

INSTRUCTION MANUAL

McINTOSH MODEL A-116

30 WATT POWER AMPLIFIER

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The McIntosh Model A-116, 30 watt Power Amplifier, is a high fidelity power amplifier designed to meet the exacting requirements of professional applications and home entertainment systems. Outputs from a McIntosh C-104 Preamplifier-Equalizer, from a tuner, or other signal source delivering 0.5 volts or more are handled by the unique two channel input system. Output impedances for direct connection to loudspeakers or a 600 ohm line are provided.

Several of the outstanding features of the A-116 amplifier are: incorporation of the famous McIntosh high efficiency output circuit, hermetically sealed output transformer, large plate dissipation reserve in the output tubes, and full 30 watts output power from 20 to 20,000 cycles with less than 0.5% harmonic distortion at any frequency within this frequency band.

INSTALLATION AND OPERATION

INPUT CONNECTIONS

The A-116 has two input channels. One is for use with the McIntosh C-104, other McIntosh preamplifiers, or whenever a 2.5 volt input is desired. The second is for inputs from tuners, tape recorders, TV sets, or the like where input signals range from 0.5 volts up. A potentiometer is provided on this input channel for gain setting. Connections to the 2.5 volt input are made at the input socket. See schematic diagram. Connections for the 0.5 volt are made either at the input screw terminal strip or the input socket. NOTE - THE INPUT SOCKET MUST BE JUMPED BETWEEN TERMINALS 2 AND 3 TO RENDER THE 0.5 VOLT INPUT OPERATIVE. (Input plug supplied with unit has this jumper in place.)

OUTPUT CONNECTIONS

The A-116 has output impedances of 4, 8, and 16 ohm available at either the screw terminal connector or the output socket. In addition, 600 ohm (balanced to ground) is available at the output socket. Because many loudspeakers do not have voice coil impedances exactly matching 4, 8 or 16 ohms, the following table lists suggested connections for best impedance matching.

Speaker impedance	3.2 to 6.5 ohms	6.5 to 13 ohms	13 ohms to 32 ohms
Connect to	4 ohms	8 ohms	16 ohms

WARNING: OUTPUT PLUGS WIRED FOR McINTOSH 20W-2 and 50W-2 AMPLIFIERS WILL NOT FUNCTION WITH THE A-116 WITHOUT RE-CONNECTION.

POWER CONNECTIONS

When used with the McIntosh C-104, tuners, or other associated equipment, the power cord is plugged into the receptical at the rear of these units. When thus connected the power switch of these units controls power to the A-116.

OPERATION WITH THE McINTOSH C-104

1. Turn C-104 volume control to off position.
2. Connect speaker to A-116 output.
3. Plug C-104 power cable into A-116 input socket.
4. Plug A-116 power line cord into rear of C-104.
5. Make other connections to C-104 as described in C-104 Instruction Manual.

The system is now ready for operation. Be sure to set Hum adjustment as described in C-104 Instruction Manual.

OPERATION WITH TUNERS, TAPE RECORDERS,

TV SETS, etc. (when C-104 is not used)

1. Be sure jumper is connected between terminals 2 and 3 of A-116 input socket. (Input plug shipped with unit has this jumper in place.)
2. Connect speaker to A-116 output.
3. Connect output of tuner, tape recorder, TV set, etc., to 0.5 volt input terminals of A-116.
4. Turn gain control on A-116 to extreme counter clockwise position.
5. Plug power cord of A-116 into 117 volt power receptical provided on tuner, etc. If no receptical is provided, plug power cord into any convenient power source.
6. Turn all equipment ON.
7. With gain control on A-116 still in counter clockwise position adjust Hum. Adjust potentiometer for minimum hum level from speakers.
8. Turn volume control on tuner, tape recorder, etc., to normal volume position. Now turn gain set control on A-116 to desired level.

ELECTRICAL AND MECHANICAL SPECIFICATIONS

McINTOSH MODEL A-116 POWER AMPLIFIER

Power Supply	112/120 volts, 60 cycles
Power Consumption	135 watts at 30 watts output 105 watts at zero signal output
Power Output	30 watts continuous
Input Level	Input #1 - 0.5 volts to 30 volts, with gain control * Input #2 - 2.5 volts, no gain control.
Frequency Range	20 to 30,000 cycles $\pm .1$ db at 30 watts output 10 to 50,000 cycles $\pm .5$ db at 30 watts output * 10 to 100,000 cycles ± 1 db at 15 watts output *
Harmonic Distortion	Less than 0.5% at 30 watts output 20 to 20,000 cycles
Intermodulation Distortion	Less than 1% if instantaneous peak power is below 60 watts
Impulse Distortion	Negligible
Phase Shift	Less than $\pm 8.5^\circ$ 20 to 20,000 cycles
Noise and Hum Level	85 db or more below rated output
Damping Factor	12 or better for 4, 8, and 16 ohm outputs, 16 for 600 ohms
Input Impedance	0.5 meg from 20 cycles to 40 Kc
Output Impedance	4, 8, 16 and 600 ohms (600 ohm is balanced to ground)
Tube Complement	Rectifier: 5U4-G Pre-Amp: 12AX7 Phase Inverter: 12BH7 Driver: 12BH7 Output: 2 - 6BG6-G

