

DENON

Hi-Fi Integrated Amplifier

SERVICE MANUAL MODEL PMA-700V

SOLID STATE
INTEGRATED AMPLIFIER



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NIPPON COLUMBIA CO., LTD.

SPECIFICATIONS

POWER AMPLIFIER SECTION

Rated Output Power: Both channel drives (TUNER → SP OUT)
100 Watts minimum rms per channel (8 ohm Load) with less than 0.02% total harmonic distortion from 20 Hz to 20 kHz.
1 kHz (4 ohm Load) 150 W + 150 W (DIN, T.H.D 1%)
1 kHz (6 ohm Load) 120 W + 120 W (IEC, Subject to change by temperature test)

Total Harmonic Distortion: 0.004% (20 Hz – 20 kHz at –3 dB rated output 8 ohm Load)
0.0025% (1 kHz at rated output 8 ohm Load)

Input Sensitivity: 150 mV

Input Impedance: 30 k ohm

EQUALIZER AMPLIFIER SECTION

Equalizer Amplifier Output: (REC OUT Terminal) Rated Output: 150 mV

Input Sensitivity/Input Impedance:

PHONO MM	2.5 mV	47 k ohm
MC	200 μV	100 ohm

CD, VIDEO-1, VIDEO-2, TUNER/AUX, TAPE

RIAA Deviation:

PHONO MM	150 mV	30 k ohm	within ±0.2 dB (20 Hz – 20 kHz)
MC			within ±0.3 dB (20 Hz – 100 kHz)

Maximum Input Voltage:

PHONO MM	160 mV/1 kHz
MC	12 mV/1 kHz

OVERALL CHARACTERISTICS

SN Ratio (IHFA Network): PHONO MM 94 dB (input terminals short-circuited for 5 mV input)
MC 75 dB (input terminals short-circuited for 500 μV input)

TUNER/AUX, CD, TAPE, VIDEO-1, VIDEO-2 107 dB (input terminals short-circuited)

Tone Control Adjustable Range: BASS 100 Hz ±10 dB
TREBLE 10 kHz ±10 dB

Filtering Characteristics: SUBSONIC 16 Hz, 12 dB/oct

Loudness Characteristics: Low frequency 100 Hz + 7 dB
High frequency 10 kHz + 6 dB

AC OUTLET:
(For U.S.A., Canada and Asia)

SWITCHED x 2, 100 W (Total)
UNSWITCHED x 1, 250 W
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 110/120/220/240 V, 50/60 Hz (Multiple)

POWER SOURCE: 3.8 A (U.S.A. & Canada); 220 W (IEC), 190W (Multiple)

DIMENSIONS: 434 mm (17-5/64")W x 157 mm (6-3/16")H x 397 mm (15-5/8")D (including rubber feet, control knobs, and terminals.)

WEIGHT: 10.5 kg (23 lbs 2 oz)

Design and specifications are subject to change without prior notice.

NOTE: The following codes correspond to the appropriate models.
E3 for U.S.A., EA for Australia, EC for Canada
This Service Manual is prepared based on E2 for 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 E 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

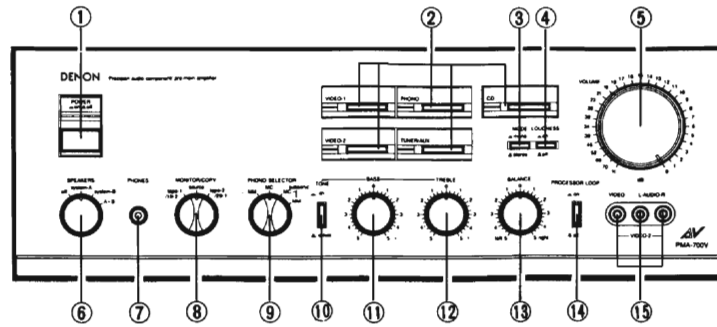


Fig. 1

- | | |
|--|--|
| ① POWER and LED indicator
(Power supply button and LED indicator) | ⑦ PHONES (Headphone Jack) |
| ② INPUT SELECTOR (Input signal selection button)
● CD, ● PHONO, ● TUNER/AUX., ● VIDEO-1,
VIDEO-2 | ⑧ MONITOR COPY (Tape monitor/Copy switch) |
| ③ MODE (Mode button)
● Stereo, ● Mono | ⑨ PHONO SELECTOR (Cartridge selection/Subsonic
filter switch) |
| ④ LOUDNESS (Loudness button) | ⑩ TONE (Tone switch) |
| ⑤ VOLUME (Adjustment of the volume) | ⑪ BASS (Regulation of low notes) |
| ⑥ SPEAKERS (Speaker selection switch)
● system-A, ● system-B, ● A+B, ● off | ⑫ TREBLE (Regulation of high notes) |
| | ⑬ BALANCE (Balance adjustment) |
| | ⑭ PROCESSOR LOOP (Processor loop switch) |
| | ⑮ FRONT VIDEO-2 (Extra front panel input terminal) |

Video Input Function

The PMA-700V provides a video input function. The image selection circuitry gives preference to VIDEO-1 for all settings of the INPUT SELECTOR button, unless VIDEO-2 has been specified. This function might be used, for example, to watch a TV monitor while playing a compact disc. In this case it would connect the image input circuitry of the VIDEO-1 terminal to the image output of a video recorder, tape recorder, or video disc recorder. The resultant monitor out signal would be sent to the TV monitor, for "background video" audio-visual entertainment combining sound and images.

Note:

Please note the following differences in the markings on the front and back panels on the European models:

VIDEO-1 → AUX/VIDEO 1
VIDEO-2 → AUX/VIDEO 2
TUNER/AUX → TUNER

In addition, there is no AV mark on the front panel.

REMOVAL OF EACH SECTION
(When assembling, do reversely as to disassembling.)

1. Removal of Top Cover

- Remove 8 screws and detach the top cover as per arrow in Fig. 2.

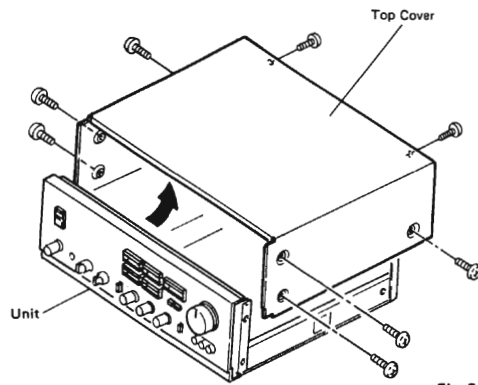


Fig. 2

2. Removal of Back Panel

- Remove 3 screws (A) and 7 screws (B) as per Fig. 3. Also remove screw (C) and detach back panel from the unit.

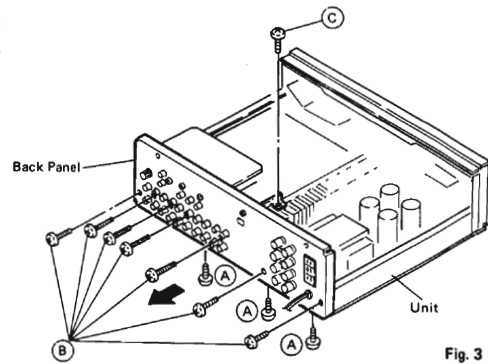


Fig. 3

3. Removal of Front Panel Ass'y

- Remove 4 screws (D) and remove 2 screws (E). And draw out front panel ass'y.

