McIntosh

MC 240

SERVICE INFORMATION

STARTING WITH SERIAL NO’S 1P001, 100D1, OR 10G01

McINTOSH LABORATORY INC. 2 CHAMBERS STREET BINGHAMTON, NEW YORK
ELECTRICAL SPECIFICATIONS

Power Output
40 watts continuous per channel, 80 watts continuous monophonic.

Harmonic Distortion
Less than 0.5% at 40 watts output or less per channel, 20Hz through 20,000Hz. Less than 0.5% at 80 watts output or less monophonic 20Hz through 20,000Hz.

Intermodulation Distortion
Less than 0.5% for any combination of frequencies from 20Hz through 20,000Hz if instantaneous peak power is below 80 watts per channel or 160 watts monophonic.

Phase Shift
Less than ±6 degrees, 20Hz through 20,000Hz.

Frequency Range
At 40 watts output per channel: +0 to -0.1 dB 16Hz through 40kHz
At 20 watts output per channel: +0 to -1 dB 10Hz through 100kHz

Noise and Hum
90 dB or more below rated output

Output Impedance
4 ohms, 8 ohms, 16 ohms, 125 ohms, and 600 ohms per channel. 2, 4, 8, 16, 32, 62, 300 ohms monophonic.

Output Voltages
25 volts and 70.7 volts, stereo or monophonic.

Internal Impedance
Less than 10% of rated load impedance

Input
Input Impedance: 250,000 ohms per channel
Input Sensitivity: Twin amp and mono inputs 0.5 volts with gain control. Stereo input 2.0 volts with balance control.

Power Requirements
117 volts AC, 50/60 cps. Uses 270 watts at 40 watts output; 145 watts at zero signal output.

Single Channel (Mono) Output Connection:
For single channel output, parallel or series connect the L and R outputs to obtain the desired impedance.

600 Ohms/70.7V Output Receptacle Connections
Pin 1: Ground, 70.7V return and 600 ohms C.T.
Pins 1 and 2: Left 70.7V output
Pins 2 and 3: Left 600 ohms output
Pins 1 and 4: Right 70.7V output
Pins 4 and 5: Right 600 ohms output
Unless otherwise specified, resistance values are in ohms, 1/2 watt, and 10% tolerance. Resistors marked with an asterisk (*) are 5% tolerance. Capacitance values smaller than 1 are in microfarads (µF); values greater than 1 are in picofarads (pF). Inductors are in microhenries (µH).

The following components are matched to 1%:
- R 26 and R 27
- R 41 and R 50
- R 12 and R 30
- R 11 and R 34
**VOLTAGE AND RESISTANCE CHART**

<table>
<thead>
<tr>
<th>Tube</th>
<th>Pin No.</th>
<th>DC Volts No. Signal</th>
<th>AC Volts at rated output</th>
<th>Resistance in Ohms Unit Off</th>
</tr>
</thead>
<tbody>
<tr>
<td>12AX7 (VI)</td>
<td>1</td>
<td>103</td>
<td>1.9</td>
<td>160K*</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0</td>
<td>42</td>
<td>1M</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>.7</td>
<td>41</td>
<td>3.3K</td>
</tr>
<tr>
<td></td>
<td>4 &amp; 5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>103</td>
<td>1.9</td>
<td>160K*</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>0</td>
<td>42</td>
<td>1M</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>.7</td>
<td>41</td>
<td>3.3K</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>0</td>
<td>63</td>
<td>0</td>
</tr>
<tr>
<td>12AU7 (V2 or V5)</td>
<td>1</td>
<td>205</td>
<td>11</td>
<td>40K*</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>103</td>
<td>1.9</td>
<td>160K*</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>108</td>
<td>9</td>
<td>18K</td>
</tr>
<tr>
<td></td>
<td>4 &amp; 5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>205</td>
<td>11</td>
<td>43K*</td>
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<tr>
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<td>7</td>
<td>85</td>
<td>0</td>
<td>2.4M*</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>108</td>
<td>9</td>
<td>18K</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>0</td>
<td>63</td>
<td>0</td>
</tr>
<tr>
<td>12BH7 (V3 or V6)</td>
<td>1</td>
<td>350</td>
<td>144</td>
<td>12K*</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>18</td>
<td>11</td>
<td>200K</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>35</td>
<td>6</td>
<td>2.7K</td>
</tr>
<tr>
<td></td>
<td>4 &amp; 5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>350</td>
<td>144</td>
<td>12K*</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>18</td>
<td>11</td>
<td>200K</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>35</td>
<td>6</td>
<td>2.7K</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>0</td>
<td>63</td>
<td>0</td>
</tr>
<tr>
<td>12AX7 (V4 or V7)</td>
<td>1</td>
<td>430</td>
<td>108</td>
<td>26*</td>
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<tr>
<td></td>
<td>2</td>
<td>-46</td>
<td>144</td>
<td>1.1M</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>-46</td>
<td>136</td>
<td>260K</td>
</tr>
<tr>
<td></td>
<td>4 &amp; 5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>430</td>
<td>108</td>
<td>26*</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>-46</td>
<td>144</td>
<td>1.1M</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>-46</td>
<td>136</td>
<td>260K</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>0</td>
<td>63</td>
<td>0</td>
</tr>
<tr>
<td>6L6GC/7027A (V8, V9, V10, V11)</td>
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<td>—</td>
<td>—</td>
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</tr>
<tr>
<td></td>
<td>3</td>
<td>430</td>
<td>108</td>
<td>27*</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>430</td>
<td>108</td>
<td>26*</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>-46</td>
<td>136</td>
<td>260K</td>
</tr>
<tr>
<td></td>
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<td>—</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>0</td>
<td>63</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>.7</td>
<td>108</td>
<td>26</td>
</tr>
</tbody>
</table>

