

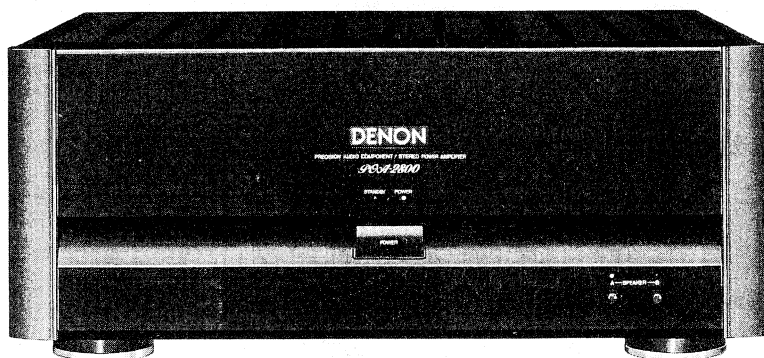
DENON

Hi-Fi Component

SERVICE MANUAL

MODEL POA-2800

STEREO POWER AMPLIFIER



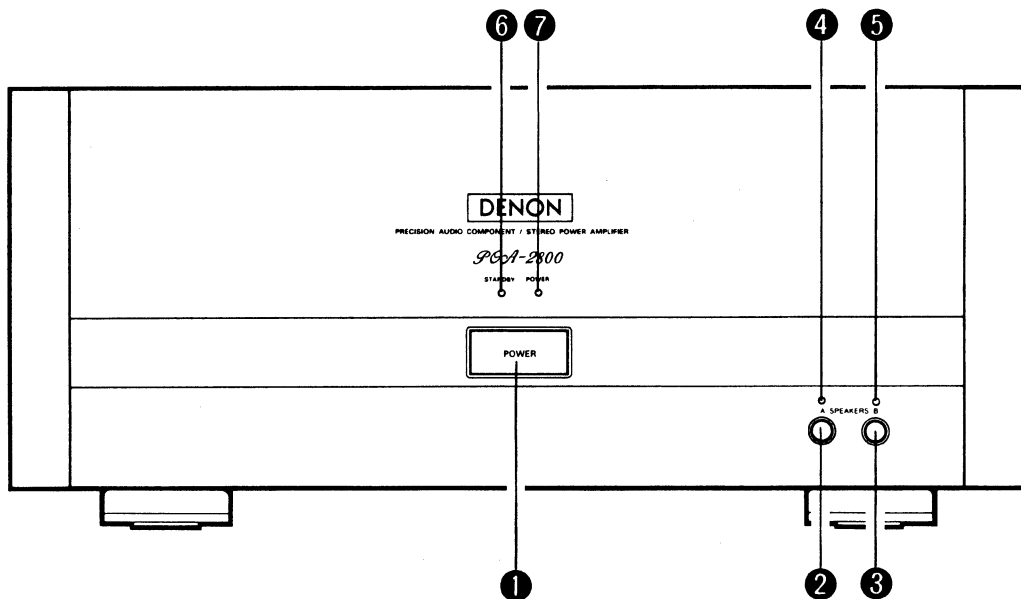
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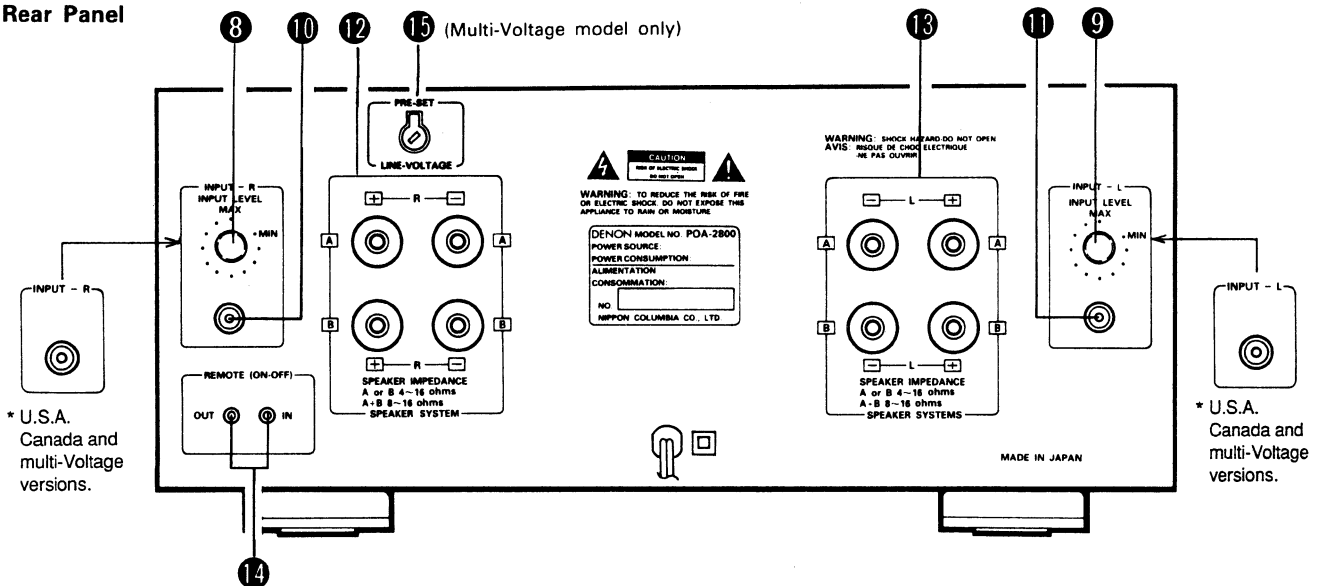
NIPPON COLUMBIA CO., LTD.

NAMES AND FUNCTIONS OF THE PARTS

Front Panel



Rear Panel



1 POWER (Power switch)

Pressing this switch causes the POWER indicator 7 to light and the power to be switched on. The muting circuit will operate for several seconds to prevent the noise that arises when the power is switched on, then the amplifier will enter the normal operating condition.

Connecting the output of a DENON component equipped with a REMOTE output to REMOTE input of the rear panel in this condition (using the remote cable supplied with this amplifier) will allow the operating condition of the amplifier to be switched to standby or normal operation, synchronized with the power on/off state of the component at the other side. Pressing the POWER switch once again will cause the indicator to go off and the power to be switched off.

2 SPEAKERS-A (Speakers A Switch)

Press this switch (indicator 4 lights) to listen to sound through the speakers connected to the SPEAKERS-A terminals.

3 SPEAKERS-B (Speakers B Switch)

Press this switch (indicator 5 lights) to listen to sound through the speakers connected to the SPEAKERS-B terminals.

4 SPEAKERS-A INDICATOR

5 SPEAKERS-B INDICATOR

6 STANDBY (Standby indicator)

This indicator lights up (orange) to indicate the standby condition when the power is switched off with the component of the other side which is connected with the remote cable.

7 POWER INDICATOR

This indicator lights when the power is turned on, and flashes in the following cases:

- While the muting circuit is activated (for several seconds) when the power is turned on.
- When there is a problem with the set.
Refer to Page 6.

NOTE:

- When you will be away for a long period such as when on a trip, set the POWER switch of this amplifier to the off position, rather than use the standby condition.

8 RIGHT CHANNEL INPUT VOLUME

Only provided for versions other than U.S.A. Canada and multi-voltage versions.

9 LEFT CHANNEL INPUT VOLUME

Only provided for versions other than U.S.A. Canada and multi-voltage versions.

10 R-ch INPUT (Right Channel Input Jacks)

Connect the right channel output cord of a preamplifier. Use connection cables equipped with RCA pin-plugs.

11 L-ch INPUT (Left Channel Input Jacks)

Connect the left channel output cord of a preamplifier. Use connection cables equipped with RCA pin-plugs.

12 R-ch SPEAKER SYSTEMS (Right Channel Speaker Terminal)

Two pairs of right channel speakers, A and B, can be connected to these terminals.

13 L-ch SPEAKER SYSTEMS (Left Channel Speaker Terminal)

Two pairs of left channel speakers, A and B, can be connected to these terminals.

14 REMOTE ON/OFF

This terminal is for the remote power switch. The power amp's power can be turned "on" and "off" by connecting the remote plug cord to the DC output terminal of the preamp (PRA-1500, etc.) and using the power switch on the preamp.

Connect to the IN terminal when using a pre-amplifier. When the OUT terminal is connected to the IN terminal of another power amplifier (the terminal is an input terminal if nothing is indicated), several power amplifiers can be controlled on a single pre-amplifier.

15 LINE VOLTAGE

(For Multi-Voltage model only)

Refer to Page 4.

- For connections, refer to Page 4.

CONNECTIONS

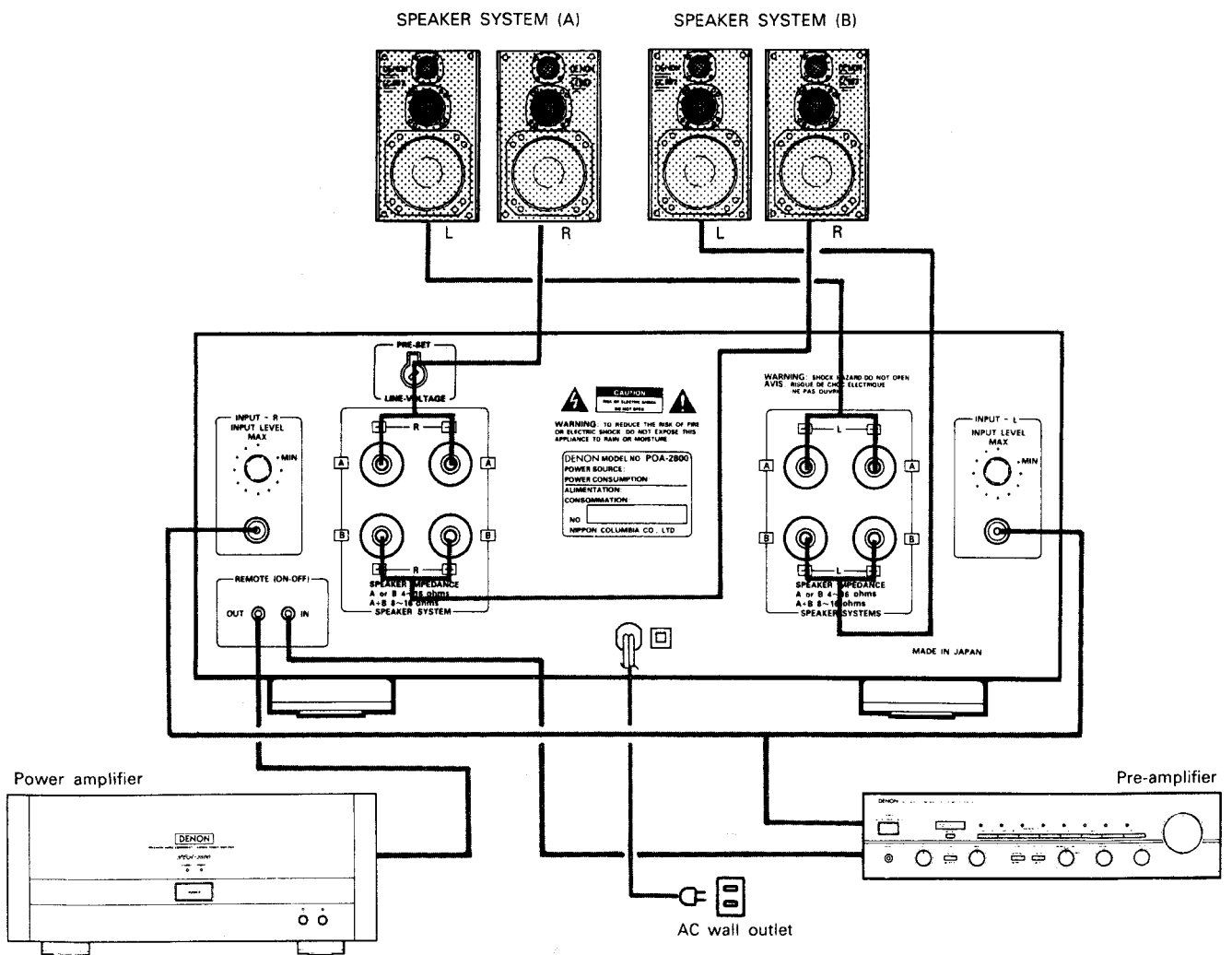
• **Notes on Connection**

- Do not connect the power cord to the AC wall outlet until all connections have been completed.
- Make sure channels are correctly connected. Connect Left channels to Left channels and Right channels to Right channels. Follow the color markings of plugs and terminals to make sure mistakes are not made.
- Connect all pin-plugs securely, pushing them completely into the jacks. Incomplete connections will cause noise generation.
- Binding the connection cables to power cords, or running such cables close to power supply transformers will cause humming or noise, and should thus be avoided.

• **Connecting the Speakers**

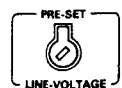
Connect the speaker for the left channel (the left side as viewed facing the front) to the L SPEAKER SYSTEM terminals on the back panel, and the speaker for the right channel to the R SPEAKER SYSTEM terminals.

Two speaker systems may be connected; one pair to the system A terminals and the other pair to the system B terminals.



• **LINE VOLTAGE (Voltage select switch) . . . For Multi-voltage model only.**

- * The desired voltage may be set with the VOLTAGE SELECTOR KNOB on the back panel using a screw driver.
- * Do not twist the VOLTAGE SELECTOR KNOB with excessive force. It may be damaged.
- * If the voltage select switch does not turn smoothly, see qualified serviceman.



• **Notes on Speaker Connections**

- Observe the correct polarity of the terminals: connect (-) leads to (-) terminals and (+) leads to (+) terminals. If the polarity is incorrect the sound image will be distorted, with the positions of musical instruments being unclear and impaired stereo imaging.
- When connecting the speaker cords, be sure the strands of the center wire do not protrude and contact other terminals or other bared speaker leads.

