# Resistance Reference Chart

| TUBES | SOCKET PINS 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| V1, 6BC8 | 20K | 2M | 0 | 0 | .1 | 19K | 2M | 0 | 0 |
| V2, 6CB6 | 1M | 0 | 0 | .1 | 20K | 20K | 0 | — | — |
| V3, 6BH6 | 560K | 100 | .1 | 0 | 20K | 20K | 0 | — | — |
| V4, 6BH6 | .1 | 100<br>350* | .1 | 0 | 20K | 20K | 0 | — | — |
| V5, 6AM8 | 220 | .1 | 20K | .1 | 0 | 20K | 6 | 16M | 0 |
| V6, 6BH6 | 500K | 5K | .1 | 0 | 20K | 20K | 5K | 0 | 0 |
| V7, 6BQ7A | 20K | 4.7K | 0 | 0 | .1 | 20K | 1M | 1K | 0 |
| V8, 12AX7 | 220K | 500K | 2.7K | .1 | .1 | 600K | 16M | 0 | 0 |
| V9, 12AU7 | 70K | 1M | 2.2K | 0 | 0 | 20K | 200K | 630 | .1 |
| V10, 6X4 | 90 | — | 0 | .1 | — | 90 | 20K | — | — |

CAUTION: Be certain to disconnect AC line cord when making these measurements.

NOTES: Muting and AFC Control at maximum, counterclockwise. Level Control maximum, clockwise. All resistance in ohms unless otherwise specified.

M equals Megohms

K equals Kilohms

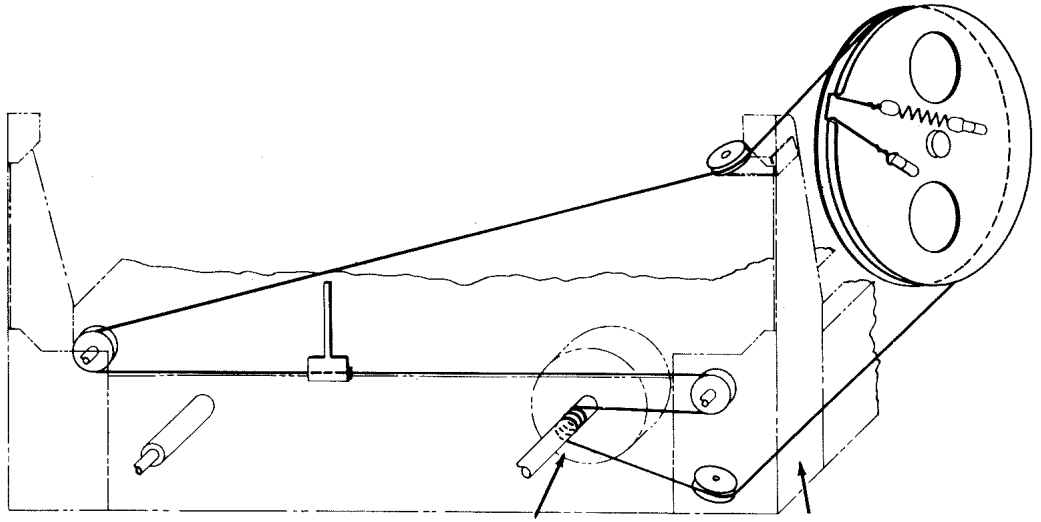
Measurements taken with respect to chassis.

*Varies with the setting of R-14

# Voltage Reference Chart

| TUBE | SOCKET PINS 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| V1, 6BC8 | 102 | — .65 | 0 | 0 | 6.3AC | 103 | — .7 | 0 | 0 |
| V2, 6CB6 | — 2.5 | 0 | 0 | 6.3AC | 100 | 100 | 0 | — | — |
| V3, 6BH6 | — .43 | .46 | 6.3AC | 0 | 101 | 101 | 0 | — | — |
| V4, 6BH6 | 0 | .58 | 6.3AC | 0 | 100 | 100 | 0 | — | — |
| V5, 6AM8 | 1.8 | 0 | 100 | 6.3AC | 0 | 100 | 0 | — .8 | 0 |
| V6, 6BH6 | 23 | 24.5 | 6.3AC | 0 | 100 | 100 | 24.5 | — | — |
| V7, 6BQ7A | 108 | — 3.9 | 0 | 0 | 6.3AC | 108 | 0 | 3.6 | 0 |
| V8, 12AX7 | 65 | 0 | .54 | 6.3AC | 6.3AC | 26 | — .8 | 0 | 0 |
| V9, 12AU7 | 55 | 0 | 2.4 | 0 | 0 | 160 | 0 | 5.5 | 6.3AC |
| V10, 6X4 | 196AC | — | 0 | 6.3AC | — | 196AC | 180 | — | — |

NOTES: Line voltage set at 117 volts, 60 cycles. Voltage readings may vary 10% under normal operating conditions. All voltages read with a vacuum-tube voltmeter under no-signal conditions. Muting Control and AFC Control at maximum, counterclockwise. All voltages read with respect to chassis. Readings are in positive voltages DC unless otherwise specified.