Auxiliary Equipment Connection Designed to power C-104 and other
McIntosh Preamplifiers.

Size 12" x 8" x 8-1/4" high, chassis type
construction

Weight 33 pounds net

Finish Gray hammertone

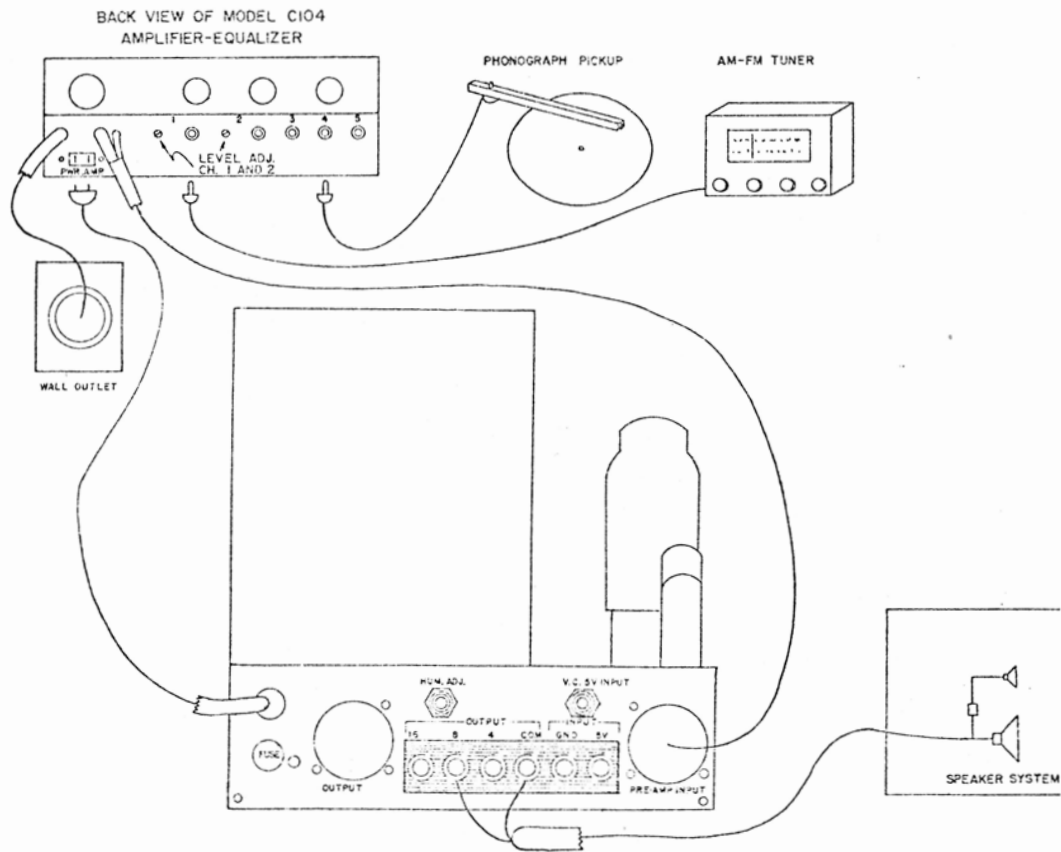
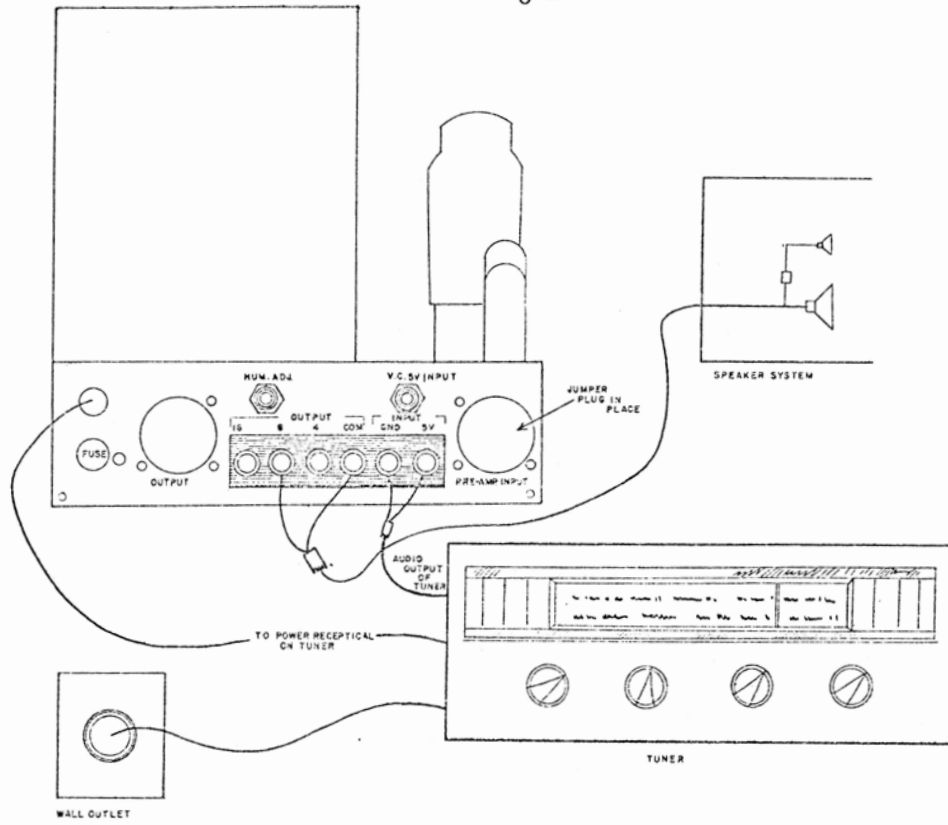
GUARANTEE