• **Speaker Impedance**

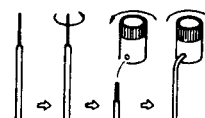
- If the A and B speaker systems are not to be used simultaneously, the speakers that are to be connected should have a nominal impedance of 4 to 16 ohms.
- If two speaker pairs (A + B) will be driven simultaneously, use of speakers whose impedance rating is outside the range of 8 to 16 ohms will result in malfunction. Thus, be sure the speaker impedance is correct.

Models for the U.S.A. and Canada only

WARNING!

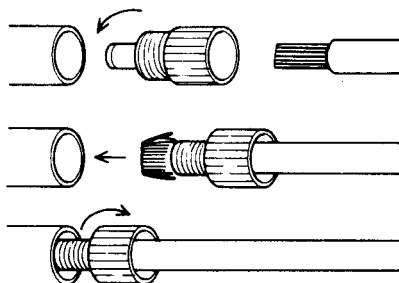
This amplifier produces a large power output at the speaker terminals, which means that a dangerous amount of energy is generated and that there is the danger of electric shock. Please perform the speaker cord connections correctly so that there is no bare wire at the amplifier or speaker terminals (Making connections that differ from the specified method may give rise to a shock hazard).

- 1) For the speaker connection cord, use a cord made with noncombustible insulating material and a cord of SPT-1 type, or one with higher flexibility.
- 2) Remove the insulation from the speaker connection as shown in the diagram.
- 3) Twist the end of the cord that has been prepared according to the previous step so that the strands do not fan out and insert it deep into the cord insertion hole on the side of the speaker terminal, then tighten the knob. At this time, the bare wire section of the cord must not be exposed from the hole. (In other words, the insulated portion of the cord must enter at least 1.6 mm into the hole.)
- 4) With connection cords that have a diameter larger than the terminal hole (4.4 mm), the bare wire portion will be exposed beyond the hole. Follow the instructions for extra-large cords.



• **For extra-large cords**

1. Remove the insulation from the end of each cord.
2. Loosen and remove the end of the speaker terminal.
3. Insert the center wire through this piece and fold back the speaker wire.
4. Reinsert the piece into the terminal and turn clockwise to tighten it.



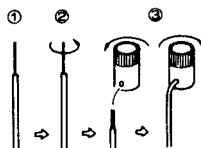
Note:

Each speaker terminal is fitted with a knob that separates from the terminal. Be careful not to lose these knobs and always be sure the correct polarity is observed when connecting them. Follow the directions on the rear panel.

Models for destinations other than U.S.A. and Canada

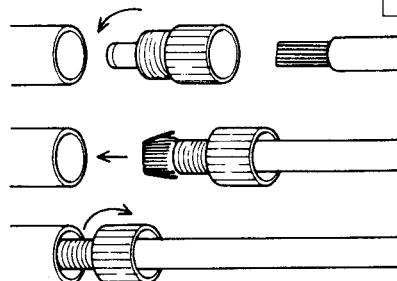
• **For regular speaker cords**

1. Remove the insulation from the end of each cord.
2. Twist the center wire.
3. Turn the speaker terminal counter-clockwise to open it, insert the twisted center wire into the terminal hole, and turn the terminal clockwise to hold the wire in place.



• **For extra-large cords**

1. Remove the insulation from the end of each cord.
2. Loosen and remove the end of the speaker terminal.
3. Insert the center wire through this piece and fold back the speaker wire.
4. Reinsert the piece into the terminal and turn clockwise to tighten it.



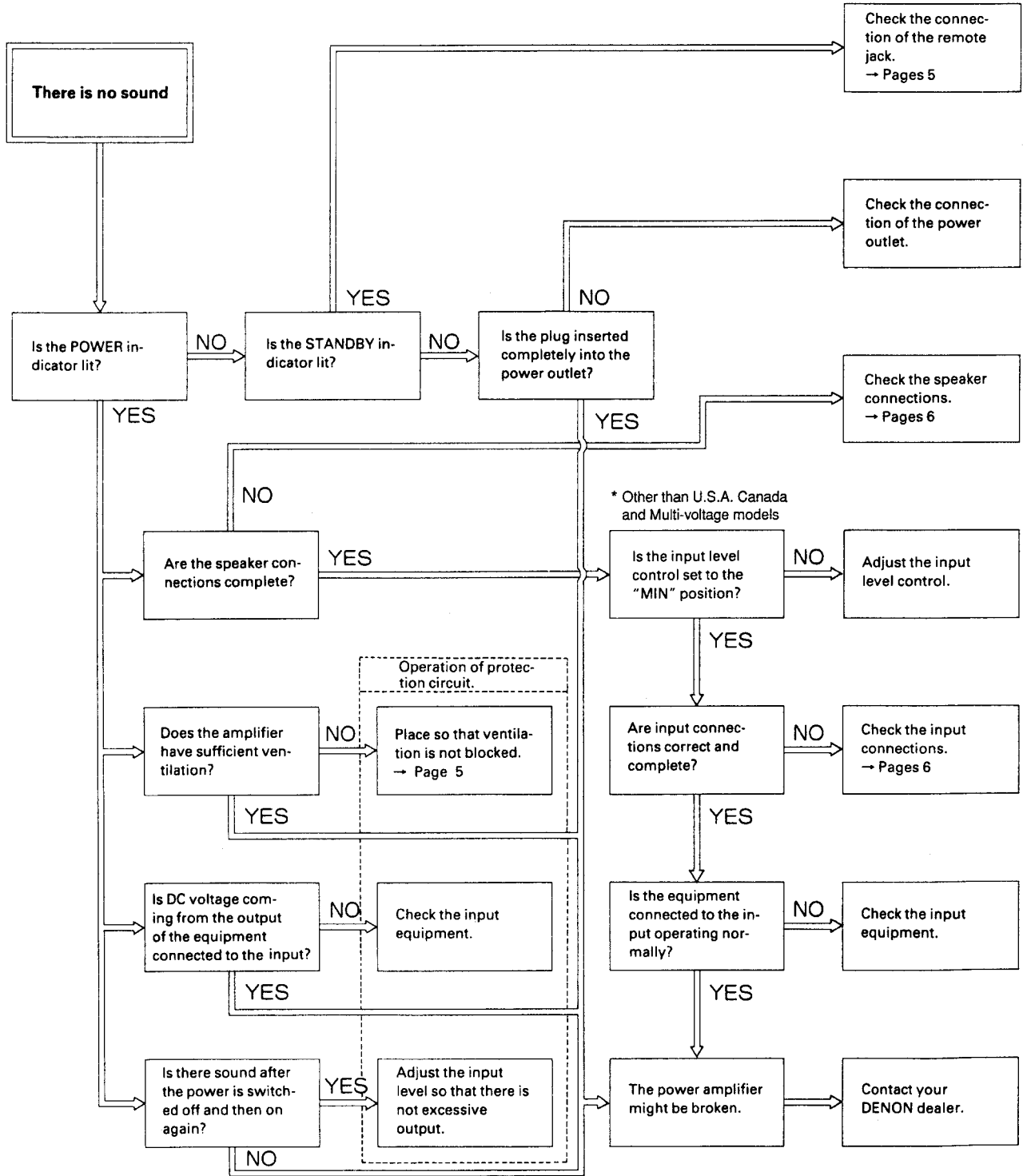
Note:

Each speaker terminal is fitted with a knob that separates from the terminal. Be careful not to lose these knobs and always be sure the correct polarity is observed when connecting them. Follow the directions on the rear panel.

TROUBLESHOOTING

1. Have all connections been made PROPERLY?
2. Have you followed all operational instructions correctly?
3. Check speaker and the preamplifier systems for proper operation.

When your unit does not seem to be operating correctly, first check the items in the following table. If the symptom does not correspond to any of the problems as shown below, turn off the power sources immediately and contact your DENON dealer.



SPECIFICATIONS

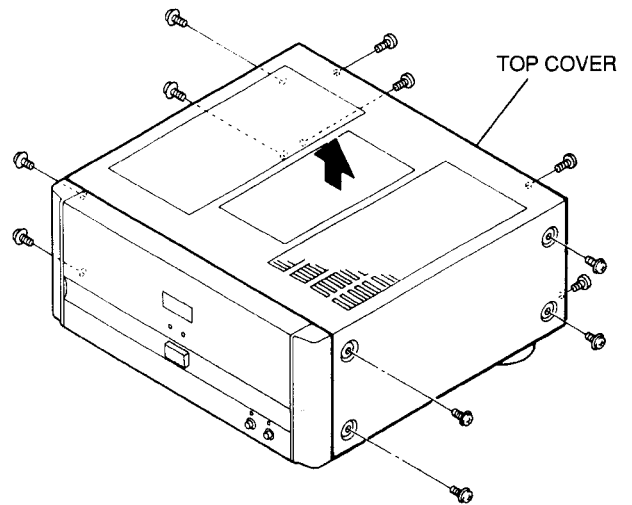
| | | | |
|------------------------------------|--|---------------------------|---|
| Rated output power: | 200 W + 200 W min. RMS into 8 ohms from 20 Hz to 20 kHz with no more than 0.01% total harmonic distortion 350 W + 350 W (4 ohms, DIN 1 kHz) | Input impedance: | 25 k ohms |
| Total harmonic distortion: | Less than 0.002% (-3 dB at rated output, 8 ohms) | Output impedance: | 0.1 ohm (1 kHz) |
| Intermodulation distortion: | Less than 0.002% (60 Hz/7 kHz: 4/1 at rated output 8 ohms) | S/N ratio: | 123 dB (IHF, A-weighting) |
| Power band width: | 5 Hz - 80 kHz (8 ohms, THD 0.03%) | Output terminals: | Speakers A or B 4~16 ohms A + B 8~16 ohms AC220V/50Hz (for Europe model) |
| Frequency response: | 1 Hz - 150 kHz +0, -3 dB (at 1 W) | Power supply: | AC 240 V/50 Hz (for U.K. and Australia model) AC 120 V/60 Hz (for U.S.A. and Canada model) AC 110/120/220/240 V 50/60 Hz (for multi-voltage model) |
| Input sensitivity: | 1 V | Power consumption: | 500W (IEC) 9 A (for U.S.A. and Canada model) 415 W (for multi-voltage model) |
| | | Dimensions: | 434 (W) × 186 (H) × 417 (D) mm (17-3/32" × 7-21/64" × 16-13/32") (Including control knobs and feet) |
| | | Weight: | 18 kg (39 lbs 12 oz) |

* Specifications and design are subject to change without notice for the purpose of improvement.

DISASSEMBLY INSTRUCTION

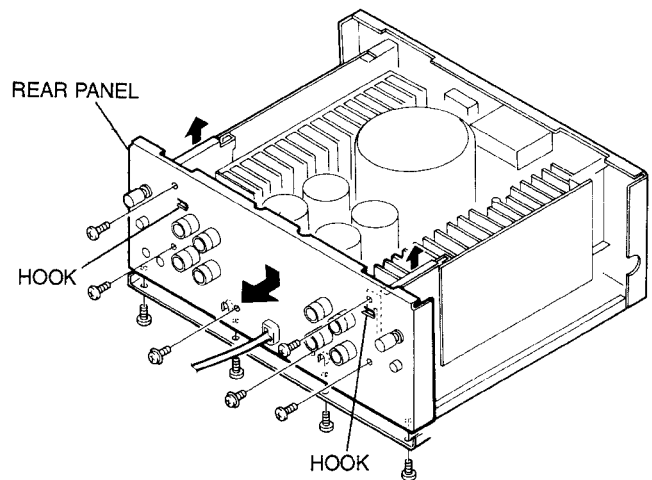
1. Top Cover

Remove 8 screws from the both sides, 4 screws from the rear side and, detach the Top Cover in the direction arrow shows.



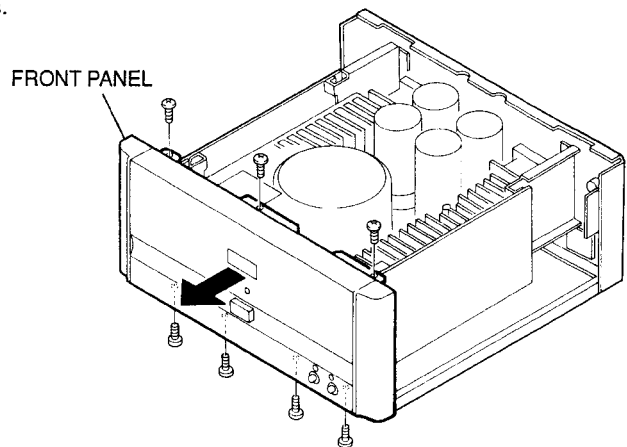
2. Rear Panel

- 1) Remove 4 screws from the bottom, 6 screws from the rear side.
- 2) Detach the Rear Panel in the direction as arrow shows with removing 2 hooks.

