

# JVC

## SERVICE MANUAL

MODEL  
**A-X3**

STEREO INTEGRATED AMPLIFIER



No. 2508  
Nov. 1979

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Warning: When replacing the parts marked with , be sure to use the designated parts to ensure safety.

## 1. Specifications

### Overall Specifications

|                                                               |                                                                                                                                                                                                              |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output Power<br>(TUNER, AUX, TAPE<br>→ SP. OUT)               | : 55 watts per channel min. RMS<br>(both channels driven, into 8 Ω<br>from 20 Hz to 20 kHz with no<br>more than 0.005% THD)<br>57 watts per channel min. RMS<br>(both channels driven, into 8 Ω<br>at 1 kHz) |
| Total Harmonic Distortion<br>(TUNER, AUX, TAPE<br>→ SP. OUT)  | : 0.005% at rated output, from<br>20 Hz to 20 kHz, 8 Ω<br>0.001% at rated output 1 kHz,<br>8 Ω<br>(Measured by HP Audio Analyzer<br>System)<br>0.02% at rated output, from<br>20 Hz to 50 kHz, 8 Ω           |
| Intermodulation Distortion<br>(TUNER, AUX, TAPE<br>→ SP. OUT) | : 0.004% at rated output, 8 Ω                                                                                                                                                                                |
| Power Band Width<br>(TUNER, AUX, TAPE<br>→ SP. OUT)           | : 5 Hz — 60 kHz (IHF, both chan-<br>nels driven, 8Ω, 0.02% THD)                                                                                                                                              |
| Frequency Response<br>(TUNER, AUX, TAPE<br>→ SP. OUT)         | : DC — 100 kHz $^{+0}_{-3}$ dB                                                                                                                                                                               |
| Damping Factor                                                | : 75 (1 kHz, 8 Ω)                                                                                                                                                                                            |

### Dimensions & Weight

|                 | Dimensions       |                   |                   | Weight            |                   |
|-----------------|------------------|-------------------|-------------------|-------------------|-------------------|
|                 | Hight            | Width             | Depth             | Net               | Gross             |
| U.S.A. & Canada | 12.1 cm (4-3/4") | 47.4 cm (18-5/8") | 34.5 cm (13-5/8") | 8.3 kg (18.3 lbs) | 9.5 kg (20.9 lbs) |
| All Other Areas | 12.1 cm (4-3/4") | 45.0 cm (17-3/4") | 34.5 cm (13-5/8") | 8.3 kg (18.3 lbs) | 9.5 kg (20.9 lbs) |

### Input Sensitivity/Impedance

|                                                   |                                                            |
|---------------------------------------------------|------------------------------------------------------------|
| Phono (MM)                                        | : 2.5 mV/47 kΩ                                             |
| Phono (MC)                                        | : 200 μV/100 Ω                                             |
| TUNER, AUX, TAPE                                  | : 150 mV/47 kΩ                                             |
| Signal-to-Noise Ratio                             |                                                            |
| Phono (MM)                                        | : 84 dB (IHF, A net, short circuit)<br>83 dB (new IHF)     |
| Phono (MC)                                        | : 67 dB (IHF, A net, short circuit)<br>76 dB (new IHF)     |
| TUNER, AUX, TAPE                                  | : 109 dB (IHF, A net, short cir-<br>cuit), 83 dB (new IHF) |
| Tone Controls                                     |                                                            |
| BASS                                              | : ±8 dB (100 Hz)                                           |
| TREBLE                                            | : ±8 dB (10 kHz)                                           |
| Muting                                            | : -20 dB                                                   |
| <b>Phono Equalizer Section (Phono → REC. OUT)</b> |                                                            |
| Phono Overload                                    |                                                            |
| Phono (MM)                                        | : 220 mV at 1 kHz, 0.005% THD                              |
| Phono (MC)                                        | : 15 mV at 1 kHz, 0.005% THD                               |
| RIAA Phono Equalization                           |                                                            |
| (MM)                                              | : ±0.3 dB (20 Hz — 20 kHz)                                 |
| (MC)                                              | : ±0.5 dB (30 Hz — 20 kHz)                                 |
| EQ Subsonic Filter                                | : -6 dB/Oct. (18 Hz)                                       |
| Total Harmonic Distortion                         |                                                            |
| Phono (MM)                                        | : 0.005% at 10 V output, 20 Hz —<br>20 kHz                 |
| Phono (MC)                                        | : 0.02% at 10 V output, 30 Hz —<br>20 kHz                  |
| Rec. Output/Impedance                             | : 150 mV/800 Ω                                             |
| Power Specifications                              | : See page 19.                                             |

## 2. Removal Procedures of Top Cover and Front Panel

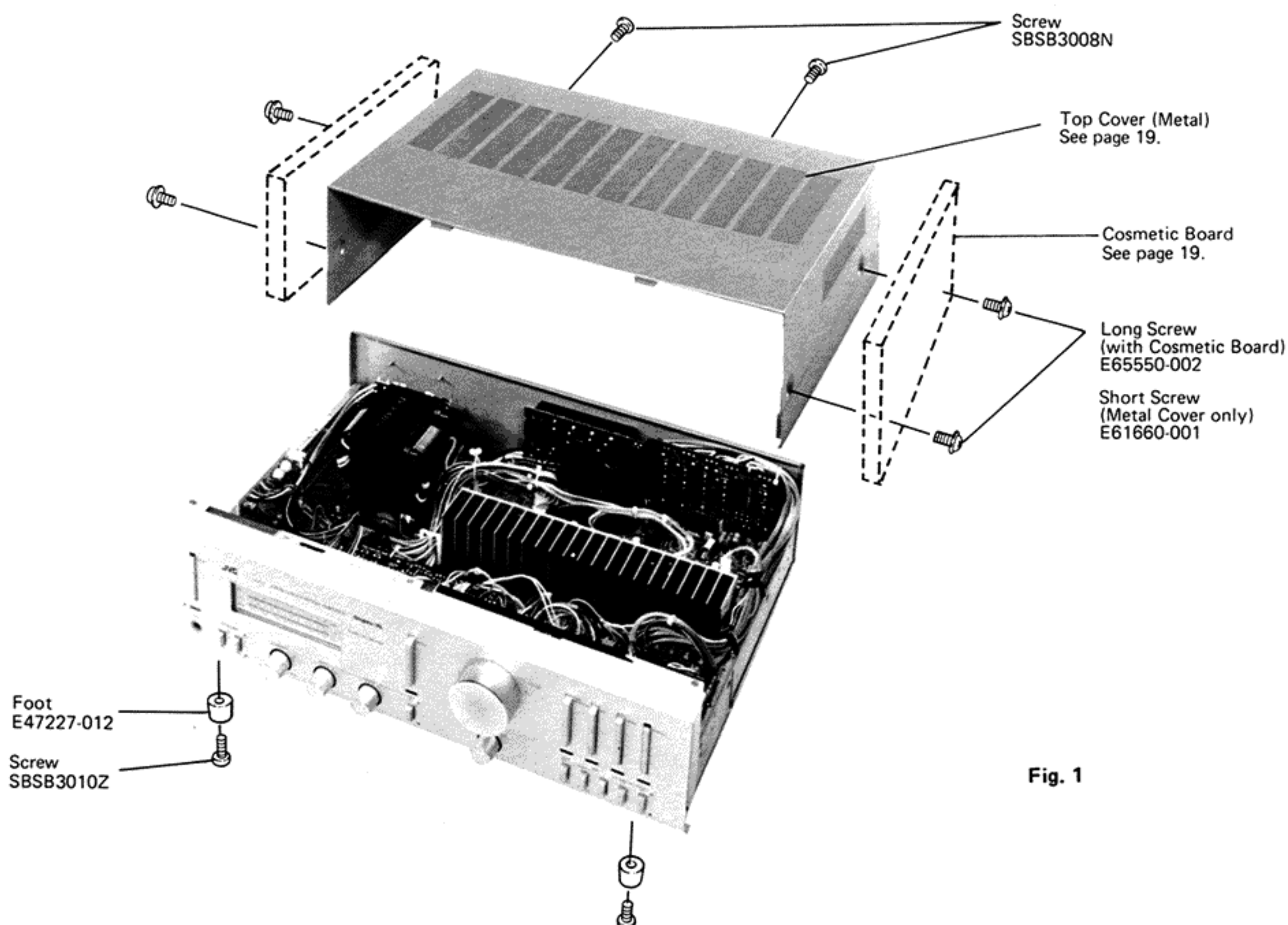
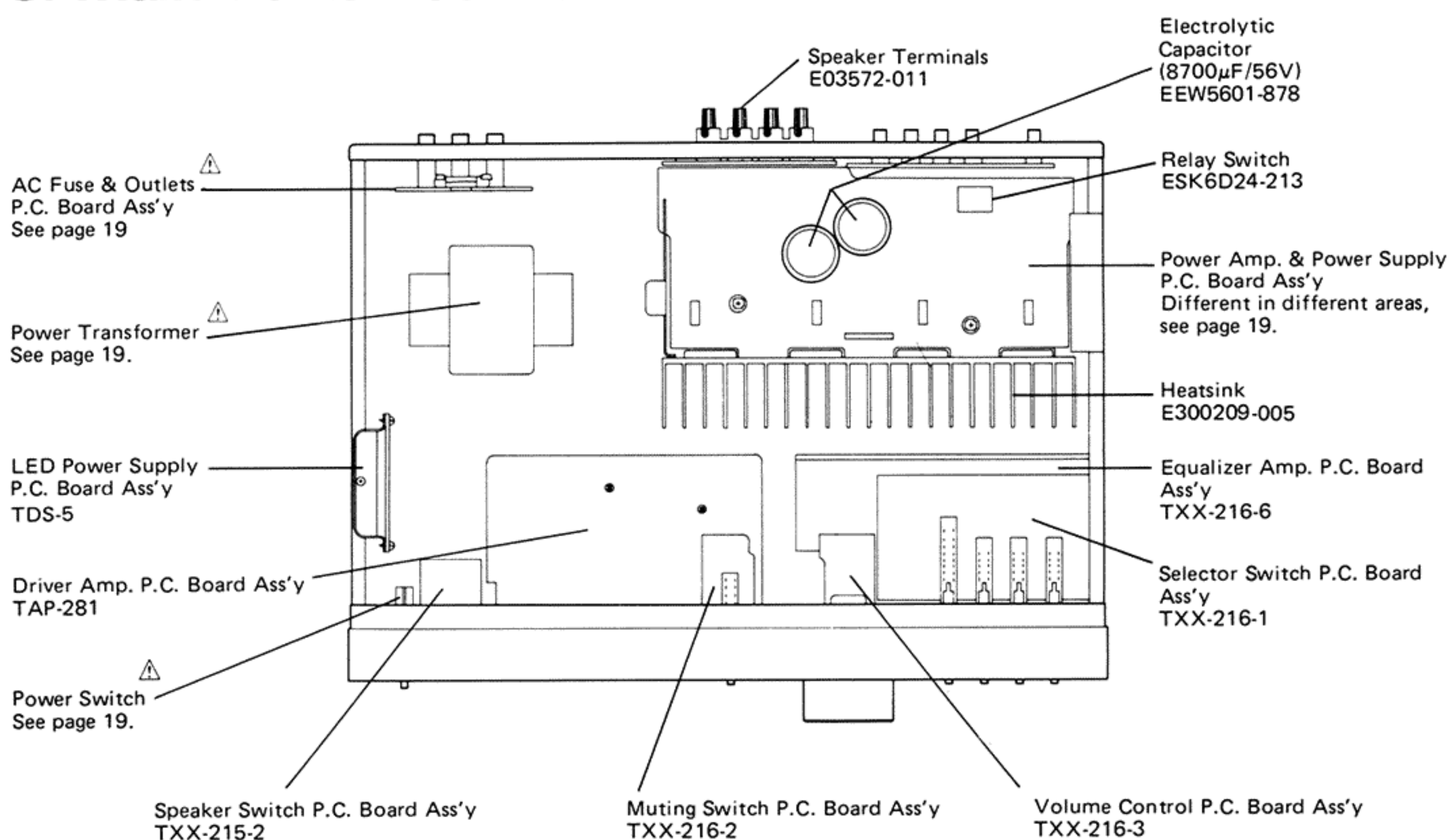


