



EM-100/80 Ensemble Mixers

SERVICE MANUAL

006337

006337

SPECIFICATIONS

CHANNELS:

6 (EM-100), 4 (EM-80)

OUTPUT POWER:

30 Wrms x 2 (EM-100/80)

CHANNEL CONTROLS:

Volume, Bass, Treble
 Reverb/Echo
 Speaker Balance
 Input Selector (Mic/Inst/Line)

MASTER CONTROLS:

Volume, Reverb/Echo
 Aux. Volume, Monitor Volume
 Power Switch

FITTINGS:

6 Input Jacks (EM-100)
 4 Input Jacks (EM-80)
 Aux. In Jacks (L,R)

Speaker Jacks (L,R)

Monitor Out Jacks (L,R)

Rec. Out Jacks (L,R)

To Echo Jack, From Echo Jack

Level Meters (L, R, EM-100)

Headphone Jack

Pilot Lamp

POWER CONSUMPTION:

130W (EM-100/80)

DIMENSIONS (W x H x D):

EM-100: 42.9x14.4x37.6 cm
 (17 x 5 $\frac{3}{4}$ x 14 $\frac{3}{4}$ ")

EM-80: 34.5x14.4x37.6 cm
 (13 $\frac{1}{2}$ x 5 $\frac{3}{4}$ x 14 $\frac{3}{4}$ ")

WEIGHT:

EM-100: 8.5 kg (18.7 lbs.)

EM-80: 8.0 kg (17.6 lbs.)

INPUT TERMINALS		NOMINAL INPUT LEVEL		IMPEDANCE
		EM-100	EM-80	
INPUT	LINE	-20 dBm (0.08V)	-22.5 dBm (0.06V)	50k Ω
	INST.	-24.5dBm (0.05V)	-27 dBm (0.03V)	50k Ω
	MIC.	-45 dBm (4 mV)	-47.5dBm (3 mV)	10k Ω
AUX.		-15 dBm (0.14V)	-15 dBm (0.14V)	50k Ω
FROM ECHO		-25 dBm (0.04V)	-25 dBm (0.04V)	50k Ω

OUTPUT TERMINALS		NOMINAL OUTPUT LEVEL		IMPEDANCE
		EM-100	EM-80	
REC. OUT		-14.5 dBm (0.15V)	-14.5dBm (0.15V)	3k Ω
MONITOR OUT		+ 5.5 dBm (1.5V)	+ 5.5dBm (1.5V)	200 Ω
TO ECHO		-10.5 dBm (0.23V)	-10.5dBm (0.23V)	7k Ω

Specifications subject to change without notice.

TOP CASE REMOVAL

- (a) Set the unit up on its side and remove the wood screws 1 to 4 as shown in Figure 1. Be careful not to lose the four power transformer fixing screws.
- (b) Reset the unit in its normal position and remove the wood screws 1 and 2 as shown in Figure 2.
- (c) Lift off the top case and lay it over to the right as shown in Figure 3.

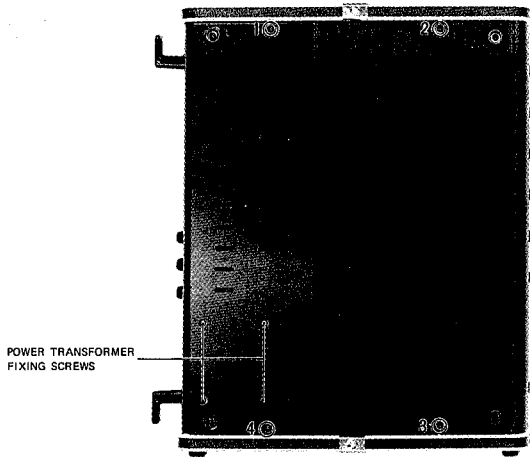


Figure 1

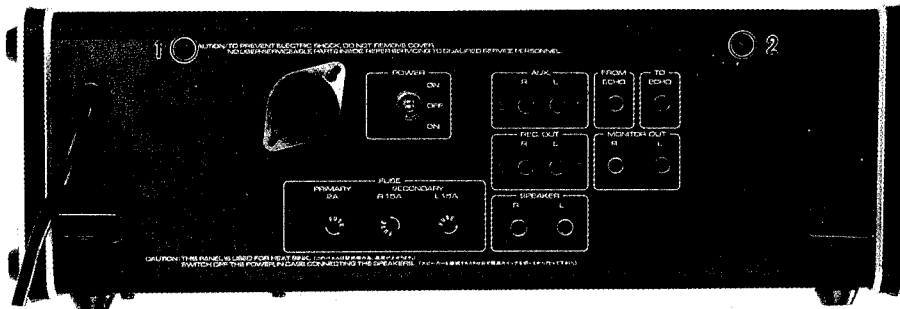


Figure 2

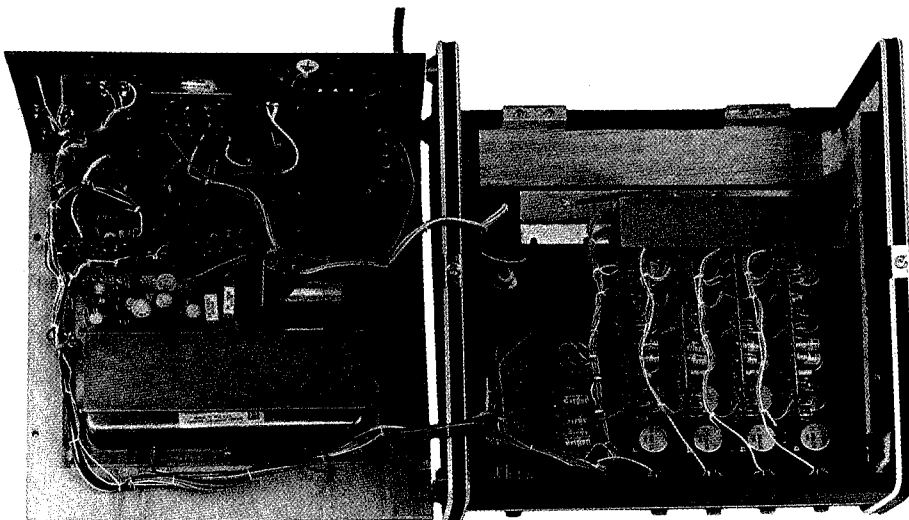
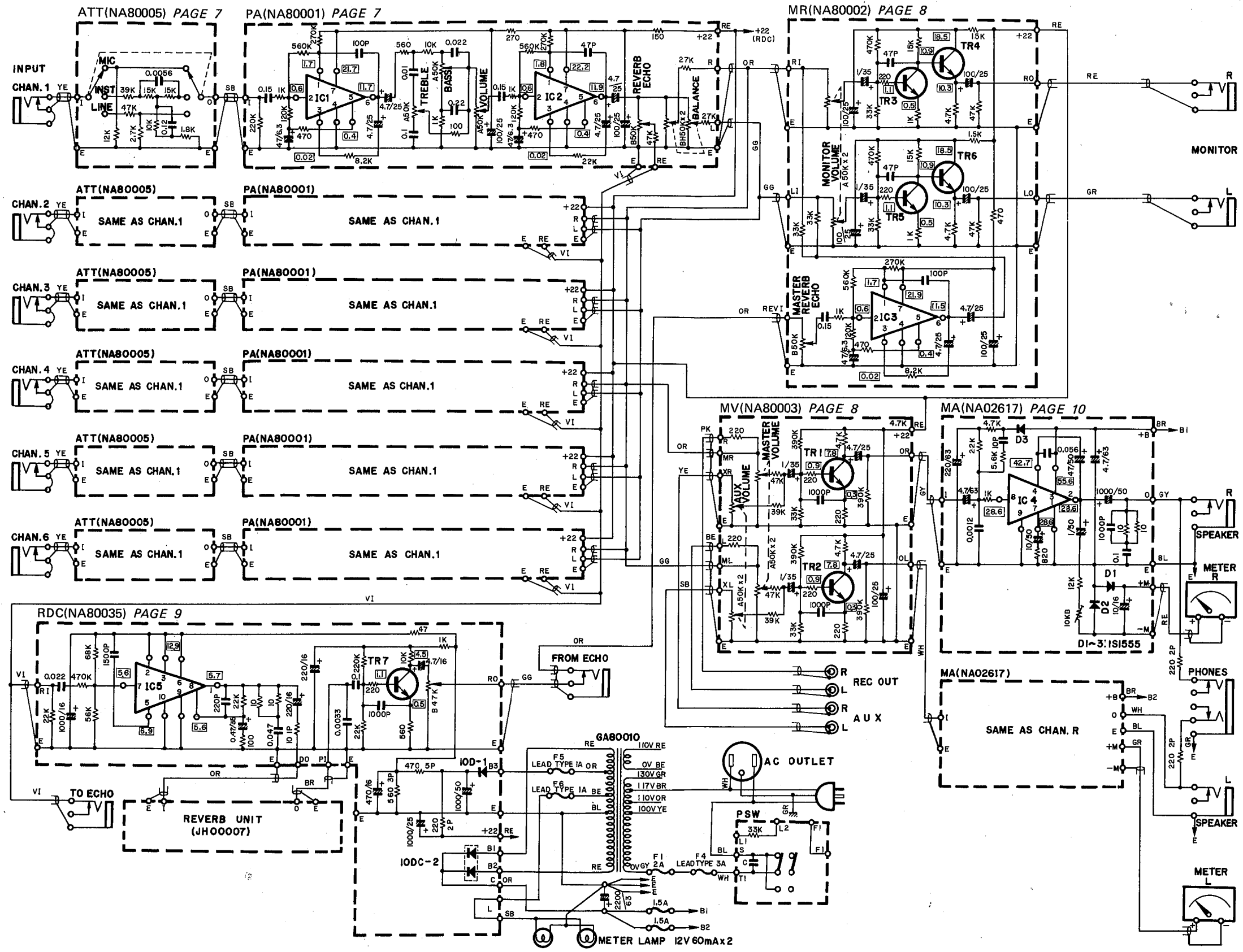


