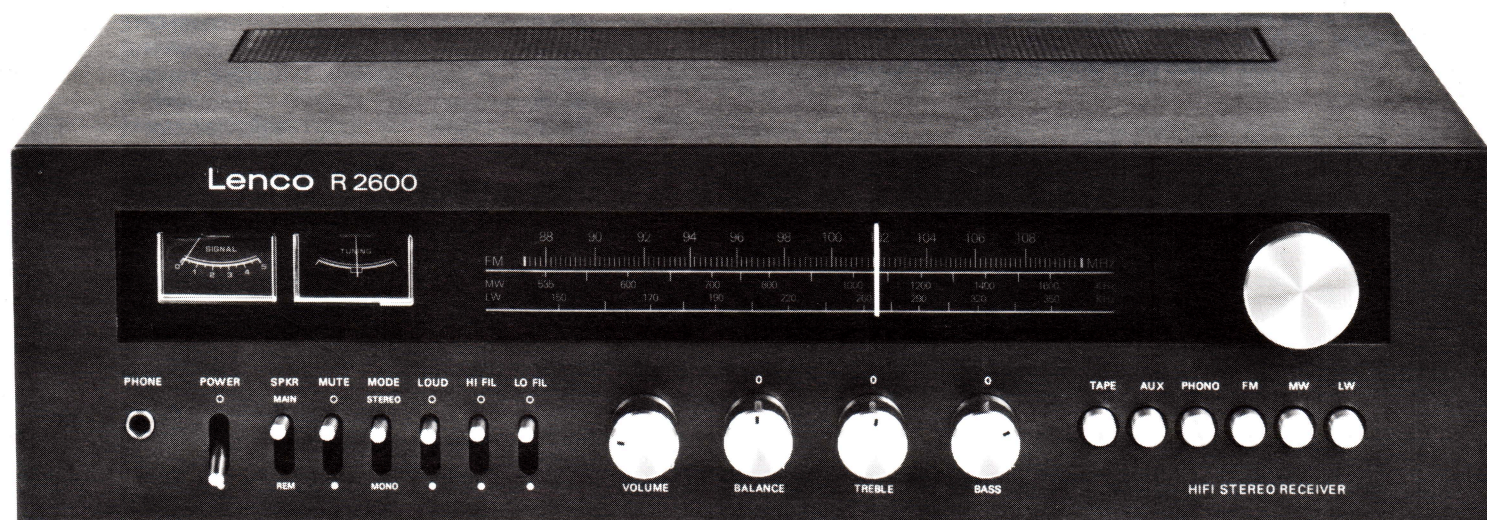


Service Manual



Lenco R 2600

Correct Ordering of Spare Parts

When ordering spare parts please specify the complete name, part number, and the relevant page number of the service manual for each required part.

By this method you will be sure to obtain the required part.

Before disassembling, switch the unit off and disconnect the mains cable.

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Specifications R2600

Amplifier Section

| | |
|------------------------------------|--|
| Nominal Power at 4 Ω | 2×28.5 W |
| THD at 1 kHz, both channels driven | 0.07 % |
| Frequency Response at 12.5 W | 19—22 000 Hz |
| Power Bandwidth | 20—40 000 Hz |
| Sensitivity Phono | 2.7 mV |
| Phono Equalizer Response | RIAA ± 2 dB |
| Sensitivity AUX | 160 mV |
| Treble Control | ± 10 dB at 10 kHz |
| Bass Control | ± 10 dB at 100 Hz |
| Loudness Control | + 6 dB at 10 kHz + 7 dB at 100 Hz — 7 dB at 10 kHz — 7 dB at 100 Hz |
| High Filter | |
| Low Filter | |
| S/N Ratio (DIN) | |
| Phono | 55 dB |
| AUX | 56 dB |

FM-Tuner Section

| | |
|-------------------------------|--------------|
| Frequency Range | 87.5—108 MHz |
| Sensitivity, mono (26 dB S/N) | 1.9 μ V |
| Limiting Sensitivity | 1.8 μ V |
| THD mono | 0.2 % |
| S/N Ratio, mono, 1 mV input | 60 dB |
| Capture Ratio | 2 dB |
| IF Rejection | 90 dB |
| Image Rejection | 50 dB |
| Channel Separation | 42 dB |
| Stereo Switch Point | 3 μ V |

AM-Tuner Section

| | | |
|-------------------------|----|--------------------------|
| Frequency Range | LW | 147— 353 kHz |
| | MW | 515—1650 kHz |
| Sensitivity (S/N 26 dB) | LW | 750 μ V/M at 250 kHz |
| | MW | 500 μ V/M at 1 kHz |
| THD | | 0.8 % |
| Image Rejection | | 42 dB |
| S/N Ratio | | 44 dB |

General

| | |
|---------------------|---|
| Speaker input | 4—8 Ω (with 8 Ω load 2×20 W power) |
| Circuitry | 1 FET, 2 IC's, 34 Transistors |
| Power Consumption | 154 W Max. |
| Power Supply | 220 V 50 Hz |
| Dimension (Overall) | 450 \times 130 \times 310 mm |
| Weight | 7.7 kg |

Precautions

1. Always disconnect the chassis from power line when soldering. Turning the power switch OFF is not enough. Power line leakage passing through the heating element may destroy the transistors.
2. Never attempt to do any work on the transistor amplifiers without first disconnecting the AC line cord and waiting until the power supply filter capacitors have discharged.
3. Replacements for output and driver transistors, if necessary, must be made from the same beta group as the original type.
4. If one output transistor burns out (open or short), always remove all output transistors in that channel and check the bias adjustment, the control and other parts in the network with an Ω -meter before inserting a new transistor. All transistors in one channel will be destroyed if the base biasing circuit is open on the emitter end.
5. When mounting a replacement power transistor, be sure the bottom of the flange, the mica insulators and the surface of the heat sink are free of foreign matter for they may cause transistors failure.
6. Silicone grease must be applied between the transistor and the mica insulator, and between the mica insulator and the heat sink for better heat conduction.

Replacement Parts List R2600

| 1. Transistor and Diode | | | | |
|-------------------------|-------------------|----------------------------|-------------------------------|---------|
| No. | Ref. No. | Description | | |
| 1 | Q 101 | Transistor | 2SC 380-Y | |
| 2 | Q 102 | " | 2SC 377-R | |
| 3 | Q 103/Q 104 | " | 2SC 372-O | |
| 4 | Q 105 | " | 2SC 372-Y | |
| 5 | Q 106/Q 107 | " | 2SC 373-GR | |
| 6 | Q 108/Q 109 | " | 2SA 495-Y | |
| 7 | Q 301/Q 302 | " | 2SC 1000-GR | |
| 8 | Q 303/Q 304/Q 401 | " | 2SC 733-GR | |
| 9 | Q 402/Q 403/Q 404 | " | | |
| 10 | Q 503/Q 504 | " | 2SC 1166-Y | |
| 11 | Q 505/Q 506 | " | 2SA 817-Y | |
| 12 | Q 507/Q 508 | " | 2SC 1627-Y | |
| 13 | Q 509/Q 510 | " | 2SD 525-Y | |
| 14 | Q 511/Q 512 | " | 2SD 525-Y | |
| 15 | Q 601 | " | 2SD 234-Y | |
| 16 | D 101/D 102/D 103 | Diode GE | IN 60 | |
| 17 | D 104/D 105/D 106 | " | IN 60 | |
| 18 | D 107 | Diode SI | IN 4004 | |
| 19 | D 501/D 502/D 503 | Varistor | HV 23G | |
| 20 | D 504/D 505/D 506 | | | |
| 21 | D 601/D 602 | Rectifier | VRRM 200 V (2.5 A) μ 05C) | |
| 22 | D 603/D 604 | " | " | |
| 23 | D 605/D 606 | Zener | 10 V 0.25 W (HZ-11 A) | |
| 24 | IC 101 | IC IF | CA 3089E | |
| 25 | IC 102 | IC MPX | CA 1310E | |
| 26 | R 101 | Resistor Fixed Carbon Film | 100 Ω | 1/4 wJ |
| 27 | R 102 | " | 1 k Ω | " |
| 28 | R 103 | " | 330 Ω | " |
| 29 | R 104 | " | 10 k Ω | " |
| 30 | R 105 | " | 1.8 k Ω | " |
| 31 | R 106 | " | 330 Ω | " |
| 32 | R 107 | " | 1.8 k Ω | " |
| 33 | R 108 | " | 100 Ω | " |
| 34 | R 109 | " | 330 Ω | " |
| 35 | R 110 | " | 270 Ω | " |
| 36 | R 111 | " | 12 k Ω | " |
| 37 | R 112 | " | 100 k Ω | " |
| 38 | R 113 | " | 47 k Ω | " |
| 39 | R 114 | " | 2.2 k Ω | " |
| 40 | R 115 | " | 8.2 k Ω | " |
| 41 | R 116 | " | 2.2 k Ω | " |
| 42 | R 117 | " | 330 Ω | " |
| 43 | R 118 | " | 10 k Ω | " |
| 44 | R 119/R 120 | " | 3.9 k Ω | " |
| 45 | R 121 | " | 470 Ω | " |
| 46 | R 122 | " | 100 Ω | " |
| 47 | R 123 | " | 5.6 k Ω | " |
| 48 | R 124 | " | 18 k Ω | " |
| 49 | R 125 | " | 1 k Ω | " |
| 50 | R 126 | " | 100 k Ω | " |
| 51 | R 127/128 | " | 82 k Ω | " |
| 52 | R 129/130 | " | 150 k Ω | " |
| 53 | R 131/132 | " | 5.6 k Ω | " |
| 54 | R 133/134 | " | 1.2 k Ω | " |
| 55 | R/135/136 | " | 220 k Ω | " |
| 56 | R 138 | Resistor Metal Oxide | 100 Ω | 1/2 (W) |
| 57 | R 140 | Resistor Fixed Carbon Film | 4.7 Ω | 1/4 wJ |
| 58 | R 141 | " | 2.2 k Ω | " |
| 59 | R 142 | " | 2.2 k Ω | " |
| 60 | R 143 | " | 15 k Ω | " |
| AM Section | | | | |
| 61 | R 201 | Resistor Fixed Carbon Film | 56 k Ω | 1/4 wJ |
| 62 | R 202 | " | 12 k Ω | " |
| 63 | R 203 | " | 1.2 k Ω | " |
| 64 | R 204 | " | 1 k Ω | " |
| 65 | R 205 | " | 47 k Ω | " |
| 66 | R 206 | " | 15 k Ω | " |
| 67 | R 207 | " | 2.2 k Ω | " |
| 68 | R 208 | " | 180 Ω | " |
| 69 | R 209 | " | 470 Ω | " |
| 70 | R 210 | " | 390 Ω | " |
| 71 | R 211 | " | 150 Ω | " |
| 72 | R 212 | " | 560 Ω | " |
| 73 | R 213 | " | 390 Ω | " |
| 74 | R 214 | " | 1 k Ω | " |

