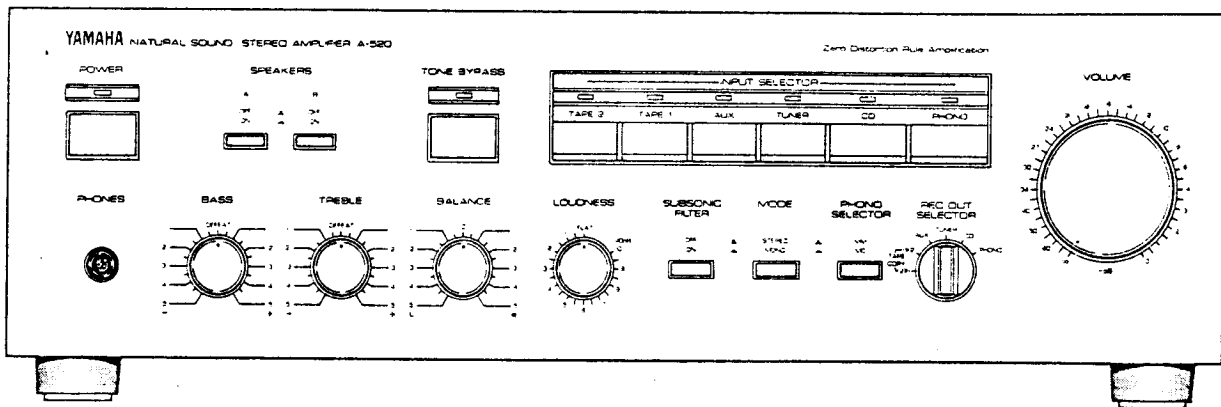


THE QUALITY OF
THIS MANUAL IS
THE BEST THAT
IS AVAILABLE

STEREO INTEGRATED AMPLIFIER A-520

SERVICE MANUAL

FRONT PANEL



For Service Manuals Contact
MAURITRON TECHNICAL SERVICES
8 Cherry Tree Rd, Chinnor
Oxon OX9 4QY
Tel: 01844-351694 Fax: 01844-352554
Email: enquiries@mauritron.co.uk

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit/s indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

A-520

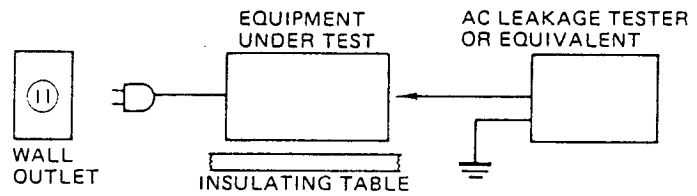
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DISASSEMBLY PROCEDURES	3		



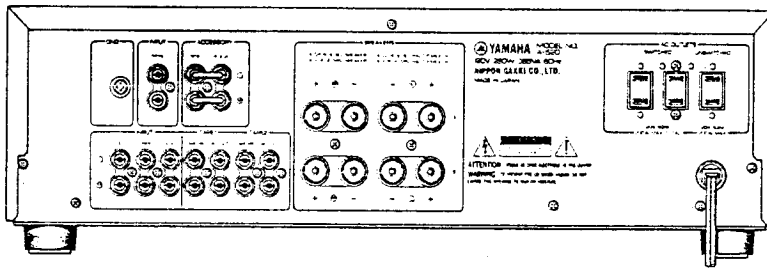
■ TO SERVICE PERSONNEL

1. Critical Components Information.
Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V Model Only).
When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.
 - Meter impedance should be equivalent to 1500 ohm shunted by 0.15 μ F.
 - Leakage current must not exceed 0.5mA.
 - Be sure to test for leakage with the AC plug in both polarities.

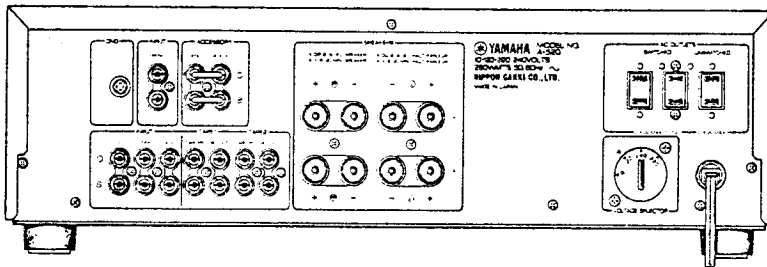


■ REAR PANELS

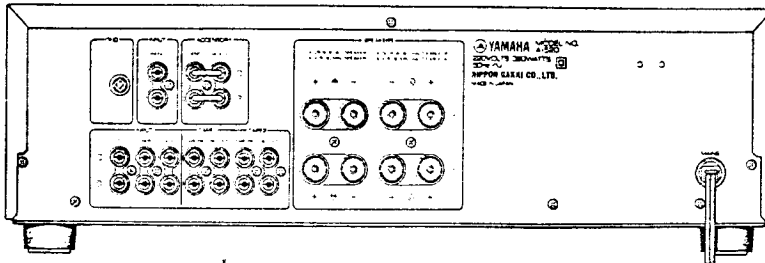
▼ U.S.A. and Canadian models



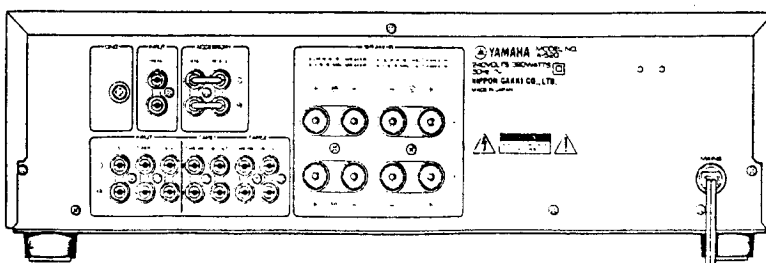
▼ General model



▼ European model

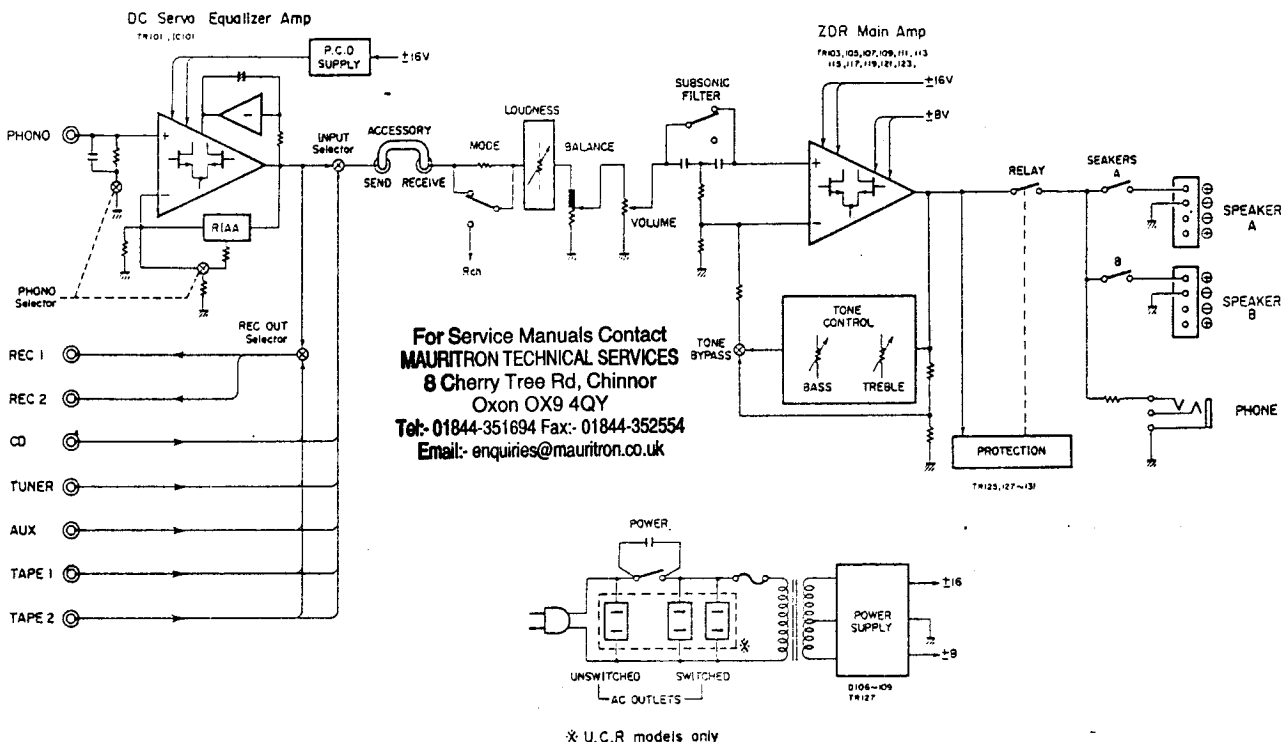


▼ British and Australian models



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BLOCK DIAGRAM



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* U.C.R models only

SPECIFICATIONS

Continuous Power Per Channel

20Hz ~ 20kHz (0.01% THD 8Ω)	75W
(0.015% THD 6Ω)	80W

DIN Standard Output Power Per Channel

1kHz, 1% THD, 4Ω	112W (A)(G)(B)
----------------------------	----------------

Dynamic Headroom

8Ω	1.12dB (R)(U)(C)
6Ω	1.76dB (R)(U)(C)

Dynamic Power Per Channel (IHF)

8Ω	97W (R)(U)(C)
6Ω	120W (R)(U)(C)

Power Bandwidth

0.03% THD 37.5W (8Ω)	10Hz ~ 50kHz
--------------------------------	--------------

Damping Factor

(at 1kHz, 8Ω)	better than 50
-------------------------	----------------

Input Sensitivity/Impedance

Phono MC	160μV/200Ω
MM	2.5mV/47kΩ
Aux, Tape, Tuner, CD	150mV/47kΩ

Input Sensitivity (New IHF)

Phono MC	19μV (R)(U)(C)
MM	0.3mV (R)(U)(C)
Aux, Tape, Tuner, CD	18mV (R)(U)(C)

Maximum Input Signal

(1kHz, 0.01% THD)	
Phono MC	10mV (R)(U)(C)
MM	150mV (R)(U)(C)

Output Level/Impedance

Rec Out	150mV/470Ω
-------------------	------------

Headphone Jack Rated Output/Output Impedance

0.01% THD 8Ω	0.7V/270Ω
------------------------	-----------

Frequency Response

20Hz ~ 20kHz Aux, Tape, Tuner, CD	+0 dB
	-0.5dB

RIAA Equalization Deviation

20Hz ~ 20kHz, PHONO MC	±0.3dB (R)(U)(C)
MM	±0.2dB (R)(U)(C)

Total Harmonic Distortion

(20Hz ~ 20kHz)	
Phono MC to Rec Out (3V)	0.007%
Phono MM to Rec Out (3V)	0.003%
Aux, Tape, Tuner, CD to SP Out 1W/8Ω	0.005%

Intermodulation Distortion

Aux, Tape, Tuner, CD Rated	
Output/8Ω	0.01% (R)(U)(C)
1W/8Ω	0.005% (R)(U)(C)

Signal to Noise Ratio

(IHF-A-Network)	
Phono MC (500μV Input Shorted)	75dB (R)(U)(C)
MM (5mV, Input Shorted)	92dB (R)(U)(C)
Aux, Tape, Tuner, CD (5.1kΩ)	100dB (R)(U)(C)

Signal to Noise Ratio (New IHF)

Phono MC	74dB (R)(U)(C)
MM	78dB (R)(U)(C)
Aux, Tape, Tuner, CD	84dB (R)(U)(C)

Residual Noise (IHF-A-Network)

	140μV (R)(U)(C)
--	-----------------

Channel Separation

Phono MM (Input shorted) 1kHz	55dB
Aux, Tape, Tuner, CD (5.1kΩ) 1kHz	55dB

Tone Control Characteristics

Bass boost/cut	±10dB (at 20Hz) (R)(U)(C)
Bass turnover frequency	350Hz (R)(U)(C)
Treble boost/Out	±10dB (at 20kHz) (R)(U)(C)
Turnover frequency	3.5kHz (R)(U)(C)

Filter Characteristics

Low (Subsonic)	15Hz - 12dB/oct (R)(U)(C)
--------------------------	---------------------------

Continuous Loudness Control

(Level-related equalization)	
Attenuation	40dB (at 1kHz) (R)(U)(C)

Gain Tracking Error (0 to -60dB)

	2dB (R)(U)(C)
--	---------------

Power Supplies

U.S.A. and Canadian models	AC 120V, 60Hz
General model	AC 110/120/220/240V, 60/50Hz
British and Australian models	240V, 50Hz
European model	220V, 50Hz

Power Consumption

	290W/390W (G)(B)(A)
--	---------------------

AC Outlet (R)(U)(C)

Unswitched x 2	200W max.
Unswitched x 1	200W max.

Dimensions (W x H x D)

	435 x 136 x 339
--	-----------------

Weight

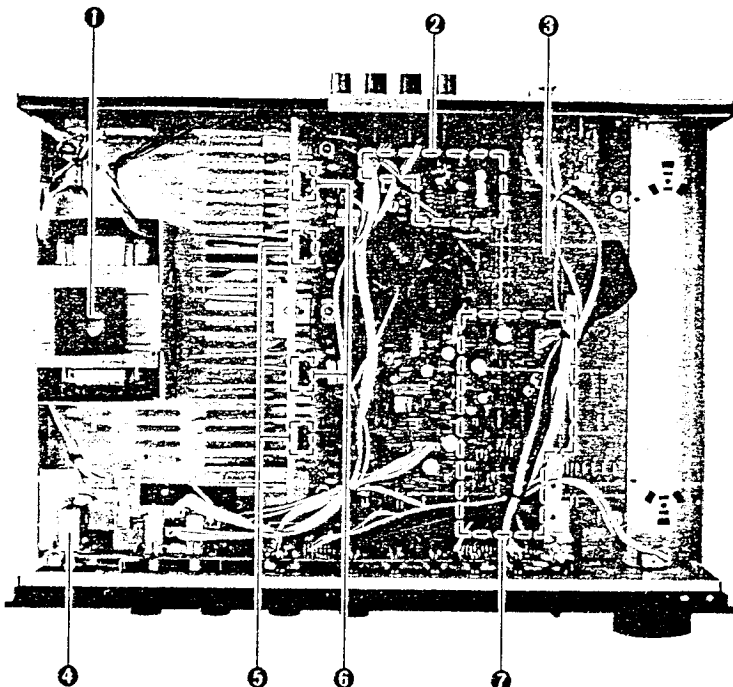
	(17-1/8 x 5-5/16 x 13-5/16)
	7.5 kg (16.5 lbs.)

- (U) . . . U.S.A. model
- (C) . . . Canadian model
- (A) . . . Australian model
- (G) . . . European model
- (R) . . . General model
- (B) . . . British model

Specifications subject to change without notice.

A-520

INTERNAL VIEW



- ① POWER TRANSFORMER
U.S.A. model: GA68030
Canadian model: GA68040
General model: GA68070
Australian & British models: GA68060
European model: GA68050
- ② PROTECTION SECTION
- ③ MAIN CIRCUIT BOARD
- ④ POWER SWITCH
- ⑤ POWER TRANSISTOR: 2SC3182 (R, O)
or 2SC2581 (O, P, Y)
- ⑥ POWER TRANSISTOR: 2SA1265 (R, O)
or 2SA1106 (O, P, Y)
- ⑦ EQ AMP SECTION

DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

1. Removal of Top Cover
 - a. Remove 5 screws (①) in Fig. 1, and slide the Top Cover back.
2. Removal of Front Panel
 - a. Remove 5 screws (②) in Fig. 1, and pull the Front Panel forward.
3. Removal of Bottom Cover
 - a. Remove 5 screws (③) in Fig. 1.

ADJUSTMENTS

- IDLING CURRENT ADJUSTMENT
When replacing the power and drive transistors, adjust idling current. This adjustment should be carried out in the non-loaded condition and no sooner than one minute after power is turned ON. Adjust VR107 (Lch) and VR108 (Rch) so that the voltage across the terminals of R217 and R218 comes to $5mV \pm 2mV$ DC.