Fig. 1

## 3. Main Parts Location



⚠ : Safety Parts

Fig. 2

# 4. Exploded Views and Part Numbers

## 4-(1) Front Panel

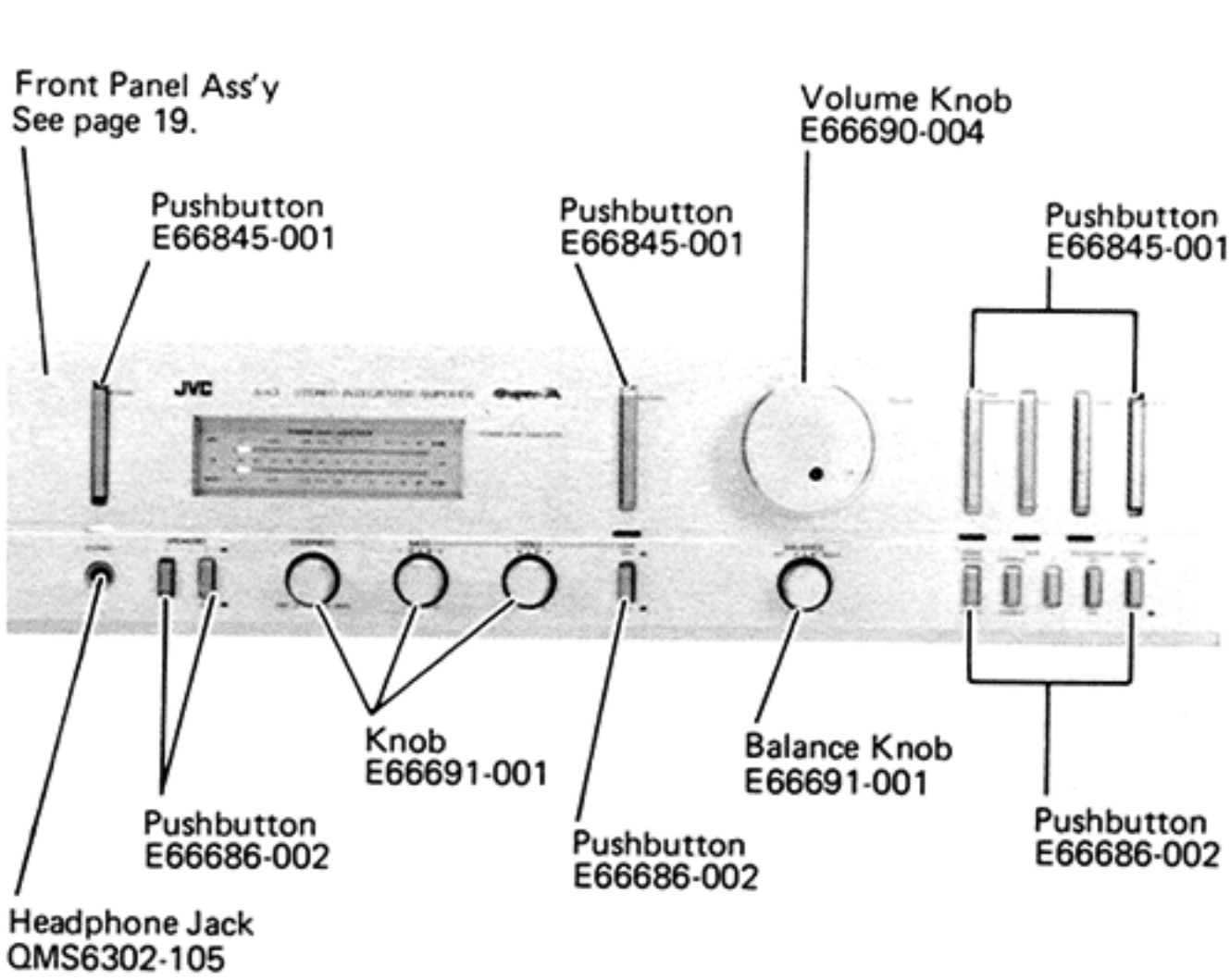


Fig. 3

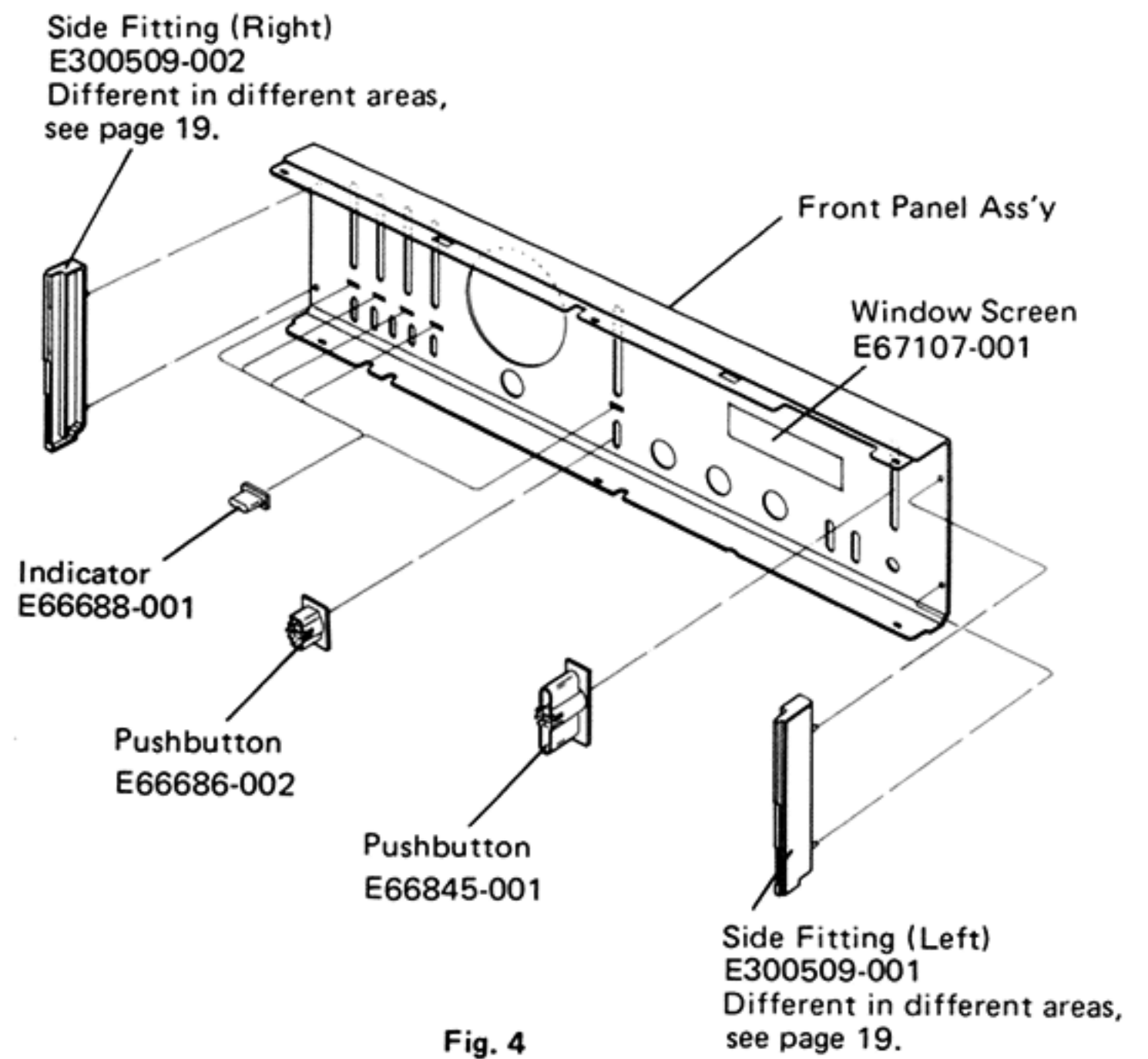


Fig. 4

## 4-(2) Rear Panel

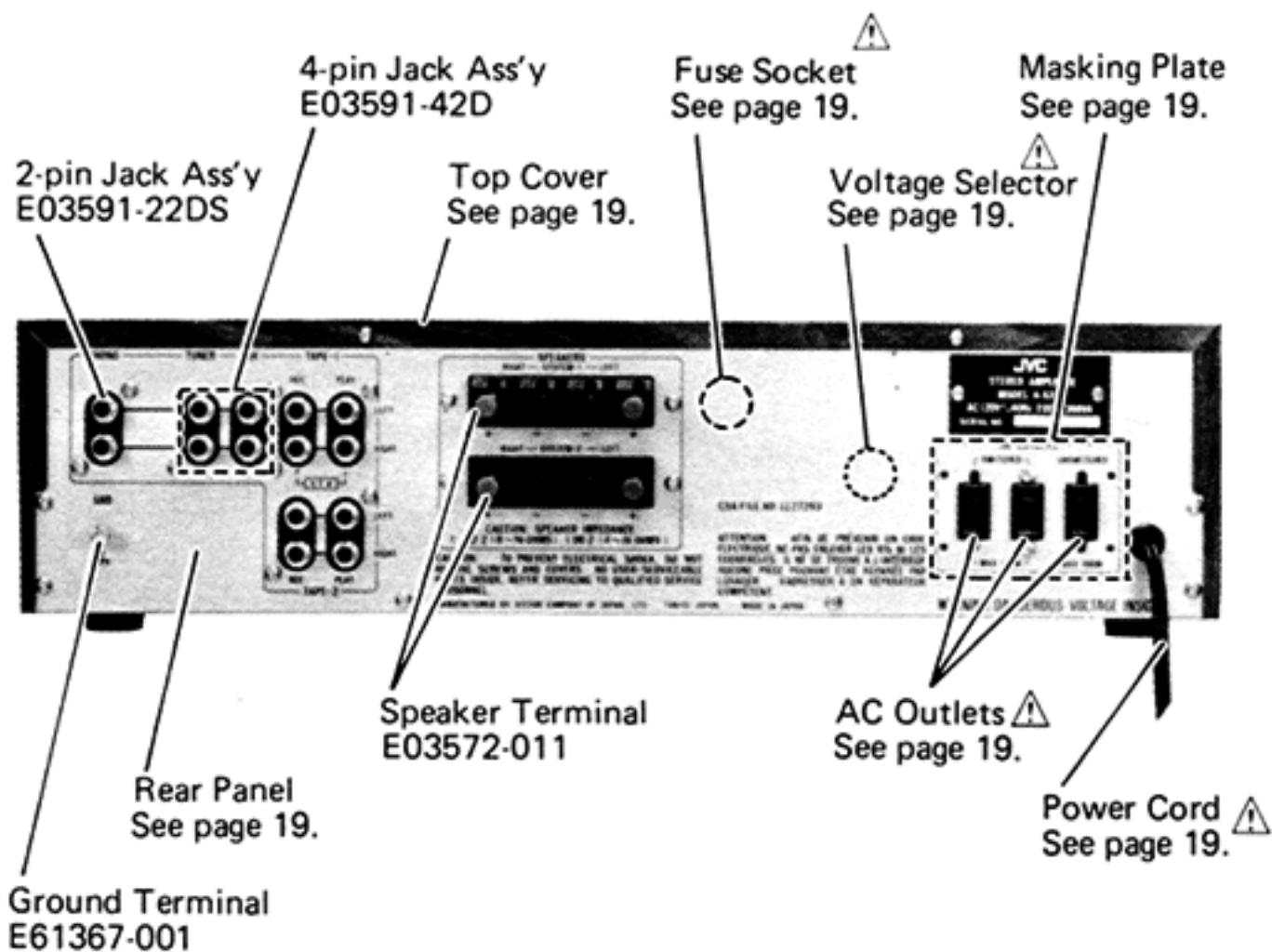


Fig. 5

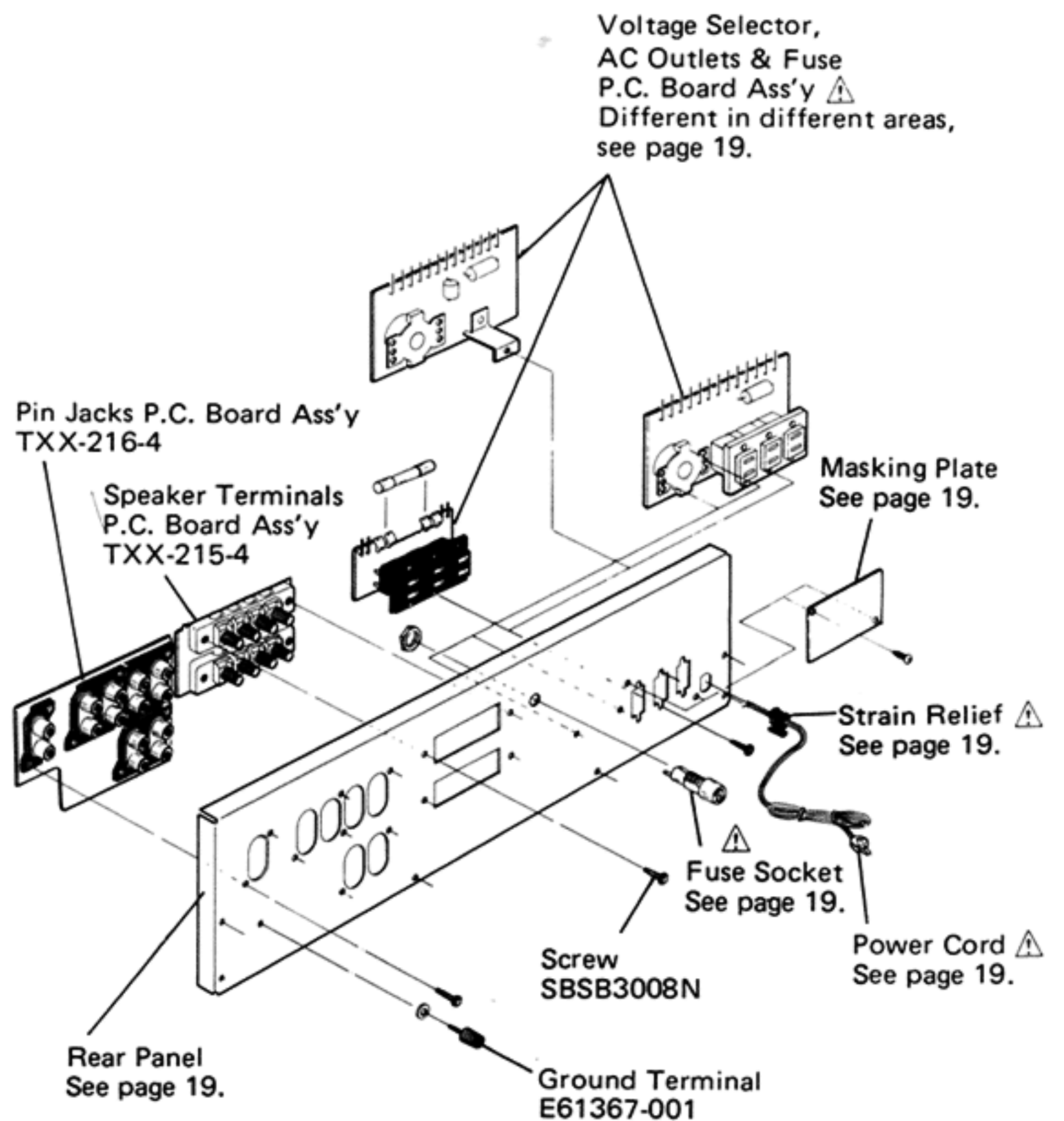


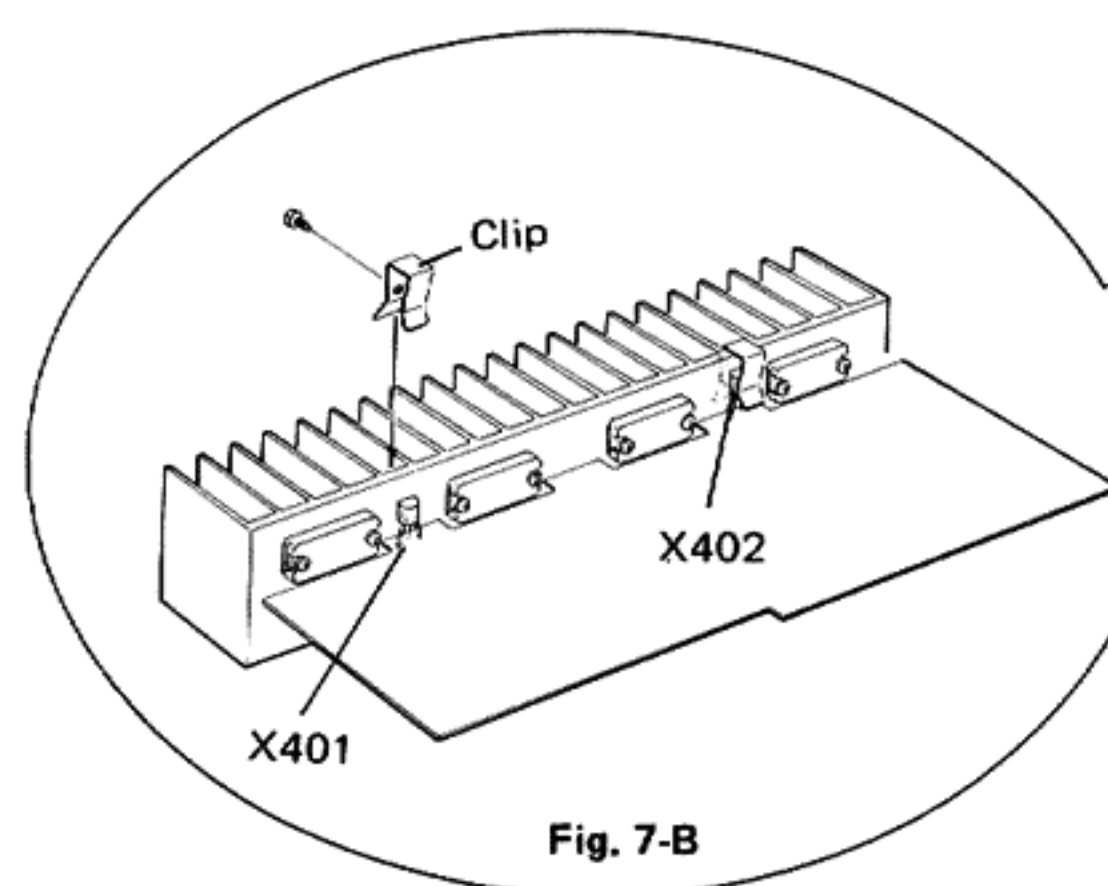
Fig. 6

⚠ : Safety Parts

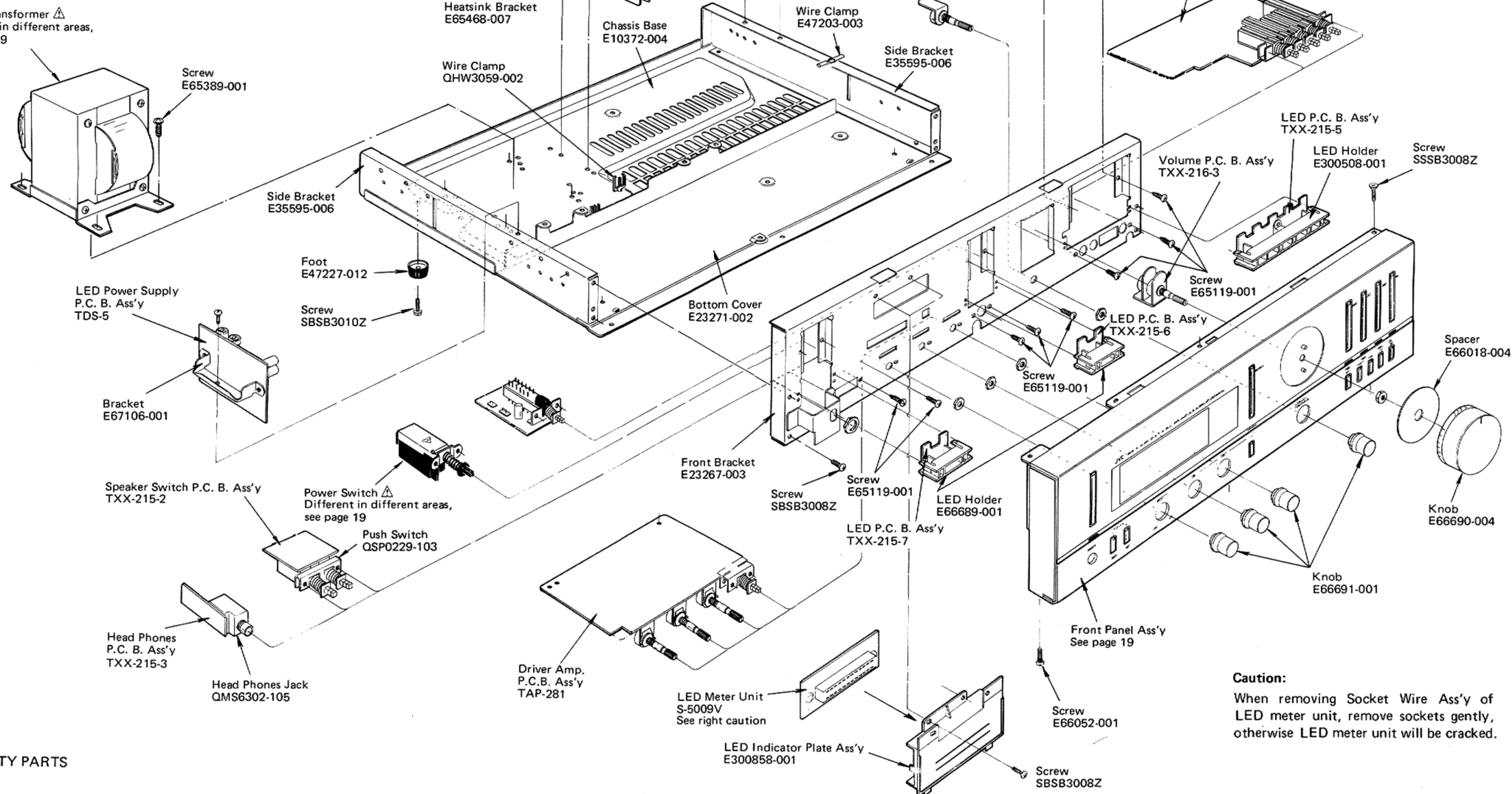
## 4-(3) Chassis Base Ass'y

### Replacement of the Power Transistors

Remove the clips of X401 and X402 transistors and unsolder the 4 power transistors X355 — X358 to separate the circuit board from the heatsink and then, replace the power transistors.



Power Transformer ⚠  
Different in different areas,  
see page 19



NOTE: ⚠ SAFETY PARTS

**Caution:**  
When removing Socket Wire Ass'y of LED meter unit, remove sockets gently, otherwise LED meter unit will be cracked.

Fig. 7

## 5. Block Diagram

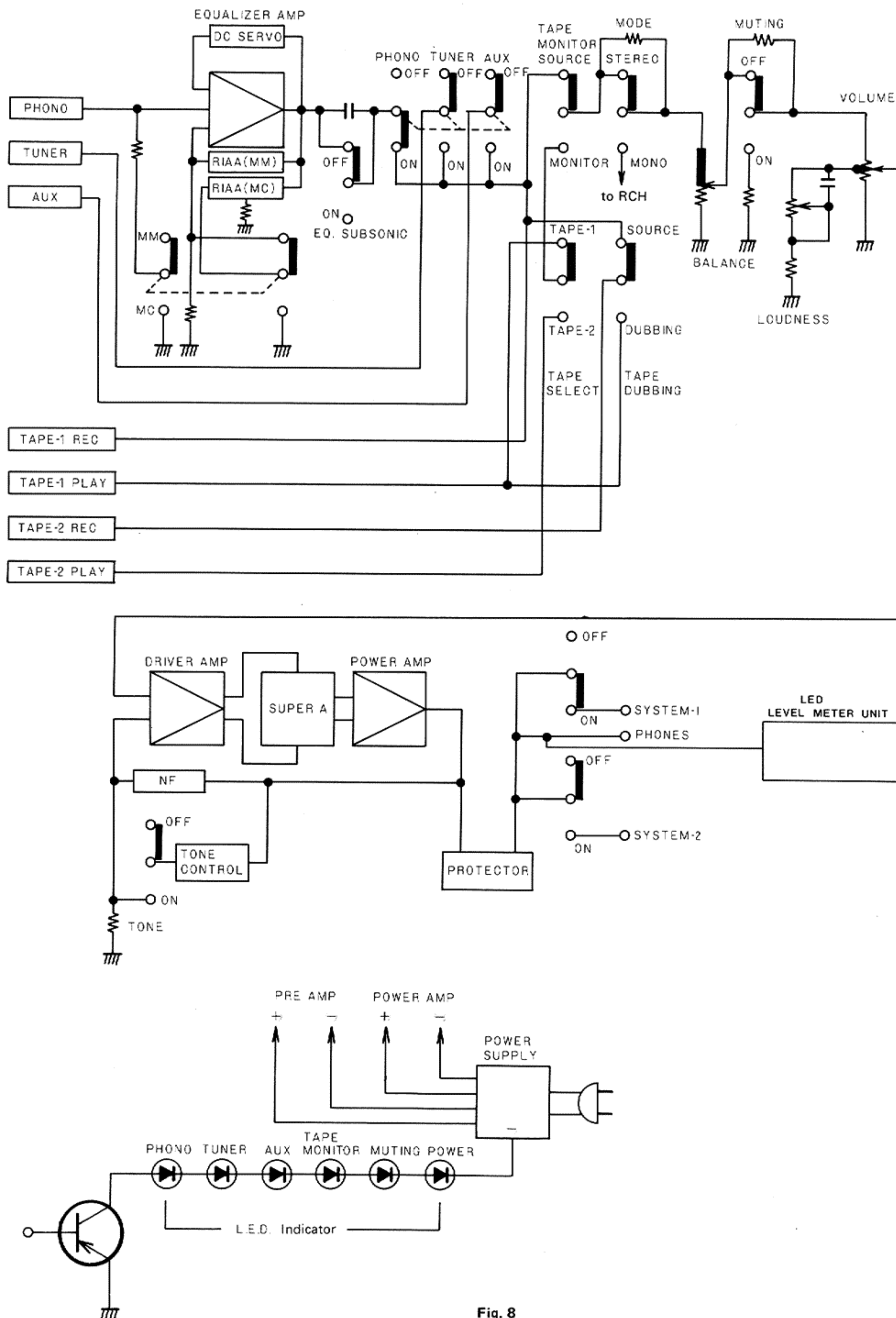


Fig. 8

## 6. New Technology

### 6-(1) New Development of IC in Super A Circuit

A newly developed IC has been employed in the heart of the super A bias circuit, thereby simplifying the circuit and improving its performance and reliability. Since the circuit

operation remains entirely the same as the conventional circuit, please refer to page 7 "Power Amplifying Section of Super A System" of the A-X5 service manual (No. 2479).

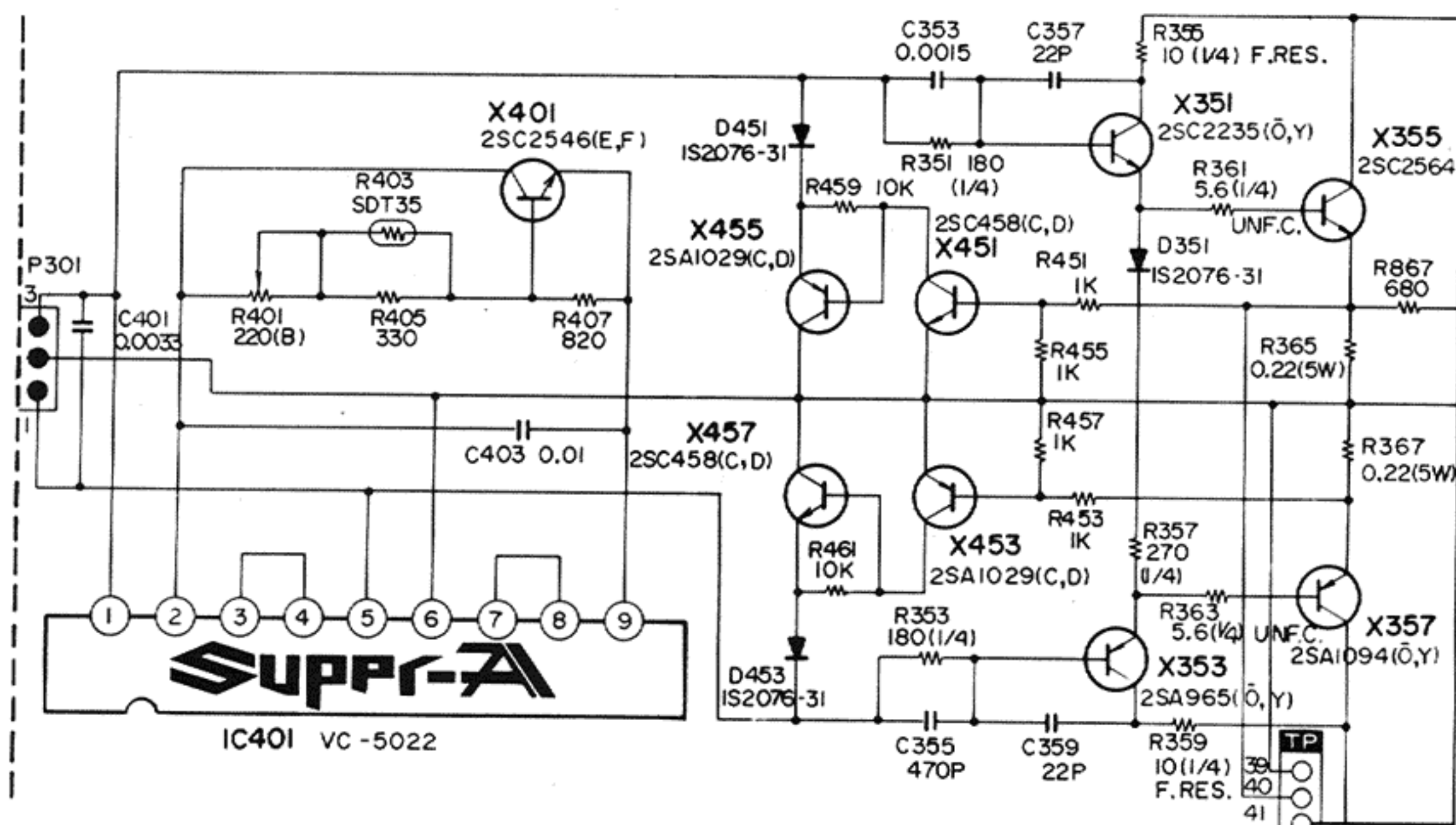


Fig. 9

### 6-(2) DC Servo Type Equalizer Circuit with EL FET

In order to achieve a 2-stage amplifier with simple circuit design, an EL-FET (2SK240) which was developed for the JVC EQ-7070 stereo phono equalizer is employed in the A-X3 providing a high performance DC Servo Equalizer circuit compatible with the both MM and MC cartridges.

#### 1. Circuit Design

In addition to the DC servo circuit, a 2-stage differential amplifier FET and a high S/N pre-amplifier IC are used to control the offset level to 0V.

#### 2. High S/N design

An EL FET is used as the first stage to form an ICL circuit and to make a high S/N ratio possible.

#### 3. DC Servo Circuit

Increased noise at a ultra low frequencies or offset point level deviation result if the equalizer circuit is designed as a DC amplifier because of the extremely high gain from ultra low frequencies to DC.

The A-X3 incorporating a MC cartridge amplifier eliminates the problem with its DC servo circuit.

The DC servo circuit operates to amplify the signals with the DC servo control circuit consisting of X703 and X705, acting as a low-pass filter circuit, it prevents noise at ultra low frequencies and offset point level deviation by controlling the voltage at pin no. 7 of IC701.