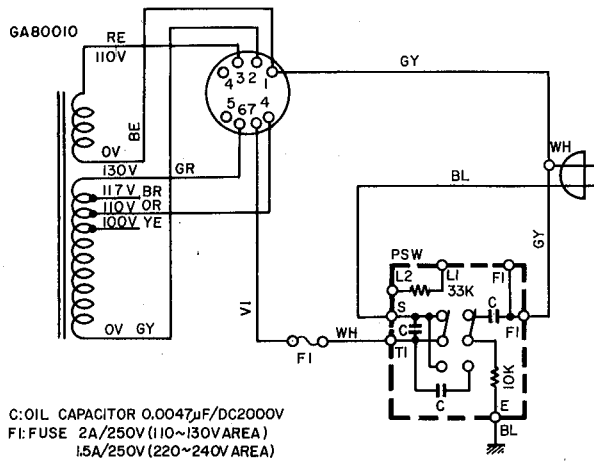
Figure 3



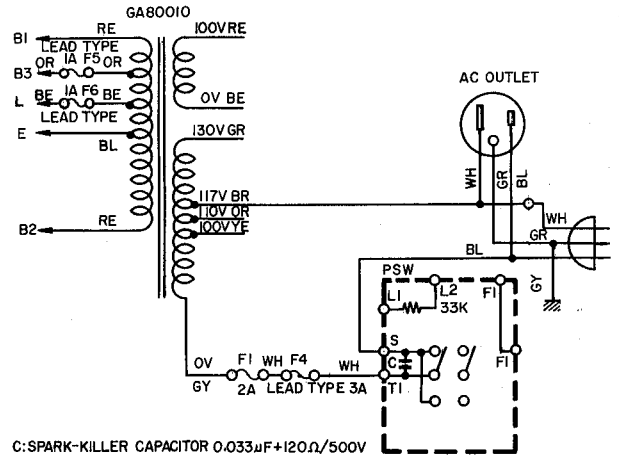
- NOTES:
1. ALL RESISTORS IN OHMS $\frac{1}{2}$ WATT UNLESS OTHERWISE NOTED.
 2. ALL CAPACITORS IN MFD. UNLESS OTHERWISE NOTED.
 3. ALL VOLTAGES MEASURED WITH A VTVM, WITH ALL CONTROLS SET AT MINIMUM.
 4. TRANSISTORS
TR1 - TR7: 2SC732
 5. INTEGRATED CIRCUITS
IC1 - IC3: BA311 (F)
IC4: STK-032
IC5: AN374
 6. AC OUTLET PROVIDED ON U.S. CANADIAN MODEL ONLY.
 7. WIRE COLOR ABBREVIATIONS
BL: BLACK GR: GREEN GG: LIGHT GREEN
BR: BROWN BE: BLUE SB: LIGHT BLUE
RE: RED VI: VIOLET PK: PINK
OR: ORANGE GY: GRAY TR: TRANSPARENT
YE: YELLOW WH: WHITE TP: TIN PLATED
 8. SEMICONDUCTOR LEAD IDENTIFICATION