	Test points	Adjustment points	Test points
Lch	Across the terminals of R217	VR107	$5mV \pm 2mV$
Rch	Across the terminals of R218	VR108	$5mV \pm 2mV$

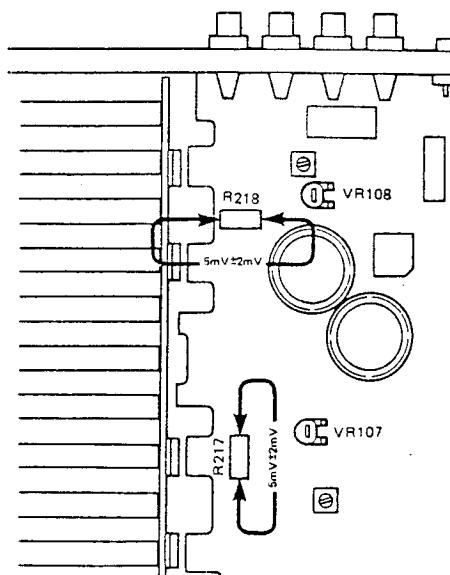
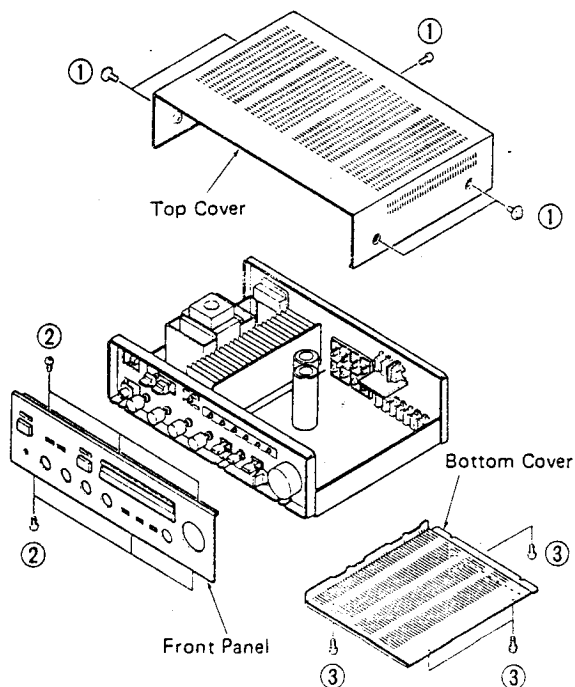


Fig. 2

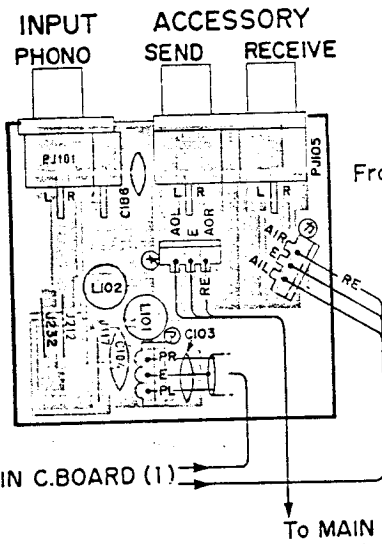
PRINTED CIRCUIT BOARD (Pattern side)

Note:
文字面: Letter side

Note: As the following parts and values differ for each model,
please refer to the corresponding column.

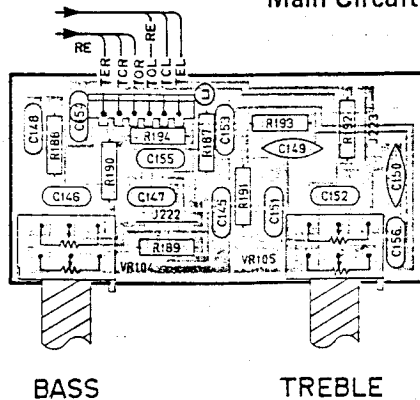
Main Circuit Bo

	R	U	C	A, B	G
C103, 104	OPEN	OPEN	OPEN	OPEN	150P
C109, 110	330P	330P	330P	330P	150P
C105, 106	OPEN	OPEN	OPEN	OPEN	150P
J261, 264, 265	SHORT	SHORT	SHORT	SHORT	OPEN
C181~184 187~192 195, 196	OPEN	OPEN	OPEN	OPEN	470P
C186	0.01	0.01	0.01	0.01	OPEN
C193, 194	OPEN	OPEN	OPEN	OPEN	680P
C197~200	OPEN	OPEN	OPEN	OPEN	5600P
J271	OPEN	OPEN	OPEN	OPEN	SHORT
C201~206	OPEN	OPEN	OPEN	OPEN	0.027
C207	0.1/25	0.1/25	0.1/25	0.1/25	OPEN
C178	0.01/500	0.01/500	0.01/500	0.01/500	OPEN
C179, 180	OPEN	OPEN	OPEN	OPEN	0.047/100
R101, 102	10	10	10	10	33
R109, 110	33	33	33	33	4.7K
R285	4.7	4.7	4.7	4.7	OPEN
R286, 287	OPEN	OPEN	OPEN	OPEN	4.7
L101, 102	SHORT	SHORT	SHORT	SHORT	15μH
L103, 104	OPEN	OPEN	OPEN	OPEN	220μH
D108	4D4B41	4D4B41	D4B820	4D4B41	4D4B41
F101	T7.0A 250V	7A 125V	7A 125V	T3.15A 250V	T3.15A 250V
F102	T3.5A 250V	OPEN	OPEN	OPEN	OPEN



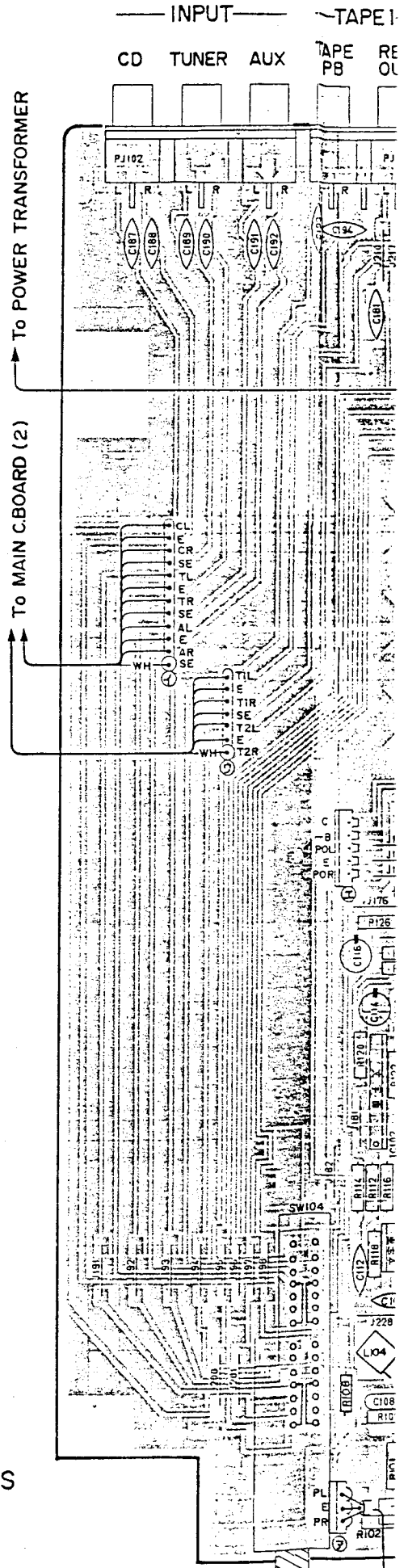
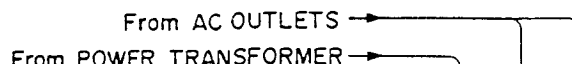
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Main Circuit Board (7)



Main Circuit Board (5)

U, C MODELS



ern side)

es differ for each model,
g column.

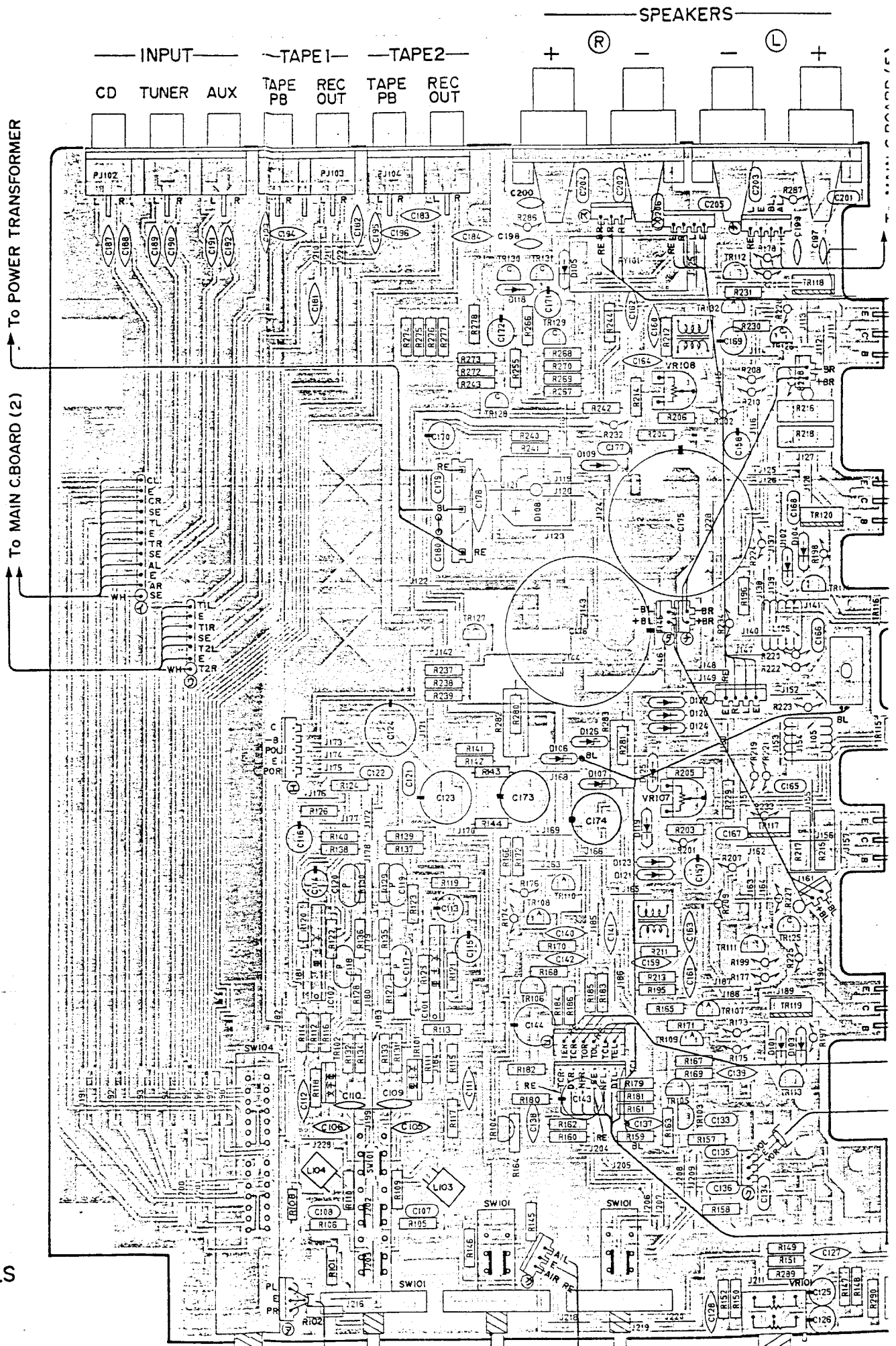
G
150P
150P
150P
OPEN
470P
OPEN
680P
5600P
SHORT
0.027
OPEN
OPEN
0.047/100
33
4.7K
OPEN
4.7
15μH
220μH
4D4B41
OV T3.15A250V
OPEN

it Board (3)
ARD (1)

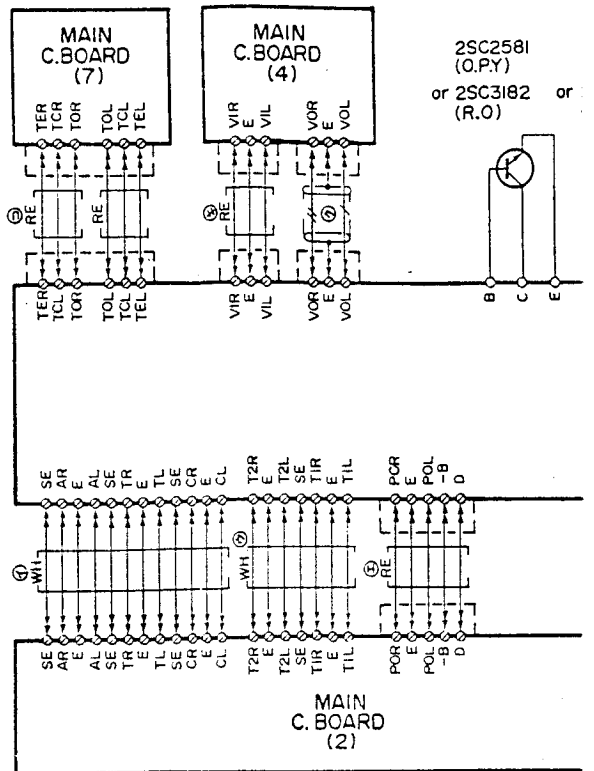
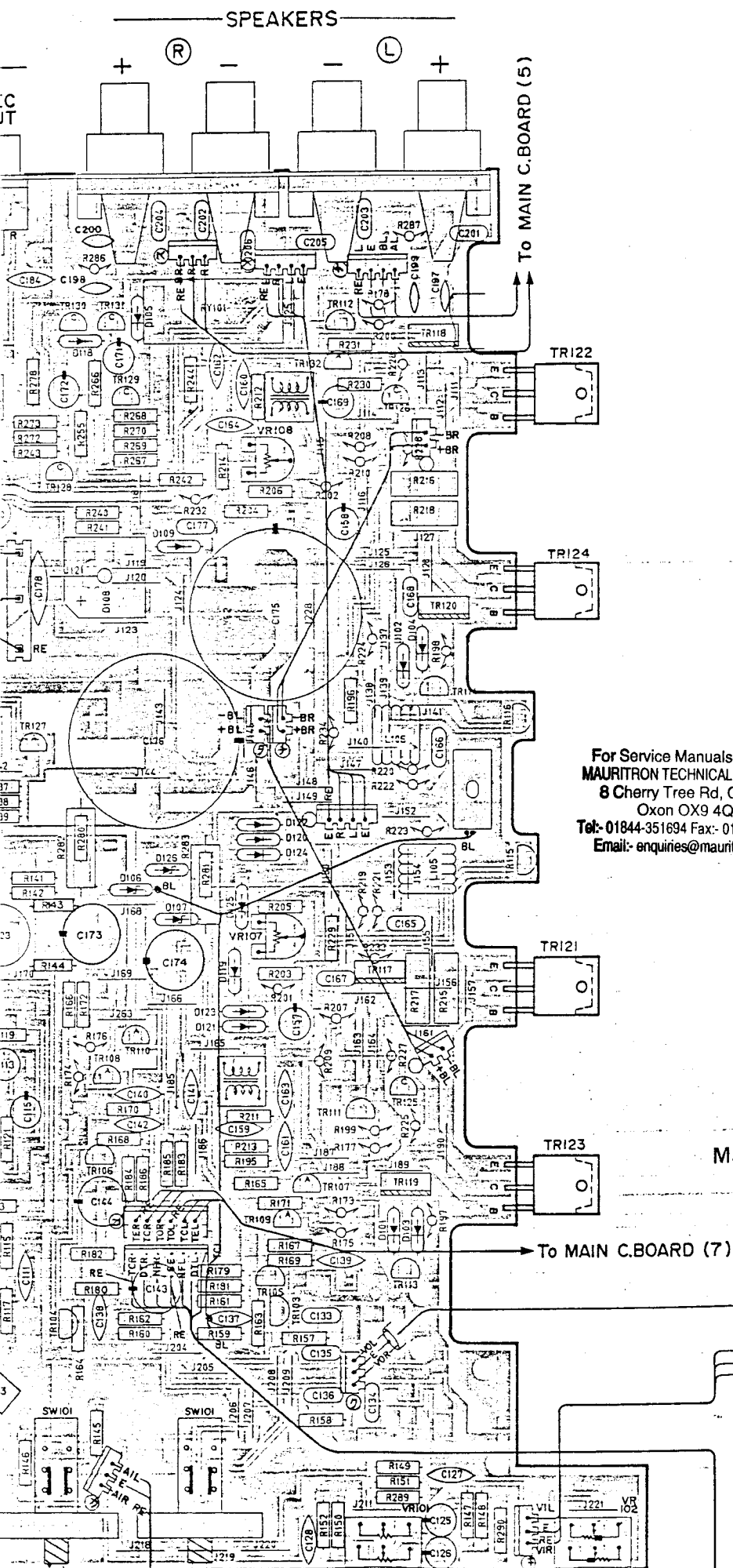
t Board (7)

U,C MODELS

Main Circuit Board (1)



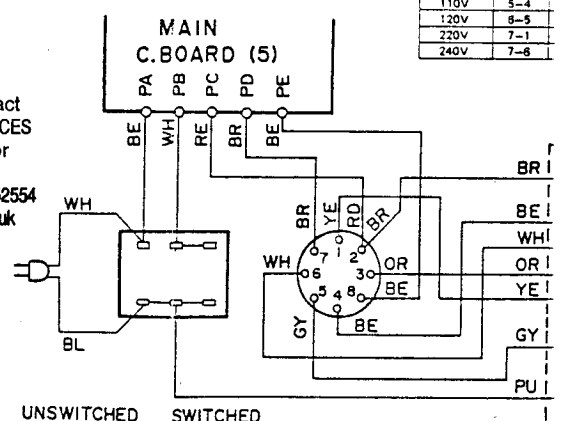
WIRING



General (R) model

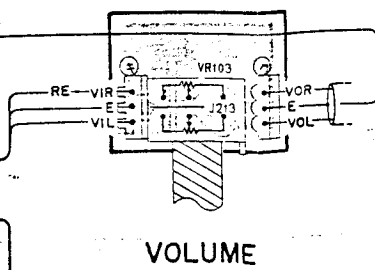
Voltage	Terminals
110V	5-4
120V	6-5
220V	7-1
240V	7-6