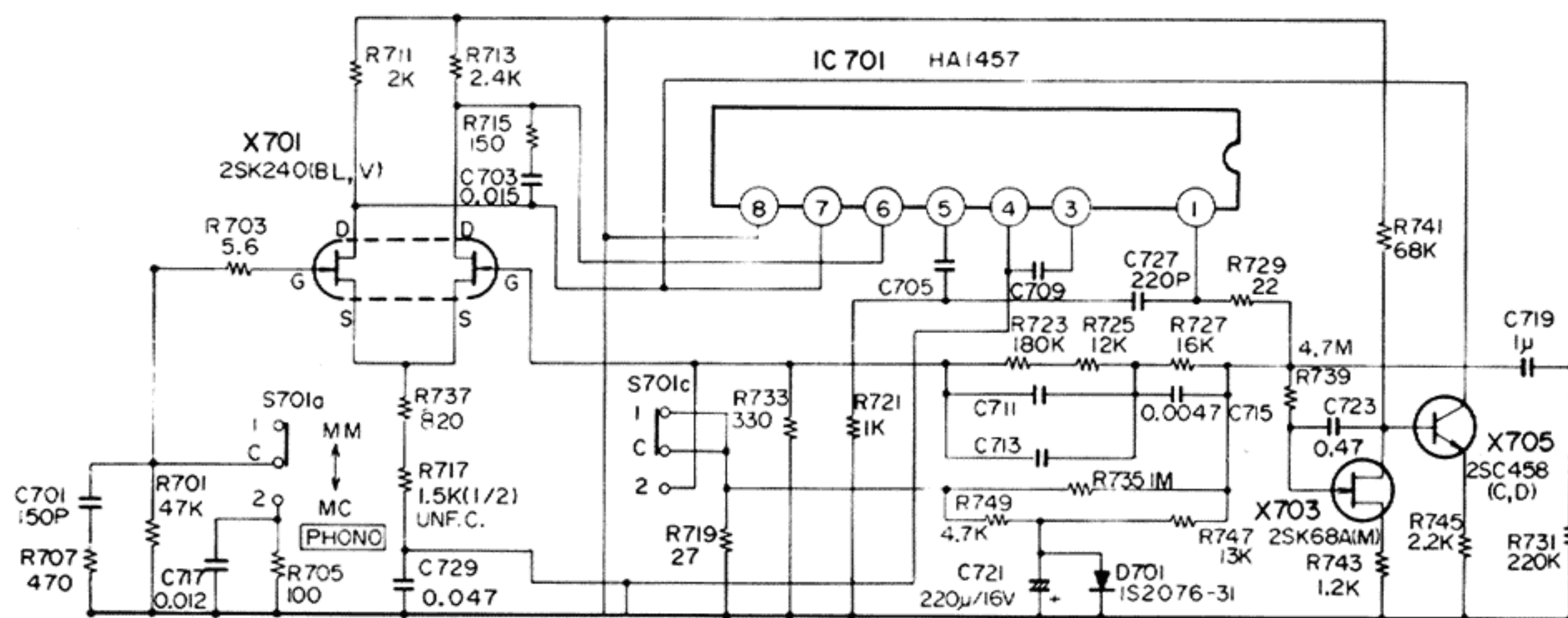
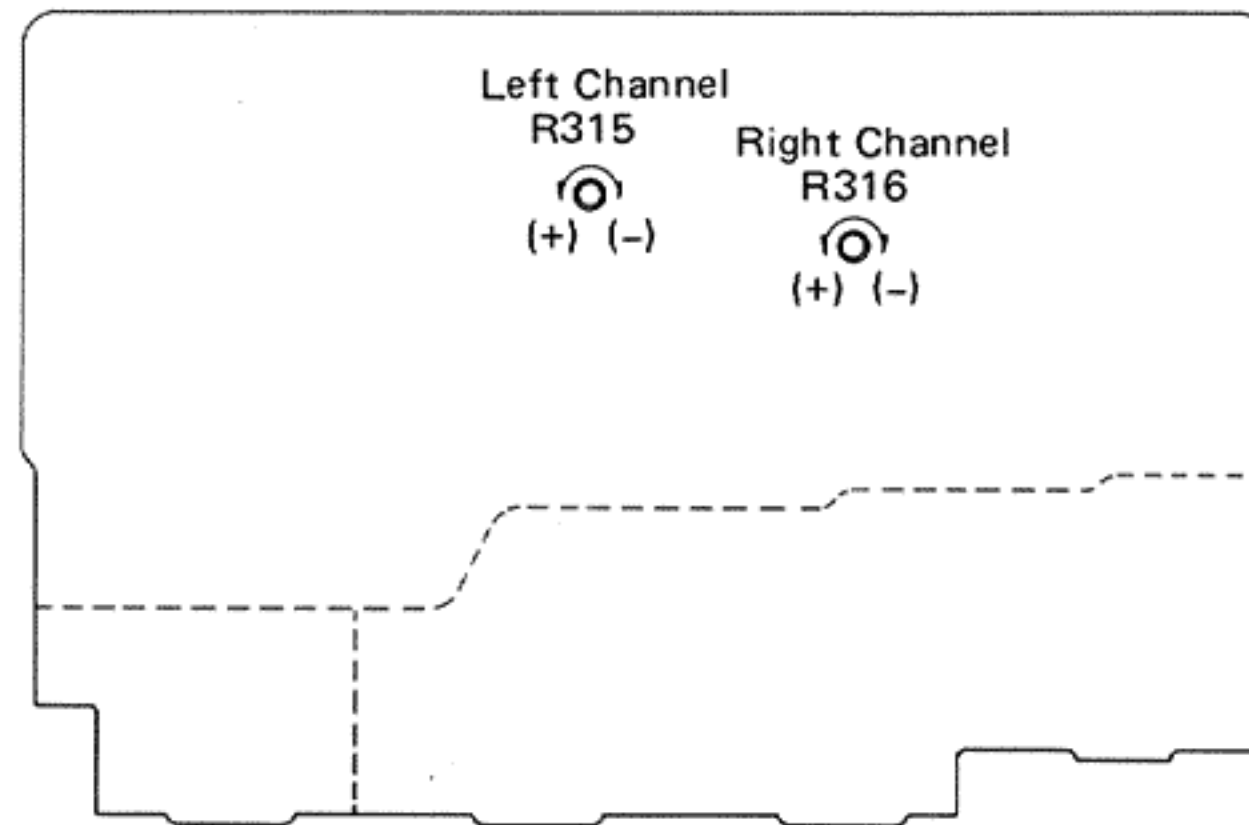


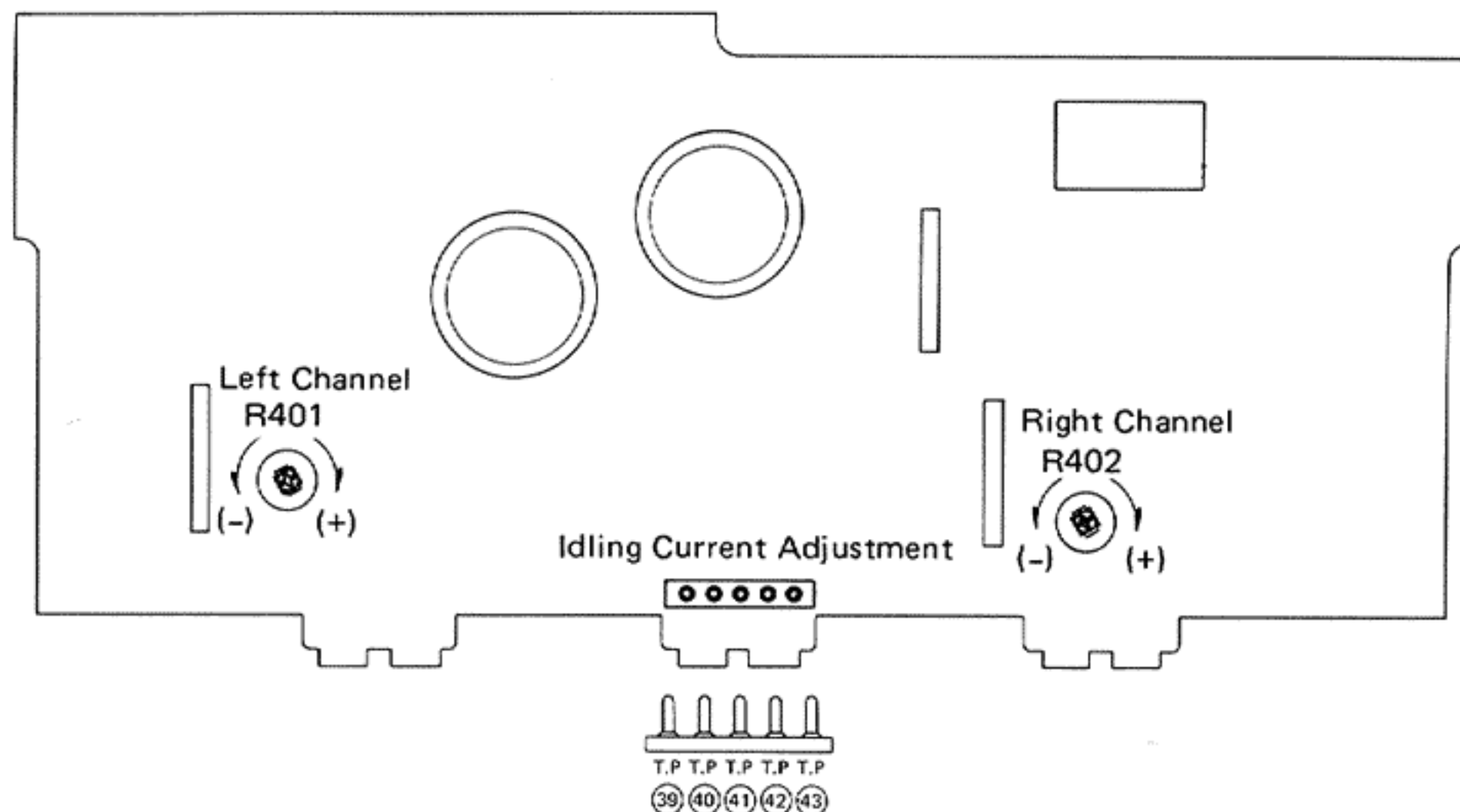
Fig. 10

## 7. Power Amplifier Adjustment Procedures



TAP-281 Driver Amp. P.C. Board Ass'y

Fig. 11



TXX-215-1 Power Amp. & Power Supply P.C. Board Ass'y

Fig. 12

### 7-(1) Center Voltage

- Before turning on the power, set the semi-fixed resistors <R315 for L channel and R316 for R channel> of the drive amplifier circuit boards (TAP-281) to the center position.
- Adjust the semi-fixed resistors (R315 and R316) so that the voltage at the following test points of the power amplifier circuit board (TXX-215-1) is within a range of  $\pm 10$  mV or less 5 minutes after the power is turned on.  
L channel: Measure the voltage between test point (39) and test point (41) (ground).  
R channel: Measure the voltage between test point (43) and test point (41) (ground).

The measurements can also be performed at the speaker terminals if the relay is operating normally.

- Adjust the semi-fixed resistors (R401 and R402) so that the voltage at the following test points of the power amplifier circuit board is within a range of 10 mV – 14 mV after the power is turned on.

L channel: Measure the voltage between test point (40) (emitter of X355) and output at the test point (39).

R channel: Measure the voltage between test point (42) (emitter of X356) and output at the test point (43).

- Readjust resistors R401 and R402 about 5 minutes after the power is turned on (the heat sink temperature must be sufficiently high) so that the voltage at the test points becomes 12 mV.

Confirm that the voltage does not vary when the heat sink temperature increases further.

Note: Be sure to perform the measurement with the probes and cabinet of the measuring equipment separated from the grounding terminals of A-X3 or of other measuring equipment.

### 7-(2) Idling Current

- Before turning on the power, turn the semi-fixed resistors <R401 for L channel and R402 for R channel> of the power amplifier circuit board fully counterclockwise.

# 8. Printed Circuit Board Ass'y and Parts List

## 8-(1) TDS-5 LED Power Supply P.C. Board Ass'y

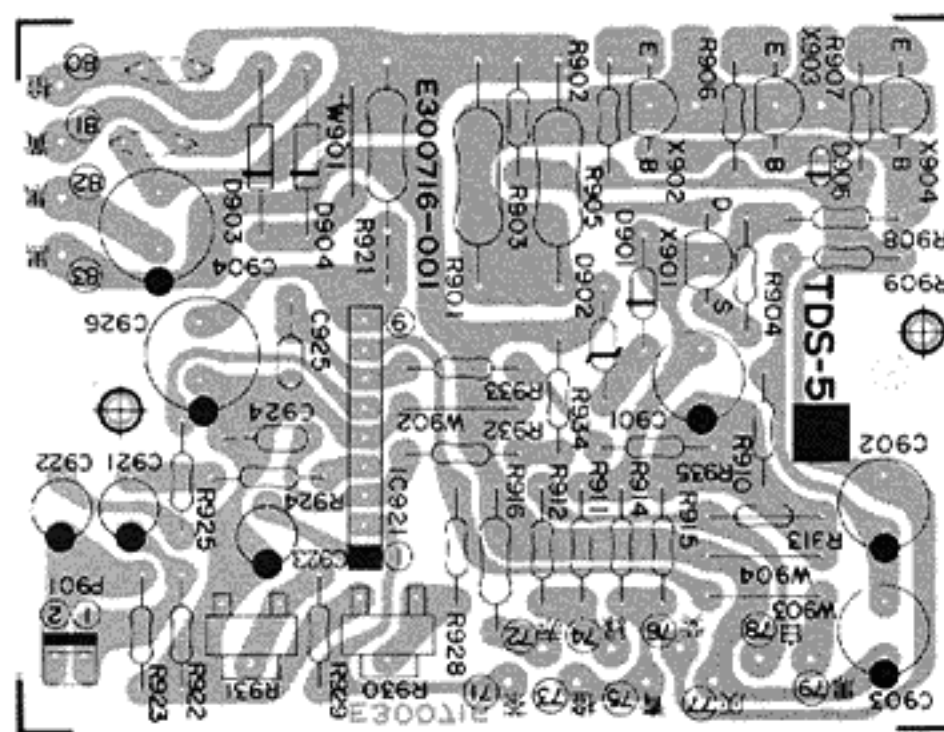


Fig. 13

### Transistors

| Item No. | Part Number  | Rating |                | Description |         |
|----------|--------------|--------|----------------|-------------|---------|
|          |              | Pc     | f <sub>T</sub> |             | Maker   |
| X901     | 2SK105(H)    | 0.25 W |                | F.E.T.      | NEC     |
| X902     | 2SC2235(O,Y) | 0.9 W  | 120 MHz        | Silicon     | Toshiba |
| X903     | 2SC2235(O,Y) | "      | "              | "           | "       |
| X904     | 2SC2235(O,Y) | "      | "              | "           | "       |

### Integrated Circuits

| Item No. | Part Number | Rating |  | Description |         |
|----------|-------------|--------|--|-------------|---------|
|          |             | Pc     |  |             | Maker   |
| IC921    | TA7318P(1)  | 700 mW |  | IC          | Toshiba |

### Diodes

| Item No. | Part Number  | Rating | Description        | Maker   |
|----------|--------------|--------|--------------------|---------|
|          |              |        |                    |         |
| D901     | 1S2076-31    | 13 V   | Silicon            | Hitachi |
| D902     | RD13EB3      |        | Silicon (Zener)    | NEC     |
| D903     | ERB12-02RKL1 |        | Silicon            | Fuji    |
| D904     | ERB12-02RKL1 |        | "                  | "       |
| D905     | VD1220       |        | Silicon (Varistor) | NEC     |

### Capacitors

| Item No. | Part Number  | Rating      |      | Description  |
|----------|--------------|-------------|------|--------------|
|          |              |             |      |              |
| C901     | QET51ER-226  | 22 $\mu$ F  | 25 V | Electrolytic |
| C902     | QET51CR-107H | 100 $\mu$ F | 16 V | "            |
| C903     | QET51CR-107H | "           | "    | "            |
| C904     | QET51JR-107H | "           | 63 V | "            |
| C921     | QET51HR-105  | 1 $\mu$ F   | 50 V | "            |

### Capacitors

| Item No. | Part Number  | Rating        |      | Description  |
|----------|--------------|---------------|------|--------------|
| C922     | QET51HR-105  | 1 $\mu$ F     | 50 V | Electrolytic |
| C923     | QET51HR-474  | 0.47 $\mu$ F  | "    | "            |
| C924     | QFM31HK-332  | 0.022 $\mu$ F | "    | Mylar        |
| C925     | QFM31HK-332  | "             | "    | "            |
| C926     | QET51ER-227H | 220 $\mu$ F   | 25V  | Electrolytic |

### Resistors

| Item No. | Part Number  | Rating         |       | Description      |
|----------|--------------|----------------|-------|------------------|
| R901     | QRG027J-391  | 390 $\Omega$   | 2 W   | Oxide Metal Film |
| R902     | QRG027J-391  | "              | "     | "                |
| R903     | QRD148J-332S | 3.3 k $\Omega$ | 1/4 W | Carbon           |
| R904     | QRD148J-820S | 82 $\Omega$    | "     | "                |
| R905     | QRD149J-130S | 13 $\Omega$    | "     | "                |
| R906     | QRD149J-130S | "              | "     | "                |
| R907     | QRD149J-130S | "              | "     | "                |
| R908     | QRD149J-471S | 470 $\Omega$   | "     | "                |
| R909     | QRD148J-104S | 100 k $\Omega$ | "     | "                |
| R910     | QRD148J-104S | "              | "     | "                |
| R911     | QRD148J-273S | 27 k $\Omega$  | "     | "                |
| R912     | QRD148J-183S | 18 k $\Omega$  | "     | "                |
| R914     | QRD148J-393S | 39 k $\Omega$  | "     | "                |
| R915     | QRD148J-222S | 2.2 k $\Omega$ | "     | "                |
| R916     | QRD129J-471  | 470 $\Omega$   | 1/2 W | "                |
| R921     | QRG017J-182S | 1.8 k $\Omega$ | 1 W   | Oxide Metal Film |
| R922     | QRD148J-104S | 100 k $\Omega$ | 1/4 W | Carbon           |
| R923     | QRD148J-104S | "              | "     | "                |
| R924     | QRD148J-623S | 62 k $\Omega$  | "     | "                |
| R925     | QRD148J-623S | "              | "     | "                |
| R928     | QRD148J-132S | 1.3 k $\Omega$ | "     | "                |
| R929     | QRD148J-132S | "              | "     | "                |
| R930     | QVP9A0B-102  | 1 k $\Omega$   | "     | Variable         |
| R931     | QVP9A0B-102  | "              | "     | "                |

### Others

| Item No. | Part Number | Rating | Description                           |
|----------|-------------|--------|---------------------------------------|
| J803     | EWS014-021  |        | 4Pin Socket Wire Ass'y (To TXX-215-1) |
| J903     | EWS075-001  |        | 5Pin Socket Wire Ass'y (To TDS-5)     |
| J904     | EWS075-002  |        | "                                     |
| P901     | QMV5005-002 |        | 2 Pin Plug Ass'y                      |
|          | E300716-001 |        | Cir. Board                            |
|          | E67106-001  |        | Bracket                               |

