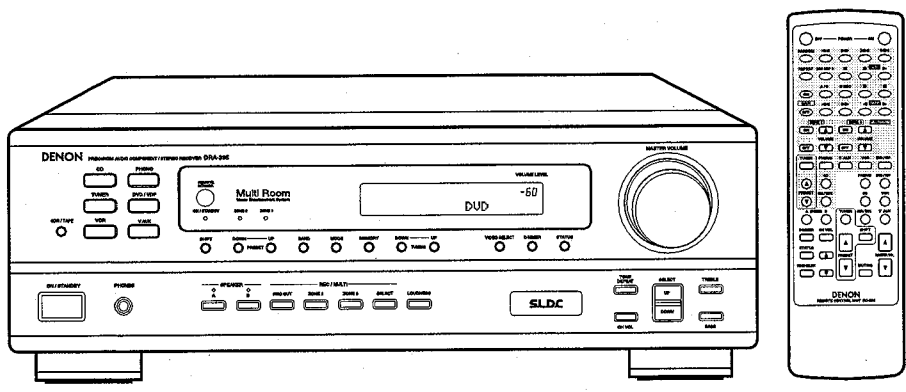


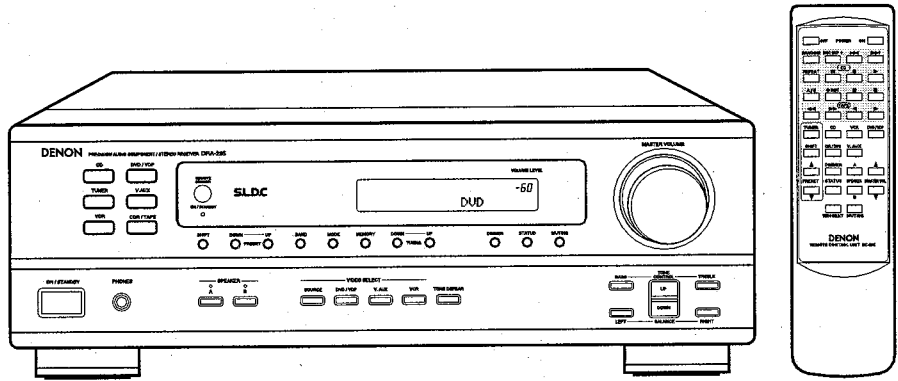
DENON

Service manual

DRA-395 2~34



DRA-295 36~69



DENON

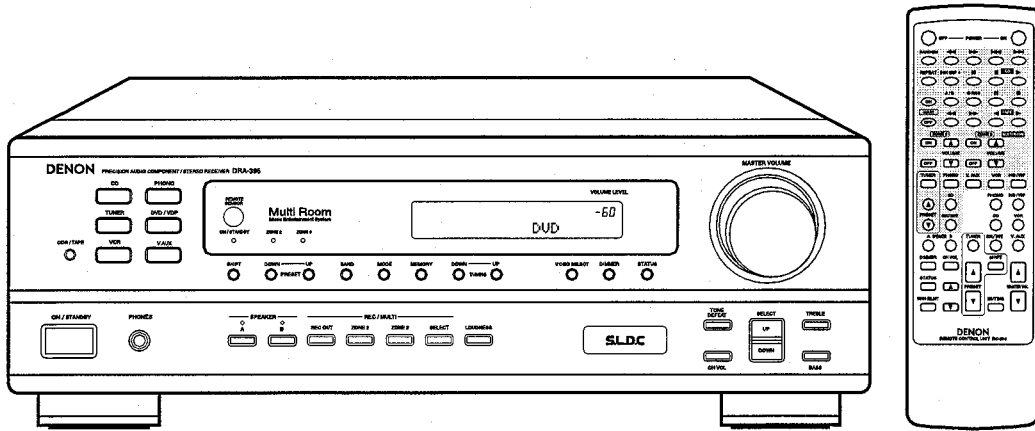
For U.S.A. & Canada model

Hi-Fi AM-FM Stereo Receiver

SERVICE MANUAL

MODEL DRA-395

AM-FM STEREO RECEIVER



— TABLE OF CONTENTS —

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• Some illustrations using in this service manual are slightly different from the actual set.

NIPPON COLUMBIA CO., LTD.

14-14, AKASAKA 4-CHOME, MINATO-KU, TOKYO 107-8011 JAPAN
Telephone: 03 (3584) 8111

SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

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 460 kohms, the unit is defective.

SPECIFICATIONS

• Audio Section

(Power Amplifier)

Rated output:	80W + 80W (8 Ω /ohms, 20Hz ~ 20kHz with 0.08% T.H.D.)
Output terminals:	A or B 4 to 16 Ω /ohms A + B 8 to 16 Ω /ohms

(Analog)

LINE input - PRE OUT

Input sensitivity/input impedance:	200mV/47k Ω /kohms
Frequency response:	10Hz ~ 50kHz: \pm 1.5dB
S/N ratio:	100 dB (IHF-A weighted)
Total harmonic distortion:	0.009% (-3dB at rated output, 8 Ω /ohms) (1kHz)
Rated output:	1.2V

PHONO input - REC OUT

Input sensitivity/input impedance:	2.5mV/47k Ω /kohms
RIAA deviation:	\pm 0.5dB (20Hz ~ 20kHz)
S/N ratio:	74dB (IHF-A weighted, with 5mV input)
Total harmonic distortion:	0.03% (1kHz, 3V)
Rated output/Maximum output:	150mV/7V

• Video Section

(Standard Video Jacks)

Input/output level and impedance:	1V p-p, 75 Ω /ohms
Frequency response:	5Hz ~ 10MHz +1, -3dB

• Tuner Section

Receiving range:	[FM] (note: μ V at 75 Ω /ohms, 0dBf = 1×10^{-15} W)	[AM]
Usable sensitivity:	87.50MHz ~ 107.90 MHz	520kHz ~ 1710kHz
50dB quieting sensitivity:	1.4 μ V (14.2dBf)	18 μ V
	MONO 2.8 μ V (20.2dBf)	
	STEREO 23 μ V (38.5dBf)	
S/N ratio:	MONO 80dB (IHF-A weighted)	
	STEREO 75dB (IHF-A weighted)	
Total harmonic distortion:	MONO 0.15% (1kHz)	
	STEREO 0.3% (1kHz)	

• General

Power supply:	AC120V, 60Hz
Power consumption:	3.39A
Maximum external dimensions:	434 (W) \times 147 (H) \times 417 (D) mm (17-1/16" \times 5-25/32" \times 16-7/16")
Weight:	9.7kg (21lbs 6oz)

• Remote Control Unit (RC-894)

Batteries:	R03/AAA Type (two batteries)
External dimensions:	64 (W) \times 206 (H) \times 19 (D) mm (2-13/64" \times 8-9/32" \times 3/4")
Weight:	140g (Approx. 4.9 oz) (including batteries)

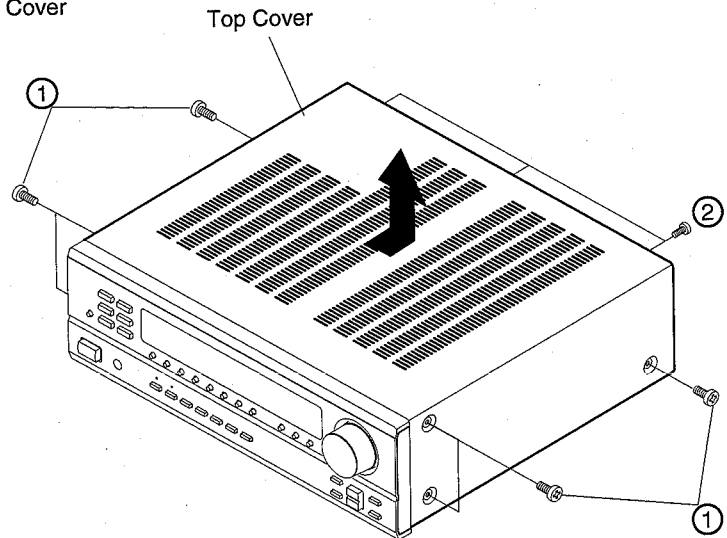
* For purposes of improvement, specifications and design are subject to change without notice.

DISASSEMBLY

(Follow the procedure below in reverse order when reassembling)

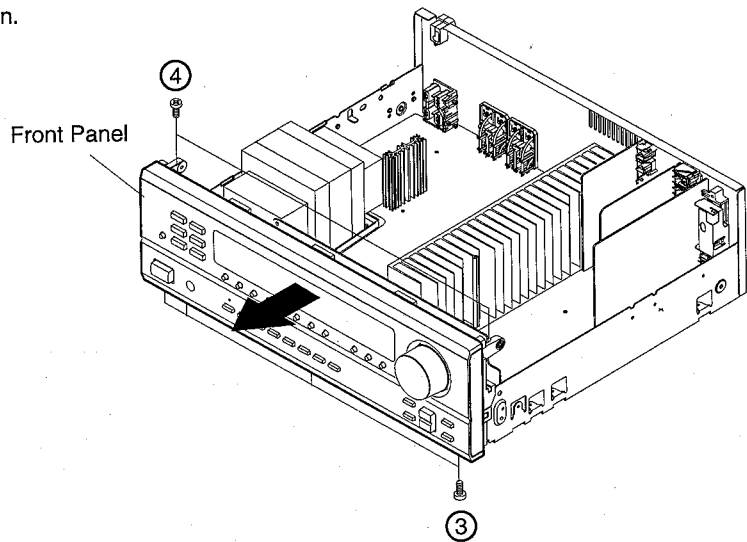
Top Cover

Remove 6 screws ① and 3 screws ②, detach the Top Cover in the arrow direction.



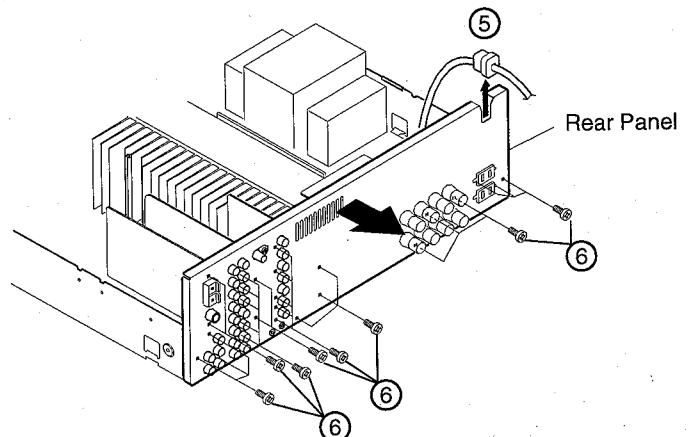
Front Panel

1. Remove 4 screws ③ and 2 screws ④.
2. Detach the Front Panel in the arrow direction.



Rear Panel

1. Remove cord bushing ⑤ from the Rear Panel.
2. Remove 26 screws ⑥.
3. Detach the Rear Panel in the arrow direction.

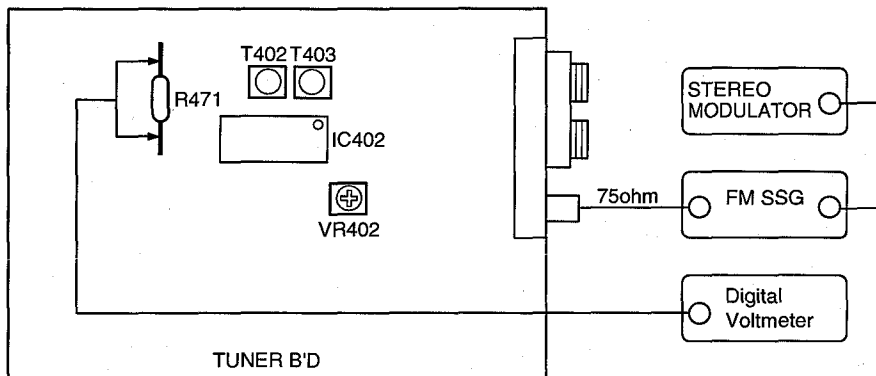


ADJUSTMENT

Tuner Section

CONNECTION DIAGRAM OF MEASURING INSTRUMENTS

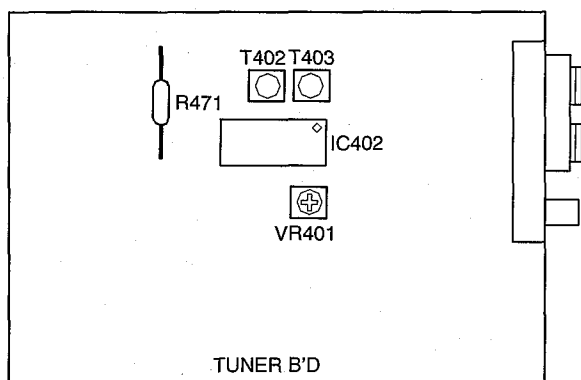
● FM



FM ALIGNMENT

Step	Alignment Item	Tuning Frequency Setting	Input					Output		Adjustment	
			Type	Frequency	Input Level	Modulation	Coupling	Type	Connect to	Points	Adjust to
1	Center Adjustment	98.1MHz (98.0MHz)	FM SSG	98.1MHz	60dB μ	Mono 1kHz 100%	Antenna Terminal	Digital Voltmeter	R471	T402	$\pm 50mV$
2	Distortion	98.1MHz (98.0MHz)	FM SSG	98.1MHz	60dB μ	Mono 1kHz 100%	Antenna Terminal	Distortion Meter	Output Terminal (L)	T403	Minimum Distortion
3	Repeat Steps 1 and 2										
4	Signal Level	98.1MHz (98.0MHz)	FM SSG	98.1MHz	20dB μ	OFF	Antenna Terminal	Light "TUNED" on FL Display		VR402	20 \pm 1 $\frac{1}{10}$ dB

● AM



AM ALIGNMENT

Step	Alignment Item	Frequency	Input	Output		Adjustment		Remarks
				Type	Connect to	Points	Adjust to	
1	Signal Level	999 (1000) kHz	AM SSG	—	—	VR401	Light "TUNED" on FL Display	SSG OUTPUT 74dB μ (EMF)

Audio Section

Idling Current

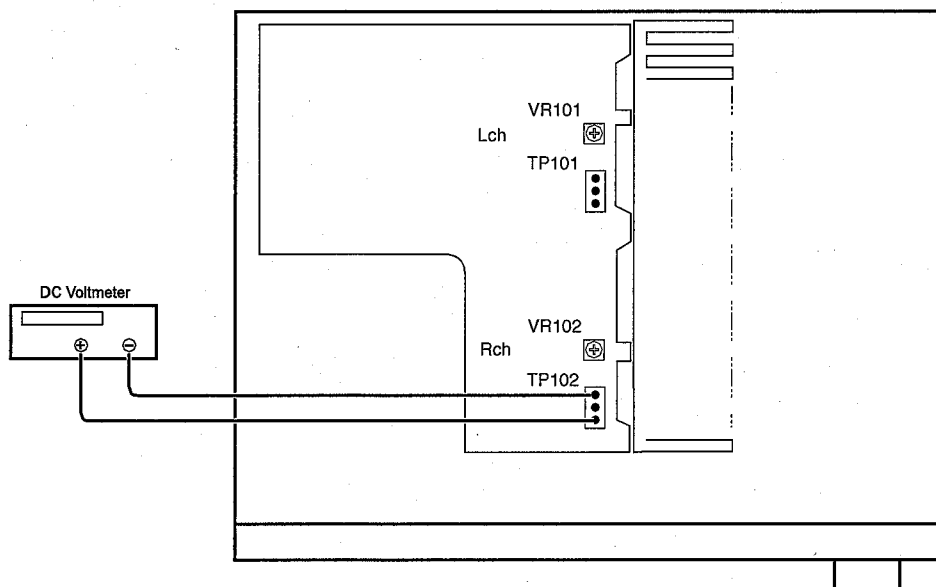
Required measurement equipment : DC Voltmeter

Preparation

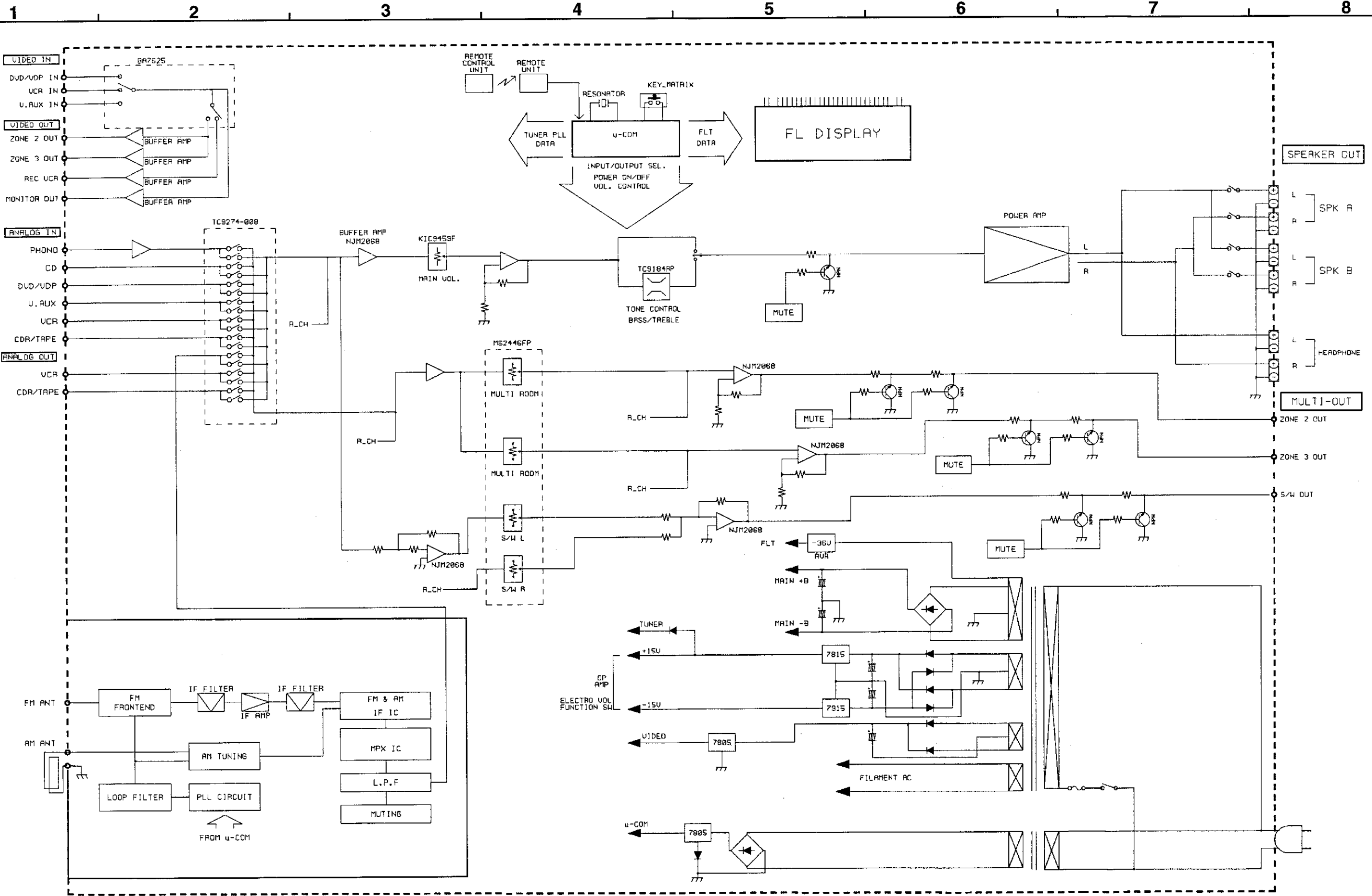
- (1) Avoid direct blow from an air conditioner or an electric fan, and adjust the unit at normal room temperature 15 °C ~ 30 °C (59 °F ~ 86 °F).
- (2) Presetting
 - POWER (Power source switch) → OFF
 - SPEAKER (Speaker terminal) → No load (Do not connect speaker, dummy resistor, etc.)

Adjustment

- (1) Remove top cover and set VR101, VR102 on Amp. Unit at full counterclockwise (\odot) position.
- (2) Connect DC Voltmeter to test points (Lch: TP101, Rch: TP102).
- (3) Connect power cord to AC Line, and turn power switch "ON".
- (4) Presetting. MASTER VOLUME : "---" counterclockwise (\odot min.)
 FUNCTION : CD
- (5) Within 2 minutes after the power on, turn VR101 clockwise (\odot) to adjust the TEST POINT voltage to 1.5 mV \pm 0.5 mV DC.
- (6) After 10 minutes from the preset above, turn VR101 to set the voltage to 2.5 mV \pm 0.5 mV DC.
- (7) Adjust the Variable Resistors of other channels in the same way.



BLOCK DIAGRAM



A

B

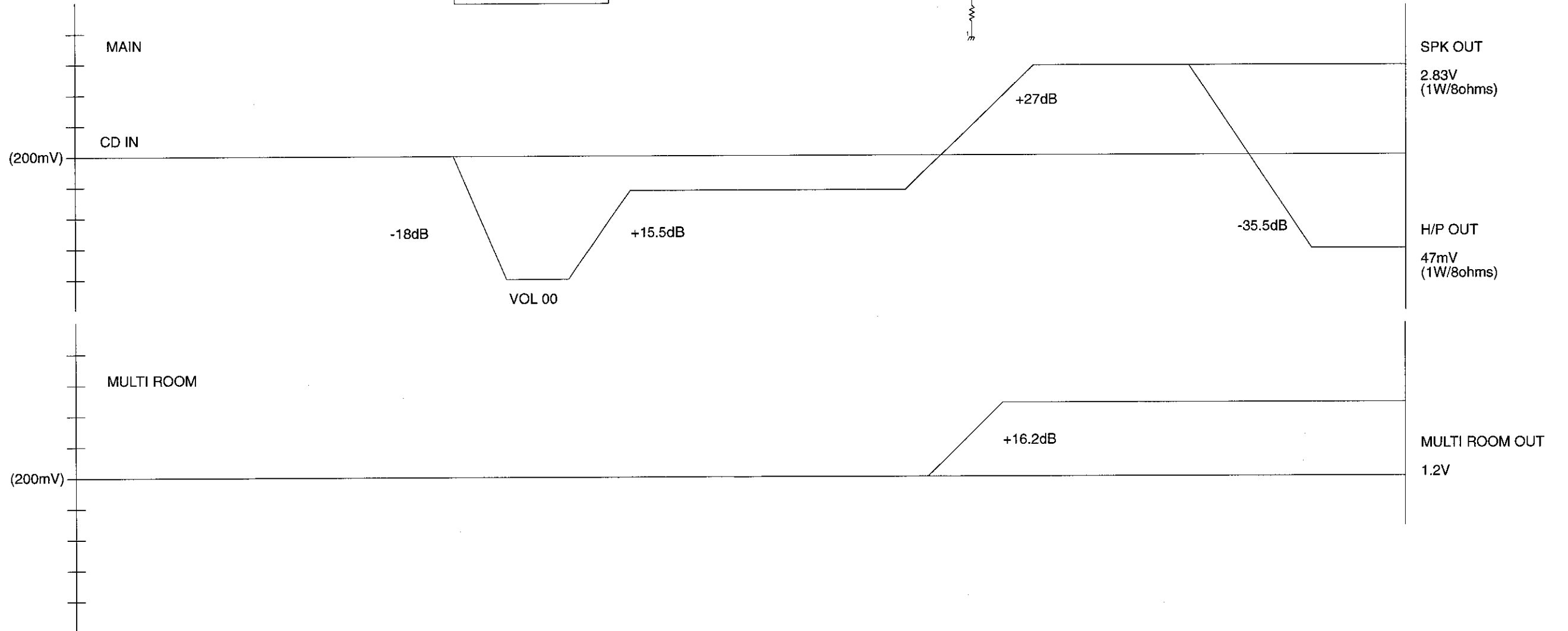
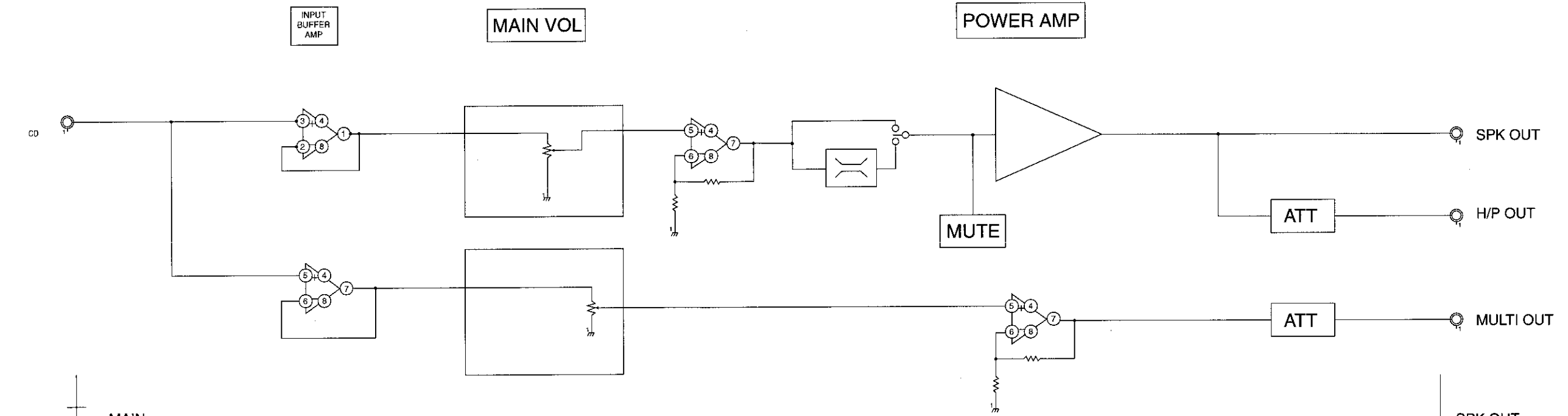
C

D

E

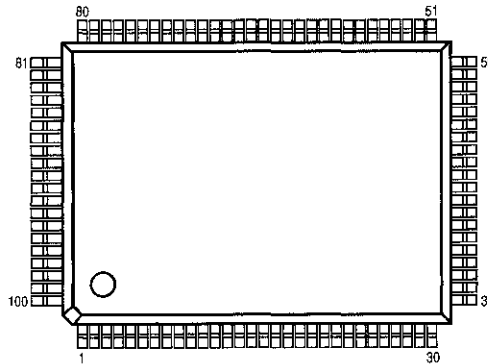
LEVEL DIAGRAM

1 2 3 4 5 6 7 8



SEMICONDUCTORS

- IC's
- CXP82840-319Q (IC900)

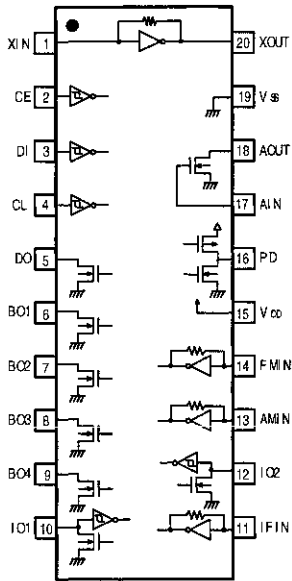


CXP82840-319Q Terminal Function

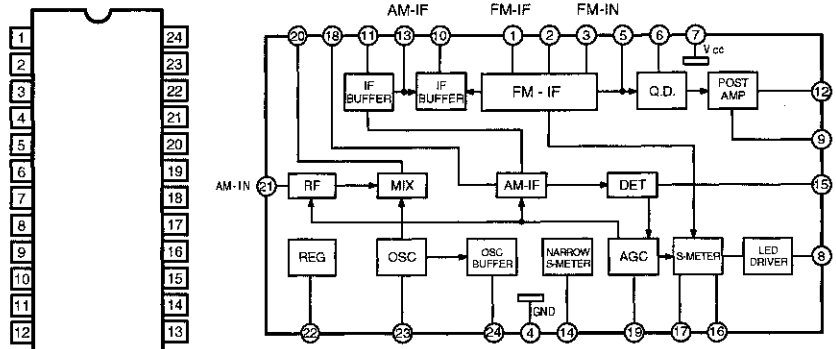
Pin No.	Pin Name	I/O	Function
1	G2/A1	O	FL G02
2	G1/A0	O	FL G01
3	NC(Vdd)	I	NC(Connect to Vdd)
4	POWER DOWN	I	AC OFF Detect
5	ENC VOLUME UP	I	Encoder VOLUME UP
6	RDS CLOCK	I	RDS clock input(TDA7330)
7	ENC VOLUME DOWN	I	Encoder VOLUME DOWN
8	REMOCON	I	Remote signal input.
9	PROTECTION	I	Protection detecting input.
10	SUB ZONE2 LED	O	ZONE3 LED indicator control
11	SUB ZONE1 LED	O	ZONE2 LED indicator control
12	62446 LATCH	O	Electronic volume control.(M62446 LATCH)
13	FUNCTION SW 1 CE	O	Function IC control.(TC9274 CE)
14	FUNCTION 1/2 DATA	O	Function IC control.(TC9274 DATA)
15	FUNCTION 1/2 CLOCK	O	Function IC control.(TC9274 CLOCK)
16	VOLUME,PLL,4094,DATA	O	LC72131,M62446,KIC9459,TC9184,TC4094(DATA)
17	VOLUME,PLL,4094,CLOCK	O	LC72131,M62446,KIC9459,TC9184,TC4094(CLOCK)
18	TUNED	I	TUNED signal in.
19	STEREO	I	STEREO signal in.
20	IF COUNT	I	PLL data in.(LC72131)
21	TUNER MUTE	O	Tuner mute output.
22	PLL CE	O	LC72131(CE)
23	4094 STB	O	TC4094(STB)
24	VOLUME STB	O	KIC9459,TC9184(STB)
25	SUB 1 MUTE	O	ZONE2 mute control.
26	MAIN MUTE	O	MAIN,Subwoofer mute output.
27	POWER RELAY	O	Power supply relaycontrol.
28	AV REF.	I	Reference voltage input for A/D converter.
29	1511 DATA	O	Not used.
30	RDS DATA	I	Not used.
31	KEY IN 1	I	Key input 1
32	KEY IN 2	I	Key input 2
33	KEY IN 3	I	Key input 3
34	STEP OPTION	I	Area select.
35	SET OPTION	I	Model select.
36	SPEAKER A LED 1	O	SPEAKER A LED indicator control
37	A VSS	I	A/D converter GND.
38	RESET	I	Low-level active,system reset.
39	EXTAL	I	EXTAL(10MHz)
40	XTAL	O	XTAL(10MHz)
41	VSS	I	GND
42	NC(TX)	O	Not used.
43	G(TEX)	I	GND
44	VDD	I	Vcc SUPPLY.
45	V FDP	I	FDP voltage supply.

Pin No.	Pin Name	I/O	Function
46	SPEAKER B LED 2	O	SPEAKER B LED indicator control
47	STBY LED 3	O	STANDBY LED indicator control
48	PD2/A53	O	FL P38
49	PD3/A52	O	FL P37
50	PD4/A51	O	FL P36
51	PD5/A50	O	FL P01
52	PD6/A49	O	FL P02
53	PD7/A48	O	FL P03
54	PF0/A47	O	FL P04
55	PF1/A46	O	FL P05
56	PF2/A45	O	FL P06
57	PF3/A44	O	FL P07
58	PF4/A43	O	FL P08
59	PF5/A42	O	FL P09
60	PF6/A41	O	FL P10
61	PF7/A40	O	FL P11
62	PG0/A39	O	FL P12
63	PG1/A38	O	FL P13
64	PG2/A37	O	FL P14
65	PG3/A36	O	FL P15
66	PG4/A35	O	FL P16
67	PG5/A34	O	FL P17
68	PG6/A33	O	FL P18
69	PG7/A32	O	FL P19
70	PH0/A31	O	FL P20
71	PH1/A30	O	FL P21
72	PH2/A29	O	FL P22
73	PH3/A28	O	FL P23
74	PH4/A27	O	FL P24
75	PH5/A26	O	FL P25
76	PH6/A25	O	FL P26
77	PH7/A24	O	FL P27
78	A23	O	FL P28
79	A22	O	FL P29
80	A21	O	FL P30
81	A20	O	FL P31
82	A19	O	FL P32
83	A18	O	FL P33
84	A17	O	FL P34
85	A16	O	FL P35
86	G16	O	FL G16
87	G15	O	FL G15
88	G14	O	FL G14
89	Vdd	I	Vcc SUPPLY.
90	G13	O	FL G13
91	G12	O	FL G12
92	G11	O	FL G11
93	G10	O	FL G10
94	G9	O	FL G09
95	G8	O	FL G08
96	G7	O	FL G07
97	G6	O	FL G06
98	G5	O	FL G05
99	G4	O	FL G04
100	G3	O	FL G03

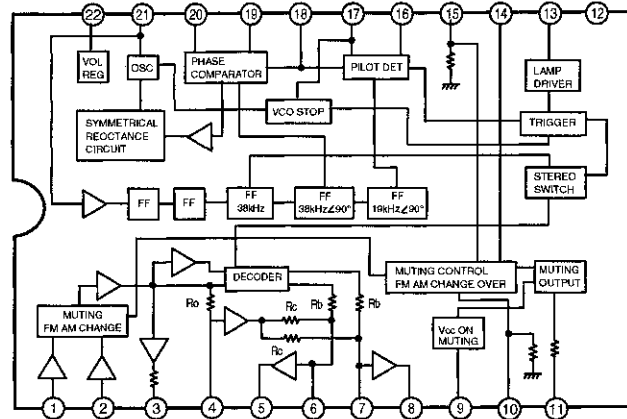
LC72131M (IC401)



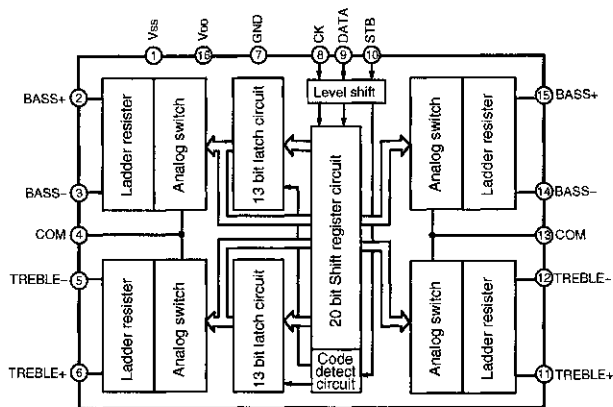
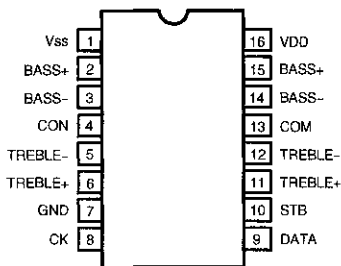
LA1266 (IC402)



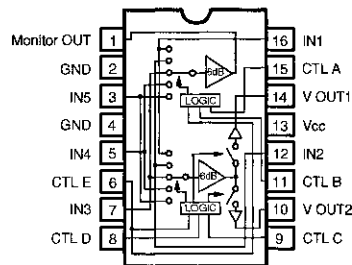
LA3401 (IC403)



TC9184AP (IC602)



BA7625 (IC501)



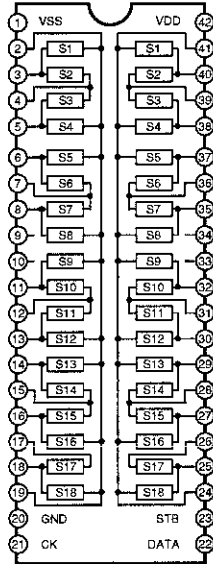
A	B	E	MONITOR OUT
L	L	*	IN 1
H	L	*	IN 2
L	H	*	IN 3
H	H	L	IN 4
H	H	H	IN 5

C	D	E	V OUT 1
L	L	*	—
H	L	*	IN 2
L	H	*	IN 3
H	H	L	IN 4
H	H	H	IN 5

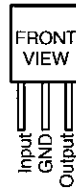
C	D	E	V OUT 2
L	L	*	IN 1
H	L	*	—
L	H	*	IN 3
H	H	L	IN 4
H	H	H	IN 5

Note 1: * mark means that feasible for either H or L.
 Note 2: Each input terminal is provided with sink chip clamp (BA7625).
 Each input terminal takes 20kohm at the end (BA7626).

TC9274N-008 (IC303)



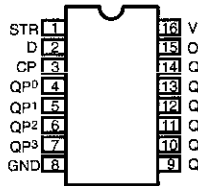
**KIA7805AP (IC103)
NJM7805FA (IC104)
KIA7815AP (IC101)**



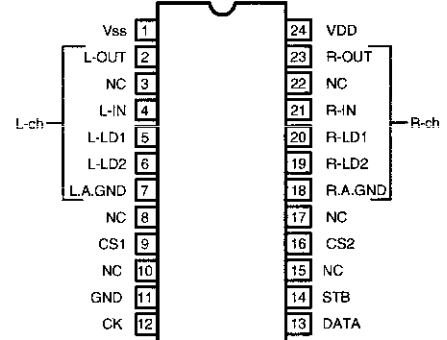
NJM7915FA (IC102)



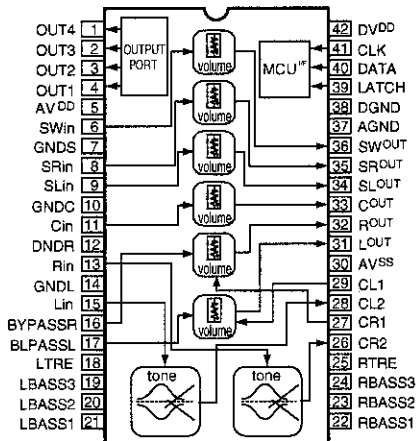
PC74HC4094 (IC604)



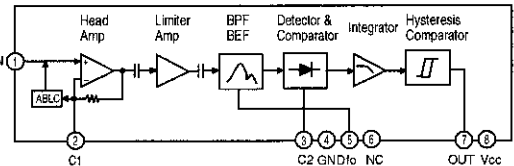
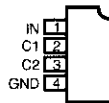
KIC9459F (IC601)



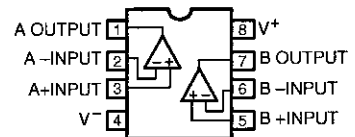
M62446FP (IC603)



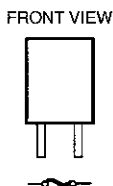
CXA1511M (IC502)



NJM2068DD (IC300~302, 605~610)



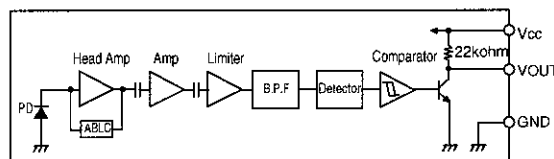
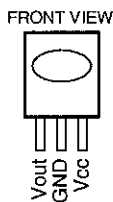
**● IC PROTECTOR
ICP-N15 (IC105)**



**● POSISTOR
P43T7D330BW16**

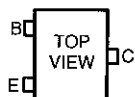


**● IR SENSOR
NJL64H380A (RMC900)**

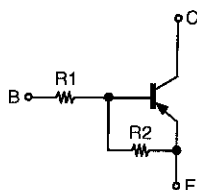


● TRANSISTORS

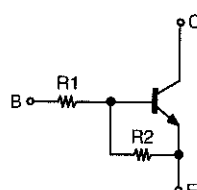
DTA114EK
DTA114YK
DTC114YK



DTA series



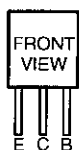
DTC series



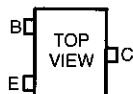
DTA114ES
DTA144ES
DTC114ES
DTC114YS
DTC144ES

	R1	R2
DTA114EK	10kohm	10kohm
DTA114ES	10kohm	10kohm
DTA114YK	10kohm	47kohm
DTA114ES	47kohm	47kohm

	R1	R2
DTC114ES	10kohm	10kohm
DTC114YK	10kohm	47kohm
DTC114YS	10kohm	47kohm
DTC144ES	47kohm	47kohm



KTC3880S



2SD947F
KTA1266Y
KSA992F
KSC1845F
KTC3200BL
KTC3198Y
KTA1268BL
KSA916Y
2SC1740S
KTC2874B

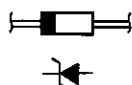


2SB1560
2SD2390

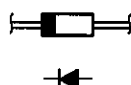


● DIODES (LED Included)

MTZJ3.3B
MTZJ5.1B
MTZJ5.6B
MTZJ6.2B
MTZJ6.8B
MTZJ7.5A
MTZJ7.5B
MTZJ18B
MTZJ20B



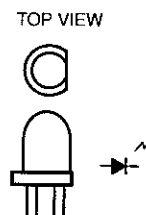
1N4007
1SS133



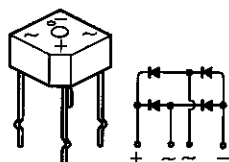
KDS160



HL-50RDRF4

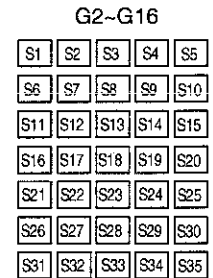
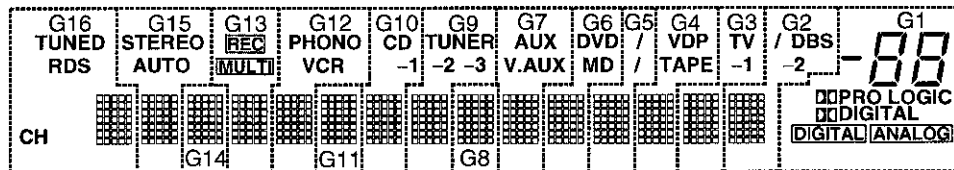
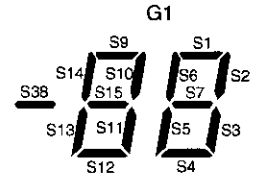
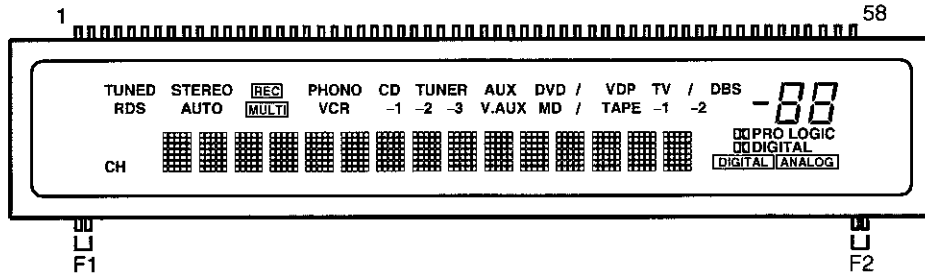


KBPC604



● FL DISPLAY

16-st-42GNK (FL900)



Pin Assignment

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CONNECTION	F1	F1	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18
PIN NO.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CONNECTION	S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30	S31	S32	S33	S34	S35	S36	S37	S38
PIN NO.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58		
CONNECTION	G16	G15	G14	G13	G12	G11	G10	G9	G8	G7	G6	G5	G4	G3	G2	G1	F2	F2		

F1,F2 : Filament
 G1-G16 : Grid
 S1-S38 : Anode

Anode & Grid Assignment

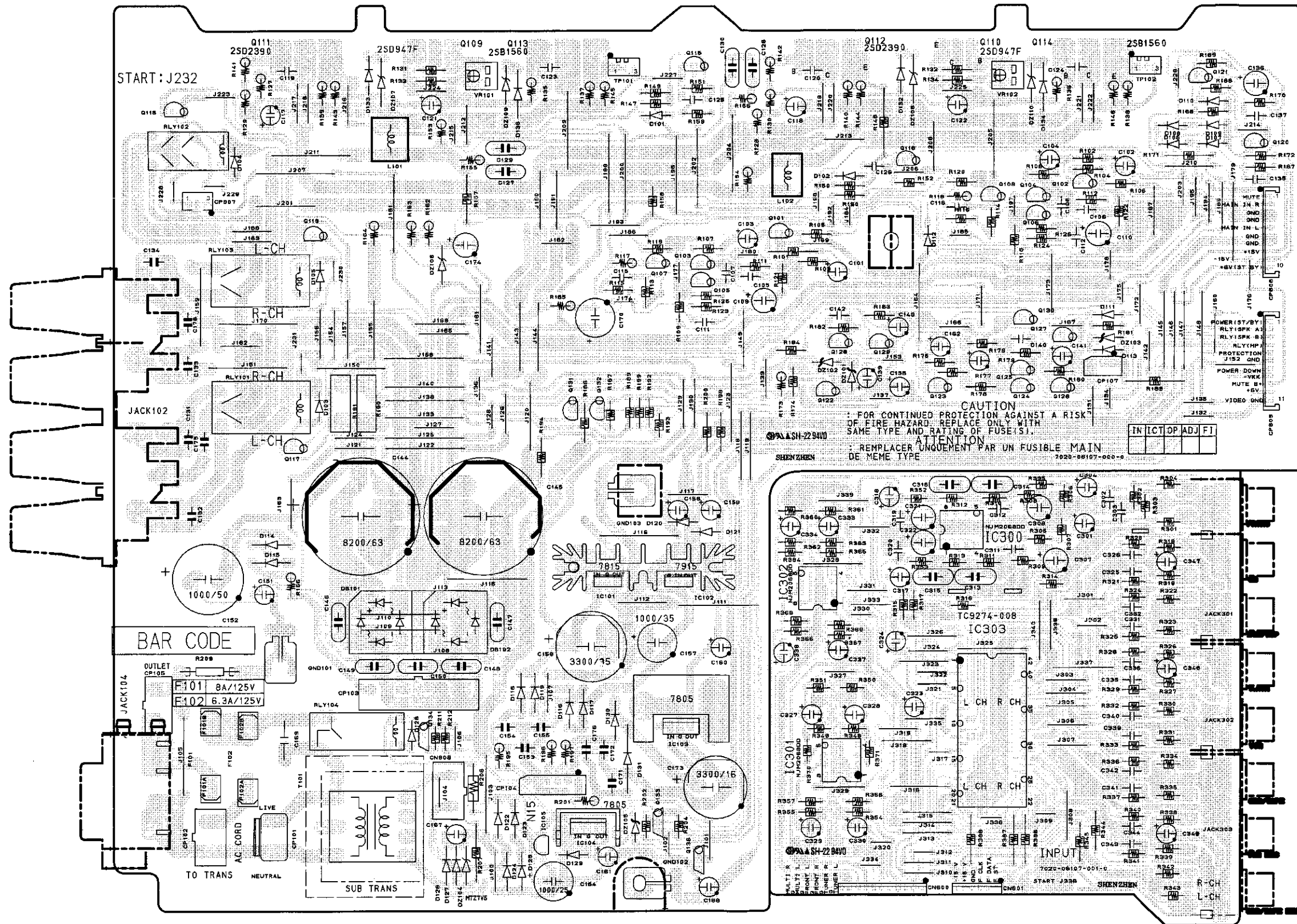
	G1	G2-G16		G1	G2-G16		G1	G2-G16		G1	G2-G16
S1	S1	S1	S10	S10	S10	S19	---	S19	S28	---	S28
S2	S2	S2	S11	S11	S11	S20	---	S20	S29	---	S29
S3	S3	S3	S12	S12	S12	S21	---	S21	S30	---	S30
S4	S4	S4	S13	S13	S13	S22	---	S22	S31	---	S31
S5	S5	S5	S14	S14	S14	S23	---	S23	S32	---	S32
S6	S6	S6	S15	S15	S15	S24	---	S24	S33	---	S33
S7	S7	S7	S16	---	S16	S25	---	S25	S34	---	S34
S8	---	S8	S17	DIGITAL	S17	S26	---	S26	S35	---	S35
S9	S9	S9	S18	PRO LOGIC	S18	S27	---	S27			

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12	G13	G14	G15	G16
S36	DIGITAL	/	TV	VDP	/(DVD)	DVD	AUX	---	TUNER	CD	---	PHONO	REC	---	STEREO	TUNED
S37	ANALOG	-2	-1	TAPE	/(MD)	MD	V.AUX	---	-2	-1	---	VCR	MULTI	---	AUTO	RDS
S38	S38	DBS	---	---	---	---	---	---	-3	---	---	---	---	---	---	CH

PRINTED WIRING BOARDS

1 2 3 4 5 6 7 8

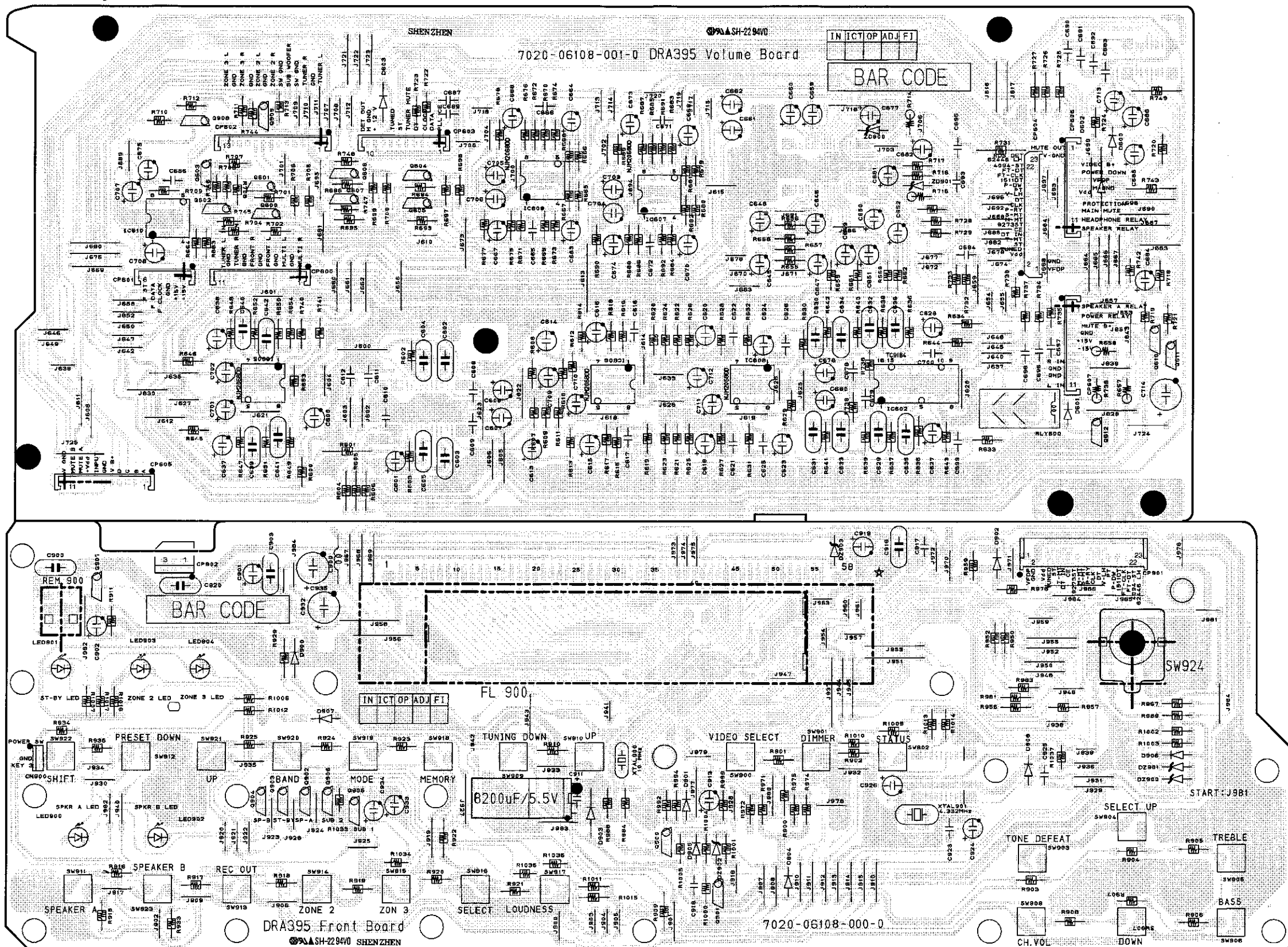
MAIN P.W.B. UNIT Ass'y



COMPONENT SIDE

1 2 3 4 5 6 7 8

FRONT P.W.B. UNIT Ass'y



A B C D E

COMPONENT SIDE

1 2 3 4 5 6 7 8

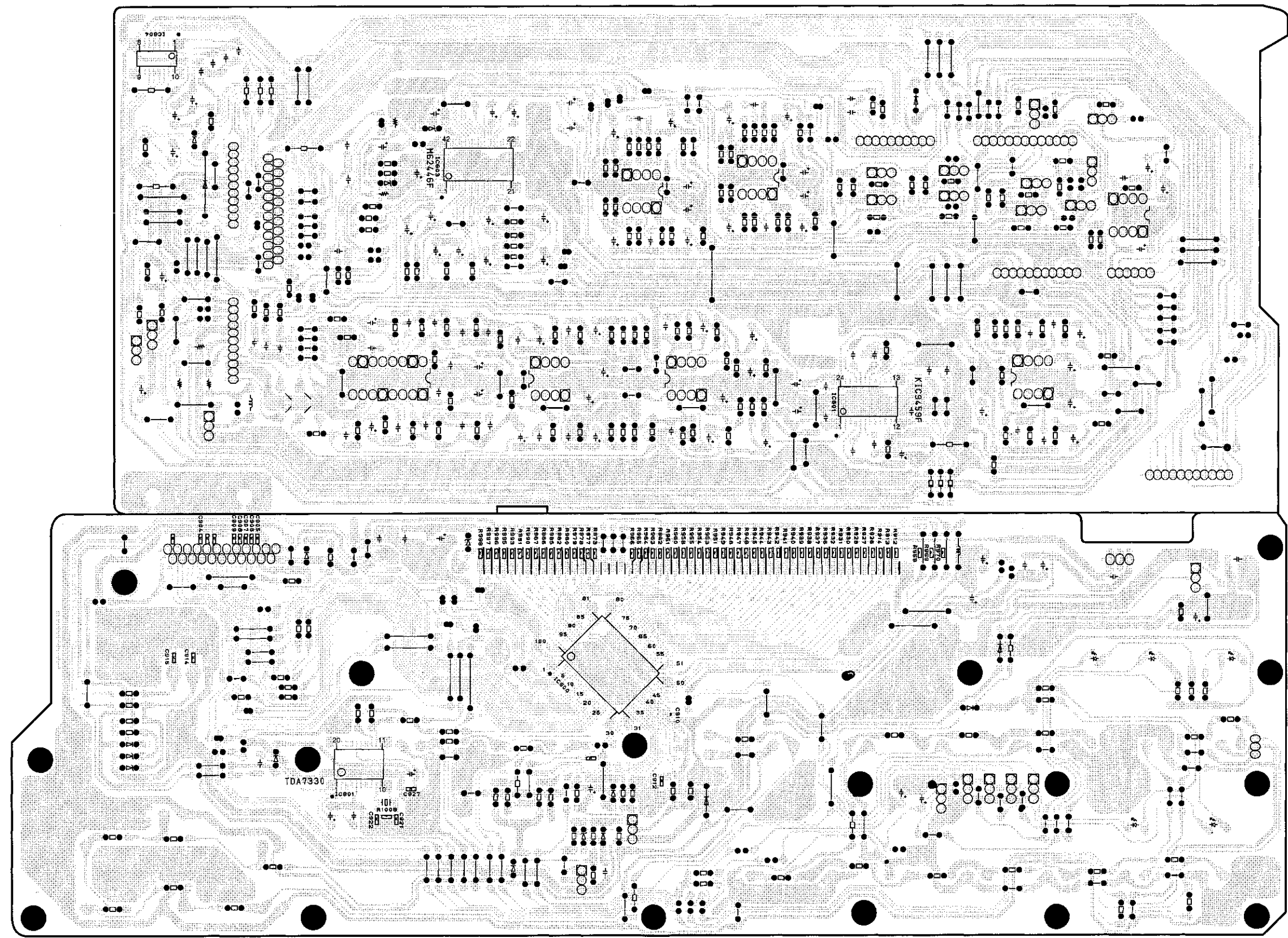
A

B

C

D

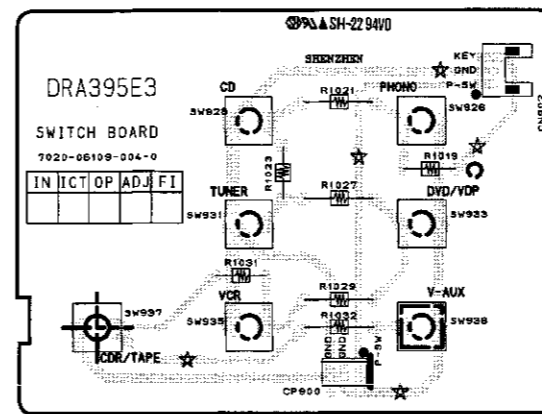
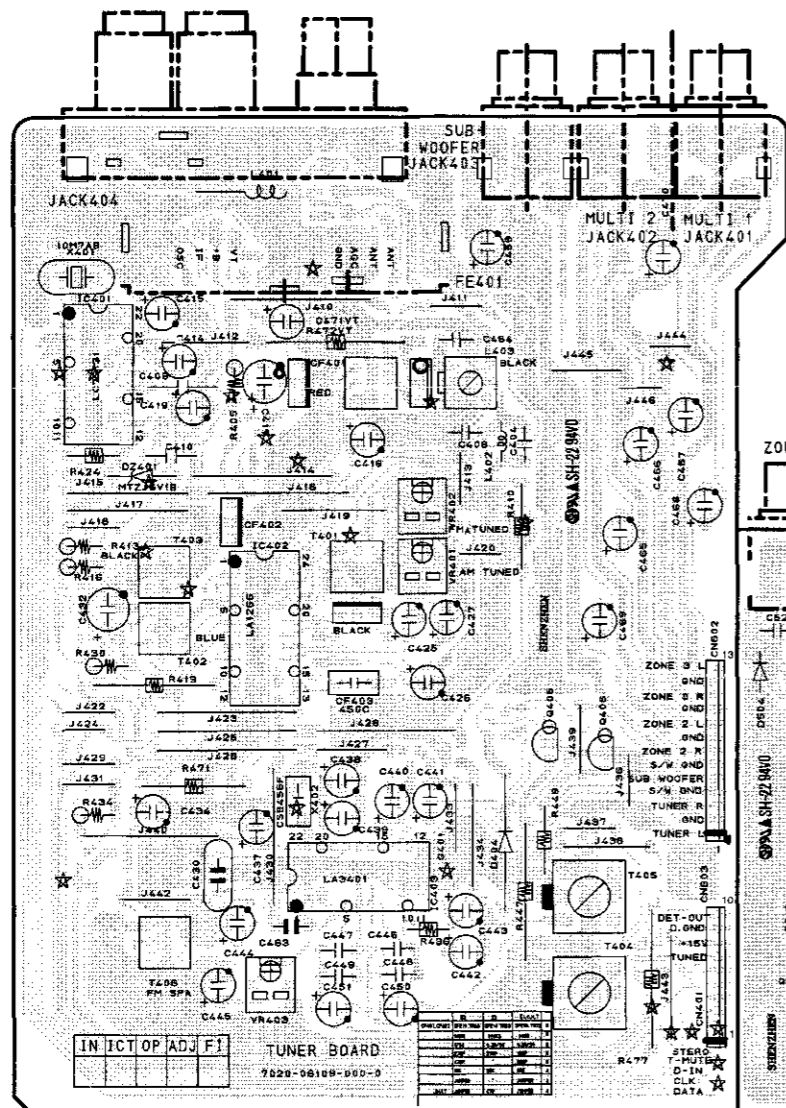
E



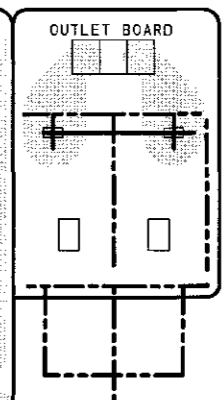
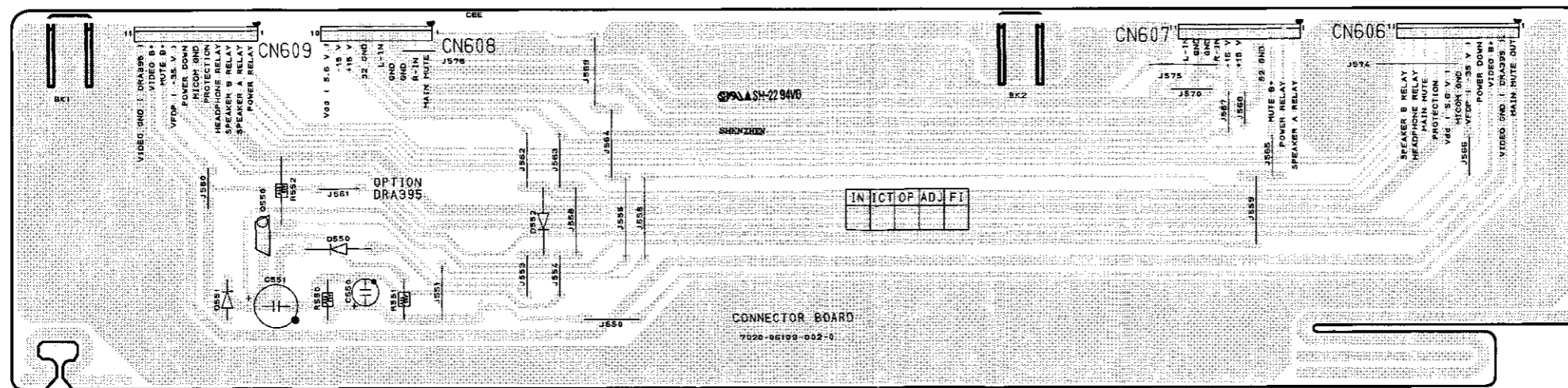
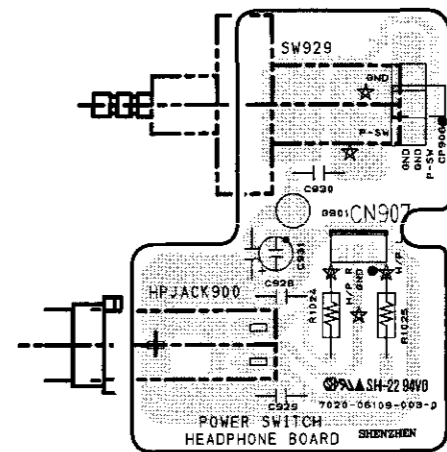
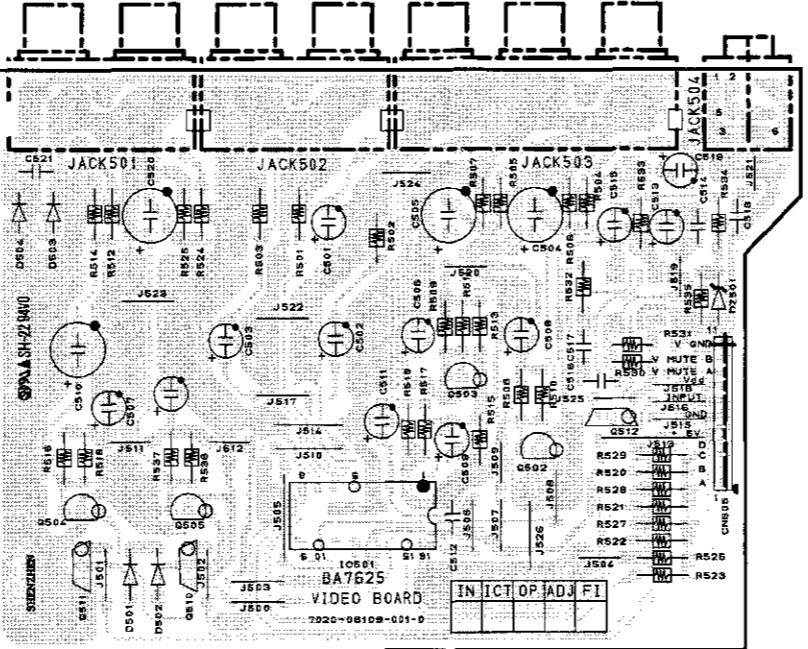
FOIL SIDE

1 2 3 4 5 6 7 8

TUNER P.W.B. UNIT Ass'y



ZONE 2 ZONE 3 DVD/VDP V.AUX VCR IN MONITOR VCR OUT ROOM TO ROOM



COMPONENT SIDE

A
B
C
D
E

1 2 3 4 5 6 7 8

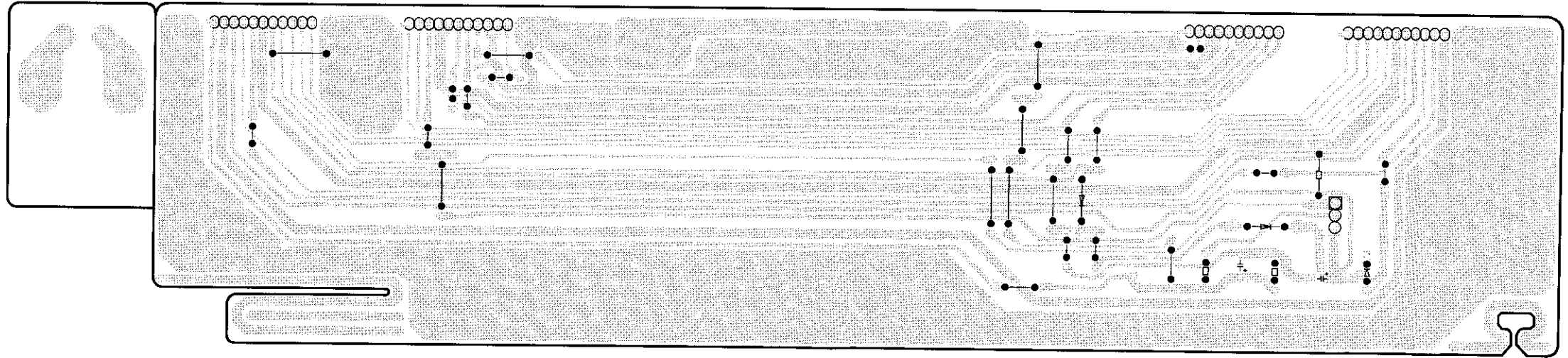
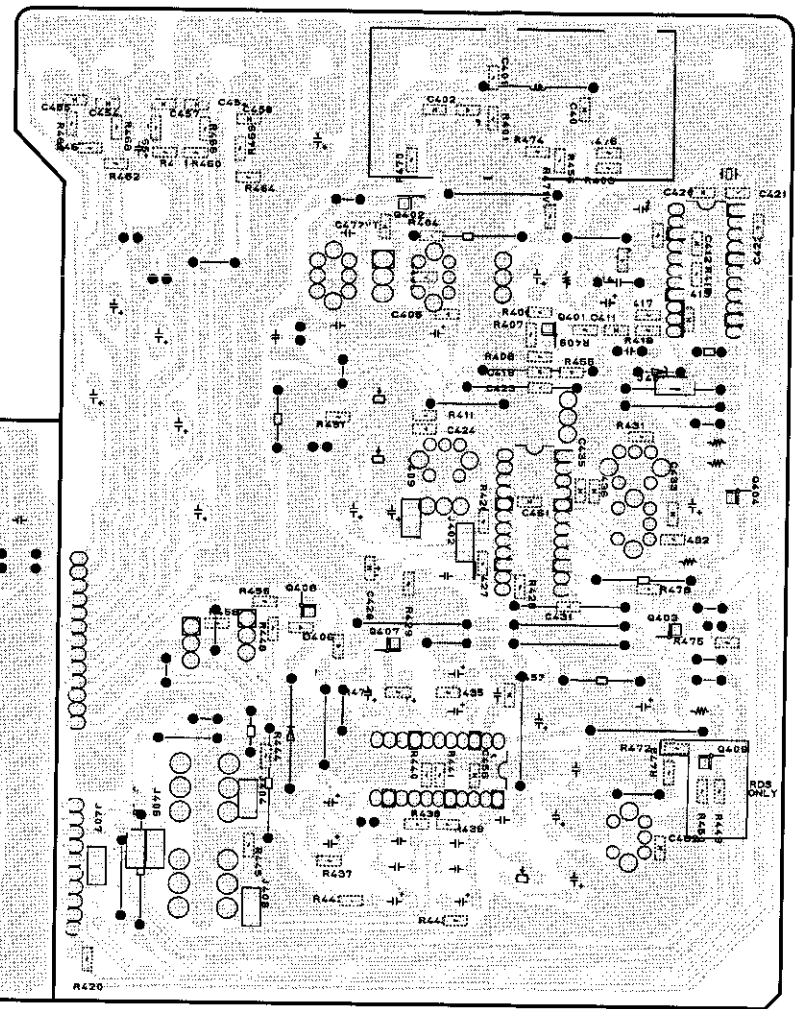
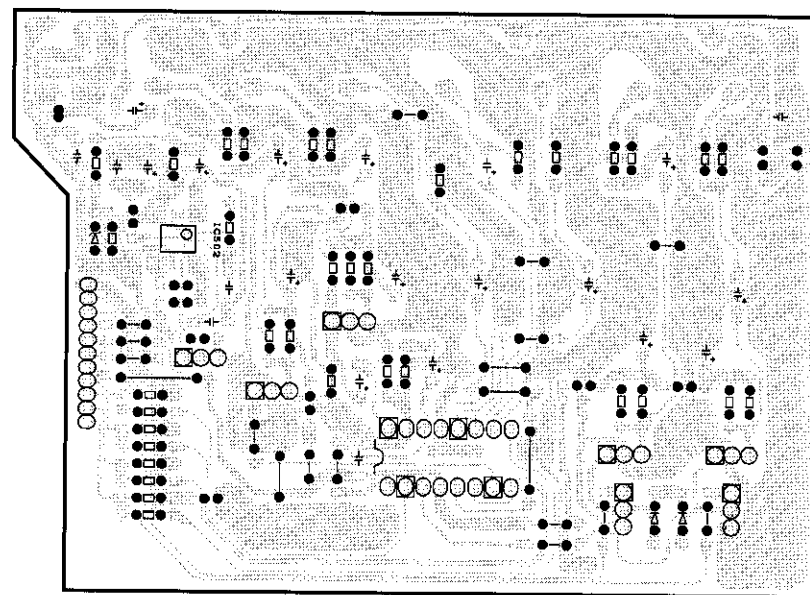
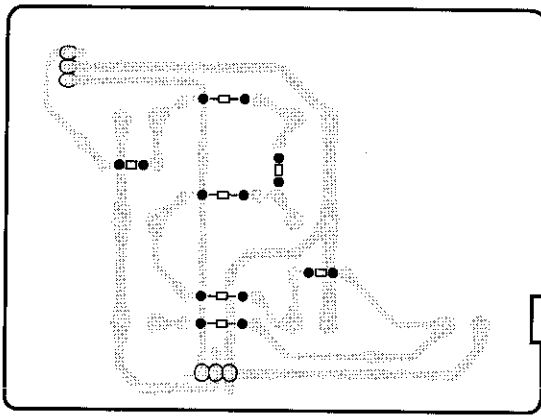
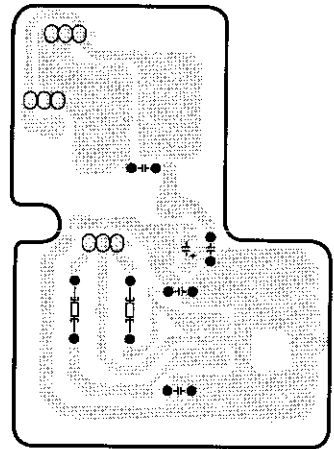
A

B

C

D

E




FOIL SIDE

NOTE FOR PARTS LIST

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

WARNING:

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

● Resistors

Ex.: BN 14K 2E 182 G FR
 Type Shape Power Resist- Allowable FR
 and per- ance error Others
 formance

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

* Resistance

$\overset{1}{\uparrow} \overset{8}{\text{---}} \overset{2}{\downarrow} \Rightarrow 1800 \text{ ohm} = 1.8 \text{ kohm}$
 Indicates number of zeros after effective number.
 2-digit effective number.

