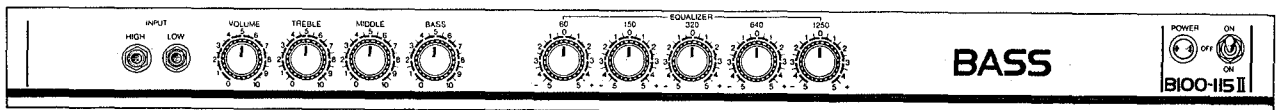


B100-115II B100-115SE

SERVICE MANUAL


FRONT PANEL

B100-115II (B100-115SE)

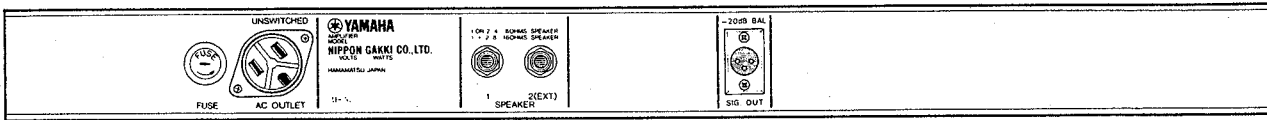


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SINCE 1887  **YAMAHA**
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

'79.10.2.5K Printed in Japan 

REAR PANEL



The illustration shows the U.S. and CANADIAN models. Other models are equipped with voltage selectors instead of AC outlets. So be sure to check for desired voltage.

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GENERAL SPECIFICATIONS

GENERAL SPECIFICATIONS

Model		B100-115 II	B100-115SE
Output Power		100 Watts RMS @ 10% THD into 8 ohms	
Speaker		1 x JA3807 (38 cm)	
Gain (To Speaker Output @ 1kHz, loaded 4 or 8 ohms)		High : 70 dB Low : 58 dB	
Input Impedance		High : 330 kohms Low : 60 kohms	
Noise (All Volume Controls at min.)		-52 dB (1.9mV)	
Signal Output (For 600 ohms balanced line)		Nominal : -20 dB (77.5 mV) Maximum : 0 dB (0.775 V)	
Circuitry		Solid State	
Power Consumption	U.S. Model	180 W	
	Canadian Model	120V 2A	
	Other Models	250 W	
Power Source		120V AC fixed, or 110, 130, 220 or 240V AC selectable, 50/60 Hz	
Dimensions	Width	687 mm	
	Height	950 mm*	790 mm*
	Depth	370 mm	400 mm
Net Weight		52 kg	44 kg

In above specifications, when dB represents a specific voltage, 0 dB is referenced to 0.775V RMS.

* Height includes detachable castors.

LOUDSPEAKER SPECIFICATIONS

Speaker	System	Cone Diameter	Nominal Impedance (Ω)	Sensitivity (dB/W.m)	Max. RMS Power (W)	Max. Peak Power (W)
JA3807	B100-115 II B100-115SE	15" (38 cm)	8	100	120	360

Specifications subject to change without notice.

ADJUSTMENTS AND PERFORMANCE CHECKS

Measuring Instruments

- The impedance of the oscillator shall be no more than $1k\Omega$.
- The impedance of such instruments, as the oscilloscope and AC Voltmeter/dB meter shall be $100K\Omega$ or more.

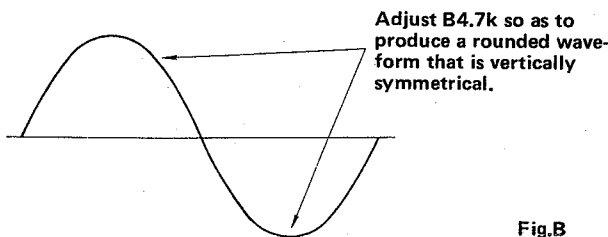
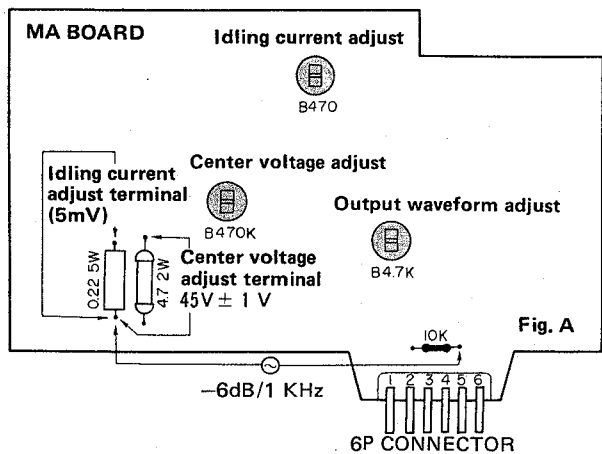
MA BOARD Adjustment

