

**600**

GENERAL INFORMATION  
SCHEMATIC DIAGRAM  
PARTS LIST  
ALIGNMENT MANUAL

**NIKKO**

*stereo pre-amp/amplifier model trm - 600*



NIKKO ELECTRIC MFG. CO., LTD. 4-1, 3-CHOME, TAMAGAWA OKUSAWA-CHO, SETAGAYA-KU, TOKYO, JAPAN.  
NIKKO ELECTRIC CORPORATION OF AMERICA 5001 LANKERSHIM BLVD., NORTH HOLLYWOOD, CALIF. 91601



# CONTENTS

|                                      | PAGE |
|--------------------------------------|------|
| 1. SPECIFICATIONS .....              | 2    |
| 2. DIAGRAMS                          |      |
| 2.1 DISASSEMBLY DETAILS .....        | 3    |
| 2.2 COMPONENT LAYOUT .....           | 4    |
| 2.4 SCHEMATIC DIAGRAM, OVERALL ..... | 6    |
| 2.5 BLOCK DIAGRAM .....              | 7    |
| 2.6 MAIN AMP. ASSEMBLY .....         | 8    |
| 2.7 PRE. AMP-REG ASSEMBLY .....      | 9    |
| 2.8 MIXING AMP. ASSEMBLY .....       | 11   |
| 3. TRANSISTOR SPECIFICATIONS .....   | 12   |
| 4. ALIGNMENT PROCEDURE .....         | 13   |

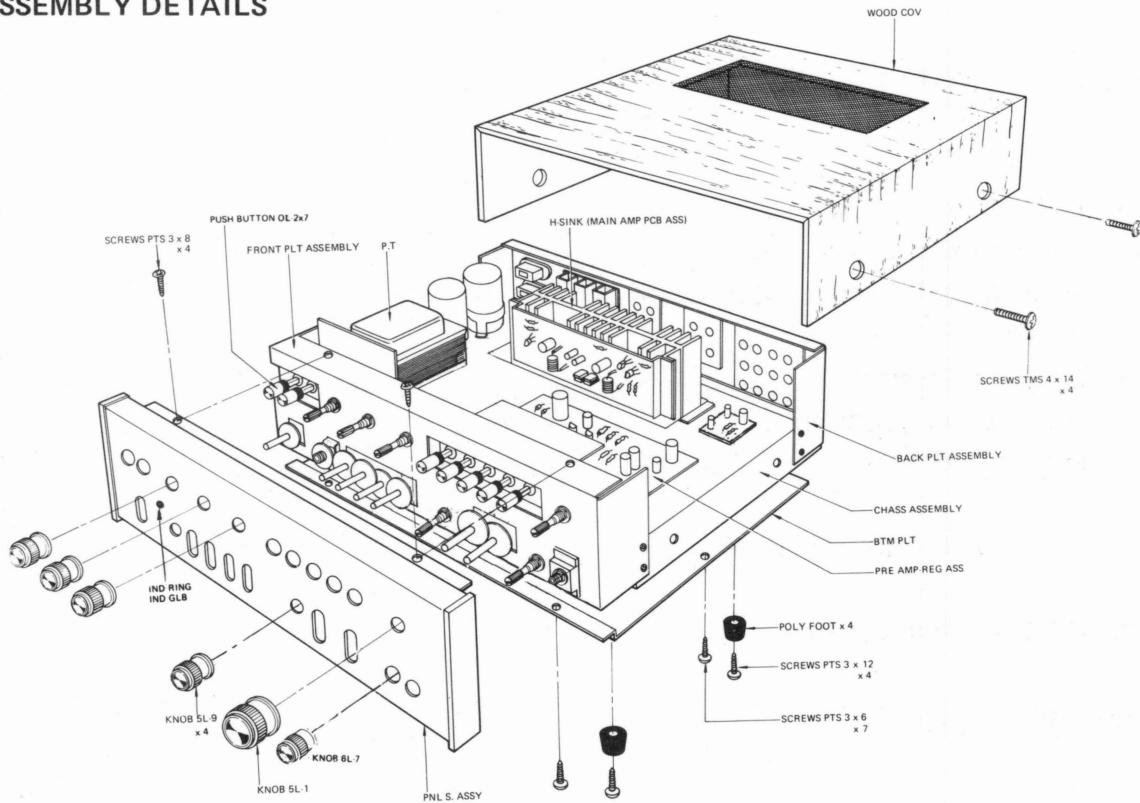
## 1. SPECIFICATIONS

TRM-500

|   |                         |                      |            |
|---|-------------------------|----------------------|------------|
| Input sensitivity                           | PHONO 1, 2 .....        | 2.2mV .....          | ±3dB       |
| (at 1000Hz,                                 | TUNER .....             | 160mV .....          | ±3dB       |
| rated output                                | AUX. ....               | 160mV .....          | ±3dB       |
|   | TAPE MON. 1, 2 .....    | 160mV .....          | ±3dB       |
|   | MIC .....               | 3mV .....            | ±3dB       |
|   | MAIN IN .....           | 1200mV .....         | ±3dB       |
| S/N   | PHONO 1, 2 .....        | 65dB .....           | 60dB       |
|   | MIC MIXING .....        | 75dB .....           | 65dB       |
|   | Other .....             | 80dB .....           | 75dB       |
| Output                                      | single ch. driven ..... | 40W .....            | 36W        |
| (8 ohm,                                     | both ch. driven .....   | 34W .....            | 30W        |
| 0.5% T.H.D)                                 |                         |                      |            |
| Distortion                                  | at 1W .....             | 0.1% .....           | 0.3%       |
| Frequency response                          | .....                   | 20Hz~30kHz .....     | ±2dB       |
| Equalizer                                   | RIAA .....              | at 70Hz, 10kHz ..... | ±2dB       |
| Bass control                                | at 70Hz .....           | ±10dB .....          | ±10dB ±3dB |
| Treble control                              | at 10kHz .....          | ±10dB .....          | ±10dB ±3dB |
| Low filter                                  | at 50Hz .....           | -3dB .....           |            |
| High filter                                 | at 7kHz .....           | -3dB .....           |            |
| Loudness control                            | at 70Hz .....           | +10dB .....          |            |
|   | at 10kHz .....          | +5dB .....           |            |
| Audio muting                                | .....                   | -20dB .....          | ±3dB       |
| Gain unbalance (at volume maximum)          | .....                   | .....                | 2dB        |
| Residual output voltage (at volume minimum) | .....                   | 0.8mV .....          | 1.5mV      |

