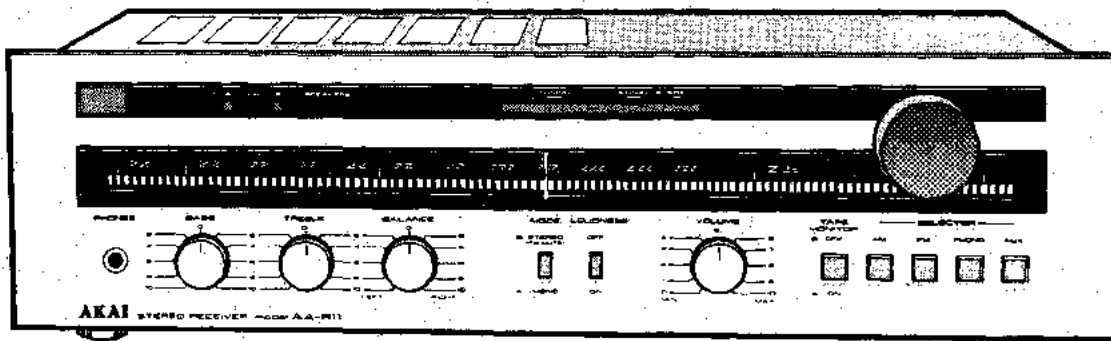
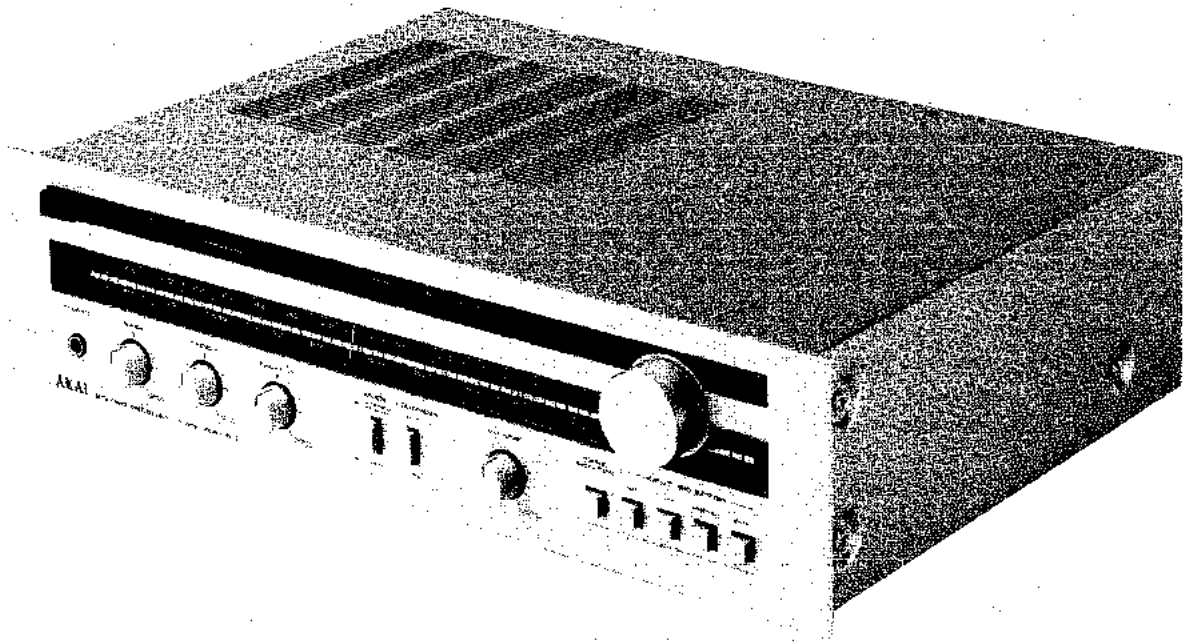


# AKAI SERVICE MANUAL



FM AM STEREO RECEIVER

MODEL **AA-R11**



## FM AM STEREO RECEIVER

# MODEL AA-R11

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# SAFETY INSTRUCTIONS

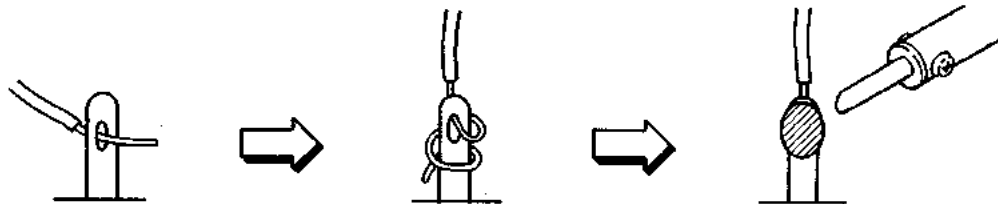
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## SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 Mohms, but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for **C** or **A**, specified insulation resistance should be more than 2.2 Mohms (ground terminals, microphone jacks, headphone jacks, line-in-out jacks etc.)

## PRECAUTIONS DURING SERVICING

1. Parts identified by the  $\Delta$  symbol parts are critical for safety.  
Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.  
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
  - 1) Wires covered with PVC tubing
  - 2) Double insulated wires
  - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
  - 1) Insulation Tape
  - 2) PVC tubing
  - 3) Spacers (Insulating Barriers)
  - 4) Insulation sheets for transistors
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

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SECTION 1

**SERVICE MANUAL**

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For basic adjustments, measuring methods, and operating principles, refer to  
GENERAL TECHNICAL MANUAL.

# I. SPECIFICATIONS

## MODEL AA-R11

### AMPLIFIER SECTION (IHF)

|  |  |
|--|--|
| RATED POWER OUTPUT<br>(BOTH CHANNELS DRIVEN)<br>20 Hz to 20 kHz, 8 OHMS (T.H.D. = 0.3%)<br>1 kHz, 4 OHMS | 15 watts<br>20 watts                                     |
| POWER BAND WIDTH   | 15 Hz to 15 kHz  |
| DAMPING FACTOR (4 OHMS)  | 40   |
| RESIDUAL NOISE   | 0.8 mV   |
| REQUIRED SPEAKER IMPEDANCE<br>A, B/A + B   | 4/8 ohms   |
| INPUT SENSITIVITY/IMPEDANCE<br>PHONO (MM)<br>AUX, TAPE   | 2.2 mV/50 kohms<br>150mV/50 kohms                        |
| S/N (IHF-A)<br>PHONO (MM)<br>AUX, TAPE   | 75 dB<br>85 dB   |
| PHONO MAXIMUM INPUT LEVEL<br>(0.1%, 1 kHz)   | 100 mV   |
| FREQUENCY RESPONSE<br>PHONO (RIAA)<br>AUX, TAPE  | 30 Hz to 15 kHz $\pm$ 1 dB<br>20 Hz to 20 kHz $\pm$ 1 dB |
| TONE CONTROL<br>BASS (70 Hz)<br>TREBLE (10 kHz)  | $\pm$ 10 dB<br>$\pm$ 10 dB                               |
| LOUDNESS CONTROL<br>(VOLUME SET AT -30 dB POSITION)<br>70 Hz/10 kHz                                      | +10/+6 dB  |
| OUTPUT LEVEL IMPEDANCE<br>TAPE REC. OUTPUT (PIN)<br>TAPE REC. OUTPUT (DIN)                               | 150 mV/2.2 kohms<br>35 mV/80 kohms                       |

### FM TUNER SECTION (IHF)

|   |                                |
|---|--------------------------------|
| FREQUENCY RANGE                             | 88 MHz to 108 MHz              |
| USABLE SENSITIVITY (300/75 OHMS)            | 2.0/1.0 $\mu$ V                |
| 50 dB QUIETING SENSITIVITY<br>(MONO/STEREO) | 5.0/50 $\mu$ V                 |
| T.H.D. (MONO/STEREO)                        | 0.1/0.2%                       |
| FREQUENCY RESPONSE                          | 50 Hz to 13 kHz, +0.5, -1.0 dB |
| CAPTURE RATIO                               | 1.5 dB                         |
| SPURIOUS RATIO                              | 80 dB                          |
| IMAGE RATIO                                 | 60 dB                          |
| AM SUPPRESSION                              | 55 dB                          |
| STEREO SEPARATION<br>(50 Hz/1 kHz/10 kHz)   | 35/45/35 dB                    |
| SUB-CARRIER SUPPRESSION                     | 45 dB                          |
| STEREO T.H.D. AT 60 dB, 1 kHz               | 0.2%                           |

### AM TUNER SECTION (IHF)

|                                   |                     |
|-----------------------------------|---------------------|
| FREQUENCY RANGE                   | 520 kHz to 1650 kHz |
| USABLE SENSITIVITY (EXT. ANTENNA) | 25 $\mu$ V          |
| SELECTIVITY                       | 35 dB               |
| IMAGE REJECTION                   | 35 dB               |
| IF REJECTION                      | 35 dB               |
| SPURIOUS REJECTION                | 40 dB               |
| S/N                               | 45 dB               |
| DISTORTION (T.H.D.)               | 1.0%                |

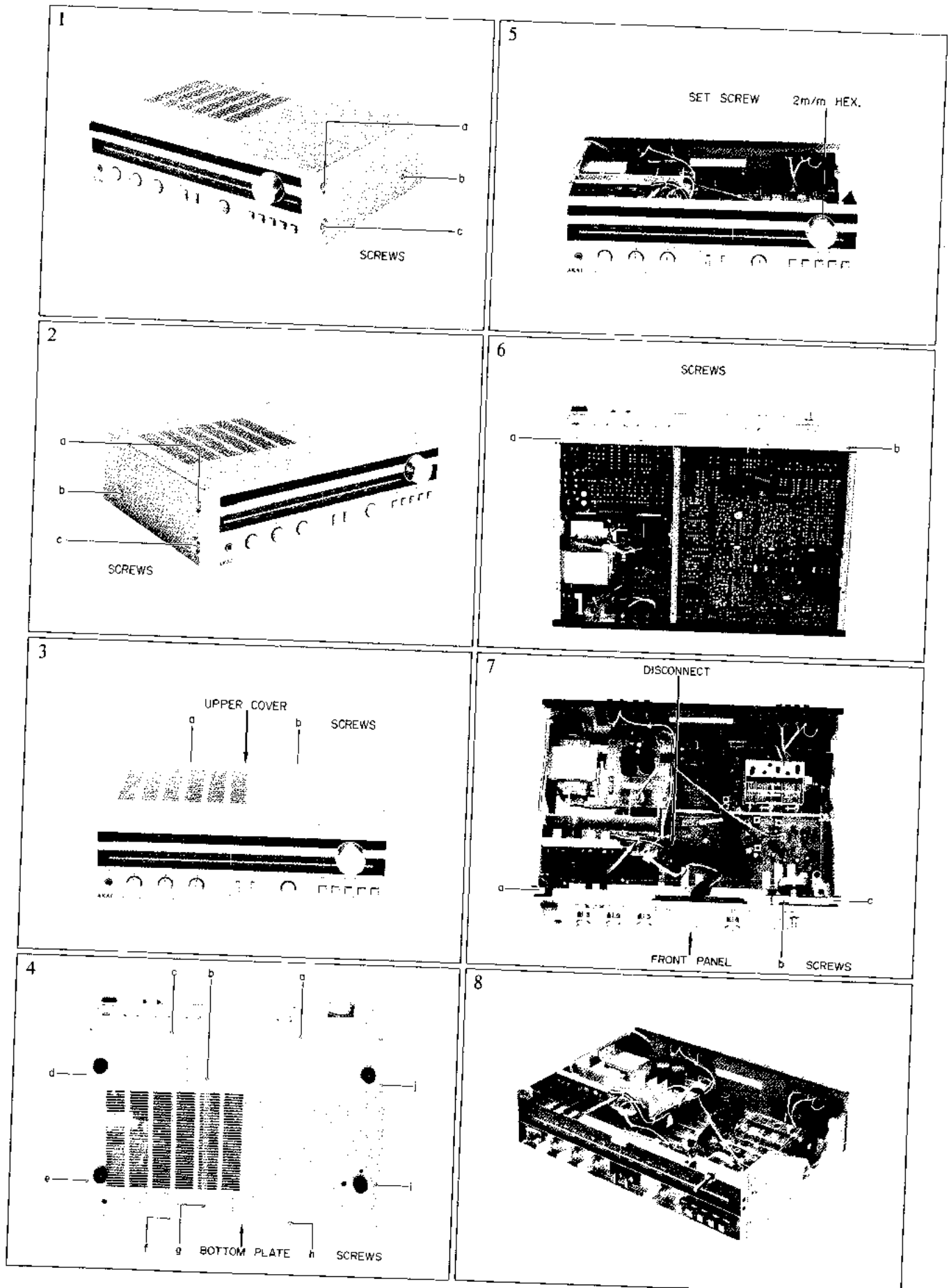
### MISCELLANEOUS

|                    |  |
|--------------------|--|
| POWER REQUIREMENTS | 220V, 50 Hz for Europe<br>240V, 50 Hz for Australia<br>110V/120V/220V/240V, 50/60 Hz switchable for other countries. |
| DIMENSIONS         | 440(W) x 120(H) x 330(D) mm (17.3 x 4.7 x 13.0 inches)   |
| WEIGHT             | 6.8 kg (14.96 lbs)   |

\* For improvement purposes, specifications and design are subject to change without notice.