• Units: ohm

$\overset{1}{\uparrow} \overset{R}{\text{---}} \overset{2}{\downarrow} \Rightarrow 1.2 \text{ ohm}$
 1-digit effective number.
 2-digit effective number, decimal point indicated by R.

• Units: ohm

● Capacitors

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

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

* Capacity (electrolyte only)

$\overset{2}{\uparrow} \overset{2}{\text{---}} \overset{2}{\downarrow} \Rightarrow 2200\mu\text{F}$
 Indicates number of zeros after effective number.
 2-digit effective number.

• Units: μF .

$\overset{2}{\uparrow} \overset{R}{\text{---}} \overset{2}{\downarrow} \Rightarrow 2.2\mu\text{F}$
 1-digit effective number.
 2-digit effective number, decimal point indicated by R.

• Units: μF .

* Capacity (except electrolyte)

$\overset{2}{\uparrow} \overset{2}{\text{---}} \overset{2}{\downarrow} \Rightarrow 2200\text{pF} = 0.0022\mu\text{F}$
 (More than 2) — Indicates number of zeros after effective number.
 2-digit effective number.

• Units: pF.

$\overset{2}{\uparrow} \overset{2}{\text{---}} \overset{1}{\downarrow} \Rightarrow 220\text{pF}$
 (0 or 1) — Indicates number of zeros after effective number.
 2-digit effective number.

• Units: pF.

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

PARTS LIST OF P.W.B. UNIT

MAIN P.W.B. UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP				CAPACITORS GROUP			
IC101	963 0057 903	IC KIA7815AP	J126781500060	R162-164	244 2055 996	Metal film 1.2kohm 1W (NB)	C060012265050
IC102	963 0044 806	IC NJM7915FA	J126791500010	R165	244 2043 937	Metal oxide 10ohm 1W (NB)	C041010065060
IC103	960 0057 709	IC KIA7805AP	J126780500360	R166	244 2043 982	Metal film 0.22ohm 1W (NB)	C060R22065050
IC104	960 0196 001	IC NJM7805FA	J126780500130	R173	963 9003 068	Metal film 4.7ohm 1/4W (NB)	C0604R7063050
IC105	960 0195 808	IC ICP-N15	J120001500030	R190,191	963 0045 203	Winding 0.1ohm 5W	C144R10069110
IC300-302	960 0179 701	IC NJM2068DD	J121206800000	R195-197	244 2043 982	Metal film 0.22ohm 1W (NB)	C060R22065050
IC303	963 0071 400	IC TC9274N-008	J080927400010	R201	244 2043 982	Metal film 0.22ohm 1W (NB)	C060R22065050
Q101,102	960 0196 603	Transistor KTC2874B	J502287400010	R208	963 9005 105	Carbon film 68ohm 1/4W	C000068063520
Q103-106	960 0196 205	Transistor KSA992Y	J5000992F0050	R209	963 0043 108	Metal film 2.2Mohm 1/2W	C060022574000
Q107,108	960 0196 506	Transistor KSC1845F	J5021845F0000	VR101,102	960 0091 601	Semi fixed resistor 1kohm	C544102015130
Q115,116	960 0196 506	Transistor KSC1845F	J5021845F0000	RESISTORS GROUP			
Q117-119	963 0022 006	Transistor DTC114YS	J6020114Y0050	R117,118	960 9004 301	Metal film 47ohm 1/4W (NB)	C060047063050
Q120	960 0196 302	Transistor KTA1268BL	J5001268B0050	R127-130	244 2052 957	Metal film 5.6kohm 1W (NB)	C060056265070
Q121	960 0196 700	Transistor KTC3200BL	J5023200B0050	R135,136	963 9003 068	Metal film 4.7ohm 1/4W (NB)	C0604R7063050
Q122	960 0189 005	Transistor KSA916Y	J5000916Y0050	R137-140	244 2043 982	Metal film 0.22ohm 1W (NB)	C060R22065070
Q123	960 0005 105	Transistor KTA1266Y	J5001266Y0050	R141,142	963 9003 068	Metal film 4.7ohm 1/4W (NB)	C0604R7063050
Q124	960 0005 202	Transistor KTC3198Y	J5023198Y0000	R143-146	244 2043 982	Metal film 0.22ohm 1W (NB)	C060R22065070
Q125	960 0196 302	Transistor KTA1268BL	J5001268B0050	R153-156	244 2043 937	Metal oxide 10ohm 1W (NB)	C041010065060
Q126,127	960 0005 202	Transistor KTC3198Y	J5023198Y0000				
Q128	960 0196 302	Transistor KTA1268BL	J5001268B0050				
Q129,130	960 0005 202	Transistor KTC3198Y	J5023198Y0000				
Q131,132	960 0196 302	Transistor KTA1268BL	J5001268B0050				
Q133,134	960 0196 409	Transistor 2SC1740SR	J5021740S0010				
Q136	963 0022 006	Transistor DTC114YS	J6020114Y0050				
D101-113	963 0020 309	Diode 1SS133	K000013300520				
D114-119	963 0058 407	Diode 1N4007	K000400700520				
D120,121	963 0020 309	Diode 1SS133	K000013300520				
D122-125	963 0058 407	Diode 1N4007	K000400700520				
D126-129	963 0020 309	Diode 1SS133	K000013300520				
D130,131	963 0058 407	Diode 1N4007	K000400700520				
D132-135	963 0020 309	Diode 1SS133	K000013300520				
DB101,102	960 0197 107	Diode KBPC604	K047604000020				
DZ101,102	963 0046 202	Zener diode MTZJ18B	K06018R044520				
DZ103,104	963 0047 405	Zener diode MTZJ7.5B	K06007R544520				
DZ105	963 0058 708	Zener diode MTZJ20B	K06020R044520				
DZ106	960 0095 500	Zener diode MTZJ5.1B	K06005R144520				
DZ107-110	963 0047 502	Zener diode MTZJ3.3B	K06003R344520				
C101,102		Electrolytic 22uF/50V	D040220087060	C169	963 9005 176	Ceramic 4700pF/250V (AC)	D008472089010
C103,104		Electrolytic 10uF/50V	D040100087070	C170	963 9005 299	Electrolytic 100uF/100V	D04010108C200
C105,106	963 9005 118	Ceramic 100pF/50V	D004101067060	C171,172	963 0021 900	Mylar film 0.047uF/100V	D02047306C060
C107,108	963 9003 165	Ceramic 220pF/500V	D009092212500	C173	963 9005 286	Electrolytic 3300uF/16V	D040332083100
C109,110		Electrolytic 47uF/25V	D040470084070	C174		Electrolytic 10uF/50V	D040100087070
C111,112	963 9005 121	Ceramic 33pF/500V	D00033006D050	C176	963 0021 900	Mylar film 0.047uF/100V	D02047306C060
C115,116	963 9005 134	Ceramic 1200pF/50V	D004122287050				
C117,118		Electrolytic 47uF/50V	D040470087060				
C119,120	963 9003 084	Ceramic 100pF/500V	D00410106D050				
C121,122		Electrolytic 10uF/50V	D040100087070				
C123,124	963 9003 084	Ceramic 100pF/500V	D00410106D050				
C125,126	963 9004 517	Ceramic 0.022uF/50V	D004223597050				
C127-130	963 9003 097	Mylar film 0.1uF/250V	D02010407H080				
C135	963 9004 504	Ceramic 0.01uF/50V	D004103097060				
C136		Electrolytic 2.2uF/50V	D0402R2087100				
C137	963 9004 504	Ceramic 0.01uF/50V	D004103097060				
C138,139		Electrolytic 1uF/50V	D040010087080				
C140	963 9005 147	Ceramic 0.1uF/25V	D004104594050				
C141		Electrolytic 220uF/6.3V	D040221081230				
C142	963 9005 147	Ceramic 0.1uF/25V	D004104594050				
C143		Electrolytic 220uF/6.3V	D040221081230				
C144,145	963 9005 260	Electrolytic 8200uF/63V	D040822088030				
C146-150	963 9003 097	Mylar film 0.1uF/250V	D02010407H080				
C151		Electrolytic 1uF/50V	D040010087080				
C152	963 9005 163	Electrolytic 1000uF/50V	D040102087080				
C153-155	963 0021 900	Mylar film 0.047uF/100V	D02047306C060				
C156	960 9007 201	Electrolytic 3300uF/35V	D040332085010				
C157	963 9003 123	Electrolytic 1000uF/35V	D040102085040				
C158-161		Electrolytic 10uF/50V	D040100087070				
C162		Electrolytic 4.7uF/50V	D0404R7087100				
C164	963 9003 136	Electrolytic 1000uF/25V	D040102084060				
C167,168		Electrolytic 1uF/50V	D040010087080				
C169	963 9005 176	Ceramic 4700pF/250V (AC)	D008472089010				
C170	963 9005 299	Electrolytic 100uF/100V	D04010108C200				
C171,172	963 0021 900	Mylar film 0.047uF/100V	D02047306C060				
C173	963 9005 286	Electrolytic 3300uF/16V	D040332083100				
C174		Electrolytic 10uF/50V	D040100087070				
C176	963 0021 900	Mylar film 0.047uF/100V	D02047306C060				

Ref. No.	Part No.	Part Name	Remarks	Q'ty
C301		Electrolytic 10uF/50V	D040100087050	
C302,303	963 9005 273	Ceramic 220pF/50V	D004221067060	
C304		Electrolytic 10uF/50V	D040100087050	
C307,308		Electrolytic 220uF/6.3V	D040221081050	
C311,312	963 9005 118	Ceramic 100pF/50V	D004101067060	
C313,314	963 9004 779	Mylar film 0.024uF/50V	D020243167050	
C315,316	960 9008 695	Mylar film 6800pF/100V	D02068206C060	
C317,318		Electrolytic 4.7uF/50V	D0404R7087250	
C319,320	963 9004 517	Mylar film 0.022uF/50V	D004223597050	
C321-324		Electrolytic 47uF/25V	D040470084100	
C325,326	963 9005 118	Ceramic 100pF/50V	D004101067060	
C327,328		Electrolytic 4.7uF/50V	D0404R7087250	
C329,330		Electrolytic 10uF/50V	D040100087050	
C331,332	963 9005 118	Ceramic 100pF/50V	D004101067060	
C333,334		Electrolytic 4.7uF/50V	D0404R7087250	
C335,336	963 9005 118	Ceramic 100pF/50V	D004101067060	
C337,338		Electrolytic 10uF/50V	D040100087050	
C339-344	963 9005 118	Ceramic 100pF/50V	D004101067060	
C347-349		Electrolytic 1uF/50V	D040010087080	
OTHER PARTS GROUP				Q'ty
CN600	963 0086 709	11P connector base	L101100031110	1
CN601	963 0085 700	6P connector base	L101100030610	1
CP101	960 0197 505	2P connector base	L108202000220	1
CP102	960 0123 304	2P connector base	L104353280200	1
CP103	963 0081 403	4P connector base	L104353280400	1
CP104	960 0128 804	6P connector base	L102526700600	1
CP107	960 0123 207	3P connector base	L102526700300	1
CP608	963 0088 008	10P connector base	L101100041010	1
CP609	963 0087 805	11P connector base	L101100041110	1
CP907	963 0048 909	3P connector base	L101220030000	1
△F101	960 0188 705	Fuse 8A/125V	G650802121060	1
△F102	963 0089 803	Fuse 6.3A/125V	G650632121150	1
F101A,B	960 0005 804	Fuse clip	G645000050010	2
F102A,B	960 0005 804	Fuse clip	G645000050010	2
GND101,102	960 9006 600	GND terminal	3790040876010	2
JACK102	963 0074 009	8P speaker terminal	G61408103610A	1
JACK104	960 0181 508	2P AC outlet	G435204004010	1
JACK301	960 0188 307	6P pin jack	G603060610010	1
JACK302	960 0188 200	4P pin jack	G602040610000	1
JACK303	960 0188 307	6P pin jack	G603060610010	1
L101,102	963 0049 005	Inductor 0.5uH	D330R50000000	2
RLY101	960 0181 702	Relay (G5PA-28)	G680240502020	1
RLY102	963 0071 303	Relay (RSB24S)	G680240202010	1
RLY103	960 0181 702	Relay (G5PA-28)	G680240502020	1
RLY104	960 0181 605	Relay (G5PA-1-8)	G680120502010	1
△T101	960 0185 708	Power trans. (Sub)	8200280960010	1
TP101,102	960 0161 405	3P connector base	L101530140310	2
★	—	Heat sink	2120043538050	1
★	963 0018 007	Screw 3x8 (B)-Z	B020030081B10	2
★	963 0090 009	Shield plate	3070210146000	1

FRONT P.W.B. UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC601	960 0133 307	IC KIC9459F	J084945900010
IC602	963 0043 506	IC TC9184AP	J080918400010
IC603	960 0179 604	IC M62446FP	J084624460010
IC604	960 0195 400	IC PC74HC4094D	J040744094020
IC605-610	960 0179 701	IC NJM2068DD	J121206800000
IC900	963 0090 106	IC CXP82840-319Q	J020828403190
Q600-607	960 0196 603	Transistor KTC2874B	J502287400010
Q610,611	963 0075 309	Transistor DTA114ES	J6000114E0010
Q612	963 0022 006	Transistor DTC114YS	J6020114Y0050
Q900	960 0196 409	Transistor 2SC1740SR	J5021740S0010
Q901	963 0075 503	Transistor DTC144ES	J6020144E0010
Q902-904	963 0081 306	Transistor DTC114ES	J6020114E0010
Q905,906	960 0196 409	Transistor 2SC1740SR	J5021740S0010
Q907	963 0081 209	Transistor DTA144ES	J6000144E0010
Q908,909	960 0196 603	Transistor KTC2874B	J502287400010
D601,602	963 0020 309	Diode 1SS133	K000013300520
D603	963 0058 407	Diode 1N4007	K000400700520
D900-902	963 0020 309	Diode 1SS133	K000013300520
D903	963 0058 407	Diode 1N4007	K000400700520
D904-907	963 0020 309	Diode 1SS133	K000013300520
DZ900,901	960 0095 607	Zener diode MTZJ5.6B	K06005R644520
DZ902	963 0047 502	Zener diode MTZJ3.3B	K06003R344520
DZ903	960 0095 801	Zener diode MTZJ6.8B	K06006R844520
ZD900,901	960 0222 603	Zener diode MTZJ7.5A	K06007R544530
LED900-904	960 0197 204	LED HL50RDRF4T	K500052015010
FL900	960 0180 509	FLT (16-ST-42GNK)	K530164200010
RESISTORS GROUP			
R657,658	960 9003 700	Metal film 10ohm 1/4W (NB)	C060010063050
R714,715	244 2052 960	Metal film 220ohm 1W (NB)	C060022165050
R736	960 9004 301	Metal film 47ohm 1/4W (NB)	C060047063050
R912-914	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R926-928	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R930-932	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R936-949	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R951	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R953-955	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R958	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R960-966	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R968-970	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R973	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160

Ref. No.	Part No.	Part Name	Remarks
R977-980	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R982	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R985-987	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R990,991	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R993	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
R995	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160
CAPACITORS GROUP			
C600,601		Electrolytic 4.7uF/50V	D0404R7087100
C602,603	963 9005 192	Mylar film 1500pF/100V	D02015206C060
C604,605	963 9005 202	Mylar film 0.1uF/50V	D020104167050
C606,607		Electrolytic 47uF/25V	D040470084070
C608,609	963 9004 504	Ceramic 0.01uF/50V	D004103097060
C610-612	963 9005 118	Ceramic 100pF/50V	D004101067060
C613-616		Electrolytic 10uF/50V	D040100087050
C617,618	963 9005 215	Ceramic 39pF/50V	D000390067050
C619,620		Electrolytic 2.2uF/50V	D0402R208710C
C621,622	963 9005 118	Ceramic 100pF/50V	D004101067060
C623,624		Electrolytic 3.3uF/50V	D0403R308705C
C625,626	963 9005 228	Ceramic 47pF/50V	D000470067050
C627,628		Electrolytic 4.7uF/50V	D0404R7087100
C629,630	960 9008 695	Mylar film 6800pF/100V	D02068206C060
C631,632	963 9003 409	Mylar film 0.01uF/50V	D020103167050
C633,634	963 9005 231	Mylar film 0.056uF/50V	D020563067050
C635,636	960 9003 302	Mylar film 3300pF/50V	D020332167050
C637,638		Electrolytic 10uF/50V	D040100087050
C639,640	963 9000 155	Mylar film 0.22uF/63V	D020224078060
C641,642	963 9003 409	Mylar film 0.01uF/50V	D020103167050
C645		Electrolytic 10uF/50V	D040100087050
C648		Electrolytic 10uF/50V	D040100087050
C649-652		Electrolytic 4.7uF/50V	D0404R7087100
C659,660		Electrolytic 3.3uF/50V	D0403R308705C
C661,662		Electrolytic 22uF/25V	D04022008405C
C663,664		Electrolytic 4.7uF/50V	D0404R7087100
C665,666	963 9005 244	Ceramic 150pF/50V	D000151067060
C667,668		Electrolytic 10uF/50V	D040100087050
C669,670		Electrolytic 4.7uF/50V	D0404R7087100
C671,672	963 9005 244	Ceramic 150pF/50V	D000151067060
C673-675		Electrolytic 10uF/50V	D040100087050
C676		Electrolytic 100uF/25V	D040101084060
C677		Electrolytic 4.7uF/50V	D0404R7087100
C678,679	963 9004 504	Ceramic 0.01uF/50V	D004103097060
C680		Electrolytic 100uF/25V	D040101084060
C681,682		Electrolytic 4.7uF/50V	D0404R7087100
C683	963 9005 118	Ceramic 100pF/50V	D004101067060
C684,685		Electrolytic 0.1uF/100V	D0400R108C00C
C686	963 9005 121	Ceramic 33pF/50V	D000330067050
C687	963 9005 118	Ceramic 100pF/50V	D004101067060
C688		Electrolytic 47uF/25V	D040470084070
C689-698	963 9005 118	Ceramic 100pF/50V	D004101067060
C699,700	963 9005 257	Mylar film 0.022uF/50V	D020223167050

TUNER P.W.B. UNIT ASS'Y

Ref. No.	Part No.	Part Name	Remarks
C701-712		Electrolytic 10uF/50V	D040100087050
C713		Electrolytic 47uF/25V	D040470084070
C714		Electrolytic 100uF/35V	D04010108505C
C900	963 0021 900	Mylar film 0.047uF/100V	D02047306C060
C901		Electrolytic 1uF/50V	D040010087080
C902		Electrolytic 47uF/25V	D040470084070
C903	963 0021 900	Mylar film 0.047uF/100V	D02047306C060
C904-909	963 9004 575	Ceramic chip 100pF/50V	D010101167160
C910	963 9004 708	Ceramic chip 0.1uF/50V	D011104577160
C911	963 0061 504	Back up cap. 8200uF/5.5V	D040822080010
C912	963 9004 708	Ceramic chip 0.1uF/50V	D011104577160
C913		Electrolytic 4.7uF/50V	D0404R7087100
C914,915	963 9004 698	Ceramic chip 0.01uF/50V	D011103777160
C916	963 0021 900	Mylar film 0.047uF/100V	D02047306C060
C918	963 9004 504	Ceramic 0.01uF/50V	D004103097060
C919		Electrolytic 47uF/50V	D040470087060
C920	963 0021 900	Mylar film 0.047uF/100V	D02047306C060
C932		Electrolytic 100uF/50V	D040101087060
C933,934		Electrolytic 33uF/16V	D04033008305C

OTHER PARTS GROUP

Q'ty

CN900	963 0089 706	3P connector cord (L=100)	L000101030070	1
CP600	963 0087 805	11P connector base	L101100041110	1
CP601	963 0087 009	6P connector base	L101100040610	1
CP602	960 0128 700	13P connector base	L101353361310	1
CP603	963 0088 008	10P connector base	L101100041010	1
CP604	963 0071 206	23P FFC connector base	L131520452345	1
CP605	963 0087 805	11P connector base	L101100041110	1
CP607,608	963 0087 805	11P connector base	L101100041110	2
CP901	963 0071 109	23P FFC connector base (L)	L131520442345	1
CP902	963 0049 102	3P connector base (L)	L102526803010	1
L900	960 0128 008	Inductor 100uH	D330101001020	1
REM900	960 0181 100	Remocon sensor NJL64H380A	E940643800000	1
RLY600	963 0071 303	Relay (RSB24S)	G680240202010	1
SW900-923	963 0045 708	Tact switch	G180000270010	24
SW924	960 0181 207	Rotary encoder (EC16B2420431)	G121162420400	1
XTAL900	960 0112 001	Ceramic resonator	CST10.0MGW-TF01 E830100000050	1
★	960 0184 408	FLT holder	4320200026000	1

Ref. No.	Part No.	Part Name	Remarks
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SEMICONDUCTORS GROUP

IC401	963 0043 700	IC LC72131	J120721310030
IC402	963 0043 904	IC LA1266	J124126600010
IC403	963 0044 000	IC LA3401	J124340100010
IC501	960 0175 200	IC BA7625	J171762500000
IC502	960 0174 104	IC CXA1511M	J030151100010
Q401	963 0058 300	Transistor KTC3880S	J5223880C00210
Q402	963 0079 305	Transistor DTA114YK	J5200114Y0210
Q403,404	963 0058 203	Transistor DTA114EK	J5200114E0210
Q405,406	960 0196 603	Transistor KTC2874B	J502287400010
Q407	963 0024 208	Transistor DTC114YK	J5220114Y0210
Q408	963 0058 203	Transistor DTA114EK	J5200114E0210
Q502-505	960 0005 105	Transistor KTA1266Y	J5001266Y0050
Q510,511	963 0022 006	Transistor DTC114YS	J6020114Y0050
Q512	963 0081 209	Transistor DTA144ES	J6000144E0010
Q550	963 0075 309	Transistor DTA114ES	J6000114E0010
D403	960 0197 000	Diode KDS160	K005016000010
D404	963 0020 309	Diode 1SS133	K000013300520
D405,406	960 0197 000	Diode KDS160	K005016000010
D501-504	963 0020 309	Diode 1SS133	K000013300520
D550	963 0058 407	Diode 1N4007	K000400700520
D551	963 0020 309	Diode 1SS133	K000013300520
D552	963 0058 407	Diode 1N4007	K000400700520
DZ401	960 0095 500	Zener diode MTZJ5.1B	K06005R144520
DZ501	960 0095 704	Zener diode MTZJ6.2B	K06006R244520

RESISTORS GROUP


R401	963 9004 821	Carbon chip 10ohm 1/16W	C20001006M160
R403	963 9004 339	Carbon chip 470ohm 1/16W	C20004716M160
R404	963 9004 083	Carbon chip 100kohm 1/16W	C20001046M160
R405	960 9003 807	Metal film 100ohm 1/4W (NB)	C060010163050
R406	963 9004 342	Carbon chip 4.7kohm 1/16W	C20004726M160
R407	963 9004 339	Carbon chip 470ohm 1/16W	C20004716M160
R408	963 9004 119	Carbon chip 1.2kohm 1/16W	C20001226M160
R409	963 9004 339	Carbon chip 470ohm 1/16W	C20004716M160
R411		Carbon chip 68kohm 1/16W	C20006836M160
R412	963 9004 834	Carbon chip 5.6kohm 1/16W	C20005626M160
R413	960 9006 503	Metal film 220ohm 1/4W (NB)	C060022163050
R414	963 9004 216	Carbon chip 2.2kohm 1/16W	C20002226M160
R415	963 9003 398	Carbon chip 1kohm 1/16W	C20001026M160
R416		Metal film 680ohm 1/4W (NB)	C060068163050
R417	963 9003 398	Carbon chip 1kohm 1/16W	C20001026M160
R418	963 9004 274	Carbon chip 33kohm 1/16W	C20003336M160
R420	963 9004 847	Carbon chip 3.3kohm 1/16W	C20003326M160
R426,427	963 9004 070	Carbon chip 10kohm 1/16W	C20001036M160

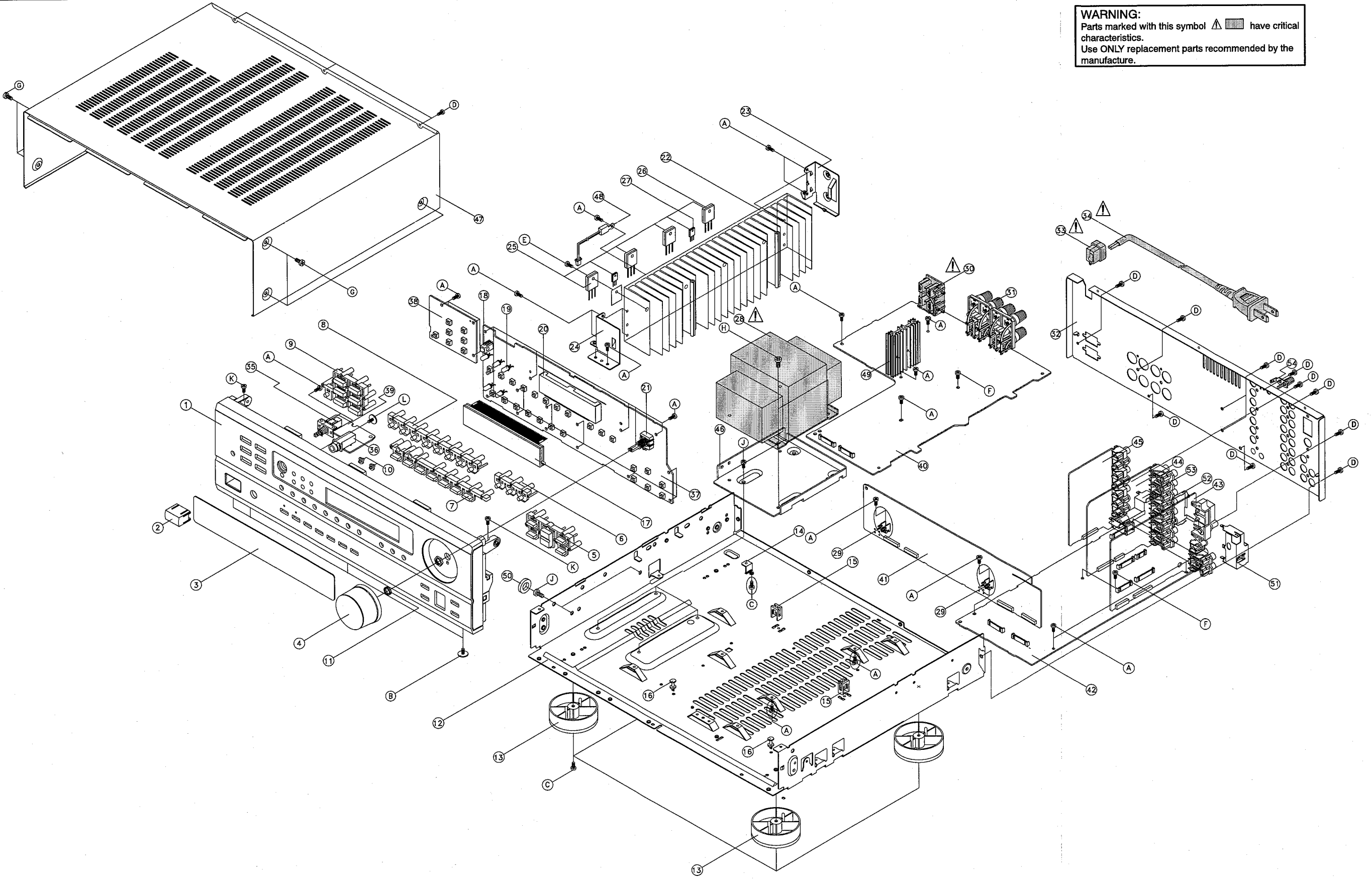
Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
R428	963 9004 847	Carbon chip 3.3kohm 1/16W	C20003326M160	C422	963 9004 656	Ceramic chip 470pF/50V	D010471167160
R429	963 9004 850	Carbon chip 82ohm 1/16W	C20008206M160	C423,424	963 9004 737	Ceramic chip 0.022uF/25V	D011223777160
R430	963 9003 807	Metal film 100ohm 1/4W (NB)	C060010163050	C425		Electrolytic 4.7uF/50V	D0404R7087100
R431	963 9004 371	Carbon chip 5.1kohm 1/16W	C20005126M160	C426		Electrolytic 3.3uF/50V	D0403R3087100
R432	963 9004 070	Carbon chip 10kohm 1/16W	C20001036M160	C427		Electrolytic 4.7uF/50V	D0404R7087100
R434	963 9003 807	Metal film 100ohm 1/4W (NB)	C060010163050	C428	963 9004 737	Ceramic chip 0.022uF/25V	D011223777160
R435	963 9004 847	Carbon chip 3.3kohm 1/16W	C20003326M160	C430	963 0021 900	Mylar film 0.047uF/100V	D02047306C060
R437-439	963 9004 083	Carbon chip 100kohm 1/16W	C20001046M160	C431	963 9004 627	Ceramic chip 33pF/50V	D010330167160
R440,441	963 9004 863	Carbon chip 120kohm 1/16W	C20001246M160	C432		Electrolytic 47uF/25V	D040470084070
R442,443	963 9004 847	Carbon chip 3.3kohm 1/16W	C20003326M160	C433	963 9004 737	Ceramic chip 0.022uF/25V	D011223777160
R444,445	963 9004 481	Carbon chip 8.2kohm 1/16W	C20008226M160	C434		Electrolytic 1uF/50V	D040010087080
R448	963 9004 216	Carbon chip 2.2kohm 1/16W	C20002226M160	C435,436	963 9004 737	Ceramic chip 0.022uF/25V	D011223777160
R455	963 9004 876	Carbon chip 330ohm 1/16W	C20003316M160	C437		Electrolytic 47uF/25V	D040470084070
R456	963 9003 385	Carbon chip 100ohm 1/16W	C20001016M160	C438		Electrolytic 1uF/50V	D040010087080
R458,459	963 9004 342	Carbon chip 4.7kohm 1/16W	C20004726M160	C439		Electrolytic 0.22uF/50V	D040R22087100
R460-464	963 9004 083	Carbon chip 100kohm 1/16W	C20001046M160	C440,441		Electrolytic 1uF/50V	D040010087080
R465-469	963 9004 203	Carbon chip 220ohm 1/16W	C20002216M160	C442		Electrolytic 2.2uF/50V	D0402R2087100
R470	963 9003 398	Carbon chip 1kohm 1/16W	C20001026M160	C443		Electrolytic 10uF/50V	D040100087050
R471VT	963 9004 203	Carbon chip 220ohm 1/16W	C20002216M160	C444		Electrolytic 4.7uF/50V	D0404R7087100
R473	963 9003 372	Carbon chip 0ohm 1/16W	C20000006M160	C445		Electrolytic 10uF/50V	D040100087050
R475	963 9004 122	Carbon chip 12kohm 1/16W	C20001236M160	C446,447	963 9005 053	Ceramic 270pF/50V	D004271277050
R476	963 9004 397	Carbon chip 56kohm 1/16W	C20005636M160	C448,449	963 9004 960	Ceramic 470pF/50V	D004471067060
R478	963 9004 070	Carbon chip 10kohm 1/16W	C20001036M160	C450,451		Electrolytic 10uF/50V	D040100087050
R479	963 9004 083	Carbon chip 100kohm 1/16W	C20001046M160	C452	963 9004 575	Ceramic chip 100pF/50V	D010101167160
R491	963 9004 229	Carbon chip 22kohm 1/16W	C20002236M160	C453	963 9004 614	Ceramic chip 27pF/50V	D010270167160
R1024,1025	963 0048 006	Metal film 330ohm 2W	C060033166520	C454,455	963 9004 575	Ceramic chip 100pF/50V	D010101167160
VR401	960 0096 606	Semi fixed resistor 20kohm	C541203115000	C456	963 9004 672	Ceramic chip 680pF/50V	D010681167160
VR402	963 0056 205	Semi fixed resistor 50kohm	C541503115000	C457,458	963 9004 575	Ceramic chip 100pF/50V	D010101167160
VR403	963 0052 005	Semi fixed resistor 200kohm	C541204115000	C459		Electrolytic 1uF/50V	D040010087080
CAPACITORS GROUP				C461	963 9004 591	Ceramic chip 22pF/50V	D010220167160
C401,402	963 9004 685	Ceramic chip 1000pF/50V	D011102777160	C463	963 9004 782	Mylar film 0.056uF/100V	D02056306C060
C403	963 9004 737	Ceramic chip 0.022uF/25V	D011223777160	C464	963 9004 973	Ceramic 3pF/50V	D000030007050
C404	963 9004 892	Ceramic 2pF/50V	D000020007050	C465-469		Electrolytic 10uF/50V	D040100087050
C405	963 9004 737	Ceramic chip 0.022uF/25V	D011223777160	C470		Electrolytic 1uF/50V	D040010087080
C406	963 9004 902	Ceramic chip 18pF/50V	D010180167160	C471VT		Electrolytic 1uF/50V	D040010087080
C408	960 9004 709	Ceramic 6pF/50V	D000060007050	C472VT	963 9004 753	Ceramic chip 0.047uF/50V	D011473597160
C409	963 9004 520	Ceramic 100pF/50V	D005101177520	C501-503		Electrolytic 4.7uF/50V	D0404R7087100
C410	963 9004 915	Ceramic 470pF/50V	D005471277520	C504,505		Electrolytic 470uF/10V	D040471082060
C411	963 9004 685	Ceramic chip 1000pF/50V	D011102777160	C506-508		Electrolytic 10uF/50V	D040100087050
C412	963 9004 737	Ceramic chip 0.022uF/25V	D011223777160	C509		Electrolytic 100uF/10V	D040101082060
C413	963 9004 575	Ceramic chip 100pF/50V	D010101167160	C510		Electrolytic 470uF/10V	D040471082060
C414		Electrolytic 2.2uF/50V	D0402R2087100	C511		Electrolytic 1uF/50V	D040010087080
C415		Electrolytic 47uF/25V	D040470084070	C512	963 9004 517	Ceramic 0.022uF/50V	D004223597050
C416		Electrolytic 10uF/50V	D040100087050	C513		Electrolytic 47uF/25V	D040470084070
C417		Electrolytic 100uF/16V	D040101083100	C514	960 9008 653	Mylar film 0.012uF/100V	D02012306C060
C418	963 9004 698	Ceramic chip 0.01uF/50V	D011103777160	C515		Electrolytic 1uF/50V	D040010087080
C419		Electrolytic 10uF/50V	D040100087050	C516	960 9008 653	Mylar film 0.012uF/100V	D02012306C060
C420	963 9004 591	Ceramic chip 22pF/50V	D010220167160	C517	963 9005 118	Ceramic 100pF/50V	D004101067060
C421	963 9004 928	Ceramic chip 24pF/50V	D010240167200	C518	963 9004 504	Ceramic 0.01uF/50V	D004103097060
				C519		Electrolytic 1uF/50V	D040010087080
				C520		Electrolytic 470uF/10V	D040471082060

Ref. No.	Part No.	Part Name	Remarks	Q'ty	Ref. No.	Part No.	Part Name	Remarks	Q'ty
C521	963 9004 504	Ceramic 0.01uF/50V	D004103097060		SW935	963 0045 708	Tact switch	G180000270010	1
C550		Electrolytic 0.1uF/50V	D040R10087070		SW937,938	963 0045 708	Tact switch	G180000270010	2
C551		Electrolytic 100uF/25V	D040101084060		T401	960 0186 600	MW IFT (PCFMAF-270)	D950500200000	1
C928,929	963 9004 533	Ceramic 1000pF/50V	D005102177530		T402	960 0007 349	FM DET trans.	D951561100000	1
C930	960 9003 108	Ceramic 0.022uF/25V	D005223594520		T403	960 0007 352	FM DET trans.	D951561200000	1
C931		Electrolytic 1uF/50V	D040010087080		X401	960 0187 405	Crystal 7.2MHz	E8007R2000071	1
OTHER PARTS GROUP				Q'ty	X402	963 0043 302	Ceramic resonator	CSB456F11	1
CF401,402	960 0187 104	Ceramic filter	SFE10.7MA8	2				E830456000050	
			E430107000140		★	963 0054 003	Shield cover	3070210056000	1
CF403	960 0187 609	Ceramic resonator	BFU450C	1	★	963 0088 406	Earth plate C	4470210206000	1
			E830450000070		★	960 0184 000	Screw bracket	4010210196000	2
CN602	960 0129 706	13P connector base	L101352371310	1					
CN603	963 0085 409	10P connector base	L101100031010	1					
CN605	963 0086 709	11P connector base	L101100031110	1					
CN606,607	963 0086 709	11P connector base	L101100031110	2					
CN608	963 0085 409	10P connector base	L101100031010	1					
CN609	963 0086 709	11P connector base	L101100031110	1					
CN902	963 0049 908	3P connector base	L101220030010	1					
CN907	963 0089 308	3P connector cord (L=400)	L000401030020	1					
CP900	963 0086 000	2P connector cord (L=80)	L000800020060	1					
CP906	963 0048 909	3P connector base	L101220030000	1					
FE401	960 0187 706	Tuner pack	E900401010020	1					
G401	—	1P Wire (L=80)	8410800010010	1					
G901	—	1P Wire (L=80)	8410800010010	1					
HAJACK900	960 0187 502	Headphone jack (D6.5)	G402038400031	1					
J401-404	963 9003 369	Carbon chip 0ohm 1/8W	C200000061300	4					
J407	963 9003 369	Carbon chip 0ohm 1/8W	C200000061300	1					
J409	963 9003 369	Carbon chip 0ohm 1/8W	C200000061300	1					
JACK401,402	960 0188 200	4P pin jack	G602040610000	1					
JACK403	960 0194 508	1P pin jack	G600010003020	1					
JACK404	963 0052 403	3P antenna terminal	G593021068010	1					
JACK501,502	960 0194 605	2P pin jack	G601020163010	2					
JACK503	960 0188 404	3P pin jack	G606030164020	1					
JACK504	963 0071 002	Mini jack	G401065020000	1					
L401,402	963 0052 102	Inductor 1uH	D3301R0001020	2					
L403	963 0056 409	MW IFT (RBW07VB-K5025)	D950500500010	1					
SW926	963 0045 708	Tact switch	G180000270010	1					
SW928	963 0045 708	Tact switch	G180000270010	1					
SW929	960 0176 209	Push switch	G000122000010	1					
SW931	963 0045 708	Tact switch	G180000270010	1					
SW933	963 0045 708	Tact switch	G180000270010	1					

EXPLODED VIEW

1 2 3 4 5 6 7 8

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

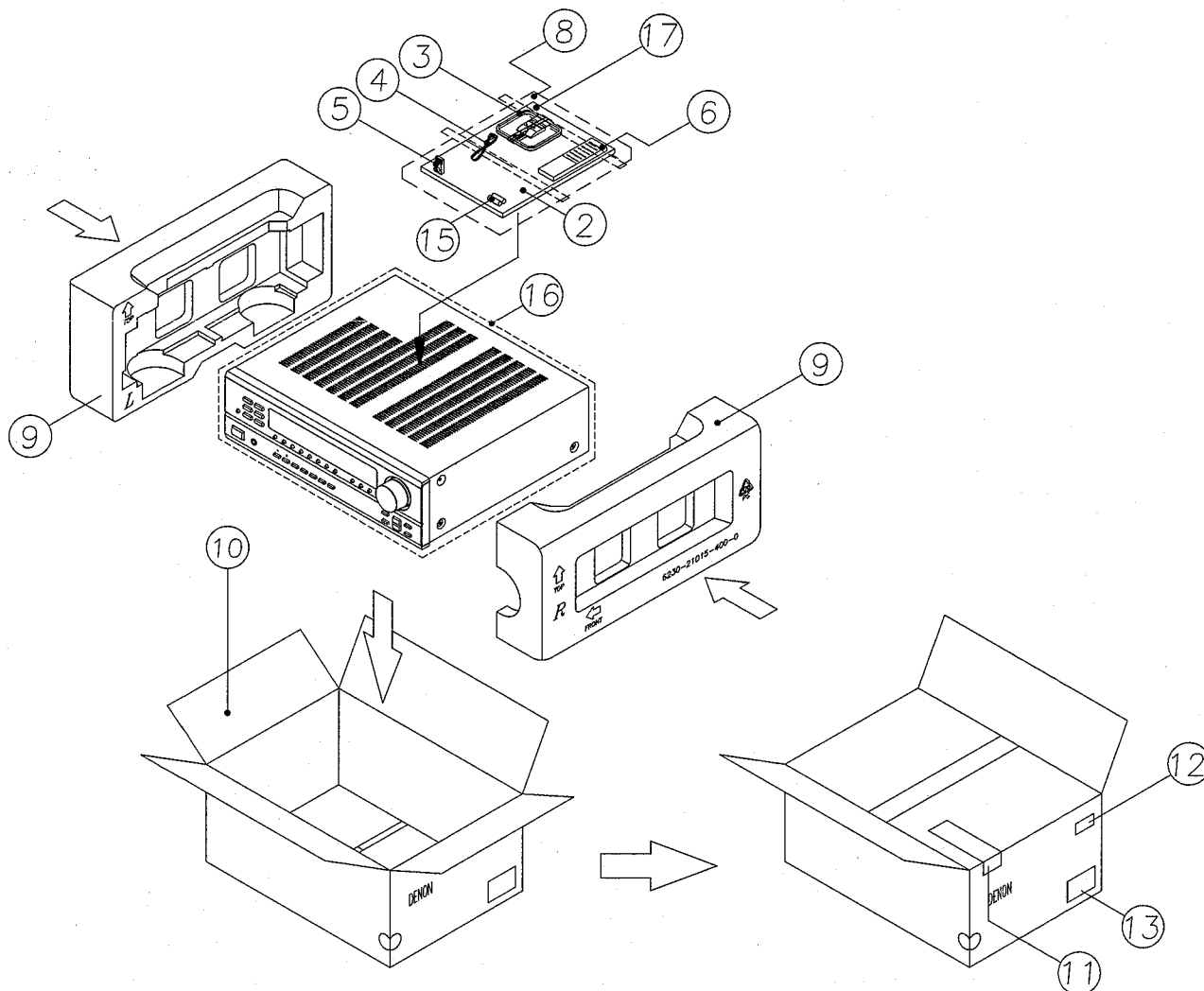


A
B
C
D
E

PARTS LIST OF EXPLODED VIEW

Ref. No.	Part No.	Part Name	Remarks	Q'ty	Ref. No.	Part No.	Part Name	Remarks	Q'ty
40 44	963 0080 200	Main P.W.B. unit Ass'y	7025HK0010010	1	31	963 0074 009	8P speaker terminal	JACK102 G61408103610A	1
		Main P.W.B. unit			32	963 0076 405	Back panel	3207210766500	1
		Input P.W.B. unit			△ 33	960 0192 403	Cord bush	4380210002000	1
37 42	963 0080 307	Front P.W.B. unit Ass'y	7025HK0010011	1	△ 34	960 0166 400	AC cord	L068020030010	1
		Front P.W.B. unit			35	960 0176 209	Push switch	SW929 G000122000010	1
		Volume P.W.B. unit			36	960 0187 502	Headphone jack (D6.5)	G402038400031	1
38 39 41 43 45	963 0080 404	Tuner P.W.B. unit Ass'y	7025HK0010012	1	46	963 0072 205	Trans bracket	4010210466001	1
		Switch P.W.B. unit			47	963 0053 017	Top cover	3000210096001	1
		Power SW/HP P.W.B. unit			48	960 0187 900	Posistor P43T7D330BW16	F320161001020	1
		Connector P.W.B. unit			49	—	Heat sink	2120043538050	1
		Tuner P.W.B. unit			50	963 0072 302	Rubber cushion	4050210165000	2
		Video P.W.B. unit			51	963 0054 003	Shield cover	3070210056000	1
1	963 0076 201	Front panel	3067210651200Z	1	52	963 0088 406	Earth plate C	4470210206000	1
2	960 0185 009	Power button	5090210201000Z	1	53	960 0090 009	Shield plate	3070210146000	1
3	963 0076 609	Display window	5077210262030	1	54	960 0183 807	Terminal	3790000090000	1
4	963 0054 906	Volume knob	5087210191010Z	1	★ 55	963 0089 104	Rubber sheet	1210210235000	3
5	963 0053 703	5key button	5097210471000Z	1	★ 56	960 0155 301	Wire clamper	4330040343010	4
6	963 0053 606	3key button	5090210511000Z	1	★ 57	963 0054 207	Fuse caution label	5527042410020	1
7	963 0089 900	7(A)key button	5090210491201Z	1	★ 58	963 0089 007	FFC cable	CP901 L301171230010	1
8	963 0053 509	8key button	5090210501000Z	1	SCREWS				
9	963 0076 803	7(B)key button	5090211331000Z	1	A	963 0018 007	Screw 3x8 (B)-Z	B020030081B10	44
10	960 0191 417	LED lens	3710210043001	2	B	960 9008 527	Screw 3x8 (B) W-B	1500001456020	4
11	963 0051 006	Knob spring	3720210116000	1	C	963 0048 200	Screw 3x10 (B)-Z	B020030101B10	5
12	960 0198 229	Main chassis	3200210146301	1	D	960 0108 714	Screw 3x10 (B)-B	B020030103B11	28
13	960 0183 904	Foot Ass'y	400802006101C	4	E	963 9004 009	Screw 3x14 (P) SW W-Z	B018230141H10	6
14	960 0184 107	Support bracket	4010210206000	1	F	963 0018 104	Screw 3x17 (B)-Z	B020030171B10	2
15	960 0003 301	P.W.B. support	4070001601010	2	G	963 0048 307	Screw 4x8 (B)-B	1500040083B10	6
16	963 0051 103	Card spacer	4300210062000	2	H	960 9008 417	Screw 4x8 (P) SW W-Z	B028940081B10	4
17	960 0180 509	FLT (16-ST-42GNK)	FL900	1	J	963 9004 025	Screw 4x6 (S)-Z	B020740061B10	6
18	960 0181 100	Remocon sensor NJL64H380A	K530164200010	1	K	963 9004 038	Screw 3x8 (B) W-Z	1500001206010	2
			REM900		L	960 9008 420	Screw 3x8 (B) W-Z	1500001456010	
19	960 0197 204	LED HL50RDRF4T	E940643800000	5					
			LED900-904						
20	960 0184 408	FLT holder	4320200026000	1					
21	960 0181 207	Rotary encoder (EC16E2420431)	SW924	1					
22	—	Heat sink (main)	G121162420400	1					
23	960 0184 204	Heat sink bracket B	4010210386000	1					
24	960 0184 301	Heat sink bracket F	4010210396000	1					
25	963 0044 107	Transistor 2SB1560Y	Q113,114	2					
			J5011560Y0000						
26	963 0044 204	Transistor 2SD2390Y	Q111,112	2					
			J5032390Y0000						
27	963 0058 106	Transistor 2SD947F	Q109,110	2					
			J503947F00000						
△ 28	963 0080 501	Power trans.	8200858680020	1					
29	960 0184 000	Screw bracket	4010210196000	2					
△ 30	960 0181 508	2P AC outlet	JACK104 G435204004010	1					

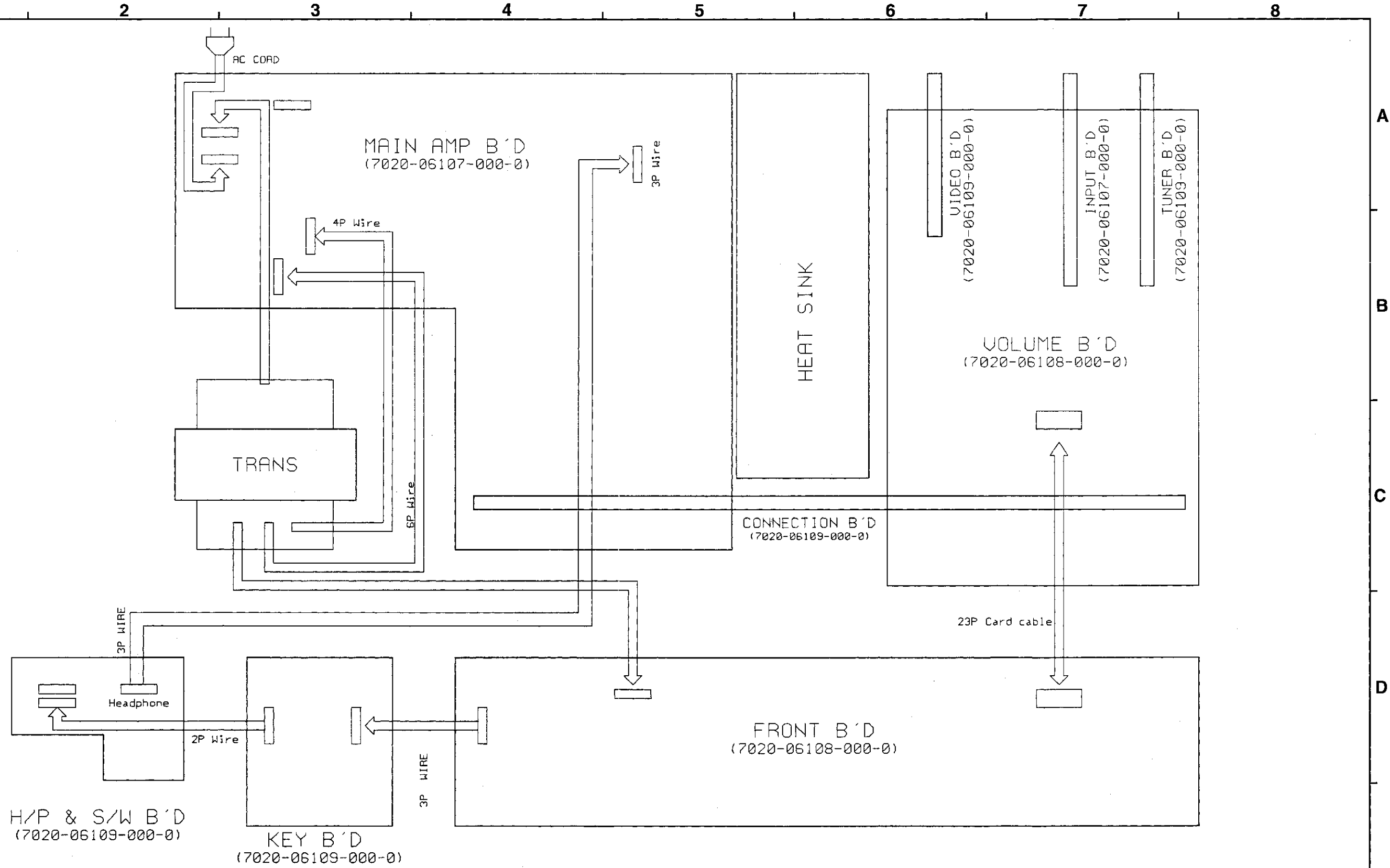
PACKING VIEW



PARTS LIST OF PACKING & ACCESSORIES

Ref. No.	Part No.	Part Name	Remarks	Q'ty	Ref. No.	Part No.	Part Name	Remarks	Q'ty
2	963 0080 006	Instruction manual	5707210170270	1	10	963 0080 103	Carton case	6007210310030	1
3	963 0052 306	AM loop antenna	E605010090000	1	11	—	DEL warranty home	5777001610020	1
4	963 0081 102	FM antenna wire	E605010010000	1	12	—	UPC label	5507002330110	1
5	963 0052 704	FM antenna adapter	L109000180010	1	13	—	Control label	5500014920010	2
6	963 0081 908	Remote control unit RC-894	8300894000010	1	15	—	Battery (R03/AAA)	G670011R50000	2
8	963 0045 106	Poly bag	6330000240000	1	16	960 0185 601	Set poly bag	6330210019000	1
9	963 0193 101	Cushion (L/R)	6230210154001	1	17	—	S.S. list (EX)	5777001620012	1

WIRING DIAGRAM



DRA-395 WIRING DIAGRAM

A

B

C

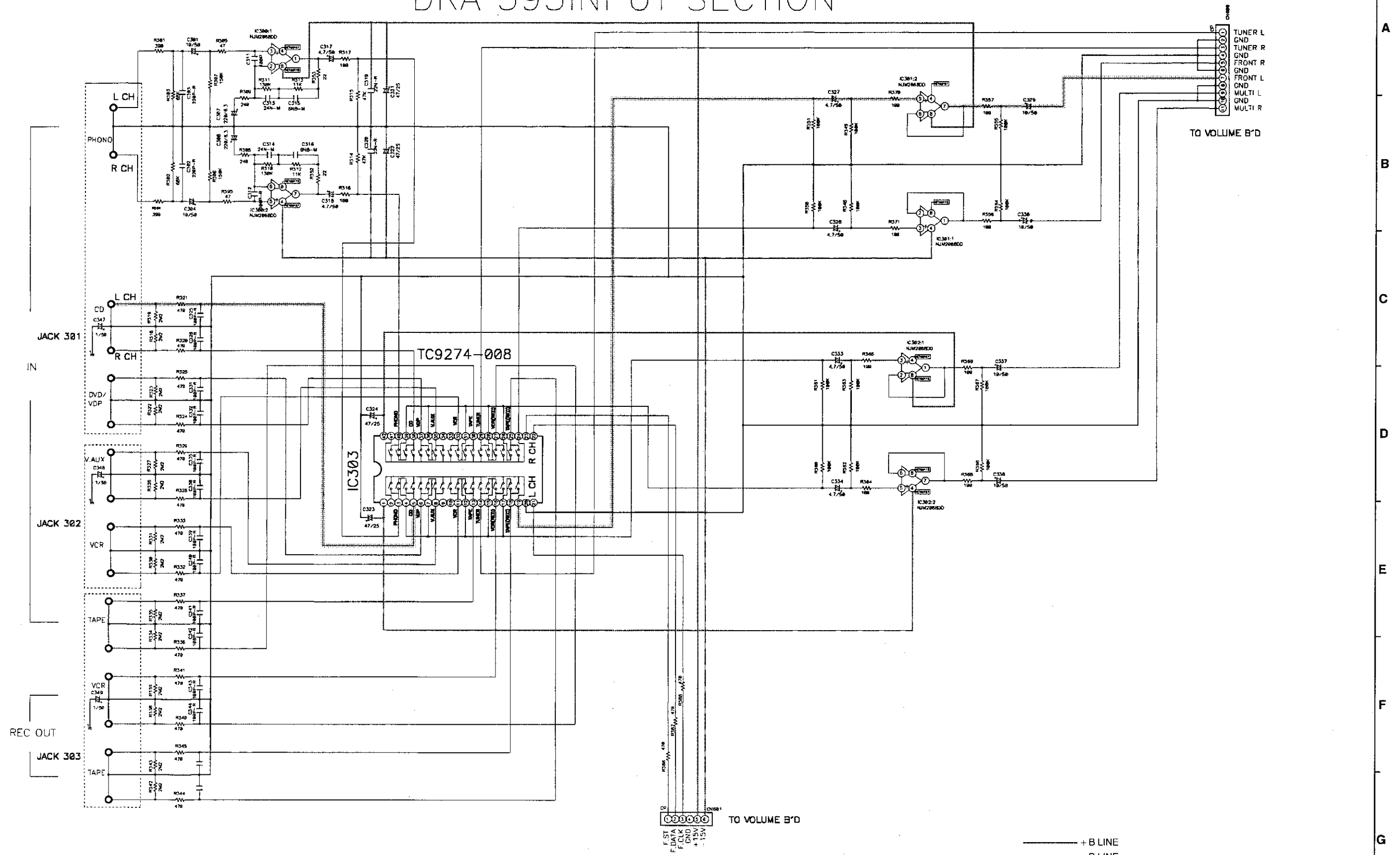
D

E

SCHEMATIC DIAGRAMS(1/6)

1 2 3 4 5 6 7 8 9 10 11

DRA 395 INPUT SECTION



JACK 301
IN

JACK 302

JACK 303
REC OUT

1 TUNER L
 2 GND
 3 TUNER R
 4 GND
 5 FRONT R
 6 GND
 7 FRONT L
 8 GND
 9 MULTI L
 10 GND
 11 MULTI R

TO VOLUME B'D

1 F ST
 2 F CLK
 3 F GND
 4 +15V
 5 GND
 6 -15V

——— + B LINE
 - - - - - - B LINE
 ▲ SIGNAL LINE

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

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

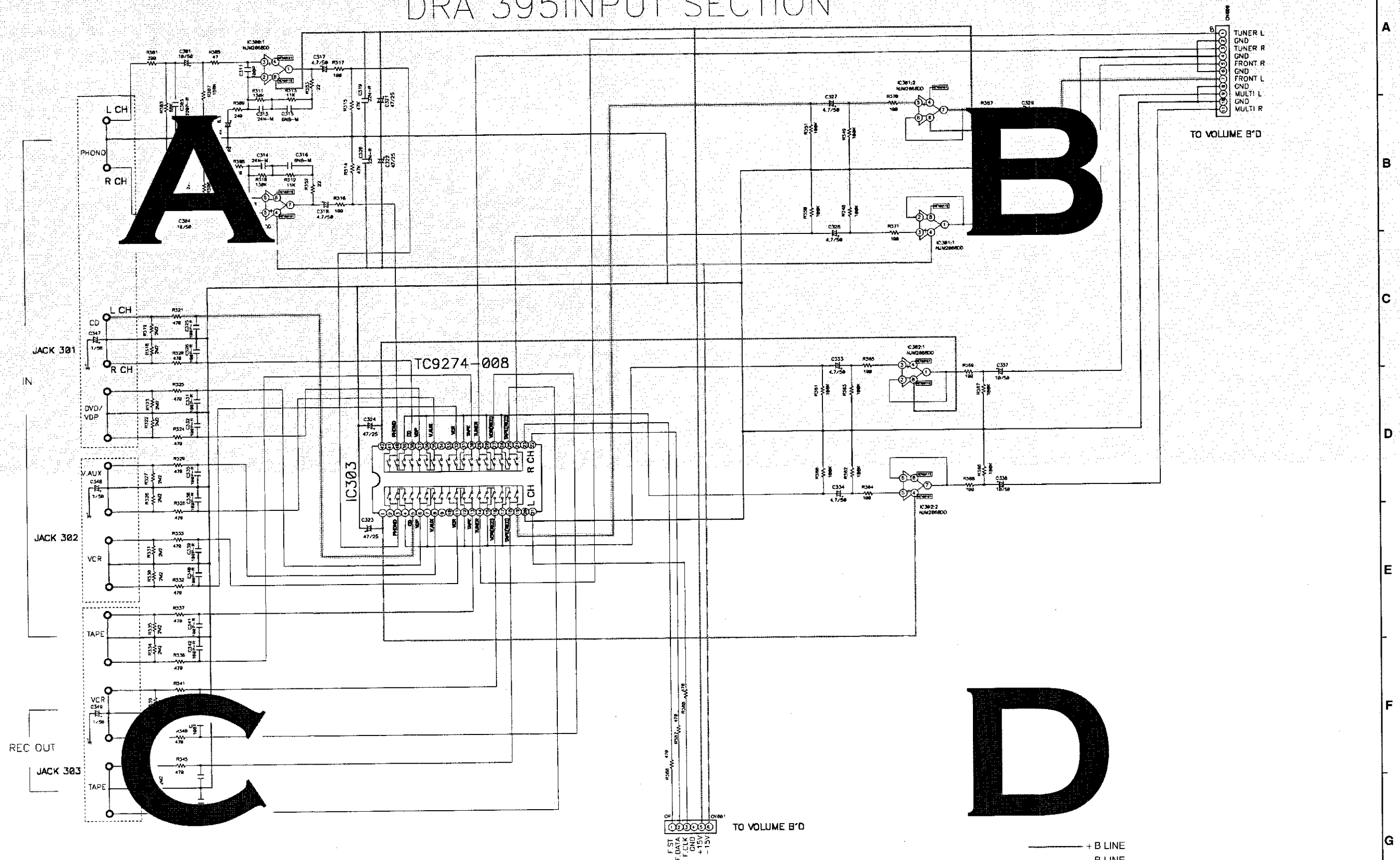
CAUTION:
 Before returning the unit to the customer, make sure you make either (1) a
 leakage current check or (2) a line to chassis resistance check. If the leakage
 current exceeds 0.5 milliamps, or if the resistance from chassis to either side
 of the power card is less than 460kohms, the unit is defective.

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


SCHEMATIC DIAGRAMS(1/6)
INPUT UNIT

SCHEMATIC DIAGRAMS(1/6)

DRA 395 INPUT SECTION



NOTICE
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 of the power card is less than 460kohms, the unit is defective.

WARNING:
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 corrected.

SCHEMATIC DIAGRAMS(1/6)
 INPUT UNIT

SCHEMATIC DIAGRAMS(1/6)

1

2

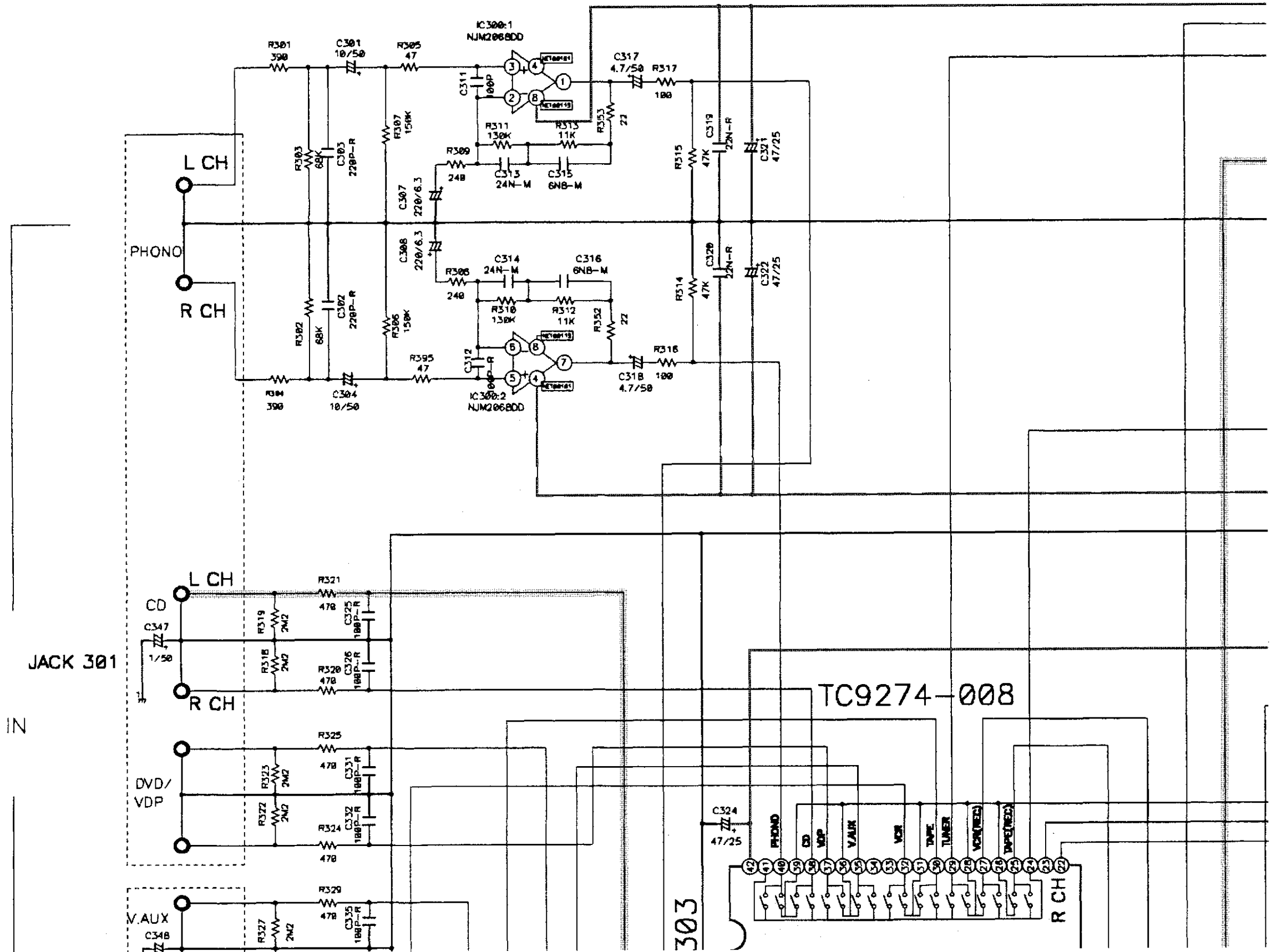
3

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DRA 395INPL



6

7

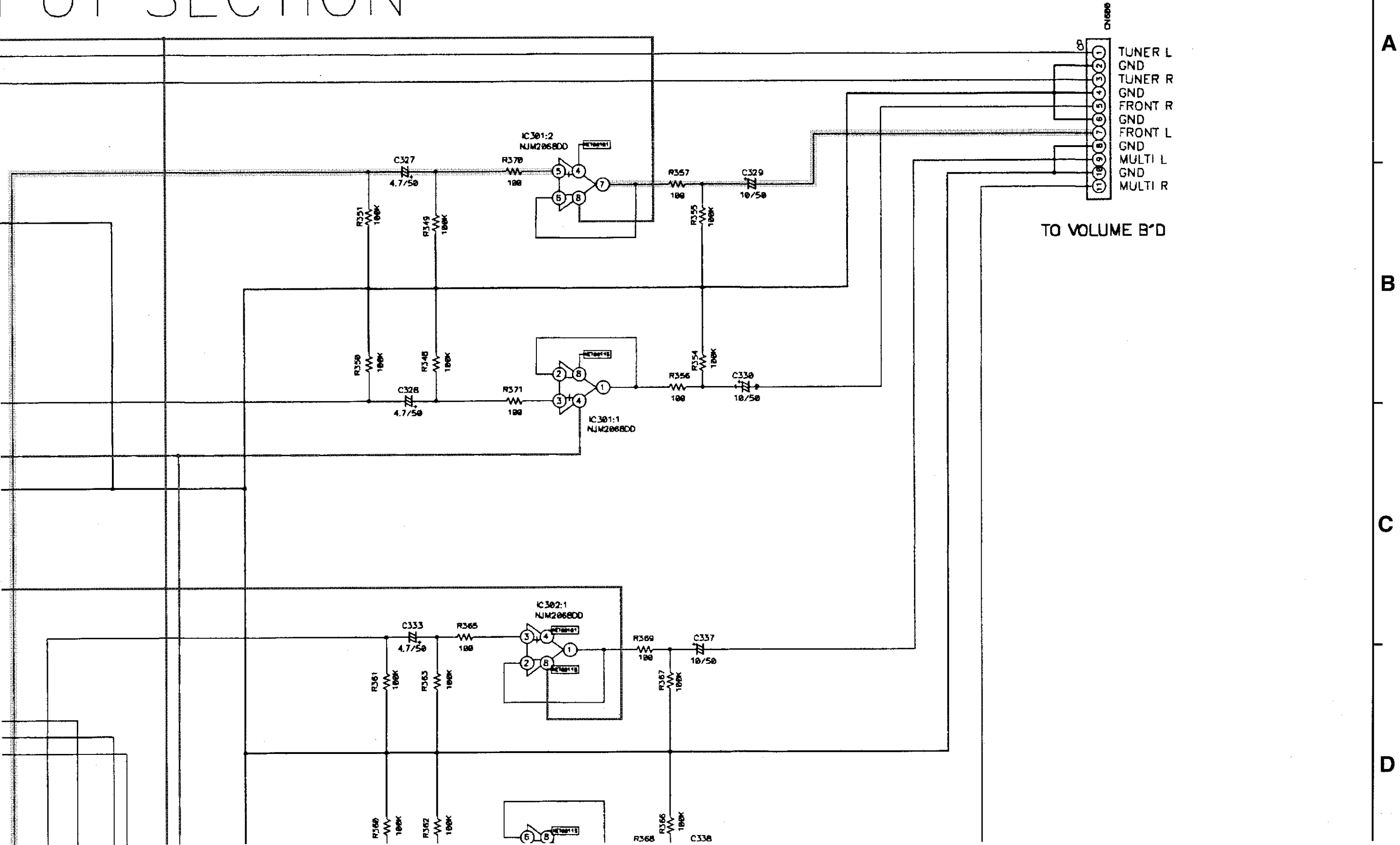
8

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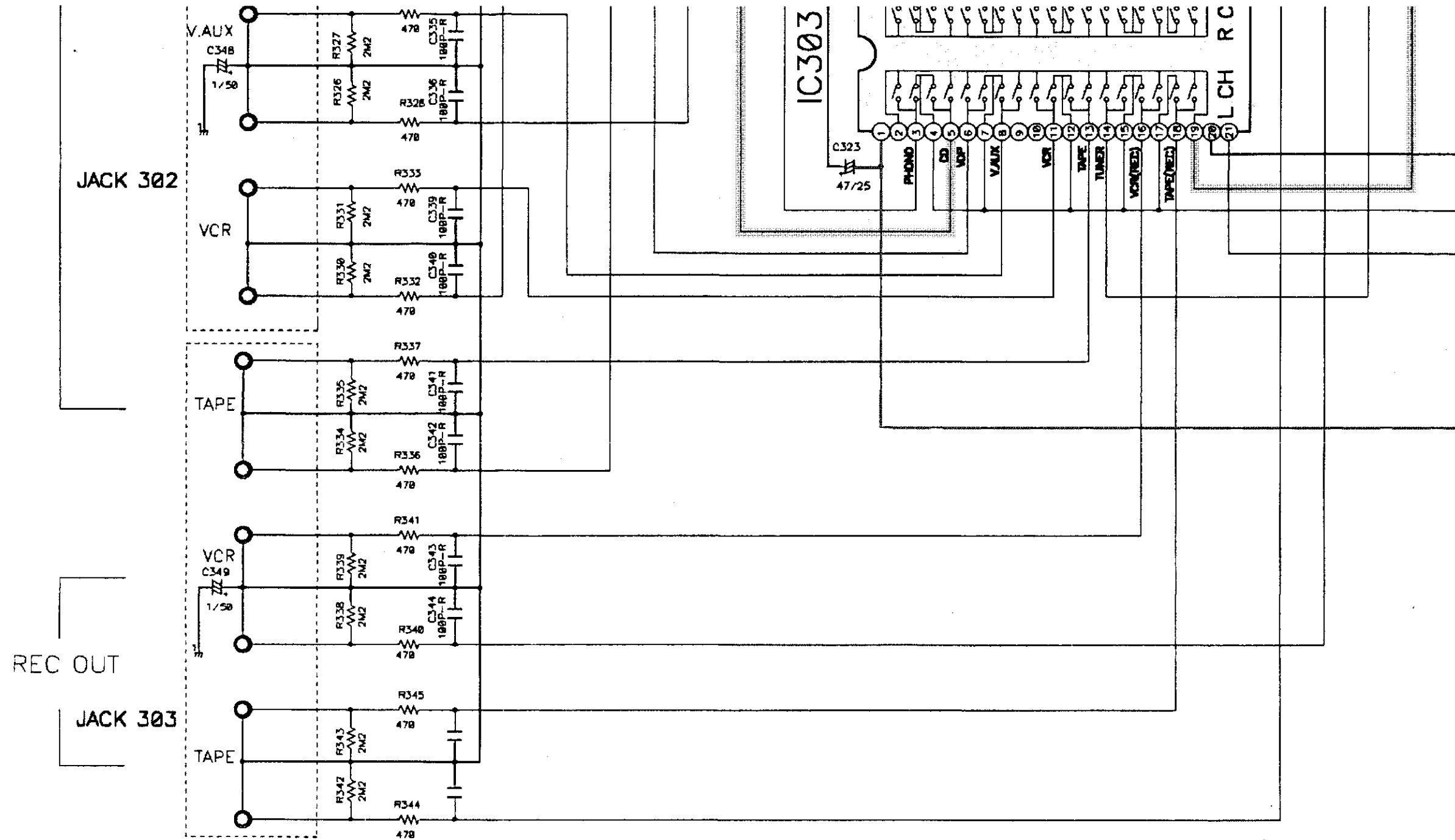
PUT SECTION



- 8
CN6006
- 1 TUNER L
 - 2 GND
 - 3 TUNER R
 - 4 GND
 - 5 FRONT R
 - 6 GND
 - 7 FRONT L
 - 8 GND
 - 9 MULTI L
 - 10 GND
 - 11 MULTI R

TO VOLUME B'D


A
B
C
D



NOTICE

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
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WARNING:

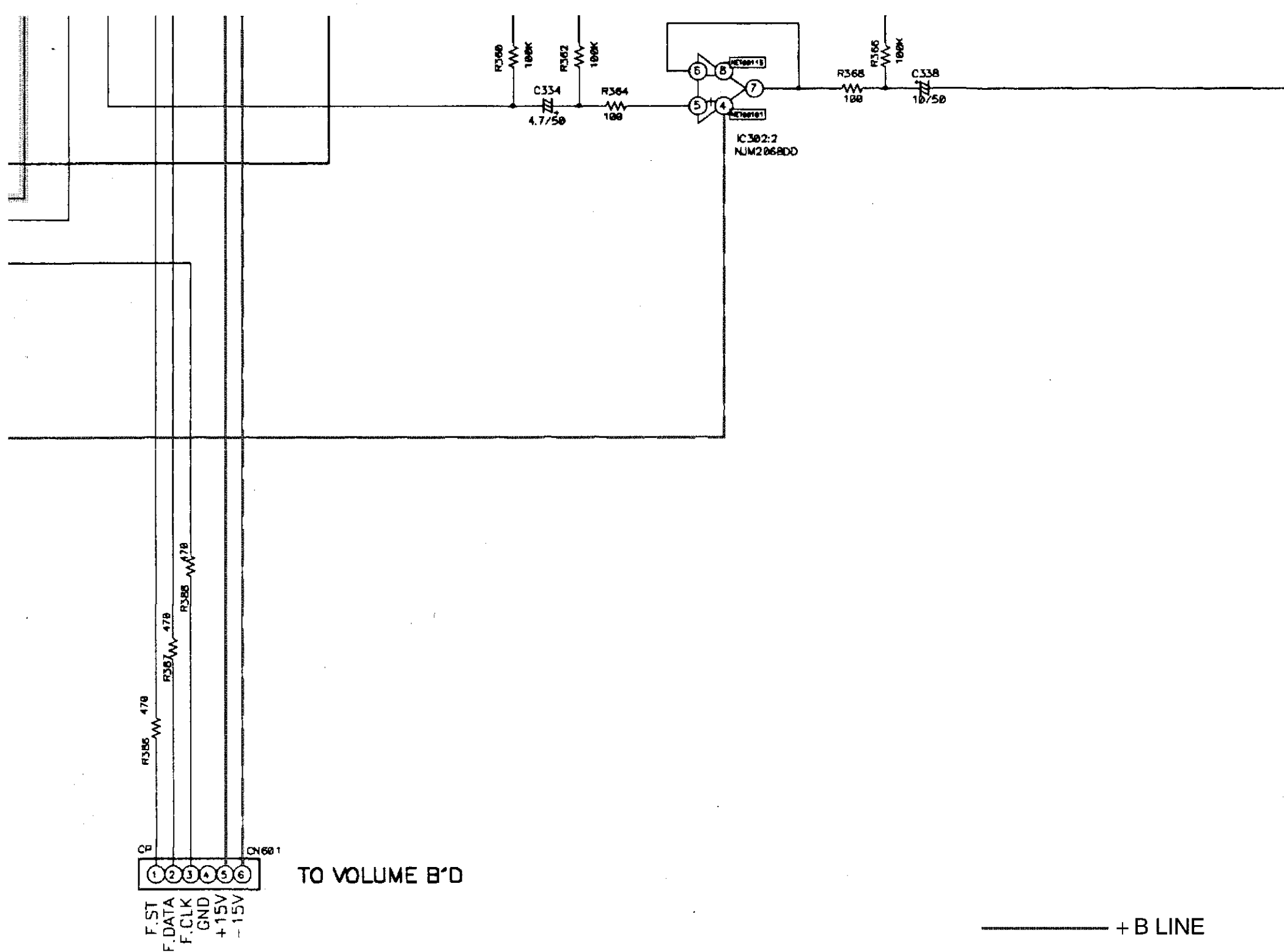
Parts marked with this symbol  have
 Use ONLY replacement parts recommended

CAUTION:

Before returning the unit to the customer
 leakage current check or (2) a line to check
 current exceeds 0.5 milliamps, or if the resistance
 of the power card is less than 460kohms

WARNING:

DO NOT return the unit to the customer
 until corrected.