## 2. DIAGRAMS

### 2.1 DISASSEMBLY DETAILS



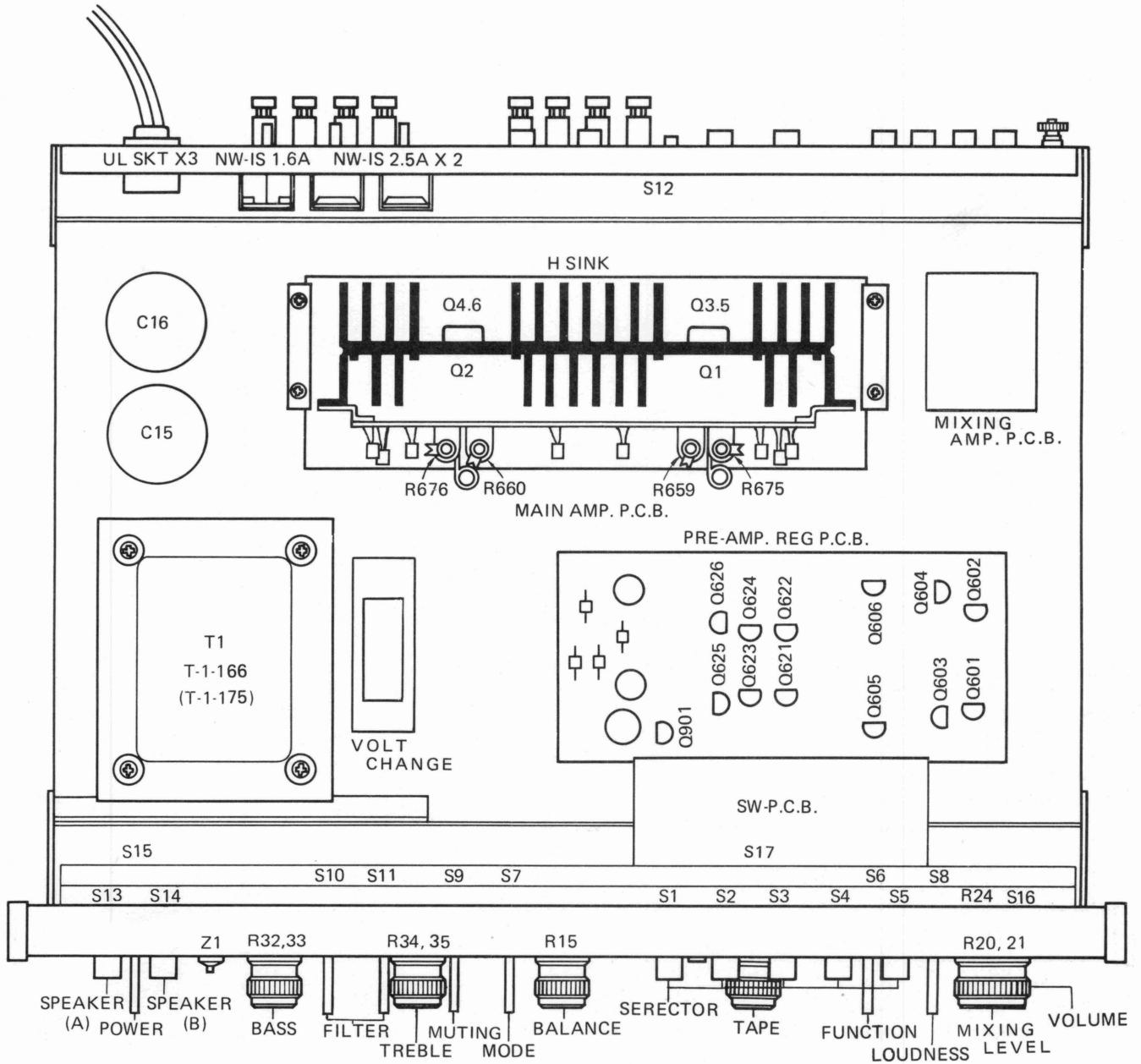
### FINAL ASSEMBLY

| Parts No. | Description    | Symbol | Parts No. | Description | Symbol |
|-----------|----------------|--------|-----------|-------------|--------|
| 982385 O  | CARTON BOX     |        | 785051 O  | KNOB 5L-9   |        |
| 984045 O  | STYROL BOX (L) |        | 740046 O  | IND GLB (P) |        |
| 984046 O  | STYROL BOX (R) |        | 715200 O  | IND RING    |        |
| 963349 O  | CARTON LABEL   |        | 874091 O  | KNOB 6L-7   |        |
| 960105 E  | OWNS MANUAL    |        | 732238 O  | BTM PLT     |        |
| 961082 E  | DIAGRAM        |        | 790289 O  | POLY FOOT   |        |
| 788250 O  | PNL S. ASSY    |        | 783069 O  | WOOD COV    |        |
| 785043 O  | KNOB 5L-1      |        |           |             |        |

### FRONT PLT ASSEMBLY

| Parts NO. | Description       | Symbol              | Parts NO. | Description       | Symbol                          |
|-----------|-------------------|---------------------|-----------|-------------------|---------------------------------|
| 404038 O  | PENTA PUSH SW     | S1, 2, 3, 4, 5      | 311104 J  | RES 100K OHM 1/4P | R38, 39                         |
| 461219 B  | PUSH SW PCB       |                     | 311151 J  | RES 150 OHM 1/4P  | R36, 37                         |
| 404039 O  | TWIN PUSH SW      | S13, 14             | 311153 J  | RES 15K OHM 1/4P  | R16, 17                         |
| 455001 O  | EAR JACK 3P       | MIC IN              | 311103 J  | RES 10K OHM 1/4P  | R13, 14, 22, 23, 26, 27, 30, 31 |
| 455009 O  | EAR JACK 3P (US)  | Head Phone          |           |                   |                                 |
| 374331 K  | M-RES 330 OHM 2P  | R43, 44             | 311472 J  | RES 4.7K OHM 1/4P | R24, 18, 19, 25                 |
| 580807 O  | PL-8 8V 40mA WIRE | Z1                  | 311332 J  | RES 3.3K OHM 1/4P | R11, 12                         |
| 400009 O  | TOGGLE SW T-129GL | S6, 7, 8, 9, 10, 11 | 225104 K  | M-CAP 0.1 MF      | C5, 6                           |
| 400011 O  | TOGGLE SW T-128SP | S15                 | 225473 K  | M-CAP 0.0047 MF   | C9, 10                          |
| 785058 O  | PUSH BUTTON OL-2  |                     | 225102 K  | M-CAP 0.001 MF    | C7, 8                           |
| 432037 O  | VR GJ10E-100KBx2  | R32, 33, 34, 35     | 225223 K  | M-CAP 0.022 MF    | C11, 12                         |
| 431038 O  | VR VJ10E 100KW    | R15                 | 225333 K  | M-CAP 0.033 MF    | C13, 14                         |
| 432039 O  | VR GJ20T100KAx2   | R20, 21             | 235501 K  | S-CAP 500 PF      | C3, 4                           |
| 431037 O  | VR B 50K 5S       | R42, S16            | 405069 O  | ROTARY SR26N1-3-3 | S17                             |
| 311474 J  | RES 470K OHM 1/4P | R28, 29             |           |                   |                                 |

