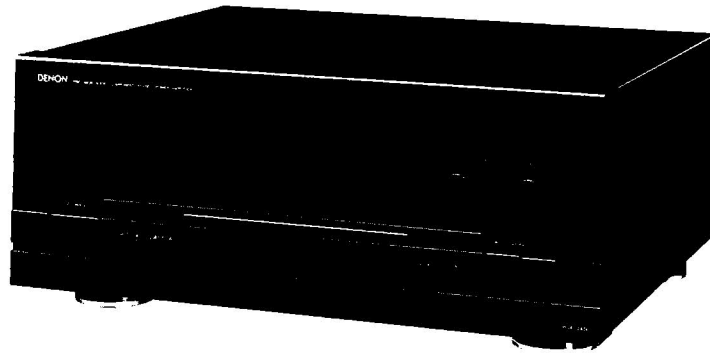


DENON

Hi-Fi Stereo Power Amplifier

SERVICE MANUAL MODEL POA-2400

SOLID STATE
STEREO POWER AMPLIFIER



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NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

Rated output power: (both channels driven) 200W per channel min, RMS with both channels driven into 8 ohms from 20 Hz to 20 kHz with no more than 0.01% total harmonic distortion (U.S.A.)
 200 W + 200 W (8 ohms, 20 Hz – 20 kHz)
 330 W + 330 W (4 ohms, DIN 1 kHz)
Dynamic Power: 450 W + 450 W (at 4 ohms)
 620 W + 620 W (at 2 ohms)
Total harmonic distortion: Less than 0.002% (–3 dB at rated output, 8 ohms)
Intermodulation distortion: Less than 0.002% (80 Hz/7 kHz: 4/1 at rated output, 8 ohms)
Power band width: 5 Hz – 80 kHz (8 ohms, THD 0.03%)
Frequency response:
 • Europe, Australia and U.K. Models. 1 Hz – 300 kHz $\pm 0_{-3}$ dB (at 1 W) (DIRECT)
 1 Hz – 100 kHz $\pm 0_{-3}$ dB (at 1 W) (NORMAL)
 • U.S.A., Canada and Multiple Models. 1 Hz – 300 kHz $\pm 0_{-3}$ dB (at 1 W)
Input sensitivity: 1V (NORMAL, DIRECT)
Input impedance:
 • Europe, Australia and U.K. Models. 25k ohms (NORMAL in / DIRECT in)
 • U.S.A., Canada and Multiple Models. 25k ohms (NORMAL in)
 47k ohms (DIRECT in)
Output impedance: 0.1 ohm (1 kHz)

S/N ratio: 123 dB (A-weighting)
Output terminals speakers:
 • Europe, Australia and U.K. Models. A or B: 4 – 16 ohms
 A + B: 8 – 16 ohms
 • U.S.A., Canada and Multiple Models. A or B: 6 – 16 ohms
 A + B: 12 – 16 ohms
General
Self diagnostic function: Display lights
Power supply: Europe AC 220 V/50 Hz
 U.K. and Australia AC 240 V/50 Hz
 U.S.A. and Canada AC 120 V/60 Hz
 Asia AC 110/120/220/240 V 50/60 Hz (Multiple)
Power consumption: 7.5A (U.S.A. and Canada)
 500 W (IEC)
 350 W (Multiple)
Dimensions: 434 mm (17-3/32") W x 187 mm (7-23/64") H x 429 mm (16-7/8) D (Including control knobs and feet)
Weight: 17.5 kg (38 lbs 10 oz)

Design and specifications are subject to change without prior notice.

This Service Manual is prepared based on U.S.A. Black Version.

For United Kingdom model only.

WARNING:

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
 The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
 Brown: Live

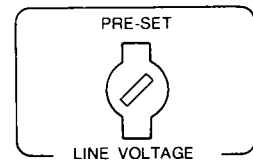
For U.S.A. and Canada models.

CAUTION

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

• **LINE VOLTAGE (Voltage select switch) . . . For Multiple 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 a qualified serviceman.



NAMES OF PARTS

• FRONT PANEL

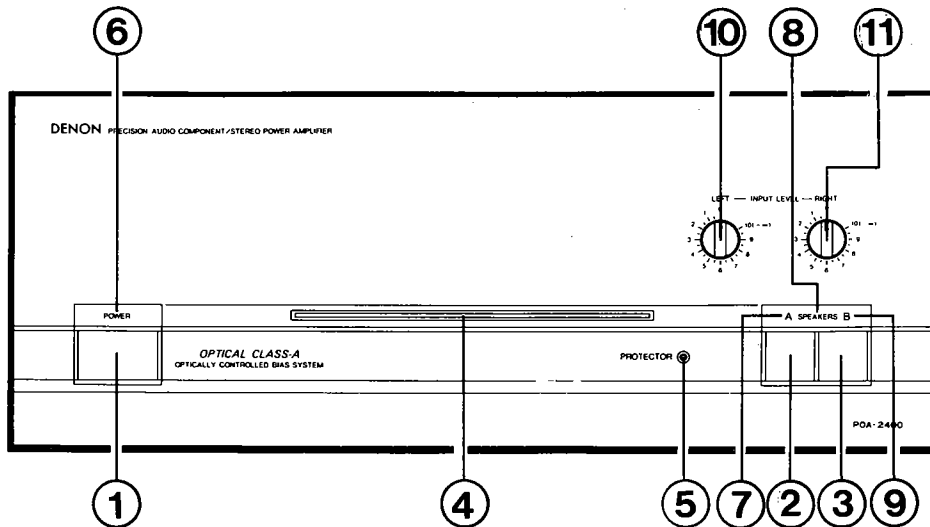


Fig. 1

- | | |
|--|---|
| <p>① POWER (Power Switch)</p> <p>② SPEAKERS-A (Speaker Select Switch-A)</p> <p>③ SPEAKERS-B (Speaker Select Switch-B)</p> <p>④ SELF-DIAGNOSIS (Self-diagnostic Result Indicator Lamps)</p> <p>* ⑤ PROTECTOR (Protection Button)</p> <ul style="list-style-type: none"> • The amplifier incorporates a speaker impedance protection circuit. If this circuit is triggered, it can be released by pressing this button. • The speakers-A or speakers-B indicator may flash when using speakers with extremely low impedance ratings. If this happens, adjust the volume level until the indicators stop flashing and to obtain better sound quality. | <p>⑥ POWER (Power Indicator)</p> <p>⑦ "A" (Speaker "A" Indicator)</p> <p>⑧ SPEAKERS (Speaker Function Indicator)</p> <p>⑨ "B" (Speaker "B" Indicator)</p> <p>⑩ INPUT LEVEL (Lch Input Level Control)</p> <p>⑪ INPUT LEVEL (Rch Input Level Control)</p> |
|--|---|

• BACK PANEL

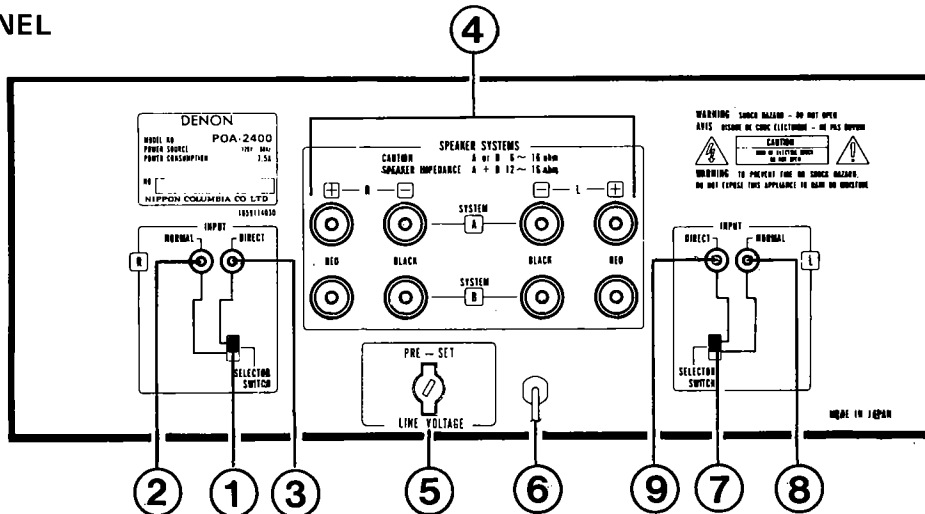


Fig. 2

- | | |
|--|---|
| <p>① INPUT SELECTOR SW (Rch.)</p> <p>② NORMAL (Rch. Normal Input Jack)</p> <p>③ DIRECT (Rch. Direct Input Jack)</p> <p>④ SPEAKER SYSTEMS (Speaker Terminals)</p> <p>⑤ LINE VOLTAGE (Line Voltage Selector) (Multiple Voltage Model only)</p> | <p>⑥ AC CORD (Power Cord)</p> <p>⑦ INPUT SELECTOR SW (Lch.)</p> <p>⑧ NORMAL (Lch. Normal Input Jack)</p> <p>⑨ DIRECT (Lch. Direct Input Jack)</p> |
|--|---|

REMOVAL OF EACH SECTION

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.

