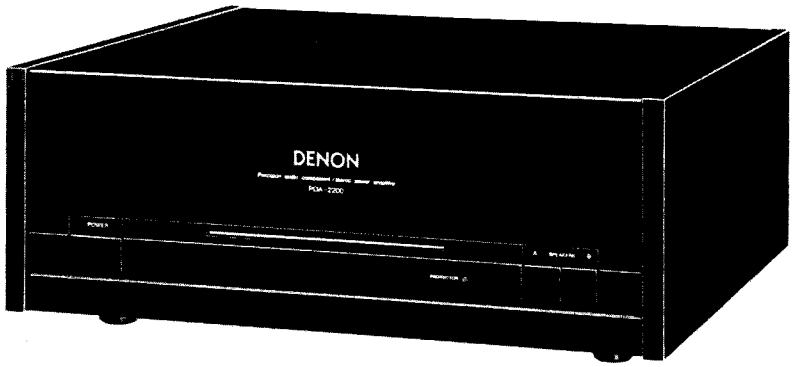
DENON

Hi-Fi Stereo Power Amplifier

SERVICE MANUAL

MODEL POA-2200

SOLID STATE
STEREO POWER AMPLIFIER



Wood side panels are optional.

TABLE OF CONTENTS

NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

Rated output power:	
(both channels driven)	220W per channel min, RMS with both channels driven into 8 ohms from 20 Hz to 20 kHz with no more than 0.02% total harmonic distortion (U.S.A.) 200 W + 200 W (8 ohms, 20 Hz – 20 kHz) 300 W + 300 W (4 ohms, DIN 1 kHz) 200 W + 200 W (6 ohms 1 kHz, IEC) (For temperature test by IEC)
Dynamic Power:	450 W + 450 W (at 4 ohms) 600 W + 600 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:	1 Hz – 300 kHz + 0, –3 dB (at 1 W)
Input sensitivity:	1V (Normal in) 1.3 V (CD in)
Input impedance:	25 k ohms (Normal in) 30 k ohms (CD in)
Output impedance:	0.1 ohm (1 kHz)
S/N ratio:	123 dB (A-weighting)
Slew rate:	±500 V/μsec
Output terminals	
Speakers:	A or B – 6 ohms A + B – 12 ohms
Self diagnostic function:	Display lights
General	
Power supply:	Germany and France 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 or 400 W (U.S.A.) 7.5 A (Canada) 320 W (IEC) 340 W (Multiple)
Dimensions:	434 mm (17-3/32") W x 184 mm (7-1/4") H x 418 mm (16-29/64") D (Including control knobs and feet)
Weight:	17.3 kg (38 lbs 3 oz)

Design and specifications are subject to change without prior notice.

NOTE: The following codes correspond to the appropriate models.
E2 for Europe, EU for U.S.A., EA for Australia, EK for U.K.
E1 for Asia and EC for Canada.
This Service Manual is prepared based on EU 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 Australia model only.

FOR YOUR SAFETY

To ensure safe operation the three-pin plug supplied must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power point, consult a qualified electrician.

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.

NAMES AND FUNCTIONS OF PARTS

• FRONT PANEL

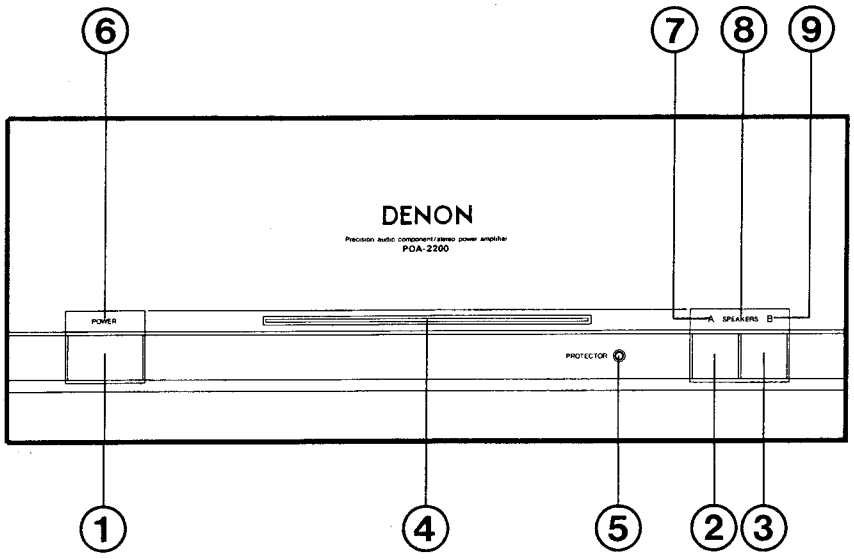


Fig. 1

① POWER (Power Switch)
② SPEAKERS-A (Speaker Select Switch-A)
③ SPEAKERS-B (Speaker Select Switch-B)
④ SELF-DIAGNOSIS (Self-diagnostic Result Indicator Lamps)
⑤ PROTECTOR
⑥ POWER (Power Indicator)
⑦ "A" (Speaker "A" Indicator)
⑧ SPEAKERS (Speaker Function Indicator)
⑨ "B" (Speaker "B" Indicator)

• BACK PANEL

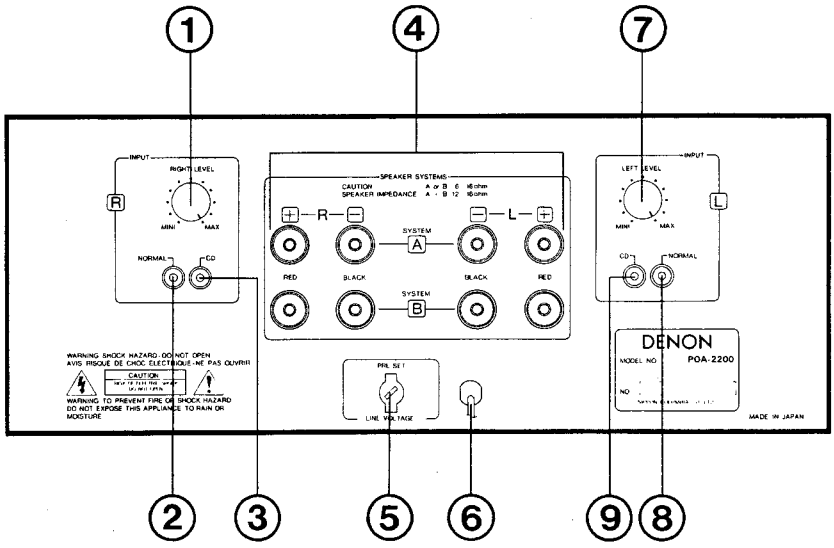
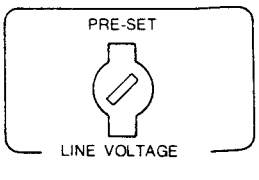


Fig. 2

① RIGHT LEVEL (Rch. Input Level Control)
② NORMAL (Rch. Normal Input Jack)
③ CD (Rch. CD Input Jack)
④ SPEAKER SYSTEMS (Speaker Terminals)
⑤ LINE VOLTAGE (Line Voltage Selector)
⑥ AC CORD (Power Cord)
⑦ LEFT LEVEL (Lch. Input Level Control)
⑧ NORMAL (Lch. Normal Input Jack)
⑨ CD (Lch. CD Input Jack)

• 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.



CONNECTIONS

- **Connection to the speaker system**
  Connect the speaker system for the left channel (the left side as viewed facing the front) to the L speaker terminal on the back panel, and the speaker system for the right channel into the R terminal. There are two sets of SPEAKERS terminals. If only one speaker system is to be used, connect it to the SYSTEM A terminals.

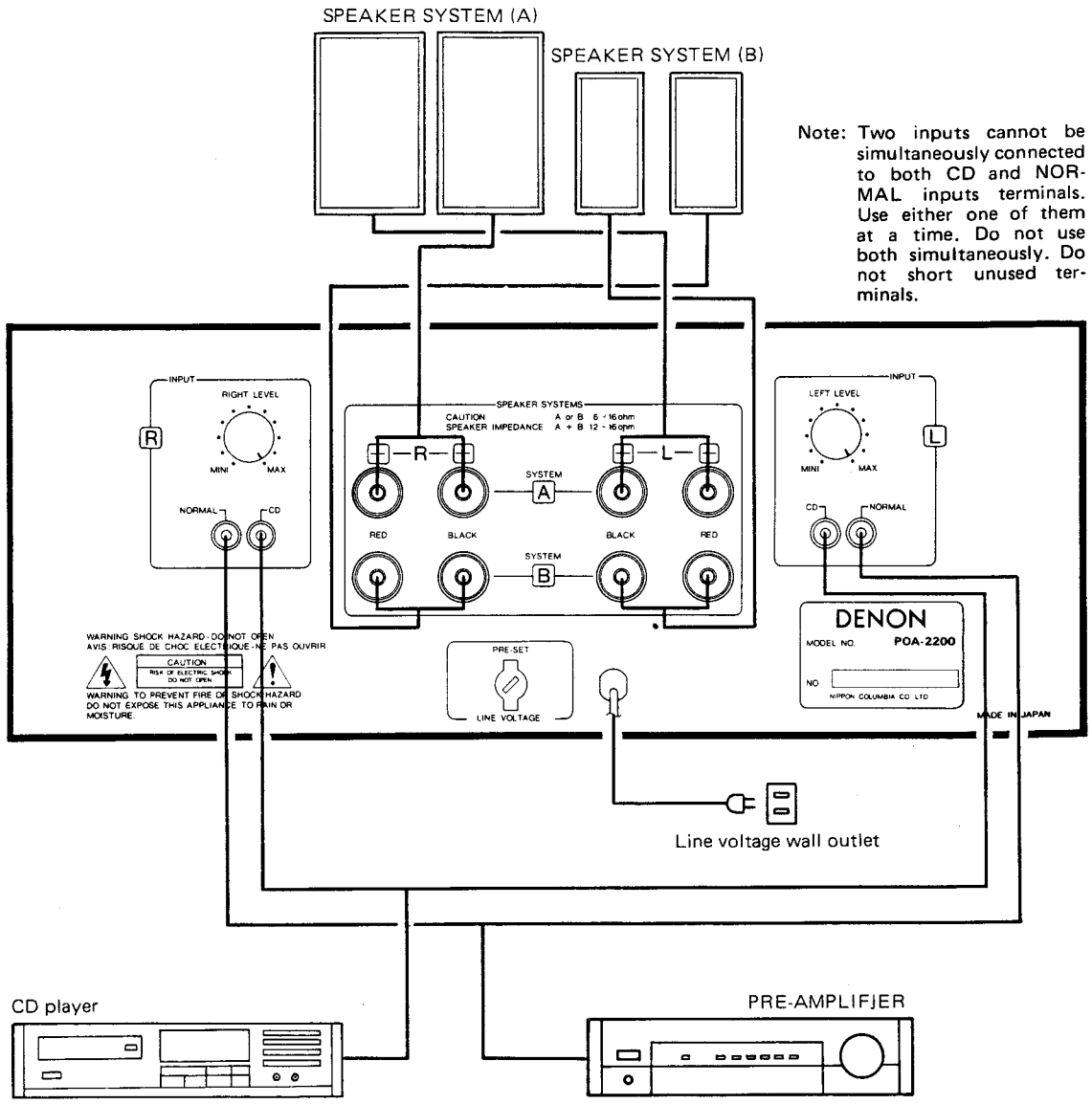


Fig. 3

CONNECTION PRECAUTIONS

- When making connections, make sure that the power is turned OFF.
- Make sure that the L output terminal of the preamplifier (or other audio equipment) is connected to the L input terminal of the POA-2200. Also check that the R output terminal of the preamplifier (or other audio equipment) is connected to the R input terminal of the POA-2200. Connect the cords going to the left speakers to the L terminals of the POA-2200 and the right speaker cords to the R terminals of the POA-2200.
- Make secure connections. If connections are not secure, noise or loss of sound output may occur.
- Do not bundle pin plug cords with the power cords: Please keep pin plug cords away from power supply transformers since hum or noise may occur.