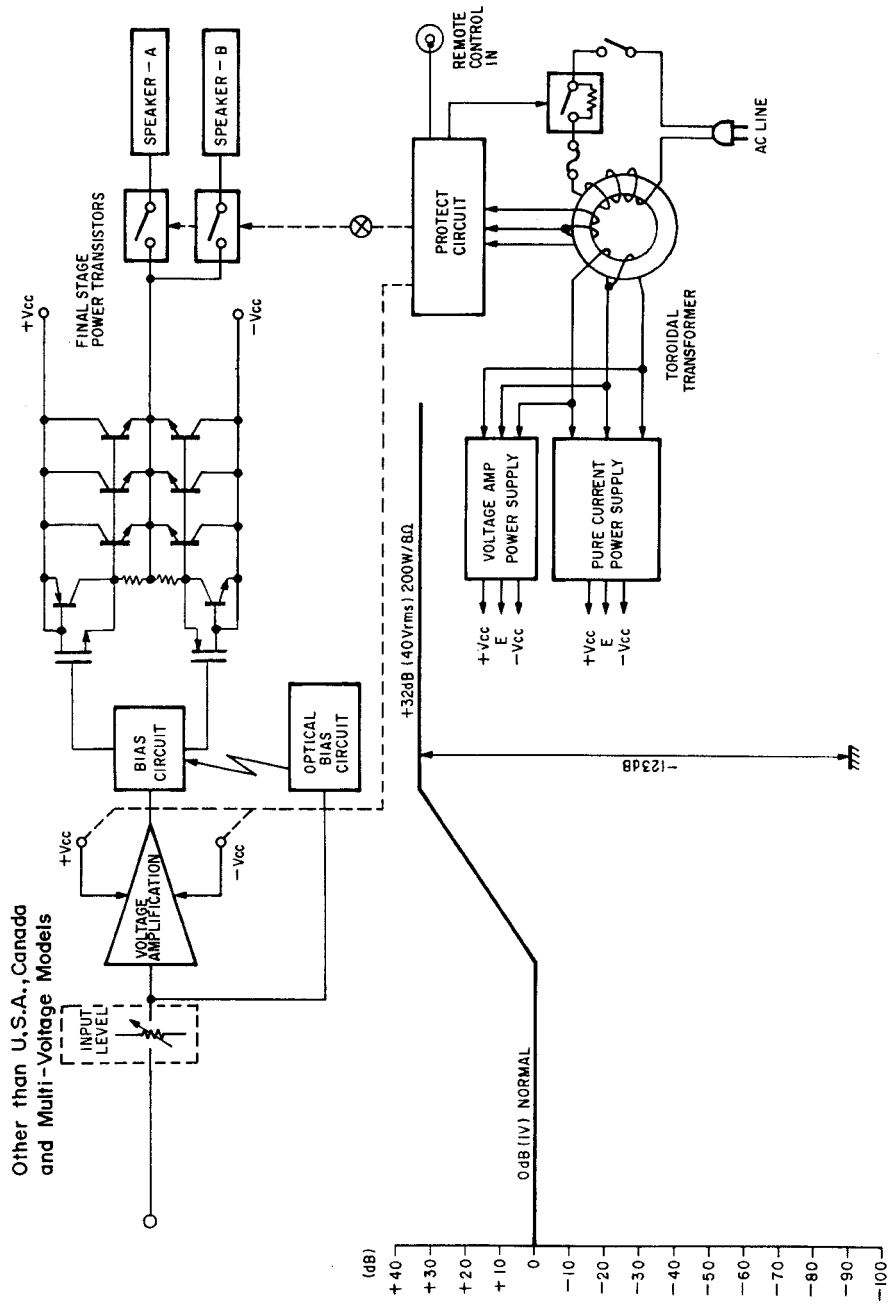


3. Front Panel

Unfasten 4 screws from the bottom, 3 screws from the top, and dismantle the Front Panel in the direction arrow shows.



BLOCK DIAGRAM



METHOD OF ADJUSTMENTS
IDLE CURRENT ADJUSTMENT

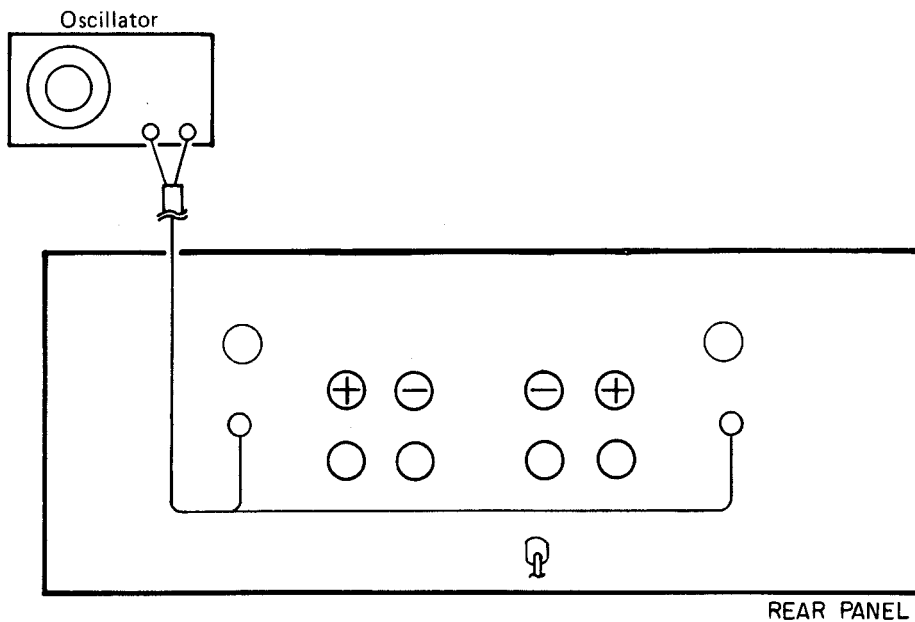
● **Setup**

1. Keep the unit away from direct wind blown by an air-conditioner and an electric fan, and keep the unit under normal conditions. Adjust the range of ambient temperature to 15–30°C.
2. Set the following switches as follows:

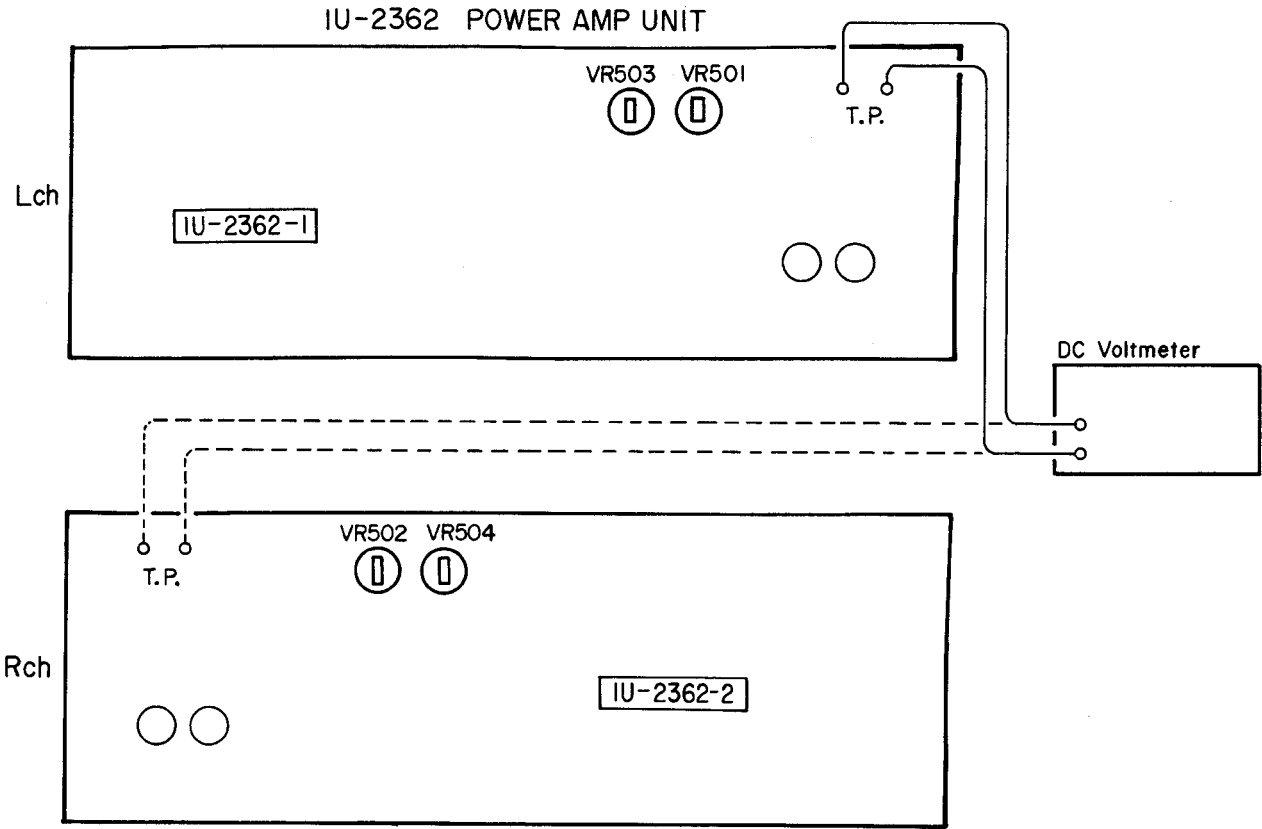
- POWER (Power switch) to off.
- INPUT LEVEL (level control) to MIN. (↻)
- SPEAKERS (Speaker terminal) to no load (Speakers disconnected)

● **Adjustment**

1. Connect DC Voltmeter to Test Points (T.P) of 1U-2362
2. Turn Power Switch "ON".
3. Adjust VR501 (L ch) and VR502 (R ch) so that the DC Voltmeter reads $3 \pm 0.5 \text{mV}$.
4. Then after 3 minutes warmup, readjust VR501 and VR502 so that the DC Voltmeter reads $5 \pm 1 \text{mV}$.
5. Set the Oscillator frequency at 1 kHz, and Output Level at 50mV, then connect input Terminal.
6. Set INPUT LEVEL VOLUME MAX. (↻)
7. Confirm that the DC Voltmeter connected to the T.P. becomes slightly greater value, than adjust the VR503 and VR504 to obtain $40 \pm 5 \text{mV}$ on the meter.
8. After 10 minutes, readjust the VR503 and VR504 for $40 \pm 5 \text{mV}$.



ALIGNMENT POINTS
1U-2362 POWER UNIT



NOTE FOR PARTS LIST

- Part indicated with the mark "◎" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:

Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

● **Resistors**

Ex.: RN 14K 2E 182 G FR
 Type Shape and performance Power Resistance Allowable error Others

| | | | |
|--------------------|-----------|----------|--------------------------|
| RD : Carbon | 2B : 1/8W | F : ±1% | P : Pulse-resistant type |
| RC : Composition | 2E : 1/4W | G : ±2% | NL : Low noise type |
| RS : Metallic film | 2H : 1/2W | J : ±5% | NB : Non-burning type |
| RW : Winding | 3A : 1W | K : ±10% | FR : Fuse resistor |
| RN : Metal film | 3D : 2W | M : ±20% | F : Lead wire forming |
| RK : Metal mixture | 3F : 3W | | |
| | 3H : 5W | | |

Resistance
 1 8 2 ⇒ 1800Ω - 1.8kΩ
 Indicates number of zeros after effective number
 2-digit effective number, decimal point indicated by R.
 • Units: Ω

● **Capacitors**

Ex.: CE 04W 1H 2R2 M BP
 Type Shape and performance Dielectric strength Capacity Allowable error Others

| | | | |
|---------------------------------|-----------|-------------|----------------------------------|
| CE : Aluminum foil electrolyte | 0J : 6.3V | F : ±1% | HS : High stability type |
| CA : Aluminum solid electrolyte | 1A : 10V | G : ±2% | BP : Non-polar type |
| CS : Tantalum electrolyte | 1C : 16V | J : ±5% | HR : Ripple-resistant type |
| CQ : Film | 1E : 25V | K : ±10% | DL : For charge and discharge |
| CK : Ceramic | 1V : 35V | M : ±20% | HF : For assuring high frequency |
| CC : Ceramic | 1H : 50V | Z : +80% | U : UL part |
| CP : Oil | 2A : 100V | | C : CSA part |
| CM : Mica | 2B : 125V | | P : ±100% |
| CF : Metallized | 2C : 160V | | W : UL-CSA type |
| CH : Metallized | 2D : 200V | C : ±0.25pF | F : Lead wire forming |
| | 2E : 250V | D : ±0.5pF | |
| | 2H : 500V | = : Others | |
| | 2J : 630V | | |

Capacity
 2 R 2 ⇒ 2.2 μF
 1-digit effective number, decimal point indicated by R.
 2-digit effective number, decimal point indicated by R.
 • Units: μF, (for P, pF (μμF))

• When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

**PARTS LIST OF P.W. BOARD
 1U-2362 POWER AMP UNIT**

| Ref. No. | Part No. | Part Name | Remarks |
|----------------------------|--------------|---------------------------|---------|
| SEMICONDUCTOR GROUP | | | |
| IC501,502 | 262 0874 009 | IC TLP521-1(BL) | |
| IC503,504 | 263 0743 007 | IC NJM2082DD | |
| IC505,506 | 263 0711 000 | IC M5218AP | |
| TR501-504 | 275 0055 015 | Transistor 2SK184C(O)/(Y) | |
| TR505-508 | 273 0281 906 | Transistor 2SC2705(O)/(Y) | |
| TR511-514 | 271 0202 002 | Transistor 2SA1360(O/Y) | |
| TR515,516 | 273 0332 907 | Transistor 2SC3334 | |
| TR517,518 | 273 0380 001 | Transistor 2SC4208A | |
| TR519,520 | 273 0317 906 | Transistor 2SC2458(BL) | |
| TR521,522 | 273 0235 923 | Transistor 2SC1841-T(E/F) | |
| TR523,524 | 275 0069 001 | Transistor 2SK215 | |
| TR525,526 | 275 0068 002 | Transistor 2SJ78 | |
| TR527,528 | 271 0256 003 | Transistor 2SA1306A(O/Y) | |
| TR529,530 | 273 0407 007 | Transistor 2SC3298A(O/Y) | |
| TR601,602 | 273 0332 907 | Transistor 2SC3334 | |
| TR603,604 | 271 0131 924 | Transistor 2SA988-T (E/F) | |
| TR701,702 | 272 0107 906 | Transistor 2SB1328(P)T105 | |
| TR703,704 | 274 0151 903 | Transistor 2SD2004(P)T105 | |
| TR705 | 273 0235 923 | Transistor 2SC1841-T(E/F) | |
| TR707,708 | 271 0131 924 | Transistor 2SA988-T(E/F) | |
| D505 | 276 0432 903 | Diode 1SS270A TE | |
| D507-510 | 276 0049 914 | Diode 1S2076ATE | |
| D511-518 | 276 0548 910 | Zener Diode DSM1D2 | |