E
F
G
H

SCHEMATIC DIAGRAMS(1/6)
INPUT UNIT

have critical characteristics.
recommended by the manufacture.

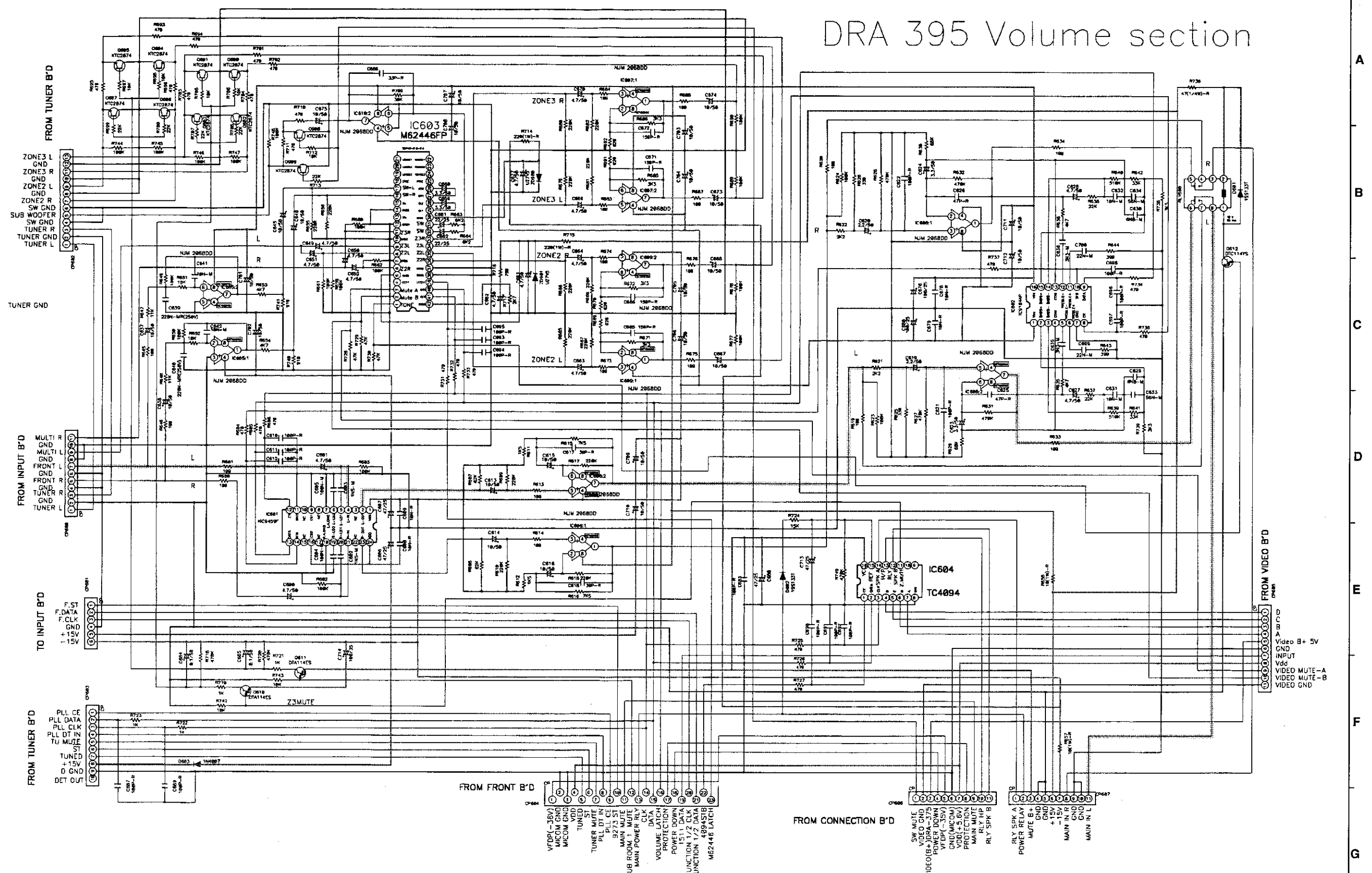
customer, make sure you make either (1) a
test to chassis resistance check. If the leakage
current is more than 100 microamps or
if the resistance from chassis to either side
is less than 10kohms, the unit is defective.

customer until the problem is located and

SCHEMATIC DIAGRAMS(2/6)

1 2 3 4 5 6 7 8 9 10 11

DRA 395 Volume section



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

WARNING:
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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 millamps, or if the resistance from chassis to either side
 of the power card is less than 460kohms, the unit is defective.

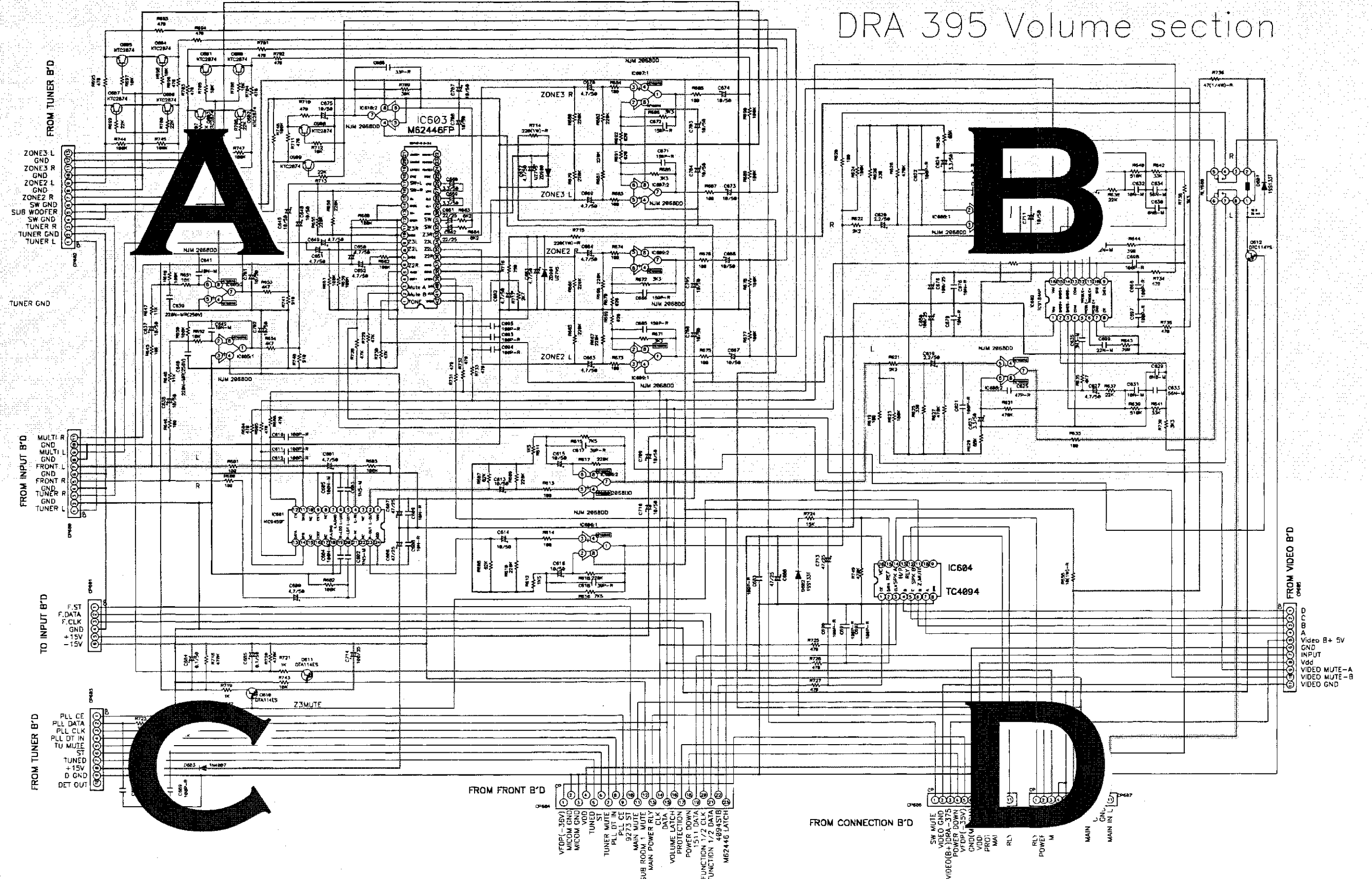
WARNING:
 DO NOT return the unit to the customer until the problem is located and
 corrected.

— + B LINE
 - - - - - B LINE
 / SIGNAL LINE

SCHEMATIC DIAGRAMS(2/6)
 VOLUME UNIT

SCHEMATIC DIAGRAMS(2/6)

DRA 395 Volume section



NOTICE
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 current exceeds 0.5 milliamps, or if the resistance from chassis to either side
 of the power card is less than 460kohms, the unit is defective.

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

— + B LINE
 - - - - - B LINE
 SIGNAL LINE

SCHEMATIC DIAGRAMS(2/6)
 VOLUME UNIT

SCHEMATIC DIAGRAMS(2/6)

1

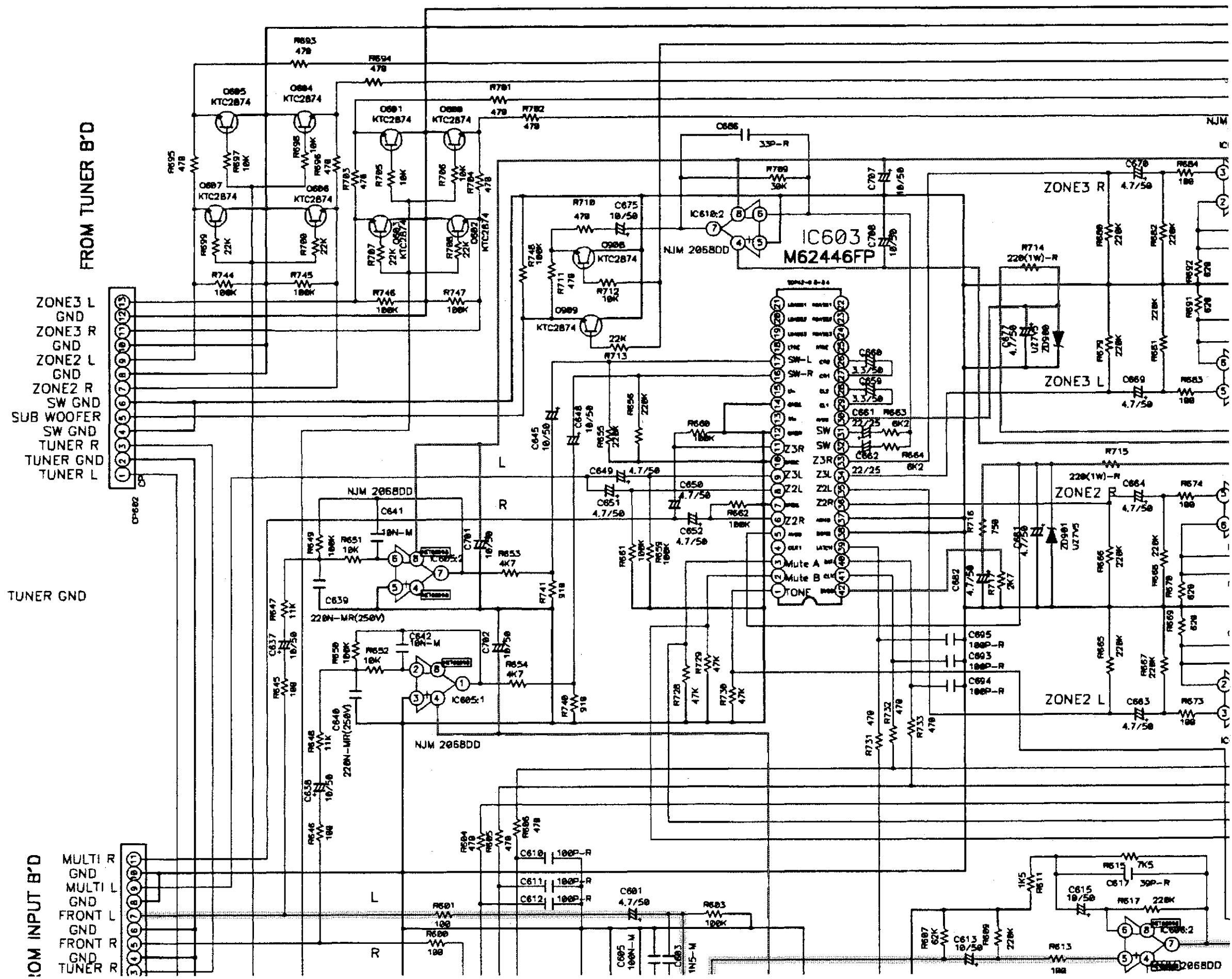
2

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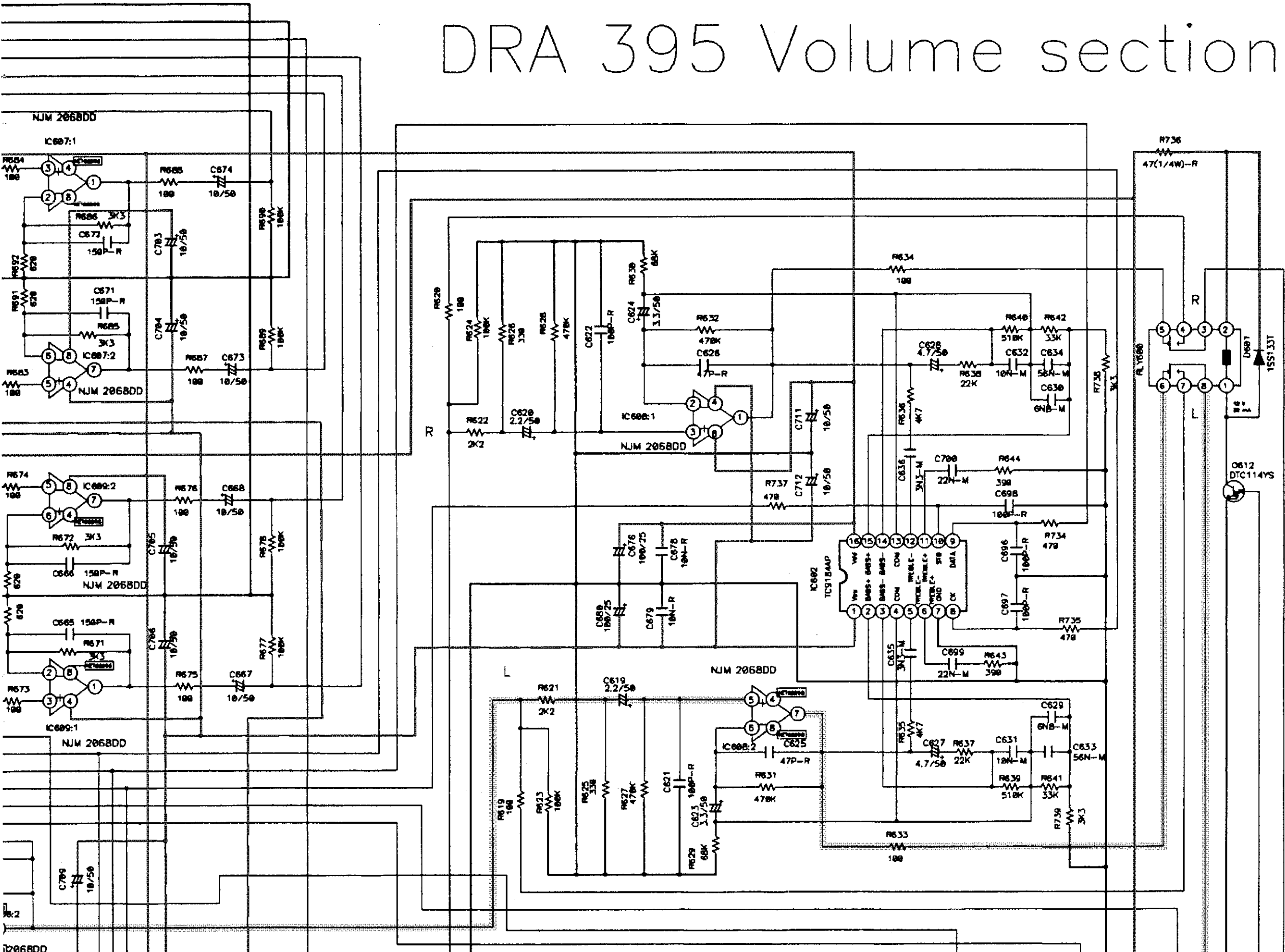
DRA 395 Volume section

A

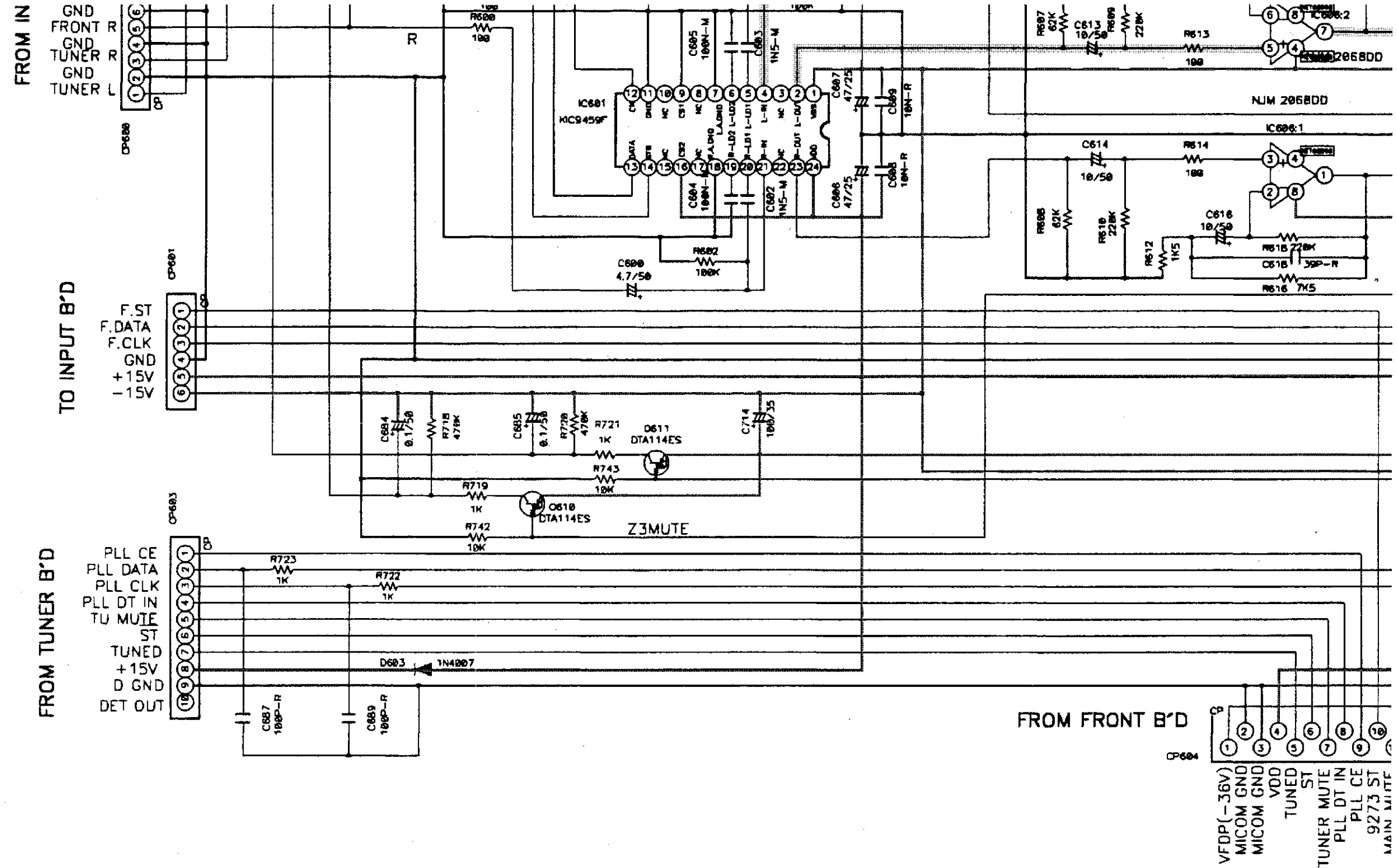
B

C

D




2068DD



NOTICE

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 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR
 NOTICE.

WARNING:

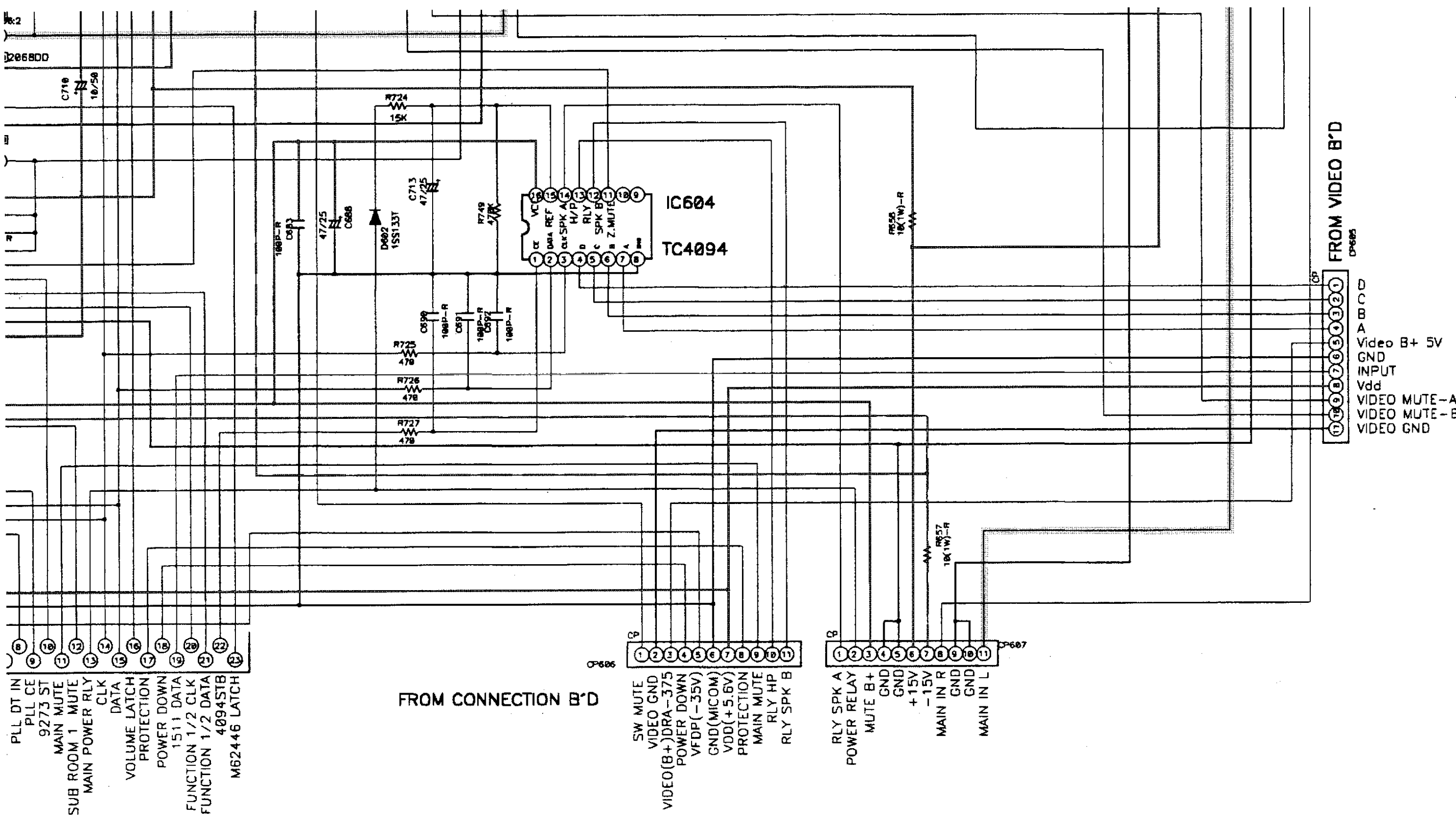
Parts marked with this symbol : Use ONLY replacement parts recommen

CAUTION:

Before returning the unit to the custome
 leakage current check or (2) a line to ch
 current exceeds 0.5 milliamps, or if the
 of the power card is less than 460kohm:

WARNING:

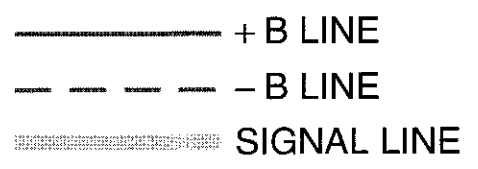
DO NOT return the unit to the customer
 corrected.



△ have critical characteristics.
 recommended by the manufacture.

customer, make sure you make either (1) a
 one to chassis resistance check. If the leakage
 or if the resistance from chassis to either side
 60kohms, the unit is defective.

ustomer until the problem is located and

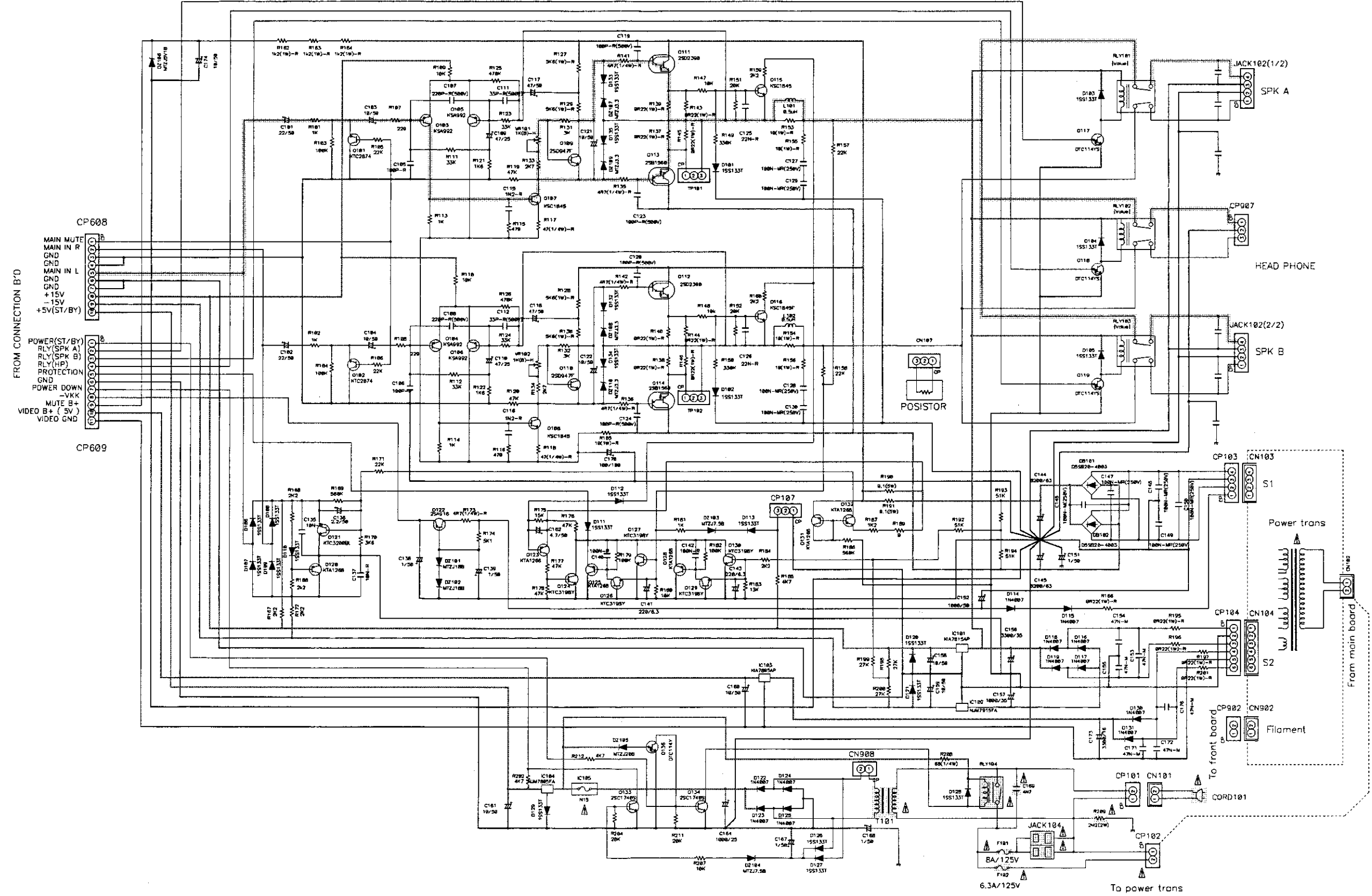


SCHEMATIC DIAGRAMS(2/6)
VOLUME UNIT

SCHEMATIC DIAGRAMS(3/6)

1 2 3 4 5 6 7 8 9 10 11

DRA 395 Main section




FROM CONNECTION B'0

CP608
MAIN MUTE
MAIN IN R
GND
MAIN IN L
GND
+15V
-15V
+5V(ST/BY)

CP609
POWER(ST/BY)
RLY(SPK A)
RLY(SPK B)
PROTECTION
GND
POWER DOWN
-VKK
MUTE B+ (5V)
VIDEO GND

NOTICE
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CONDITION.
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NOTICE.

WARNING:
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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 millamps, or if the resistance from chassis to either side of the power card is less than 460kohms, the unit is defective.

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

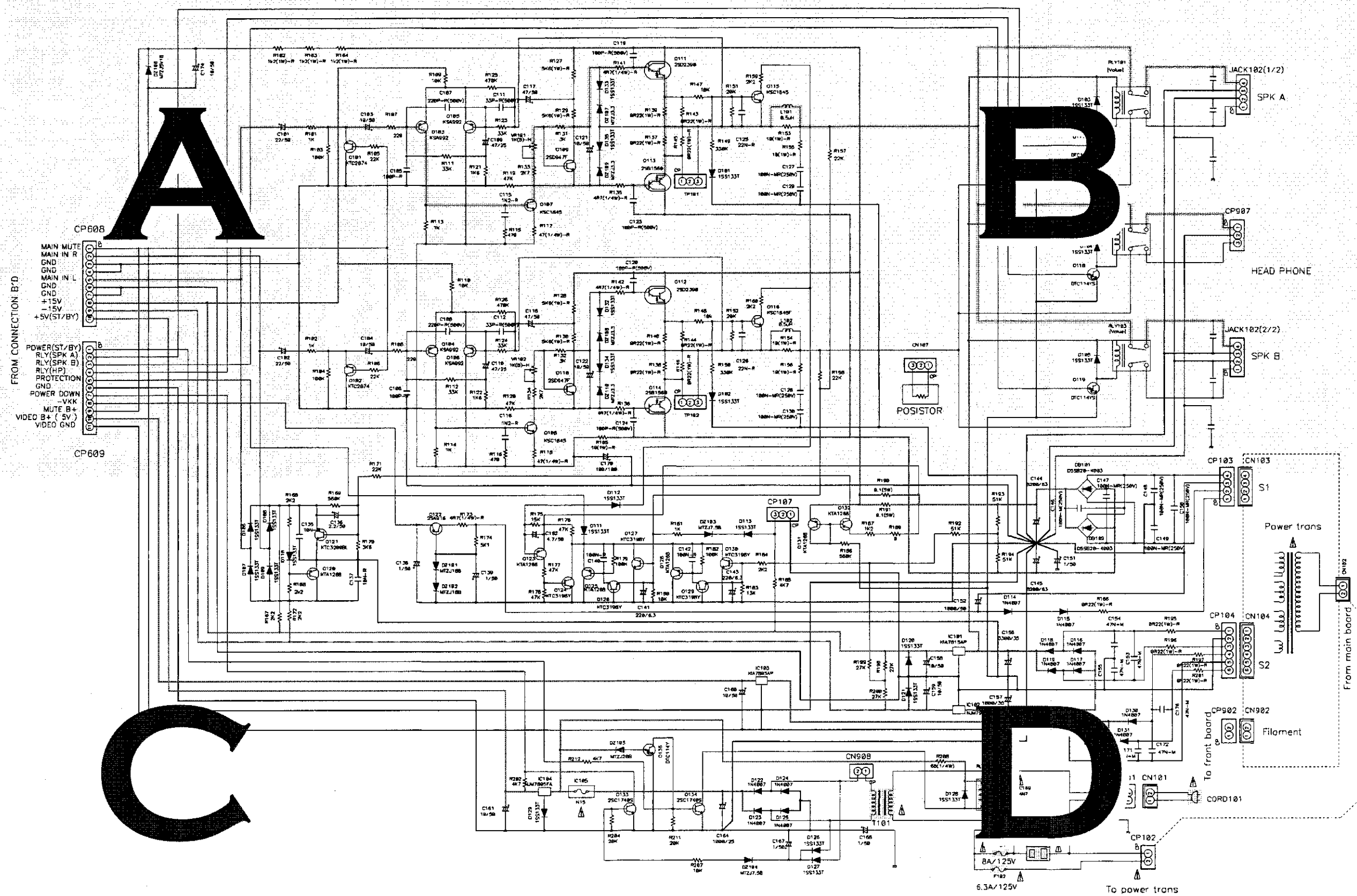
----- + B LINE
----- - B LINE
----- SIGNAL LINE

SCHEMATIC DIAGRAMS(3/6)
MAIN UNIT


A
B
C
D
E
F
G
H

SCHEMATIC DIAGRAMS(3/6)

DRA 395 Main section



NOTICE
 ALL RESISTANCE VALUES IN OHM. k=1,000 OHM M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
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WARNING:
 DO NOT return the unit to the customer until the problem is located and corrected.