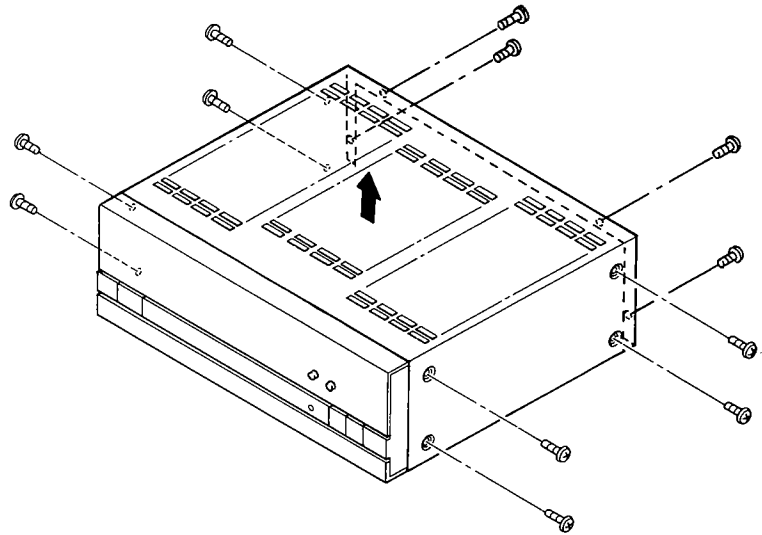


Fig. 4

2. Back Panel

Remove 8 screws from the bottom, 6 screws from the rear side, and take out the Back Panel in the direction arrow shows.

NOTE:

When remove Bottom Cover, do not take out the yellow screws.

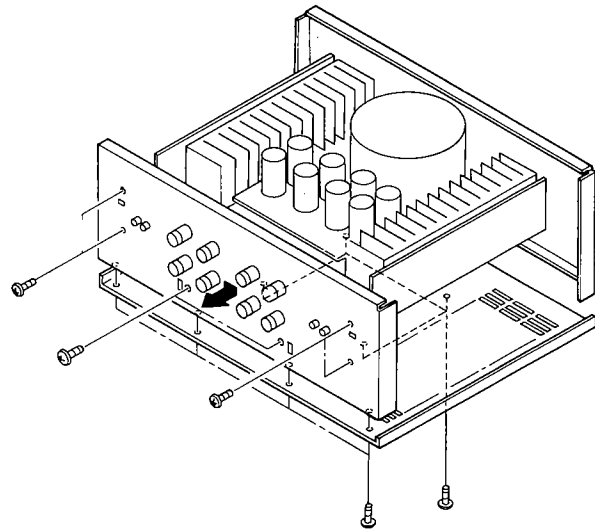


Fig. 5

3. Front Panel

Unfasten 4 screws from the bottom, 3 screws from the top, and dismantle the Front Panel.

Caution:

As illustration shows, please put a block underneath the unit and detach the Panel in a straight line to the unit. Never slant the panel nor to detach it with leaned line, this will prevent breaking of the power switch inside.

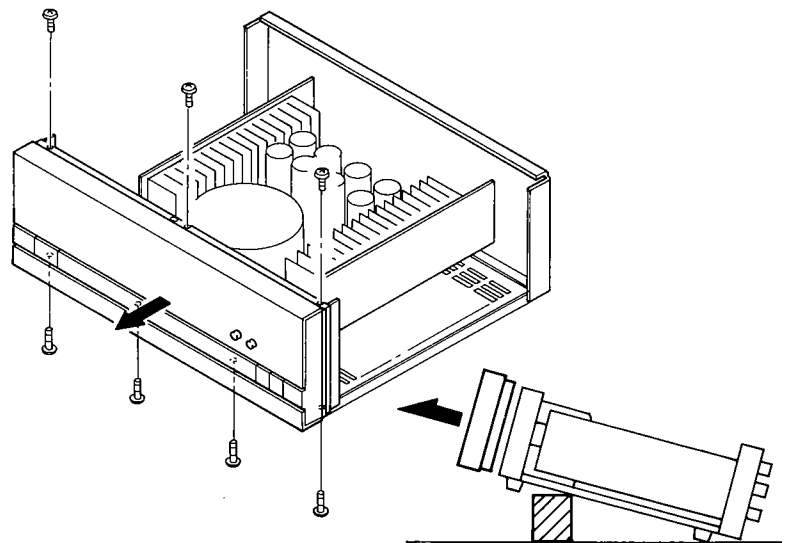


Fig. 6

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 0 (⤵)
 - SPEAKERS (Speaker terminal) to no load (Speakers disconnected)

● Adjustment

1. Connect DC Voltmeter to Test Points (T.P) of KU-9143.
2. Turn Power Switch "ON".
3. Adjust VR501 (L ch) and VR502 (R ch) so that the DC Voltmeter reads 3 ± 0.5 mV.
4. Then after 3 minutes warmup, readjust VR501 and VR502 so that the DC Voltmeter reads 5 ± 1 mV.
5. Connect V.T.V.M. to the Speaker Terminals.
6. Set the Oscillator frequency at 1 kHz, and Output Level at 100 mV, then connect with NORMAL Input Terminal.
7. Adjust the LEVEL Control turning clockwise to obtain the indication of the V.T.V.M. connected to the Speaker Terminal becomes 2 V.
8. Confirm that the DC Voltmeter connected to the T.P. becomes slightly greater value, then adjust the VR503 and VR504 to obtain 50 ± 5 mV on the meter.
9. After 10 minutes, readjust the VR503 and VR504 for 60 ± 5 mV.

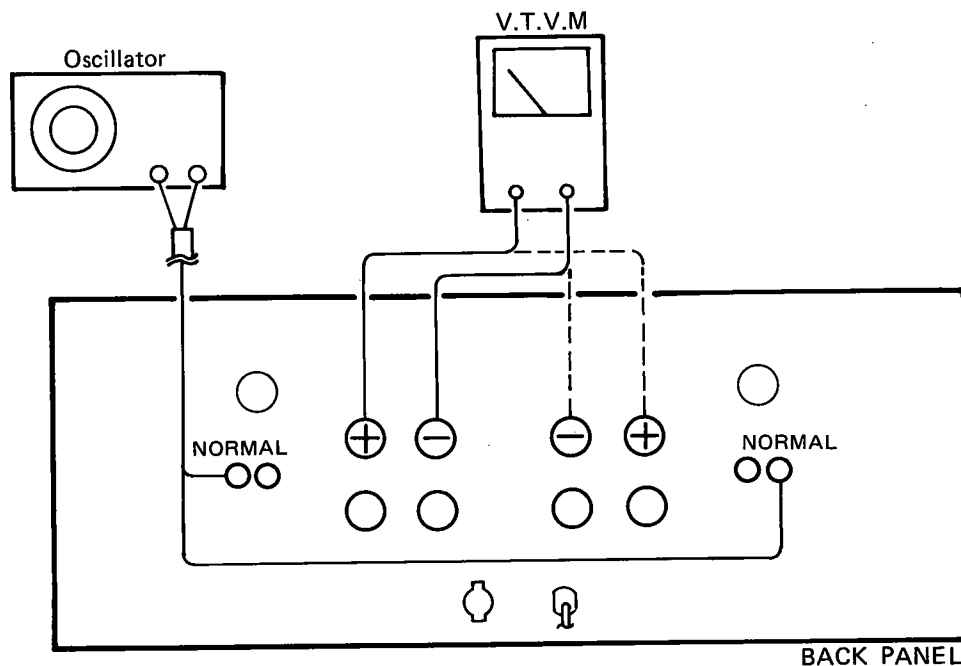


Fig. 7

ALIGNMENT POINTS
KU-9143 POWER UNIT (Component Side)

KU-9143 POWER

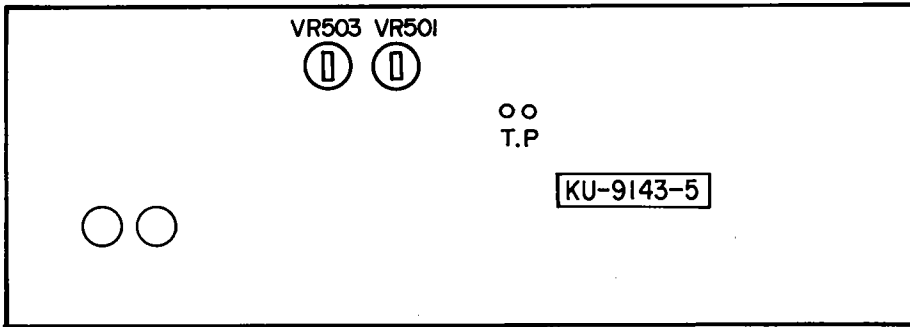
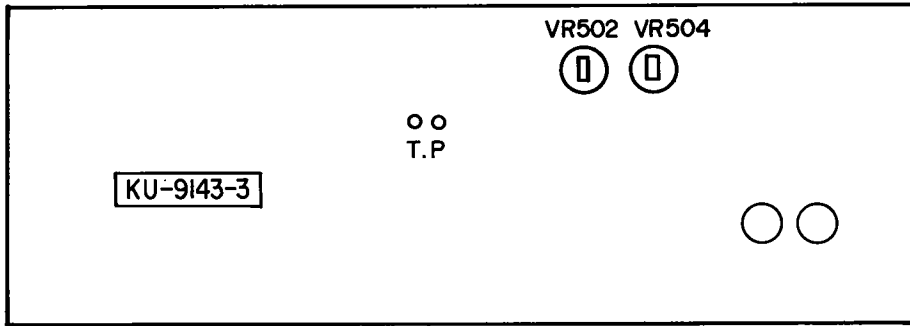