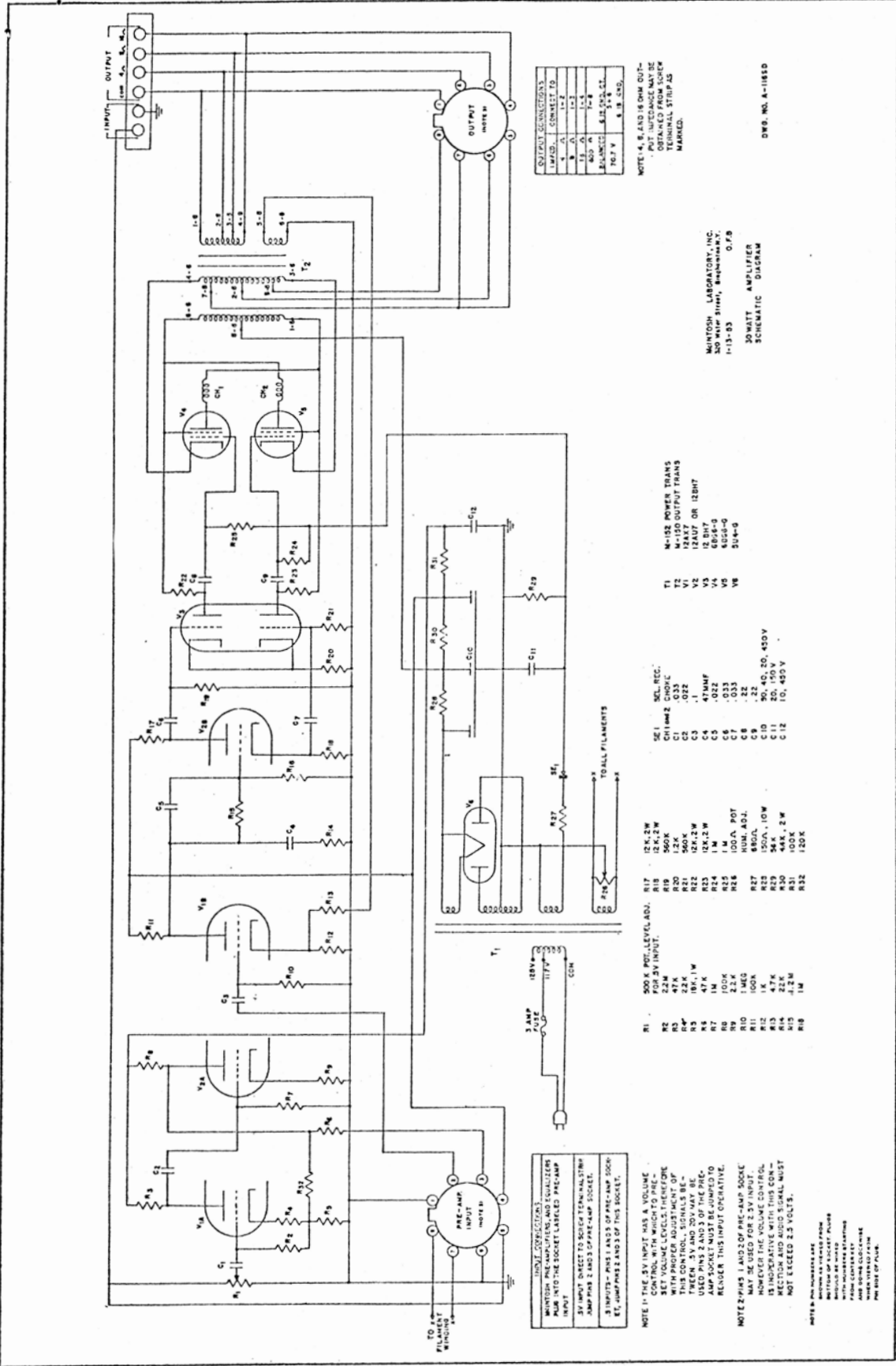
We guarantee the performance of this equipment and the mechanical and electrical workmanship to be free of serious defects for a period of 90 days with the exception that we do not guarantee the tubes or filter condensers beyond that of their manufacturers.

