

# HARMAN-KARDON MODEL A-120 (Melody II)



**TYPE SET**

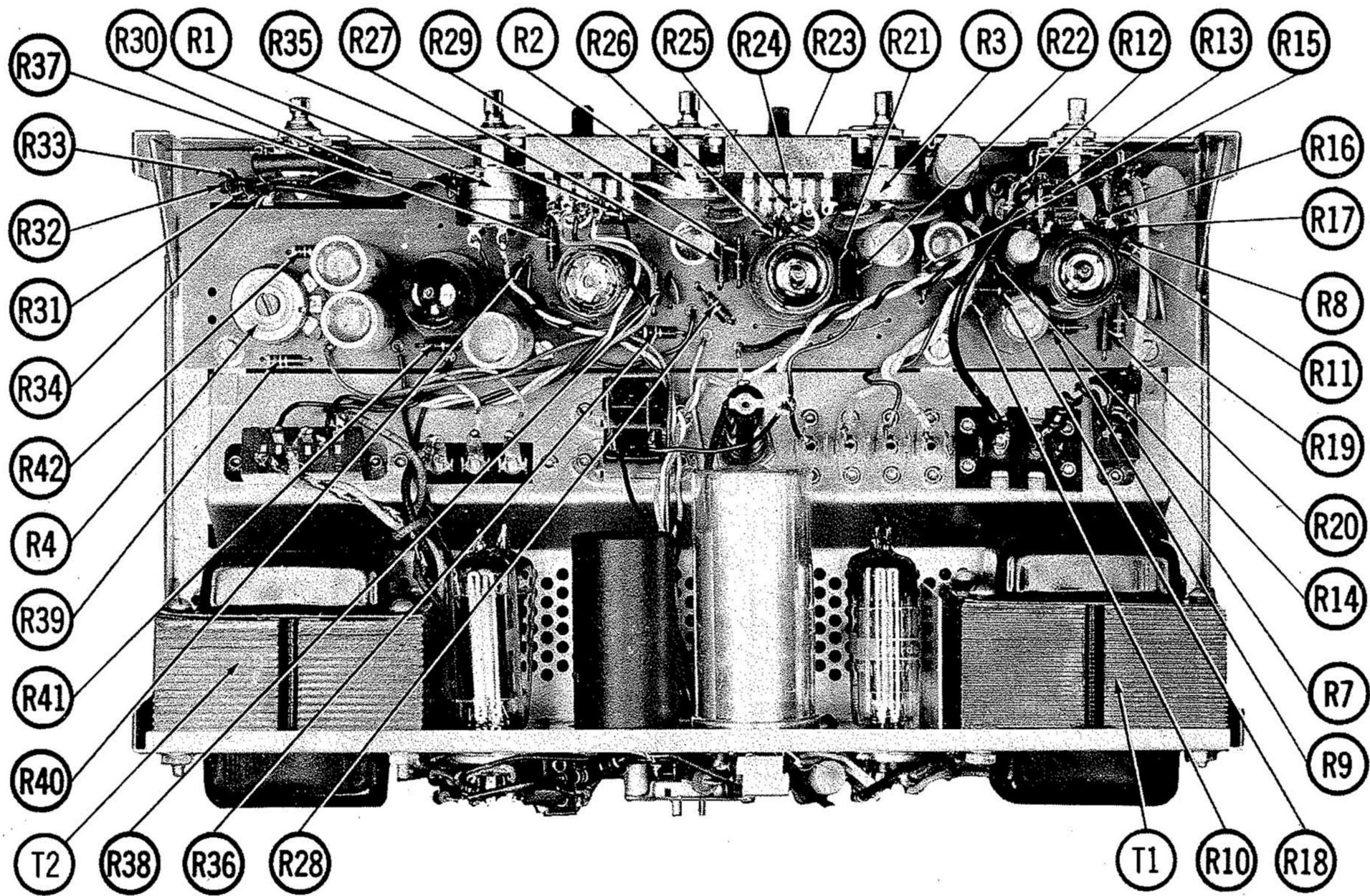
AC Operated 6 Channel 20 Watt Audio Amplifier