----- + B LINE
 - - - - - -B LINE
 ~~~~~ SIGNAL LINE

SCHEMATIC DIAGRAMS(3/6)  
 MAIN UNIT

# SCHEMATIC DIAGRAMS(3/6)

1

2

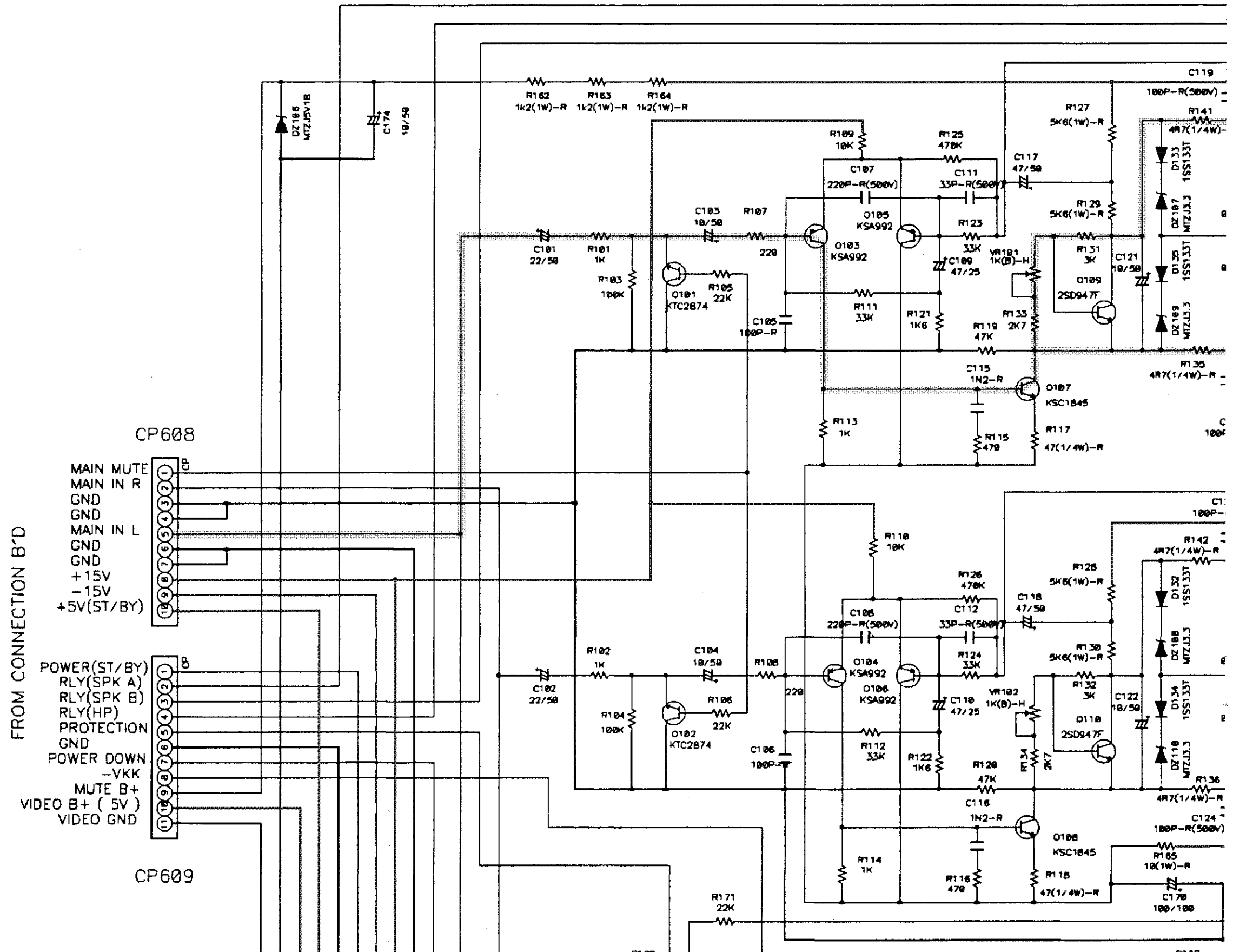
3

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DRA 39



6

7

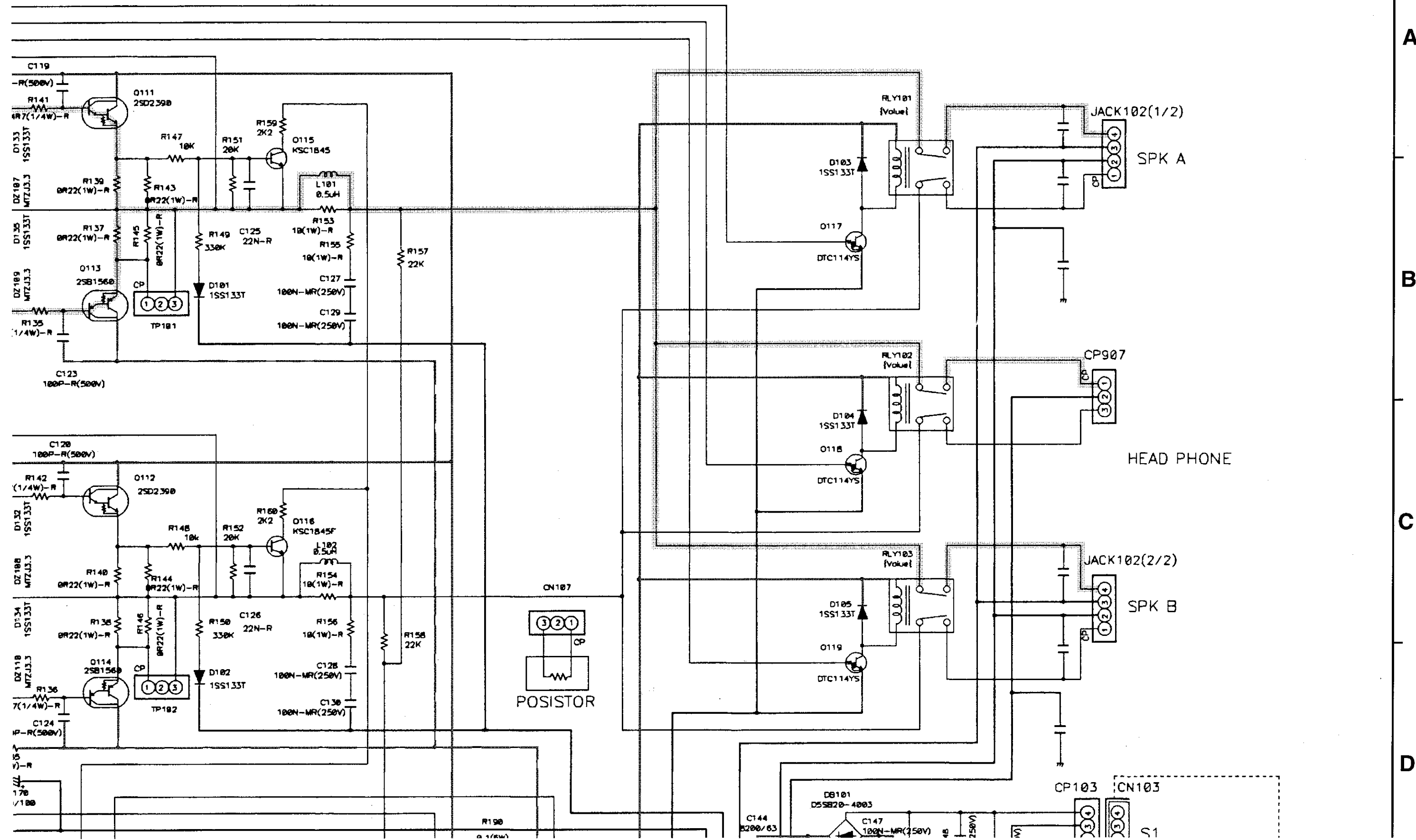
8

9

10

11

# 95 Main section

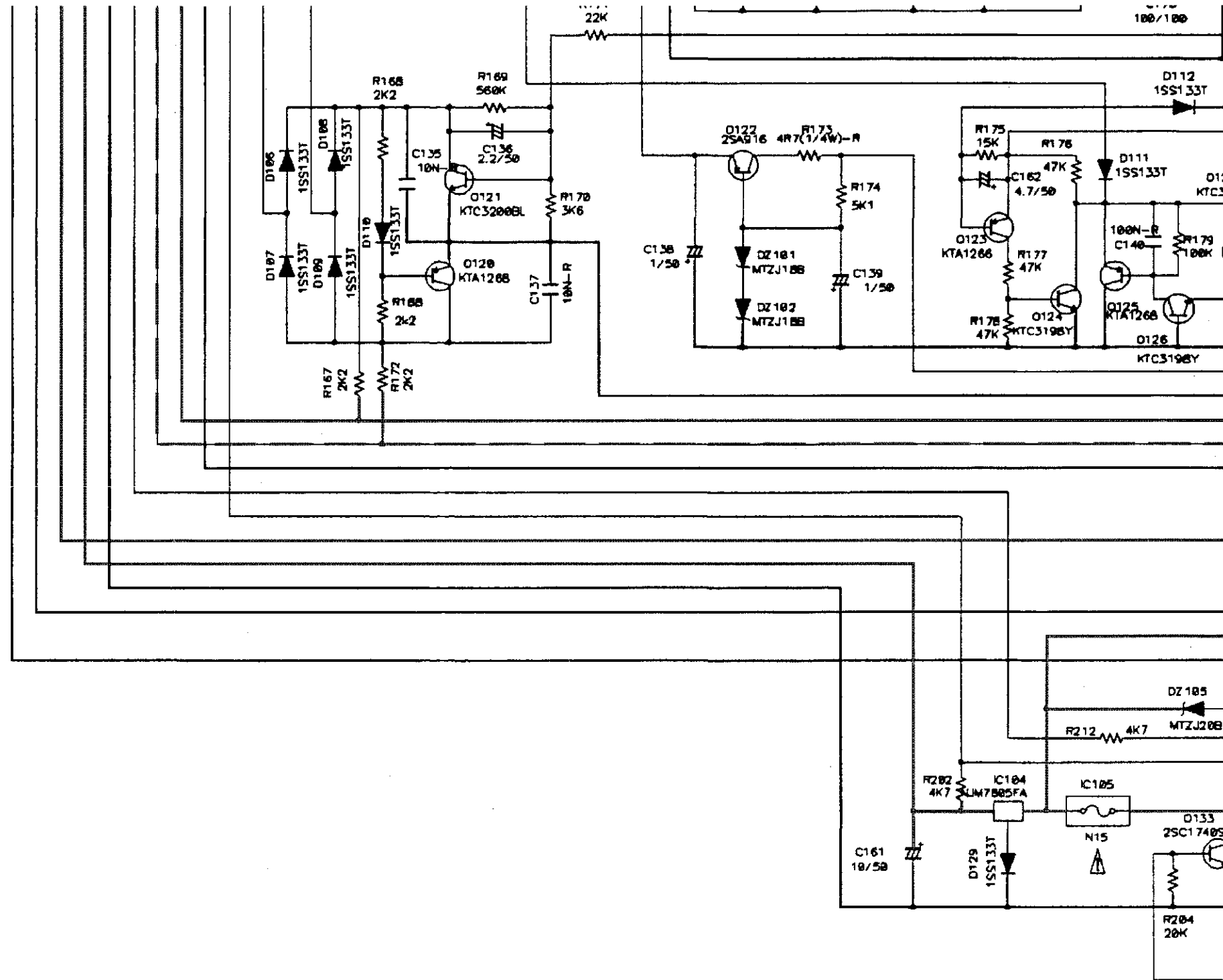


A

B

C


D



**NOTICE**

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 ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD  
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 NOTICE.

**WARNING:**

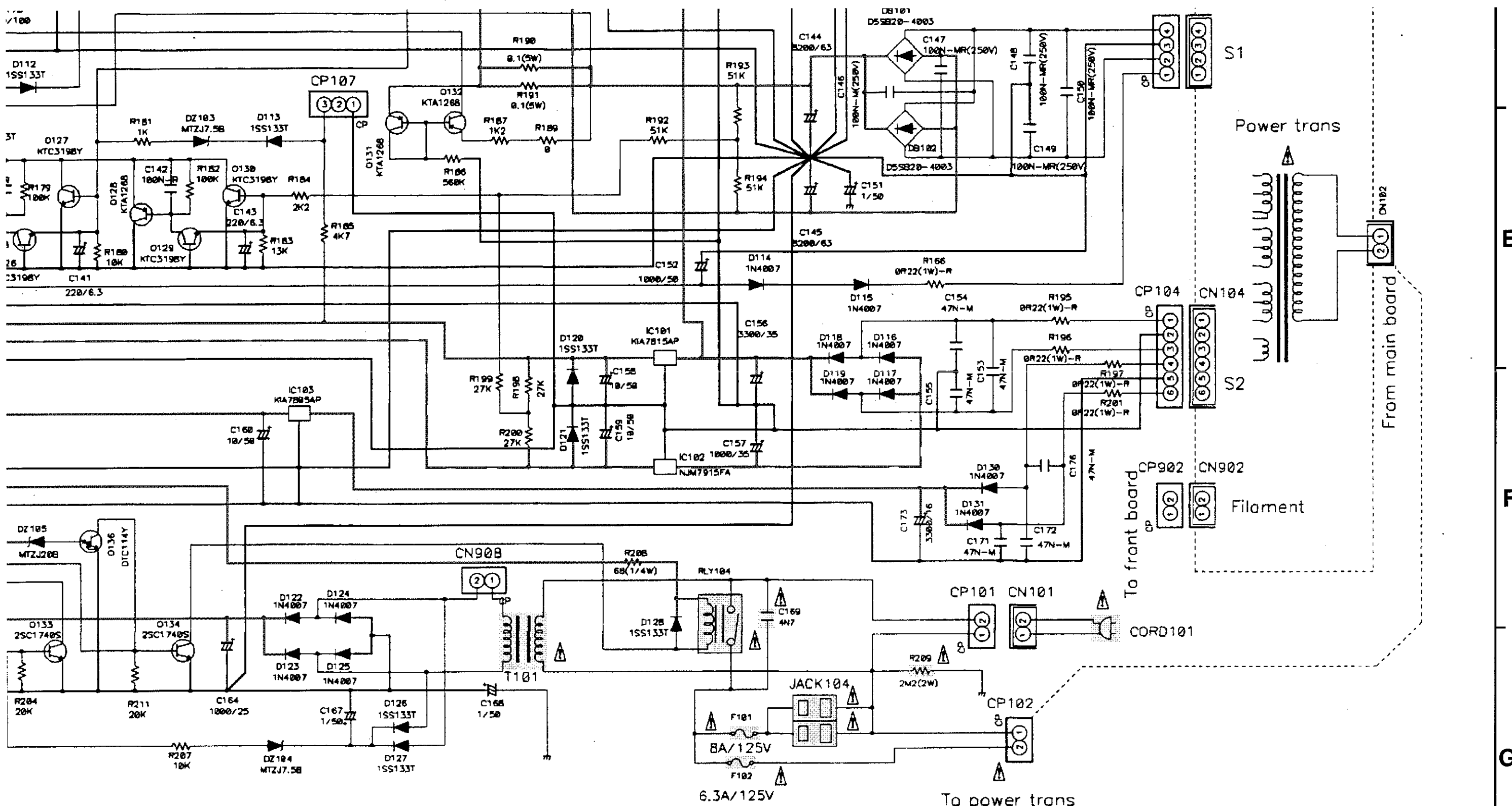
Parts marked with this symbol  have  
 Use ONLY replacement parts recommended

**CAUTION:**

Before returning the unit to the customer,  
 leakage current check or (2) a line to chassis  
 current exceeds 0.5 milliamps, or if the resistance  
 of the power card is less than 460kohms,

**WARNING:**

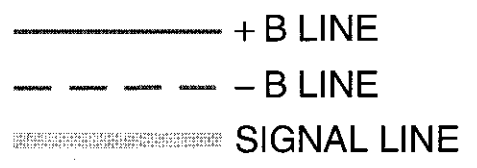
DO NOT return the unit to the customer until  
 corrected.



□ have critical characteristics.  
 ○ recommended by the manufacturer.

Customer, make sure you make either (1) a  
 test to chassis resistance check. If the leakage  
 is more than 100kohms, the unit is defective.

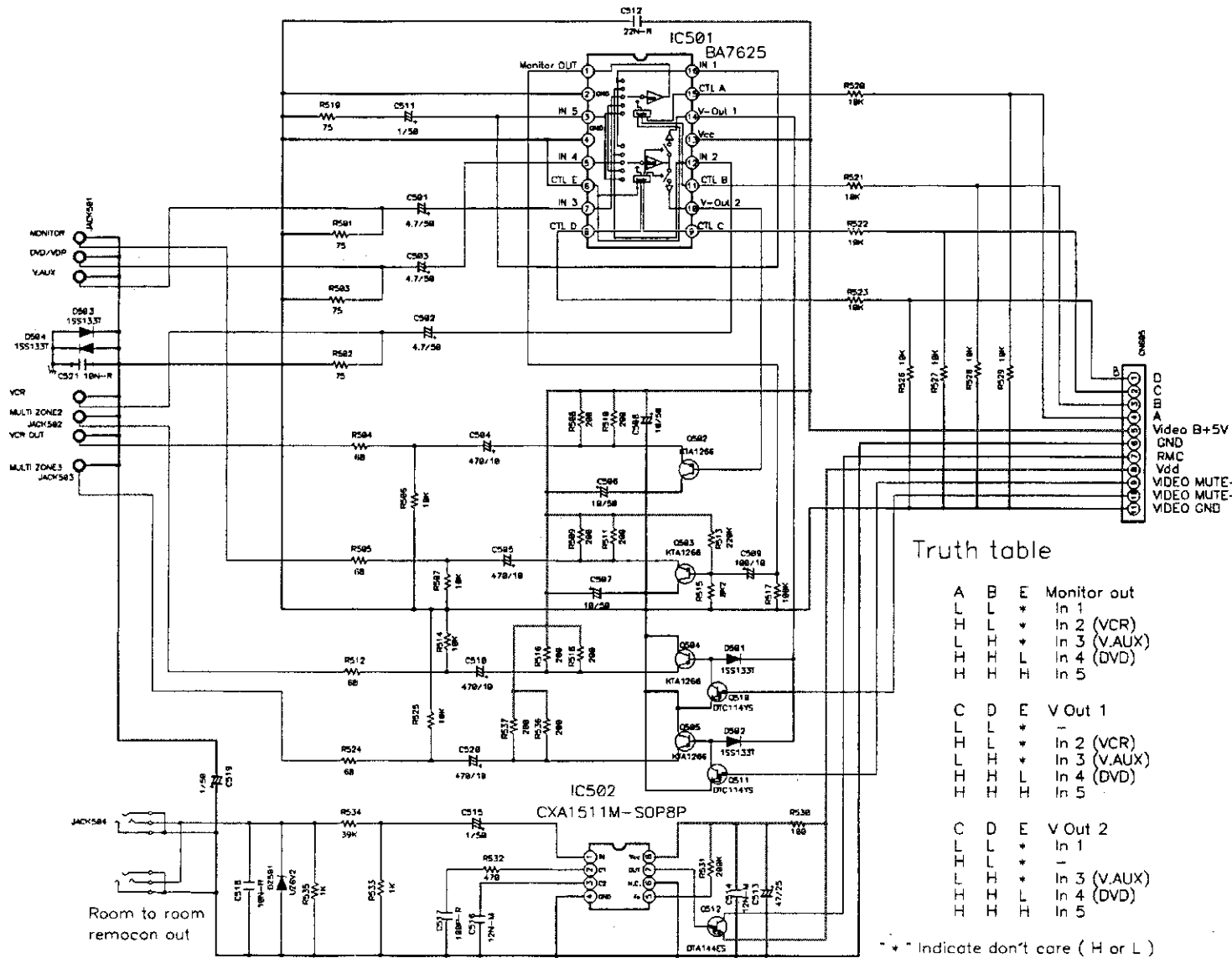
Customer until the problem is located and



**SCHEMATIC DIAGRAMS(3/6)  
 MAIN UNIT**

# DRA 395 Video Section

# DRA 395 Connection Section



Truth table

| A | B | E | Monitor out  |
|---|---|---|--------------|
| L | L | * | In 1         |
| H | L | * | In 2 (VCR)   |
| L | H | * | In 3 (V.AUX) |
| H | H | L | In 4 (DVD)   |
| H | H | H | In 5         |

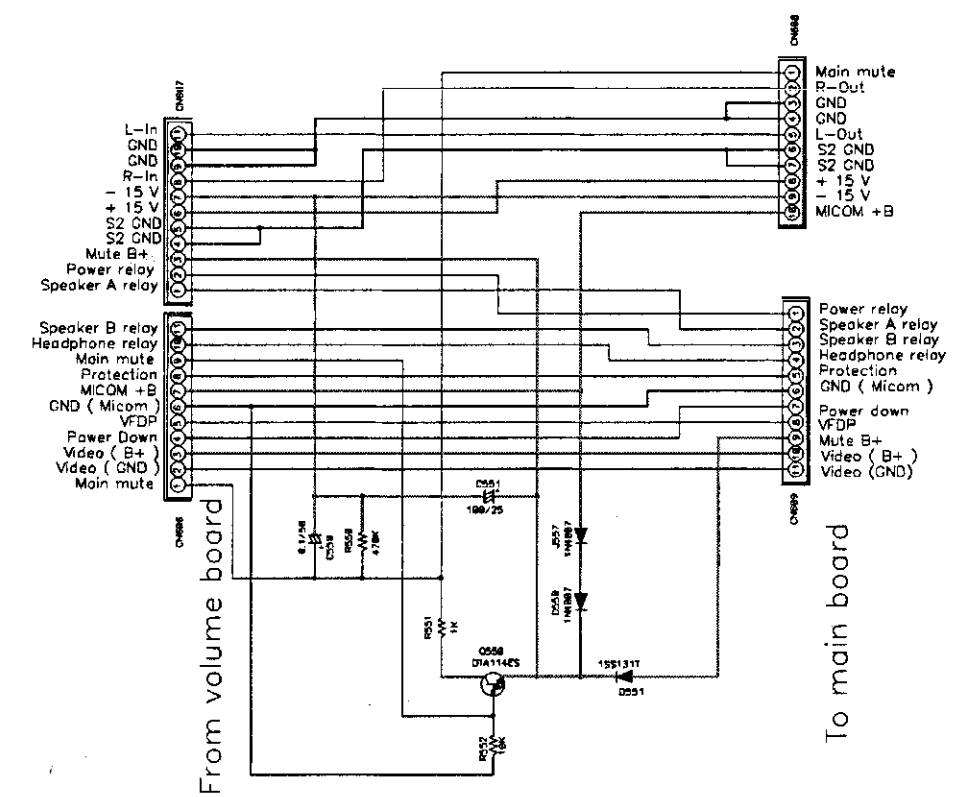
| C | D | E | V Out 1      |
|---|---|---|--------------|
| L | L | * | In 2 (VCR)   |
| H | L | * | In 3 (V.AUX) |
| L | H | L | In 4 (DVD)   |
| H | H | H | In 5         |

| C | D | E | V Out 2      |
|---|---|---|--------------|
| L | L | * | In 1         |
| H | L | * | In 2 (VCR)   |
| L | H | * | In 3 (V.AUX) |
| H | L | L | In 4 (DVD)   |
| H | H | H | In 5         |

\* \* Indicate don't care ( H or L )

TO VOLUME B/D



From volume board

To main board

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

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

**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 card is less than 480kohms, the unit is defective.

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

————— + B LINE  
 - - - - - B LINE

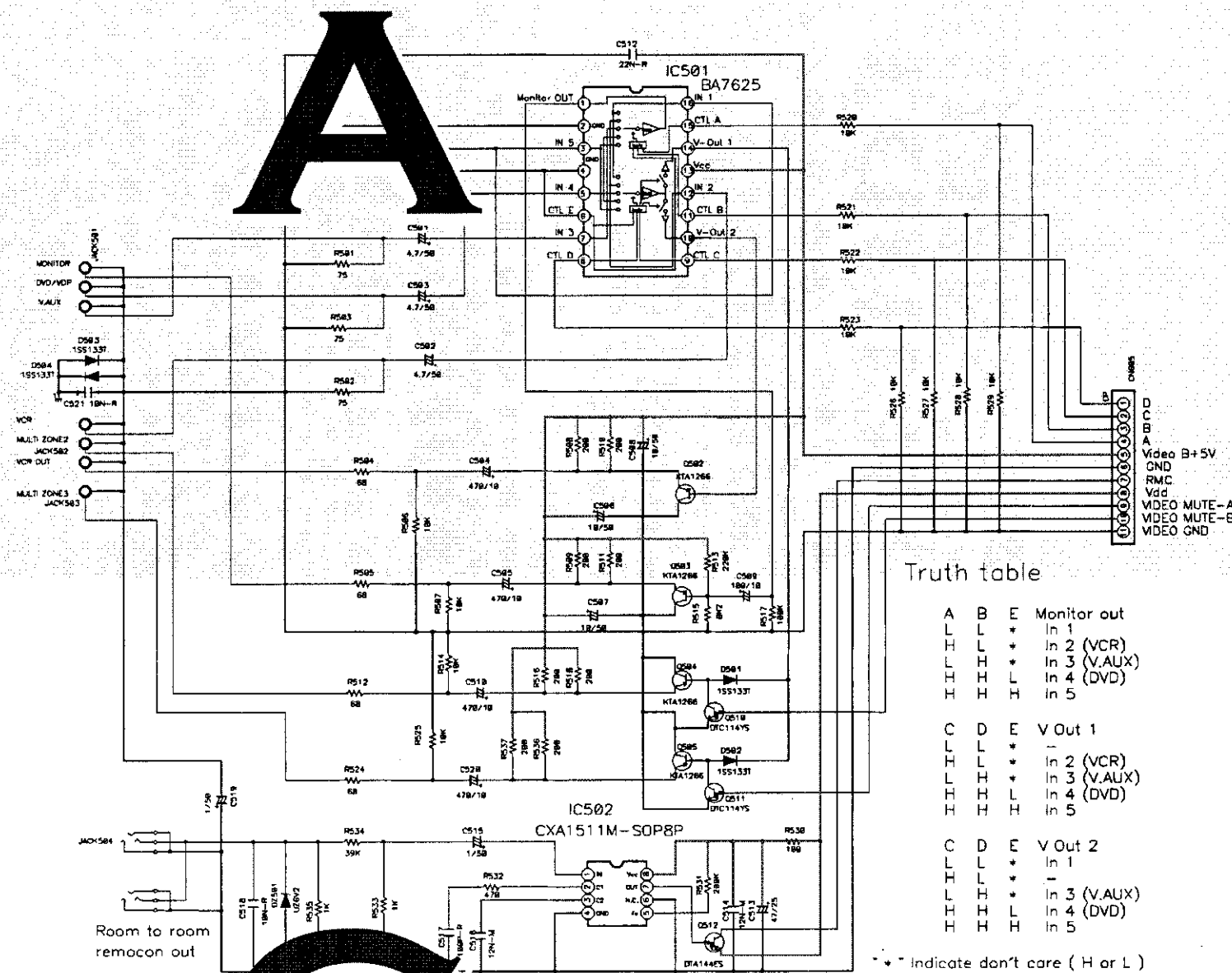
SCHEMATIC DIAGRAMS(4/6)  
 VIDEO UNIT  
 CONNECTOR UNIT



SCHEMATIC DIAGRAMS(4/6)

1 2 3 4 5 6 7 8 9 10 11

# DRA 395 Video Section

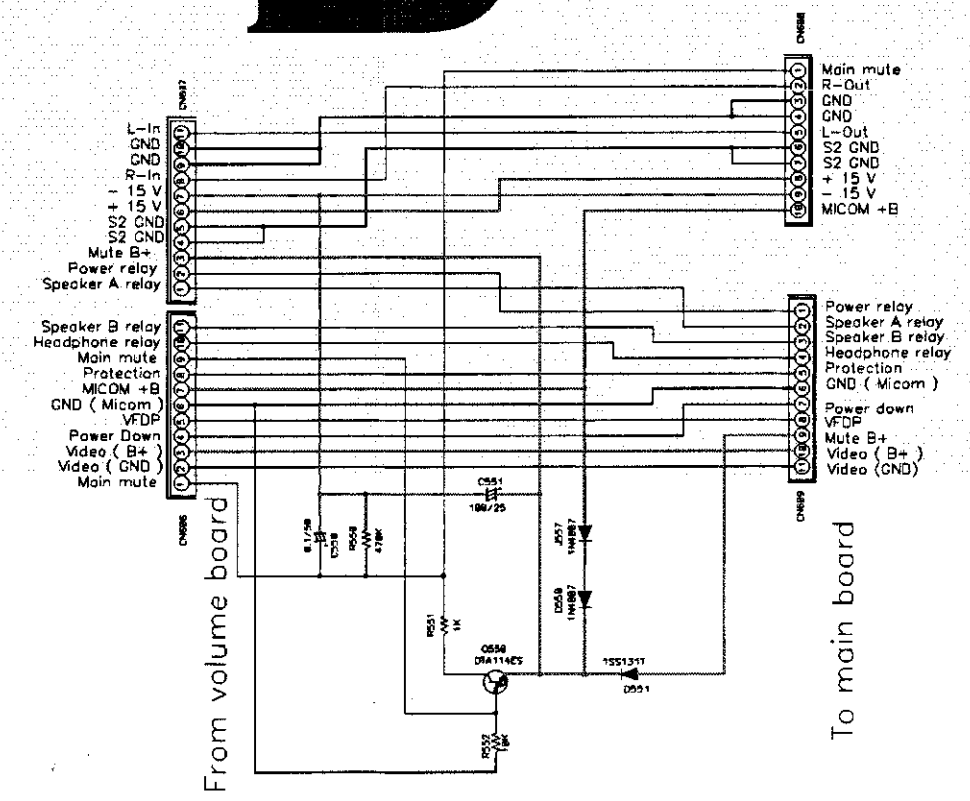


Truth table

|   |   |   |              |
|---|---|---|--------------|
| A | B | E | Monitor out  |
| L | L | + | ln 1         |
| L | L | + | ln 2 (VCR)   |
| L | L | + | ln 3 (V.AUX) |
| L | L | + | ln 4 (DVD)   |
| L | L | + | ln 5         |
| C | D | E | V Out 1      |
| L | L | + | ln 2 (VCR)   |
| L | L | + | ln 3 (V.AUX) |
| L | L | + | ln 4 (DVD)   |
| L | L | + | ln 5         |
| C | D | E | V Out 2      |
| L | L | + | ln 1         |
| L | L | + | ln 2         |
| L | L | + | ln 3 (V.AUX) |
| L | L | + | ln 4 (DVD)   |
| L | L | + | ln 5         |

\* + indicate don't care ( H or L )

# DRA 395 Connector Section



# C

# D

**NOTICE**  
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 ALL CAPACITANCE VALUES IN MICRO FARAD, P=MICRO-MICRO FARAD  
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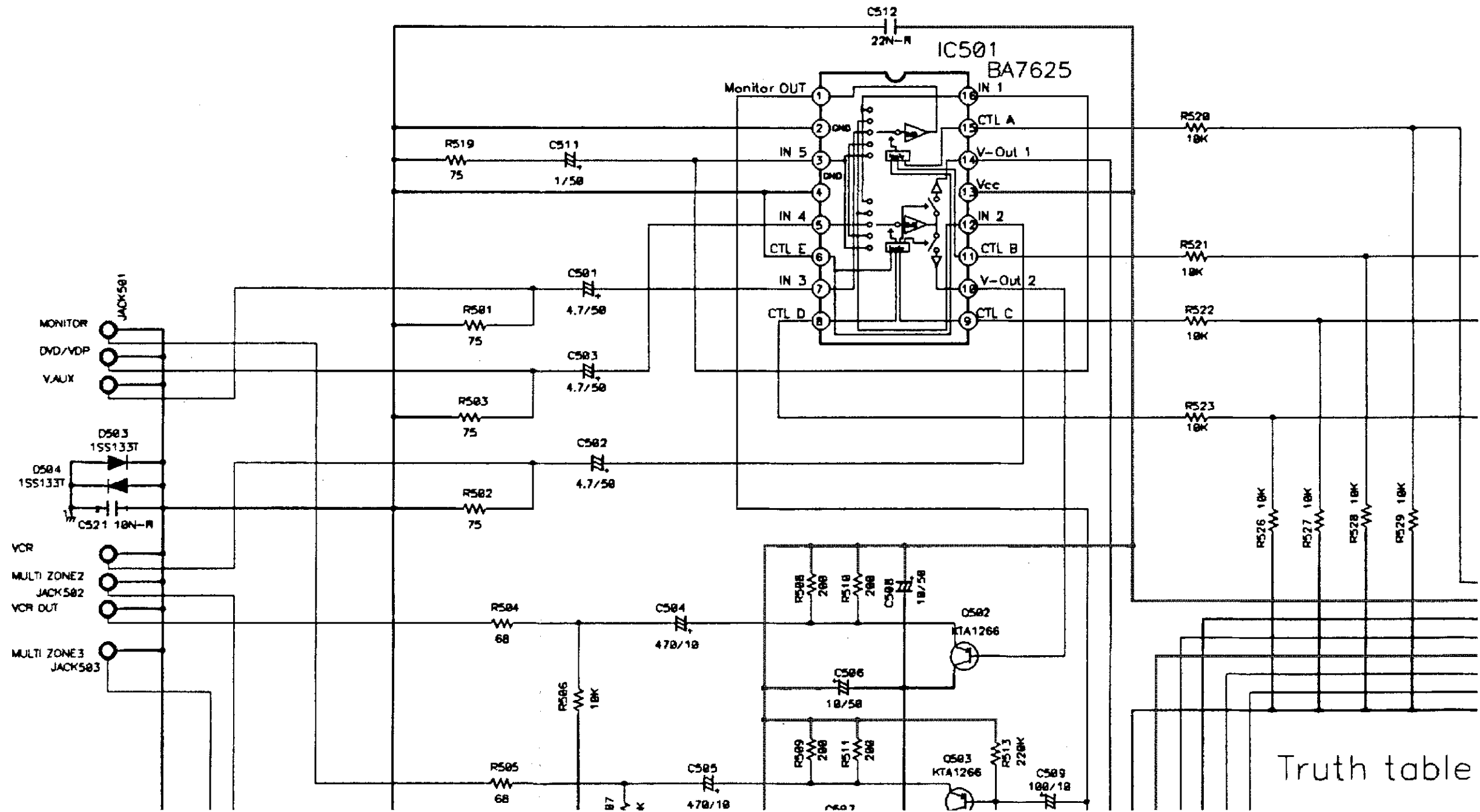
**CAUTION:**  
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 leakage current check or (2) a line to chassis resistance check. If the leakage  
 current exceeds 0.5 millamps, or if the resistance from chassis to either side  
 of the power card is less than 460kohms, the unit is defective.

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

— + B LINE  
 - - - - - B LINE

SCHEMATIC DIAGRAMS(4/6)  
 VIDEO UNIT  
 CONNECTOR UNIT

# DRA 395 Video Section



Truth table

6

7

8

9

10

11

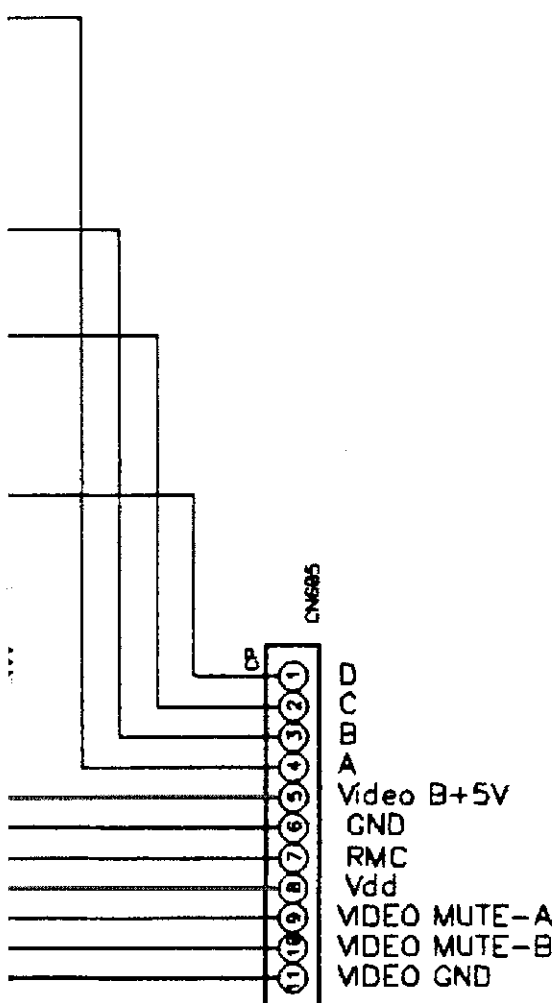
# DRA 395 Connection Section

A

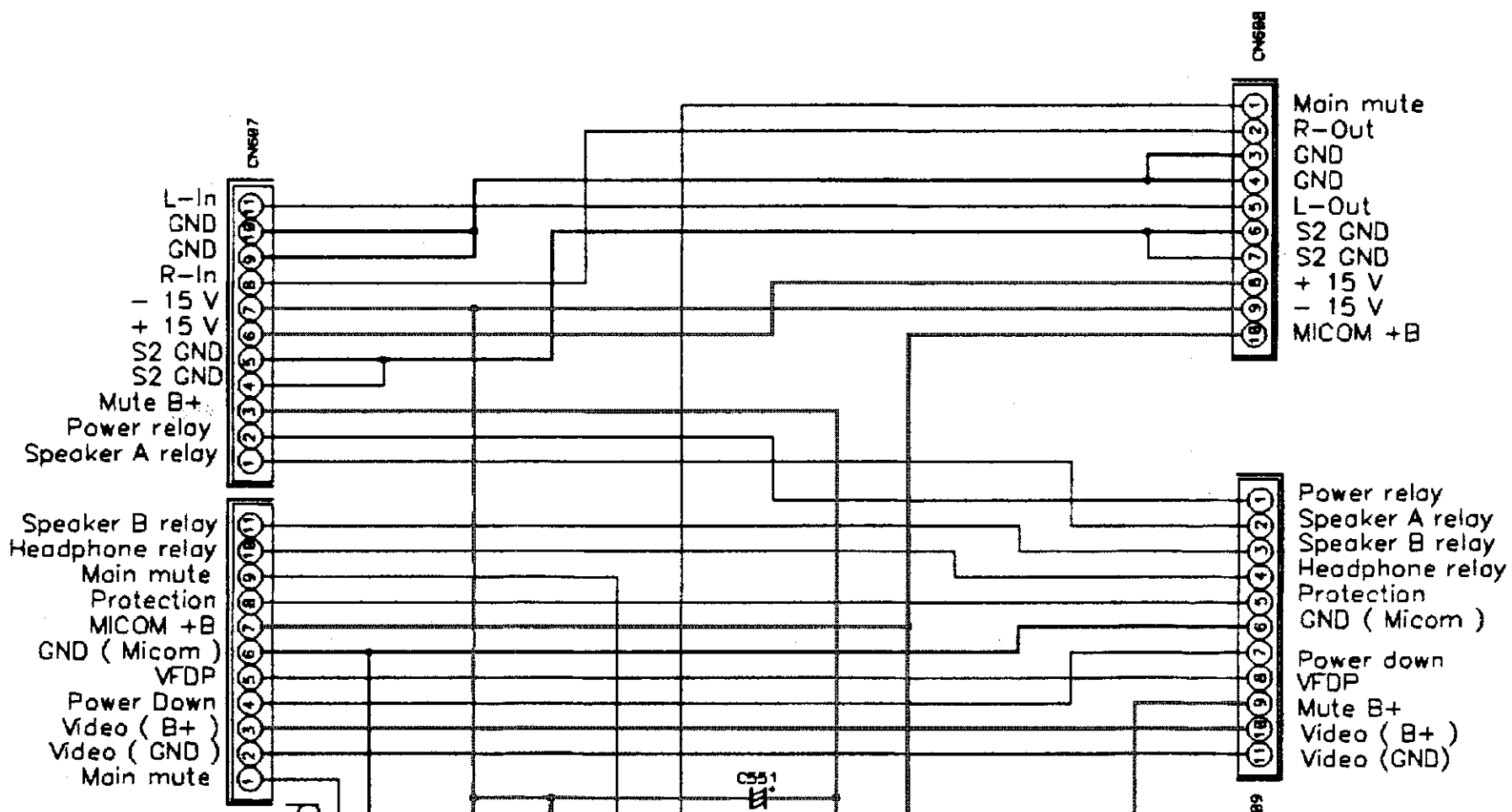
B

C

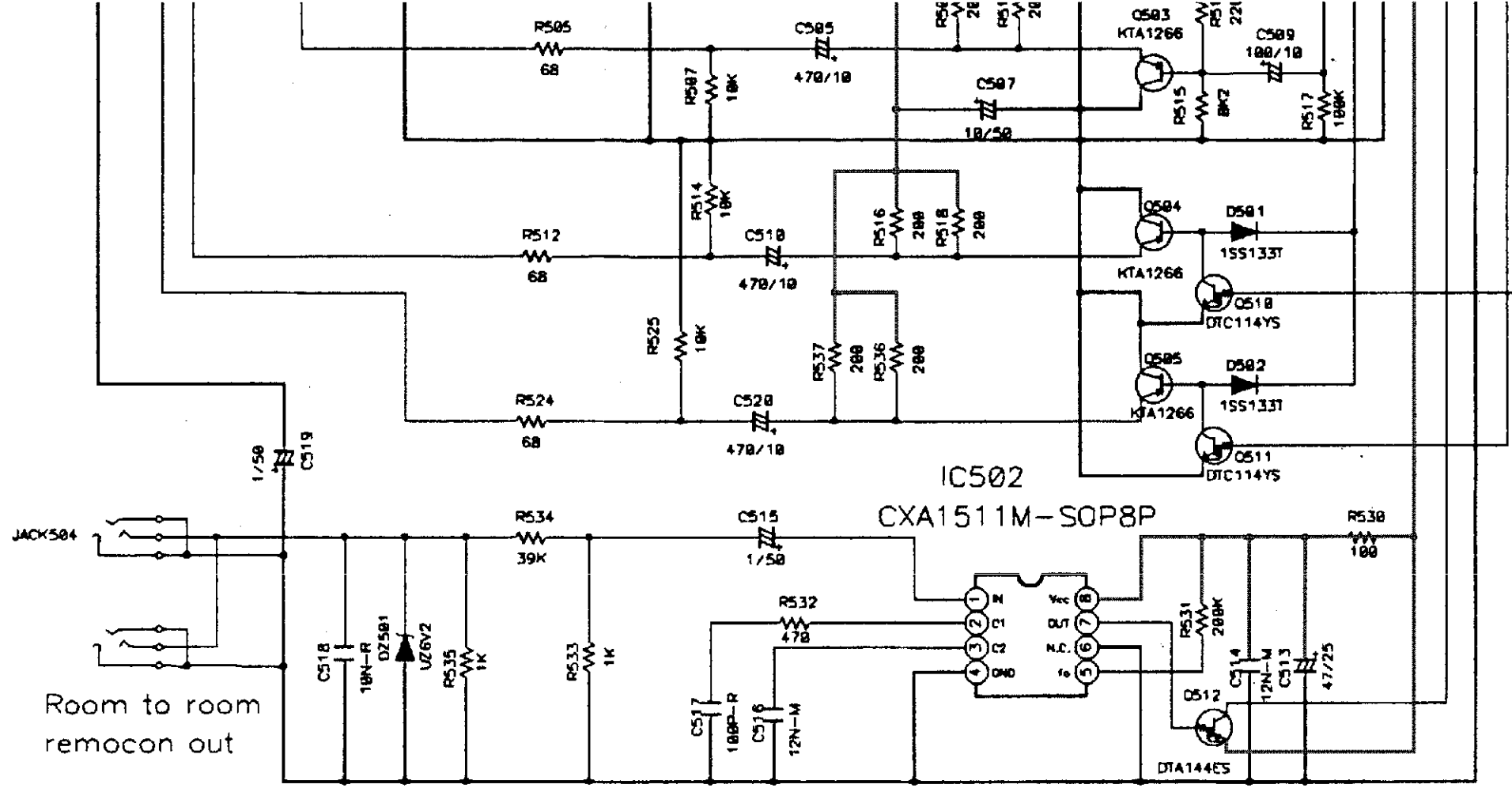
D



TO VOLUME B'D



ible



Truth table

| A | B | E | M |
|---|---|---|---|
| L | H | * | * |
| H | H | * | * |
| H | H | H | H |
| L | C | D | E |
| L | H | * | * |
| H | H | * | * |
| H | H | H | H |
| L | C | D | E |
| H | H | * | * |
| H | H | * | * |
| H | H | H | H |

\* \* Indicate don't ca

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**WARNING:**

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 Use ONLY replacement parts recommen

**CAUTION:**

Before returning the unit to the custome  
 leakage current check or (2) a line to ch  
 current exceeds 0.5 milliamps, or if the r  
 of the power card is less than 460kohm:

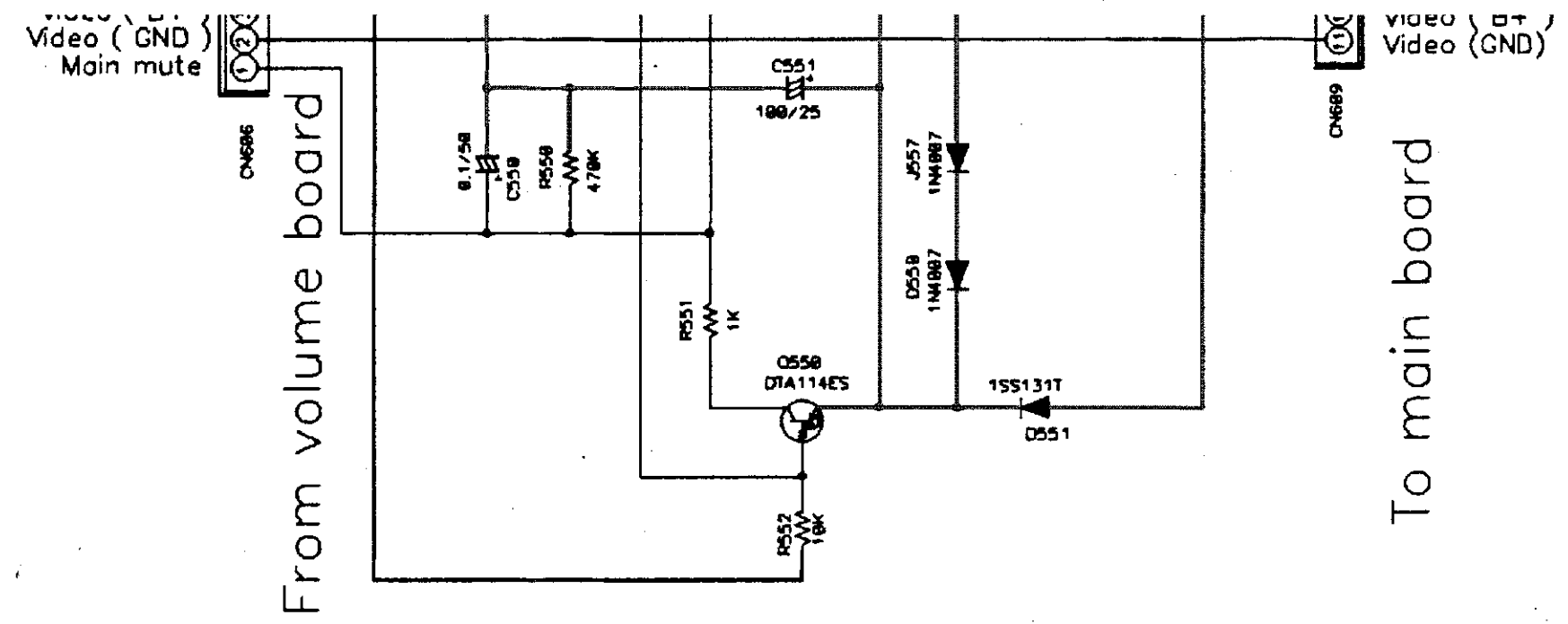
**WARNING:**

DO NOT return the unit to the customer  
 corrected.

ible

- E Monitor out
- \* In 1
- \* In 2 (VCR)
- \* In 3 (V.AUX)
- L In 4 (DVD)
- H In 5
  
- E V Out 1
- \* -
- \* In 2 (VCR)
- \* In 3 (V.AUX)
- L In 4 (DVD)
- H In 5
  
- E V Out 2
- \* In 1
- \* -
- \* In 3 (V.AUX)
- L In 4 (DVD)
- H In 5

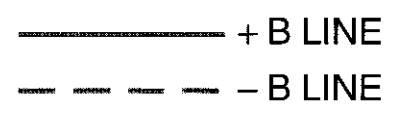
n't care ( H or L )



have critical characteristics. recommended by the manufacture.

customer, make sure you make either (1) a resistance check. If the leakage or if the resistance from chassis to either side is 50kohms, the unit is defective.

customer until the problem is located and

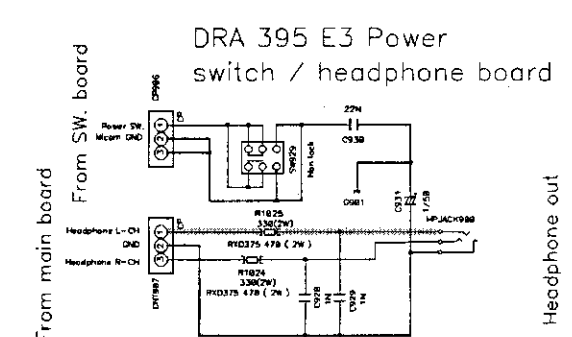
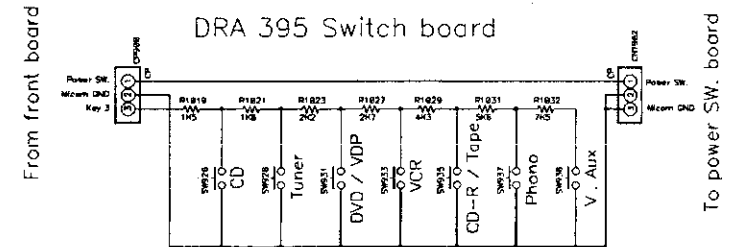
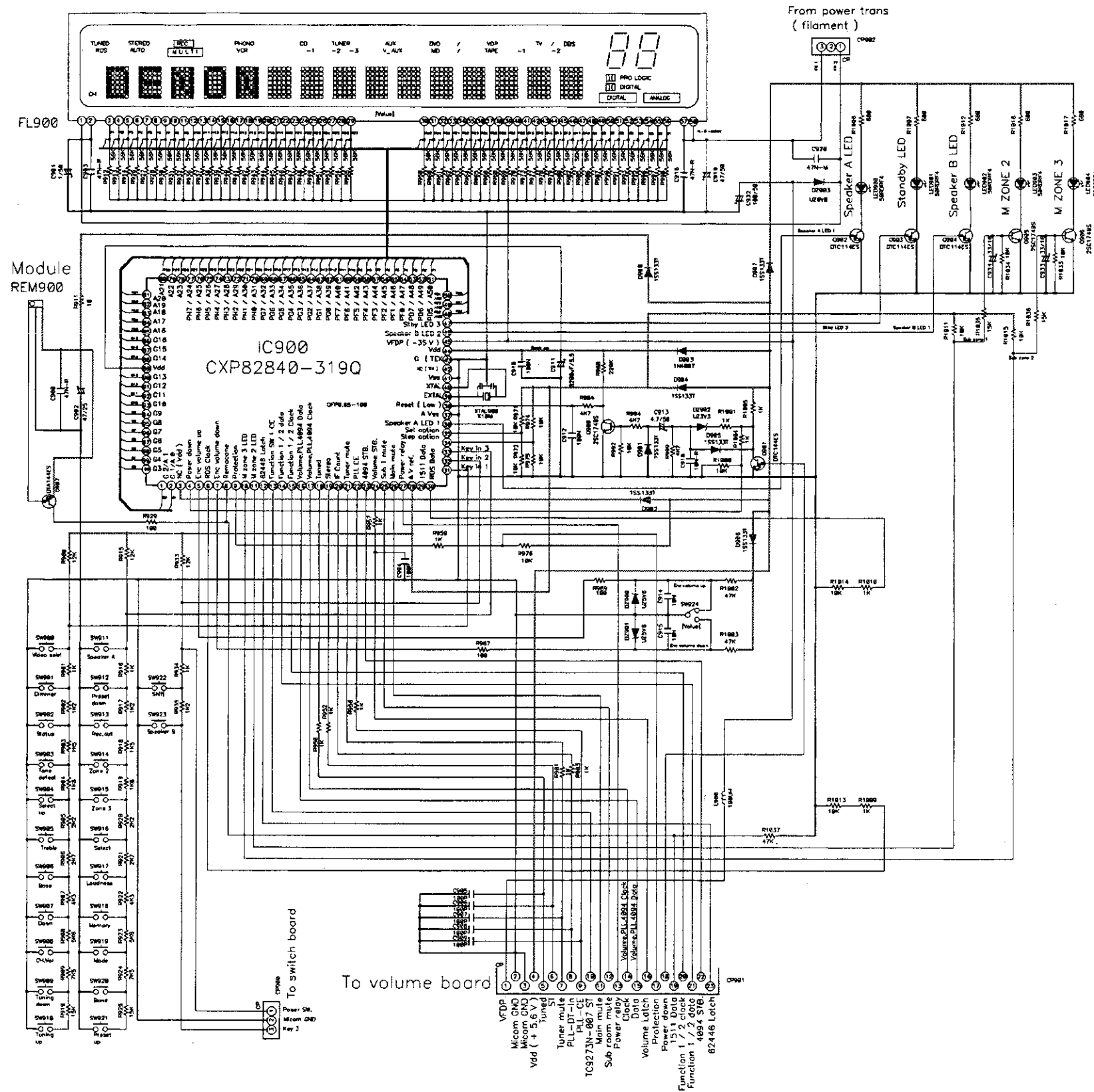


**SCHEMATIC DIAGRAMS(4/6)**  
**VIDEO UNIT**  
**CONNECTOR UNIT**

E  
F  
G  
H

1 2 3 4 5 6 7 8 9 10 11

# DRA 395 Front section



**NOTICE**  
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 ALL CAPACITANCE VALUES IN MICRO FARAD, P=MICRO-MICRO FARAD  
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT  
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 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR  
 NOTICE.

**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 millamps, or if the resistance from chassis to either side of the power card is less than 480kohms, the unit is defective.

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

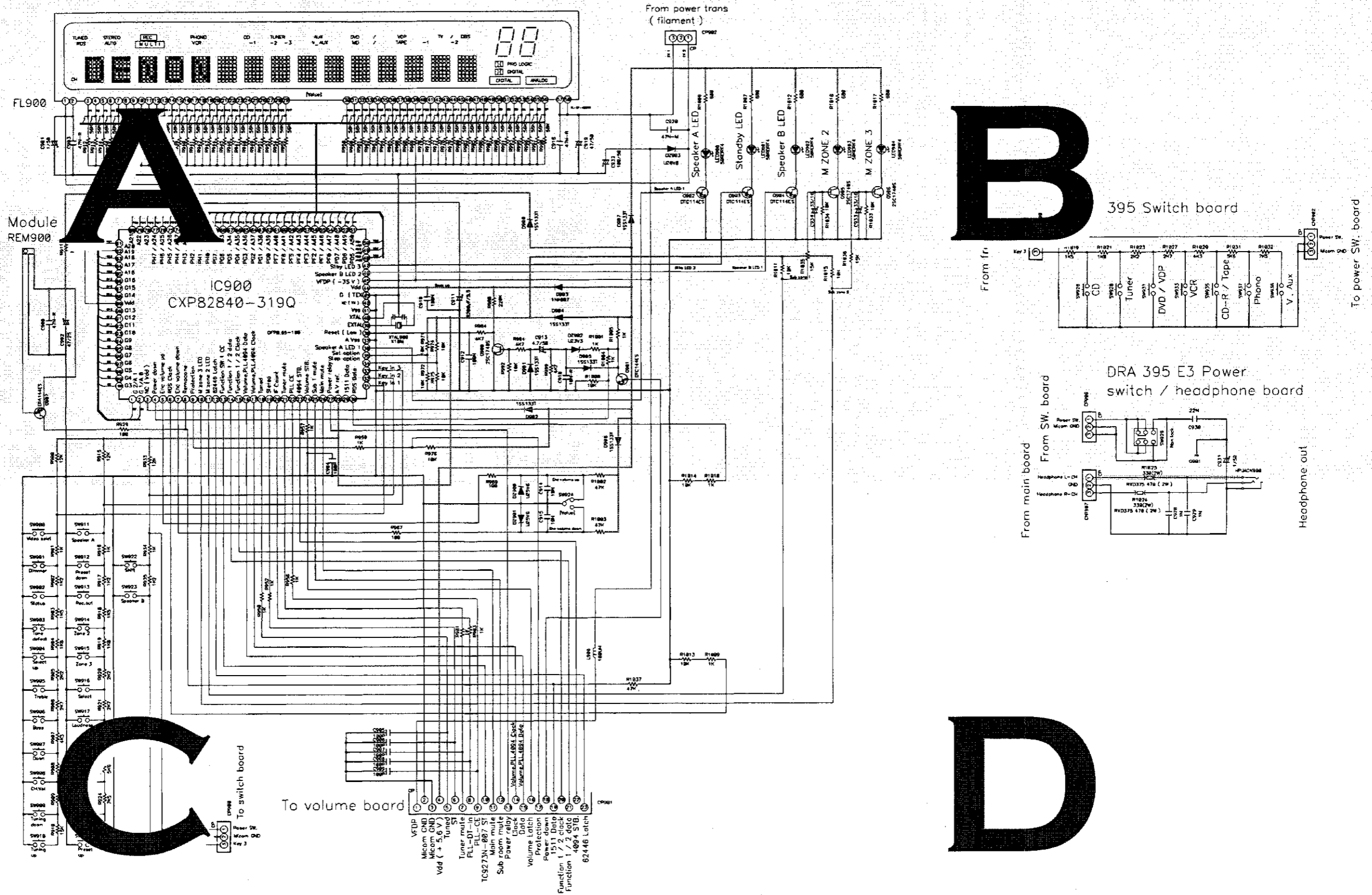
————— + B LINE  
 - - - - - SIGNAL LINE

SCHEMATIC DIAGRAMS(5/6)  
 FRONT UNIT  
 SWITCH UNIT  
 POWER SW/HP UNIT

A  
B  
C  
D  
E  
F  
G  
H

SCHEMATIC DIAGRAMS(5/6)

DRA 395 Front section



**NOTICE**  
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 leakage current check or (2) a line to chassis resistance check. If the leakage  
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 of the power card is less than 480kohms, the unit is defective.

**WARNING:**  
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 corrected.

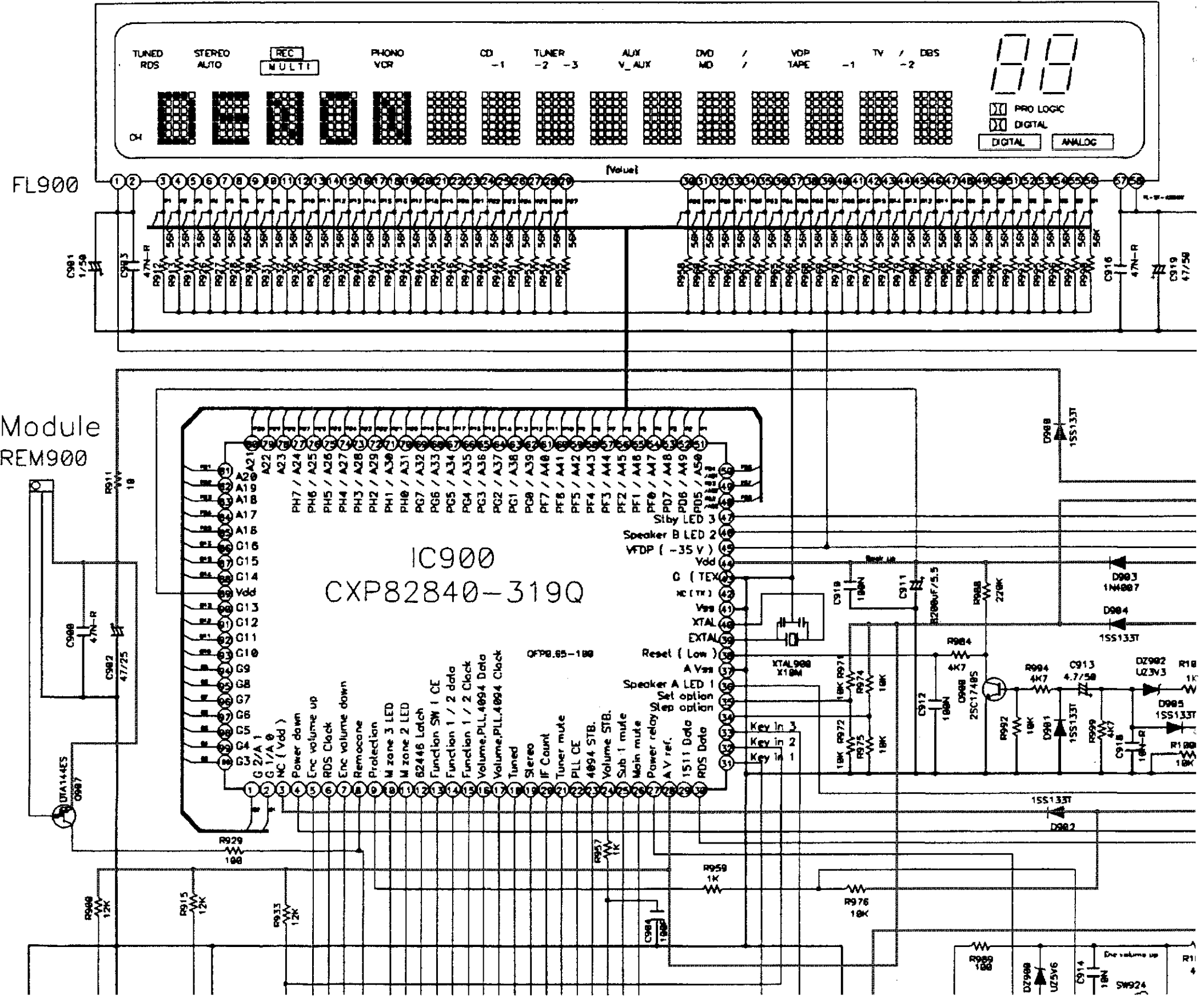
— + B LINE  
 - - - - - SIGNAL LINE

SCHEMATIC DIAGRAMS(5/6)  
 FRONT UNIT  
 SWITCH UNIT  
 POWER SW/HP UNIT

SCHEMATIC DIAGRAMS(5/6)

1 2 3 4 5 6

DRA 395 Fr





6

7

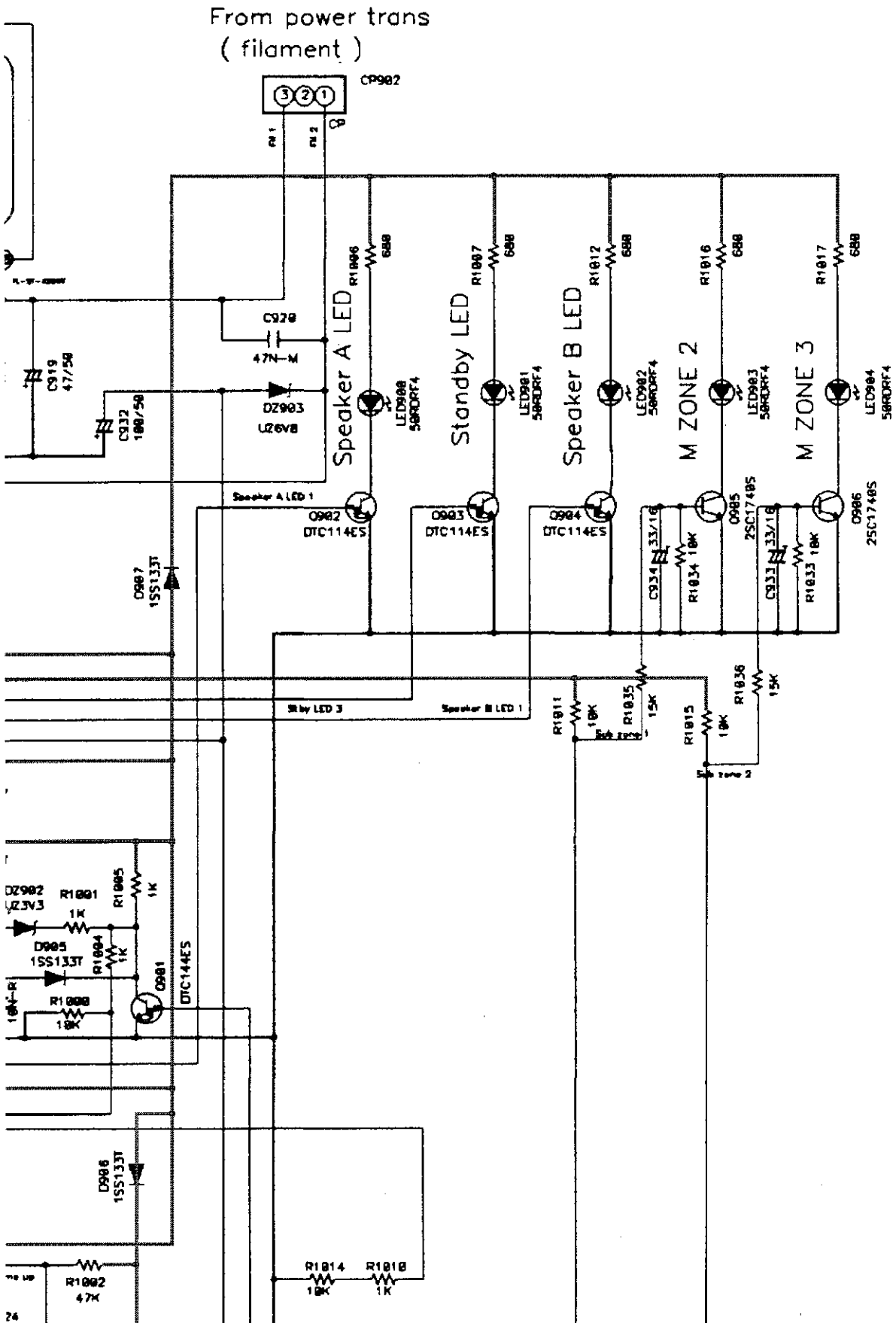
8

9

10

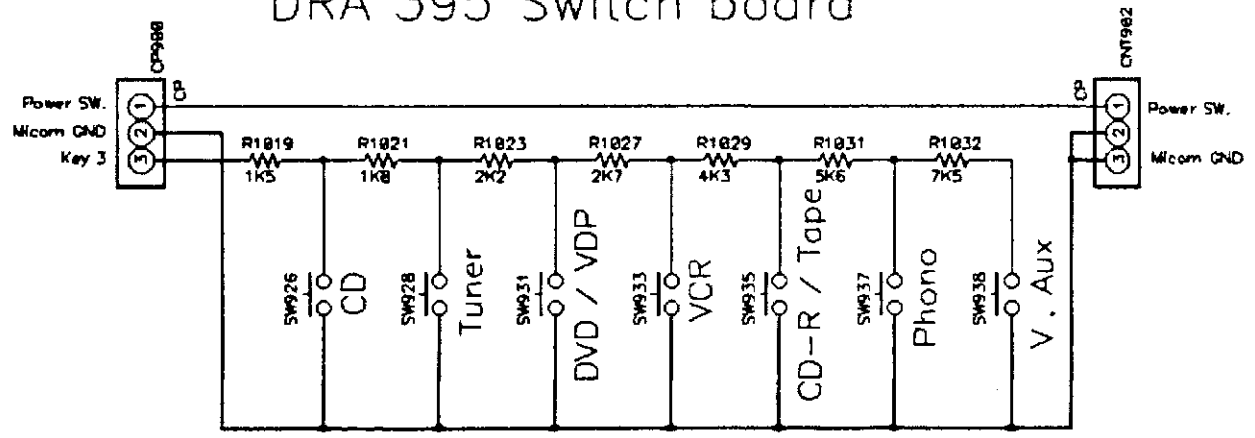
11

# Front section



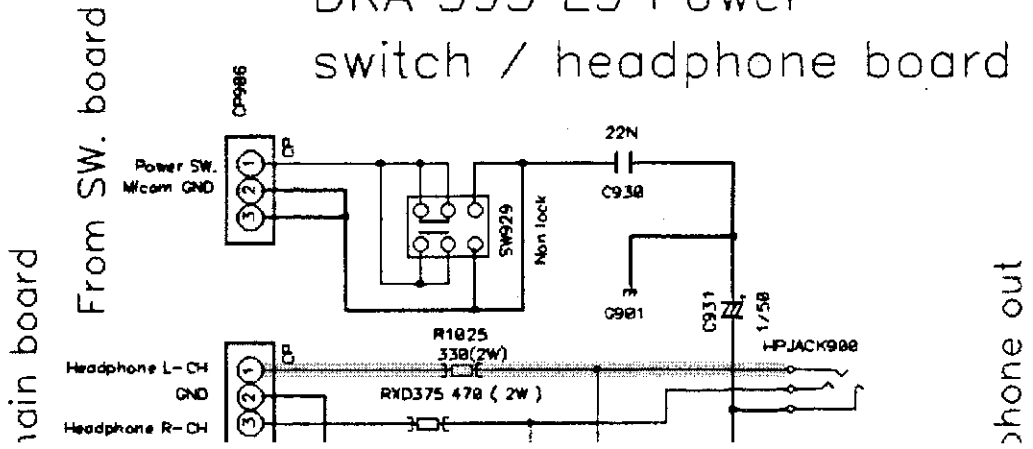
From front board

## DRA 395 Switch board



To power SW. board

## DRA 395 E3 Power switch / headphone board

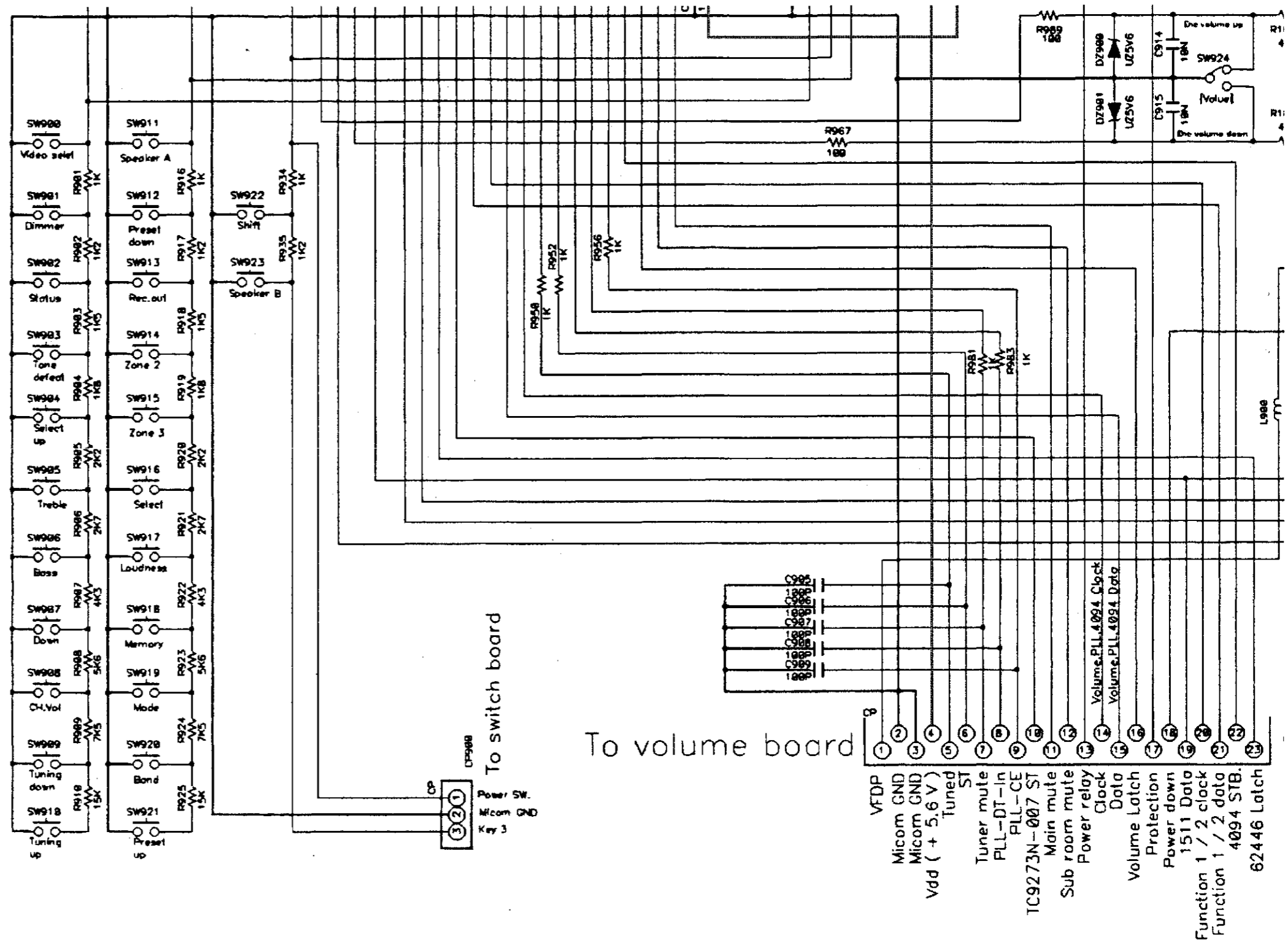


A

B

C


D



**NOTICE**

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**WARNING:**

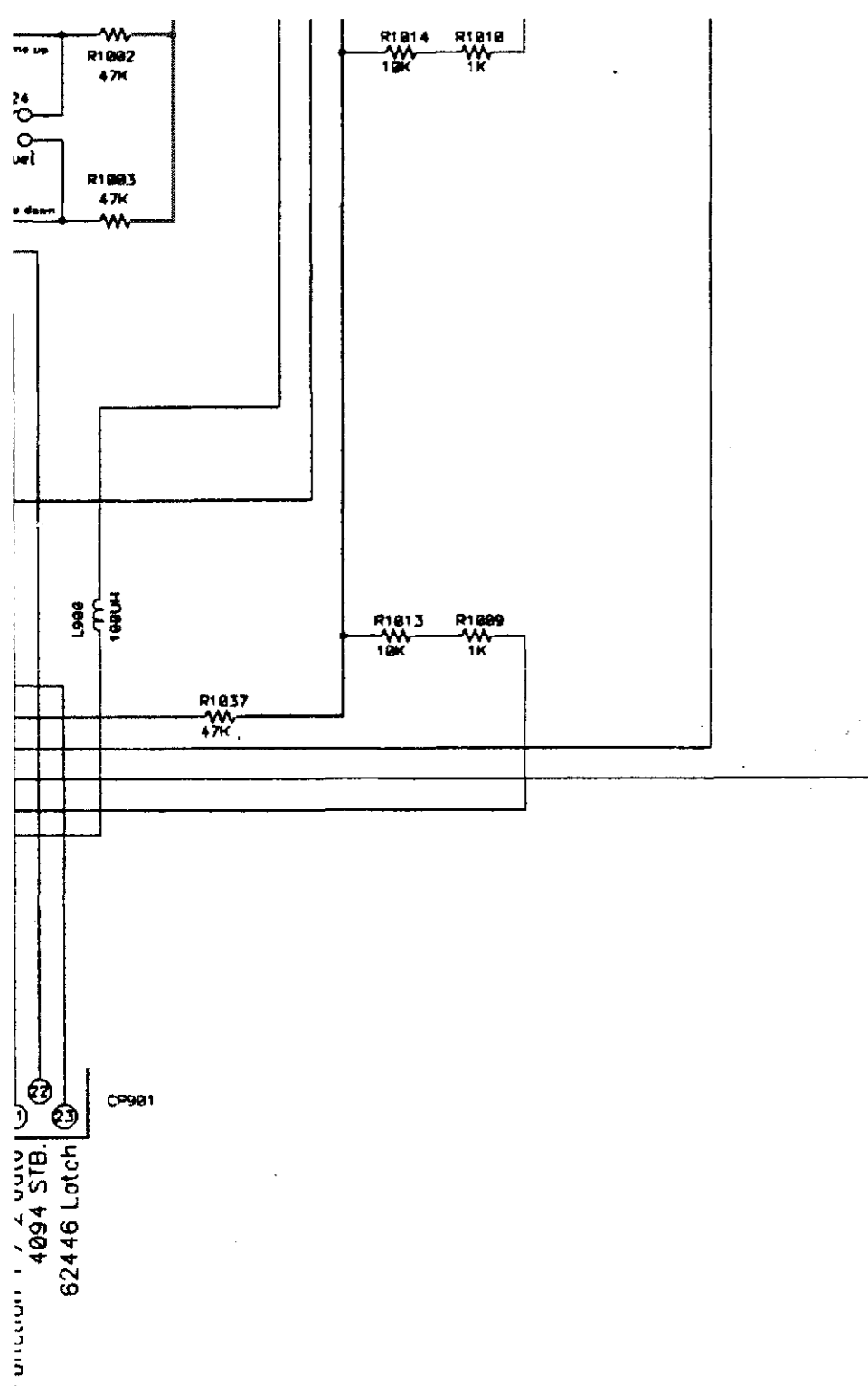
Parts marked with this symbol  Use ONLY replacement parts recomm

**CAUTION:**

Before returning the unit to the custom leakage current check or (2) a line to c current exceeds 0.5 milliamps, or if th of the power card is less than 460kohl

**WARNING:**

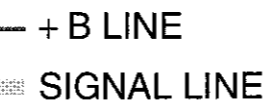
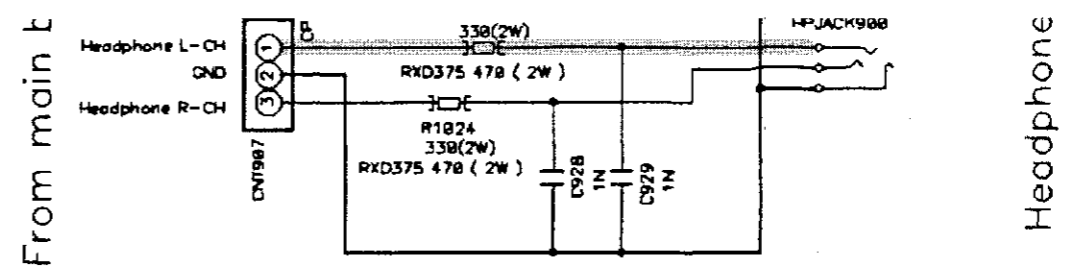
DO NOT return the unit to the custom corrected.



▲ have critical characteristics.  
recommended by the manufacture.

③ customer, make sure you make either (1) a  
line to chassis resistance check. If the leakage  
is, or if the resistance from chassis to either side  
460kohms, the unit is defective.

customer until the problem is located and

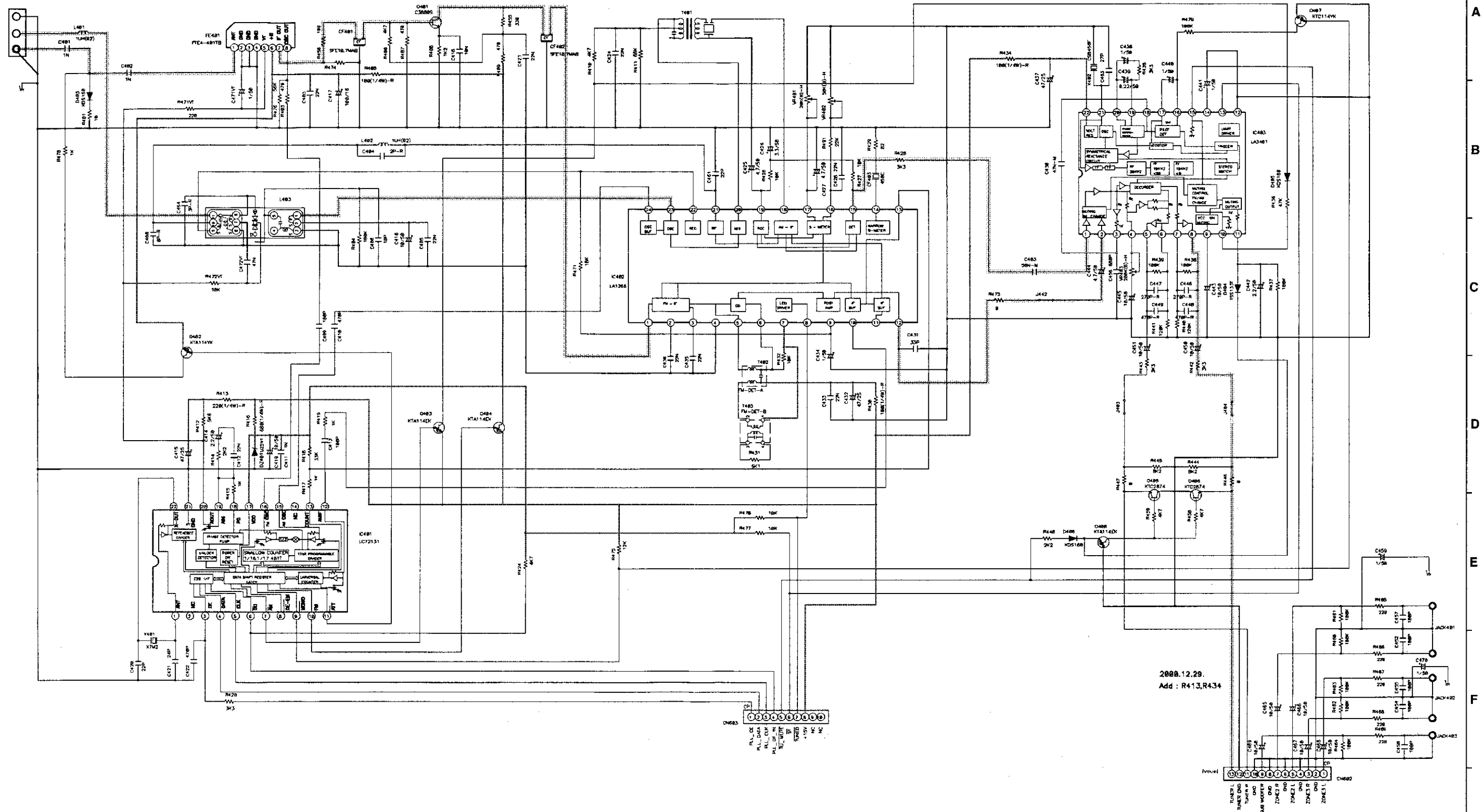


**SCHEMATIC DIAGRAMS(5/6)**  
FRONT UNIT  
SWITCH UNIT  
POWER SW/HP UNIT

SCHEMATIC DIAGRAMS(6/6)


1 2 3 4 5 6 7 8 9 10 11

# DRA 395 Tuner section



2000.12.29.  
Add : R413,R434

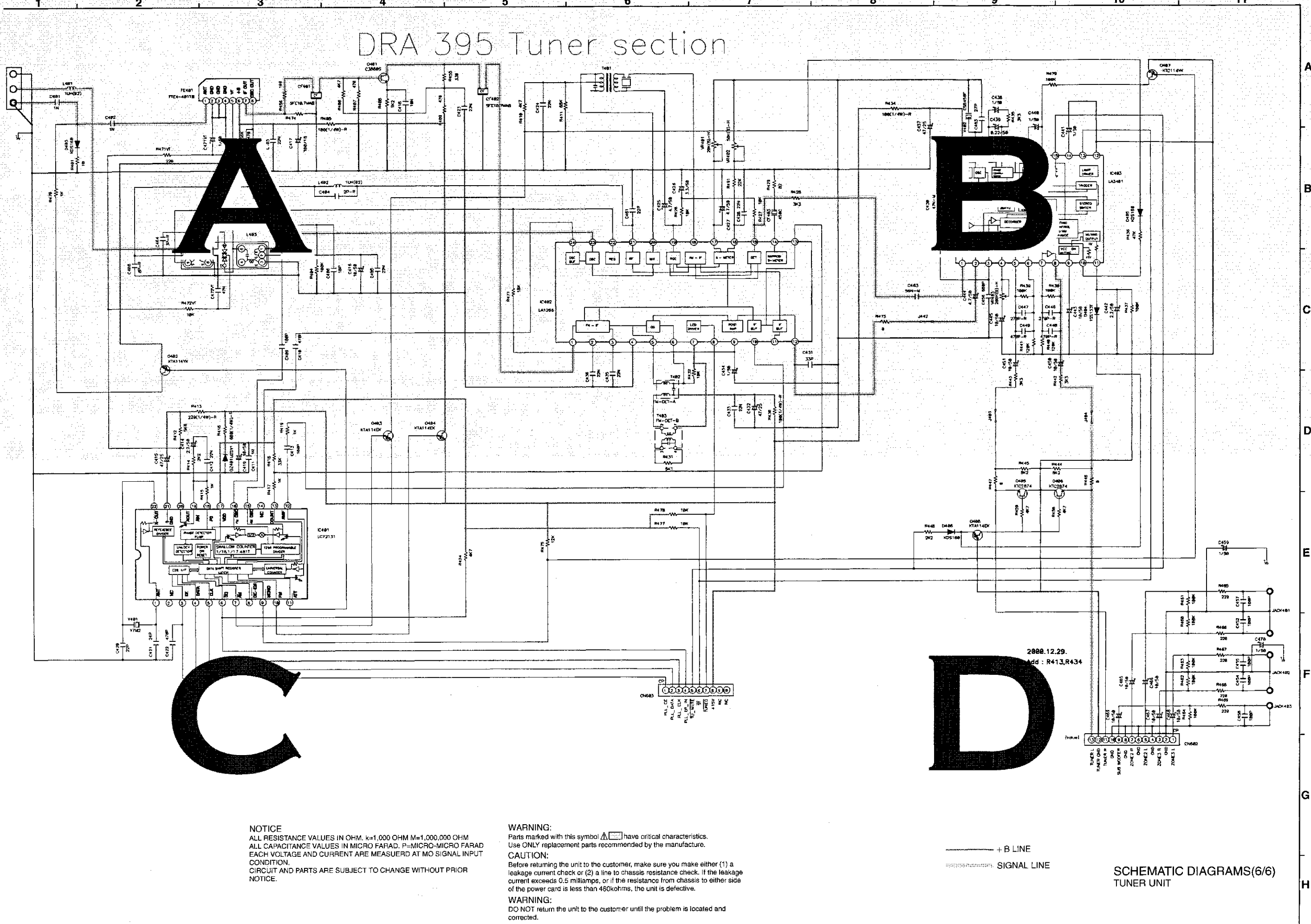
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 current exceeds 0.5 millamps, or if the resistance from chassis to either side  
 of the power card is less than 480kohms, the unit is defective.  
**WARNING:**  
 DO NOT return the unit to the customer until the problem is located and  
 corrected.


— + B LINE  
 - - - - - SIGNAL LINE  
**SCHEMATIC DIAGRAMS(6/6)**  
**TUNER UNIT**

SCHEMATIC DIAGRAMS(6/6)

DRA 395 Tuner section



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CONDITION.  
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR  
NOTICE.

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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 card is less than 460kohms, the unit is defective.

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

————— + B LINE  
- - - - - SIGNAL LINE

SCHEMATIC DIAGRAMS(6/6)  
TUNER UNIT

SCHEMATIC DIAGRAMS(6/6)

1

2

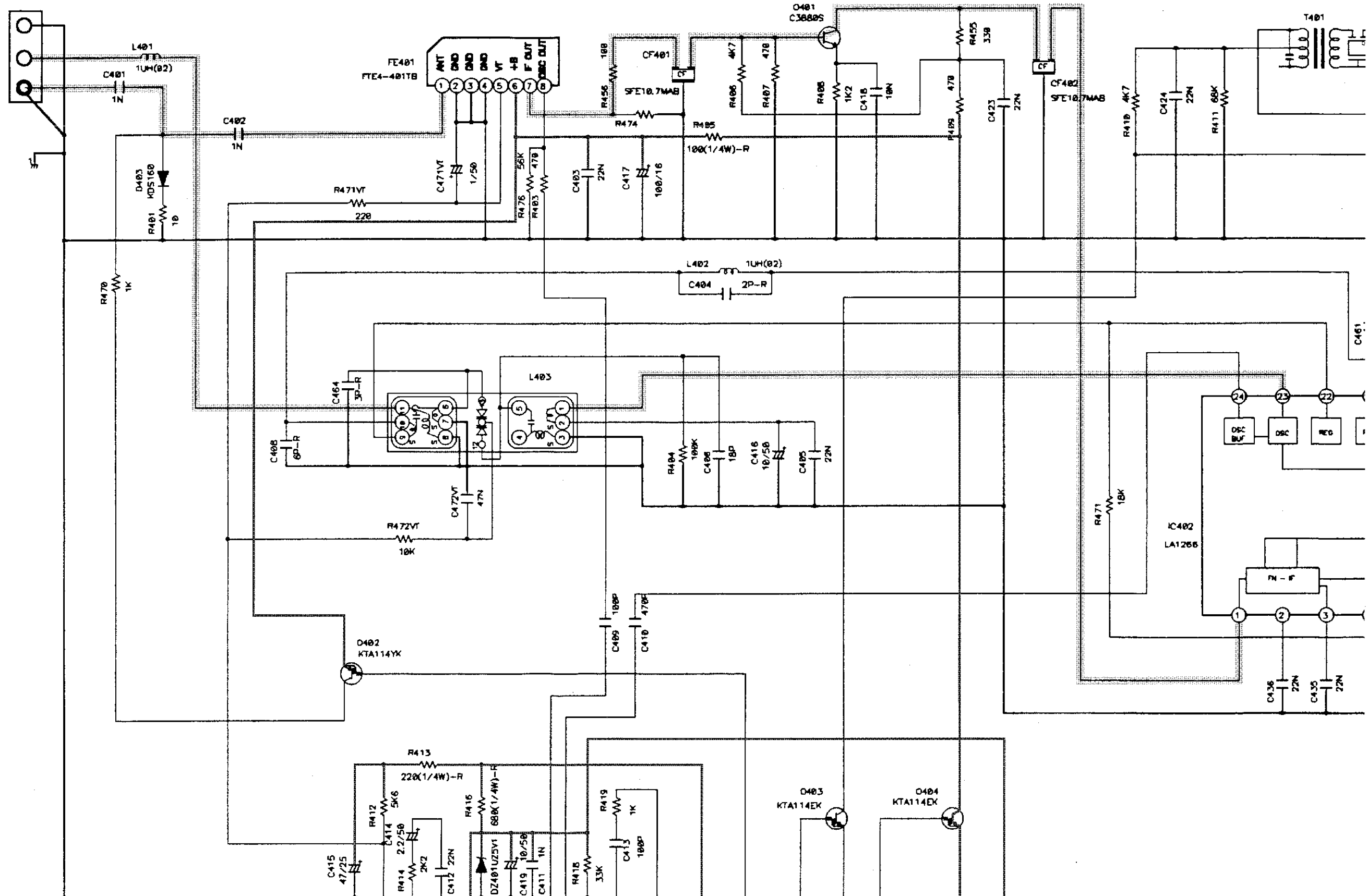
3

4

5

6

DRA 395 Tuner s



6

7

8

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10

11

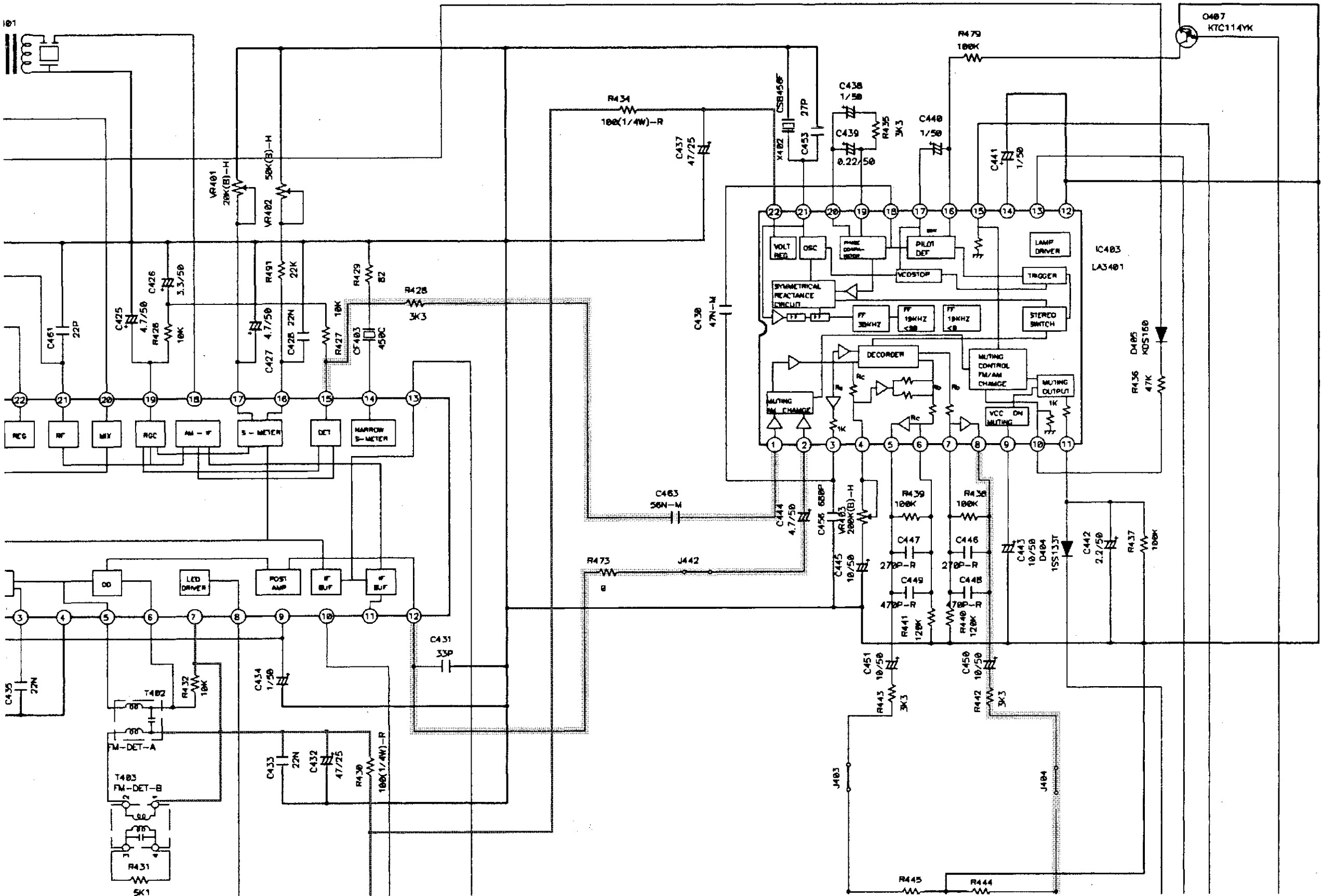
section

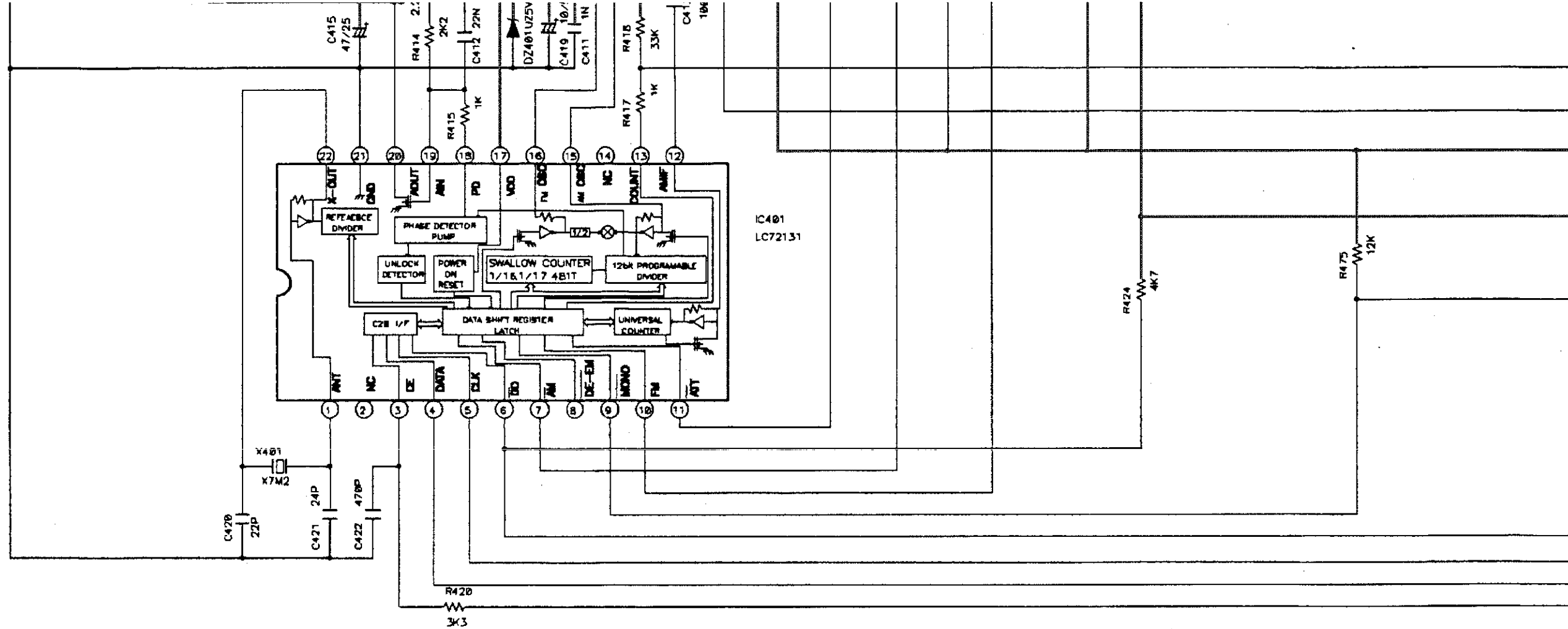
A

B

C

D






**NOTICE**

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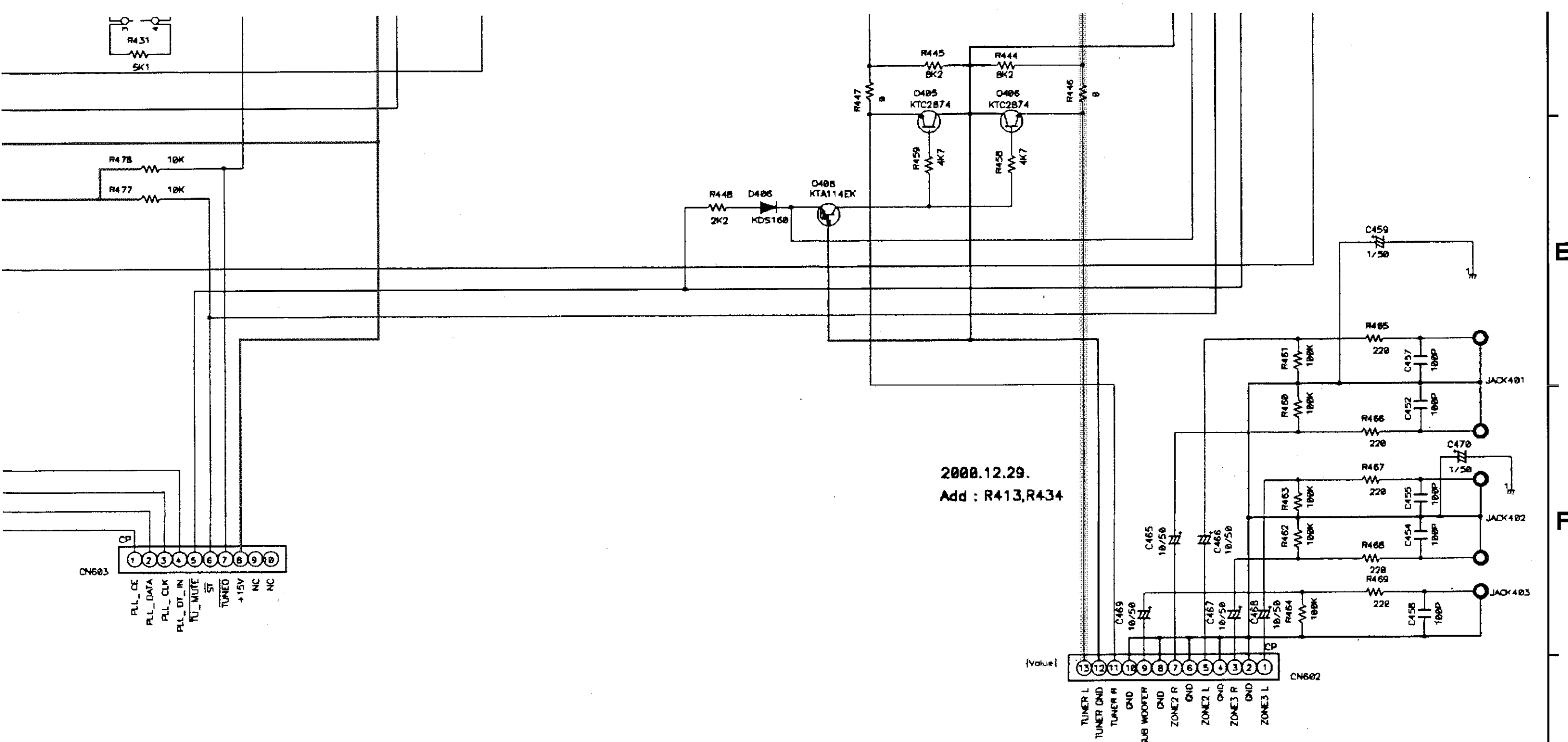
**CAUTION:**

Before returning the unit to the customer  
 (1) check for leakage current or (2) a line to chassis  
 current exceeds 0.5 milliamps, or if the resistance  
 of the power card is less than 460kohms

**WARNING:**

DO NOT return the unit to the customer  
 until corrected.





2008.12.29.  
Add : R413,R434

have critical characteristics.  
recommended by the manufacture.

customer, make sure you make either (1) a  
reference to chassis resistance check. If the leakage  
resistance is less than 10kohms, the unit is defective.

customer until the problem is located and

————— + B LINE  
 ..... SIGNAL LINE

**SCHEMATIC DIAGRAMS(6/6)  
TUNER UNIT**

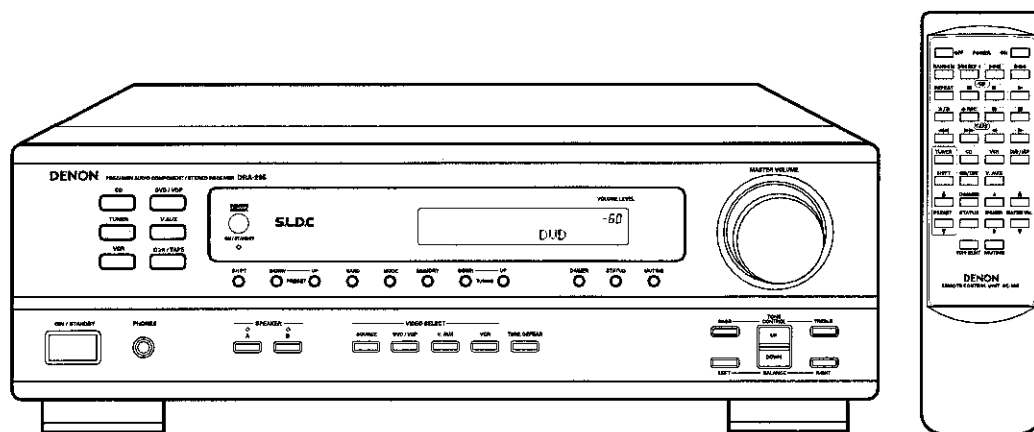
E  
F  
G  
H

# DENON

For U.S.A., Canada  
& Europe model

Hi-Fi AM-FM Stereo Receiver

## SERVICE MANUAL MODEL DRA-295 AM-FM STEREO RECEIVER



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• Some illustrations using in this service manual are slightly different from the actual set.

## NIPPON COLUMBIA CO., LTD.

14-14, AKASAKA 4-CHOME, MINATO-KU, TOKYO 107-8011 JAPAN  
Telephone: 03 (3584) 8111

## SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

### LEAKAGE CURRENT CHECK

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 460 kohms, the unit is defective.

## SPECIFICATIONS

### • Audio Section

#### (Power Amplifier)

**Rated output:** 50W + 50W (8Ω/ohms, 20Hz ~ 20kHz with 0.08% T.H.D.)  
**Output terminals:** A or B 4 to 16Ω/ohms  
 A + B 8 to 16Ω/ohms

#### (Analog)

#### LINE input - PRE OUT

**Input sensitivity/input impedance:** 200mV/47kΩ/kohms  
**Frequency response:** 10Hz ~ 50kHz: ±1.5dB  
**S/N ratio:** 98 dB (IHF-A weighted)  
**Total harmonic distortion:** 0.009% (-3dB at rated output, 8Ω/ohms) (1kHz)  
**Rated output:** 1.2V

### • Video Section (U.S.A. & Canada model)

#### (Standard Video Jacks)

**Input/output level and impedance:** 1V p-p, 75Ω/ohms  
**Frequency response:** 5Hz ~ 10MHz +1, -3dB

### • Tuner Section

|                                   |                                                                  |                  |
|-----------------------------------|------------------------------------------------------------------|------------------|
|                                   | <b>[FM]</b> (note: μV at 75Ω/ohms, 0dBf = 1×10 <sup>-15</sup> W) | <b>[AM]</b>      |
| <b>Receiving range:</b>           |                                                                  |                  |
| U.S.A. & Canada model             | 87.50MHz ~ 107.90MHz                                             | 520kHz ~ 1710kHz |
| Europe model                      | 87.50MHz ~ 108.00MHz                                             | 522kHz ~ 1611kHz |
| <b>Usable sensitivity:</b>        | 1.4μV (14.2dBf)                                                  | 18μV             |
| <b>50dB quieting sensitivity:</b> | MONO 2.8μV (20.2dBf)                                             |                  |
|                                   | STEREO 23μV (38.5dBf)                                            |                  |
| <b>S/N ratio:</b>                 | MONO 80dB (IHF-A weighted)                                       |                  |
|                                   | STEREO 75dB (IHF-A weighted)                                     |                  |
| <b>Total harmonic distortion:</b> | MONO 0.15% (1kHz)                                                |                  |
|                                   | STEREO 0.3% (1kHz)                                               |                  |

### • General

**Power supply:** AC120V, 60Hz (For U.S.A. & Canada model)  
 AC230V, 50Hz (For Europe model)  
**Power consumption:** 3.0A (For U.S.A. & Canada model)  
 150W (For Europe model)  
**Maximum external dimensions:** 434 (W) × 147 (H) × 417 (D) mm (17-3/32" × 5-25/32" × 16-27/64")  
**Weight:** 9.2kg (20lbs 4.5oz)

### • Remote Control Unit

RC-895 (For U.S.A. & Canada model)  
 RC-907 (For Europe model)  
**Batteries:** R06P/AA Type (two batteries)  
**External dimensions:** 50 (W) × 179 (H) × 22 (D) mm (1-31/32" × 7-3/64" × 55/64")  
**Weight:** 125g (Approx. 7.5 oz) (including batteries)

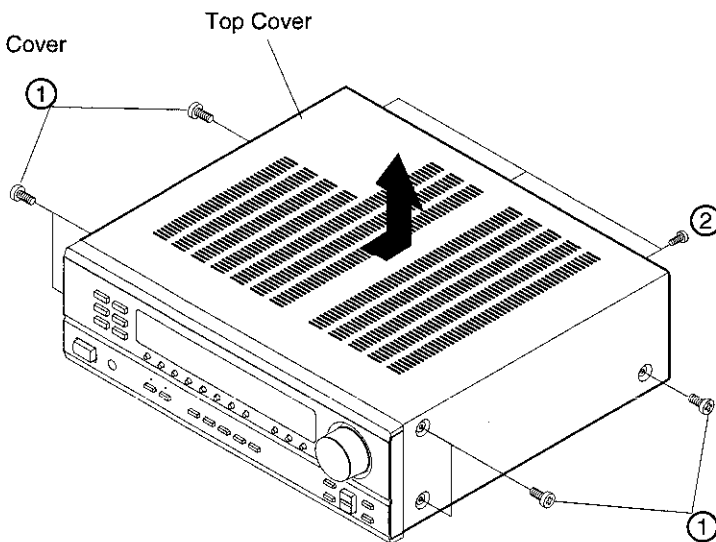
\* For purposes of improvement, specifications and design are subject to change without notice.

## DISASSEMBLY

(Follow the procedure below in reverse order when reassembling)

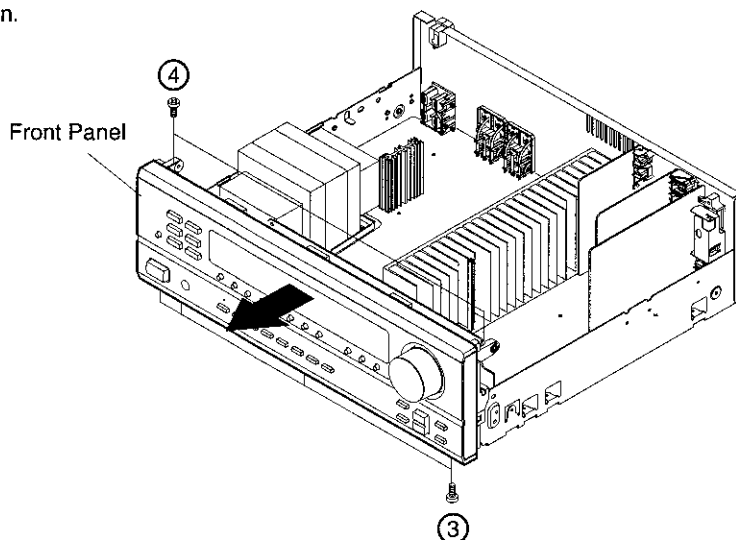
### Top Cover

Remove 6 screws ① and 3 screws ②, detach the Top Cover in the arrow direction.



### Front Panel

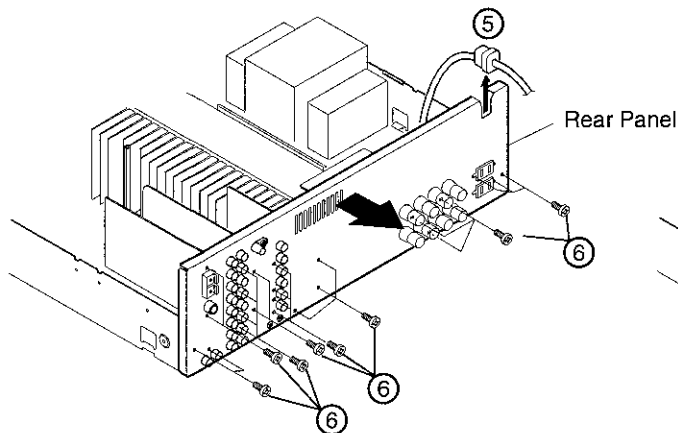
1. Remove 4 screws ③ and 2 screws ④.
2. Detach the Front Panel in the arrow direction.



### Rear Panel

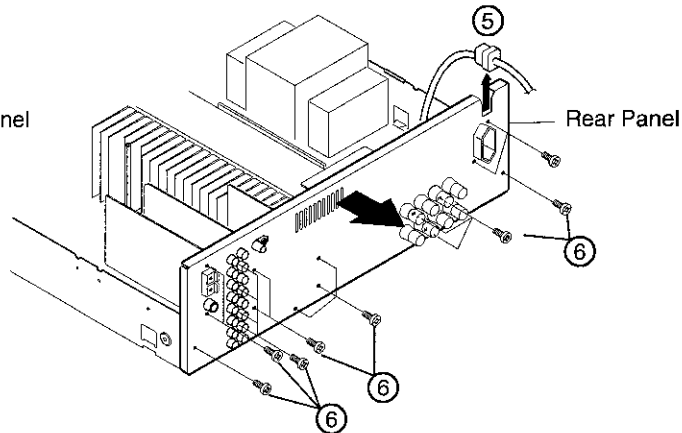
#### U.S.A. & Canada model

1. Remove cord bushing ⑤ from the Rear Panel.
2. Remove 23 screws ⑥.
3. Detach the Rear Panel in the arrow direction.



#### Europe model

1. Remove cord bushing ⑤ from the Rear Panel.
2. Remove 17 screws ⑥.
3. Detach the Rear Panel in the arrow direction.

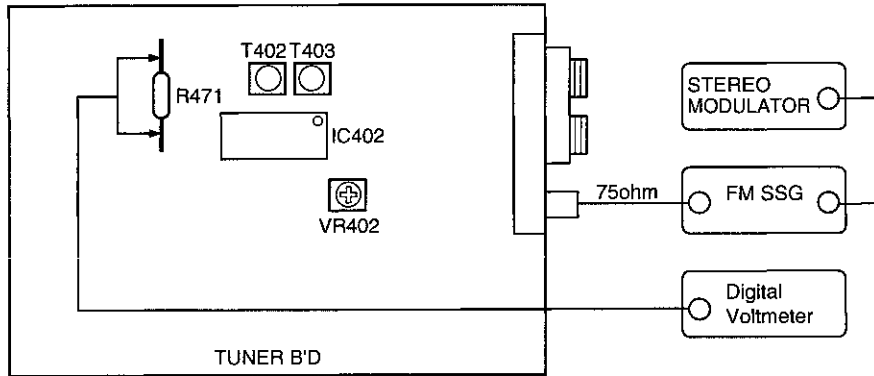


# ADJUSTMENT

## Tuner Section

### CONNECTION DIAGRAM OF MEASURING INSTRUMENTS

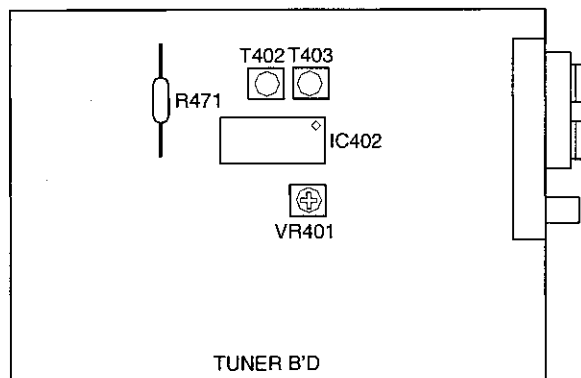
● FM



### FM ALIGNMENT

| Step | Alignment Item       | Tuning Frequency Setting | Input  |           |             |                |                  | Output                      |                     | Adjustment |                                       |
|------|----------------------|--------------------------|--------|-----------|-------------|----------------|------------------|-----------------------------|---------------------|------------|---------------------------------------|
|      |                      |                          | Type   | Frequency | Input Level | Modulation     | Coupling         | Type                        | Connect to          | Points     | Adjust to                             |
| 1    | Center Adjustment    | 98.1MHz (98.0MHz)        | FM SSG | 98.1MHz   | 60dBμ       | Mono 1kHz 100% | Antenna Terminal | Digital Voltmeter           | R471                | T402       | ± 50mV                                |
| 2    | Distortion           | 98.1MHz (98.0MHz)        | FM SSG | 98.1MHz   | 60dBμ       | Mono 1kHz 100% | Antenna Terminal | Distortion Meter            | Output Terminal (L) | T403       | Minimum Distortion                    |
| 3    | Repeat Steps 1 and 2 |                          |        |           |             |                |                  |                             |                     |            |                                       |
| 4    | Signal Level         | 98.1MHz (98.0MHz)        | FM SSG | 98.1MHz   | 20dBμ       | OFF            | Antenna Terminal | Light "TUNED" on FL Display |                     | VR402      | 20 <sup>+10</sup> / <sub>-10</sub> dB |

● AM



### AM ALIGNMENT

| Step | Alignment Item | Frequency      | Input  | Output |            | Adjustment |                             | Remarks                |
|------|----------------|----------------|--------|--------|------------|------------|-----------------------------|------------------------|
|      |                |                |        | Type   | Connect to | Points     | Adjust to                   |                        |
| 1    | Signal Level   | 999 (1000) kHz | AM SSG | —      | —          | VR401      | Light "TUNED" on FL Display | SSG OUTPUT 74dBμ (EMF) |

## Audio Section

### Idling Current

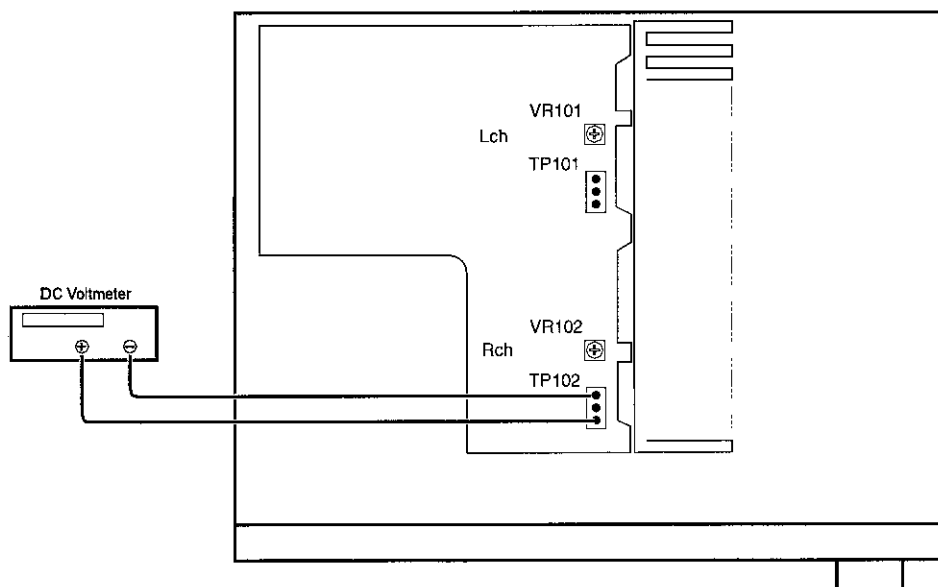
Required measurement equipment : DC Voltmeter

### Preparation

- (1) Avoid direct blow from an air conditioner or an electric fan, and adjust the unit at normal room temperature 15 °C ~ 30 °C (59 °F ~ 86 °F).
- (2) Presetting
  - POWER (Power source switch) → OFF
  - SPEAKER (Speaker terminal) → No load (Do not connect speaker, dummy resistor, etc.)

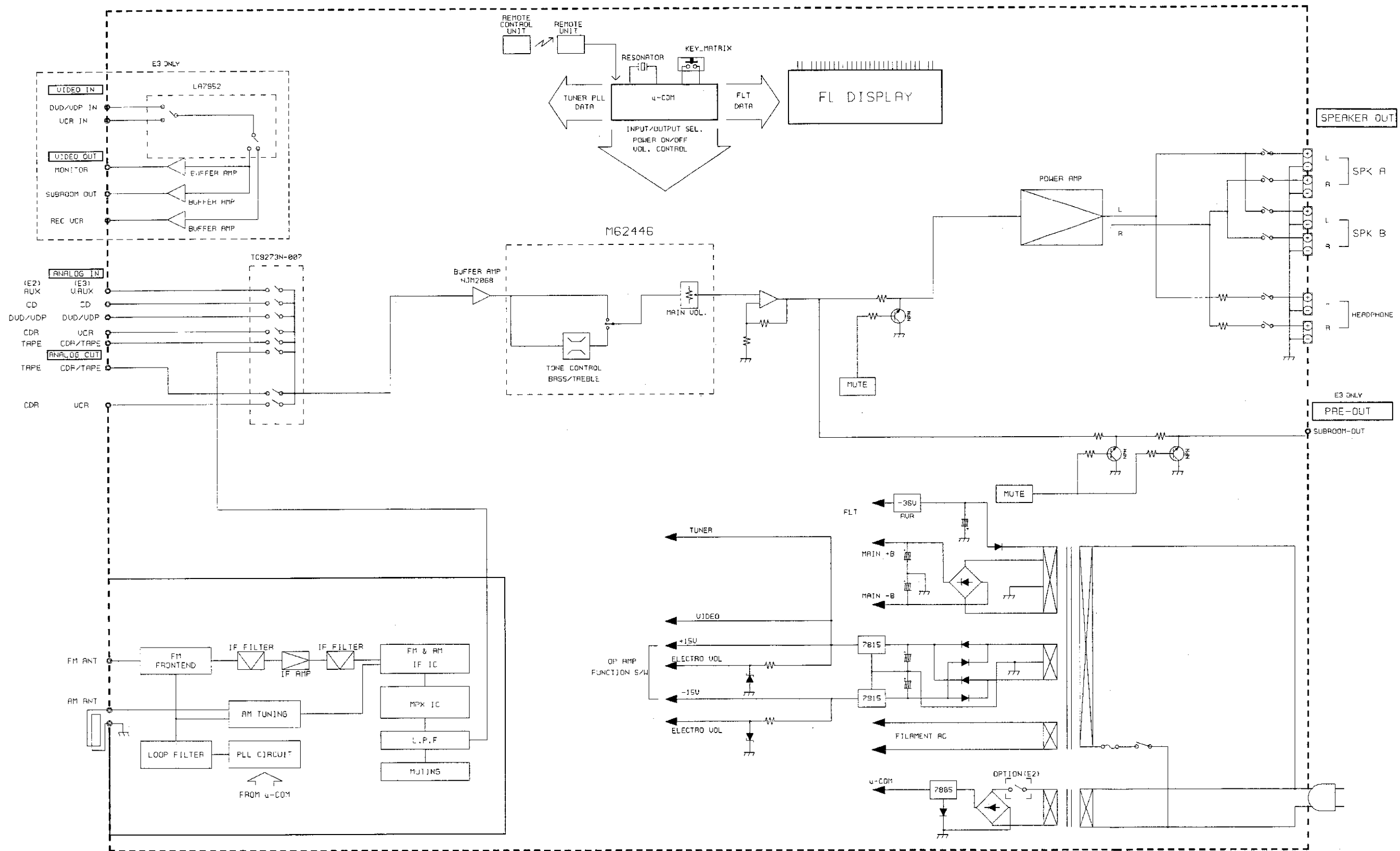
### Adjustment

- (1) Remove top cover and set VR101, VR102 on Amp. Unit at full counterclockwise (  $\odot$  ) position.
- (2) Connect DC Voltmeter to test points (Lch: TP101, Rch: TP102).
- (3) Connect power cord to AC Line, and turn power switch "ON".
- (4) Presetting.           MASTER VOLUME : "---" counterclockwise (  $\odot$  min.)  
                                  FUNCTION           : CD
- (5) Within 2 minutes after the power on, turn VR101 clockwise (  $\odot$  ) to adjust the TEST POINT voltage to 1.5 mV  $\pm$ 0.5 mV DC.
- (6) After 10 minutes from the preset above, turn VR101 to set the voltage to 2.5 mV  $\pm$ 0.5 mV DC.
- (7) Adjust the Variable Resistors of other channels in the same way.



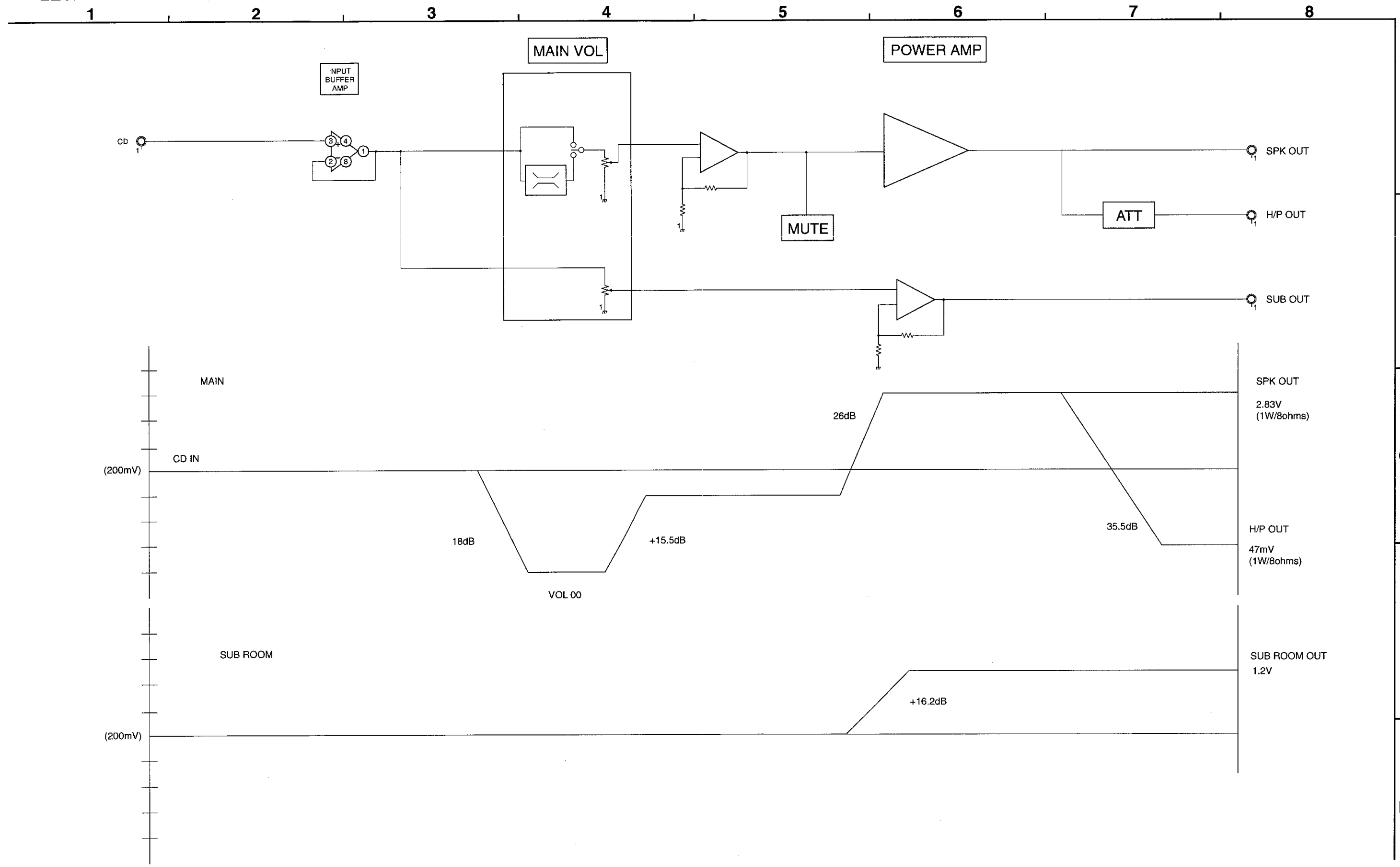
# BLOCK DIAGRAM

1 2 3 4 5 6 7 8



A  
B  
C  
D  
E

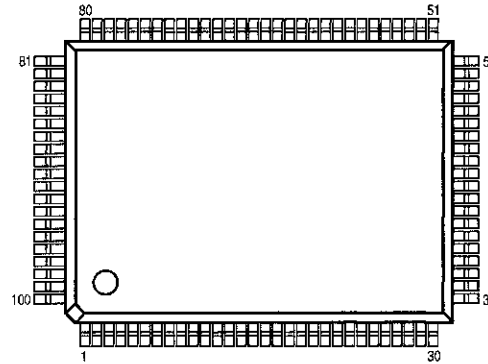
# LEVEL DIAGRAM





SEMICONDUCTORS

- IC's
- CXP82840-321Q (IC900)

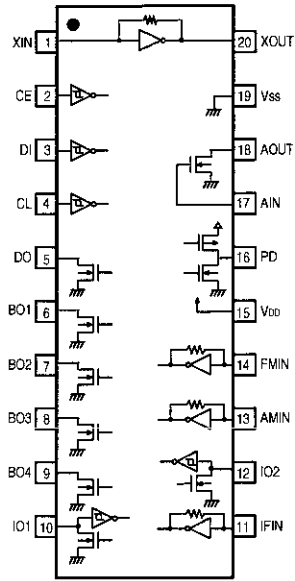


CXP82840-321Q Terminal Function

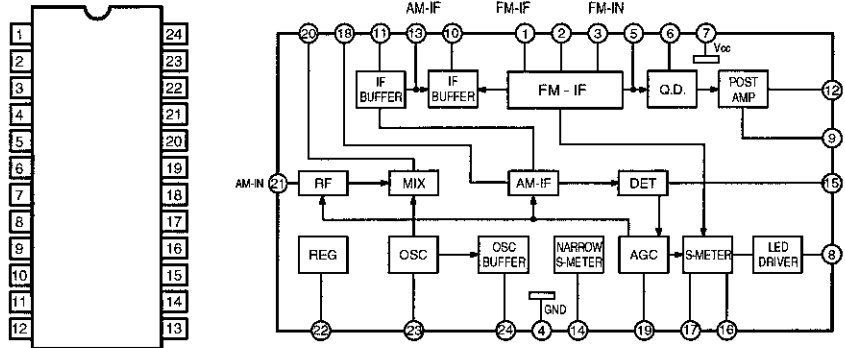
| Pin No. | Pin Name              | I/O | Function                                   |
|---------|-----------------------|-----|--------------------------------------------|
| 1       | G2/A1                 | O   | FL G02                                     |
| 2       | G1/A0                 | O   | FL G01                                     |
| 3       | NC(Vdd)               | I   | NC(Connect to Vdd)                         |
| 4       | POWER DOWN            | I   | AC OFF Detect                              |
| 5       | ENC VOLUME UP         | I   | Encoder VOLUME UP                          |
| 6       | RDS CLOCK             | I   | RDS clock input(TDA7330)                   |
| 7       | ENC VOLUME DOWN       | I   | Encoder VOLUME DOWN                        |
| 8       | REMOCON               | I   | Remote signal input.                       |
| 9       | PROTECTION            | I   | Protection detecting input.                |
| 10      | SUB ZONE2 LED         | O   | Not used.                                  |
| 11      | SUB ZONE1 LED         | O   | Not used.                                  |
| 12      | 62446 LATCH           | O   | Electronic volume control.(M62446 LATCH)   |
| 13      | FUNCTION SW 1 CE      | O   | Function IC control.(TC9273 ST)            |
| 14      | FUNCTION 1/2 DATA     | O   | Function IC control.(TC9273 DATA)          |
| 15      | FUNCTION 1/2 CLOCK    | O   | Function IC control.(TC9273 CLOCK)         |
| 16      | VOLUME,PLL,4094,DATA  | O   | LC72131,M62446,TC4094(DATA)                |
| 17      | VOLUME,PLL,4094,CLOCK | O   | LC72131,M62446,TC4094(CLOCK)               |
| 18      | TUNED                 | I   | TUNED signal in.                           |
| 19      | STEREO                | I   | STEREO signal in.                          |
| 20      | IF COUNT              | I   | PLL data in.(LC72131)                      |
| 21      | TUNER MUTE            | O   | Tuner mute output.                         |
| 22      | PLL CE                | O   | LC72131(CE)                                |
| 23      | 4094 STB              | O   | TC4094(STB)                                |
| 24      | VOLUME STB            | O   | Not used.                                  |
| 25      | SUB 1 MUTE            | O   | Not used.                                  |
| 26      | MAIN MUTE             | O   | MAIN,Subwoofer mute output.                |
| 27      | POWER RELAY           | O   | Power supply relaycontrol.                 |
| 28      | AV REF.               | I   | Reference voltage input for A/D converter. |
| 29      | 1511 DATA             | O   | Not used.                                  |
| 30      | RDS DATA              | I   | RDS data input(TDA7330)                    |
| 31      | KEY IN 1              | I   | Key input 1                                |
| 32      | KEY IN 2              | I   | Key input 2                                |
| 33      | KEY IN 3              | I   | Key input 3                                |
| 34      | STEP OPTION           | I   | Area select.                               |
| 35      | SET OPTION            | I   | Model select.                              |
| 36      | SPEAKER A LED 1       | O   | SPEAKER A LED indicator control            |
| 37      | A VSS                 | I   | A/D converter GND.                         |
| 38      | RESET                 | I   | Low-level active,system reset.             |
| 39      | EXTAL                 | I   | EXTAL(10MHz)                               |
| 40      | XTAL                  | O   | XTAL(10MHz)                                |
| 41      | VSS                   | I   | GND                                        |
| 42      | NC(TX)                | O   | Not used.                                  |
| 43      | G(TEX)                | I   | GND                                        |
| 44      | VDD                   | I   | Vcc SUPPLY.                                |
| 45      | VFDP                  | I   | FDP voltage supply.                        |

| Pin No. | Pin Name        | I/O | Function                        |
|---------|-----------------|-----|---------------------------------|
| 46      | SPEAKER B LED 2 | O   | SPEAKER B LED indicator control |
| 47      | STBY LED 3      | O   | STANDBY LED indicator control   |
| 48      | PD2/A53         | O   | FL P38                          |
| 49      | PD3/A52         | O   | FL P37                          |
| 50      | PD4/A51         | O   | FL P36                          |
| 51      | PD5/A50         | O   | FL P01                          |
| 52      | PD6/A49         | O   | FL P02                          |
| 53      | PD7/A48         | O   | FL P03                          |
| 54      | PF0/A47         | O   | FL P04                          |
| 55      | PF1/A46         | O   | FL P05                          |
| 56      | PF2/A45         | O   | FL P06                          |
| 57      | PF3/A44         | O   | FL P07                          |
| 58      | PF4/A43         | O   | FL P08                          |
| 59      | PF5/A42         | O   | FL P09                          |
| 60      | PF6/A41         | O   | FL P10                          |
| 61      | PF7/A40         | O   | FL P11                          |
| 62      | PG0/A39         | O   | FL P12                          |
| 63      | PG1/A38         | O   | FL P13                          |
| 64      | PG2/A37         | O   | FL P14                          |
| 65      | PG3/A36         | O   | FL P15                          |
| 66      | PG4/A35         | O   | FL P16                          |
| 67      | PG5/A34         | O   | FL P17                          |
| 68      | PG6/A33         | O   | FL P18                          |
| 69      | PG7/A32         | O   | FL P19                          |
| 70      | PH0/A31         | O   | FL P20                          |
| 71      | PH1/A30         | O   | FL P21                          |
| 72      | PH2/A29         | O   | FL P22                          |
| 73      | PH3/A28         | O   | FL P23                          |
| 74      | PH4/A27         | O   | FL P24                          |
| 75      | PH5/A26         | O   | FL P25                          |
| 76      | PH6/A25         | O   | FL P26                          |
| 77      | PH7/A24         | O   | FL P27                          |
| 78      | A23             | O   | FL P28                          |
| 79      | A22             | O   | FL P29                          |
| 80      | A21             | O   | FL P30                          |
| 81      | A20             | O   | FL P31                          |
| 82      | A19             | O   | FL P32                          |
| 83      | A18             | O   | FL P33                          |
| 84      | A17             | O   | FL P34                          |
| 85      | A16             | O   | FL P35                          |
| 86      | G16             | O   | FL G16                          |
| 87      | G15             | O   | FL G15                          |
| 88      | G14             | O   | FL G14                          |
| 89      | Vdd             | I   | Vcc SUPPLY.                     |
| 90      | G13             | O   | FL G13                          |
| 91      | G12             | O   | FL G12                          |
| 92      | G11             | O   | FL G11                          |
| 93      | G10             | O   | FL G10                          |
| 94      | G9              | O   | FL G09                          |
| 95      | G8              | O   | FL G08                          |
| 96      | G7              | O   | FL G07                          |
| 97      | G6              | O   | FL G06                          |
| 98      | G5              | O   | FL G05                          |
| 99      | G4              | O   | FL G04                          |
| 100     | G3              | O   | FL G03                          |

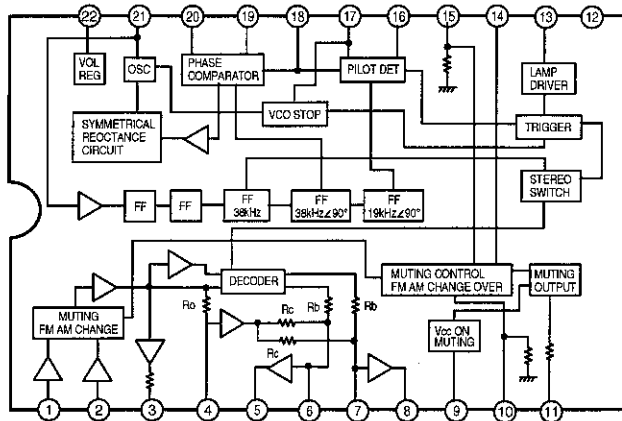
**LC72131M (IC401)**



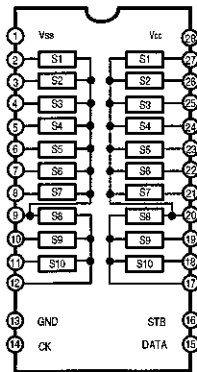
**LA1266 (IC402)**



**LA3401 (IC403)**



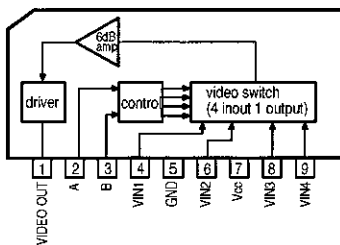
**TC9273N-007 (IC300)**



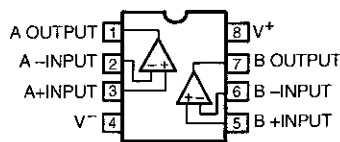
**TC9273N Terminal Function**

| Pin No        | Symbol | Name            | Function                                                       |
|---------------|--------|-----------------|----------------------------------------------------------------|
| 1             | Vss    | +Power Terminal | Dual Power Use: VDD = 8.0-17 V Single Power Use: VDD = 8.0-18V |
| 13            | GND    | Digital Ground  | GND=0V                                                         |
| 28            | Vdd    | +Power Terminal | Vss=8.0-17V                                                    |
| 2-12<br>12-27 | S1-S10 | I/O Terminal    | Input terminal of analog switch.                               |
| 14            | CK     | Clock Input     | Clock input for data transfer.                                 |
| 15            | DATA   | Data Input      | Serial input for switch setting.                               |
| 16            | STB    | Strobe Input    | Strobe Input Strobe input for data writing.                    |

**LA7952 (IC500)  
(U.S.A./Canada model)**

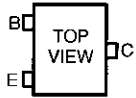


**NJM2068DD (IC301,602)**

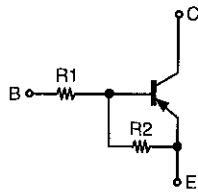


● TRANSISTORS

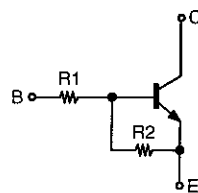
DTA114EK  
DTA114YK  
DTC114YK



DTA series



DTC series



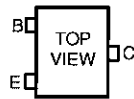
DTA114ES  
DTA144ES  
DTC114ES  
DTC114YS  
DTC144ES

|          | R1     | R2     |
|----------|--------|--------|
| DTA114EK | 10kohm | 10kohm |
| DTA114ES | 10kohm | 10kohm |
| DTA114YK | 10kohm | 47kohm |
| DTA114ES | 47kohm | 47kohm |

|          | R1     | R2     |
|----------|--------|--------|
| DTC114ES | 10kohm | 10kohm |
| DTC114YK | 10kohm | 47kohm |
| DTC114YS | 10kohm | 47kohm |
| DTC144ES | 47kohm | 47kohm |



KTC3880S



2SD947F  
KTA1266Y  
KSA992F  
KSC1845F  
KTC3200BL  
KTC3198Y  
KTA1268BL  
KSA916Y  
2SC1740S  
KTC2874B

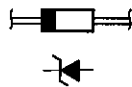


2SB1559  
2SD2389

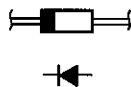


● DIODES (LED Included)

MTZJ3.3B  
MTZJ5.1B  
MTZJ5.6B  
MTZJ6.2B  
MTZJ6.8B  
MTZJ7.5A  
MTZJ7.5B  
MTZJ18B  
MTZJ20B



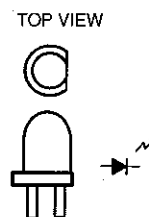
1N4007  
1SS133



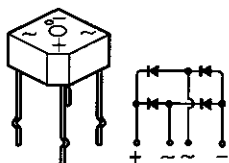
KDS160



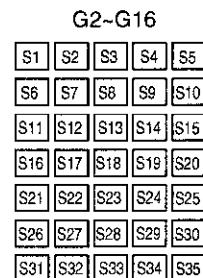
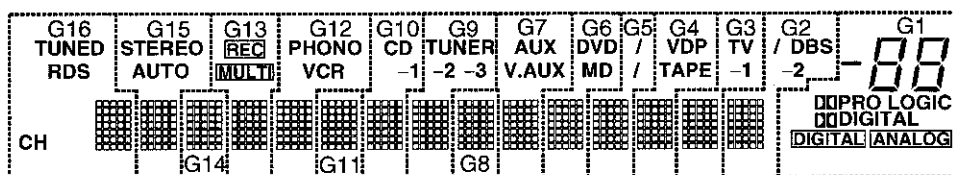
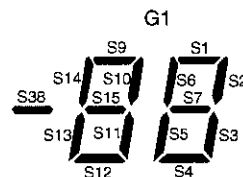
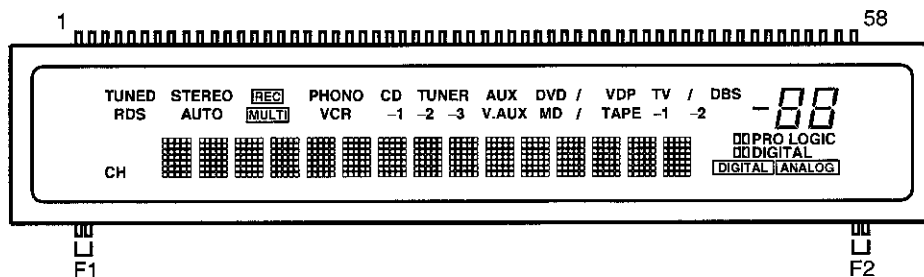
HL-50RDRF4



KBPC604



● FL DISPLAY  
16-st-42GNK (FL900)



Pin Assignment

|            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PIN NO.    | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
| CONNECTION | F1  | F1  | S1  | S2  | S3  | S4  | S5  | S6  | S7  | S8  | S9  | S10 | S11 | S12 | S13 | S14 | S15 | S16 | S17 | S18 |
| PIN NO.    | 21  | 22  | 23  | 24  | 25  | 26  | 27  | 28  | 29  | 30  | 31  | 32  | 33  | 34  | 35  | 36  | 37  | 38  | 39  | 40  |
| CONNECTION | S19 | S20 | S21 | S22 | S23 | S24 | S25 | S26 | S27 | S28 | S29 | S30 | S31 | S32 | S33 | S34 | S35 | S36 | S37 | S38 |
| PIN NO.    | 41  | 42  | 43  | 44  | 45  | 46  | 47  | 48  | 49  | 50  | 51  | 52  | 53  | 54  | 55  | 56  | 57  | 58  |     |     |
| CONNECTION | G16 | G15 | G14 | G13 | G12 | G11 | G10 | G9  | G8  | G7  | G6  | G5  | G4  | G3  | G2  | G1  | F2  | F2  |     |     |

F1,F2 : Filament  
G1-G16 : Grid  
S1-S38 : Anode

Anode & Grid Assignment

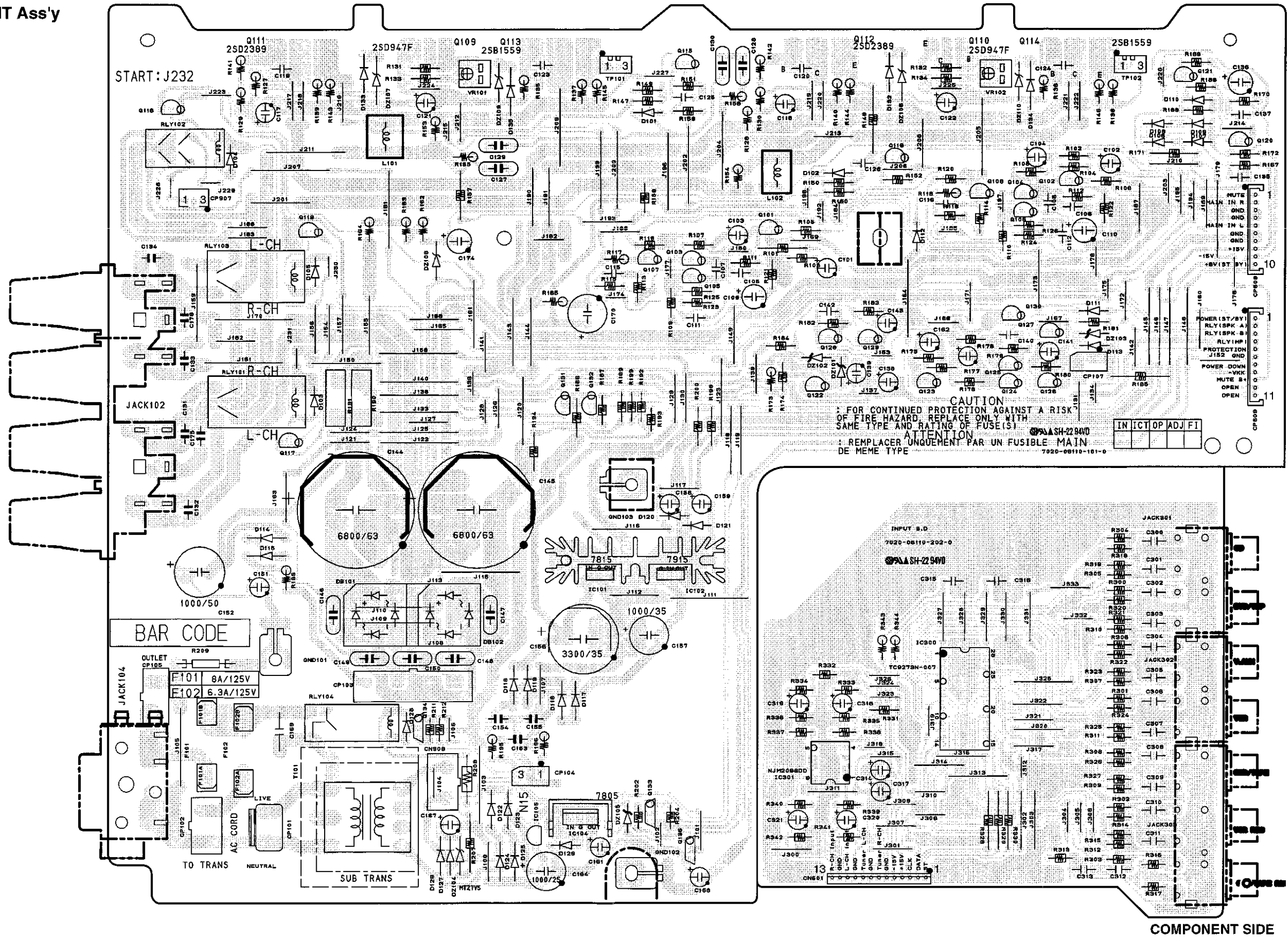
|    | G1  | G2-G16 |     | G1        | G2-G16 |     | G1  | G2-G16 |     | G1  | G2-G16 |
|----|-----|--------|-----|-----------|--------|-----|-----|--------|-----|-----|--------|
| S1 | S1  | S1     | S10 | S10       | S10    | S19 | --- | S19    | S28 | --- | S28    |
| S2 | S2  | S2     | S11 | S11       | S11    | S20 | --- | S20    | S29 | --- | S29    |
| S3 | S3  | S3     | S12 | S12       | S12    | S21 | --- | S21    | S30 | --- | S30    |
| S4 | S4  | S4     | S13 | S13       | S13    | S22 | --- | S22    | S31 | --- | S31    |
| S5 | S5  | S5     | S14 | S14       | S14    | S23 | --- | S23    | S32 | --- | S32    |
| S6 | S6  | S6     | S15 | S15       | S15    | S24 | --- | S24    | S33 | --- | S33    |
| S7 | S7  | S7     | S16 | ---       | S16    | S25 | --- | S25    | S34 | --- | S34    |
| S8 | --- | S8     | S17 | PRO LOGIC | S17    | S26 | --- | S26    | S35 | --- | S35    |
| S9 | S9  | S9     | S18 | PRO LOGIC | S18    | S27 | --- | S27    |     |     |        |

|     | G1      | G2  | G3  | G4   | G5     | G6  | G7    | G8  | G9    | G10 | G11 | G12   | G13   | G14 | G15    | G16   |
|-----|---------|-----|-----|------|--------|-----|-------|-----|-------|-----|-----|-------|-------|-----|--------|-------|
| S36 | DIGITAL | /   | TV  | VDP  | /(DVD) | DVD | AUX   | --- | TUNER | CD  | --- | PHONO | REC   | --- | STEREO | TUNED |
| S37 | ANALOG  | -2  | -1  | TAPE | /(MD)  | MD  | V.AUX | --- | -2    | -1  | --- | VCR   | MULTI | --- | AUTO   | RDS   |
| S38 | S38     | DBS | --- | ---  | ---    | --- | ---   | --- | -3    | --- | --- | ---   | ---   | --- | ---    | CH    |

PRINTED WIRING BOARDS

1 2 3 4 5 6 7 8

MAIN P.W.B. UNIT Ass'y



A  
B  
C  
D  
E

1

2

3

4

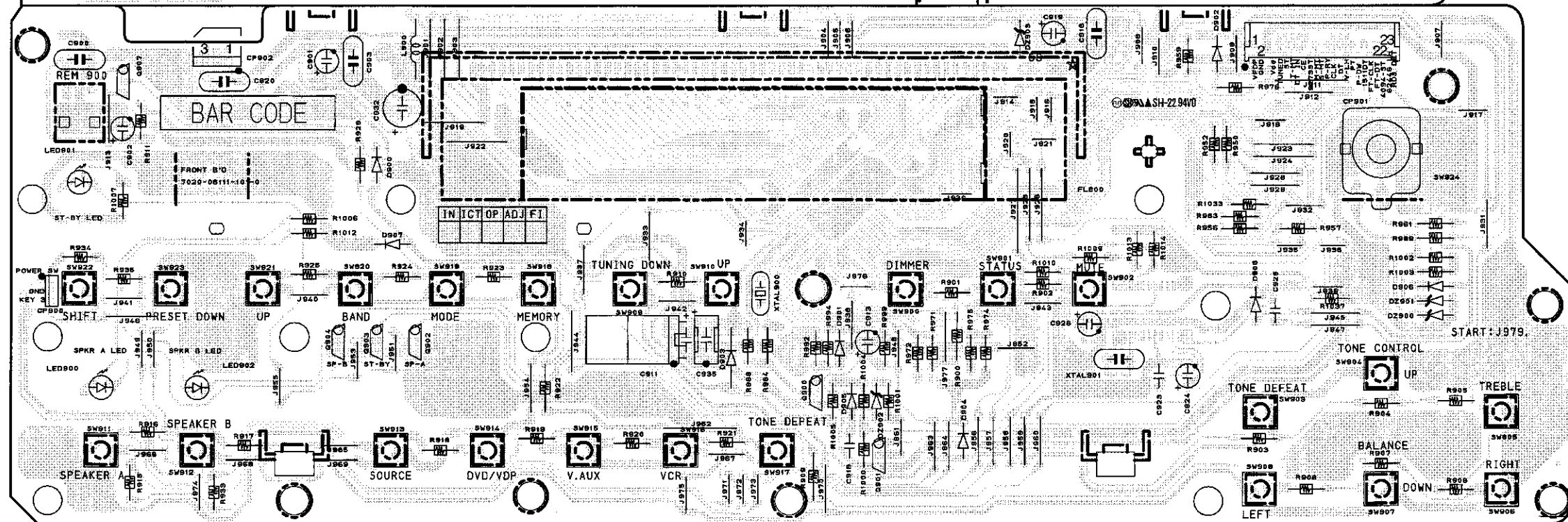
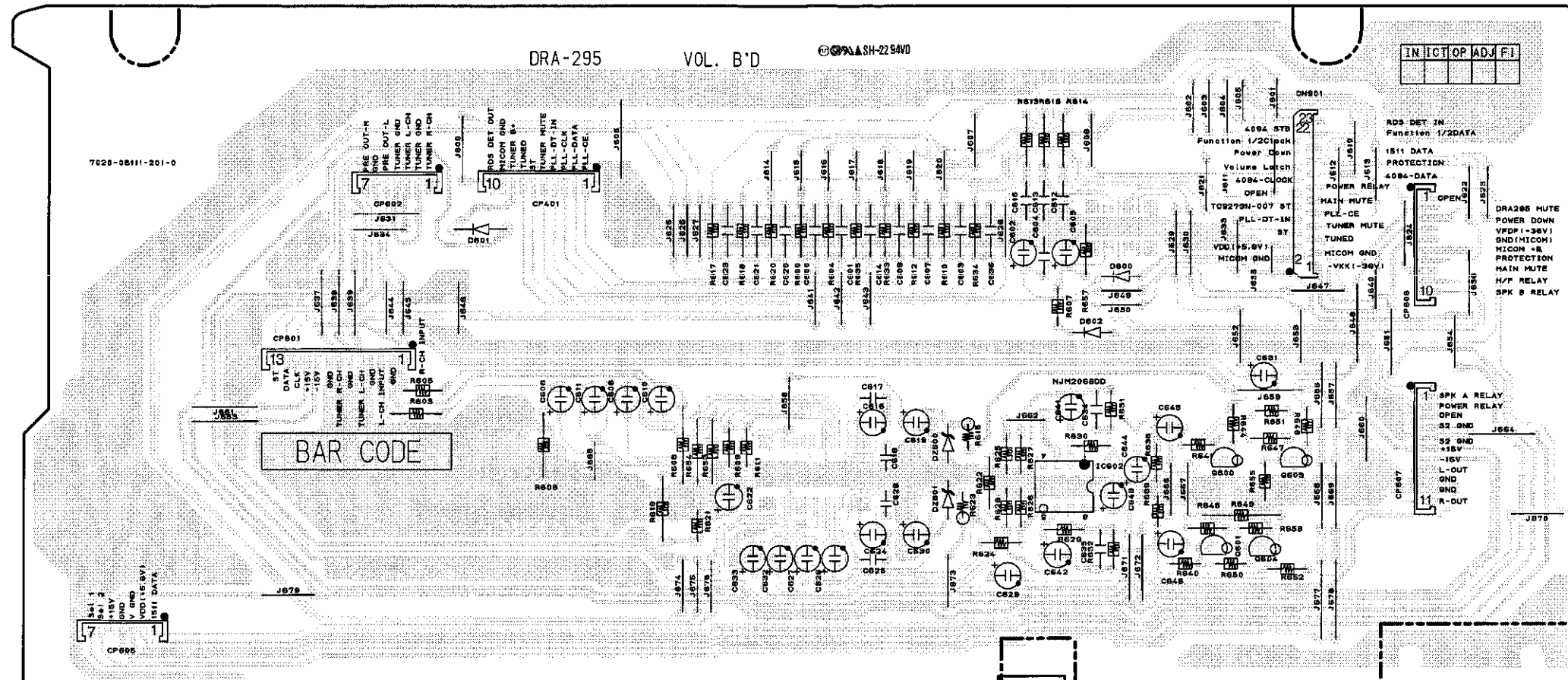
5

6

7

8

VOLUME P.W.B. UNIT Ass'y



COMPONENT SIDE

A

B

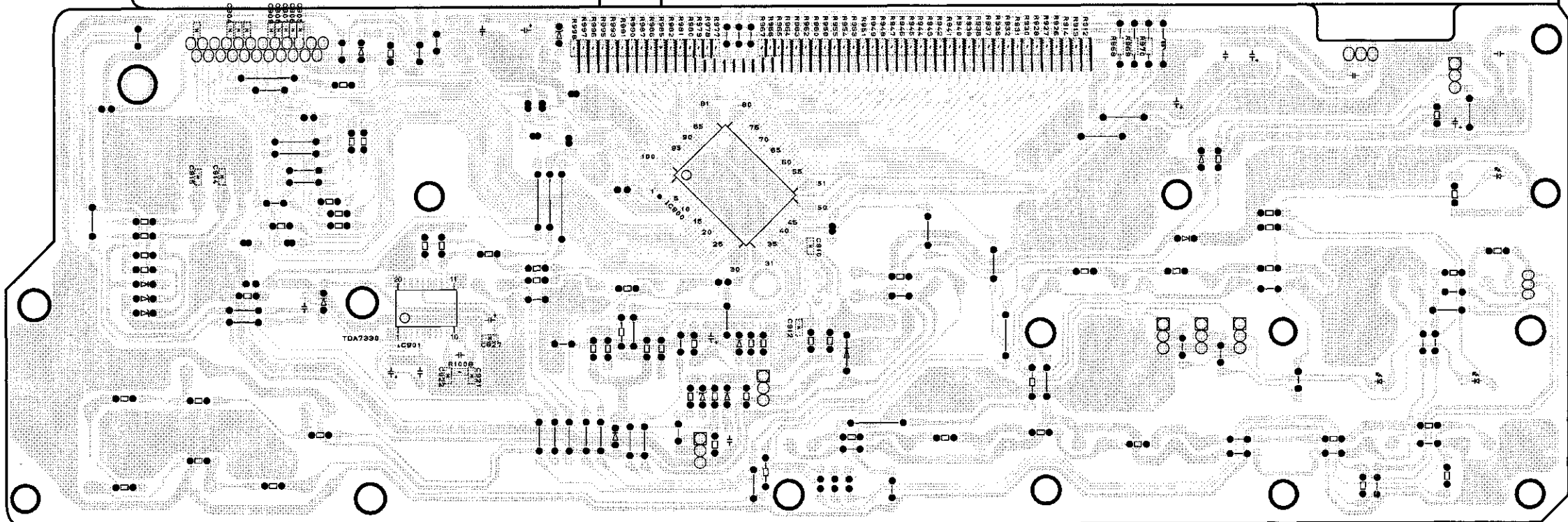
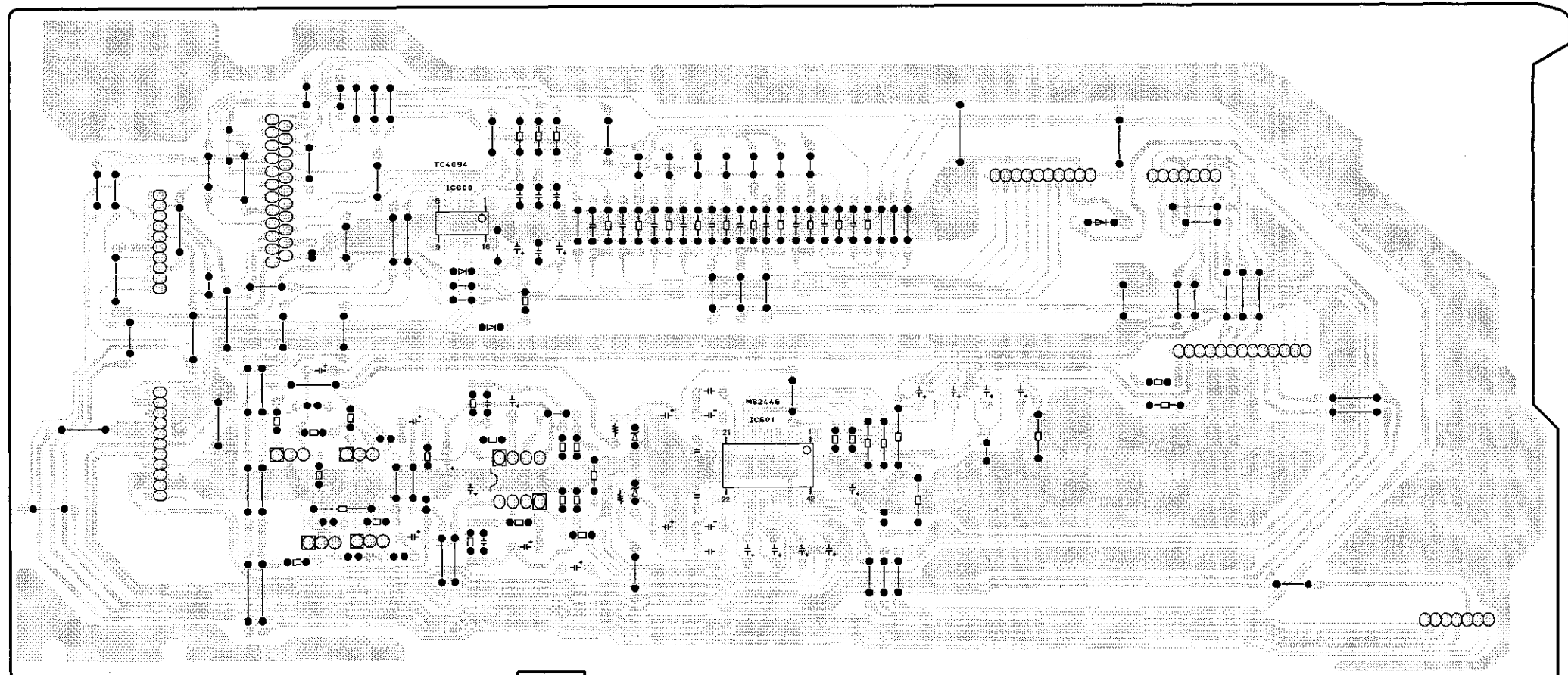
C

D

E

1 2 3 4 5 6 7 8

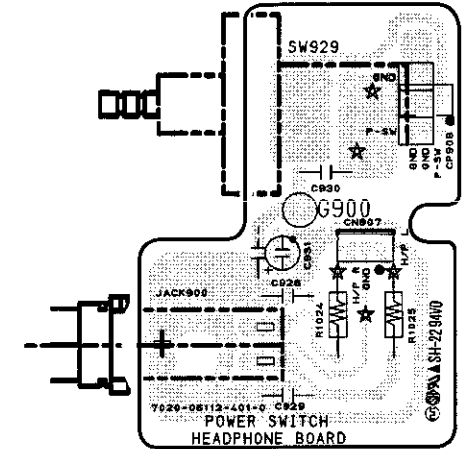
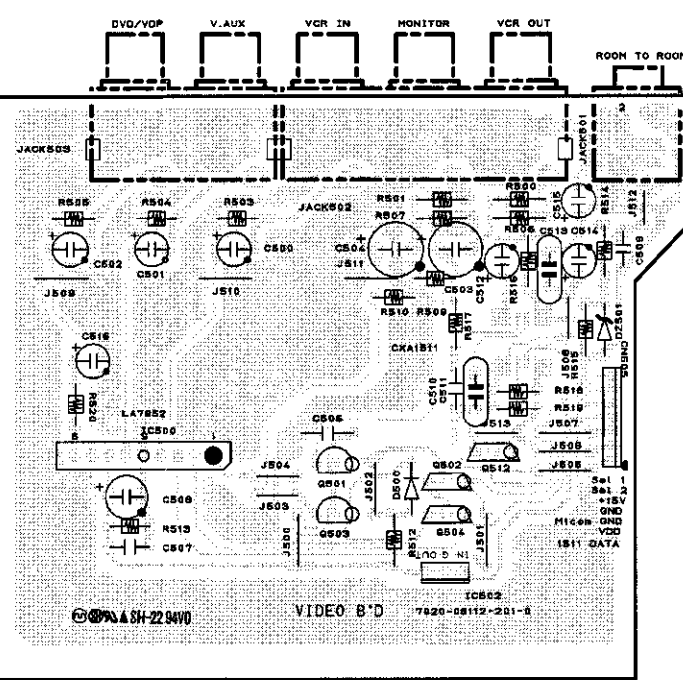
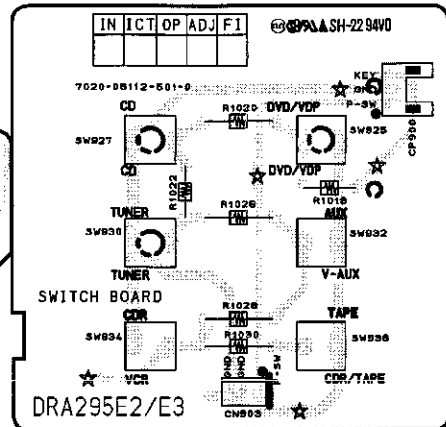
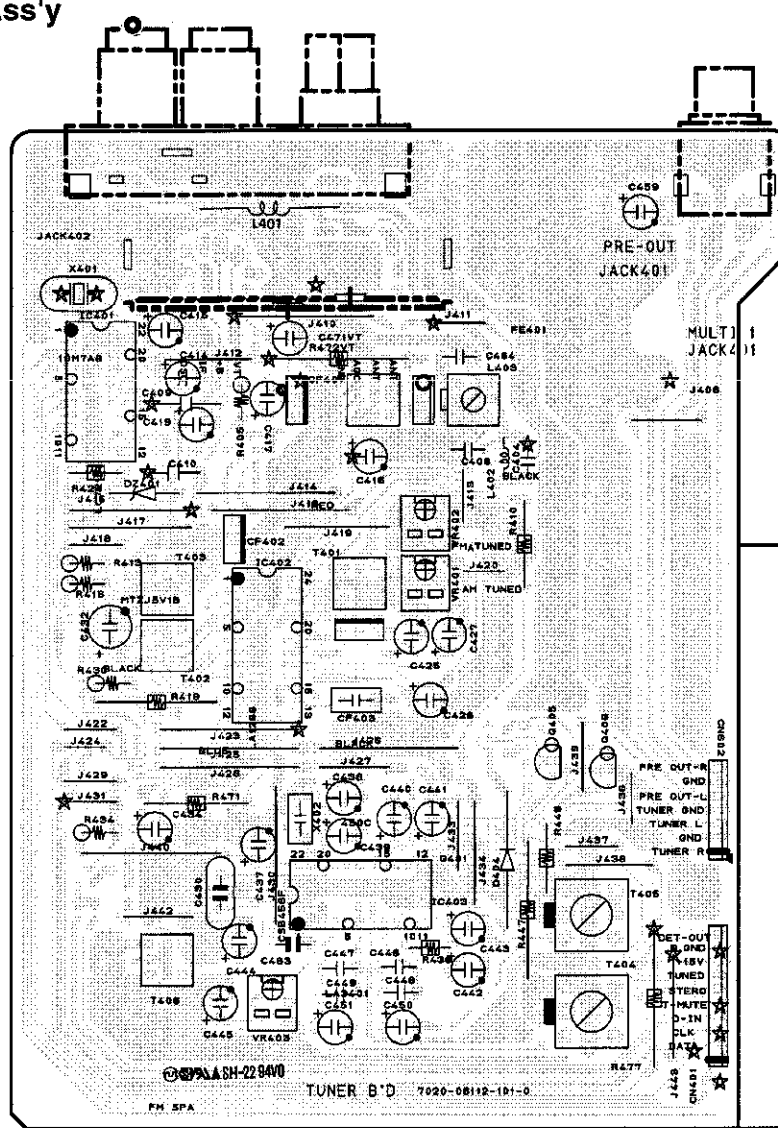
A  
B  
C  
D  
E



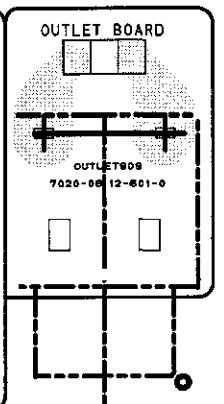
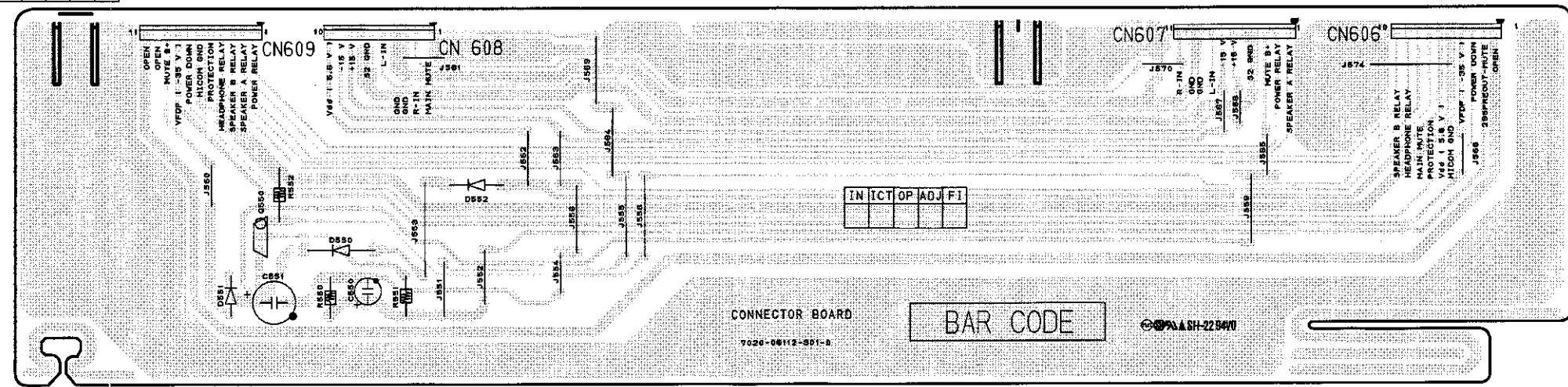
FOIL SIDE

1 2 3 4 5 6 7 8

TUNER P.W.B. UNIT Ass'y