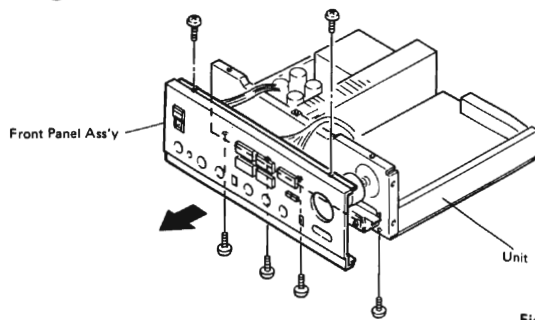


Fig. 4

CONNECTIONS

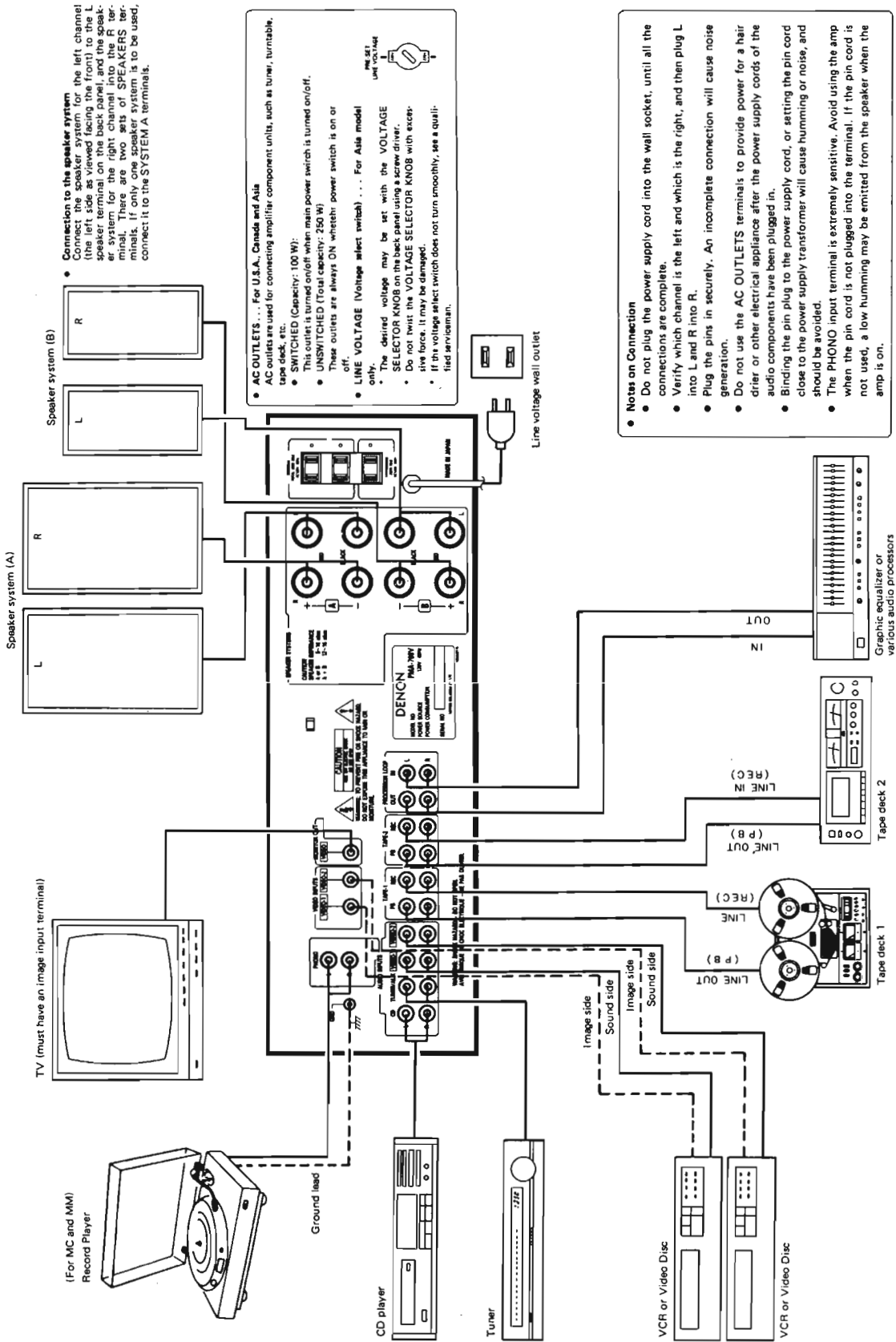


Fig. 5

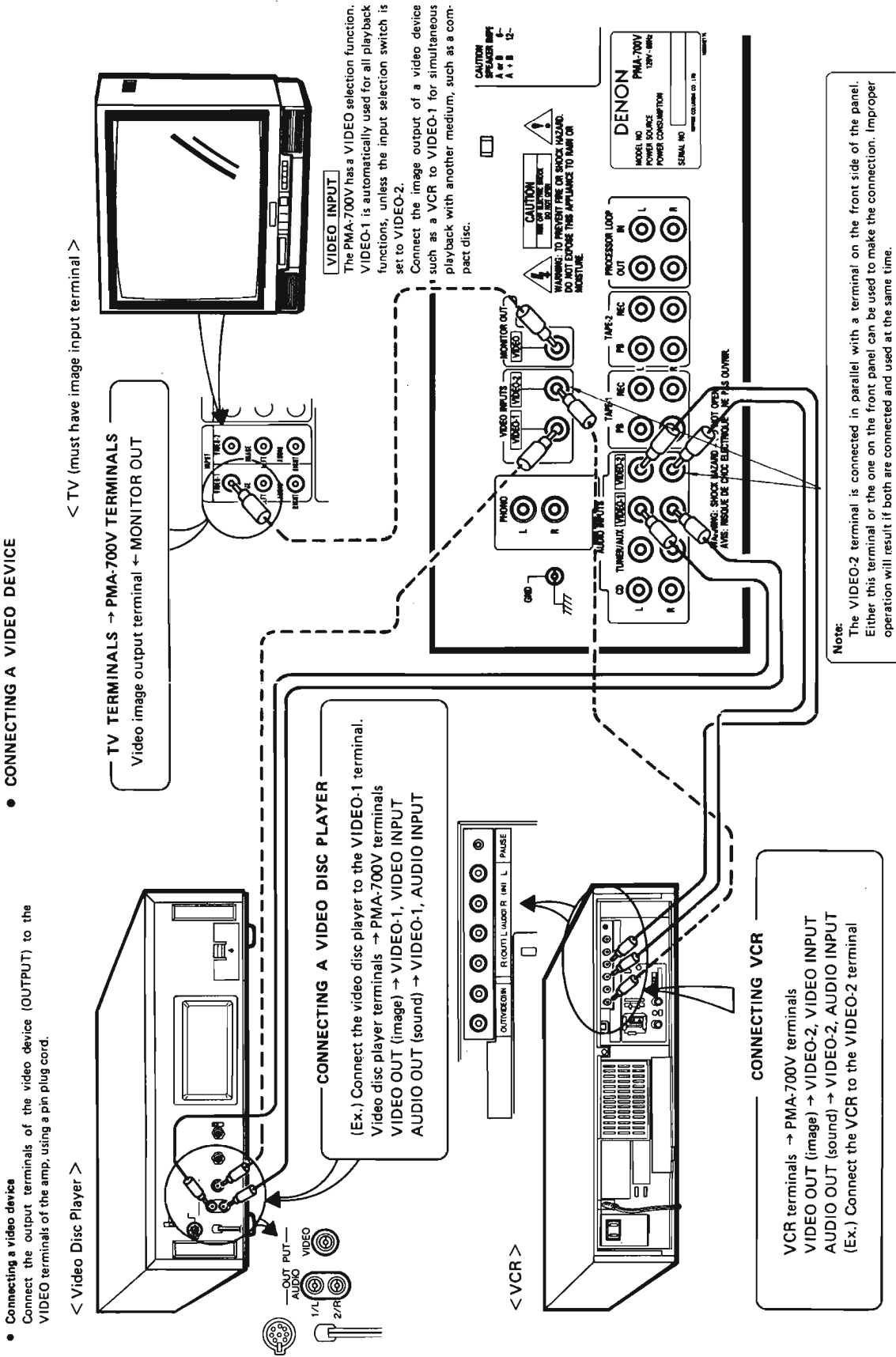


Fig. 6

METHOD OF ADJUSTMENTS

BLOCK DIAGRAM

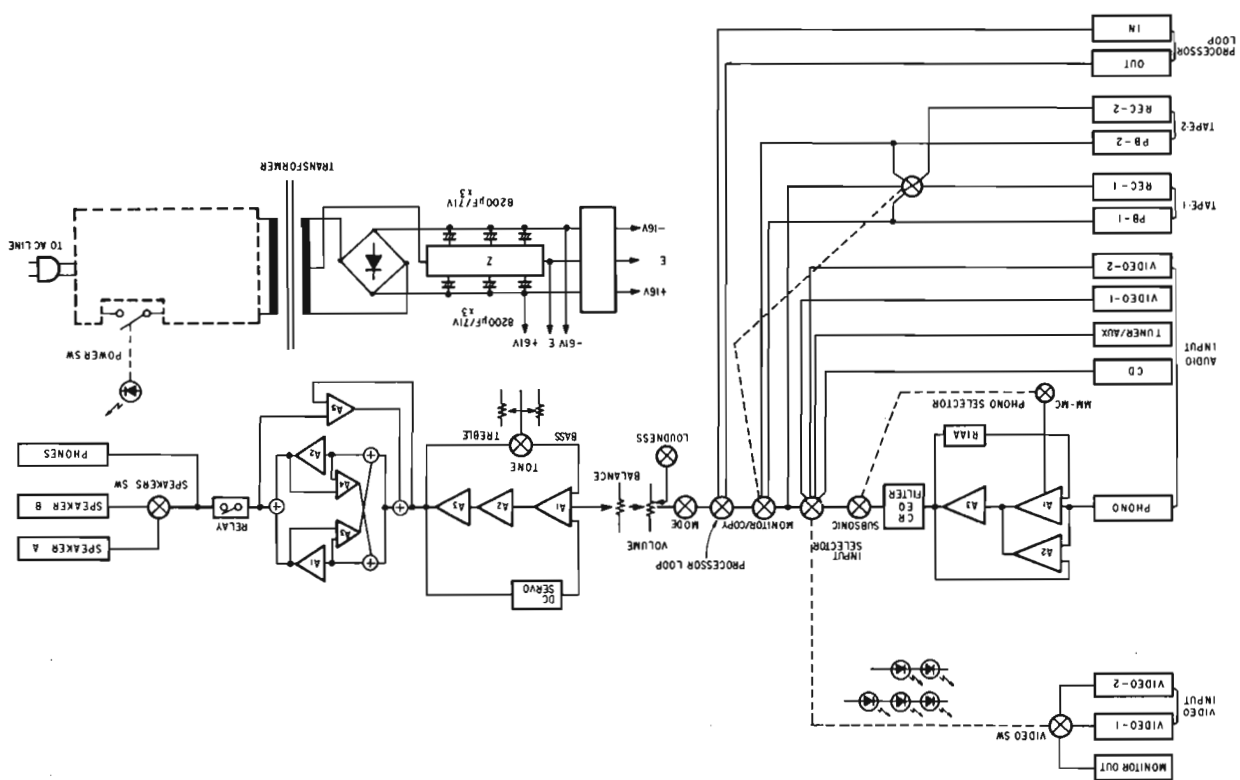


Fig. 7

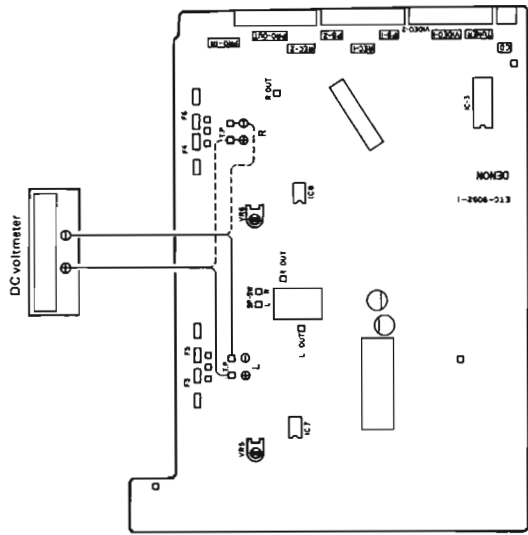


Fig. 8

IDLING CURRENT

- Setup
 1. Lay the unit at an ordinary position away from a direct current from a cooler or fan. Do the adjustment at a temperature between 15°C and 30°C.
 2. Set controls as follows.
 - POWER SWITCH → off (■)
 - VOLUME CONTROL → fully counterclockwise (∞ min)
 - SPEAKER Terminals → open: do not connect the speakers, dummy load etc.
- Adjustment
 1. Remove Top cover. And then connect DC Voltmeter to Test points of ETC-9052:1 (INPUT & POWER Unit). (Fch) clockwise so that the DC voltmeter reads.
 - 0.4 ± 0.1 mVDC
 - 5 ± 0.5 mV
 - 8 ± 3 mV
 2. Connect Power cord to AC outlet, and turn Power Switch "on" (■). Within 10 seconds turn VR5 (Lch) and VR6 (Rch) clockwise so that the DC voltmeter reads.
 3. Then after 5 minutes warmup adjust VR5 and VR6 so that the DC Voltmeter reads.
 - 5 ± 0.5 mV
 - 8 ± 3 mV
 4. And after 15 minutes warmup adjust VR5 and VR6 so that the DC Voltmeter reads.
 - 5 ± 0.5 mV
 - 8 ± 3 mV

SEMICONDUCTORS

• IC's

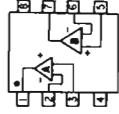
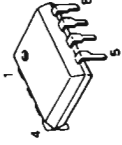
TC9152P (Toshiba)



FUNCTION OF EACH TERMINAL

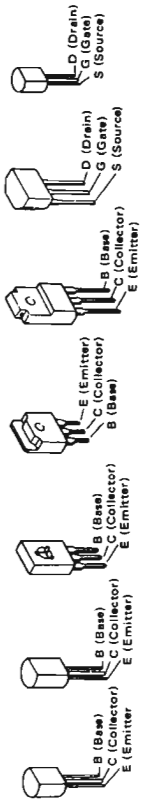
TERMINAL NO.	SYMBOL	FUNCTION	REMARKS
2	INH	Inhibit input terminal. Normal operation at "H" level, inhibit operation at "L" level.	
3	OSC	C.R connecting terminal for oscillator. With this oscillation frequency, muting time and switching time of analog will be set.	
4	ALL-OFF	Specified OFF input terminal of all analog switches. Applying "H" level to turn off all analog switches.	
5	MUTE	Output terminal of muting signal. By receiving of "H" level at select input terminals (SEL-1 ~ SEL-5), this terminal becomes "H" level for settled time and within this time analog switch will shift.	
23	SEL-1	Select input terminals for respective analog switches. Turn SEL-1 ~ SEL-5 terminals to "H" level to turn on respective analog switches.	
22	SEL-2		
21	SEL-3		
20	SEL-4		
19	SEL-5		
6/18	SIG-A1 SIG-B1	Signal input terminal 1. Select SEL-1 to turn on analog switch 1 and this terminal will conduct to COM terminal.	
7/17	SIG-A2 SIG-B2	Signal input terminal 2. Select SEL-2 to turn on analog switch 2 and this terminal will conduct to COM terminal.	
8/16	SIG-A3 SIG-B3	Signal input terminal 3. Select SEL-3 to turn on analog switch 3 and this terminal will conduct to COM terminal.	
9/15	SIG-A4 SIG-B4	Signal input terminal 4. Select SEL-4 to turn on analog switch 4 and this terminal will conduct to COM terminal.	
10/14	SIG-A5 SIG-B5	Signal input terminal 5. Select SEL-5 to turn on analog switch 5 and this terminal will conduct to COM terminal.	
11/13	COM-A COM-B	Common terminal for analog switches.	
24	VDD	Power supply voltage applying terminal.	
1	VSS1	For control system VDD-VSS1.	
12	VSS2	For analog switch system VDD-VSS2.	