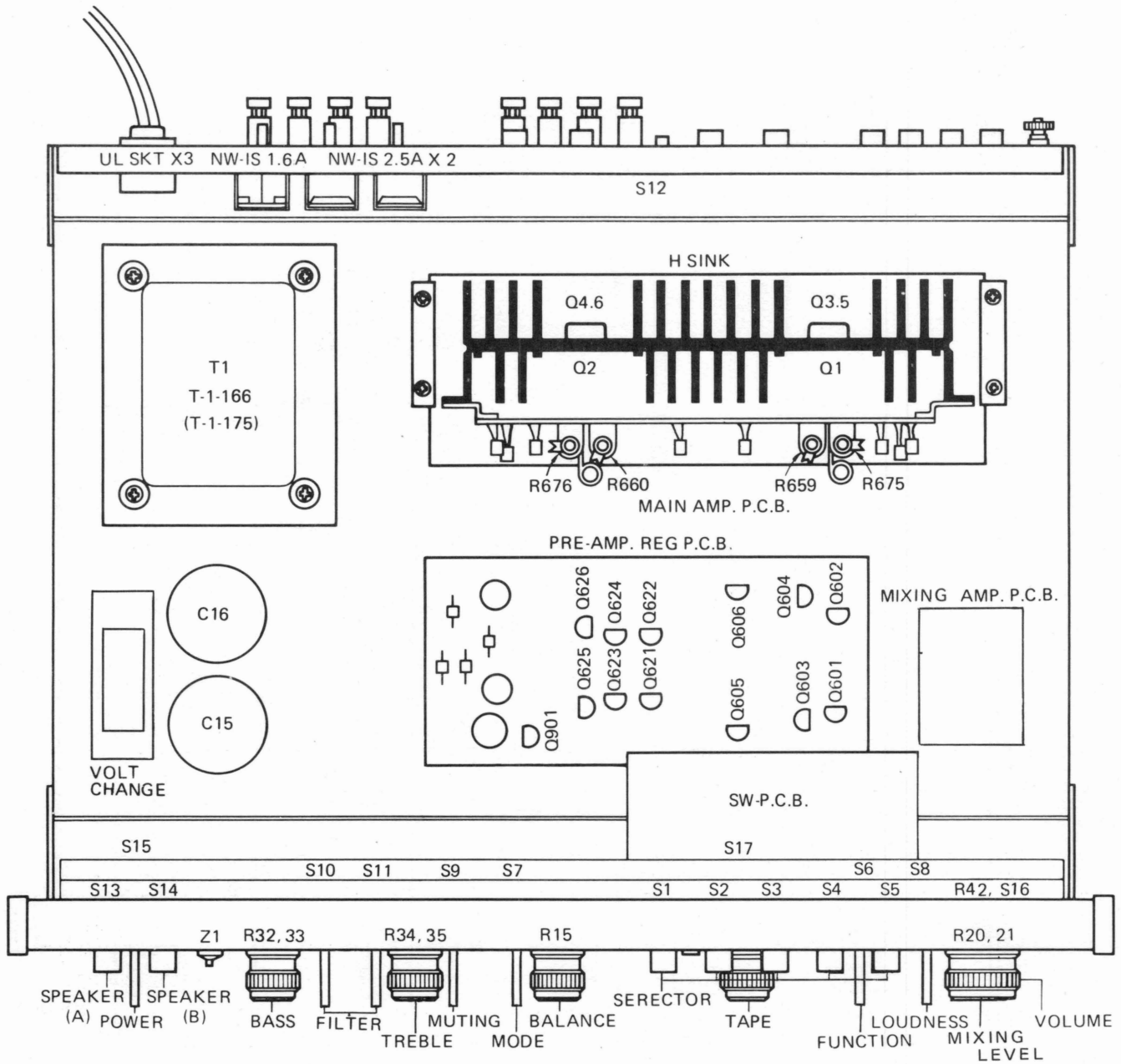
## 2.2 COMPONENT LAYOUT (1)



### CHASSIS ASSEMBLY

| Parts No. | Description           | Symbol  | Parts No. | Description       | Symbol      |
|-----------|-----------------------|---------|-----------|-------------------|-------------|
| 110158 O  | P.T T-1-166           | T1      | 204688 U  | E-CAP 35L6800 MF  | C15, 16     |
| 453032 O  | VOLT CHANGE PLUG      |         | 214477 W  | E-CAP 35R 470 MF  | C20         |
| 453033 O  | VOLT CHANGE SKT       |         | 203106 W  | E-CAP 25R 10 MF   | C21, 22     |
| 248472 Z  | C-CAP 0.0047 MF 1.4KV | C18, 19 | 373682 K  | M-RES 6.8K OHM 1W | R46, 45     |
| 311151 J  | RES 150 OHM 1/4P      | R48     | 560026 S  | D S2HB10 (S3G-1)  | D1, 2, 3, 4 |
| 311103 J  | RES 10 KOHM 1/4P      | R40, 41 |           |                   |             |
| 312105 K  | RES 1M OHM 1/2P       | R47     |           |                   |             |

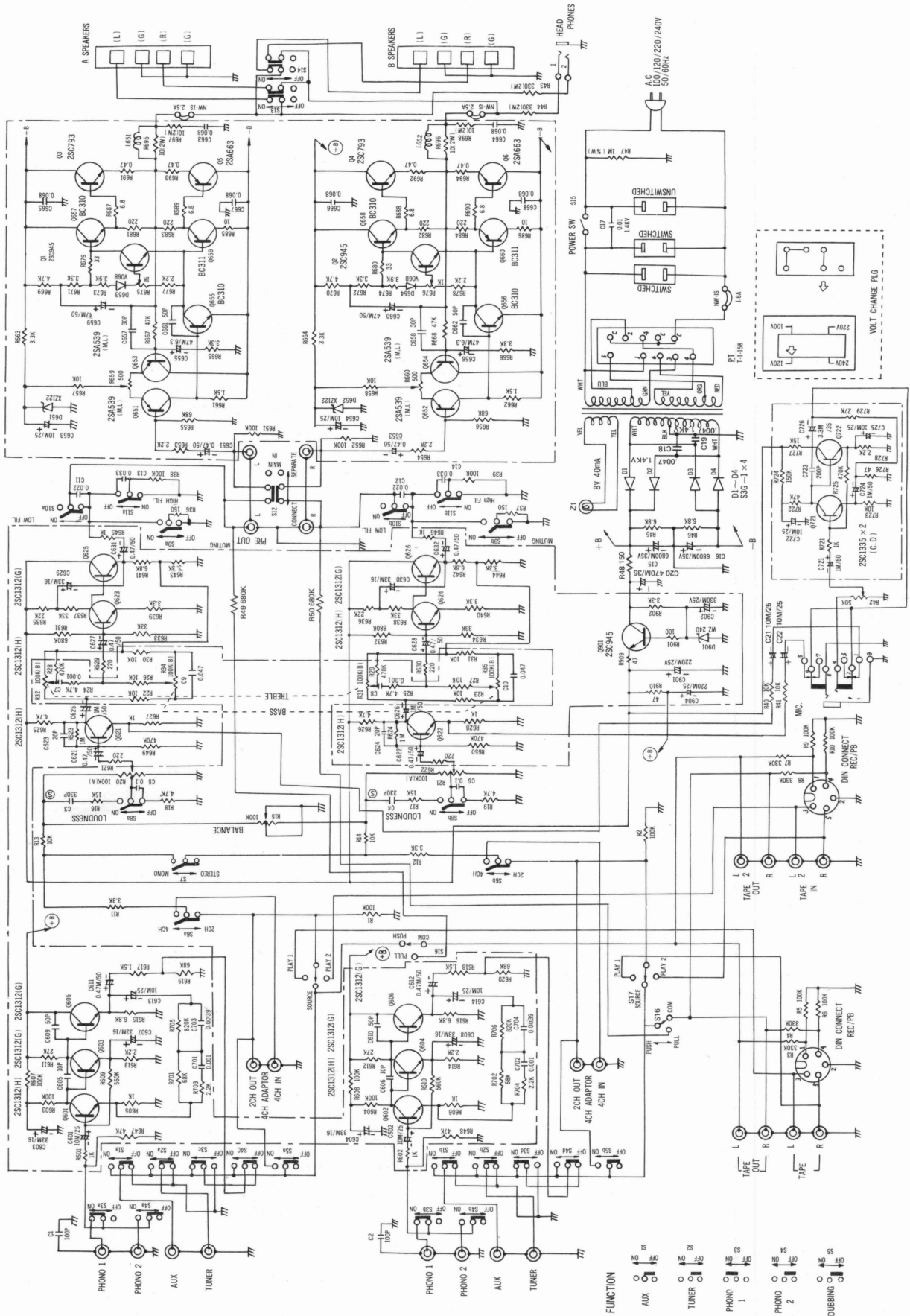
### 2.3 COMPONENT LAYOUT (2)