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.

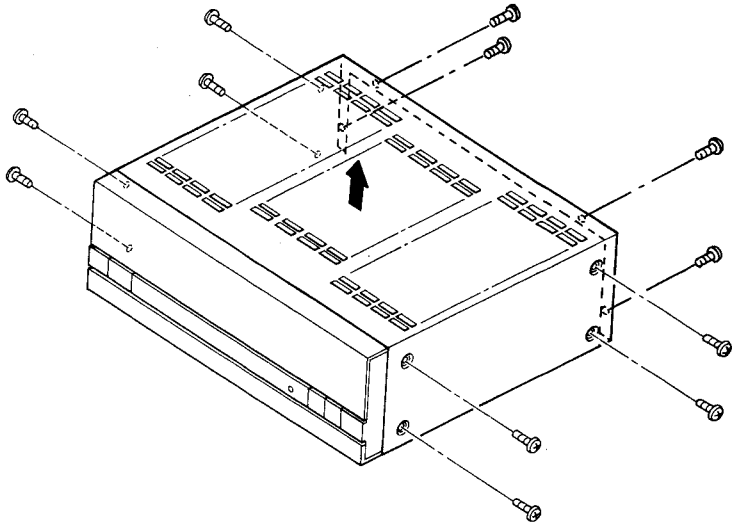


Fig. 4

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.

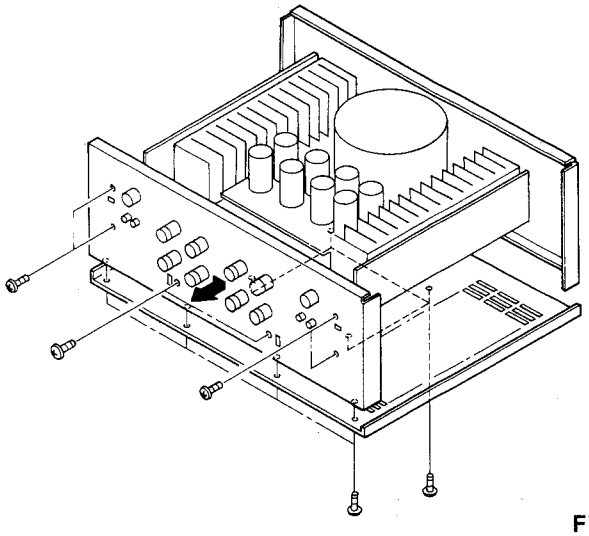


Fig. 5

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.

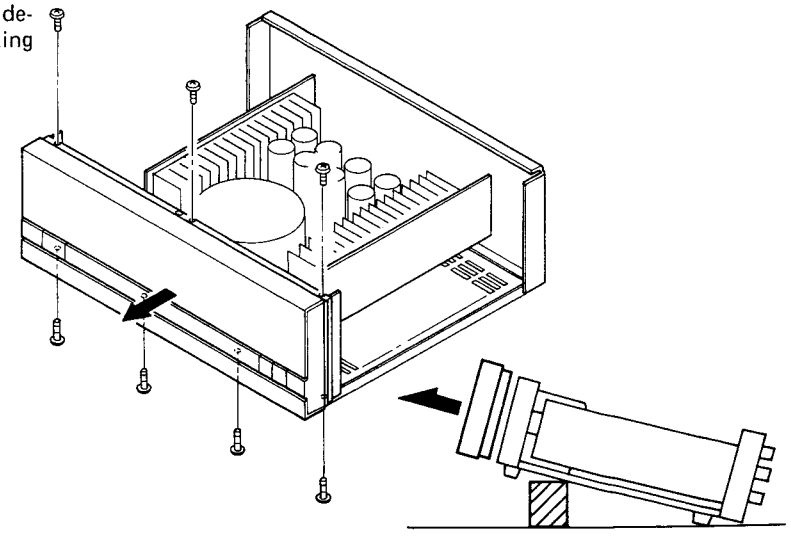


Fig. 6

METHOD OF ADJUSTMENTS

1. Adjustment of Idle Current (ETC-9070)

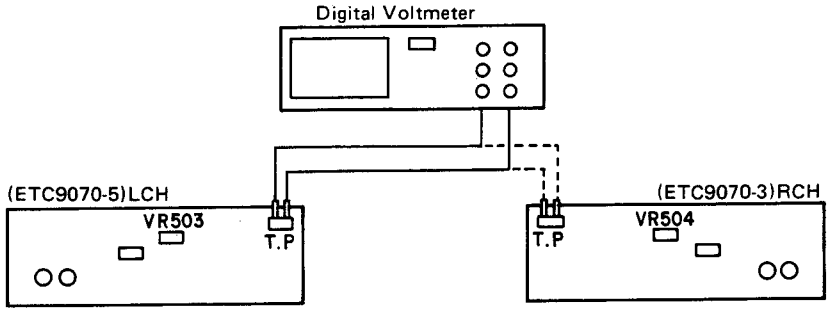


Fig. 7

(1) Connect a digital voltmeter to the test point.
(2) Turn the unit power on.
(3) Wait 2~3 minutes for warm-up, rotate VR503: Lch (VR504:Rch) and adjust voltage value on the meter to 8 mV ±1mV.

2. Adjustment of Neutral Point Voltage

(1) Connect a digital voltmeter to the SPEAKER terminal.
(2) Turn the unit power on.
(3) Turn the LEFT LEVEL and RIGHT LEVEL controls on the back panel fully clockwise (maximum).
(4) Confirm the voltage on the meter indicates within ±100 mV value.

3. Adjustment of Distortion Factor (ETC9070)

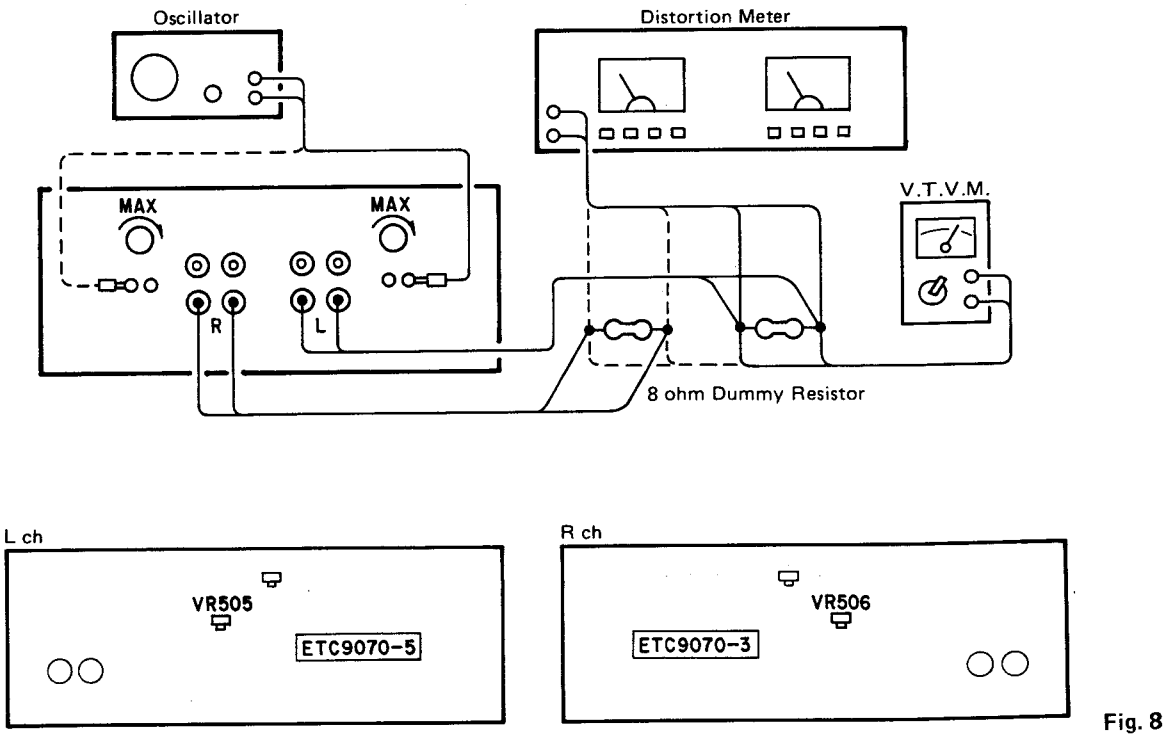


Fig. 8

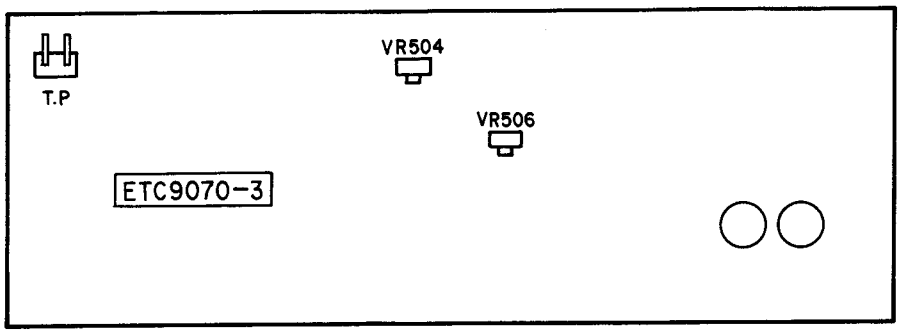
(1) Set an oscillator output to "NORMAL" and feed it to both channels simultaneously.

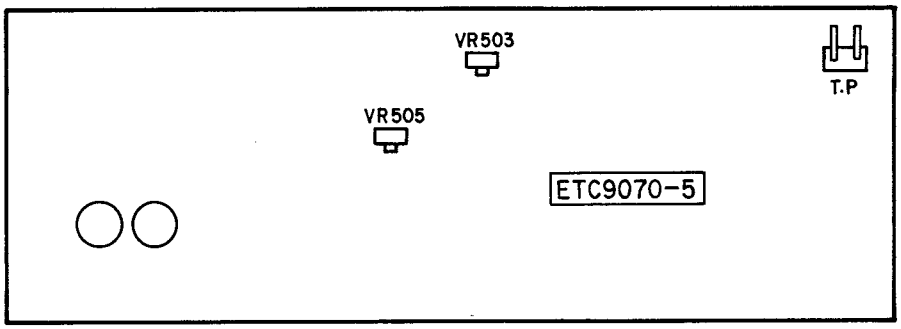
Each speaker output to connect —
- 8 ohm dummy resistor
- Distortion meter
- V.T.V.M.

(2) Turn the unit power on, and set the LEFT LEVEL and RIGHT LEVEL controls to maximum.
(3) In the first place confirm that there's no dropping of supply voltage, then set the oscillator frequency to 20 kHz and adjust output of oscillator to obtain 28.3V for both speaker outputs.
(4) Adjust VR505: Lch (VR506: Rch) on the ETC9070 for minimum distortion. Distortion factor must be no more than 0.005% at this time.