1. Adjust the B470k and B4.7k pots to somewhere around the middle.
2. With the unit in the condition of Table 1, apply a $-6dB/1kHz$ signal between the 6P connector pin ③ and ① and adjust the B4.7k pot so as to produce a rounded output waveform which is vertical as shown in Fig. A. (Load resistance : 8 ohms)
3. With the unit in the condition of Table 1, adjust the B470k pot so that the center voltage (measured at the 6P connector pin ⑤) of the output circuit will be $45\pm 1V$.

NOTE: By performing adjustments 2 and 3 alternately, adjust the MA circuit board to the optimum condition. Adjustments should be performed as swiftly as possible.

Idling Current Adjustment

With the unit in a no-signal condition, adjust the B470 pot so as to bring the voltage between the 6P connector pin ④ and ① (0.22Ω at both ends) to 5mV.



After completing the above adjustments (performed on a circuit board basis), proceed to performance checks.

● Prior to Performing Adjustments

- Set each control as shown in Table 1.
- Apply the signal to HIGH INPUT.

Table 1

Identification of Controls	Position of Controls
VOLUME	Maximum
TREBLE	Maximum
MIDDLE	Maximum
BASS	Maximum
5-BAND EQUALIZER	All to center

- Connect the load specified in Table 2 to SP OUT.

Table 2

Model No.	Load Resistance
G100-115SE	8 Ω
G100-115II	8 Ω

1. GAIN

- With the unit in the condition specified in Tables 1 & 2, feed in the input signal. Outputs as shown in Table 3 should be obtained.

Table 3

INPUT	JACK	OUTPUT
$-60dB / 1 KHz$	HIGH	$9 \pm 3 dB$
- do. -	LOW	$-3 \pm 3 dB$

2. MAXIMUM OUTPUT

- Put the unit in the condition specified in Tables 1 & 2. When the output is 100W, and the T.H.D. is at 10%, the condition as shown in Table 4 should be satisfied.

Table 4

OUT PUT	Load (8 ohms)	
	At 100W output (31.2dBm)	T.H.D. (@10%)
INPUT	T.H.D.: Less than 10%	140W, or less (32.7dB)
1 KHz		

3. FREQUENCY RESPONSE

- Regarding the frequency response of the set in the condition specified in Tables 1&2, please refer to Fig.1 when the output level for a 1kHz input is set as the reference level(0dB). The tolerance shall be within $\pm 3dB$, respectively.

Table 5

SIGNAL	FREQUENCY(Hz)		
	70	400	7 K
INPUT LEVEL			
$-60dB$	$-1 \pm 3 dB$	$-8 \pm 3dB$	$4 \pm 3dB$

4. TONE CONTROL

- Put the unit in the condition specified in Tables 1 & 2.
- When each tone control knob is turned from maximum to minimum, the output variation should stay within the range specified in Table 6.

Table 6

Control	INPUT		Variation
	Freq.	Signal	
TREBLE	7 KHz	-60dB	16 ± 3dB
MIDDLE	400Hz	-60dB	6 ± 3dB
BASS	70Hz	-60dB	11 ± 3dB

5. VARIATION CHARACTERISTICS OF 5-BAND EQ

- Put the unit in the condition specified in Tables 1 & 2.
- When each 5-BAND EQ knob is turned from maximum to minimum, the output variation should stay within the range specified in Table 7.

Table 7

EQ Control	INPUT		Variation
60Hz	-60dB	60Hz	±10 ± 2 dB
150Hz	-do.-	150Hz	±10 ± 2 dB
320Hz	-do.-	320Hz	±10 ± 2 dB
640Hz	-do.-	640Hz	±10 ± 2 dB
1250Hz	-do.-	1250Hz	±10 ± 2 dB

6. NOISE LEVEL

- Put the unit in the condition specified in Tables 1 & 2.
- No plug should be inserted into INPUT.
- When the unit is set as shown in Table 8, the output level should stay within the range specified in Table 8.
- Change the polarities of the POWER switch, measurement should be taken at the one whose noise level has been found to be lower.