## II. DISMANTLING OF UNIT

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.



### III. CONTROLS

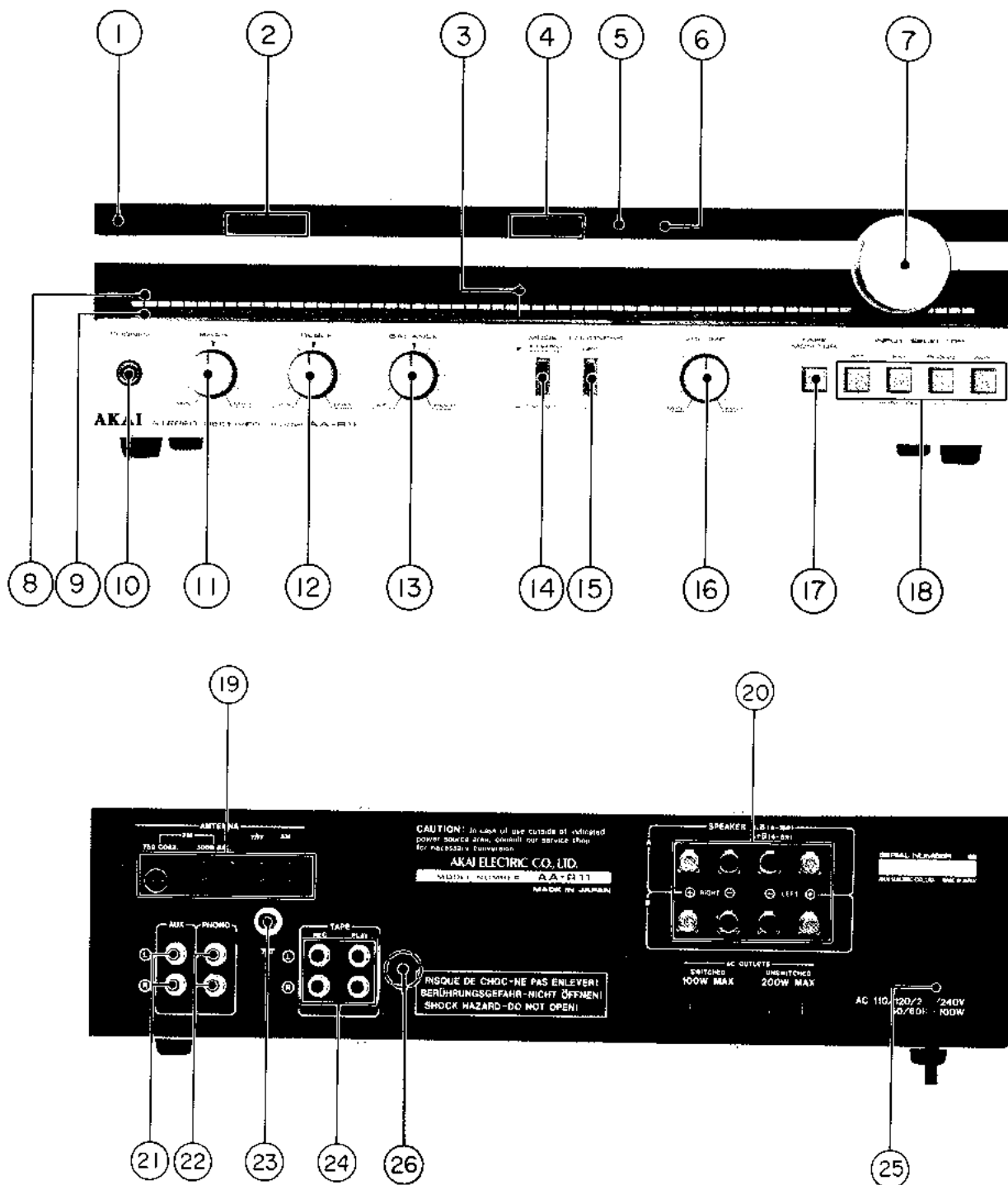


Fig. 1 Controls

- |  |   |
|--|---|
| 1. POWER Switch                                | 14. MODE Selector   |
| 2. SPEAKERS Switches                           | 15. LOUDNESS Switch   |
| 3. Frequency Indicator                         | 16. VOLUME Control  |
| 4. FM Centre TUNING Indicator                  | 17. TAPE MONITOR Switch   |
| 5. LED SIGNAL Strength Indicator               | 18. Input SELECTOR Buttons                                      |
| 6. FM STEREO Indicator                         | 19. FM and AM ANTENNA Terminals                                 |
| 7. Tuning Knob                                 | 20. SPEAKER "A" and "B" Terminals                               |
| 8. FM Dial Scale                               | 21. AUX Jacks   |
| 9. AM Dial Scale                               | 22. PHONO Jacks   |
| 10. Headphone (PHONES) Jack                    | 23. Ground Terminal ( $\perp$ )                                 |
| 11. BASS Control                               | 24. TAPE Jacks  |
| 12. TREBLE Control                             | 25. Power Cord  |
| 13. Stereo BALANCE Control (L: left, R: right) | 26. DIN Jack (Some models are not equipped with this facility.) |

# VI. PRINCIPAL PARTS LOCATION

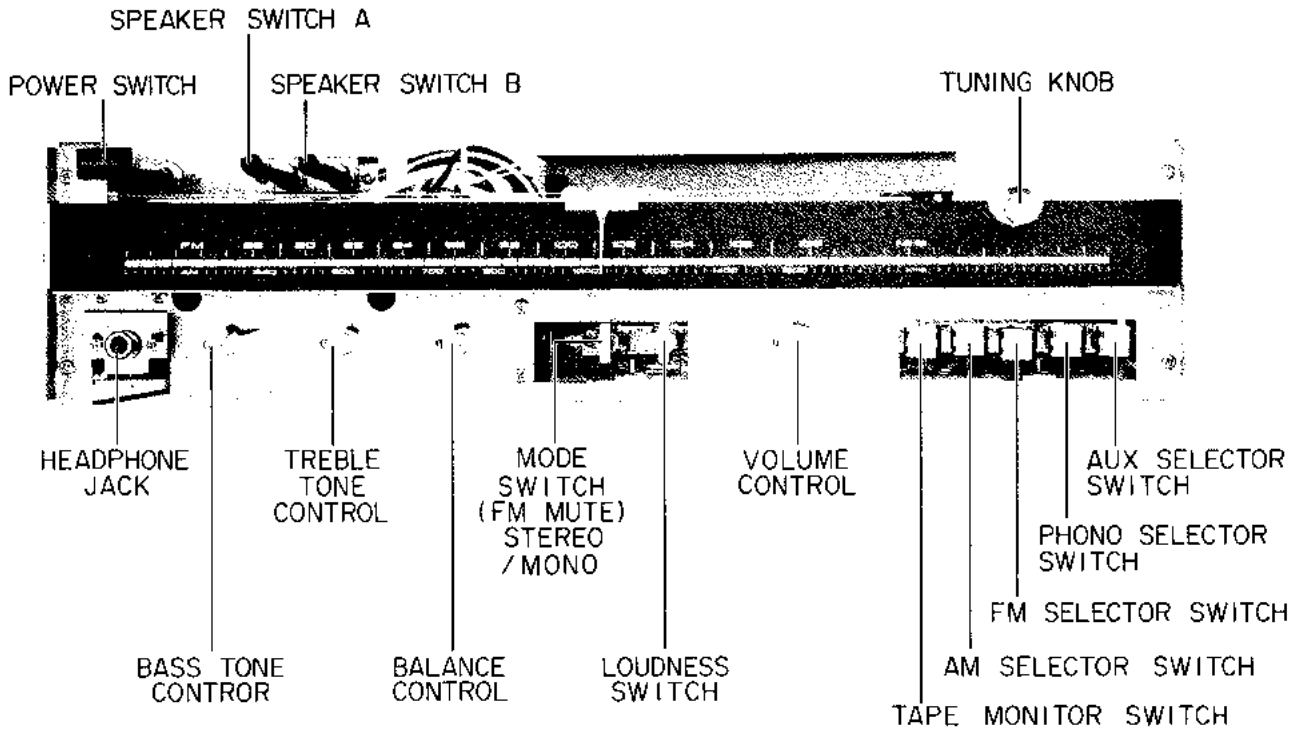


Fig. 2 Front View

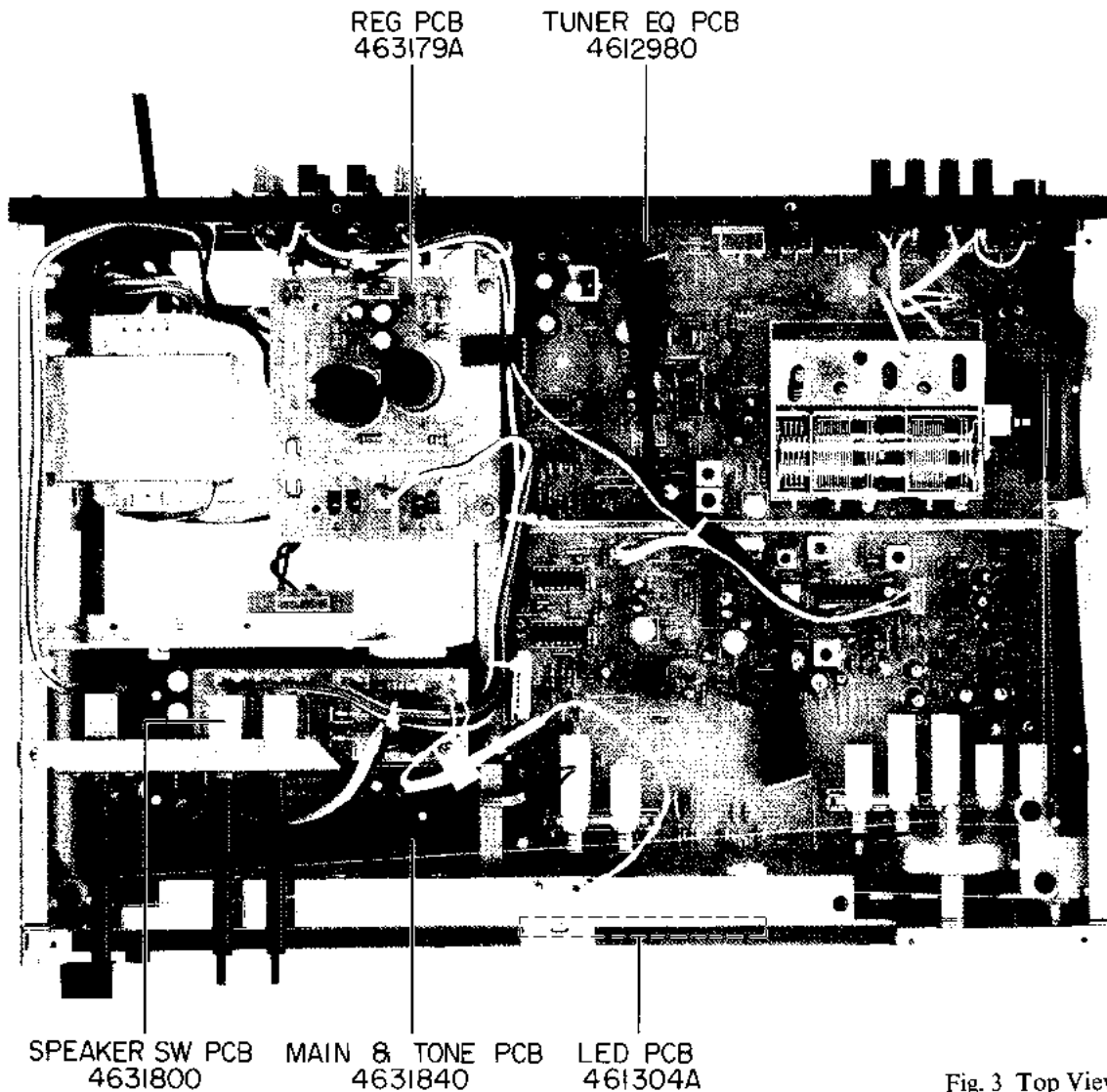


Fig. 3 Top View



## V. VOLTAGE CONVERSION

### Do not Attempt This Conversion Yourself.

Models for Europe are not equipped with this facility. Each machine is preset at the factory according to destination, but some machines can be set to 110V, 120V, 220V or 240V as required. If your machine's voltage can be converted, refer the following voltage conversion to a qualified Service Repair Shop or professional service personnel.