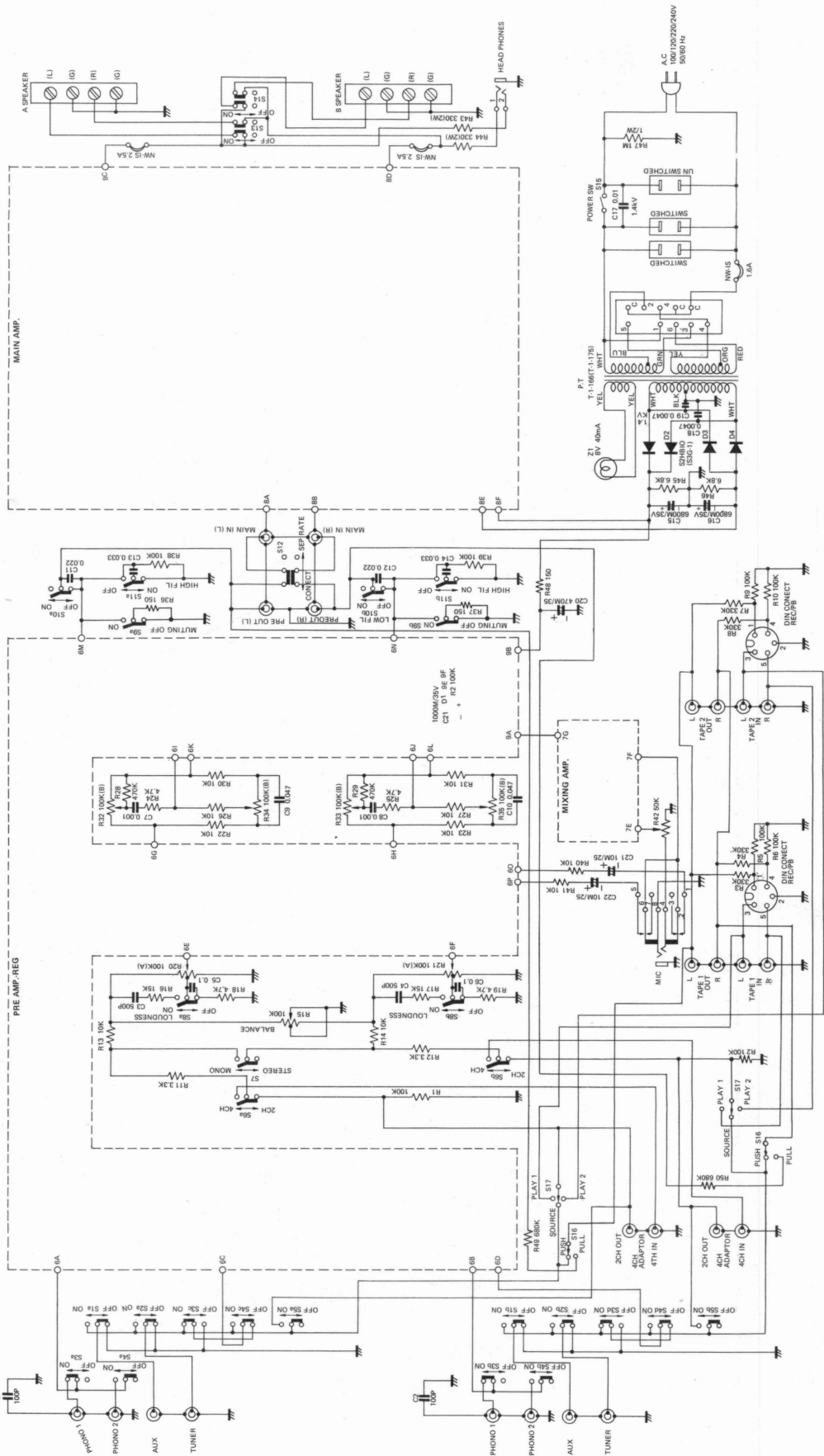
### BACK PLT ASSEMBLY

| Parts No. | Description         | Symbol             | Parts No. | Description       | Symbol             |
|-----------|---------------------|--------------------|-----------|-------------------|--------------------|
| 606002 J  | PLUG CORD KP-2 GRY  |                    | 444045 O  | US PIN TER 4P     | Pre, 4CH IN/OUT    |
| 450006 O  | UL SKT (B)          |                    | 453022 O  | DIN CONCT         |                    |
| 248103 Z  | C-CAP 0.01 MF 1.4KV | C17                | 715202 O  | GND TER NUT       |                    |
| 490052 O  | NW-1S 1.6A          |                    | 715201 O  | GND TER SHIFT     |                    |
| 490053 O  | NW-1S 2.5A          |                    | 311104 J  | RES 100K OHM 1/4P | R1, 2, 5, 6, 9, 10 |
| 446041 O  | PUSH TER 4P         | Speaker            | 311334 J  | RES 330K OHM 1/4P | R3, 4, 7, 8        |
| 444081 O  | US PIN TER 4Px 2    | Input, Tape IN/OUT | 311684 J  | RES 680K OHM 1/4P | R49,50             |
| 402043 O  | SLD SW SL-13-8      | S12                | 245101 M  | C-CAP 100 PF      | C1, 2              |