## DIAL CORD REPLACEMENT INSTRUCTIONS

1. Remove defective cord and dial pointer.
2. Restring new cord as shown in illustration.
3. Mount dial pointer, and with variable capacitor fully in counterclockwise position, center pointer over index mark at low-frequency end of dial.
4. Wrap dial string with adhesive type tape where string is inserted under pointer tabs.
5. Secure dial pointer in place by applying household cement.

# FISHER MODEL FM-90

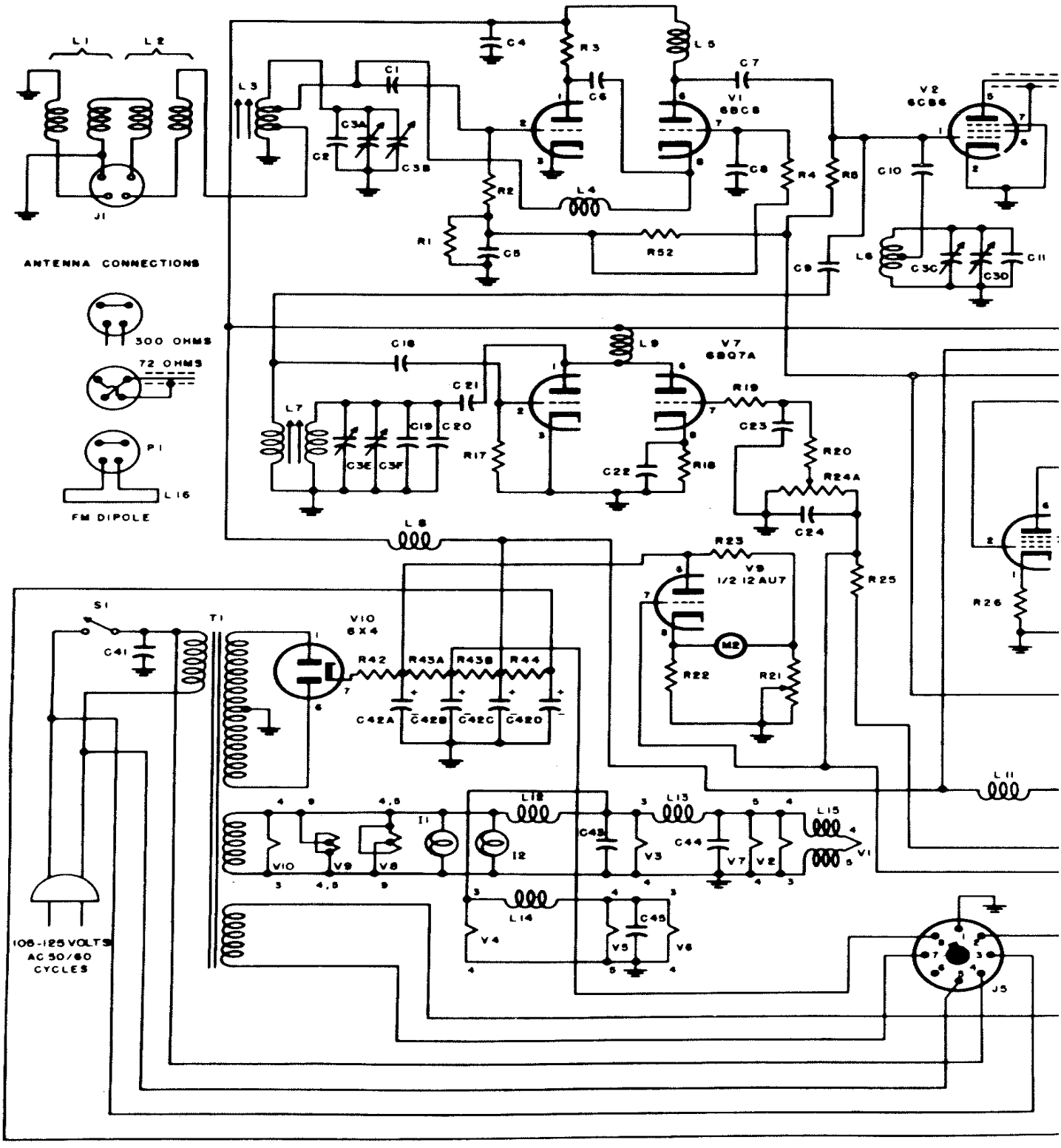
# Parts Description List

| Symbol | Description | Part No. |
|---|---|---|
| C-1, C-28 | Capacitor, Ceramic: 100 mmfd; 600 V | C-577-121 |
| C-2 | Capacitor, Ceramic: 10 mmfd, NPO; 500 V | CC20CH100G5 |
| C-3A-E | Capacitor, Variable | C-551-119 |
| C-3F | Capacitor, Ceramic trimmer: 1-6 mmfd; NPO | C-520-159 |
| C-4, C-5 | Capacitor, Ceramic: .005 mfd; 600 V | CK62GP502V6 |
| C-6, C-21 | Capacitor, Ceramic: 500 mmfd; 500 V | C-1315 |
| C-7 | Capacitor, Ceramic: 33 mmfd; 500 V | CC21GP330M5 |
| C-8 | Capacitor, Ceramic: 470 mmfd; Disc | C-520-143 |
| C-9 | Capacitor: 2.2 mmfd | C-3039 |
| C-10 | Capacitor, Ceramic: .005 mfd; 600 V | CK62GP502V6 |
| C-11 | Capacitor, Ceramic: 5 mmfd, NPO; 500 V | CC20CH050F5 |
| C-12, C-13 | | |
| C-14, C-15 | Capacitor, Ceramic: .005 mfd; 600 V | CK62GP502V6 |
| C-16, C-17 | | |
| C-18 | Capacitor, Ceramic: 68 mmfd; disc type | C-551-170 |
| C-19 | Capacitor, Ceramic: 5 mmfd ± 1 mmfd N1400; 500 V | CC20VK050F5 |
| C-20 | Capacitor, Ceramic: 5 mmfd ± 1 mmfd, N330; 500 V | CC20SK050F5 |
| C-22, C-24 | Capacitor, Ceramic: .005 mfd; 600 V | CK62GP502V6 |
| C-23 | Capacitor, Ceramic: .05 mfd | C-584-123 |
| C-25 | Capacitor, Electrolytic: 10 mfd; 50 V | C-551-146 |
| C-26, C-27 | Capacitor, Ceramic: .005 mfd; 600 V | CK62GP502V6 |
| C-29, C-31, C-36 | Capacitor, Ceramic: .02 mfd; 600 V | C-556-122 |
| C-30 | Capacitor, Ceramic: 33 mmfd; 500 V | CC21GP330M5 |
| C-32, C-40 | Capacitor, Ceramic: .005 mfd; 600 V | CK62GP502V6 |
| C-33, C-34 | Capacitor, Ceramic: 68 mmfd, 10%; 500 V | CC21GP680K5 |