**TUBES (Eight)**

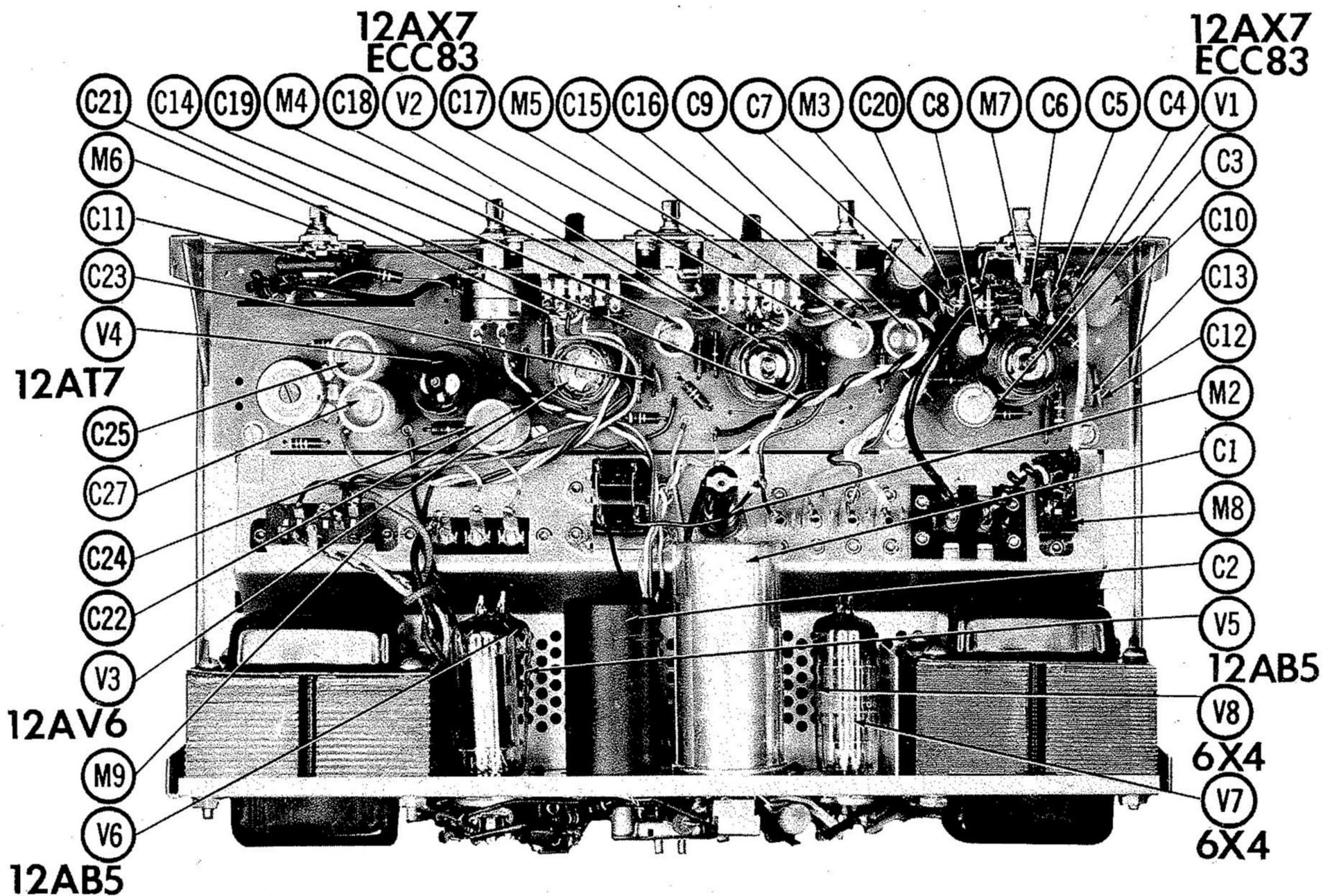
Types 12AX7/ ECC83 Preamplifier, 12AX7/ ECC83 Cath. Follower-AF Amp., 12AV6 AF Amplifier, 12AT7 Driver, (2) 12AB5 Output, (2) 6X4 Rectifier