| No. | Ref. No. | Description | | |
|---------------|-----------|-----------------------------|--------------|--------|
| 75 | R 215 | Resistor Fixed Carbon Film | 15 kΩ | 1/4 wJ |
| 76 | R 216 | " " | 4.7 kΩ | " |
| 77 | R 217 | " " | 22 kΩ | " |
| 78 | R 218 | " " | 1 kΩ | " |
| 79 | R 219 | " " | 2.2 kΩ | " |
| 80 | R 220 | " " | 10 kΩ | " |
| 81 | R 221 | " " | 22 kΩ | " |
| 82 | R 301/302 | " " | 4.7 kΩ | " |
| 83 | R 303/304 | " " | 47 kΩ | " |
| 84 | R 305/306 | " " | 150 kΩ | " |
| 85 | R 307/308 | " " | 680 Ω | " |
| 86 | R 309/310 | " " | 47 kΩ | " |
| 87 | R 311/312 | " " | 220 kΩ | " |
| 88 | R 313/314 | " " | 10 kΩ | " |
| 89 | R 315/316 | " " | 1 kΩ | " |
| 90 | R 317/318 | " " | 680 Ω | " |
| 91 | R 319/320 | " " | 560 kΩ | " |
| 92 | R 321/322 | " " | 33 kΩ | " |
| 93 | R 323/324 | " " | 100 kΩ | " |
| 94 | R 325 | " " | 470 Ω | " |
| Tone Section | | | | |
| 95 | R 401/402 | Resistor Fixed Carbon Film | 220 kΩ | 1/4 wJ |
| 96 | R 403/404 | " " | 120 kΩ | " |
| 97 | R 405/406 | " " | 6.8 kΩ | " |
| 98 | R 407/408 | " " | 1.5 kΩ | " |
| 99 | R 409/410 | " " | 2 MΩ | " |
| 100 | R 411/412 | " " | 4.7 kΩ | " |
| 101 | R 413/414 | " " | 10 kΩ | " |
| 102 | R 415/416 | " " | 22 kΩ | " |
| 103 | R 417/418 | " " | 4.7 kΩ | " |
| 104 | R 419/422 | " " | 100 kΩ | " |
| 105 | R 421/422 | " " | 4.7 kΩ | " |
| 106 | R 423/424 | " " | 820 Ω | " |
| 107 | R 425/426 | " " | 4.7 kΩ | " |
| 108 | R 427/428 | " " | 47 kΩ | " |
| 109 | R 429 | " " | 47 kΩ | " |
| 110 | R 430/431 | " " | 610 kΩ | " |
| Audio Section | | | | |
| 111 | R 501/502 | Resistor Fixed Carbon Film | 2.2 kΩ | 1/4 WJ |
| 112 | R 503/504 | " " | 270 kΩ | " |
| 113 | R 505/508 | " " | 47 kΩ | " |
| 114 | R 507/508 | " " | 5.6 kΩ | " |
| 115 | R 509/510 | " " | 1 kΩ | " |
| 116 | R 511/512 | " " | 220 kΩ | " |
| 117 | R 513/514 | " " | 3.9 kΩ | " |
| 118 | R 515/516 | " " | 1.2 kΩ | 1/2 WJ |
| 119 | R 517/518 | " " | 150 kΩ | 1/4 WJ |
| 120 | R 519/520 | " " | 18 kΩ | " |
| 121 | R 521/522 | " " | 1.5 kΩ | " |
| 122 | R 523/524 | " " | 47 Ω | " |
| 123 | R 525/526 | " " | 150 Ω | " |
| 124 | R 527/528 | " " | 10 Ω | " |
| 125 | R 529/530 | " " | 150 Ω | " |
| 126 | R 531—4 | Resistor Cement | 0.47 Ω | 3 WK |
| 127 | R 535/536 | Resistor Cement Metal Oxide | 10 Ω | 1/2 WJ |
| 128 | R 537 | " " | 2.2 kΩ | " |
| 129 | R 538/539 | " " | 390 Ω | " |
| 2. Power | | | | |
| 130 | R 601 | Resistor Cement Metal Oxide | 200 Ω | 3 WJ |
| 131 | R 602 | " " | 1.5 kΩ | 1/2 WJ |
| 3. Capacitor | | | | |
| 132 | CF 101 | Filter Cermic | 10.7 MA5 | |
| 133 | CF 102 | " | 10.7 MA5 | |
| 134 | DE-40093 | Capacitor Trimmer | ECVIZW 50×32 | |

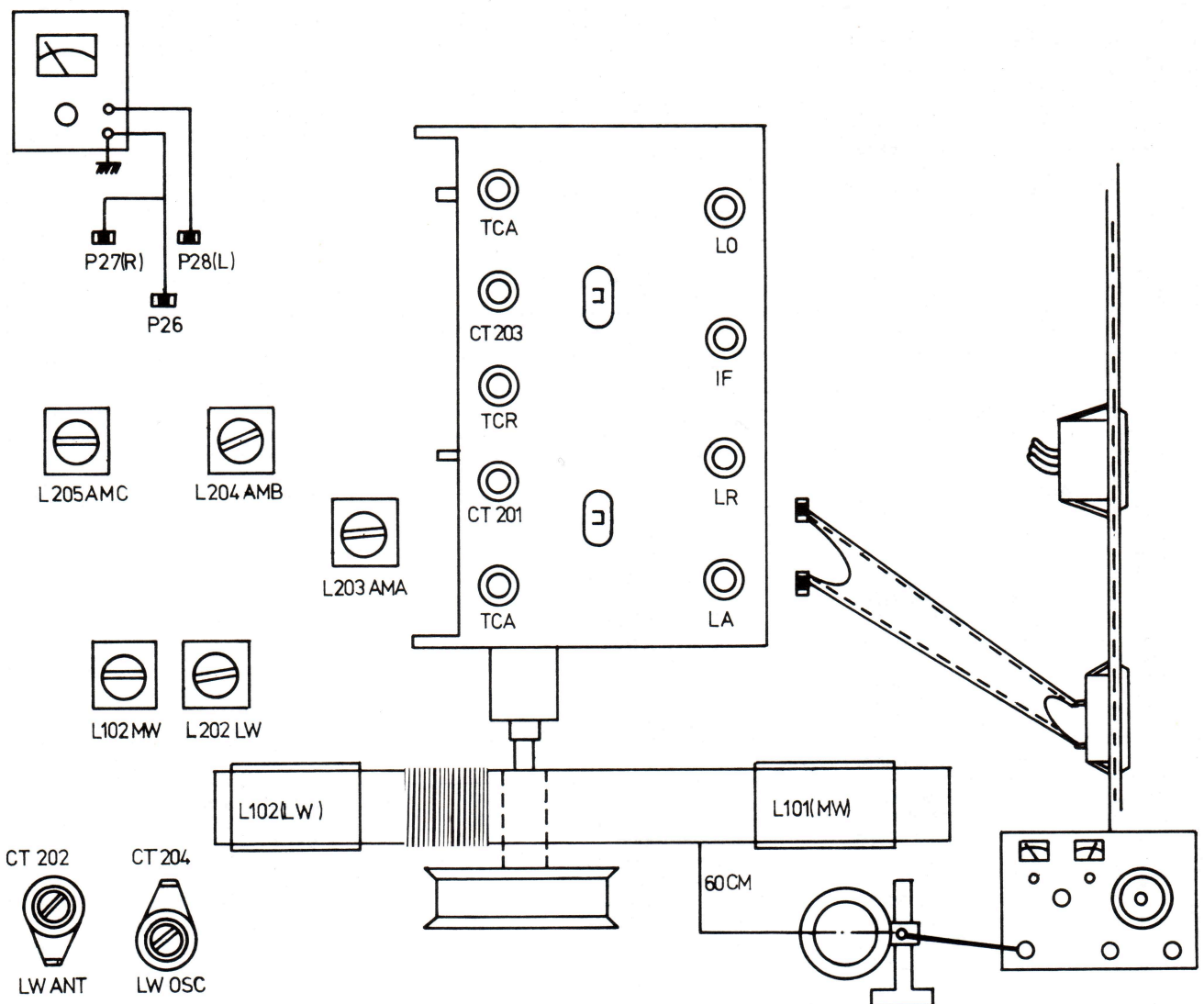
| No. | Ref. No. | Description |
|-------------------|-------------------|--|
| FM Section | | |
| 135 | C 101 | Capacitor Cermic 0.001 μ F 50 WV (Z) |
| 136 | C 1-2/1-3 | " " 0.01 μ F 50 WV (Z) |
| 137 | C 104/105 | " " 0.047 μ F DC 16 WV |
| 138 | C 106 | Capacitor Electrolytic 4.7 μ F DC 16 WV (M) |
| 139 | C 107 | Capacitor al Solid 0.47 μ F DC 16 WV (M) |
| 140 | C 108 | Capacitor Cermic 0.047 μ F DC 50 WV (Z) |
| 141 | C 109 | " " 0.01 μ F DC 50 WV (Z) |
| 142 | C 110 | " " 150 PF 50 WV (K) |
| 143 | C 111/112/113 | " " 0.047 μ F 50 WV (Z) |
| 144 | C 114 | Capacitor Electrolytic 10 μ F DC 16 WV |
| 145 | C 115 | Capacitor Polyester 0.047 μ F 50 WV (M) |
| 146 | C 116 | Capacitor Polystyrene 470 pF DC 50 WV (J) |
| 147 | C 117 | Capacitor al Solid 0.22 μ F DC 16 WV (M) |
| 148 | C 118 | " " 0.47 μ F DC 16 WV (M) |
| 149 | C 119 | " " 0.22 μ F DC 16 WV (M) |
| 150 | C 120/121 | Capacitor Polyester 0.0068 μ F 50 WV (J) |
| 151 | C 122/123 | Capacitor Electrolytic 1 μ F DC 16 WV |
| 152 | C 124/125 | Capacitor |
| 153 | C 126 | Capacitor Cermic Electrolytic 220 μ F DC 25 WV |
| 154 | C 127 | " " 1 μ F DC 16 WV |
| 155 | C 128 | Capacitor Cermic " 0.02 μ F 50 WV (Z) |
| 156 | C 129 | Capacitor Cermic Electrolytic 47 μ F DC 16 WV |
| AM Section | | |
| 157 | C 201 | Capacitor Cermic 15 PF 50 WV (J) |
| 158 | C 202 | " " 20 PF 50 WV (J) |
| 159 | C 203 | " " 0.022 μ F 50 WV (Z) |
| 160 | C 204 | " " 0.047 μ F 50 WV (Z) |
| 161 | C 205 | Capacitor Electrolytic 1 μ F DC 16 WV |
| 162 | C 206 | Capacitor Cermic 0.047 μ F 50 WV (Z) |
| 163 | C 207 | " " 0.022 μ F 50 WV (Z) |
| 164 | C 208 | " " 0.01 μ F 50 WV (Z) |
| 165 | C 209 | " " 0.022 μ F 50 WV (Z) |
| 166 | C 210 | Capacitor Polstylene 470 PF DC 50 WV (J) |
| 167 | C 211 | " " 180 PF DC 50 WV (J) |
| 168 | C 212 | Capacitor Cermic 10 PF 50 WV (D) |
| 169 | C 213 | " " 47 PF 50 WV (J) |
| 170 | C 214 | " " 0.022 μ F 50 WV (Z) |
| 171 | C 215 | Capacitor Electrolytic 10 μ F 16 WV DC |
| 172 | C 216 | Capacitor Cermic 0.22 μ F 50 WV (Z) |
| 173 | C 217/218/219/220 | " " |
| 174 | C 221 | Capacitor Electrolytic 47 μ F 16 WV DC |
| 175 | C 222 | Capacitor Cermic 0.0047 μ F 50 WV (Z) |
| 176 | C 223 | " " 0.001 μ F 50 WV (Z) |
| 177 | C 224 | Capacitor al Solid 0.1 μ F 16 WV DC (M) |
| 178 | C 225 | Capacitor Electrolytic 220 μ F 6.3 WV DC |
| 179 | C 226 | Capacitor Cermic 150 PF 50 WV (K) |
| 180 | C 227 | " " 0.047 μ F 50 WV (Z) |
| EG | | |
| 181 | C 301/302 | Capacitor Electrolytic 1 μ F 16 WV DC |
| 182 | C 303/304 | " " 4.7 μ F 25 WV DC |
| 183 | C 305/306 | Capacitor Cermic 220 PF 50 WV (K) |
| 184 | C 307/308 | Capacitor Electrolytic 33 μ F 6.3 WV DC |
| 185 | C 309/310 | " " 10 μ F 25 WV DC |
| 186 | C 311/312 | Capacitor Polyester 0.0068 μ F DC 50 WV (K) |
| 187 | C 313/314 | " " 0.0022 μ F DC 50 WV (K) |
| 188 | C 315/316 | Capacitor Electrolytic 1 μ F 50 WV |
| 189 | C 317 | " " 220 μ F DC 25 WV |
| Tone | | |
| 190 | C 401/402 | Capacitor Cermic 350 F 50 WV (K) |
| 191 | C 403/404 | Capacitor Polyester 0.047 μ F 50 WV (K) |
| 192 | C 405/406 | " " 0.1 μ F 50 WV (M) |
| 193 | C 407/408 | Capacitor Electrolytic 1 μ F 50 WV DC |
| 194 | C 409/410/411/412 | Capacitor Polyester 0.047 μ F 50 WV (K) |
| 195 | C 413/414 | " " 0.001 μ F 50 WV (K) |
| 196 | C 415/416 | Capacitor Cermic 8.2 PF 50 WV (K) |
| 197 | C 417/418 | Capacitor Electrolytic 1 μ F 50 WV DC |
| 198 | C 419/420 | Capacitor Cermic 220 PF 50 WV (K) |
| 199 | C 421/422 | Capacitor Polyester 0.033 μ F 50 WV (K) |
| 200 | C 423/424 | " " 0.0047 μ F 50 WV (K) |
| 201 | C 425 | " " 0.001 μ F 50 WV (J) |
| 202 | C 426 | Capacitor Electrolytic 220 μ F 25 WV DC |