| C-35 | Capacitor, Electrolytic: 10 mfd; 50 V | C-551-128 |
| C-37 | Capacitor, Ceramic: 300 mmfd; 500 V | CC21GP301M5 |
| C-38 | Capacitor, Ceramic: 1000 mmfd, 10%; 500 V | CC21GP102K5 |
| C-39 | Capacitor, Ceramic: .02 mfd; 600 V | C-556-122 |
| C-41 | Capacitor, Molded Tubular: .01 mfd; 600 V | C-2747 |
| C-42A, B, C, D | Capacitor, Electrolytic: 40 mfd, 250 V, 40 x 40 x 30 mfd: 200 V | C-550-130 |
| C-43, C-44, C-45 | Capacitor, Ceramic: .005 mfd; 600 V | CK62GP502V6 |
| C-46 | Capacitor, Ceramic: .047 mfd; 200 V | C68P473M2 |
| C-47 | Capacitor, Ceramic: .0047 mfd; 200 V | C68P472M2 |
| C-48 | Capacitor, Ceramic: .22 mfd; 200 V | C68P224V2 |
| C-49 | Capacitor, Electrolytic: 1 mfd; 250 V | C-546-126 |
| I-1, I-2 | Lamp, 2 W | I-563-145 |
| J-1, J-6 | Jack | J-520-137 |
| J-2, J-3, J-4 | Jack, Phono | J-3143 |
| J-5 | Socket, Tube Octal | X-1530 |
| L-1, L-2 | Coil, Elevator | L-509-139 |
| L-3 | Coil, Antenna | L-551-131 |
| L-4 | Coil, Neutralization | L-520-178 |
| L-5, L-8, L-9, L-11 | Coil, RF choke, 2.2 micro-henry | L-3352 |
| L-6 | Coil, RF | L-551-132 |
| L-7 | Coil, Oscillator | L-551-133 |
| L-10 | Coil, FM Limiter Assembly | L-551-121 |
| L-12, L-13, L-14 | Choke Filament | L-520-156 |
| L-15 | Coil, Bifilar | L-509-140 |
| L-16 | Dipole, Assembly | AS-520-163 |
| M-1 | Meter, Signal | M-551-134 |
| M-2 | Meter, Tuning | M-551-169 |
| P-1 | Plug, 4 male contacts | P-520-138 |
| R-1 | Resistor, Composition: 470,000 ohms, 10%; ½ W | RC20BF474K |
| R-2, R-20 | Resistor, Composition: 1 megohm, 10%, ½ W | RC20BF105K |
| R-3 | Resistor, Composition: 470 ohms, 10%; ½ W | RC20BF471K |
| R-4, R-5 | Resistor, Composition: 1 megohm, 10% ½ W | RC20BF105K |
| R-6 | Resistor, Composition: 33,000 ohms, 10%; ½ W | RC20BF333K |
| R-7 | Resistor, Composition: 1000 ohms, 10%; ½ W | RC20BF102K |
| R-8, R-25 | Resistor, Composition: 470,000 ohms, 10%; ½ W | RC20BF474K |
| R-9 | Resistor, Composition: 100 ohms, 10%; ½ W | RC20BF101K |
| R-10 | Resistor, Composition: 330,000 ohms, 10%; ½ W | RC20BF334K |
| R-11 | Resistor, Composition: 1500 ohms, 10%; ½ W | RC20BF152K |