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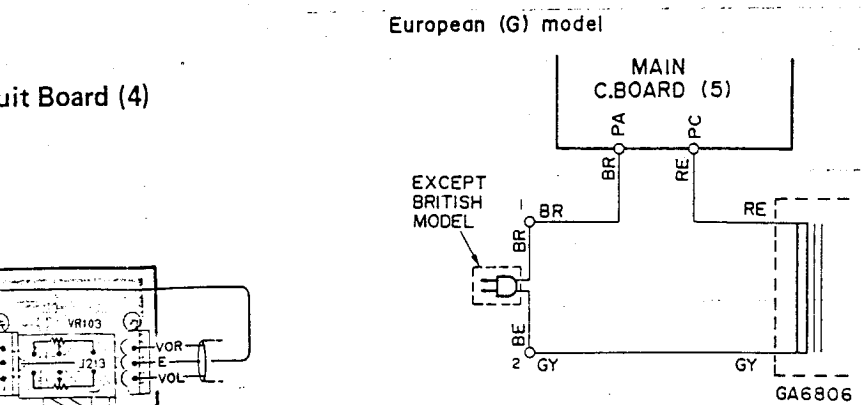
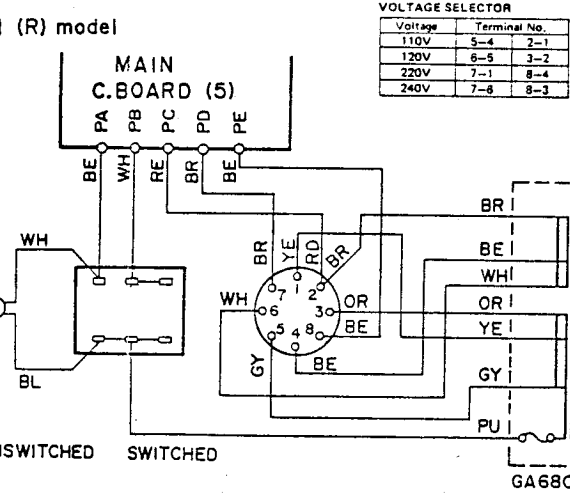
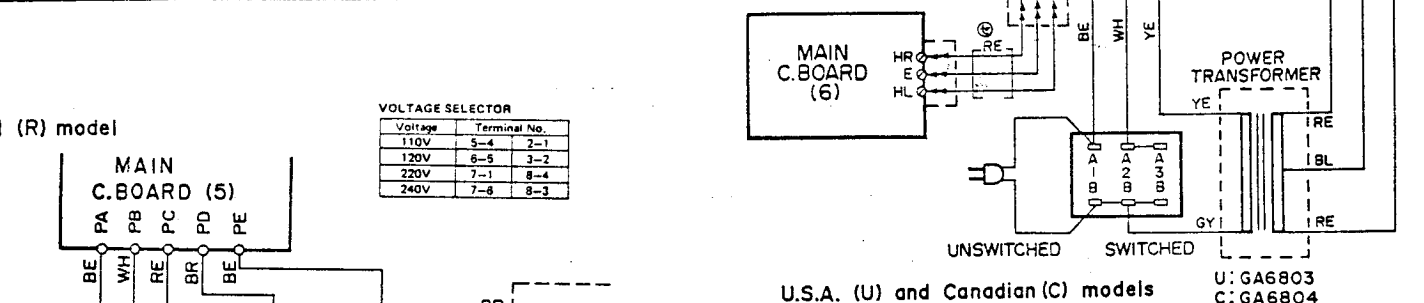
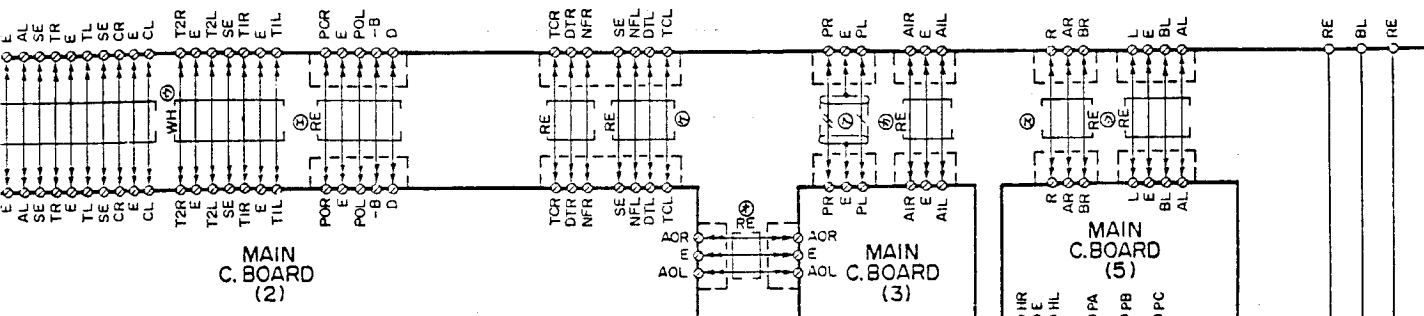
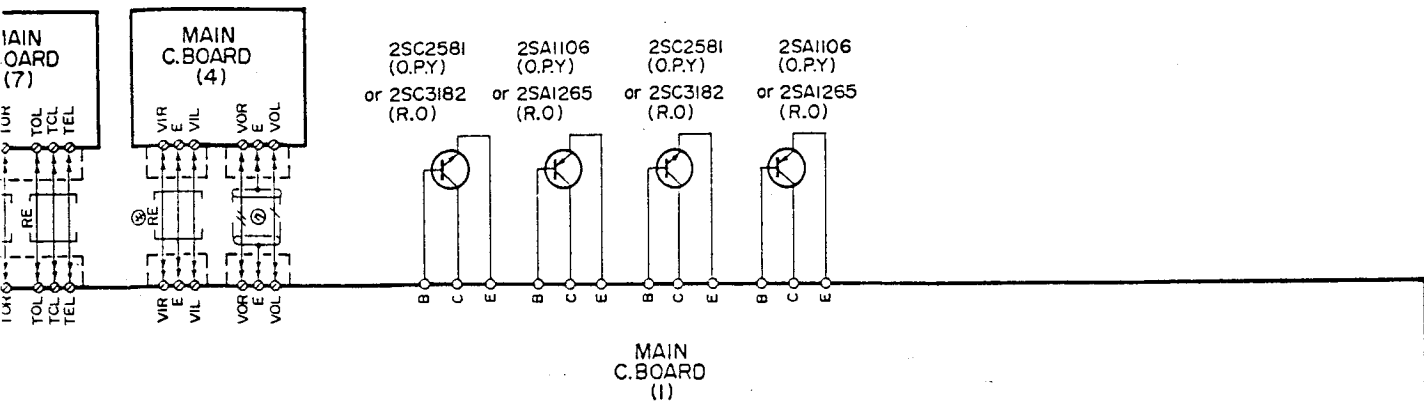
Main Circuit Board (4)

European (C)

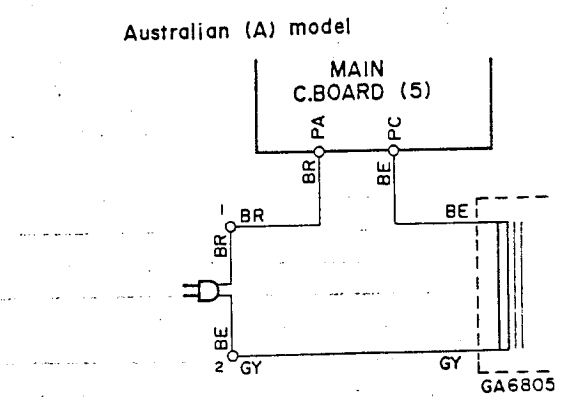


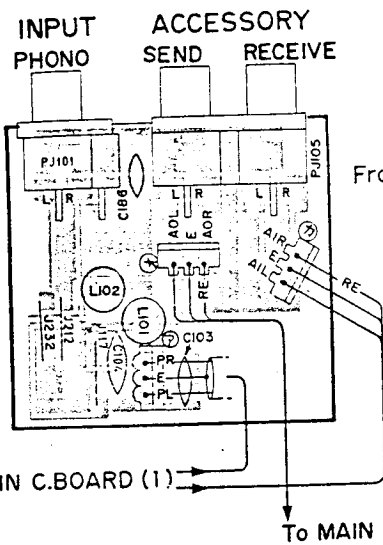
EXCEPT BRITISH MODEL

NG



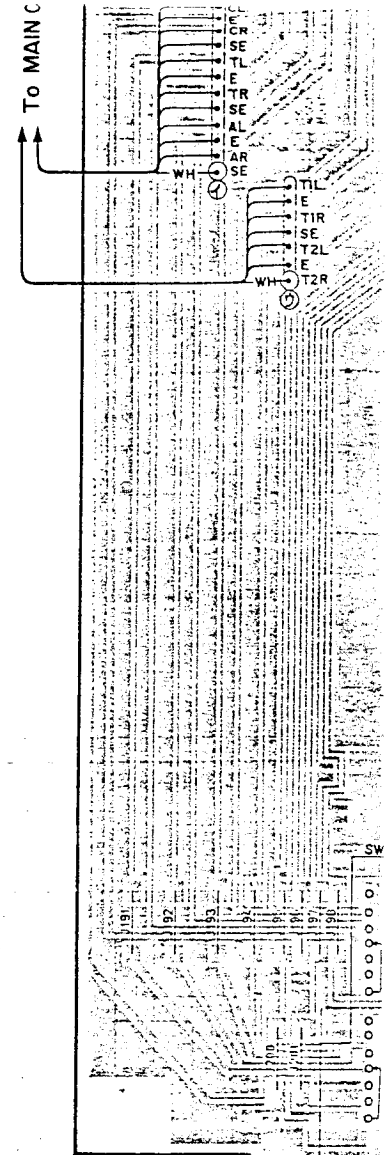
VOLUME



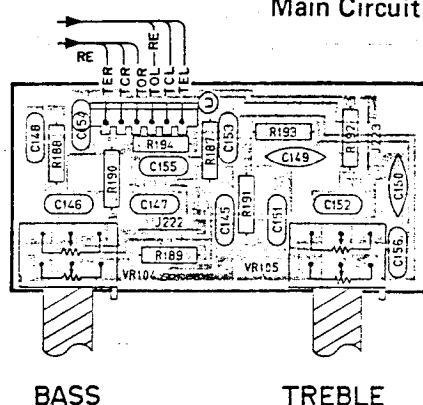


Main Circuit Board (3)
From MAIN C. BOARD (1)

From MAIN C. BOARD (1) →
→ To MAIN C. BOARD (2)



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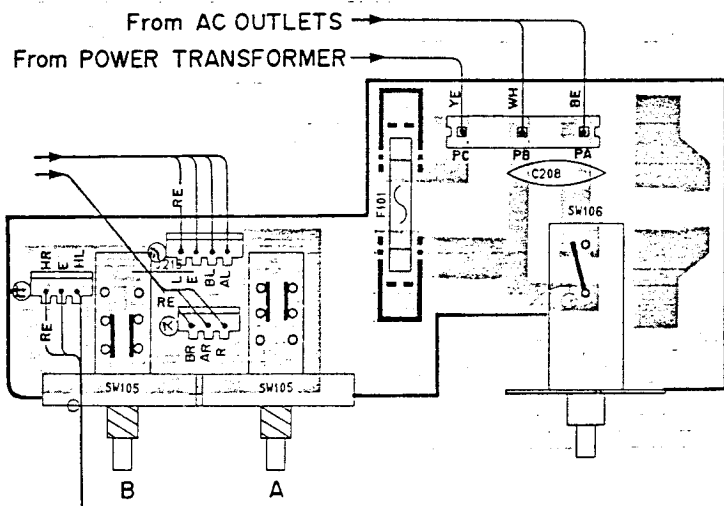


Main Circuit Board (7)

BASS TREBLE

Main Circuit Board (5)

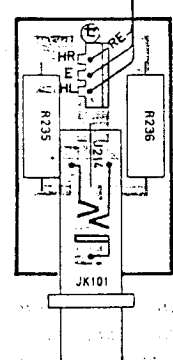
U, C MODELS



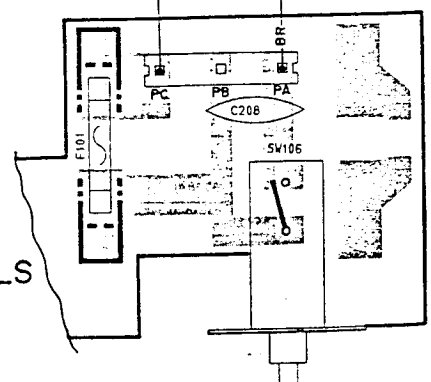
Main Circuit Board (6)

SPEAKERS

From POWER CORD
From POWER TRANSFORMER
A, B MODELS = RE
G MODEL = BE



PHONES



A, G, B MODELS

POWER

REC (SELEC)

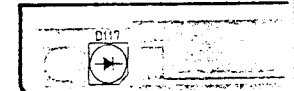
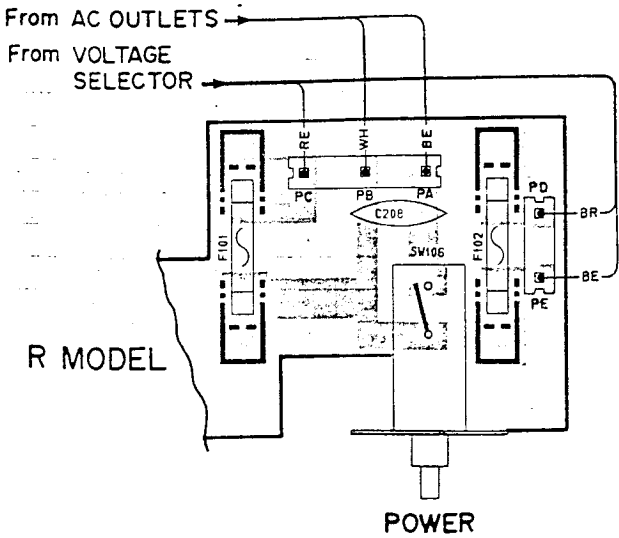
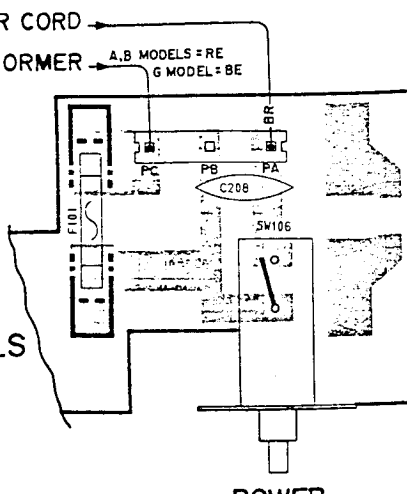
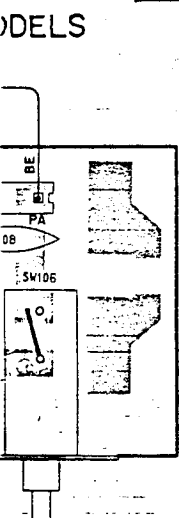
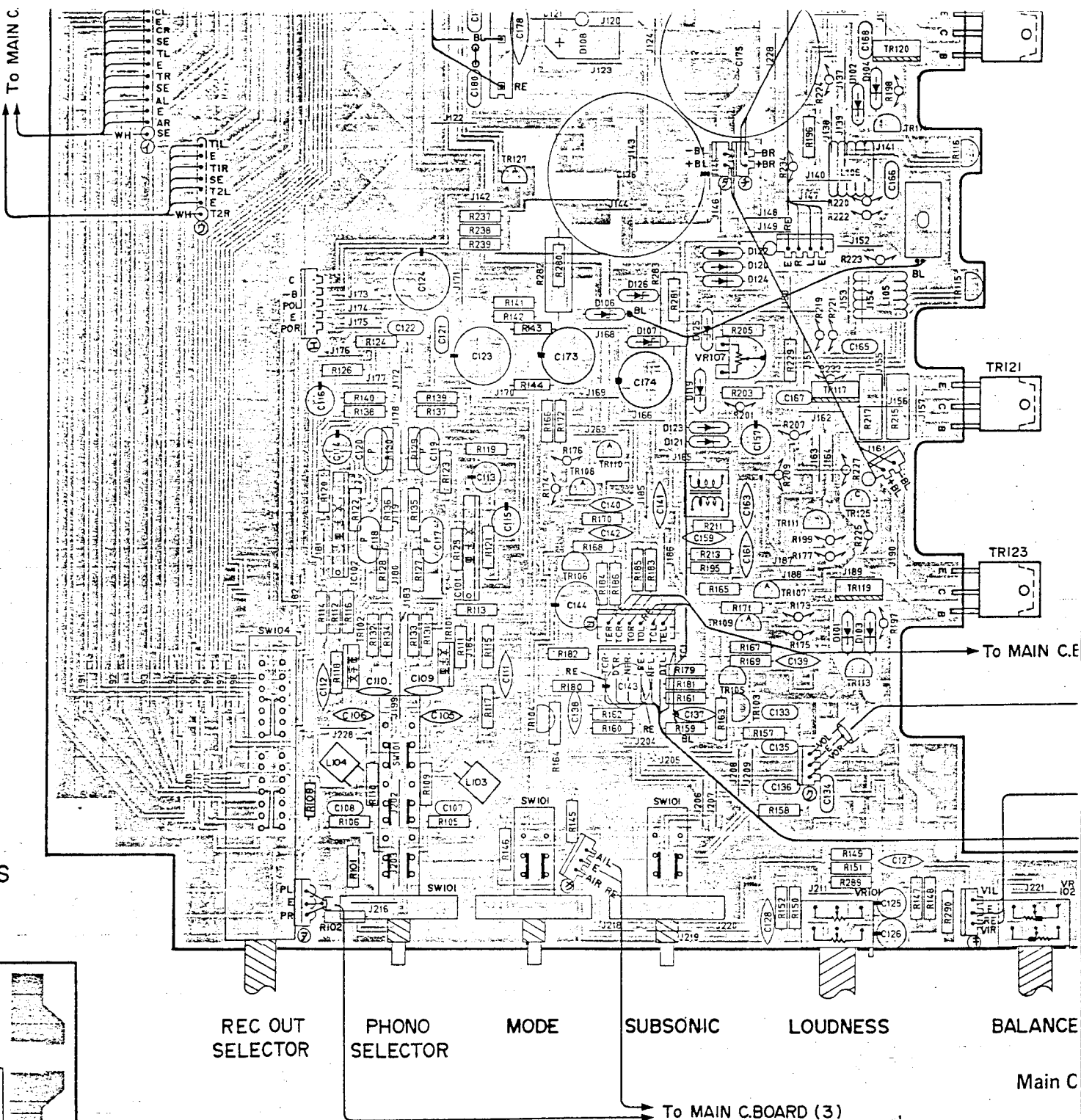
F1 F