IN ICT OP ADJ F1



BAR CODE

COMPONENT SIDE

A  
B  
C  
D  
E



1 2 3 4 5 6 7 8

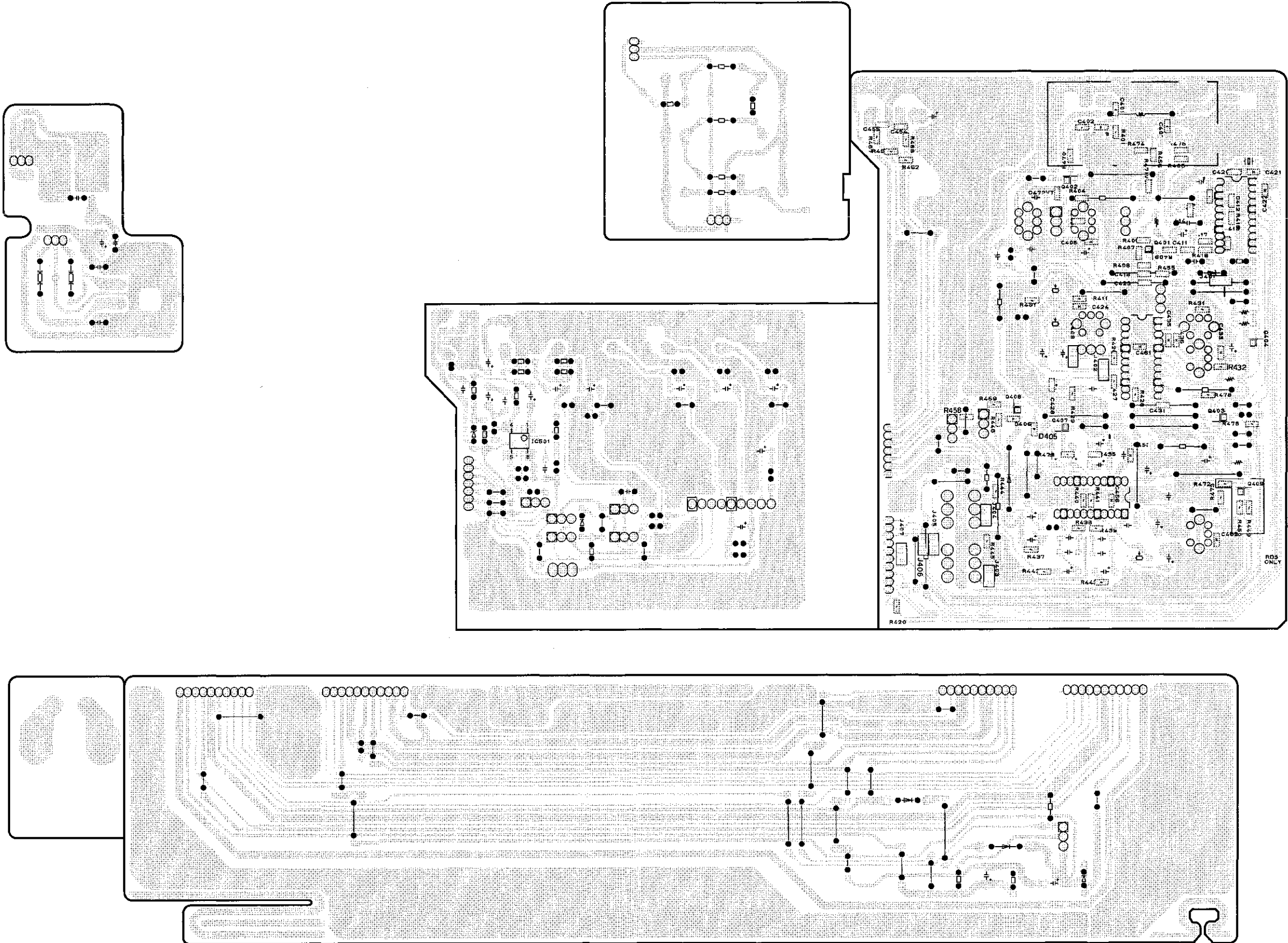
A

B

C

D

E




FOIL SIDE

## NOTE FOR PARTS LIST

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

**WARNING:**

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

### ● Resistors

Ex.: RN 14K 2E 182 G ER

|                                                                                                                   |                                                                                 |                                                       |                                                                                                                         |                 |        |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------|--------|
| Type                                                                                                              | Shape and performance                                                           | Power                                                 | Resistance                                                                                                              | Allowable error | Others |
| RD : Carbon<br>RC : Composition<br>RS : Metal oxide film<br>RW : Winding<br>RN : Metal film<br>RK : Metal mixture | 2B : 1/8W<br>2E : 1/4W<br>2H : 1/2W<br>3A : 1W<br>3D : 2W<br>3F : 3W<br>3H : 5W | F : ±1%<br>G : ±2%<br>J : ±5%<br>K : ±10%<br>M : ±20% | P : Pulse-resistant type<br>NL : Low noise type<br>NB : Non-burning type<br>FR : Fuse-resistor<br>F : Lead wire forming |                 |        |

**\* Resistance**

$1 \underline{8} \underline{2} \Rightarrow 1800 \text{ ohm} = 1.8 \text{ kohm}$   
Indicates number of zeros after effective number.  
2-digit effective number.

• Units: ohm

$1 \underline{R} \underline{2} \Rightarrow 1.2 \text{ ohm}$   
1-digit effective number.  
2-digit effective number, decimal point indicated by R.

• Units: ohm

### ● Capacitors

Ex.: CE 04W 1H 2R2 M BP

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

**\* Capacity (electrolyte only)**

$2 \underline{2} \underline{2} \Rightarrow 2200\mu\text{F}$   
Indicates number of zeros after effective number.  
2-digit effective number.

• Units:  $\mu\text{F}$ .

$2 \underline{R} \underline{2} \Rightarrow 2.2\mu\text{F}$   
1-digit effective number.  
2-digit effective number, decimal point indicated by R.

• Units:  $\mu\text{F}$ .

**\* Capacity (except electrolyte)**

$2 \underline{2} \underline{2} \Rightarrow 2200\text{pF} = 0.0022\mu\text{F}$   
(More than 2) — Indicates number of zeros after effective number.  
2-digit effective number.

• Units: pF.

$2 \underline{2} \underline{1} \Rightarrow 220\text{pF}$   
(0 or 1) — Indicates number of zeros after effective number.  
2-digit effective number.

• Units: pF.

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

**PARTS LIST OF P.W.B. UNIT**  
**MAIN P.W.B. UNIT ASS'Y**

Note: The symbols in the column "Remarks" indicate the following destinations.  
E3: U.S.A./Canada model E2: Europe model

| Ref. No.                    | Part No.     | Part Name                   | Remarks       |
|-----------------------------|--------------|-----------------------------|---------------|
| <b>SEMICONDUCTORS GROUP</b> |              |                             |               |
| IC101                       | 963 0057 903 | IC KIA7815AP                | J126781500060 |
| IC102                       | 963 0044 806 | IC NJM7915FA                | J126791500010 |
| IC104                       | 960 0196 001 | IC NJM7805FA                | J126780500130 |
| IC105                       | 960 0195 808 | IC ICP-N15                  | J120001500030 |
| IC300                       | 960 0174 308 | IC TC9273N-007              | J080927300000 |
| IC301                       | 960 0179 701 | IC NJM2068DD                | J121206800000 |
| Q101,102                    | 960 0196 603 | Transistor KTC2874B         | J502287400010 |
| Q103-106                    | 960 0196 205 | Transistor KSA992Y          | J5000992F0050 |
| Q107,108                    | 960 0196 506 | Transistor KSC1845F         | J5021845F0000 |
| Q115,116                    | 960 0196 506 | Transistor KSC1845F         | J5021845F0000 |
| Q117-119                    | 963 0022 006 | Transistor DTC114YS         | J6020114Y0050 |
| Q120                        | 960 0196 302 | Transistor KTA1268BL        | J5001268B0050 |
| Q121                        | 960 0196 700 | Transistor KTC3200BL        | J5023200B0050 |
| Q122                        | 960 0189 005 | Transistor KSA916Y          | J5000916Y0050 |
| Q123                        | 960 0005 105 | Transistor KTA1266Y         | J5001266Y0050 |
| Q124                        | 960 0005 202 | Transistor KTC3198Y         | J5023198Y0000 |
| Q125                        | 960 0196 302 | Transistor KTA1268BL        | J5001268B0050 |
| Q126,127                    | 960 0005 202 | Transistor KTC3198Y         | J5023198Y0000 |
| Q128                        | 960 0196 302 | Transistor KTA1268BL        | J5001268B0050 |
| Q129,130                    | 960 0005 202 | Transistor KTC3198Y         | J5023198Y0000 |
| Q131,132                    | 960 0196 302 | Transistor KTA1268BL        | J5001268B0050 |
| Q133,134                    | 960 0196 409 | Transistor 2SC1740SR        | J5021740S0010 |
| Q136                        | 963 0022 006 | Transistor DTC114YS         | J6020114Y0050 |
| D101-113                    | 963 0020 309 | Diode 1SS133                | K000013300520 |
| D114-119                    | 963 0058 407 | Diode 1N4007                | K000400700520 |
| D120,121                    | 963 0020 309 | Diode 1SS133                | K000013300520 |
| D122-125                    | 963 0058 407 | Diode 1N4007                | K000400700520 |
| D126-129                    | 963 0020 309 | Diode 1SS133                | K000013300520 |
| D132-135                    | 963 0020 309 | Diode 1SS133                | K000013300520 |
| DB101,102                   | 960 0197 107 | Diode KBPC604               | K047604000020 |
| DZ101,102                   | 963 0046 202 | Zener diode MTZJ18B         | K06018R044520 |
| DZ103,104                   | 963 0047 405 | Zener diode MTZJ7.5B        | K06007R544520 |
| DZ105                       | 963 0058 708 | Zener diode MTZJ20B         | K06020R044520 |
| DZ106                       | 960 0095 500 | Zener diode MTZJ5.1B        | K06005R144520 |
| DZ107-110                   | 963 0047 502 | Zener diode MTZJ3.3B        | K06003R344520 |
| <b>RESISTORS GROUP</b>      |              |                             |               |
| R117,118                    | 960 9004 301 | Metal film 47ohm 1/4W (NB)  | C060047063050 |
| R127-130                    | 244 2052 957 | Metal film 5.6kohm 1W (NB)  | C060056265070 |
| R135,136                    | 963 9003 068 | Metal film 4.7ohm 1/4W (NB) | C0604R7063050 |
| R137-140                    | 244 2043 982 | Metal film 0.22ohm 1W (NB)  | C060R22065070 |
| R141,142                    | 963 9003 068 | Metal film 4.7ohm 1/4W (NB) | C0604R7063050 |
| R143-146                    | 244 2043 982 | Metal film 0.22ohm 1W (NB)  | C060R22065070 |
| R153-156                    | 244 2043 937 | Metal oxide 10ohm 1W (NB)   | C041010065060 |
| R162-164                    | 244 2055 996 | Metal film 1.2kohm 1W (NB)  | C060012265050 |
| R165                        | 244 2043 937 | Metal oxide 10ohm 1W (NB)   | C041010065060 |

| Ref. No.                | Part No.     | Part Name                   | Remarks                 |
|-------------------------|--------------|-----------------------------|-------------------------|
| R166                    | 244 2043 982 | Metal film 0.22ohm 1W (NB)  | C060R22065050           |
| R173                    | 963 9003 068 | Metal film 4.7ohm 1/4W (NB) | C0604R7063050           |
| R190,191                | 963 0045 203 | Winding 0.1ohm 5W           | C144R10069110           |
| R195,196                | 244 2043 982 | Metal film 0.22ohm 1W (NB)  | C060R22065050           |
| R208                    | 963 9005 105 | Carbon film 68ohm 1/4W      | C000068063520           |
| R209                    | 963 0043 108 | Metal film 2.2Mohm 1/2W     | for E3<br>C060022574000 |
| R343,344                | 244 2043 937 | Metal oxide 10ohm 1W (NB)   | C041010065060           |
| VR101,102               | 960 0091 601 | Semi fixed resistor 1kohm   | C544102015130           |
| <b>CAPACITORS GROUP</b> |              |                             |                         |
| C101,102                |              | Electrolytic 22uF/50V       | D040220087060           |
| C103,104                |              | Electrolytic 10uF/50V       | D040100087070           |
| C105,106                | 963 9005 118 | Ceramic 100pF/50V           | D004101067060           |
| C107,108                | 963 9003 165 | Ceramic 220pF/500V          | D009092212500           |
| C109,110                |              | Electrolytic 47uF/25V       | D040470084070           |
| C111,112                | 963 9005 121 | Ceramic 33pF/500V           | D000330067050           |
| C115,116                | 963 9005 134 | Ceramic 1200pF/50V          | D004122287050           |
| C117,118                |              | Electrolytic 47uF/50V       | D040470087060           |
| C119,120                | 963 9003 084 | Ceramic 100pF/500V          | D00410106D050           |
| C121,122                |              | Electrolytic 10uF/50V       | D040100087070           |
| C123,124                | 963 9003 084 | Ceramic 100pF/500V          | D00410106D050           |
| C125,126                | 963 9004 517 | Ceramic 0.022uF/50V         | D004223597050           |
| C127-130                | 963 9003 097 | Mylar film 0.1uF/250V       | D02010407H080           |
| C131-134                | 960 9003 409 | Mylar film 0.01uF/50V       | for E2<br>D020103167050 |
| C135                    | 963 9004 504 | Ceramic 0.01uF/50V          | D004103097060           |
| C136                    |              | Electrolytic 2.2uF/50V      | D0402R2087100           |
| C137                    | 963 9004 504 | Ceramic 0.01uF/50V          | D004103097060           |
| C138,139                |              | Electrolytic 1uF/50V        | D040010087080           |
| C140                    | 963 9005 147 | Ceramic 0.1uF/25V           | D004104594050           |
| C141                    |              | Electrolytic 220uF/6.3V     | D040221081230           |
| C142                    | 963 9005 147 | Ceramic 0.1uF/25V           | D004104594050           |
| C143                    |              | Electrolytic 220uF/6.3V     | D040221081230           |
| C144,145                | 963 9005 150 | Electrolytic 680uF/63V      | D040681088030           |
| C146-150                | 963 9003 097 | Mylar film 0.1uF/250V       | D02010407H080           |
| C151                    |              | Electrolytic 1uF/50V        | D040010087080           |
| C152                    | 963 9005 163 | Electrolytic 1000uF/50V     | D040102087230           |
| C153-155                | 963 0021 900 | Mylar film 0.047uF/100V     | D02047306C060           |
| C156                    | 960 9007 201 | Electrolytic 3300uF/35V     | D040332085010           |
| C157                    | 963 9003 123 | Electrolytic 1000uF/35V     | D040102085040           |
| C158,159                |              | Electrolytic 10uF/50V       | D040100087070           |
| C161                    |              | Electrolytic 10uF/50V       | D040100087070           |
| C162                    |              | Electrolytic 4.7uF/50V      | D0404R7087100           |
| C164                    | 963 9003 136 | Electrolytic 1000uF/25V     | D040102084060           |
| C167,168                |              | Electrolytic 1uF/50V        | D040010087080           |
| △ C169                  | 963 9005 176 | Ceramic 4700pF/250V (AC)    | D008472089010           |
| C170                    | 963 9005 299 | Electrolytic 100uF/100V     | D04010108C200           |
| C174                    |              | Electrolytic 10uF/50V       | D040100087070           |

| Ref. No. | Part No.     | Part Name             | Remarks                 |
|----------|--------------|-----------------------|-------------------------|
| C175     | 963 9005 189 | Mylar film 2200pF/63V | for E2<br>D020222068050 |
| C178     | 963 9005 189 | Mylar film 2200pF/63V | for E2<br>D020222068050 |
| C300-313 | 963 9004 520 | Ceramic 100pF/50V     | for E2<br>D005101177520 |
| C314     |              | Electrolytic 10uF/50V | D040100087070           |
| C315,316 | 963 9004 504 | Ceramic 0.01uF/50V    | D004103097060           |
| C317-321 |              | Electrolytic 10uF/50V | D040100087070           |

**OTHER PARTS GROUP**

|             |              |                     |                         | Q'ty |
|-------------|--------------|---------------------|-------------------------|------|
| CN601       | 960 0129 706 | 13P connector base  | L101352371310           | 1    |
| CN908       | 960 0123 304 | 2P connector base   | for E2<br>L104353280200 | 1    |
| CP101       | 960 0197 505 | 2P connector base   | L108202000220           | 1    |
| CP102       | 960 0123 304 | 2P connector base   | L104353280200           | 1    |
| CP103       | 963 0081 403 | 4P connector base   | L104353280400           | 1    |
| CP104       | 960 0123 207 | 3P connector base   | L102526700300           | 1    |
| CP105       | 960 0123 304 | 2P connector base   | for E2<br>L104353280200 | 1    |
| CP107       | 960 0123 207 | 3P connector base   | L102526700300           | 1    |
| CP608       | 963 0088 008 | 10P connector base  | L101100041010           | 1    |
| CP609       | 963 0087 805 | 11P connector base  | L101100041110           | 1    |
| CP907       | 963 0048 909 | 3P connector base   | L101220030000           | 1    |
| △ F101      | 960 0188 705 | Fuse 8A/125V        | for E3<br>G650802121060 | 1    |
| △ F101      | 960 0142 602 | Fuse T2.5A/250V     | for E2<br>G650252251160 | 1    |
| △ F102      | 963 0089 803 | Fuse 6.3A/125V      | for E3<br>G650632121150 | 1    |
| △ F102      | 963 0044 709 | Fuse T3.15A/250V    | for E2<br>G650312251160 | 1    |
| F101A,B     | 960 0005 804 | Fuse clip           | G645000050010           | 2    |
| F102A,B     | 960 0005 804 | Fuse clip           | G645000050010           | 2    |
| GND101-103  | 960 9006 600 | GND terminal        | 3790040876010           | 3    |
| JACK102     | 963 0074 009 | 8P speaker terminal | G61408103610A           | 1    |
| JACK104     | 960 0181 508 | 2P AC outlet        | for E3<br>G435204004010 | 1    |
| JACK301,302 | 960 0188 200 | 4P pin jack         | G602040610000           | 2    |
| JACK303     | 960 0188 307 | 6P pin jack         | G603060610010           | 1    |
| L101,102    | 963 0049 005 | Inductor 0.5uH      | D330R50000000           | 2    |
| RLY101      | 960 0181 702 | Relay (G5PA-28)     | G680240502020           | 1    |
| RLY102      | 963 0071 303 | Relay (RSB24S)      | G680240202010           | 1    |
| RLY103      | 960 0181 702 | Relay (G5PA-28)     | G680240502020           | 1    |
| RLY104      | 960 0181 605 | Relay (G5PA-1-8)    | G680120502010           | 1    |

| Ref. No.  | Part No.     | Part Name             | Remarks                 | Q'ty |
|-----------|--------------|-----------------------|-------------------------|------|
| △ T101    | 960 0185 708 | Power trans. (Sub)    | for E3<br>8200280960010 | 1    |
| △ T101    | 960 0185 711 | Power trans. (Sub)    | for E2<br>8201280000010 | 1    |
| TP101,102 | 960 0161 405 | 3P connector base     | L101530140310           | 2    |
| ★         | —            | Heat sink             | 2120043538050           | 1    |
| ★         | 963 0018 007 | Screw 3x8 (B)-Z       | B020030081B10           | 2    |
| ★         | 963 0068 400 | Condenser cover       | for E2<br>4310002640010 | 1    |
| ★         | 963 0060 000 | Fuse label (for T101) | for E2<br>5527200040020 | 1    |

FRONT P.W.B. UNIT ASS'Y

| Ref. No.                    | Part No.     | Part Name                 | Remarks                 |
|-----------------------------|--------------|---------------------------|-------------------------|
| <b>SEMICONDUCTORS GROUP</b> |              |                           |                         |
| IC600                       | 960 0195 400 | IC PC74HC4094D            | J040744094020           |
| IC601                       | 960 0179 604 | IC M62446FP               | J084624460010           |
| IC602                       | 960 0179 701 | IC NJM2068DD              | J121206800000           |
| IC900                       | 963 0089 609 | IC CXP82840-321Q          | J020828403210           |
| IC901                       | 963 0081 801 | IC TDA7330BD              | for E2<br>J020733000010 |
| Q600,601                    | 960 0196 603 | Transistor KTC2874B       | for E3<br>J502287400010 |
| Q603,604                    | 960 0196 603 | Transistor KTC2874B       | for E3<br>J502287400010 |
| Q900                        | 960 0196 409 | Transistor 2SC1740SR      | J5021740S0010           |
| Q901                        | 963 0075 503 | Transistor DTC144ES       | J6020144E0010           |
| Q902-904                    | 963 0081 306 | Transistor DTC114ES       | J6020114E0010           |
| Q907                        | 963 0081 209 | Transistor DTA144ES       | J6000144E0010           |
| D600                        | 963 0020 309 | Diode 1SS133              | K000013300520           |
| D601                        | 963 0058 407 | Diode 1N4007              | K000400700520           |
| D602                        | 963 0020 309 | Diode 1SS133              | K000013300520           |
| D900-902                    | 963 0020 309 | Diode 1SS133              | K000013300520           |
| D903                        | 963 0058 407 | Diode 1N4007              | K000400700520           |
| D904-908                    | 963 0020 309 | Diode 1SS133              | K000013300520           |
| DZ600,601                   | 960 0222 603 | Zener diode MTZJ7.5A      | K06007R544530           |
| DZ900,901                   | 960 0095 607 | Zener diode MTZJ5.6B      | K06005R644520           |
| DZ902                       | 963 0047 502 | Zener diode MTZJ3.3B      | K06003R344520           |
| DZ903                       | 960 0095 801 | Zener diode MTZJ6.8B      | K06006R844520           |
| LED900-902                  | 960 0197 204 | LED HL50RDRF4T            | K500052015010           |
| FL900                       | 960 0180 509 | FLT (16-ST-42GNK)         | K530164200010           |
| <b>RESISTORS GROUP</b>      |              |                           |                         |
| R615                        | 244 2052 960 | Metal film 220ohm 1W (NB) | C060022165050           |
| R623                        | 244 2052 960 | Metal film 220ohm 1W (NB) | C060022165050           |
| R912-914                    | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R926-928                    | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R930-932                    | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R936-949                    | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R951                        | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R953-955                    | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R958                        | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R960                        | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R962-970                    | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R977-982                    | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R985-987                    | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |

| Ref. No.                | Part No.     | Part Name                 | Remarks                 |
|-------------------------|--------------|---------------------------|-------------------------|
| R990,991                | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R993                    | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R995                    | 963 9004 397 | Carbon chip 56kohm 1/16W  | C20005636M160           |
| R1008                   | 963 9004 245 | Carbon chip 2.2Mohm 1/16W | for E2<br>C20002256M160 |
| <b>CAPACITORS GROUP</b> |              |                           |                         |
| C600,601                | 963 9004 520 | Ceramic 100pF/50V         | D005101177520           |
| C602                    |              | Electrolytic 10uF/50V     | D040100087070           |
| C603                    | 963 9004 520 | Ceramic 100pF/50V         | D005101177520           |
| C604                    | 960 9003 108 | Ceramic 0.022uF/25V       | D005223594520           |
| C605                    |              | Electrolytic 47uF/10V     | D040470082050           |
| C606                    |              | Electrolytic 4.7uF/50V    | D0404R7087100           |
| C607                    | 963 9004 520 | Ceramic 100pF/50V         | D005101177520           |
| C608                    |              | Electrolytic 4.7uF/50V    | D0404R7087100           |
| C609                    | 963 9004 520 | Ceramic 100pF/50V         | D005101177520           |
| C610,611                |              | Electrolytic 4.7uF/50V    | D0404R7087100           |
| C612-615                | 963 9004 520 | Ceramic 100pF/50V         | D005101177520           |
| C616                    |              | Electrolytic 0.33uF/50V   | D040R33087100           |
| C617                    | 960 9003 603 | Mylar film 0.015uF/50V    | D020153167050           |
| C618                    | 963 9005 079 | Mylar film 8200pF/100V    | D02082206C060           |
| C619                    |              | Electrolytic 47uF/10V     | D040470082050           |
| C620,621                | 963 9004 520 | Ceramic 100pF/50V         | D005101177520           |
| C622                    |              | Electrolytic 1uF/50V      | D040010087080           |
| C623                    | 963 9004 520 | Ceramic 100pF/50V         | D005101177520           |
| C624                    |              | Electrolytic 0.33uF/50V   | D040R33087100           |
| C625                    | 960 9003 603 | Mylar film 0.015uF/50V    | D020153167050           |
| C626,627                |              | Electrolytic 3.3uF/50V    | D0403R308705C           |
| C628                    | 963 9005 079 | Mylar film 8200pF/100V    | D02082206C060           |
| C629                    |              | Electrolytic 10uF/50V     | for E3<br>D040100087070 |
| C630                    |              | Electrolytic 47uF/10V     | D040470082050           |
| C631                    |              | Electrolytic 10uF/50V     | for E3<br>D040100087070 |
| C632,633                |              | Electrolytic 10uF/50V     | D040100087070           |
| C634,635                | 963 9005 082 | Ceramic 39pF/50V          | D001390067520           |
| C636                    | 960 9003 108 | Ceramic 0.022uF/25V       | for E3<br>D005223594520 |
| C636                    | 963 9004 520 | Ceramic 100pF/50V         | for E2<br>D005101177520 |
| C641-644                |              | Electrolytic 10uF/50V     | D040100087070           |
| C645,646                |              | Electrolytic 10uF/50V     | for E3<br>D040100087070 |
| C900                    | 963 0021 900 | Mylar film 0.047uF/100V   | D02047306C060           |
| C901                    |              | Electrolytic 1uF/50V      | D040010087080           |
| C902                    |              | Electrolytic 47uF/25V     | D040470084070           |
| C903                    | 963 0021 900 | Mylar film 0.047uF/100V   | D02047306C060           |
| C904-909                | 963 9004 575 | Ceramic chip 100pF/50V    | D010101167160           |
| C910                    | 963 9004 708 | Ceramic chip 0.1uF/50V    | D011104577160           |
| C911                    | 963 0061 504 | Back up cap. 8200uF/5.5V  | D040822080010           |

TUNER P.W.B. UNIT ASS'Y

| Ref. No.          | Part No.     | Part Name                         | Remarks                            |
|-------------------|--------------|-----------------------------------|------------------------------------|
| C912              | 963 9004 708 | Ceramic chip 0.1uF/50V            | D011104577160                      |
| C913              |              | Electrolytic 4.7uF/50V            | D0404R7087100                      |
| C914,915          | 963 9004 698 | Ceramic chip 0.01uF/50V           | D011103777160                      |
| C916              | 963 0021 900 | Mylar film 0.047uF/100V           | D02047306C060                      |
| C918              | 963 9004 504 | Ceramic 0.01uF/50V                | D004103097060                      |
| C919              |              | Electrolytic 47uF/50V             | D040470087060                      |
| C920              | 963 0021 900 | Mylar film 0.047uF/100V           | D02047306C060                      |
| C921,922          | 963 9004 614 | Ceramic chip 27pF/50V             | for E2<br>D01027016716C            |
| C923              | 963 9004 504 | Ceramic 0.01uF/50V                | for E2<br>D004103097060            |
| C924              |              | Electrolytic 10uF/50V             | for E2<br>D040100087050            |
| C925              | 963 9005 095 | Ceramic 270pF/50V                 | for E2<br>D000271067050            |
| C926              |              | Electrolytic 47uF/25V             | for E2<br>D040470084070            |
| C927              | 963 9004 698 | Ceramic chip 0.01uF/50V           | for E2<br>D011103777160            |
| C932              |              | Electrolytic 100uF/50V            | D040101087060                      |
| C935              | 960 0186 503 | Electric double layer 0.047F/5.5V | for E2<br>D090473904010            |
| OTHER PARTS GROUP |              |                                   |                                    |
| CN901             | 963 0071 206 | 23P FFC connector base            | L131520452345 1                    |
| CP401             | 963 0088 008 | 10P connector base                | L101100041010 1                    |
| CP601             | 960 0128 600 | 13P connector base                | L101353361310 1                    |
| CP602             | 963 0085 807 | 7P connector base                 | L101100040710 1                    |
| CP605             | 963 0085 807 | 7P connector base                 | L101100040710 1                    |
| CP606             | 963 0088 008 | 10P connector base                | L101100041010 1                    |
| CP607             | 963 0087 805 | 11P connector base                | L101100041110 1                    |
| CP900             | 963 0089 706 | 3P connector cord (L=100)         | L000101030070 1                    |
| CP901             | 963 0071 109 | 23P FFC connector base (L)        | L131520442345 1                    |
| CP902             | 963 0049 102 | 3P connector base (L)             | L102526803010 1                    |
| L900              | 960 0128 008 | Inductor 100uH                    | D330101001020 1                    |
| REM900            | 960 0181 100 | Remocon sensor NJL64H380A         | E940643800000 1                    |
| SW900-923         | 960 0194 207 | Tact switch                       | G180000270010 24                   |
| SW924             | 960 0181 207 | Rotary encoder (EC16B2420431)     | G121162420400 1                    |
| XTAL900           | 960 0112 001 | Ceramic resonator                 | CST10.0MGW-TF01 1<br>E830100000050 |
| XTAL901           | 960 0091 818 | Crystal 4.332MHz                  | for E2 1<br>E8004R3320051          |
| ★                 | 960 0184 408 | FLT holder                        | 4320200026000 1                    |

| Ref. No.             | Part No.     | Part Name                 | Remarks                 |
|----------------------|--------------|---------------------------|-------------------------|
| SEMICONDUCTORS GROUP |              |                           |                         |
| IC401                | 963 0043 700 | IC LC72131                | J120721310030           |
| IC402                | 963 0043 904 | IC LA1266                 | J124126600010           |
| IC403                | 963 0044 000 | IC LA3401                 | J124340100010           |
| IC500                | 960 0181 101 | IC LA7952                 | for E3<br>J171795200000 |
| IC501                | 960 0174 104 | IC CXA1511M               | for E3<br>J030151100010 |
| IC502                | 263 0516 001 | IC NJM7812FA              | for E3<br>J126781200010 |
| Q401                 | 963 0058 300 | Transistor KTC3880S       | J5223880O0210           |
| Q402                 | 963 0079 305 | Transistor DTA114YK       | J5200114Y0210           |
| Q403,404             | 963 0058 203 | Transistor DTA114EK       | J5200114E0210           |
| Q405,406             | 960 0196 603 | Transistor KTC2874B       | J502287400010           |
| Q407                 | 963 0024 208 | Transistor DTC114YK       | J5220114Y0210           |
| Q408                 | 963 0058 203 | Transistor DTA114EK       | J5200114E0210           |
| Q409                 | 963 0058 300 | Transistor KTC3880S       | for E2<br>J5223880O0210 |
| Q501                 | 960 0096 813 | Transistor KTC3199Y       | for E3<br>J5023199Y0010 |
| Q502                 | 963 0022 006 | Transistor DTC114YS       | for E3<br>J6020114Y0050 |
| Q503                 | 960 0096 813 | Transistor KTC3199Y       | for E3<br>J5023199Y0010 |
| Q504                 | 963 0022 006 | Transistor DTC114YS       | for E3<br>J6020114Y0050 |
| Q512                 | 963 0081 209 | Transistor DTA144ES       | for E3<br>J6000144E0010 |
| Q550                 | 963 0075 309 | Transistor DTA114ES       | J6000114E0010           |
| D403                 | 960 0197 000 | Diode KDS160              | K005016000010           |
| D404                 | 963 0020 309 | Diode 1SS133              | K000013300520           |
| D405,406             | 960 0197 000 | Diode KDS160              | K005016000010           |
| D500                 | 963 0020 309 | Diode 1SS133              | for E3<br>K000013300520 |
| D550                 | 963 0058 407 | Diode 1N4007              | K000400700520           |
| D551                 | 963 0020 309 | Diode 1SS133              | K000013300520           |
| D552                 | 963 0058 407 | Diode 1N4007              | K000400700520           |
| DZ401                | 960 0095 500 | Zener diode MTZJ5.1B      | K06005R144520           |
| DZ501                | 960 0095 704 | Zener diode MTZJ6.2B      | for E3<br>K06006R244520 |
| RESISTORS GROUP      |              |                           |                         |
| R401                 | 963 9004 821 | Carbon chip 10ohm 1/16W   | C20001006M160           |
| R403                 | 963 9004 339 | Carbon chip 470ohm 1/16W  | C20004716M160           |
| R404                 | 963 9004 083 | Carbon chip 100kohm 1/16W | C20001046M160           |

| Ref. No. | Part No.     | Part Name                   | Remarks                 |
|----------|--------------|-----------------------------|-------------------------|
| R405     | 960 9003 807 | Metal film 100ohm 1/4W (NB) | C060010163050           |
| R406     | 963 9004 342 | Carbon chip 4.7kohm 1/16W   | C20004726M160           |
| R407     | 963 9004 339 | Carbon chip 470ohm 1/16W    | for E3<br>C20004716M160 |
| R407     | 963 9005 008 | Carbon chip 620ohm 1/16W    | for E2<br>C20006216M160 |
| R408     | 963 9004 119 | Carbon chip 1.2kohm 1/16W   | for E3<br>C20001226M160 |
| R408     | 963 9004 436 | Carbon chip 680ohm 1/16W    | for E2<br>C20006816M160 |
| R409     | 963 9004 339 | Carbon chip 470ohm 1/16W    | C20004716M160           |
| R411     | 963 9005 011 | Carbon chip 68kohm 1/16W    | C20006836M160           |
| R412     | 963 9004 834 | Carbon chip 5.6kohm 1/16W   | C20005626M160           |
| R413     | 960 9006 503 | Metal film 220ohm 1/4W (NB) | C060022163050           |
| R414     | 963 9004 216 | Carbon chip 2.2kohm 1/16W   | C20002226M160           |
| R415     | 963 9003 398 | Carbon chip 1kohm 1/16W     | C20001026M160           |