ME2189 (Mitsubishi)
LAG456DP (Sanyo)



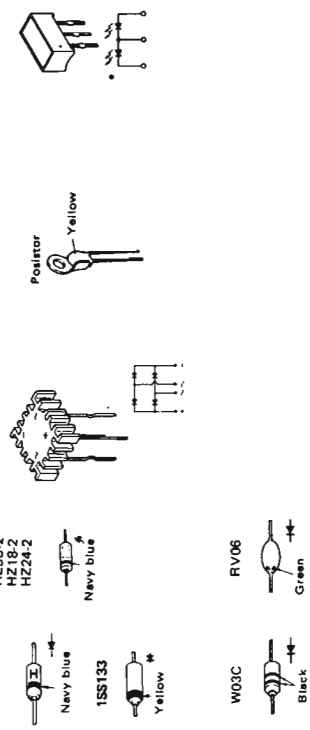
• TRANSISTORS (including FET)

- 2SA1015(Y) 2SA949(O/Y) 2SA1358(Y/O) 2SA1104(O/Y) 2SA1306(O/Y) 25A1369(B/L)/(G/B)/C
- 2SC1815(B/L) 2SC2229(O/Y) 2SC1815(B/L) 2SC2229(O/Y) 2SC1815(B/L) 2SC2229(O/Y)
- 2SA988E(F) 2SC1841(E/F) 2SC3421(Y/O) 2SC2579(O/Y) 2SC3288(O/Y)
- 2SK1701(B/L)/V/DVGS FET 2SK381(C)/ID FET 2SK3288(O/Y) (Black)



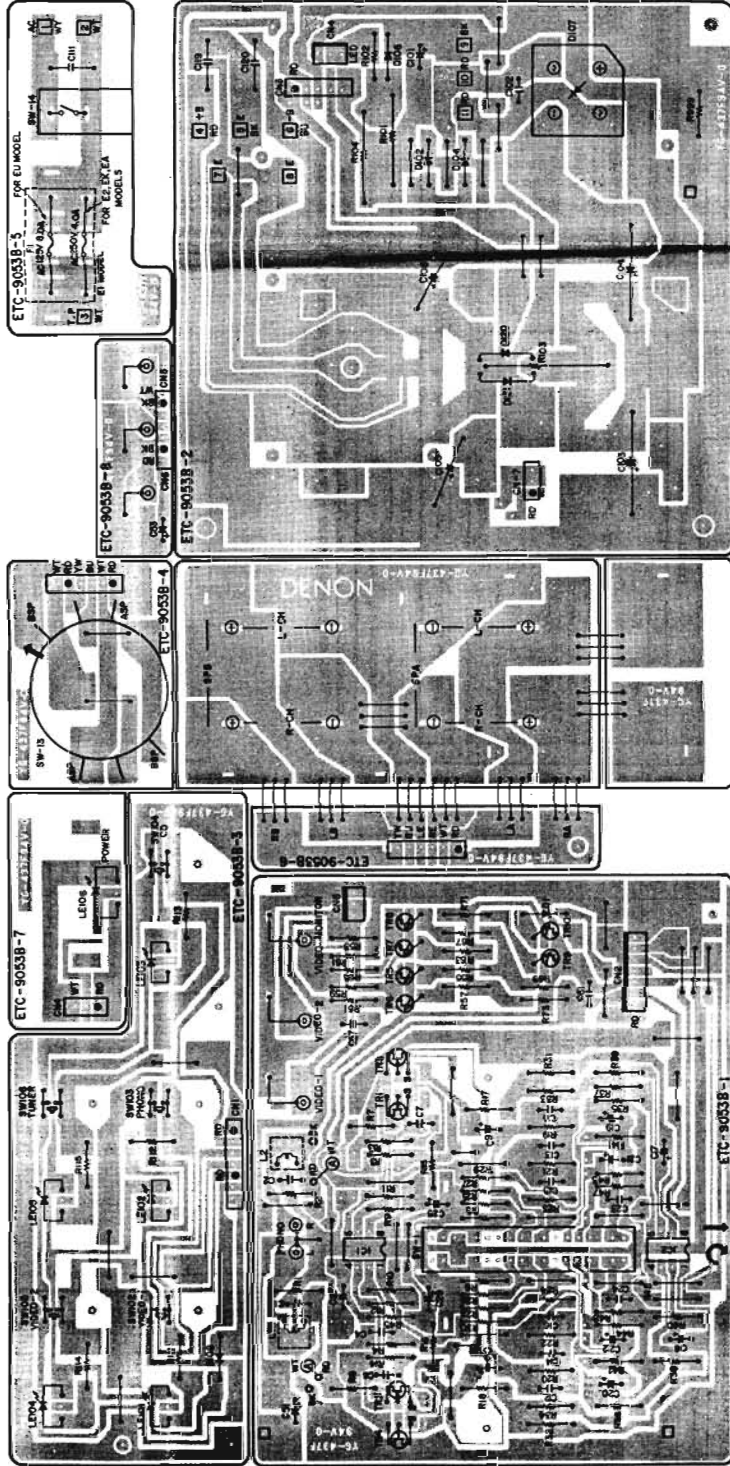
• DIODES (including LED)

- 1S2076A
- HZ5C-1
- HZ7B-3
- HZ9B-2
- HZ18-2
- HZ24-2
- 1SS133
- W03C
- RV06
- LED LD-001VR (Red)
- LED LD-001DU (Orange)



PRINTED WIRING BOARD PATTERNS AND PARTS LIST

ETC9053B EQ. & PS UNIT



ETC0953B EQ. & PS UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions
		SEMICONDUCTORS
IC001	2630257001	M-5218P IC (MITSUBISHI)
IC002	2630229013	LA-6948DF IC (SANYO)
TR001	2750038045	2SK36918(L)(GRVC) FET
TR005	2710102005	2SA1015(Y) TRANSISTOR
TR006	2730198015	2SC1815(BL) TRANSISTOR
TR007	2710102005	2SA1015(Y) TRANSISTOR
TR008	2730198015	2SC1815(BL) TRANSISTOR
	~010	
DI01	2760220021	HZ24-2 ZENER
DI02	2760191008	W03C DIODE
DI06	2760249002	HZ18-2 ZENER
DI07	2760356005	D5FF20(4001) DIODE
DI08	2760249002	HZ18-2 ZENER
DI20	2760237001	RV06 DIODE
DI21	121	
LD101	3939310004	LD-001VR LED (INPUT)
LD105	3939310017	LD-001DU LED (POWER)
LD106	2440103028	RESISTORS (not included Carbon Film ±5%, T/W type)
RT101	2440103028	2.7k ohm ±5% 2W METAL OXIDE FILM (NBF)
RT103	2430032002	0.47 ohm ±5% 5W METAL OXIDE FILM (NBF)
RT104	2440103028	2.7k ohm ±5% 2W METAL OXIDE FILM (NBF)

ETC9053B EQ. & PS UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions
		CAPACITORS
CO01	2533631009	160pF ±5% 50V CERAMIC
CO07	2551134025	0.01µF ±5% 50V PLASTIC FILM
CO08	2544161021	100µF ±20% 6.3V ELECTROLYTIC
CO09	2551140048	0.068µF ±5% 50V PLASTIC FILM
CO10	2551140048	0.018µF ±5% 50V PLASTIC FILM
CO11	2544149004	1500pF ±5% 50V PLASTIC FILM
CO12	2544161021	100µF ±20% 6.3V ELECTROLYTIC
CO13	2544147003	2.2µF 50V ELECTROLYTIC
CO19	2544146004	1µF 50V ELECTROLYTIC
CO20	2544146004	3300pF ±5% 50V PLASTIC FILM
CO21	2544157009	1µF 50V ELECTROLYTIC
CO22	2544146004	10µF 50V ELECTROLYTIC
CO23	2544146004	1µF 50V ELECTROLYTIC
CO24	2544130007	10µF ±20% 35V ELECTROLYTIC
CO25	2544146004	1µF 50V ELECTROLYTIC
CO27	2544130007	10µF ±20% 35V ELECTROLYTIC
CO29	254414007	10µF 50V ELECTROLYTIC
CO31	2544146004	1µF 50V ELECTROLYTIC
CO32	2544146004	1µF 50V ELECTROLYTIC
CO51	2544146004	1µF 50V ELECTROLYTIC
CO53	2544146004	1µF 50V ELECTROLYTIC

ETC9053B EQ. & PS UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions	Qty
C057	2531024003	0.01µF ±80, -20% 50V CERAMIC	1
C061	2531024003	0.01µF ±80, -20% 50V CERAMIC	1
C101	2544060009	10µF 100V ELECTROLYTIC	60
C102	2538011006	0.01µF ±80, -20% 250V (AC) CERAMIC	10
C103	2546084009	8200pF ±20% 63V ELECTROLYTIC	2
	~108		
AC111	2038008014	0.0047µF ±100, -0% 400V (AC) CERAMIC	1
C591	2531008003	4700pF ±10% 50V CERAMIC	1
	~594		
		SWITCHES & COILS	
SW001	2129521002	SLIDE SW REMOTE (PHONO)	
SW013	2129522001	ROTARY SWITCH (SPEAKER)	
ASW014	2129526008	POWER SWITCH	
SW102	2124407008	TACT SWITCH (INPUT)	
	~108		
L001	2359003002	FTZ CHOKE COIL	
	002		
		OTHER PARTS	
	2220054107	JUMPER WIRE #10mm	1
	2030009120	TERMINAL PIN L-21mm	60
	EP-5657H4	FUSE HOLDER	10
	3030022008	FUSE (A1) (MINI SIZE)	2
	2051016687	WITCH (AND RUSH)	1
AF001			

Ref. No.	Part No.	Part Name & Descriptions
	2050274004	2P CONNECTOR BASE
	2050240009	3P CONNECTOR BASE
	2048182014	3P CONNECTOR BASE
	2050273005	4P TERMINAL
	4450057010	CORD CLIP
CH001	2042052098	7P NH CONNECTOR CORD (TACT SW & LED)
CH002	2050190078	7P NH CONNECTOR BASE (EQ & VIDEO SW)
CH003	2038123067	5P NH CONNECTOR CORD
CH004	2050190038	5P WIRE HOLDER (4- & MUTING)
CH005	2050190038	5P WIRE HOLDER (4- & MUTING)
CH006	2034186012	3P CONNECTOR CORD (POWER LED)
CH007	2050185038	3P WIRE HOLDER (POWER LED)
CH008	2050190038	3P NH CONNECTOR BASE (PC-LED)
CH009	2034282009	3P CONNECTOR CORD (FRONT VIDEO-2)
CH010	2034200023	3P CONNECTOR CORD (IF. VIDEO-2, BK)
CH011	2050185067	6P WIRE HOLDER (VIDEO-2)
CH012	2050243077	7P WIRE HOLDER (TACT SW & LED)
CH013	2030241028	1P CONTACT ASS'Y (FRONT VIDEO-2)

E1, EP1 for Asia ETC9053D
(Same as ETC9053B for E2) except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
		RESISTORS
R001-002	2412100004	2.2k ohm ±5% 1/4W CARBON DELETE
R047-048	2412128002	33k ohm ±5% 1/4W CARBON ADD.
		CAPACITORS
C031-032	2544141009	10µF 35V ELECTROLYTIC ADD
C111	2539010007	0.01µF +100,-0% 400V (AC) CERAMIC DELETE
C591-594	2531008003	4700pF ±15% 50V CERAMIC DELETE
		SWITCH & COILS
SW014 L001-002	2129525008	POWER SWITCH DELETE
	2356003002	FTZ CHOKE COIL (2) DELETE
		OTHER PARTS
F001	2070022008	FUSE 100mA-100V (2) DELETE
	2416101807	FUSE 1A DELETE

EK for U.K. and EA for Australia ETC9053F
(Same as ETC9053B for E2) except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
		RESISTORS
R001-002	2412100004	2.2k ohm ±5% 1/4W CARBON DELETE
		SWITCH & COILS
L001-002	2359003002	FTZ CHOKE COIL (2) DELETE