4

6

7

8



PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES

2SA970 (GR, BL)	2SK117	2SA968 (O, Y)
2SC2240 (GR, BL)	2SK128	2SA1306A
2SA1145 (O, Y)	2SK108	2SA1306
2SC2705 (O, Y)		2SA1306B
		2SC2238 (O, Y)
		2SC3298A
		2SC3298
		2SC3298B

MODELS

POWER CORD
FORMER
A, B MODELS = RE
G MODEL = BE

S

REC OUT
SELECTOR

PHONO
SELECTOR

MODE

SUBSONIC

LOUDNESS

BALANCE

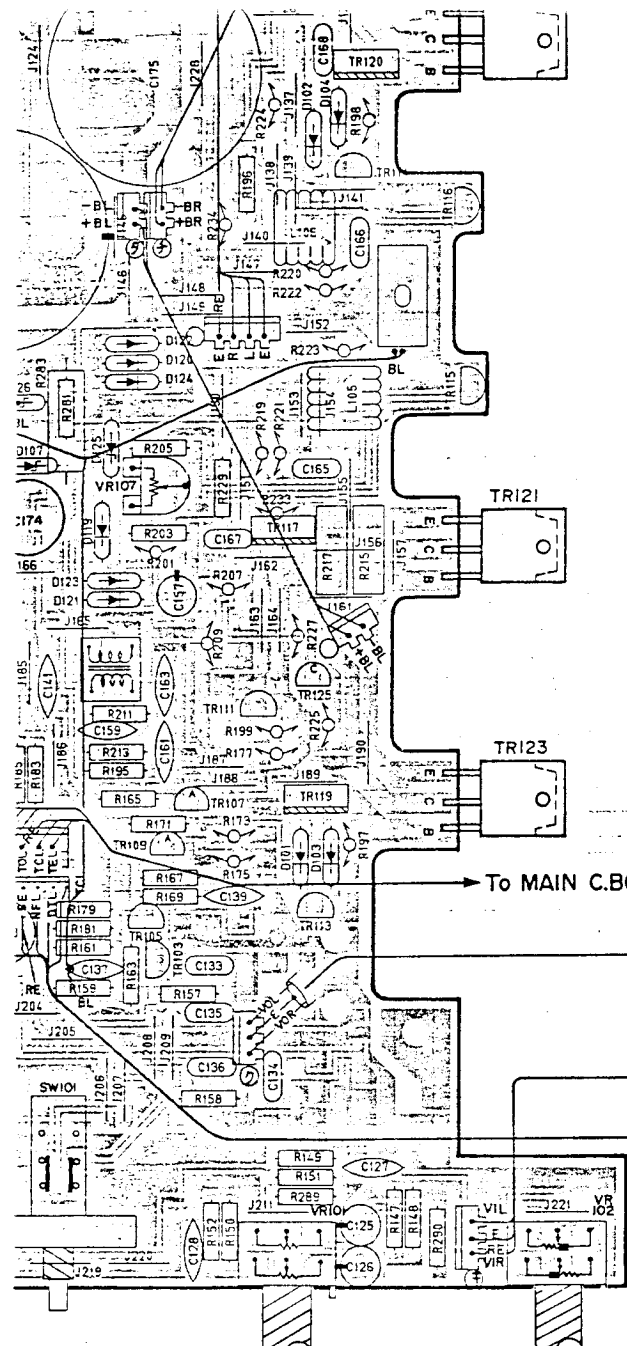
Main C

To MAIN C.BOARD (3)

POWER

POWER

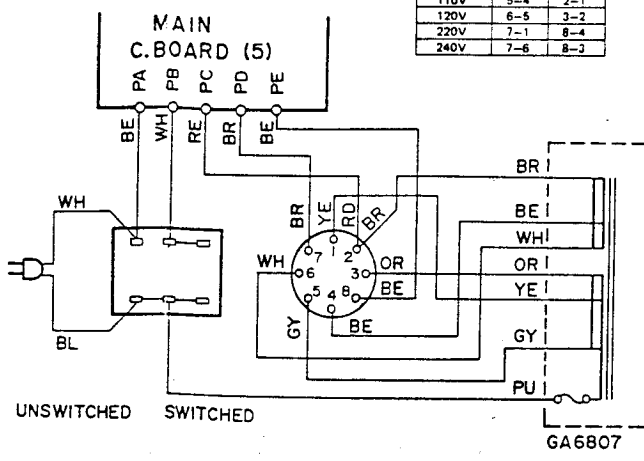
POWER



General (R) model

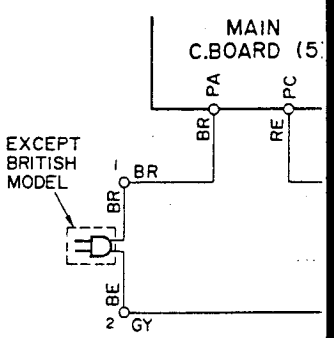
VOLTAGE SELECTOR

Voltage	Terminal No.	Terminal No.
110V	5-4	2-1
120V	6-5	3-2
220V	7-1	8-4
240V	7-6	8-3

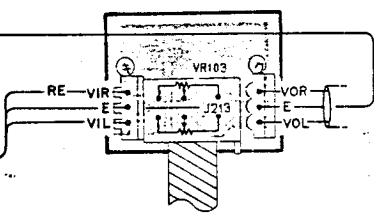


Main Circuit Board (4)

European (G) model



To MAIN C. BOARD (7)

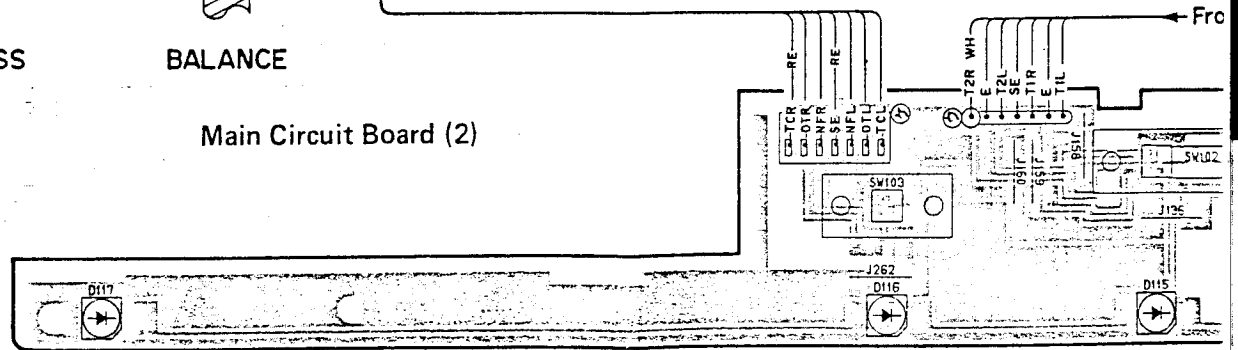


VOLUME

SUBSONIC LOUDNESS BALANCE

Main Circuit Board (2)

To MAIN C. BOARD (3)



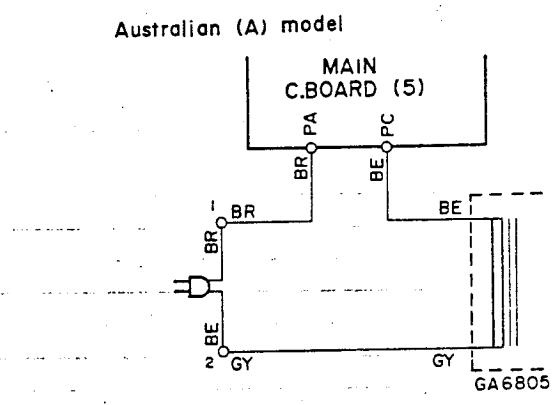
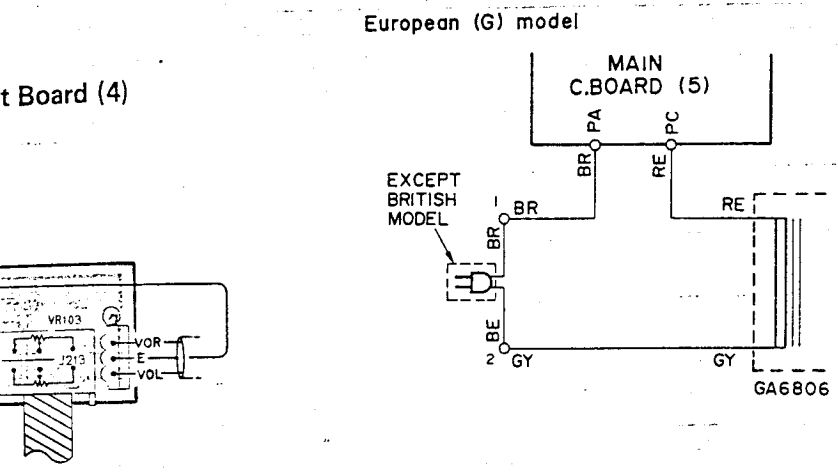
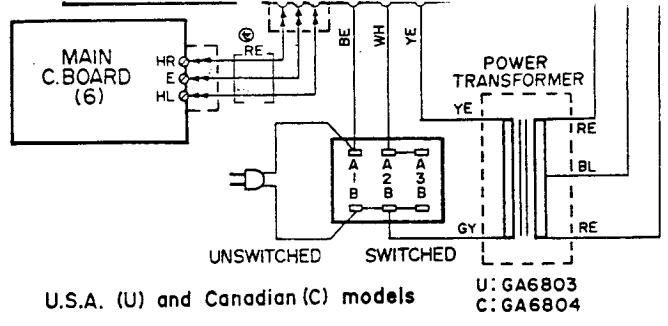
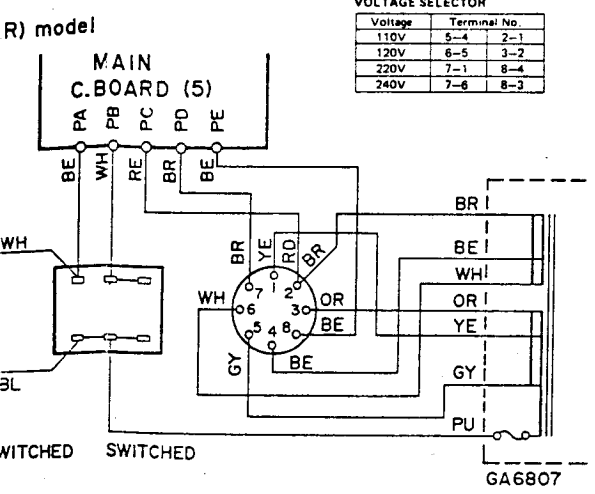
POWER

TAPE-2

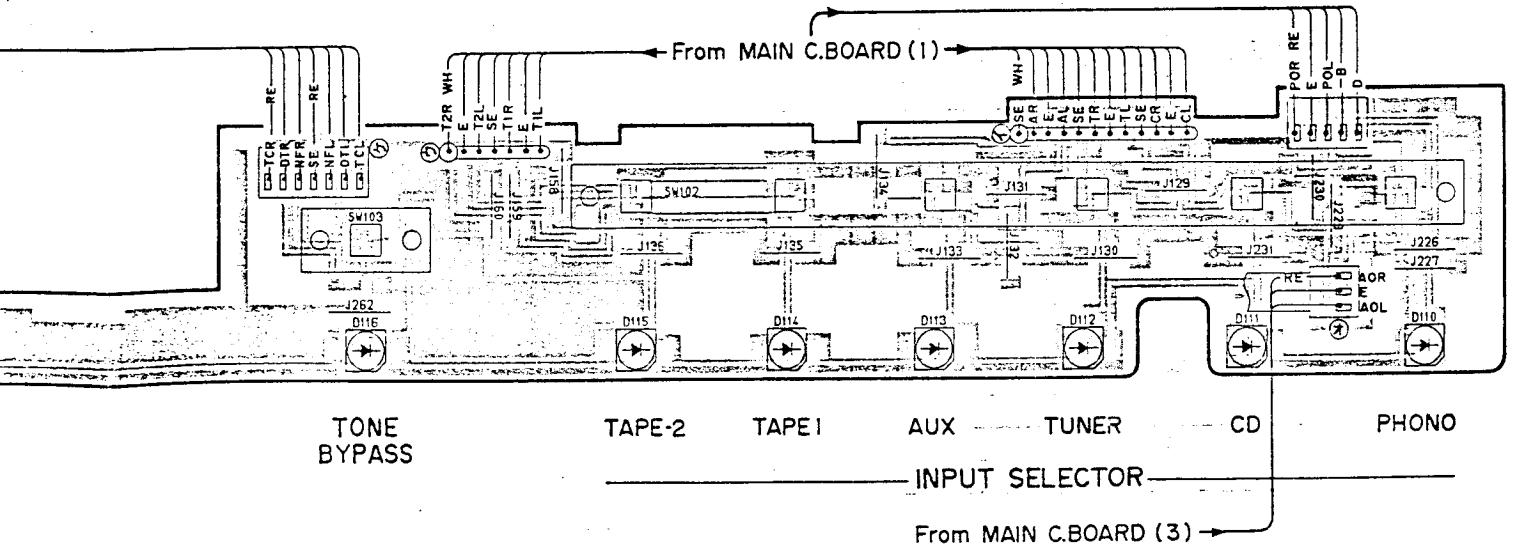
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 Email: enquiries@mauritron.co.uk

PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.

2SA970 (GR, BL) 2SC2240 (GR, BL) 2SA1145 (O, Y) 2SC2705 (O, Y)	2SK117 2SK128 2SK108	2SA968 (O, Y) 2SA1306A 2SA1306 2SA1306B 2SC2238 (O, Y) 2SC3298A 2SC3298 2SC3298B	2SC3182 (R, O) 2SC2581 (O, P, Y) 2SA1265 (R, O) 2SA1106 (O, P, Y)	SLR-55URC 	1S1555 1S2473 HZ16-3L 1S582 HZ6C-1L 	D48B20 4D4B41 	NJM4558S 	M5218L
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VOLUME



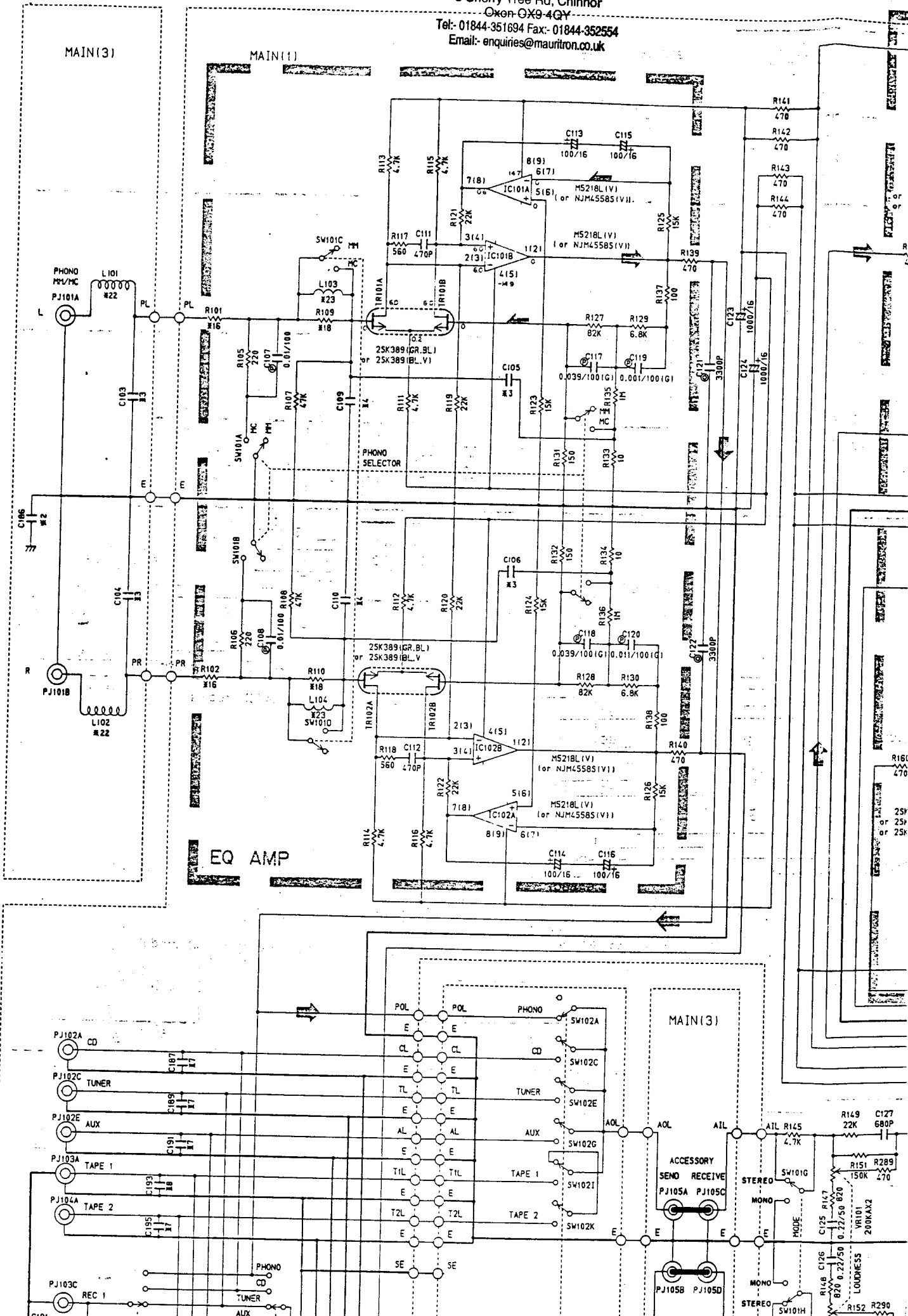
- WIRE COLOR ABBREVIATIONS
- BL ▶ Black
 - BR ▶ Brown
 - RE ▶ Red
 - OR ▶ Orange
 - YE ▶ Yellow
 - GR ▶ Green
 - BE ▶ Blue
 - VI ▶ Violet
 - GY ▶ Gray
 - WH ▶ White
 - GG ▶ Light Green
 - SB ▶ Light Blue
 - PK ▶ Pink