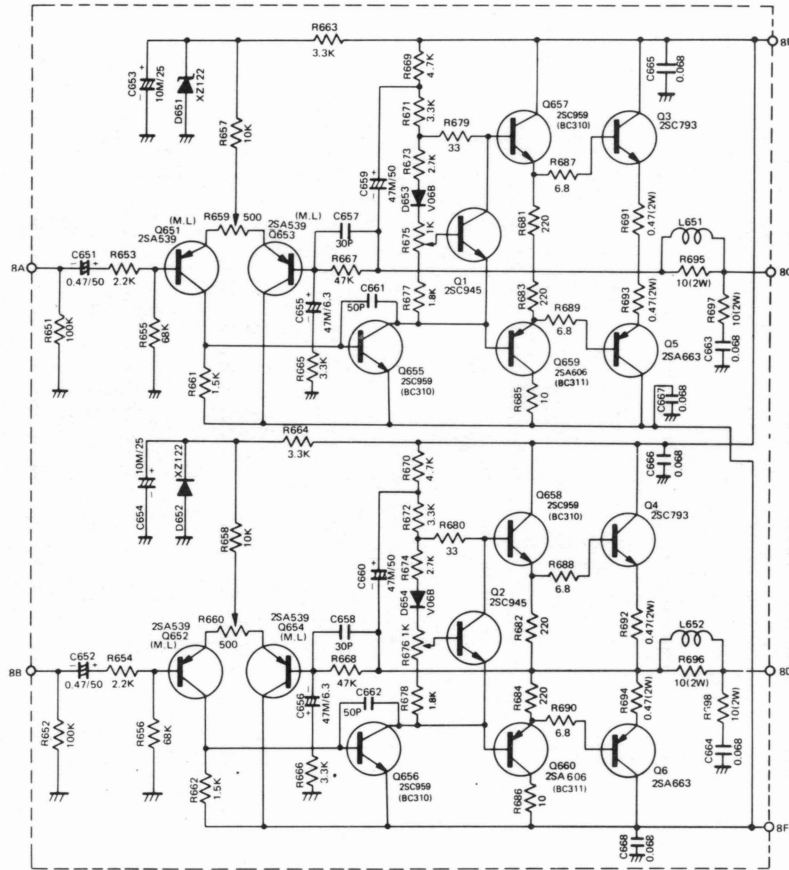
# 2.4 SCHEMATIC DIAGRAM OVERALL



## 2.5 BLOCK DIAGRAM



## 2.6 MAIN AMP. ASSEMBLY

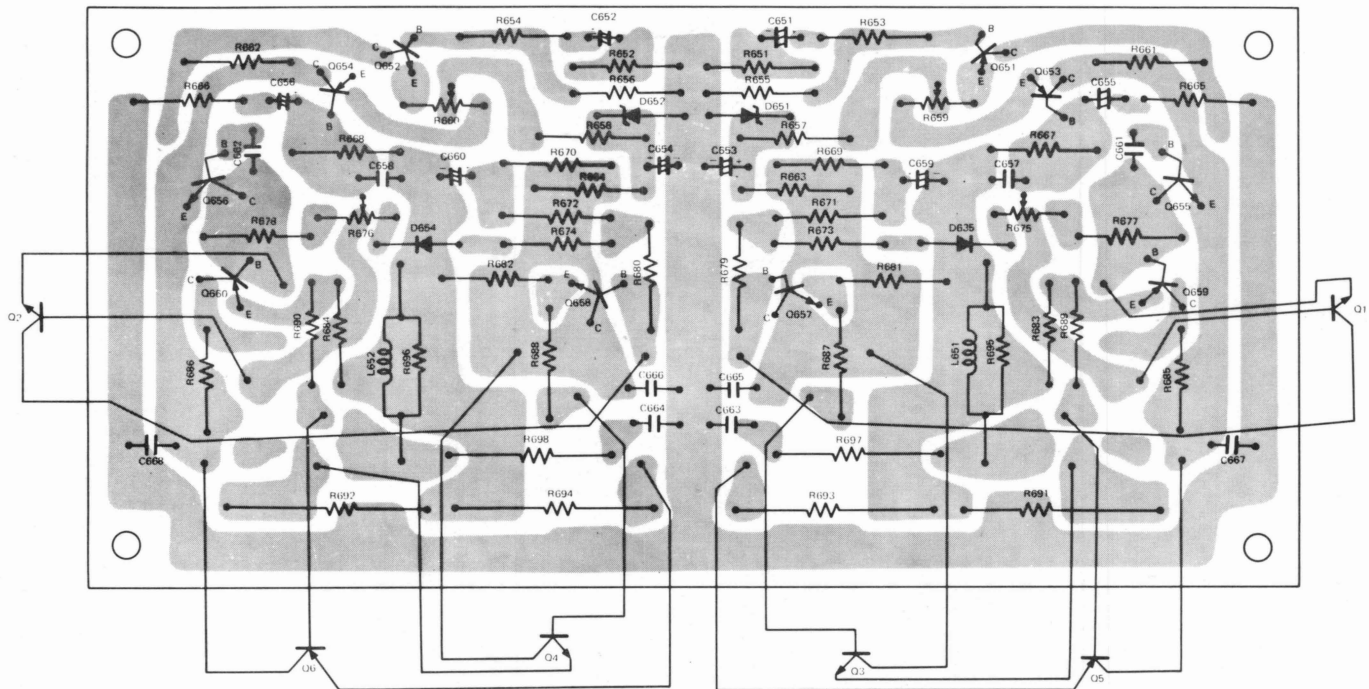


## MAIN AMP PCB ASSEMBLY

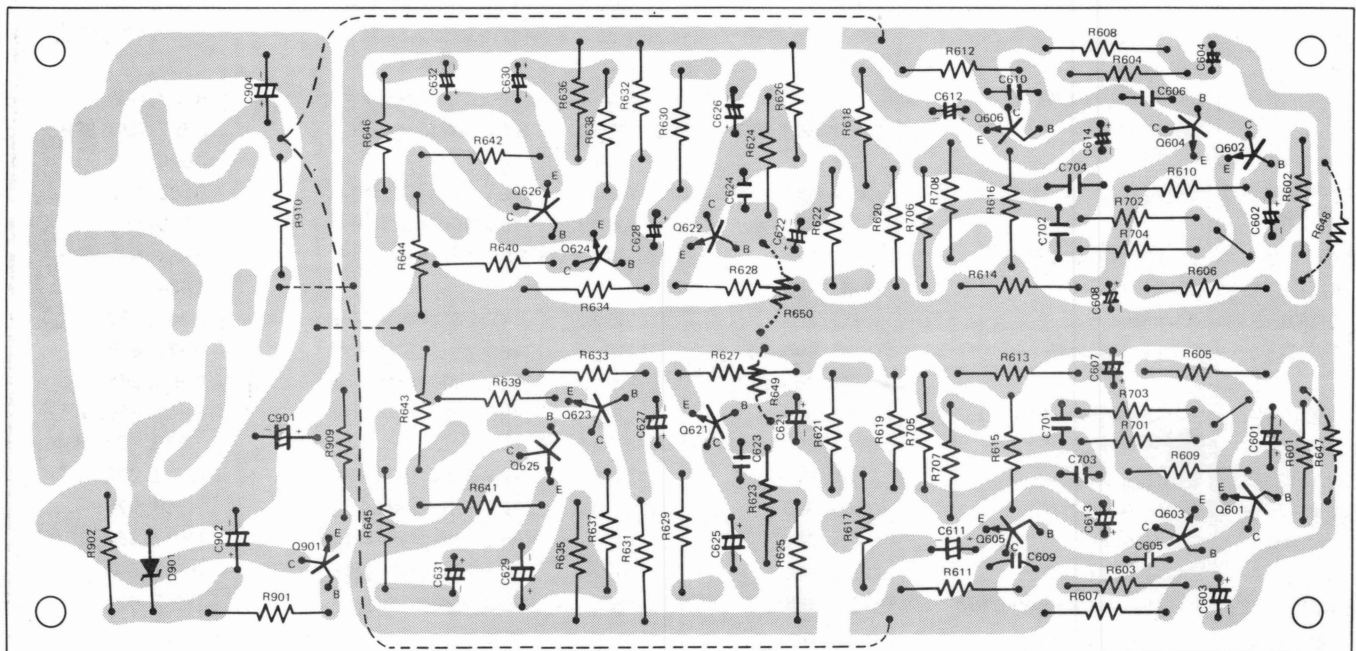
| Parts No. | Description         | Symbol                           | Parts No. | Description       | Symbol                           |
|-----------|---------------------|----------------------------------|-----------|-------------------|----------------------------------|
| 748005 O  | H-SINK              |                                  | 121047 O  | CH. COIL ASS      | L651, 652                        |
| 513025 S  | P-TR 2SC793         | Q3, 4                            | 374100 K  | M-RES 10 OHM 2W   | R695, 696                        |
| 513038 S  | P-TR 2SA663         | Q5, 6                            | 374479 K  | M-RES 0.47 OHM 2W | R691, 692, 693,<br>694           |
| 515045 S  | TR 2SC945           | Q1, 2                            | 374100 K  | M-RES 10 OHM 2W   | R697, 698                        |
| 463012 O  | MAIN AMP PCB        |                                  | 311688 J  | RES 6.8 OHM 1/4P  | R687, 688, 689,<br>690           |
| 514066 S  | TR 2SA539           | Q651, 652, 653,<br>654           | 311100 J  | RES 10 OHM 1/4P   | R685, 686                        |
| 515049 S  | TR 2SC959 (BC 310)  | Q657, 658, 655,<br>656           | 311330 J  | RES 33 OHM 1/4P   | R679, 680                        |
| 514070 S  | TR 2SA606 (BC311)   | Q659, 660                        | 311221 J  | RES 220 OHM 1/4P  | R681, 682, 683,<br>684           |
| 502020 S  | ZD XZ-122           | D651, 652                        | 311152 J  | RES 1.5K OHM 1/4P | R661, 662                        |
| 560023 S  | D V06B              | D653, 654                        | 311182 J  | RES 1.8K OHM 1/4P | R677, 678                        |
| 225683 M  | M-CAP 0.068MF       | C665, 666, 667,<br>668, 663, 664 | 311222 J  | RES 2.2K OHM 1/4P | R653, 654                        |
| 205474 W  | E-CAP 50R0.47MF     | C651, 652                        | 311332 J  | RES 3.3K OHM 1/4P | R665, 666, 671,<br>672, 663, 664 |
| 203106 W  | E-CAP 25R10MF       | C653, 654                        | 311272 J  | RES 2.7K OHM 1/4P | R673, 674                        |
| 200476 W  | E-CAP 6.3R47MF      | C655, 656                        | 311472 J  | RES 4.7K OHM 1/4P | R669, 670                        |
| 205476 W  | E-CAP 50R47MF       | C659, 660                        | 311103 J  | RES 10K OHM 1/4P  | R657, 658                        |
| 245500 M  | C-CAP 50PF          | C661, 662                        | 311473 J  | RES 47K OHM 1/4P  | R667, 668                        |
| 245300 M  | C-CAP 30PF          | C657, 658                        | 311683 J  | RES 68K OHM 1/4P  | R655, 656                        |
| 430044 O  | KVSF10-5BM B500 OHM | R659, 660                        | 311104 J  | RES 100K OHM 1/4P | R651, 652                        |
| 430045 O  | KVSF10-5BM B1K      | R675, 676                        |           |                   |                                  |