EC for Canada ETC9053L
(Same as ETC9053B for E2) except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
		RESISTORS
R001-002	2412100004	2.2k ohm ±5% 1/4W CARBON DELETE
		CAPACITORS
C001-002	2554121006	100pF ±5% 50V PLASTIC FILM ADD.
C001-002	2533631009	150pF ±5% 50V CERAMIC DELETE
C111	2539010007	0.01µF +10,-0% 400V (AC) CERAMIC DELETE
C111	2539011006	0.01µF +80,-20% 250V (AC) CERAMIC ADD.
C591-594	2531008003	4700pF ±10% 50V CERAMIC DELETE
		SWITCH & COILS
SW014 L001-002	2129525008	POWER SWITCH DELETE
	2356003002	FTZ CHOKE COIL (2) DELETE
		OTHER PARTS
F001	2007019007	FUSE 1A DELETE
	2026011008	FUSE HOLDER (2) DELETE

EU for U.S.A. ETC9053E
(Same as ETC9053B for E2) except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
		RESISTORS
R001-002	2412100004	2.2k ohm ±5% 1/4W CARBON DELETE
		CAPACITORS
C001-002	2554121006	100pF ±5% 50V PLASTIC FILM ADD.
C001-002	2533631009	150pF ±5% 50V CERAMIC DELETE
C111	2539010007	0.01µF +100,-0% 400V (AC) CERAMIC DELETE
C111	2539011006	0.01µF +80,-20% 250V (AC) CERAMIC ADD.
C591-594	2531008003	4700pF ±10% 50V CERAMIC DELETE
		SWITCH & COILS
SW014 L001-002	2129525008	POWER SWITCH DELETE
	2356003002	FTZ CHOKE COIL (2) DELETE
		OTHER PARTS
F001	2007019007	FUSE 1A DELETE
	2026011008	FUSE HOLDER (2) DELETE

ETC9052B INPUT & POWER UNIT PARTS LIST

Ref. No.	Part No.	Part Name & Descriptions
		SEMICONDUCTORS
IC003	2620581004	TC9152P IC (TOSHIBA)
IC005	2630257001	M5218P IC (MITSUBISHI)
TR151	2730198015	25C1815(BL) TRANSISTOR
TR152	2710102005	25A1015(Y) TRANSISTOR
TR155	2730198015	25C1815(BL) TRANSISTOR
TR156	2730253015	25C2878(A/B) TRANSISTOR
TR201	2730198015	25C7815(BL) TRANSISTOR
TR202	2730235020	25C1841(E/F) TRANSISTOR
TR204	2710102005	25A1015(Y) TRANSISTOR
TR205	2730253015	25C2878(A/B) TRANSISTOR
TR206	2730198015	25C1815(BL) TRANSISTOR
TR207	2710102005	25A1015(Y) TRANSISTOR
TR209	2730235020	25C342(O/Y) TRANSISTOR
TR210	2710195009	25A1386(O/Y) TRANSISTOR
TR211	2750043001	25K3818(B)(C) FET
TR401	2750046008	25K17018(B)(V)D VGS FET
TR402	2730235020	25C1841(E/F) TRANSISTOR
TR409	2710185006	25A949(O)(Y) TRANSISTOR
TR415	2730307000	25C2229(O)(Y) TRANSISTOR
TR417	2710185006	25A949(O)(Y) TRANSISTOR
TR419	2730307000	25C2229(O)(Y) TRANSISTOR
TR501	2730198015	25C1815(BL) TRANSISTOR
TR502	2730307000	25C2229(O)(Y) TRANSISTOR
TR505	2710185006	25A949(O)(Y) TRANSISTOR
TR507	2730324009	25C3298(O)(Y) TRANSISTOR
TR508	2710196008	25A1306(O)(Y) TRANSISTOR
D152	2760401002	1SS133 DIODE
D171	2760401002	1SS133 DIODE
D201	2760049011	1S2076A DIODE
D202	2760248002	HZ18-2 ZENER
D208	2760049011	1S2076A DIODE
D401	2760401002	1SS133 DIODE
D501	2760218033	HZ9B-2 ZENER
D504	2760236031	HZ5C-1 ZENER
D505	2760236031	HZ5C-1 ZENER
D506	2760236031	HZ5C-1 ZENER
D507	2760236031	HZ5C-1 ZENER
D510	2760401002	1SS133 DIODE
D511	2760401002	1SS133 DIODE
D523	2760049011	1S2076A DIODE
D526	2760401002	1SS133 DIODE
D527	2760401002	1SS133 DIODE
D531	2760049011	1S2076A DIODE
D532	2760049011	1S2076A DIODE
		RESISTORS (not included Carbon Film ±5%, 1/4W Type)
R201	2440038026	560 ohm ±5% 1W METAL OXIDE FILM (NBF)
R557	2440037028	470 ohm ±5% 1W METAL OXIDE FILM (NBF)
R413	2440036054	240 ohm ±5% 1/4W CARBON (NBF)
R414	2412319087	1k ohm ±5% 1/4W CARBON (NBF)
R417		
R418		
		CAPACITORS
C055	2544132005	10µF 16V ELECTROLYTIC
C059	2544146004	1µF 50V ELECTROLYTIC
C151	2551001006	0.001µF ±5% 50V PLASTIC FILM
C155	2544164031	220pF ±20% 25V ELECTROLYTIC
C157	2531024003	0.01µF +80,-20% 50V CERAMIC
C201	2544146004	1µF 50V ELECTROLYTIC
C202	2544146004	1µF 50V ELECTROLYTIC
C203	2554137003	470pF ±5% 50V PLASTIC FILM
C204	2544146004	10µF 35V ELECTROLYTIC
C205	2544146004	10µF 35V ELECTROLYTIC
C206	2544060002	470pF ±10% 50V CERAMIC
C207	2544132005	10µF 16V ELECTROLYTIC
C301	2531004007	1000pF ±10% 50V CERAMIC
C303	2551140051	0.082µF ±5% 50V PLASTIC FILM
C304	2554121006	100pF ±5% 50V PLASTIC FILM
C401	2554137003	470pF ±5% 50V PLASTIC FILM
C403	2554137003	470pF ±5% 50V PLASTIC FILM
C405	2531008003	4700pF ±10% 50V CERAMIC
C406	2531008003	4700pF ±10% 50V CERAMIC
C407	2534289001	100pF ±0.5pF 500V CERAMIC
C408	2531024003	0.01µF +80,-20% 50V CERAMIC
C410	2534355009	5pF ±0.25pF 500V CERAMIC
C412	2533627000	100pF ±5% 50V CERAMIC
C413	2533627000	100pF ±5% 50V CERAMIC
C414	2533643000	470pF ±5% 50V CERAMIC
C415	2533643000	470pF ±5% 50V CERAMIC
C416	2544150003	10µF 50V ELECTROLYTIC
C417		
C418		

Ref. No.	Part No.	Part Name & Descriptions	Ref. No.	Part No.	Part Name & Descriptions	Q'ty
C419, 420	2534273000	15pF ±5% 500V CERAMIC	F003 ~006	2020022008	FUSE HOLDER (+ - B)	8
C421, 422	2534271002	12pF ±0.5pF 500V CERAMIC		2050274004	2P CONNECTOR BASE	1
C425, 426	2544146004	1μF 50V ELECTROLYTIC	CN001	2050152003	6P CONNECTOR BASE	3
C427	2544060038	0.47μF 100V ELECTROLYTIC		2050190078	7P NH CONNECTOR BASE (TACT SW & LED)	1
C428	2544181001	1μF ±20% 100V ELECTROLYTIC	CN002	2050185070	7P WIRE HOLDER	1
C429, 430	2544161021	100μF ±20% 6.3V ELECTROLYTIC	CN002	2042052014	7P CONNECTOR CORD (EQ & VIDEO SW)	1
C451, 452	2551121041	0.015μF ±5% 50V PLASTIC FILM	CN003	2050190052	5P NH CONNECTOR BASE	1
C453, 454	2551140064	0.12μF ±5% 50V PLASTIC FILM	CN006	2050190036	3P NH CONNECTOR BASE (FRONT VIDEO-2)	1
C457, 458	2551121007	6800pF ±5% 50V PLASTIC FILM		2050190036	3P NH CONNECTOR BASE (POWER INPUT)	1
C459, 460	2551120013	1200pF ±5% 50V PLASTIC FILM	W-003	2050185038	3P WIRE HOLDER	13
C461, 462	2551135095	0.056μF ±5% 50V PLASTIC FILM		2034200010	3P CONNECTOR CORD	1
C465, 466	2533633007	180pF ±5% 50V CERAMIC	F003 ~006	4450033005	WIRE CLAMP BAND	1
C501 ~504	2544139008	100μF 25V ELECTROLYTIC		2061040023	FUSE (6.3A, F)	4
C505, 506	2533603008	10pF ±0.5pF 50V CERAMIC				
C507 ~510	2533639001	330pF ±5% 50V CERAMIC				
C511, 512	2544132005	10μF 16V ELECTROLYTIC				
C513, 514	2544146004	1μF 50V ELECTROLYTIC				
C519 ~522	2531024003	0.01μF +80,-20% 50V CERAMIC				
C523 ~526	2531024003	0.01μF +80,-20% 50V CERAMIC				
C527 ~530	2533627000	100pF ±5% 50V CERAMIC				
C531 ~534	2534281005	33pF ±5% 500V CERAMIC				
C535 ~538	2531005006	1500pF ±10% 50V CERAMIC				
C539, 540	2551121025	0.01μF ±5% 50V PLASTIC FILM				
C541, 542	2551121067	0.022μF ±5% 50V PLASTIC FILM				
C543 ~546	2544181001	1μF ±20% 100V ELECTROLYTIC				
C555, 556	2531024003	0.01μF +80,-20% 50V CERAMIC				
C555, 556	2531024003	0.01μF +80,-20% 50V CERAMIC				
SWITCHES & RELAY						
SW007	2124254002	SLIDE SW (REMOTE) T. MONI				
SW008	2129520003	1P PUSH SW PROCESSOR LOOP				
SW010, 011	2129523000	2P PUSH SW MODE & LOUD				
SW012	2129520003	1P PUSH SW TONE				
RL001	2140037009	RELAY SP 48V				
OTHER PARTS						
						Q'ty
	2229053302	P.W. BOARD				1
	2090008146	JUMPER WIRE P=5mm				15
	2090008120	JUMPER WIRE P=10mm				219
	2090008104	JUMPER WIRE P=15mm				4
J701 ~703						
705						
J018	2090008159	JUMPER WIRE P= mm				1
	EP-5667H1	TERMINAL PIN L=21mm				12
	4170043100	RADIATOR (FOR TR209, 210)				2
	4730354019	TAPPING SCREW (2) 3x8				2
L501, 502	2359001004	INDUCTOR (1μH)				2
	4140240001	EARTH PLATE (GND)				1

E1, EP1 for Asia ETC9052D
 (Same as ETC9052B (for E2) except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
RESISTORS		
R207	2440037026	470 ohm ±5% 1W METAL OXIDE (NB) CHANGE
R525, 526	2412123007	20k ohm ±5% 1/4W CARBON CHANGE
CAPACITORS		
C507 ~510	2533639001	330pF ±5% 50V CERAMIC CHANGE
OTHER PARTS		
F003 ~006	2090008120 2061041035	JUMPER WIRE P=10mm (4) ADD. FUSE (F) 6.3A (4) CHANGE

EU for U.S.A. ETC9052E
 (Same as ETC9052B (for E2) except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
OTHER PARTS		
F003 ~006	5139134004 2061046001	FUSE LABEL ADD. FUSE 6.3AUL ℓ=20mm CHANGE