Table 8

Condition	Noise Level
Set the Tables 1 & 2	No more than -42dB
Volume: MIN.	No more than -52dB

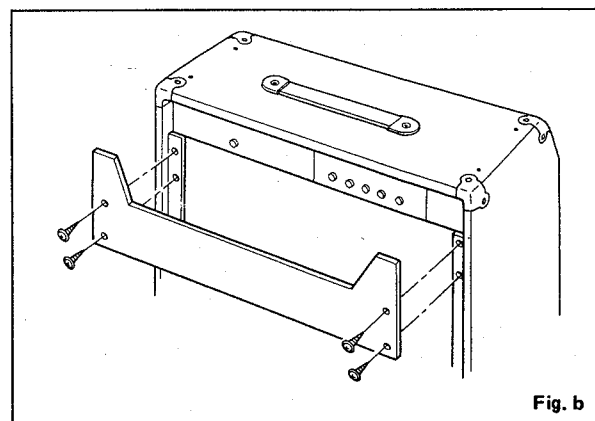
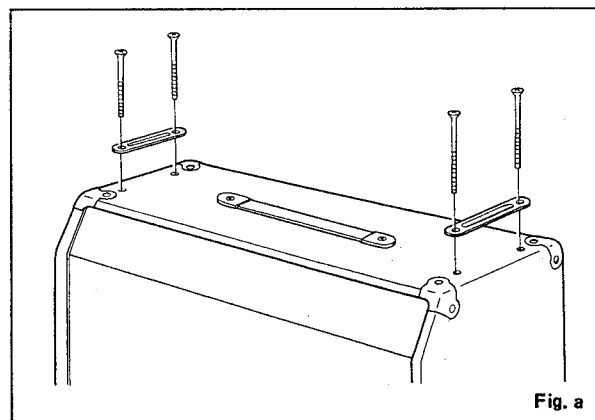
7. SIGNAL OUT TERMINAL

- Put the unit in the condition specified in Tables 1 & 2.
- Connect a 560Ω load between terminals ② and ③ of SIG. OUT(Cannon Connector).
- When an input signal of 1kHz/-60dB is fed in, outputs in the range of -36±3dB should be obtained at both ends of 560Ω.

NOTE: When dB represents a specific voltage, 0dB is referenced to 0.775V.

DISMANTLING PROCEDURE

- Remove the screws shown in Figs. a and b. Remove the back panel and the chassis body.