1. Disconnect power cord.
2. Loosen holding screws and remove the plate of the Voltage Selector at the bottom of the unit.
3. Turn with a screwdriver until the correct voltage for your area is shown.
4. Loosen holding screws and remove the top panel.
5. Change the fuse located on the power switch PC Board
  - 110V, 120V – 1.25A
  - 220V, 240V – 630 mA

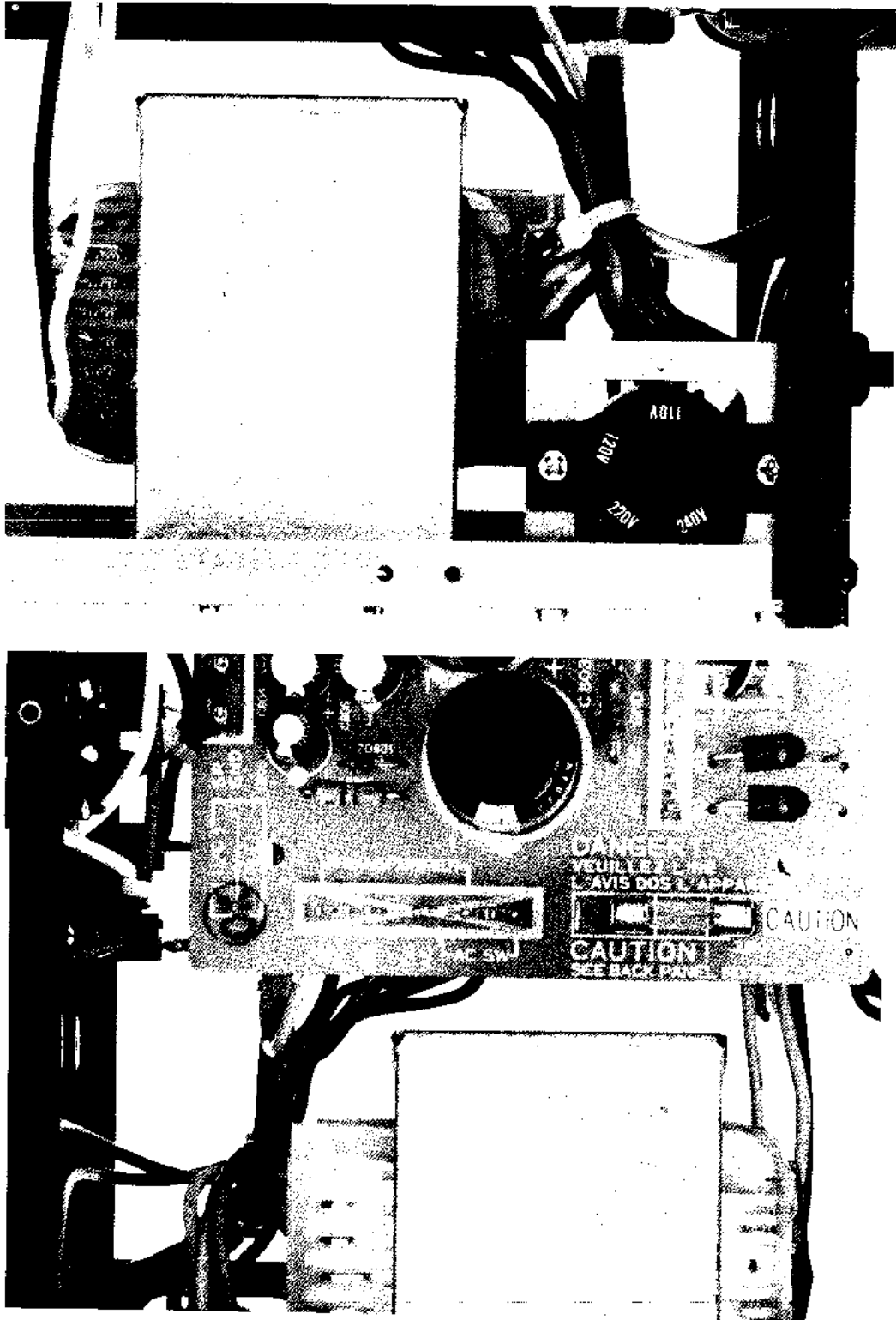


Fig. 4 Voltage Conversion

# VI. TUNER ADJUSTMENT

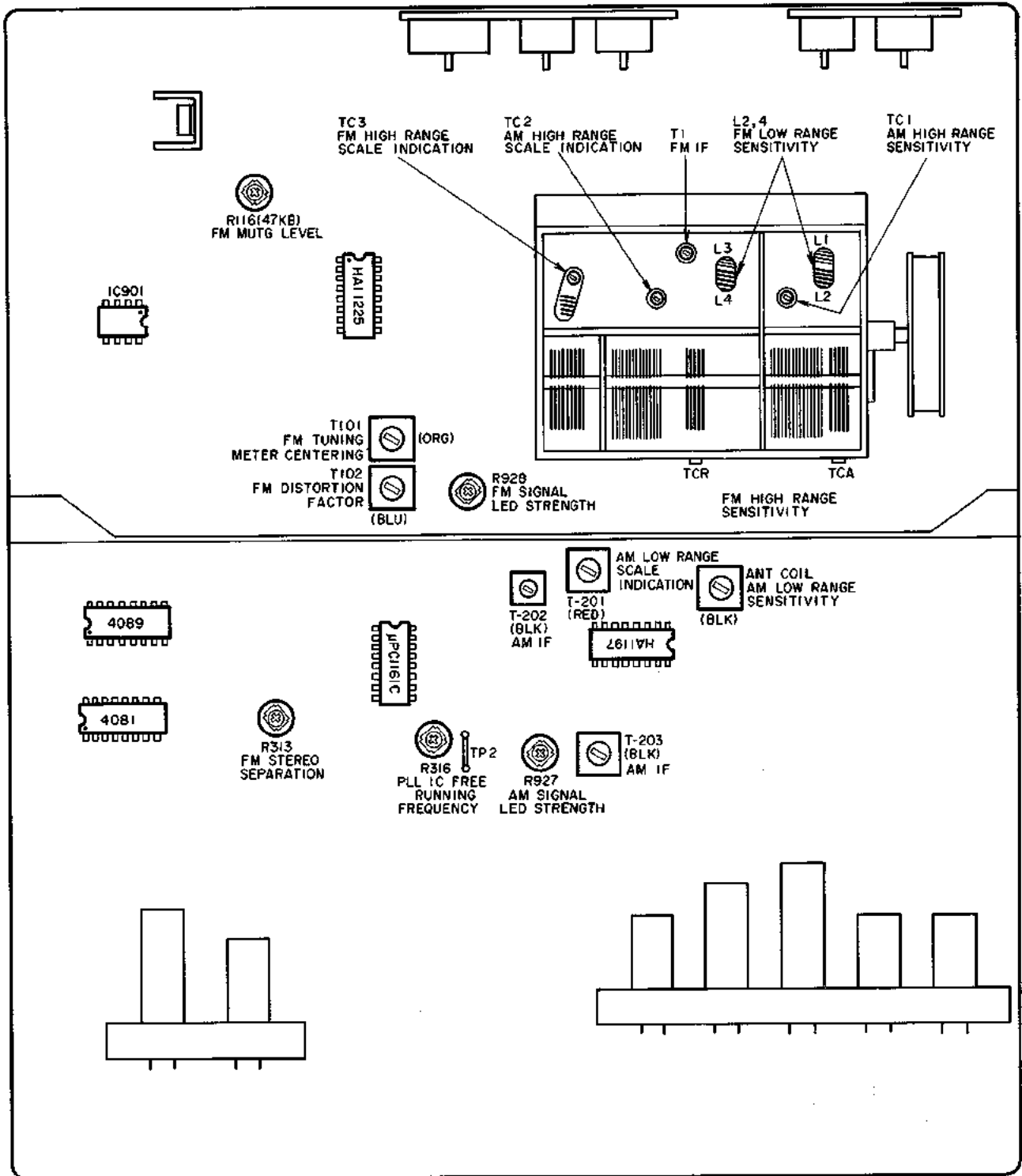


Fig. 5 Tuner EQ P.C Board

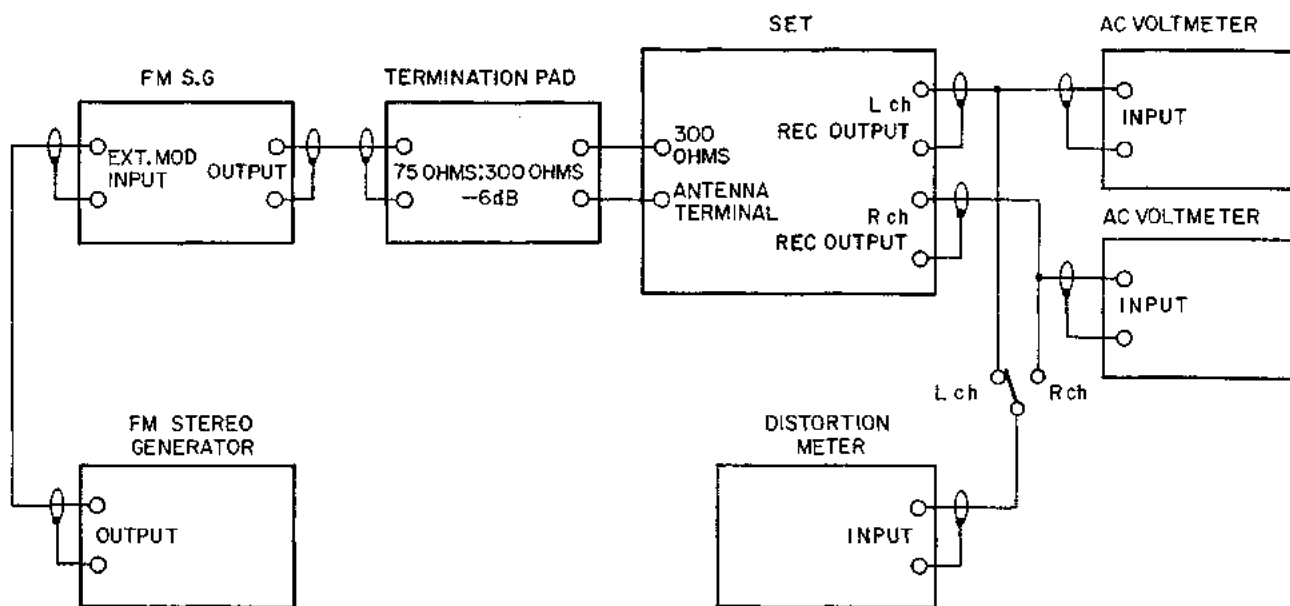


Fig. 6 Instrument Connections

### 1. FM ADJUSTMENT (Refer to Fig. 5, 6)

| Step | Adjustment Item                              | Adjustment Point       | Result                            | Remarks  |
|------|--|------------------------|-----------------------------------|--|
| 1    | Front End IF Coil                            | T1 (Front End)         | Maximum Noise Level               | SELECTOR to FM. Turns only noise without interference from broadcasting.             |
| 2    | Distortion Factor                            | T102 (BLU)             | Less than 0.3% Distortion Factor  | 98 MHz, 60 dB (mono) input. Less than 0.3% on both channels.                         |
| 3    | Tuning LED Centering                         | T101 (ORG)             | Centered Tuning LED must be light | 98 MHz 60 dB (mono) input.   |
| 4    | High Range Scale Indication                  | TC-3 (Front End)       | Maximum Output                    | 108 MHz, 60 dB (mono) input. TUNING INDICATOR to 108 MHz Error: Within $\pm 250$ kHz |
| 5    | Confirmation of Low Range Scale Indication   |                        | Maximum Output                    | 88 MHz, 60 dB (mono) input. TUNING INDICATOR to 88 MHz, Error: Within $\pm 250$ kHz. |
| 6    | High Range Sensitivity                       | TC-R, TC-A (Front End) | Less than 3% Distortion Factor    | 108 MHz, Less than 6 dB (mono) input.  |
| 7    | Low Range Sensitivity                        | L2, L4 (Front End)     | Less than 3% Distortion Factor    | 88 MHz, Less than 6 dB (mono) input. See-NOTE 1, 2.                                  |
| 8    | Mute Level                                   | R116 (47 k $\Omega$ )  | No signal emitted from output     | MUTE SW to ON<br>98 MHz, 30 dB (mono) input.   |
| 9    | PLL IC Free Running Frequency                | R316 (10 k $\Omega$ )  | 76 kHz $\pm 0.1$ kHz              | Frequency Counter to Test Point 2.<br>See NOTE 3.                                    |
| 10   | Stereo Indicator Lighting Confirmation       |                        |                                   | Stereo Indicator must be light.  |
| 11   | Stereo Separation (Left $\rightarrow$ Right) | R313 (470 k $\Omega$ ) | More than 40 dB                   | 98 MHz, 60 dB (stereo), L ch input. Minimum output of R ch.                          |
| 12   | Stereo Separation (Right $\rightarrow$ Left) | R313 (470 k $\Omega$ ) | More than 40 dB                   | 98 MHz, 60 dB (stereo), R ch input. Maximum output of L ch.                          |
| 13   | Signal Strength Indication                   | R928 (10 k $\Omega$ )  | 40 dB $\pm 12$ dB                 | 98 MHz Signal LED is to light up.  |

Chart-1

- NOTES:**
1. When the specified sensitivity of 6 dB cannot be obtained at the two frequency points, 88 MHz and 108 MHz repeat adjustment as in Step 7.
  2. When the distortion factor of the sensitivity still does not comply with the data specifications, adjust by turning the Front End FM IF coil core but not any more than 1/2 turn.
  3. The free Running Frequency of the PLL IC must be exactly 76.00 kHz.