EM-100 ENSEMBLE MIXER SCHEMATIC DIAGRAM

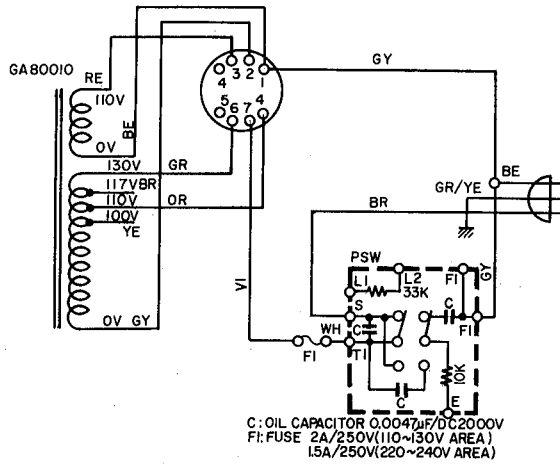
▼ FOR GENERAL MODEL



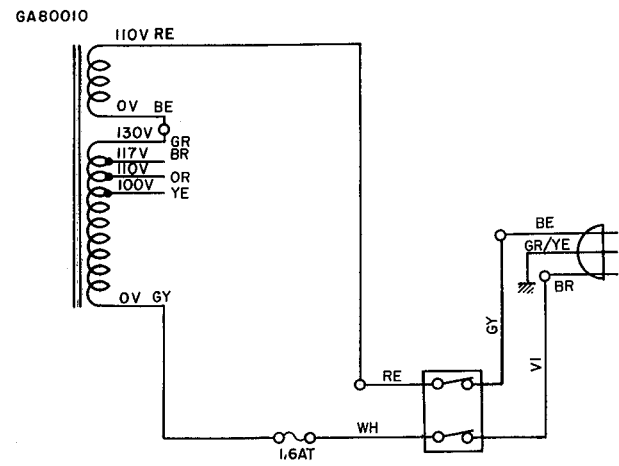
▼ FOR U.S., CANADIAN MODEL



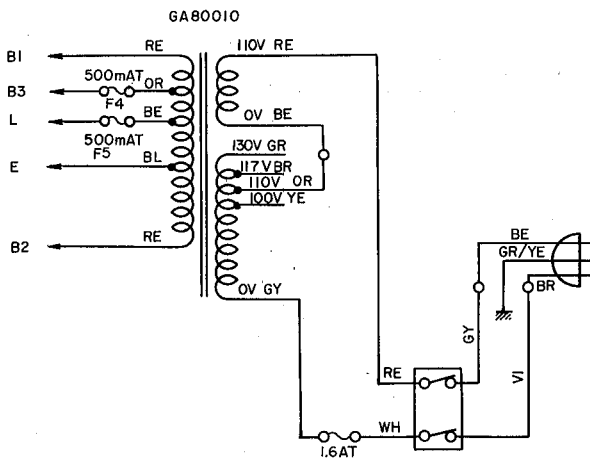
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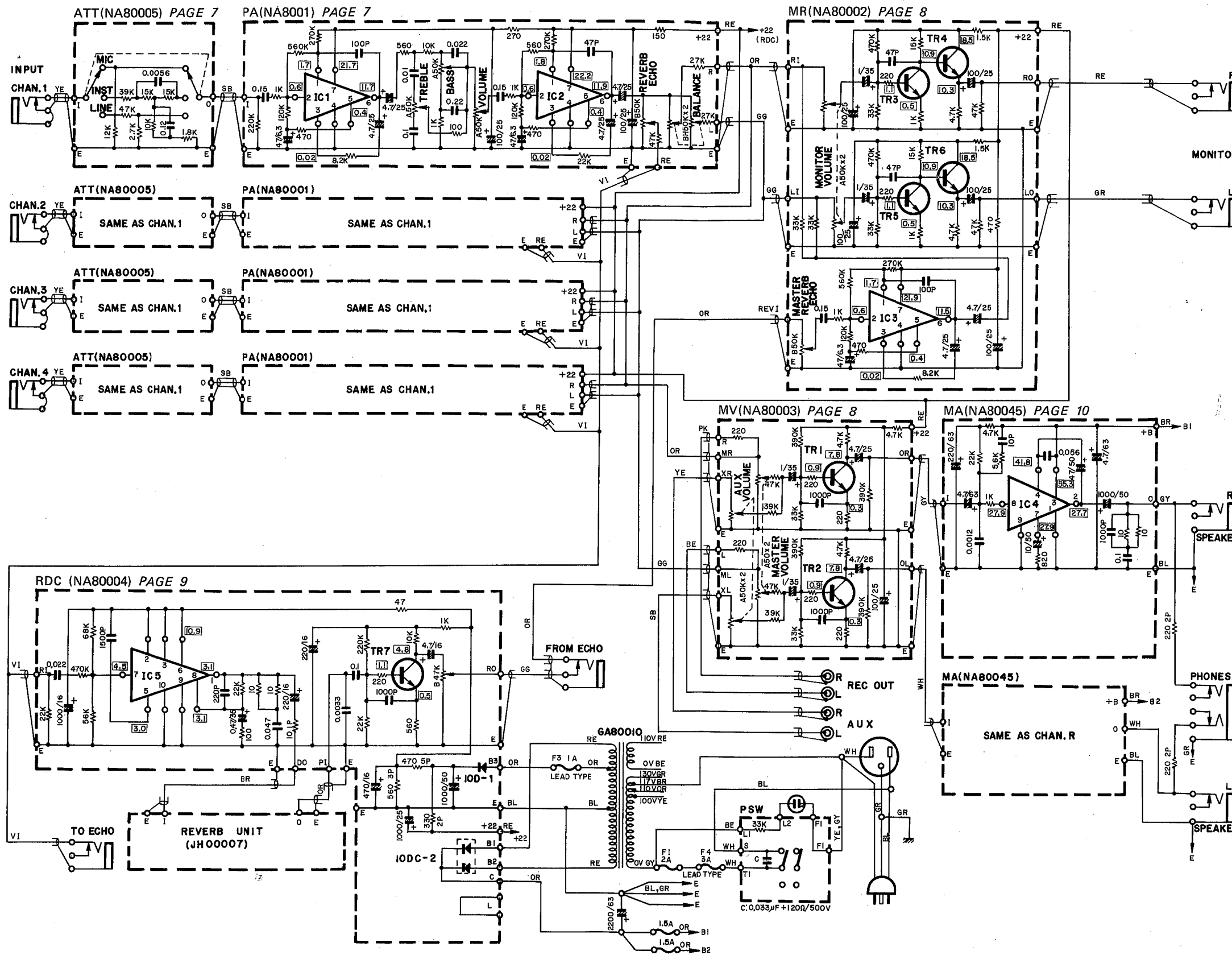


▼ FOR AUSTRALIAN MODEL



▼ FOR EUROPEAN MODEL

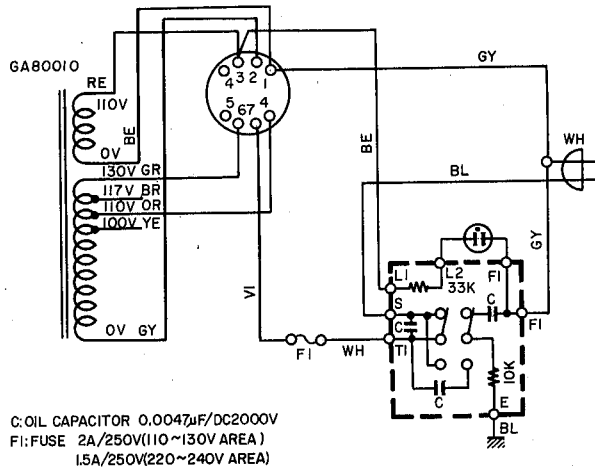




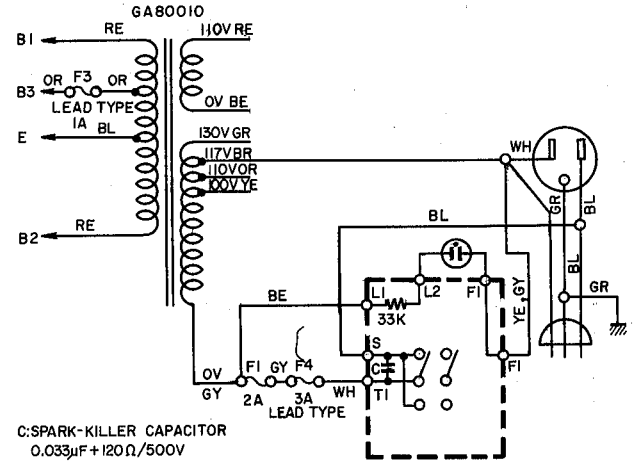
- NOTES:
1. ALL RESISTORS IN OHMS/WATT UNLESS OTHERWISE NOTED.
 2. ALL CAPACITORS IN MFD. UNLESS OTHERWISE NOTED.
 3. ALL VOLTAGES MEASURED WITH A VTVM, WITH ALL CONTROLS SET AT MINIMUM.
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 YE: YELLOW WH: WHITE TP: TIN PLATED
 7. SEMICONDUCTOR LEAD IDENTIFICATION