## 8-(2) TXX-215 Power amp. Power Supply and Speakers P.C. Board Ass'y

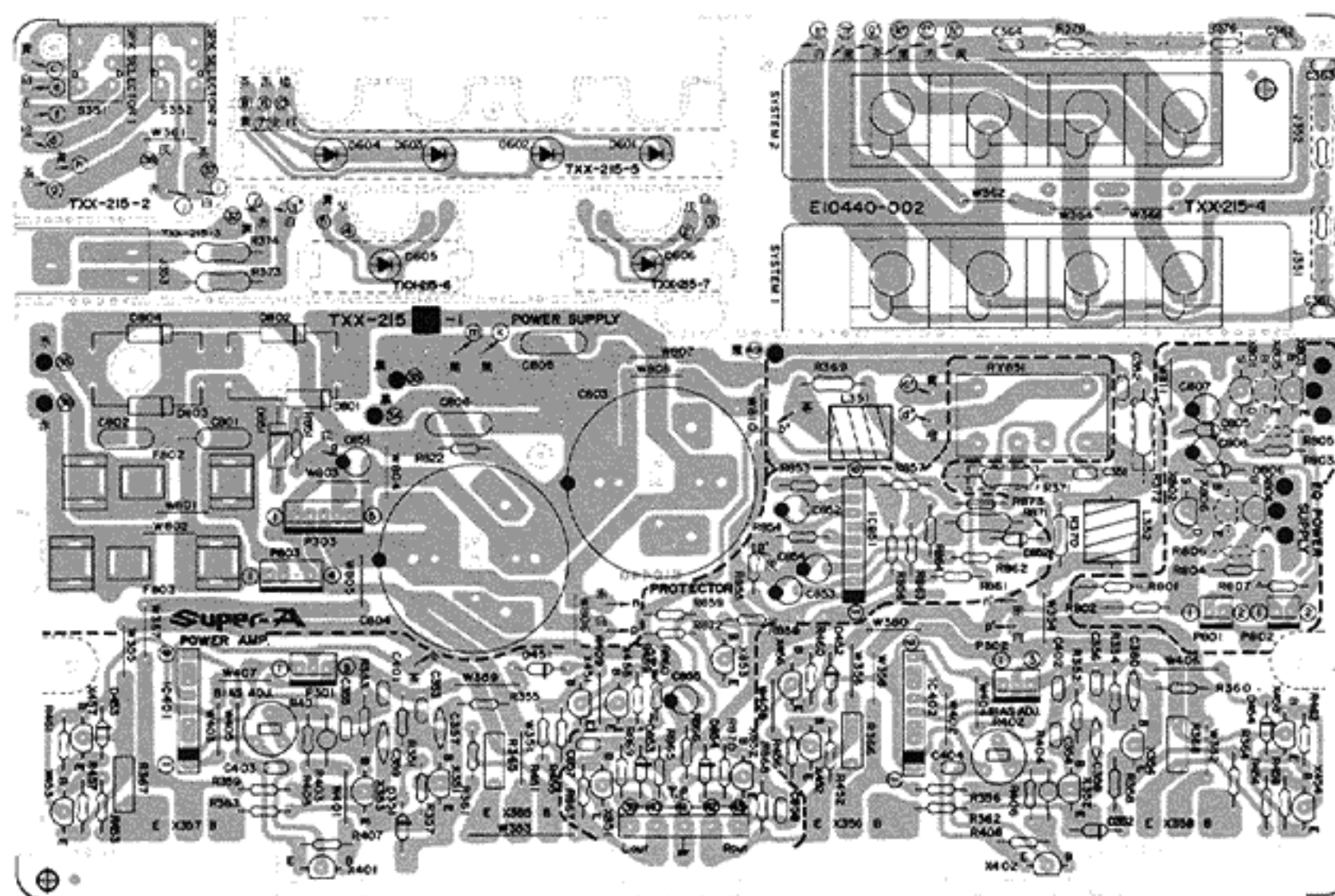


Fig. 14

△ : Safety Parts

## Each Individual P.C. Board Location

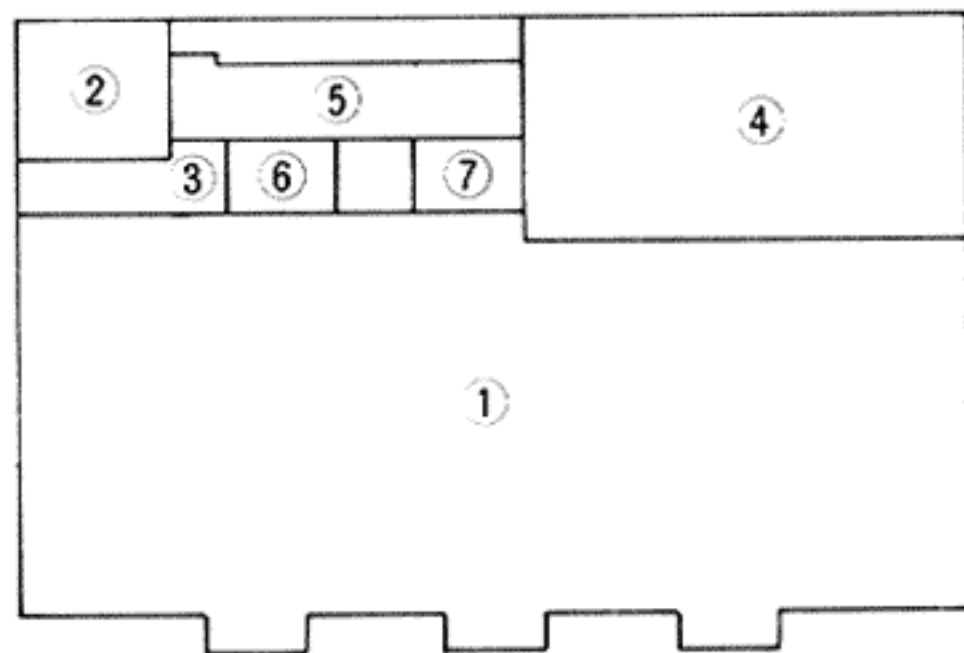


Fig. 15

- ① TXX-215-1 Power Amp. P.C.B. Ass'y
- ② TXX-215-2 Speaker Select Switch P.C.B. Ass'y
- ③ TXX-215-3 Head Phones P.C.B. Ass'y
- ④ TXX-215-4 Speaker Terminal P.C.B. Ass'y
- ⑤ TXX-215-5 L.E.D. P.C.B. Ass'y
- ⑥ TXX-215-6 "
- ⑦ TXX-215-7 "

### Note:

The specific symbols ( 赤, 黒, 白, . . . etc.) on a surface of above P.C. Board are actually unrelated to the repair service and are significant denotement in order to process the proper assembly of P.C. Board at the factory.

## Transistors

| Item No. | Part Number  | Rating |                | Description |         |
|----------|--------------|--------|----------------|-------------|---------|
|          |              | Pc     | f <sub>T</sub> | Silicon     | Maker   |
| X351     | 2SC2235(O,Y) | 0.9 W  | 120 MHz        | Silicon     | Toshiba |
| X352     | 2SC2235(O,Y) | "      | "              | "           | "       |
| X353     | 2SA965(O,Y)  | "      | "              | "           | "       |
| X354     | 2SA965(O,Y)  | "      | "              | "           | "       |
| X355     | 2SC2564(O,Y) | 120 W  | 90 MHz         | "           | "       |
| X356     | 2SC2564(O,Y) | "      | "              | "           | "       |
| X357     | 2SA1094(O,Y) | "      | 70 MHz         | "           | Hitachi |
| X358     | 2SA1094(O,Y) | "      | "              | "           | "       |
| X401     | 2SC2546(E,F) | 0.4 W  | 90 MHz         | "           | "       |
| X402     | 2SC2546(E,F) | "      | "              | "           | "       |
| X451     | 2SC458(C,D)  | 0.2 W  | 230 MHz        | "           | "       |
| X452     | 2SC458(C,D)  | "      | "              | "           | "       |
| X453     | 2SA1029(C,D) | "      | 200 MHz        | "           | "       |
| X454     | 2SA1029(C,D) | "      | "              | "           | "       |
| X455     | 2SA1029(C,D) | "      | "              | "           | "       |
| X456     | 2SA1029(C,D) | "      | "              | "           | "       |
| X457     | 2SC458(C,D)  | "      | 230 MHz        | "           | "       |
| X458     | 2SC458(C,D)  | "      | "              | "           | "       |
| X801     | 2SK105(F)    | 0.25 W |                | F.E.T.      | NEC     |
| X802     | 2SK105(F)    | "      |                | "           | "       |
| X803     | 2SC2235(O,Y) | 0.9 W  | 120 MHz        | Silicon     | Toshiba |
| X804     | 2SA965(O,Y)  | "      | "              | "           | "       |
| X851     | 2SC1775AV(F) | 0.2 W  | 200 MHz        | "           | Hitachi |
| X852     | 2SC1775AV(F) | "      | "              | "           | "       |
| X853     | 2SA872AV(E)  | 0.3 W  | 120 MHz        | "           | "       |

## Diodes

| Item No. | Part Number  | Rating | Description    | Maker        |
|----------|--------------|--------|----------------|--------------|
| D603     | SG203TA      |        | L.E.D.         | NEC          |
| D604     | SY403TA      |        | "              | "            |
| D605     | SG203TA      |        | "              | "            |
| D606     | SY403TA      |        | "              | "            |
| D801     | 30D2FA-S     |        | Silicon        | Nihon Inter. |
| D802     | 30D2FA-S     |        | "              | "            |
| D803     | 30D2FA-S     |        | "              | "            |
| D804     | 30D2FA-S     |        | "              | "            |
| D805     | RD27EB3      |        | Silicon(Zener) | NEC          |
| D806     | RD27EB3      |        | "              | "            |
| D851     | ERB12-02RKL1 |        | Silicon        | Fuji         |
| D852     | 1S2076-31    |        | "              | Hitachi      |
| D853     | 1S2076-31    |        | "              | "            |

## Coil & Transformers

| Item No. | Part Number | Rating | Description |
|----------|-------------|--------|-------------|
| L351     | E04059-1R0  | 1 μH   | Choke Coil  |
| L352     | E04059-1R0  | "      | "           |

## Capacitors

| Item No. | Part Number | Rating   |       | Description                      |
|----------|-------------|----------|-------|----------------------------------|
| C351     | QFM31HK-223 | 0.022 μF | 50 V  | Mylar                            |
| C352     | QFM31HK-223 | "        | "     | "                                |
| C353     | QFM31HK-152 | 1500 pF  | "     | "                                |
| C354     | QFM31HK-152 | "        | "     | "                                |
| C355     | QCS21HJ-471 | 470 pF   | "     | Ceramic                          |
| C356     | QCS21HJ-471 | "        | "     | "                                |
| C357     | QCS21HJ-220 | 22 pF    | "     | "                                |
| C358     | QCS21HJ-220 | "        | "     | "                                |
| C359     | QCS21HJ-220 | "        | "     | "                                |
| C360     | QCS21HJ-220 | "        | "     | "                                |
| C361     | QFM31HK-103 | 0.01 μF  | "     | Mylar                            |
| C362     | QFM31HK-103 | "        | "     | "                                |
| C363     | QFM31HK-103 | "        | "     | "                                |
| C364     | QFM31HK-103 | "        | "     | "                                |
| C401     | QFM31HK-332 | 3300 pF  | "     | "                                |
| C402     | QFM31HK-332 | "        | "     | "                                |
| C403     | QFM31HK-103 | 0.01 μF  | "     | "                                |
| C404     | QFM31HK-103 | "        | "     | "                                |
| C801     | QCE22HP-103 | "        | 500 V | Ceramic (U.S.A. & Canada)        |
| C801     | QFZ0074-104 | 0.1 μF   | 250 V | Ceramic (Except U.S.A. & Canada) |

⚠ : Safety Parts

## Integrated Circuits

| Item No. | Part Number | Rating | Description | Maker     |
|----------|-------------|--------|-------------|-----------|
| IC401    | VC5022      |        | I.C.        | Toyodengu |
| IC402    | VC5022      |        | "           | "         |
| IC851    | TA7317P     | 0.5 W  | "           | Toshiba   |

## Diodes

| Item No. | Part Number | Rating | Description | Maker   |
|----------|-------------|--------|-------------|---------|
| D351     | 1S2076-31   |        | Silicon     | Hitachi |
| D352     | 1S2076-31   |        | "           | "       |
| D451     | 1S2076-31   |        | "           | "       |
| D601     | SG203TA     |        | L.E.D.      | NEC     |
| D602     | SG203TA     |        | "           | "       |

## Capacitors

| Item No. | Part Number  | Rating       |       | Description           |
|----------|--------------|--------------|-------|-----------------------|
| C802     | QCE22HP-103  | 0.01 $\mu$ F | 500 V | Ceramic               |
| C803     | EEW5601-878  | 8700 $\mu$ F | 56 V  | Electrolytic          |
| C804     | EEW5601-878  | "            | "     | "                     |
| C807     | QET51HR-106H | 10 $\mu$ F   | 50 V  | Tantalum Electrolytic |
| C808     | QET51HR-106H | "            | "     | "                     |
| C851     | QET51HR-105H | 1 $\mu$ F    | "     | "                     |
| C852     | QET51CR-226H | 22 $\mu$ F   | 16 V  | "                     |
| C853     | QET51AR-476H | 47 $\mu$ F   | 10 V  | "                     |
| C854     | QET51AR-476H | "            | "     | "                     |
| C855     | QET51HR-106H | 10 $\mu$ F   | 50 V  | "                     |
| C857     | QFM31HK-103  | 0.01 $\mu$ F | "     | Mylar                 |
| C858     | QFM31HK-103  | "            | "     | "                     |

## Resistors

| Item No. | Part Number   | Rating        |        | Description                |
|----------|---------------|---------------|--------|----------------------------|
| R351     | QRZ0052-181   | 180 $\Omega$  | 1/4 W  | Carbon (Fuse) $\triangle$  |
| R352     | QRZ0052-181   | "             | "      | " $\triangle$              |
| R353     | QRZ0052-181   | "             | "      | " $\triangle$              |
| R354     | QRZ0052-181   | "             | "      | " $\triangle$              |
| R355     | QRZ0052-100   | 10 $\Omega$   | "      | " $\triangle$              |
| R356     | QRZ0052-100   | "             | "      | " $\triangle$              |
| R357     | QRZ0052-271   | 270 $\Omega$  | 1/4 W  | " $\triangle$              |
| R358     | QRZ0052-271   | "             | "      | " $\triangle$              |
| R359     | QRZ0052-100   | 10 $\Omega$   | "      | " $\triangle$              |
| R360     | QRZ0052-100   | "             | "      | " $\triangle$              |
| R361     | QRD149J-5R6S  | 5.6 $\Omega$  | "      | Carbon $\triangle$         |
| R362     | QRD149J-5R6S  | "             | "      | " $\triangle$              |
| R363     | QRD149J-5R6S  | "             | "      | " $\triangle$              |
| R364     | QRD149J-5R6S  | "             | "      | " $\triangle$              |
| R365     | QRM054K-R22   | 0.22 $\Omega$ | 5 W    | Metal Plate $\triangle$    |
| R366     | QRM054K-R22   | "             | "      | " $\triangle$              |
| R367     | QRM054K-R22   | "             | "      | " $\triangle$              |
| R368     | QRM054K-R22   | "             | "      | " $\triangle$              |
| R369     | QRD129J-4R7   | 4.7 $\Omega$  | 1/2 W  | Carbon $\triangle$         |
| R370     | QRD129J-4R7   | "             | "      | " $\triangle$              |
| R371     | See Page 19   | 10 $\Omega$   | "      | " $\triangle$              |
| R372     | See Page 19   | "             | "      | " $\triangle$              |
| R373     | QRG017J-331S  | 330 $\Omega$  | "      | Ox. Metal Film $\triangle$ |
| R374     | QRG017J-331S  | "             | "      | " $\triangle$              |
| R375     | See Page 19   | 10 $\Omega$   | "      | " $\triangle$              |
| R376     | See Page 19   | "             | "      | " $\triangle$              |
| R377     | See Page 19   | "             | "      | " $\triangle$              |
| R378     | See Page 19   | "             | "      | " $\triangle$              |
| R401     | QVP4A0B-221   | 220 $\Omega$  | 0.15 W | Variable                   |
| R402     | QVP4A0B-221   | "             | "      | "                          |
| R403     | SDT35         | 350 $\Omega$  | 1 W    | Thermistor                 |
| R404     | SDT35         | "             | "      | "                          |
| R405     | QRD141J-331SY | 330 $\Omega$  | 1/4 W  | Carbon                     |
| R406     | QRD141J-331SY | "             | "      | "                          |
| R407     | QRD141J-821SY | 820 $\Omega$  | "      | "                          |
| R408     | QRD141J-821SY | "             | "      | "                          |
| R451     | QRD141J-102SY | 1 k $\Omega$  | "      | "                          |
| R452     | QRD141J-102SY | "             | "      | "                          |
| R453     | QRD141J-102SY | "             | "      | "                          |
| R454     | QRD141J-102SY | "             | "      | "                          |
| R455     | QRD141J-102SY | "             | "      | "                          |
| R456     | QRD141J-102SY | "             | "      | "                          |
| R457     | QRD141J-102SY | "             | "      | "                          |
| R458     | QRD141J-102SY | "             | "      | "                          |
| R459     | QRD141J-103SY | 10 k $\Omega$ | "      | "                          |
| R460     | QRD141J-103SY | "             | "      | "                          |
| R461     | QRD141J-103SY | "             | "      | "                          |
| R462     | QRD141J-103SY | "             | "      | "                          |
| R801     | QRZ0052-820   | 82 $\Omega$   | "      | Carbon (Fuse) $\triangle$  |
| R802     | QRZ0052-820   | "             | "      | " $\triangle$              |

## Resistors

| Item No. | Part Number   | Rating         |       | Description                |
|----------|---------------|----------------|-------|----------------------------|
| R803     | QRD149J-820S  | 82 $\Omega$    | 1/4W  | Carbon $\triangle$         |
| R804     | QRD149J-820S  | "              | "     | " $\triangle$              |
| R807     | QRD141J-224SY | 220 k $\Omega$ | "     | "                          |
| R822     | QRD141J-223SY | 22 k $\Omega$  | "     | "                          |
| R851     | QRD149J-331S  | 330 $\Omega$   | "     | " $\triangle$              |
| R853     | QRD141J-224SY | 220 k $\Omega$ | "     | "                          |
| R854     | QRD141J-103SY | 10 k $\Omega$  | "     | "                          |
| R855     | QRD141J-204SY | 200 k $\Omega$ | "     | "                          |
| R856     | QRD141J-683SY | 68 k $\Omega$  | "     | "                          |
| R857     | QRD141J-223SY | 22 k $\Omega$  | "     | "                          |
| R858     | QRD141J-473SY | 47 k $\Omega$  | "     | "                          |
| R859     | QRD141J-103SY | 10 k $\Omega$  | "     | "                          |
| R860     | QRD149J-270S  | 27 $\Omega$    | "     | " $\triangle$              |
| R861     | QRD141J-563SY | 56 k $\Omega$  | "     | "                          |
| R862     | QRD141J-563SY | "              | "     | "                          |
| R863     | QRD141J-273SY | 27 k $\Omega$  | "     | "                          |
| R864     | QRD141J-273SY | "              | "     | "                          |
| R865     | QRD141J-223SY | 22 k $\Omega$  | "     | "                          |
| R866     | QRD141J-223SY | "              | "     | "                          |
| R867     | QRD141J-681SY | 680 $\Omega$   | "     | "                          |
| R868     | QRD141J-681SY | "              | "     | "                          |
| R869     | QRD141J-562SY | 5.6 k $\Omega$ | "     | "                          |
| R870     | QRD141J-562SY | "              | "     | "                          |
| R871     | QRG017J-102S  | 1 k $\Omega$   | 1 W   | Ox. Metal Film $\triangle$ |
| R872     | QRD141J-332SY | 3.3 k $\Omega$ | 1/4 W | Carbon                     |

## Others

| Item No. | Part Number | Rating | Description                         |
|----------|-------------|--------|-------------------------------------|
| J351     | E03572-011  |        | Speaker Terminal                    |
| J352     | E03572-011  |        | "                                   |
| J353     | QMS6302-105 |        | Head Phone Jack Ass'y               |
| J602     | EWS014-015  |        | 4P Socket Wire Ass'y (To TXX-216-2) |
| J604     | EWS015-013  |        | 5P Socket Wire Ass'y (To TXX-216-1) |
| J901     | EWS012-010  |        | 2P Socket Wire Ass'y (To TDS-5)     |
| P301     | QMV5005-003 |        | 3P Plug Ass'y                       |
| P302     | QMV5005-003 |        | " "                                 |
| P303     | QMV5005-005 |        | 5P "                                |
| P801     | QMV5005-002 |        | 2P "                                |
| P803     | QMV5005-004 |        | 4P "                                |
| RY851    | ESK6D24-213 |        | Relay Switch                        |
|          | See Page 19 |        | Fuse Clip                           |
|          | See Page 19 |        | Fuse Label                          |
|          | E300209-005 |        | Heat Sink                           |
|          | E03628-5UD  |        | 5P Plug Ass'y (Test Point)          |
|          | E300508-001 |        | 4 L.E.D. Holder                     |
|          | E43727-002  |        | Tab                                 |
|          | E65468-007  |        | Heat Sink Bracket                   |
|          | E67105-001  |        | Clip (X401, 402)                    |
|          | E66689-001  |        | 1 L.E.D. Holder                     |
|          | LPSP3014NS  |        | Screw                               |
|          | QSP0229-103 |        | Push Switch (Speaker)               |
|          | SBSB3008Z   |        | Tapping Screw                       |
|          | E66998-002  |        | IC Cap                              |

$\triangle$  : Safety Parts

## 8-(3) TXX-216 Equalizer Amp. and Source Selector P.C. Board Ass'y

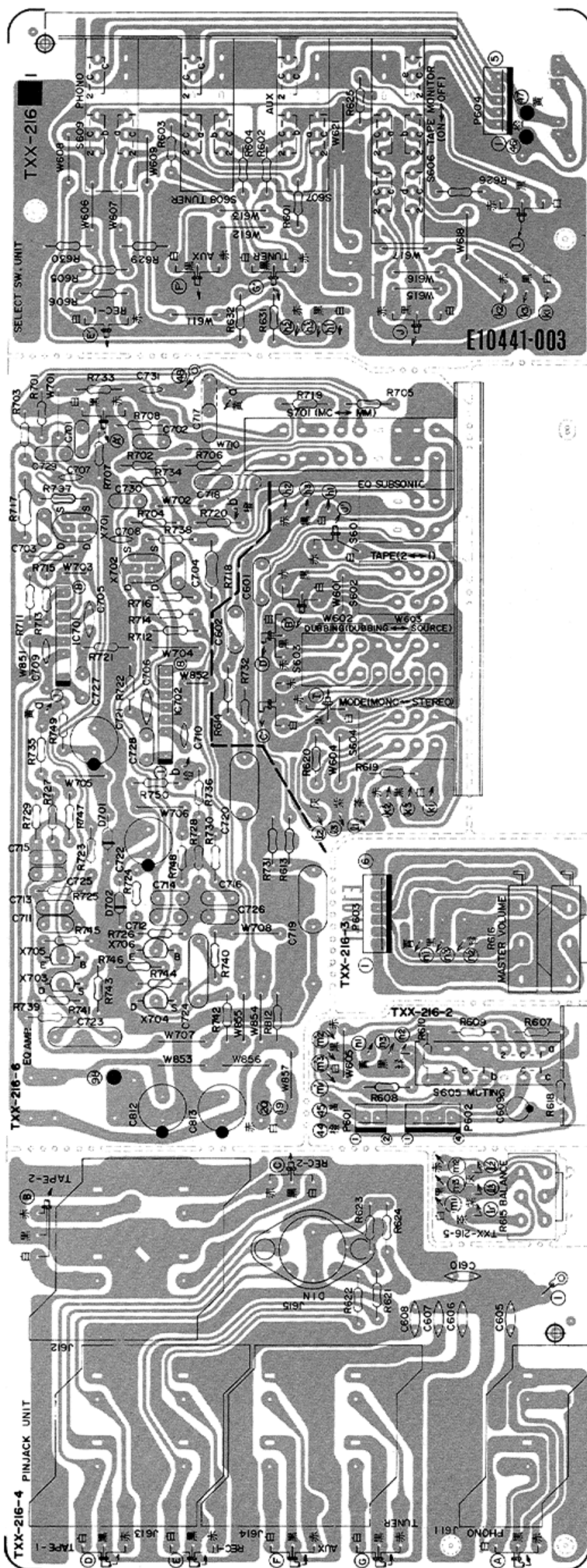


Fig. 16

Each Individual P.C. Board Location

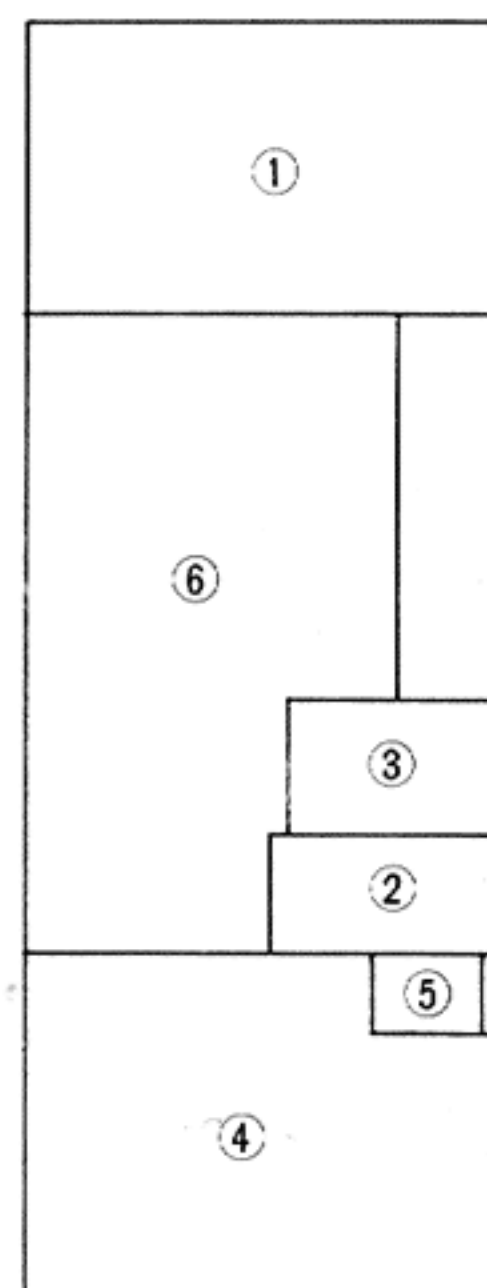


Fig. 17

- ① TXX-216-1 Select Switch P.C.B. Ass'y
- ② TXX-216-2 Muting Switch P.C.B. Ass'y
- ③ TXX-216-3 Volume P.C.B. Ass'y
- ④ TXX-216-4 Pin Jack P.C.B. Ass'y
- ⑤ TXX-216-5 Balance Control P.C.B. Ass'y
- ⑥ TXX-216-6 EQ Amp. & Switch P.C.B. Ass'y

### Note:

The specific symbols (赤, 黒, 白, ... etc.) on a surface of above P.C. Board are actually unrelated to the repair service and are significant denotement in order to process the proper assembly of P.C. Board at the factory.