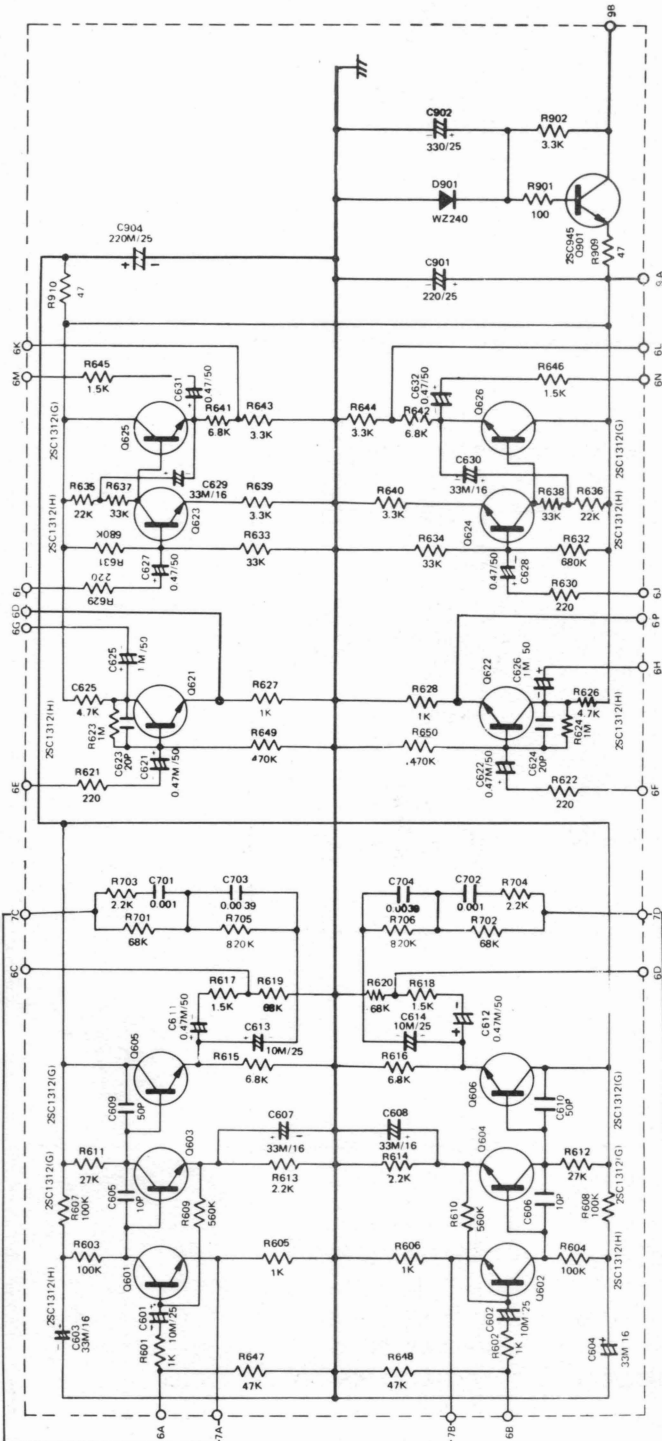
## MAIN AMP ASSEMBLY



## 2.7 PRE AMP-REG ASSEMBLY

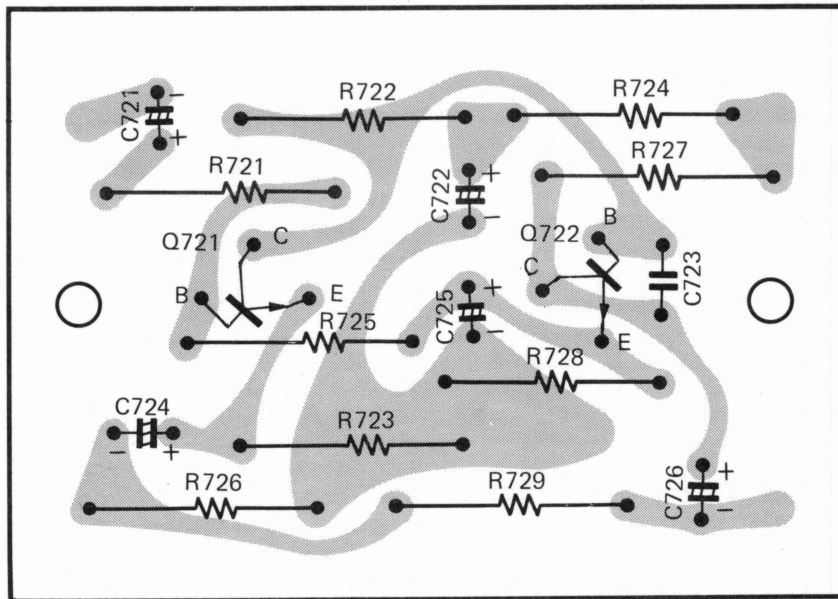
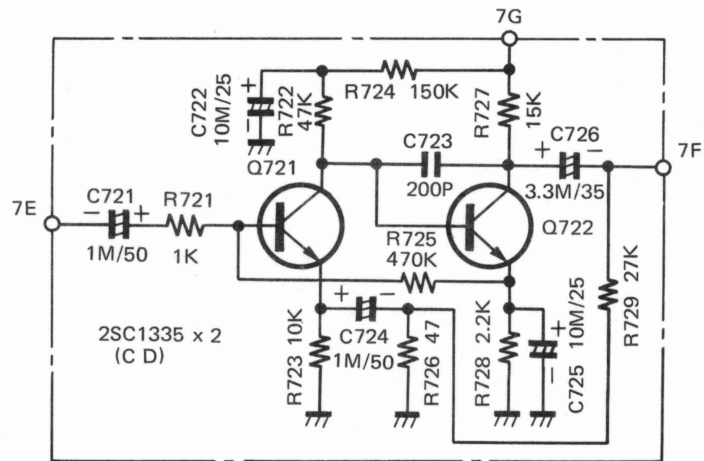