| No. | Ref. No. | Description |
|------------------------------|----------------------|--|
| Audio | | |
| 203 | C 501/502 | Capacitor Electrolytic 2.2 μ F 50 WV DC |
| 204 | C 503/504 | Capacitor Cermic 220 PF 50 WV (K) |
| 205 | C 505/506 | Capacitor Electrolytic 47 μ F 6.3 WV DC |
| 206 | C 507/508/509/510 | " " 10 μ F 35 WV DC |
| 207 | C 511/512 | " " 100 μ F 35 WV (K) |
| 208 | C 513/514 | Capacitor Cermic 82 PF 50 WV (K) |
| 209 | C 515 516 | Capacitor Electrolytic 470 μ F 6.3 WV DC |
| 210 | C 517/518 | " " 2200 μ F 35 WV DC |
| 211 | C 519/520 | Capacitor Cermic 0.047 μ F 50 WV (Z) |
| 212 | C 521 | Capacitor Electrolytic 100 μ F 50 WV DC |
| 213 | C 522 | Capacitor Cermic 0.047 μ F 50 WV (Z) |
| 214 | C 601 DE 40210 | Capacitor Electrolytic 2200 μ F 50 WV DC |
| 215 | C 602 | " " 220 μ F 50 WV |
| 216 | C 603 | Capacitor Cermic 0.047 μ F 50 WV (Z) |
| 217 | C 604 | " " 0.02 μ F (500 WVZ) |
| 4. Controls | | |
| 218 | S-A-B-D-E-F DE 20263 | Push Switch 15 mm 6 Block |
| 219 | S-A-B-C-D-E DE 30051 | Lever Switch (A) ESL-242 (Signal) |
| 220 | S-F DE 30057 | Lever Switch (C) ESL 2153 (Speaker) |
| 221 | S-G DE 30057 | Lever Switch (B) ESL-2183 (Power) |
| 222 | S-R 101 DE 40345 | Resistor Semifixed 100 k Ω (B) TR-14-11 |
| 223 | S-R 102 DE 40345 | " " " " |
| 224 | S-R 103 DE 40611 | " " " " 5 k Ω (B) " |
| 225 | C-R 401 DE 30054 | Variable Resist. Rotary Duple 100 KA \times 2 50 % TAP |
| 226 | V-R 402 DE 30055 | " " " " 100 KB \times 2 |
| 227 | V-R 403 DE 30055 | " " " " 100 KB \times 2 |
| 228 | V-R 404 DE 30056 | Variable Resist. Rotary Single 100 KB |
| 229 | S-R 501/502 DE 40084 | Resistor Semifixed |
| 5. Coils | | |
| 230 | DL 101 DE 40872 | Coil Discriminator TKAC 1859 \times 10 K |
| 231 | DL 102 DE 40873 | " " " " TKAC 18390 AUD, 10 K |
| 232 | L 201 DE 30058 | Coil MW OSC 021 LO 10 mm Sq-q |
| 233 | L 202 DE 30058 | Coil LW OSC 011 LO 10 mm Sq-q |
| 234 | L 203 DE 30058 | IFT AM A 031 AA 10 mm Sq-q |
| 235 | L 204 DE 30058 | IFT AM B 041 AB 10 mm Sq-q |
| 236 | L 205 DE 30058 | IFT AM C 051 AC 10 mm Sq-q |
| 237 | FC 101 DE 30058 | Fixed Coil 18 μ W (K) |
| 238 | FC 102 DE 30058 | " " " " 2.2 μ H (K) |
| 239 | DE 40137 | Ant Coil MW 210 μ H + 15 % -10 % |
| 240 | DE 40138 | Ant Coil LW 2.4 mH |
| 241 | DE 40138.7 | Ferrite Core L 82-AR 10 \times 140 |
| 242 | LPF 1 LPF 2 DE 30423 | Filter LC M 675 F |
| 6. Transformer (Power) | | |
| 243 | | S-284-C |
| 7. Miscellaneous | | |
| 244 | Tuner DE 20265 | P C B X PC-FR |
| 245 | Tone DE 30071 | P C B X PC-FR |
| 246 | Audio DE 30227 | P C B X PC-FR |
| 247 | Power DE 40100 | P C B X PC-FR |
| 248 | FA | Puse 220 V 1.6 AT |
| 249 | FB | Puse 220 V 4 AT |
| 250 | FC | Puse 220 V 1.6 AT |
| 251 | Front End DE 30223 | FL 122 μ FM 3 Gang AM 2 Gang |
| 252 | M 101 | Tuning Meter 200 μ A |
| 253 | M 102 | Signal Meter 200 μ A |
| 254 | DE 40095 | Lamp 10 \emptyset |
| 255 | DE 40094 | Lamp 10 \emptyset |
| 256 | DE 40094 | Lamp 10 \emptyset |
| 257 | | Lamp Stereo Indicator 5 \emptyset 30 mA |
| 8. Cabinet and Cabinet Parts | | |
| 258 | DM 10259 | Wood Box Black Coated |
| 259 | DM 20219-1 | Ventilation Grill 454 \times 115 \times 3.2 T (M/M) |
| 260 | DM 10260 | Front Panel 400 \times 54 \times 4 T (M/M) |
| 261 | DM 20296 | Lens Black Out 10 \emptyset |
| 262 | DM 41951 | Knob Push Knob |
| 263 | DM 30486 | Base Pointer |
| 264 | DM 40216 | Knob Tuning 31 \emptyset |
| 265 | DM 40346 | Knob Control 20 \emptyset |
| 266 | DM 20299 | Scale Dial 42 \times 349 \times 2 T (M/M) |
| 267 | DM 40225 | Rubber Foot |

MW Alignment Procedure

| Step | Generator | | Tuning Dial Setting | Out Put Indicator Connected to | Adjust | Adjust for |
|------|--|-------------------------------|--|---|----------------------|-------------------------------|
| | Coupling | Frequency | | | | |
| 1 | Am Antenna | 455 kHz (400 Hz 30 % Mod) | Non Interfering at Low End of Scale | AC VTVM TO Out Put Jack P 27 (R) R 28 (L) P 26 (G) and Oscilloscope to Out Put Jack (P 27, P 28, P 26) | L 203 L 204 L 205 | Maximum Reading on VTVM |
| 2 | Frequency Range | 515 kHz 1650 kHz | Low End of Scale High End of Scale | | L 201 CT 203 | |
| 3 | | 600 kHz (400 Hz 30 % Mod) | 600 kHz | | L 101 | |
| 4 | | 1400 kHz (400 Hz 30 % Mod) | 1400 kHz | | CT 201 | |
| 5 | Repeat 3 and 4 until no further improvement is noticed | | | | | |

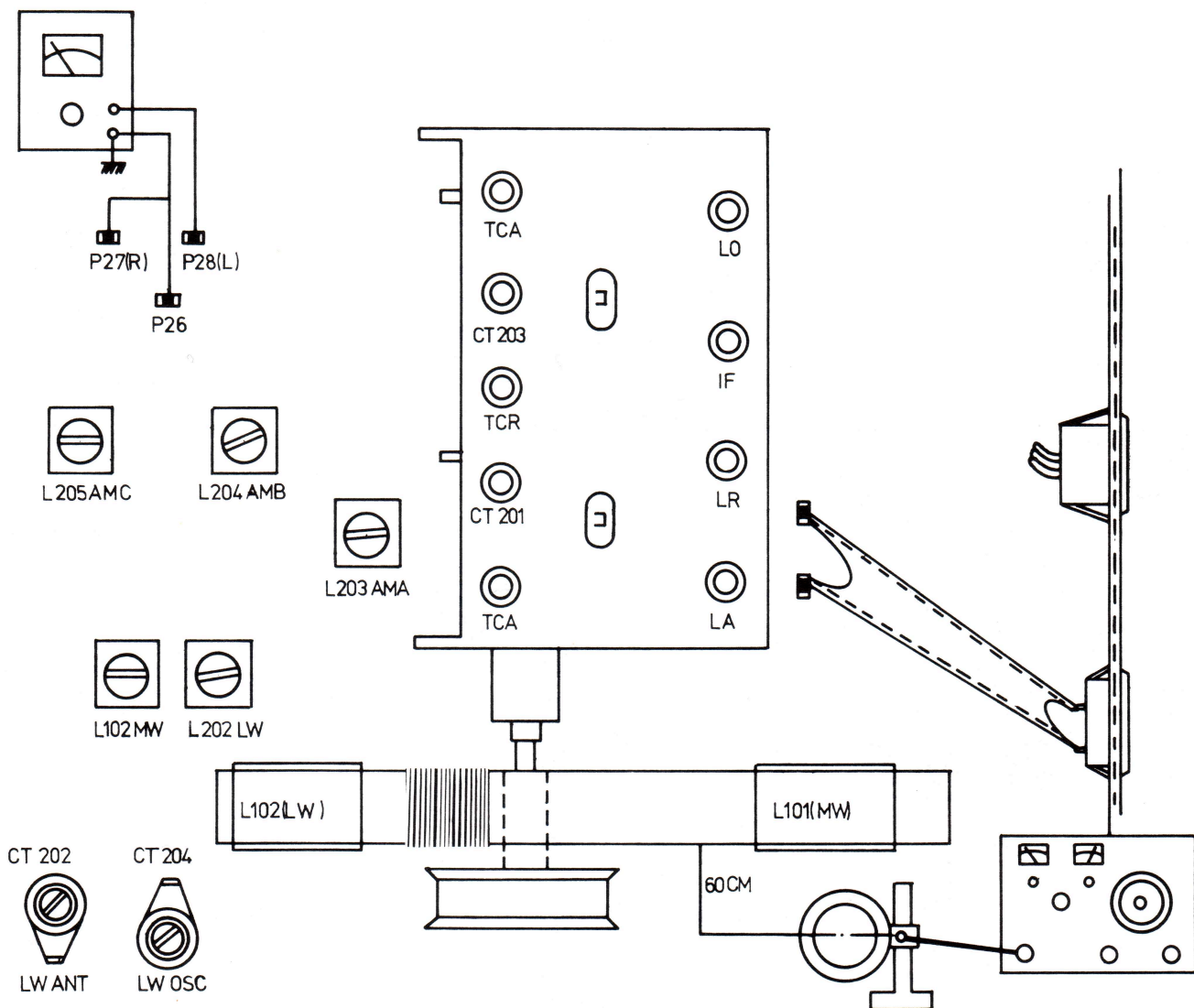
Instruments: AM signal generator and AC VTVM and oscilloscope.
 Notes: Set selector switch to MW position. In put signal must be kept as low as possible to avoid AGC action.