## Transistors

| Item No. | Part Number  | Rating |                | Description |         |
|----------|--------------|--------|----------------|-------------|---------|
|          |              | Pc     | f <sub>T</sub> | F.E.T.      | Maker   |
| X701     | 2SK240(BL,V) | 0.4 W  | 90 MHz         | "           | Toshiba |
| X702     | 2SK240(BL,V) |        |                | "           | "       |
| X703     | 2SK68A(M)    |        |                | "           | NEC     |
| X704     | 2SK68A(M)    |        |                | "           | "       |
| X705     | 2SC458(C,D)  | 0.2 W  | 230 MHz        | Silicon     | Hitachi |
| X706     | 2SC458(C,D)  | "      | "              | "           | "       |

## Integrated Circuits

| Item No. | Part Number | Rating | Description | Maker   |
|----------|-------------|--------|-------------|---------|
|          |             | Pc     |             |         |
| IC701    | HA1457      | 0.5 W  | I.C.        | Hitachi |
| IC702    | HA1457      | "      | "           | "       |

## Diodes

| Item No. | Part Number | Rating | Description | Maker   |
|----------|-------------|--------|-------------|---------|
|          |             |        |             |         |
| D701     | 1S2076-31   |        | Silicon     | Hitachi |
| D702     | 1S2076-31   |        | "           | "       |

## Capacitors

| Item No. | Part Number  | Rating        |       | Description           |
|----------|--------------|---------------|-------|-----------------------|
|          |              | Value         | V     |                       |
| C601     | QFM31HK-224  | 0.22 $\mu$ F  | 50 V  | Mylar                 |
| C602     | QFM31HK-224  | "             | "     | "                     |
| C605     | QCF21HP-473  | 0.022 $\mu$ F | "     | Ceramic               |
| C606     | QCF21HP-103A | "             | "     | "                     |
| C607     | QCF21HP-103A | "             | "     | "                     |
| C608     | QCF21HP-103A | "             | "     | "                     |
| C609     | QET51AR-476  | 47 $\mu$ F    | 10 V  | Electrolytic          |
| C610     | QCF21HP-103A | 0.022 $\mu$ F | 50 V  | Ceramic               |
| C701     | QCS21HJ-151  | 150 pF        | "     | "                     |
| C702     | QCS21HJ-151  | "             | "     | "                     |
| C703     | QFM31HK-153  | 0.015 $\mu$ F | "     | Mylar                 |
| C704     | QFM31HK-153  | "             | "     | "                     |
| C705     | QCS21HJ-680  | 68 pF         | "     | Ceramic               |
| C706     | QCS21HJ-680  | "             | "     | "                     |
| C709     | QCS21HJ-560  | 56 pF         | "     | "                     |
| C710     | QCS21HJ-560  | "             | "     | "                     |
| C711     | QFM31HJ-822  | 8200 pF       | "     | Mylar                 |
| C712     | QFM31HJ-822  | "             | "     | "                     |
| C713     | QFM31HJ-822  | "             | "     | "                     |
| C714     | QFM31HJ-822  | "             | "     | "                     |
| C715     | QFM31HJ-472  | 4700 pF       | "     | "                     |
| C716     | QFM31HJ-472  | "             | "     | "                     |
| C717     | QFM31HK-123  | 0.012 $\mu$ F | "     | "                     |
| C718     | QFM31HK-123  | "             | "     | "                     |
| C719     | EFZ0080-105  | 1 $\mu$ F     | 200 V | Film                  |
| C720     | EFZ0080-105  | "             | "     | "                     |
| C721     | QET51CR-227H | 220 $\mu$ F   | 16 V  | Tantalum Electrolytic |
| C722     | QET51CR-227H | "             | "     | "                     |
| C723     | QFH42AK-474  | 0.47 $\mu$ F  | 100 V | Metallized Mylar      |
| C724     | QFH42AK-474  | "             | "     | "                     |
| C727     | QCS21HJ-221  | 220 pF        | 50 V  | Ceramic               |
| C728     | QCS21HJ-221  | "             | "     | "                     |
| C729     | QFM31HK-473  | 0.047 $\mu$ F | "     | Mylar                 |
| C730     | QFM31HK-473  | "             | "     | "                     |
| C731     | QCF21HP-473  | "             | "     | Ceramic               |
| C812     | QET51ER-227E | 220 $\mu$ F   | 25 V  | Electrolytic          |
| C813     | QET51ER-227E | "             | "     | "                     |

## Resistors

| Item No. | Part Number   | Rating         |       | Description                     |
|----------|---------------|----------------|-------|---------------------------------|
|          |               | Value          | W     |                                 |
| R601     | QRD141J-331SY | 330 $\Omega$   | 1/4 W | Carbon                          |
| R602     | QRD141J-331SY | "              | "     | "                               |
| R603     | QRD141J-331SY | "              | "     | "                               |
| R604     | QRD141J-331SY | "              | "     | "                               |
| R605     | QRD141J-331SY | "              | "     | "                               |
| R606     | QRD141J-331SY | "              | "     | "                               |
| R607     | QRD141J-823SY | 82 k $\Omega$  | "     | "                               |
| R608     | QRD141J-823SY | "              | "     | "                               |
| R609     | QRD141J-103SY | 10 k $\Omega$  | "     | "                               |
| R610     | QRD141J-103SY | "              | "     | "                               |
| R613     | QRD141J-331SY | 330 $\Omega$   | "     | "                               |
| R614     | QRD141J-331SY | "              | "     | "                               |
| R615     | QVD7A3M-1F5V  | 250 k $\Omega$ | "     | Variable (Balance Control)      |
| R616     | QVZ1221-002   | 100 k $\Omega$ | 1/2 W | Variable (Master Volume)        |
| R618     | QRD141J-220SY | 22 $\Omega$    | 1/4 W | Carbon                          |
| R619     | QRD141J-472SY | 4.7 k $\Omega$ | "     | "                               |
| R620     | QRD141J-472SY | "              | "     | "                               |
| R621     | QRD141J-334SY | 330 k $\Omega$ | "     | Carbon (Except U.S.A. & Canada) |
| R622     | QRD141J-334SY | "              | "     | "                               |
| R623     | QRD141J-104SY | 100 k $\Omega$ | "     | "                               |
| R624     | QRD141J-104SY | "              | "     | "                               |
| R625     | QRD141J-331SY | 330 $\Omega$   | "     | Carbon                          |
| R626     | QRD141J-331SY | "              | "     | "                               |
| R629     | QRD141J-105SY | 1 M $\Omega$   | "     | "                               |
| R630     | QRD141J-105SY | "              | "     | "                               |
| R631     | QRD141J-100SY | 10 $\Omega$    | "     | "                               |
| R632     | QRD141J-100SY | "              | "     | "                               |
| R701     | QRD141J-473SY | 47 k $\Omega$  | "     | "                               |
| R702     | QRD141J-473SY | "              | "     | "                               |
| R703     | QRD141J-5R6SY | 5.6 $\Omega$   | "     | "                               |
| R704     | QRD141J-5R6SY | "              | "     | "                               |
| R705     | QRD141J-101SY | 100 $\Omega$   | "     | "                               |
| R706     | QRD141J-101SY | "              | "     | "                               |
| R707     | QRD141J-471SY | 470 $\Omega$   | "     | "                               |
| R708     | QRD141J-471SY | "              | "     | "                               |
| R711     | QRD141J-202SL | 2 k $\Omega$   | "     | "                               |
| R712     | QRD141J-202SL | "              | "     | "                               |
| R713     | QRD141J-242SL | 2.4 k $\Omega$ | "     | "                               |
| R714     | QRD141J-242SL | "              | "     | "                               |
| R715     | QRD141J-151SY | 150 $\Omega$   | "     | "                               |
| R716     | QRD141J-151SY | "              | "     | "                               |
| R717     | QRD129J-152   | 1.5 k $\Omega$ | 1/2 W | "                               |
| R718     | QRD129J-152   | "              | "     | "                               |
| R719     | QRD141J-270SY | 27 $\Omega$    | 1/4 W | "                               |
| R720     | QRD141J-270SY | "              | "     | "                               |
| R721     | QRD141J-102SY | 1 k $\Omega$   | "     | "                               |
| R722     | QRD141J-102SY | "              | "     | "                               |
| R723     | QRD141J-184SY | 180 k $\Omega$ | "     | "                               |
| R724     | QRD141J-184SY | "              | "     | "                               |
| R725     | QRD141J-123SY | 12 k $\Omega$  | "     | "                               |
| R726     | QRD141J-123SY | "              | "     | "                               |
| R727     | QRD141J-163SY | 16 k $\Omega$  | "     | "                               |
| R728     | QRD141J-163SY | "              | "     | "                               |
| R729     | QRD141J-220SY | 22 $\Omega$    | "     | "                               |
| R730     | QRD141J-220SY | "              | "     | "                               |
| R731     | QRD141J-224SY | 220 k $\Omega$ | "     | "                               |
| R732     | QRD141J-224SY | "              | "     | "                               |
| R733     | QRD141J-331SY | 330 $\Omega$   | "     | "                               |
| R734     | QRD141J-331SY | "              | "     | "                               |
| R735     | QRD141J-105SY | 1 M $\Omega$   | "     | "                               |
| R736     | QRD141J-105SY | "              | "     | "                               |
| R737     | QRD141J-821SY | 820 $\Omega$   | "     | "                               |
| R738     | QRD141J-821SY | "              | "     | "                               |
| R739     | QRD141J-475SY | 4.7 M $\Omega$ | "     | "                               |
| R740     | QRD141J-475SY | 4.7 M $\Omega$ | "     | "                               |
| R741     | QRD141J-683SY | 68 k $\Omega$  | "     | "                               |

## Resistors

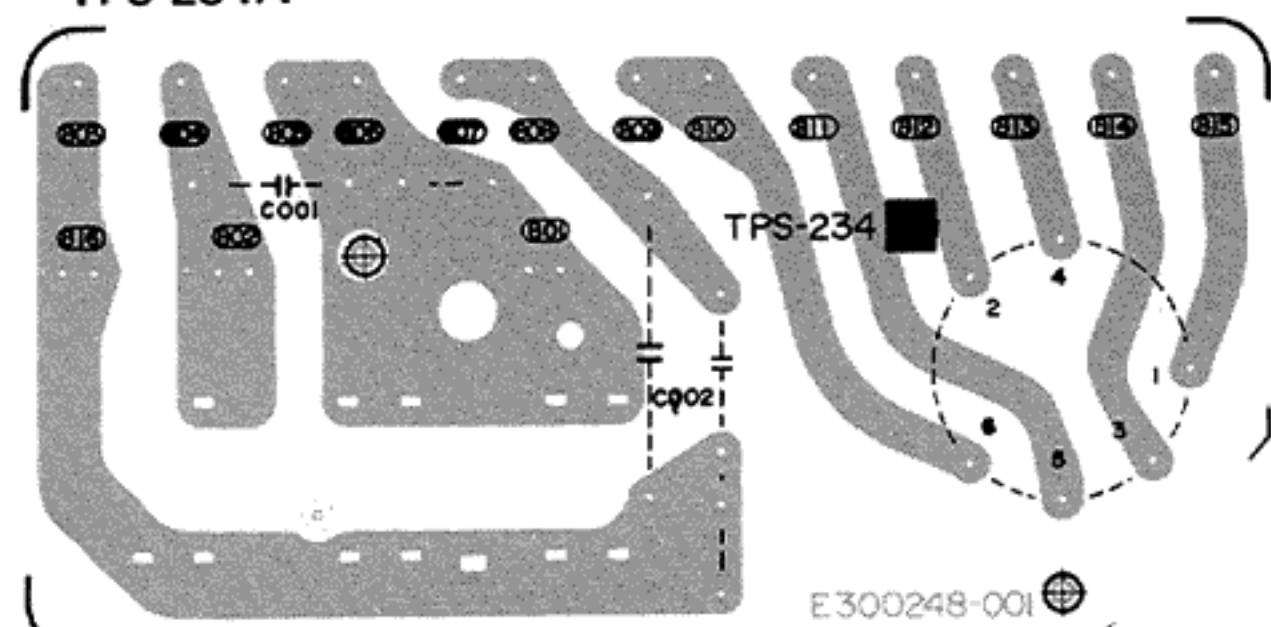
| Item No. | Part Number   | Rating | Description  |
|----------|---------------|--------|--------------|
| R742     | QRD141J-683SY | 68 kΩ  | 1/4 W Carbon |
| R743     | QRD141J-122SY | 1.2 kΩ | "            |
| R744     | QRD141J-122SY | "      | "            |
| R745     | QRD141J-222SY | 2.2 kΩ | "            |
| R746     | QRD141J-222SY | "      | "            |
| R747     | QRD141J-133SY | 13 kΩ  | "            |
| R748     | QRD141J-133SY | "      | "            |
| R749     | QRD141J-472SY | 4.7 kΩ | "            |
| R750     | QRD141J-472SY | "      | "            |
| R812     | QRD141J-912SY | 9.1 kΩ | "            |

## Others

| Item No. | Part Number | Rating | Description                                |
|----------|-------------|--------|--------------------------------------------|
| J611     | E03591-22DS |        | 2Pin Jack Ass'y                            |
| J612     | E03591-42D  |        | 4Pin "                                     |
| J613     | E03591-42D  |        | " "                                        |
| J614     | E03591-42D  |        | " "                                        |
| J615     | E03623-003  |        | Din Socket Ass'y<br>(Except U.S.A.&Canada) |
| J801     | EWS012-009  |        | 2P Socket Wire Ass'y<br>(To TXX-215-1)     |
| P601     | QMV5005-002 |        | 2P Plug Ass'y                              |
| P602     | QMV5005-004 |        | 4P "                                       |
| P603     | QMV5005-006 |        | 6P "                                       |
| P604     | QMV5005-005 |        | 5P "                                       |
| S605     | QSP0210-104 |        | Push Switch (Muting)                       |
| 4KEY     | QSP0249-112 |        | Push Switch                                |
| 5KEY     | QSP0259-003 |        | "                                          |
|          | EWT011-018  |        | Terminal Wire Ass'y                        |

## 8-(4) TPS-234 AC Socket P.C. Board Ass'y

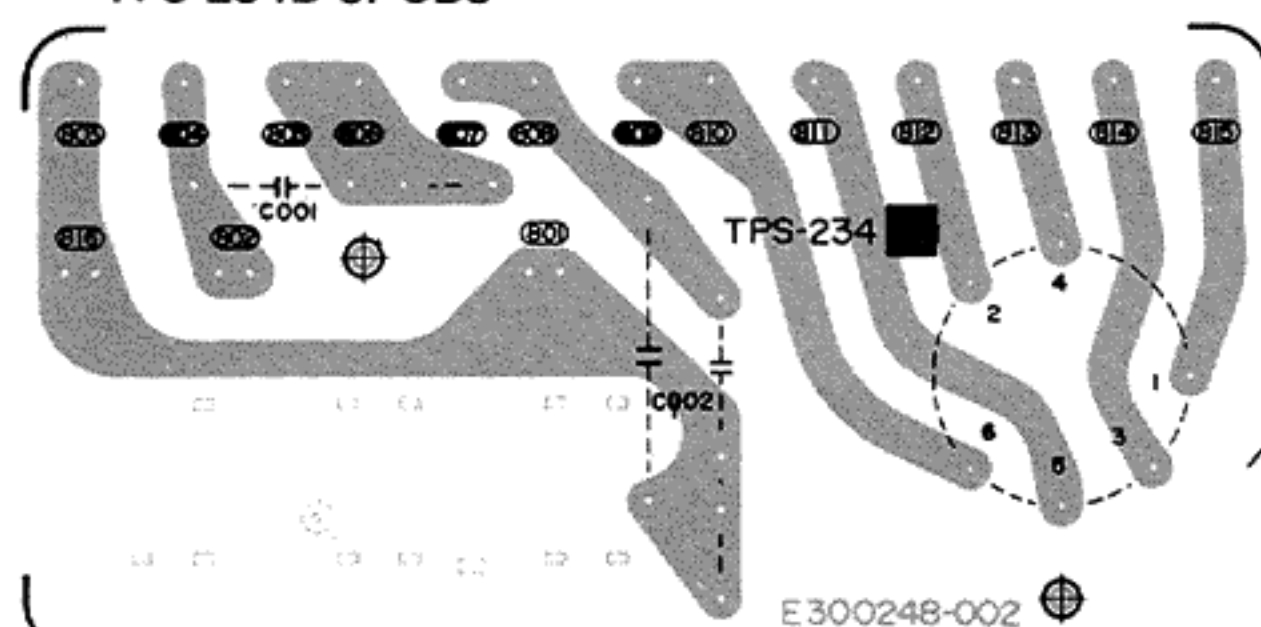
TPS-234A



For U.S. Military Market and  
Other Countries

Fig. 18

TPS-234B or CBS



TPS-234B : for Australia & Europe  
TPS-234CBS : for U.K.