FREQUENCY RESPONSE DIAGRAM

B100-115II, B100-115SE

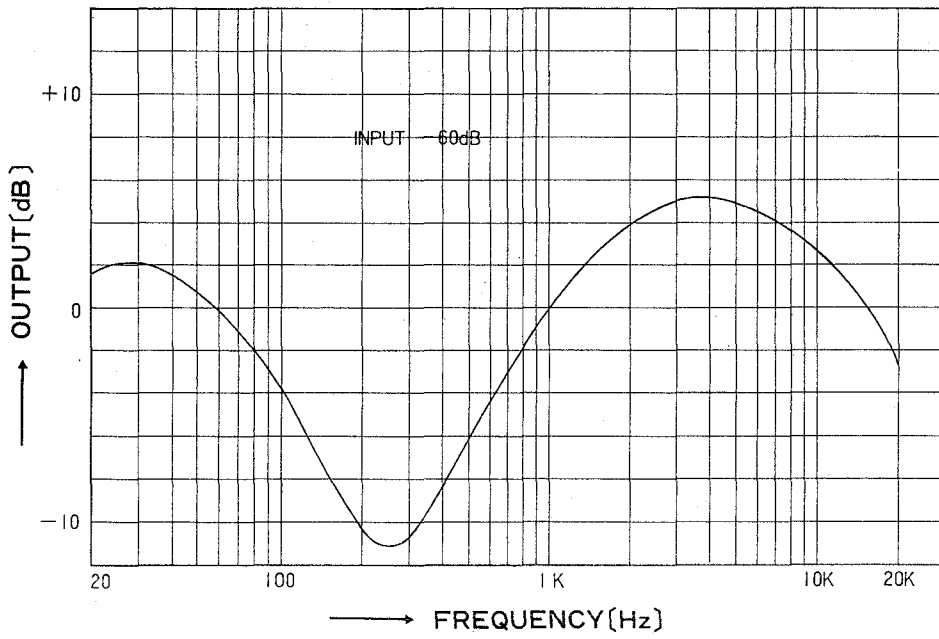


Fig. 1

PARTS LIST MA Unit, MA Board

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
※	30:54:00NB:81:26:20	MA UNIT	MAユニット			U,C
※	30:54:00NB:81:26:30	"	"			O
※	30:54:00NA:80:51:50	MA Board #83333	MAシート			U,C
※	30:54:00NA:80:51:60	" #83343	"			O
※	30:54:00BA:80:38:60	Heat Sink	放熱板			
※	30:54:00AA:81:17:20	Holder	シートホルダー			
	40:10:00EA:04:01:00	Pan Head Screw 4×10 ZMC2-Y	ナベ小ネジ			
	40:10:00ED:03:00:60	Bind Head Screw 3×6 ZMC2-Y	バインド小ネジ			
	40:10:00Ei:03:01:00	Bind Head Tapping Screw 3×10 ZMC2-Y	バインドタッピングネジ			
	40:10:00EV:20:00:30	Flat Washer A3S	平座金			
	40:10:00iC:15:86:00	Transistor	トランジスター			
	40:10:00iL:00:04:40	Mica Base	マイカベース			
	40:10:00EA:03:01:60	Pan Head Screw 3×16 ZMC2-Y	ナベ小ネジ			
※	30:54:00AA:81:05:00	Transistor Cover	トランジスタカバー			
	40:10:00Ei:03:00:60	Bind Head Tapping Screw 3×6 ZMC2-Y	バインドタッピングネジ			
※	30:54:00AA:81:04:90	MA Board Cover	保護カバー			
	30:54:00CB:81:44:20	Spacer	スペーサー			
	40:10:00LB:60:26:70	Socket	トランジスタソケット			
		MA BOARD	MAシート			
	40:10:00HL:32:34:70	Metal Oxide Film Resistor 4.7Ω,2P	サンキン抵抗			
	40:10:00HL:32:61:50	" 1.5KΩ,2P	"			
	40:10:00HL:31:65:60	" 5.6KΩ,1P	"			
	40:10:00HL:31:71:00	" 10KΩ,1P	"			
	40:10:00HM:85:22:20	" 0.22Ω,5P	セメント抵抗			
	40:10:00HW:80:52:20	Fuse Resistor 220Ω,48mA	ヒューズ抵抗			O
	40:10:00HW:90:52:20	" 220Ω	"			U,C
	40:10:00HT:41:00:40	Variable Resistor B4.7KΩ	半固定ボリューム			
	40:10:00HT:41:01:10	" B470KΩ	"			
	40:10:00HT:41:01:20	" B470Ω	"			
	40:10:00iE:00:00:10	FET 2SK30A(Y)	FET			
	40:10:00iA:08:72:10	Transistor 2SA872A(D,E)	トランジスタ			
	40:10:00iA:09:70:00	" 2SA970(GR,BL)	"			
	40:10:00iC:16:24:00	" 2SC1624(O,Y)	"			
	40:10:00iC:15:09:30	" 2SC1509(R,Q)	"			
	40:10:00iA:07:77:30	" 2SA777(R,Q)	"			
	40:10:00iA:08:14:00	" 2SA814(Y)	"			
	40:10:00iF:00:04:50	Varistor STV-3H-O	バリスタ			
	40:10:00iF:00:00:40	Diode 1S1555	ダイオード			
	40:10:00LB:60:07:90	Connector Plug	ライトアングルウエハーピン			