LW Alignment Procedure

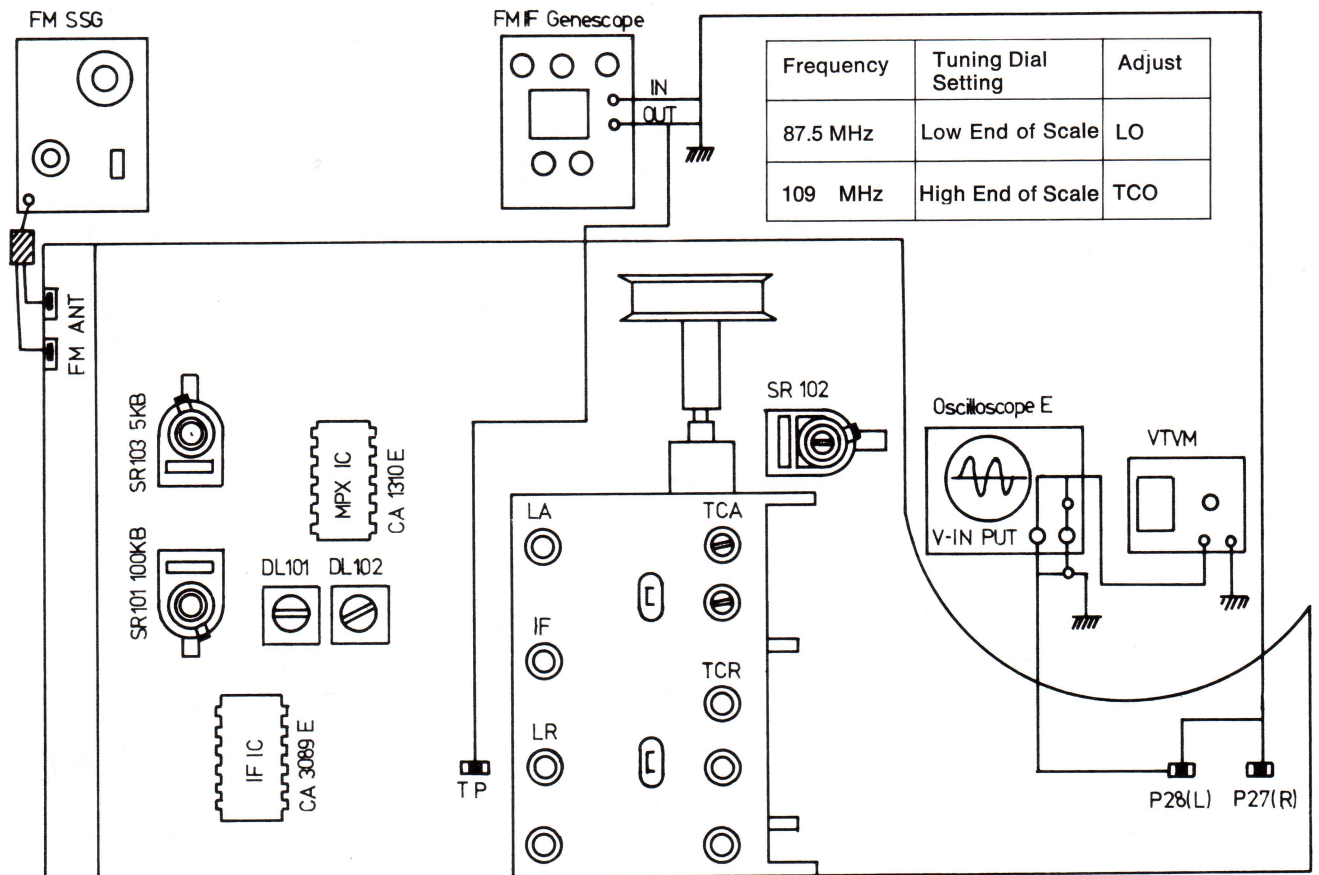
| Step | Generator | | Tuning Dial Setting | Out Put Indicator Connected to | Adjust | Adjust for |
|------|--|------------------------------|--|---|----------------------|-------------------------------|
| | Coupling | Frequency | | | | |
| 1 | Am Antenna | 455 kHz (400 Hz 30 % Mod) | Non Interfering at Low End of Scale | AC VTVM TO Out Put Jack and Oscilloscope to Out Put Jack | L 203 L 204 L 205 | Maximum Reading on VTVM |
| 2 | Frequency Range | 147 kHz 353 kHz | Low End of Scale High End of Scale | | L 202 CT 204 | |
| 3 | | 170 kHz (400 Hz 30 % Mod) | 170 kHz | | L 102 | |
| 4 | | 320 kHz (400 Hz 30 % Mod) | 320 kHz | | CT 202 | |
| 5 | Repeat 3 and 4 until no further improvement is noticed | | | | | |

Instruments: AM signal generator and AC VTVM and oscilloscope.
 Notes: Set selector switch to LW position. In put signal must be kept as low as possible to avoid AGC action.



FM IF RF Alignment Procedure

| Step | Genescope | | Tuning Dial Setting | Out Put Indicator Connected to | Adjust | Adjust for |
|----------------------------|---|-------------------------------------|---------------------------------|--|---------------------------|--|
| | Connect | Frequency | | | | |
| 1 | FM Genescope | | Quiet Point on Band | Genescope to P 27 (R) P 28 (L) Tuner Board | DL 101 DL 102 FM IF | Maximum and Balanced S-Curve on Scope |
| | To test point (P 3) | 10.7 MHz | | | | |
| 2 | Disconnect FM Genescope and Connect FM SSG to FM Antenna Terminal | | | | | |
| 3 | FM SSG | | Tuner for Maximum Out Put Point | Oscilloscope and AC VTVM to Out Put Jack (Left of Right) | DL 101 DL 102 FM IF | Maximum Amplitude on Scope (undistorted) |
| | To FM Antenna Terminal | 98 MHz (1000 Hz) (40 kHz Deviation) | | | | |
| 90 MHz (40 kHz Deviation) | | 90 MHz | | | | |
| 106 MHz (40 kHz Deviation) | | 106 MHz | | | | |
| 4 | | | | | LA and LR | Maximum Reading on VTVM (undistorted) |
| 5 | | | | | TCR and TCA | |
| 6 | Repeat Steps 4 and 5 Until no Further Improvement is Noticed | | | | | |
| 7 | Tuning Meter | | 98 MHz | To Tuning Meter Alignment | DL 101 DL 102 | Meter Center at no Signal Minimum Distortion |
| 8 | Signal Meter | | 98 MHz | To Signal Meter Alignment | SR 101 | Maximum (Needle) |

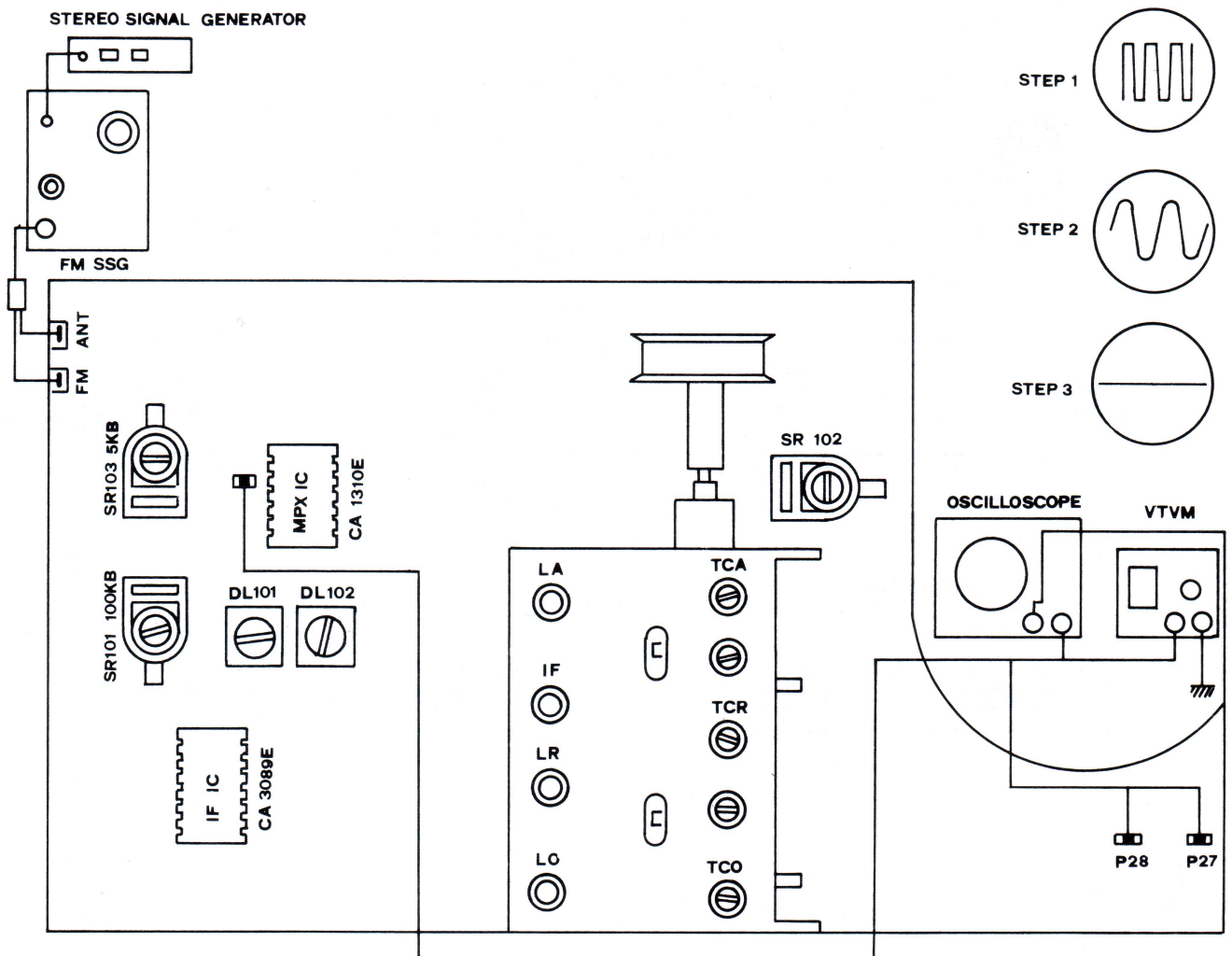


MPX Alignment Procedure

| Step | Stereo Signal Generator | | Out Put Indicator Connected to | Adjust | Adjust for |
|------|--|---------------------------------|---|--------|--|
| | Modulation | RF Deviation | | | |
| 1 | 19 kHz Pilot Signal | 10 % | Oscilloscope to Test Point | SR 103 | Maximum Amplitude on Scope |
| 2 | Composite 1 kHz Signal to Left | Pilot 10 % Main and Sub 90 % | Oscilloscope and VTVM to Left (PIN No. 28) | SR 103 | Maximum and Undistorted Sine Wave on Scope |
| 3 | | | Oscilloscope and VTVM to Right (Pin No. 27) | | Minimum Reading on VTVM |
| 4 | Composite 1 kHz Signal to Right Channel only | | Same as in Step 2, 3 | SR 103 | Same as in Step 2, 3 |
| 5 | Muting Level Control | | Oscilloscope and VTVM | SR 102 | 10 μ V (SSG in Put) |
| 6 | Repeat Steps 3 and 4 Until no Further Improvement is Noticed | | | | |

In Put Level = 98 MHz 1 mV

Note: The IF amplifier alignment must be completed before attempting this FM stereo alignment ment IF poor Alignment will result in poor FM stereo.

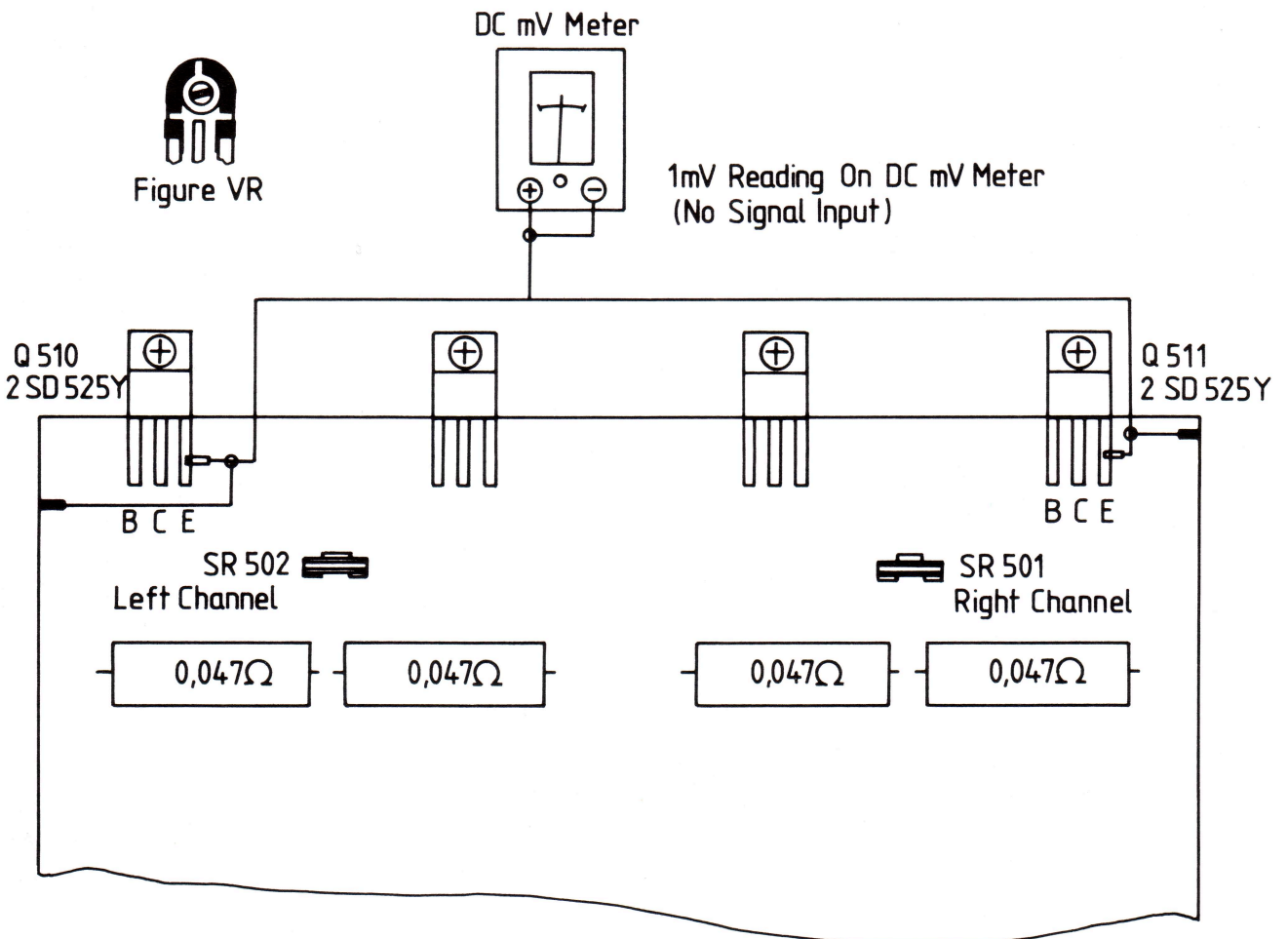


Main Amplifier Adjustment (Idling Current)

