

# McIntosh

## C 24



## SERVICE INFORMATION

STARTING WITH SERIAL NO. 10D01

## ELECTRICAL SPECIFICATIONS

### FREQUENCY RESPONSE

+0 to -0.5dB from 20Hz to 20,000Hz

### DISTORTION

Less than 0.1% at 2.5 volts, 20Hz to 20,000Hz

### INPUT SENSITIVITY (phono 1, phono 2, tape head)

2 millivolts for 2.5 volts output at 1kHz

### INPUT SENSITIVITY (aux, tape, tuner)

0.20 volts for 2.5 volts output

### HUM AND NOISE (phono 1, phono 2, tape head)

70dB below 10 millivolt input

### HUM AND NOISE (aux, tape, tuner)

75dB below rated output

### OUTPUT (main)

2.5 volts with rated input. Up to 10 volts can be developed without distortion.

### OUTPUT (tape)

0.20 volts with rated input. Phono input signal of 10 millivolts produces 1.2 volts output.

### OUTPUT (center channel)

2.5 volts with rated input on both channels. A level control adjusts output from -6dB to +6dB with respect to main output.

### BASS CONTROL

+18dB at 20Hz

### TREBLE CONTROL

+18dB at 20,000Hz

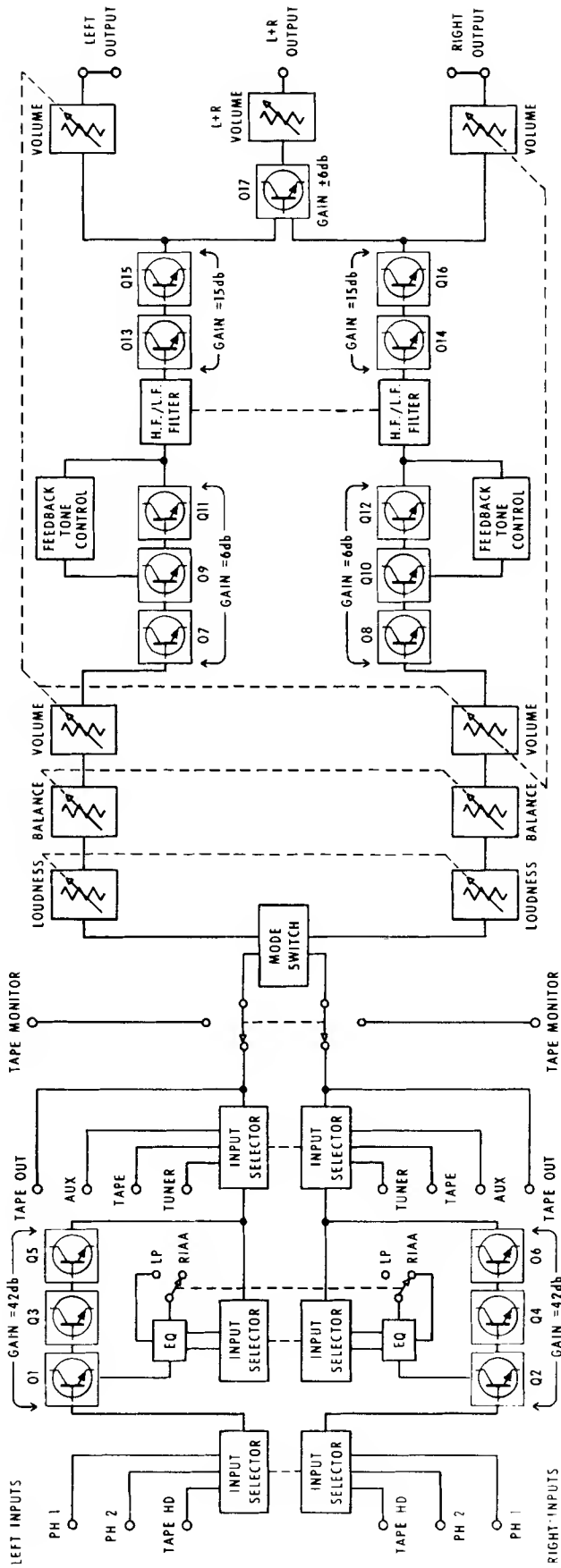
### LF FILTER

Flat or roll off below 50Hz

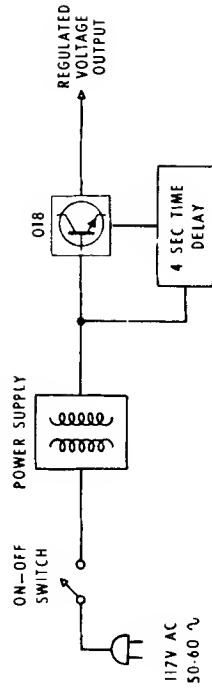
### HF FILTER

Flat or roll off above 5000Hz

PREAMPLIFIER BLOCK DIAGRAM



POWER SUPPLY DELAY CIRCUIT

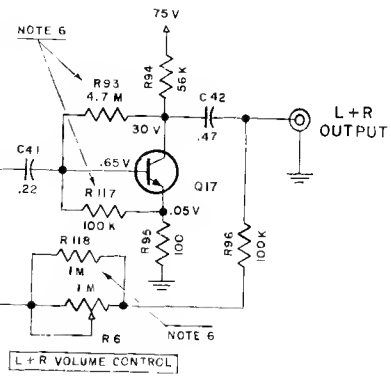
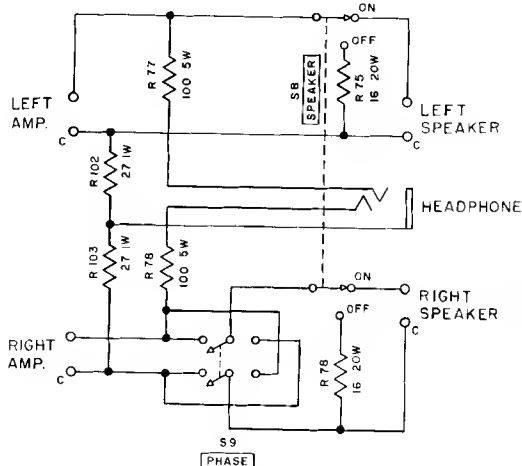
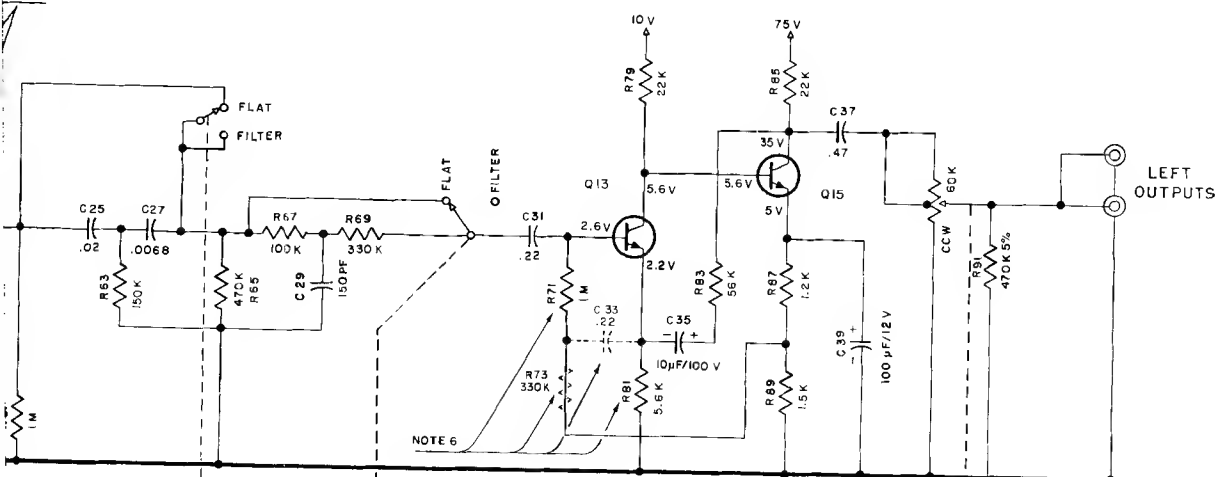