**POWER SUPPLY**

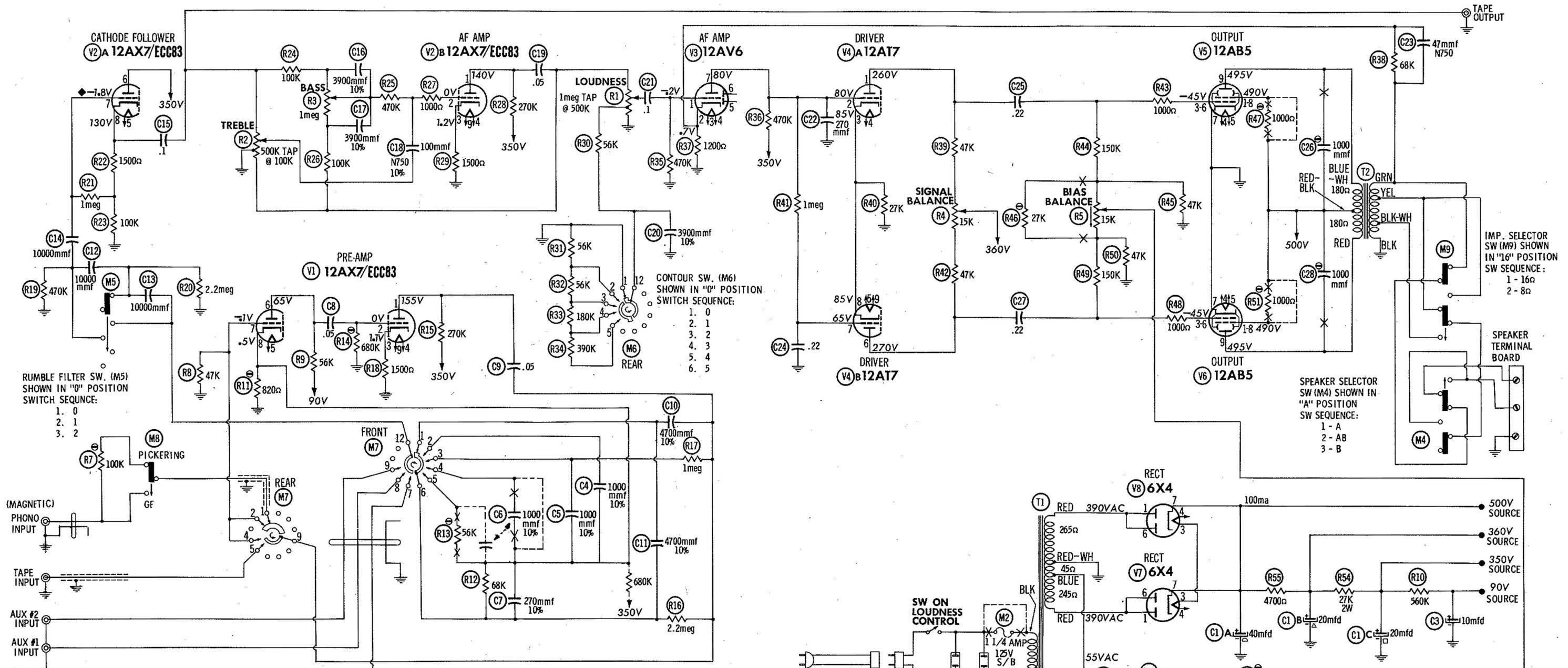
105-125 Volts AC-60 Cycles      **RATING** .8 Amp @117 Volts AC (83 Watts)



**CHASSIS TOP VIEW**



**CHASSIS TOP VIEW**



RUMBLE FILTER SW. (M5) SHOWN IN "0" POSITION SWITCH SEQUENCE:

- 0
- 1
- 2

PICKERING

PHONO INPUT

TAPE INPUT

AUX #2 INPUT

AUX #1 INPUT

TUNER INPUT

FUNCTION SELECTOR SW (M7) SHOWN IN "EUR" POSITION SW SEQUENCE:

- EUR
- R1AA
- LP
- 15
- 7.5
- 3.75
- TUNER
- AUX #1
- AUX #2

CONTOUR SW. (M6) SHOWN IN "0" POSITION SWITCH SEQUENCE:

- 0
- 1
- 2
- 3
- 4
- 5
- 6

SPEAKER SELECTOR SW (M4) SHOWN IN "A" POSITION SW SEQUENCE:

- A
- AB
- B

IMP. SELECTOR SW (M9) SHOWN IN "16" POSITION SW SEQUENCE:

- 16Ω
- 8Ω

RESISTANCE READINGS

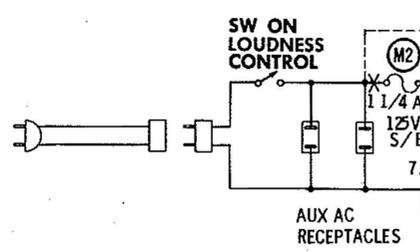
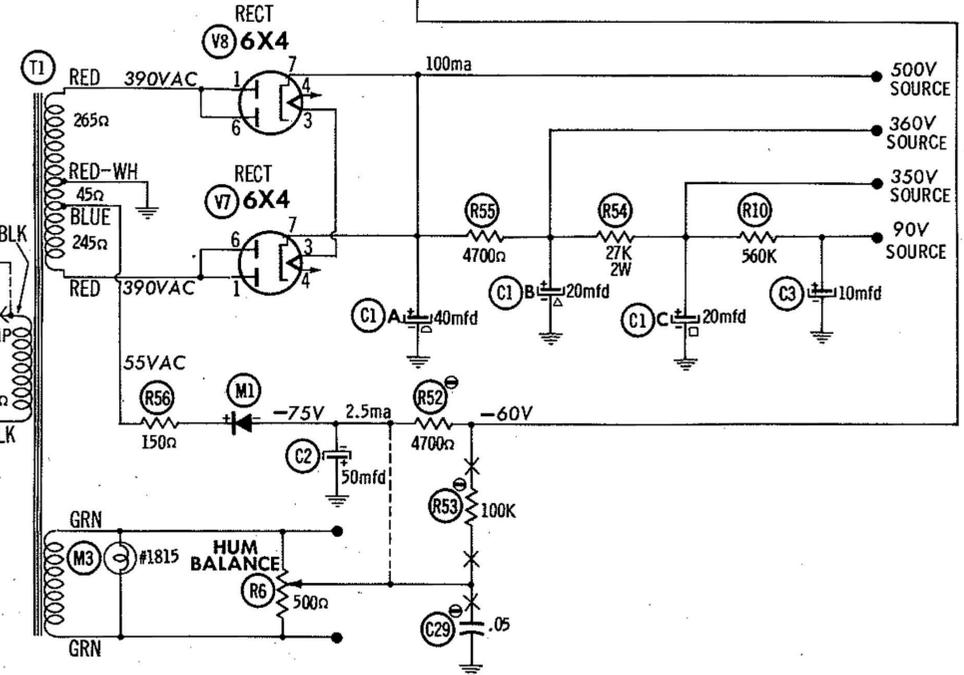
| ITEM | TUBE           | Pin 1  | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7    | Pin 8  | Pin 9 |
|------|----------------|--------|-------|-------|-------|-------|-------|----------|--------|-------|
| V1   | ECC83<br>12AX7 | †300K  | 680K  | 1500Ω | ▲100K | ▲100K | †550K | 47K      | 820Ω   | 100K  |
| V2   | ECC83<br>12AX7 | †300K  | 600K  | 1500Ω | ▲100K | ▲100K | †32K  | 1.1meg   | 100K   | ▲100K |
| V3   | 12AV6          | 470K   | 1100Ω | ▲100K | ▲100K | NC    | NC    | †500K    |        |       |
| V4   | 12AT7          | †60K   | †500K | 27K   | ▲100K | ▲100K | †55K  | †1.5meg  | 27K    | ▲100K |
| V5   | 12AB5          | †1000Ω | TP    | 170K  | ▲100K | ▲100K | 170K  | 0Ω       | †1000Ω | †180Ω |
| V6   | 12AB5          | †1000Ω | TP    | 170K  | ▲100K | ▲100K | 170K  | 0Ω       | †1000Ω | †180Ω |
| V7   | 6X4            | 290Ω   | TP    | ▲100K | ▲100K | TP    | 290Ω  | 20K(MIN) |        |       |
| V8   | 6X4            | 265Ω   | NC    | ▲100K | ▲100K | NC    | 265Ω  | 20K(MIN) |        |       |

† MEASURED FROM PIN 7 OF V8  
 † MEASURED FROM PIN 8 OF V2  
 ▲ MEASURED FROM NEGATIVE LUG OF M1  
 NC NO CONNECTION  
 TP TIE POINT

- DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
- Socket connections are shown as bottom views.
- Measured values are from socket pin to common negative.
- Line voltage maintained at 117 volts for voltage readings.
- Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
- All controls at minimum, proper output load connected.

SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)



# PARTS LIST AND DESCRIPTIONS

## TUBES (GENERAL ELECTRIC, SYLVANIA)

| ITEM No. | USE                      | TYPE         |
|----------|--------------------------|--------------|
| V1       | Preamplifier             | 12AX7/ ECC83 |
| V2       | Cath. Follower - AF Amp. | 12AX7/ ECC83 |
| V3       | AF Amplifier             | 12AV6        |
| V4       | Driver                   | 12AT7        |

| ITEM No. | USE       | TYPE  |
|----------|-----------|-------|
| V5       | Output    | 12AB5 |
| V6       | Output    | 12AB5 |
| V7       | Rectifier | 6X4   |
| V8       | Rectifier | 6X4   |

### ELECTROLYTIC CAPACITORS

| ITEM No. | RATING |       | REPLACEMENT DATA       |                  |                           |                  |                  |                  |                  |
|----------|--------|-------|------------------------|------------------|---------------------------|------------------|------------------|------------------|------------------|
|          | CAP.   | VOLT. | Harman-Kardon PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
| C1A      | 40     | 475   | JE1021710              | AFH3-50-05       | C0372                     | FP396.1          | TMT-47           | Q-075            | TVL-3842         |
| B        | 20     | 475   |                        |                  |                           |                  | TD-20-500        |                  |                  |
| C        | 20     | 475   |                        |                  |                           |                  |                  |                  |                  |
| C2       | 50     | 150   | JE1021711              | AFH1-18          | A0200                     | FP115            | TMS-20           | S-080            | TVL-1415         |
| C3       | 10     | 150   |                        | PRS150V10        | BBR10-150                 | TC42             | TD-10-150        | MT-1510          | TVA-1406         |

### FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

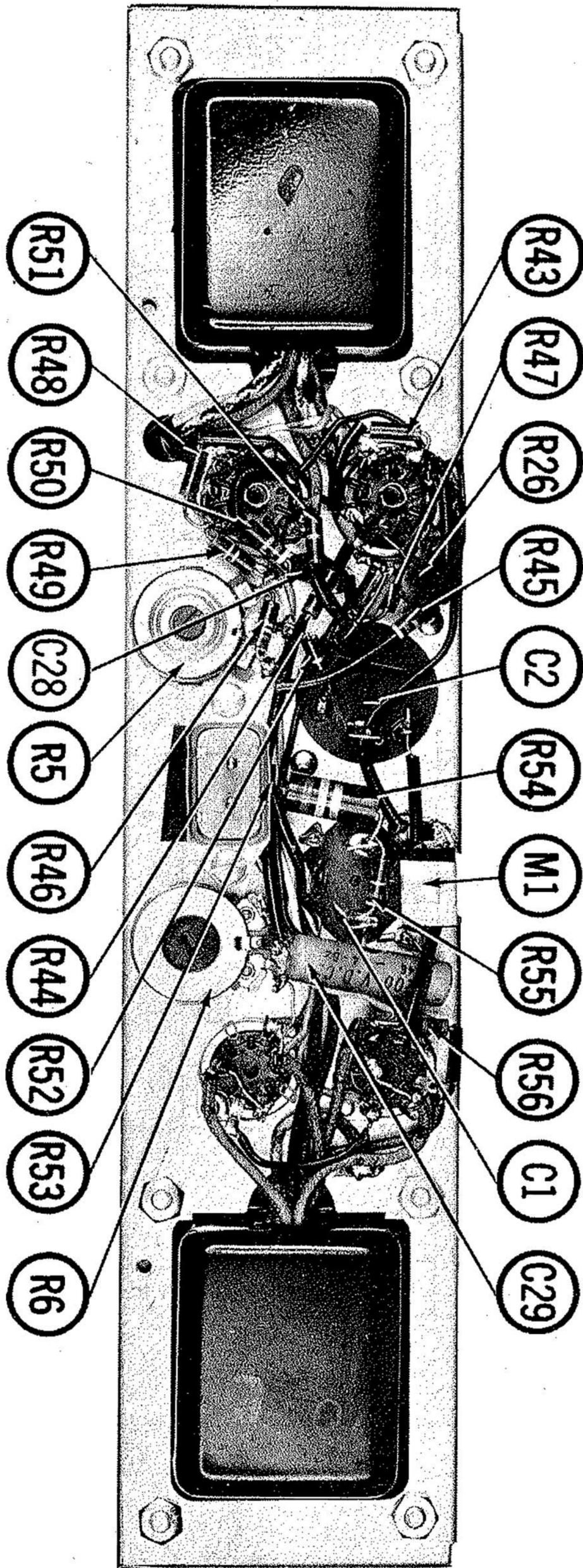
| ITEM No. | RATING |      | REPLACEMENT DATA       |                  |                    |                           |                  |                  | NOTES    |
|----------|--------|------|------------------------|------------------|--------------------|---------------------------|------------------|------------------|----------|
|          | CAP.   | VOLT | Harman-Kardon PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No. |          |
| C4       | 1000   |      |                        |                  |                    | HVB30D1                   |                  |                  | 10%      |
| C5       | 1000   |      |                        |                  |                    | HVB30D1                   |                  |                  | 10%      |
| C6       | 1000   |      |                        |                  |                    | HVB30D1                   |                  |                  | 10%      |
| C7       | 270    |      |                        |                  | MD-271             | L10T27                    |                  | 5TCC-T27         | 10%      |
| C8       | .05    | 200  |                        | P288N-05         | DF-503             | CUB2S5                    | GEM-415          | 2TM-S5           |          |
| C9       | .05    | 400  |                        | P488N-05         | DF-503             | CUB4S5                    | GEM-415          | 4TM-S5           |          |
| C10      | 4700   |      |                        |                  |                    |                           |                  |                  | 10%      |
| C11      | 4700   |      |                        |                  |                    |                           |                  |                  | 10%      |
| C12      | 10000  |      |                        | BPD-01           | DD-103             | BYA10S1                   | DC511            | 5HK-S1           |          |
| C13      | 10000  |      |                        | BPD-01           | DD-103             | BYA10S1                   | DC511            | 5HK-S1           |          |
| C14      | 10000  |      |                        | BPD-01           | DD-103             | BYA10S1                   | DC511            | 5HK-S1           |          |
| C15      | .1     | 200  |                        | P288N-1          | DF-104             | CUB2P1                    | GEM-201          | 2TM-P1           |          |
| C16      | 3900   |      |                        |                  |                    |                           |                  |                  | 10%      |
| C17      | 3900   |      |                        |                  |                    |                           |                  |                  | 10%      |
| C18      | 100    |      |                        | N750-D1100       | DTN-100            | C10T1U                    | NT-531           | 5TCU-T1          | N750 10% |
| C19      | .05    | 400  |                        | P488N-05         | DF-503             | CUB4S5                    | GEM-415          | 4TM-S5           |          |
| C20      | 3900   |      |                        |                  |                    |                           |                  |                  | 10%      |
| C21      | .1     | 200  |                        | P288N-1          | DF-104             | CUB2P1                    | GEM-201          | 2TM-P1           |          |
| C22      | 270    |      |                        | SI 270           | D8-271             | LT6T27                    | UC-5327          | 5GA-T27          |          |
| C23      | 47     |      |                        | N750-D147        | DTN-47             | C10Q47U                   | NT-5447          | 5TCU-Q47         | N750     |
| C24      | .22    | 400  |                        | P488N-22         |                    | CUB4P22                   | GEM-4022         | 4TM-P22          |          |
| C25      | .22    | 400  |                        | P488N-22         |                    | CUB4P22                   | GEM-4022         | 4TM-P22          |          |
| C26      | 1000   | 2000 |                        | HVD-30-1000      | DD30-102           | HVB20D1                   | DC3021           | 20GA-D1          | ①        |
| C27      | .22    | 400  |                        | P488N-22         |                    | CUB4P22                   | GEM-4022         | 4TM-P22          |          |
| C28      | 1000   | 2000 |                        | HVD-30-1000      | DD30-102           | HVB20D1                   | DC-3021          | 20GA-D1          | ①        |
| C29      | .05    | 200  |                        | P288N-05         | DF-503             | CUB2S5                    | GEM-415          | 2TM-S5           | ①        |

① Not used in some versions.