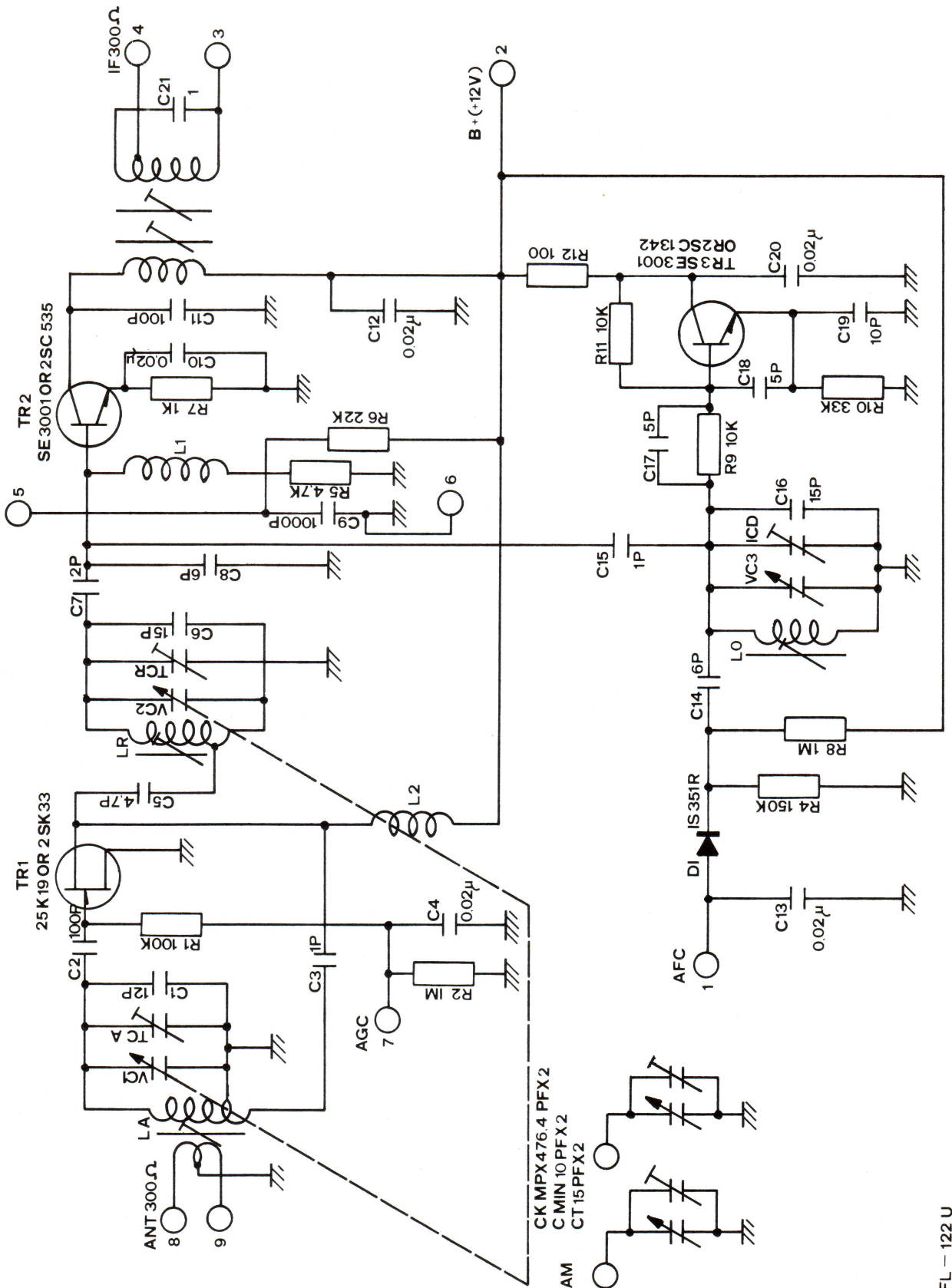
Adjust idling current using a DC milli-volt meter.

1. Set volume control to minimum position.
2. Connect the plus lead of a DC millivolt meter to the Emitter (transistor Q 510 2SD525 Y on main AMP circuit Board) and the minus lead to the chassis ground (for right channel) the plus lead to the emitter (transistor Q 509 2 SD 525 Y) and the minus lead to the chassis ground.

And rotate the potentiometer SR 502 (300 Ω) (SR 501 for right channel) to obtain a 1 mV reading on DC millivolt meter.



FM FRONT END SCHEMATIC DIAGRAM



Tuning Meter and Signal Meter Alignment Procedure

FM Tuning Meter Adjustment

Step 1: Adjust DL 101 for center position of the tuning meter at no signal.

Step 2: Fine tune FM Signal Generator so as to center the needle at this meter at the input of 1 mV. Then, adjust DL 102 to set the minimum distortion.

FM Signal Meter Adjustment

Note: The FM IF and FM RF alignment must be completed before attempting this adjustment.

Set the antenna input level to 1 mV by controlling the signal generator.

Then adjust SR 101 so that the signal meter indicates toward 4.5 on the scale.

Trouble Shooting

Chart 1

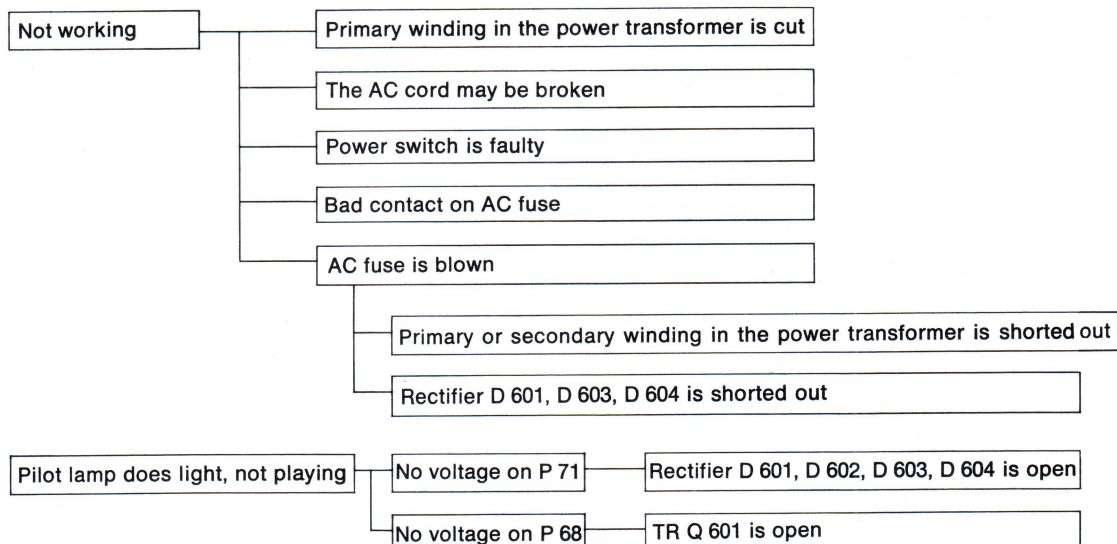
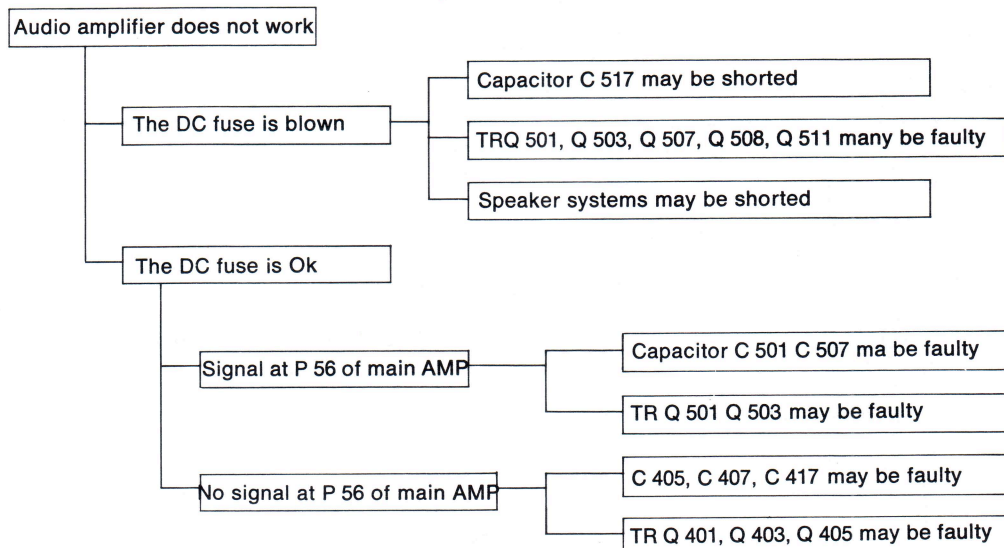
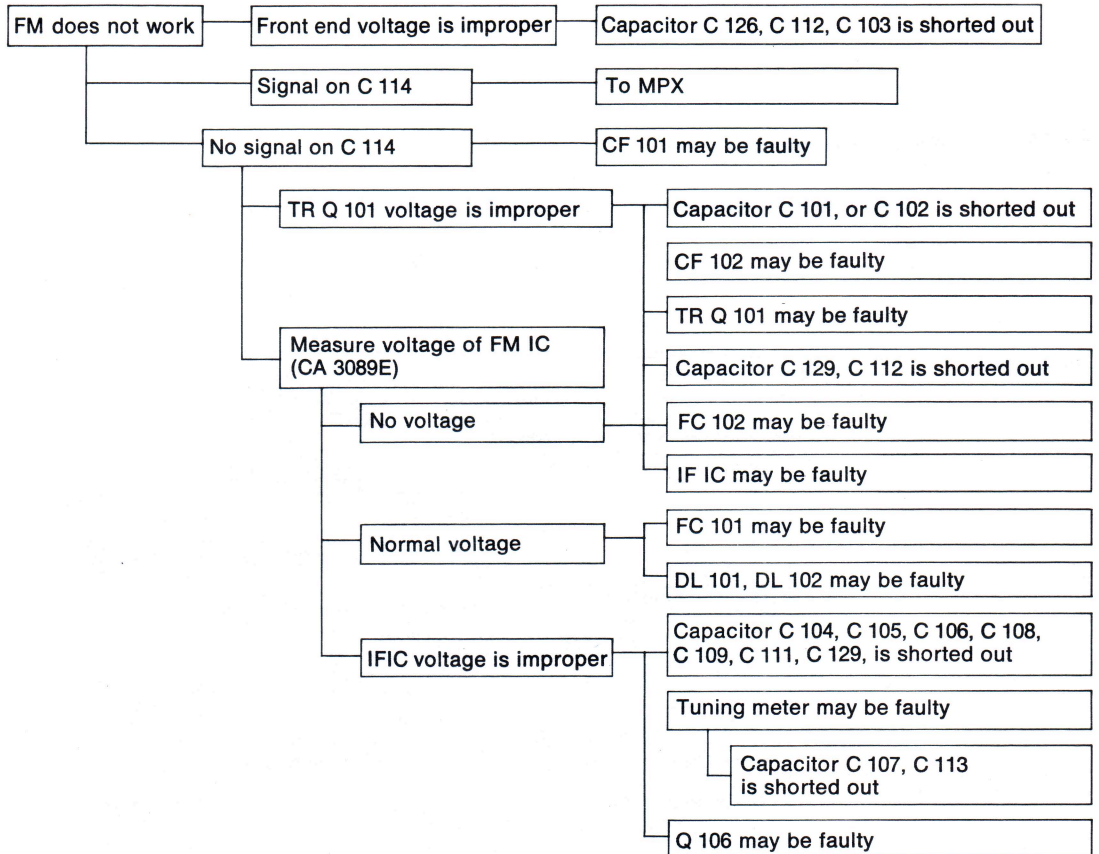


Chart 2



Note: If the right channel is inoperative, check to see the circuits is item above.