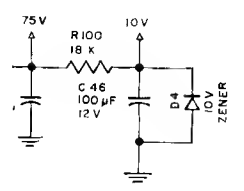
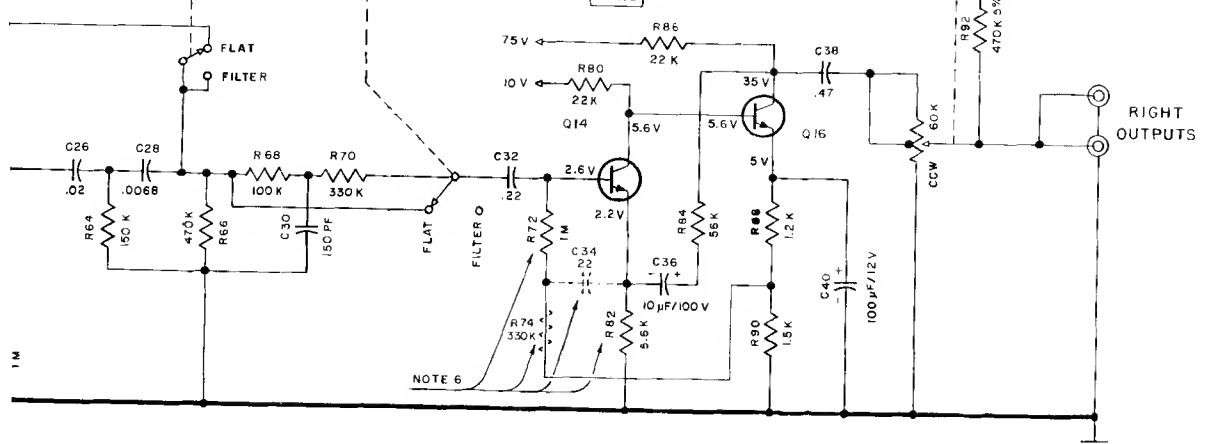