Fig. 8

TROUBLESHOOTING

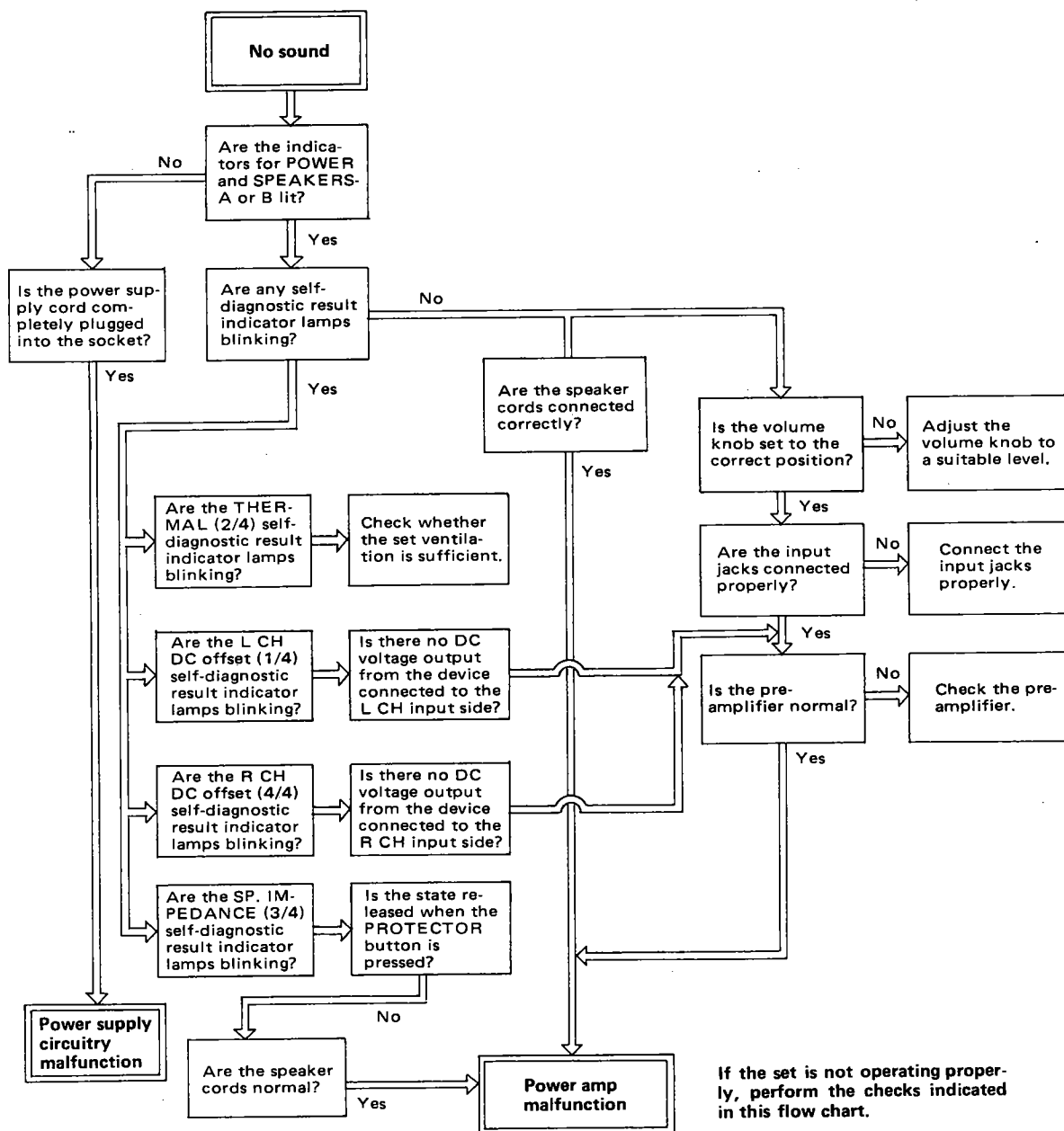
Before troubleshooting, be sure to check whether your audio system is really the source of the problem.

If you think the amplifier is out of order, first check the following one more time:

1. Are all the connections correctly made?
2. Is the set being operated properly in accordance with the Operating Manual?
3. Are the speakers and preamplifier being operated correctly?

If the set does not operate properly, perform the checks indicated in the flow chart below.

If none of the items listed apply to the difficulty, the amplifier is probably out of order. Turn off the power immediately, and contact the outlet where you purchased the amplifier or your nearest DENON dealer.



BLOCK LEVEL DIAGRAM

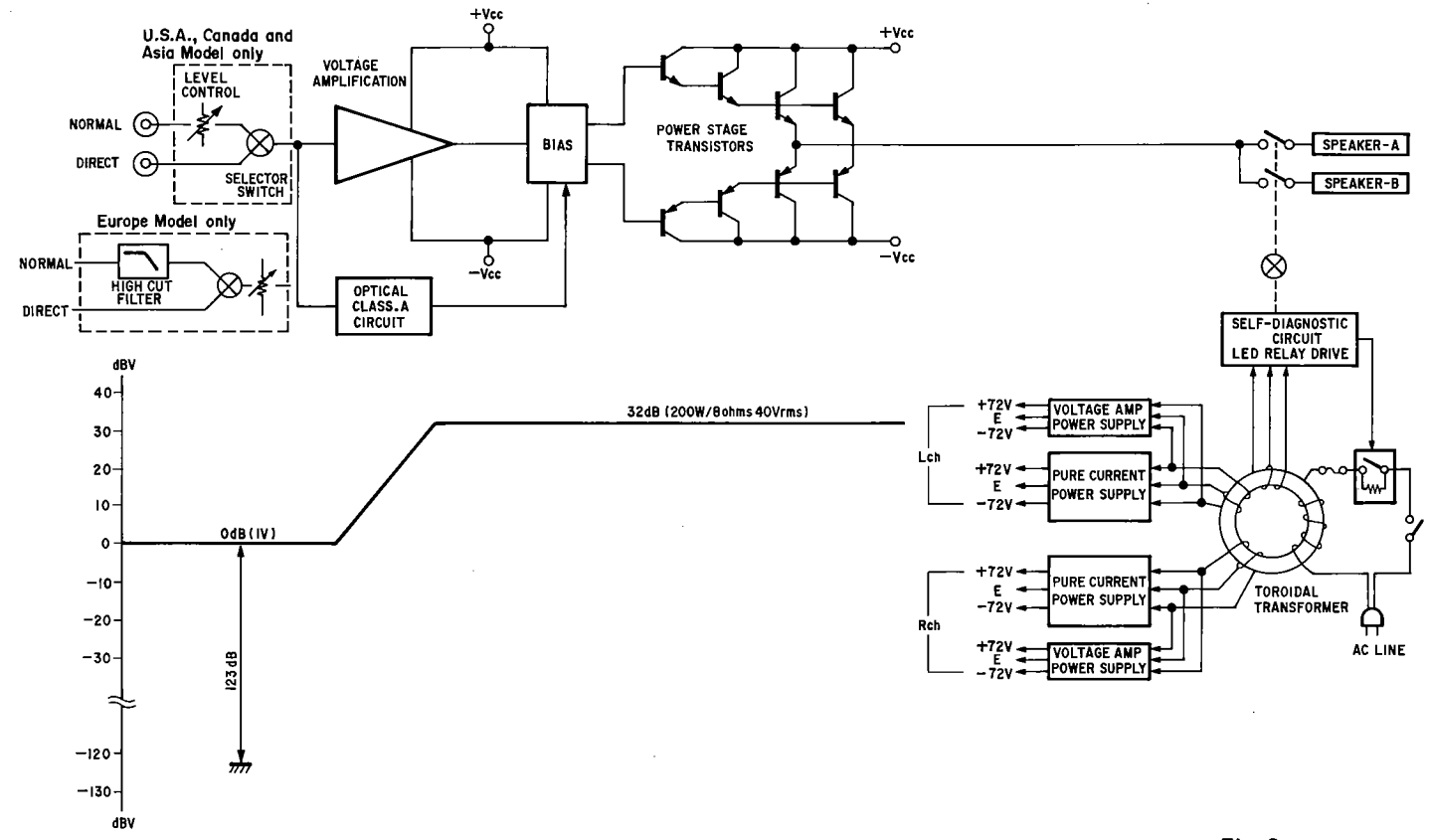
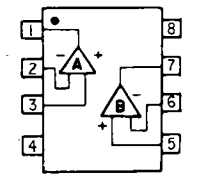
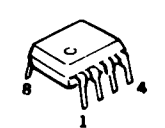


Fig. 9

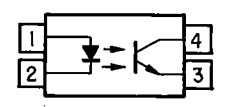
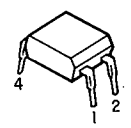
SEMICONDUCTORS

• IC's

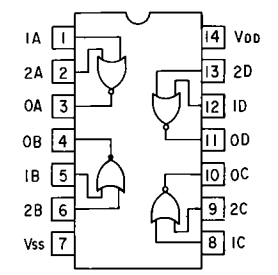
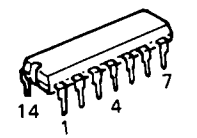
M5238P (Mitsubishi)



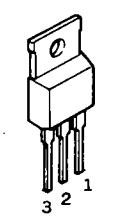
TLP521-1(BL)(Toshiba)