| R416     | 963 9005 024 | Metal film 680ohm 1/4W (NB) | C060068163050           |
| R417     | 963 9003 398 | Carbon chip 1kohm 1/16W     | C20001026M160           |
| R418     | 963 9004 274 | Carbon chip 33kohm 1/16W    | C20003336M160           |
| R420     | 963 9004 847 | Carbon chip 3.3kohm 1/16W   | C20003326M160           |
| R426,427 | 963 9004 070 | Carbon chip 10kohm 1/16W    | C20001036M160           |
| R428     | 963 9004 847 | Carbon chip 3.3kohm 1/16W   | for E3<br>C20003326M160 |
| R428     | 963 9004 070 | Carbon chip 10kohm 1/16W    | for E2<br>C20001036M160 |
| R429     | 963 9004 850 | Carbon chip 82ohm 1/16W     | C20008206M160           |
| R430     | 963 9003 807 | Metal film 100ohm 1/4W (NB) | C060010163050           |
| R431     | 963 9004 371 | Carbon chip 5.1kohm 1/16W   | C20005126M160           |
| R432     | 963 9004 070 | Carbon chip 10kohm 1/16W    | C20001036M160           |
| R434     | 963 9003 807 | Metal film 100ohm 1/4W (NB) | C060010163050           |
| R435     | 963 9004 847 | Carbon chip 3.3kohm 1/16W   | C20003326M160           |
| R437     | 963 9004 083 | Carbon chip 100kohm 1/16W   | C20001046M160           |
| R438,439 | 963 9004 083 | Carbon chip 100kohm 1/16W   | for E3<br>C20001046M160 |
| R438,439 | 963 9004 164 | Carbon chip 150kohm 1/16W   | for E2<br>C20001546M160 |
| R440,441 | 963 9004 863 | Carbon chip 120kohm 1/16W   | for E3<br>C20001246M160 |
| R440,441 | 963 9004 232 | Carbon chip 220kohm 1/16W   | for E2<br>C20002246M160 |
| R442,443 | 963 9004 847 | Carbon chip 3.3kohm 1/16W   | for E3<br>C20003326M160 |
| R442,443 | 963 9004 216 | Carbon chip 2.2kohm 1/16W   | for E2<br>C20002226M160 |
| R444,445 | 963 9004 481 | Carbon chip 8.2kohm 1/16W   | for E3<br>C20008226M160 |
| R444,445 | 963 9004 847 | Carbon chip 3.3kohm 1/16W   | for E2<br>C20003326M160 |
| R448     | 963 9004 216 | Carbon chip 2.2kohm 1/16W   | C20002226M160           |
| R449     | 963 9005 037 | Carbon chip 3.9kohm 1/16W   | for E2<br>C20003926M160 |

| Ref. No.   | Part No.     | Part Name                   | Remarks                 |
|------------|--------------|-----------------------------|-------------------------|
| R450       | 963 9003 398 | Carbon chip 1kohm 1/16W     | for E2<br>C20001026M160 |
| R455       | 963 9004 876 | Carbon chip 330ohm 1/16W    | C20003316M160           |
| R456       | 963 9003 385 | Carbon chip 100ohm 1/16W    | C20001016M160           |
| R458,459   | 963 9004 342 | Carbon chip 4.7kohm 1/16W   | C20004726M160           |
| R462,463   | 963 9004 083 | Carbon chip 100kohm 1/16W   | for E3<br>C20001046M160 |
| R467,468   | 963 9004 203 | Carbon chip 220ohm 1/16W    | for E3<br>C20002216M160 |
| R470       | 963 9003 398 | Carbon chip 1kohm 1/16W     | C20001026M160           |
| R471VT     | 963 9004 203 | Carbon chip 220ohm 1/16W    | C20002216M160           |
| R472       | 963 9003 385 | Carbon chip 100ohm 1/16W    | for E2<br>C20001016M160 |
| R473       | 963 9003 372 | Carbon chip 0ohm 1/16W      | for E3<br>C20000006M160 |
| R473       | 963 9005 040 | Carbon chip 2.4kohm 1/16W   | for E2<br>C20002426M160 |
| R474       | 963 9004 889 | Carbon chip 180ohm 1/16W    | for E2<br>C20001816M160 |
| R475       | 963 9004 122 | Carbon chip 12kohm 1/16W    | C20001236M160           |
| R476       | 963 9004 397 | Carbon chip 56kohm 1/16W    | C20005636M160           |
| R478       | 963 9004 070 | Carbon chip 10kohm 1/16W    | C20001036M160           |
| R479       | 963 9004 083 | Carbon chip 100kohm 1/16W   | C20001046M160           |
| R491       | 963 9004 229 | Carbon chip 22kohm 1/16W    | C20002236M160           |
| R1024,1025 | 963 0048 006 | Metal film 330ohm 2W        | C060033166520           |
| VR401      | 960 0096 606 | Semi fixed resistor 20kohm  | C541203115000           |
| VR402      | 963 0056 205 | Semi fixed resistor 50kohm  | for E3<br>C541503115000 |
| VR402      | 960 0096 402 | Semi fixed resistor 100kohm | for E2<br>C541104115000 |
| VR403      | 963 0052 005 | Semi fixed resistor 200kohm | C541204115000           |

**CAPACITORS GROUP**

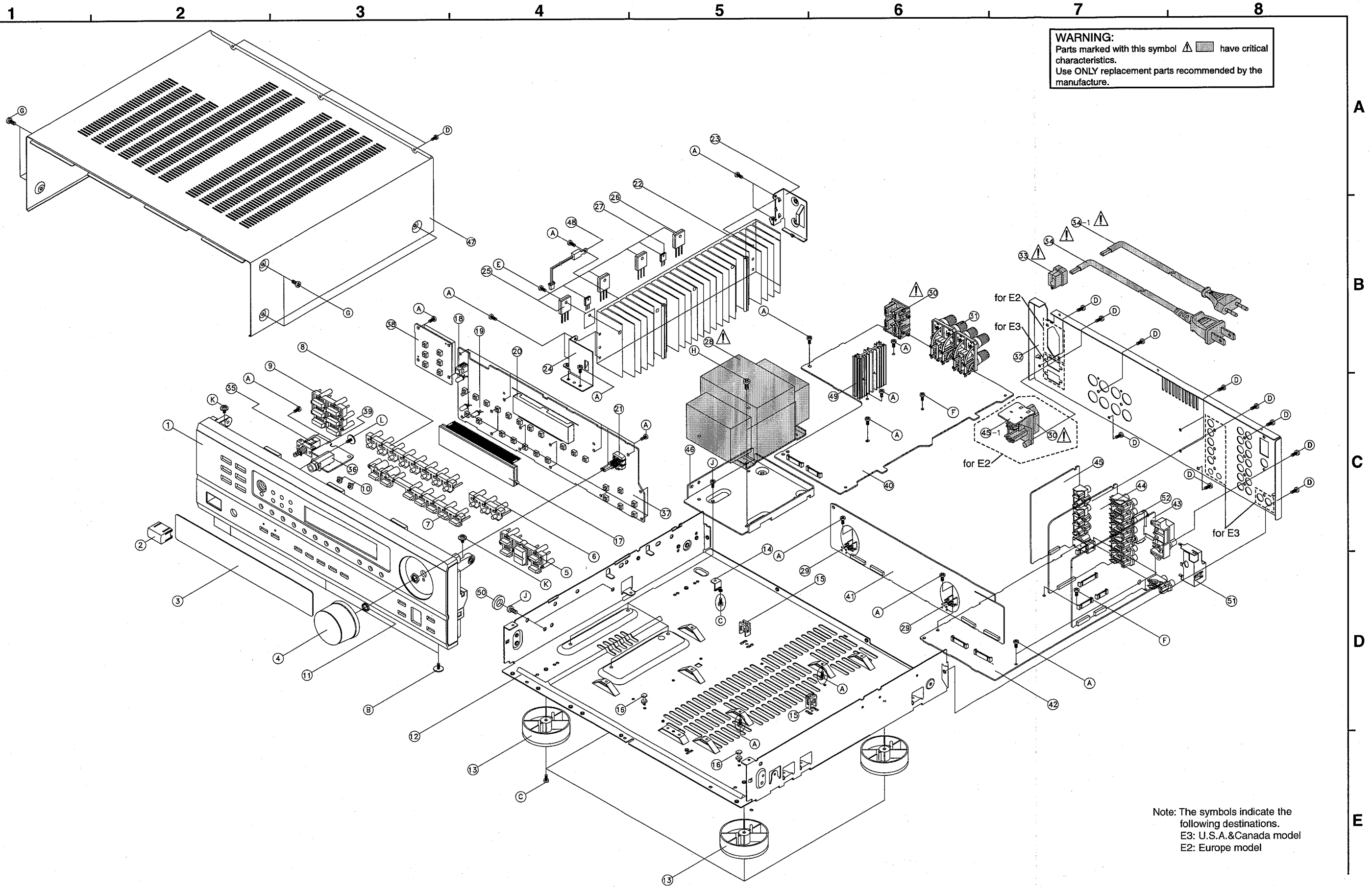
|          |              |                          |               |
|----------|--------------|--------------------------|---------------|
| C401,402 | 963 9004 685 | Ceramic chip 1000pF/50V  | D011102777160 |
| C403     | 963 9004 737 | Ceramic chip 0.022uF/25V | D011223777160 |
| C404     | 963 9004 892 | Ceramic 2pF/50V          | D000020007050 |
| C405     | 963 9004 737 | Ceramic chip 0.022uF/25V | D011223777160 |
| C406     | 963 9004 902 | Ceramic chip 18pF/50V    | D010180167160 |
| C408     | 960 9004 709 | Ceramic 6pF/50V          | D000060007050 |
| C409     | 963 9004 520 | Ceramic 100pF/50V        | D005101177520 |
| C410     | 963 9004 915 | Ceramic 470pF/50V        | D005471277520 |
| C411     | 963 9004 685 | Ceramic chip 1000pF/50V  | D011102777160 |
| C412     | 963 9004 737 | Ceramic chip 0.022uF/25V | D011223777160 |
| C413     | 963 9004 575 | Ceramic chip 100pF/50V   | D010101167160 |
| C414     |              | Electrolytic 2.2uF/50V   | D0402R2087100 |
| C415     |              | Electrolytic 47uF/25V    | D040470084070 |
| C416     |              | Electrolytic 10uF/50V    | D040100087050 |
| C417     |              | Electrolytic 100uF/16V   | D040101083100 |
| C418     | 963 9004 698 | Ceramic chip 0.01uF/50V  | D011103777160 |


| Ref. No. | Part No.     | Part Name                | Remarks                 | Ref. No.                 | Part No.     | Part Name                 | Remarks                 |             |
|----------|--------------|--------------------------|-------------------------|--------------------------|--------------|---------------------------|-------------------------|-------------|
| C419     |              | Electrolytic 10uF/50V    | D040100087050           | C506,507                 | 963 9004 562 | Ceramic 0.047uF/50V       | for E3<br>D005473597520 |             |
| C420     | 963 9004 591 | Ceramic chip 22pF/50V    | D010220167160           | C508                     |              | Electrolytic 100uF/10V    | for E3<br>D040101083100 |             |
| C421     | 963 9004 928 | Ceramic chip 24pF/50V    | D010240167200           | C509                     | 963 9004 504 | Ceramic 0.01uF/50V        | for E3<br>D004103097060 |             |
| C422     | 963 9004 656 | Ceramic chip 470pF/50V   | D010471167160           | C510                     | 963 9004 520 | Ceramic 100pF/50V         | for E3<br>D005101177520 |             |
| C423,424 | 963 9004 737 | Ceramic chip 0.022uF/25V | D011223777160           | C511                     | 960 9008 653 | Mylar film 0.012uF/100V   | for E3<br>D02012306C060 |             |
| C425     |              | Electrolytic 4.7uF/50V   | D0404R7087100           | C512                     |              | Electrolytic 1uF/50V      | for E3<br>D040010087050 |             |
| C426     |              | Electrolytic 3.3uF/50V   | D0403R3087100           | C513                     | 960 9008 653 | Mylar film 0.012uF/100V   | for E3<br>D02012306C060 |             |
| C427     |              | Electrolytic 4.7uF/50V   | D0404R7087100           | C514                     |              | Electrolytic 47uF/25V     | for E3<br>D040470084070 |             |
| C428     | 963 9004 737 | Ceramic chip 0.022uF/25V | D011223777160           | C515                     |              | Electrolytic 1uF/50V      | for E3<br>D040010087050 |             |
| C430     | 963 0021 900 | Mylar film 0.047uF/100V  | D02047306C060           | C516                     |              | Electrolytic 10uF/50V     | for E3<br>D040100085050 |             |
| C431     | 963 9004 627 | Ceramic chip 33pF/50V    | D010330167160           | C550                     |              | Electrolytic 0.1uF/50V    | D040R10087070           |             |
| C432     |              | Electrolytic 47uF/25V    | D040470084070           | C551                     |              | Electrolytic 100uF/25V    | D040101084060           |             |
| C433     | 963 9004 737 | Ceramic chip 0.022uF/25V | D011223777160           | C928,929                 | 963 9004 533 | Ceramic 1000pF/50V        | D005102177530           |             |
| C434     |              | Electrolytic 1uF/50V     | for E3<br>D040010087080 | C930                     | 960 9003 108 | Ceramic 0.022uF/25V       | D005223594520           |             |
| C434     |              | Electrolytic 0.33uF/50V  | for E2<br>D040R33087100 | C931                     |              | Electrolytic 1uF/50V      | D040010087080           |             |
| C435,436 | 963 9004 737 | Ceramic chip 0.022uF/25V | D011223777160           | <b>OTHER PARTS GROUP</b> |              |                           |                         | <b>Q'ty</b> |
| C437     |              | Electrolytic 47uF/25V    | D040470084070           | CF401,402                | 960 0187 104 | Ceramic filter SFE10.7MA8 | for E3<br>E430107000140 | 2           |
| C438     |              | Electrolytic 1uF/50V     | D040010087080           | CF401,402                | 960 0177 509 | Ceramic filter SFE10.7MS3 | for E2<br>E430107000150 | 2           |
| C439     |              | Electrolytic 0.22uF/50V  | D040R22087100           | CF403                    | 960 0187 609 | Ceramic resonator BFU450C | E830450000070           | 1           |
| C440,441 |              | Electrolytic 1uF/50V     | D040010087080           | CN401                    | 963 0085 409 | 10P connector base        | L101100031010           | 1           |
| C442     |              | Electrolytic 2.2uF/50V   | D0402R2087100           | CN602                    | 963 0086 505 | 7P connector base         | L101100030710           | 1           |
| C443     |              | Electrolytic 10uF/50V    | D040100087050           | CN605                    | 963 0086 505 | 7P connector base         | for E3<br>L101100030710 | 1           |
| C444     |              | Electrolytic 4.7uF/50V   | D0404R7087100           | CN606                    | 963 0085 409 | 10P connector base        | L101100031010           | 1           |
| C445     |              | Electrolytic 10uF/50V    | D040100087050           | CN607                    | 963 0086 709 | 11P connector base        | L101100031110           | 1           |
| C446,447 | 963 9005 053 | Ceramic 270pF/50V        | for E3<br>D004271277050 | CN608                    | 963 0085 409 | 10P connector base        | L101100031010           | 1           |
| C446,447 | 963 9005 066 | Ceramic 330pF/50V        | for E2<br>D004331277050 | CN609                    | 963 0086 709 | 11P connector base        | L101100031110           | 1           |
| C448,449 | 963 9004 960 | Ceramic 470pF/50V        | for E3<br>D004471067060 | CN907                    | 963 0089 308 | 3P connector cord (L=400) | L000401030020           | 1           |
| C450,451 |              | Electrolytic 10uF/50V    | D040100087050           | CP900                    | 963 0049 908 | 3P connector base         | L101220030010           | 1           |
| C453     | 963 9004 614 | Ceramic chip 27pF/50V    | D010270167160           | CP903                    | 963 0086 000 | 2P connector cord (L=80)  | L000800020060           | 1           |
| C454,455 | 963 9004 575 | Ceramic chip 100pF/50V   | for E3<br>D010101167160 | CP905                    | 963 0089 405 | 2P connector cord (L=120) | for E2<br>L000121020050 | 1           |
| C456     | 963 9004 672 | Ceramic chip 680pF/50V   | D010681167160           | CP906                    | 963 0048 909 | 3P connector base         | for E3<br>L101220030000 | 1           |
| C459     |              | Electrolytic 1uF/50V     | for E3<br>D040010087080 | CP906                    | 963 0089 502 | 2P connector cord (L=350) | for E2<br>L000351020070 | 1           |
| C461     | 963 9004 591 | Ceramic chip 22pF/50V    | D010220167160           |                          |              |                           |                         |             |
| C462     | 963 9004 656 | Ceramic chip 470pF/50V   | for E2<br>D010471167160 |                          |              |                           |                         |             |
| C463     | 963 9004 782 | Mylar film 0.056uF/100V  | D02056306C060           |                          |              |                           |                         |             |
| C464     | 963 9004 973 | Ceramic 3pF/50V          | D000030007050           |                          |              |                           |                         |             |
| C471VT   |              | Electrolytic 1uF/50V     | D040010087080           |                          |              |                           |                         |             |
| C472VT   | 963 9004 753 | Ceramic chip 0.047uF/50V | D011473597160           |                          |              |                           |                         |             |
| C500-502 |              | Electrolytic 47uF/25V    | for E3<br>D040470084070 |                          |              |                           |                         |             |
| C503,504 |              | Electrolytic 470uF/10V   | for E3<br>D040471081230 |                          |              |                           |                         |             |



| Ref. No.   | Part No.     | Part Name              | Remarks                 | Q'ty | Ref. No. | Part No.     | Part Name         | Remarks                    | Q'ty |
|------------|--------------|------------------------|-------------------------|------|----------|--------------|-------------------|----------------------------|------|
| FE401      | 960 0187 706 | Tuner pack             | E900401010020           | 1    | X402     | 963 0043 302 | Ceramic resonator | CSB456F11<br>E830456000050 | 1    |
| G401       | —            | 1P Wire (L=80)         | 8410800010010           | 1    | ★        | 963 0054 003 | Shield cover      | 3070210056000              | 1    |
| G900       | —            | 1P Wire (L=80)         | 8410800010010           | 1    | ★        | 963 0088 406 | Earth plate C     | 4470210206000              | 1    |
| J401,402   | 963 9003 369 | Carbon chip 0ohm 1/8W  | C200000061300           | 2    | ★        | 960 0184 000 | Screw bracket     | 4010210196000              | 2    |
| J403,404   | 963 9003 369 | Carbon chip 0ohm 1/8W  | for E3<br>C200000061300 | 2    |          |              |                   |                            |      |
| J405,406   | 963 9003 369 | Carbon chip 0ohm 1/8W  | for E2<br>C200000061300 | 2    |          |              |                   |                            |      |
| J407       | 963 9003 369 | Carbon chip 0ohm 1/8W  | C200000061300           | 1    |          |              |                   |                            |      |
| J409       | 963 9003 369 | Carbon chip 0ohm 1/8W  | C200000061300           | 1    |          |              |                   |                            |      |
| JACK401    | 960 0188 006 | 2P pin jack            | for E3<br>G601020170000 | 1    |          |              |                   |                            |      |
| JACK402    | 963 0052 403 | 3P antenna terminal    | G593021068010           | 1    |          |              |                   |                            |      |
| JACK501    | 963 0071 002 | Mini jack              | for E3<br>G401065020000 | 1    |          |              |                   |                            |      |
| JACK502    | 960 0188 404 | 3P pin jack            | for E3<br>G606030164020 | 1    |          |              |                   |                            |      |
| JACK503    | 960 0194 605 | 2P pin jack            | for E3<br>G601020163010 | 1    |          |              |                   |                            |      |
| JACK900    | 960 0187 502 | Headphone jack (D6.5)  | G402038400031           | 1    |          |              |                   |                            |      |
| L401,402   | 963 0052 102 | Inductor 1uH           | D3301R0001020           | 2    |          |              |                   |                            |      |
| L403       | 963 0056 409 | MW IFT (RBW07VB-K5025) | D950500500010           | 1    |          |              |                   |                            |      |
| △ OUTLE909 | 960 0143 203 | AC outlet              | for E2<br>G435040110000 | 1    |          |              |                   |                            |      |
| SW925      | 963 0045 708 | Tact switch            | G180000270010           | 1    |          |              |                   |                            |      |
| SW927      | 963 0045 708 | Tact switch            | G180000270010           | 1    |          |              |                   |                            |      |
| SW929      | 960 0176 209 | Push switch            | for E3<br>G000122000010 | 1    |          |              |                   |                            |      |
| SW929      | 963 0056 603 | Push switch            | for E2<br>G000040890000 | 1    |          |              |                   |                            |      |
| SW930      | 963 0045 708 | Tact switch            | G180000270010           | 1    |          |              |                   |                            |      |
| SW932      | 963 0045 708 | Tact switch            | G180000270010           | 1    |          |              |                   |                            |      |
| SW934      | 963 0045 708 | Tact switch            | G180000270010           | 1    |          |              |                   |                            |      |
| SW936      | 963 0045 708 | Tact switch            | G180000270010           | 1    |          |              |                   |                            |      |
| T401       | 960 0186 600 | MW IFT (PCFMAF-270)    | D950500200000           | 1    |          |              |                   |                            |      |
| T402       | 960 0007 349 | FM DET trans.          | D951561100000           | 1    |          |              |                   |                            |      |
| T403       | 960 0007 352 | FM DET trans.          | D951561200000           | 1    |          |              |                   |                            |      |
| T404,405   | 960 0071 207 | MPX filter             | for E2<br>E401500100000 | 2    |          |              |                   |                            |      |
| T406       | 960 0037 607 | Antibirdie filter      | for E2<br>E403126832410 | 1    |          |              |                   |                            |      |
| X401       | 960 0187 405 | Crystal 7.2MHz         | E8007R2000071           | 1    |          |              |                   |                            |      |

# EXPLODED VIEW



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

Note: The symbols indicate the following destinations.  
 E3: U.S.A. & Canada model  
 E2: Europe model

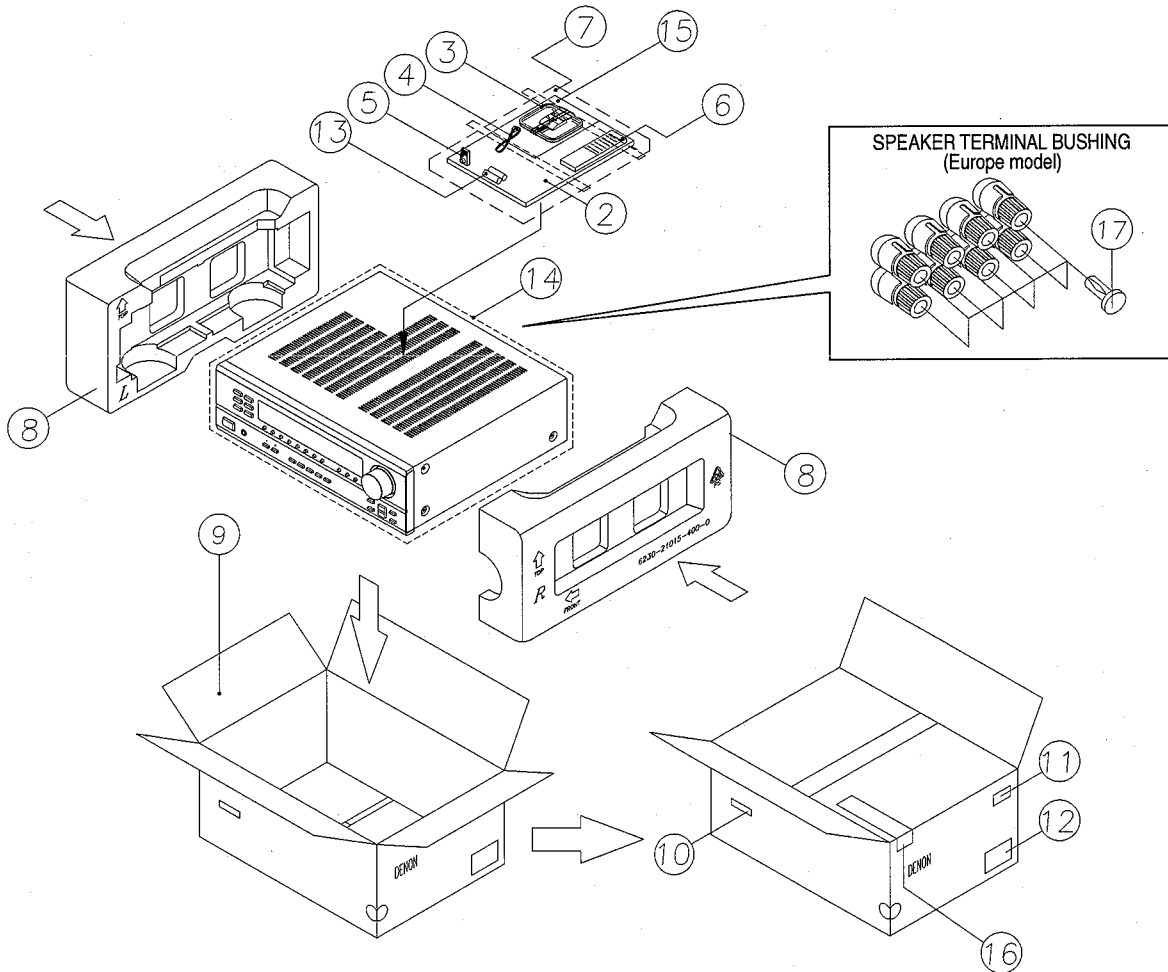
**PARTS LIST OF EXPLODED VIEW**

Note: The symbols in the column "Remarks" indicate the following destinations.  
 E3: U.S.A./Canada model      E2: Europe model

| Ref. No. | Part No.     | Part Name                     | Remarks                     | Q'ty | Ref. No. | Part No.     | Part Name              | Remarks                           | Q'ty |
|----------|--------------|-------------------------------|-----------------------------|------|----------|--------------|------------------------|-----------------------------------|------|
|          | 963 0080 802 | Main P.W.B. unit Ass'y        | for E3<br>7025HK0011010     | 1    | 22       | —            | Heat sink (main)       | 2120210298100Z                    | 1    |
|          | 963 0080 815 | Main P.W.B. unit Ass'y        | for E2<br>7025HK0011020     | 1    | 23       | 960 0184 204 | Heat sink bracket B    | 4010210386000                     | 1    |
| 40       |              | Main P.W.B. unit              |                             |      | 24       | 960 0184 301 | Heat sink bracket F    | 4010210396000                     | 1    |
| 44       |              | Input P.W.B. unit             |                             |      | 25       | 960 0090 107 | Transistor 2SB1559Y    | Q113,114<br>J5011559Y1170         | 2    |
|          | 963 0080 909 | Front P.W.B. unit Ass'y       | for E3<br>7025HK0011011     | 1    | 26       | 960 0090 000 | Transistor 2SD2389Y    | Q111,112<br>J5032389Y1170         | 2    |
|          | 963 0080 912 | Front P.W.B. unit Ass'y       | for E2<br>7025HK0011021     | 1    | 27       | 963 0058 106 | Transistor 2SD947F     | Q109,110<br>J503947F00000         | 2    |
|          |              | Front P.W.B. unit             |                             |      | Δ 28     | 963 0088 901 | Power trans.           | for E3<br>8200858630100           | 1    |
| 37       |              | Volume P.W.B. unit            |                             |      | Δ 28     | 963 0088 914 | Power trans.           | for E2<br>8200858630110           | 1    |
| 42       |              |                               |                             |      | 29       | 960 0184 000 | Screw bracket          | 4010210196000                     | 2    |
|          | 963 0081 005 | Tuner P.W.B. unit Ass'y       | for E3<br>7025HK0011012     | 1    | Δ 30     | 960 0181 508 | 2P AC outlet           | JACK104, for E3<br>G435204004010  | 1    |
|          | 963 0081 018 | Tuner P.W.B. unit Ass'y       | for E2<br>7025HK0011022     | 1    | Δ 30     | 960 0143 203 | AC outlet              | OUTLE909, for E2<br>G435040110000 | 1    |
|          |              | Switch P.W.B. unit            |                             |      | 31       | 963 0089 201 | 8P speaker terminal    | JACK102<br>G61408103610A          | 1    |
| 38       |              | Power SW/HP P.W.B. unit       |                             |      | 32       | 963 0076 502 | Back panel             | for E3<br>3207210766600           | 1    |
| 39       |              | Connector P.W.B. unit         |                             |      | 32       | 963 0076 515 | Back panel             | for E2<br>3207210766700           | 1    |
| 41       |              | Tuner P.W.B. unit             |                             |      | Δ 33     | 960 0192 403 | Cord bush              | 4380210002000                     | 1    |
| 43       |              | Video P.W.B. unit             | for E3                      |      | Δ 34     | 960 0166 400 | AC cord                | for E3<br>L068020030010           | 1    |
| 45       |              | Outlet P.W.B. unit            | for E2                      |      | Δ 34-1   | 960 0202 500 | AC cord                | for E2<br>L068040011010           | 1    |
| 45-1     |              |                               |                             |      | 35       | 960 0176 209 | Push switch            | SW929, for E3<br>G000122000010    | 1    |
| 1        | 963 0076 308 | Front panel                   | for E3<br>3067210261040Z    | 1    | 35       | 963 0056 603 | Push switch            | SW929, for E2<br>G0000408900000   | 1    |
| 1        | 963 0076 311 | Front panel                   | for E2<br>3067210261050Z    | 1    | 36       | 960 0187 502 | Headphone jack (D6.5)  | JACK900<br>G4020384000031         | 1    |
| 2        | 960 0185 009 | Power button                  | 5090210201000Z              | 1    | 46       | 963 0072 205 | Trans bracket          | 4010210466001                     | 1    |
| 3        | 963 0076 612 | Display window                | 5077210262040               | 1    | 47       | 963 0053 017 | Top cover              | 3000210096001                     | 1    |
| 4        | 963 0054 906 | Volume knob                   | 5087210191010Z              | 1    | 48       | 960 0187 900 | Posistor P43T7D330BW16 | F320161001020                     | 1    |
| 5        | 963 0053 703 | 5key button                   | 5097210471000Z              | 1    | 49       | —            | Heat sink              | 2120043538050                     | 1    |
| 6        | 963 0053 606 | 3key button                   | 5090210511000Z              | 1    | 50       | 963 0072 302 | Rubber cushion         | 4050210165000                     | 2    |
| 7        | 963 0053 415 | 7(A)key button                | 5090210491001Z              | 1    | 51       | 963 0054 003 | Shield cover           | 3070210056000                     | 1    |
| 8        | 963 0053 509 | 8key button                   | 5090210501000Z              | 1    | 52       | 963 0088 406 | Earth plate C          | 4470210206000                     | 1    |
| 9        | 963 0053 305 | 6key button                   | 5090210481000Z              | 1    | 53       | 963 0081 607 | Side bracket           | for E2<br>4010210686000           | 1    |
| 10       | 960 0191 417 | LED lens                      | 3710210043001               | 2    | 54       | 963 0044 602 | P.W.B. support         | for E2<br>4070210192000           | 1    |
| 11       | 963 0051 006 | Knob spring                   | 3720210116000               | 1    | ★ 55     | 963 0089 104 | Rubber sheet           | 1210210235000                     | 3    |
| 12       | 960 0198 229 | Main chassis                  | 3200210146301               | 1    | ★ 56     | 960 0155 301 | Wire clamper           | for E3<br>4330040343010           | 4    |
| 13       | 960 0183 904 | Foot Ass'y                    | 400802006101C               | 4    | ★ 56     | 960 0155 301 | Wire clamper           | for E2<br>4330040343010           | 5    |
| 14       | 960 0184 107 | Support bracket               | 4010210206000               | 1    | ★ 57     | 963 0054 207 | Fuse caution label     | for E3<br>5527042410020           | 1    |
| 15       | 960 0003 301 | P.W.B. support                | 4070001601010               | 2    |          |              |                        |                                   |      |
| 16       | 963 0051 103 | Card spacer                   | 4300210062000               | 2    |          |              |                        |                                   |      |
| 17       | 960 0180 509 | FLT (16-ST-42GNK)             | FL900<br>K530164200010      | 1    |          |              |                        |                                   |      |
| 18       | 960 0181 100 | Remocon sensor NJL64H380A     | REM900<br>E940643800000     | 1    |          |              |                        |                                   |      |
| 19       | 960 0197 204 | LED HL50RDRF4T                | LED900-902<br>K500052015010 | 3    |          |              |                        |                                   |      |
| 20       | 960 0184 408 | FLT holder                    | 4320200026000               | 1    |          |              |                        |                                   |      |
| 21       | 960 0181 207 | Rotary encoder (EC16B2420431) | SW924<br>G121162420400      | 1    |          |              |                        |                                   |      |

| Ref. No.      | Part No.     | Part Name             | Remarks                 | Q'ty |
|---------------|--------------|-----------------------|-------------------------|------|
| ★ 58          | 963 0089 007 | FFC cable             | CP901<br>L301171230010  | 1    |
| <b>SCREWS</b> |              |                       |                         |      |
| A             | 963 0018 007 | Screw 3×8 (B)-Z       | B020030081B10           | 44   |
| B             | 960 9008 527 | Screw 3×8 (B) W-B     | 1500001456020           | 4    |
| C             | 963 0048 200 | Screw 3×10 (B)-Z      | B020030101B10           | 5    |
| D             | 960 0108 714 | Screw 3×10 (B)-B      | for E3<br>B020030103B11 | 24   |
| D             | 960 0108 714 | Screw 3×10 (B)-B      | for E2<br>B020030103B11 | 19   |
| E             | 963 9004 009 | Screw 3×14 (P) SW W-Z | B018230141H10           | 6    |
| F             | 963 0018 104 | Screw 3×17 (B)-Z      | B020030171B10           | 2    |
| G             | 963 0048 307 | Screw 4×8 (B)-B       | 1500040083B10           | 6    |
| H             | 963 9008 417 | Screw 4×8 (P) SW W-Z  | B028940081B10           | 4    |
| J             | 963 9004 025 | Screw 4×6 (S)-Z       | B020740061B10           | 6    |
| K             | 963 9004 038 | Screw 3×8 (B) W-Z     | 1500001206010           | 2    |
| L             | 960 9008 420 | Screw 3×8 (B) W-Z     | 1500001456010           | 1    |

**PACKING VIEW**



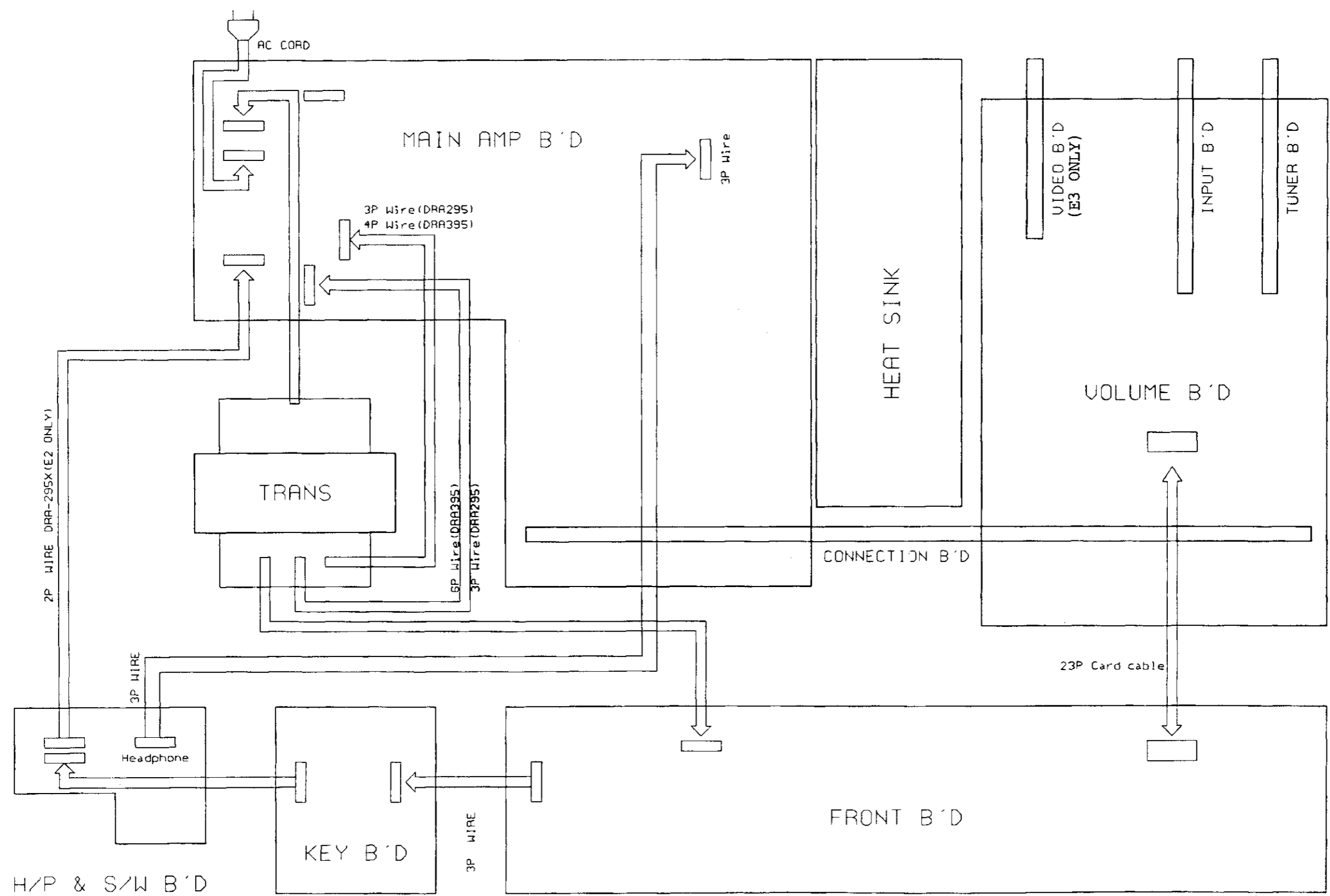
**PARTS LIST OF PACKING & ACCESSORIES**

Note: The symbols in the column "Remarks" indicate the following destinations.  
 E3: U.S.A./Canada model      E2: Europe model

| Ref. No. | Part No.     | Part Name                  | Remarks                 | Q'ty | Ref. No. | Part No.     | Part Name                | Remarks                 | Q'ty |
|----------|--------------|----------------------------|-------------------------|------|----------|--------------|--------------------------|-------------------------|------|
| 2        | 963 0080 608 | Instruction manual         | for E3<br>5707210170250 | 1    | 10       | —            | RDS label                | for E2<br>5507051670010 | 2    |
| 2        | 963 0080 611 | Instruction manual         | for E2<br>5707210170260 | 1    | 11       | —            | UPC label                | for E3<br>5507002330100 | 1    |
| 3        | 963 0052 306 | AM loop antenna            | E605010090000           | 1    | 11       | —            | POS label                | for E2<br>5507002340090 | 1    |
| 4        | 963 0081 102 | FM antenna wire            | E605010010000           | 1    | 12       | —            | Control label            | 5500014920010           | 2    |
| 5        | 963 0052 704 | FM antenna adapter         | L109000180010           | 1    | 13       | —            | Battery (R6P/AA)         | G670001R50010           | 2    |
| 6        | 963 0088 707 | Remote control unit RC-895 | for E3<br>8300895000010 | 1    | 14       | 960 0185 601 | Set poly bag             | 6330210019000           | 1    |
| 6        | 963 0088 804 | Remote control unit RC-907 | for E2<br>8300907000010 | 1    | 15       | —            | S.S. list (EX)           | 5777001620012           | 1    |
| 7        | 963 0045 106 | Poly bag                   | 6330000240000           | 1    | 16       | —            | DEL warranty home        | for E3<br>5777001610020 | 1    |
| 8        | 963 0193 101 | Cushion (L/R)              | 6230210154001           | 1    | 17       | 960 0093 104 | Speaker terminal bushing | for E2<br>2410040353010 | 8    |
| 9        | 963 0080 705 | Carton case                | for E3<br>6007210310040 | 1    |          |              |                          |                         |      |
| 9        | 963 0080 718 | Carton case                | for E2<br>6007210310070 | 1    |          |              |                          |                         |      |

# WIRING DIAGRAM

1 2 3 4 5 6 7 8



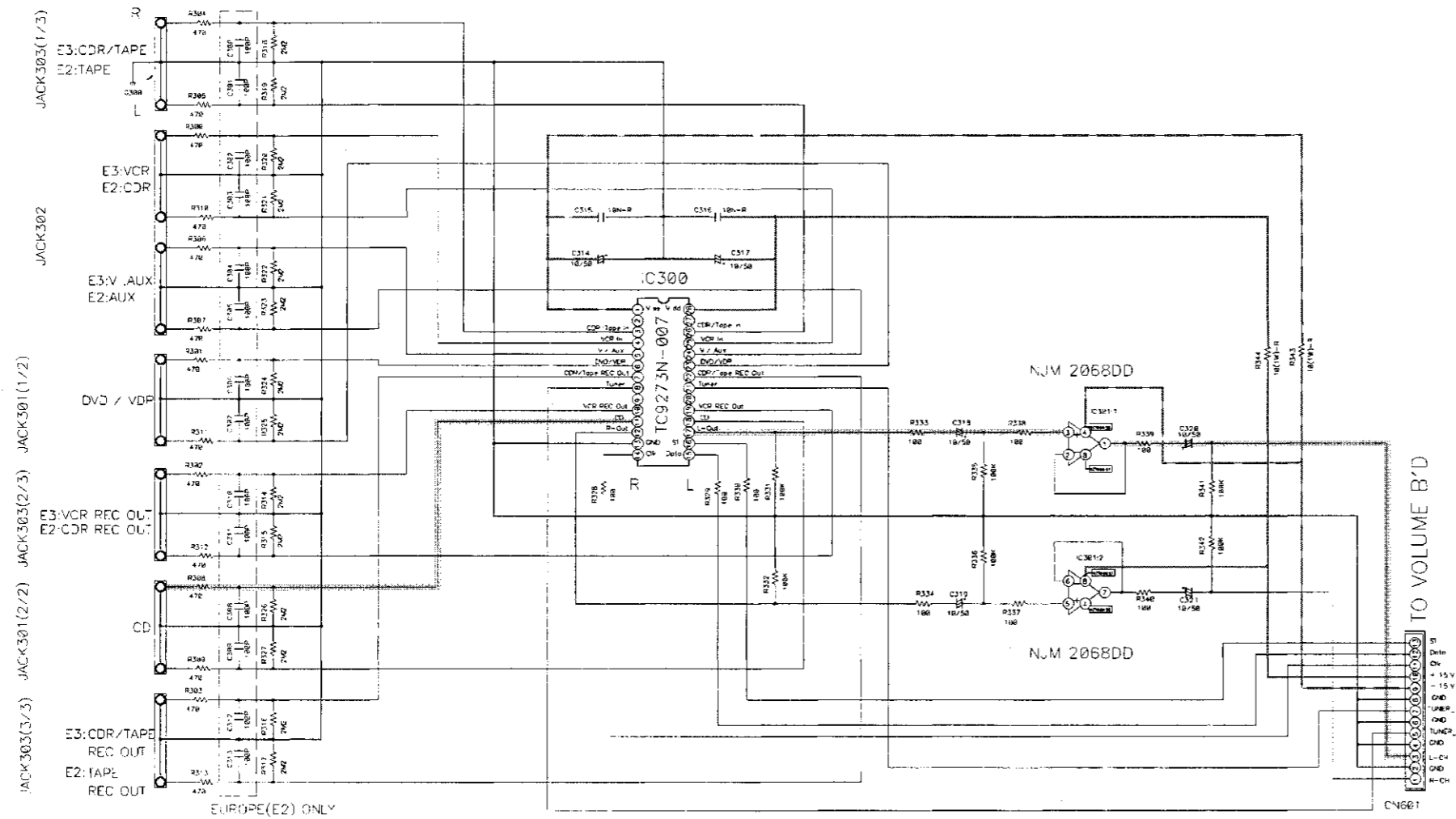
A  
B  
C  
D  
E

DRA-295 WIRING DIAGRAM

SCHEMATIC DIAGRAMS(1/5)

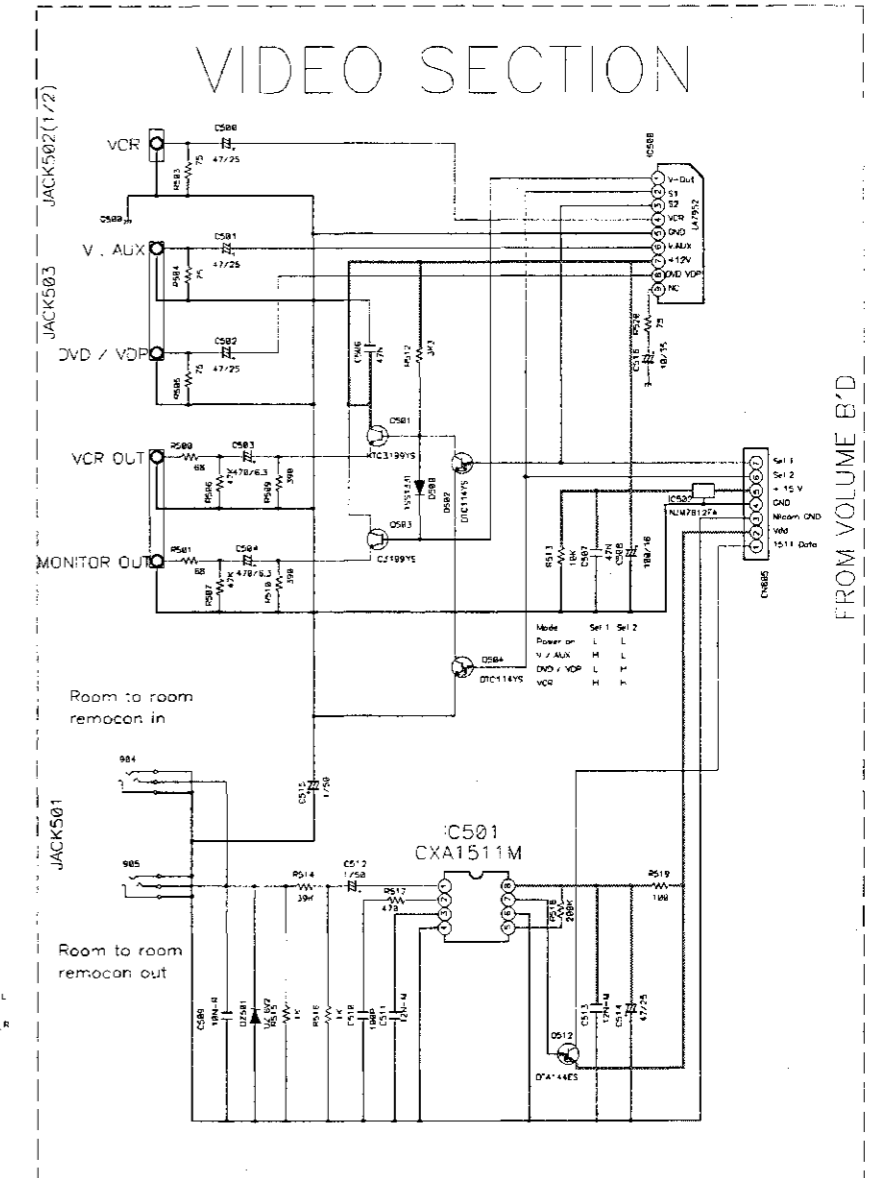
1 2 3 4 5 6 7 8 9 10 11

INPUT SECTION

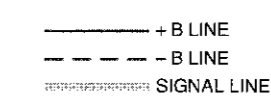


EUROPE(E2) ONLY


VIDEO SECTION



USA(E3) ONLY



**NOTICE**  
 ALL RESISTANCE VALUES IN OHM, k=1,000 OHM M=1,000,000 OHM  
 ALL CAPACITANCE VALUES IN MICRO FARAD, P=MICRO-MICRO FARAD  
 EACH VOLTAGE AND CURRENT ARE MEASURED AT MO SIGNAL INPUT  
 CONDITION.  
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR  
 NOTICE.

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

**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 card is less than 460k ohms, the unit is defective.

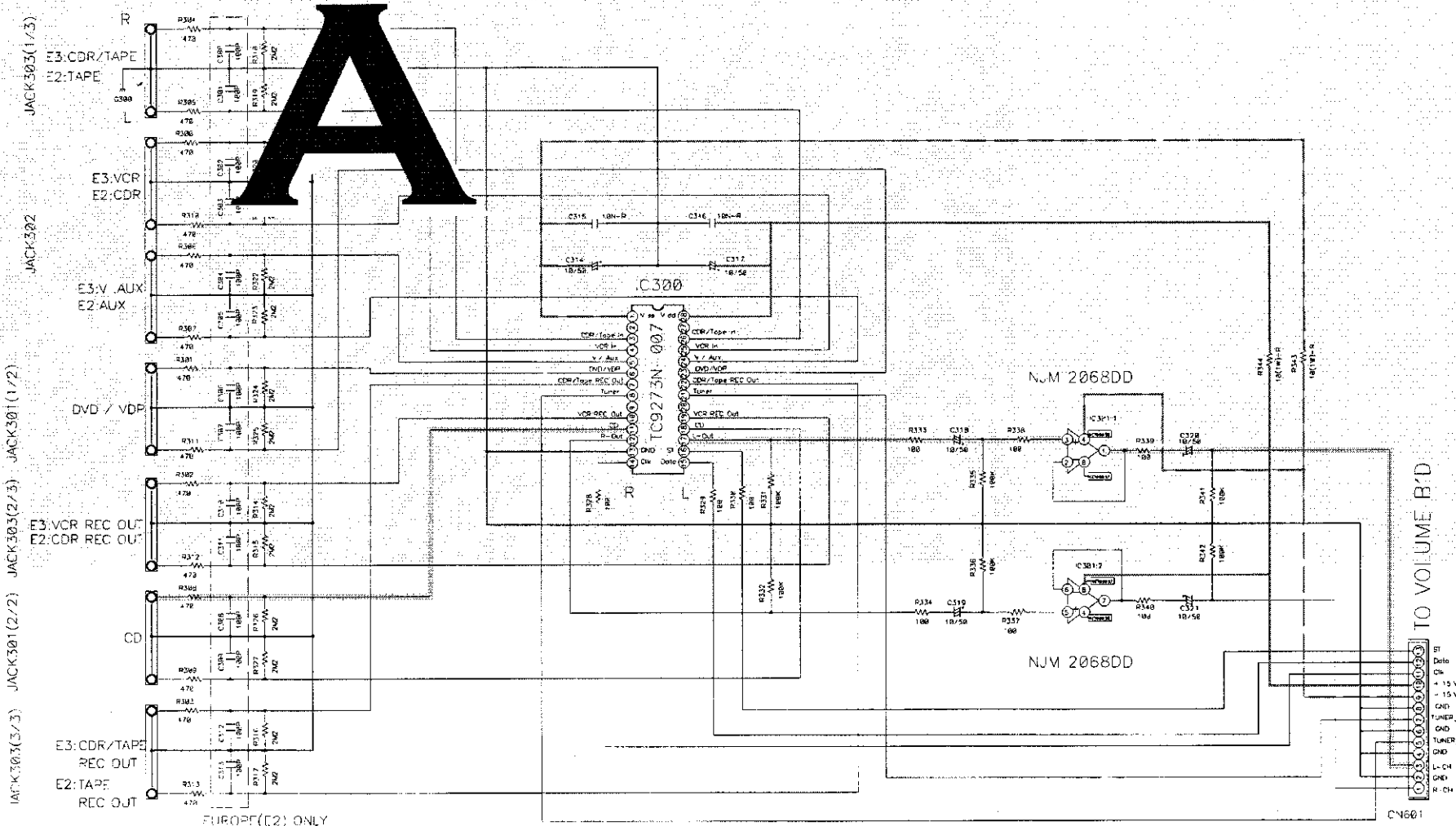
**WARNING:**  
 DO NOT return the unit to the customer until the problem is located and  
 corrected.

SCHEMATIC DIAGRAMS(1/5)  
INPUT UNIT  
VIDEO UNIT

SCHEMATIC DIAGRAMS(1/5)

1 2 3 4 5 6 7 8 9 10 11

INPUT SECTION



C

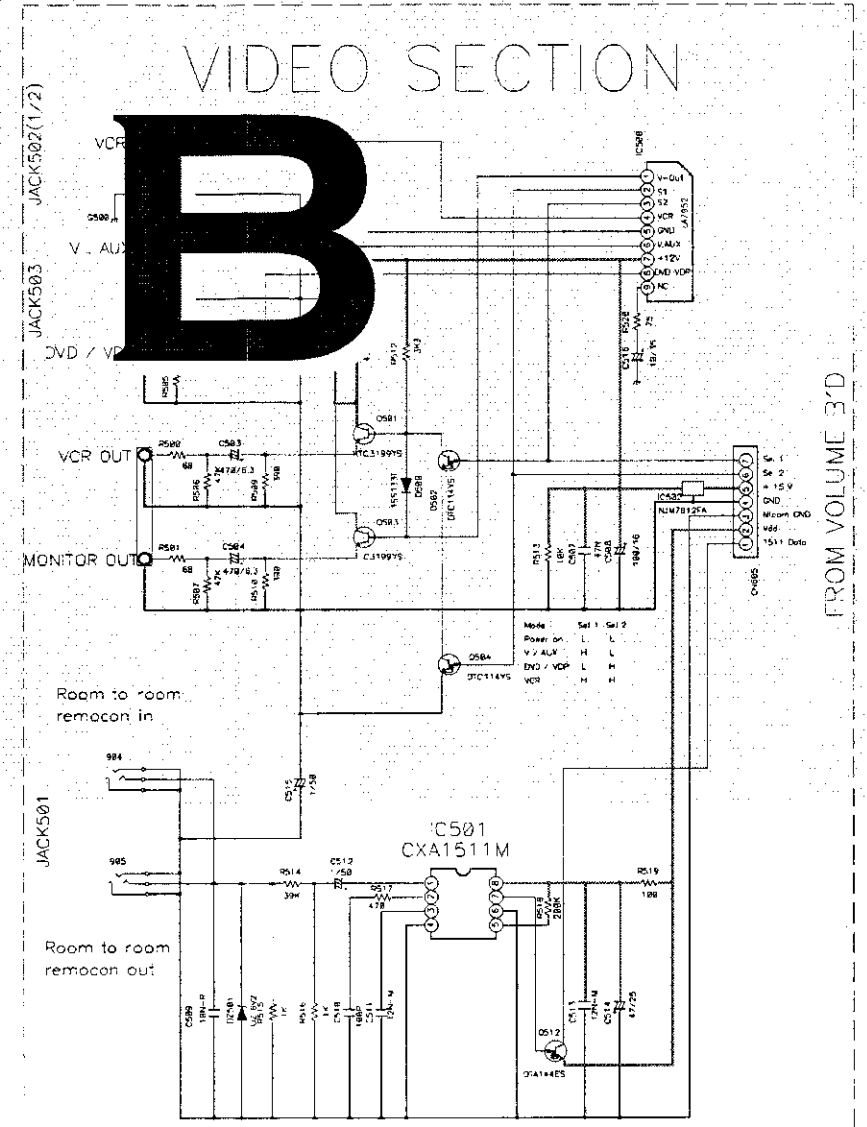
**NOTICE**  
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 ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD  
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**WARNING:**  
 DO NOT return the unit to the customer until the problem is located and corrected.

VIDEO SECTION



D

— + B LINE  
 - - - - B LINE  
 ~~~~~ SIGNAL LINE