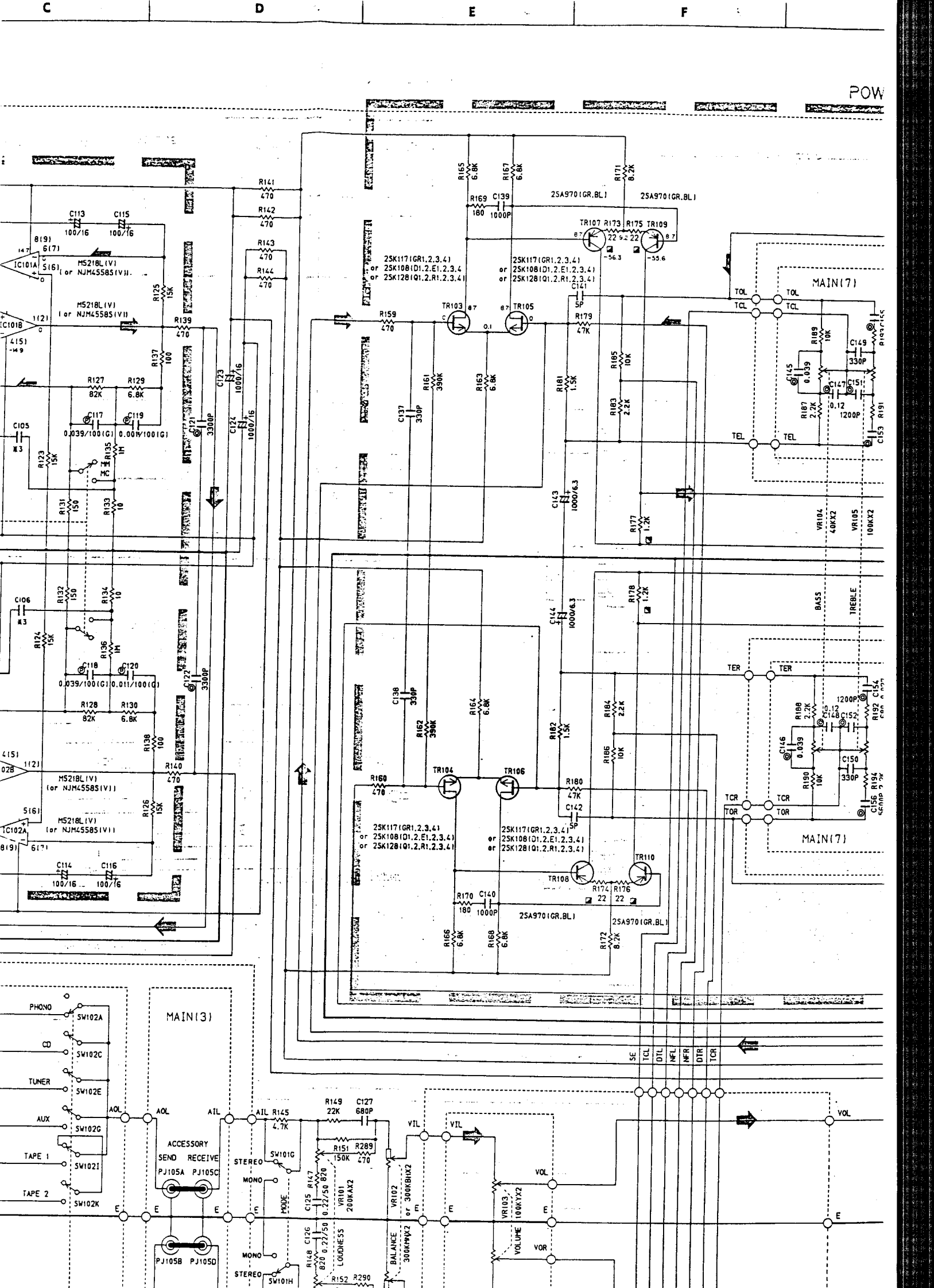
R, O) O, P, Y) R, O) O, P, Y)	SLR-55URC	1S1555 1S2473 HZ16-3L 1SS82 HZ6C-1L	D48B20 4D4B41	NJM4558S	M5218L	2SK389 (BL, V) 2SK389 (GR, BL)

* Circuit board are subject to change without notice.

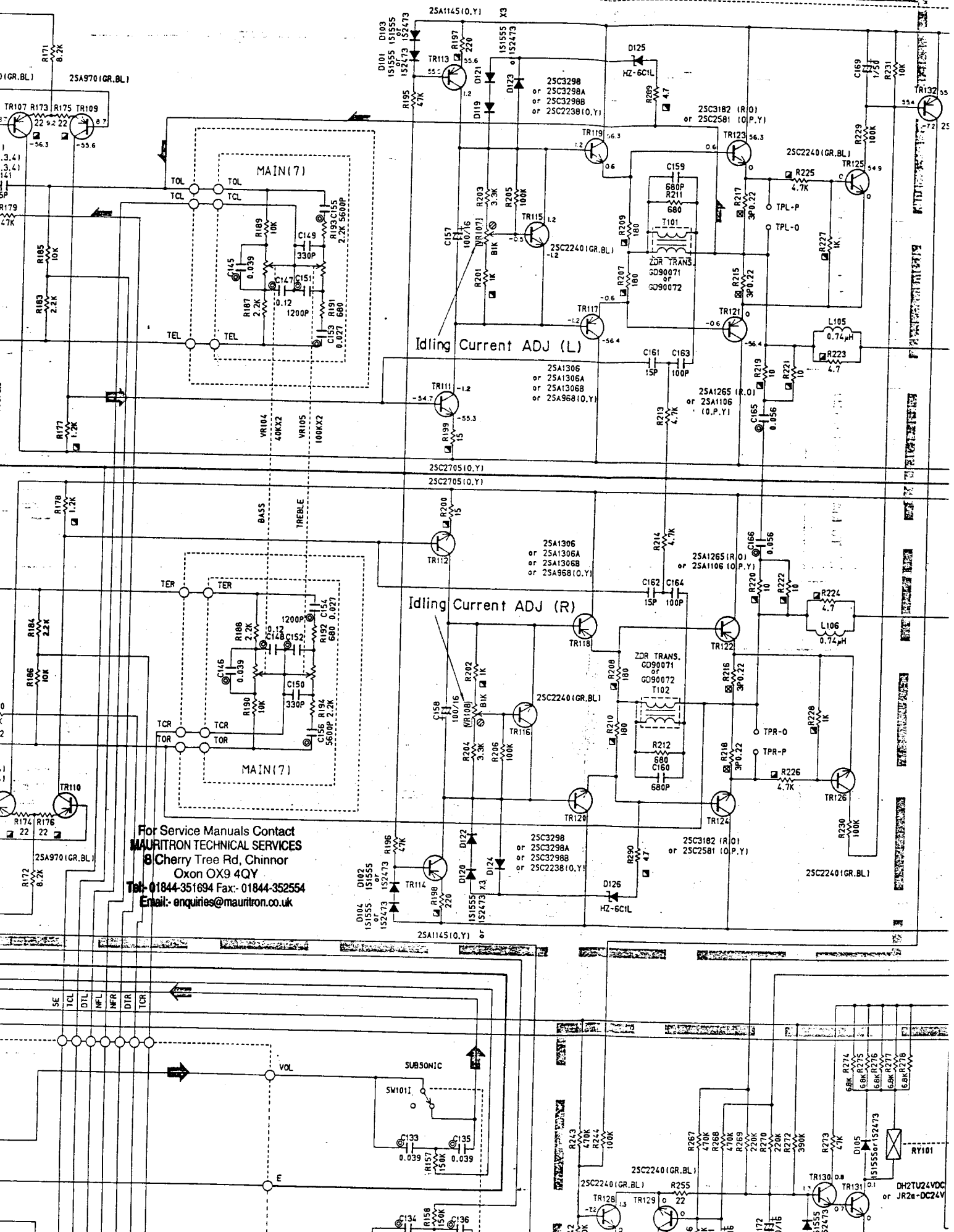
SCHEMATIC DIAGRAM

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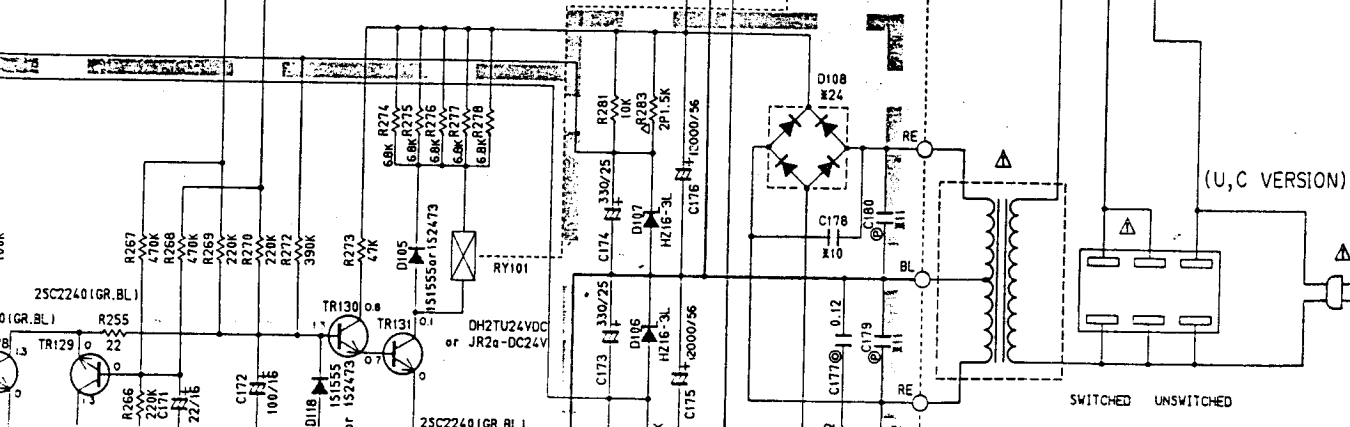
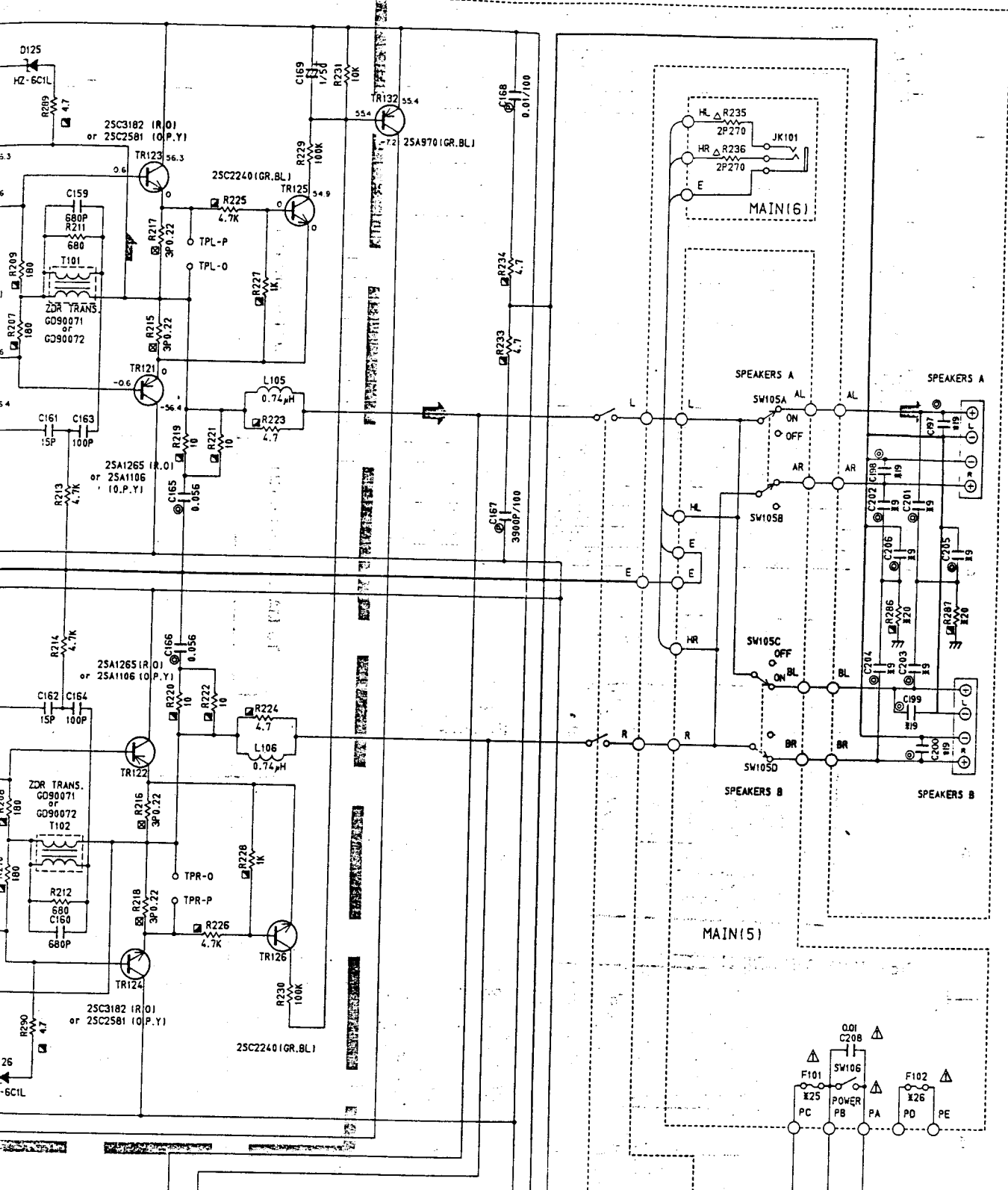