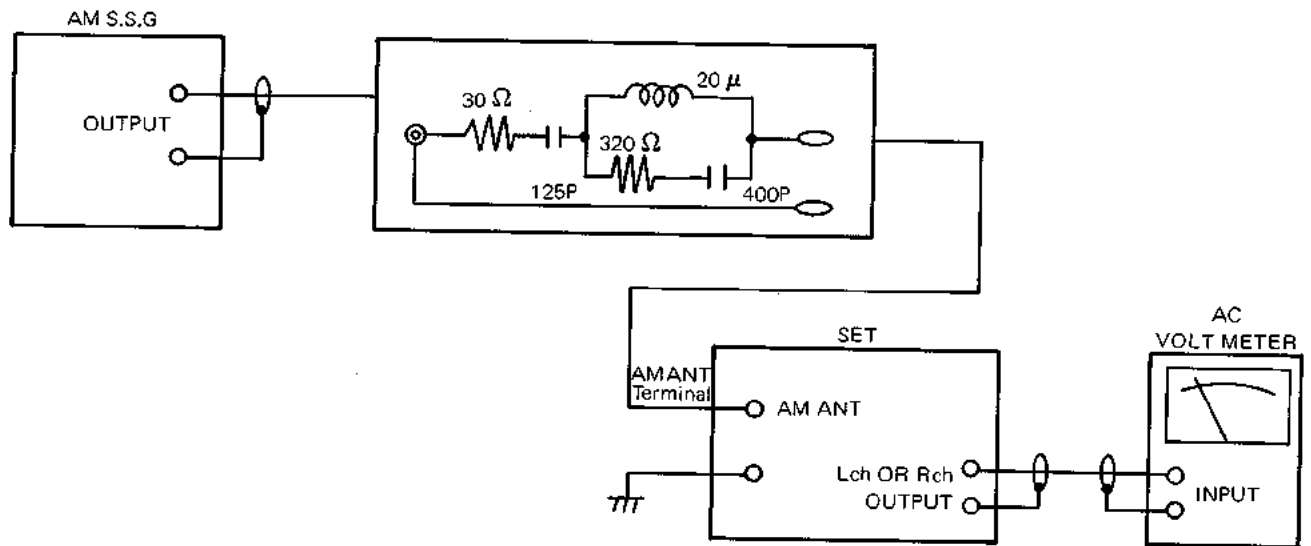


Fig. 7 Instrument Connections

## 2. AM ADJUSTMENT (Refer to Figs. 5, 7)

| Step | Adjustment Item             | Adjustment Point         | Result                                      | Remarks  |
|------|-----------------------------|--------------------------|---|--|
| 1    | AM IF Coil                  | T202 (BLK)<br>T203 (BLK) | Maximum Output                              | 1,400 kHz, 35 dB input   |
| 2    | Low Range Scale Indication  | T201 (RED)               | Maximum Output                              | SELECTOR to AM 520 kHz, 35 dB input. TUNING INDICATOR to 520 kHz. Error: Within 2% |
| 3    | High Range Scale Indication | TC2 (Front End)          | Maximum Output                              | 1,400 kHz, 35 dB input. TUNING INDICATOR to 1,400 kHz. Error: Within 2%            |
| 4    | Low Range Sensitivity       | ANT. Coil (BLK)          | Maximum Output<br>Minimum Distortion Factor | 520 kHz, 35 dB input. Less than 10% Distortion Factor.                             |
| 5    | High Range Sensitivity      | TC1 (Front End)          | Maximum Output<br>Minimum Distortion Factor | 1,400 kHz, 35 dB input. Less than 10% Distortion Factor.                           |
| 6    | Signal Strength Indication  | R927 (10 kB)             | 50 dB $\pm$ 12 dB                           | 1000 kHz LED is to light up.   |

Chart-2

NOTE: For best result, repeat STEPs 1 through 5 two or three times.

## VII. CLASSIFICATION OF VARIOUS P.C BOARDS

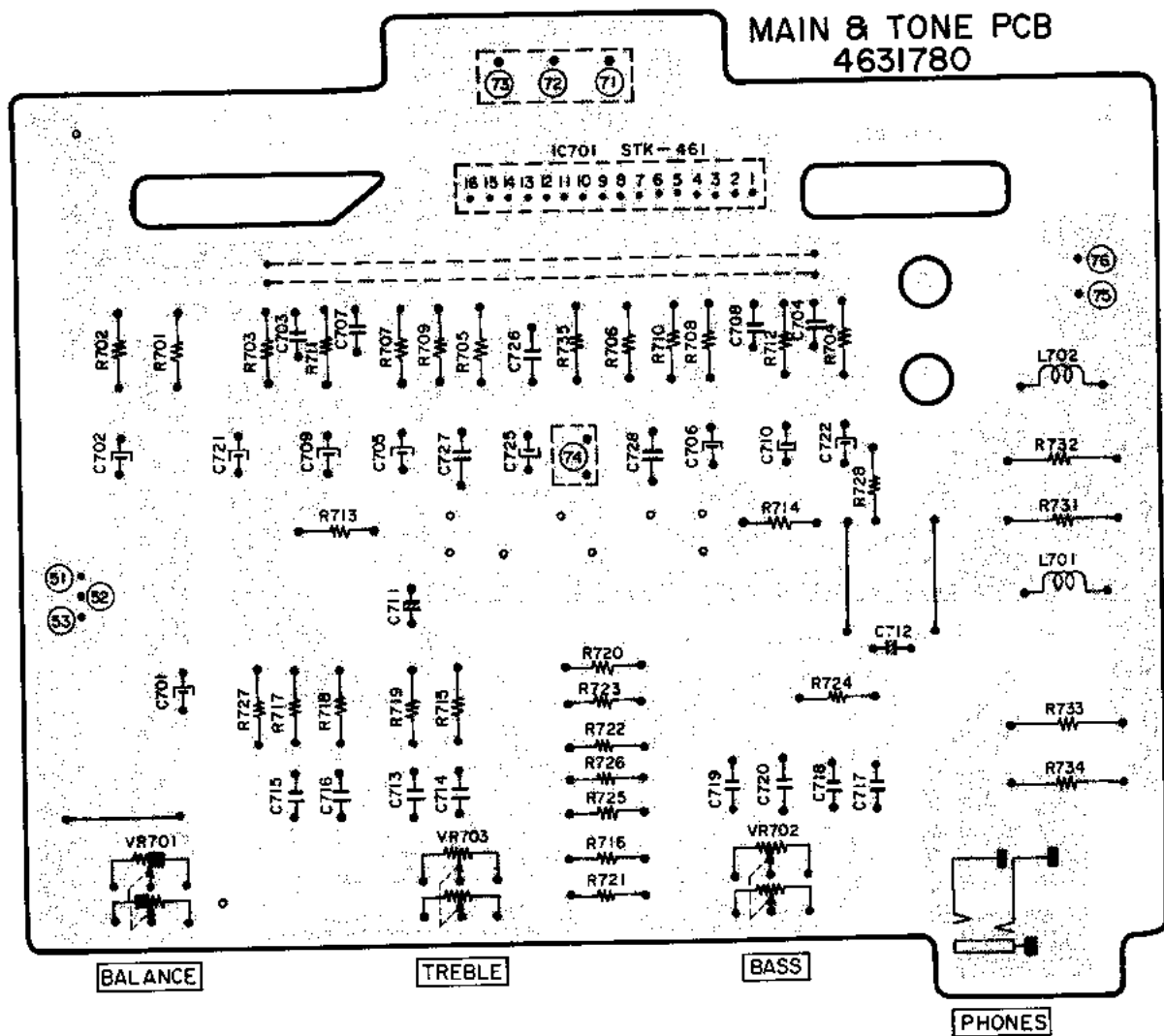
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### 1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

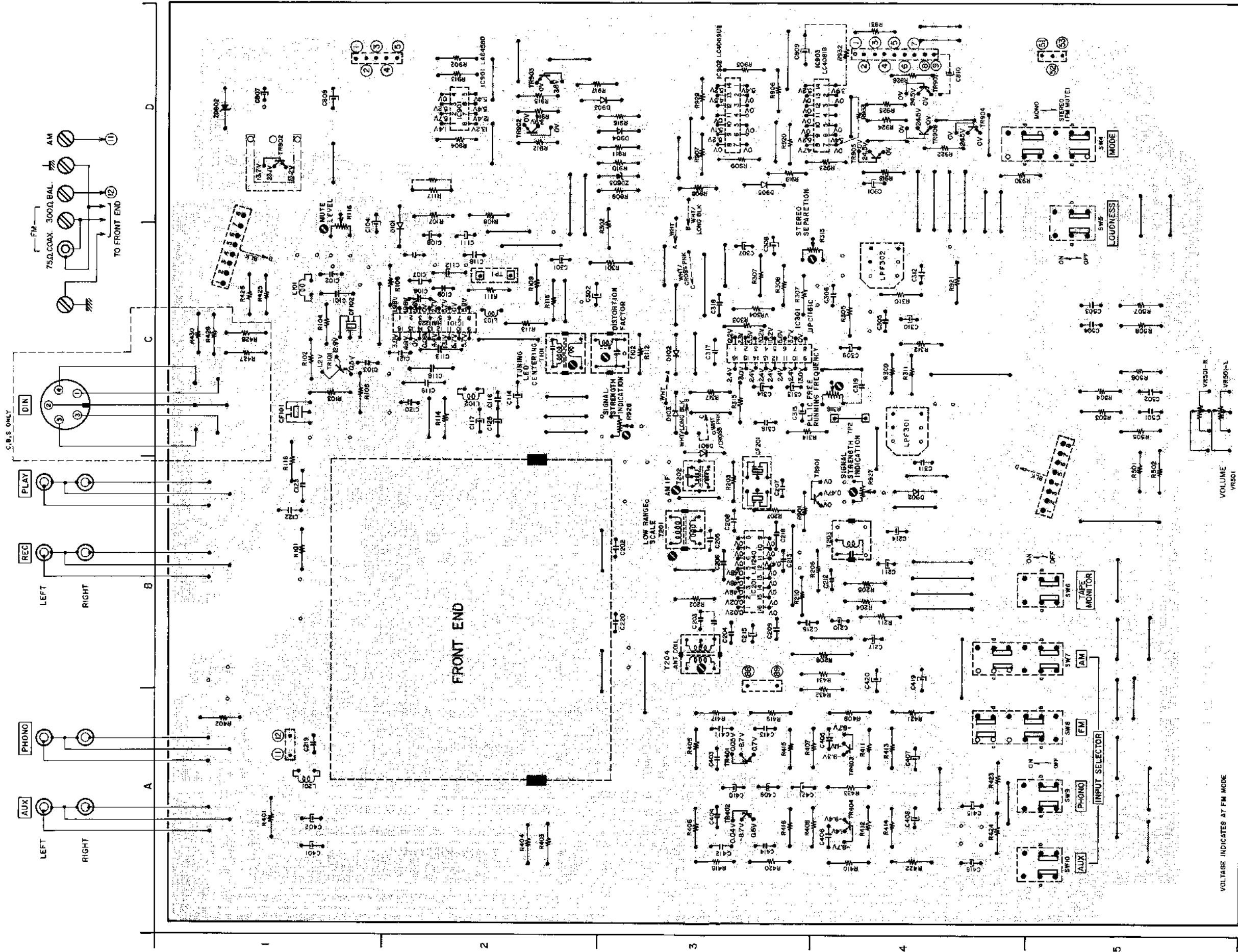
| P.C Board Title       | P.C Board Number |
|-----------------------|------------------|
| TUNER EQ P.C Board    | 4612980          |
| LED P.C Board         | 461304A          |
| REG P.C Board         | 463179A          |
| SPEAKER P.C Board     | 4631800          |
| MAIN & TONE P.C Board | 4631840          |