ALIGNMENT POINTS
ETC9070 POWER UNIT (Component Side)

ETC9070 POWER





TROUBLESHOOTING

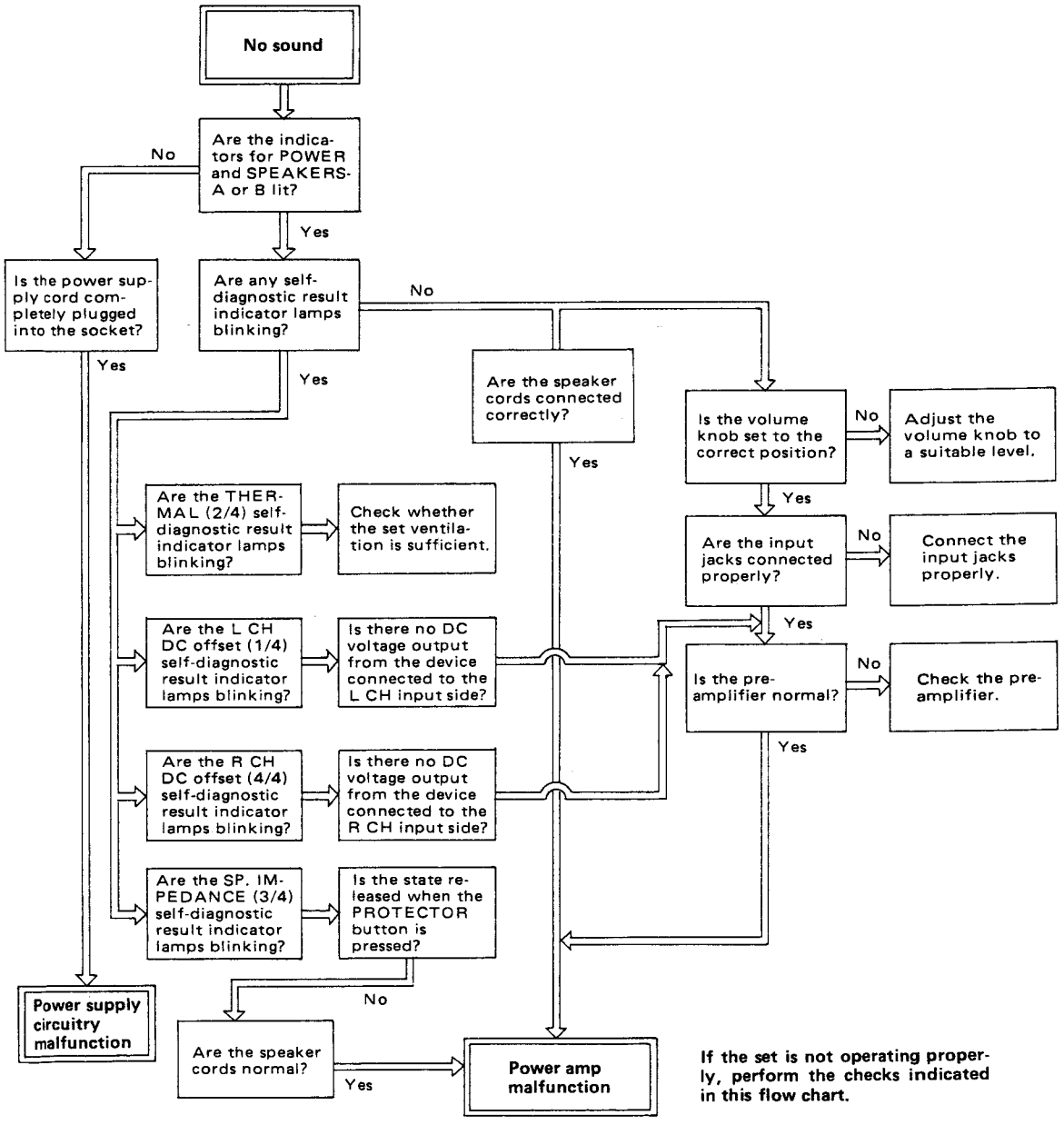
Before troubleshooting, be sure to check whether your audio system is really the source of the problem.

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 DIAGRAM

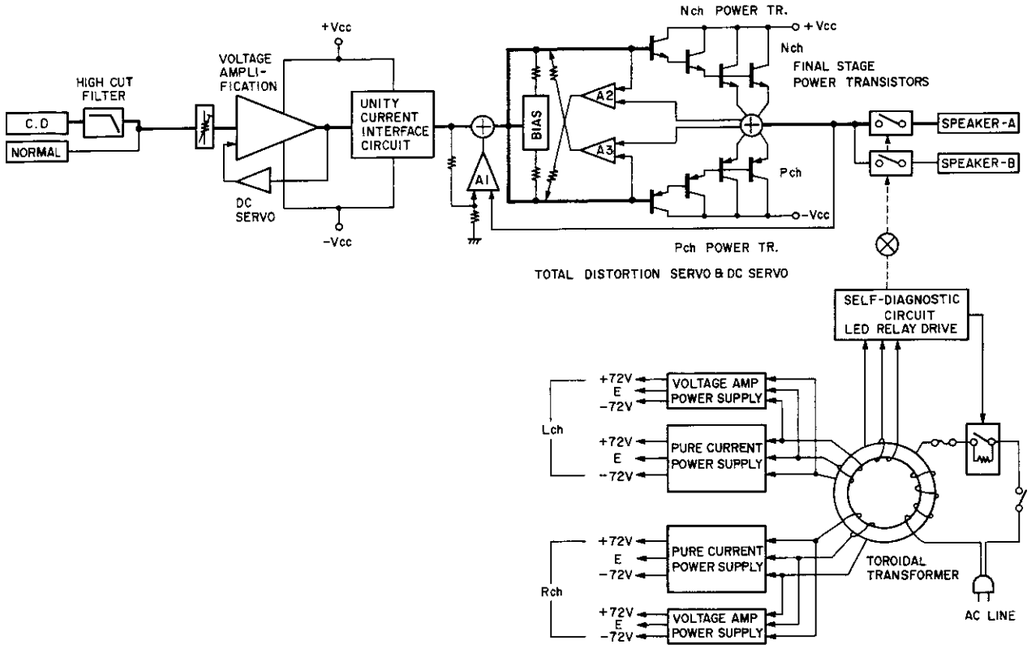
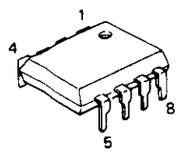


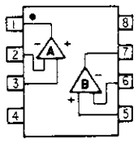
Fig. 9

SEMICONDUCTORS

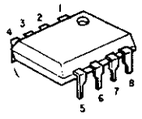
• IC's

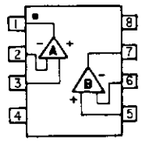
M5218P (Mitsubishi)



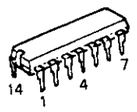


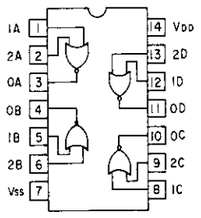
NJM082DT or 082BD (JRC)



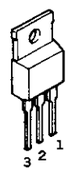


HD1400IBP (Hitachi)





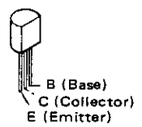
NJM78M15A(JRC)



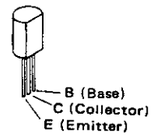
PIN CONFIGURATION
1. Output
2. Ground
3. Input

• TRANSISTOR (including FET)

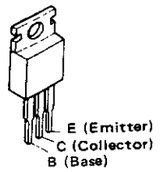
2SA1015(Y)
2SC1815(BL)
2SC2878(A/B)



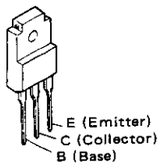
2SA1145(O/Y)
2SA1321
2SC2705(O/Y)
2SC3334



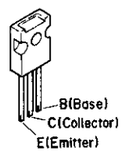
2SA968(Y)/(O)
2SC2238(Y)/(O)



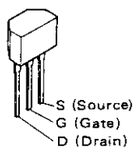
2SA1306 O/Y
2SC3298 O/Y



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



FET
2SK184C(Y/GR/BL)

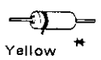


• DIODES (include LED's, Thyristor, Posistor)

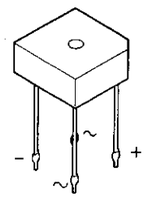
HZ2C-1
HZ5C-1
HZ7B-3
HZ9B-2
HZ15-2

1S2076A

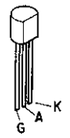
1SS133



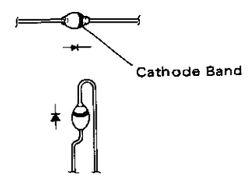
4D4B42(LCI)



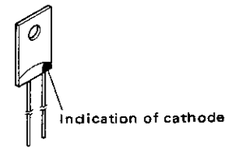
SFOR1A42
Thyristor



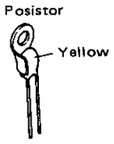
DSA1A2 {Type-2 / Type-3
Color of Cathode Band, White



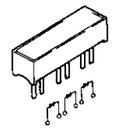
MV-1YH
Indication of cathode, White



PTH487A01BD222TS

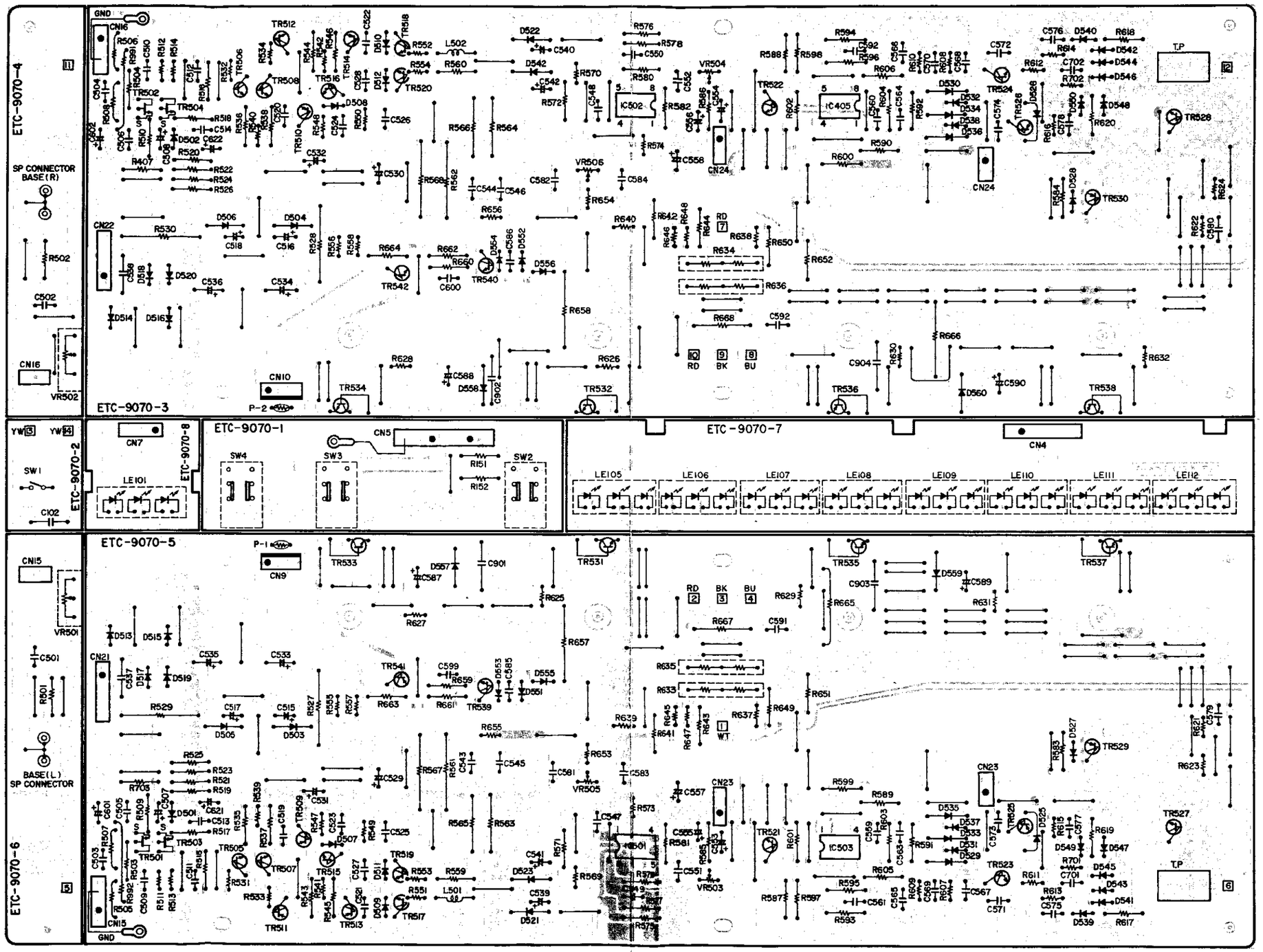


LD-701VR-L (RED)
LD-701YY(YELLOW)
LD-701DU(ORANGE)



LD-101DU (ORANGE)

PRINTED WIRING BOARD PATTERNS AND PARTS LIST
ETC9070 POWER UNIT



E2 for Europe ETC9070B [Same as ETC9070 (for EU) except the followings.]