| R-12, R-16 | Resistor, Composition: 1000 ohms, 10%; ½ W | RC20BF102K |
| R-13, R-19 | Resistor, Composition: 100 ohms, 10%; ½ W | RC20BF101K |
| R-14 | Potentiometer, 250 ohms; wirewound | R-550-135-2 |
| R-15 | Resistor, Composition: 330,000 ohms, 10%; ½ W | RC20BF334K |
| R-17 | Resistor, Composition: 4700 ohms, 10%; ½ W | RC20BF472K |
| R-18, R-22 | Resistor, Composition: 1000 ohms, 10%; ½ W | RC20BF102K |
| R-21 | Potentiometer, 1500 ohms; wirewound | R-520-149 |
| R-23 | Resistor, Composition: 33,000 ohms, 10%; 1 W | RC30BF333K |
| R-24 A & B | Potentiometer, Dual with switch | R-551-136 |
| R-26 | Resistor, Composition: 220 ohms, 10%; ½ W | RC20BF221K |
| R-27, R-28 | Resistor, Composition: 220,000 ohms, 10%; ½ W | RC20BF224K |
| R-29 | Resistor, Composition: 22,000 ohms, 10%; ½ W | RC20BF223K |
| R-30 | Resistor, Composition: 15 megohms, 10%; ½ W | RC20BF156K |
| R-31, R-33 | Resistor, Composition: 220,000 ohms, 10% ½ W | RC20BF224K |
| R-32 | Resistor, Composition: 1000 ohms, 10%; ½ W | RC20BF102K |
| R-34 | Resistor, Composition: 100,000 ohms, 10%; ½ W | RC20BF104K |
| R-35 | Resistor, Composition: 470,000 ohms, 10%; ½ W | RC20BF474K |
| R-36 | Resistor, Composition: 4700 ohms, 10%; ½ W | RC20BF472K |
| R-37, R-50 | Resistor, Composition: 47,000 ohms, 10%; ½ W | RC20BF473K |
| R-38, R-44 | Resistor, Composition: 2200 ohms, 10%; ½ W | RC20BF222K |
| R-39 | Resistor, Composition: 68,000 ohms, 10%; ½ W | RC20BF683K |
| R-40, R-41 | Resistor, Composition: 10,000 ohms, 10%; ½ W | RC20BF103K |
| R-42 | Resistor, 220 ohms, 10% 5 W | R-551-137 |
| R-43A, B | Resistor, Wirewound: 910 ohms, tapped at 330 ohms | R-551-138 |
| R-45 | Potentiometer, Composition: 500,000 ohms | R-520-139 |
| R-46 | Resistor, Composition: 220,000 ohms, 10%; ½ W | RC20BF224K |
| R-47 | Resistor, Composition: 2700 ohms, 10%; ½ W | RC20BF272K |
| R-48 | Resistor, Composition: 33,000 ohms, 10%; ½ W | RC20BF333K |
| R-49, R-52 | Resistor, Composition: 1 megohm, 10%; ½ W | RC20BF105K |
| R-51 | Resistor, Composition: 2200 ohms, 10%; ½ W | RC20BF222K |