FM Section



No separation or insufficient

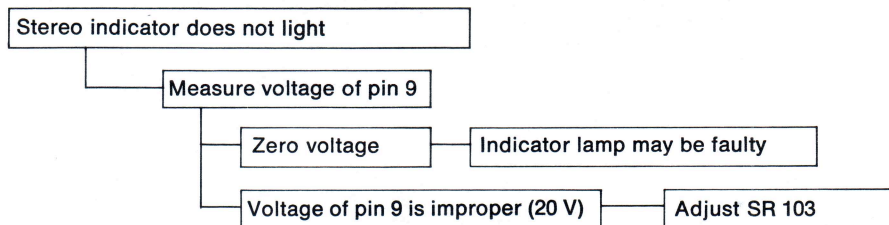
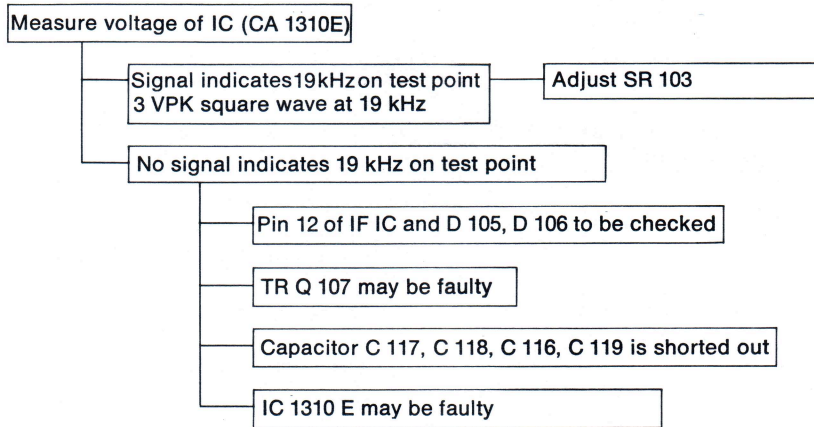
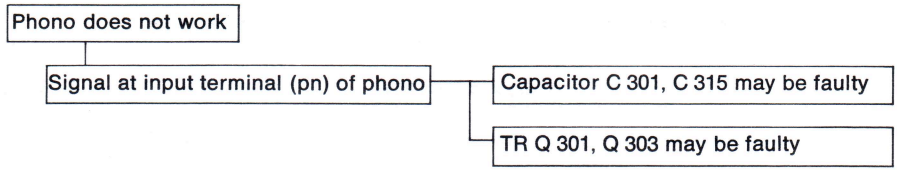


Chart 3

Phono



AM Section

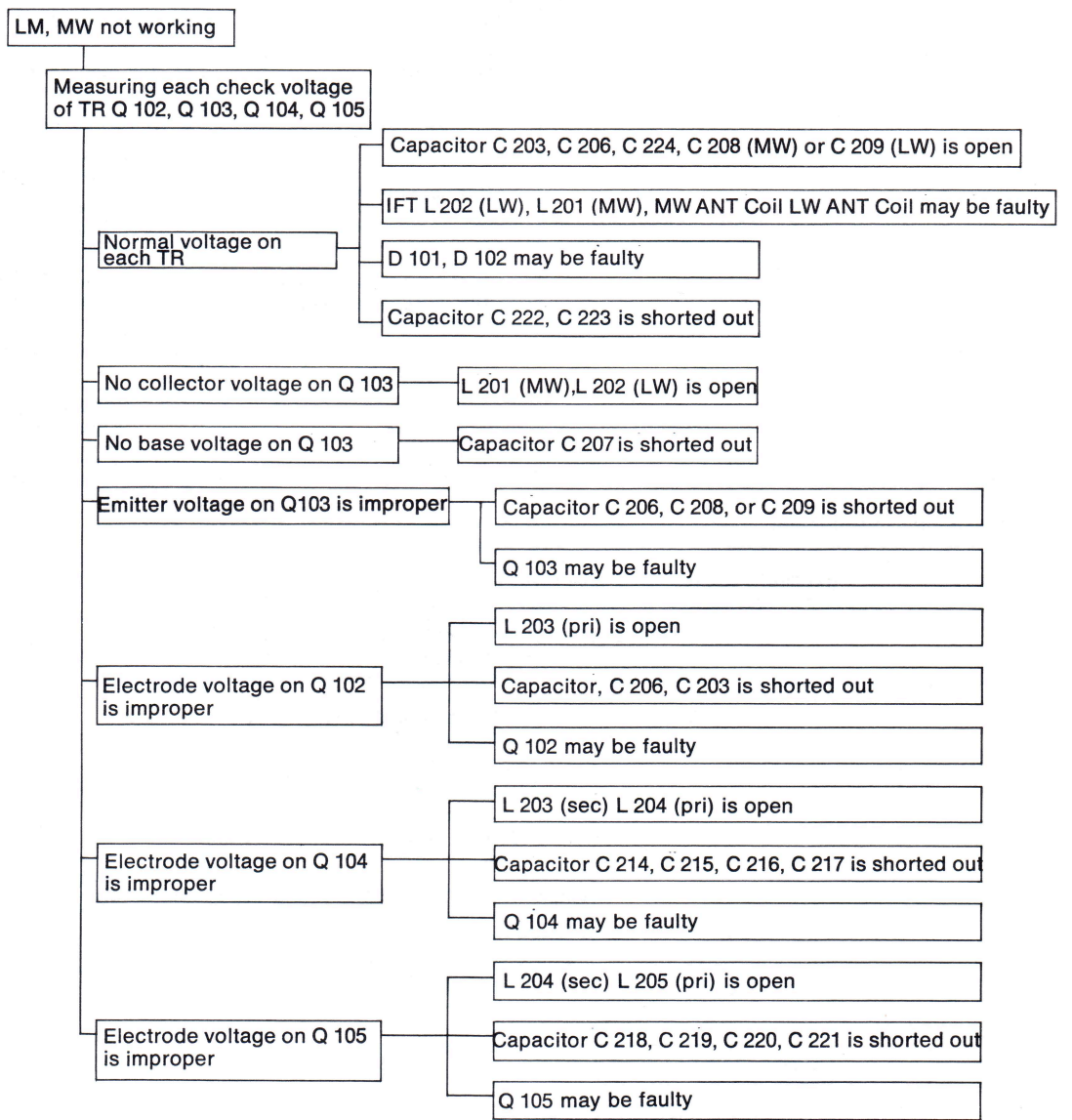
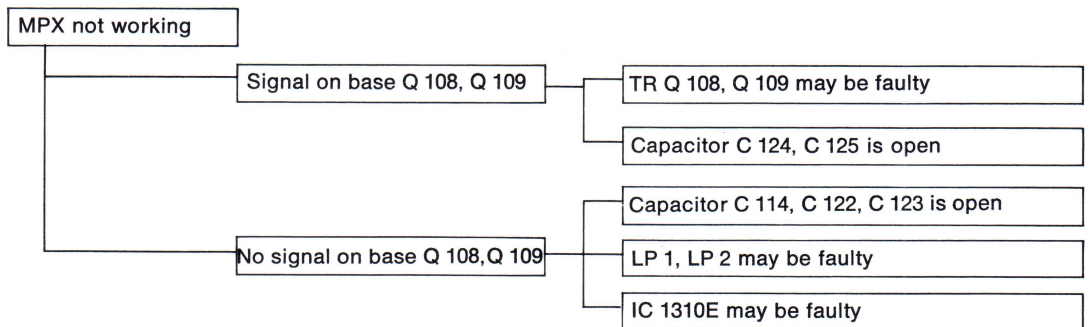
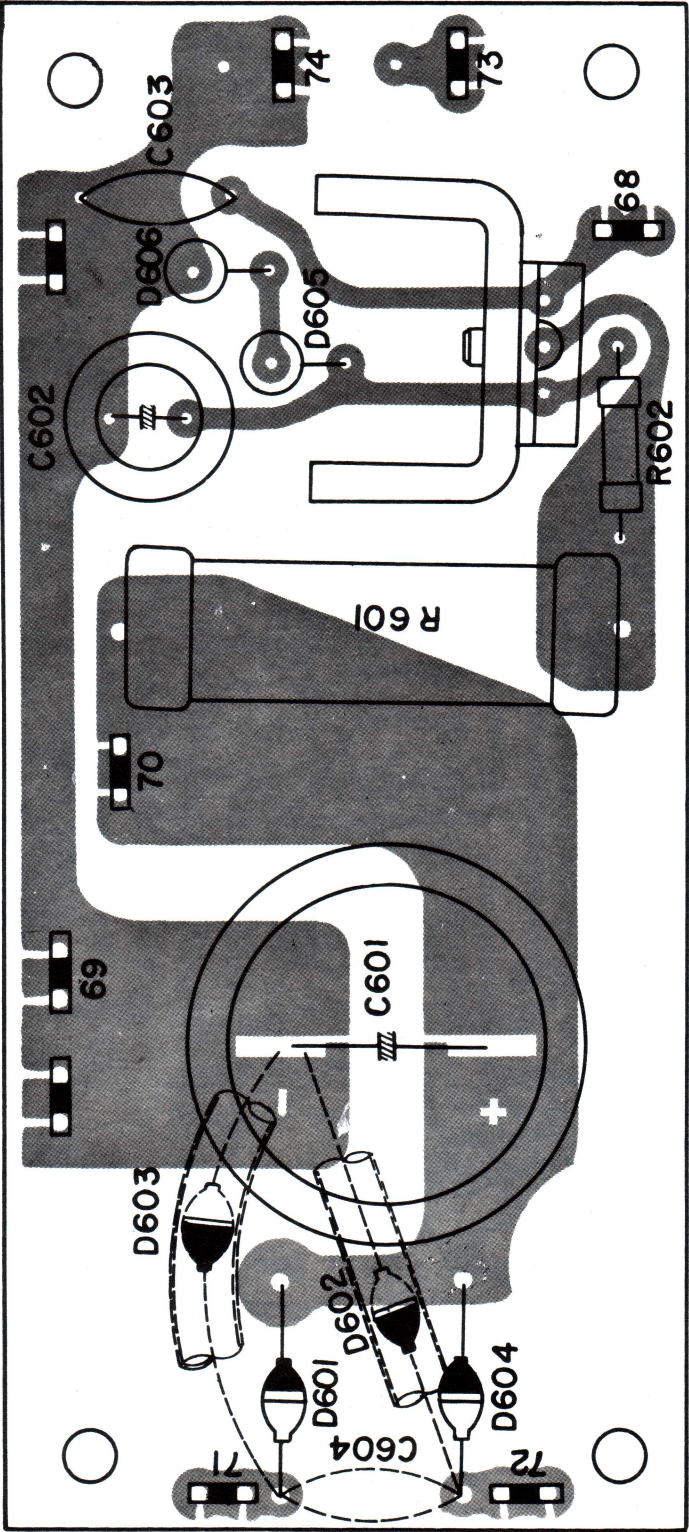