Ref. No.	Part No.	Part Name & Descriptions	
SWITCH			
	2129525008	Power Sw	Change

Ref. No.	Part No.	Part Name & Descriptions	
OTHER PARTS			
	4150298001	Condencer Cover	Add

ETC9070 POWER UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions
SEMICONDUCTORS		
IC501,502	2630244014	NJM082DT IC (JRC)
IC503,504	2630257001	M-5218P IC (Mitsubishi)
TR501~504	2750055002	2SK184C(Y/GR/BL) FET
TR505~508	2730281003	2SC2705(O/Y) Transistor
TR509, 510	2710168007	2SA1145(O/Y) Transistor
TR511~514	2710202002	2SA1360(O/Y) Transistor
TR515, 516	2730333003	2SC3423(O/Y) Transistor
TR517, 518	2730324009	2SC3298O/Y Transistor
TR519, 520	2710196008	2SA1306O/Y Transistor
TR521, 522	2730198015	2SC1815(BL) Transistor
TR523, 524	2730332004	2SC3334 Transistor
TR525, 526	2710201003	2SA1321 Transistor
TR527, 528	2730199027	2SC2238(Y)/(O) Transistor
TR529, 530	2710104029	2SA968(Y)/(O) Transistor
TR539, 540	2730332004	2SC3334 Transistor
TR541, 542	2710201003	2SA1321 Transistor
D501,502	2760401002	1SS133 Diode
D503~506	2760253001	HZ15-2 Zener
D507~512	2760401002	1SS133 Diode
D513~520	2760427015	DSA1A2 (TYPE-3) Diode
D521~524	2760253001	HZ15-2 Zener
D525,526	2760049011	1S2076A Diode
D527,528	2760388002	MV-1YH Diode
D529,530	2760236031	HZ5C-1 Zener
D531,532	2760401002	1SS133 Diode
D533~536	2760254000	HZ7B-3 Zener
D537~556	2960401002	1SS133 Diode
LE101	3939319018	LD-701DU (Orange) LED
LE105~112	3939319034	LD-701VR-L (RED) LED
P001,002	2760289004	PTH487A01BD222TS Positive Thermistor
RESISTORS (not included Carbon Film ±5%, 1/4W type)		
⚠ R511~514	2412380963	2.2k ohm ±5% 1/4W Carbon (NB)
⚠ R527~530	2440106025	4.7k ohm ±5% 2W Metal Oxide Film (NB)
⚠ R531~534	2412378904	180 ohm ±5% 1/4W Carbon (NB)
⚠ R539,540	2412379961	820 ohm ±5% 1/4W Carbon (NB)
⚠ R541,542	2412377934	91 ohm ±5% 1/4W Carbon (NB)
⚠ R547~550	2412377947	100 ohm ±5% 1/4W Carbon (NB)
⚠ R551~554	2412375981	22 ohm ±5% 1/4W Carbon (NB)
⚠ R555~558	2412387908	1 ohm ±5% 1/4W Carbon (NB)
⚠ R561,562	2440101020	1.8k ohm ±5% 2W Metal Oxide Film (NB)
⚠ R563~566	2440043023	1.5k ohm ±5% 1W Metal Oxide Film (NB)
⚠ R567,568	2440101020	1.8k ohm ±5% 2W Metal Oxide Film (NB)
⚠ R569,570	2412377947	100 ohm ±5% 1/4W Carbon (NB)
⚠ R573,574	2412379987	1k ohm ±5% 1/4W Carbon (NB)
⚠ R607~610	2412379987	1k ohm ±5% 1/4W Carbon (NB)
⚠ R611,612	2412379903	470 ohm ±5% 1/4W Carbon (NB)
⚠ R613~616	2412377947	100 ohm ±5% 1/4W Carbon (NB)
⚠ R621,622	2412387908	1 ohm ±5% 1/4W Carbon (NB)
⚠ R623,624	2412377947	100 ohm ±5% 1/4W Carbon (NB)
⚠ R625~628	2412387908	1 ohm ±5% 1/4W Carbon (NB)
⚠ R629~632	2412322028	4.7 ohm ±5% 1/4W Carbon (NB)
R633~636	2432033038	0.18 ohm x 2 ±5% 2W Wire Wound
⚠ R637~640	2412375981	22 ohm ±5% 1/4W Carbon (NB)
⚠ R645~648	2412379987	1k ohm ±5% 1/4W Carbon (NB)
⚠ R653~656	2412376964	47 ohm ±5% 1/4W Carbon (NB)
⚠ R657,658	2440106025	4.7k ohm ±5% 2W Metal Oxide Film (NB)

Ref. No.	Part No.	Part Name & Descriptions
⚠ R665,666	2440112022	15k ohm ±5% 2W Metal Oxide Film (NB)
⚠ R667,668	2440021029	22 ohm ±5% 1W Metal Oxide Film (NB)
VR501, 502	2119031007	Input VR 50k ohm
VR503, 504	2116014072	Semi Fixed Resistor Bias (10k ohm)
VR505, 506	2116014069	Semi Fixed Resistor 20kHz T.H.D. (200 ohm)
CAPACITORS		
⚠ C102	2538003014	4700pF ±20% 400VAC (Power SW) Ceramic
C501,502	2554131009	270pF ±5% 50V Plastic Film
C503,504	2554129008	220pF ±5% 50V Plastic Film
C505,506	2554137003	470pF ±5% 50V Plastic Film
C507,508	2544150003	10μF 50V Electrolytic
C509,510	2554141002	680pF ±5% 50V Plastic Film
C511,512	2551120084	4700pF ±5% 50V Plastic Film
C513,514	2534262008	3pF ±0.25pF 500V Ceramic
C515~518	2544150003	10μF 50V Electrolytic
C519,520	2534269001	10pF ±0.5pF 500V Ceramic
C521,522	2534355009	5pF ±0.25pF 500V Ceramic
C523,524	2554121006	100pF ±5% 50V Plastic Film
C525,526	2554137003	470pF ±5% 50V Plastic Film
C527,528	2531024003	0.01μF +80,−20% 50V Ceramic
C529~532	2544181001	1μF ±20% 100V Electrolytic
C533~536	2544229002	470μF ±20% 100V Electrolytic
C537,538	2531052004	4700pF +100,−0% 500V Ceramic
C539~542	2544164031	220μF ±20% 25V Electrolytic
C543~546	2551135095	0.056μF ±5% 50V Plastic Film
C547,548	2534269001	10pF ±0.5pF 500V Ceramic
C549~552	2554121006	100pF ±5% 50V Plastic Film
C553,554	2544132005	10μF 16V Electrolytic
C555~558	2544181001	1μF ±20% 100V Electrolytic
C559~566	2551134025	0.01μF ±5% 50V Plastic Film
C567~570	2554121006	100pF ±5% 50V Plastic Film
C571~574	2534281005	33pF ±5% 500V Ceramic
C575~578	2551120026	1500pF ±5% 50V Plastic Film
C579,580	2551134054	0.1μF ±5% 50V Plastic Film
C581~584	2551134025	0.01μF ±5% 50V Plastic Film
C585,586	2551120084	4700pF ±5% 50V Plastic Film
C587~590	2544181014	10μF ±20% 100V Electrolytic
C591,592	2551121025	0.01μF ±5% 50V Plastic Film
C599,600	2551072006	0.01μF ±10% 50V Plastic Film
C601,602	2544132005	10μF 16V Electrolytic
C621,622	2544150003	10μF 50V Electrolytic
SWITCHES & COIL		
⚠	2129534002	Power SW (Push)
	2129536000	3P Push Switch
L501,502	2350016917	Inductor (180K)

OTHER PARTS			Q'ty
	2229070107	P.W. Board	1
	2090008120	Jumper Wire P=10mm	200
J901,902	2090008104	Jumper L=15mm	2
	EP-5667H1	Terminal Pin L=21mm	12
	4170043100	Radiator	4
	4730354019	Tapping Screw (2) 3x8	4
	2050315002	2P Connector Base	2
	2050075025	2P Terminal	2
	2050190036	3P NH Connector Base	2
	2050154030	3P NH Connector Base	2
	2050243022	2P Wire Holder	6
	2050243035	3P Wire Holder	2
	2050185038	3P Wire Holder	4
	2050243048	4P Wire Holder	2
	2050243051	5P Wire Holder	1
	2050243080	8P Wire Holder	1
	2034282012	3P Connector Cord	2
	2034185009	3P Connector Cord	1
	2036171008	4P Connector Cord	2
	2038162002	5P Connector Cord	1

(Con.)

Ref. No.	Part No.	Part Name & Descriptions	Q'ty
	2042052027	7P Connector Cord	1
	2030241028	1P Contact Ass'y	2
	2030275007	1P Contact Ass'y	1
	4756008006	4φ Nut	2

ETC9071 SUPPLY UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions		
SEMICONDUCTORS				
IC101	2680217004	NJM78M15A	IC	(JRC)
IC102,103	2620298009	HD14001BP	IC	(Hitachi)
TR101	2730253015	2SC2878(A/B)		Transistor
TR102	2730317003	2SC2458(BL)		Transistor
TR103	2710191003	2SA1048(GR)		Transistor
TR104 ~107	2730317003	2SC2458(BL)		Transistor
TR108 ~111	2710191003	2SA1048(GR)		Transistor
TR112, 113	2730317003	2SC2458(BL)		Transistor
TR114	2710191003	2SA1048(GR)		Transistor
TR115, 116	2730317003	2SC2458(BL)		Transistor
TR117	2710191003	2SA1048(GR)		Transistor
TR118 ~122	2730317003	2SC2458(BL)		Transistor
D101,102	2760424005	4D4B42(LC1)		Diode
D103~106	2760427002	DSA1A2 (TYPE-2)		Diode
D201,202	2760427015	DSA1A2 (TYPE-3)		Diode
D203,204	2760049011	1S2076A		Diode
D205	2760401002	1SS133		Diode
D206	2760236031	HZ5C-1		Zener
D207,208	2760401002	1SS133		Diode
D210~212	2760401002	1SS133		Diode
D213	2760254000	HZ7B-3		Zener
D213	2760218033	HZ9B-2		Zener
D214~217	2760401002	1SS133		Diode
D218	2790016001	SF0R1A42		Diode
D219~226	2760401002	1SS133		Diode
D227	2760049011	1S2076A		Diode
D228	2760254000	HZ7B-3		Zener
D229,230	2760401002	1SS133		Diode
D231	2760368019	HZ2C-1		Zener
D250	2760401002	1SS133		Diode
D801,802	2760401002	1SS133		Diode
LE102, 103	3939223010	LD-101DU (Orange)		LED
LE104	3939319021	LD-701YY (Yellow)		LED
RESISTORS (not included Carbon Film ±5%, 1/4W type)				
⚠ R101	2432044001	1.2 ohm	±10% 10W	Wire Wound
⚠ R163,164	2430032002	0.47 ohm	±10% 3W	Wire Wound
⚠ R192	2412387908	1 ohm	±5% 1/4W	Carbon (NB)
⚠ R805,806	2440025025	47 ohm	±5% 1W	Metal Oxide Film (NB)
CAPACITORS				
⚠ C101	2538003014	4700pF	±20% 400VAC	Ceramic
C103,104	2531151002	4700pF	+100,0% 500V	Ceramic
C201	2551134025	0.01μF	±5% 50V	Plastic Film
C202	2544168095	1000μF	±20% 35V	Electrolytic
C203	2544145005	0.47μF	50V	Electrolytic
C204	2544146004	1μF	50V	Electrolytic
C205	2544127007	220μF	6.3V	Electrolytic
C206	2544254912	22μF	±20% 16V	Electrolytic
C207	2561035017	0.22μF	±5% 50V	Metalized
C208,209	2544130007	100μF	10V	Electrolytic
C210	2544132005	10μF	16V	Electrolytic
C251~253	2544164015	10μF	±20% 25V	Electrolytic
C801,802	2551121067	0.022μF	±5% 50V	Plastic Film