HD14001BP (Hitachi)



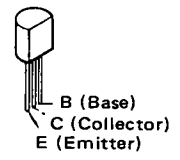
NJM78M15A(JRC)



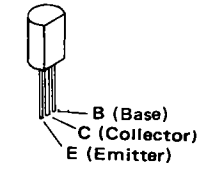
PIN CONFIGURATION
1. Output
2. Ground
3. Input

• TRANSISTOR (including FET)

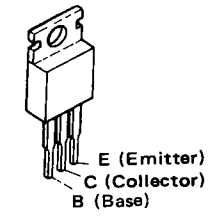
2SC1815(Y)
2SC2878(A/B)
2SC1841(E/F)
2SA988(E/F)



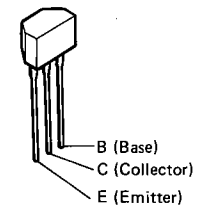
2SA1145(O/Y)
2SA1321
2SC2705(O/Y)
2SC3334



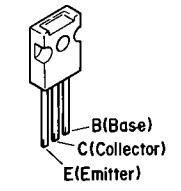
2SA968(Y)
2SC2238(Y)



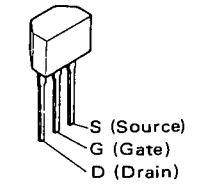
2SC2458(BL)
2SA1048(GR)



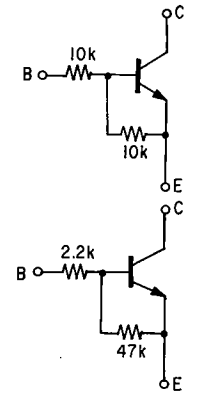
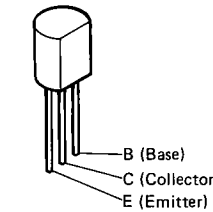
2SA1360 (O/Y)
2SC3423 (O/Y)



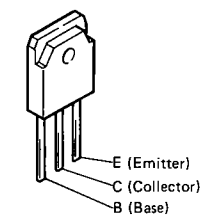
FET
2SK184C(Y/GR/BL)



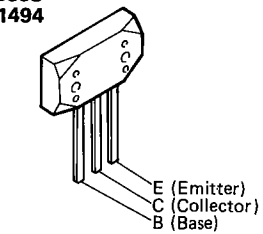
RN1202(10k-10k) NPN
RN1205(2.2k-47k) NPN
RN1205(2.2k-47k)



U.S.A., Canada and Asia Model
2SA1492
2SC3856



Europe Model only.
2SC3858
2SA1494

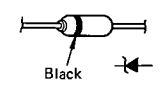


• DIODES (include LED's, Thyristor, Posistor)

HZ2C-1
HZ5C-1
HZ7B-3
HZ9B-2
HZ16-2
HZ12A-2
HZ30-2



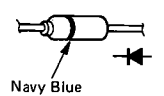
HZS7B-3



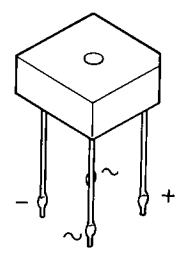
1S2076A



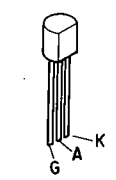
1SS270A



4D4B42(LCI)

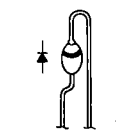


SFOR1A42
Thyristor

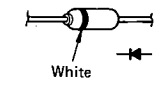


DSA1A2 (Type-3)

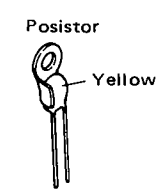
Color of Cathode Band, White



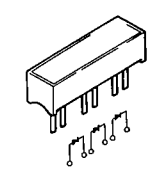
DSM1A2 (Type-2)



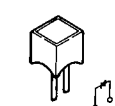
PTH487A01BD222TS



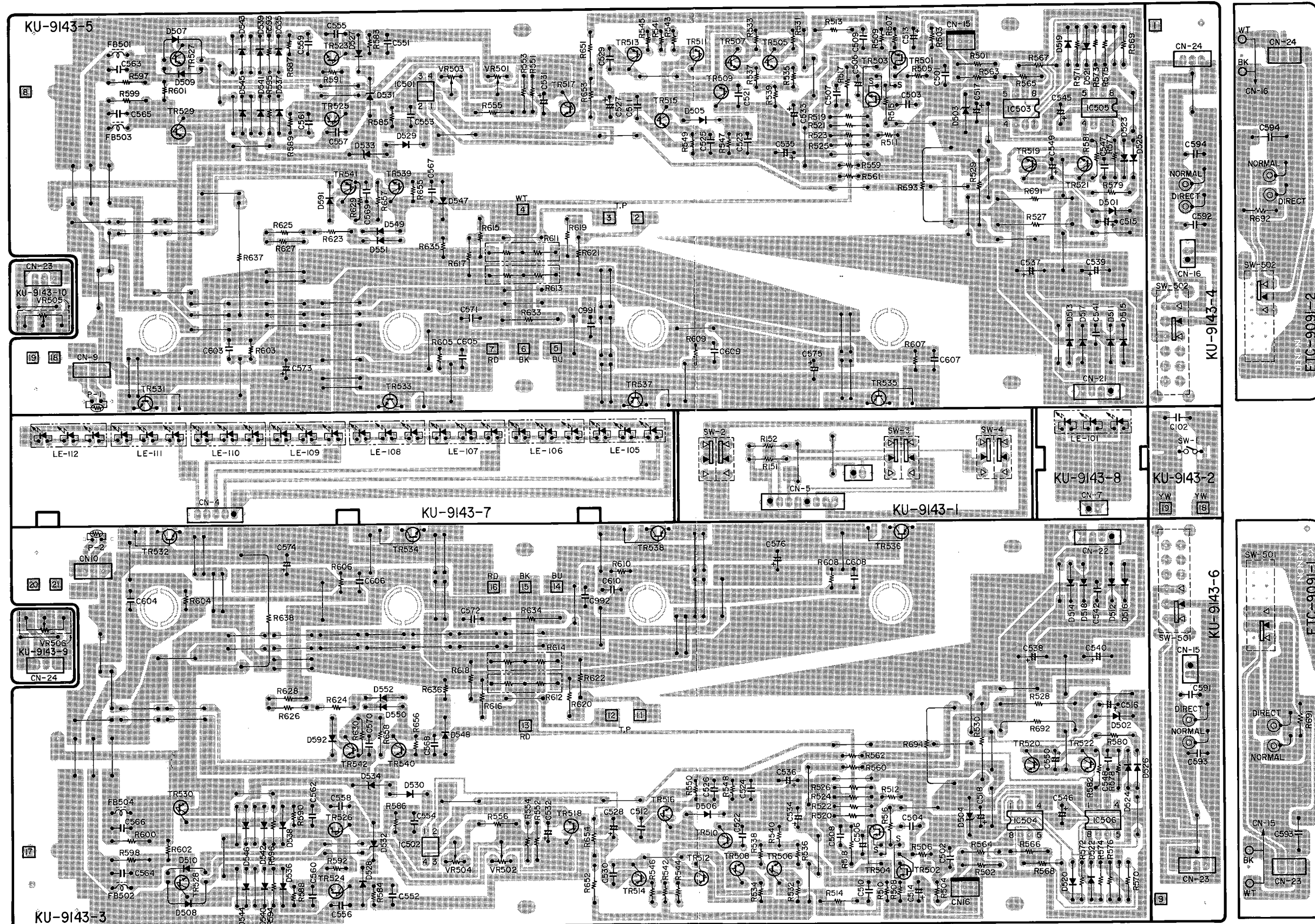
LD-701VR-L (RED)
LD-701YY(YELLOW)
LD-701DU(ORANGE)



LD-101DU (ORANGE)



PRINTED WIRING BOARD PATTERNS
KU-9143 POWER UNIT



NOTE:
KU-9143-4, -6 : U.S.A., Canada & Multiple Models
ETC-9091-1, -2 : Europe, U.K. & Australia Models