## 2. COMPOSITION OF VARIOUS P.C. BOARDS

### 1) MAIN & TONE P.C Board 4631780

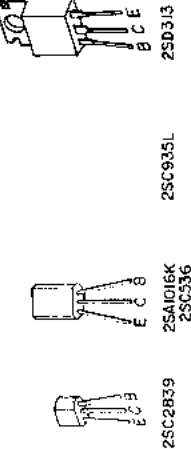


2) TUNER EQ P.C Board 4612980



TUNER EQ PCB 4612980

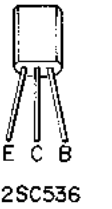
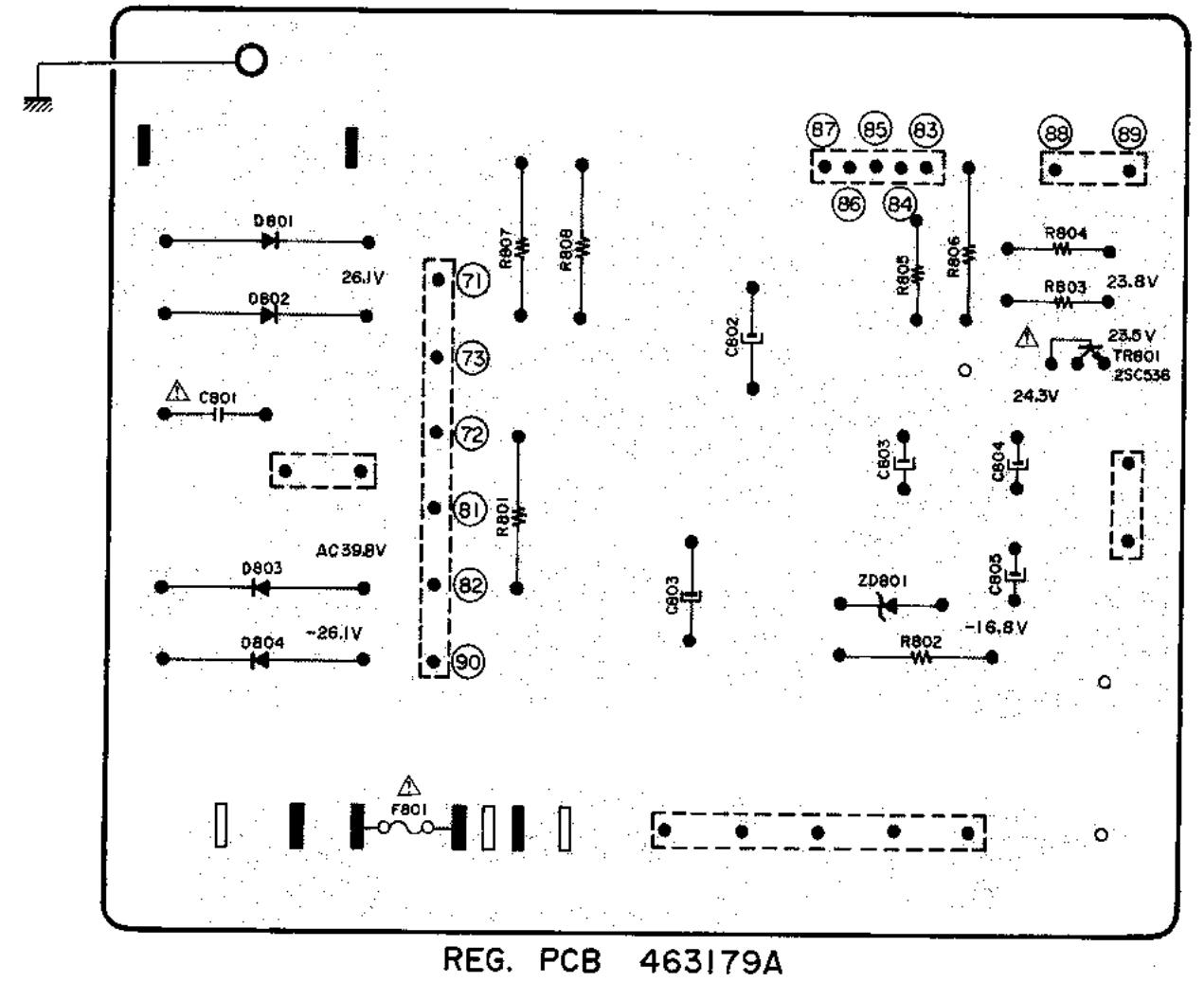
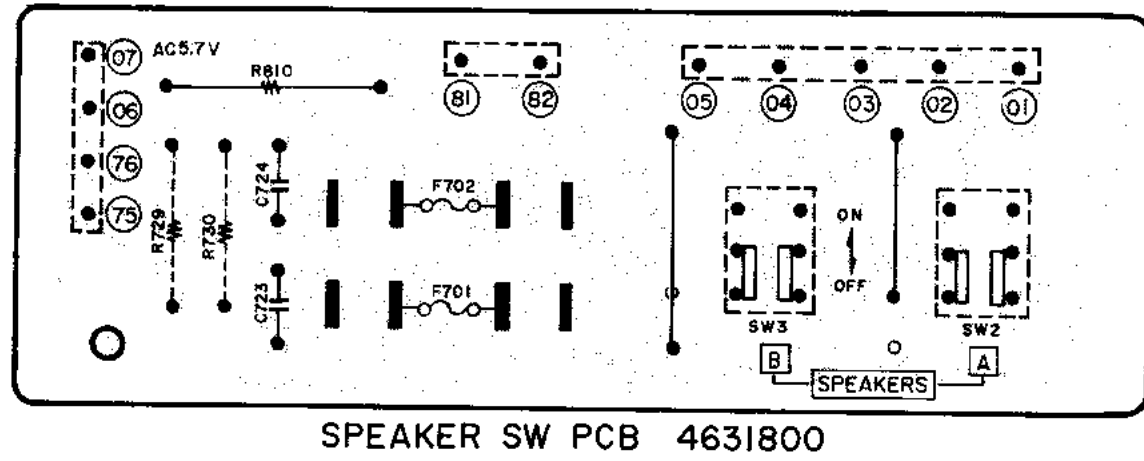
- TR101 25C2839
- TR401,402 25A1016K
- TR403,404 25C935L
- TR901 to 907 25C536
- TR908 25D313



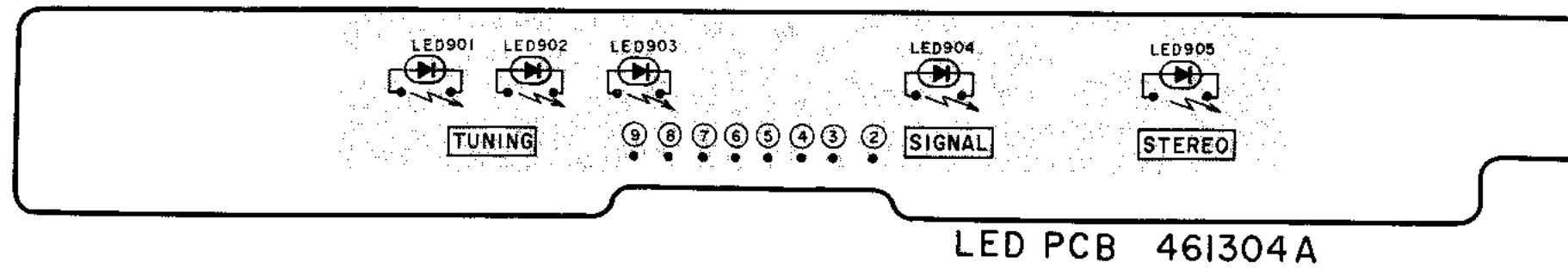
VOLTAGE INDICATES AT FM MODE

| IC    | Pin | Component | Pin | Component |
|-------|-----|-----------|-----|-----------|
| IC101 | C-2 | TR101     | C-1 |           |
| IC201 | B-3 | TR401     | A-3 |           |
| IC301 | C-3 | TR402     | A-3 |           |
| IC901 | D-2 | TR403     | A-4 |           |
| IC902 | D-3 | TR404     | A-4 |           |
| IC903 | D-3 | TR901     | B-4 |           |
|       |     | TR902     | D-2 |           |
|       |     | TR903     | D-2 |           |
|       |     | TR904     | D-4 |           |
|       |     | TR905     | D-4 |           |
|       |     | TR906     | D-4 |           |
|       |     | TR907     | D-4 |           |
|       |     | TR908     | D-1 |           |





WARNING: INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.  
AVERTISSEMENT: A L'INDIQUE LES COMPOSANTS CRITIQUES DE SÛRETÉ. POUR MAINTENIR LE NIVEAU DE SÛRETÉ DE L'APPAREIL, NE REMPLACEZ LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SÛRETÉ QUE PAR DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.



---

SECTION 2

**PARTS LIST**

TABLE OF CONTENTS

|                                |    |
|--------------------------------|----|
| RECOMMENDED SPARE PARTS .....  | 21 |
| 1. TUNER P.C BOARD BLOCK ..... | 21 |
| 2. ASSEMBLY BLOCK .....        | 22 |
| 3. FINAL ASSEMBLY .....        | 23 |
| INDEX .....                    | 24 |

Resistor and Capacitor which are not listed in this parts list, please refer to  
COMMON LIST FOR SERVICE PARTS.

### ATTENTION

1. When placing an order for parts, be sure to list the parts no., model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
3. Because parts number and parts unit supply in the Preliminary Parts List may be partially changed, please use this parts list for all future reference.

### HOW TO USE THIS PARTS LIST

1. This Parts List shows the parts that are considered necessary for repairs. Other parts, such as resistors and capacitors, are shown in the "Common List for Service Parts". Select and order such parts from the "Common List for Service Parts".
2. The Recommended Spare Parts shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not be supplied in principle.
4. How to read list
  - a) Mechanism Block
  - b) P.C Board Block

#### 2. HEAD BASE BLOCK

| REF. NO. | PARTS NO.     | DESCRIPTION             |
|----------|---------------|-------------------------|
| 2-1x     | BH-T2023A320A | HEAD BASE BLOCK GX-F66R |
| 2-2      | HP-H2206A010A | HEAD R/P PR4-8FU C      |
| 2-3      | ZS-477876     | PAN20x03STL CMT         |
| 2-4      | ZS-536488     | BID20x03STL CMT         |
| 2-5      | ZG-402895     | CS ANGLE ADJUST SPRING  |

- SP (Service Parts) Classification
- A small "x" indicates the inability to show that particular part in the Photo or Illustration.
- This number corresponds with the individual parts index number in that figure
- This number corresponds with the Figure Number

#### 6. SYS. CON. P.C BOARD BLOCK

| REF. NO.  | PARTS NO.     | DESCRIPTION                     |
|-----------|---------------|---------------------------------|
| 6-1       | BA-T2034A070A | PC SYS CON BLK GX-F44R          |
| 6-1C1     | EI-324536     | IC HD14049BP                    |
| 6-1C2     | EI-336801     | IC MB8841-564M                  |
| 6-1C3     | EI-331661     | IC SN7405N                      |
| 6-1C4     | EI-336725     | IC M54527P                      |
| 6-TR1to4  | ET-200985     | TR 2SC2603 F,G                  |
| 6-TR5to28 | ET-554657     | TR 2SA733A P,Q                  |
| 6-D1      | ED-318292     | D SILICON H 1S2473T-77 T26      |
| 6-D2to4   | ED-308952     | D GERMA V 1K34A-LR F07          |
| 6-D5to10  | ED-318292     | D SILICON H 1S2473T-77 T26      |
| 6-X1      | EI-318384     | OSC X'TAL NC-18C<br>3.579545MHZ |

- SP (Service Parts) Classification
- This reference numbers corresponds with symbol numbers of Schematic Diagrams.

5. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List. It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index.

### WARNING

▲ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

### AVERTISSEMENT

▲ IF INDIQUE LES COMPOSANTS CRITIQUES DE SURETE POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOMMANDEES PAR LE FABRICANT.

## RECOMMENDED SPARE PARTS

Because, if the parts listed below are on hand, almost any repair va be accomplished, we suggest that you stock these Recommended Spare Parts Items.

| REF. NO. | PARTS NO. | DESCRIPTION                      |
|----------|-----------|----------------------------------|
| 1        | BT-708015 | △ TRANS POWEER T-1-492 (U)       |
| 2        | BT-708014 | △ TRANS POWER T-1-408 (E)        |
| 3        | BT-708016 | △ TRANS POWER T-1-493 (S)        |
| 4        | ED-708060 | D SILICON GP20D-L                |
| 5        | ED-301911 | D SILICON H DS448                |
| 6        | ED-708045 | D ZENER GZA13Z                   |
| 7        | ED-708061 | D ZENER GZA16Z                   |
| 8        | ED-708046 | D ZENER GZA5.1Y                  |
| 9        | EF-708020 | △ FUSE 250V T1.25A (F801) (U)    |
| 10       | EF-708021 | △ FUSE 250V T2.5A (F701, 702)    |
| 11       | EF-708019 | △ FUSE 250V T800MA (F801) (E, S) |
| 12       | EF-708019 | △ FUSE 250V T800MA (F801) (U)    |
| 13       | EI-703843 | IC HA11225                       |
| 14       | EI-293185 | IC LA1240                        |
| 15       | EI-708047 | IC LA6458D                       |
| 16       | EI-708048 | IC LC4069UB                      |
| 17       | EI-708049 | IC LC4081B                       |
| 18       | EI-708057 | IC STK-461                       |
| 19       | EI-703853 | IC UPC1161C                      |
| 20       | EJ-703868 | PHONE J                          |
| 21       | ER-708036 | FILTER CE AA-R11                 |
| 22       | ER-706132 | FILTER CE SF Z450A               |
| 23       | ER-703856 | FILTER LPF VSL-231C              |
| 24       | ES-708064 | △ SW PUSH SDI,1P                 |
| 25       | ES-708055 | SW PUSH 2 THROW AA-R11           |
| 26       | ES-708062 | SW PUSH 2 THROW SUF24            |
| 27       | ES-708054 | SW SELECT AA-R11                 |
| 28       | ET-708053 | TR 2SA1016K G                    |
| 29       | ET-708035 | TR 2SC2839 E                     |
| 30       | ET-708050 | TR 2SC536 G, H                   |
| 31       | ET-635218 | TR 2SC945L K, P, Q, R            |
| 32       | ET-336941 | TR 2SD313 E, F                   |
| 33       | EV-706125 | R S-FIX SR19R 0.15W 473          |
| 34       | EV-706114 | R S-FIX SR19R 0.15W 474          |
| 35       | EV-700302 | R S-FIX SR19R 103                |
| 36       | EV-708058 | VR ROTARY V16L3G3 250KMN         |
| 37       | EV-708059 | VR ROTARY V16L4G3 100KCX2        |
| 38       | EV-708056 | VR ROTARY V16L4G3 250KBX2        |