*This Resistance measured with condenser C25A shorted to ground
A high impedance VTVM is used to measure the operating voltages and resistances.
BE SURE THE AMPLIFIER IS TURNED OFF WHEN MEASURING RESISTANCES

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**T3**

**DETAIL "A"**

**NOTE 4**

- Outlet 300 W Max.
- 79 AT 28°C
- 117 V
- 125 V
- R56
- 3.2A SLO-BLO
- 105-130 V
- 50-60 CPS

**STEREO PREAMP POWER (IN EARLY UNITS)**

- To Left Stereo Input
- To Right Stereo Input

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154 – 319
SCHEMATIC NOTES

1. In units with serial numbers below 32G66, C29 and C30 do not appear; R9 & C2 and R32 & C12 are connected together as shown.

2. In units with serial numbers below 32G66, R17 & 40 were 27K; R18 & 41 were 30K; R10 & 33 were 10K; and R57 was 10K 2W.

3. In units with serial numbers below 32G66, R58 (100K) is used. When this resistor is used, the connection is broken at point indicated by "X".

4. In units with serial numbers below 45G45, power transformer T3 is connected as shown in detail "A".

REPLACEMENT PARTS

All parts not listed are common items obtainable from radio parts jobbers.

Replacement parts may be obtained when ordered by PART NUMBER from:

McIntosh Laboratory Inc.
Customer Service Department
2 Chambers Street
Binghamton, New York 13903
(telephone 607-723-3512)

CAPACITORS

<table>
<thead>
<tr>
<th>Symbol Number</th>
<th>Description</th>
<th>Part Number</th>
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<tbody>
<tr>
<td>C2</td>
<td>Tubular ceramic 4.70pF</td>
<td>061-033</td>
</tr>
<tr>
<td>C3</td>
<td>Elect. 100µF 3V</td>
<td>066-047</td>
</tr>
<tr>
<td>C12</td>
<td>Tubular ceramic 4.70pF</td>
<td>061-033</td>
</tr>
<tr>
<td>C13</td>
<td>Elect. 100µF 3V</td>
<td>066-047</td>
</tr>
<tr>
<td>C23</td>
<td>Elect. 250µF 250V</td>
<td>066-022</td>
</tr>
<tr>
<td>C24</td>
<td>Elect. 250µF 250V</td>
<td>066-023</td>
</tr>
<tr>
<td>C25,26</td>
<td>Elect. 100/300µF 500/450V</td>
<td>066-027</td>
</tr>
<tr>
<td>C27</td>
<td>Elect. 12µF 250V</td>
<td>066-046</td>
</tr>
</tbody>
</table>

RECTIFIERS

<table>
<thead>
<tr>
<th>Symbol Number</th>
<th>Description</th>
<th>Part Number</th>
</tr>
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<tbody>
<tr>
<td>SR1,2</td>
<td>Si. rectifier</td>
<td>070-032</td>
</tr>
<tr>
<td>SR3</td>
<td>Se. rectifier</td>
<td>070-005</td>
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</table>

FUSES

<table>
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<tr>
<th>Symbol Number</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Fuse 3.2 amp</td>
<td>089-006</td>
</tr>
</tbody>
</table>
C Notes

1. Numbers below 10 do not appear; C12 are connected in parallel.
2. Numbers below 27K; R18 & 413 were 10K; and
3. Numbers below 1 is used. When used, the connection is indicated by "X".
4. Transformer T3 is not in detail "A".

Parts

- 70PF 061-013
- 3V 066-047
- 70PF 061-013
- 3V 066-047
- 250V 066-022
- 250V 066-023
- 0.01 066-027
- 250V 066-046
- 070-012
- 070-005
- 089-006

Chokes

L1,2 Choke 2.2mH 122-001
L3,4 Choke 2.2mH 122-001
L5 Filter choke 1H 122-002

Resistors & Potentiometers

R1 Mono gain 134-020
R2 Left gain 134-020
R3 Right gain 134-020
R7 Balance 134-116
R56 Thermistor 144-006

Switches

S2 Mode selector 146-005

Tubes

V1 12AX7 165-019
V2 12AU7 165-018
V3 12BH7-A 165-020
V4 12AX7 165-019
V5 12AU7 165-018
V6 12BH7-A 165-020
V7 12AX7 165-019
V8,9 6L6CG/7027-A 165-014
V10,11 6L6CG/7027-A 165-014

Transformers

T1 Output (left) 043-656
T2 Output (right) 043-657
T3 Power (10001 to 15045) 043-648
T3 Power (15045 & Above) 043-655

Miscellaneous Items

- Mounting flanges 001-057
- Plastic feet 017-040
- Owners manual 038-174
- Mounting template 038-003
- Hardware package 043-432
- Gain & balance knobs 090-013
- Mode selector knob 090-015
- Octal plug cap 127-004
- Octal plug 127-006
- Line cord 170-021
- Fuse holder 178-001
- Shipping carton 033-011