**PRINTED WIRING BOARD PARTS LIST
KU-9143 POWER UNIT PARTS LIST**

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

| Ref. No. | Part No. | Part Name | Remarks |
|--|------------|-------------------|---------------------|
| SEMICONDUCTORS | | | |
| IC501,502 | 2620874009 | TLP521-1 (BL) | Photo Coupler |
| IC503~506 | 2620679000 | M5238P | |
| TR501~504 | 2750055002 | 2SK184C(Y/GR/BL) | FET |
| TR505~508 | 2730281003 | 2SC2705 (O)/(Y) | |
| TR509,510 | 2710168007 | 2SA1145 (O)/(Y) | |
| TR511~514 | 2710202002 | 2SA1360 (O/Y) | |
| TR515,516 | 2730332004 | 2SC3334 | |
| TR517,518 | 2730198002 | 2SC1815 (Y) | |
| TR519,520 | 2690067008 | RN1205 (2.2k-47k) | |
| TR521,522 | 2730235020 | 2SC1841 (E/F) | |
| TR523,524 | 2730332004 | 2SC3334 | |
| TR525,526 | 2710201003 | 2SA1321 | |
| TR527,528 | 2730199001 | 2SC2238 (Y) | |
| TR529,530 | 2710104003 | 2SA968 (Y) | |
| TR539,540 | 2730332004 | 2SC3334 | |
| TR541,542 | 2710131021 | 2SA988 (E/F) | |
| D501~504 | 2760256008 | HZ16-2 | Zener |
| D505~510 | 2760049011 | 1S2076A | |
| D511~518 | 2760433009 | DSM1A2 (TYPE2) | |
| D519~530 | 2760049011 | 1S2076A | |
| D531~534 | 2760236031 | HZ5C-1 | Zener |
| D535~552 | 2760049011 | 1S2076A | |
| D591,592 | 2760049011 | 1S2076A | |
| LE101 | 3939319018 | LD-701DU | Orange |
| LE105~110 | 3939319034 | LD-701VR-L | Red |
| LE112,113 | 3939319034 | LD-701VR-L | Red |
| P001,002 | 2760289004 | PTH487A01BD222TS | Positive Thermistor |
| RESISTORS (not included Carbon Film ±5%, 1/4W type) | | | |
| △R503,504 | 2412322044 | RD14B2E102JNB | 1kohm 1/4W ±5% |
| △R505,506 | 2412322031 | RD14B2E101JNB | 100ohm 1/4W ±5% |
| △R507~510 | 2412380963 | RD14B2E222JNB | 2.2kohm 1/4W ±5% |
| △R511,512 | 2412378920 | RD14B2E221JNB | 220ohm 1/4W ±5% |
| △R527~530 | 2440107024 | RS14B3D562JNBF | 5.6kohm 2W ±5% |
| △R531~534 | 2412378904 | RD14B2E181JNB | 180ohm 1/4W ±5% |
| △R535~538 | 2412376922 | RD14B2E330JNB | 33ohm 1/4W ±5% |
| △R539,540 | 2412379981 | RD14B2E821JNB | 820ohm 1/4W ±5% |
| △R541,542 | 2412377934 | RD14B2E910JNB | 91ohm 1/4W ±5% |
| △R543~546 | 2412387940 | RD14B2E4R7JNB | 4.7ohm 1/4W ±5% |

| Ref. No. | Part No. | Part Name | Remarks |
|-------------------|------------|---------------------|--|
| △R547~550 | 2412322031 | RD14B2E101JNB | 100ohm 1/4W ±5% |
| △R559~562 | 2412387908 | RD14B2E010JNB | 1ohm 1/4W ±5% |
| △R583~586 | 2412379987 | RD14B2E102JNB | 1kohm 1/4W ±5% |
| △R587~590 | 2412322031 | RD14B2E101JNB | 100ohm 1/4W ±5% |
| △R591,592 | 2412379903 | RD14B2E471JNB | 470ohm 1/4W ±5% |
| △R601,602 | 2412378904 | RD14B2E181JNB | 180ohm 1/4W ±5% |
| △R603~610 | 2412387940 | RD14B2E4R7JNB | 4.7ohm 1/4W ±5% |
| △R611~614 | 2432033038 | RW==3DR18R18 | 0.18ohm ×2 2W |
| △R633,634 | 2440017020 | RS14B3A100JNBF | 10ohm 1W ±5% |
| △R635,636 | 2412380905 | RD14B2E122JNB | 1.2kohm 1/4W ±5% |
| △R637,638 | 2440169020 | RS14B3F223JNBF | 22kohm 3W ±5% |
| △R655,656 | 2412380905 | RD14B2E122JNB | 1.2kohm 1/4W ±5% |
| △R691~694 | 2440107024 | RS14B3D562JNB | 5.6kohm 2W ±5% |
| VR501,502 | 2116064006 | V06PB103 | 10kohm (20kHz T.H.D) Semi Fixed Resistor |
| VR503,504 | 2116064019 | V06PB473 | 47kohm (Bias) Semi Fixed Resistor |
| | 2119053001 | V16V35FB503 | 50kohm (INPUT VR) |
| CAPACITORS | | | |
| △C102 | 2538003014 | CK46E2GAC472M | 4700pF ±20% 400V AC (POWER SW) |
| C501~504 | 2554229940 | CQ92P2A221J | 220pF ±5% 100V |
| C505,506 | 2543056959 | CE04D1H100MBP (SME) | 10μF/50V |
| C507,508 | 2521086912 | CM92C2A050D | 5pF/100V ±0.5pF |
| C509,510 | 2551121025 | CQ93M1H103J | 0.01μF/50V ±5% |
| C511,512 | 2521085926 | CM92C2A680J | 68pF/100V ±5% |
| C513~518 | 2544260087 | CE04W1H100M (SME) | 10μF/50V ±20% |

| Ref. No. | Part No. | Part Name | Remarks |
|----------------------------|------------|----------------------|----------------------|
| C521,522 | 2521086938 | CM92C2A100D | 10pF/100V ±0.5pF |
| C523,524 | 2554229908 | CQ92P2A101J | 100pF/100V ±5% |
| C525,526 | 2551249907 | CQ93M1H471J (B) | 470pF/50V ±5% |
| C527,528 | 2544263084 | CE04W2A100M (SME) | 10μF/100V ±20% |
| C529,530 | 2521086938 | CM92C2A100D | 10pF/100V ±0.5pF |
| C531,532 | 2544260045 | CE04W1H010M (SME) | 1μF/50V ±20% |
| C533~536 | 2543046008 | CE04D2A010MBP | 1μF/100V ±20% |
| C537~540 | 2544229002 | CE04W2A471M | 470μF/100V ±20% |
| C541,542 | 2531151905 | CK45E2H472P | 4700pF/500V +100 -0% |
| C545,546 | 2544260087 | CE04W1H100M (SME) | 10μF/50V ±20% |
| C547,548 | 2554213972 | CQ93M1H103J (B) | 0.01μF/50V ±5% |
| C549,550 | 2544299906 | CE04W1C100M (SRE) | 10μF/16V ±20% |
| C551~554 | 2554229908 | CQ92P2A101J | 100pF/100V ±5% |
| C555~558 | 2521085900 | CM92C2A270J | 27pF/100V ±5% |
| C559~562 | 2554213927 | CQ93M1H152J (B) | 1500pF/50V ±5% |
| C563~566 | 2561034092 | CF93A1H154J | 0.15μF/50V ±5% |
| C567~570 | 2554213972 | CQ93M1H103J (B) | 0.01μF/50V ±5% |
| C571,572 | 2554228967 | CQ92P2A103J | 0.01μF/100V ±5% |
| C573~576 | 2544263084 | CE04W2A100M (SME) | 10μF/100V ±20% |
| SWITCHES & COIL | | | |
| △ | 2129534002 | POWER SW (PUSH) | |
| SW501,502 | 2129536000 | 3P PUSH SWITCH | SP SW |
| | 2124311107 | SLIDE SWITCH | |
| OTHER PARTS | | | |
| FB501~504 | 2359006009 | BL02RN1-R62 | 4 |
| | 2050233032 | 3P EH CONNECTOR BASE | 6 |
| | 2050243022 | 2P WIRE HOLDER | 6 |
| | 2050243048 | 4P WIRE HOLDER | 2 |

| Ref. No. | Part No. | Part Name | Remarks |
|----------|------------|----------------------|---------|
| | 2050243051 | 5P WIRE HOLDER | 1 |
| | 2050243080 | 8P WIRE HOLDER | 1 |
| | 2030275007 | 1P CONTACT Ass'y | 1 |
| | 2050315002 | 2P CONNECTOR BASE | 2 |
| | 2050190036 | 3P NH CONNECTOR BASE | 2 |

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

ETC9071E SUPPLY UNIT PARTS LIST

| Ref. No. | Part No. | Part Name | Remarks |
|--|------------|------------------|------------------------|
| SEMICONDUCTORS | | | |
| IC101 | 2680217004 | NJM78M15A | |
| IC102~104 | 2620298009 | HD14001BP | |
| TR101 | 2730253015 | 2SC2878 (A/B) | |
| TR102 | 2730317003 | 2SC2458 (BL) | |
| TR103 | 2710191003 | 2SA1048 (GR) | |
| TR104~107 | 2730317003 | 2SC2458 (BL) | |
| TR108~111 | 2710191003 | 2SA1048 (GR) | |
| TR112,113 | 2730317003 | 2SC2458 (BL) | |
| TR114 | 2710191003 | 2SA1048 (GR) | |
| TR115,116 | 2730317003 | 2SC2458 (BL) | |
| TR117 | 2710191003 | 2SA1048 (GR) | |
| TR118~122 | 2730317003 | 2SC2458 (BL) | |
| TR161 | 2690025008 | RN1202 (10k-10k) | |
| TR162 | 2730317003 | 2SC2458 (BL) | |
| TR163 | 2690025008 | RN1202 (10k-10k) | |
| D101,102 | 2760424005 | 4D4B42 (LC1) | |
| D161~163 | 2760049011 | 1S2076A | |
| D165,166 | 2760049011 | 1S2076A | |
| D201,202 | 2760427015 | DSA1A2 (TYPE-3) | |
| D203,204 | 2760049011 | 1S2076A | |
| D205 | 2760432000 | 1SS270A | |
| D206 | 2760236031 | HZ5C-1 | |
| D207,208 | 2760432000 | 1SS270A | |
| D209 | 2760218033 | HZ9B-2 | |
| D210~212 | 2760432000 | 1SS270A | |
| D213 | 2760254000 | HZ7B-3 | |
| D214~217 | 2760432000 | 1SS270A | |
| D218 | 2790016001 | SF0R1A42 | |
| D219~226 | 2760432000 | 1SS270A | |
| D227 | 2760049011 | 1S2076A | |
| D228 | 2760465022 | HZS7B-3 | |
| D229,230 | 2760432000 | 1SS270A | |
| D231 | 2760368019 | HZ2C-1 | |
| D250 | 2760432000 | 1SS270A | |
| D801,802 | 2760432000 | 1SS270A | |
| LE102,103 | 3939223010 | LD-101DU | |
| LE104 | 3939319021 | LD-701 YY | |
| RESISTORS (not included Carbon Film ±5%, 1/4W type) | | | |
| AR101 | 2432044001 | RW78A4A1R2K= | 1.2ohm ±10% 10W |
| AR192 | 2412387908 | RD14B2E010JNBST | 1ohm ±5% 1/4W |
| AR805,806 | 2440025025 | RS14B3A470JNBF | 47ohm ±5% 1W |
| CAPACITORS | | | |
| C101 | 2538003014 | CK45E2GAC472M | 4700pF/400V AC ±20% |