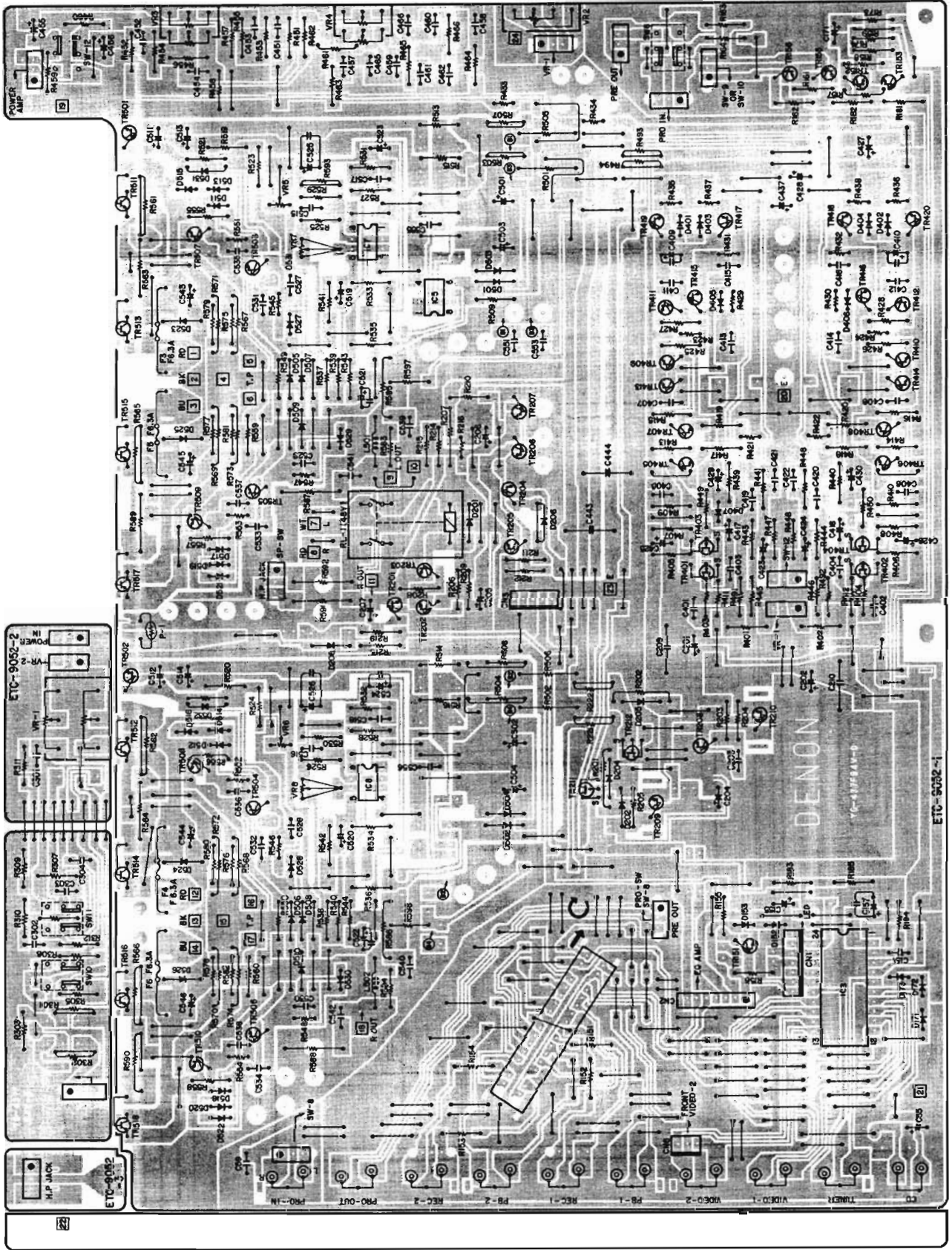
EK for U.K. and EA for Australia ETC9052F
 (Same as ETC9052B (for E2) except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
CAPACITORS		
C424	2544060038	0.47μF 100V ELECTROLYTIC ADD.
C427	2544060038	0.47μF 100V ELECTROLYTIC DELETE

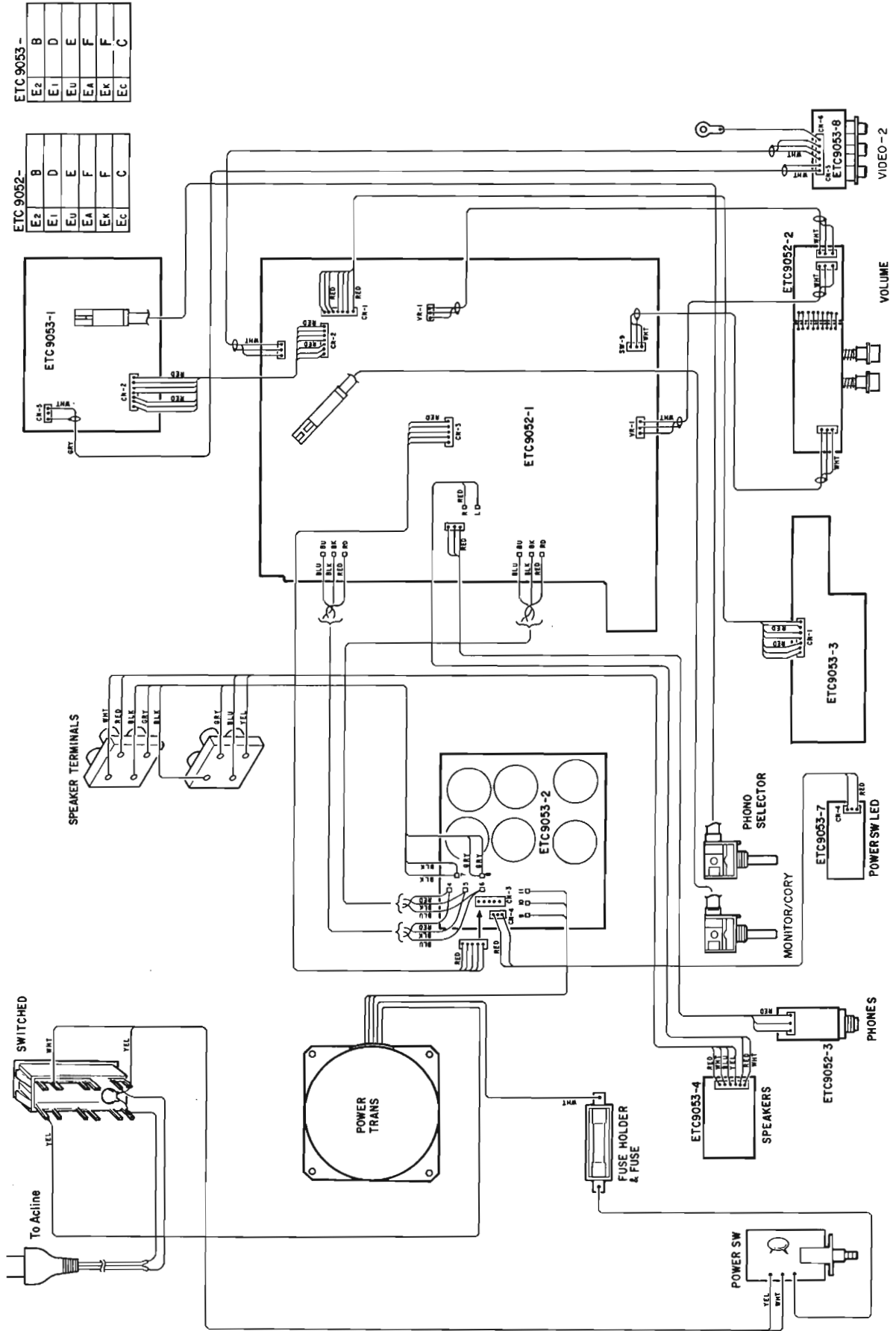
EC for Canada ETC9052L
 (Same as ETC9052B (for E2) except the followings.)

Ref. No.	Part No.	Part Name & Descriptions
F003 ~006	5139134004 2061046001	FUSE LABEL ADD. FUSE 6.3AUL ℓ=20mm CHANGE

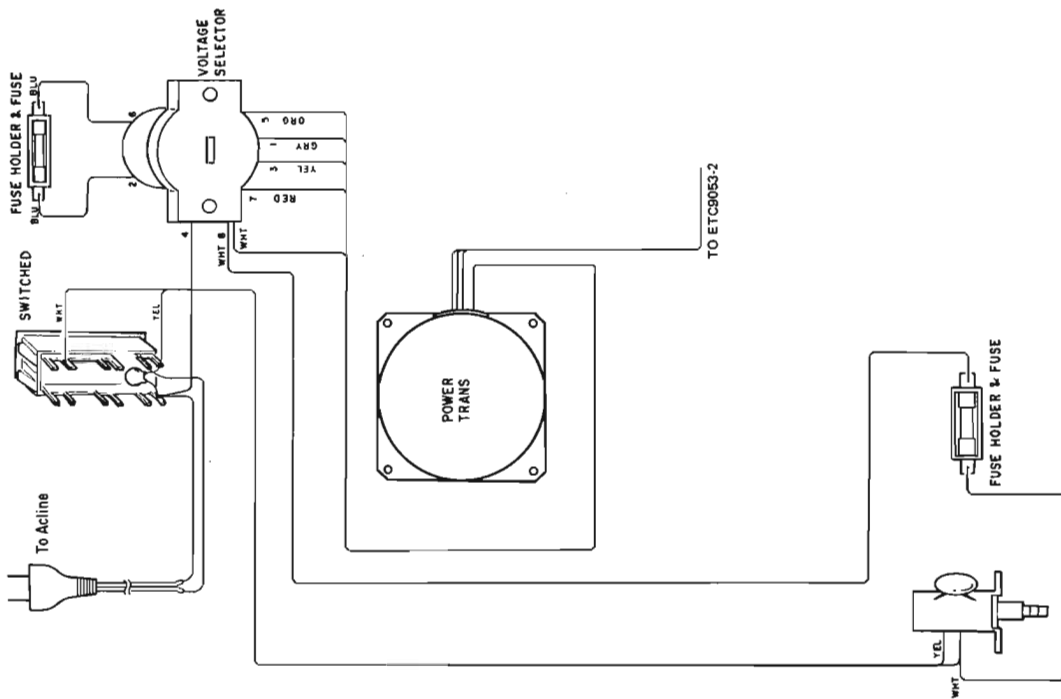
ETC9052B INPUT & POWER UNIT



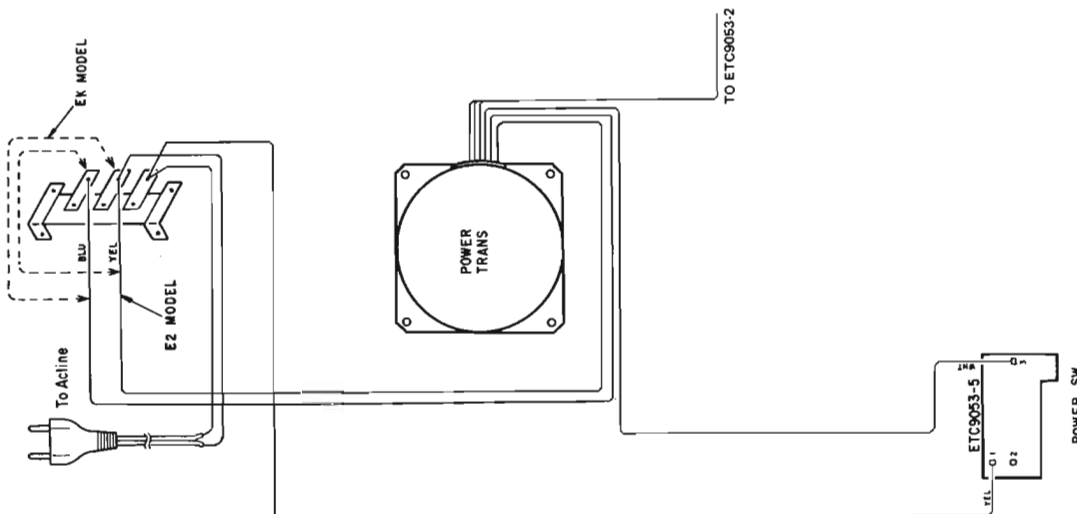
WIRING DIAGRAM
(This figure is specifications of EU & EC Models)



WIRING DIAGRAM
E1 Model (Same as EU version except the following)