| Ref. No. | Part No. | Part Name | Remarks |
|---|--------------|---------------------------------|-----------------|
| D523-530 | 276 0432 903 | Diode 1SS270A TE | |
| D531-534 | 276 0460 904 | Zener Diode HZS5C-1TD | |
| D535-546 | 276 0432 903 | Diode 1SS270A TE | |
| D581-588 | 276 0467 907 | Zener Diode HZS9A-1TD | |
| D601-608 | 276 0432 903 | Diode 1SS270A TE | |
| D701,702 | 276 0432 903 | Diode 1SS270A TEB | |
| RESISTOR GROUP (Not included Carbon Film ±5% 1/4W type) | | | |
| R501,502 | 245 2116 906 | Metallic Film 100K ohm 1/4W ±2% | RN14K2E104GT |
| R503,504 | 245 2060 900 | Metallic Film 470 ohm 1/4W ±2% | RN14K2E471GT |
| R505,506 | 245 2044 900 | Metallic Film 100 ohm 1/4W ±2% | RN14K2E101GT |
| R507-510 | 245 2076 907 | Metallic Film 2.2K ohm 1/4W ±2% | RN14K2E222GT |
| R511-514 | 245 2052 905 | Metallic Film 220 ohm 1/4W ±2% | RN14K2E221GT |
| R515,516 | 245 2090 909 | Metallic Film 8.2K ohm 1/4W ±2% | RN14K2E822GT |
| R517-524 | 245 2104 905 | Metallic Film 33K ohm 1/4W ±2% | RN14K2E333GT |
| R525-530 | 244 2052 973 | Metallic Film 560 ohm 1W | RS14B3A561JST |
| R531 | 214 2378 904 | Carbon (Non burn) 180 ohm 1/4W | RD14B2E181JNBST |
| R533,534 | 245 2084 902 | Metallic Film 4.7K ohm 1/4W ±2% | RN14K2E472GT |
| R535-538 | 214 2376 922 | Carbon (Non burn) 33 ohm 1/4W | RD14B2E330JNBST |
| R539,540 | 214 2379 961 | Carbon (non burn) 820 ohm 1/4W | RD14B2E821JNBST |
| R541,542 | 214 2376 977 | Carbon (non burn) 51 ohm 1/4W | RD14B2E510JNBST |
| R543-546 | 214 2387 940 | Carbon (non burn) 4.7 ohm 1/4W | RD14B2E47JNBST |
| R547-550 | 214 2377 947 | Carbon (non burn) 100 ohm 1/4W | RD14B2E101JNBST |
| R551,552 | 245 2106 903 | Metallic Film 39K ohm 1/4W ±2% | RN14K2E393GT |
| R555,556 | 245 2096 903 | Metallic Film 15K ohm 1/4W ±2% | RN14K2E153GT |

| Ref. No. | Part No. | Part Name | Remarks |
|-----------|--------------|--------------------------------|-----------------|
| R559-562 | 214 2387 908 | Carbon (non burn) 1 ohm 1/4W | RD14B2E010JNBST |
| R583-586 | 214 2379 987 | Carbon (non burn) 102 ohm 1/4W | RD14B2E102JNBST |
| R587-590 | 214 2376 964 | Carbon (non burn) 47 ohm 1/4W | RD14B2E470JNBST |
| R591,592 | 244 2052 928 | Metallic Film 47 ohm 1W | RS14B3A470JST |
| R593-596 | 245 2132 906 | Metallic Film 470K ohm 1/4W±2% | RN14K2E474GT |
| R597,598 | 244 2052 928 | Metallic Film 47 ohm 1W | RS14B3A470JST |
| R599-610 | 244 2051 987 | Metallic Film 4.7 ohm 1W | RS14B3A47R7JST |
| R611-622 | 243 2039 029 | Winding 0.22 ohm 5W | RW99=3HR22K |
| R627-632 | 244 2052 973 | Metallic Film 560 ohm 1W | RS14B3A561JST |
| R633,634 | 244 2050 904 | Metallic Film 22 ohm 1W | RS14B3A220JST |
| R635-638 | 245 2132 906 | Metallic Film 470K ohm 1/4W±2% | RN14K2E474GT |
| R639,640 | 244 2052 973 | Metallic Film 560 ohm 1W | RS14B3A561JST |
| R645-650 | 244 2052 973 | Metallic Film 560 ohm 1W | RS14B3A561JST |
| R663,664 | 214 2377 947 | Carbon (non burn) 100 ohm 1/4W | RD14B2E101JNBST |
| R665,666 | 214 2376 977 | Carbon (non burn) 51 ohm 1/4W | RD14B2E510JNBST |
| R667,668 | 214 2377 947 | Carbon (non burn) 100 ohm 1/4W | RD14B2E101JNBST |
| R669-672 | 214 2379 987 | Carbon (non burn) 102 ohm 1/4W | RD14B2E102JNBST |
| R683-686 | 244 2051 990 | Metallic Film 4.7K ohm 1W | RS14B3A822JST |
| R687-690 | 244 2051 903 | Metallic Film 8.2K ohm 1W | RS14B3A822JST |
| R691,692 | 244 2050 904 | Metallic Film 22 ohm 1W | RS14B3A220JST |
| R695-698 | 244 2051 903 | Metallic Film 8.2K ohm 1W | RS14B3A822JST |
| VR501,502 | 211 6014 072 | Variable 10K ohm | V09QB103 |
| VR503,504 | 211 8005 005 | Variable 47K ohm | V09QB473 |

CAPACITOR GROUP

| | | | |
|----------|--------------|----------------------------------|----------------|
| C501-504 | 255 6177 980 | Film 220pF/50V | CQ09S1H221JT |
| C505,506 | 254 3056 959 | Electrolytic 10µF/50V (Bipolar) | CE04D1H100MBPT |
| C507,508 | 253 4424 901 | Ceramic 33pF/50V | CC45SL1H330JT |
| C509,510 | 255 6179 988 | Film 0.01µF/50V | CQ09S1H103JT |
| C511,512 | 253 4538 907 | Ceramic 68pF/50V | CC45SL1H680JT |
| C513,514 | 254 4260 980 | Electrolytic 10µF/50V | CE04W1H100MT |
| C517,518 | 254 4260 980 | Electrolytic 10µF/50V | CE04W1H100MT |
| C521,522 | 253 4486 907 | Ceramic 47pF/500V | CC45SL2H470JT |
| C523,524 | 255 6177 948 | Film 100pF/50V | CQ09S1H101JT |
| C525,526 | 255 6178 921 | Film 470PF/50V | CQ09S1H471JT |
| C527,528 | 254 4263 987 | Electrolytic 10µF/100V | CE04W2A100MT |
| C529,530 | 253 4470 900 | Ceramic 10pF/500V | CC45SL2H100DT |
| C531,532 | 254 4260 949 | Electrolytic 1µF/50V | CE04W1H010MT |
| C533-536 | 254 3046 901 | Electrolytic 1µF/100V (Bipolar) | CE04D2A010MBPT |
| C537-540 | 254 4229 002 | Electrolytic 470µF/100V | CE04W2A471M |
| C541,542 | 256 1042 903 | Metalized 0.1µF/250V | CF93A2E104KT |
| C543-546 | 254 4260 980 | Electrolytic 10µF/50V | CE04W1H100MT |
| C547,548 | 255 4199 973 | Film 0.01µF/50V | CQ92M1H103JT |
| C549,550 | 254 4260 980 | Electrolytic 10µF/50V | CE04W1H100MT |
| C551-554 | 255 6177 948 | Film 100pF/50V | CQ09S1H101JT |
| C555-558 | 255 6177 980 | Film 220pF/50V | CQ09S1H221JT |
| C559,560 | 253 4428 907 | Ceramic 47pF/50V | CC45SL1H470JT |
| C561,562 | 254 4260 980 | Electrolytic 10µF/50V | CE04W1H100MT |
| C567,568 | 255 4199 973 | Film 0.01µF/50V | CQ92M1H103JT |
| C571,572 | 255 6179 988 | Film 0.01µF/50V | CQ09S1H103JT |
| C573-576 | 254 3046 930 | Electrolytic 10µF/100V (Bipolar) | CE04D2A100MBPT |
| C601-604 | 254 4260 993 | Electrolytic 22µF/50V | CE04W1H220MT |
| C605,606 | 254 4261 918 | Electrolytic 47µF/50V | CE04W1H470MT |
| C607-610 | 255 4199 973 | Film 0.01µF/50V | CQ92M1H103JT |
| C701-704 | 254 4256 949 | Electrolytic 100µF/25V | CE04W1E101MT |

| Ref. No. | Part No. | Part Name | Remarks |
|--------------------|--------------|---------------------------|-------------------------|
| OTHER PARTS | | | |
| △F009-012 | 206 1015 090 | FUSE (5A) | Europe, U.K., Australia |
| △F009-012 | 206 1046 027 | FUSE (5A) | U.S.A. Canada |
| △F009-012 | 206 1035 012 | FUSE (5A) | Multi-voltage |
| P501,502 | 214 0129 001 | Posistor PTH487A01BD222TS | |
| | 205 0233 032 | 3P EH CONNECTOR BASE | |
| | 205 0233 087 | 8P EH CONNECTOR BASE | |
| | 205 0275 003 | 10P EH CONNECTOR BASE | |
| | 205 0653 036 | 3P VH CONNECTOR BASE | |
| | 205 0343 032 | 3P CONNECTOR BASE (KR-PH) | |

1U-2363 PROTECTOR UNIT

| Ref. No. | Part No. | Part Name | Remarks |
|---|--------------|---------------------------|---------------------------------------|
| SEMICONDUCTOR GROUP | | | |
| TR201-213 | 273 0317 906 | Transistor 2SC2458(BL) | |
| TR215 | 273 0317 906 | Transistor 2SC2458(BL) | |
| TR217 | 271 0191 906 | Transistor 2SA1048(GR) | |
| TR218 | 273 0317 906 | Transistor 2SC2458(BL) | |
| TR219,220 | 269 0107 900 | Transistor RN1241(A/B) | |
| TR222 | 273 0317 906 | Transistor 2SC2458(BL) | |
| SC201 | 279 0016 904 | Thyristor SF0R1A42 | |
| D201-213 | 276 0432 903 | Diode 1SS270A TE | |
| D215,216 | 276 0466 908 | Zener Diode HZS7C-1TD | |
| D217 | 276 0477 900 | Zener Diode HZS16-1TD | |
| D221-224 | 276 0553 905 | Diode 1SR35-200A(T93X) | |
| D235 | 276 0432 903 | Diode 1SS270A TE | |
| LD201-203 | 393 9506 902 | LED SEL4117R(TP3) | |
| LD204 | 393 9506 915 | LED SEL4917D(TP3) | |
| RESISTOR GROUP (not included Carbon Film ±5% 1/4W type) | | | |
| △R101,102 | 243 2079 021 | Winding 33 ohm 10W | RW78A4A330K-(UL) |
| R247-249 | 244 2043 924 | Metallic Film 68 ohm 1W | RS14B3A680JST(S) |
| VR501,502 | 211 0741 008 | Variable 50K ohm | V1610V25FB503 (Europe Models Only) |
| CAPACITOR GROUP | | | |
| C101 | 253 8014 702 | Ceramic 0.01µF/400VAC | CK45F2GAC103MC |
| C201,202 | 254 4260 951 | Electrolytic 2.2µF/50V | CE04W1H2R2MT |
| C203 | 253 1151 905 | Ceramic 0.0047µF/500V | CK45E2H472PT |
| C205 | 254 4260 935 | Electrolytic 0.47µF/50V | CE04W1HR47MT |
| C205 | 254 4258 785 | Electrolytic 470µF/35V | CE04W1V471MT |
| C206 | 254 4252 943 | Electrolytic 220µF/10V | CE04W1A221MT |
| C207 | 254 4258 785 | Electrolytic 470µF/35V | CE04W1V471MT |
| C208 | 254 4252 901 | Electrolytic 22µF/10V | CE04W1A220MT |
| C209 | 254 4252 930 | Electrolytic 100µF/10V | CE04W1A101MT |
| C210,211 | 254 4260 980 | Electrolytic 10µF/50V | CE04W1H100MT |
| C212 | 254 4250 945 | Electrolytic 330µF/6.3V | CE04W0J331MT |
| C213 | 254 4260 980 | Electrolytic 10µF/50V | CE04W1H100MT |
| OTHER PARTS | | | |
| △F001 | 206 1036 011 | FUSE (6.3A) | Europe, U.K., Australia |
| △F001 | 206 1051 009 | FUSE (12A) | U.S.A. Canada |
| △F001 | 206 1064 009 | FUSE (12A) | Multi-voltage |
| △F201,202 | 206 1015 016 | FUSE (1.25A) | Europe, U.K., Australia |
| △F201,202 | 206 1039 047 | FUSE (1.25A) | U.S.A. Canada |
| △F201,202 | 206 1035 025 | FUSE (1.25A) | Multi-voltage |
| △SW101 | 212 9534 002 | POWER SWITCH (PUSH) TV-8 | |
| SW201,202 | 212 1076 005 | 2P PUSH SWITCH | |
| CN3F | 205 0277 030 | 3P EH CONNECTOR BASE (RD) | |
| CN3G | 205 0343 032 | 3P CONNECTOR BASE (KR-PH) | |
| CN3K | 205 0233 032 | 3P EH CONNECTOR BASE | |

| Ref. No. | Part No. | Part Name | Remarks |
|----------|--------------|------------------------------|---------|
| CN3A,3B | 205 0343 045 | 4P CONNECTOR BASE (KR-PH) | |
| | 205 0190 036 | 3P NH CONNECTOR BASE | |
| | 203 4842 009 | 3P VH-SDN CONNECTOR CORD | |
| CN3F | 203 4817 034 | 3P EH-SCN CORD (RD) | |
| CN3G | 203 4834 020 | 3P KR-DA CONNECTOR CORD | |
| CN3H | 203 4834 033 | 3P KR-DA CONNECTOR CORD | |
| CN3K | 203 4833 021 | 3P EH-SCN CONNECTOR CORD | |
| CN4 | 203 6374 038 | 4P KR-DA CONNECTOR CORD | |
| CN8 | 204 2451 013 | 8P EH-SCN CONNECTOR CORD | |
| CN10 | 204 2515 001 | 10P EH-SCN CONNECTOR CORD | |