EM-80 ENSEMBLE MIXER SCHEMATIC DIAGRAM

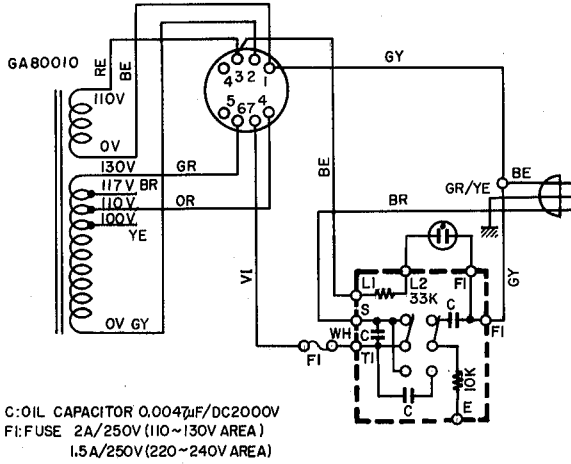
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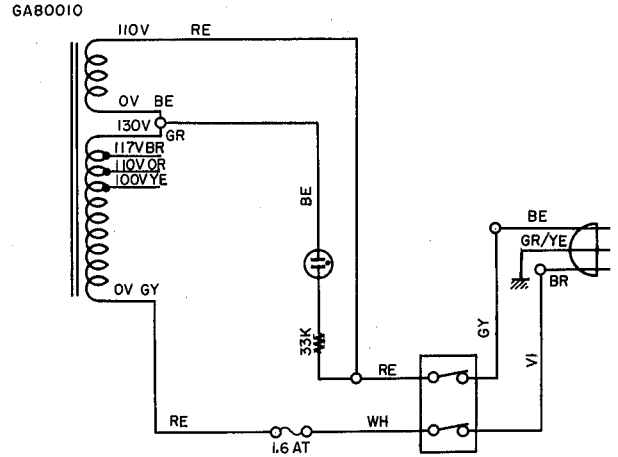
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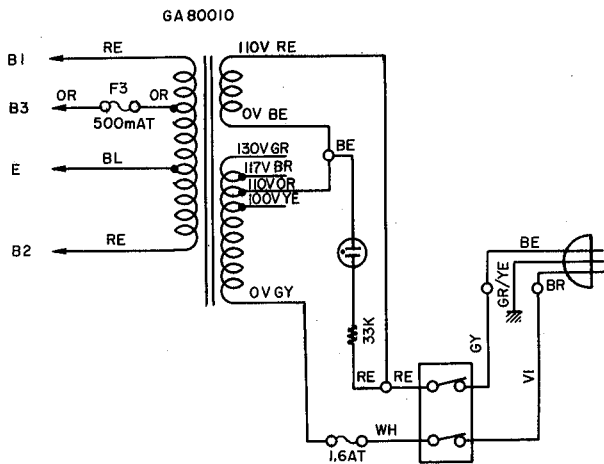
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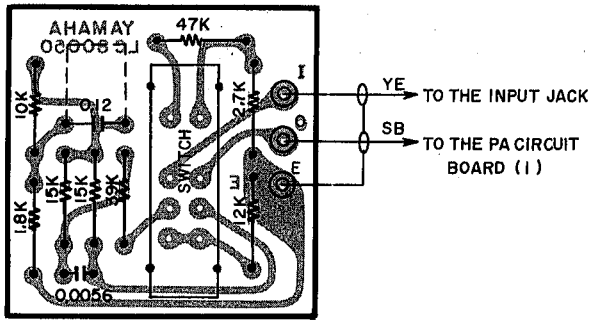


▼ FOR AUSTRALIAN MODEL



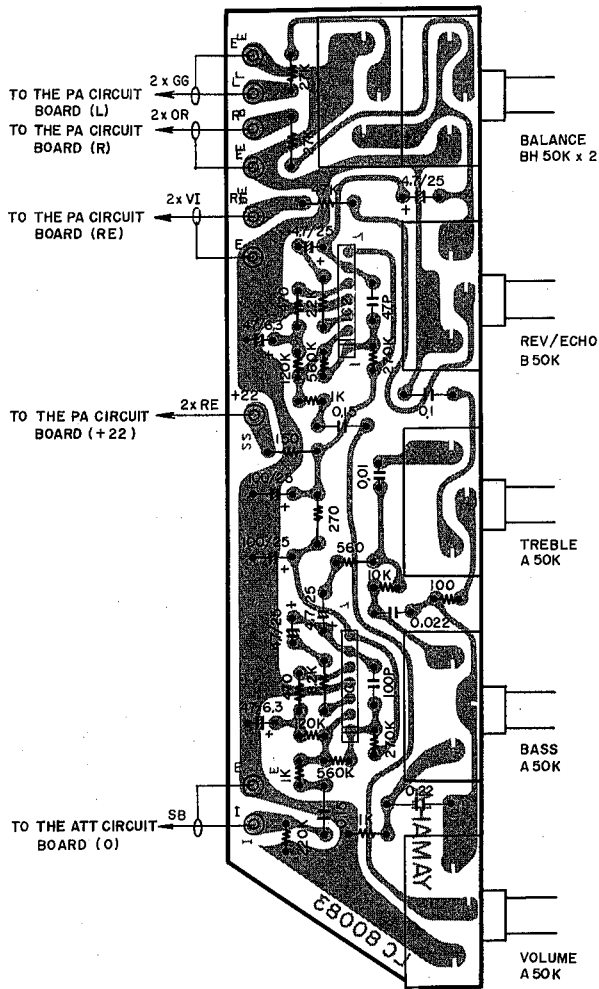
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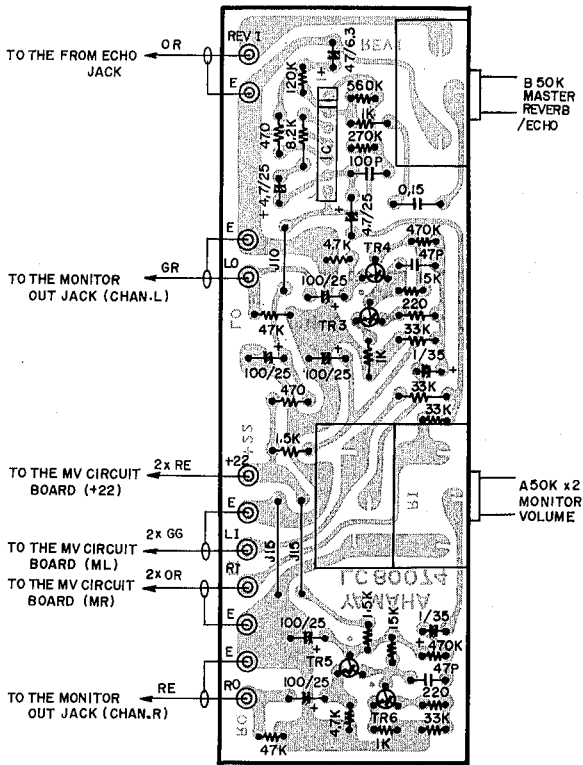
Part No.	Description
NA80005	ATT Circuit Board Ass'y #80050
KA40007	Slide Switch

ATT CIRCUIT BOARD



Part No.	Description
NA80001	PA Circuit Board Ass'y #80083
IG00047	IC BA311(F)
HS32021	Variable Resistor A50kΩ
HS32022	Variable Resistor B50kΩ
HS32023	Variable Resistor BH50kΩ x 2