### CONTROLS

| ITEM No. | RATING     |       | REPLACEMENT DATA       |                    |                    |              |                  | INSTALLATION NOTES |
|----------|------------|-------|------------------------|--------------------|--------------------|--------------|------------------|--------------------|
|          | RESISTANCE | WATTS | Harman-Kardon PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. |                    |
| RLA      | 1meg       | 1/2   | RV1021636              |                    |                    |              |                  | Loudness, Tap@500K |
| B        | Switch     |       |                        |                    |                    |              |                  |                    |
| R2       | 500K       | 1/2   | RV1021634              |                    |                    |              |                  | Treble, Tap@100K   |
| R3       | 1meg       | 1/2   | RV1021635              |                    |                    |              |                  | Bass               |
| R4       | 15K        | 1/2   | RV1021725              |                    |                    |              |                  | Signal Balance     |
| R5A      | 15K        | 1/2   | RV1021708              | AB-22              | A47-15K-S          | B11-118      | TA153L           | Blas Balance       |
| B        | Shaft      |       |                        | AK-1               | FKS-1/4            | TMI-Kit      | Not Req          |                    |
| R6A      | 500Ω       | 1/2   | RV1021709              | AB-4               | A47-500-S          | B11-103      | TA52L            | Hum Balance        |
| B        | Shaft      |       |                        | AK-1               | FKS-1/4            | TMI-Kit      | Not Req.         |                    |

# CHASSIS—BOTTOM VIEW



# PARTS LIST AND DESCRIPTIONS (Continued)

## RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

| ITEM No. | RATING |      | Harman-Kardon PART No. | NOTES  | ITEM No. | RATING |      | Harman-Kardon PART No. | NOTES  |
|----------|--------|------|------------------------|--------|----------|--------|------|------------------------|--------|
|          | OHMS   | WATT |                        |        |          | OHMS   | WATT |                        |        |
| R7       | 100K   |      |                        | Note 1 | R32      | 56K    |      |                        |        |
| R8       | 47K    |      |                        |        | R33      | 180K   |      |                        |        |
| R9       | 56K    |      |                        |        | R34      | 390K   |      |                        |        |
| R10      | 560K   |      |                        |        | R35      | 470K   |      |                        |        |
| R11      | 820Ω   |      |                        | Note 2 | R36      | 470K   |      |                        |        |
| R12      | 68K    |      |                        |        | R37      | 1200Ω  |      |                        |        |
| R13      | 56K    |      |                        | Note 3 | R38      | 68K    |      |                        |        |
| R14      | 680K   |      |                        | Note 4 | R39      | 47K    |      |                        |        |
| R15      | 270K   |      |                        |        | R40      | 27K    |      |                        |        |
| R16      | 2.2meg |      |                        |        | R41      | 1meg   |      |                        |        |
| R17      | 1meg   |      |                        |        | R42      | 47K    |      |                        |        |
| R18      | 1500Ω  |      |                        |        | R43      | 1000Ω  |      |                        |        |
| R19      | 470K   |      |                        |        | R44      | 150K   |      |                        |        |
| R20      | 2.2meg |      |                        |        | R45      | 47K    |      |                        |        |
| R21      | 1meg   |      |                        |        | R46      | 27K    |      |                        | Note 3 |
| R22      | 1500Ω  |      |                        |        | R47      | 1000Ω  |      |                        | Note 3 |
| R23      | 100K   |      |                        |        | R48      | 1000Ω  |      |                        |        |
| R24      | 100K   |      |                        |        | R49      | 150K   |      |                        |        |
| R25      | 470K   |      |                        |        | R50      | 47K    |      |                        |        |
| R26      | 100K   |      |                        |        | R51      | 1000Ω  |      |                        | Note 3 |
| R27      | 1000Ω  |      |                        |        | R52      | 4700Ω  |      |                        | Note 5 |
| R28      | 270K   |      |                        |        | R53      | 100K   |      |                        | Note 3 |
| R29      | 1500Ω  |      |                        |        | R54      | 27K    | 2    |                        |        |
| R30      | 56K    |      |                        |        | R55      | 4700Ω  |      |                        |        |
| R31      | 56K    |      |                        |        | R56      | 150Ω   |      |                        |        |

Note 1. Some versions may use 180K in this application.

Note 2. Some versions may use 2200Ω in this application.

Note 3. Not used in some versions.