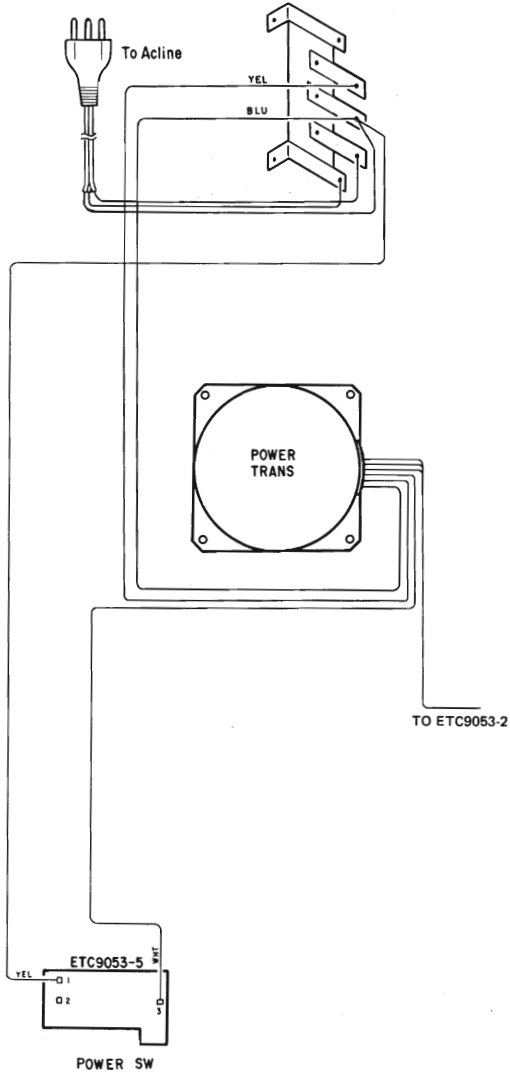
WIRING DIAGRAM
E2 & EK Models (Same as EU version except the following)



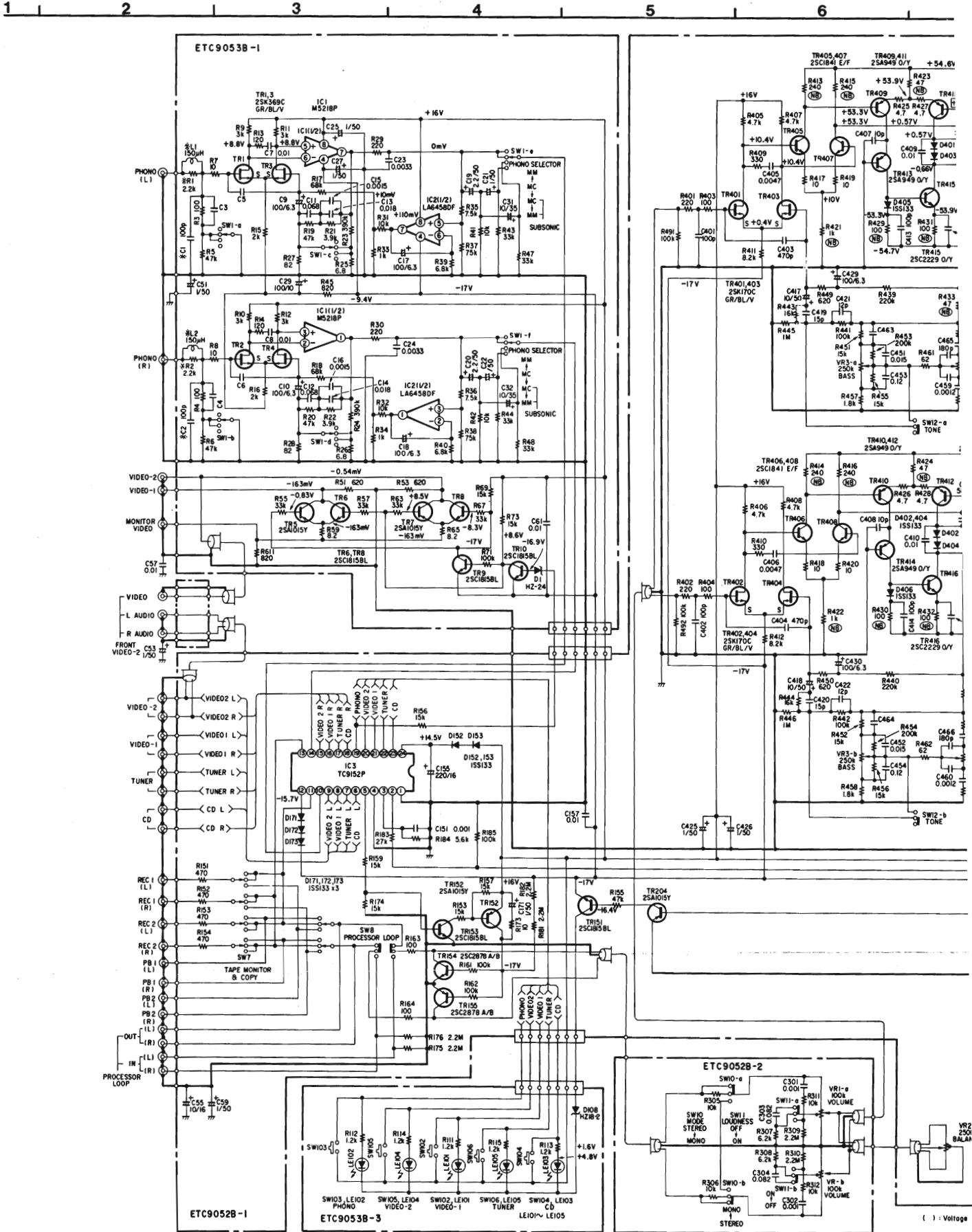
A-700V

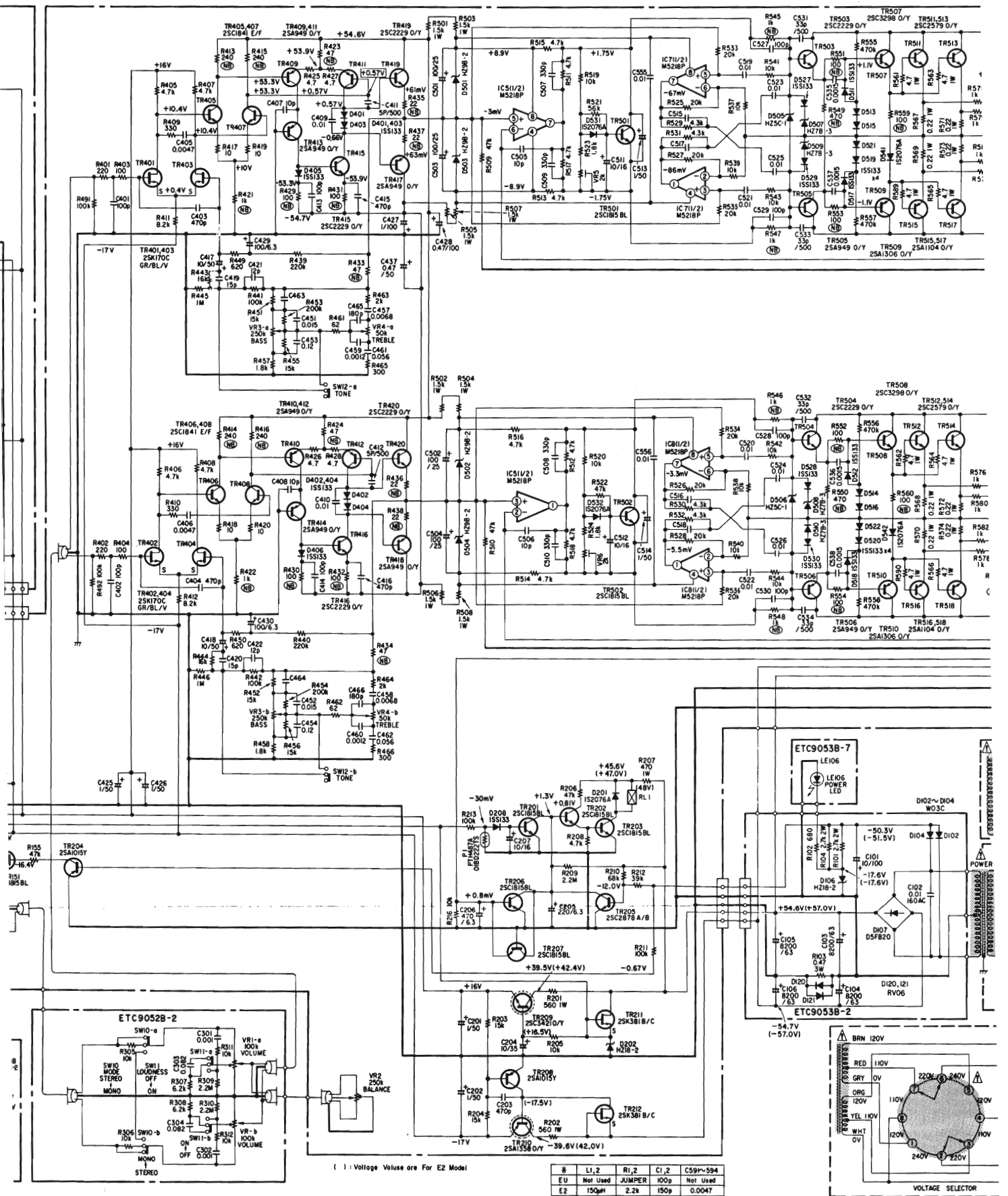
WIRING DIAGRAM

A Model (Same as EU version except the following)



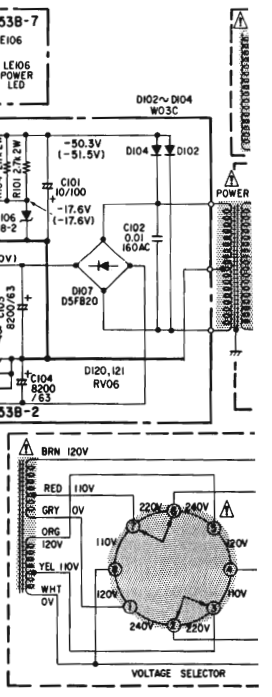
SCHEMATIC DIAGRAM





() : Voltage Value are For E2 Model

№	Li, 2	R, 2	Ci, 2	C59P~594
EU	Not Used	JUMPER	100p	Not Used
E2	150M	2.2k	150p	0.0047