1U-2364 POWER SUPPLY UNIT

PACKING & ACCESSORIES

| Ref. No. | Part No. | Part Name | Remarks |
|--|--------------|-----------------------------|-------------------------|
| SEMICONDUCTOR GROUP | | | |
| D101,102 | 276 0424 005 | Diode 4D4B42 | |
| D231 | 276 0432 903 | Diode 1SS270A TE | |
| D233 | 276 0432 903 | Diode 1SS270A TE | |
| D236,237 | 276 0432 903 | Diode 1SS270A TE | |
| RESISTOR GROUP (not included Carbon Film ±5% 1/4W type) | | | |
| R801,802 | 244 2043 937 | Metallic Film 10 ohm 1W | RS14B3A100JST |
| R803,804 | 244 2051 987 | Metallic Film 4.7 ohm 1W | RS14B3A4R7JST |
| R805-808 | 244 2050 904 | Metallic Film 22 ohm 1W | RS14B3A220JST |
| R811,812 | 244 2051 987 | Metallic Film 4.7 ohm 1W | RS14B3A4R7JST |
| CAPACITOR GROUP | | | |
| C103,104 | 256 1043 708 | Metallized 0.22μF/250V | CF93B2E224K |
| C801,802 | 255 6179 988 | Film 0.01μF/50V | CQ09S1H103JT |
| C803-806 | 255 6179 946 | Film 0.0047μF/50V | CQ09S1H472JT |
| C807,808 | 255 6179 988 | Film 0.01μF/50V | CQ09S1H103JT |
| OTHER PARTS | | | |
| △ F005-F008 | 206 1036 011 | FUSE (6.3A) | Europe, U.K., Australia |
| △ F005-F008 | 206 1046 014 | FUSE (8A) | U.S.A. Canada |
| △ F005-F008 | 206 1052 008 | FUSE (8A) | Multi-voltage |
| L801-804 | 235 0068 004 | INDUCTOR (1mH) | |
| RL801-814 | 214 0129 001 | RELAY (DH2TU) | |
| CN3I | 203 4833 018 | 3P EH-SCN CONNECTOR CORD | |
| CN3J | 203 4833 018 | 3P EH-SCN CONNECTOR CORD | |
| | 205 0653 036 | 3P VH CONNECTOR BASE | |

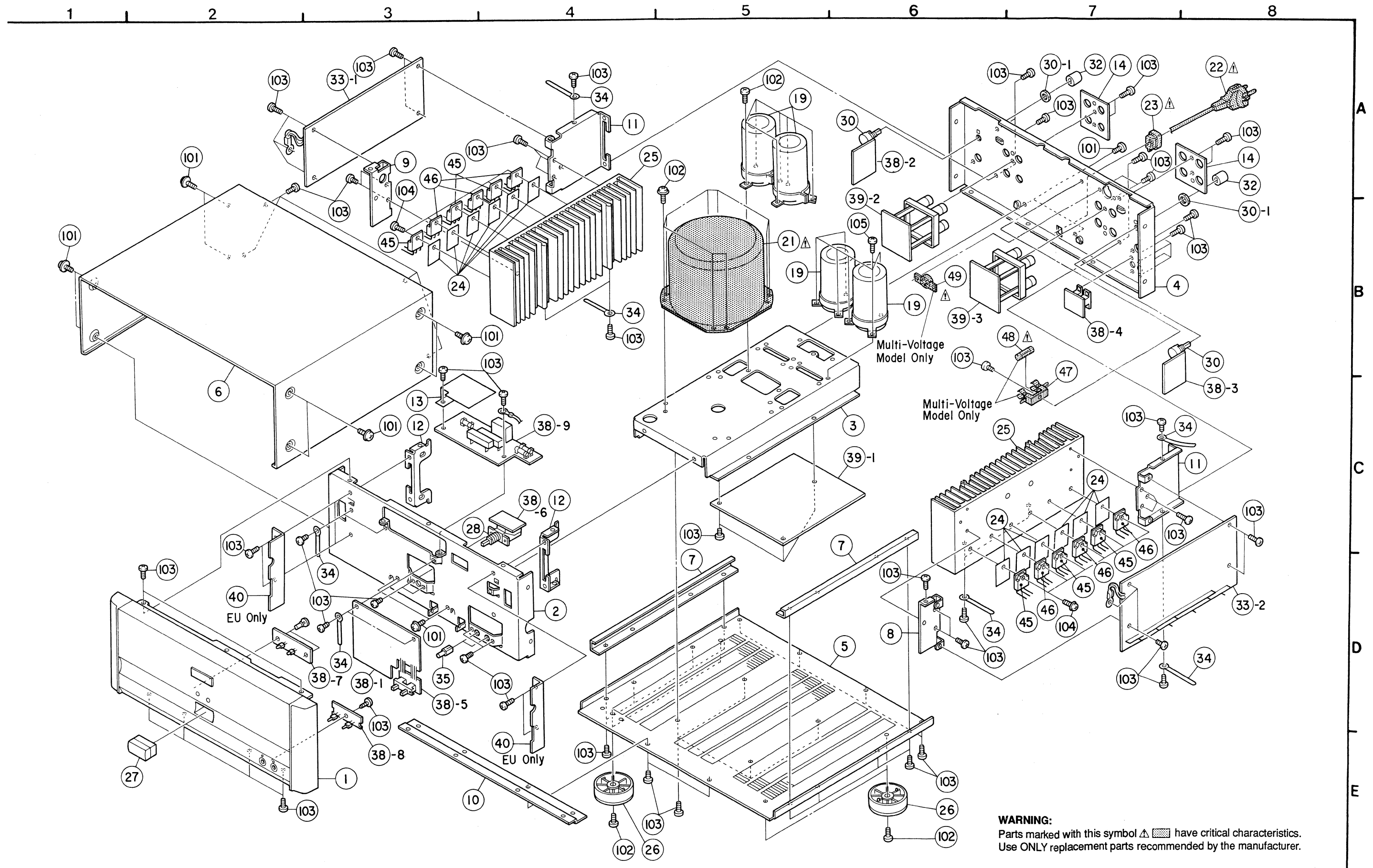
| Ref. No. | Part No. | Part Name | Remarks | Q'ty |
|----------|--------------|------------------|--------------------------|------|
| | 504 9101 029 | STYRENE PAPER | | 1 |
| | 505 0075 051 | CABINET COVER | | 1 |
| | 503 9218 004 | CUSHION ASSY | | 1 |
| | 501 1580 006 | CARTON CASE | | 1 |
| | 505 8006 019 | ENVELOPE | | 1 |
| | 511 2241 008 | INST. MANUAL | Europe Canada | 1 |
| | 511 2260 005 | INST. MANUAL | U.S.A., Multi-voltage | 1 |
| | 203 4442 001 | REMOTE PLUG CORD | | 1 |

PARTS LIST OF EXPLODED VIEW

| Ref. No. | Part No. | Part Name | Remarks | Ref. No. | Part No. | Part Name | Remarks |
|----------|--------------|--------------------------------|-----------------|----------|--------------|-------------------------------|--------------------|
| ⊙ 1 | 144 2173 206 | FRONT PANEL ASS'Y | | ⊙ | 1U-2364B | SUPPLY & SPEAKER UNIT | U.S.A. Canada |
| ⊙ | 144 2173 222 | FRONT PANEL ASS'Y | (Gold) | ⊙ | 1U-2364C | SUPPLY & SPEAKER UNIT | Multi-voltage |
| ⊙ 2 | 411 1142 002 | FRONT CHASSIS | | ⊙ 39-1 | | SUPPLY UNIT | |
| ⊙ 3 | 411 1155 002 | TRANS CHASSIS | | ⊙ 39-2 | | SPEAKER (L) UNIT | |
| ⊙ 4 | 105 1012 004 | BACK PANEL | Europe | ⊙ 39-3 | | SPEAKER (R) UNIT | |
| ⊙ | 105 1012 017 | BACK PANEL | U.S.A. Canada | ⊙ 40 | 412 3510 001 | UL BRACKET | U.S.A. Only |
| ⊙ | 105 1012 020 | BACK PANEL | Multi-Voltage | 45 | 273 0401 003 | Transistor 2SC3856 (O/P/Y)(Z) | |
| ⊙ 5 | 105 9116 106 | BOTTOM COVER | | 46 | 271 0251 008 | Transistor 2SA1492 (O/P/Y)(Z) | |
| ⊙ 6 | 102 9016 016 | TOP COVER | | △ 47 | 202 0013 101 | FUSE holder | Multi-voltage Only |
| ⊙ | 102 9016 029 | TOP COVER | (Gold) | △ 48 | 206 1061 057 | FUSE (6.3A) F2 | Multi-voltage Only |
| ⊙ 7 | 412 9081 207 | SUPPORT BRACKET | | △ 49 | 212 9555 005 | VOLTAGE SEL SWITCH | Multi-voltage Only |
| ⊙ 8 | 412 3464 105 | P.W.B. BRACKET (R) | | 101 | 477 0263 005 | 3P. SWELLING SCREW | |
| ⊙ 9 | 412 3463 106 | P.W.B. BRACKET (L) | | | 477 0263 018 | 3P. SWELLING SCREW | (Gold) |
| ⊙ 10 | 144 2178 007 | PANEL BRACKET | | 102 | 473 7004 003 | 4 × 8 CBTS(S)-Z SCREW | |
| ⊙ 11 | 412 3437 006 | RADIATOR BRACKET (REAR) | | 103 | 473 7015 018 | 3 × 8 CBTS(S)-B SCREW | |
| ⊙ 12 | 412 3436 104 | RADIATOR BRACKET (FRONT) | | 104 | 473 8007 009 | 3 × 12 CUP SCREW | |
| ⊙ 13 | 415 0648 004 | INSULATING COVER | | | | | |
| ⊙ 14 | 415 9014 105 | PROTECTOR SHEET | | | | | |
| 19 | 254 6165 009 | ELECTROLYTIC CAPACITOR | CE68W==183M(DL) | | | | |
| △ 21 | 233 9559 000 | POWER TRANS | Europe | | | | |
| △ | 233 9555 004 | POWER TRANS | U.S.A. Canada | | | | |
| △ | 233 9558 001 | POWER TRANS | Multi-Voltage | | | | |
| △ 22 | 206 2070 005 | AC CORD (250V 6A C2) | Europe | | | | |
| △ | 206 2060 002 | AC CORD (POLARIZED) | U.S.A. Canada | | | | |
| △ | 206 2083 005 | AC CORD | Multi-Voltage | | | | |
| △ 23 | 445 0056 008 | CORD BUSH | Europe | | | | |
| △ | 445 0020 005 | CORD BUSH (4K-4) | U.S.A. Canada | | | | |
| △ | 445 0071 009 | CORD BUSH | Multi-Voltage | | | | |
| ⊙ 24 | 415 0234 007 | INSULATING SHEET | | | | | |
| 25 | 417 0043 100 | RADIATOR | | | | | |
| 26 | 104 0195 000 | FOOT | | | | | |
| 27 | 113 9242 110 | PUSH KNOB (P) ASS'Y | | | | | |
| | 113 9242 107 | PUSH KNOB (P) ASS'Y | (Gold) | | | | |
| △ 28 | 212 9534 002 | POWER SW. (PUSH) TV-8 | SW101 | | | | |
| 30 | 211 0741 008 | INPUT VOLUME (V1610V25FB503) | Europe Only | | | | |
| 30-1 | | NUT (ATTACHED TO INPUT VOLUME) | | | | | |
| 32 | 112 0555 007 | VOLUME KNOB (B) | Europe Only | | | | |
| ⊙ 33 | 1U-2362A | POWER AMP. UNIT | Europe | | | | |
| ⊙ | 1U-2362B | POWER AMP. UNIT | U.S.A. Canada | | | | |
| ⊙ | 1U-2362C | POWER AMP. UNIT | Multi-Voltage | | | | |
| ⊙ 33-1 | | POWER AMP. (L) UNIT | | | | | |
| ⊙ 33-2 | | POWER AMP. (R) UNIT | | | | | |
| △ 34 | 445 8004 007 | WIRE CLAMPER | | | | | |
| △ 35 | 113 1356 004 | PUSH KNOB (MARU) | | | | | |
| | 113 1356 062 | PUSH KNOB (MARU) | (Gold) | | | | |
| ⊙ 38 | 1U-2363A | PROTECTOR UNIT | Europe | | | | |
| ⊙ | 1U-2363B | PROTECTOR UNIT | U.S.A. Canada | | | | |
| ⊙ | 1U-2363C | PROTECTOR UNIT | Multi-Voltage | | | | |
| ⊙ 38-1 | | PROTECTOR UNIT | | | | | |
| ⊙ 38-2 | | INPUT VOL. (L) UNIT | | | | | |
| ⊙ 38-3 | | INPUT VOL. (R) UNIT | | | | | |
| ⊙ 38-4 | | DC REMOTE JACK UNIT | | | | | |
| ⊙ 38-5 | | SPEAKER SW. UNIT | | | | | |
| ⊙ 38-6 | | POWER SW. UNIT | | | | | |
| ⊙ 38-7 | | POWER LED UNIT | | | | | |
| ⊙ 38-8 | | SPEAKER LED UNIT | | | | | |
| ⊙ 38-9 | | AC UNIT | | | | | |
| ⊙ 39 | 1U-2364A | SUPPLY & SPEAKER UNIT | Europe | | | | |