| Ref. No. | Part No. | Part Name | Remarks |
|---------------------------|------------|--|-------------------------|
| C103,104 | 2561043711 | CF93B2E474K | 0.47 μF/250V ±10% |
| C161 | 2544260032 | CE04W1HR47M (SME) | 0.47 μF/50V ±20% |
| C162 | 2561034034 | CF93A1H473J | 0.047 μF/50V ±5% |
| C201 | 2554199973 | CQ92M1H103J (MRZ) | 0.01 μF/50V ±5% |
| C202 | 2544168095 | CE04W1V102MF | 1000 μF/35V ±20% |
| C203 | 2544260032 | CE04W1HR47M (SME) | 0.47 μF/50V ±20% |
| C204 | 2544260045 | CE04W1H010M (SME) | 1 μF/50V ±20% |
| C205 | 2544250039 | CE04W0J221M (SME) | 220 μF/6.3V ±20% |
| C206 | 2544254019 | CE04W1C220M (SME) | 22 μF/16V ±20% |
| C207 | 2561035017 | CF93A1H224J | 0.22 μF/50V ±5% |
| C208,209 | 2544252037 | CE04W1A101M (SME) | 100 μF/10V ±20% |
| C210 | 2544254006 | CE04W1C100M (SRA) | 10 μF/16V ±20% |
| C251 | 2531024003 | CK45F1H103Z | 0.01 μF/50V +80 -20% |
| C252 | 2544256004 | CE04W1E100M (SME) | 10 μF/25V ±20% |
| C253 | 2544195929 | CE04W1V100M (SRA) | 10 μF/35V ±20% |
| C260 | 2544254019 | CE04W1C220M (SME) | 22 μF/16V ±20% |
| C801,802 | 2554228996 | CQ92P2A223J | 0.022 μF/100V ±5% |
| RELAYS & COILS | | | |
| L801~804 | 2359001004 | INDUCTOR | (POWER OUT 1 μH) |
| RL001,002 | 2140041008 | RELAY | 24V, 7A |
| RL003 | 2140115002 | RELAY | |
| OTHER PARTS | | | |
| | 4170253000 | RADIATOR | 1 |
| | 4700012022 | Cross Pan Screw with S.W.,W 3×12 | 1 |
| | 2020022008 | FUSE HOLDER | 20 |
| | EP-5870 | FUSE HOLDER | 2 |
| ΔF001 | 2061051009 | FUSE 12A | 1 |
| ΔF003,004 | 2061039047 | FUSE 1.25A | 2 |

| Ref. No. | Part No. | Part Name | Remarks |
|-----------|------------|-------------------------|-----------|
| ΔF005~008 | 2061046014 | FUSE 8A | 4 |
| ΔF009~012 | 2061046027 | FUSE 5A | 4 |
| | 2050075025 | 2P TERMINAL | SP L.R. 1 |
| | 2050234031 | 3P EH SID CONN. BASE | 2 |
| | 2050190036 | 3P NH CONNECTOR BASE | 4 |
| | 2050190049 | 4P NH CONNECTOR BASE | 3 |
| | 2050190052 | 5P NH CONNECTOR BASE | 3 |
| | 2050190078 | 7P NH CONNECTOR BASE | 1 |
| | 2050243048 | 4P WIRE HOLDER | 1 |
| | 2050243022 | 2P WIRE HOLDER | 2 |

KU-9143S (for Europe)

[Same as KU-9143 (for U.S.A.) except the followings]

| Ref. No. | Part No. | Part Name | Remarks |
|--------------------|------------|--------------------|---------|
| SWITCH | | | |
| Δ | 2129525008 | POWER SW | C |
| OTHER PARTS | | | |
| | 4150298001 | CONDENSER COVER | C102 A |

NOTE: A: Add C: Change D: Delete

ETC9071V (for PX)

[Same as ETC9071E (for U.S.A.) except the followings]

| Ref. No. | Part No. | Part Name | Remarks |
|--------------------|------------|--------------------|--------------|
| RESISTOR | | | |
| R101 | 2432044014 | RW78A4A2R2K= | 2.2ohm 10W C |
| RELAY | | | |
| RL003 | 2140115002 | RELAY | C |
| OTHER PARTS | | | |
| ΔF001 | 2061017043 | FUSE 12A | C |
| ΔF002 | 2061035038 | FUSE 6.3A (T) | A |
| ΔF003,004 | 2061035025 | FUSE 1.25A (T) (2) | C |
| ΔF005~008 | 2061052008 | FUSE 8A (4) | C |
| ΔF009~012 | 2061035012 | FUSE 5A (T) (4) | C |
| | 2020022008 | FUSE HOLDER (2) | A |

NOTE: A: Add C: Change D: Delete

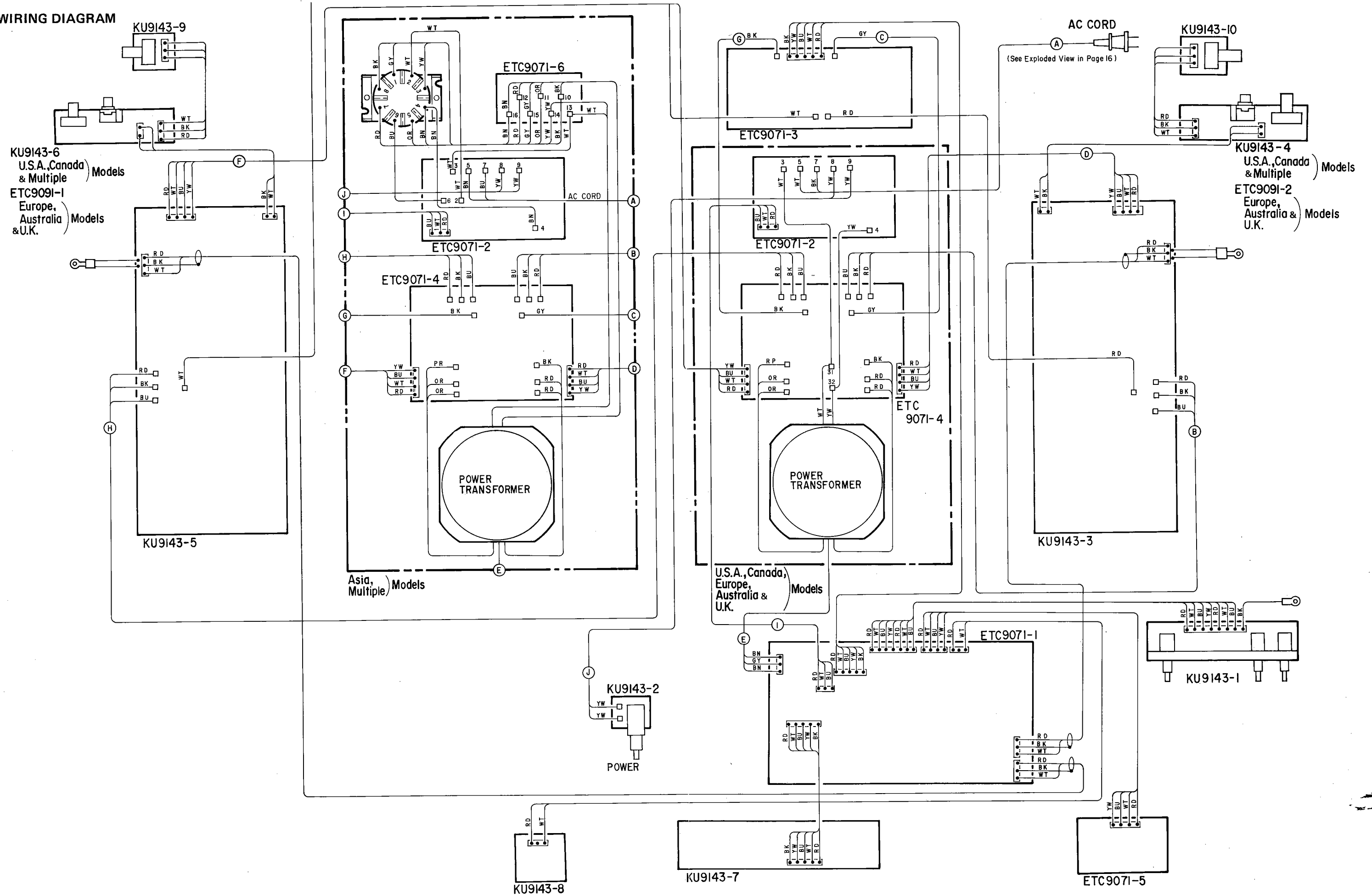
ETC9071S (for Europe)