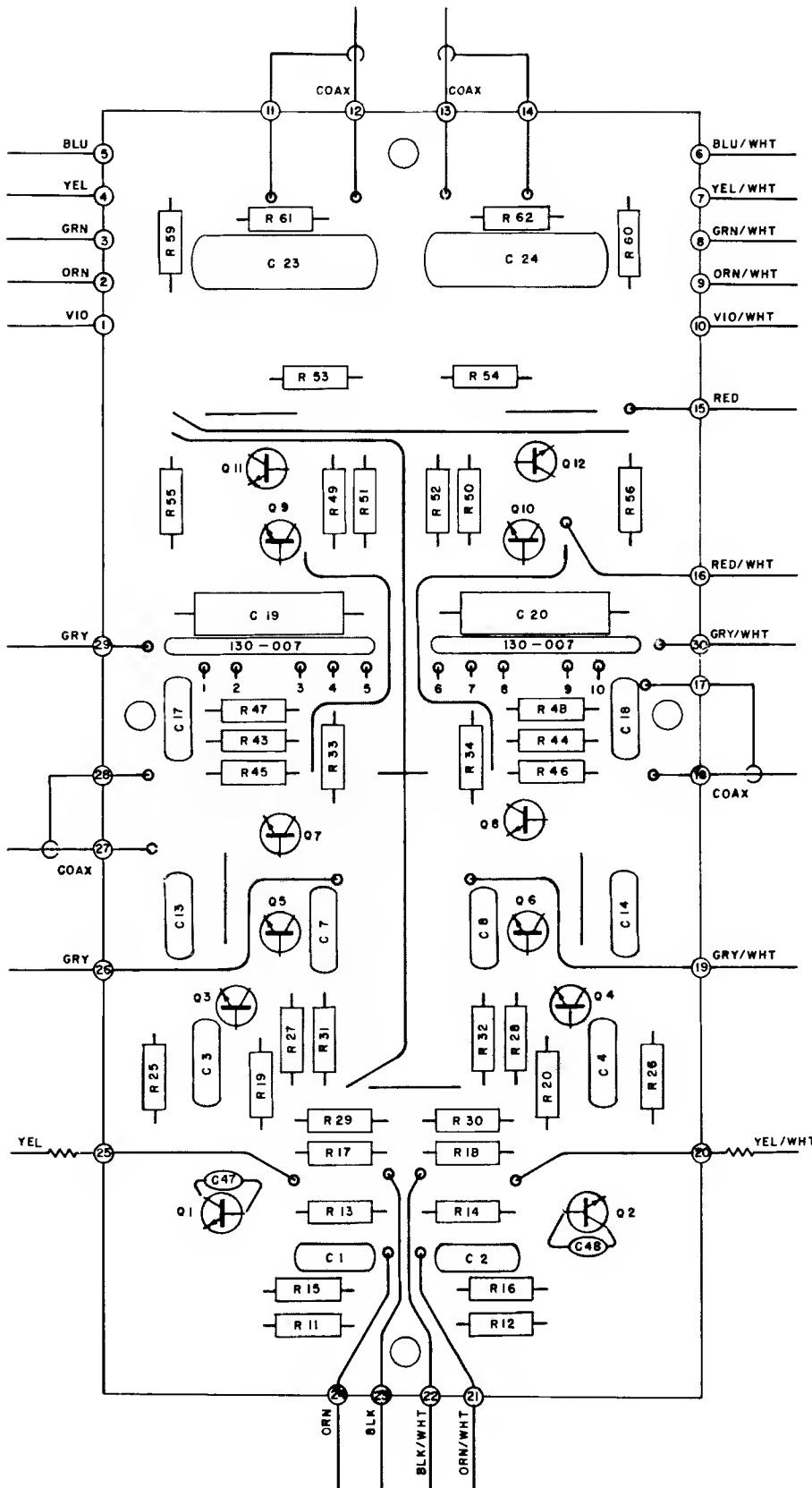
NOTE 6



NOTE 6



PRINTED CIRCUIT BOARD 043 - 978



1. C47, C48, C49, units with ser
2. C13 and C14 an 36D00.
3. R27 & R28 are
4. R107 & R108 an 19D00.
5. R109 & R110 an 19D00.
6. In units with

R25, R26, R49, R19, R20, R43, R41, R42, R57, R113, R114, R11, R12 are  
 R29 & R30 are  
 R33 & R34 are  
 R55 & R56 are  
 R81 & R82 are  
 R107 & R108 an  
 R93 is 2.2M  
 R99 is 2.2K  
 C5, C6, C15, C  
 C7 & C8 are 0.  
 C17 & C18 are  
 C47 & C48 are  
 C51 & C52 are

Unless otherwi  
 ohms, 1/2 watt  
 smaller than 1  
 than 1 are in

The terminal r  
 circuit board

All voltages a

1. Use c
2. All v
3. AC in
4. No s
5. Front



## SCHEMATIC NOTES

1. C47, C48, C49, & C50 and R111 & R112 do not appear in units with serial numbers below 43D01.
2. C13 and C14 are .22 $\mu$ F in units with serial numbers below 36D00.
3. R27 & R28 are 470K in earlier units.
4. R107 & R108 are 2.2M in units with serial numbers below 19D00.
5. R109 & R110 are not in units with serial numbers below 19D00.
6. In units with serial numbers below 51D55:

R25, R26, R49, R50, R71 & R72 are 100K  
 R19, R20, R43, R44, R45 & R46 are 1M  
 R41, R42, R57, R58, R73 & R74 are used  
 R113, R114, R115, R116, R117 & R118 are not used  
 R11 & R12 are 4.7M  
 R29 & R30 are 27K  
 R33 & R34 are 680 $\Omega$   
 R55 & R56 are 7.5K  
 R81 & R82 are 12K  
 R107 & R108 are 560K  
 R93 is 2.2M  
 R99 is 2.2K  
 C5, C6, C15, C16, C21, C22, C33, C34, C49 & C50 are used  
 C7 & C8 are 0.1 $\mu$ F  
 C17 & C18 are .22 $\mu$ F  
 C47 & C48 are 6.8pF  
 C51 & C52 are not used

Unless otherwise specified, resistance values are in ohms, 1/2 watt, and 10% tolerance. Capacitance values smaller than 1 are in microfarads ( $\mu$ F); values greater than 1 are in picofarads (pF).

The terminal numbering of rotary switches and printed circuit board wires is for reference only.

All voltages are measured under the following conditions:

1. Use of an 11 megohm input impedance VTVM
2. All voltages  $\pm 10\%$  with respect to ground
3. AC input at 117 volts, 50/60 cycles
4. No signal at input terminals
5. Front panel controls at normal positions

## REPLACEMENT PARTS

All parts not listed are available from radio parts stores.

Replacement parts may be ordered by PART NUMBER from:

McIntosh I  
 Customer S  
 2 Chambers  
 Binghamton  
 (telephone

Symbol Number	Description	Value
C1,2	Mylar	.2
C3,4	Mylar	.1
C7,8	Mylar	.2
C17,18	Mylar	.4
C19,20	Mylar	.2
C23,24	Mylar	.4
C31,32	Mylar	.2
C33,34	Mylar	.2
C35,36	Elect.	10
C37,38	Mylar	.4
C39,40	Elect.	10
C41	Mylar	.2
C42	Mylar	.4
C46	Mylar	10
C51,52	Mylar	.2
D1,2	Si. rectif	
D3	Zener diod	
D4	Zener diod	
F1	Fuse 1/2 a	
F2	Fuse 1/16	
F2	Fuse 1/16	
R1,2	Balance & (with flat	
R1,2	Balance & (with knur	
R3	Volume con	
R4	Bass contr (with flat	