POWER AMP

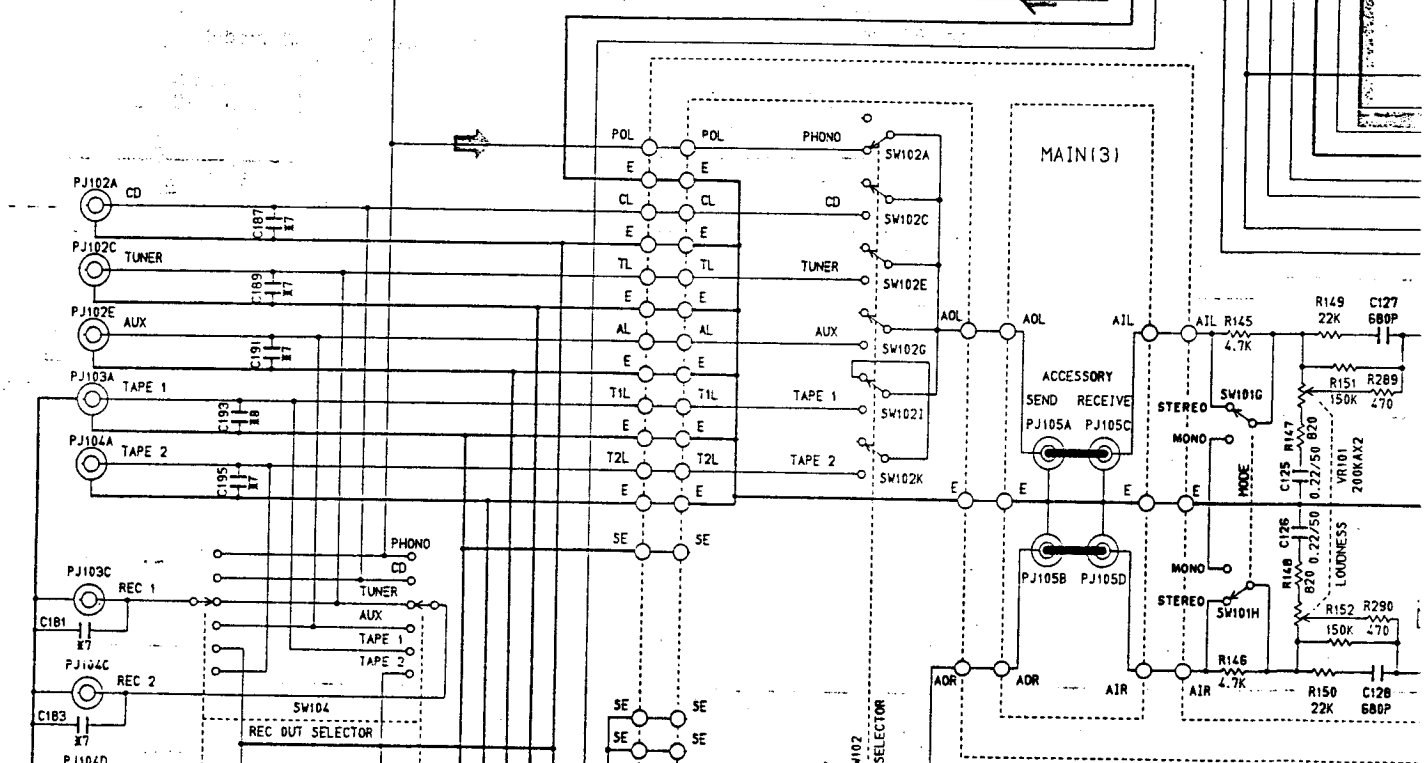
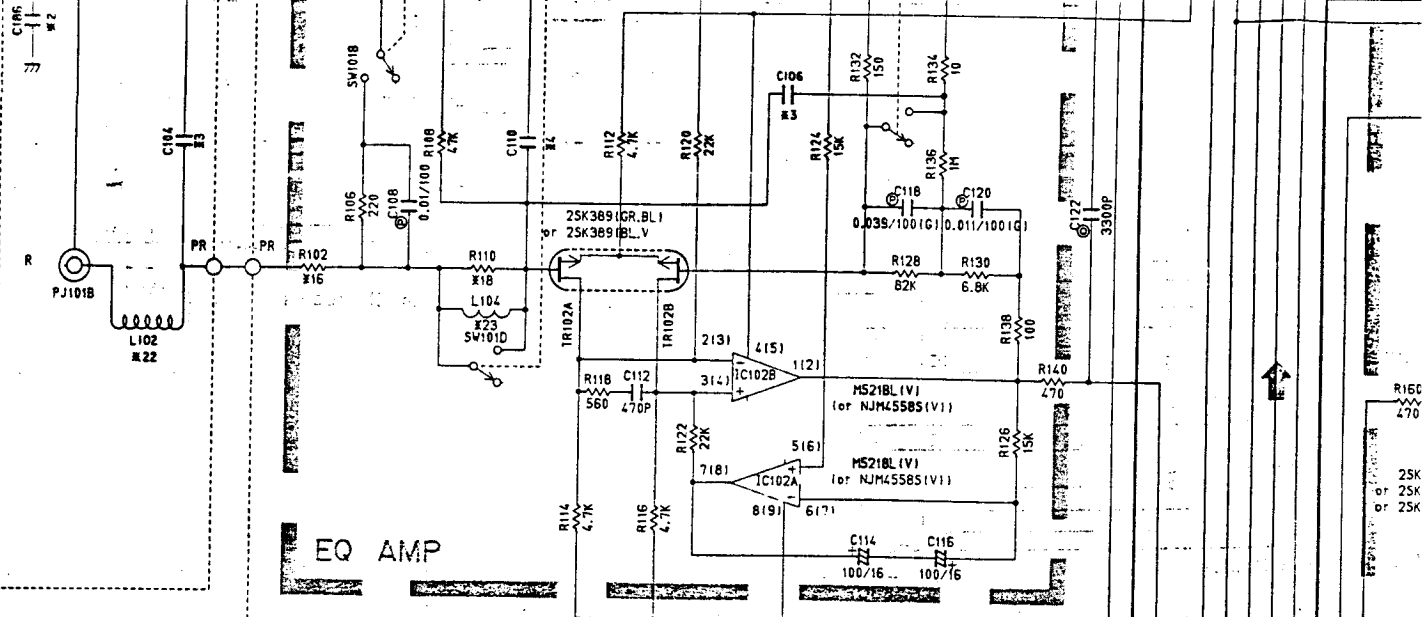


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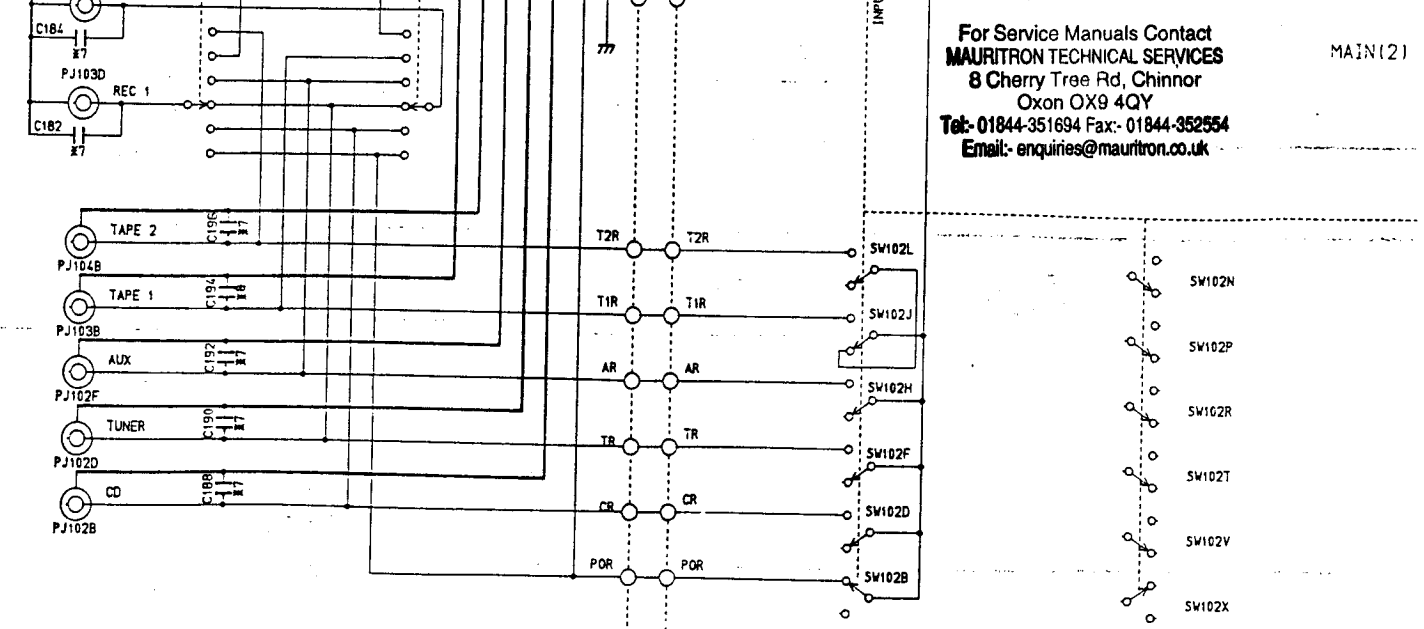


(U, C VERSION)

SWITCHED UNSWITCHED



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4

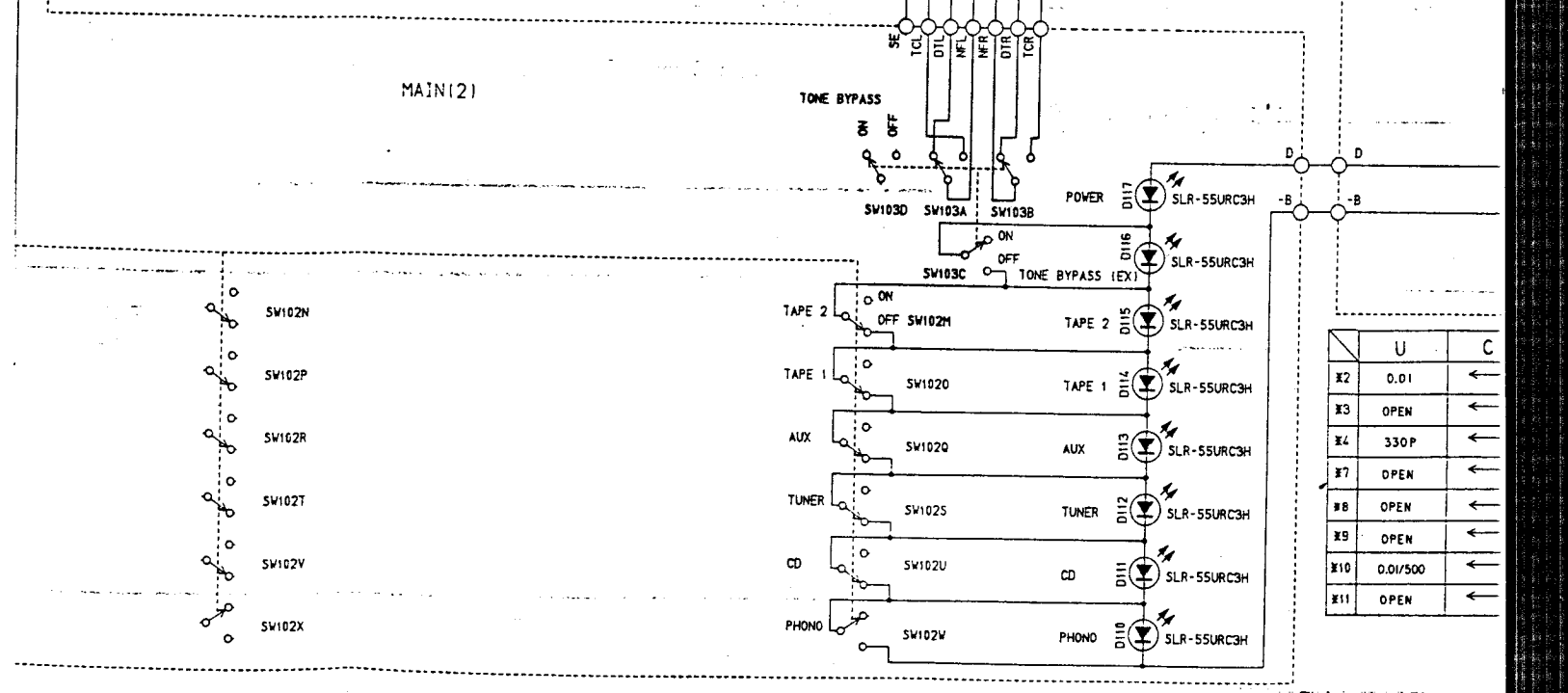
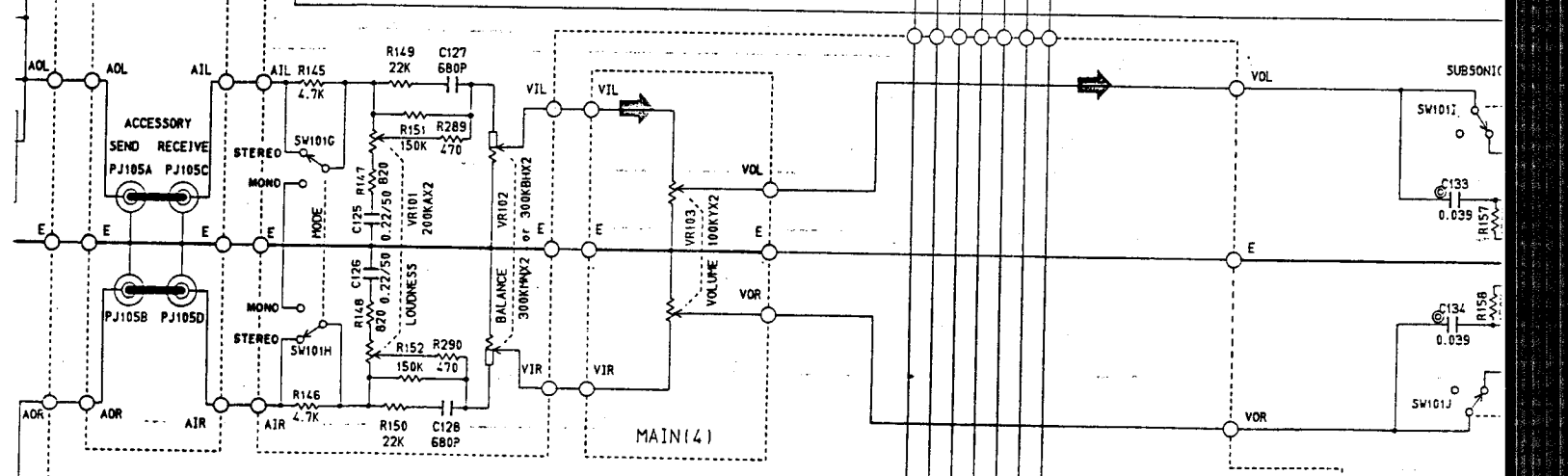
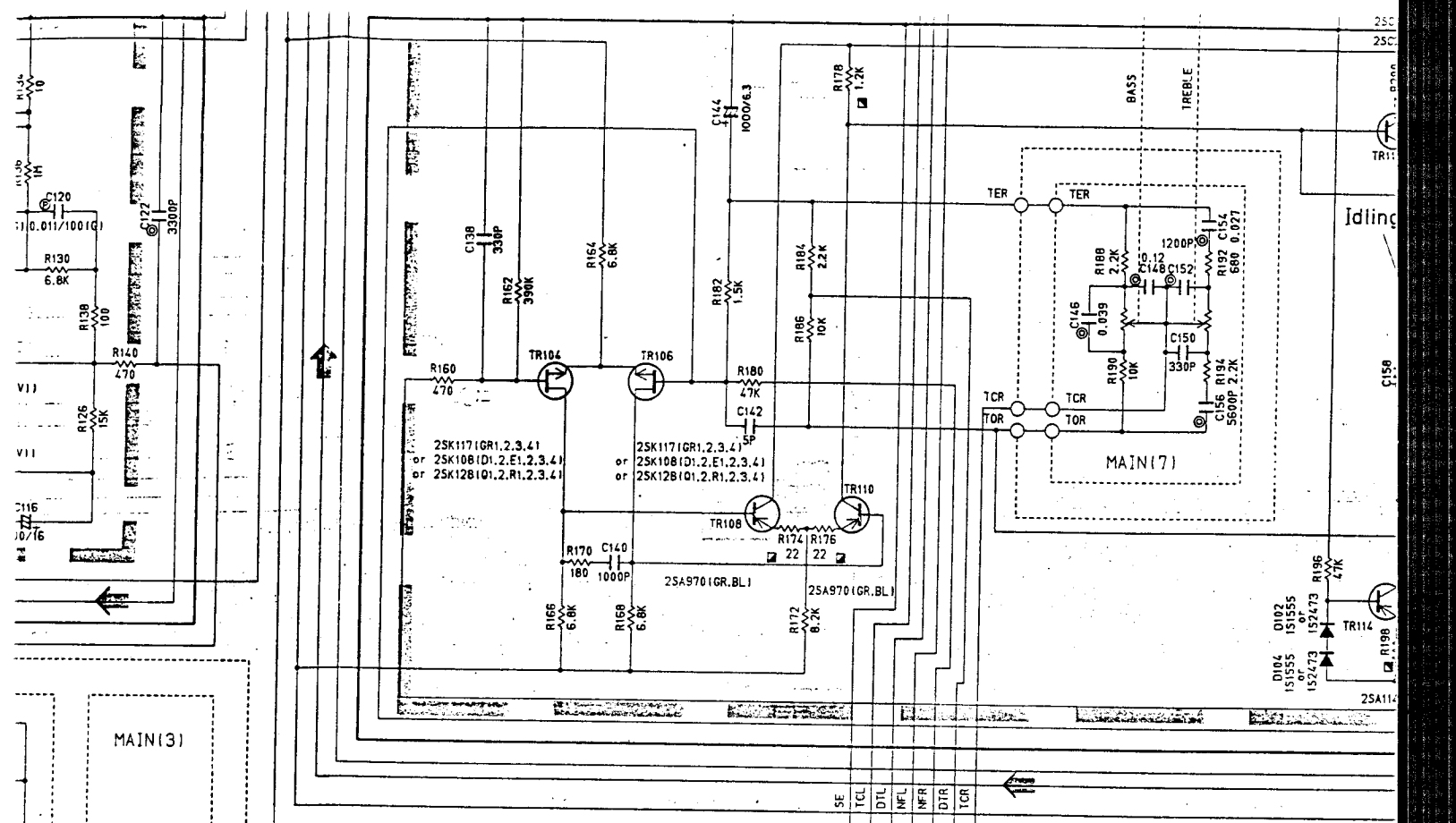
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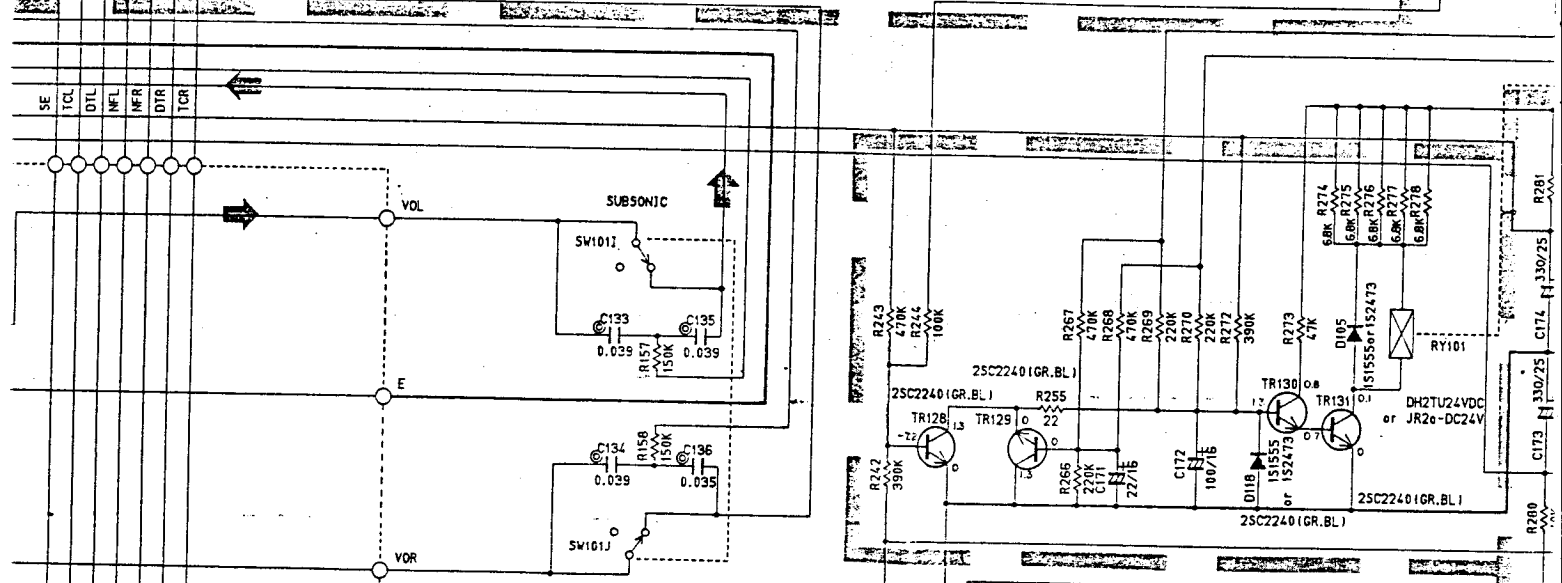
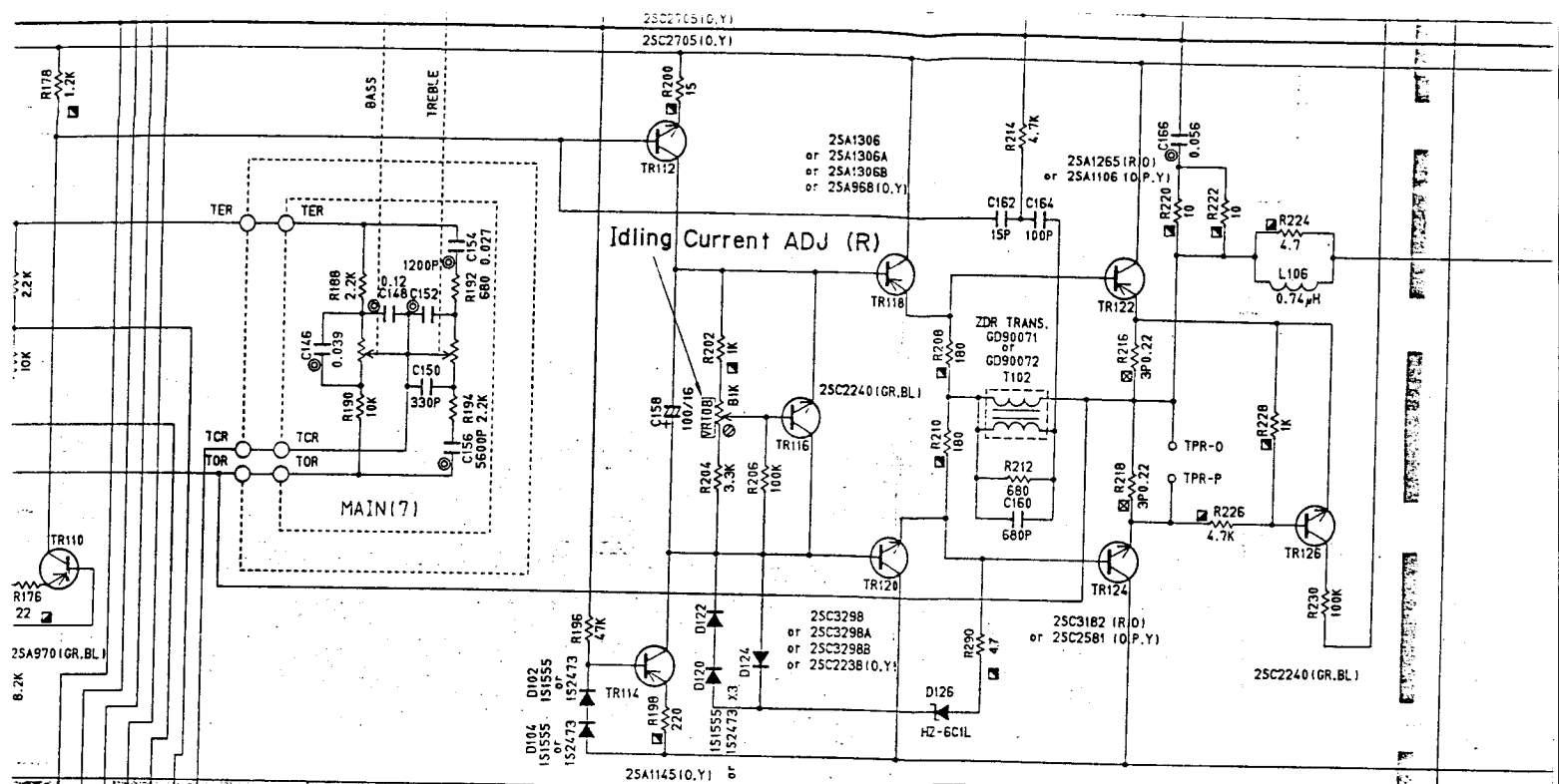
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7