## MISCELLANEOUS PARTS

| | |
|---|---|
| Dress Panel | AS-551-168 |
| Dress Panel Escutcheon | AS-551-172 |
| Knob, Tuning | E-50049-5 |
| Knob, AFC | E-50049-2 |
| Knob, Muting | E-50049-4 |
| Dial Glass | N-551-117 |

# FISHER MODEL FM-90



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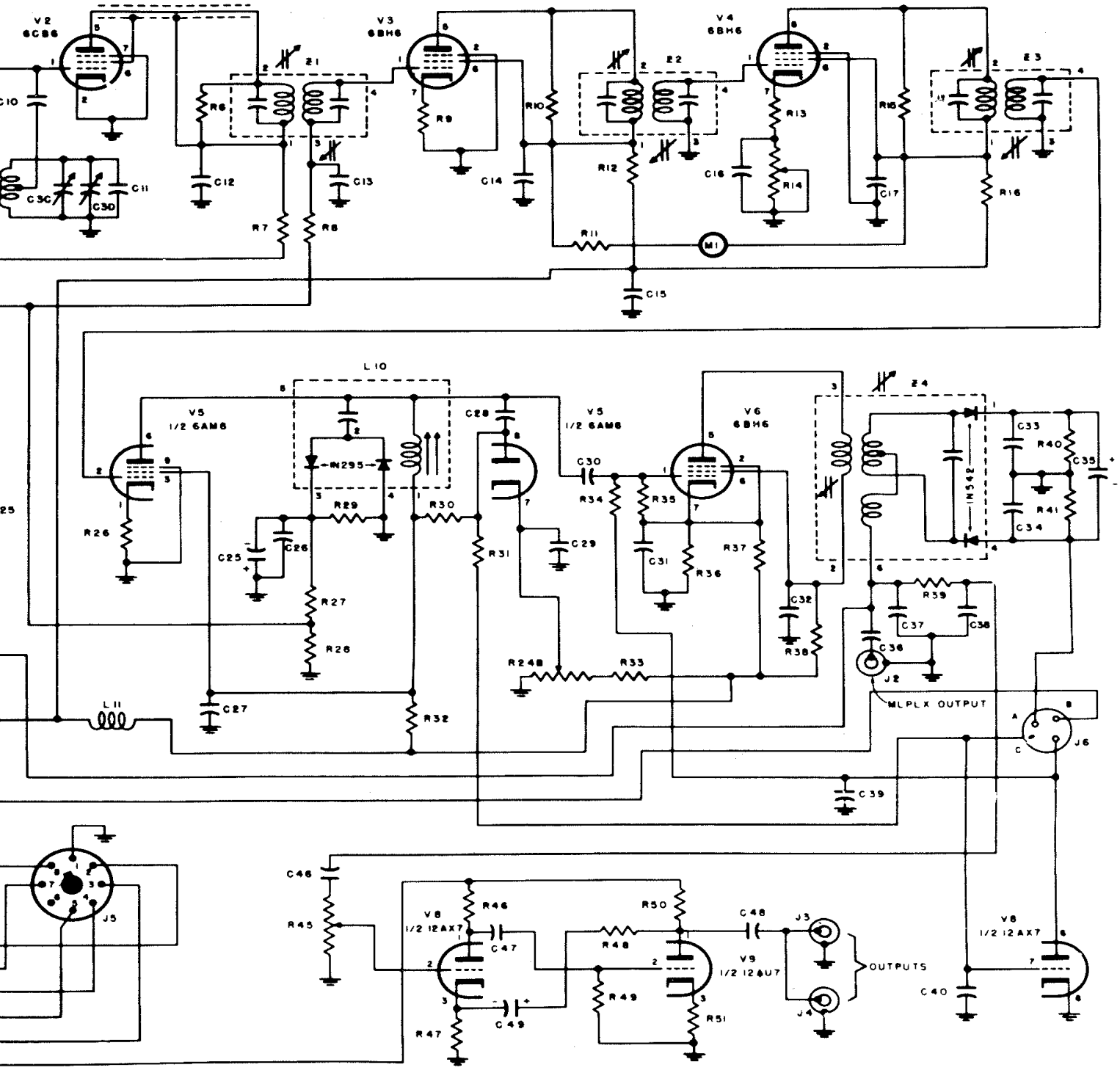


SCHEMATIC DIAGRAM COURTESY FISHER RADIO CORP