# PRE AMP-REG PCB ASSEMBLY



| Parts No. | Description       | Symbol                                  |
|-----------|-------------------|---|
| 463019 O  | PRE AMP-REG PCB   |   |
| 515063 S  | TR 2SC1312 (H)    | Q601, 602, 621, 622, 623, 624           |
| 515062 S  | TR 2SC1312 (G)    | Q603, 604, 605, 606, 625, 626           |
| 515045 S  | TR 2SC945         | Q901                                    |
| 502021 S  | ZD WZ 240         | D901                                    |
| 245200 M  | C-CAP 20PF        | C623, 624                               |
| 245100 M  | C-CAP 10PF        | C605, 606                               |
| 245500 M  | C-CAP 50PF        | C609, 610                               |
| 225102 K  | M-CAP 0.001       | C701, 702                               |
| 225392 K  | M-CAP 0.0039      | C703, 704                               |
| 202336 W  | E-CAP 16R33MF     | C603, 604, 607, 608, 629, 630           |
| 203106 W  | E-CAP 25R10MF     | C601, 602, 613, 614                     |
| 203337 W  | E-CAP 25R330MF    | C902                                    |
| 205474 W  | E-CAP 50R0.47MF   | C611, 612, 621, 622, 627, 628, 631, 632 |
| 205105 W  | E-CAP 50R1MF      | C625, 626                               |
| 203227 W  | E-CAP 25R220MF    | C904, 901                               |
| 311221 J  | RES 220 OHM 1/4P  | R621, 622, 629, 630                     |
| 311101 J  | RES 100 OHM 1/4P  | R901                                    |
| 311102 J  | RES 1K OHM 1/4P   | R601, 602, 605, 606, 627, 628           |
| 311152 J  | RES 1.5K OHM 1/4P | R617, 618, 645, 646                     |
| 311222 J  | RES 2.2K OHM 1/4P | R613, 614, 703, 704,                    |
| 311332 J  | RES 3.3K OHM 1/4P | R639, 640, 643, 644, 902                |
| 311472 J  | RES 4.7K OHM 1/4P | R625, 626                               |
| 311682 J  | RES 6.8K OHM 1/4P | R615, 616, 641, 642                     |
| 311223 J  | RES 22K OHM 1/4P  | R635, 636                               |
| 311333 J  | RES 33K OHM 1/4P  | R633, 634, 637, 638                     |
| 311473 J  | RES 47K OHM 1/4P  | R647, 648                               |
| 311683 J  | RES 68K OHM 1/4P  | R619, 620, 701, 702                     |
| 311104 J  | RES 100K OHM 1/4P | R603, 604, 607, 608                     |
| 311474 J  | RES 470K OHM 1/4P | R649, 650                               |
| 311684 J  | RES 680K OHM 1/4P | R631, 632                               |
| 311824 J  | RES 820K OHM 1/4P | R705, 706                               |
| 311105 J  | RES 1M OHM 1/4P   | R623, 624                               |
| 311470 J  | RES 47 OHM 1/4P   | R909, 910                               |
| 311273 J  | RES 27K OHM 1/4P  | R611, 612                               |
| 311564 J  | RES 560K OHM 1/4P | R609, 610                               |

## 2.8 MIXING AMP. ASSEMBLY



## MIXING AMP. ASSEMBLY

| Parts No. | Description       | Symbol    | Parts No. | Description          | Symbol    |
|-----------|-------------------|-----------|-----------|----------------------|-----------|
| 461224 O  | MIXING AMP PCB    |           | 311473 J  | RES 47K OHM 1/4P     | R722      |
| 515054 S  | TR 2SC1335 (C, D) | Q721, 722 | 311154 J  | RES 150K OHM 1/4P    | R724      |
| 311470 J  | RES 47 OHM 1/4P   | R726      | 311474 J  | RES 470K OHM 1/4P    | R725      |
| 311102 J  | RES 1K OHM 1/4P   | R721      | 245201 M  | C-CAP 200PF 50V SL   | C723      |
| 311222 J  | RES 2.2K OHM 1/4P | R728      | 205105 W  | E-CAP 50R 1 50V RB   | C721, 724 |
| 311103 J  | RES 10K OHM 1/4P  | R723      | 204335 W  | E-CAP 35R 3.3 35V RB | C726      |
| 311153 J  | RES 15K OHM 1/4P  | R727      | 203106 W  | E-CAP 25R 10 25V RB  | C725, 722 |
| 311273 J  | RES 27K OHM 1/4P  | R729      |           |                      |           |