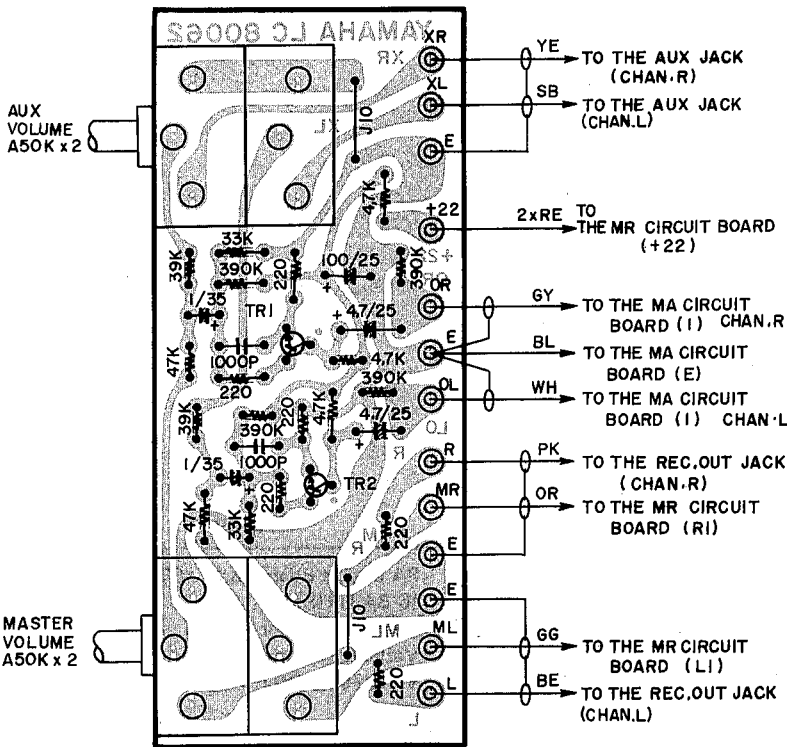
PA CIRCUIT BOARD



MR CIRCUIT BOARD

Part No.	Description
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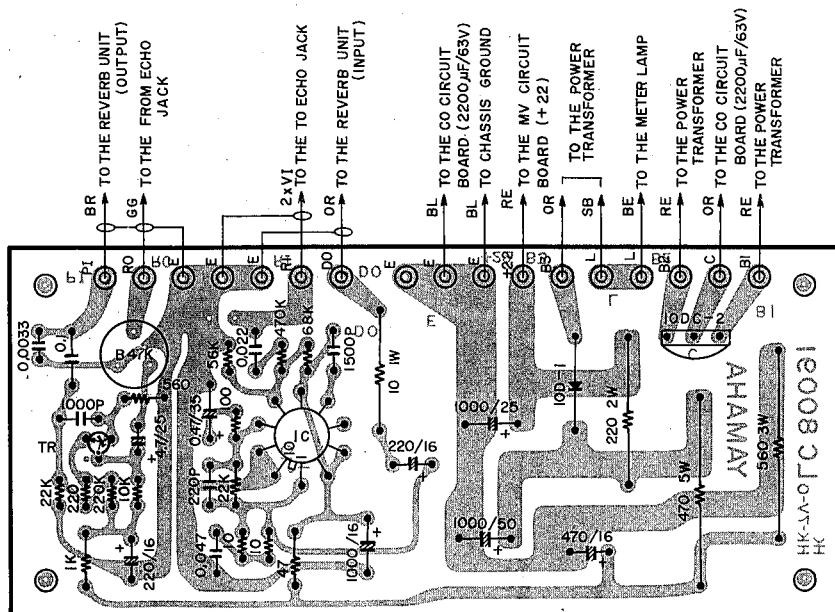
NA80002	MR Circuit Board Ass'y #80073
IC07323	Transistor 2SC732
IG00047	IC BA311(F)
HS32022	Variable Resistor B50k Ω
HS32024	Variable Resistor A50k Ω x 2



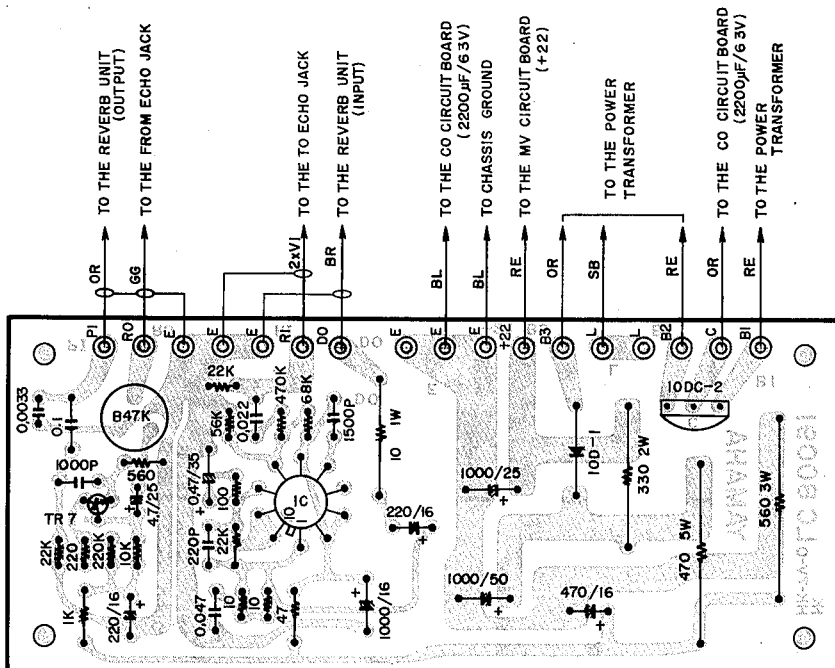
MV CIRCUIT BOARD

Part No.	Description
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NA80003	MV Circuit Board Ass'y #80062
IC07323	Transistor 2SC732
HS32024	Variable Resistor A50k Ω x 2



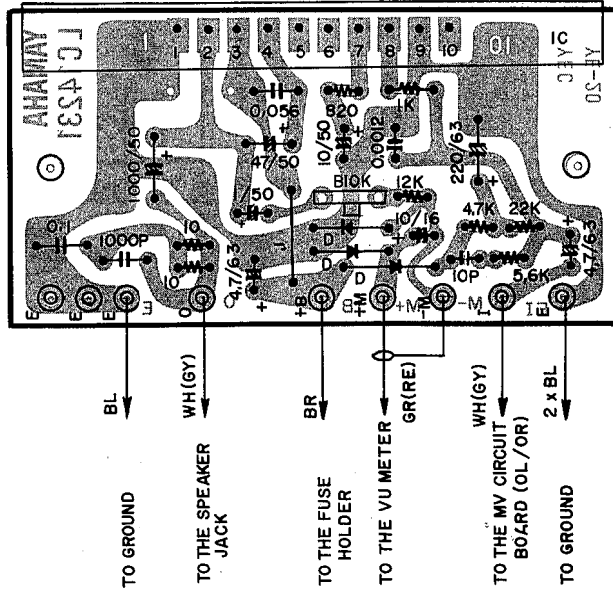
▲ FOR EM-100



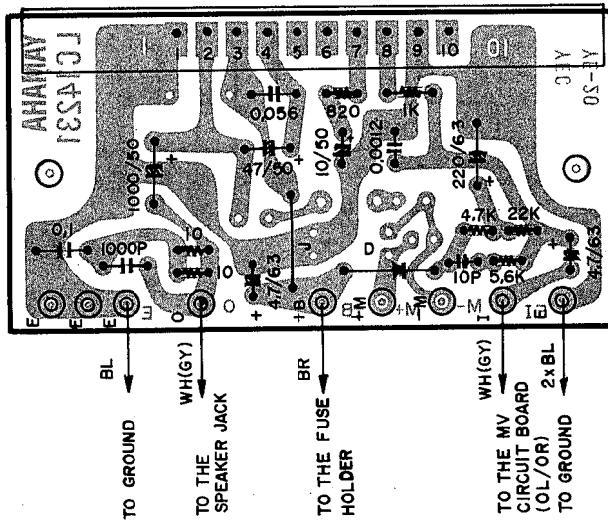
▲ FOR EM-80

Part No.	Description
NA80035	RDC Circuit Board Ass'y #80091 (for EM-100)
NA80004	RDC Circuit Board Ass'y #80091 (for EM-80)
IC07323	Transistor 2SC732
IG00015	IC AN374
IH00005	Diode 10DC-2
IH00003	Diode 10D-1
HT41014	Variable Resistor B47kΩ