SCHEMATIC DIAGRAMS(1/5)

1

2

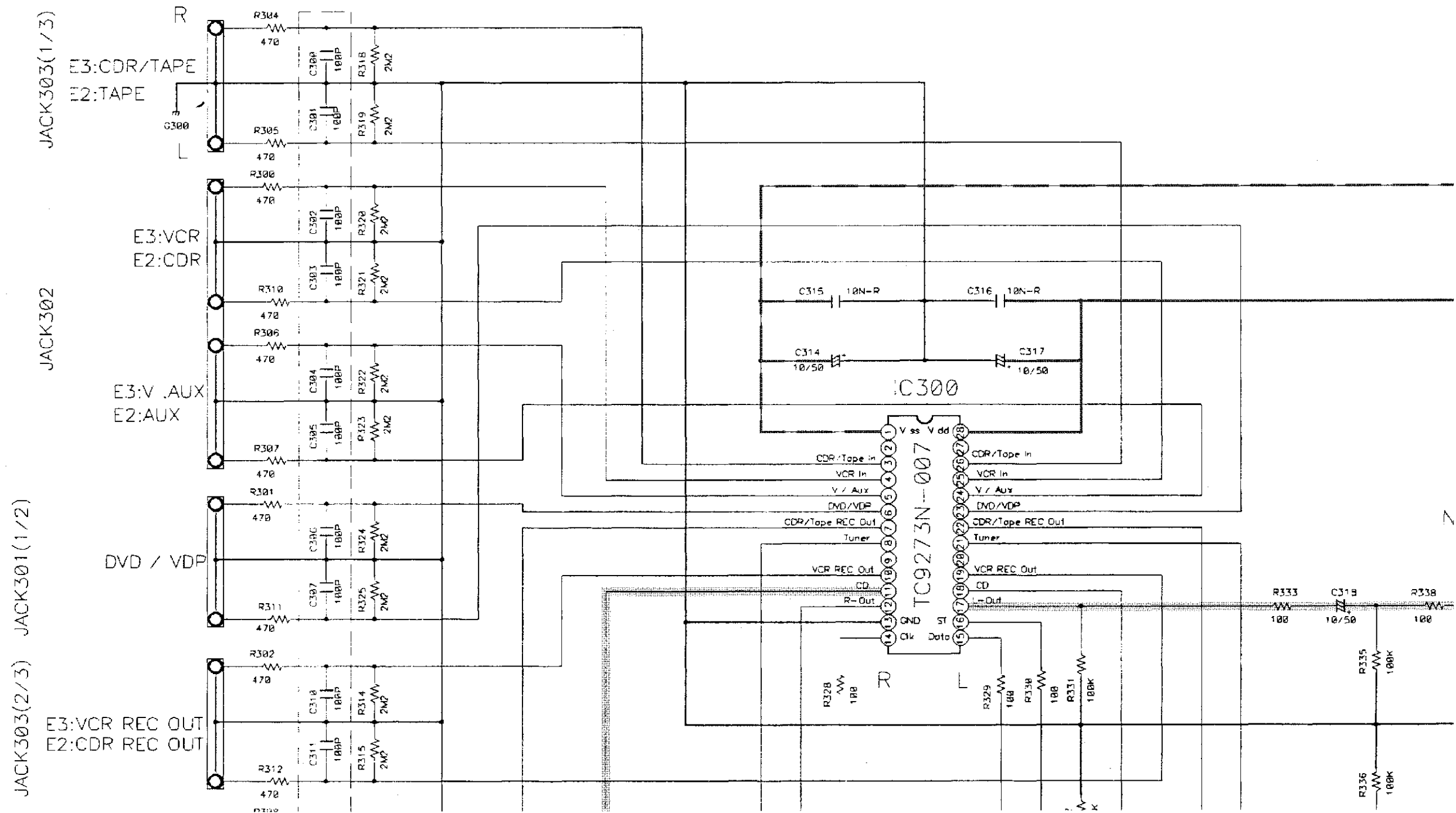
3

4

5

6

INPUT SECTION



6

7

8

9

10

11

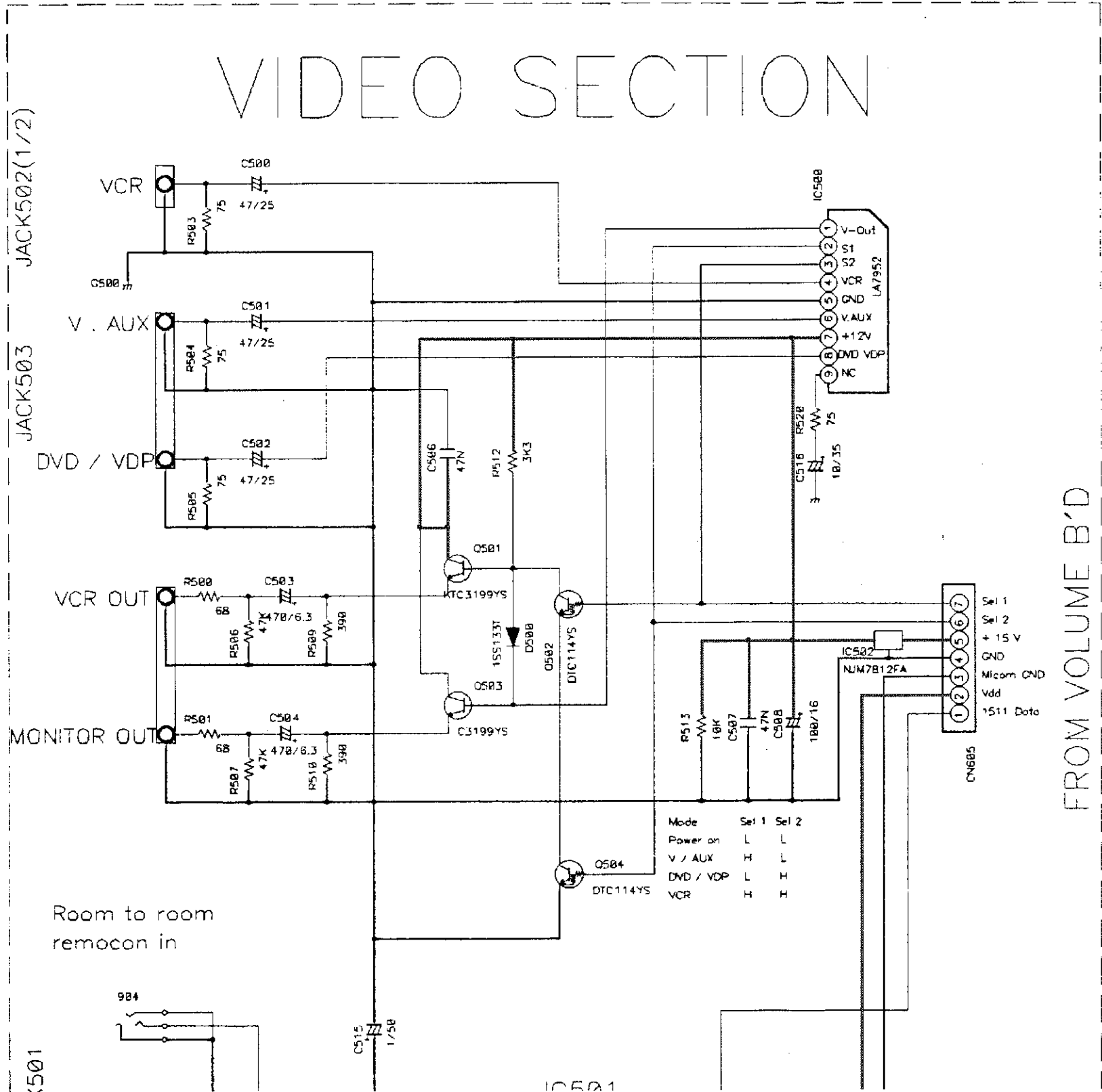
A

B

C

D

VIDEO SECTION



JACK502(1/2)

JACK503

VCR OUT

MONITOR OUT

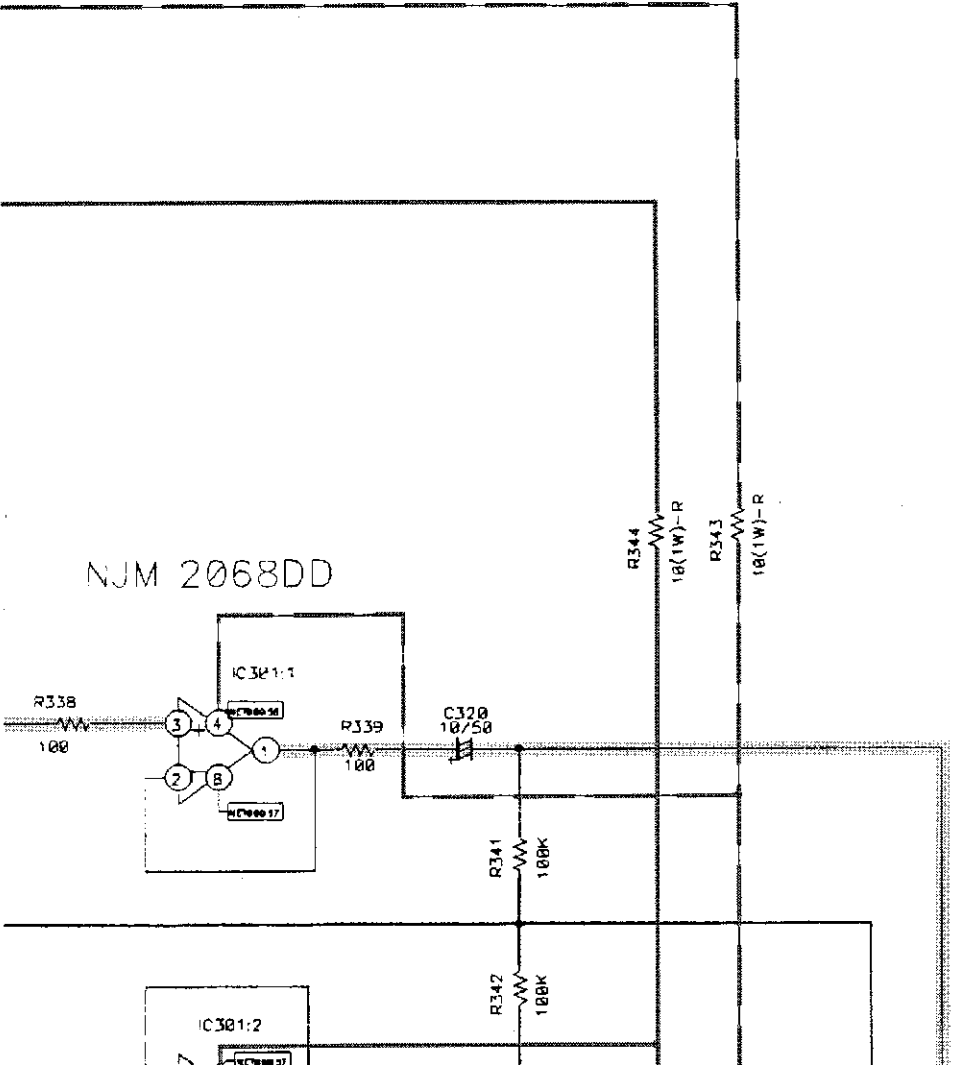
IC501

IC502

FROM VOLUME B'D

VOLUME B'D

NJM 2068DD

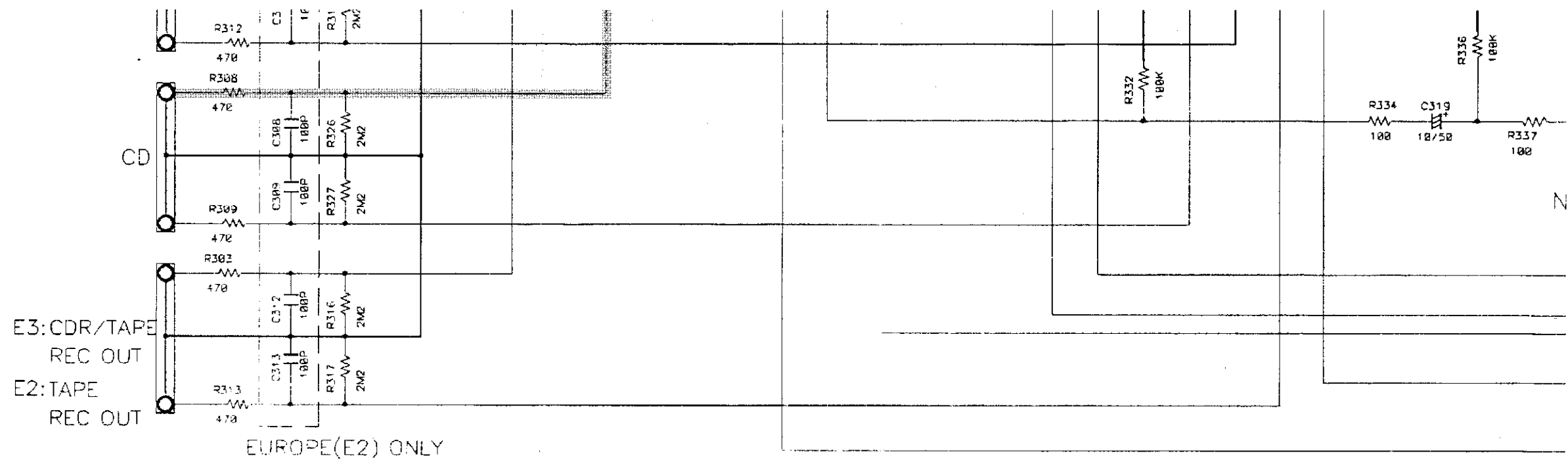


| Mode | Set 1 | Set 2 |
|-----------|-------|-------|
| Power on | L | L |
| V / AUX | H | L |
| DVD / VDP | L | H |
| VCR | H | H |

- 1 Sel 1
- 2 Sel 2
- 3 +15V
- 4 GND
- 5 Micom GND
- 6 Vdd
- 7 1511 Data

- 1 V-Out
- 2 S1
- 3 S2
- 4 VCR
- 5 GND
- 6 V.AUX
- 7 +12V
- 8 DVD VDP
- 9 NC


JACK303(3/3) JACK301(2/2) JACK



NOTICE

ALL RESISTANCE VALUES IN OHM. k=1,000 OHM M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT
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WARNING:

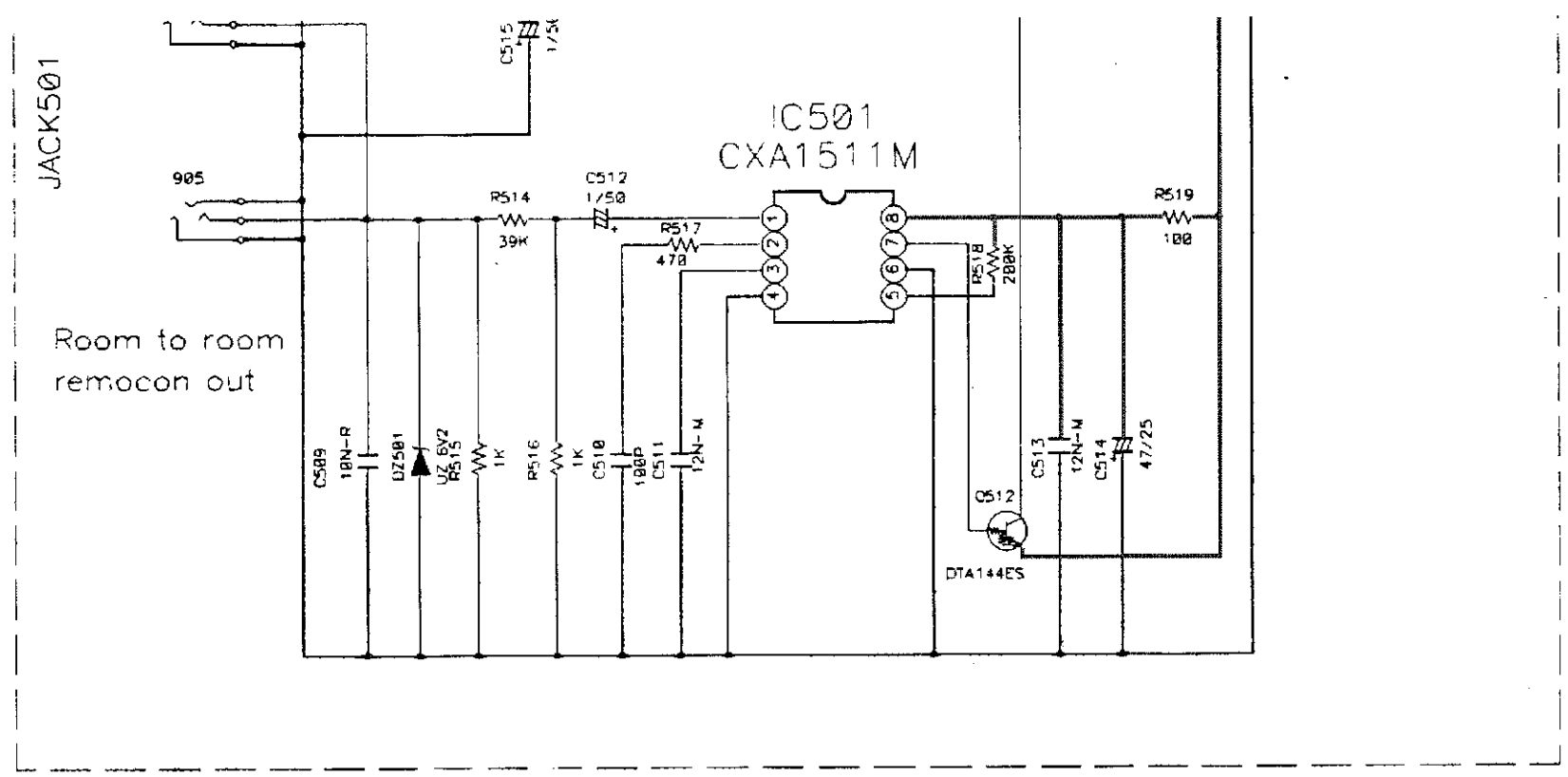
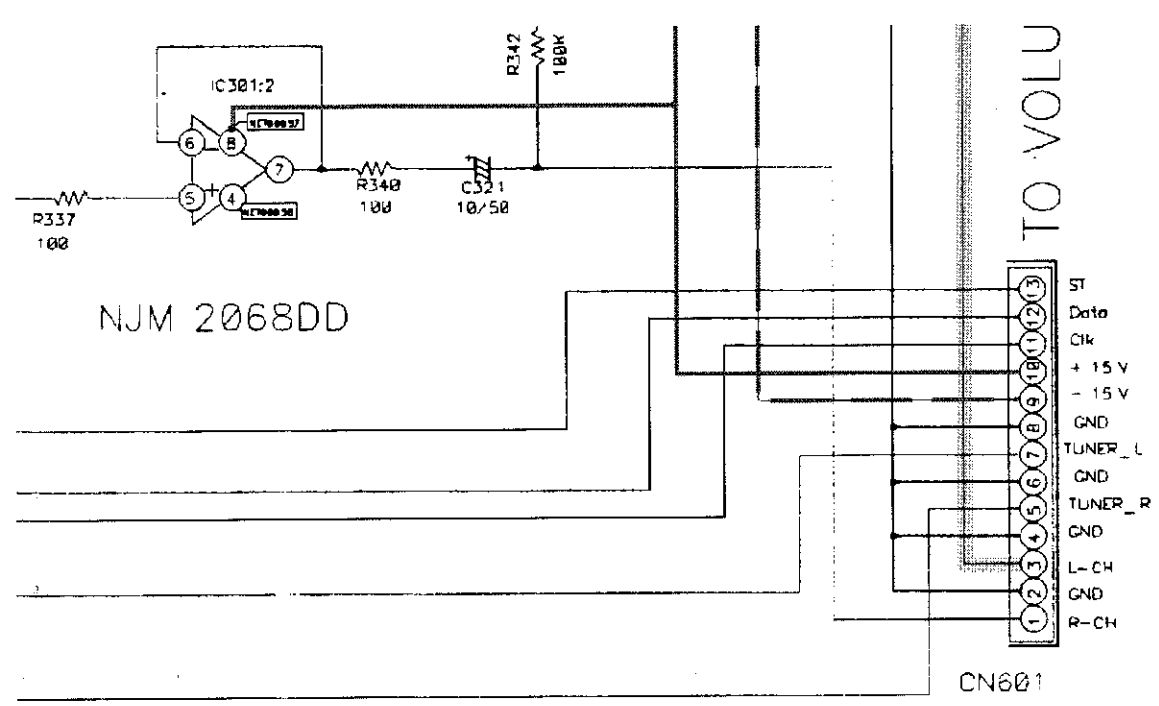
Parts marked with this symbol  have
 Use ONLY replacement parts recommended.

CAUTION:

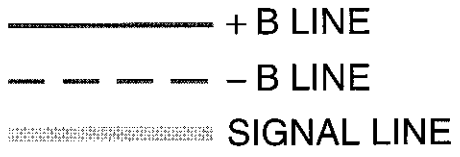
Before returning the unit to the customer,
 leakage current check or (2) a line to chassis
 current exceeds 0.5 milliamps, or if the resistance
 of the power card is less than 460kohms

WARNING:

DO NOT return the unit to the customer until
 corrected.



USA(E3) ONLY



SCHEMATIC DIAGRAMS(1/5)
INPUT UNIT
VIDEO UNIT

have critical characteristics.
recommended by the manufacture.

customer, make sure you make either (1) a
leakage to chassis resistance check. If the leakage
is more than 10k ohms, the unit is defective.

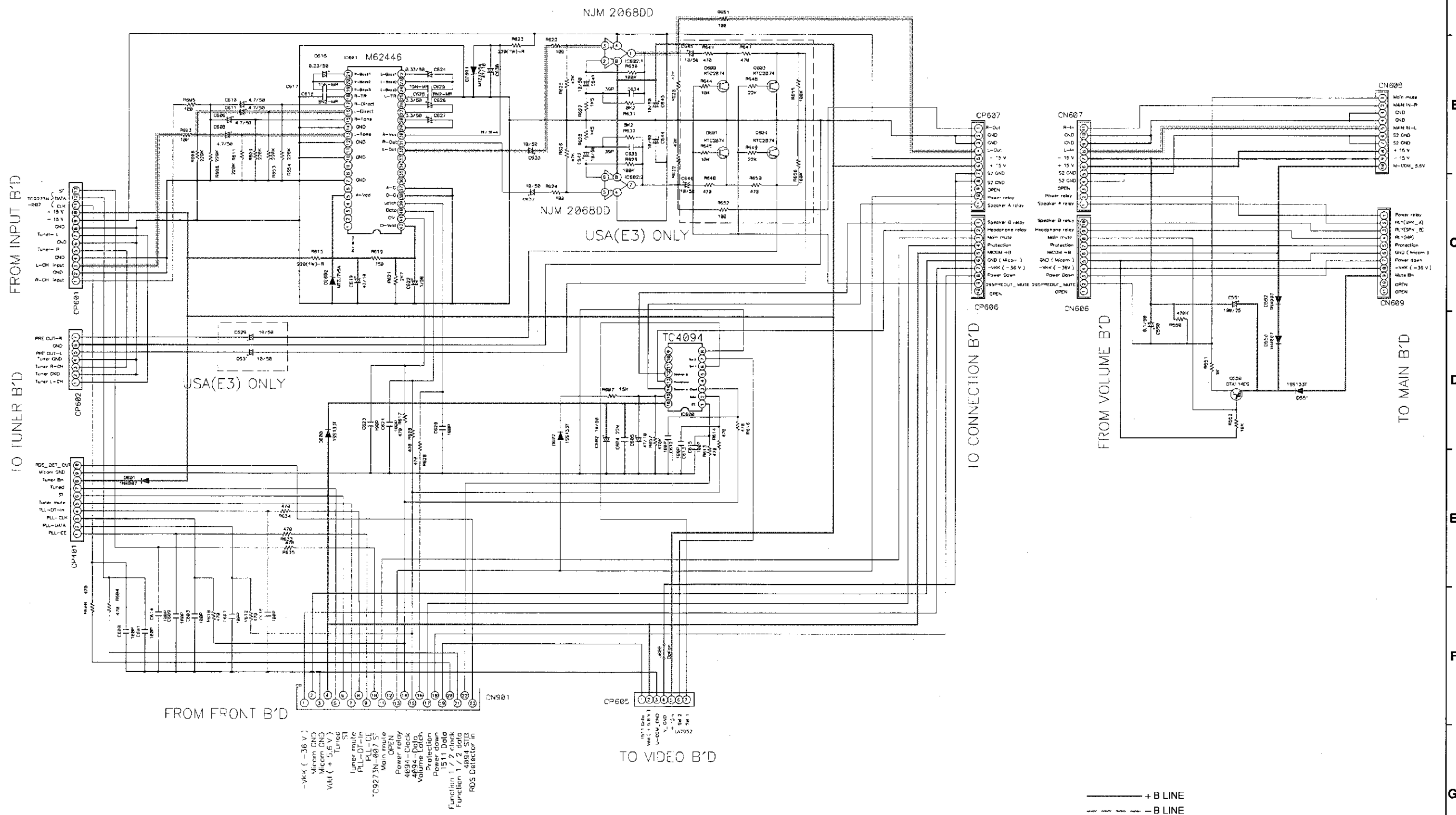
customer until the problem is located and

E
F
G
H

1 2 3 4 5 6 7 8 9 10 11

VOLUME SECTION

CONNECTION SECTION



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

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

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 milliamperes, or if the resistance from chassis to either side of the power card is less than 480kohms, the unit is defective.

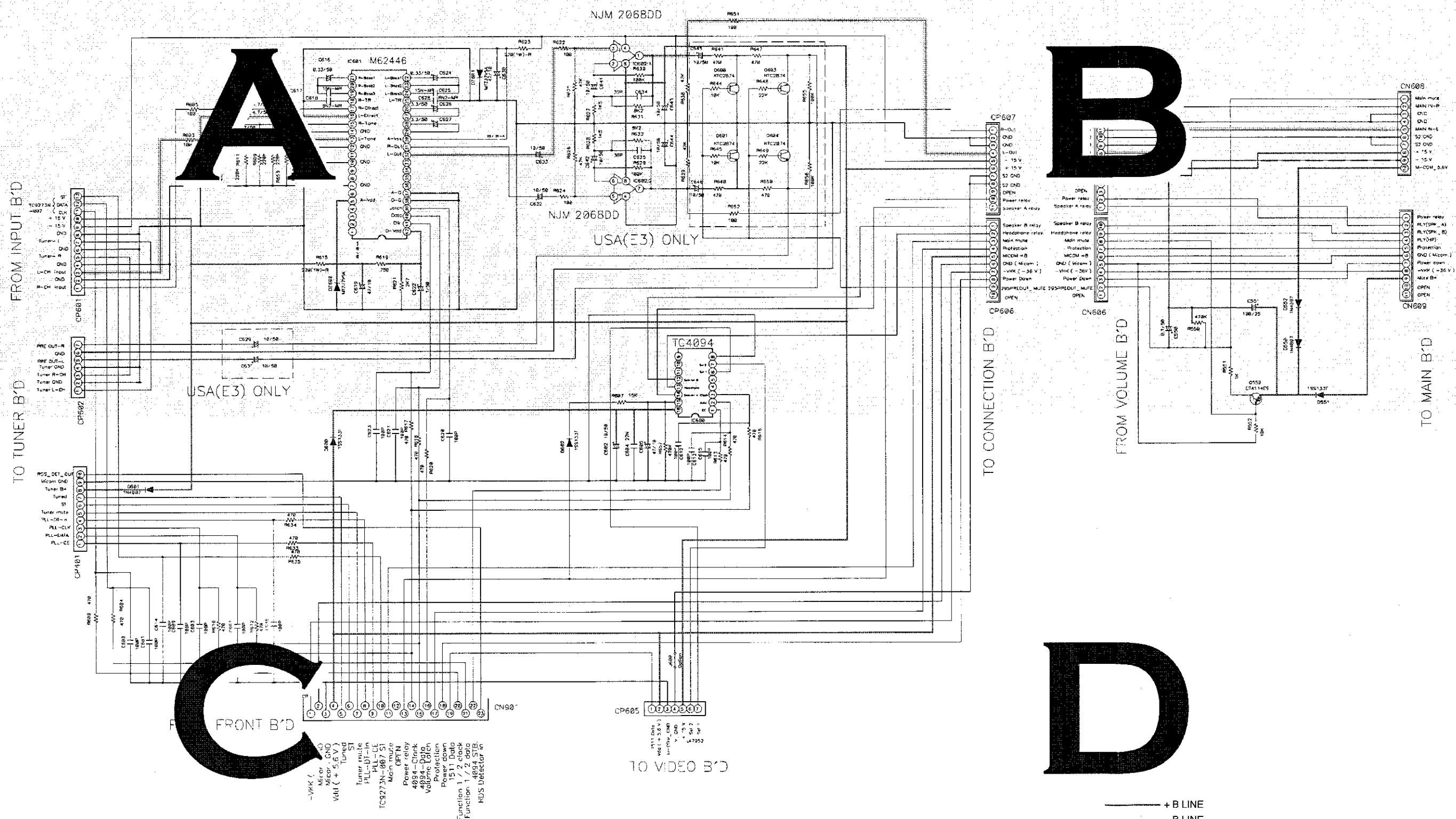
WARNING:
 DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAMS(2/5)

1 2 3 4 5 6 7 8 9 10 11

VOLUME SECTION

CONNECTION SECTION



A

B

C

D

FROM INPUT B'D

TO TUNER B'D

TO CONNECTION B'D

FROM VOLUME B'D

TO MAIN B'D

FRONT B'D

TO VIDEO B'D

NOTICE
 ALL RESISTANCE VALUES IN OHM. k=1,000 OHM M=1,000,000 OHM
 ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
 EACH VOLTAGE AND CURRENT ARE MEASURED AT MO SIGNAL INPUT
 CONDITION.
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR
 NOTICE.

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

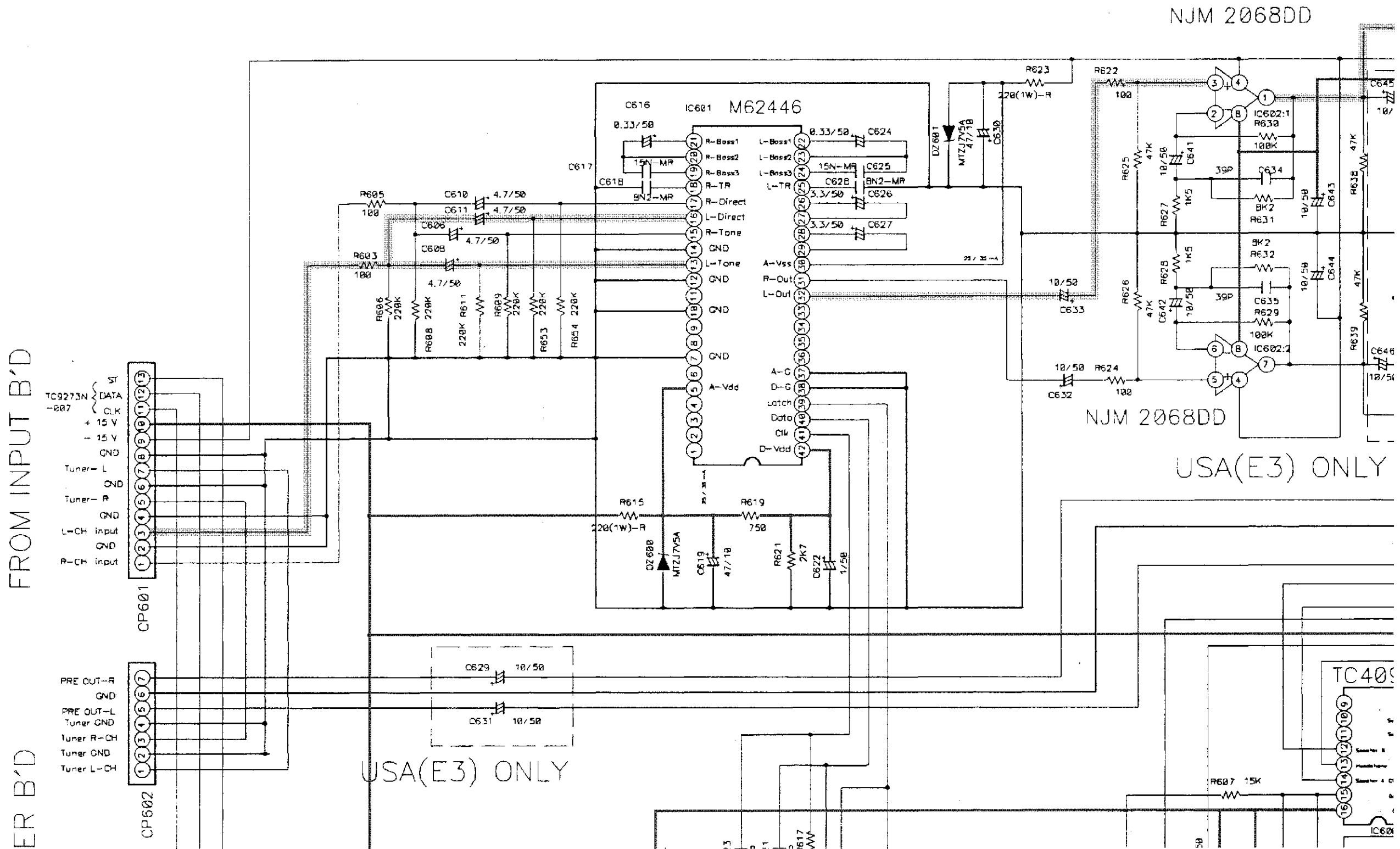
CAUTION:
 Before returning the unit to the customer, make sure you make either (1) a
 leakage current check or (2) a line to chassis resistance check. If the leakage
 current exceeds 0.5 milliamps, or if the resistance from chassis to either side
 of the power card is less than 480kohms, the unit is defective.