### 3. TRANSISTOR SPECIFICATIONS

#### TRANSISTOR COMPLEMENT

| TYPE    | Description    | Class of Service | Maximum Ratings (Ta=25°C) (Absolute Values) |                         |                   |                 |                       |                      | Electrical characteristics (Typical Value (Ta=25°C)) |         |           |       |              |        |              |                           |       |                         |       | Manufacture |    |  |            |
|---------|----------------|------------------|---|-------------------------|-------------------|-----------------|-----------------------|----------------------|--|---------|-----------|-------|--------------|--------|--------------|---------------------------|-------|-------------------------|-------|-------------|----|--|------------|
|         |                |                  | Collector to Base Voltage                   | Emitter to Base Voltage | Collector Current | Emitter Current | Collector Dissipation | Junction temperature | Condition of Measurement                             |         | hfe (hFE) | NF dB | fob (fT) MHz | Cob PF | hie (real) Ω | Collector/Cut-off Current |       | Emitter/Cut-off Current |       |             |    |  |            |
|         |                |                  | Vcbo (V)                                    | Vebo (V)                | Ic (mA)           | Ie (mA)         | Pc (mW)               | Tj °C                | Vce (V)  | Ie (mA) |           |       |              |        |              | Icbo (max μA)             | Vcb V | Iebo (max μA)           | VEB V |             |    |  |            |
| 2SA539  | PNP Si E-P     | Medium Amp       | -60   | -5                      | -200              |                 | 250                   | 125                  | -1   | -50     | 80        |       |              | 200    | 8.5          | 20                        | 0.2   | -30                     |       |             |    |  | NEC        |
| 2SA697  | PNP Si E-P     | Medium Amp       | -65   | -4                      | -300              |                 | 500                   | 125                  | -6   | -10     | 70        |       |              | 150    | 10           |                           | 1     | -25                     | 1     |             | -2 |  | mitsubishi |
| 2SC710  | NPN Si E-P     | RF Amp           | 25  | 4                       | 100               |                 | 200                   | 125                  | 6  | 1       | 100       | 3     |              | 200    | 2.0          |                           | 1     | 25                      | 5     | 2           |    |  | mitsubishi |
| 2SC945  | NPN Si E-P     | Small Signal Amp | 50  | 5                       | 100               |                 | 250                   | 125                  | 6  | 1       | 150       |       |              | 250    | 4.5          | 25                        | 0.1   | 40                      |       |             |    |  | NEC        |
| 2SC968  | NPN Si E-P     | Medium Amp       | 50  | 5                       | 500               |                 | 500                   | 175                  | 6  | 1       | 160       |       |              | 60     | 10           | 70                        | 1     | 12                      |       |             |    |  | FUJITSU    |
| 2SC1211 | NPN Si E-P     | Medium Amp       | 65  | 4                       | 300               |                 | 500                   | 125                  | 6  | 10      | 100       |       |              | 150    | 10           |                           | 1     | 25                      | 1     | 2           |    |  | mitsubishi |
| 2SC1335 | NPN Si E-P     | Low Noise Amp    | 30  | 5                       | 100               |                 | 200                   | 125                  | 12   | 2       | 250       | 3     |              | 230    | 1.8          |                           | 0.5   | 18                      | 0.5   | 2           |    |  | HITACHI    |
| 2SC1312 | NPN Si E-P     | Low Noise Amp    | 35  | 4                       | 100               |                 | 200                   | 125                  | 6  | 1       | 800       |       |              | 150    | 2.5          |                           | 0.1   | 25                      | 0.01  | 2           |    |  | mitsubishi |
| BC310   | NPN Si P       | Medium Amp       | 70  | 5                       | 1A                |                 | 3570                  | 200                  | 10   | 10      | 110       |       |              | 20     | 12           |                           | 50    | 40                      |       |             |    |  | SGS        |
| BC311   | PNP Si P       | Medium Amp       | -70   | -5                      | 1A                |                 | 2860                  | 200                  | -10  | -10     | 110       |       |              |        | 13           |                           | 100   | 30                      |       |             |    |  | SGS        |
| BC312   | NPN Si P       | Medium Amp       | 100   | 5                       | 150               |                 | 5W                    | 200                  | 10   | 30      | 130       |       |              |        | 6            |                           | 50    | 75                      | 100mA | 4           |    |  | SGS        |
| 2SA663  | PNP Si E-Messa | Power Output     | -100  | -5                      | 7A                |                 | 60W                   | 150                  | -5   | -1A     | 80        |       |              | 6      | 600          |                           | 1mA   | 50                      | 1mA   | 5           |    |  | TOSHIBA    |
| 2SC793  | NPN Si T-Messa | Power Output     | 100   | 5                       | 7A                |                 | 60W                   | 150                  | 5  | 150     | 50        |       |              | 9      | 230          | 15                        | 1mA   | 30                      |       |             |    |  | TOSHIBA    |
| 2SB536  | PNP Si-EP      | Medium Amp       | -130  | -5                      | -1.5A             |                 | 20W                   | 150                  | -5   | -0.3A   | 100       |       |              |        |              |                           | -1    | -120                    | -1    | -3          |    |  | NEC        |
| 2SD381  | NPN Si-EP      | Medium Amp       | 130   | 5                       | 1.5A              |                 | 20W                   | 150                  | 5  | 0.3A    | 100       |       |              |        |              |                           | 1     | 120                     | 1     | 3           |    |  | NEC        |
| 2SA606  | PNP Si-EP      | Medium Amp       | -100  | -5                      | 700               |                 | 700                   | 150                  | -5   | 200     | 100       |       |              | 115    | 20           | 45                        | -3    | -80                     |       |             |    |  | NEC        |
| 2SC959  | NPN Si-EP      | Medium Amp       | 120   | 5                       | 700               |                 | 700                   | 150                  | 5  | 200     | 100       |       |              | 80     | 17           | 35                        | 3     | 80                      |       |             |    |  | NEC        |

#### RECTIFIER, DIODE, ZENER-DIODE

| Type         | Description            | Maximum Rating (TA = 25°C) |                  |                     |                               |                 |                           | Electrical Characteristics (Typical Value) TA = 25°C |                 |  |              |           |  | CES Type & Manufacture |  |  |                 |
|--------------|------------------------|----------------------------|------------------|---------------------|-------------------------------|-----------------|---------------------------|--|-----------------|--|--------------|-----------|--|------------------------|--|--|-----------------|
|              |                        | Peak Inverse Voltage (V)   | Dissipation (nW) | Output Current (mA) | Inverse Current A             | Surge Current A | Junction Temperature (°C) | Condition  |                 | Condition                              |              | Condition |  |                        |  |  |                 |
| S3G-1        | Si RECTIFIER           | 100                        |                  | 3A                  | V <sub>R</sub> = 100<br>10 μA | 100A            | 175                       |  |                 |  |              |           |  |                        |  |  | SHINDENGEN      |
| IOD-1        | Si RECTIFIER           | 100                        |                  | 1A                  | 50 μA                         | 50A             | -40<br>} +150             |  |                 |  |              |           |  |                        |  |  | IS1664<br>IR    |
| IN60 (IS188) | Ge DIODE POINT CONTACT | Peak 40<br>35              |                  | 50mA                | V <sub>R</sub> = 10V<br>75 μA | 0.5A            | +70                       | γ<br>40MHz   | Min.<br>50%     | C<br>V <sub>R</sub> = 1V               | 0.8PF        |           |  |                        |  |  | (KURAKE)        |
| V06B         | Si VARISTOR            | 100                        |                  | 1.1A                |                               | 25A             | -40<br>} +165             |  |                 |  |              |           |  |                        |  |  | KURAKE (Yellow) |
| XZ-122       | Si ZENER DIODE         |                            | 500mW            |                     | 1 μA                          |                 | 175                       | V <sub>Z</sub><br>I <sub>Z</sub> = 5mA               | 11.9<br>} 12.6V | R <sub>d</sub><br>I <sub>Z</sub> = 5mA | Max.<br>15 Ω |           |  |                        |  |  | JRC             |
| WZ-240       | Si ZENER DIODE         | 21                         | 500mW            |                     | 1 μA                          |                 | 175                       | V <sub>Z</sub><br>I <sub>Z</sub> = 5mA               | 22.8<br>} 25.2V | R <sub>d</sub><br>I <sub>Z</sub> = 5mA | Max.<br>30 Ω |           |  |                        |  |  | JRC             |
| WZ-130       | Si ZENER DIODE         | 11                         | 500mW            |                     | 1 μA                          |                 | 175                       | V <sub>Z</sub><br>I <sub>Z</sub> = 5mA               | 12.4<br>} 13.6V | R <sub>d</sub><br>I <sub>Z</sub> = 5mA | Max.<br>15 Ω |           |  |                        |  |  | JRC             |
| S-1.5-02     | Si RECTIFIER           | 200                        |                  | 1.5A                |                               | 60A             | -55<br>+125               |  |                 |  |              |           |  |                        |  |  | ORIGIN          |
| S2HB10       | Si RECTIFIER           | 100                        |                  | 8A                  | 10 μA                         | 80A             | -30<br>+150               |  |                 |  |              |           |  |                        |  |  | SHINDENGEN      |

## **4. ALIGNMENT PROCEDURE**

### **4.1 D.C. BALANCE ALIGNMENT**

Adjust R659, R660 and align to make the D.C. voltage of output terminal zero (below  $\pm 100\text{mV}$ ).

### **4.2 IDLING CURRENT ALIGNMENT**

Adjust R675, R676 and align idling current in the limits between 20mA and 30mA when Q3, Q5 and Q4, Q6 are showing no signal.