RDC CIRCUIT BOARD



▲ FOR EM-100

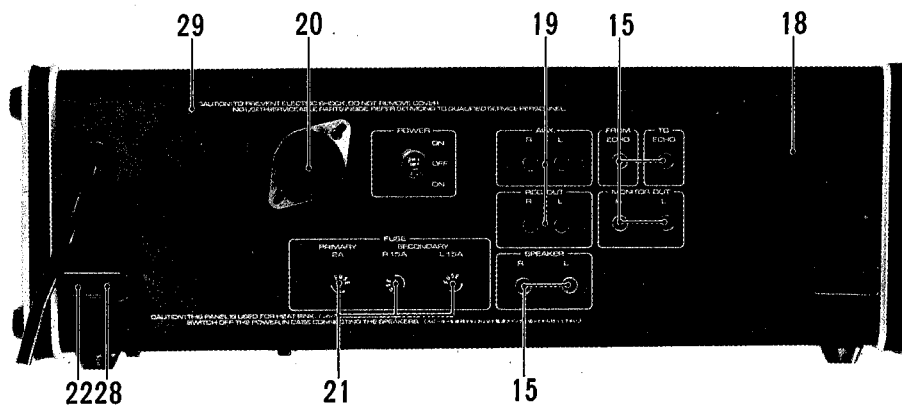
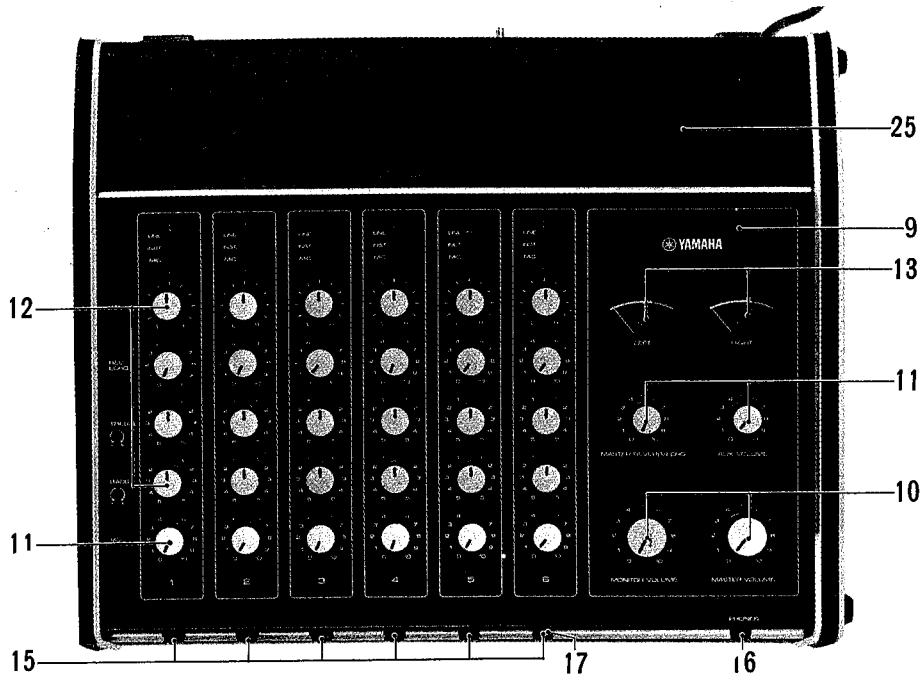


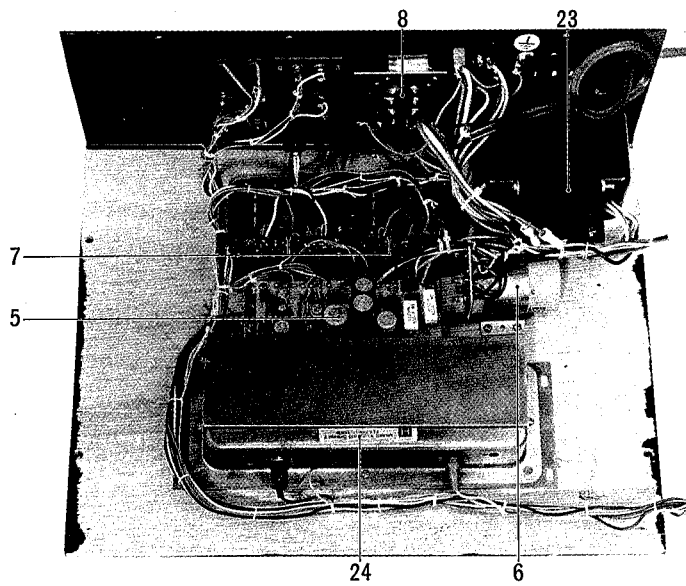
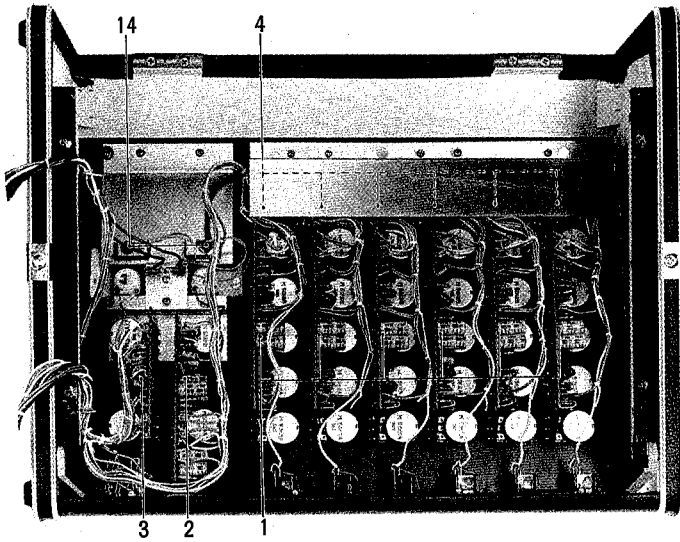
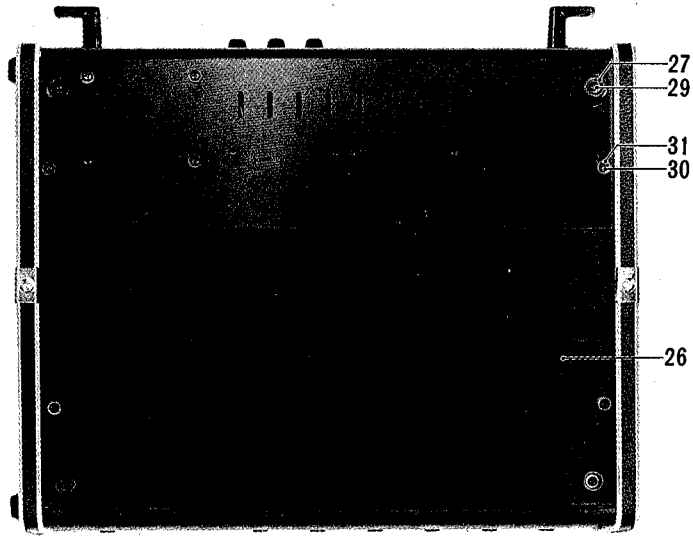
▲ FOR EM-80

Part No.	Description
NA02617	MA Circuit Board Ass'y #14231 (for EM-100)
NA80045	MA Circuit Board Ass'y #14231 (for EM-80)
IG00013	IC STK032
IF00004	Diode 1S1555
HT12003	Variable Resistor B10kΩ (for EM-100)