NOTES:
 ALL RESISTANCE VAL
 ALL CAPACITANCE VAL
 EVERY VOLTAGE AN
 CIRCUIT AND PARTS AF

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

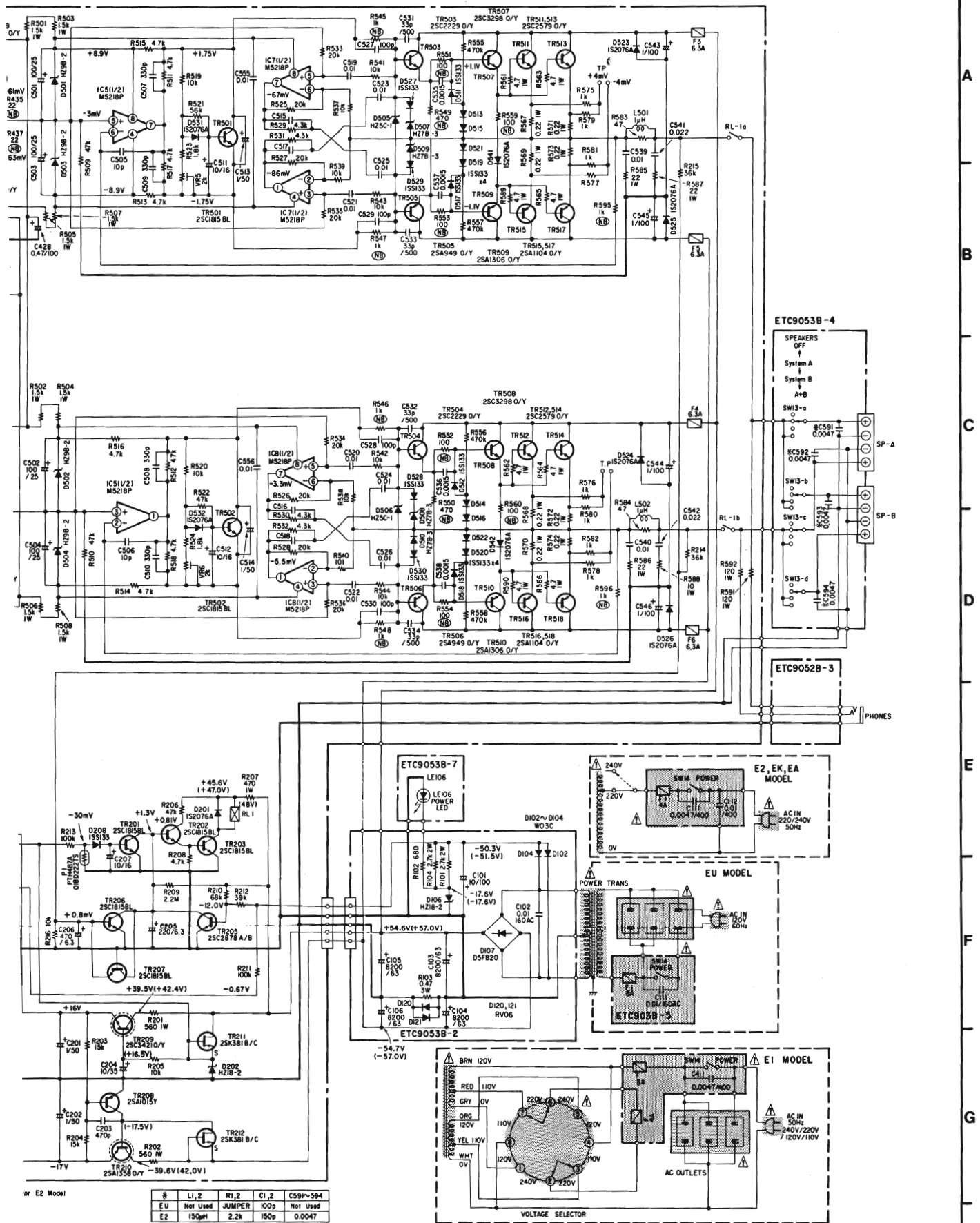
8

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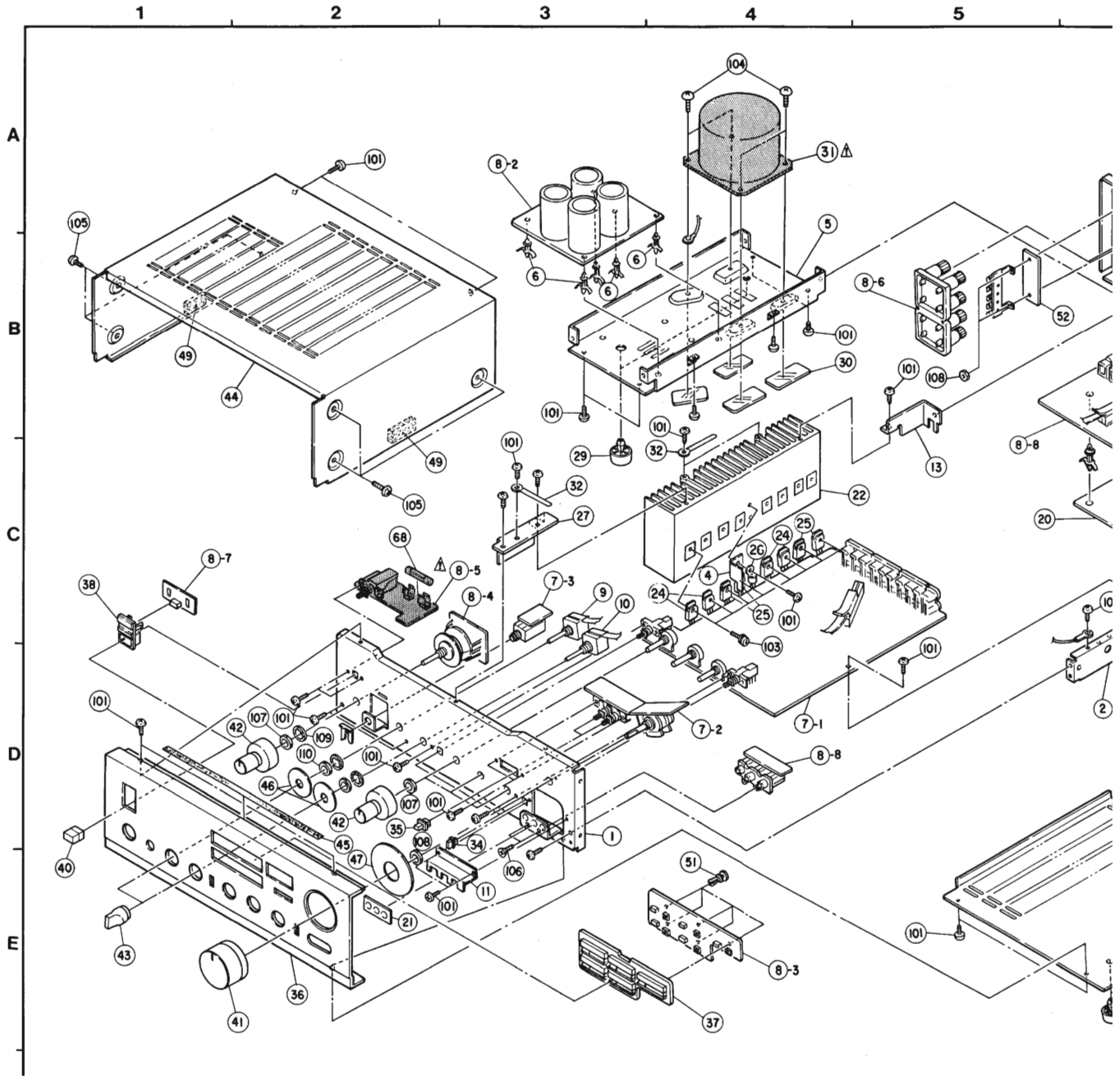
12



	R1,2	R1,2	C1,2	C59~594
E2 Model	Not Used	JUMPER	100p	Not Used
E1 Model	150pH	2.2k	150p	0.0047

NOTES:
 ALL RESISTANCE VALUES IN OHM, K = 1,000 OHM, M = 1,000,000 OHM.
 ALL CAPACITANCE VALUES IN MICROFARAD, P = MICRO-MICRO FARAD.
 EVERY VOLTAGES AND CURRENTS IS MEASURED AT NO SIGNAL INPUT CONDITION.
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.


EXPLODED VIEW OF CHASSIS AND CABINET
(This figure is specifications of E2.)

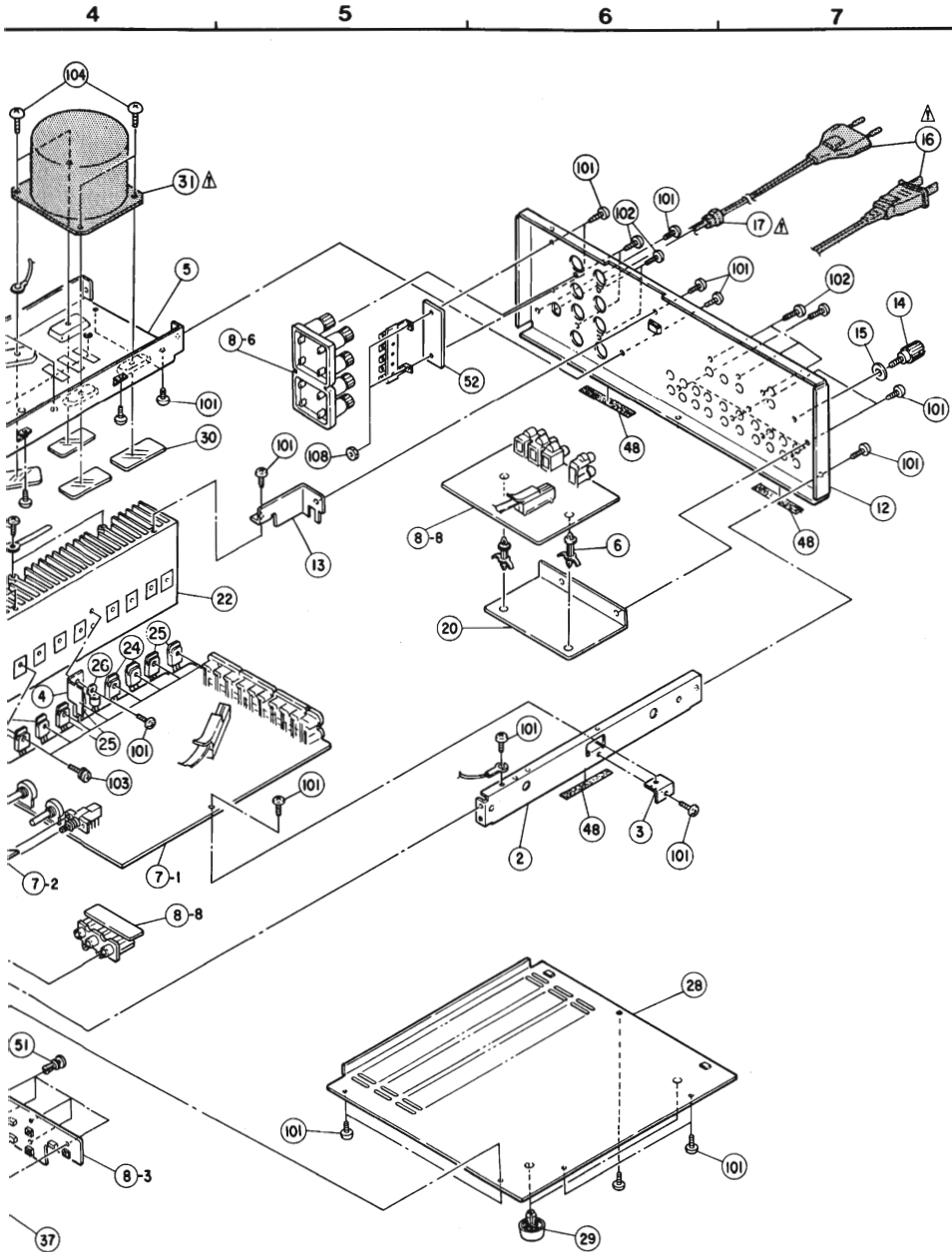


Note 1. See addendum list right for the parts with asterisk (*) on the Ref. No. and the other parts not included in the list.
2. * marked not included EXPLODED VIEW OF CHASSIS AND CABINET.
3. This list is prepared based on E2 BLACK VERSION.