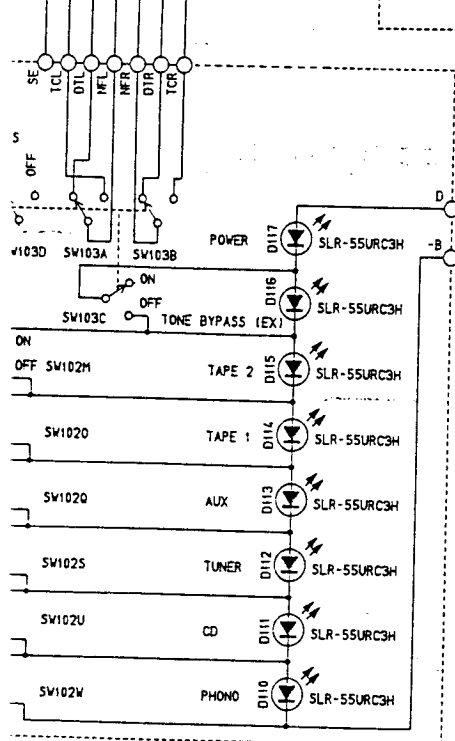
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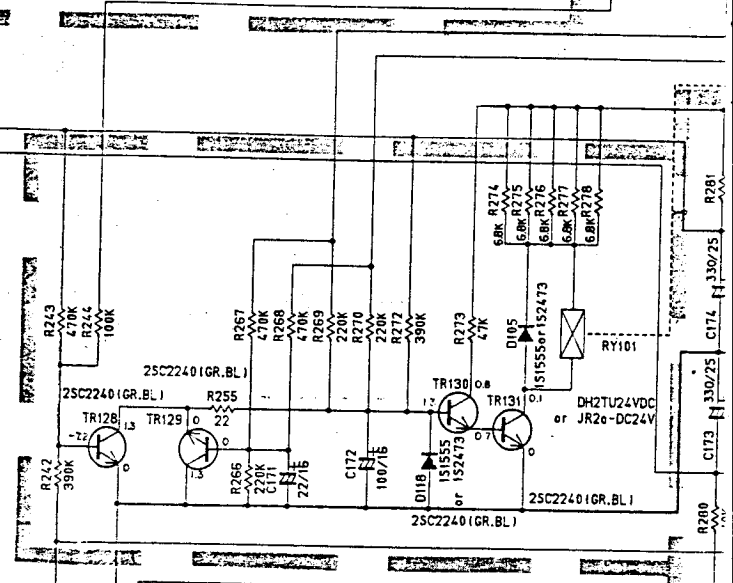




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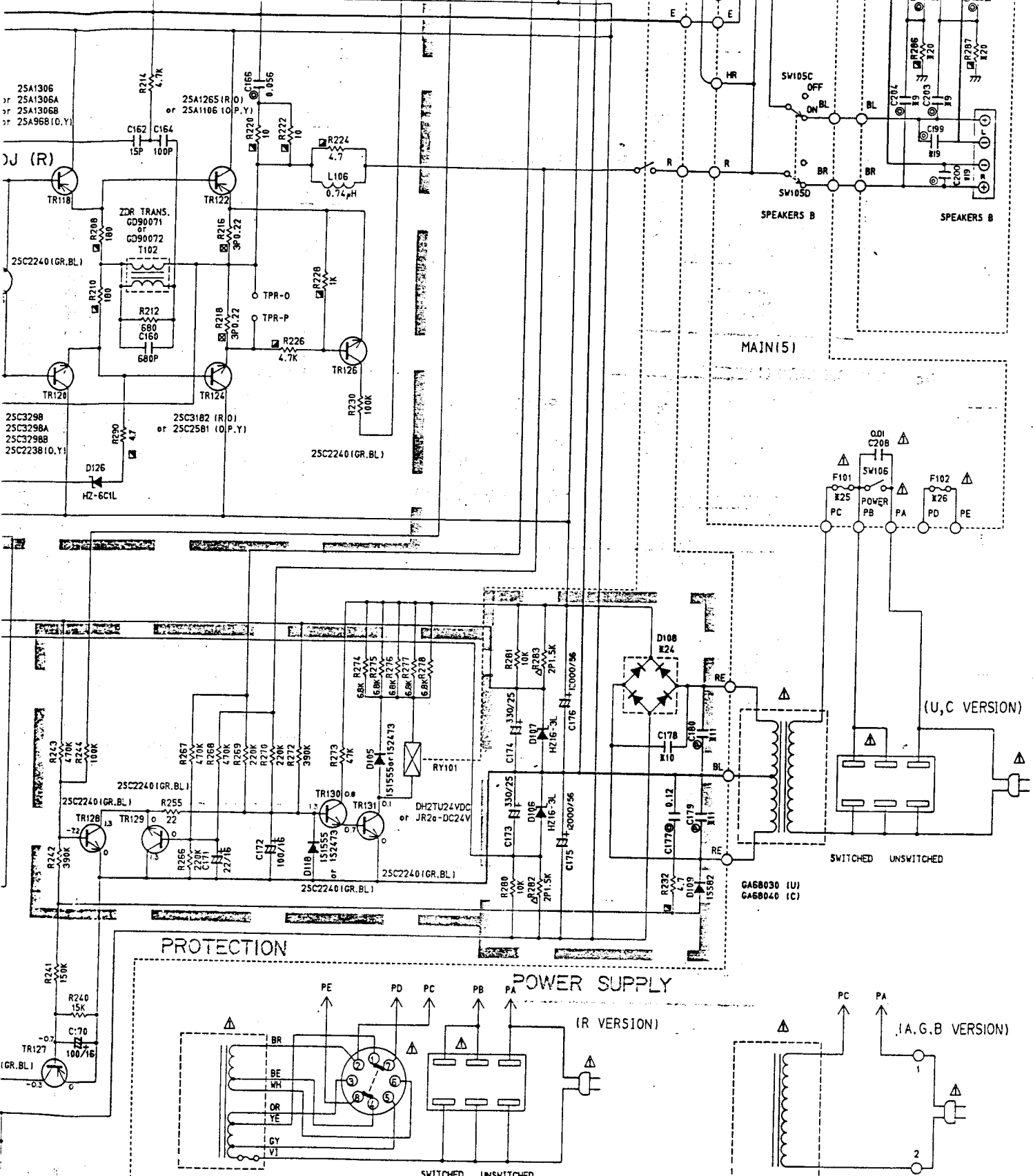


	U	C	R	A, B	G
✖2	0.01	←	←	←	OPEN
✖3	OPEN	←	←	←	150P
✖4	330P	←	←	←	150P
✖7	OPEN	←	←	←	470P
✖8	OPEN	←	←	←	680P
✖9	OPEN	←	←	←	0.027
✖10	0.01/500	←	←	←	OPEN
✖11	OPEN	←	←	←	0.047/100



	U	C	R	A, B	G
✖16	10	←	←	←	33
✖18	33	←	←	←	4.7
✖19	OPEN	←	←	←	560
✖20	OPEN	←	←	←	4.7
✖22	SHORT	←	←	←	15P
✖23	OPEN	←	←	←	220
✖24	4D4B41	D4BB20	4D4B41	←	←
✖25	7A 125V	←	7.0A 250V	T3.15A 250V	←
✖26	OPEN	←	T3.5A 250V	OPEN	←

• Comp. replac.
 • Schen



A, B	G
←	OPEN
←	150P
←	150P
←	470P
←	680P
←	0.027
←	OPEN
←	0.047/100

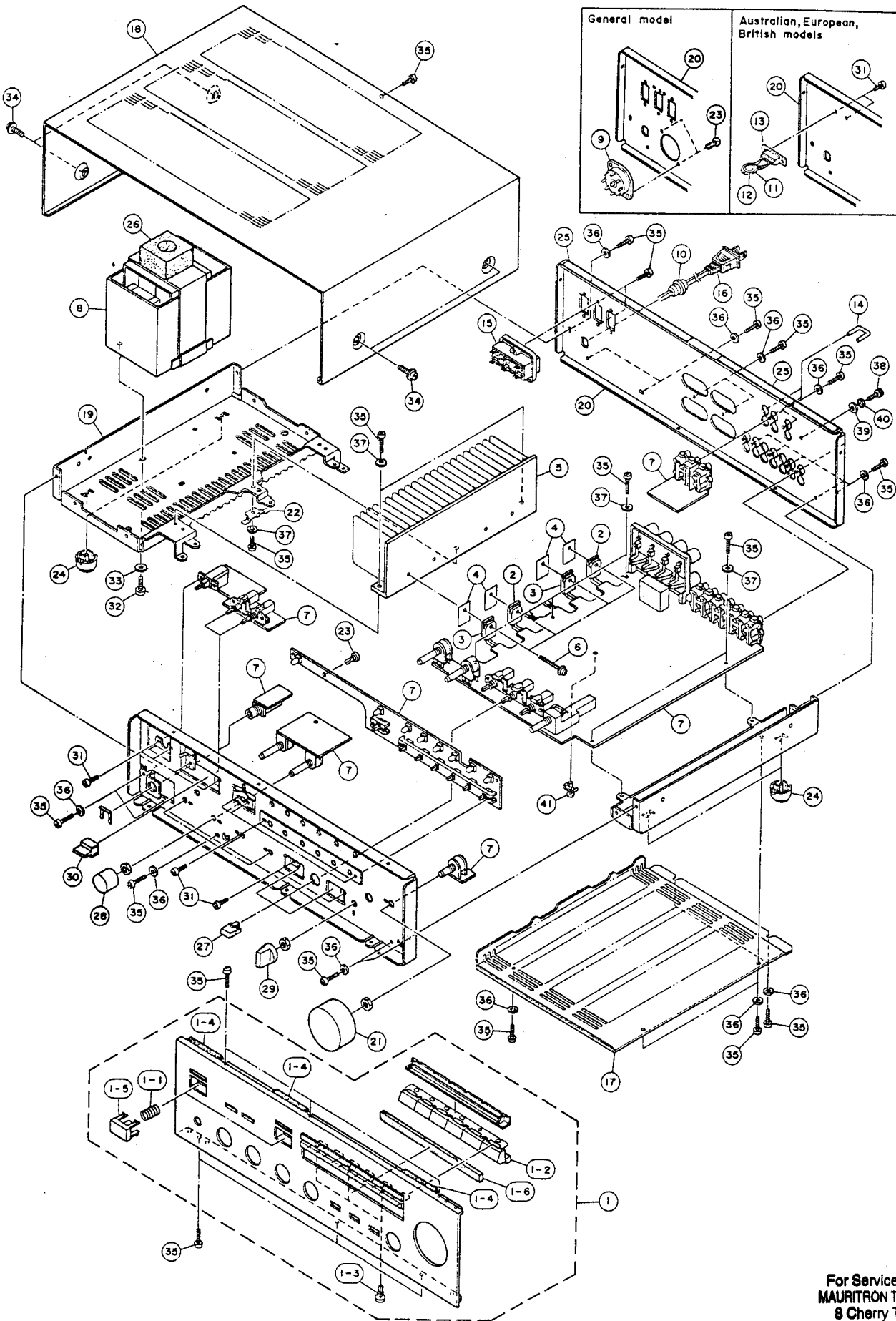
	U	C	R	A, B	G
⊗16	10	←	←	←	33
⊗18	33	←	←	←	4.7
⊗19	OPEN	←	←	←	5600P
⊗20	OPEN	←	←	←	4.7k
⊗22	SHORT	←	←	←	15μH
⊗23	OPEN	←	←	←	220μH
⊗24	4D4B41	D4BB20	4D4B41	←	←
⊗25	7A 125V	←	T7.0A 250V	T3.15A 250V	←
⊗26	OPEN	←	T3.5A 250V	OPEN	←

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
■	METAL PLATE RESISTOR
⊙	FLAME PROOF CARBON FILM RESISTOR
●	SEMI VARIABLE RESISTOR

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	CERAMIC CAPACITOR
▲	POLYESTEL FILM CAPACITOR
●	POLYPROPYLEN FILM CAPACITOR

• Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 • Schematic diagram is subject to change without notice.