## 1. TUNER P.C BOARD BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION                    |
|----------|-----------|--------------------------------|
| 1-1      | BA-708033 | PC TUNER BLK AA-R11 (U)        |
| 1-2      | BA-708032 | PC TUNER BLK AA-R11 (E) (E, S) |

### TUNER EQ P.C BOARD

|                |           |                               |
|----------------|-----------|-------------------------------|
| 1-3            | EE-708034 | FRONT END FB111U AA-R11       |
| 1-4            | EJ-701735 | CONNECTOR DIN M0088 5P (E, S) |
| 1-5            | EJ-703842 | PIN J                         |
| 1-IC101        | EI-703843 | IC HA11225                    |
| 1-IC201        | EI-293185 | IC LA1240                     |
| 1-IC301        | EI-703853 | IC UPC1161C                   |
| 1-IC901        | EI-708047 | IC LA6458D                    |
| 1-IC902        | EI-708048 | IC LC4069UB                   |
| 1-IC903        | EI-708449 | IC LC4081B                    |
| 1-TR101        | ET-708035 | TR 2SC2839 E                  |
| 1-TR401, 402   | ET-708053 | TR 2SA1016K G                 |
| 1-TR403, 404   | ET-635218 | TR 2SC945L K, P, Q, R         |
| 1-TR802        | ET-336941 | TR 2SD313 E, F                |
| 1-TR901 to 907 | ET-708050 | TR 2SC536 G, H                |
| 1-D101 to 103  | ED-301911 | D SILICON H DS448             |
| 1-D901 to 905  | ED-301911 | D SILICON H DS448             |
| 1-ZD802        | ED-708045 | D ZENER GZA13Z                |
| 1-ZD803        | ED-708046 | D ZENER GZA5, 1Y              |
| 1-T101         | EO-703846 | COIL FM DET (1) AA-R20        |
| 1-T102         | EO-703847 | COIL FM DET (2) AA-R20        |
| 1-T201         | EO-703808 | COIL OSC AM                   |
| 1-T202         | EO-703932 | COIL AM IFT AA-R20            |
| 1-T203         | EO-701852 | COIL DET AM                   |
| 1-T204         | EO-708044 | COIL ANT AA-R11               |
| 1-L101, 102    | EO-703849 | COIL RC-855 2.2UH M           |
| 1-L103         | EO-703848 | COIL 22UH                     |
| 1-L201         | EO-703849 | COIL RC-855 2.2UH M           |
| 1-CF101, 102   | ER-708036 | FILTER CE AA-R11              |
| 1-CF201        | ER-706132 | FILTER CE SFZ450A             |
| 1-LPF301, 302  | ER-703856 | FILTER LPF VSL-231C           |
| 1-SW4-5        | ES-708055 | SW PUSH 2THROW AA-R11         |
| 1-SW6-10       | ES-708054 | SW SELECT AA-R11              |
| 1-VR510        | EV-708056 | VR ROTARY V16L4G3 250KBX2     |
| 1-R116         | EV-706125 | R S-FIX SR19R 0.15W 473       |
| 1-R207         | ER-324480 | △ R CB H SNP FS RDS 1/4W 470J |
| 1-R209         | ER-333616 | △ R CB H SNP FS RDS 1/2W 151J |
| 1-R313         | EV-706114 | R S-FIX SR19R 0.15W 474       |
| 1-R316         | EV-700302 | R S-FIX SR19R 103             |
| 1-R431, 432    | ER-200940 | △ R CB H SNP FS RDS 1/4W 561J |
| 1-R809         | ER-315062 | R CB H F10 RDS 1/4W 561J      |
| 1-R927, 928    | EV-700302 | R S-FIX SR19R 103             |
| 1-C217         | EC-708043 | C TT V R47M 50.0DC            |
| 1-C313         | EC-708039 | C TT V R22M 50.0DC            |
| 1-C314         | EC-708042 | C TT V 1R0M 50.0DC            |
| 1-C315         | EC-708040 | C TT V 3R3M 25.0DC            |
| 1-C316         | EC-703861 | C STY 471J 50V                |

### MAIN & TONE P.C BOARD

|              |           |                           |
|--------------|-----------|---------------------------|
| 1-JC701      | EI-708057 | IC STK-461                |
| 1-L701, 702  | EO-701714 | COIL CH 1UH               |
| 1-VR701      | EI-708058 | VR ROTARY V16L3G3 250KMN  |
| 1-VR702, 703 | EV-708059 | VR ROTARY V16L4G3 100KCX2 |
| 1-R705, 706  | ER-708038 | R CT 2W R33J              |
| 1-R731, 732  | ER-341940 | △ R OMF H SNP FS 1W 100J  |
| 1-R733, 734  | ER-708037 | △ R OMF H SNP FS 1W 331J  |
| 1-6          | EJ-703868 | PHONE J                   |

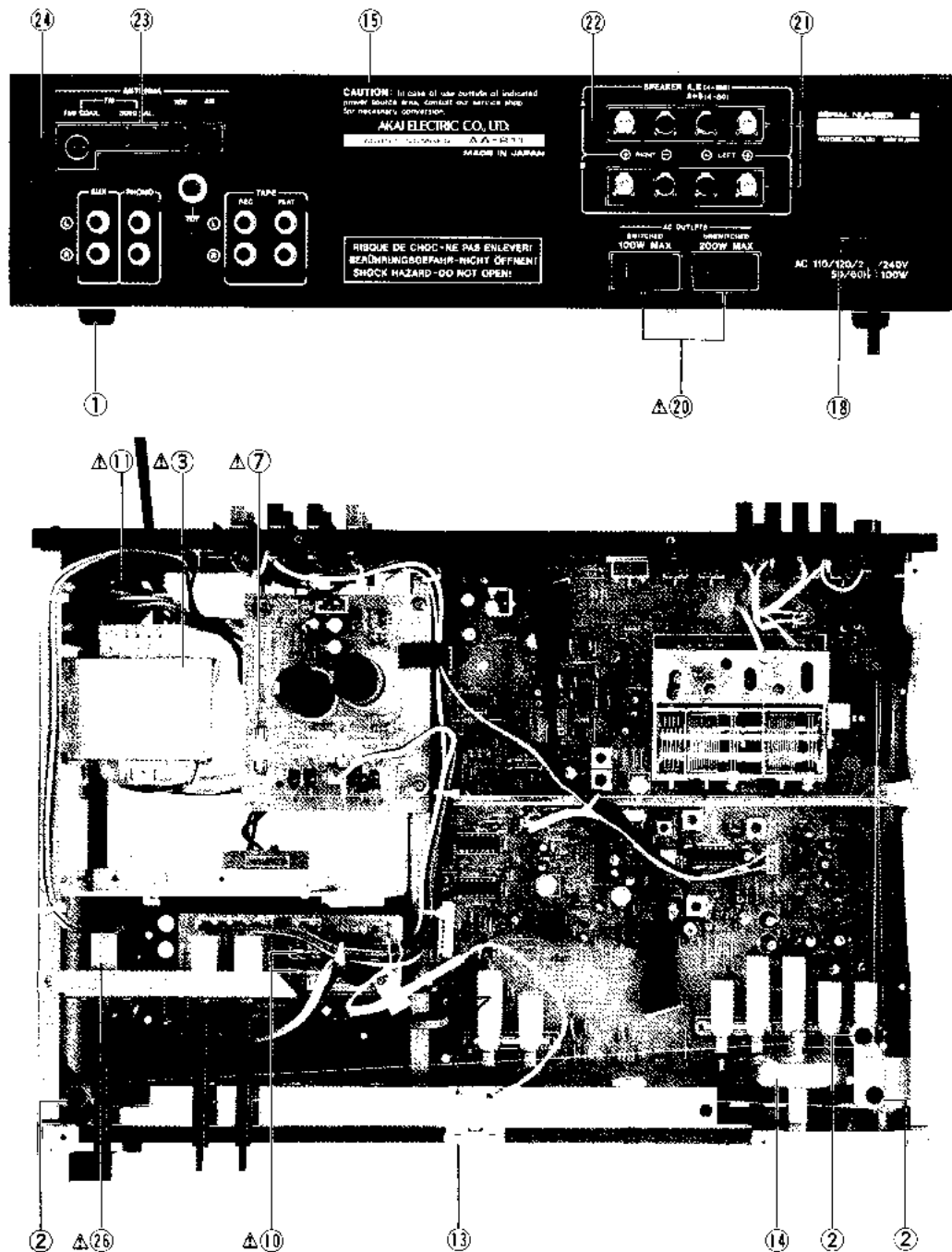
### REGULATE P.C BOARD

|               |           |                          |
|---------------|-----------|--------------------------|
| 1-TR801       | ET-708050 | TR 2SC536 G, H           |
| 1-D801 to 804 | ED-708060 | D SILICON GP20D-L        |
| 1-ZD801       | ED-708061 | D ZENER GZA16Z           |
| 1-R801        | ER-341632 | R OMF H SNP FS 1W 222J   |
| 1-R802        | ER-321620 | △ R OMF H SNP FS 1W 471J |
| 1-R806        | ER-708051 | △ R OMF H SNP FS 1F 390J |
| 1-R807        | ER-313515 | △ R OMF H SNP FS 1W 152J |
| 1-R808        | ER-341632 | △ R OMF H SNP FS 1W 222J |
| 1-C801        | EC-703905 | C CE 103 500V            |
| 1-C802, 803   | EC-708067 | C TT 472M 35.0DC         |

### SP SW P.C BOARD

|             |           |                          |
|-------------|-----------|--------------------------|
| 1-SW2-3     | ES-708062 | △ SW PUSH 2THROW SUF24   |
| 1-R729, 730 | ER-708068 | △ R OMF H SNP FS 1W 4R7J |
| 1-R810      | ER-307245 | △ R OMF H SNP FS 2W 181J |