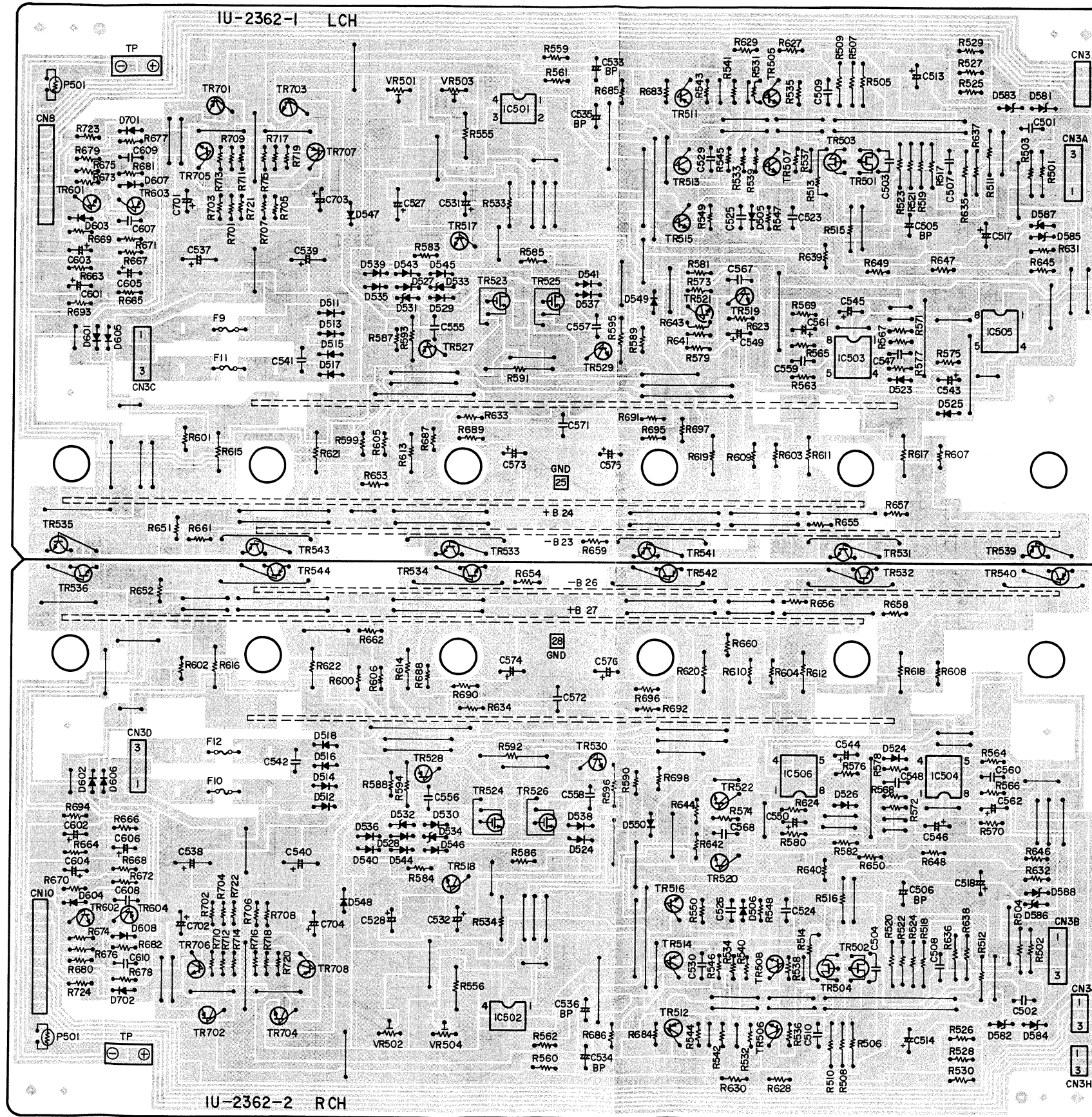
* (Gold) in the Remarks column refers with gold front panels.

EXPLODED VIEW

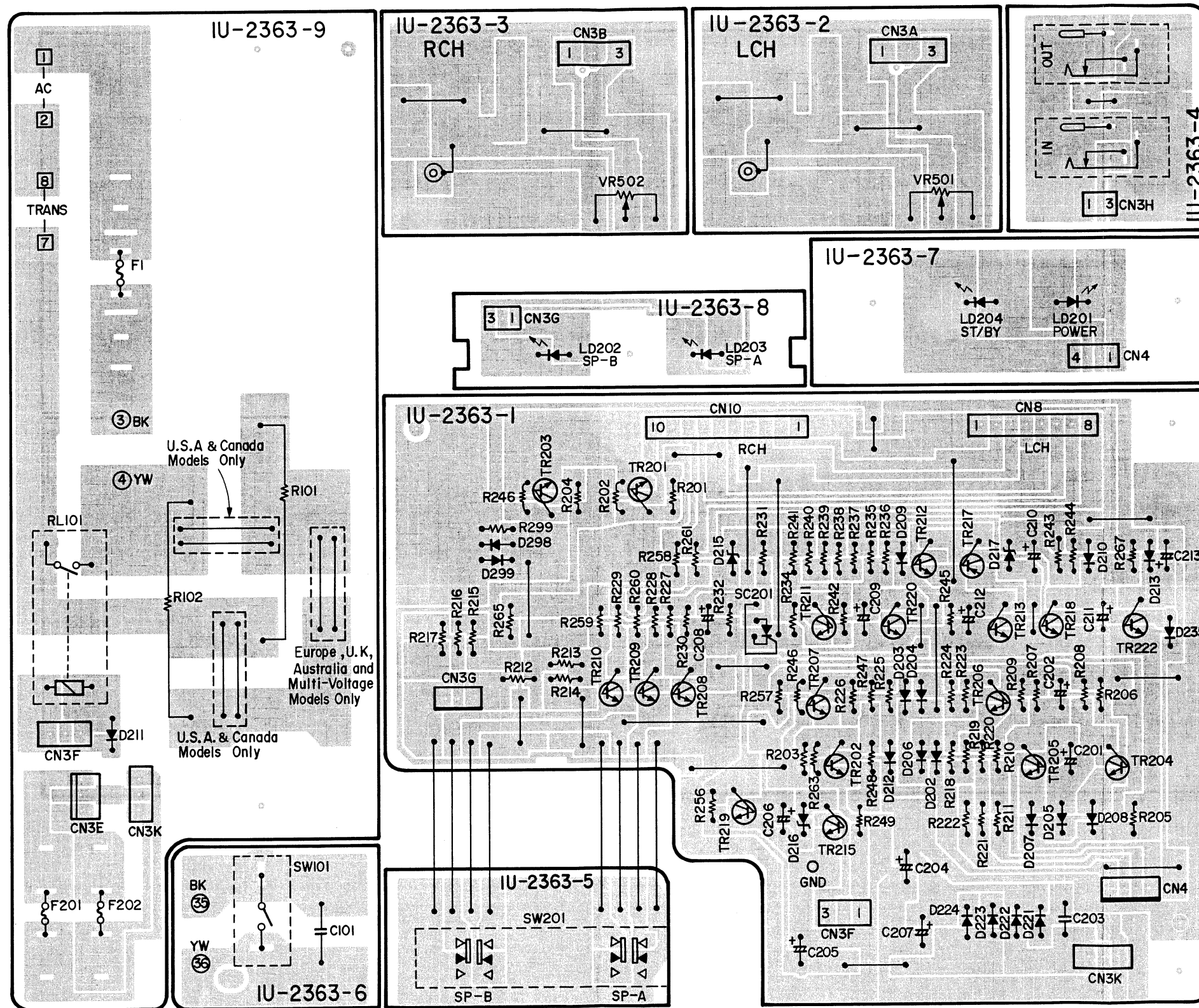


WARNING:
 Parts marked with this symbol ▲ have critical characteristics.
 Use ONLY replacement parts recommended by the manufacturer.

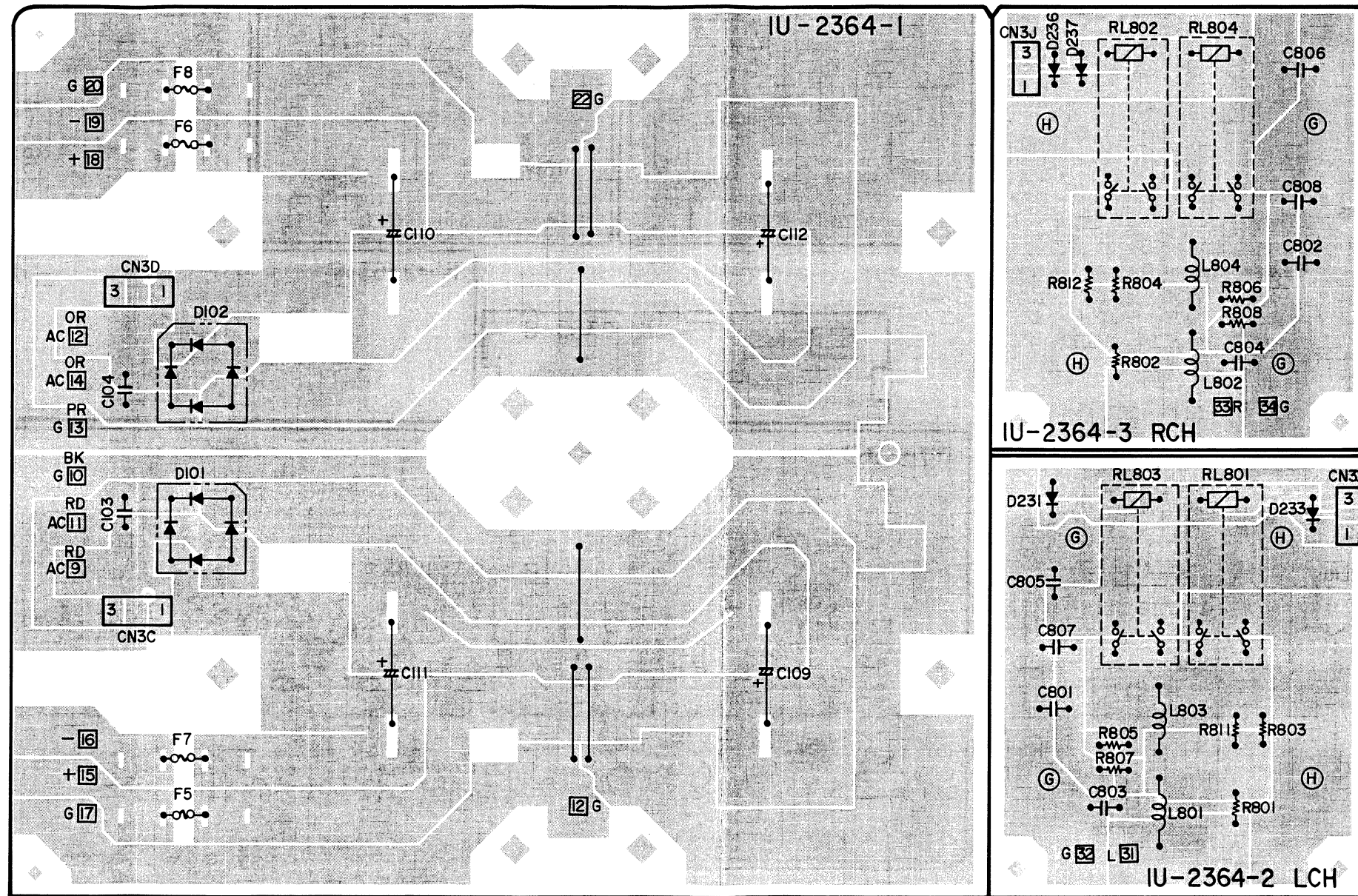
P.W. BOARD OF 1U-2362 POWER AMP UNIT



P.W. BOARD OF 1U-2363 PROTECTOR UNIT



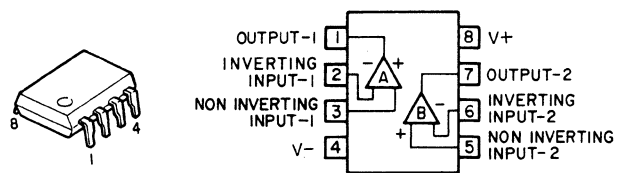
P.W. BOARD OF 1U-2364 POWER SUPPLY UNIT



SEMICONDUCTORS

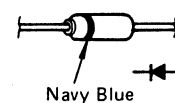
● IC

NJM-2082DD
M-5218P

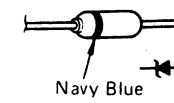


● Diodes (included LED)

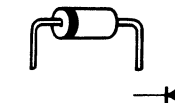
1S2076A
1SS270A



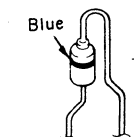
HZS-5C-1 HZS-9A-1
HZS-7C-1 HZS-16-1



DSM1A2 (type-2)

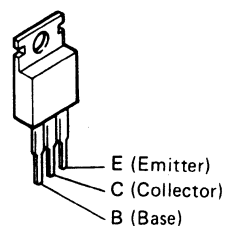


1SR35-200A

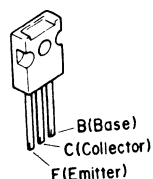


● Transistors

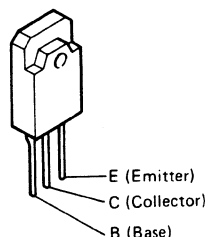
2SC2336A (Q)/(P)
2SA1006A (Q/P)



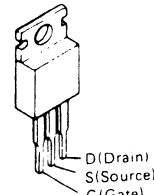
2SA1360 (O/Y)



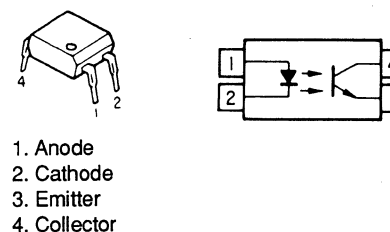
2SA1492LB(O/P/Y)
2SA3856LB(O/P/Y)



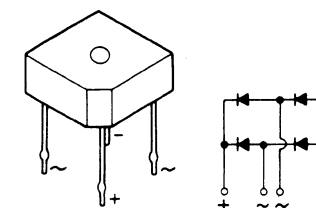
2SJ78
2SK215



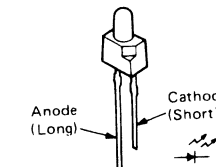
TLP-521-1 (BL)