MA CIRCUIT BOARD

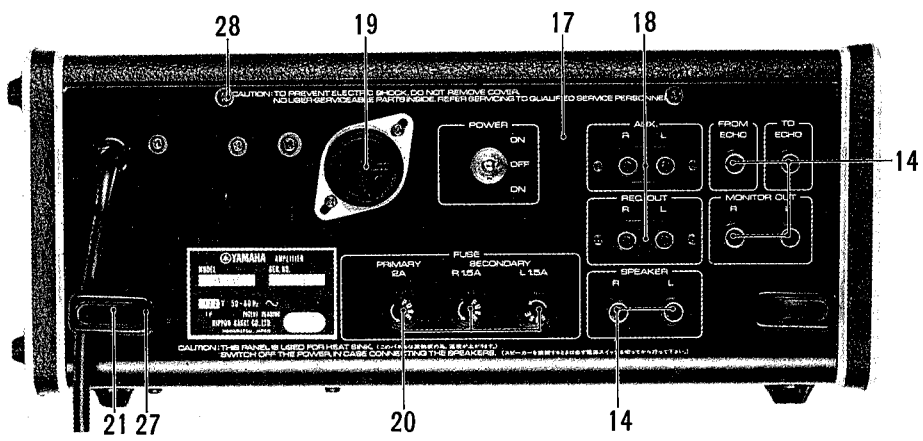
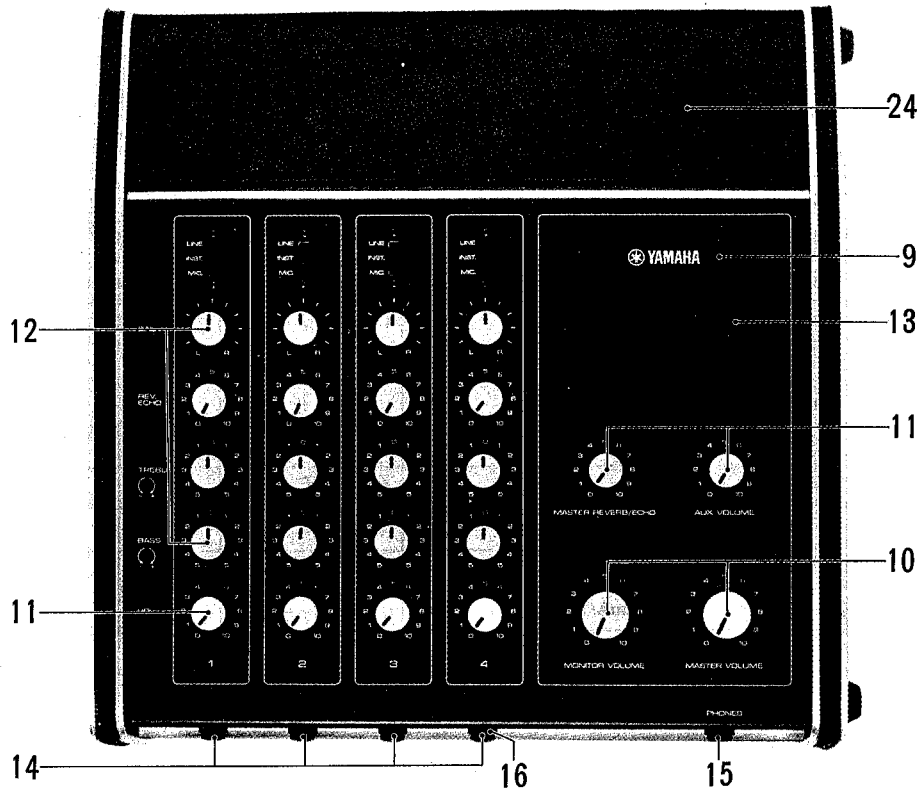
EM-100 PARTS LIST

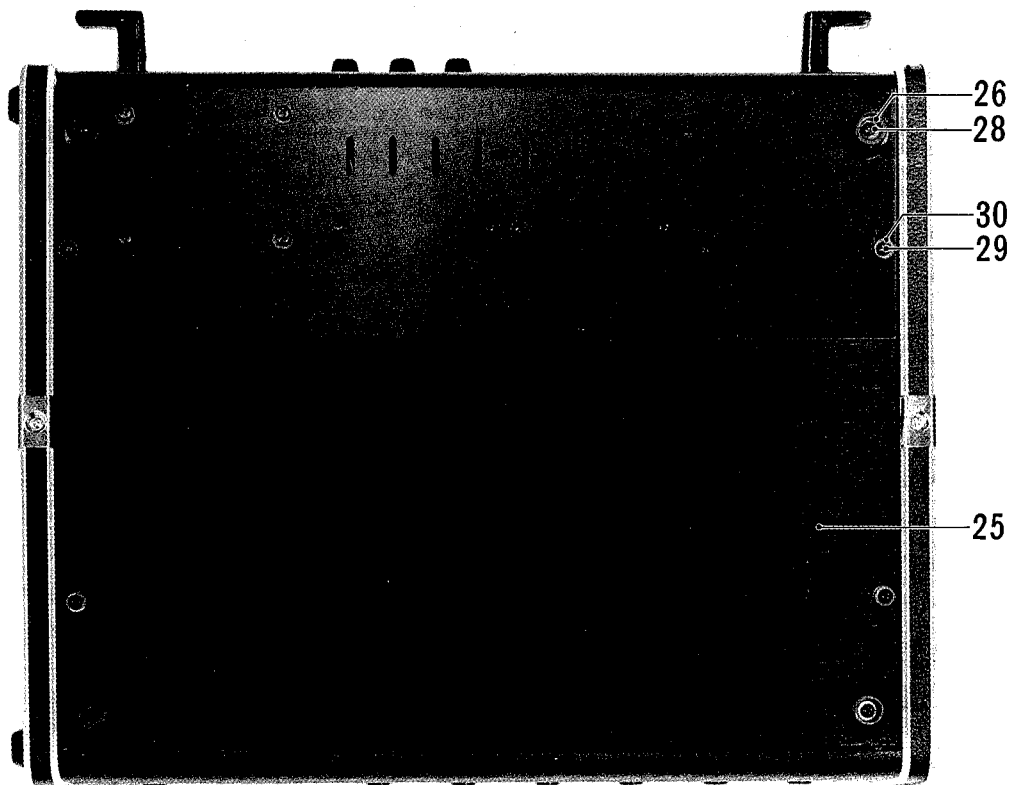
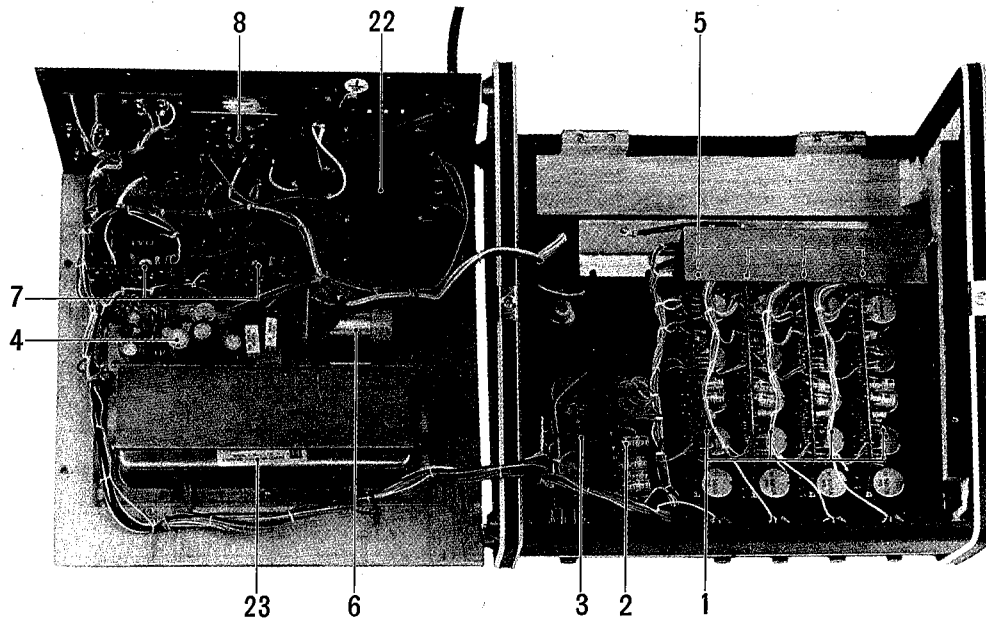