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

— + B LINE
 - - - - - B LINE
 ~~~~~ SIGNAL LINE

SCHEMATIC DIAGRAMS(2/5)  
 VOLUME UNIT  
 CONNECTOR UNIT

# VOLUME SECTION



6

7

8

9

10

11

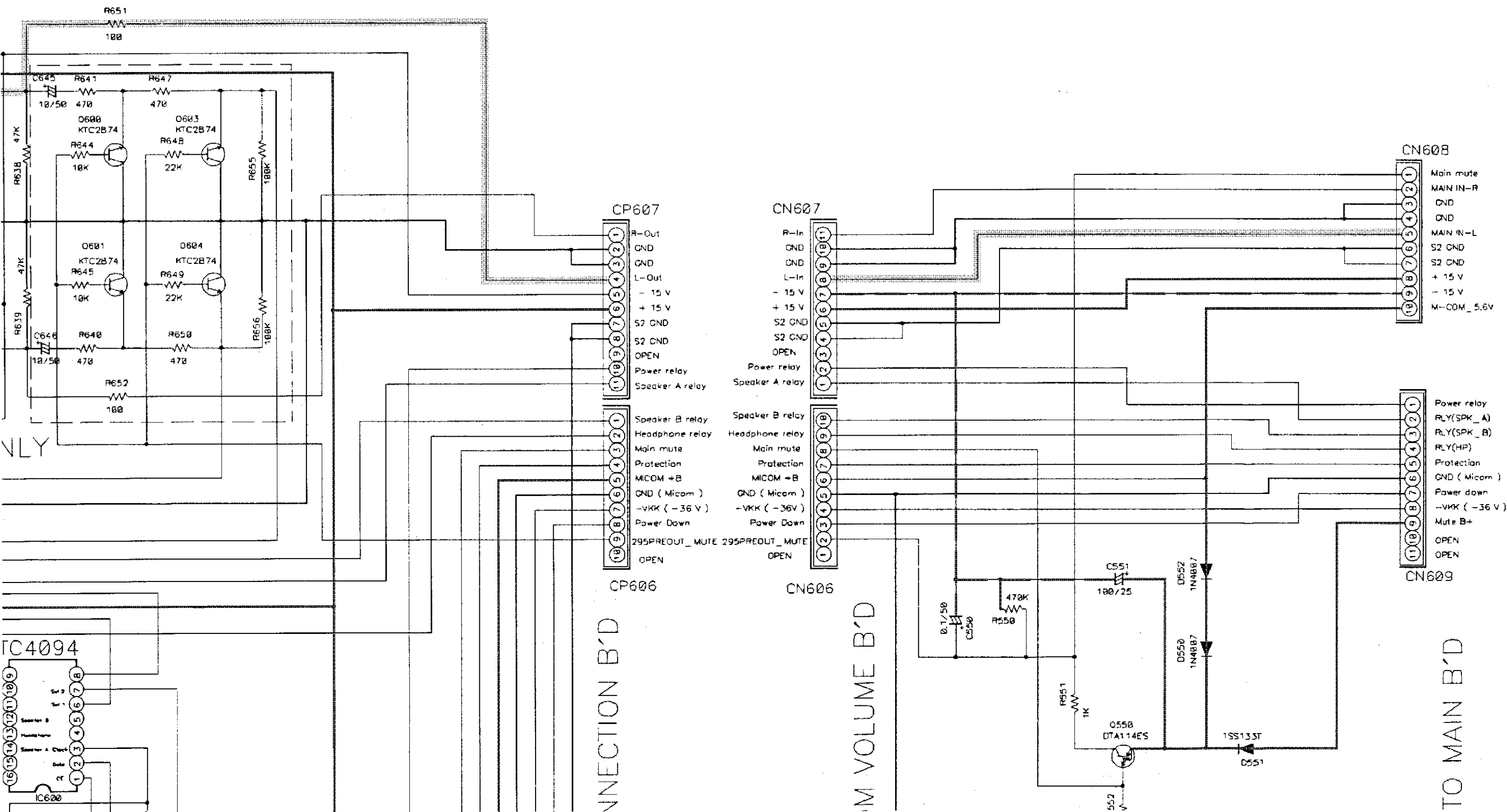
# CONNECTION SECTION

A

B

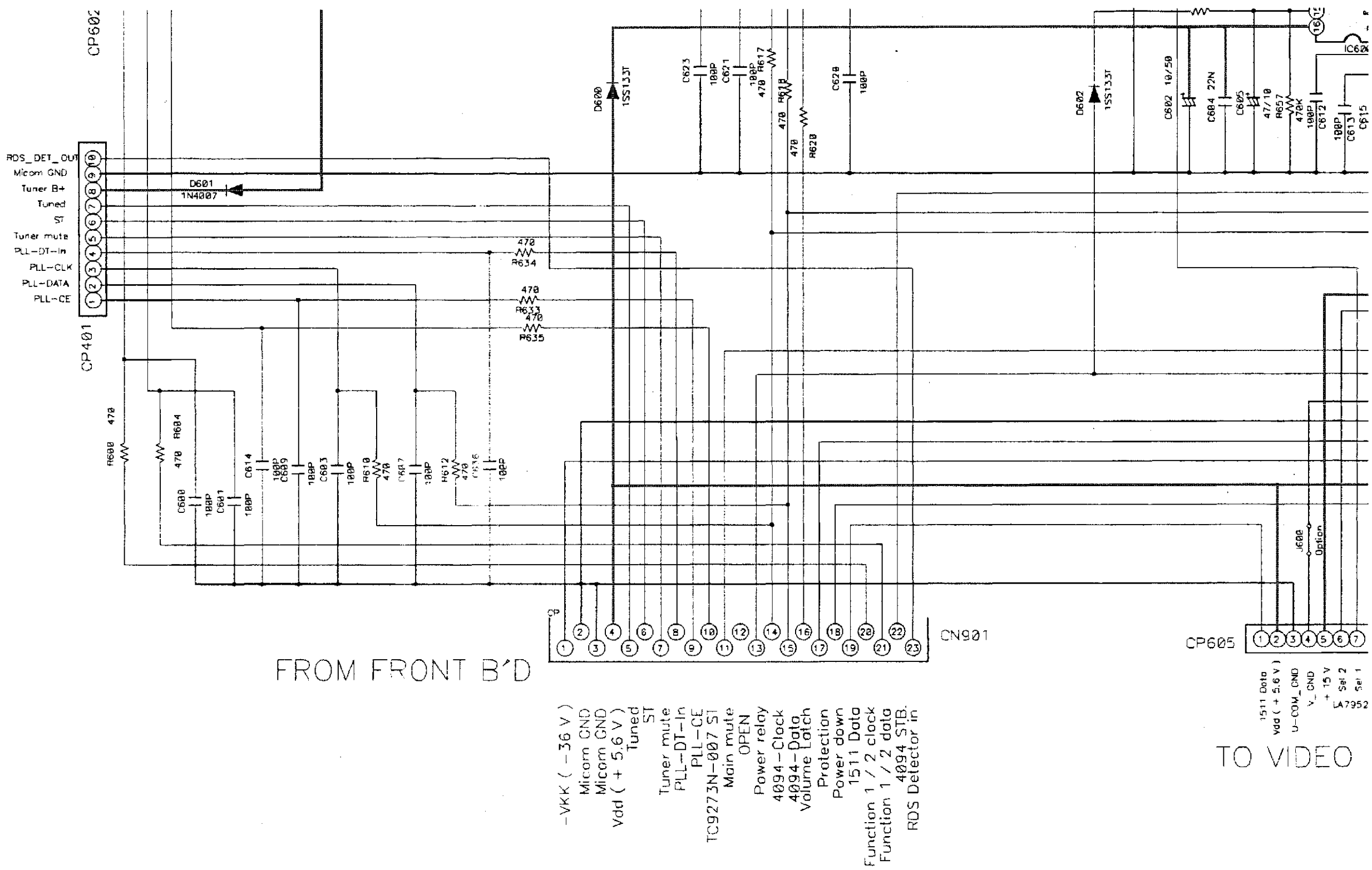
C

D





TO TUNER I



FROM FRONT B'D

**NOTICE**

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 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.

**WARNING:**

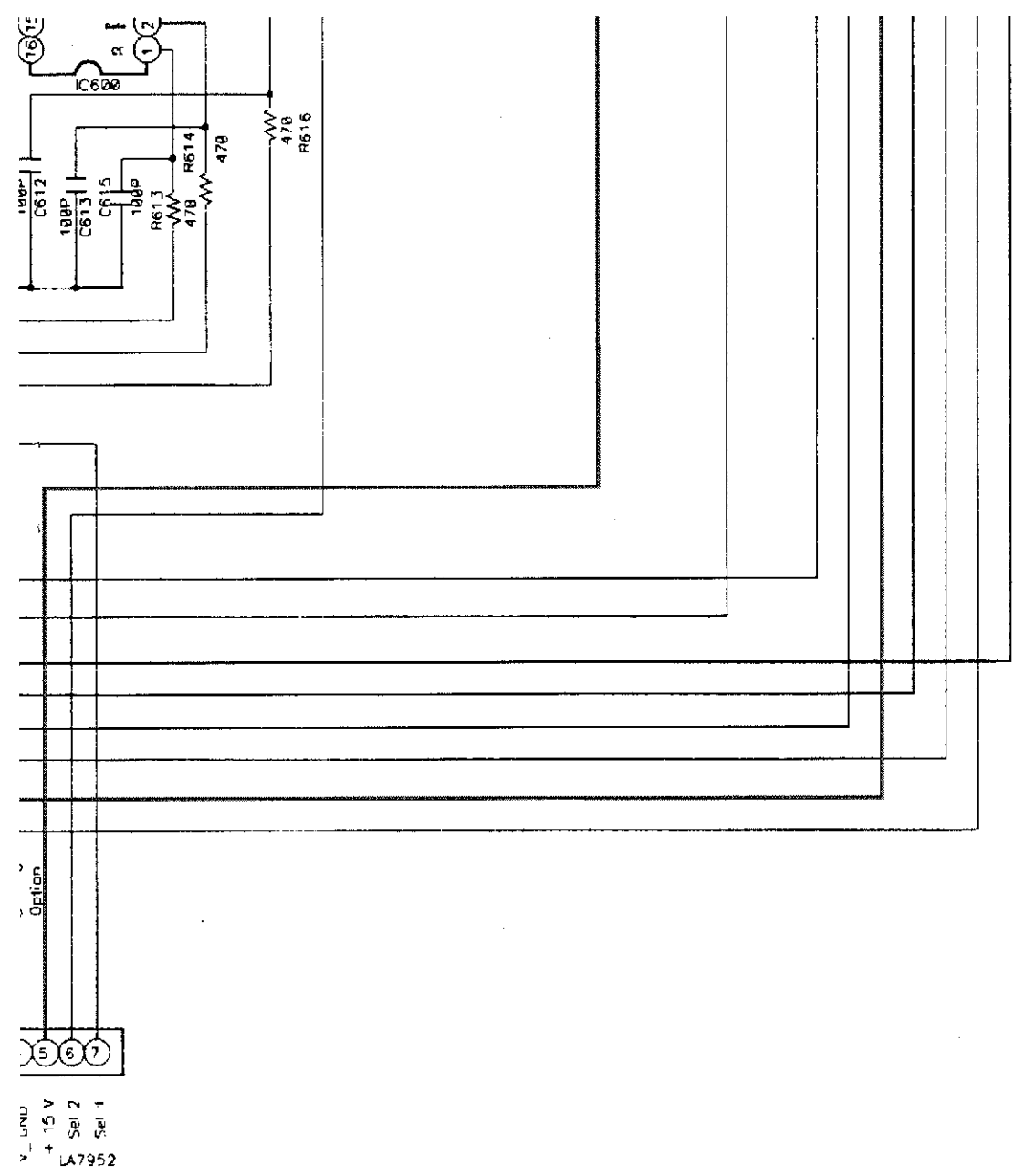
Parts marked with this symbol h:  
 Use ONLY replacement parts recommen

**CAUTION:**

Before returning the unit to the custome  
 leakage current check or (2) a line to ch  
 current exceeds 0.5 milliamps, or if the l  
 of the power card is less than 460kohms:

**WARNING:**

DO NOT return the unit to the customer  
 corrected.



TO CONNECT

FROM V

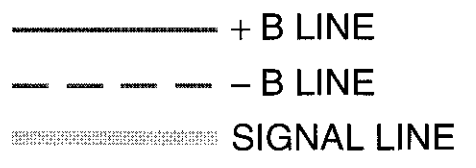


0551

TO N

LA7952  
+ 15 V  
Sel 2  
Sel 1

LEO B'D



have critical characteristics.  
recommended by the manufacture.

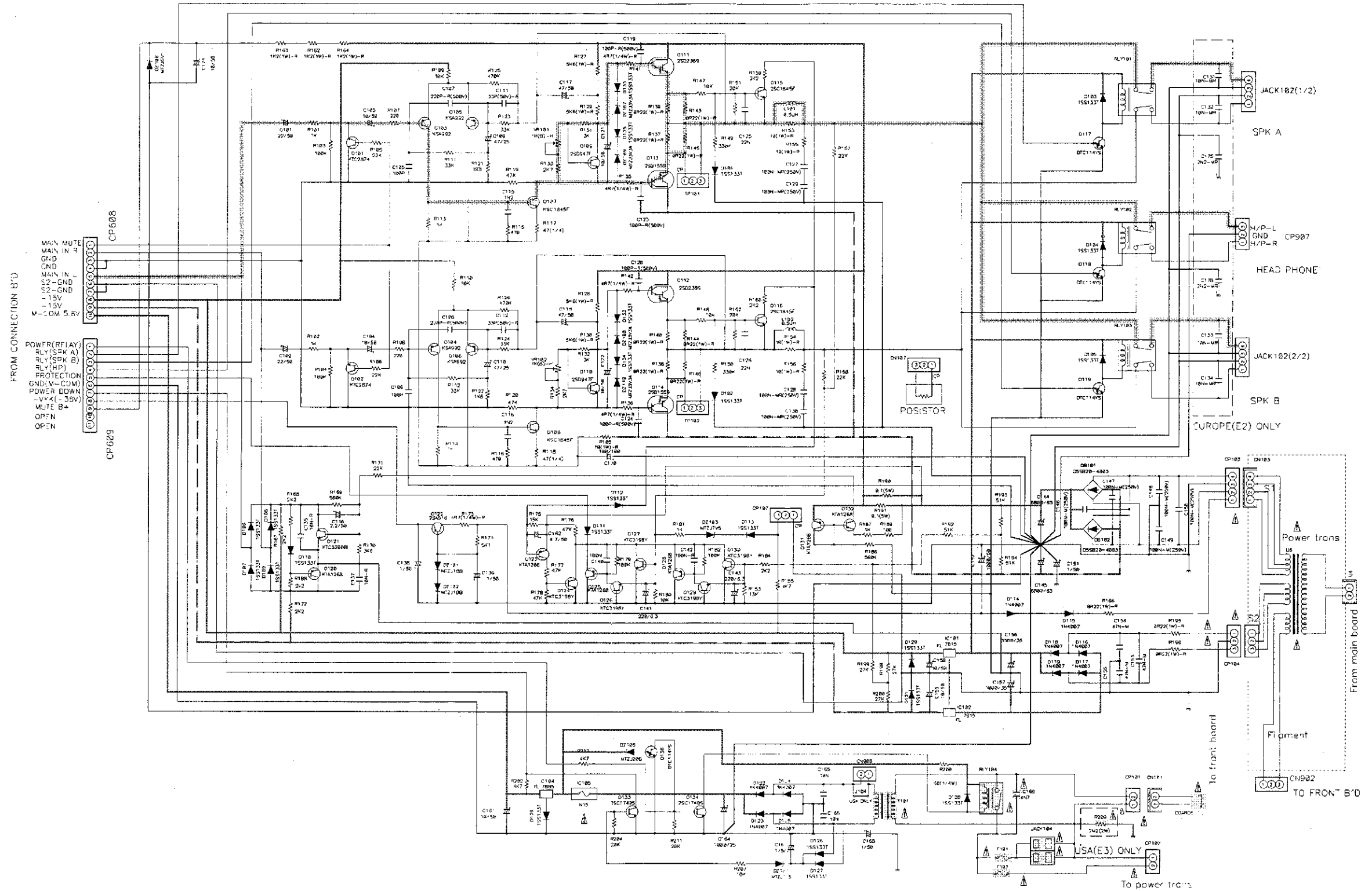
customer, make sure you make either (1) a  
one to chassis resistance check. If the leakage  
or if the resistance from chassis to either side  
30kohms, the unit is defective.

customer until the problem is located and

SCHEMATIC DIAGRAMS(2/5)  
VOLUME UNIT  
CONNECTOR UNIT

E  
F  
G  
H

MAIN SECTION



FROM CONNECTION B'D

MAIN MUTE  
MAIN IN R  
GND  
S2-GND  
S2-GND  
-15V  
-15V  
M-1.0M 5.5V

POWER(RELAY)  
RLY(SPK A)  
RLY(SPK B)  
RLY(HP)  
PROTECTION  
GND(V-COM)  
POWER DOWN  
-VKK(-35V)  
MUTE B+  
OPEN

|          |           |            |
|----------|-----------|------------|
|          | F101      | F102       |
| USA(E3)  | 8A/125V   | 6.3A/125V  |
| EURC(E2) | 2.5A/250V | 3.15A/250V |

----- + B LINE  
----- - B LINE  
..... SIGNAL LINE

**NOTICE**  
ALL RESISTANCE VALUES IN OHM, k=1,000 OHM M=1,000,000 OHM  
ALL CAPACITANCE VALUES IN MICRO FARAD, P=MICRO-MICRO FARAD  
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CONDITION.  
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NOTICE.

**WARNING:**  
Parts marked with this symbol have critical characteristics.  
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**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 card is less than 460kohms, the unit is defective.

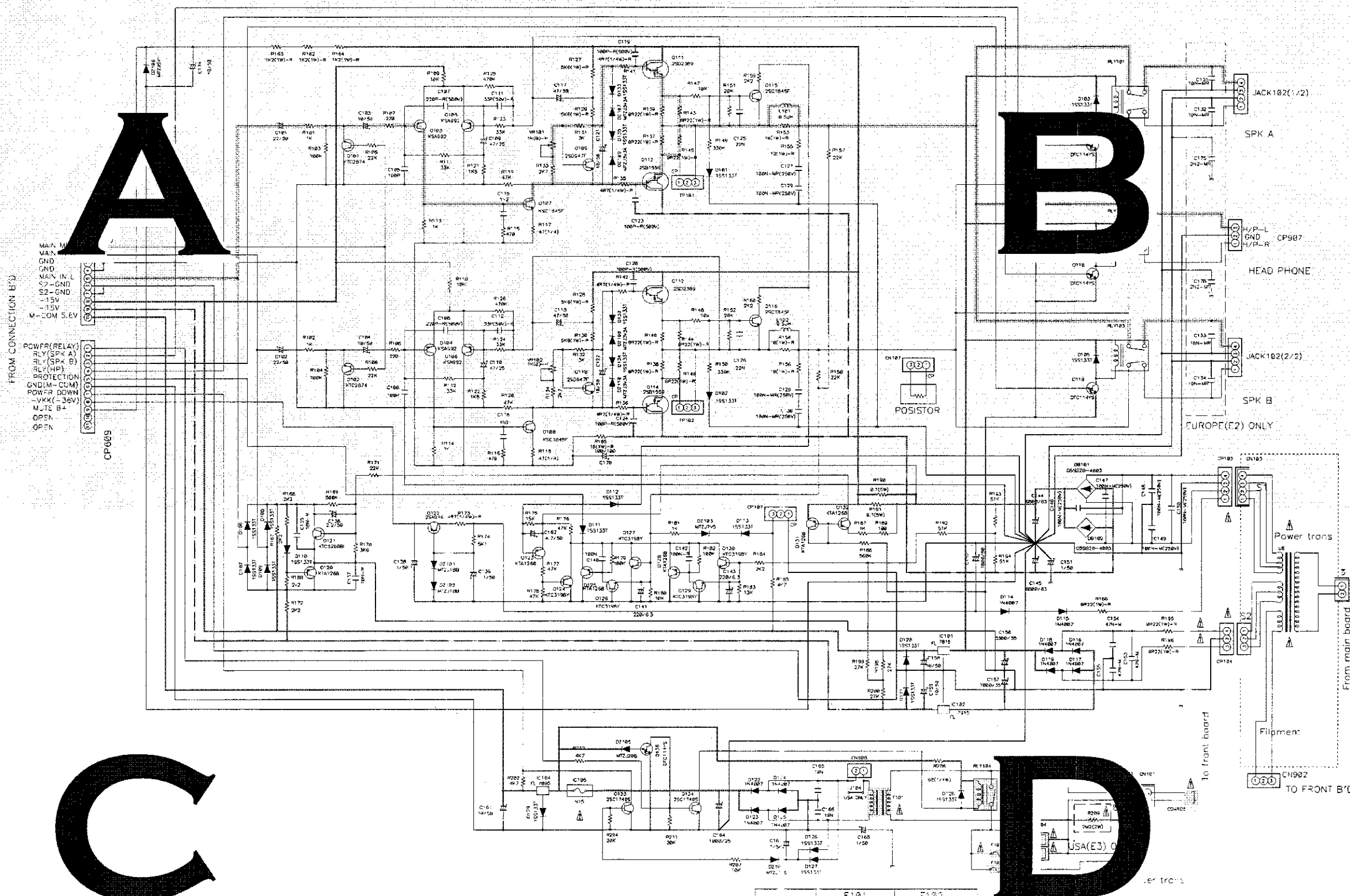
**WARNING:**  
DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAMS(3/5)  
MAIN UNIT

SCHEMATIC DIAGRAMS(3/5)

1 2 3 4 5 6 7 8 9 10 11

MAIN SECTION



FROM CONNECTION B'D

MAIN M  
MAIN L  
GND  
GND  
GND  
E2-GND  
-15V  
-15V  
M-COM 5.EV

CP669

PCWFR(RELAY)  
RLY(SP4 A)  
RLY(SP4 B)  
RLY(HP)  
PROTECTION  
GND(M-CUM)  
POWER DOWN  
-VKK(-30V)  
MUTE B+  
OPEN  
OPEN

JACK 102(1/2)

SPK A

H/P-L  
GND  
H/P-R

CP987

HEAD PHONE

JACK 102(2/2)

SPK B

EUROPE(E2) ONLY

Power trans

Filament

TO FRONT B'D

CP183

CP185

CP187

CP189

CP191

CP193

CP195

CP197

CP199

CP201

CP203

CP205

CP207

CP209

C

D

|             |           |            |
|-------------|-----------|------------|
|             | F101      | F102       |
| U: 4(E3)    | 8A/125V   | 6.3A/125V  |
| EJRC -E(E2) | 2.5A/250V | 3.15A/250V |

— + B LINE  
 - - - - B LINE  
 ······ SIGNAL LINE

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 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 millamps, or if the resistance from chassis to either side  
 of the power card is less than 460kohms, the unit is defective.

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

SCHEMATIC DIAGRAMS(3/5)  
MAIN UNIT

# SCHEMATIC DIAGRAMS(3/5)

1

2

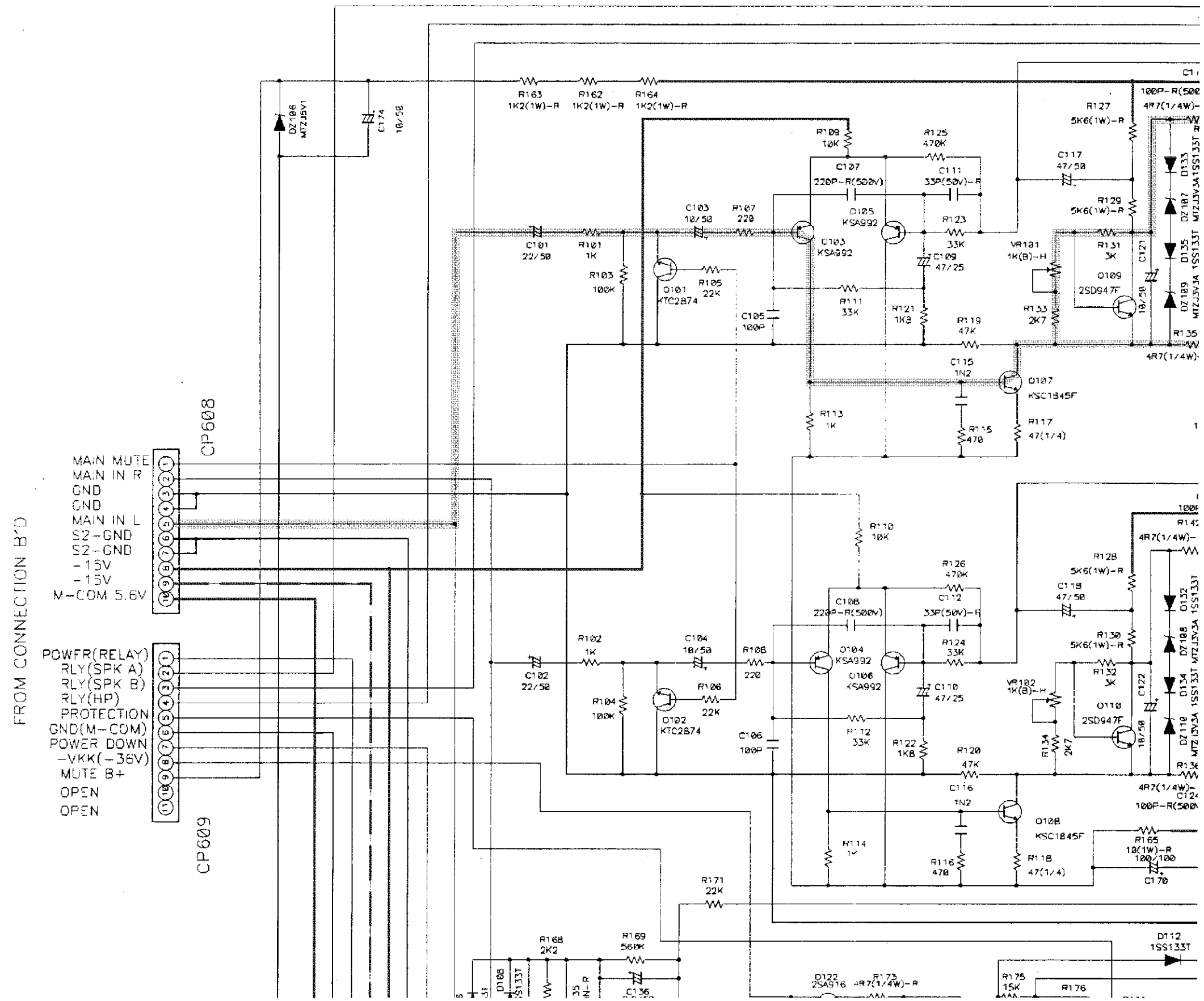
3

4

5

6

# MAIN



6

7

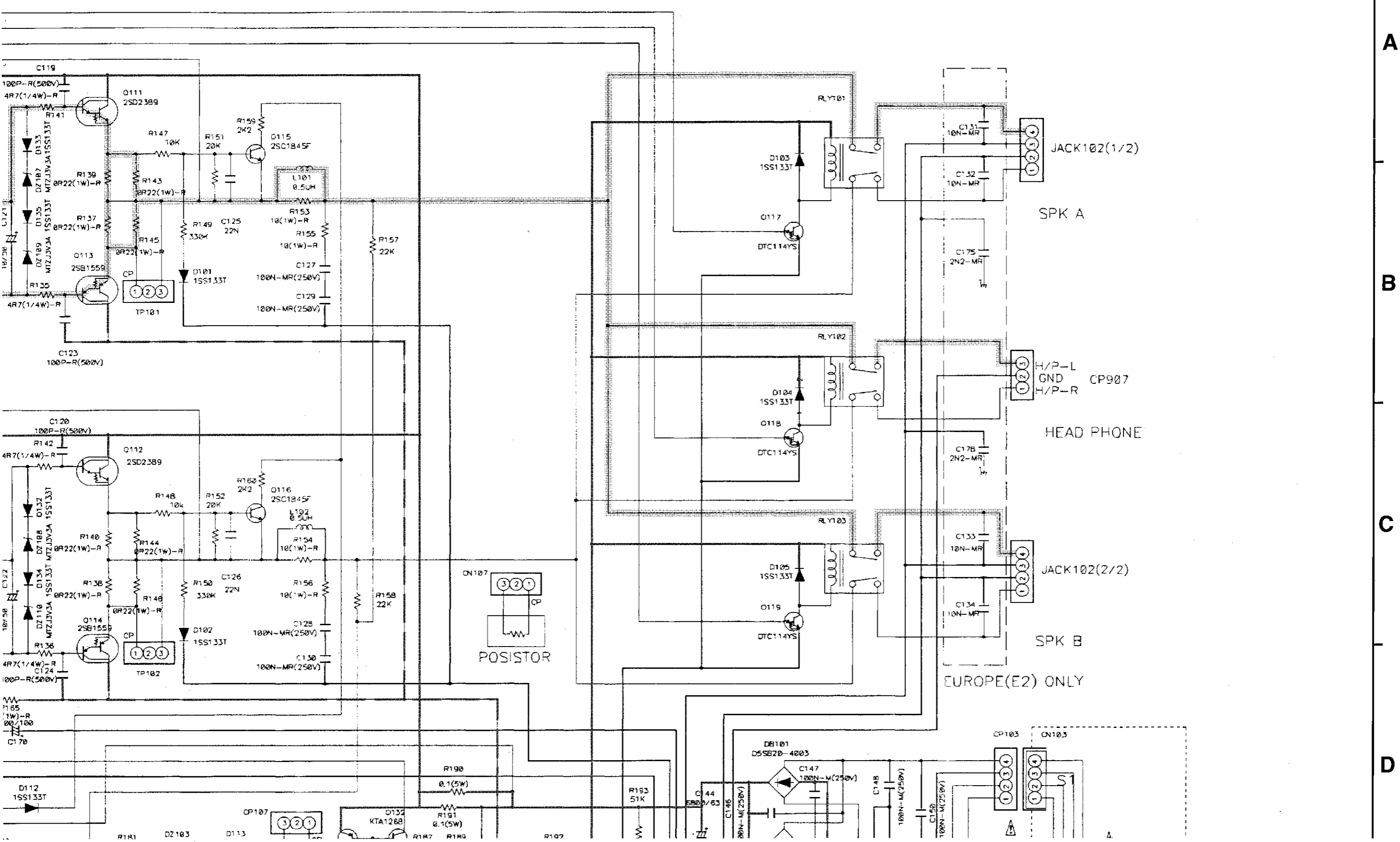
8

9

10

11

# MAIN SECTION

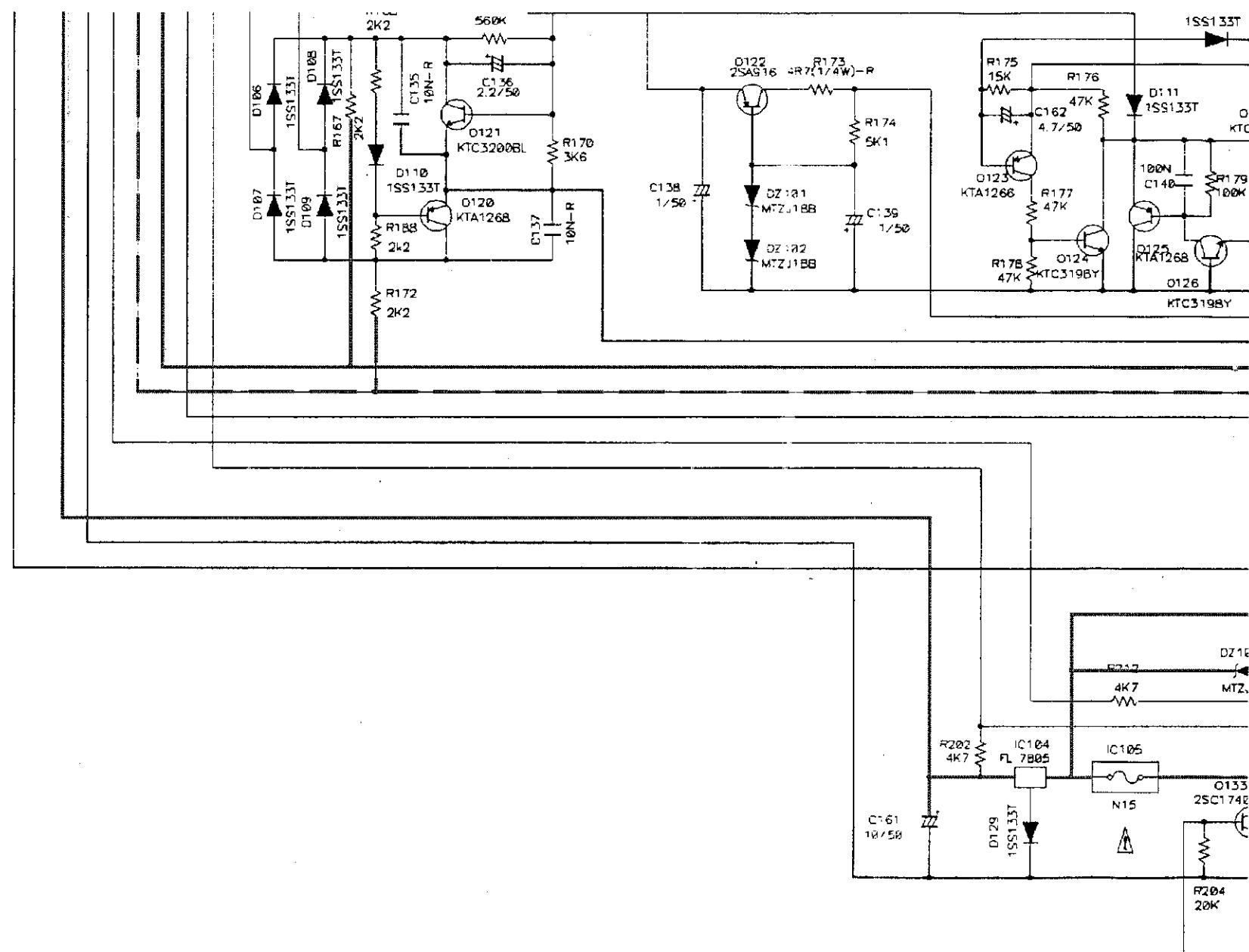


A

B

C


D



**NOTICE**

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 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.

**WARNING:**

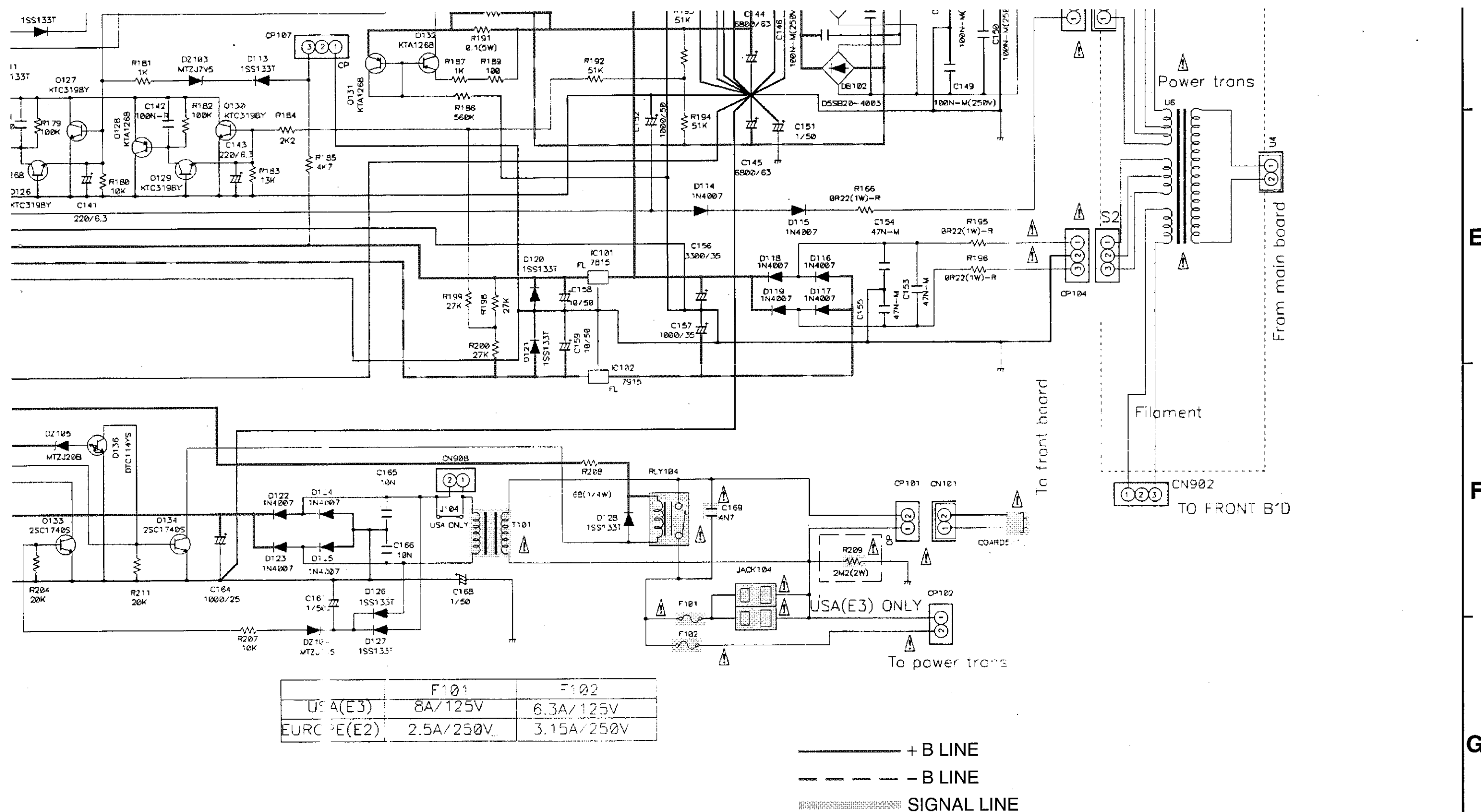
Parts marked with this symbol  have  
 Use ONLY replacement parts recommended

**CAUTION:**

Before returning the unit to the customer, run  
 leakage current check or (2) a line to chassis  
 current exceeds 0.5 milliamps, or if the resi-  
 of the power card is less than 460kohms, the

**WARNING:**

DO NOT return the unit to the customer un-  
 corrected.



|            | F101      | F102       |
|------------|-----------|------------|
| USA(E3)    | 8A/125V   | 6.3A/125V  |
| EUROPE(E2) | 2.5A/250V | 3.15A/250V |

have critical characteristics.  
 recommended by the manufacture.

tomer, make sure you make either (1) a  
 to chassis resistance check. If the leakage  
 the resistance from chassis to either side  
 ohms, the unit is defective.

omer until the problem is located and

### SCHEMATIC DIAGRAMS(3/5) MAIN UNIT

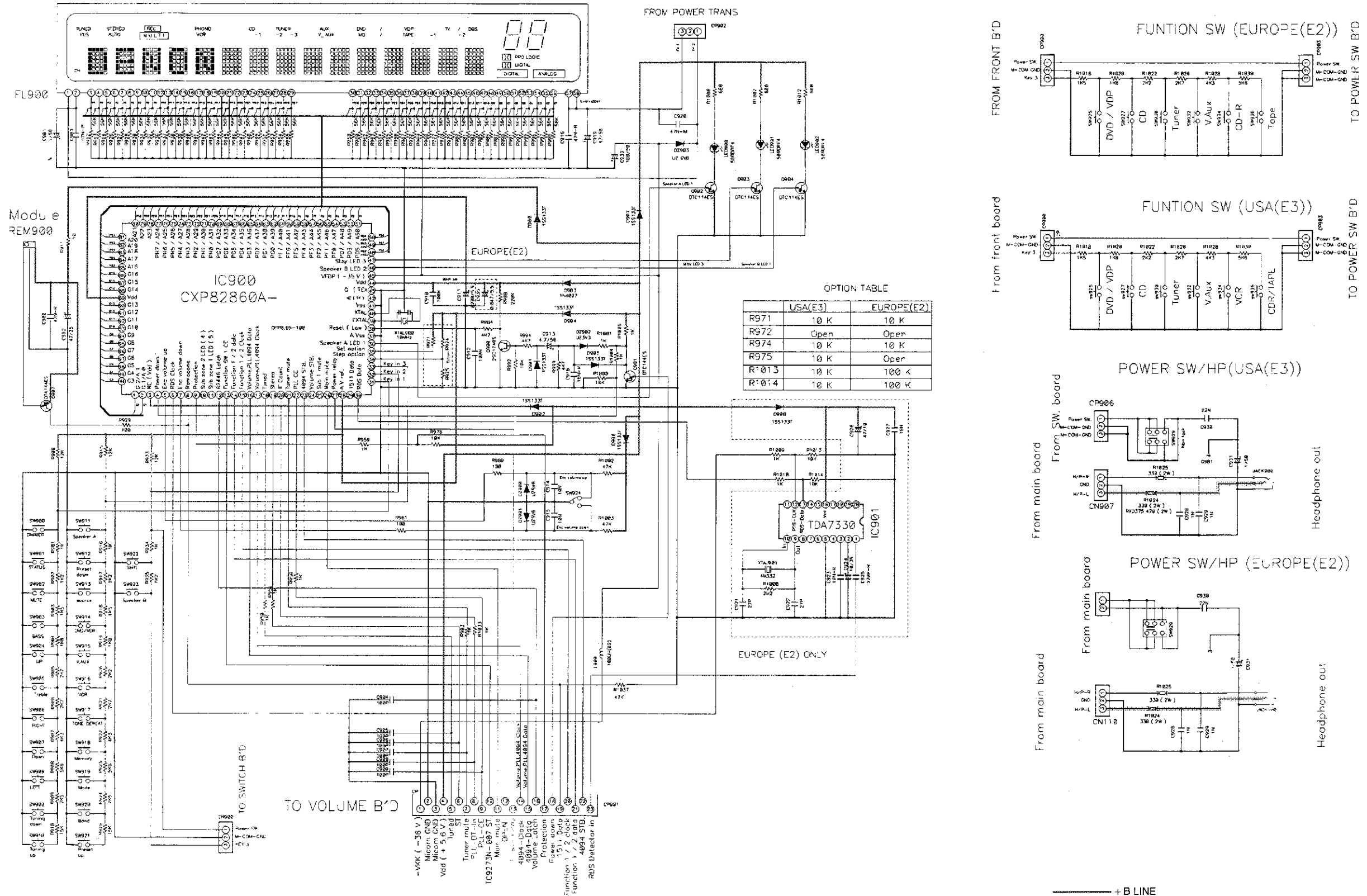
E  
F  
G  
H



SCHEMATIC DIAGRAMS(4/5)

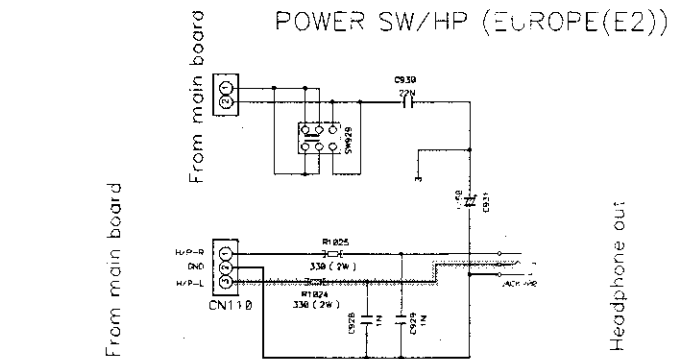
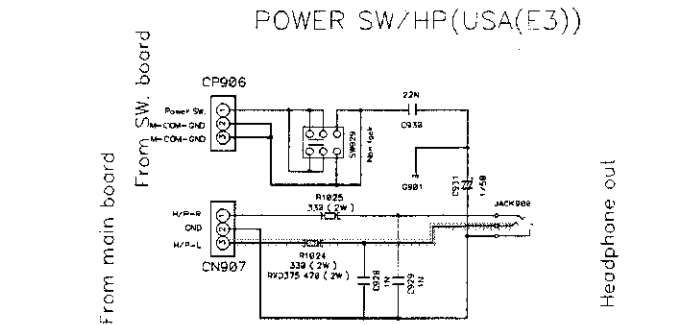
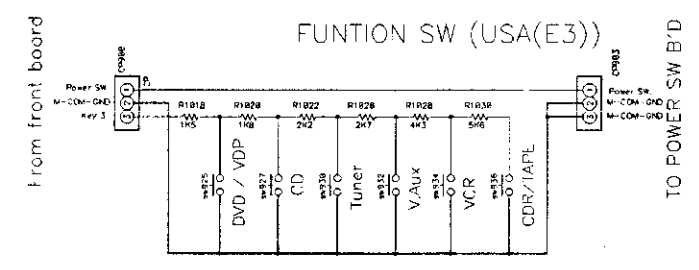
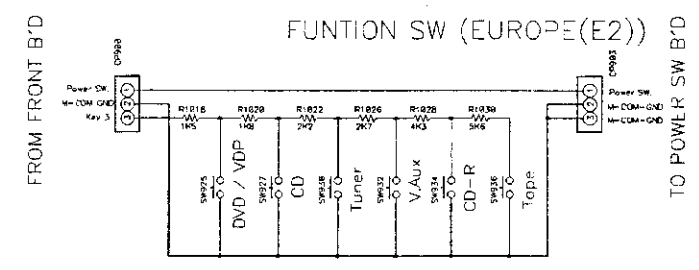
1 2 3 4 5 6 7 8 9 10 11

FRONT SECTION



OPTION TABLE

|       | USA(E3) | EUROPE(E2) |
|-------|---------|------------|
| R971  | 10 K    | 10 K       |
| R972  | Open    | Open       |
| R974  | 10 K    | 10 K       |
| R975  | 10 K    | Open       |
| R*013 | 10 K    | 100 K      |
| R*014 | 10 K    | 100 K      |



**NOTICE**  
 ALL RESISTANCE VALUES IN OHM. k=1,000 OHM M=1,000,000 OHM  
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 NOTICE.

**WARNING:**  
 Parts marked with this symbol  $\Delta$  have critical characteristics.  
 Use ONLY replacement parts recommended by the manufacture.

**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 card is less than 460kohms, the unit is defective.

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

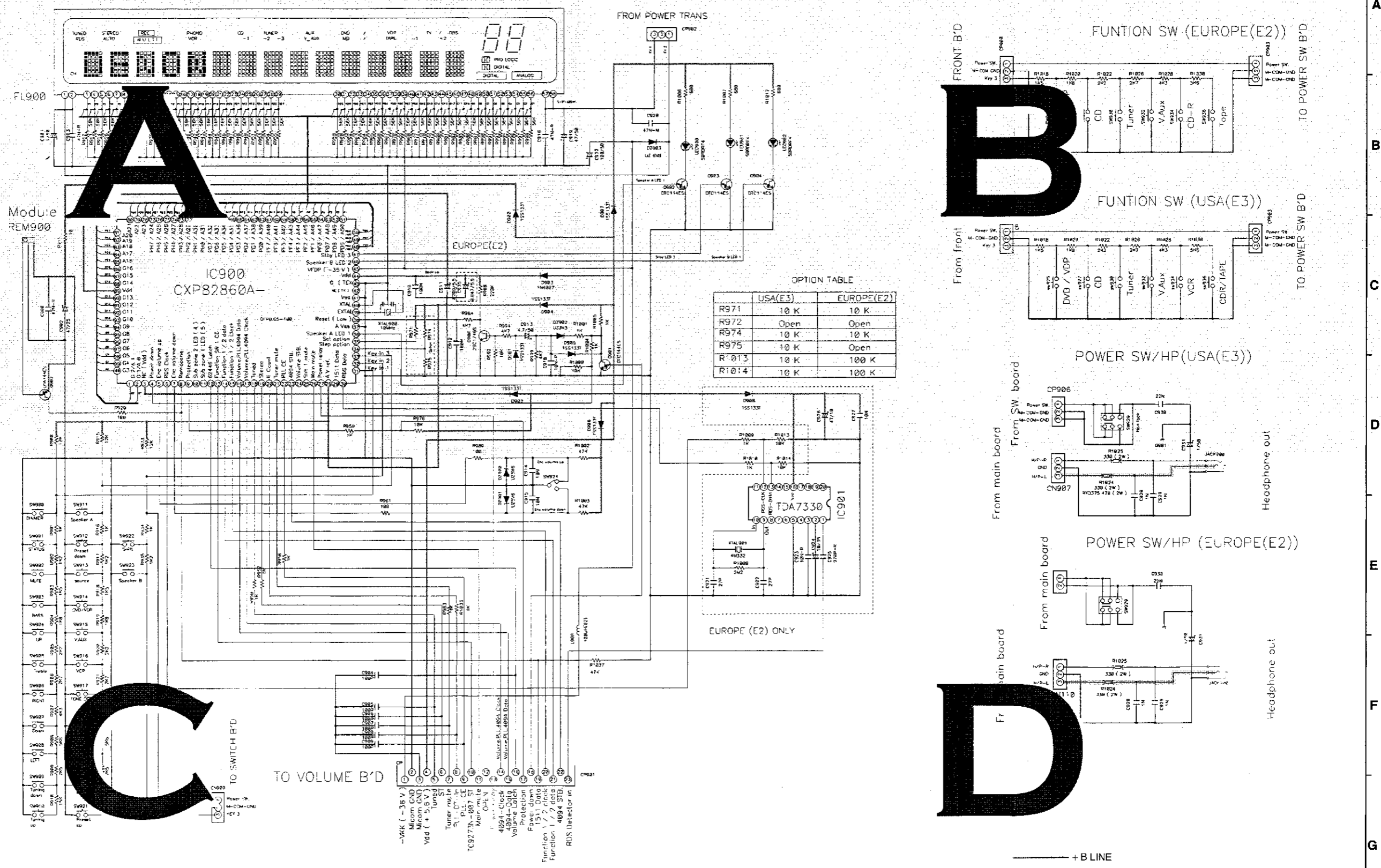
— + B LINE  
 - - - - - SIGNAL LINE

SCHEMATIC DIAGRAMS(4/5)  
 FRONT UNIT  
 SWITCH UNIT  
 POWER SW/HP UNIT

SCHEMATIC DIAGRAMS(4/5)

1 2 3 4 5 6 7 8 9 10 11

FRONT SECTION

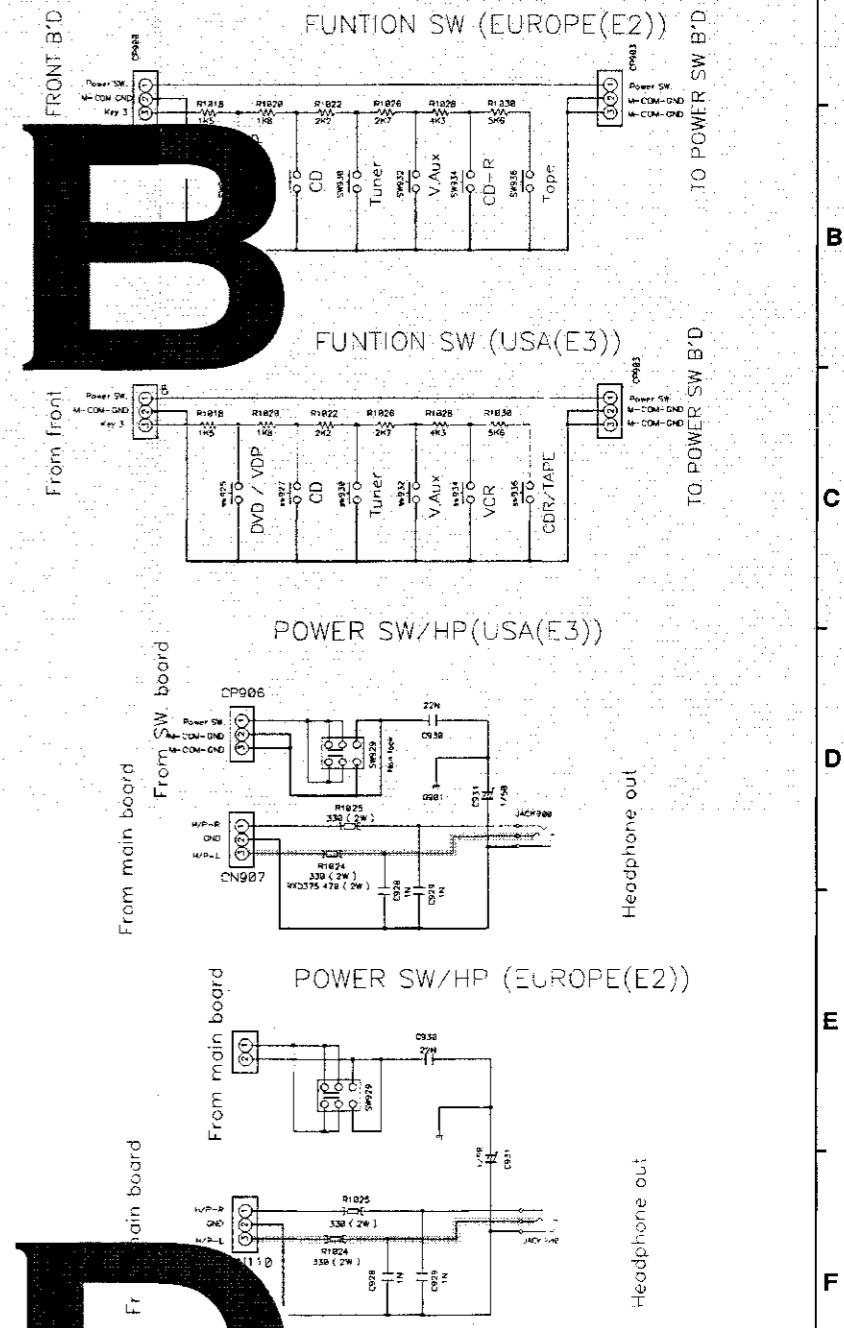


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 NOTICE.

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 Before returning the unit to the customer, make sure you make either (1) a  
 leakage current check or (2) a line to chassis resistance check. If the leakage  
 current exceeds 0.5 milliamps, or if the resistance from chassis to either side  
 of the power card is less than 460kohms, the unit is defective.

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



— + B LINE  
 - - - - - SIGNAL LINE

SCHEMATIC DIAGRAMS(4/5)  
 FRONT UNIT  
 SWITCH UNIT  
 POWER SW/HP UNIT



# SECTION

6

7

8

9

10

11

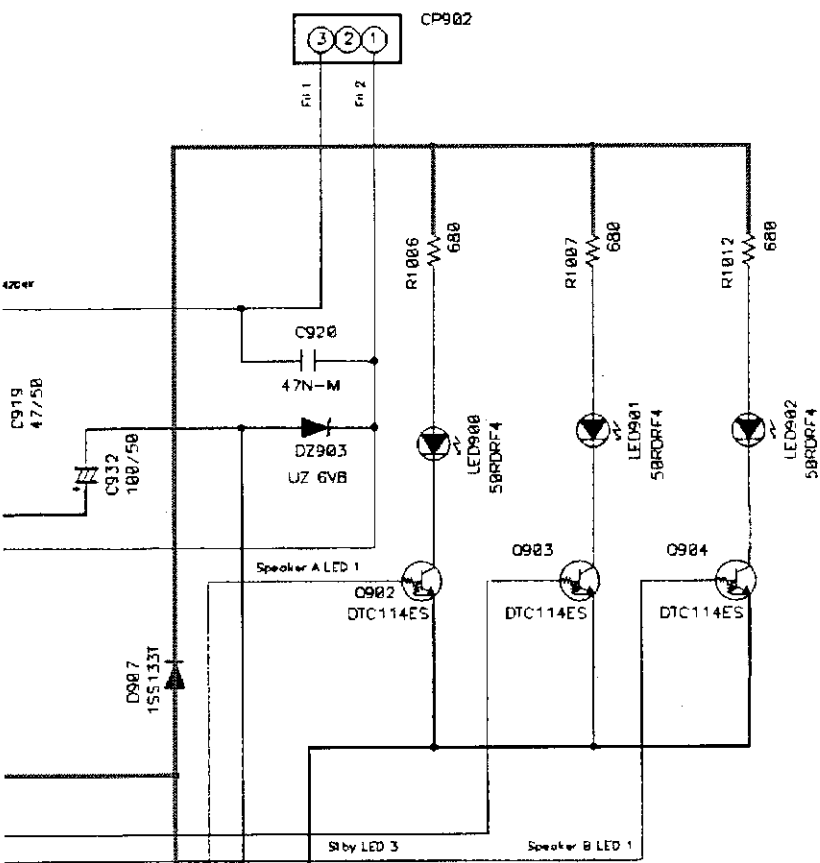
A

B

C

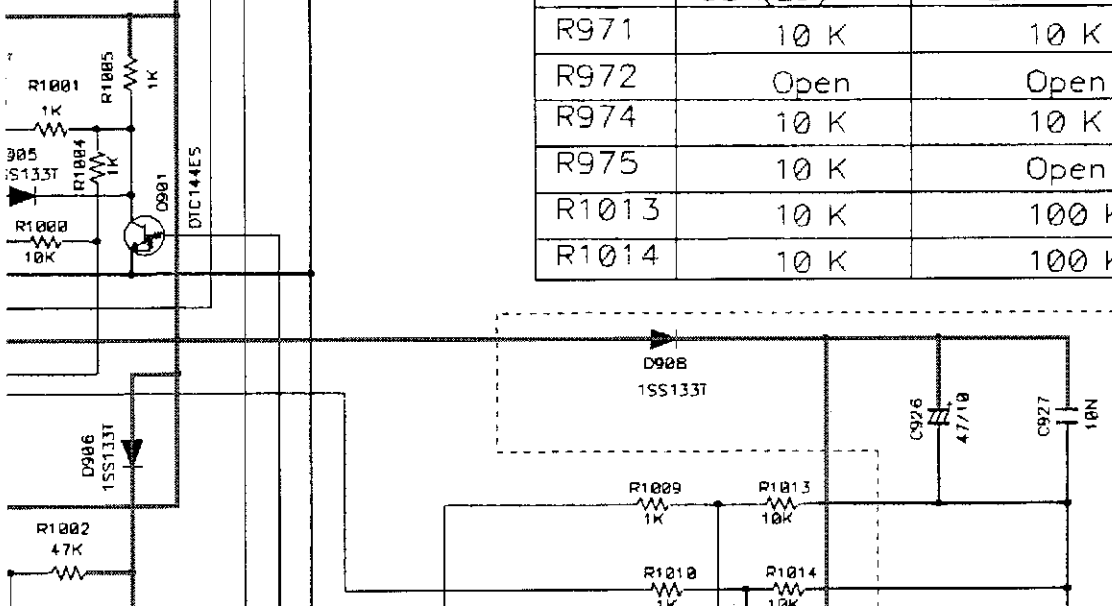
D

FROM POWER TRANS



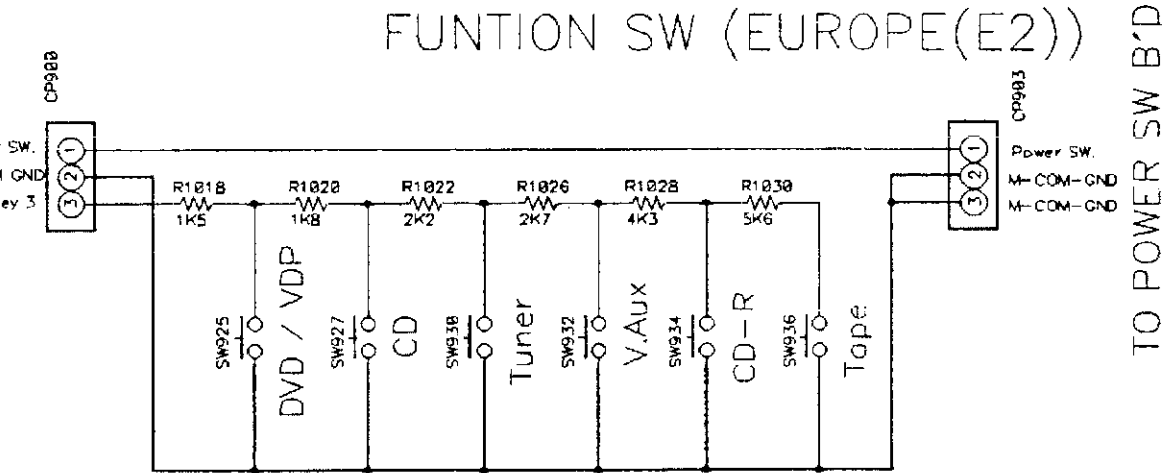
OPTION TABLE

|       | USA(E3) | EUROPE(E2) |
|-------|---------|------------|
| R971  | 10 K    | 10 K       |
| R972  | Open    | Open       |
| R974  | 10 K    | 10 K       |
| R975  | 10 K    | Open       |
| R1013 | 10 K    | 100 K      |
| R1014 | 10 K    | 100 K      |



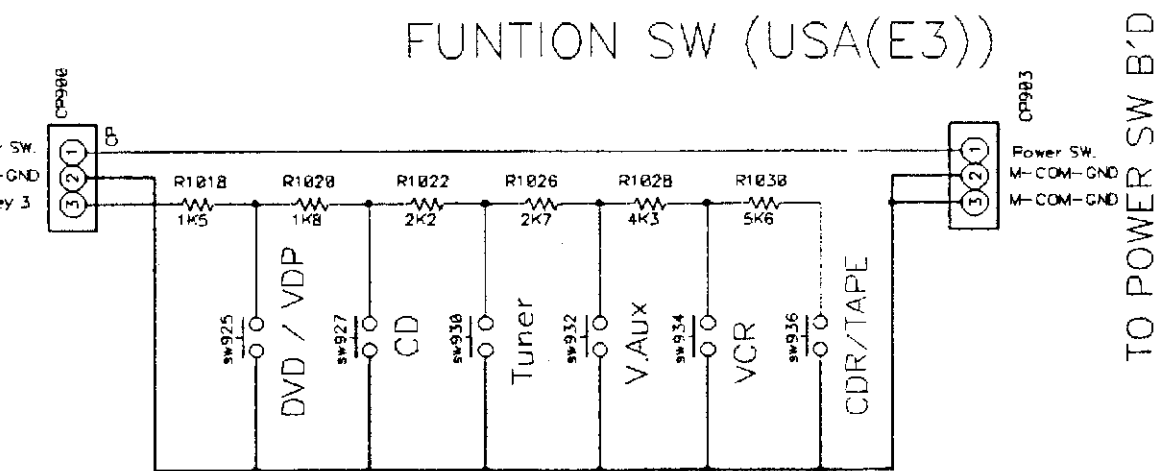
FROM FRONT B'D

From front board



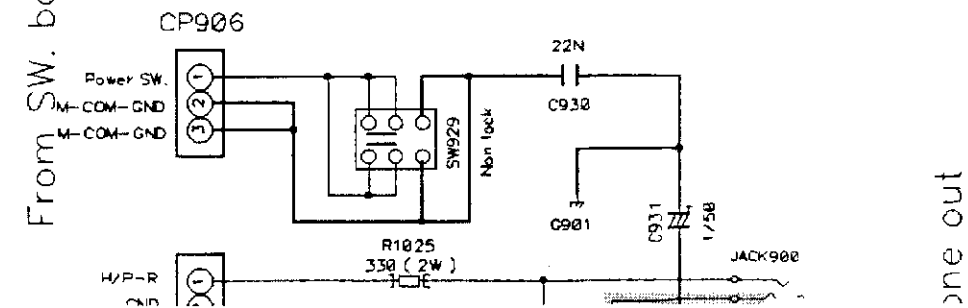
From front board

From Sw. board

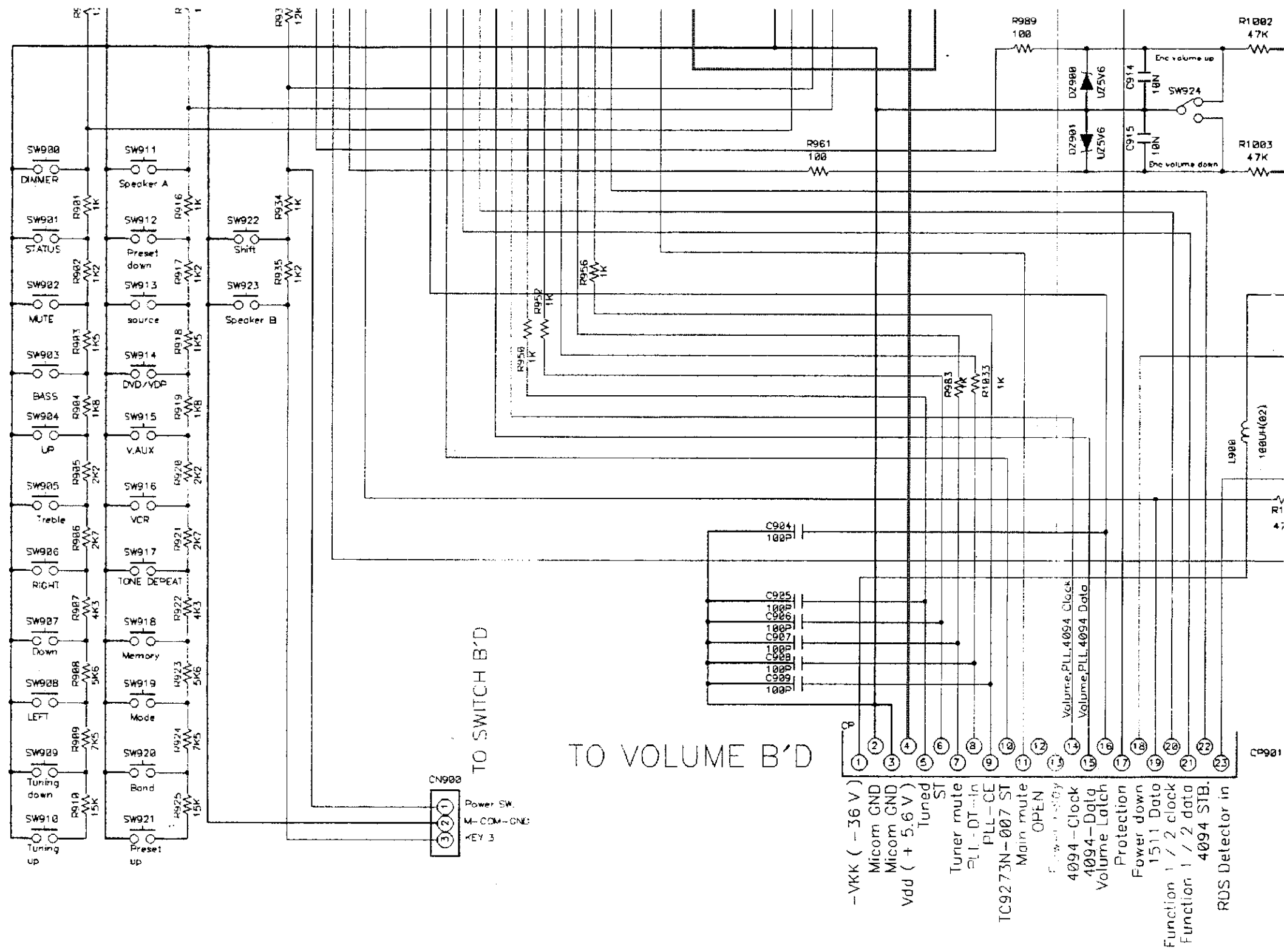


From Sw. board


POWER SW/HP(USA(E3))

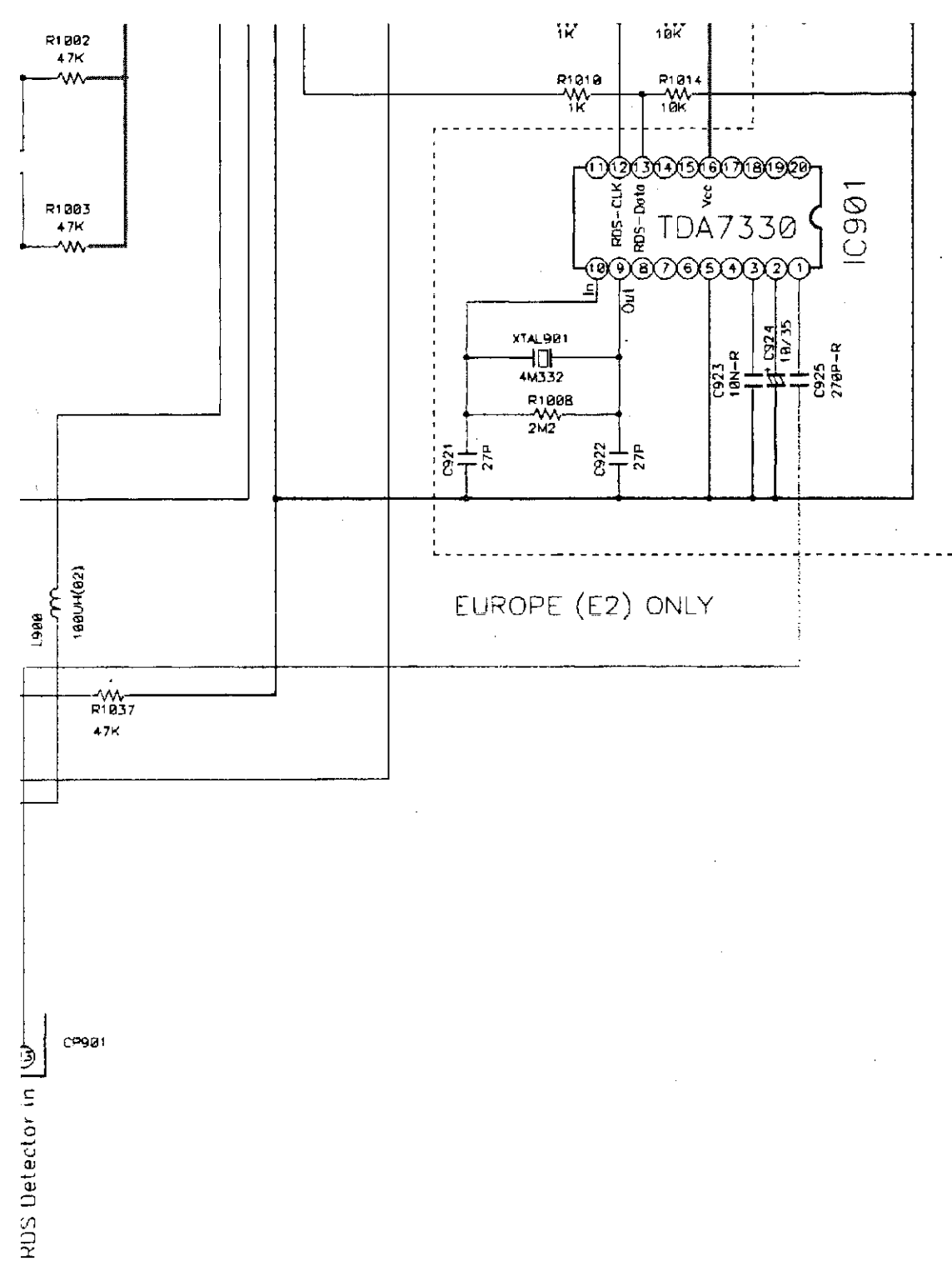


one out

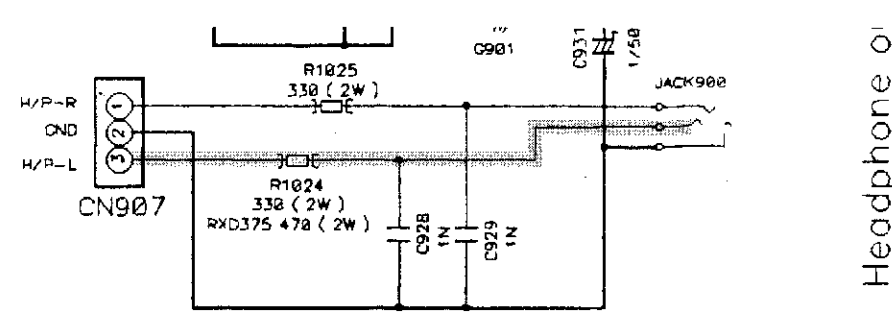


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**WARNING:**  
 Parts marked with this symbol  have  
 Use ONLY replacement parts recommended.  
**CAUTION:**  
 Before returning the unit to the customer  
 leakage current check or (2) a line to ch  
 current exceeds 0.5 milliamps, or if the r  
 of the power card is less than 460kohms  
**WARNING:**  
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 corrected.



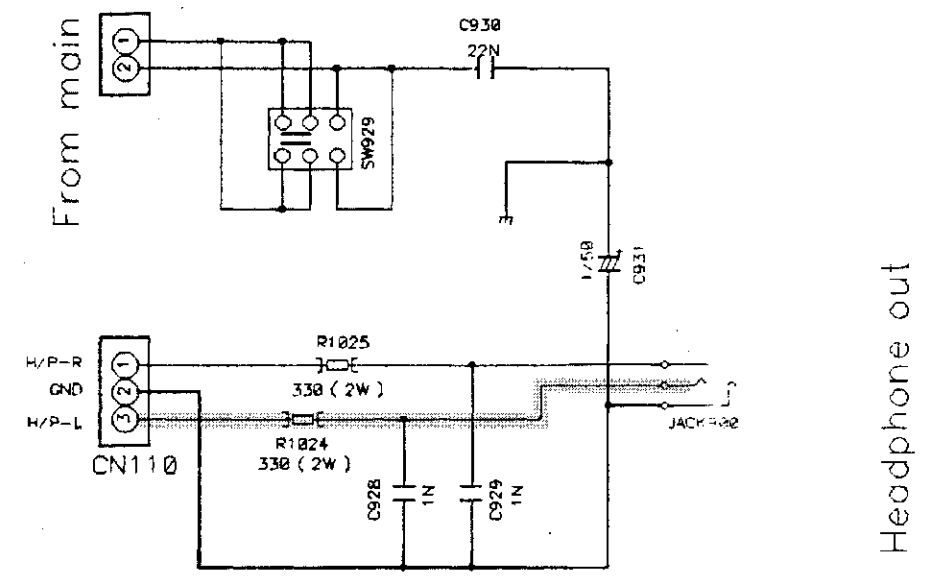
From main boc



Headphone o

POWER SW/HP (EUROPE(E2))

From main board



Headphone out

— + B LINE  
 ▨ SIGNAL LINE

▨ have critical characteristics. commended by the manufacture.

ustomer, make sure you make either (1) a ne to chassis resistance check. If the leakage or if the resistance from chassis to either side 30kohms, the unit is defective.

ustomer until the problem is located and

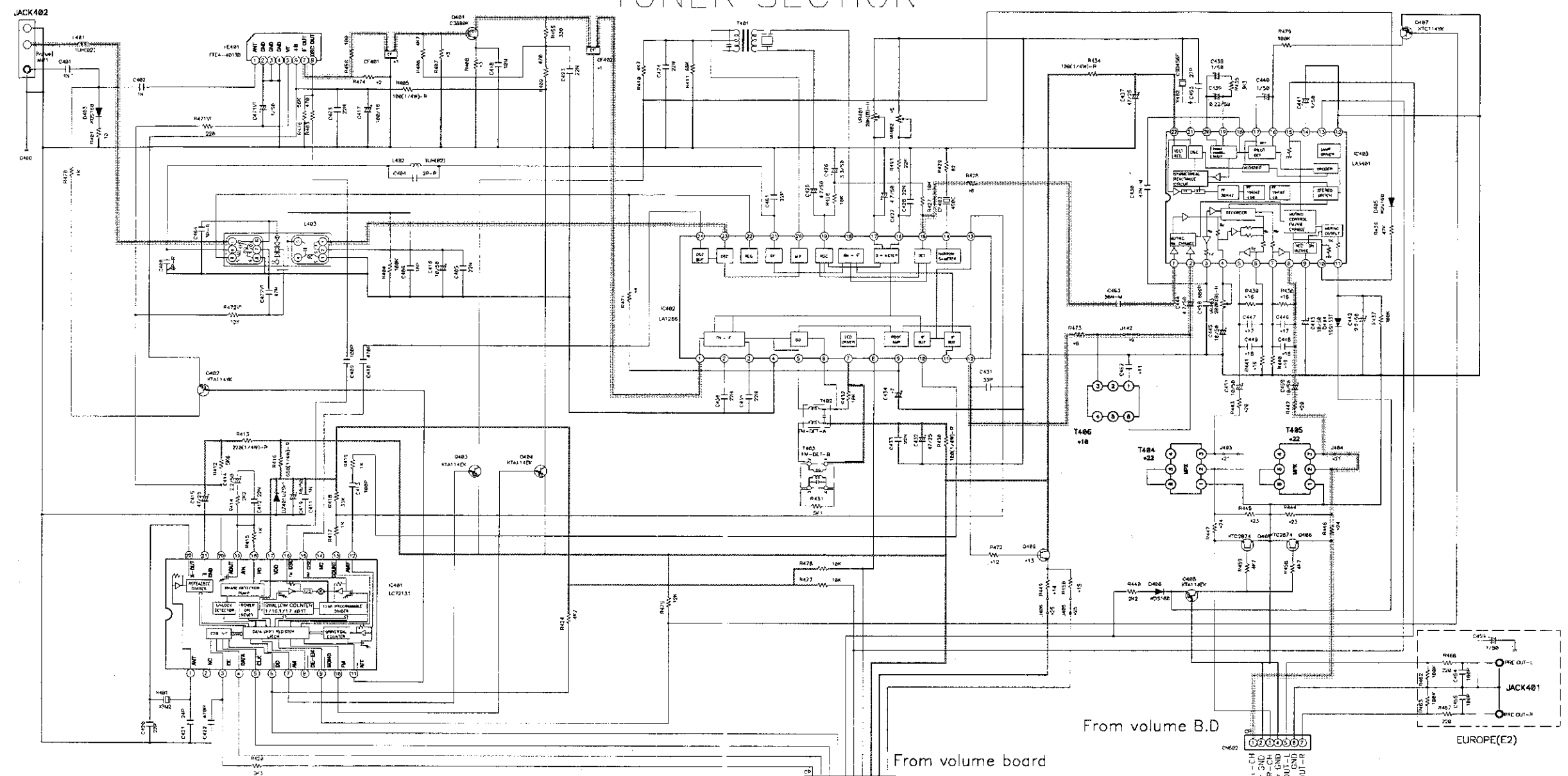
SCHEMATIC DIAGRAMS(4/5)  
 FRONT UNIT  
 SWITCH UNIT  
 POWER SW/HP UNIT

F  
E  
F  
G  
H

**SCHEMATIC DIAGRAMS(5/5)**

1 2 3 4 5 6 7 8 9 10 11

**TUNER SECTION**



**TUNER BOARD**

| R-NO. | USA(E3)     | EUROPE(E2) |
|-------|-------------|------------|
| *1    | CF401/CF402 | SFE10.7MA8 |
| *2    | R474        | 100        |
| *3    | R407/R408   | 470/1.2K   |
| *4    | R471        | 10K        |
| *5    | VR402       | 50K(B)-H   |
| *6    | R428        | 3.3K       |
| *7    | C434        | 1/50       |
| *8    | R473        | 0          |

| R-NO. | USA(E3)   | EUROPE(E2)  |
|-------|-----------|-------------|
| *9    | J442      | JUMPER      |
| *10   | T486      | ANTI-BIRDIE |
| *11   | C452      | 470P        |
| *12   | R472      | 100         |
| *13   | O489      | 03BB05      |
| *14   | R449      | 3.9K        |
| *15   | R450      | 1K          |
| *16   | R438,R439 | 100K        |

| R-NO. | USA(E3)   | EUROPE(E2) |
|-------|-----------|------------|
| *17   | C446,C447 | 270P       |
| *18   | C448,C449 | 470P       |
| *19   | R440,R441 | 120K       |
| *20   | R442,R443 | 3.3K       |
| *21   | J403,J404 | JUMPER     |
| *22   | T406,T405 | -          |
| *23   | R444,R445 | 0.2K       |
| *24   | R446,R447 | JUMPER     |
| *25   | J405,406  | JUMPER     |

————— + B LINE  
 - - - - - SIGNAL LINE

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 ALL CAPACITANCE VALUES IN MICRO FARAD, P=MICRO-MICRO FARAD  
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**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 millamps, or if the resistance from chassis to either side  
 of the power cord is less than 450kohms, the unit is defective.

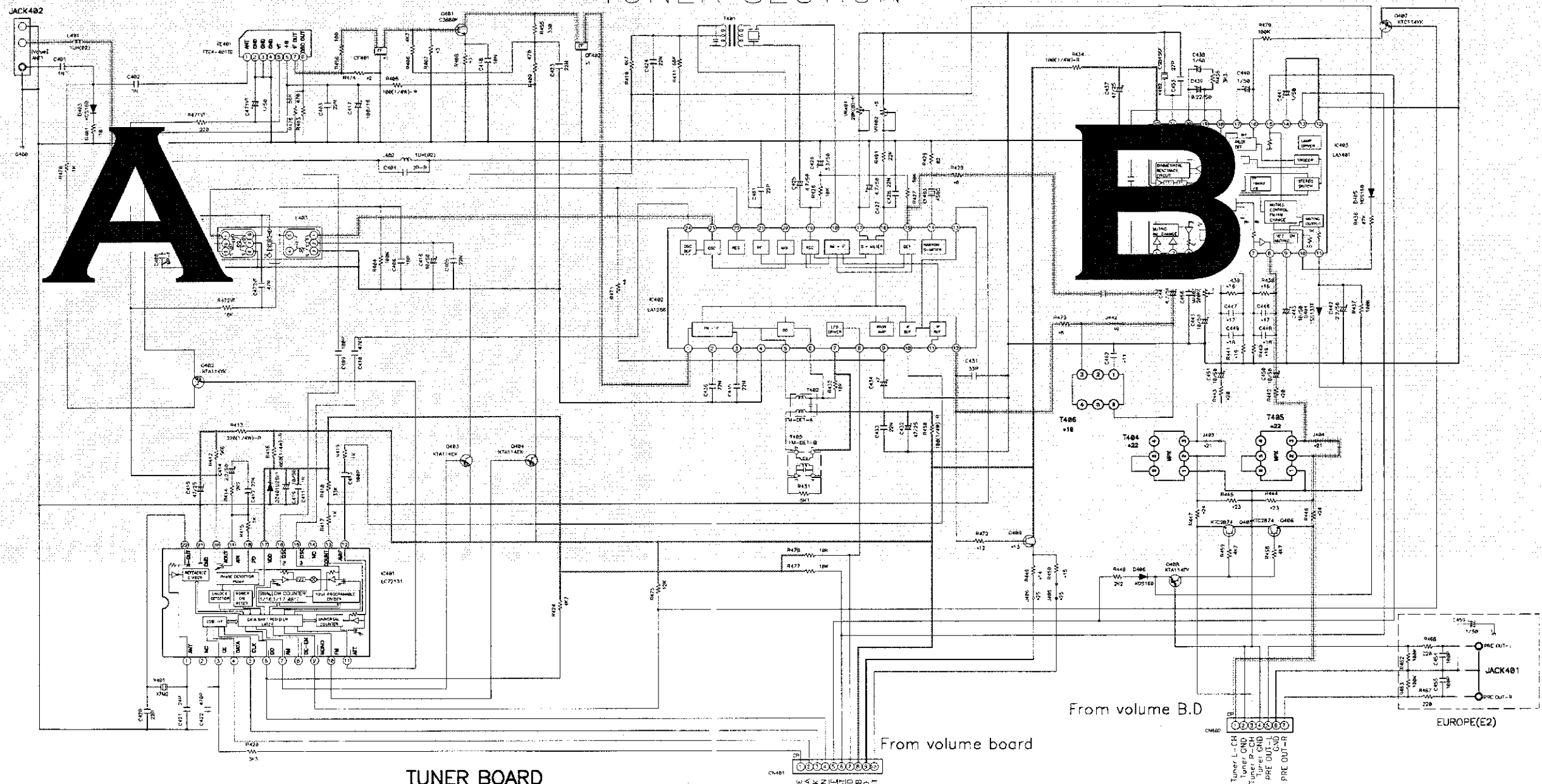
**WARNING:**  
 DO NOT return the unit to the customer until the problem is located and  
 corrected.

**SCHEMATIC DIAGRAMS(5/5)  
 TUNER UNIT**

SCHEMATIC DIAGRAMS(5/5)

1 2 3 4 5 6 7 8 9 10 11

TUNER SECTION



TUNER BOARD

| R-NO. | USA(E3)     | EUROPE(E2) |
|-------|-------------|------------|
| *1    | CF401,CF402 | SFE10.7MAB |
| *2    |             | 100        |
| *3    | *408        | 680/680    |
|       | R471        | 10K        |
|       | VR402       | 50K(B)-H   |
|       | R428        | 3.3K       |
|       | C434        | 0.33/50    |
| *8    |             | 2.4K       |

| R-NO. | USA(E3)   | EUROPE(E2)  |
|-------|-----------|-------------|
| *9    | J442      | JUMPER      |
| *10   | T406      | ANTI-BIRDIE |
| *11   | C452      | 470P        |
| *12   | R472      | 100         |
| *13   | O409      | C3880S      |
| *14   | R449      | 3.9K        |
| *15   | R450      | 1K          |
| *16   | R438,R439 | 100K        |

| R-NO. | USA(E3)   | EUROPE(E2) |
|-------|-----------|------------|
| *17   | C446,C447 | 270P       |
| *18   | C448,C449 | 470        |
| *19   | R440,R441 | 120        |
| *20   | R442,R443 | 3.3        |
| *21   | J403,J404 | JUMPER     |
| *22   | T404,T405 | LFP(MPX)   |
| *23   | R444,R445 | 8.2        |
| *24   | R446,R447 | JUMPER     |
| *25   | J405,406  |            |

**C**

**D**

NOTICE

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

WARNING:

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

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 card is less than 480kohms, the unit is defective.

WARNING:

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

— + B LINE  
 - - - - - SIGNAL LINE

SCHEMATIC DIAGRAMS(5/5)  
 TUNER UNIT



# SCHEMATIC DIAGRAMS(5/5)

1

2

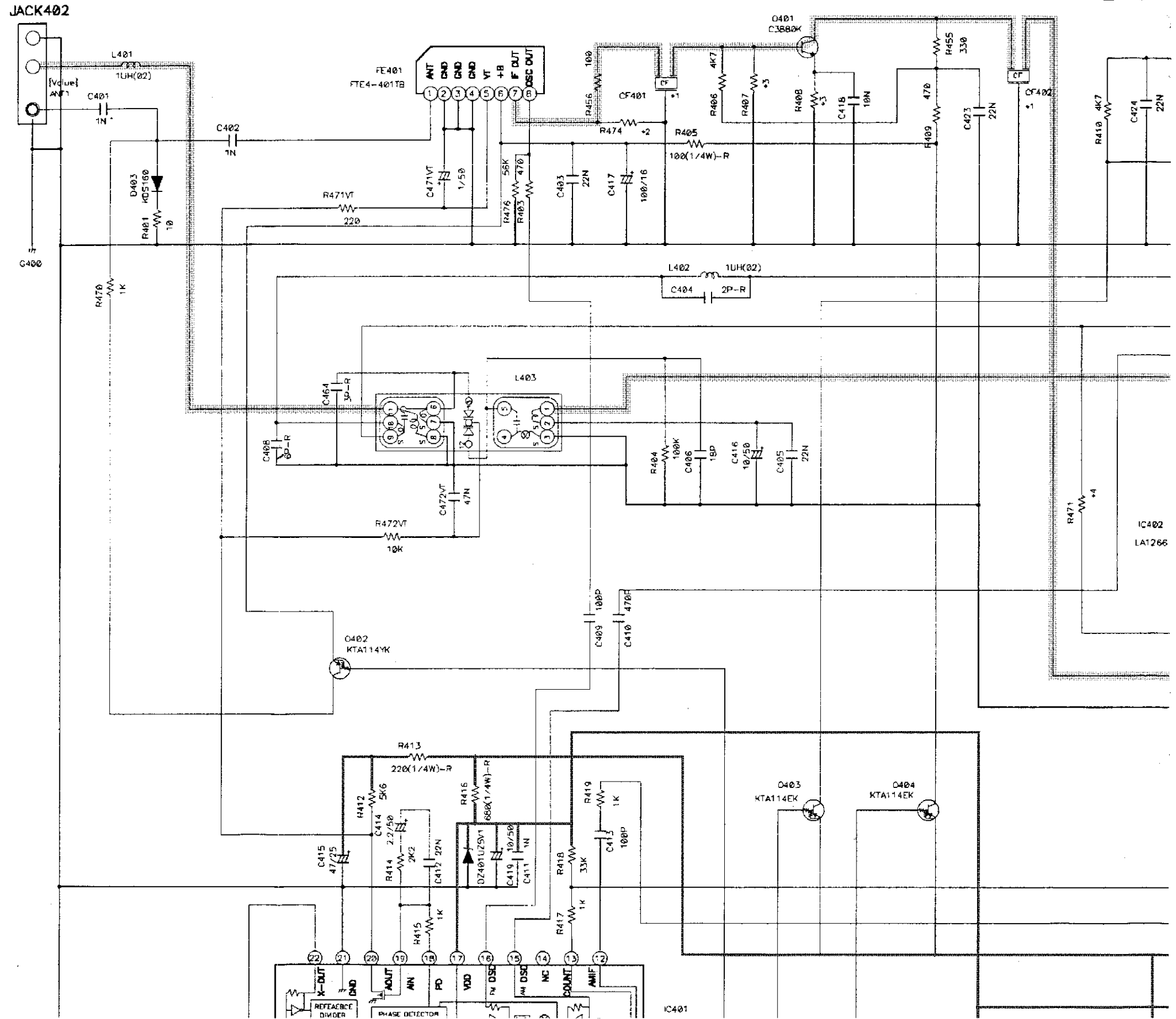
3

4

5

6

TUN



6

7

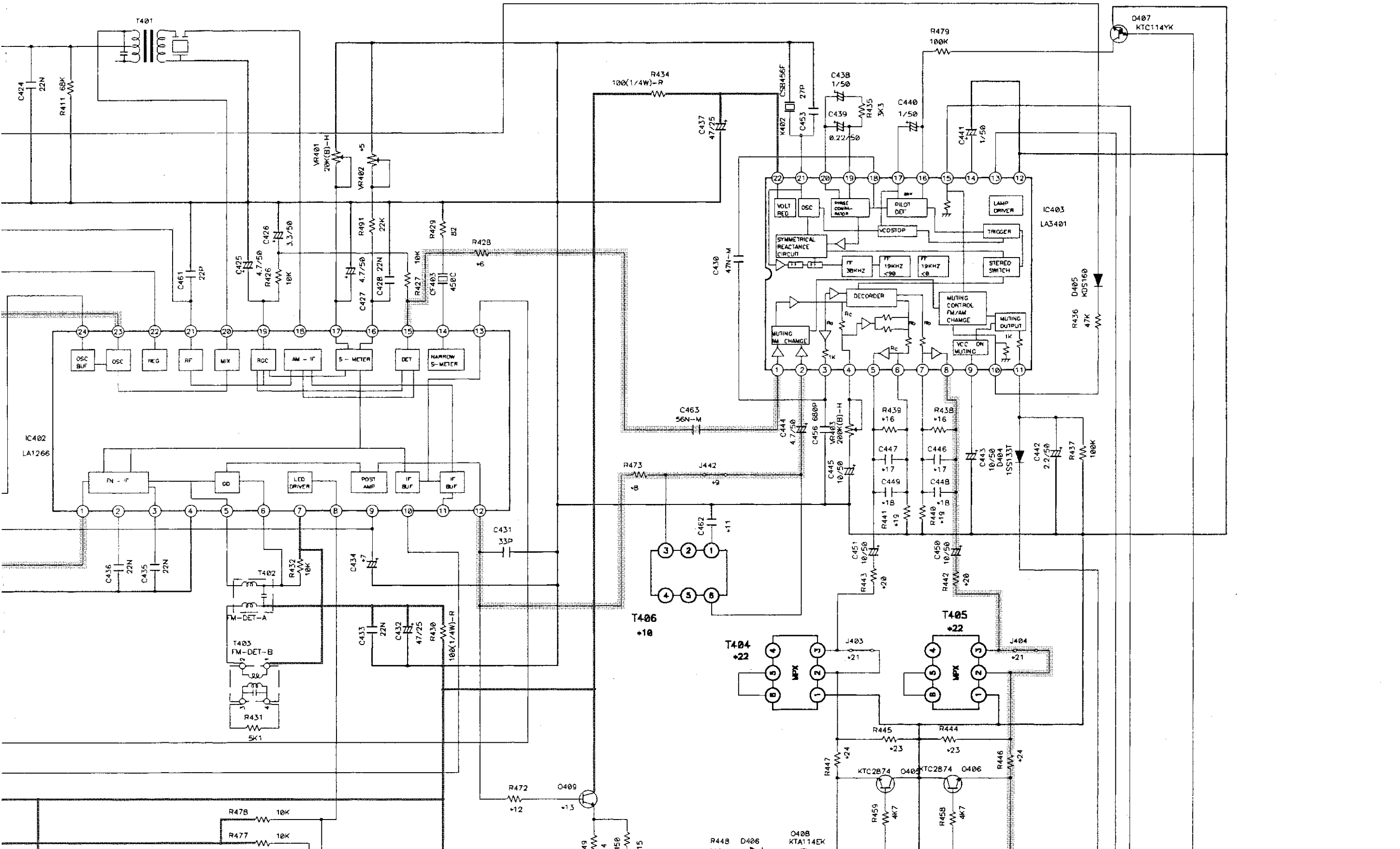
8

9

10

11

# INNER SECTION

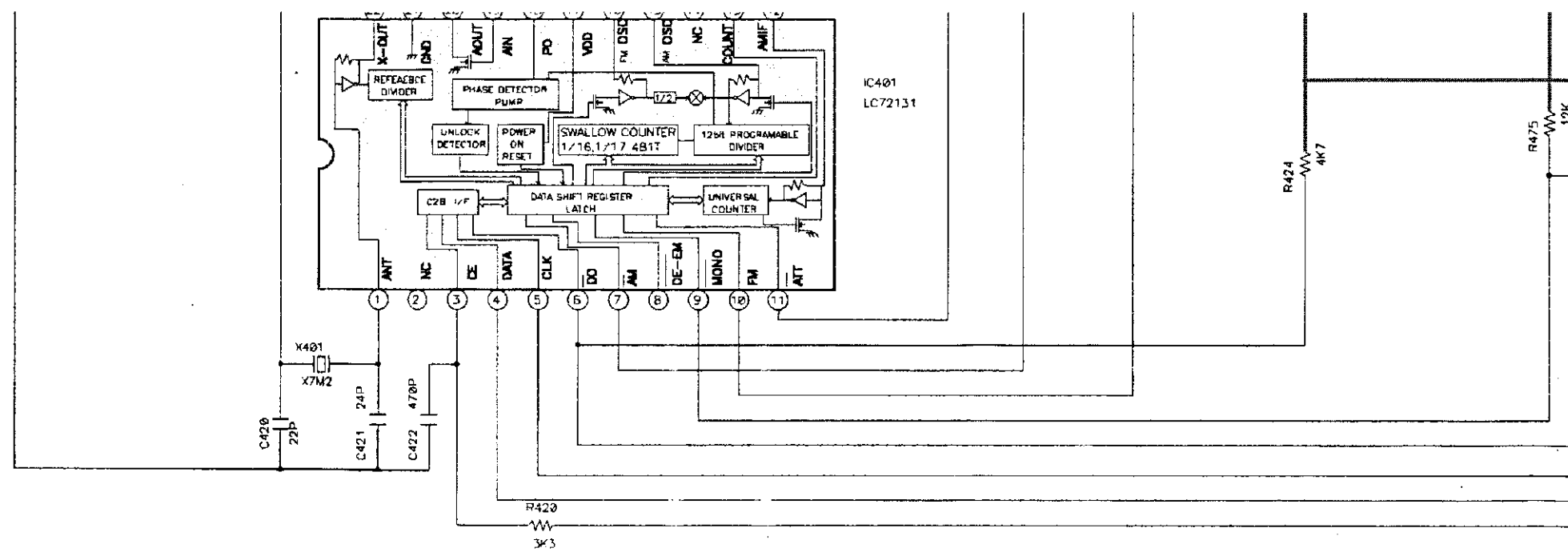


A

B

C

D



## TUNER BOARD


|    | R-NO.       | USA(E3)    | EUROPE(E2) |
|----|-------------|------------|------------|
| *1 | CF401/CF402 | SFE10.7MAB | SFE10.7MS3 |
| *2 | R474        | -          | 180        |
| *3 | R407/R408   | 470/1.2K   | 680/680    |
| *4 | R471        | 18K        | 39K        |
| *5 | VR402       | 50K(B)-H   | 100K(B)-H  |
| *6 | R428        | 3.3K       | 10K        |
| *7 | C434        | 1/50       | 0.33/50    |
| *8 | R473        | 0          | 2.4K       |

|     | R-NO.     | USA(E3) | EUROPE  |
|-----|-----------|---------|---------|
| *9  | J442      | JUMPER  | -       |
| *10 | T406      | -       | ANTI-BI |
| *11 | C462      | -       | 470F    |
| *12 | R472      | -       | 100     |
| *13 | Q409      | -       | C388K   |
| *14 | R449      | -       | 3.9k    |
| *15 | R450      | -       | 1K      |
| *16 | R438,R439 | 100K    | 150     |

### NOTICE

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

### WARNING:

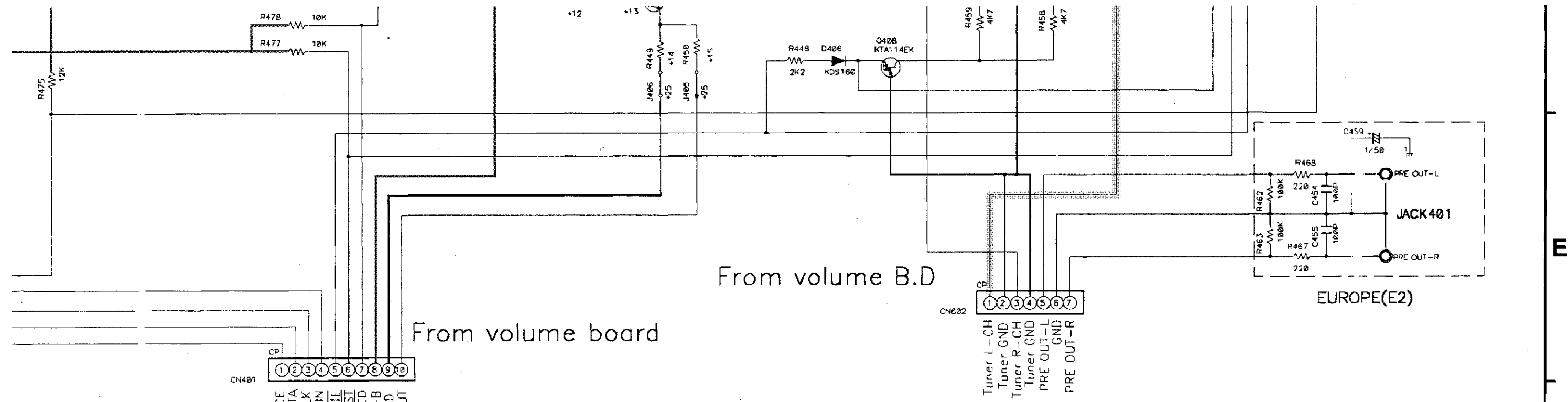
Parts marked with this symbol  have  
 Use ONLY replacement parts recommended

### CAUTION:

Before returning the unit to the customer, (1) check for  
 leakage current check or (2) a line to chassis  
 current exceeds 0.5 milliamps, or if the resistance  
 of the power card is less than 460kohms,

### WARNING:

DO NOT return the unit to the customer until  
 corrected.

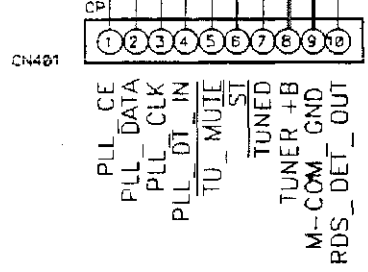


From volume board

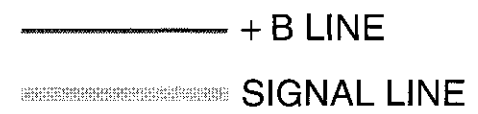
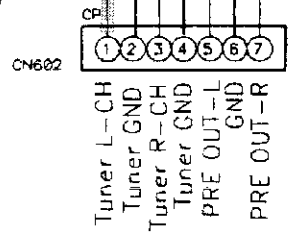
From volume B.D

EUROPE(E2)

|             |
|-------------|
| EUROPE(E2)  |
| -           |
| ANTI-BIRDIE |
| 470P        |
| 100         |
| C3880S      |
| 3.9K        |
| 1K          |
| 150K        |



|     | R-NO.     | USA(E3) | EUROPE(E2) |
|-----|-----------|---------|------------|
| *17 | C446,C447 | 270P    | 330P       |
| *18 | C448,C449 | 470P    | -          |
| *19 | R440,R441 | 120K    | 220K       |
| *20 | R442,R443 | 3.3K    | 2.2K       |
| *21 | J403,J404 | JUMPER  | -          |
| *22 | T404,T405 | -       | LPF(MPX)   |
| *23 | R444,R445 | 8.2K    | 3.3K       |
| *24 | R446,R447 | JUMPER  | 470        |
| *25 | J405,406  | -       | JUMPER     |



have critical characteristics. recommended by the manufacture.

customer, make sure you make either (1) a continuity test to chassis resistance check. If the leakage is less than 100kohms, the unit is defective.

customer until the problem is located and

**SCHEMATIC DIAGRAMS(5/5)  
TUNER UNIT**

E  
F  
G  
H