[Same as ETC9071E (for U.S.A.) except the followings]

| Ref. No. | Part No. | Part Name | Remarks |
|--------------------|------------|------------------|--------------------------|
| RESISTOR | | | |
| R101 | 2432044027 | RW78A4A4R7K= | 4.7ohm 10W C |
| CAPACITORS | | | |
| C803~806 | 2554228938 | CQ92P2A472J (4) | 4700pF/100V A ±5% FTZ |
| | 2561043708 | CF93B2E224K (2) | 0.22 μF/250V C FTZ |
| RELAY | | | |
| RL003 | 2140115002 | RELAY | C |
| OTHER PARTS | | | |
| | 2020022008 | FUSE HOLDER (2) | C |
| ΔF001 | 2061036011 | FUSE (6.3A) | C |
| ΔF003,004 | 2061015016 | FUSE (1.25A) (2) | PRO & MUT C |
| ΔF005~008 | 2061036011 | FUSE (6.3A) (4) | C |
| ΔF009~012 | 2061015090 | FUSE (5A) (4) | DRIVER Vcc C |
| | 5139151003 | FUSE LABEL (2) | T 6.3A A |

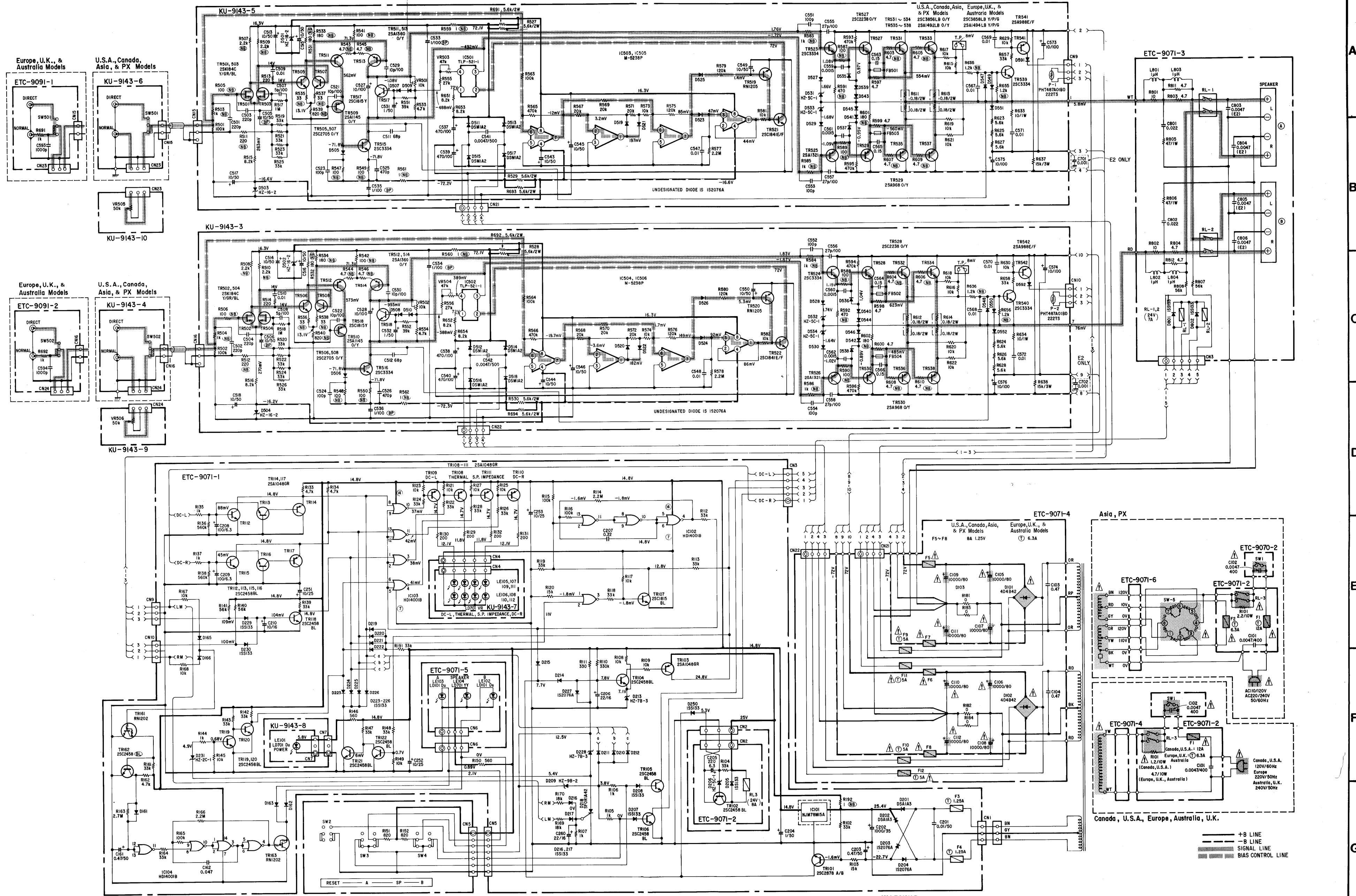
NOTE: A: Add C: Change D: Delete

WIRING DIAGRAM



SCHEMATIC DIAGRAM

1 2 3 4 5 6 7 8 9 10 11

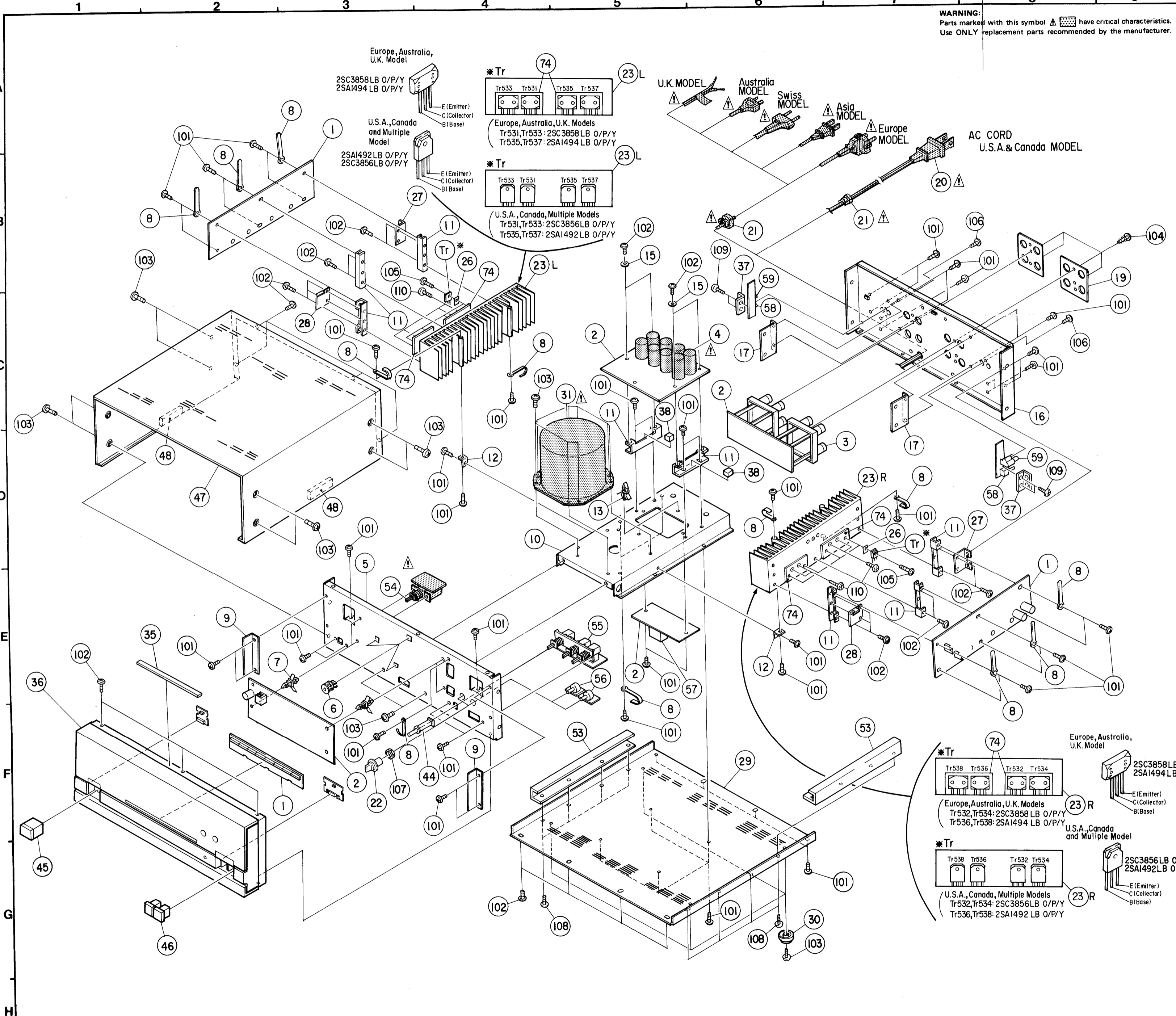


WARNING:
Parts marked with this symbol have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage 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 k ohms, the unit is defective.

