosh Pre-Amplifiers |
| Size | -- x 8" x 8" high, chassis type construction |
| Weight | 30.5 pounds net |
| Finish | Chrome and Black |

## DESCRIPTION

The McIntosh Model MC-30 is a 30 watt high fidelity power amplifier designed for home entertainment systems and professional applications. The Model MC-30 is similar to the earlier McIntosh Model A-116 30 watt amplifiers and includes all of the rigid electrical specifications and features found in these earlier units plus: less than 1/3% harmonic distortion at any power output up to 30 watts and at any frequency in the audio spectrum, 20 to 20,000 cps; less than 1/2% intermodulation distortion if instantaneous peak power is below 60 watts for any combination of frequencies 20 to 20,000 cps; and noise and hum level 90 db or more below rated output. The famous McIntosh high efficiency output circuit is used to obtain the high standard of performance found in this amplifier.

The MC-30 may be operated from any signal source delivering 0.5 or more volts, or directly from a McIntosh Audio Compensator or Pre-Amplifier, such as the Models C-8, C-4, C-104, or C-108. Output impedances of 4, 8 and 16 ohms are provided for direct connection to loudspeakers. Additional outputs for 166 ohms (70.7 volts) and 600 ohms are provided for use with multiple speaker systems, lines, etc.

## INSTALLATION

### Location

The MC-30 should be located in a ventilated area. If the amplifier is housed in a cabinet or other enclosure, holes should be provided for air circulation.

### Input Connections

1. When a McIntosh Audio Compensator or other McIntosh pre-amplifier is used with the MC-30, plug the pre-amplifier's output-power cord into the "Pre-Amp input" receptacle on the MC-30 and turn the "gain" control fully counter clockwise. This receptacle supplies the required plate and filament power to the pre-amplifier equipment as well as providing the necessary audio connection.

For pre-amplifier installation and operation refer to the pre-amplifier's instruction manual.

2. When a signal source of 0.5 volts or more is used to drive the amplifier such as the output from a tuner, tape recorder, or pre-amplifier, plug the [illegible] pin jack receptacle or connect to the "0.5 volt" and "GND" screw terminals. Use the "gain" control to obtain the desired operating level.

OUTPUT SOCKET CONNECTIONS:

4 Ohms - Pins 1 & 2
8 Ohms - Pins 1 & 3
16 Ohms - Pins 1 & 4
600 Ohms - Pins 7 & 8
70.7 Volts - Pins 5 & 6
Pin 6 to ground and 600 Ohm CT