Fig. 19

| Item No.  | Description        | Part Number                       |                                    |                                      |
|-----------|--------------------|-----------------------------------|------------------------------------|--------------------------------------|
|           |                    | TPS-234A                          | TPS-234B                           | TPS-23CBS                            |
| C001/C002 | Film Capacitor ⚠   | QFH53BM-103<br>(0.01 μF/AC 500 V) | QFZ29007-103<br>(0.01 μF/AC 450 V) | QFZ29007-103BS<br>(0.01 μF/AC 450 V) |
|           | AC Outlets ⚠       | QMC0637-003                       | —                                  | —                                    |
|           | Tab (Long)         | E43727-001                        | E43727-001                         | E43727-001                           |
|           | Tab (Short)        | E65508-001                        | E65508-001                         | E65508-001                           |
|           | Bracket            | —                                 | E65586-002                         | E65586-002                           |
|           | Tapping Screw      | —                                 | SBSB3008Z                          | SBSB3008Z                            |
|           | Voltage Selector ⚠ | QSR0085-001                       | QSR0085-001                        | QSR0085-001BS                        |

## 8-(5) TPS-255 AC Fuse P.C. Board Ass'y

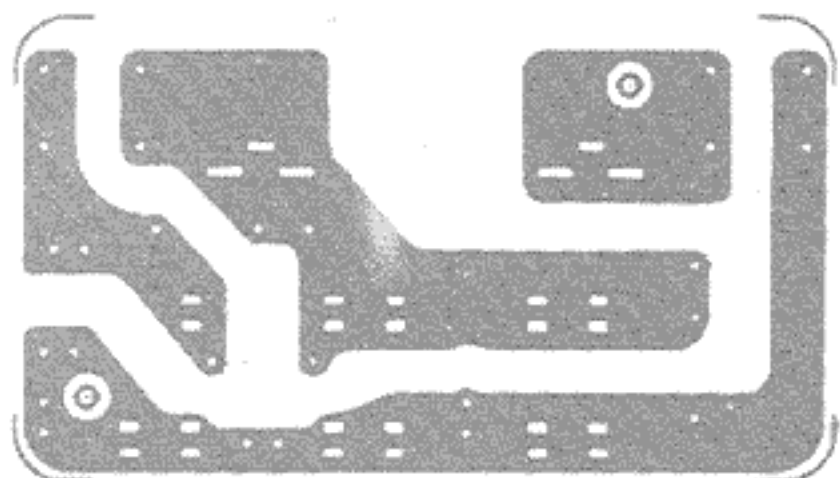


Fig. 20

TPS-255B for U.S.A. & Canada

### Capacitors

| Item No. | Part Number  | Rating        | Description |
|----------|--------------|---------------|-------------|
| C001     | QCZ9014-103A | 0.01 μF 125 V | Ceramic ⚠   |

### Others

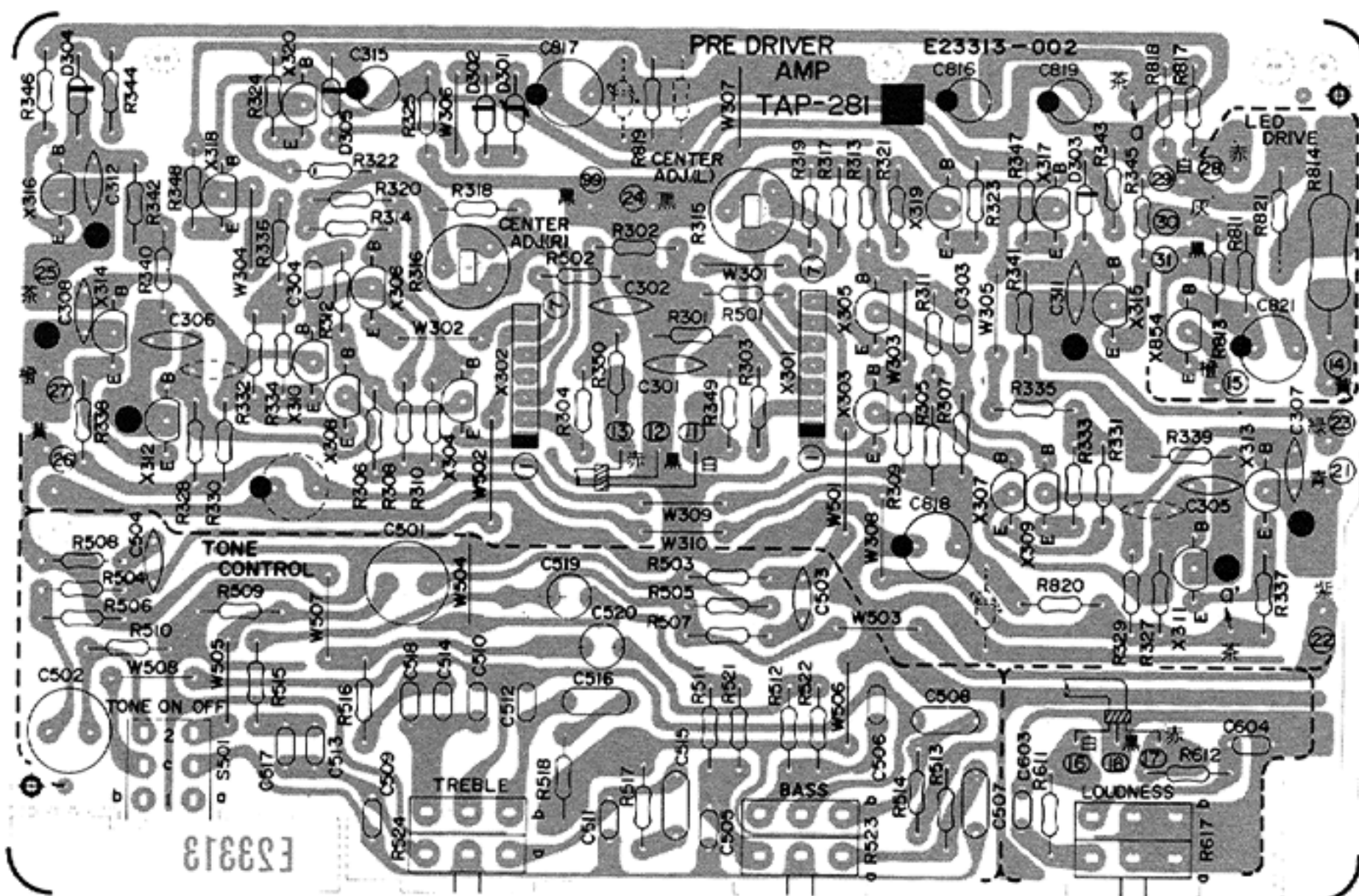
| Item No. | Part Number | Rating | Description |
|----------|-------------|--------|-------------|
| J811     | QMC0637-003 |        | AC Outlet ⚠ |
|          | E03675-004  |        | Fuse Clip ⚠ |
|          | E43727-001  |        | Tab (Long)  |
|          | E65508-001  |        | Tab (Short) |

⚠ : Safety Parts

### Note:

The specific symbols ( 赤, 黒, 白, ... etc.) on a surface of above P.C. Board are actually unrelated to the repair service and are significant denotement in order to process the proper assembly of P.C. Board at the factory.

## 8-(6) TAP-281 Driver Amp. P.C. Board Ass'y



### Note:

The Specific symbols (赤, 黒, 白, . . . etc.) on a surface of above P.C. Board are actually unrelated to the repair service and are significant denotement in order to process the proper assembly of P.C. Board at the factory.

Fig. 21

### Transistors

| Item No. | Part Number    | Rating     |                | Description |         |
|----------|----------------|------------|----------------|-------------|---------|
|          |                | Pc         | f <sub>T</sub> |             | Maker   |
| X301     | 2SK150A(GR,BL) | 0.2 W/Unit |                | Dual F.E.T. | Toshiba |
| X302     | 2SK150A(GR,BL) | "          |                | "           | "       |
| X303     | 2SC458(C,D)    | 0.2 W      | 230 MHz        | Silicon     | Hitachi |
| X304     | 2SC458(C,D)    | "          | "              | "           | "       |
| X305     | 2SC458(C,D)    | "          | "              | "           | "       |
| X306     | 2SC458(C,D)    | "          | "              | "           | "       |
| X307     | 2SC458(C,D)    | "          | "              | "           | "       |
| X308     | 2SC458(C,D)    | "          | "              | "           | "       |
| X309     | 2SC458(C,D)    | "          | "              | "           | "       |
| X310     | 2SC458(C,D)    | "          | "              | "           | "       |
| X311     | 2SA872AV(D,E)  | 0.3 W      | 120 MHz        | "           | "       |
| X312     | 2SA872AV(D,E)  | "          | "              | "           | "       |
| X313     | 2SA872AV(D,E)  | "          | "              | "           | "       |
| X314     | 2SA872AV(D,E)  | "          | "              | "           | "       |
| X315     | 2SC1775AV(E,F) | 0.2 W      | 200 MHz        | "           | "       |
| X316     | 2SC1775AV(E,F) | "          | "              | "           | "       |
| X317     | 2SC458(C,D)    | "          | 230 MHz        | "           | "       |
| X318     | 2SC458(C,D)    | "          | "              | "           | "       |
| X319     | 2SC458(C,D)    | "          | "              | "           | "       |
| X320     | 2SC458(C,D)    | "          | "              | "           | "       |
| X854     | 2SA1084(E)     | 0.4 W      | 120 MHz        | "           | "       |

### Capacitors

| Item No. | Part Number  | Rating   |       | Description  |
|----------|--------------|----------|-------|--------------|
|          |              |          |       |              |
| C303     | QCS21HJ-471  | 470 pF   | 50 V  | Ceramic      |
| C304     | QCS21HJ-471  | "        | "     | "            |
| C305     | QCS21HJ-100  | 10 pF    | "     | "            |
| C306     | QCS21HJ-100  | "        | "     | "            |
| C307     | QCS21HJ-150  | 15 pF    | "     | "            |
| C308     | QCS21HJ-150  | "        | "     | "            |
| C311     | QCS21HJ-560  | 56 pF    | "     | "            |
| C312     | QCS21HJ-560  | "        | "     | "            |
| C315     | QET51HR-105H | 1 μF     | "     | Electrolytic |
| C501     | QEZ0046-226  | 22 μF    | "     | "            |
| C502     | QEZ0046-226  | "        | "     | "            |
| C503     | QCS21HJ-150  | 15 pF    | "     | Ceramic      |
| C504     | QCS21HJ-150  | "        | "     | "            |
| C505     | QFM31HJ-333  | 0.033 μF | "     | Mylar        |
| C506     | QFM31HJ-333  | "        | "     | "            |
| C507     | QFM31HJ-224  | 0.22 μF  | "     | "            |
| C508     | QFM31HJ-224  | "        | "     | "            |
| C509     | QCS21HJ-181  | 180 pF   | "     | Ceramic      |
| C510     | QCS21HJ-181  | "        | "     | "            |
| C511     | QFM31HJ-122  | 1200 pF  | "     | Mylar        |
| C512     | QFM31HJ-122  | "        | "     | "            |
| C513     | QFM31HJ-472  | 4700 pF  | "     | "            |
| C514     | QFM31HJ-472  | "        | "     | "            |
| C515     | QFM31HJ-563  | 0.056 μF | "     | "            |
| C516     | QFM31HJ-563  | "        | "     | "            |
| C517     | QFM31HJ-272  | 2700 pF  | "     | "            |
| C518     | QFM31HJ-272  | "        | "     | "            |
| C519     | QEZ0046-225  | 2.2 μF   | "     | Electrolytic |
| C520     | QEZ0046-225  | "        | "     | "            |
| C603     | QFM31HJ-183N | 0.018 μF | 50 V  | Mylar        |
| C604     | QFM31HJ-183N | "        | "     | "            |
| C816     | QET51JR-225H | 2.2 μF   | 63 V  | Electrolytic |
| C817     | QET51HR-476H | 47 μF    | 50 V  | "            |
| C818     | QET51HR-476H | "        | "     | "            |
| C819     | QET51JR-225H | 2.2 μF   | 63 V  | "            |
| C821     | QET50JR-227H | 220 μF   | 6.3 V | "            |

### Diodes

| Item No. | Part Number | Rating | Description     | Maker   |
|----------|-------------|--------|-----------------|---------|
|          |             |        |                 |         |
| D301     | RD5.6EB3    |        | Silicon (Zener) | NEC     |
| D302     | 1S2076-31   |        | Silicon         | Hitachi |
| D303     | 1S2076-31   |        | "               | "       |
| D304     | 1S2076-31   |        | "               | "       |
| D305     | 1S2076-31   |        | "               | "       |

## Resistors

| Item No. | Part Number   | Rating |       | Description     |
|----------|---------------|--------|-------|-----------------|
| R301     | QRD141J-105SY | 1 MΩ   | 1/4 W | Carbon          |
| R302     | QRD141J-105SY | "      | "     | "               |
| R303     | QRD141J-470SY | 47 Ω   | "     | "               |
| R304     | QRD141J-470SY | "      | "     | "               |
| R305     | QRD141J-123SY | 12 kΩ  | "     | "               |
| R306     | QRD141J-123SY | "      | "     | "               |
| R307     | QRD141J-123SY | "      | "     | "               |
| R308     | QRD141J-123SY | "      | "     | "               |
| R309     | QRD141J-124SY | 120 kΩ | "     | "               |
| R310     | QRD141J-124SY | "      | "     | "               |
| R311     | QRD141J-331SY | 330 Ω  | "     | "               |
| R312     | QRD141J-331SY | "      | "     | "               |
| R313     | QRD141J-563SY | 56 kΩ  | "     | "               |
| R314     | QRD141J-563SY | "      | "     | "               |
| R315     | QVP4A0B-221   | 220 Ω  | "     | Variable        |
| R316     | QVP4A0B-221   | "      | "     | "               |
| R317     | QRD141J-270SY | 27 Ω   | 1/4 W | Carbon          |
| R318     | QRD141J-270SY | "      | "     | "               |
| R319     | QRD141J-270SY | "      | "     | "               |
| R320     | QRD141J-270SY | "      | "     | "               |
| R321     | QRD141J-562SY | 5.6 kΩ | "     | "               |
| R322     | QRD141J-562SY | "      | "     | "               |
| R323     | QRD141J-202SY | 2 kΩ   | "     | "               |
| R324     | QRD141J-202SY | "      | "     | "               |
| R325     | QRD141J-273SY | 27 kΩ  | "     | "               |
| R327     | QRZ0052-102   | 1 kΩ   | "     | Carbon (Fuse) ⚠ |
| R328     | QRZ0052-102   | "      | "     | " ⚠             |
| R329     | QRZ0052-102   | "      | "     | " ⚠             |
| R330     | QRZ0052-102   | "      | "     | " ⚠             |
| R331     | QRD141J-220SY | 22 Ω   | "     | Carbon          |
| R332     | QRD141J-220SY | "      | "     | "               |
| R333     | QRD141J-220SY | "      | "     | "               |
| R334     | QRD141J-220SY | "      | "     | "               |
| R335     | QRD141J-103SY | 10 kΩ  | "     | "               |
| R336     | QRD141J-103SY | "      | "     | "               |
| R337     | QRZ0052-101   | 100 Ω  | "     | Carbon (Fuse) ⚠ |
| R338     | QRZ0052-101   | "      | "     | " ⚠             |
| R339     | QRD141J-432SY | 4.3 kΩ | "     | Carbon          |
| R340     | QRD141J-432SY | "      | "     | "               |
| R341     | QRD141J-432SY | "      | "     | "               |
| R342     | QRD141J-432SY | "      | "     | "               |
| R343     | QRD149J-181S  | 180 Ω  | "     | " ⚠             |
| R344     | QRD149J-181S  | "      | "     | " ⚠             |
| R345     | QRD149J-181S  | "      | "     | " ⚠             |
| R346     | QRD149J-181S  | "      | "     | " ⚠             |
| R347     | QRD141J-182SY | 1.8 kΩ | "     | "               |
| R348     | QRD141J-182SY | "      | "     | "               |
| R349     | QRD149J-151S  | 150 Ω  | "     | " ⚠             |
| R350     | QRD149J-151S  | "      | "     | " ⚠             |
| R501     | QRD149J-361S  | 360 Ω  | "     | " ⚠             |
| R502     | QRD149J-361S  | "      | "     | " ⚠             |
| R503     | QRD141J-622SY | 6.2 kΩ | "     | "               |
| R504     | QRD141J-622SY | "      | "     | "               |
| R505     | QRD141J-393SY | 39 kΩ  | "     | "               |
| R506     | QRD141J-393SY | "      | "     | "               |
| R507     | QRD141J-181SY | 180 Ω  | "     | "               |
| R508     | QRD141J-181SY | "      | "     | "               |
| R509     | QRD141J-433SY | 43 kΩ  | "     | "               |
| R510     | QRD141J-433SY | "      | "     | "               |
| R511     | QRD141J-153SY | 15 kΩ  | "     | "               |
| R512     | QRD141J-153SY | "      | "     | "               |
| R513     | QRD141J-132SY | 1.3 kΩ | "     | "               |
| R514     | QRD141J-132SY | "      | "     | "               |
| R515     | QRD141J-202SY | 2 kΩ   | "     | "               |
| R516     | QRD141J-202SY | "      | "     | "               |

## Resistors

| Item No. | Part Number   | Rating |       | Description         |
|----------|---------------|--------|-------|---------------------|
| R517     | QRD141J-361SY | 360 Ω  | 1/4 W | Carbon              |
| T518     | QRD141J-361SY | "      | "     | "                   |
| R521     | QRD141J-223SY | 22 kΩ  | "     | "                   |
| R522     | QRD141J-223SY | "      | "     | "                   |
| R523     | QVZ1709-007   | 50 kΩ  | "     | Variable (Bass)     |
| R524     | QVZ1709-008   | "      | "     | " (Treble)          |
| R611     | QRD141J-183SY | 18 kΩ  | 1/4 W | Carbon              |
| R612     | QRD141J-183SY | "      | "     | "                   |
| R617     | QVZ1713-001   | 250 kΩ | "     | Variable (Loudness) |
| R811     | QRD141J-273SY | 27 kΩ  | 1/4 W | Carbon              |
| R813     | QRD141J-563SY | 56 kΩ  | "     | "                   |
| R814     | QRG027J-122   | 1.2 kΩ | 2 W   | Oxide Metal Film    |
| R817     | QRZ0052-150   | 15 Ω   | 1/4 W | Carbon (Fuse) ⚠     |
| R818     | QRZ0052-150   | "      | "     | " ⚠                 |
| R819     | QRD149J-471S  | 470 Ω  | 1/4 W | Carbon              |
| R820     | QRD149J-122S  | 1.2 kΩ | "     | "                   |
| R821     | QRD129J-271   | 270 Ω  | 1/2 W | "                   |

## Others

| Item No. | Part Number | Rating | Description                            |
|----------|-------------|--------|----------------------------------------|
| J301     | EWS013-022  |        | 3 Pin Socket Wire Ass'y (To TXX-215-1) |
| J302     | EWS013-023  |        | "                                      |
| J303     | EWS015-014  |        | 5 Pin Socket Wire Ass'y (To TXX-215-1) |
| J601     | EWS012-008  |        | 2 Pin Socket Wire Ass'y (To TXX-216-2) |
| J603     | EWS016-011  |        | 6 Pin Socket Wire Ass'y (To TXX-216-3) |
| S501     | QSP0219-013 |        | Push Switch (Tone)                     |

⚠ : Safety Parts

## 9. Packing Materials and Part Numbers

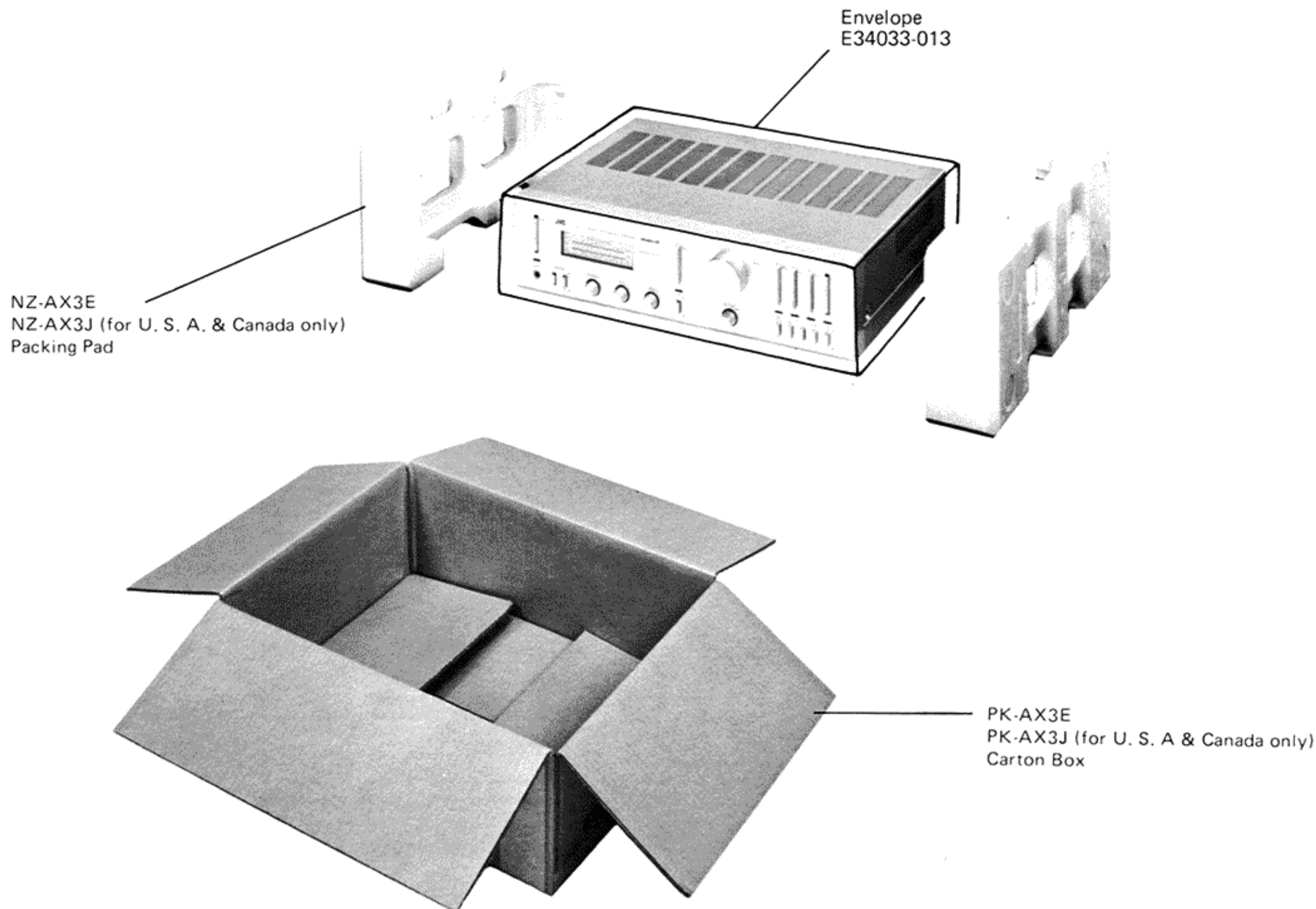


Fig. 22

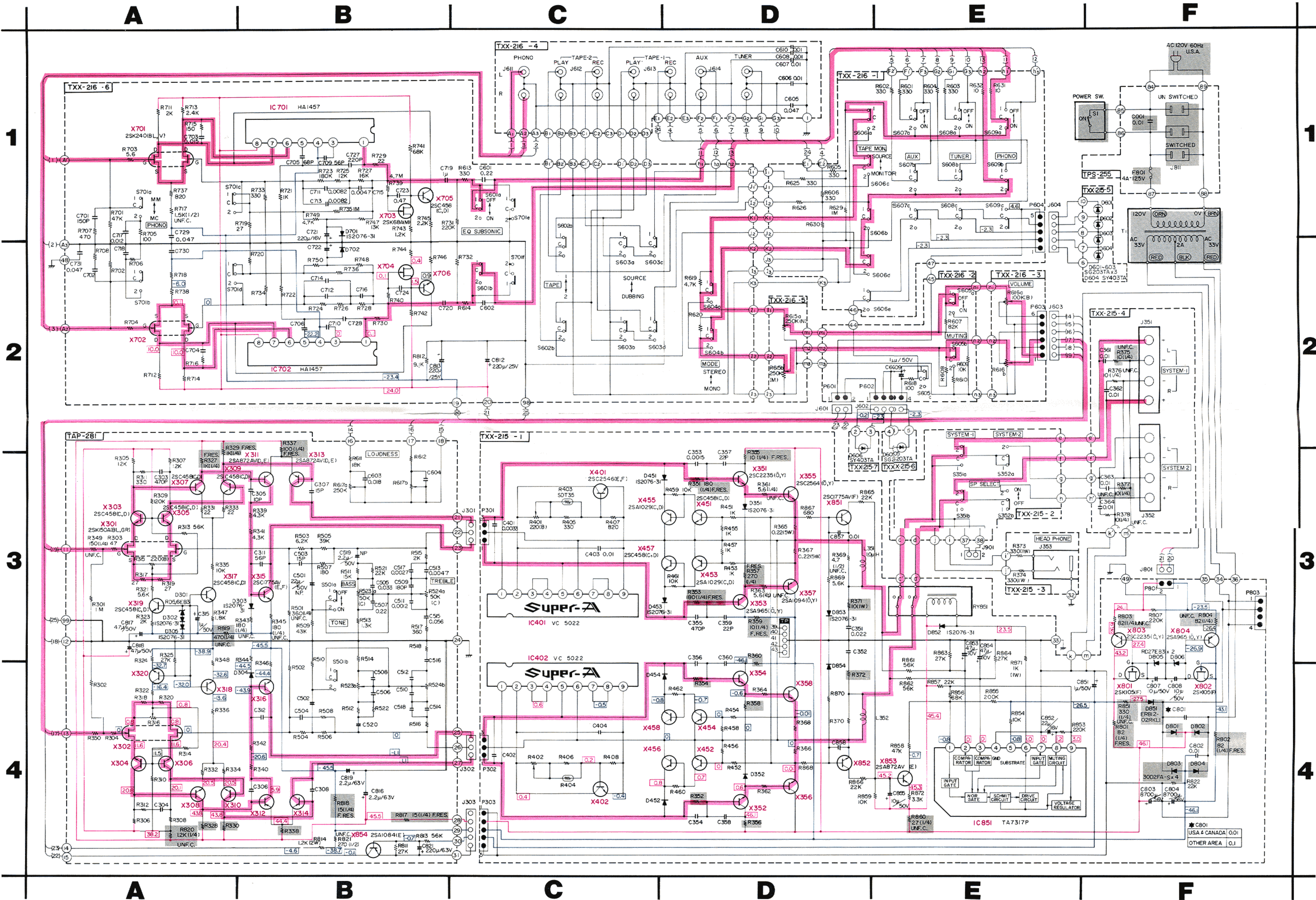
## 10. Accessories List

| Item No. | Part Number | Description                                                     | Q'ty |
|----------|-------------|-----------------------------------------------------------------|------|
| 1        | E30580-808A | Instruction Book (for U.K., E30580-808ABS)                      | 1    |
| 2        | See below   | Warranty Card                                                   | 1    |
| 3        | E41202-2    | Envelope for Instruction Book & Warranty Card                   | 1    |
| 4        | BT20024B    | "Do it Better" (for U.S.A. only)                                | 1    |
| 5        | BT20023     | Service Procedures (for U.S.A. only)                            | 1    |
| 6        | See page 19 | Fuses (for U.S.Military Market & Other Countries)               | 1    |
| 7        | E64208-001  | Envelope for Fuses (for U.S. Military Market & Other Countries) | 1    |
| 8        | See page 19 | Fuse Label                                                      | 1    |
| 9        | E64216-002  | Caution Tag for Power Cord (for U.S. Military Market)           | 1    |