## ASSEMBLY BLOCK

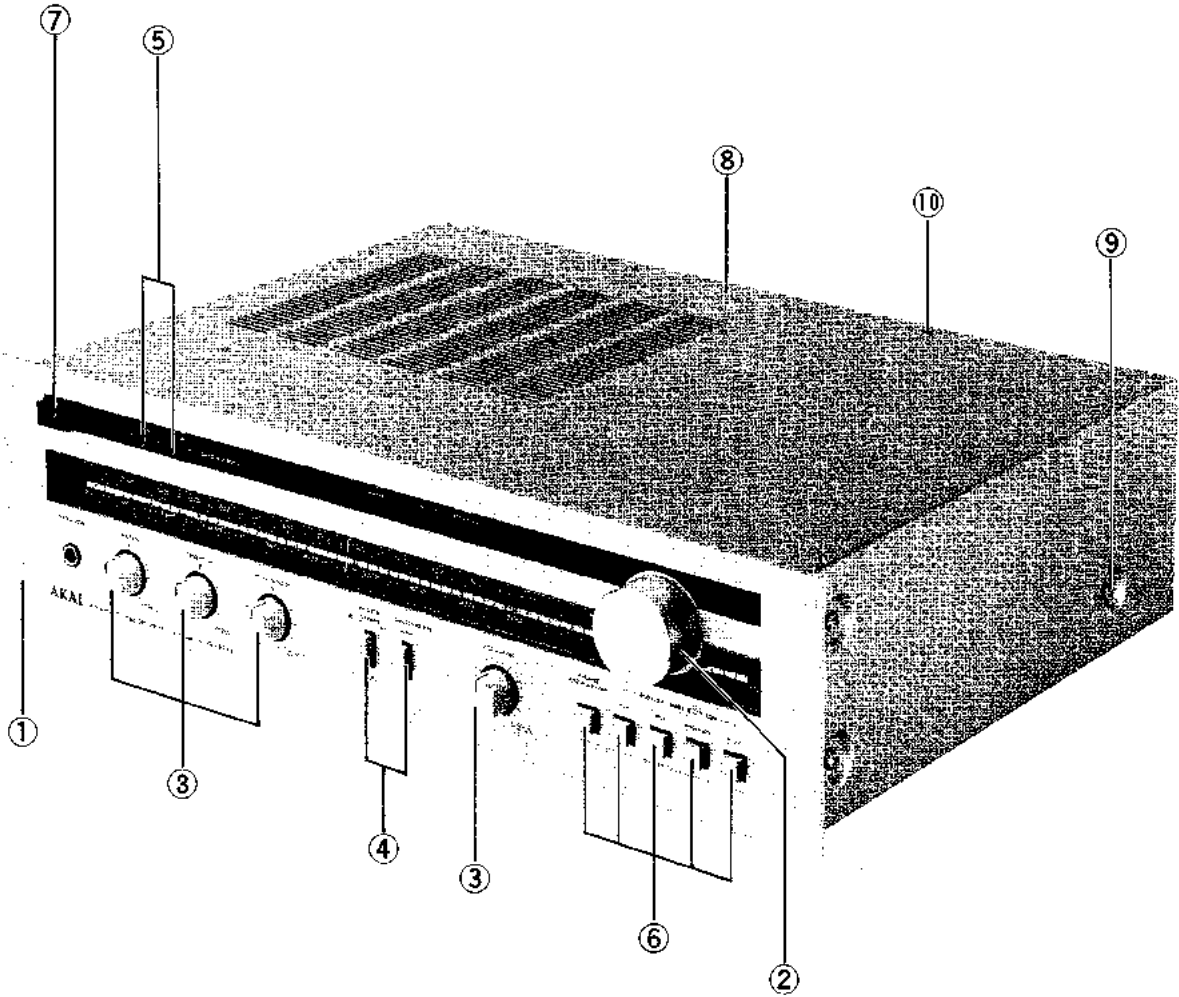


## 2. ASSEMBLY BLOCK

| REF. NO. | PARTS NO. | DESCRIPTION                      | REF. NO. | PARTS NO. | DESCRIPTION                 |
|----------|-----------|----------------------------------|----------|-----------|-----------------------------|
| 2-1      | SA-708012 | FOOT AA-R11                      | 2-15     | BD-708025 | PANEL REAR BLK AA-R11 (U)   |
| 2-2      | TA-708013 | PULLEY AA-R11                    | 2-16x    | BD-708024 | PANEL REAR BLK AA-R11 (E)   |
| 2-3      | BT-708015 | △ TRANS POWER T-1-492 (U)        | 2-17x    | BD-708026 | PANEL REAR BLK AA-R11 (S)   |
| 2-4x     | BT-708014 | △ TRANS POWER T-1-408 (E)        | 2-18     | EZ-703829 | STRAIN RELIEF SR-3P-4 (U)   |
| 2-5x     | BT-708016 | △ TRANS POWER T-1-493 (S)        | 2-19x    | EZ-701834 | STRAIN RELIEF SR4N-4 (E, S) |
| 2-6x     | ZS-708018 | PT PAN40X06STL CMT               | 2-20     | EJ-703831 | △ AC SOCKET AA-R20 (U)      |
| 2-7      | EF-708020 | △ FUSE 250V T1.25A (F801) (U)    | 2-21     | EJ-703832 | SPEAKER TERMINAL            |
| 2-8x     | EF-708019 | △ FUSE 250V T800MA (F801) (U)    | 2-22     | ZS-666336 | T2PAN30X08STL CMT           |
| 2-9x     | EF-708019 | △ FUSE 250V T800MA (F801) (E, S) | 2-23     | EJ-708027 | ANT TERMINAL 5P AA-R11      |
| 2-10     | EF-708021 | △ FUSE 250V T2.5A (F701, 702)    | 2-24     | ZS-666336 | T2PAN30X08STL CMT           |
| 2-11     | EJ-700279 | △ VOLT SELECTOR (U)              | 2-25     | EJ-708029 | TERMINAL 1P AA-R11          |
| 2-12x    | ZG-703804 | SPRING (K) AA-R20                | 2-26     | ES-708064 | △ SW PUSH SDL1P (SW1)       |
| 2-13     | TA-708022 | POINTER AA-R11                   | 2-27x    | FC-708065 | △ C EC 103 400DC (C1)       |
| 2-14     | TA-708023 | DIAL SHAFT                       |          |           |                             |

When ordering parts, please quote Parts Number, Description and Model Number.

## FINAL ASSEMBLY



### 3. FINAL ASSEMBLY

| REF. NO. | PARTS NO. | DESCRIPTION            |
|----------|-----------|------------------------|
| 3-1      | BD-708003 | PANEL FRONT BLK AA-R11 |
| 3-2      | SK-708004 | KNOB TUNING AA-R11     |
| 3-3      | SK-708005 | KNOB 11SL-18D AA-R11   |
| 3-4      | SK-708007 | KNOB VOL AA-R11        |
| 3-5      | SK-708008 | KNOB VOL AA-R11        |
| 3-6      | SK-701815 | KNOB 99SQ              |
| 3-7      | SK-708009 | KNOB POWER AA-R11      |
| 3-8      | SP-708010 | COVER UPPER AA-R11     |
| 3-9      | ZS-316650 | PAN4DX08STL NI3        |
| 3-10     | ZS-708011 | T2PAN30X06STL NI3      |

When ordering parts, please quote Parts Number, Description and Model Number.

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|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|
| BA-708032 | 1-2                   | EV-700302 | 1-R316                |           |                       |           |                       |
| BA-708033 | 1-1                   | EV-700302 | 1-R927, 928           |           |                       |           |                       |
| BD-708003 | 3-1                   | EV-706114 | 1-R313                |           |                       |           |                       |
| BD-708024 | 2-16x                 | EV-706125 | 1-R116                |           |                       |           |                       |
| BD-708025 | 2-15                  | EV-708056 | 1-VR510               |           |                       |           |                       |
| BD-708026 | 2-17x                 | EV-708058 | 1-VR701               |           |                       |           |                       |
| BT-708014 | 2-4x                  | EV-708059 | 1-VR702, 703          |           |                       |           |                       |
| BT-708015 | 2-3                   | EZ-701834 | 2-19x                 |           |                       |           |                       |
| BT-708016 | 2-5x                  | EZ-703829 | 2-18                  |           |                       |           |                       |
| EC-703861 | 1-C316                | SA-708012 | 2-1                   |           |                       |           |                       |
| EC-703905 | 1-C801                | SK-701815 | 3-6                   |           |                       |           |                       |
| EC-708039 | 1-C313                | SK-708004 | 3-2                   |           |                       |           |                       |
| EC-708040 | 1-C315                | SK-708005 | 3-3                   |           |                       |           |                       |
| EC-708042 | 1-C314                | SK-708007 | 3-4                   |           |                       |           |                       |
| EC-708043 | 1-C217                | SK-708008 | 3-5                   |           |                       |           |                       |
| EC-708065 | 2-27x                 | SK-708009 | 3-7                   |           |                       |           |                       |
| EC-708067 | 1-C802, 803           | SP-708010 | 3-8                   |           |                       |           |                       |
| ED-301911 | 1-D901 to 905         | TA-708013 | 2-2                   |           |                       |           |                       |
| ED-301911 | 1-D101 to 103         | TA-708022 | 2-13                  |           |                       |           |                       |
| ED-708045 | 1-ZD802               | TA-708023 | 2-14                  |           |                       |           |                       |
| ED-708046 | 1-ZD803               | ZG-703804 | 2-12x                 |           |                       |           |                       |
| ED-708060 | 1-D801 to 804         | ZS-316650 | 2-12x                 |           |                       |           |                       |
| ED-708061 | 1-ZD801               | ZS-666336 | 2-22                  |           |                       |           |                       |
| EE-708034 | 1-3                   | ZS-666336 | 2-24                  |           |                       |           |                       |
| EF-708019 | 2-8x                  | ZS-708011 | 3-10                  |           |                       |           |                       |
| EF-708019 | 2-9x                  | ZS-708018 | 2-6x                  |           |                       |           |                       |
| EF-708020 | 2-7                   |           |                       |           |                       |           |                       |
| EF-708021 | 2-10                  |           |                       |           |                       |           |                       |
| EI-293185 | 1-IC201               |           |                       |           |                       |           |                       |
| EI-703843 | 1-IC101               |           |                       |           |                       |           |                       |
| EI-703853 | 1-IC301               |           |                       |           |                       |           |                       |
| EI-708047 | 1-IC901               |           |                       |           |                       |           |                       |
| EI-708048 | 1-IC902               |           |                       |           |                       |           |                       |
| EI-708049 | 1-IC903               |           |                       |           |                       |           |                       |
| EI-708057 | 1-IC701               |           |                       |           |                       |           |                       |
| EJ-700279 | 2-11                  |           |                       |           |                       |           |                       |
| EJ-701735 | 1-4                   |           |                       |           |                       |           |                       |
| EJ-703831 | 2-20                  |           |                       |           |                       |           |                       |
| EJ-703832 | 2-21                  |           |                       |           |                       |           |                       |
| EJ-703842 | 1-5                   |           |                       |           |                       |           |                       |
| EJ-703868 | 1-6                   |           |                       |           |                       |           |                       |
| EJ-708027 | 2-23                  |           |                       |           |                       |           |                       |
| EJ-708029 | 2-25                  |           |                       |           |                       |           |                       |
| EO-701714 | 1-L701, 702           |           |                       |           |                       |           |                       |
| EO-701852 | 1-T203                |           |                       |           |                       |           |                       |
| EO-703808 | 1-T201                |           |                       |           |                       |           |                       |
| EO-703846 | 1-T101                |           |                       |           |                       |           |                       |
| EO-703847 | 1-T102                |           |                       |           |                       |           |                       |
| EO-703848 | 1-T103                |           |                       |           |                       |           |                       |
| EO-703849 | 1-L201                |           |                       |           |                       |           |                       |
| EO-703849 | 1-L101, 102           |           |                       |           |                       |           |                       |
| EO-703932 | 1-T202                |           |                       |           |                       |           |                       |
| EO-708044 | 1-T204                |           |                       |           |                       |           |                       |
| ER-200940 | 1-R431, 432           |           |                       |           |                       |           |                       |
| ER-307245 | 1-R810                |           |                       |           |                       |           |                       |
| ER-313515 | 1-R807                |           |                       |           |                       |           |                       |
| ER-315062 | 1-R809                |           |                       |           |                       |           |                       |
| ER-321620 | 1-R802                |           |                       |           |                       |           |                       |
| ER-324480 | 1-R207                |           |                       |           |                       |           |                       |
| ER-333616 | 1-R209                |           |                       |           |                       |           |                       |
| ER-341632 | 1-R808                |           |                       |           |                       |           |                       |
| ER-341632 | 1-R801                |           |                       |           |                       |           |                       |
| ER-341940 | 1-R731, 732           |           |                       |           |                       |           |                       |
| ER-703856 | 1-LPF301, 302         |           |                       |           |                       |           |                       |
| ER-706132 | 1-CF201               |           |                       |           |                       |           |                       |
| ER-708036 | 1-CF101, 102          |           |                       |           |                       |           |                       |
| ER-708037 | 1-R733, 734           |           |                       |           |                       |           |                       |
| ER-708038 | 1-R705, 706           |           |                       |           |                       |           |                       |
| ER-708051 | 1-R806                |           |                       |           |                       |           |                       |
| ER-708068 | 1-R729, 730           |           |                       |           |                       |           |                       |
| ES-708054 | 1-SW6-10              |           |                       |           |                       |           |                       |
| ES-708055 | 1-SW4-5               |           |                       |           |                       |           |                       |
| ES-708062 | 1-SW2-3               |           |                       |           |                       |           |                       |
| ES-708064 | 2-26                  |           |                       |           |                       |           |                       |
| ET-336941 | 1-TR802               |           |                       |           |                       |           |                       |
| ET-635218 | 1-TR403, 404          |           |                       |           |                       |           |                       |
| ET-708035 | 1-TR101               |           |                       |           |                       |           |                       |
| ET-708050 | 1-TR901 to 907        |           |                       |           |                       |           |                       |
| ET-708050 | 1-TR801               |           |                       |           |                       |           |                       |
| ET-708053 | 1-TR401, 402          |           |                       |           |                       |           |                       |