EXPLODED VIEW



For Service Manuals Contact
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PARTS LIST

ELECTRICAL PARTS

WARNING

Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.

- Carbon resistors of this stereo tuner are 1/6W. There is no discription about them in this parts list. Use the "Part No" HF850000 or equivalent.

322-117-322-255

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 08:58:90	Main circuit Board	メ イ ン シ ー ト	Silver		J	
※	NA 08:59:00	"	"	Black		J	
※	NA 08:59:10	"	"	Silver		R	
※	NA 08:59:20	"	"	Black		R	
※	NA 08:59:30	"	"	Silver		U	
※	NA 08:59:40	"	"	Black		U	
※	NA 08:59:50	"	"	Silver		A,B	
※	NA 08:59:60	"	"	Black		A,B	
※	NA 08:59:70	"	"	Silver		G	
※	NA 08:59:80	"	"	Black		G	
※	NA 08:59:90	"	"	Silver		C	
※	NA 08:60:00	"	"	Black		C	
	FG 41:11:50	Ceramic Cap	セ ラ コ ン	C161,162			
	FG 41:21:50	"	"	C105,106		G	
	FG 41:21:00	"	"	C163,164			
	FG 41:21:50	"	"	C103,104		G	
	FG 41:23:30	"	"	C109,110		J,R,U,A. C,B	
	FG 41:21:50	"	"	"		G	
	FG 41:23:30	"	"	C137,138,149,150			
	FG 41:24:70	"	"	C181~184,187~192 195,196		G	
	FG 41:24:70	"	"	C111,112			
	FG 41:26:80	"	"	C127,128,159,160			
	FG 41:26:80	"	"	C193,194		G	
	FG 41:31:00	"	"	C139,140			
	FG 44:41:00	"	"	C186		J,R,U,A. C,B	
	FG 41:05:00	"	"	C141,142			
	FH 23:41:00	"	"	C178		J,R,U,A. C,B	
	Fi 32:41:00	"	"	C208		J	Δ
	Fi 41:41:00	"	"	C208		R,U,A,C,B	Δ
	Fi 38:41:00	"	"	C208		G	Δ
	FZ 00:41:30	"	半 導 体 セ ラ コ ン	C207		J,R,U,A. C,B	
	FZ 00:37:10	Electrolytic Cap	ブ ロ ッ ク ケ ミ コ ン	C175,176		R,U,A,G. C,B	
※	FZ 00:67:00	"	"	C175,176		J	
	FZ 00:44:20	Polypropylene Film Cap	ポ リ プ ロ コ ン	C179,180		G	
	FA 15:31:20	Mylar Cap	マ イ ラ ー コ ン	C151,152			
	UA 25:33:30	"	"	C121,122			
	UA 25:35:60	"	"	C155,156			
	UA 25:35:60	"	"	C197~200		G	
	UA 25:43:90	"	"	C129~132		J	
	UA 25:42:70	"	"	C201~206		G	
	UA 25:42:70	"	"	C153,154			
	UA 25:43:90	"	"	C145,146,133~136			
	UA 25:45:60	"	"	C165,166			
	FA 15:51:20	"	"	C147,148,177			
	UT 46:41:10	Polypropylene Film Cap	ポ リ プ ロ コ ン	C119,120			
	UT 46:43:90	"	"	C117,118			
	UT 45:41:00	"	"	C107,108,168			
	UT 45:33:90	"	"	C167			
	UW 91:84:70	Electrolytic Cap	ケ ミ コ ン	C143,144		J	
	UJ 17:91:00	"	"	C143,144		R,U,A,G. C,B	
	UW 93:72:20	"	"	C171			
	UW 93:81:00	"	"	C113~116,157,158, 170,172			
	UW 94:83:30	"	"	C173,174			

※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	UW 86 52 20	Electrolytic Cap	0.22 μ F 50V	ケ ミ コ ン	C125,126		
	UW 96 61 00	"	1 μ F 50V	"	C169		
	UJ 13 91 00	"	1000 μ F 16V	"	C123,124		
	GD 90 07 10	Coil	0.74 μ H	空 芯 コ イ ル	L105,106		
	GE 90 03 30	Choke Coil	220 μ H	チ ョ ー ク コ イ ル	L103,104	G	
	GE 90 08 40	Coil	15 μ H	コ イ ル	L101,102	G	
	GD 90 07 10	ZDR Transformer	2mH	Z D R ト ラ ンス	T101,102		
	GD 90 07 20	"	2mH	"	"		
	HL 82 52 70	Metal Film Oxide Resistor	270 Ω 2P	鍍 金 抵 抗	R235,236		
	HL 62 61 50	"	1.5k Ω 2P	"	R282,283		
	HL 33 61 80	"	1.8k Ω 3P	"	R279	J	
	HV 45 34 70	Flam Proof Carbon Resistor	4.7 Ω 1/4W	不 燃 化 カ ー ボ ン 抵 抗	R286,287,289,290	G	
	HV 45 34 70	"	4.7 Ω 1/4W	"	R223,224,232-234		
	HV 45 41 00	"	10 Ω 1/4W	"	R219-222		
	HV 45 41 50	"	15 Ω 1/4W	"	R199,200		
	HV 45 42 20	"	22 Ω 1/4W	"	R173-176		
	HV 45 51 80	"	180 Ω 1/4W	"	R207-210		
	HV 45 52 20	"	220 Ω 1/4W	"	R197,198		
	HV 45 61 00	"	1k Ω 1/4W	"	R201,202,227,228		
	HV 45 64 70	"	4.7k Ω 1/4W	"	R225,226		
	HV 45 61 20	"	1.2k Ω 1/4W	"	R177,178		
	HZ 00 23 90	Metal Plate Resistor	0.22k Ω	金 属 板 抵 抗	R215,216		
	HZ 00 30 50	"	0.22 Ω	"	R217,218		
	HS 31 18 90	Potentiometer	Y100k Ω ×2	可 変 抵 抗 器	VR103 VOLUME		
	HS 31 24 20	"	T \times 100k Ω ×2	"	VR105 TREBLE		
	HS 41 24 30	"	T \times 100k Ω ×2	"	VR104 BASS		
	HS 41 24 40	"	A200k Ω ×2	"	VR101 LOUDNESS		
	HS 41 24 50	"	MN300k Ω	"	VR102 BALANCE		
	HT 37 03 40	Pre-Set Potentiometer	B1k Ω	半 固 定 抵 抗 器	VR107,108		
	iA 09 70 00	Transistor	2SA970 (GR,BL)	ト ラ ン ジ ス タ	TR107-110,127,132		
	iA 11 45 00	"	2SA1145 (O,Y)	"	TR113,114		
	iC 22 40 00	"	2SC2240 (GR,GU)	"	TR115,116,125,126, 128-131		
	iC 27 05 00	"	2SC2705 (O,Y)	"	TR111,112		
	iA 09 68 00	"	2SA968 (O,Y)	"	TR117,118		
	iA 13 06 10	"	2SA1306	"	"		
	iC 22 38 00	"	2SC2238 (O,Y)	"	TR119,120		
	iX 60 22 50	"	2SC3298A	"	"		
	iE 10 34 10	FET	2SK117	F E T	TR103-106		
	iE 10 45 10	Dual FET	2SK389 (BL,V)	デュアル F E T	TR101,102		
	iE 10 45 00	"	2SK389 (BR,BL)	"	"		
	iF 00 06 70	Diode	1S2473	ダ イ オ ー ド	D101-105,118-124		
	iF 00 00 40	"	1S1555	"	"		
	iF 00 14 00	"	1SS82	"	D109		
	iF 00 30 30	Zener Diode	HZ16-3L	ツェナーダイオード	D106,107		
	iF 00 15 10	"	HZ6C-1L	"	D125,126		
	iF 00 42 70	LED	SLR-55URC3H	L E D	D110-117		
	iH 00 08 70	Diode Bridge	4D4B41	ダイオードブリッジ	D108	J,R,U,A, G,B	

*New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	iH :00:11:70	Diode Bridge	D48B20	ダイオードブリッジ	D106		C
	iG :08:57:00	IC	M5218L	I C	IC101,102 } Inter-changeable 併用		
	iG :14:50:00	"	NJM4558S	"		"	
※	KA :50:20:20	Rotary Switch	SRZ-V	ロータリースイッチ	SW104 REC OUT		
※	KA :80:35:70	Push Switch	2連単動	プッシュスイッチ	SW105 SPEAKERS		
※	KA :80:48:30	"	6連	"	SW102 INPUT		
※	KA :80:48:40	"	単動	"	SW103 RICHNESS		
※	KA :80:49:00	"	SUF	3連金具付スイッチ	SW101 PHONO,MODE,SUBSONIC		
※	KA :80:48:60	Power Switch	SDL81P(TYPE B)	パワースイッチ	SW106 POWER		
	KB :00:03:70	Fuse	T3.5A 250V	ヒ ユ ー ズ	F102		R
	KB :00:07:60	"	T3.15A 250V	"	F101		A,G,B
	KB :00:13:00	"	T7.0A 250V	"	F101		J,R
	KB :00:15:20	"	7A 125V	"	F101		U,C
	KC :00:19:40	Relay	DH2TU24VDC	リ レ ー	RY101	Inter-changeable 併用	
※	KC :00:20:00	"	JR2a-DC24V	"	"		
	LB :20:22:90	Pin Jack	2P	ピンジャック	PJ101		
	LB :40:10:30	"	4P	"	PJ104,105		
	LB :40:10:40	"	4P	"	PJ103		
	LB :60:60:90	"	6P	"	PJ102		
	LB :30:17:50	Head Phone Jack	GY	ホーンジャック	Silver JK101		
	LB :30:17:60	"	BL	"	Black		
	LA :00:21:40	Lapping Terminal	2P P=10 i-Type	i型ラッピング端子板			R
	LA :00:21:50	"	3P P=10 i-Type	"			
※	LA :00:54:40	Speaker Terminal	R ch	スピーカーターミナル			
※	LA :00:54:50	"	L ch	"			
	LB :20:10:60	Fuse Holder Pin		ヒューズホルダーピン			A,G,B
	LB :20:19:70	"		"			J,R,U,C
	BB :06:83:70	Ground Angle		ア ー ス 金 具			
	CB :08:60:30	Spacer		ス ペ ー サ ー		A-500	
	CB :09:52:60	Cover for Cap		コンデンサーカバー			G
	AA :61:47:20	Shield Plate		シールド板			J
	AA :61:51:00	"		"			J

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※New Parts (新規部品)

MECHANISM PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
* 1	NB 62 36 30	Panel Unit	パネルユニット	Silver		J	
* "	NB 62 36 40	"	"	Black		J	
* "	NB 62 36 50	"	"	Silver		R,U,A,G,C,B	
* "	NB 62 36 60	"	"	Black		R,U,A,G,C,B	
1-1	AA 62 20 80	Spring	ス プ リ ン グ				
* 1-2	NB 62 28 00	Knob Ass'y	ツ マ ミ Ass'y	INPUT Silver			
* "	NB 62 27 80	"	"	INPUT Black			
1-3	CB 06 88 80	Plastic Rivet	プラスチックリベット				
1-4	CB 08 50 50	Isolation Tape	防 振 テ ー プ				
* 1-5	CB 63 51 00	Button	ボ タ ン	Silver			
* "	CB 63 51 10	"	"	Black			
* 1-6	CB 63 52 60	Cushion	ク ッ シ ョ ン				
* 2	iX 60 12 60	Transistor	2SA1106 (O,P,Y)	ト ラ ン ジ ス タ	TR121,122		
* 3	iX 60 12 70	"	2SC2581 (O,P,Y)	"	TR123,124		
4	iL 00 05 70	Insulation Base	マイカベース				
5	BA 09 14 30	Heat Sink	放 熱 板				
6	EZ 00 13 50	Cup Screw	3x14 FCM3-BI	カップスクリュー(Bタイト)			
* 7	NA 08 58 90	Main Circuit Board	メインシート	Silver		J	
* "	NA 08 59 00	"	"	Black		J	
* "	NA 08 59 10	"	"	Silver		R	
* "	NA 08 59 20	"	"	Black		R	
* "	NA 08 59 30	"	"	Silver		U	
* "	NA 08 59 40	"	"	Black		U	
* "	NA 08 59 50	"	"	Silver		A,B	
* "	NA 08 59 60	"	"	Black		A,B	
* "	NA 08 59 70	"	"	Silver		G	
* "	NA 08 59 80	"	"	Black		G	
* "	NA 08 59 90	"	"	Silver		C	
* "	NA 08 60 00	"	"	Black		C	
* 8	GA 68 02 00	Power Transformer	電 源 ト ラ ン ス			J	△
* "	GA 68 03 00	"	"			U	△
* "	GA 68 04 00	"	"			C	△
* "	GA 68 05 00	"	"			G	△
* "	GA 68 06 00	"	"			A,B	△
* "	GA 68 07 00	"	"			R	△
9	LB 20 14 80	Voltage Selector	電 圧 切 換 器			R	△
10	CB 61 68 10	Cord Stopper	CM-22A	コ ー ド ス ト ッ パ ー		J	
"	CB 62 01 90	"	CM-22B	"		R,A,G,B	
"	CB 62 02 00	"	CM-22C	"		U,C	
13	LA 00 29 50	Terminal	2P	2 P 中 継 端 子 台		A,G,B	△
14	LB 10 11 10	Short Plug		シ ョ ー ト プ ラ グ			
15	LB 60 39 20	AC Outlet		A C ア ウ ト レ ッ ト		J,R,U	△
"	LB 60 43 20	"		"		C	△
16	MG 00 17 50	Power Cord	7A 125V 2.2m	電 源 コ ー ド	Inter-changeable 併用	J	△
"	MG 00 17 60	"	7A 125V 2.2m	"		J	△
"	MG 00 16 30	"	6A 250V 2m	"	Inter-changeable 併用	R	△
"	MG 00 14 50	"	10A 125V 1.98m	"		U,C	△
"	MG 00 14 60	"	10A 125V 2m	"	U,C	△	
"	MG 00 09 60	"	2.5A 250V 2m	"	Inter-changeable 併用	G	△
"	MG 00 16 20	"	2.5A 250V 2m	"		G	△
"	MG 00 09 20	"	7.5A 250V 2.5m	"	Inter-changeable 併用	A	△
"	MG 00 14 90	"	7.5A 250V 2.5m	"		A	△
"	MG 00 18 60	"	2.5A 250V 2m	"	B	△	

*New Parts (新規部品)

A-520

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
17	AA:61:46:30	Bottom Cover	ボトムカバー		A-500		
※ 18	AA:62:54:30	Top Cover	トップカバー	Silver			
※ "	AA:62:54:40	"	"	Black			
※ 19	AA:62:36:00	Side Frame (L)	サイドスレーム (L)				
※ 20	AA:62:36:20	Rear Panel	リアパネル			J	
※ "	AA:62:36:30	"	"			R	
※ "	AA:62:36:40	"	"			U,C	
※ "	AA:62:36:50	"	"			G	
※ "	AA:62:36:60	"	"			A,B	
※ 21	BA:09:12:60	Knob	ツマミ	VOLUME Silver			
※ "	BA:09:12:50	"	"	" Black			
22	BB:07:01:20	Transistor Pusher	トランジスタプッシャー				
23	CB:06:88:80	Plastic Rivet	プラスチックリベット				
24	CB:62:07:30	Leg	脚				
25	CB:60:98:10	Isolation Tape	防振テープ		T-6a		
26	CB:63:74:80	Cushion	クッション				
※ 27	CB:63:42:20	Push Button	プッシュボタン	Silver			
※ "	CB:63:42:30	"	"	Black			
※ 28	CB:63:82:30	Knob	ツマミ	Silver			
※ "	CB:63:82:40	"	"	Black			
※ 29	CB:63:82:70	"	"	REC OUT Silver			
※ "	CB:63:82:80	"	"	" Black			
※ 30	NB:62:36:20	Button Ass'y (F)	ボタンAss'y(F)	SPEAKERS Silver	T-500		
"	NB:60:92:00	"	"	Black	T-500		
31	Ei:33:00:66	Binding Head Tapping Screw	3x6 FCRM3-BI	バインドタッピングネジ	PACK		
32	Ei:34:01:00	"	4x10 FCRM3-BI	"	PACK		
33	EV:20:30:46	Plain Washer	φ4 FCRM3-BI	平座金	PACK		
34	EK:13:00:20	BW Head Screw	4x8 FNM3-3g	BWヘッド小ネジ	Silver		
"	EK:36:50:40	"	4x8 FCRM3-BI	"	Black		
35	Ei:33:00:86	Binding Head Tapping Screw	3x8 FCRM3-BI	バインドタッピングネジ	PACK		
36	EV:41:30:36	Toothed Lock Washer	φ3 FCRM3-BI	歯付座金	PACK		
37	EV:20:30:36	Plain Washer	φ3 FCRM3-BI	平座金	PACK		
38	EZ:00:14:00	Ground Terminal Screw	3x13.5MFNi-II	アース端子ネジ			
39	EV:90:13:60	Sems Plain Washer	φ10xφ3.5x10.8 FNM3-3g	セムス平座金			
40	EV:42:00:30	Toothed Lock Washer	M3 ZMC2-Y	外歯付座金			
41	CB:08:60:30	P.C. Board Spacer		プリントスペーサー			
	CB:06:92:50	Binding Tie	BK-1	インシュロックタイ			

*New Parts (新規部品)