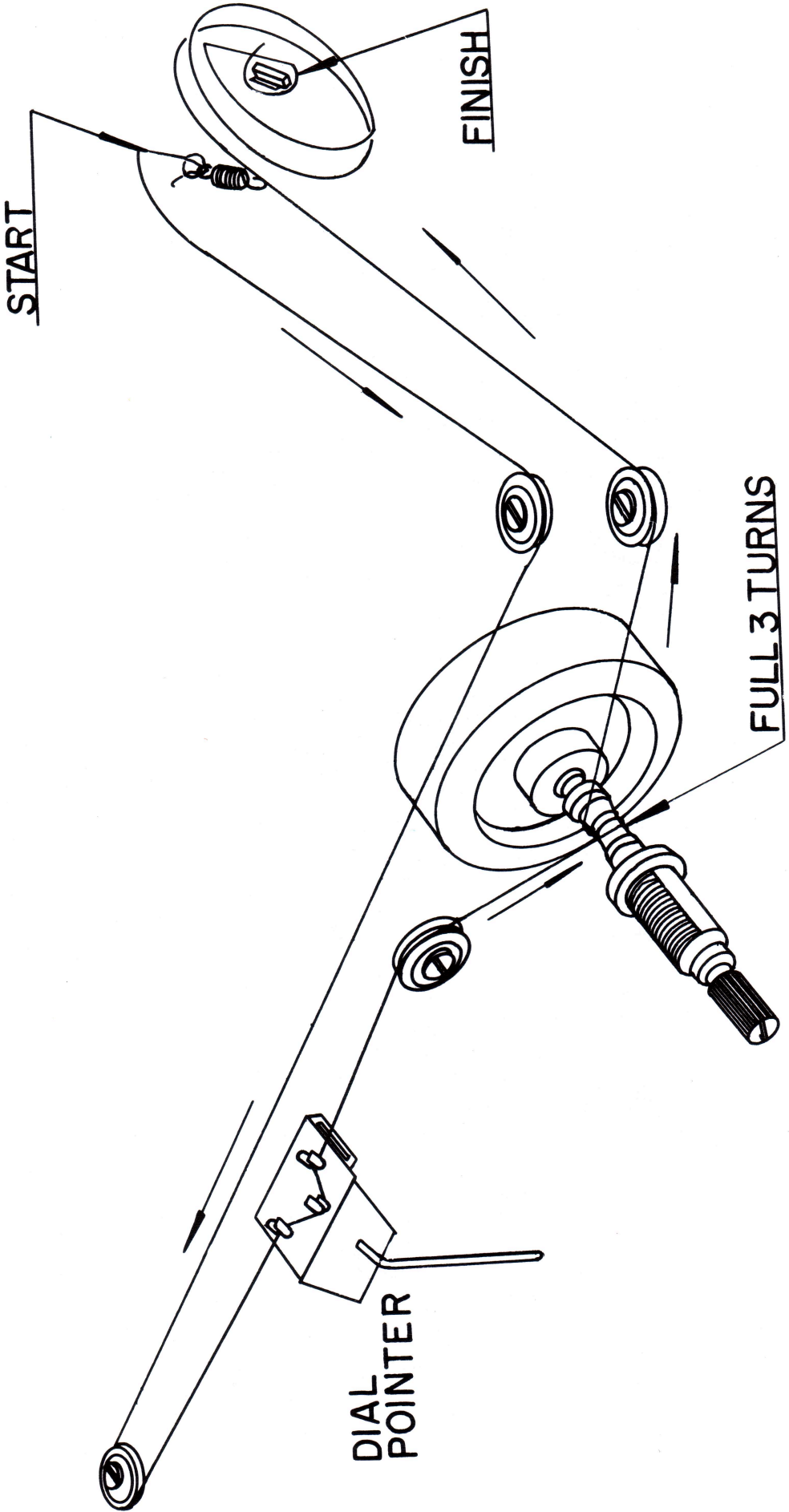
Chart 4



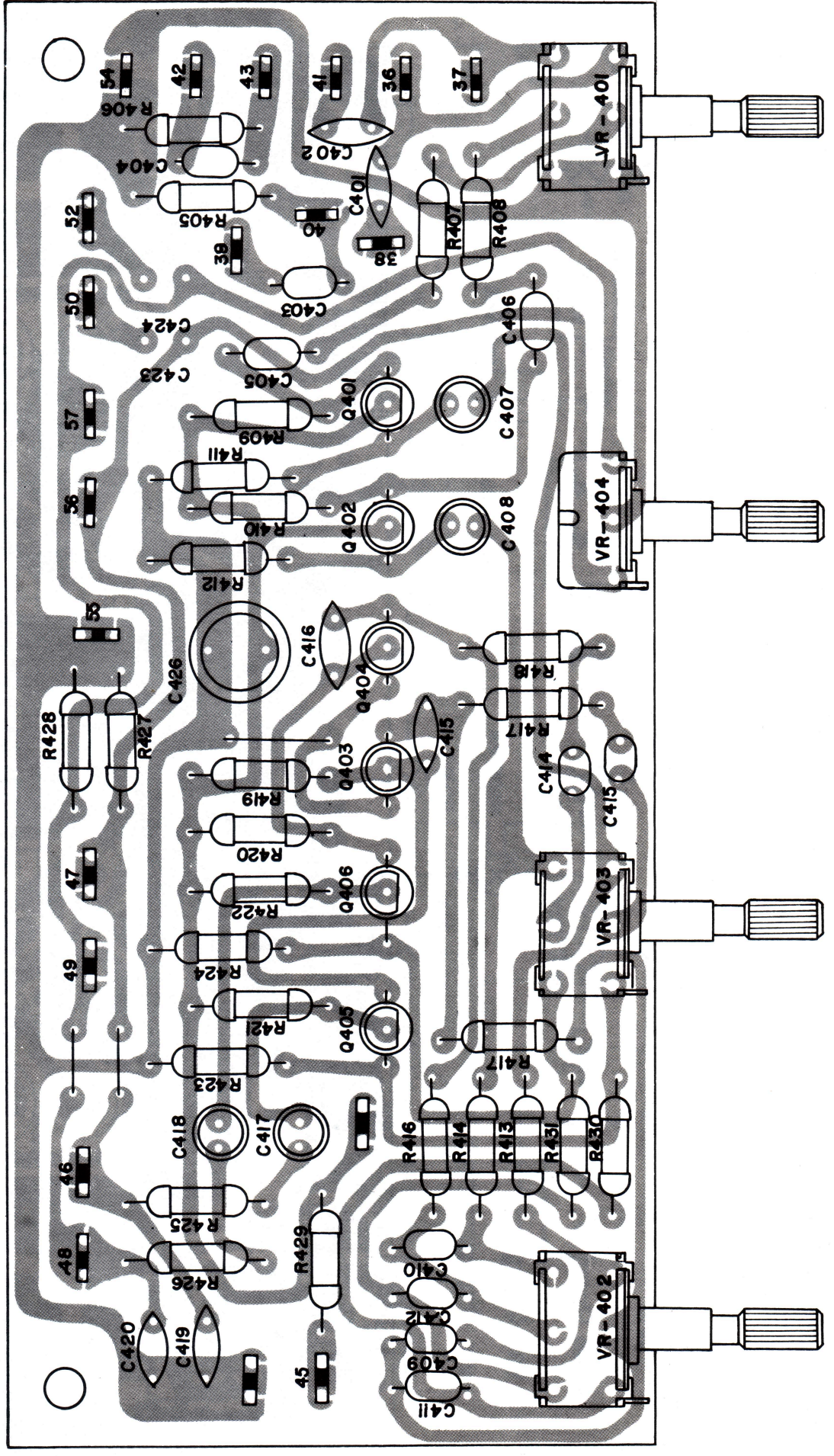
Power Supply X-Ray View



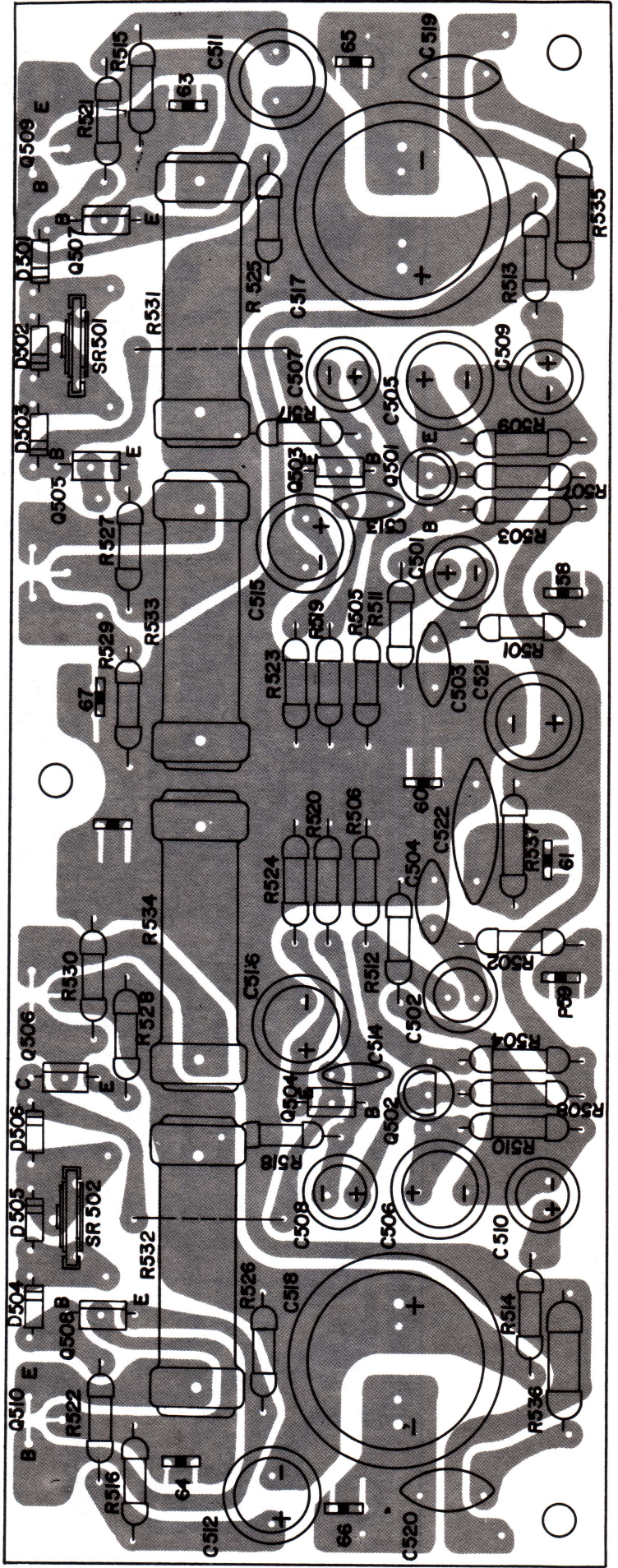
DIAL STRINGING DIAGRAM



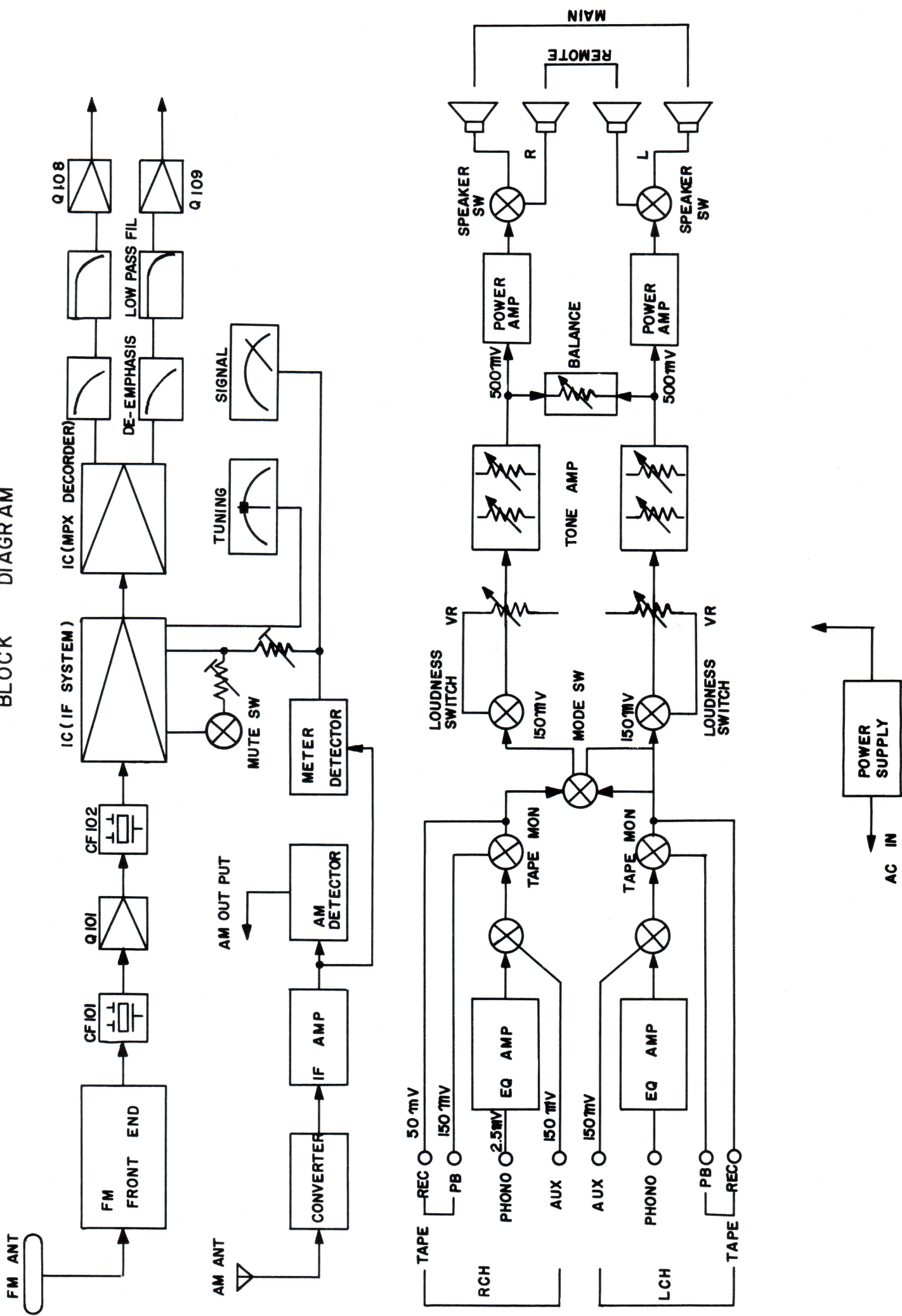
Tone Control X-Ray View



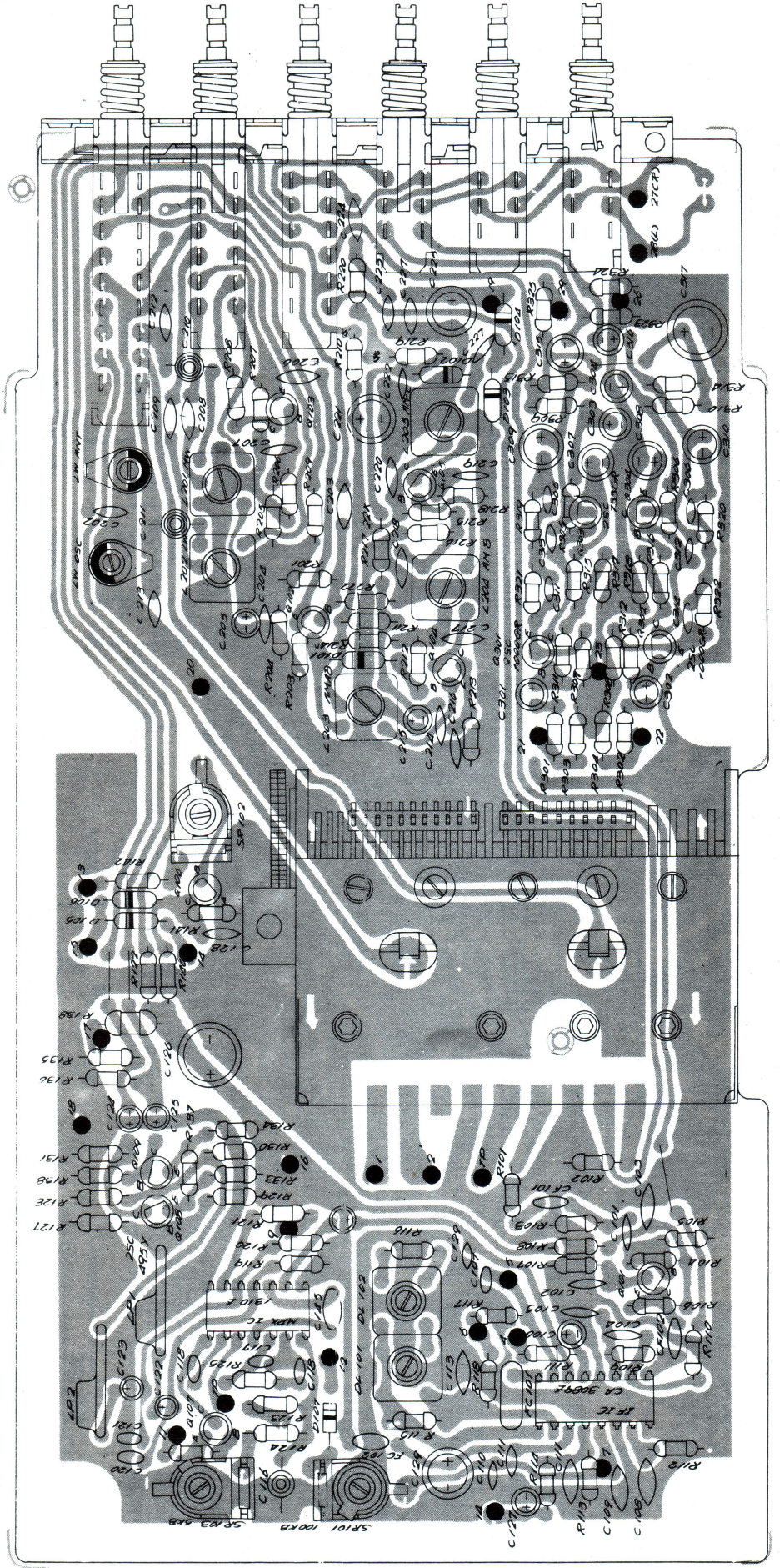
Main Amplifier X-Ray View



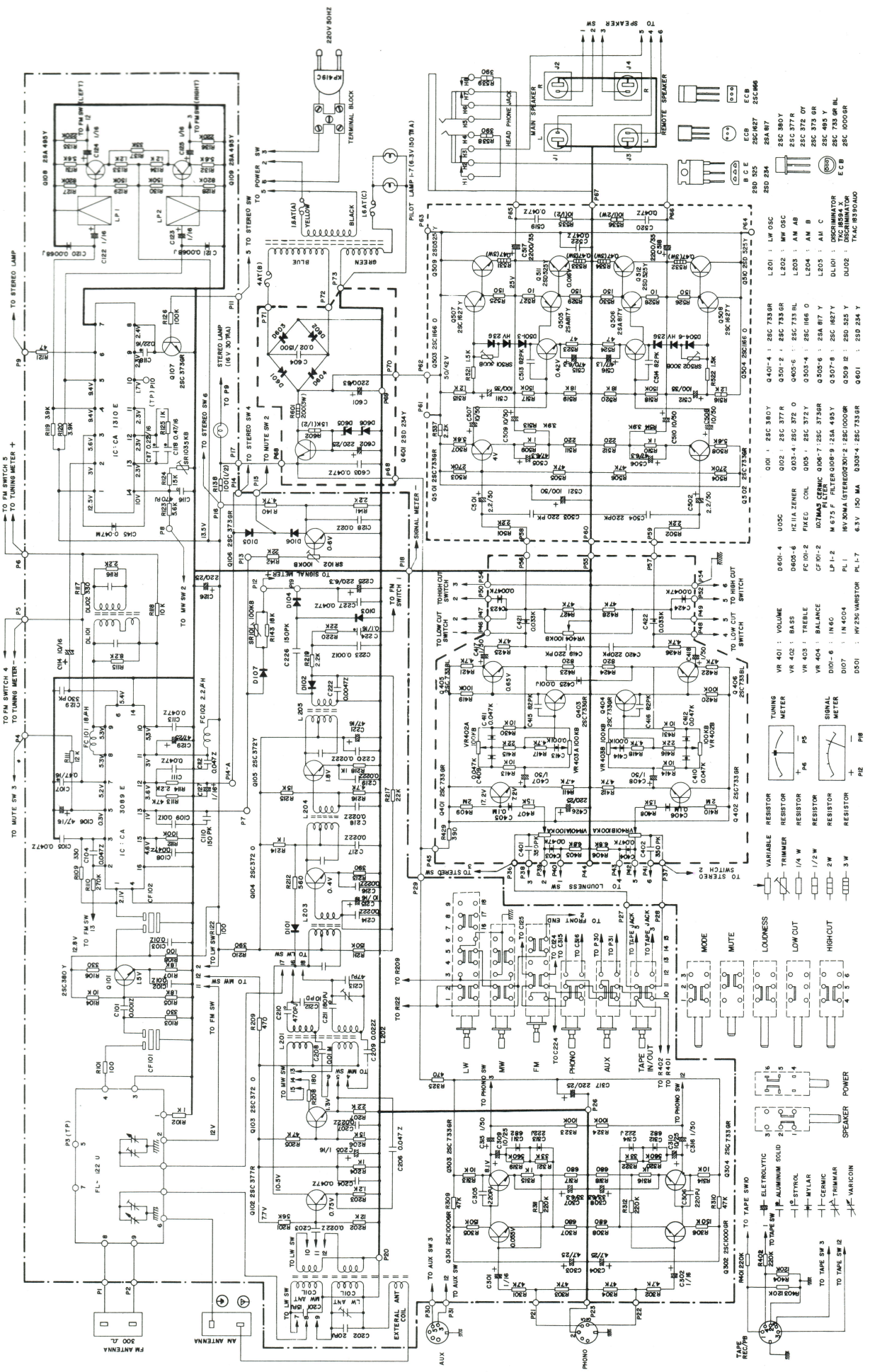
BLOCK DIAGRAM



Tuner and Phono X-Ray View



Schematic Circuit Diagram



| | | | | | | | |
|-----|------------|--------|------------|--------|------------|------|--------|
| 010 | 25C 380Y | 0101 | 25C 380Y | 0401-4 | 25C 7338R | L201 | LW OSC |
| 020 | 25C 380Y | 0102 | 25C 377R | 0501-2 | 25C 7338R | L202 | MW OSC |
| 030 | 25C 377R | 0201-6 | 25C 377R | 0601-5 | 25C 733 BL | L203 | AM AB |
| 040 | 25C 378 0Y | 0301-4 | 25C 378 0Y | 0701-2 | 25C 733 BL | L204 | AM B |
| 050 | 25C 378 0Y | 0401-5 | 25C 378 0Y | 0801-4 | 25C 186 0 | L205 | AM C |
| 060 | 25C 378 0Y | 0501-6 | 25C 378 0Y | 0901-5 | 25C 186 0 | L206 | AM D |
| 070 | 25C 378 0Y | 0601-5 | 25C 378 0Y | 1001-2 | 25C 186 0 | L207 | AM E |
| 080 | 25C 378 0Y | 0701-4 | 25C 378 0Y | 1101-2 | 25C 186 0 | L208 | AM F |
| 090 | 25C 378 0Y | 0801-5 | 25C 378 0Y | 1201-2 | 25C 186 0 | L209 | AM G |
| 100 | 25C 378 0Y | 0901-5 | 25C 378 0Y | 1301-2 | 25C 186 0 | L210 | AM H |
| 110 | 25C 378 0Y | 1001-5 | 25C 378 0Y | 1401-2 | 25C 186 0 | L211 | AM I |
| 120 | 25C 378 0Y | 1101-5 | 25C 378 0Y | 1501-2 | 25C 186 0 | L212 | AM J |