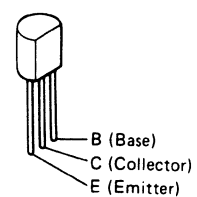
4D4B42 (LCI)



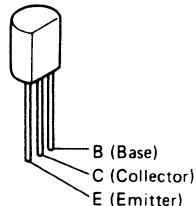
SEL4117RT(RED)
SEL-4918DT(ORG)



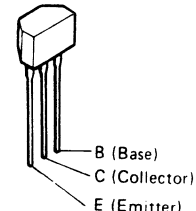
2SC1841 (B/F)
2SA988 (E/F)



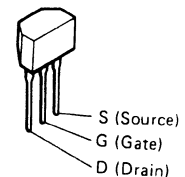
2SC2705 (O/Y)
2SC3334



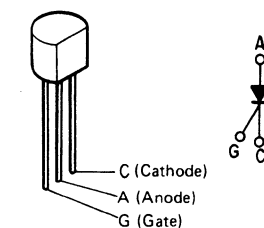
2SC2458 (BL)
RN1241



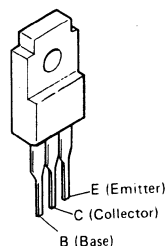
2SK184C (Y/GR/BL)



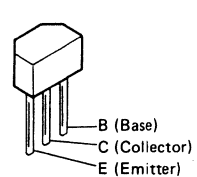
SFOR1A42
Thyristor



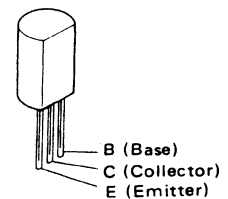
2SC3298A (O/Y)
2SA1306A(O/Y)



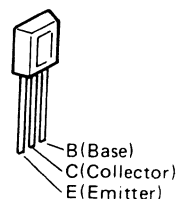
2SC2458A (BL)
2SA1048 (GR)



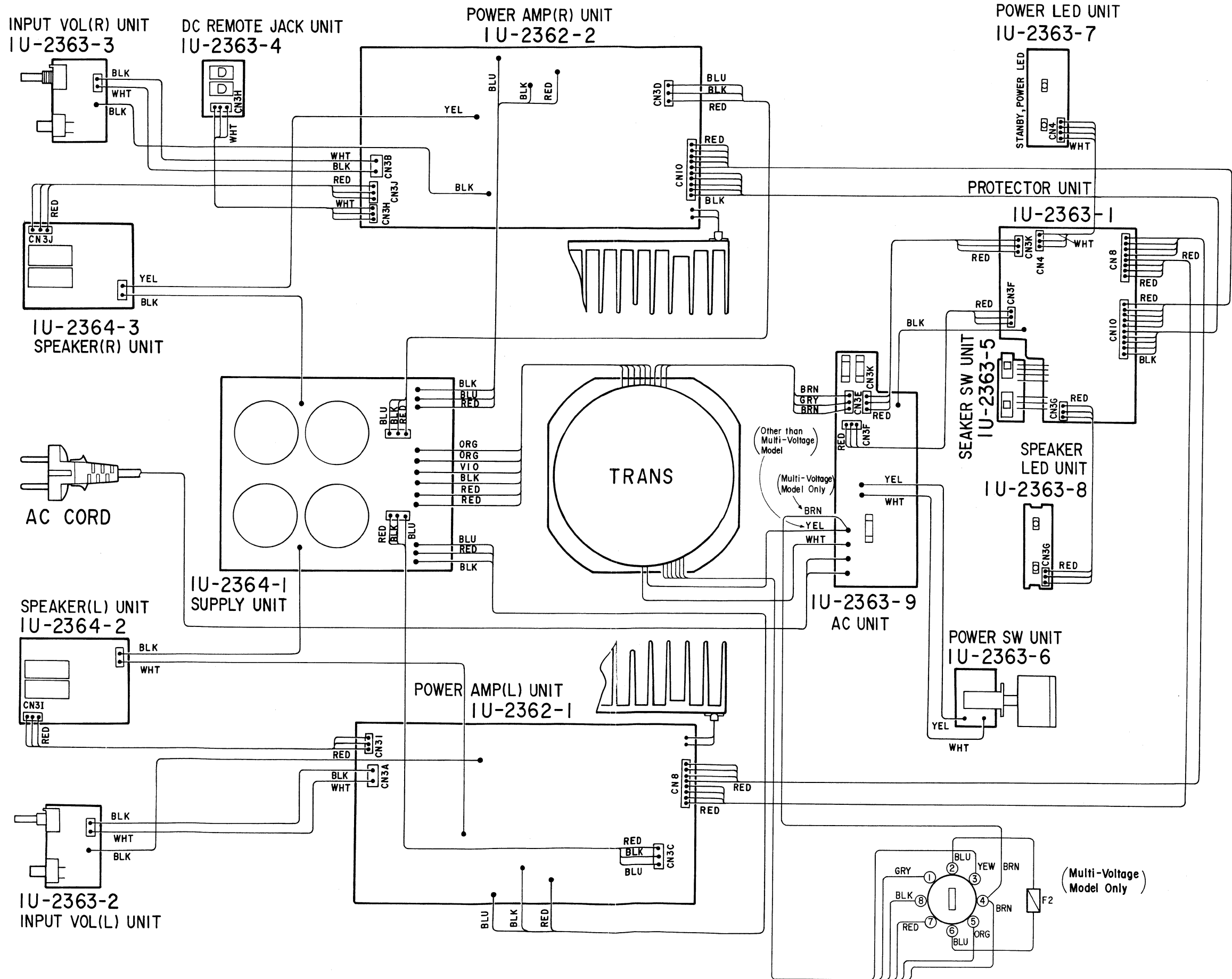
2SC4208A
2SC2705 (O/Y)



2SB1328(P)
2SD2004(P)



WIRING DIAGRAM



SCHEMATIC DIAGRAM

1

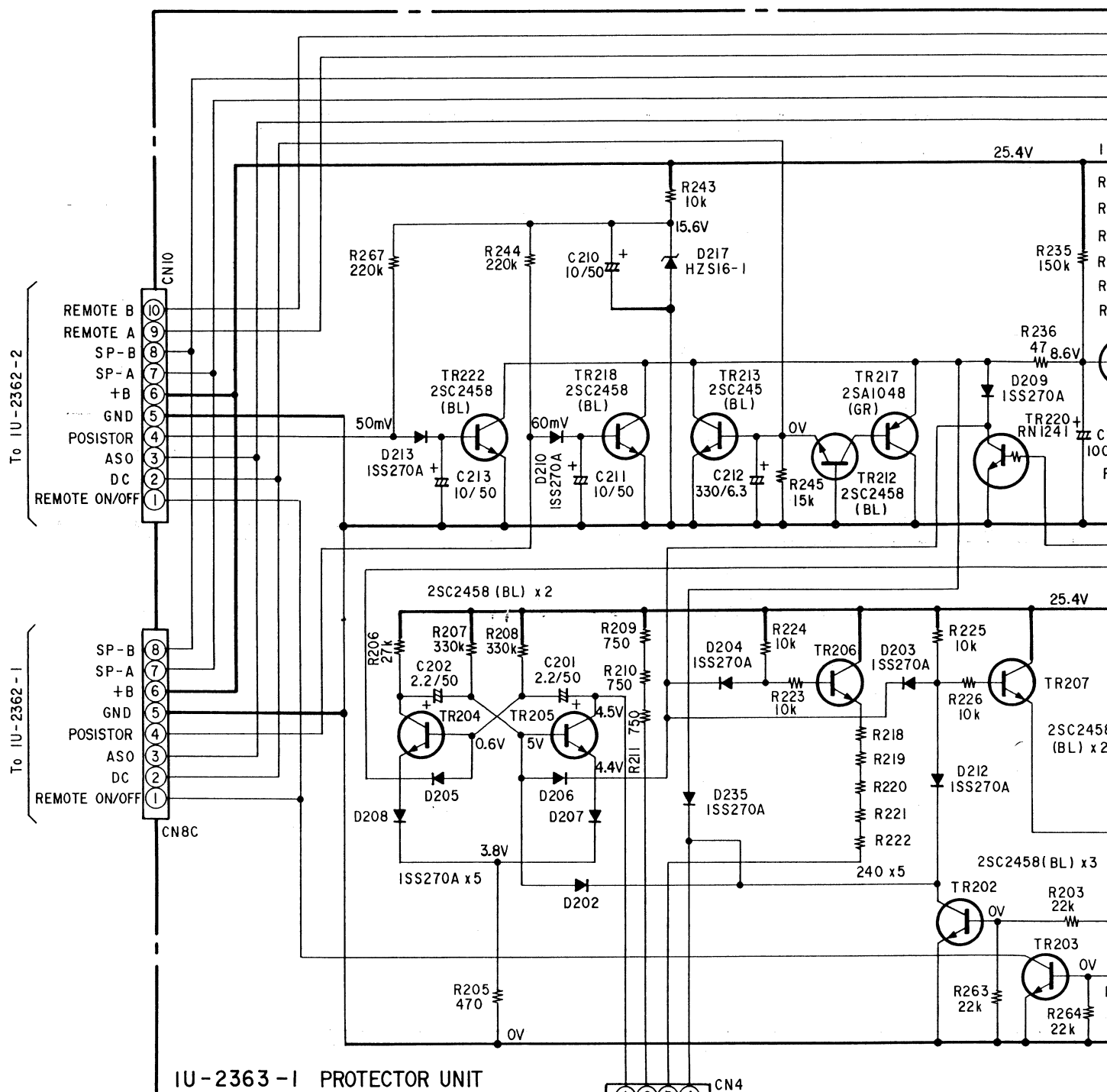
2

3

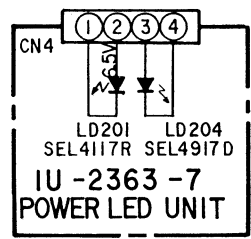
4

5

6

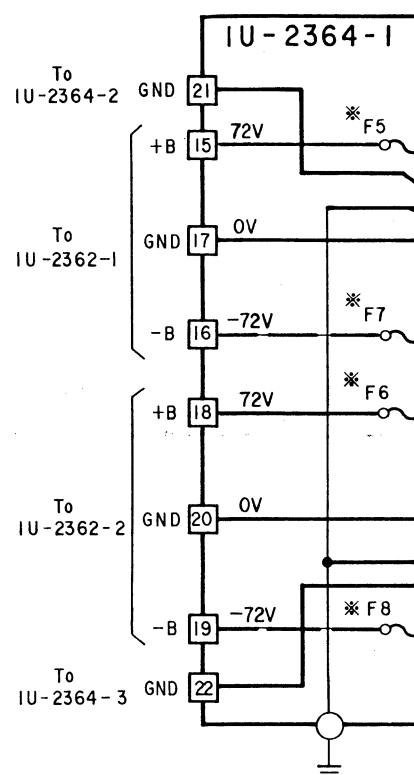


IU-2363-1 PROTECTOR UNIT



*

| | C101 | F1 | F5,6,7,8 | F201, 202 |
|-----------------------------|-------------|----------|----------|------------|
| Europe U.K. Australia | 0.0047/400V | T6.3A | T6.3A | T1.25A |
| U.S.A Canada | 0.01/125V | I2A I25V | 8A I25V | I.25A I25V |
| Multi-Voltage | 0.0047/250V | T12A | T8A | T1.25A |



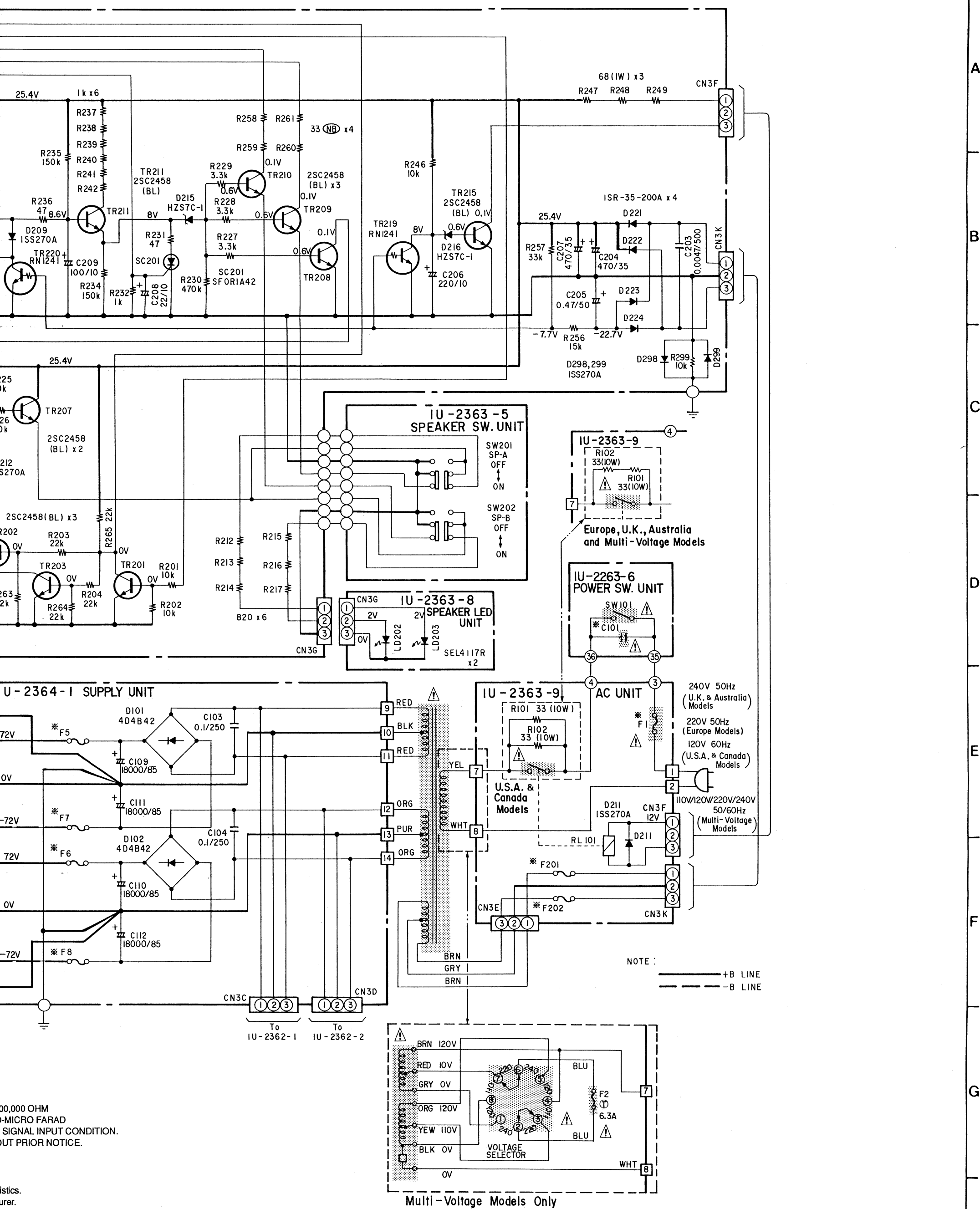
NOTES
 ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CON
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

WARNING:
 Parts marked with this symbol Δ have critical characteristics.
 Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
 Before returning the unit to the customer, make sure you make either (1) a leakage
 the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either
 defective.