Note 4. Some versions may use 220K in this application.

Note 5. Some versions may use 15K in this application.

## TRANSFORMER (POWER)

| ITEM No. | RATING        |   |               | REPLACEMENT DATA       |                     |                |              |                  |                     |                |
|----------|---------------|---|---------------|------------------------|---------------------|----------------|--------------|------------------|---------------------|----------------|
|          |               |   |               | Harman-Kardon PART No. | Halldorson PART No. | Merit PART No. | Ram PART No. | Stancor PART No. | Thordarson PART No. | Triad PART No. |
|          | PRI.          | SEC. 1  | SEC. 2        |                        |                     |                |              |                  |                     |                |
| T1       | 117V<br>@ .8A | 720VCT<br>@ .100A<br>Tap @<br>55V @<br>.0025A | 12V<br>@ 1.8A | FT1021778              |                     |                |              |                  |                     |                |

# PARTS LIST AND DESCRIPTIONS (Continued)

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE |                 | REPLACEMENT DATA       |                     |                |              |                  |                     | NOTES   |                |
|----------|-----------|-----------------|------------------------|---------------------|----------------|--------------|------------------|---------------------|---------|----------------|
|          |           |                 | Harman-Kardon PART No. | Halldorson PART No. | Merit PART No. | Ram PART No. | Stancor PART No. | Thardarson PART No. |         | Triad PART No. |
|          | PRI.      | SEC.            |                        |                     |                |              |                  |                     |         |                |
| T2       | 7500Ω CT  | 16Ω Tap @ 8, 4Ω | FT1021777              |                     |                |              |                  |                     | 22S66 ① |                |

① Use original shields and mounting brackets.

## SELENIUM RECTIFIER

| ITEM No. | RATING             | REPLACEMENT DATA       |                  |                        |                         | NOTES |
|----------|--------------------|------------------------|------------------|------------------------|-------------------------|-------|
|          | CURRENT (Measured) | Harman-Kardon PART No. | FEDERAL PART No. | INTERNATIONAL PART No. | SARKES TARZIAN PART No. |       |
| M1       | .0025A             | Z1021726               | 1159             | CR-20                  | 10                      |       |

## FUSES

| ITEM No. | TYPE | RATING             | REPLACEMENT DATA       |        |                                 |        |                                   |        |
|----------|------|--------------------|------------------------|--------|---------------------------------|--------|-----------------------------------|--------|
|          |      |                    | Harman-Kardon PART No. |        | LITTELFUSE PART No.             |        | BUSS PART No.                     |        |
|          |      |                    | FUSE                   | HOLDER | FUSE                            | HOLDER | FUSE                              | HOLDER |
| M2       | MDL  | 1 1/4A<br>125V S/B |                        |        | 3131.25<br>(1 1/4A 125V<br>S/B) | 342001 | MDL 1 1/4<br>(1 1/4A 125V<br>S/B) | HKP    |

## MISCELLANEOUS

| ITEM No. | PART NAME | Harman-Kardon PART No.                  | NOTES  |
|----------|-----------|---|--|
| M3       | Lamp      | KB1071741<br><br>ER1021632<br>ER1021633 | #1815  |
| M4       | Switch    |   | Speaker Selector, 3 Position, Slide Type       |
| M5       | Switch    |   | Rumble Filter, 3 Position, Slide Type          |
| M6       | Switch    |   | Contour, 6 Position, Single Wafer, Rotary Type |
| M7       | Switch    |   | Function, 9 Position, Dual Wafer, Rotary Type  |
| M8       | Switch    |   | G. E. Pickering, 2 Position, Slide Type        |
| M9       | Switch    |   | Speaker Impedance, 2 Position, Slide Type      |

## WIRING DATA

|  |  |
|--|--|
| General-use Unshielded Hook-up Wire .....      | Use BELDEN No. 8530 (Solid) Available in Ten Colors<br>8524 (Stranded) Available in Ten Colors |
| Power Cord .....                               | Use BELDEN No. 1765-B (6 Ft. Length)<br>1725-K (7½ Ft. Length)                                 |
| Low-Loss Shielded Lead (Interconnecting) ..... | Use BELDEN No. 8401  |
| Phono Pick-up Arm Cable .....                  | Use BELDEN No. 8430 (Two Conductor - Twisted)  |