### Warranty Card

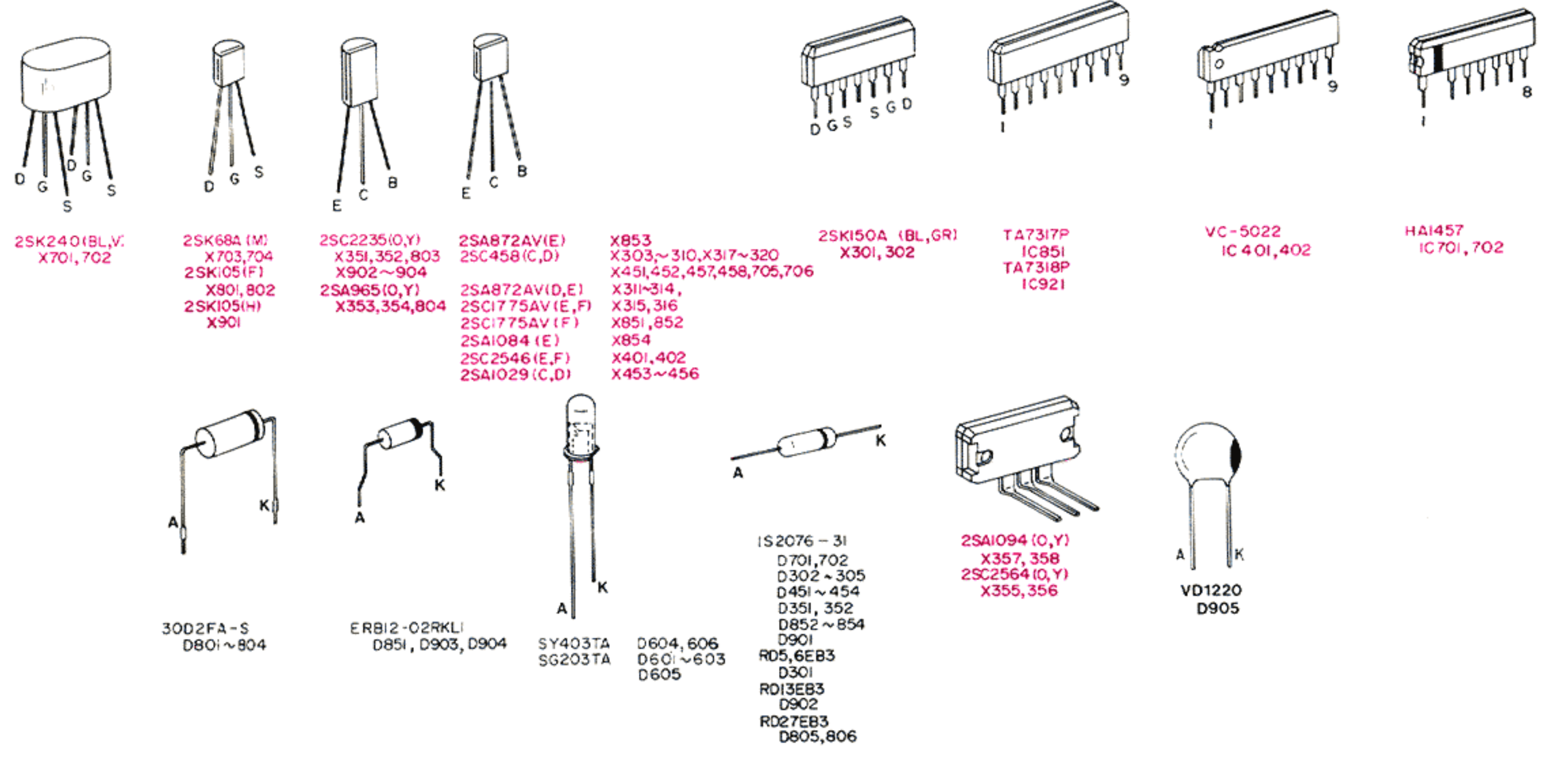
| U.S.A.   | Canada   | U.K.     | Europe | Australia | U.S. Military Market |
|----------|----------|----------|--------|-----------|----------------------|
| BT20032B | BT20025C | BT20013C | —      | BT20029B  | BT20032B             |

11. A-X3 Schematic Diagram



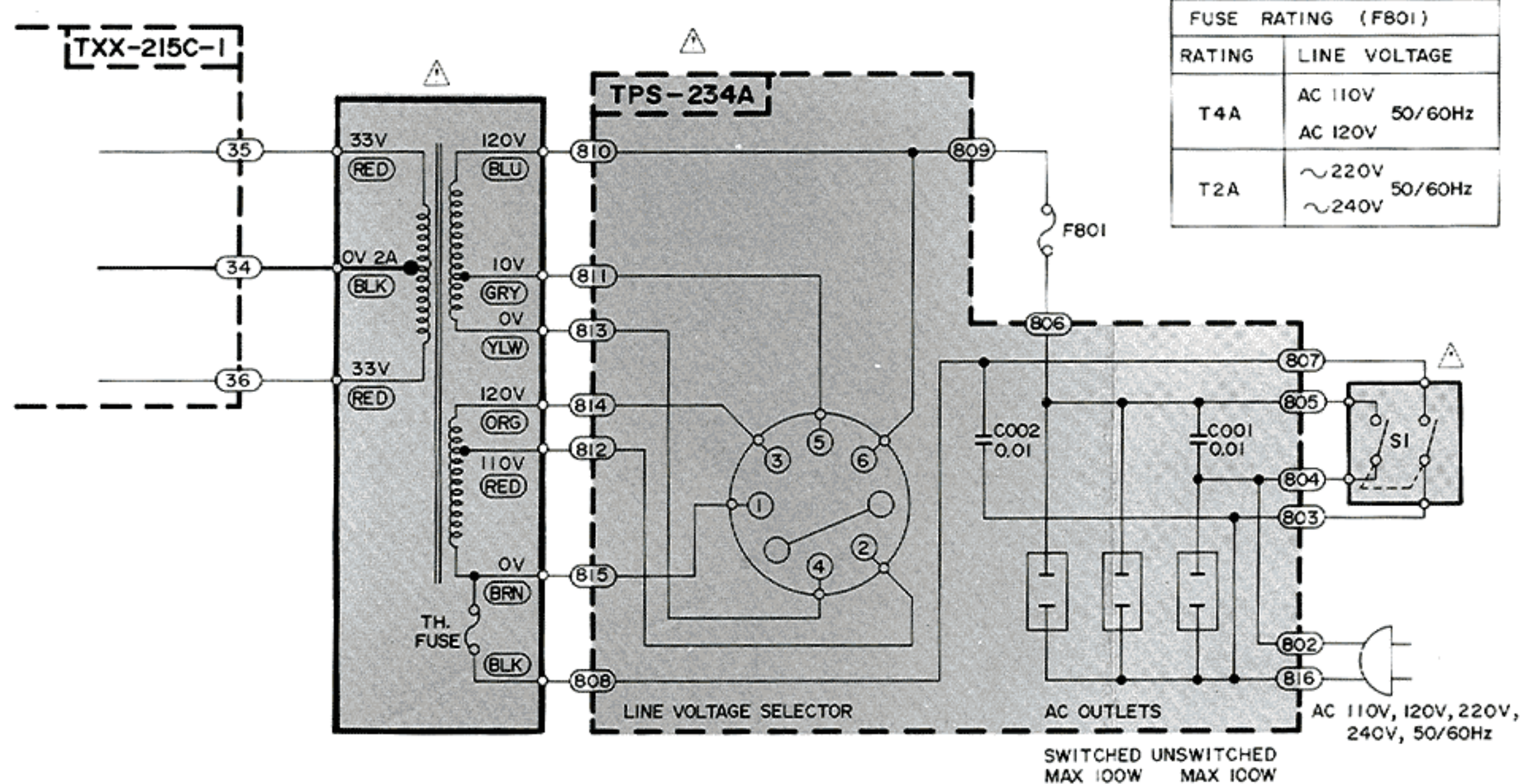
Printed Circuit Board Ass'y Location

| P.C. Board Ass'y | Description                           | Page |
|------------------|---------------------------------------|------|
| TDS-5            | LED Power Supply                      | 8    |
| TXX-215          | Power Amp., Power Supply and Speakers | 8    |
| TXX-216          | Equalizer Amp. and Source Selector    | 11   |
| TPS-234          | AC Socket                             | 12   |
| TPS-255          | AC Fuse                               | 12   |
| TAP-281          | Driver Amp.                           | 14   |

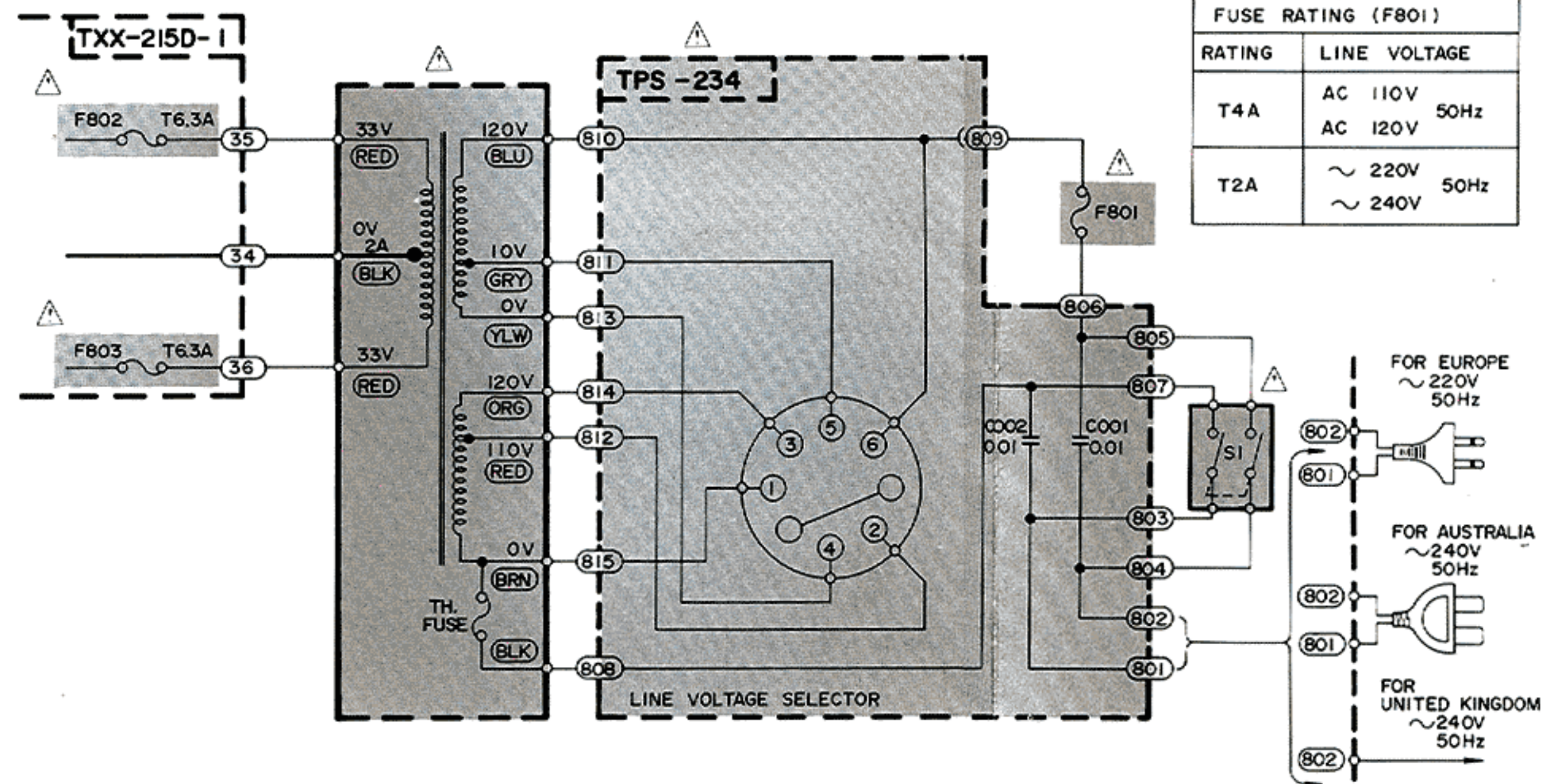


- Notes:
1. Voltage values in   and   are measured with a tester (impedance 20 k $\Omega$ /V) without a signal applied to the unit.
  2. Voltage values in   are positive.  
                    indicates positive B power supply.
  3. Voltage values in   are negative.  
                    indicates negative B power supply.
  4.   indicates signal path.
  5. When replacing the parts in the darkened area   and those marked with  $\Delta$ , be sure to use the designated parts to ensure safety.
  6. This is the standard circuit diagram.  
The design and contents are subject to change without notice.

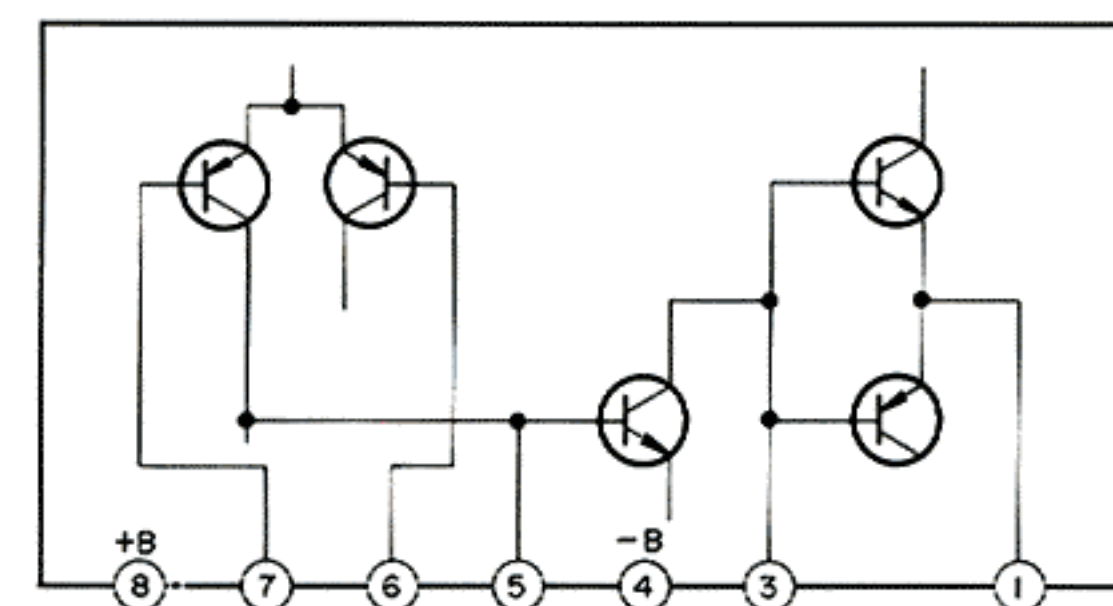
(U),(P) (U) FOR OTHER COUNTRIES  
(P) FOR PACEX



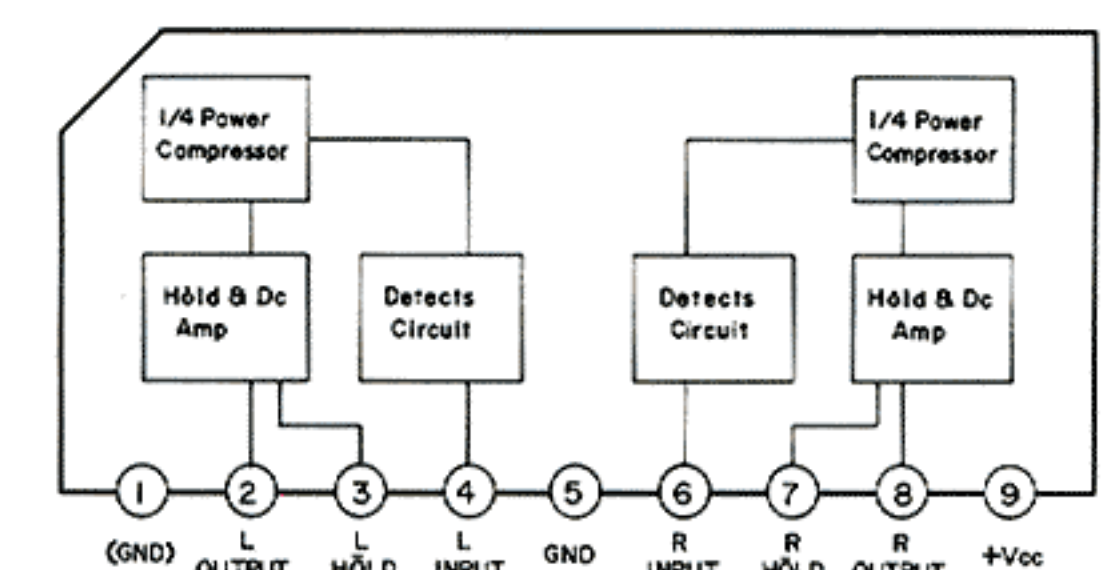
(E),(A),(BS) (E) FOR EUROPE : ~220V, 50Hz  
(A) FOR AUSTRALIA : ~240V, 50Hz  
(BS) FOR U.K. : ~240V, 50Hz