EXPLODED VIEW OF PARTS LIST for E2 BLACK VERSION

Ref. No.	Part No.	Part Name & Descriptions	Q'ty	Ref. No.	Part No.	Part Name & Descriptions	Q'ty	Ref. No.	Part No.	Part Name & Descriptions	Q'ty				
1	4119019302	FRONT CHASSIS	1	27	4129039107	RADIATOR BRACKET	1	SCREWS, NUTS							
2	4119020207	SIDE CHASSIS	1	28	1059044100	BOTTOM COVER	1					101	4737002034	TAPPING SCREW (S) BLACK 3x6	4
3	4129038001	P.W.B BRACKET	1	29	1049003009	FOOT	4					102	4737500044	TAPPING SCREW (P) BLACK 3x8	1
4	4129044008	BRACKET	1	30	4149017002	SAFETY PLATE	4	103	4700012022	CROSS PAN SCREW WITH SW, W 3x12	1				
5	4119021109	TRANS CHASSIS	1	*31	2339541005	POWER TRANS	1	104	4737004016	TAPPING SCREW (S) 4x6	1				
6	4150228000	P.C.B HOLDER	7	*32	4450048016	CORD HOLDER (L50)	3	**105	4737007000	TAPPING SCREW (S) BLACK 4x8	1				
*7	ETC9052B	INPUT & POWER UNIT	1s	*33	4450033005	WIER CLAMP BAND	10	106	4737512003	TAPPING SCREW (P) BLACK 3x8	1				
*8	ETC9063B	EQ & PS UNIT	1	**34	1139071006	PUSH KNOB (T)	2	107	4737006014	TAPPING SCREW (S) WITH WASHER 3x8	1				
9	2123614009	ROTARY REMOTE SW (T. MONI)	1	**35	1139072005	PUSH KNOB (L)	2	108	4756006008	NUT M3	1				
10	2123614012	ROTARY REMOTE SW (PHONO)	1	**36	1449026220	FRONT PANEL ASS'Y	1	PACKING & ACCESSORIES (not included EXPLODED VIEW)							
11	-	-	1	**37	1139073224	PUSH KNOB (F) ASS'Y	1					201	5049102003	STYLEN PAPER	1
*12	1059052105	BACK PANEL	1	**38	1469044101	KNOB GUIDE (P) ASS'Y	1					202	5059102006	POLY COVER	1
13	4129040002	BRACKET	1	39	-	-	1	203	5039123102	CUSHION	1				
14	2050071016	TERMINAL ASS'Y	1	**40	1129012004	VR KNOB ASS'Y	1	**204	5019122039	CARTON CASE	1				
15	4770018001	WASHER (P-87)	1	**42	1129013207	KNOB ASS'Y	4	205	5119170004	INST. MANUAL	1				
*16	2062002031	AC CORD	1	**43	1129014109	KNOB ASS'Y	2	**206	5139111014	COLOR LABEL (BLACK)	1				
*17	4450020005	CORD BUSH (4K-4)	1	**44	1029013310	TOP COVER	1	207	5138295009	CONTROL CARD	1				
18	-	-	1	45	1229006017	SPACER	1								
*19	2538010007	CERAMIC CAPACITOR 10.01µF 400V ACI	1	46	1229007029	BLIND RING	2								
20	2129041001	P.W.B SUPPORT	1	47	1229007032	BLIND RING	1								
21	1469045100	BLIND SHEET	1	48	1229006033	SPACER	3								
22	4179012116	POWER RADIATOR	1	49	-	-	1								
23	4150234007	INSULATING SHEET	8	50	-	-	1								
24	2730232023	TRANSISTOR 2SC2579(O)/(Y) ^(TRRS11-814)	4	51	4770210016	PUSH RIVET	5								
25	2710130022	TRANSISTOR 2SA1104(O)/(Y) ^(TRRS15-518)	4	52	4150088004	INSULATING SHEET	1								
26	2760289004	POSITIVE THERMISTOR PTH487A01B222TS	1	*53	2050089008	7P W. TERMINAL	1								
				54	1220114005	SPACER	2								

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



WARNING:

- Component parts**
Parts marked with  and/or shading in this : the specified parts for replacement.
- Leakage current**
Before returning the appliance to customer, tes an error of not more than 5%) leakage current ground. Reverse the power plug polarity and tes Any current measured MUST NOT EXCEED 0.



CAUTION:
SHOCK, D
USER SER
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The lightning flash is intended to ale voltage" within th tude to constitute



The exclamation mark the user of the pr ing) instructions ir

**WARNING: TO PREVEI
DO NOT EX**

ADDENDUM LIST

Ref. No.	Part Name & Descriptions
7	INPUT & POWER UNIT
▲ 8	EQ. & P.S UNIT
12	BACK PANEL
▲ 16	AC CORD
▲ 17	CORD BUSH
▲ 31	POWER TRANS
36	FRONT PANEL ASS'Y
37	PUSH KNOB (F) ASS'Y
52	INSULATING SHEET
53	7P W. TERMINAL
61	VOLTAGE LABEL
62	BLIND SHEET
63	EARTH LABEL
64	NOTICE SHEET
65	NOTICE SHEET
▲ 66	AC OUTLET (POLARIZED)
▲ 67	FUSE HOLDER
▲ 68	FUSE (8A)
▲ 69	VOLTAGE SEL SW
70	CAUTION SHEET
71	IMPORTANT LABEL
72	FUSE LABEL
73	LA APPROVAL MARK
74	DANGEROUS MARK
75	CSA LABEL
▲ 76	POWER SWITCH
▲ 77	CAPACITOR n μF/400V (AC)
101	TAPPING SCREW (S) 3x6 (BLACK)
107	TAPPING SCREW (S) WITH WASHER 3x8
108	NUT M3
111	φ3 TOOTH WASHER
112	3T LUG
113	φ4 TOOTH WASHER
114	TAPPING SCREW 4x16 (BLACK)
204	CARTON CASE
207	CONTROL CARD
211	CAUTION PAPER
212	WARRANTY IN ENVELOPE
213	SAFETY INSTRUCTION
214	COLOR LABEL (BLACK)

Parts with asterisk (*) on the Ref. No. and the other parts not included in the list.
EXPLODED VIEW OF CHASSIS AND CABINET.
BLACK VERSION.

GOLD VERSION PARTS LIST

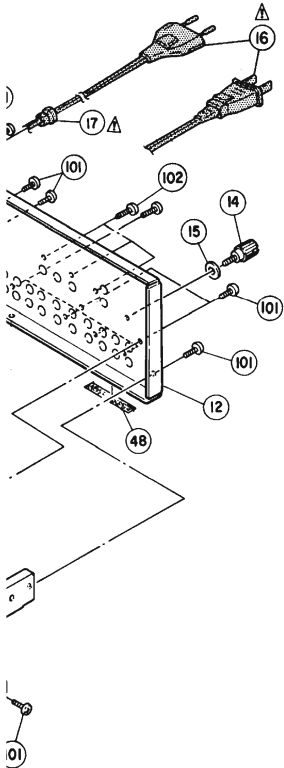
(Same as BLACK VERSION except the followings.)

Q'ty	Ref. No.	Part No.	Part Name & Descriptions	Q'ty	Ref. No.	Part No.	Part Name & Descriptions	Q'ty
1			SCREWS, NUTS		34	1139071019	PUSH KNOB (T)	2
1					35	1139072021	PUSH KNOB (L)	2
4					36	1449033006	FRONT PANEL ASS'Y	1
4	101	4737002034	TAPPING SCREW (S) BLACK 3x6	44	37	1139073211	PUSH KNOB (F) ASS'Y	1
1	102	4737500044	TAPPING SCREW (P) BLACK 3x8	11	38	1469044114	KNOB GUIDE (P) ASS'Y	1
1	103	4700012022	CROSS PAN SCREW WITH SW, W 3x12	8	40	1139070117	PUSH KNOB (P)	1
3					41	1139012017	VR KNOB ASS'Y	1
10	104	4737004016	TAPPING SCREW (S) 4x6	4	42	1129013210	KNOB ASS'Y	4
2	**105	4737007000	TAPPING SCREW (S) BLACK 4x8	6	43	1129014112	KNOB ASS'Y	2
2	106	4737512003	TAPPING SCREW (P) BLACK 3x8	2	44	1029013336	TOP COVER	1
1	107	4737006014	TAPPING SCREW (S) WITH WASHER 3x8	2	105	4737014006	TAPPING SCREW(S) 4x8	6
1	108	4756006008	NUT M3	2	204	5019122084	CARTON CASE	1
					206	5139111001	COLOR LABEL (GOLD)	2
			PACKING & ACCESSORIES (not included EXPLODED VIEW)					
1	201	5049102003	STYLEN PAPER	1				
1	202	5059102006	POLY COVER	1				
4	203	5039123102	CUSHION	2				
1	**204	5019122039	CARTON CASE	1				
1	205	5119170004	INST. MANUAL	1				
2	**206	5139111014	COLOR LABEL (BLACK)	2				
1	207	5138295009	CONTROL CARD	1				
5								
1								
1								
2								

Important safety item, which must be replaced,
part specified or meeting the specification

DENON

7



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.



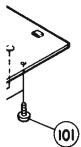
The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

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ADDENDUM LIST

Ref. No.	Part Name & Descriptions	Part No.				
		E1/EP1 for Asia	EU for U.S.A.	EA for Australia	EK for U.K.	EC for Canada
7	INPUT & POWER UNIT	ETC9052D	ETC9052E	ETC9052F	ETC9052F	ETC9052L
8	EQ. & P.S. UNIT	ETC9053D	ETC9053E	ETC9053F	ETC9053F	ETC9053L
12	BACK PANEL	105905005	1059042115	1059052105	1059052105	1059042115
18	AC CORD	2060031028	2062038004	2062012018	2062024008	2062039004
17	CORD BUSH	4450028007	4450020005	4450028007	4450020005	4450020005
31	POWER TRANS.	2339548006	2339538005	2339541005	2339541005	2339541005
36	FRONT PANEL ASS'Y	1449026110	1449026110	1449026123	1449026123	1449026110
37	PUSH KNOB (F) ASS'Y	1139073101	1139073101	1139073224	1139073224	1139073101
52	INSULATING SHEET	-	-	4150088004	4150088004	-
53	7P W. TERMINAL	-	-	2050089008	2050089008	-
61	VOLTAGE LABEL	-	-	5130362008	5130362008	-
62	BLIND SHEET	-	-	5130148006	-	-
63	EARTH LABEL	-	-	5130148000	-	-
64	NOTICE SHEET	-	-	5130209006	-	-
65	NOTICE SHEET	-	-	5130210008	-	-
68	AC OUTLET (POLARIZED)	2033926007	2033926007	-	-	2033926007
67	FUSE HOLDER	2020013101(2)	2020013101(2)	-	-	2020013101
68	FUSE (8A)	2061048014	2061048014	-	-	2061048014
69	VOLTAGE SEL SW	2120186006	-	-	-	-
70	CAUTION SHEET	-	-	-	5130364006	-
71	IMPORTANT LABEL	-	-	-	5139133005	-
72	FUSE LABEL	-	5130607019	-	-	-
73	LA APPROVAL MARK	-	5138300004	-	-	-
74	DANGEROUS MARK	-	5138266009	-	-	-
75	CSA LABEL	-	(2)	-	-	5138311006
76	POWER SWITCH	2129634002	2129634002	-	-	2129634002
77	CAPACITOR 11 µF/400V (AC)	2538003014 (0.047)	2538010007 (0.01)	-	-	2538010007 (0.01)
101	TAPPING SCREW (S) 3x6 (BLACK)	4737002034 (38)	4737002034 (36)	4737002034 (37)	4737002034 (36)	4737002034 (36)
107	TAPPING SCREW (S) WITH WASHER 3x8	-	-	4737006014 (2)	4737006014 (2)	-
108	NUT M3	-	-	4756006008 (2)	4756006008 (2)	-
111	φ3 TOOTH WASHER	-	-	4753001051 (1)	-	-
112	3T LUG	-	-	2050003107 (2)	-	-
113	φ4 TOOTH WASHER	-	-	4753100004 (6)	-	-
114	TAPPING SCREW 4x16 (BLACK)	4734453039	-	-	-	-
204	CARTON CASE	5019122039	5019116032	5019122039	5019122039	5019116032
207	CONTROL CARD	-	-	-	-	-
211	CAUTION PAPER	-	-	5130211007	-	-
212	WARRANTY IN ENVELOPE	-	5150349108	-	-	-
213	SAFETY INSTRUCTION	5158052206	-	-	-	-
214	COLOR LABEL (BLACK)	5139111014 (2)	5139111014 (2)	5139111014 (2)	5139111014 (2)	5139111014 (2)

OPTIONAL PARTS LIST
CHECK VERSION except the followings.)

Part No.	Part Name & Descriptions	Q'ty
371019	PUSH KNOB (T)	2
372021	PUSH KNOB (L)	2
333006	FRONT PANEL ASS'Y	1
373211	PUSH KNOB (F) ASS'Y	1
344114	KNOB GUIDE (P) ASS'Y	1
370117	PUSH KNOB (P)	1
312017	VR KNOB ASS'Y	1
313210	KNOB ASS'Y	4
314112	KNOB ASS'Y	2
313336	TOP COVER	1
314006	TAPPING SCREW(S) 4x8	6
122084	CARTON CASE	1
111001	COLOR LABEL (GOLD)	2

NIPPON COLUMBIA CO., LTD.
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