Ref. No.	Part No.	Part Name & Descriptions	Q'ty
RELAYS & COILS			
RL001, 002	2140041008	Relay (24V, 7A)	
⚠ RL003	2140038008	Relay (24V, 8A)	
L801~804	2359001004	Inductor (Power Out 1μH)	
OTHER PARTS			
	2229071106	P.W. Board	1
	2090008120	Jumper Wire P=10mm	105
	EP-5667H1	Terminal Pin L=21mm	21
	4170253000	Radiator	1
	4700012022	Cross Pan Screw with S.W. W3x12	1
	2020022008	Fuse Holder	20
	EP-5870	Fuse Holder	2
⚠ F001	2061051009	Fuse 12A	1
⚠ F003,004	2061039047	Fuse 1.25A	2
⚠ F005~008	2061046014	Fuse 8A	4
⚠ F009~012	2061046027	Fuse 5A	4
	2050075025	2P Terminal	1
	2050154030	3P NH Connector Base	2
	2050190036	3P NH Connector Base	
	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
	2036105058	4P Connector Cord	1

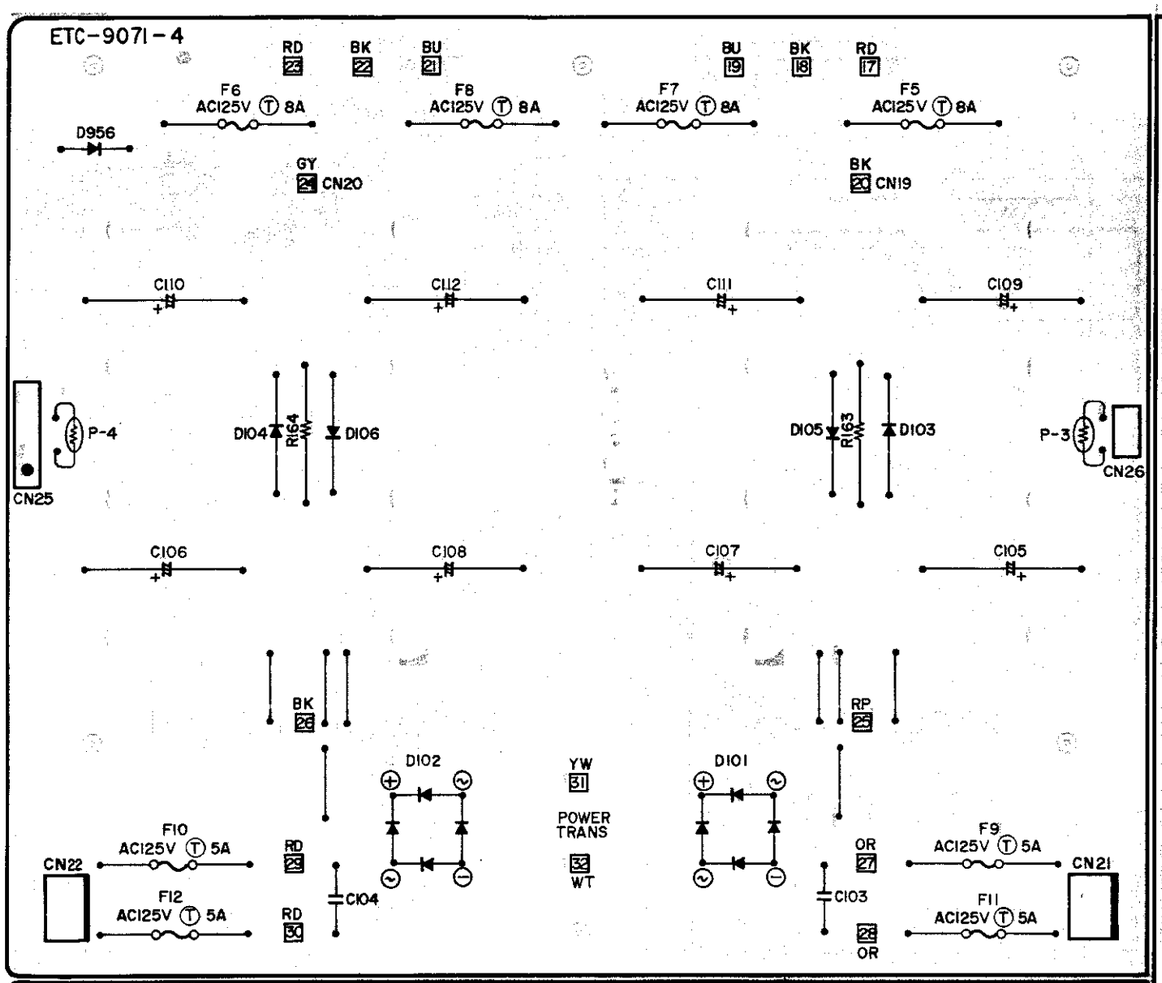
EP for PX(multi. voltage) ETC9071D
[Same as ETC9071 (for EU) except the followings.]

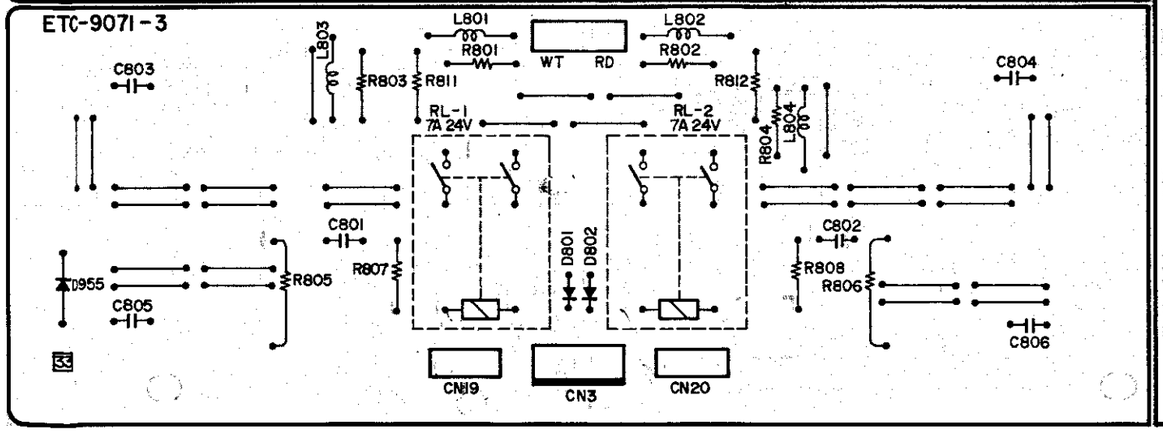
Ref. No.	Part No.	Part Name & Descriptions	
OTHER PARTS			
	2020022008	Fuse Holder (22)	Add
⚠ F001	2061017043	Fuse 12A	Change
⚠ F002	2061035038	Fuse (6.3A)	Add
⚠ F003,004	2061035025	Fuse (1.25A) (2)	Change
⚠ F005~008	2061052008	Fuse 8A (4)	Change
⚠ F009~012	2061035012	Fuse 5A (T) (4)	Change

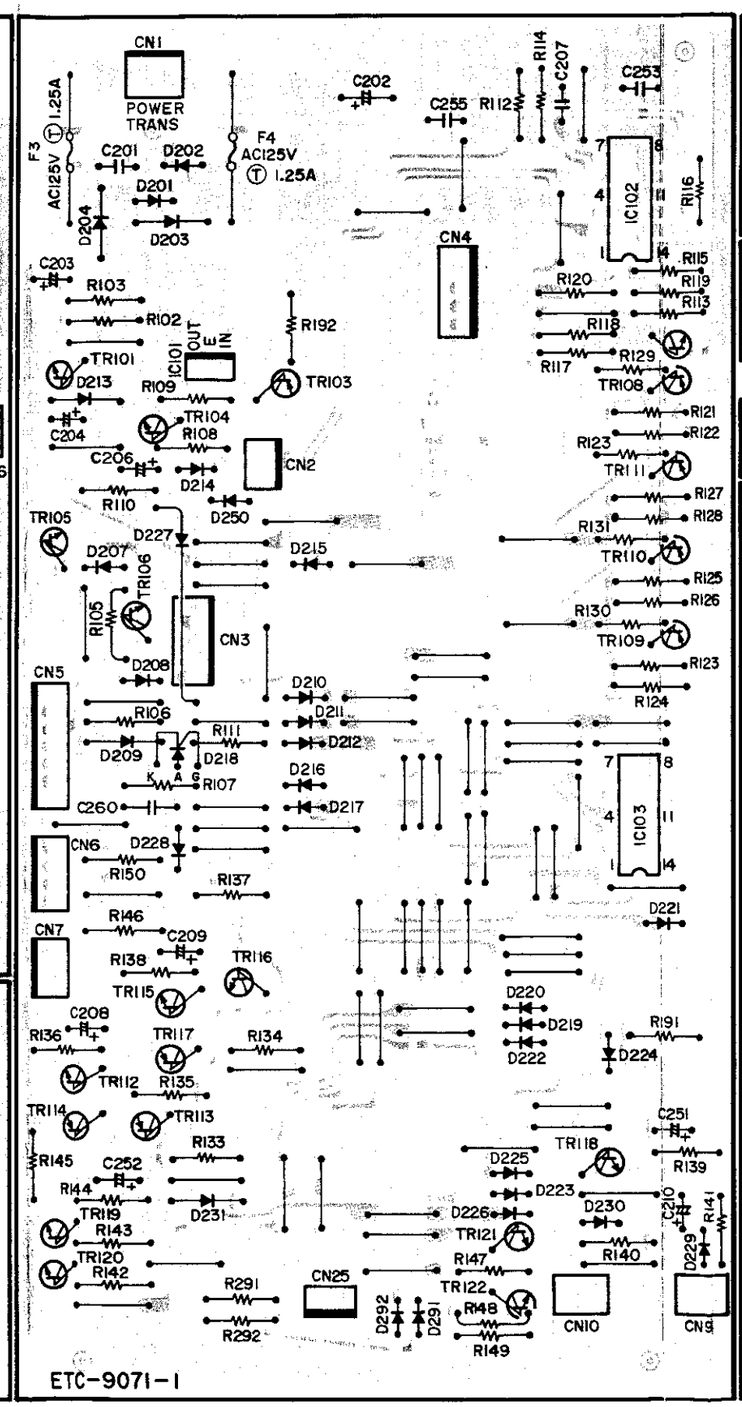
E2 for Europe ETC9071B
[Same as ETC9071 (for EU) except the followings.]