WARNING:
 DO NOT return the unit to the customer until the problem is located and corrected.

6 7 8 9 10 11



00,000 OHM
 MICRO FARAD
 SIGNAL INPUT CONDITION.
 PRIOR NOTICE.

either (1) a leakage current check or (2) a line to chassis resistance check. If
 from chassis to either side of the power cord is less than 240 kohms, the unit is

ated and corrected.

A
 B
 C
 D
 E
 F
 G
 H

SCHEMATIC DIAGRAM

1

2

3

4

5

6

A

B

C

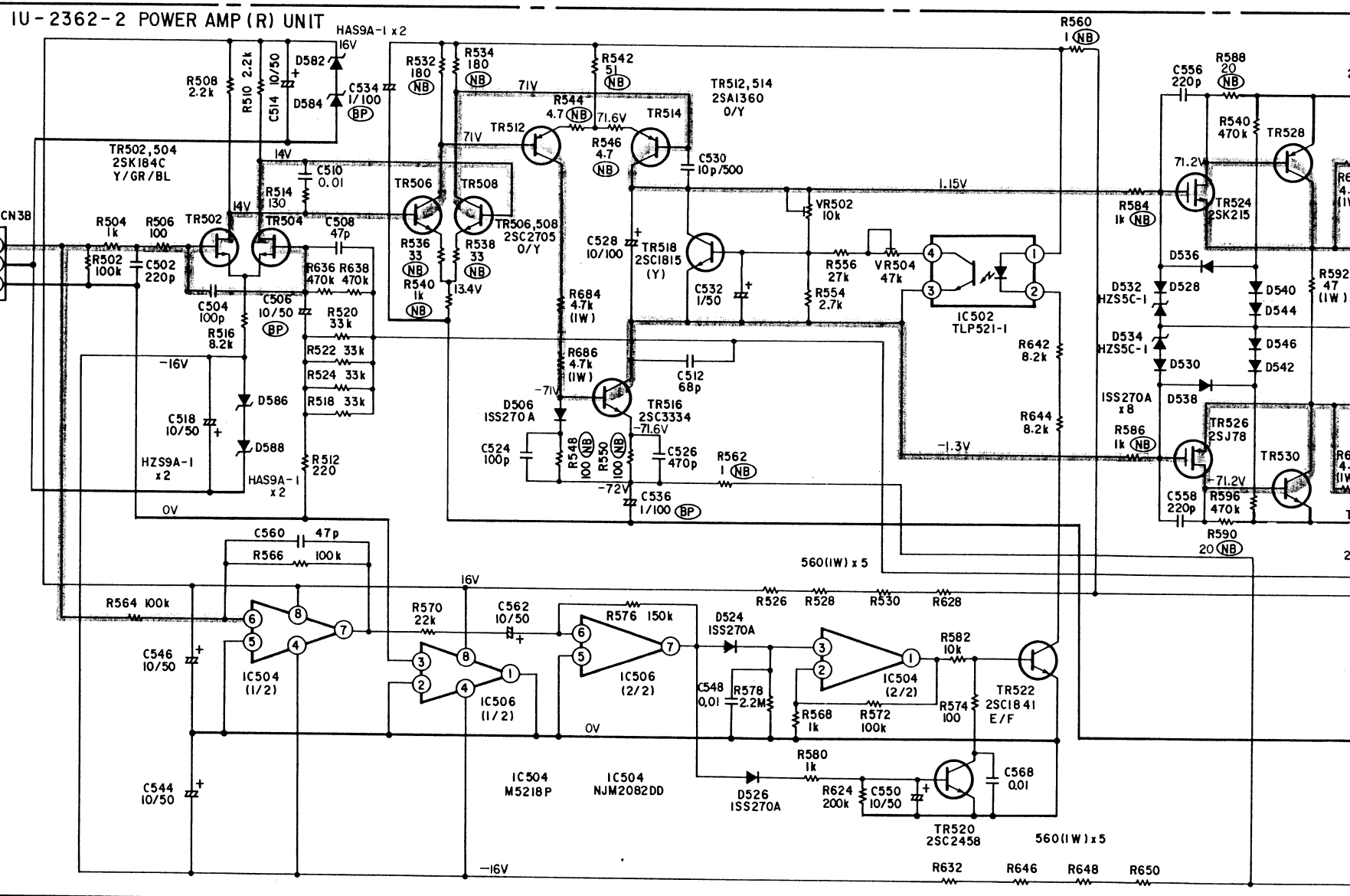
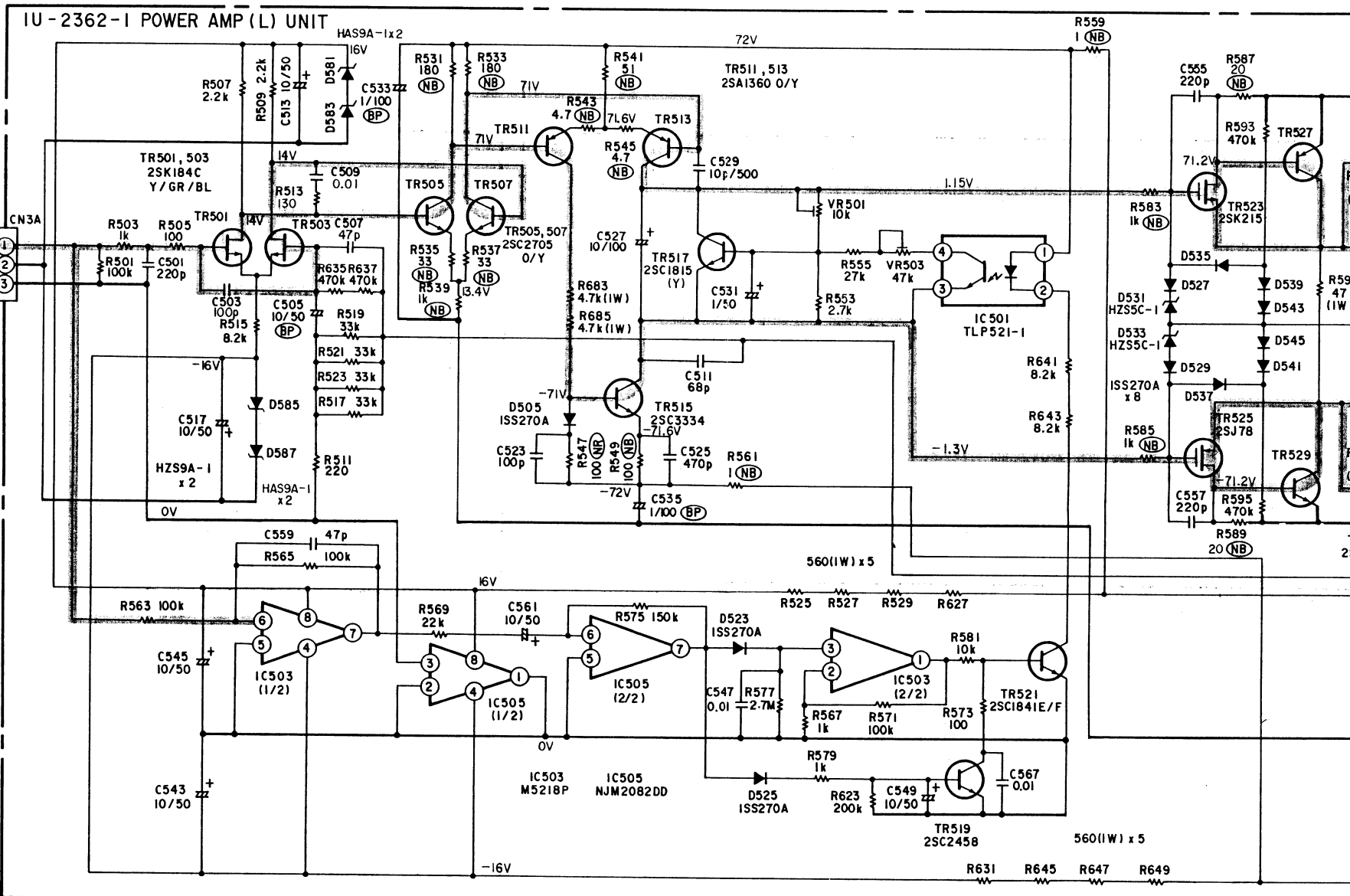
D

E

F

G

H

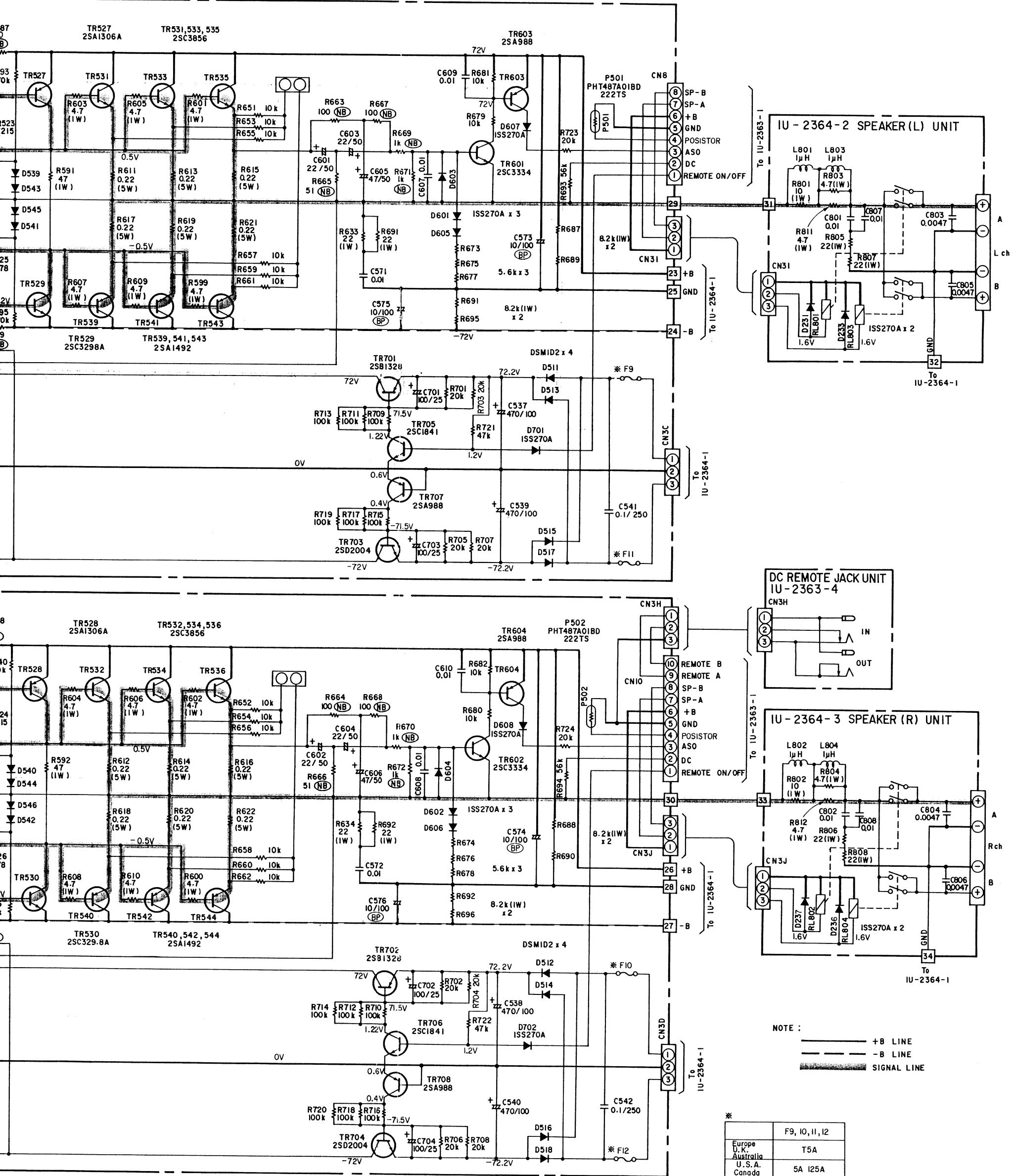


WARNING:
Parts marked with this symbol have critical characteristics.
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Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT NOTICE



NOTE :
 ——— +B LINE
 - - - -B LINE
 ——— SIGNAL LINE

| | |
|---------------|----------------|
| * | F9, 10, 11, 12 |
| Europe | T5A |
| U.K. | T5A |
| Australia | T5A |
| U.S.A. | 5A 125A |
| Canada | 5A 125A |
| Multi-Voltage | T5A |

M, M=1,000,000 OHM
 =MICRO-MICRO FARAD
 D AT NO SIGNAL INPUT CONDITION.
 E WITHOUT PRIOR NOTICE.