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

EXPLODED VIEW OF CHASSIS AND CABINET & PARTS LIST
 • EXPLODED VIEW OF CHASSIS AND CABINET



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

PARTS LIST OF EXPLODED VIEW

| Ref. No. | Part No. | Part Name & Descriptions | Q'ty |
|---|------------|--|------|
| ⊙ *1 | KU-9143 | POWER UNIT | 1 |
| ⊙ *2 | ETC9071E | SUPPLY UNIT | 1 |
| 3 | 2050316001 | 4P TERMINAL (SPEAKER) | 2 |
| ▲ 4 | 2548114005 | 10000 μF ±20% 80V ELECTROLYTIC (C105~G112) | 8 |
| ⊙ 5 | 4119029208 | FRONT CHASSIS | 1 |
| ⊙ 6 | 4439015002 | P.W. SPACER | 3 |
| ⊙ 7 | 4159016019 | P.C.B. HOLDER | 4 |
| ⊙ 8 | 4450048016 | CORD HOLDER (L50) | 13 |
| ⊙ 9 | 4121477000 | BRACKET | 2 |
| ⊙ 10 | 4119028005 | TRANS CHASSIS | 1 |
| ⊙ 11 | 4129062006 | PWB SUPPORT BRACKET | 8 |
| ⊙ 12 | 4129059006 | BRACKET | 2 |
| ⊙ 13 | 4159016006 | P.C.B. HOLDER | 2 |
| ⊙ *14 | 2034319011 | 3P CONNECTOR CORD | 1 |
| ⊙ 15 | 4419028006 | SP. W PLATE | 4 |
| *16 | 1059114137 | BACK PANEL | 1 |
| ⊙ 17 | 4129041001 | PWB SUPPORT | 2 |
| ⊙ *18 | 2038161003 | 5P CONNECTOR CORD | 1 |
| 19 | 4159014105 | PROTECTOR SHEET | 2 |
| ▲ *20 | 2082060002 | AC CORD (POLARIZED) | 1 |
| ▲ *21 | 4450020005 | CORD BUSH (4k-4) | 1 |
| 22 | 1129041004 | KNOB | 2 |
| ⊙ *23 | 4179034107 | POWER RADIATOR | 2 |
| 24 | - | - | 4 |
| 25 | - | - | 4 |
| 26 | 4150234007 | INSULATING SHEET (U.S.A., Canada, Multiple Models) | 8 |
| 26 | 4159044007 | INSULATING SHEET (Europe, Australia, U.K. Models) | 8 |
| ⊙ 27 | 4129060008 | RADIATOR BRACKET (R) | 2 |
| ⊙ 28 | 4129061104 | RADIATOR BRACKET (F) | 2 |
| 29 | 1059116009 | BOTTOM COVER | 1 |
| 30 | 1049012207 | FOOT ASS'Y | 4 |
| ▲ *31 | 2339555004 | POWER TRANS. | 1 |
| ⊙ *32 | 2034486038 | 3P EH-EH CON. CORD | 1 |
| ⊙ *33 | 2034486041 | 3P EH-EH CON. CORD | 1 |
| *34 | 4450033005 | WIRE CLAMP BAND | 8 |
| 35 | 1220095014 | SPACER 0.8t 5 × 220 | 1 |
| 36 | AF71A04 | FRONT PANEL SUB ASS'Y | 1 |
| ⊙ 37 | 4129090007 | SLIDE SW BRACKET | 2 |
| ⊙ 38 | 4619013002 | CUSHION | 2 |
| 44 | 1139087100 | PUSH KNOB (PROTECTOR) | 1 |
| 45 | 1139081108 | PUSH KNOB ASS'Y (P) | 1 |
| 46 | 1139084103 | PUSH KNOB ASS'Y (SP) | 2 |
| 47 | 1029016003 | TOP COVER | 1 |
| 48 | 4619001043 | RUBBER SHEET | 2 |
| *49 | 5139148029 | FUSE LABEL | 1 |
| *50 | 5139148032 | FUSE LABEL | 1 |
| *51 | 5139148003 | FUSE LABEL | 1 |
| *52 | 5139148016 | FUSE LABEL | 1 |
| ⊙ 53 | 4129081207 | SUPPORT BRACKET | 2 |
| ▲ 54 | 2129534002 | POWER SW (PUSH) | 1 |
| 55 | 2129536000 | 3P PUSH SWITCH (SP SW) | 1 |
| 56 | 2119053001 | V16V35FB503 50kohms (INPUT VR) | 2 |
| 57 | 2140115002 | RELAY (RL003) | 1 |
| 58 | 2124311107 | SLIDE SWITCH (SW501,502) | 2 |
| 59 | 2050315002 | 2P CONNECTOR BASE (INPUT) | 2 |
| ⊙ *60 | 2034486012 | 3P EH-EH CON. CORD (CN-23) | 1 |
| ⊙ *61 | 2034486025 | 3P EH-EH CON. CORD (CN-24) | 1 |
| SCREWS & WASHER | | | |
| *101 | 4737002034 | TAPPING SCREW (S) 3 × 6 (BLACK) | 65 |
| 102 | 4737002021 | TAPPING SCREW (S) 3 × 8 (BLACK) | 25 |
| 103 | 4737007000 | TAPPING SCREW (S) 4 × 8 (BLACK) | 24 |
| 104 | 4737508017 | TAPPING SCREW (P) 3 × 10 (BLACK) | 4 |
| *105 | 4738007009 | CUP SCREW 3 × 12 | 8 |
| 106 | 4770064107 | TAPPING SCREW 3 × 10 (BLACK) | 2 |
| 107 | - | NUT M7 | 2 |
| 108 | 4737002005 | TAPPING SCREW (S) 3 × 6 | 8 |
| 109 | 4713201024 | TAPPING SCREW (S) 2.6 × 4 | 4 |
| PACKING & ACCESSORIES (not included EXPLODED VIEW) | | | |
| *201 | 5138268009 | DANGEROUS MARK | 1 |
| 202 | - | - | - |
| 203 | 5049102003 | STYLEN PAPER 0.5t 800 × 650 | 1 |
| 204 | 5050075051 | CABINET COVER 0.02t 850W × 450D | 1 |
| 205 | 5039168002 | CUSHION | 2 |
| *206 | 5019157020 | CARTON CASE | 1 |
| *207 | 5119244008 | INST MANUAL | 1 |
| *208 | 5150418107 | DA1 WARRANTY HOME (U.S.A) | 1 |
| | 5150388004 | DCI WARRANTY (Canada) | 1 |

WARNING:

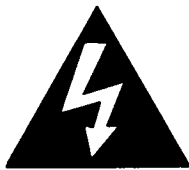
Parts marked with this symbol  have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

ADDENDUM LIST

| Ref. No. | Part Name & Descriptions | Part No. | | |
|----------|--|----------------|----------------------------|-----------------------------|
| | | Multi. voltage | Europe | Swiss |
| 1 | POWER UNIT | KU-9143 | KU-9143S | KU-9143S |
| 2 | SUPPLY UNIT | ETC9071V | ETC9071S | ETC9071S |
| 16 | BACK PANEL | 1059114124 | 1059114108 | 1059114108 |
| Δ 20 | AC CORD | 2006031026 | 2062070005 (250V 6A C2) | 2062072003 (250V 6A SEV) |
| Δ 21 | CORD BUSH | 4450028007 | 4450020005 | 4450020005 |
| 23 | POWER RADIATOR | 4179034107(2) | 4179042005(2) | 4179042005(2) |
| Δ 31 | POWER TRANS | 2339558001 | 2339559000 | 2339559000 |
| 34 | WIRE CLAMP BAND | 4450033005(10) | 4450033005(6) | 4450033005(6) |
| *70 | VOLTAGE SEL SW | 2129555007 | — | — |
| *71 | BRACKET (B) | 4129065003 | — | — |
| *72 | SAFETY COVER | 4149022000 | — | — |
| *73 | PUSH RIVET | 4770210016(2) | — | — |
| 74 | CU PLATE | — | 4179041006(4) | 4179041006(4) |
| | (Europe, Australia & U.K. Models only) | | | |
| 101 | TAPPING SCREW (S) 3×6 (BLACK) | 4737002034(71) | 4737002034(65) | 4737002034(65) |
| 105 | CUP SCREW (3×12) | 4738007009(8) | — | — |
| | CUP SCREW (3×14) | — | 4738007038(16) | 4738007038(16) |
| 110 | CUP SCREW (3×8) | — | 4738007025(8) | 4738007025(8) |
| 201 | DANGEROUS MARK | — | — | — |
| 206 | CARTON CASE | 5019111147 | 5019111147 | 5019111147 |
| 207 | INST MANUAL | 5119244008 | 5119239000 | 5119239000 |
| 208 | DA1 WARRANTY HOME | 5158052206 | — | — |
| | (WARRANTY IN ENVELOPE) | | | |
| 211 | PRESET LABEL | 5150290008 | — | — |

Note:

1. See addendum list above for the parts with asterisk (*) on the Ref. No. and the other parts not included in the list.
2. * marked not included EXPLODED VIEW OF CHASSIS AND CABINET.
3. This list is prepared based on U.S.A BLACK VERSION.
4. 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.



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

NIPPON COLUMBIA CO., LTD.

14-14, 4-CHOME AKASAKA,
MINATO-KU, TOKYO 107 JAPAN
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TLX: JAPANOLA J22591
CABLE: NIPPONCOLUMBIA TOKYO