U. S. Patent No. 2477074 -- Other Patents Pending

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McINTOSH LABORATORY, INC.





OUTPUT CONNECTIONS

IMPEDANCE	CONNECT TO
16 Ω	1-1
32 Ω	1-2
60 Ω	1-3
120 Ω	1-4
240 Ω	1-5
480 Ω	1-6
960 Ω	1-7
1.92 K Ω	1-8
3.84 K Ω	1-9
7.68 K Ω	1-10

NOTE: 4, 8, AND 16 OHM OUTPUTS ARE OBTAINED FROM SOCKET TERMINAL STRIP AS MARKED.

MINTOSH LABORATORY, INC.
30 WATTS POWER, BROADWAY,
1-13-53
30 WATT AMPLIFIER
SCHEMATIC DIAGRAM

DWG. NO. A-1185D

- T1** M-102 POWER TRANS
V1 12AU7
V2 12AU7 OR 12BH7
V3 12BH7
V4 6X4
V5 6X4
V6 6X4
V8 6X4-G

- SE1** SEL. REC.
C1 47MFD 50V
C2 .002
C3 .1
C4 47MFD
C5 .002
C6 .002
C7 .003
C8 .22
C9 .002
C10 .002
C11 20, 150V
C12 10, 450V

- R1** 500K POT. LEVEL ADJ.
R2 22K
R3 22K
R4 22K
R5 18K-1W
R6 47K
R7 100K
R8 22K
R9 1M Ω
R10 1M Ω
R11 100K
R12 47K
R13 22K
R14 22K
R15 10K
R16 10K
R17 12K-2W
R18 560K
R19 560K
R20 560K
R21 22K
R22 12K-2W
R23 12K-2W
R24 1M Ω
R25 1M Ω
R26 100 Ω POT.
R27 80 Ω
R28 10 Ω
R29 47K
R30 44K-2W
R31 100K
R32 150K

- TO ALL FILAMENTS**
X TO
8

INPUT CONNECTIONS
 MINTOSH PRE-AMPLIFIERS AND EQUALIZERS PLUG INTO THE SOCKET LABELED PRE-AMP INPUT.
 3V INPUT DIRECT TO SOCKET TERMINAL STRIP.
 6V INPUTS - PINS 1 AND 3 OF PRE-AMP SOCKET.
 E1, JUMP PINS 2 AND 3 OF THIS SOCKET.

NOTE 1: THE 3V INPUT HAS A VOLUME CONTROL WITH WHICH TO PRE-SELECT THE SIGNAL TO BE AMPLIFIED. WITH PROPER ADJUSTMENT OF THIS CONTROL, SIGNALS BETWEEN 3V AND 20V MAY BE USED. 3V AND 20V MAY BE USED WITH EITHER 3V OR 6V INPUT SOCKET MUST BE JUMPED TO RENDER THIS INPUT OPERATIVE.
 NOTE 2: PINS 1 AND 3 OF PRE-AMP SOCKET MAY BE USED FOR 1.5V INPUT. HOWEVER THE VOLUME CONTROL IS INOPERATIVE WITH THIS CONNECTION AND AUDIO SIGNAL MUST NOT EXCEED 2.5 VOLTS.

NOTE 3: PIN NUMBERING ARE SHOWN AS VIEWED FROM REAR OF SOCKET PLUGS. INCLUDE ALL PINS WITH INCLUDING STARTING AND STOPPING POINTS AND SIGNAL COMMONS PER SIDE OF PLUG.