Ref. No.	Part No.	Description		Remarks	Common Models
1	NA80001	PA circuit board	P A シ ー ト		
2	NA80002	MR circuit board	M R シ ー ト		
3	NA80003	MV circuit board	M V シ ー ト		
4	NA80005	ATT circuit board	A T T シ ー ト		
5	NA80035	RDC circuit board	R D C シ ー ト		
6	NA80022	CO circuit board	C O シ ー ト		
7	NA02617	MA circuit board	M A シ ー ト		
8	NA02720	PSW circuit board	P S W シ ー ト	General, South African model	
8	NA02819	PSW circuit board	P S W シ ー ト	U.S., Canadian model	
8	KA30001	Power switch	トグルスイッチ	European, Australian model	
9	AA80046	Panel	パ ネ ル		
10	CB80076	Knob, orange	ツマミ、オレンジ		
11	CB80078	Knob, white	ツマミ、アイボリー		
12	CB80108	Knob, light blue	ツマミ、ライトブルー		
	CB02419	Spacer	ス ペ ー サ ー		
13	J100021	VU meter	レベルメータ		
14	JB00002	Lead type lamp 60 mA/12V	リード付ランプ		
15	LB20063	Phone jack	ジ ャ ッ ク		
16	LB30006	Phone jack, phones	ヘッドホンジャック		
17	CB06201	Phone nut	ホ ー ン ナ ッ ト		
18	BA80004	Rear panel	バ ッ ク パ ネ ル		
19	LB20019	Pin jack	ピンジャック		
	LB20025	Voltage selector	電 圧 切 換 器	General, South African model	
20	LB30025	AC socket	3 P A C ソ ケ ッ ト	U.S., Canadian model	
21	LB20048	Fuse holder	ヒューズホルダー	Except European model	
21	LB20059	Fuse holder	ヒューズホルダー	European model	
	KB00034	Fuse 1.5A 250V	ヒ ュ ー ズ	General, U.S., Canadian, South African, Australian model	
	KB00035	Fuse 2A 250V	ヒ ュ ー ズ	General (100~130V area) U.S., Canadian model	
	KB00074	Miniature fuse 1.6AT	ミニヒューズ	European model	
22	CB02257	Power cord holder	コード巻付コラム		
23	GA80010	Power transformer	電 源 ト ラ ン ス		
24	JH00007	Reverb unit	リバーブユニット		
	LB20047	Fuse holder	ヒューズホルダー	European model	
	KB00071	Miniature fuse 0.5AT	ミニヒューズ	European model	
	KB00082	Lead type fuse 1A	リード付ヒューズ	U.S., Canadian model	
	KB00085	Lead type fuse 3A	リード付ヒューズ	U.S., Canadian model	
25	305608-00000010	Cabinet	キャビネット		
26	305608-00000020	Bottom cover	底 板		
27	CB80118	Slip fitting	ス ペ リ 座		
	NB80050	Handle ass'y	取 手 Ass'y		
28	EA34025	⊕ Flat head screw M4 x 25	皿 小 ネ ジ	FCM-BL	
29	EQ33513	⊕ Round head wood screw 3.5 x 13	丸 木 ネ ジ	FCM-BL	
30	EQ33525	⊕ Round head wood screw 3.5 x 25	丸 木 ネ ジ	FCM-BL	
31	EV20304	Washer 4S	平 座 金	FCM-BL	

EM-80 PARTS LIST





Ref. No.	Part No.	Description	Remarks	Common Models
1	NA80001	PA circuit board # 80083	P A シ ー ト	
2	NA80002	MR circuit board # 80074	M R シ ー ト	
3	NA80003	MV circuit board # 80062	M V シ ー ト	
4	NA80004	RDC circuit board # 80091	R D C シ ー ト	
5	NA80005	ATT circuit board # 80050	A T T シ ー ト	
6	NA80022	CO circuit board # 80040	C O シ ー ト	
7	NA80045	MA circuit board # 14231	M A シ ー ト	
8	NA02720	PSW circuit board # 14990	P S W シ ー ト	General, South African model
8	NA02819	PSW circuit board # 15681	P S W シ ー ト	U.S., Canadian model
8	KA30001	Power switch	トグルスイッチ	European, Australian model
9	AA80004	Panel	パ ネ ル	
10	CB80076	Knob, orange	ツマミ、オレンジ	
11	CB80078	Knob, white	ツマミ、アイボリー	
12	CB80108	Knob, light blue	ツマミ、ライトブルー	
	CB02419	Spacer	ス ペ ー サ ー	
13	JB00036	Neon lamp	ネオンブラケットランプ	
14	LB20063	Phone jack	ジ ャ ッ ク	
15	LB30006	Phone jack, phones	ヘッドホンジャック	
16	CB06201	Phone nut	ホ ー ナ ッ ト	
17	BA80003	Rear panel	バックパネル	
18	LB20019	Pin jack	ピンジャック	
	LB20025	Voltage selector	電 圧 切 換 器	General, South African model
19	LB30025	AC socket	3P A C ソ ケ ッ ト	U.S., Canadian model
20	LB20048	Fuse holder	ヒューズホルダー	Except European model
20	LB20059	Fuse holder	ヒューズホルダー	European model
	KB00034	Fuse 1.5A 250V	ヒ ュ ー ズ	General, U.S., Canadian, South African, Australian model
	KB00035	Fuse 2A 250V	ヒ ュ ー ズ	General (100~130V area), U.S., Canadian model
	KB00074	Miniature fuse 1.6AT	ミニヒューズ	European model
21	CB02257	Power cord holder	コード巻付コラム	
22	GA80010	Power transformer	電 源 ト ラ ン ス	
23	JH00007	Reverb unit	リバーブユニット	
	LB20047	Fuse holder	ヒューズホルダー	European model
	KB00071	Miniature fuse 0.5AT	ミニヒューズ	European model
	KB00082	Lead type fuse 1A	リード付ヒューズ	U.S., Canadian model
	KB00085	Lead type fuse 3A	リード付ヒューズ	U.S., Canadian model
24	305604-00000010	Cabinet	キャビネット	
25	305604-00000020	Bottom cover	底 板	
26	CB80118	Slip fitting	ス ペ リ 座	
27	EA34025	⊕ Flat head screw M4 x 25	皿 小 ネ ジ	FCM-BL
28	EQ33513	⊕ Round head wood screw 3.5 x 13	丸 木 ネ ジ	FCM-BL
29	EQ33525	⊕ Round head wood screw 3.5 x 25	丸 木 ネ ジ	FCM-BL
30	EV20304	Washer 4S	平 座 金	FCM-BL
	NB80050	Handle ass'y	取 手 Ass'y	