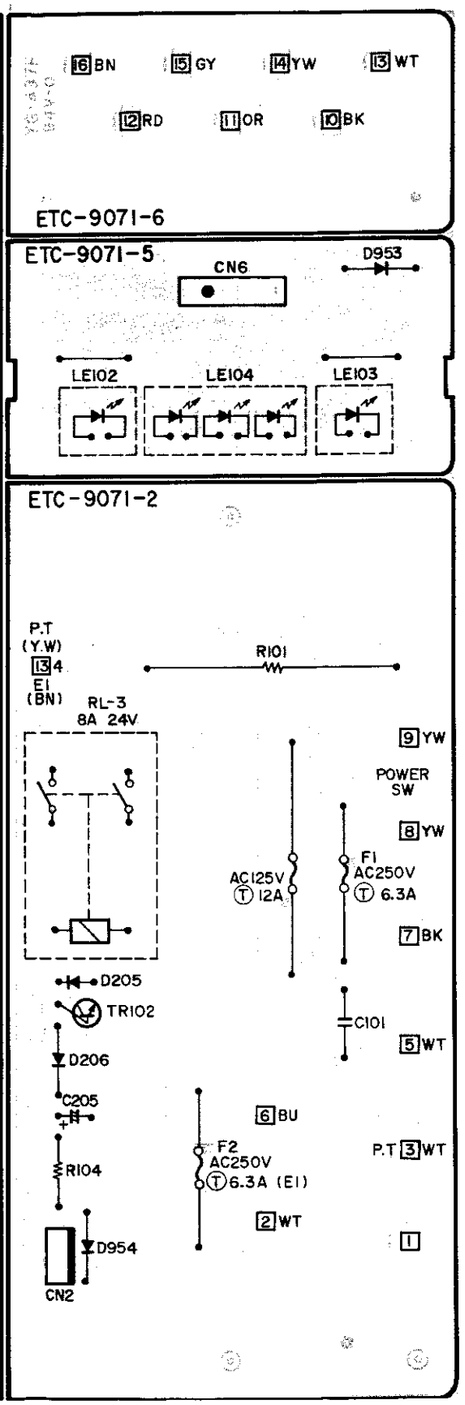
Ref. No.	Part No.	Part Name & Descriptions	
RESISTORS			
⚠ R101	2432044027	2.2 ohm ±10% 10W Wire Wound	Change
OTHER PARTS			
	4170197108	Heat Sink (2)	Add
	4700012006	Cross Pan Screw with S Washer 3x12 (ZNP) (2)	Add
	2020022008	Fuse Holder (22)	Change
⚠ F001	2061036011	Fuse (6.3A)	Change
⚠ F003,004	2061015016	Fuse (1.25A) (2)	Change
⚠ F005~008	2061036011	Fuse (6.3A)	Change
⚠ F009~012	2061015090	Fuse (5A) (4)	Change
	EP-5870	Fuse Holder (2)	Delete