| 130 | 25C 378 0Y | 1201-5 | 25C 378 0Y | 1601-2 | 25C 186 0 | L213 | AM K |
| 140 | 25C 378 0Y | 1301-5 | 25C 378 0Y | 1701-2 | 25C 186 0 | L214 | AM L |
| 150 | 25C 378 0Y | 1401-5 | 25C 378 0Y | 1801-2 | 25C 186 0 | L215 | AM M |
| 160 | 25C 378 0Y | 1501-5 | 25C 378 0Y | 1901-2 | 25C 186 0 | L216 | AM N |
| 170 | 25C 378 0Y | 1601-5 | 25C 378 0Y | 2001-2 | 25C 186 0 | L217 | AM O |
| 180 | 25C 378 0Y | 1701-5 | 25C 378 0Y | 2101-2 | 25C 186 0 | L218 | AM P |
| 190 | 25C 378 0Y | 1801-5 | 25C 378 0Y | 2201-2 | 25C 186 0 | L219 | AM Q |
| 200 | 25C 378 0Y | 1901-5 | 25C 378 0Y | 2301-2 | 25C 186 0 | L220 | AM R |
| 210 | 25C 378 0Y | 2001-5 | 25C 378 0Y | 2401-2 | 25C 186 0 | L221 | AM S |
| 220 | 25C 378 0Y | 2101-5 | 25C 378 0Y | 2501-2 | 25C 186 0 | L222 | AM T |
| 230 | 25C 378 0Y | 2201-5 | 25C 378 0Y | 2601-2 | 25C 186 0 | L223 | AM U |
| 240 | 25C 378 0Y | 2301-5 | 25C 378 0Y | 2701-2 | 25C 186 0 | L224 | AM V |
| 250 | 25C 378 0Y | 2401-5 | 25C 378 0Y | 2801-2 | 25C 186 0 | L225 | AM W |
| 260 | 25C 378 0Y | 2501-5 | 25C 378 0Y | 2901-2 | 25C 186 0 | L226 | AM X |
| 270 | 25C 378 0Y | 2601-5 | 25C 378 0Y | 3001-2 | 25C 186 0 | L227 | AM Y |
| 280 | 25C 378 0Y | 2701-5 | 25C 378 0Y | 3101-2 | 25C 186 0 | L228 | AM Z |
| 290 | 25C 378 0Y | 2801-5 | 25C 378 0Y | 3201-2 | 25C 186 0 | L229 | AM AA |
| 300 | 25C 378 0Y | 2901-5 | 25C 378 0Y | 3301-2 | 25C 186 0 | L230 | AM AB |