## 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

Symbol Number	Description	Part Number
C1,2	Mylar .22 $\mu$ F 20% 250V	064-043
C3,4	Mylar .1 $\mu$ F 20% 250V	064-037
C7,8	Mylar .22 $\mu$ F 20% 250V	064-043
C17,18	Mylar .47 $\mu$ F 20% 250V	064-045
C19,20	Mylar .22 $\mu$ F 20% 250V	064-043
C23,24	Mylar .47 $\mu$ F 10% 100V	064-019
C31,32	Mylar .22 $\mu$ F 20% 250V	064-043
C33,34	Mylar .22 $\mu$ F 20% 250V	064-043
C35,36	Elect. 10 $\mu$ F 100V	066-007
C37,38	Mylar .47 $\mu$ F 10% 100V	064-019
C39,40	Elect. 100 $\mu$ F 15V	066-127
C41	Mylar .22 $\mu$ F 20% 250V	064-043
C42	Mylar .47 $\mu$ F 10% 100V	064-019
C46	Mylar 100 $\mu$ F 15V	066-127
C51,52	Mylar .22 $\mu$ F 20% 250V	064-043

### DIODES

D1,2	Si. rectifier	070-015
D3	Zener diode 75V	070-025
D4	Zener diode 10V	070-024

### FUSES

F1	Fuse 1/2 amp	089-009
F2	Fuse 1/16 amp (pig-tail)	089-010
F2	Fuse 1/16 amp (cartridge)	089-012

### POTENTIOMETERS

R1,2	Balance & loud control (with flat shaft)	134-178
R1,2	Balance & loud control (with knurled shaft)	134-101
R3	Volume control	134-074
R4	Bass control (with flat shaft)	134-180

R4	Bass control (with knurled shaft)	134-080
R5	Treble control (with flat shaft)	134-181
R5	Treble control (with knurled shaft)	134-081
R6	L & R volume control	134-082

### RESISTORS

R75,76	Wirewound 16 $\Omega$ 10% 20W	139-022
R77,78	Wirewound 100 $\Omega$ 10% 5W	139-008
R102,103	Wirewound 27 $\Omega$ 10% 1W	139-028

### SWITCHES

S1	Compensation switch	148-007
S2	Input selector switch	146-067
S3	Tape monitor	148-007
S4	Mode selector switch	146-107
S5	Power switch	148-003
S6	LF switch	148-007
S7	HF switch	148-007
S8	Speaker switch	148-007
S9	Phase switch	148-007

### TRANSISTORS

Q1,2	Si. NPN transistor	132-503
Q3,4	Si. NPN transistor	132-503
Q5,6	Si. NPN transistor	132-026
Q7,8	Si. NPN transistor	132-504
Q9,10	Si. NPN transistor	132-501
Q11,12	Si. NPN transistor	132-026
Q13,14	Si. NPN transistor	132-501
Q15,16	Si. NPN transistor	132-026
Q17	Si. NPN transistor	132-502
Q18	Si. NPN transistor	132-014

### TRANSFORMER

T1	Power transformer	043-532
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### MODULES

Tone control	130-007
Equalization	130-026

### LAMPS

Neon bulb	058-009
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### FRONT PANEL AND TRIM

Front Panel (complete)	043-360
Front panel glass	043-877

End cap (right)	018-043
End cap (left)	018-044
Volume control knob	043-253
Input selector knob	043-253
Mode selector knob	043-253
Balance knob	090-009
Loudness control knob (for flat shaft)	043-625
Loudness control knob (for knurled shaft)	090-008
Bass knob, front (for flat shaft)	043-625
Bass knob, front (for knurled shaft)	090-008
Bass knob, rear	090-009
Treble knob, front (for flat shaft)	043-625
Treble knob, front (for knurled shaft)	090-008
Treble knob, rear	090-009
L & R gain control knobs	090-013

#### MOUNTING SYSTEM

Shelf bracket (right)	043-592
Shelf bracket (left)	043-593
Mounting template #100	038-179
Hardware package	043-452

#### MISCELLANEOUS ITEMS

Line cord	170-021
Fuseholder	178-001
Shipping carton	043-950
Owners manual	038-035
Plastic feet	017-041
Shorting plug	127-001
Audio cable (6')	170-015

# McIntosh

**MODEL NUMBER:** C 24

**MODIFICATION:** Add four grounding springs to the shafts of the Volume, Balance, Bass and Treble controls.

**DESCRIPTION:** Some controls have developed a noise when rotated. Adding the springs to ground the shafts prevents this condition.

**CAUTION:** When adding the springs to the Bass and Treble control, be sure they make good contact. Make sure the spring is not too tight. If the springs are tight the clutch action of the controls will not function.

**PROCEDURE:** Remove the front panel. Place the spring around the shaft and insert the ends of the spring into the control guide hole. See diagram.