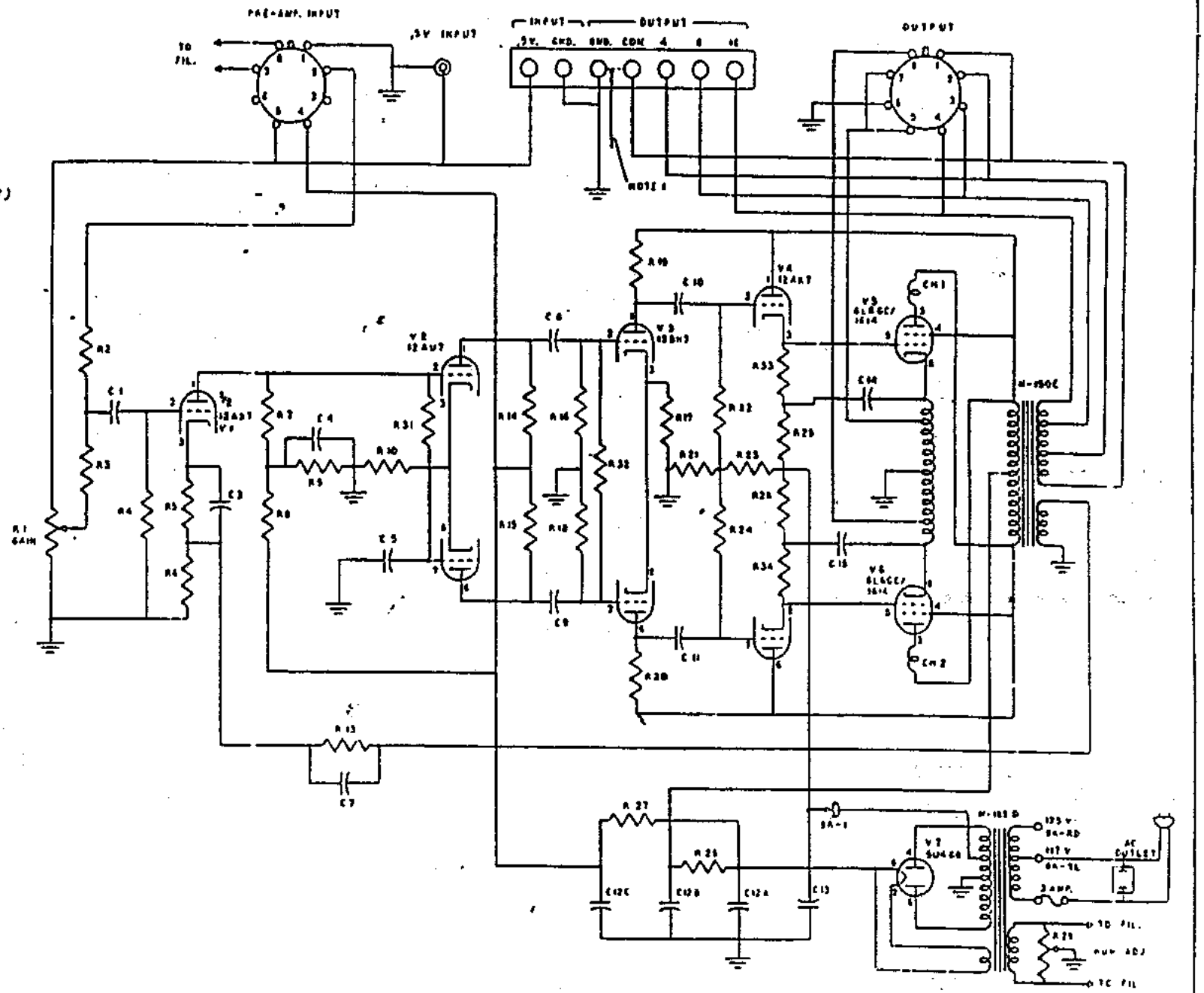
PREAMP INPUT SOCKET CONNECTIONS

Pin 1 - Ground
Pin 2 - Preamp Input (2.5V)
Pin 3 - Not Used
Pin 4 - 310V B+ @ 3.5MA
Pin 5 - 0.5 Volt Input
Pin 6 - Not Used
Pin 7 & 8 - 6.3V @ 2A

| | |
|---|---|
| C1 | .1mf, 200V |
| C2 | Not Used |
| C3 | 100 mf, 12V |
| C4 | 8mf, 250V |
| C5 | .22mf, 400V |
| C6 | Not Used |
| C7 | 470mmf, 500V |
| C8 | .047mf, 10%, 600V |
| C9 | .047mf, 10%, 600V |
| C10 | .82mf, 600V, PILM |
| C11 | .22mf, 600V, PILM |
| C12A | 35mf, 500V |
| C12B | 80mf, 500V |
| C12C | 15mf, 450V |
| C13 | 8mf, 250V |
| C14 | .47mf, 200V |
| C15 | .47mf, 200V |
| R1 | 250K, Log |
| R2 | 100K |
| R3 | 27K |
| R4 | 1M |
| R5 | 3.3K |
| R6 | 68 Ohms, 5% |
| R7 | 10K |
| R8 | 330K |
| R9 | 680K |
| R10 | 1M, 1W |
| R11 | Not Used |
| R12 | Not Used |
| R13 | 2.2K, 5% |
| R14 | 27K, 5% |
| R15 | 3M, 5% |
| R16 | 220K |
| R17 | 1.2K |
| R18 | 220K |
| R19 | 12K, 2W |
| R20 | 12K, 2W |
| R21 | 5K, 5% |
| R22 | 1M |
| R23 | 100K, 5% |
| R24 | 1M |
| R25 | 5K |
| R26 | 5K |
| R27 | 10K, 10W |
| R28 | 150 Ohms, 1 - |
| R29 | Not Used |
| R30 | Not Used |
| R31 | Not Used |
| R32 | Not Used |
| R33 | 5K |
| R34 | 5K |

* Balance to 15

ALL RESISTORS, 1/2W




McINTOSH LABORATORY INC
MODEL MC-30, POWER AMPLIFIER

| Tube | Pin No. | DC Volts No Signal | DC Volts 30W out | AC Volts 30W out | Resistance Unit Off |
|---|---|---|---|---|---|
| 12AX7 | 1 | 440 | 365 | 94 | 185* |
| | 2 | -46 | -46 | 134 | 1M |
| | 3 | -45 | -45 | 118 | 270K |
| | 4&5 | Fil | 6.3 V. ac to Pin 9 | - | 0 to 70 |
| | 6 | 440 | 365 | 94 | 185* |
| | 7 | -46 | -46 | 134 | 1M |
| | 8 | -45 | -45 | 118 | 270K |
| | 9 | Fil | - | - | 0 to 70 |
| 6L6GC/1614 (Both Tubes) | 1 | 0 | 0 | 0 | - |
| | 2 | Fil | 6.3 V. ac to Pin 7 | - | 0 to 70 |
| | 3 | 440 | 365 | 94 | 200* |
| | 4 | 440 | 365 | 94 | 200* |
| | 5 | -45 | -45 | 118 | 270K |
| | 6 | - | - | - | - |
| | 7 | Fil | - | - | 0 to 70 |
| | 8 | 1.1 | 2.7 | 94 | 25 |
| 5U4GB | 1 | - | - | - | - |
| | 2 | 455 | 400 | 7.9 (Ripple) | 0* |
| | 3 | - | - | | |
| | 4 | 395 AC | 385 AC | 385 | 45 |
| | 5 | - | - | | - |
| | 6 | 395 AC | 385 AC | 385 | 45 |
| | 7 | - | - | | - |
| | 8 | 455 | 400 | | 0* |

U. S. Patents No. 2,477,074; 2,545,788; 2,646,467; 2,654,058 others pending

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