ETC9071 SUPPLY UNIT

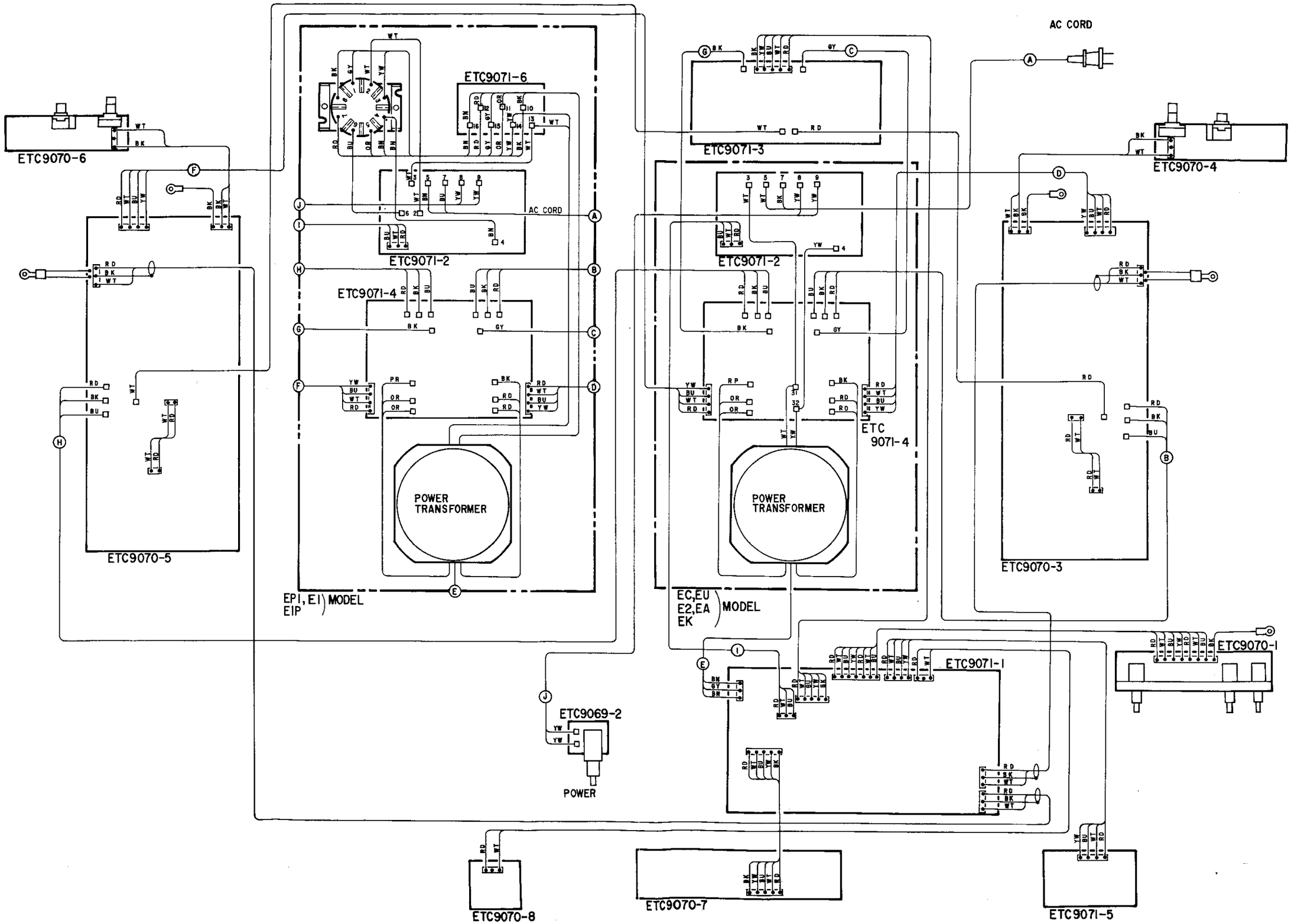




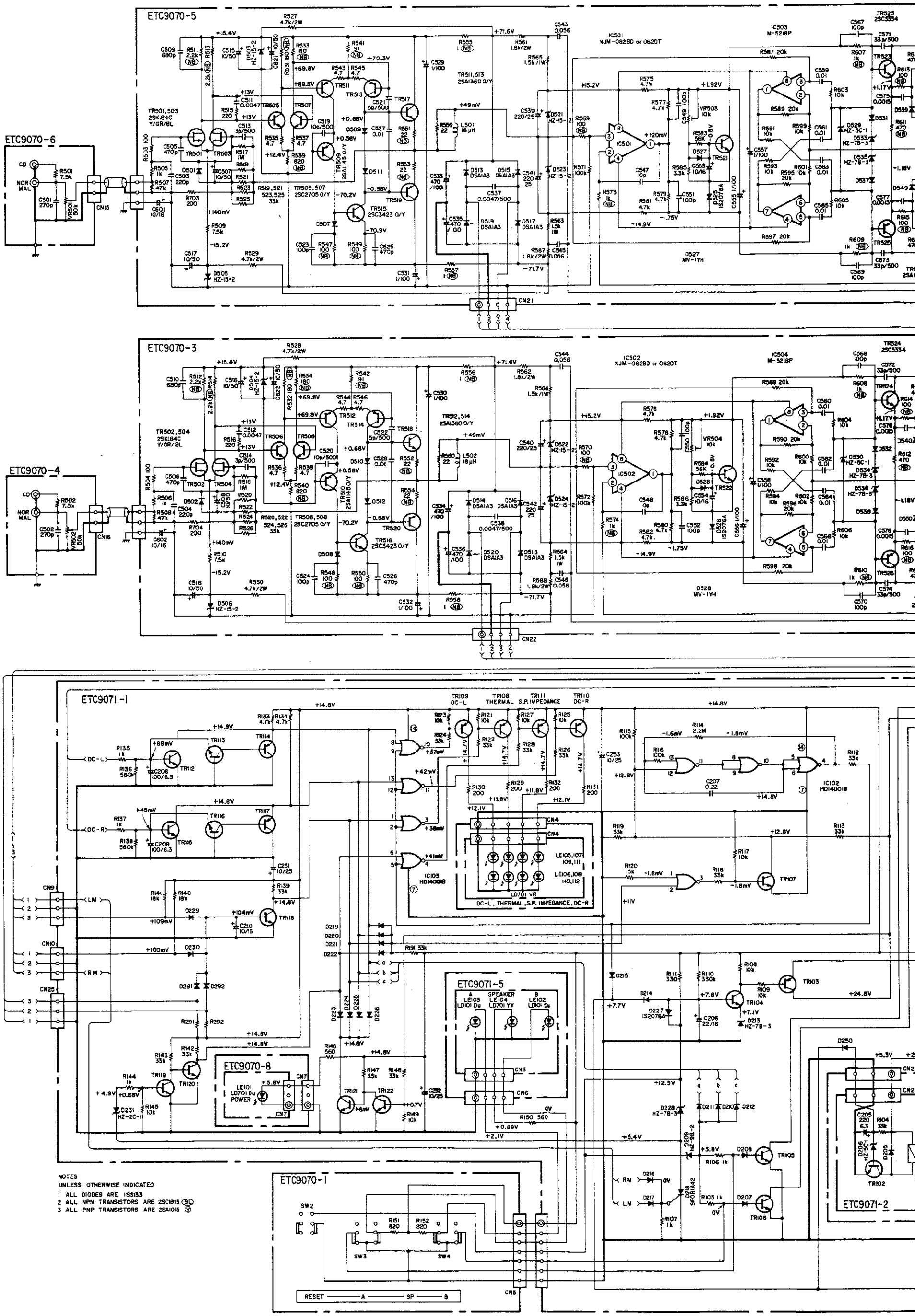




WIRING DIAGRAM

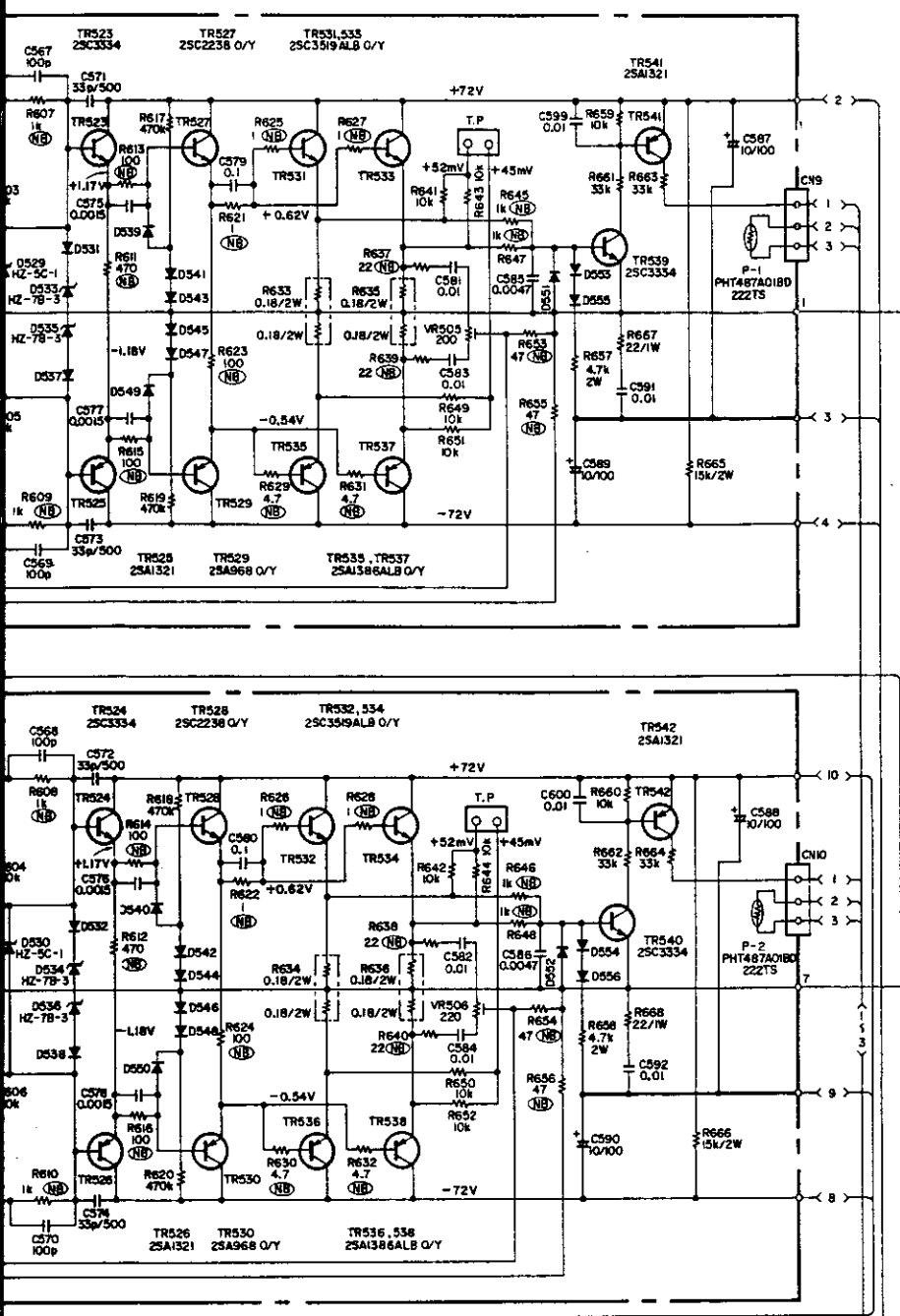


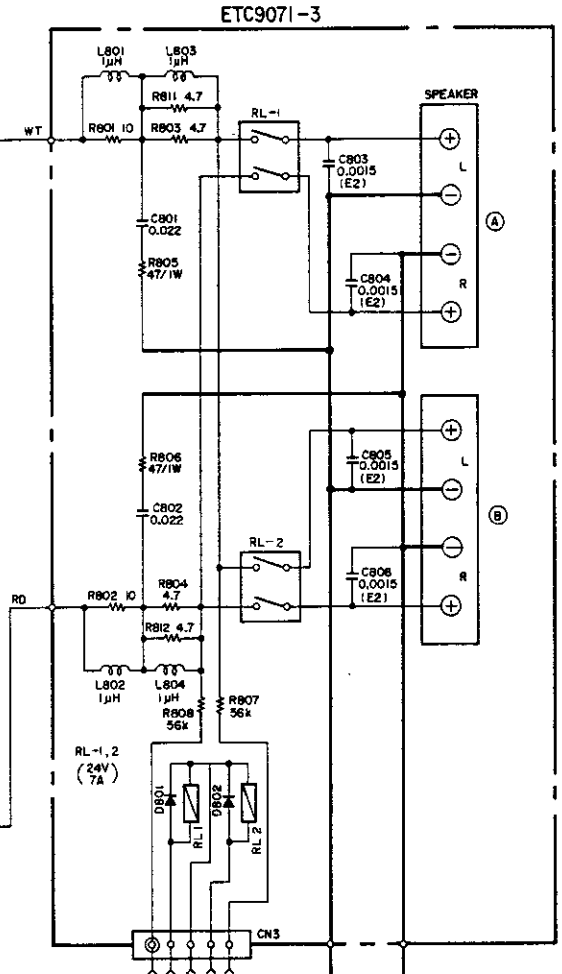
SCHEMATIC DIAGRAM

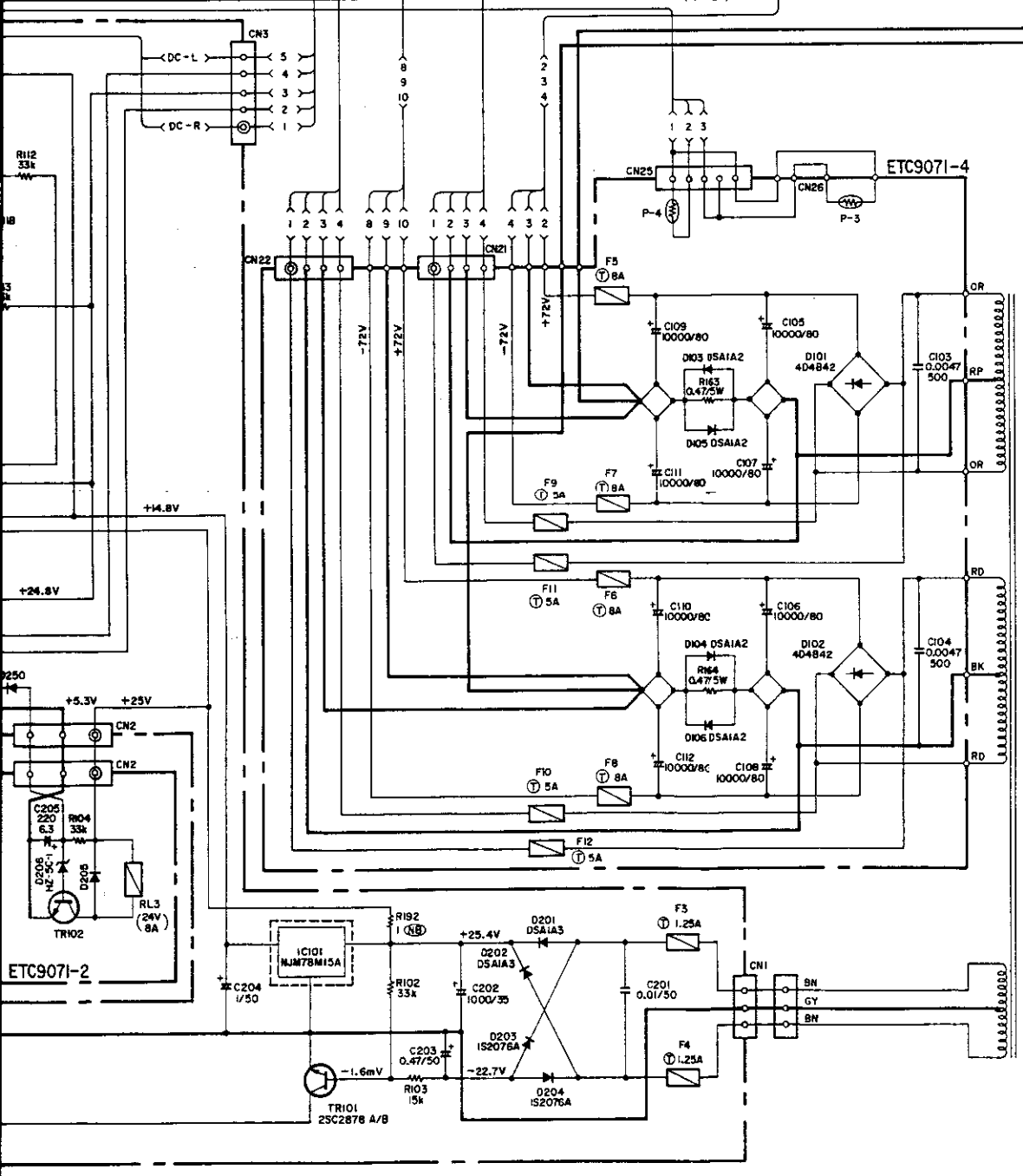


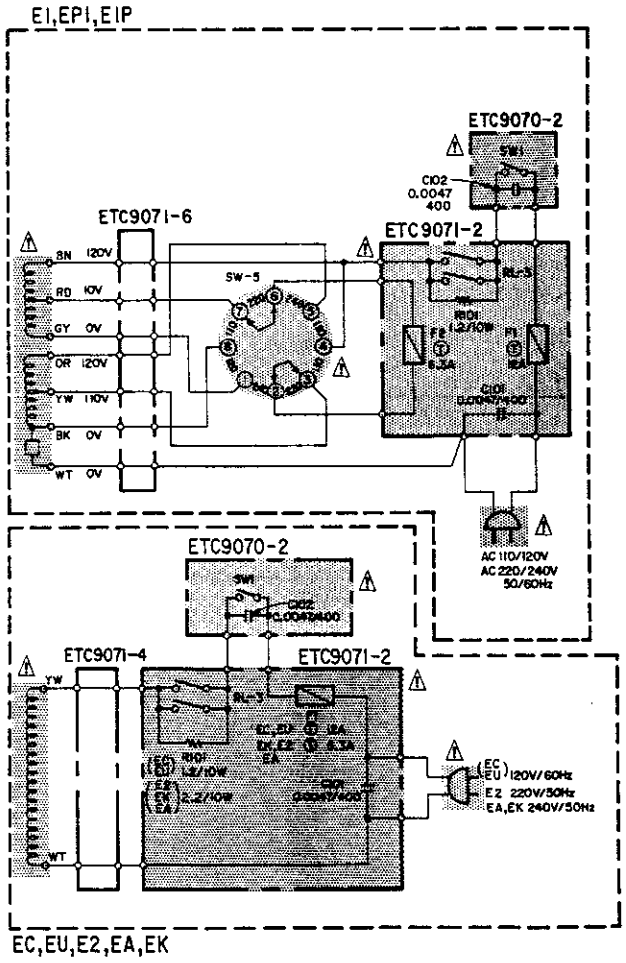
6 7 8 9 10 11

⚠ ▨ Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.









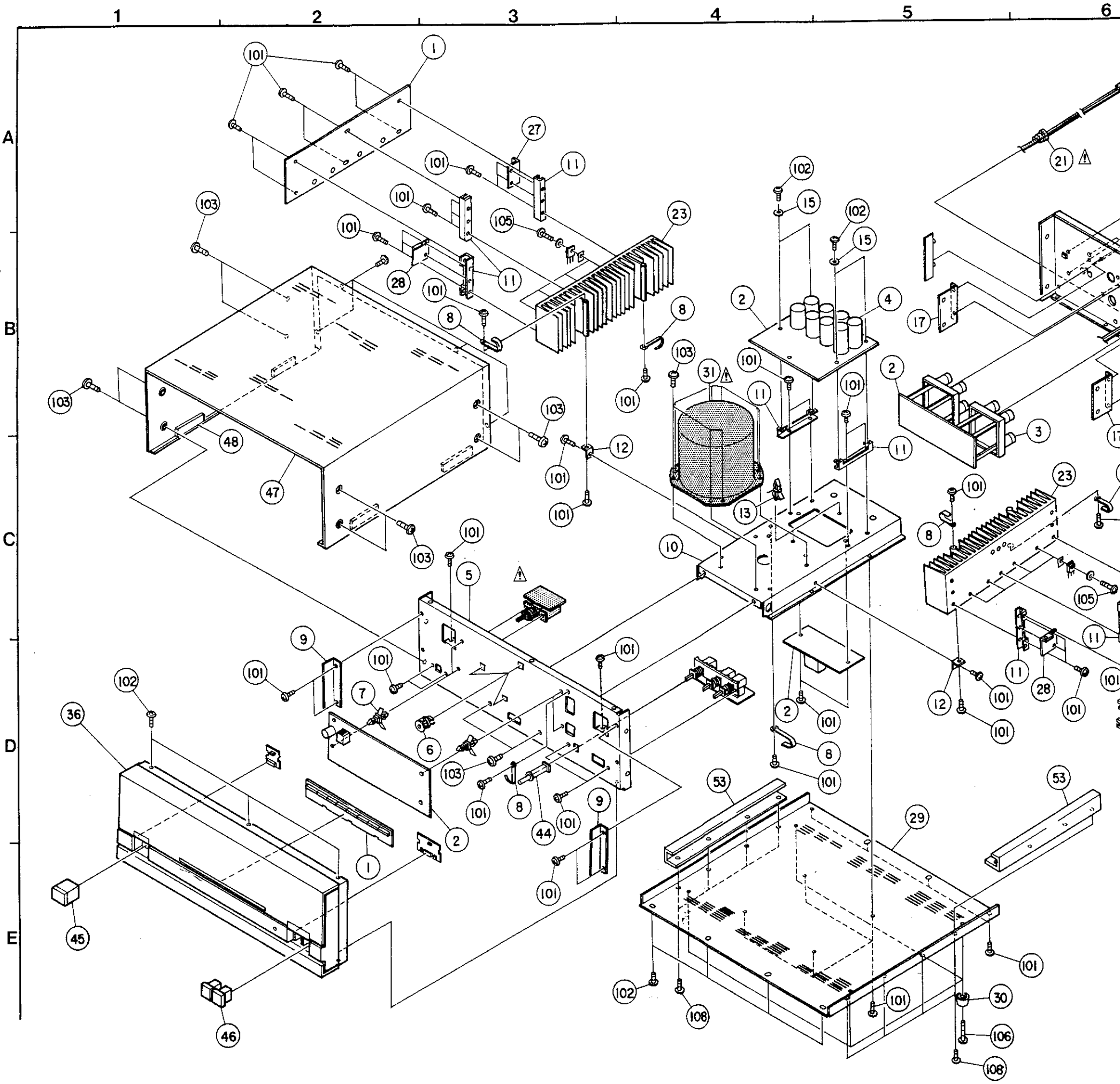
NOTES
ALL RESISTANCE VALUES IN OHM K = 1,000 OHM k = 1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD P = MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