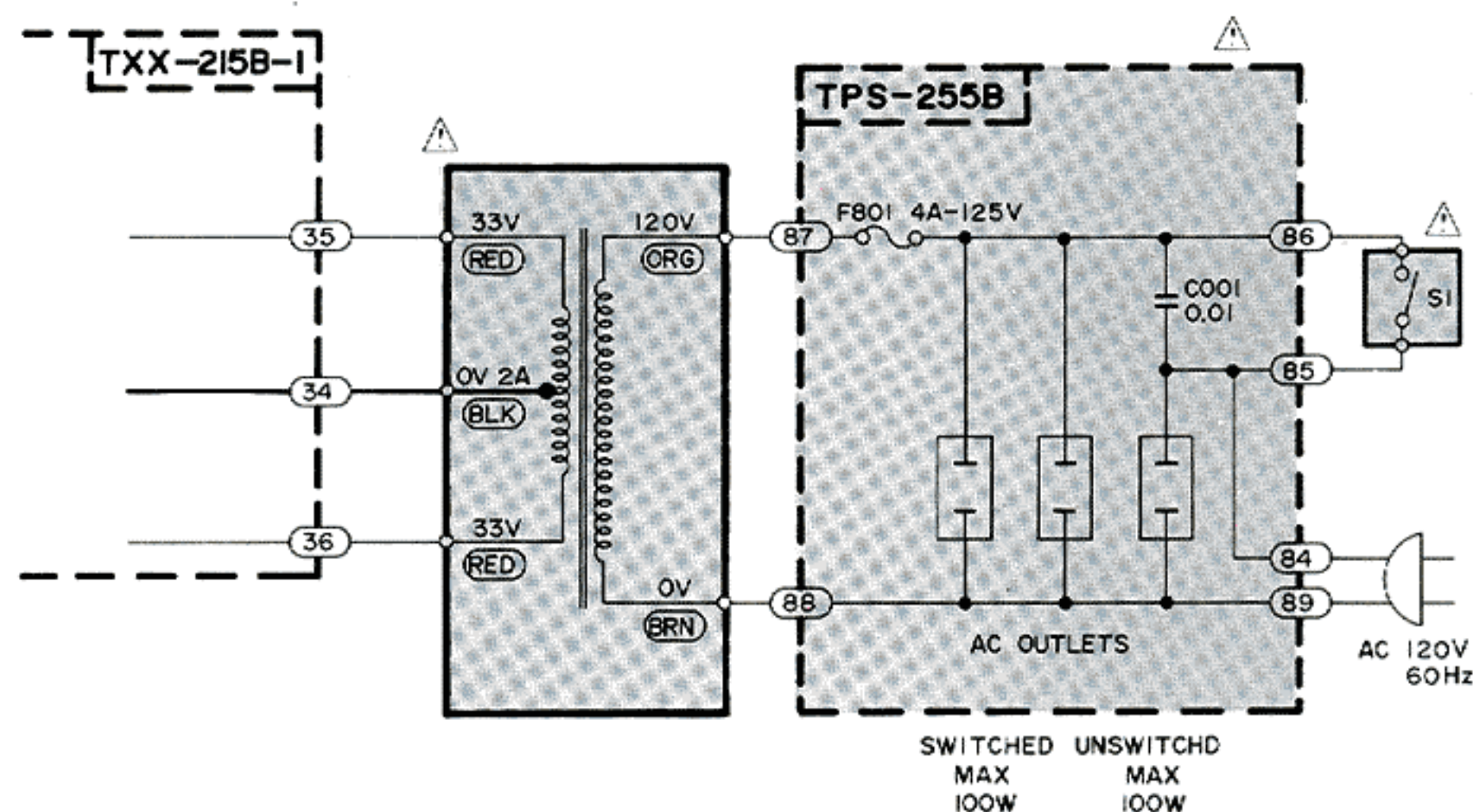
EQ IC IC701, 702 HA1457



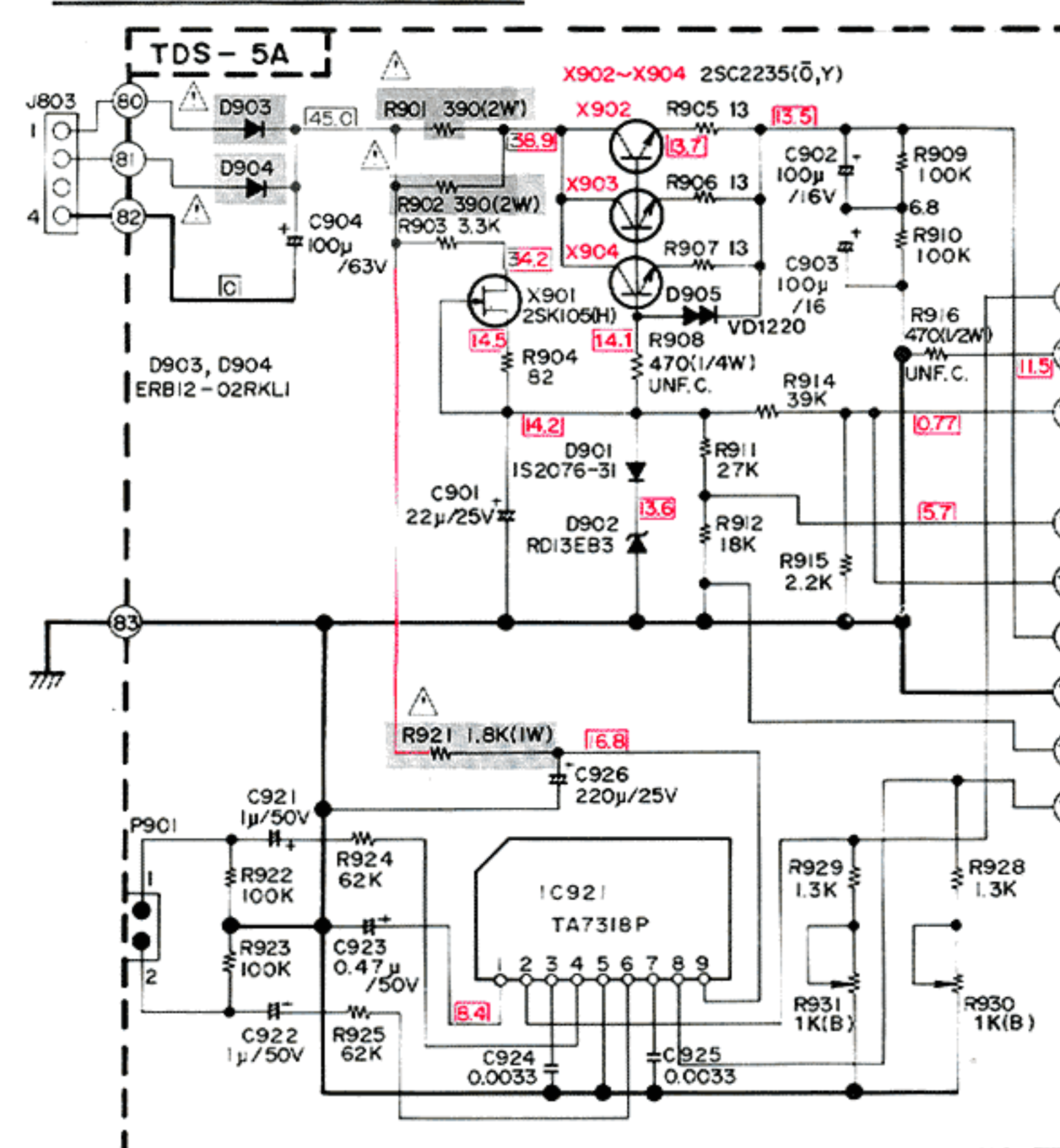
COMPRESSION IC IC921 TA7318P



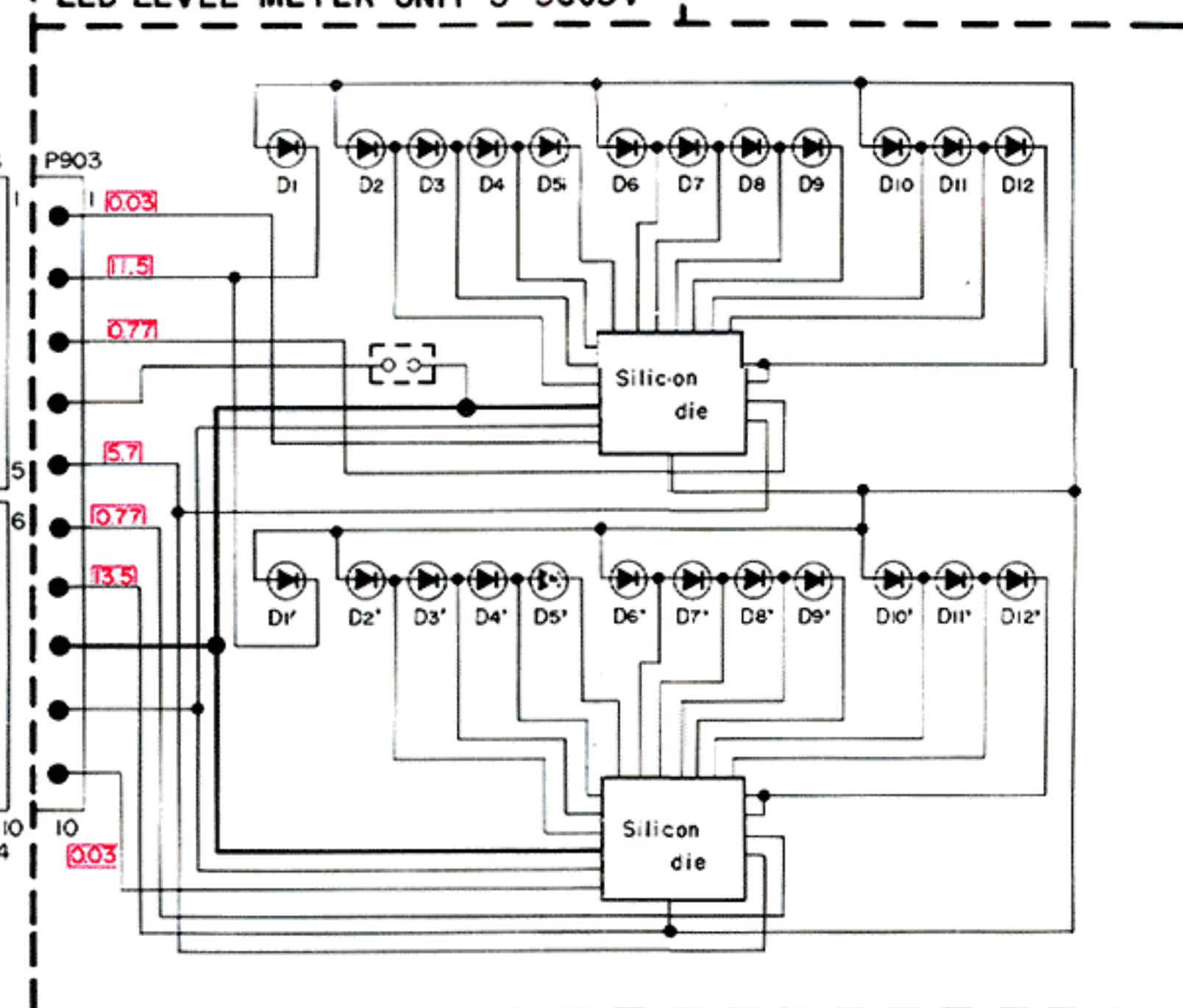
(C) FOR CANADA : AC 120V 60Hz



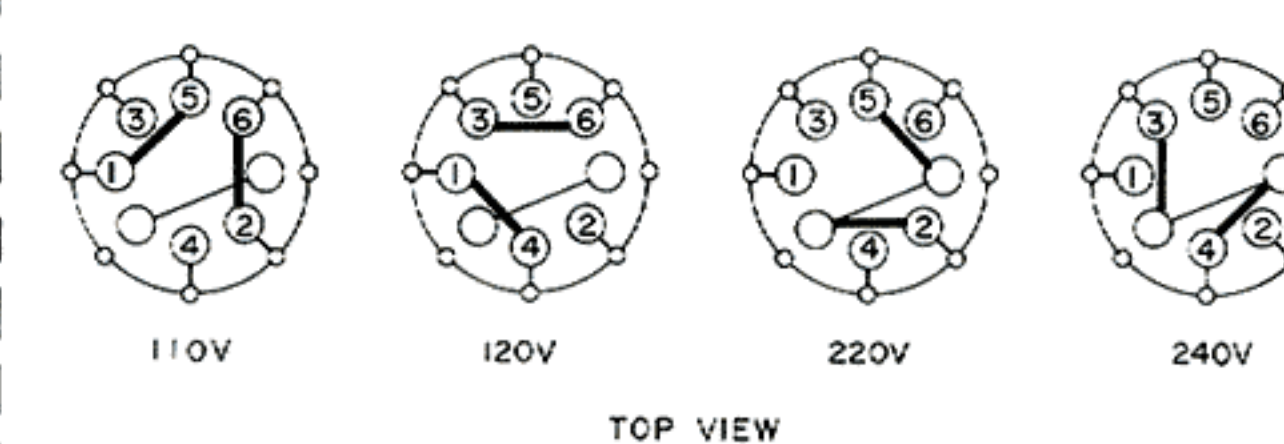
LED LEVEL METER



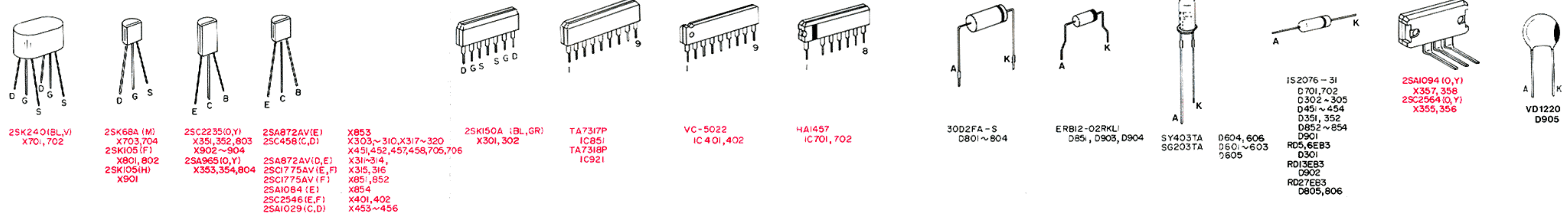
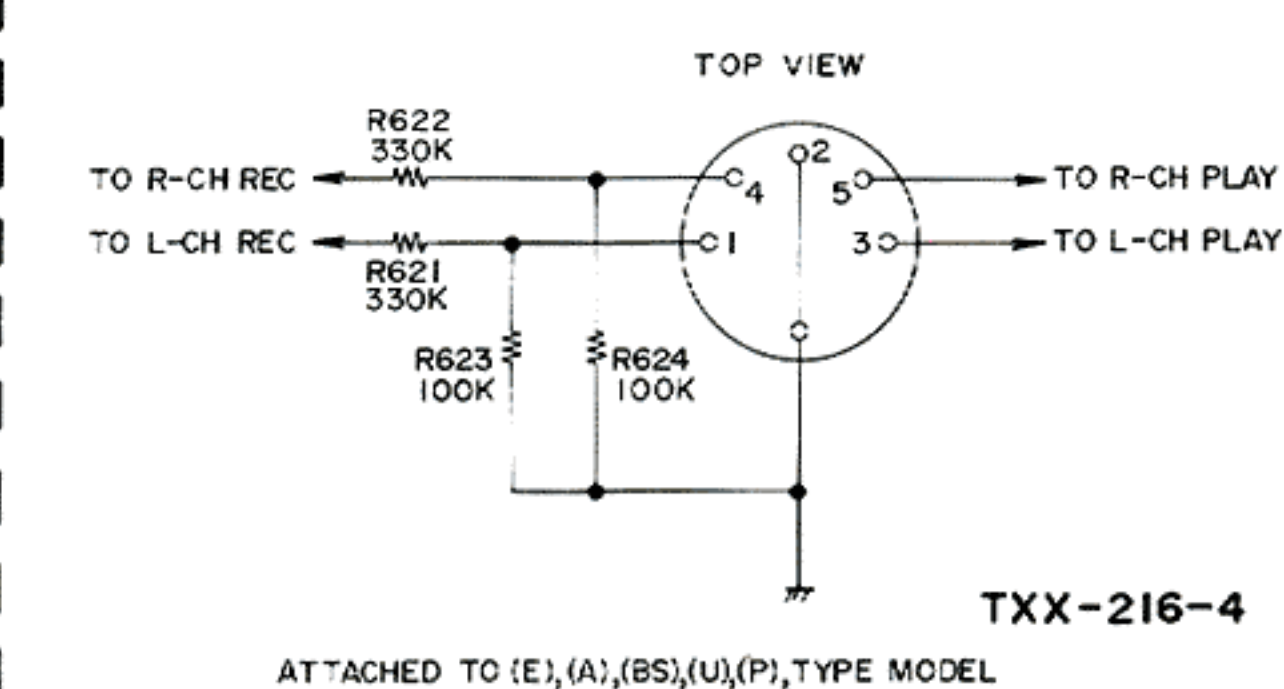
LED LEVEL METER UNIT S-5009V



VOLTAGE SELECTOR CONNECTION



DIN CONNECTOR



TRANSISTOR, IC AND DIODE LEAD IDENTIFICATION

Printed Circuit Board Ass'y Location

| P.C. Board Ass'y | Description                           | Page |
|------------------|---------------------------------------|------|
| TDS-5            | LED Power Supply                      | 8    |
| TXX-215          | Power Amp., Power Supply and Speakers | 8    |
| TXX-216          | Equalizer Amp. and Source Selector    | 11   |
| TPS-234          | AC Socket                             | 12   |
| TPS-255          | AC Fuse                               | 12   |
| TAP-281          | Driver Amp.                           | 14   |

- Notes:
- Voltage values in   and   are measured with a tester (impedance 20 kΩ/V) without a signal applied to the unit.
  - Voltage values in   are positive.  
— indicates positive B power supply.
  - Voltage values in   are negative.  
— indicates negative B power supply.
  - indicates signal path.
  - When replacing the parts in the darkened area   and those marked with  , be sure to use the designated parts to ensure safety.
  - This is the standard circuit diagram.  
The design and contents are subject to change without notice.

# 12. Parts List with Specified Numbers for Designated Areas

| Page  | Item No.                        | Description                   | U.S.A. & Canada    | Australia               | Europe                  | U.K.                    | U.S. Military Market & Other Countries         |
|-------|---------------------------------|-------------------------------|--------------------|-------------------------|-------------------------|-------------------------|------------------------------------------------|
| 2, 3  |                                 | Top Cover (Metal)             | E23270-003         | E23270-002              | E23270-002              | E23270-002              | E23270-002                                     |
| 2, 3  |                                 | Cosmetic Board (Left)         | ED92933-001        | —                       | —                       | —                       | —                                              |
|       |                                 | (Right)                       | ED92933-002        | —                       | —                       | —                       | —                                              |
| 2, 3  |                                 | Screw                         | E65550-002         | E61660-001              | E61660-001              | E61660-001              | E61660-001                                     |
| 3, 4  |                                 | Side Fitting (Left)           | —                  | E300509-001             | E300509-001             | E300509-001             | E300509-001                                    |
| 3, 4  |                                 | Side Fitting (Right)          | —                  | E300509-002             | E300509-002             | E300509-002             | E300509-002                                    |
| 3, 13 | 8-(5)                           | AC Fuse & Outlets ⚠           | TPS-255B           | —                       | —                       | —                       | —                                              |
|       |                                 | P.C. Board Ass'y              | —                  | —                       | —                       | —                       | —                                              |
| 13    | 8-(4)                           | Voltage Selector ⚠            | —                  | TPS-234B                | TPS234B                 | TPS-234CBS              | TPS-234A                                       |
|       |                                 | P.C. Board Ass'y              | —                  | —                       | —                       | —                       | —                                              |
| 3     |                                 | Fuse Socket ⚠                 | —                  | QMG0301-003             | QMG0301-003             | QMG0301-003BS           | QMG0301-003                                    |
| 3, 13 |                                 | AC Outlets ⚠                  | QMC0637-003        | —                       | —                       | —                       | QMC0637-003                                    |
| 3, 13 |                                 | Voltage Selector ⚠            | —                  | QSR0085-001             | QSR0085-001             | QSR0085-001BS           | QSR0085-001                                    |
|       | F801                            | Fuse (Primary) ⚠              | QMF61U1-4R0 (4.0A) | QMF51A2-2R0L (T2A)      | QMF51A2-2R0L (T2A)      | QMF51A2-2R0LBS (T2A)    | QMF51A2-4R0S (T4A)<br>or<br>QMF51A2-2R0L (T2A) |
|       | F802/<br>F803                   | Fuse (Secondary) ⚠            | —                  | QMF51A2-6R3S (T6.3A)    | QMF51A2-6R3S (T6.3A)    | QMF51A2-6R3BS (T6.3A)   | —                                              |
|       |                                 | Fuse Clip ⚠ (Secondary)       | —                  | E48965-002              | E48965-002              | E48965-002              | —                                              |
| 16    | 8                               | Fuse Label                    | —                  | E67132-T6R3 (for T6A)   | E67132-T6R3 (for T6A)   | E67132-T6R3 (for T6A)   | —                                              |
| 4     |                                 | Power Transformer ⚠           | E03077-46B         | E03077-46C              | E03077-46C              | E03077-46CBS            | E03077-46C                                     |
| 4     |                                 | Power Switch ⚠                | QSP1110-301        | QSP2111-016             | QSP2111-016             | QSP2111-016BS           | QSP2111-016                                    |
| 3, 4  |                                 | Power Cord ⚠                  | QMP1200-200        | QMP2560-244             | QMP3900-200             | QMP9017-008BS           | QMP7600-250                                    |
| 3     |                                 | Strain Relief ⚠               | QHS3876-162        | QHS3876-162             | QHS3876-162             | QHS3876-162BS           | QHS3876-162                                    |
| 3, 4  |                                 | Front Panel Ass'y             | EFP-AX3EJ          | EFP-AX3EE               | EFP-AX3EE               | EFP-AX3EE               | EFP-AX3EE                                      |
| 3     |                                 | Rear Panel                    | E23268-001         | E23268-002              | E23268-002              | E23268-002              | E23268-002                                     |
| 3     |                                 | Masking Plate                 | —                  | E65494-002              | E65494-002              | E65494-002              | —                                              |
| 4, 8  | 8-(2)                           | Power Amp. & Power Supply     | TXX-215B           | TXX-215D                | TXX-215D                | TXX-215D                | TXX-215C                                       |
|       |                                 | P.C. Board Ass'y              | —                  | —                       | —                       | —                       | —                                              |
| 4, 11 | 8-(3)                           | Equalizer & Select Switch     | TXX-216B           | TXX-216C                | TXX-216C                | TXX-216C                | TXX-216C                                       |
|       |                                 | P.C. Board Ass'y              | —                  | —                       | —                       | —                       | —                                              |
| 10    | R371/<br>R372                   | Resistor ⚠ (Oxide Metal Film) | QRX017J-100S       | QRZ0049-100 (Fuse Type) | QRZ0049-100 (Fuse Type) | QRZ0049-100 (Fuse Type) | QRX017J-100S                                   |
| 10    | R375/<br>R376/<br>R377/<br>R378 | Resistor (Carbon)             | QRD149J-100S       | QRZ0049-100 (Fuse Type) | QRZ0049-100 (Fuse Type) | QRZ0049-100 (Fuse Type) | QRD149J-100S                                   |

NOTE: ⚠ SAFETY PARTS

## Power Specifications

| Area                     | Line Voltage & Frequency                    | Power Consumption |
|--------------------------|---------------------------------------------|-------------------|
| U.S.A.                   | AC 120 V, 60 Hz                             | 235 W             |
| CANADA                   | AC 120 V, 60 Hz                             | 300 VA            |
| EUROPE, U.K. & AUSTRALIA | AC 110/120/220/240 V ~ Selectable, 50 Hz    | 460W              |
| OTHER AREAS              | AC 110/120/220/240 V ~ Selectable, 50/60 Hz | 460 W             |

# JVC

VICTOR COMPANY OF JAPAN, LIMITED, TOKYO, JAPAN

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