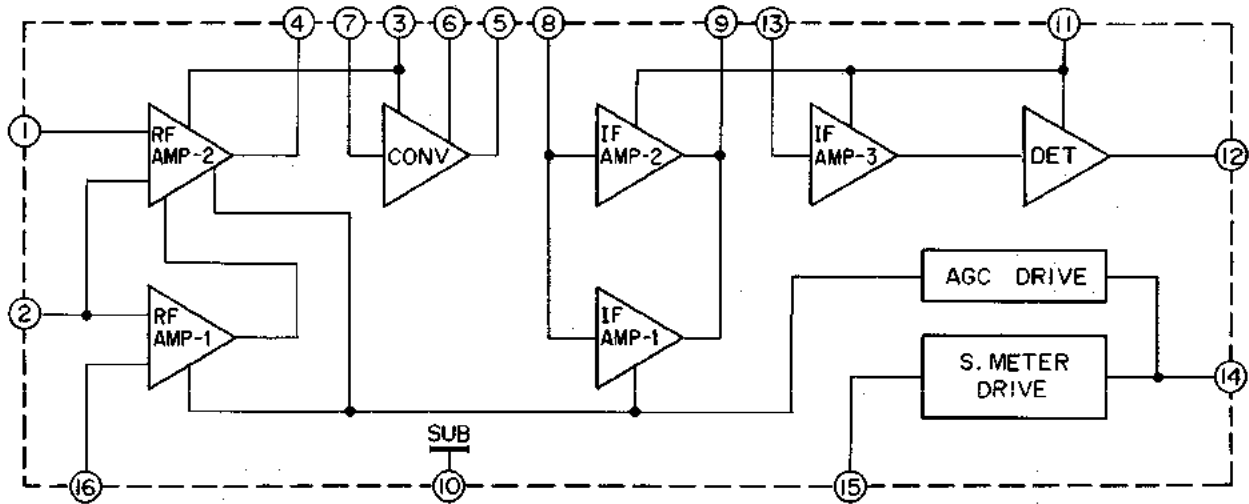
SECTION 3

# SCHEMATIC DIAGRAM

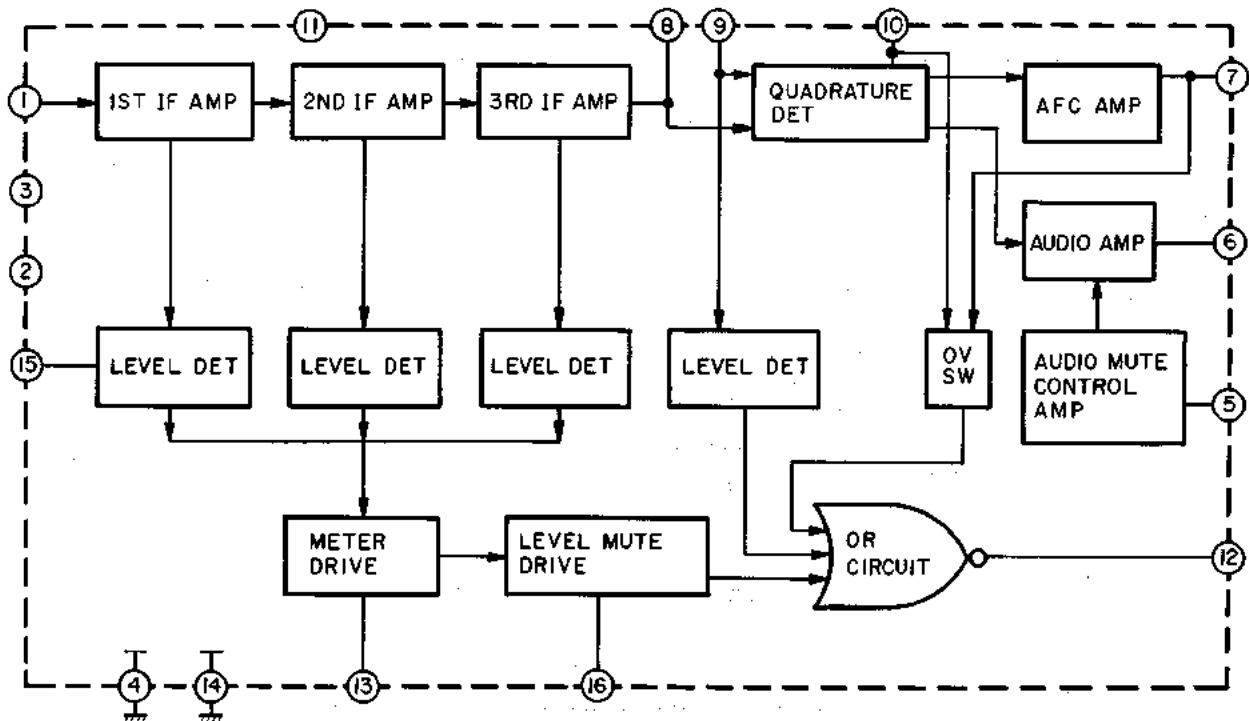
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LA1240

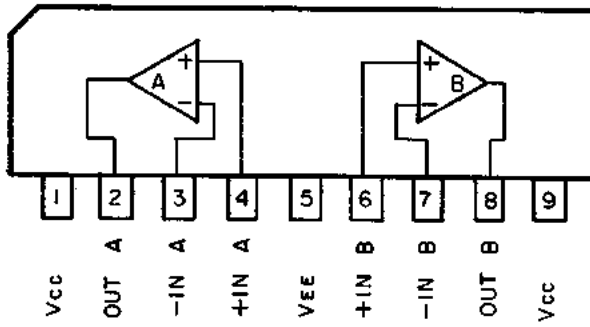


HA11225

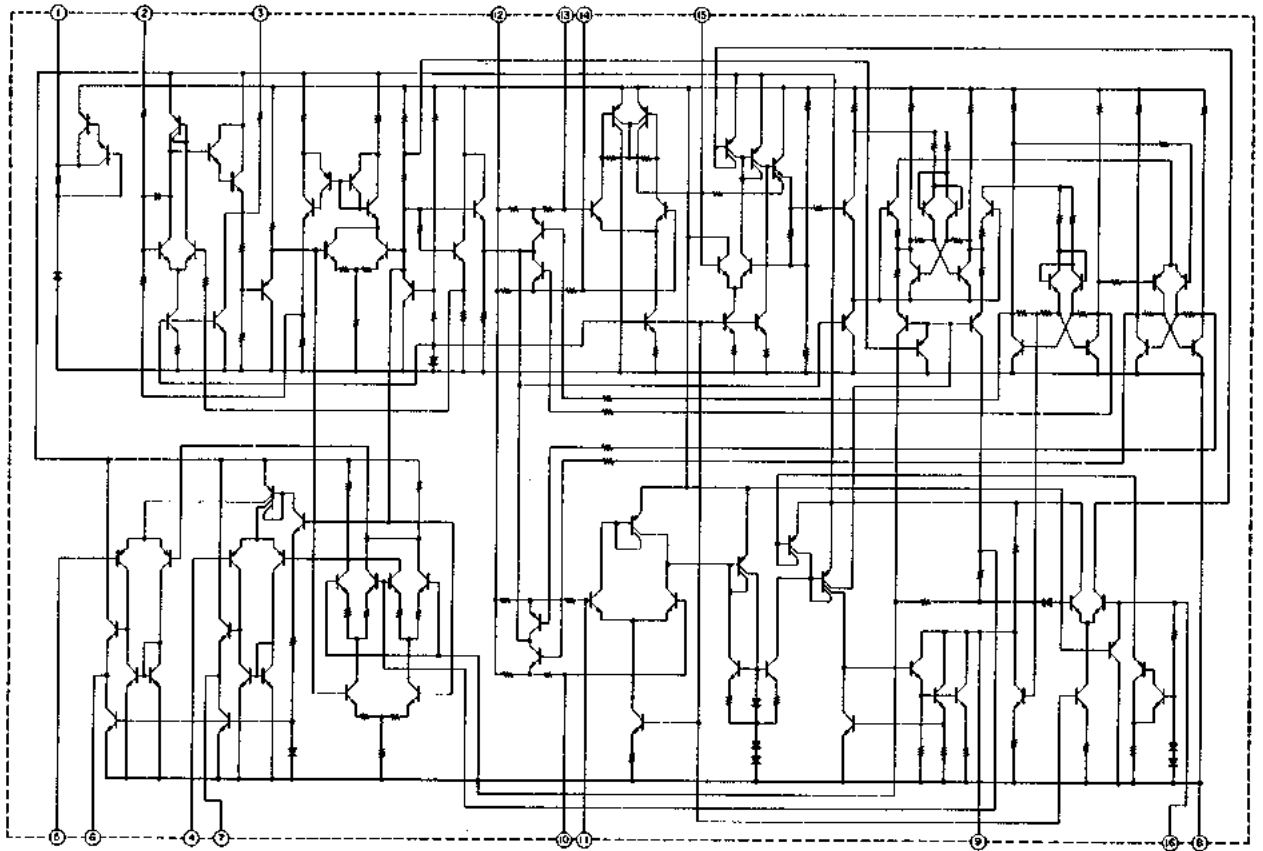




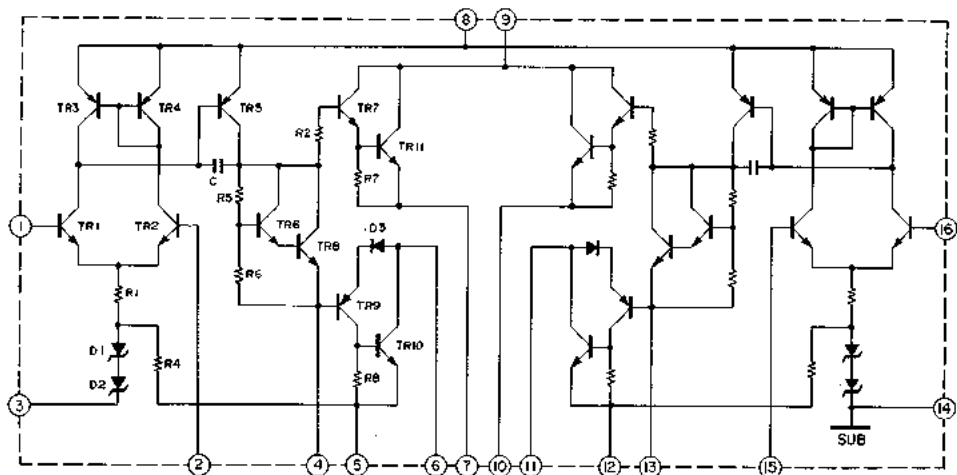
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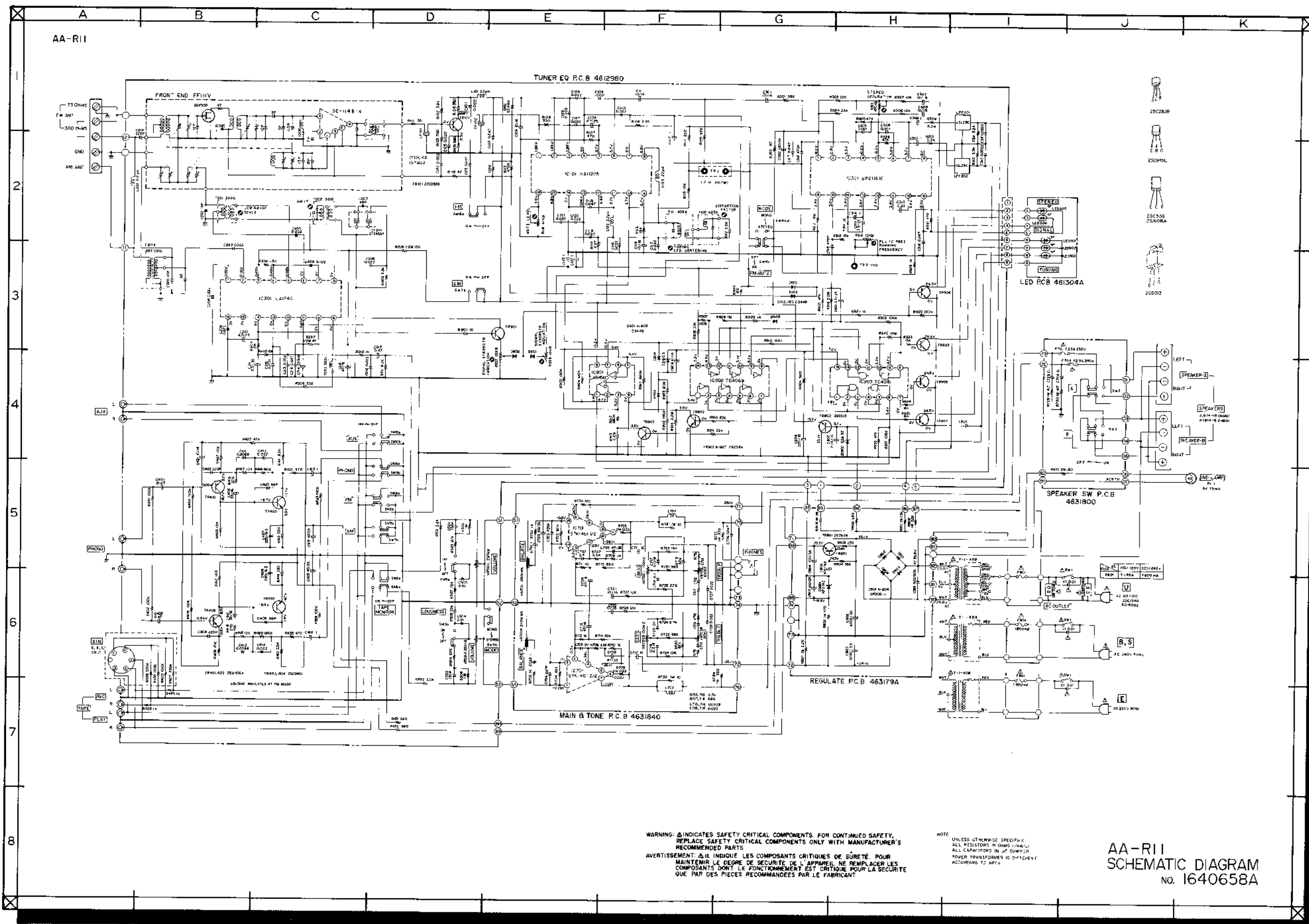


**μPC1161C**



**STK-461**





WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.  
 AVERTISSEMENT: ⚠ INDIQUE LES COMPOSANTS CRITIQUES DE SÛRETÉ POUR MAINTENIR LE DEGRÉ DE SÛRETÉ DE L'APPAREIL. NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SÛRETÉ QUE PAR DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

NOTE: UNLESS OTHERWISE SPECIFIED, ALL RESISTORS IN OHMS, K=K, ALL CAPACITORS IN µF UNLESS OTHERWISE SPECIFIED.  
 UNLESS OTHERWISE SPECIFIED, ALL RESISTORS IN OHMS, K=K, ALL CAPACITORS IN µF UNLESS OTHERWISE SPECIFIED.

AA-R11  
 SCHEMATIC DIAGRAM  
 NO. 1640658A