A B C D E F G H

EXPLODED VIEW OF CHASSIS AND CABINET & PARTS LIST

• EXPLODED VIEW OF CHASSIS AND CABINET

⚠ ▩ when nec
by the ma



• PARTS LIST OF EXPLODED VIEW

Note 1. See addendum list below 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 EU BLACK VERSION.

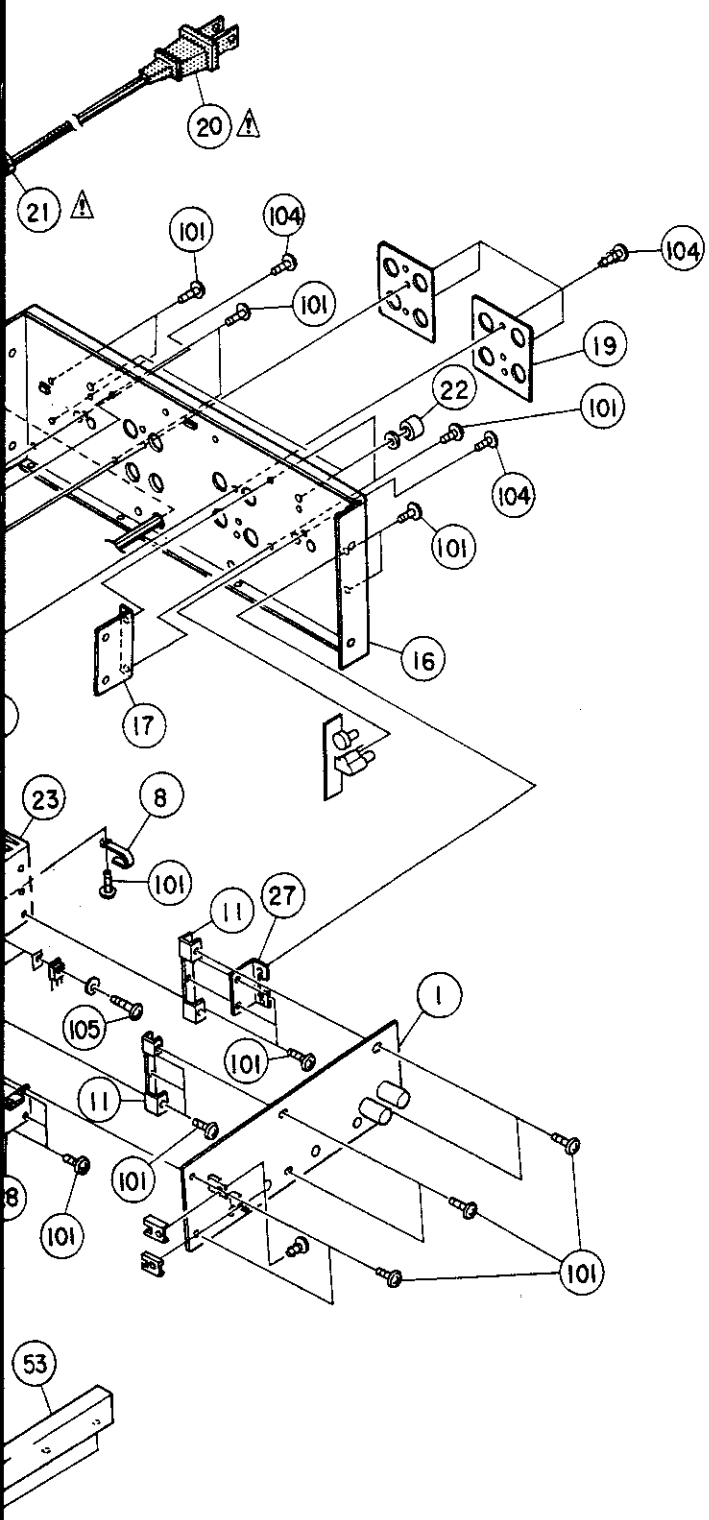
Ref. No.	Part No.	Part Name & Descriptions	Q'ty
*1	ETC9070	POWER UNIT	1
*2	ETC9071	SUPPLY UNIT	1
3	2050316001	4P TERMINAL	2
4	2546140005	10000μF ±20% 80V ELECTROLYTIC (C105~C112)	8
5	4119029101	FRONT CHASSIS	1
6	4439015002	P.W. SPACER	3
7	4159016019	P.C.B HOLDER	4
8	4450048016	CORD HOLDER (L50)	6
9	4121477000	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	4159001008	F.S WASHER	4
*16	1059065008	BACK PANEL	1
17	4129041001	PWB SUPPORT	2
18	2038161003	5P CONNECTOR CORD	1
19	4159014008	PROTECTOR SHEET	2
⚠ *20	2062039004	AC CORD (POLARIZED)	1
⚠ 21	4450020005	CORD BUSH (4K4)	1
22	1129024102	VR KNOB (LEVEL)	2
23	4179016002	POWER RADIATOR	2
24	2710181000	2SA1386ALB(O)/IY)	4
25	2730300007	2SC3519ALB(O)/(Y)	4

Ref. No.	Part No.	Part Name & Descriptions	Q'ty
26	4150234007	INSULATING SHEET	8
27	4129060008	RADIATOR BRACKET (R)	2
28	4129061007	RADIATOR BRACKET (F)	2
29	1059067200	BOTTOM COVER	1
30	1040027107	FOOT	4
⚠ 31	2339555004	POWER TRANS	1
32	2034318009	3P CONNECTOR CORD	1
33	2034318012	3P CONNECTOR CORD	1
*34	4450033005	WIRE CLAMP BAND	6
35	1229006017	SPACER	1
*36	1449036003	FRONT, PANEL	1
37	1469056005	ESC PLATE (P)	1
38	1469057004	ESC PLATE (SP)	1
39	1469061207	KNOB GUIDE (SP)	1
40	1469062206	KNOB GUIDE (P)	1
41	1439031102	LENS ASS'Y	1
42	1469059002	SIDE ESC PLATE (R)	1
43	1469060004	SIDE ESC PLATE (L)	1
44	1139087100	PUSH KNOB (PROTECTOR)	1
45	1139081106	PUSH KNOB ASS'Y (P)	1
46	1139084103	PUSH KNOB ASS'Y (SP)	2
47	1029016003	TOP COVER	1
48	4619001043	RUBBER SHEET	4
★49	5139148029	FUSE LABEL	1
★50	5139148032	FUSE LABEL	1

Ref. No.	Part No.	Part Name & Descriptions	Q
★51	5139148003	FUSE LABEL	
★52	5139148016	FUSE LABEL	
53	4129081100	SUPPORT BRACKET	
SCREWS & WASHER			
*101	4737002034	TAPPING SCREW (S) 3x6 (BLACK)	7
102	4737002021	TAPPING SCREW (S) 3x8 (BLACK)	1
103	4737007000	TAPPING SCREW (S) 4x8 (BLACK)	2
104	4737500044	TAPPING SCREW (P) 3x8 (BLACK)	
105	4700012022	CROSS PAN SCREW WITH S.W, W 3x12	
106	4737007039	TAPPING SCREW (S) 4x20 (BLACK)	
107		NUT M7	
108	4737002005	TAPPING SCREW (S) 3x6	
PACKING & ACCESSORIES (not included EXPLODED VIEW)			
*201	5138266009	DANGEROUS MARK	
*202	5138300004	LA APPROVAL MARK	
203	5049102003	STYLEN PAPER	
204	5050075051	CABINET COVER	
205	5039126109	CUSHION	
206	5019128004	CARTON CASE	
207	5119179005	INST MANUAL	
*208	5150349108	WARRANTY IN ENVELOPE	

⚠ ▩ Means important safety item, which must be replaced, when necessary, by a part specified or meeting the specification by the manufacturer.

6 | 7



Ref. No.	Part Name & Descriptions	Part No. EP for PX(multi. voltage)	Part No. E2 for Europe	Part No.
1	POWER UNIT	ETC9070	ETC9070B	
2	SUPPLY UNIT	ETC9071D	ETC9071B	
16	BACK PANEL	1059065011	1059065024	
⚠20	ACCORD	2006031026	2062002031	
⚠31	POWER TRANS	2339558001	2339559001	
34	WIRE CLAMP BAND	4450033005(10)	4450033005(6)	
36	FRONT PANEL	1449036003	1449036003	
60	VOLTAGE SEL SW	2120186006	–	
61	BRACKET (B)	4129065003	–	
62	SAFETY COVER	4149022000	–	
63	PUSH RIVET	4770210016(2)	–	
64				
101	TAPPING SCREW (S) 3x6 (BLACK)	4737002034(81)	4737002034(75)	
201	DANGEROUS MARK	–	–	
202	LA APPROVAL MARK	–	–	
208	WARRANTY IN ENVELOPE	5158052206	–	
209	CONTROL CARD	–	5138295009	
210	COLOR LABEL (BLACK)	–	513911014(2)	
211	PRESET LABEL	5150290008	–	

ptions	Q'ty
	1
	1
	2
(BLACK)	75
(BLACK)	11
(BLACK)	20
(BLACK)	6
H S.W, W	8
20 (BLACK)	4
	2
	8
ODED VIEW)	
	1
	1
	1
	1
	2
	1
	1
DPE	1

DENON

WARNING:

1. Component parts
Parts marked with ⚠ and/or shading in this service manual have special characteristics important to safety. Be sure to use the specified parts for replacement.

2. Leakage current
Before returning the appliance to customer, test the leakage current when the power plug is connected. Use a calibrated (with an error of not more than 5%) leakage current tester and measure the leakage current from any exposed metal to the earth ground. Reverse the power plug polarity and test the above again.
Any current measured MUST NOT EXCEED 0.5 milliamps. Corrective measure must be taken if it exceeds the limit.

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.

ADDENDUM LIST

NIPPON COLUMBIA CO., LTD.
No. 14-14, 4-CHOME AKASAKA,
MINATO-KU, TOKYO 107 JAPAN
TEL: 03-584-8111
TLX: JAPANOLA J22591
CABLE: NIPPONCOLUMBIA TOKYO

Printed in Japan 606 BU 0039