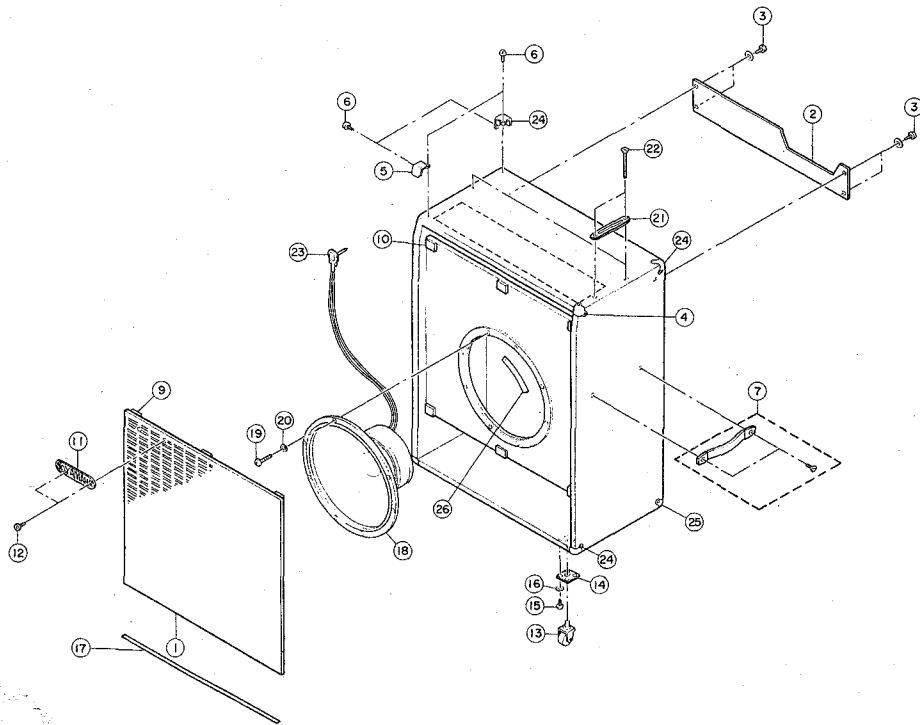
※ : New Part (新部品) DESTINATION ABBREVIATIONS U : US, C : Canada, O : Other (except for US, Canada models)

PA Board/JK Writing Board

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
※	30:54:00 NA 80:52:90	DC BOARD	#84801	DCシート		C
※	30:54:00 NA 80:53:00	"	#84811	"		U
※	30:54:00 NA 80:53:10	"	#84791	"		O
	40:10:00 i H 00:07:20	Diode	W03B	ダイオード		
	40:10:00 i H 00:02:10	"	S5151	"		
	40:10:00 i H 00:02:20	"	S5151R	"		
	40:10:00 i F 00:02:20	Zener Diode	WZ310	ツェナーダイオード		
	40:10:00 i C 15:09:30	Transistor	2SC1509(R,Q)	トランジスタ		
	40:10:00 i D 07:26:00	"	2SD726(B,C)	"		
	40:10:00 L B 20:15:30	Fuse Holder Pin		ヒューズホルダーピン		
	40:10:00 K B 00:03:10	Fuse	0.5A,250V	ヒューズ		C
	40:10:00 K B 00:03:80	"	4.0A,250V	"		C
	40:10:00 K B 00:10:10	" UL	0.5A,250V	ULヒューズ		U
	40:10:00 K B 00:10:50	" "	4.0A,250V	"		U
	40:10:00 K B 00:07:10	" Mini	500mAT,250V	ミニヒューズ		O
	40:10:00 K B 00:07:60	" "	3.15AT,250V	"		O
	40:10:00 L B 60:05:20	Connector Housing		コネクタハウジング		
※	30:54:00 NA 80:52:80	PA BOARD	#84611	PAシート		
	40:10:00 F P 35:51:50	Tantalum Capacitor	0.15/35	タンタルコン		
	40:10:00 F P 35:53:30	"	0.33/35	"		
	40:10:00 F P 35:54:70	"	0.47/35	"		
	40:10:00 F P 35:56:80	"	0.68/35	"		
	40:10:00 F P 35:63:30	"	3.3/35	"		
	40:10:00 F P 35:64:70	"	4.7/35	"		
	40:10:00 F P 35:66:80	"	6.8/35	"		
	40:10:00 i A 09:70:00	Transistor	2SA970(GR,BL)	トランジスタ		
	40:10:00 i C 22:40:00	"	2SC2240(GR,BL)	"		
	40:10:00 i E 00:00:20	FET	2SK30A(GR)	FET		
	40:10:00 H S 31:07:50	Variable Resistor	A1K Ω	ボリューム		
	40:10:00 H S 31:07:60	"	A25K Ω	"		
	40:10:00 H S 31:08:00	" Center Click	G50K Ω	" (センタークリック)		
	40:10:00 L C 84:29:10	JK WRITEING BOARD		JK 基板		
	40:10:00 L B 20:15:40	Jack		ホーンジャック		

※ : New Part (新部品)

EXPLODED VIEW

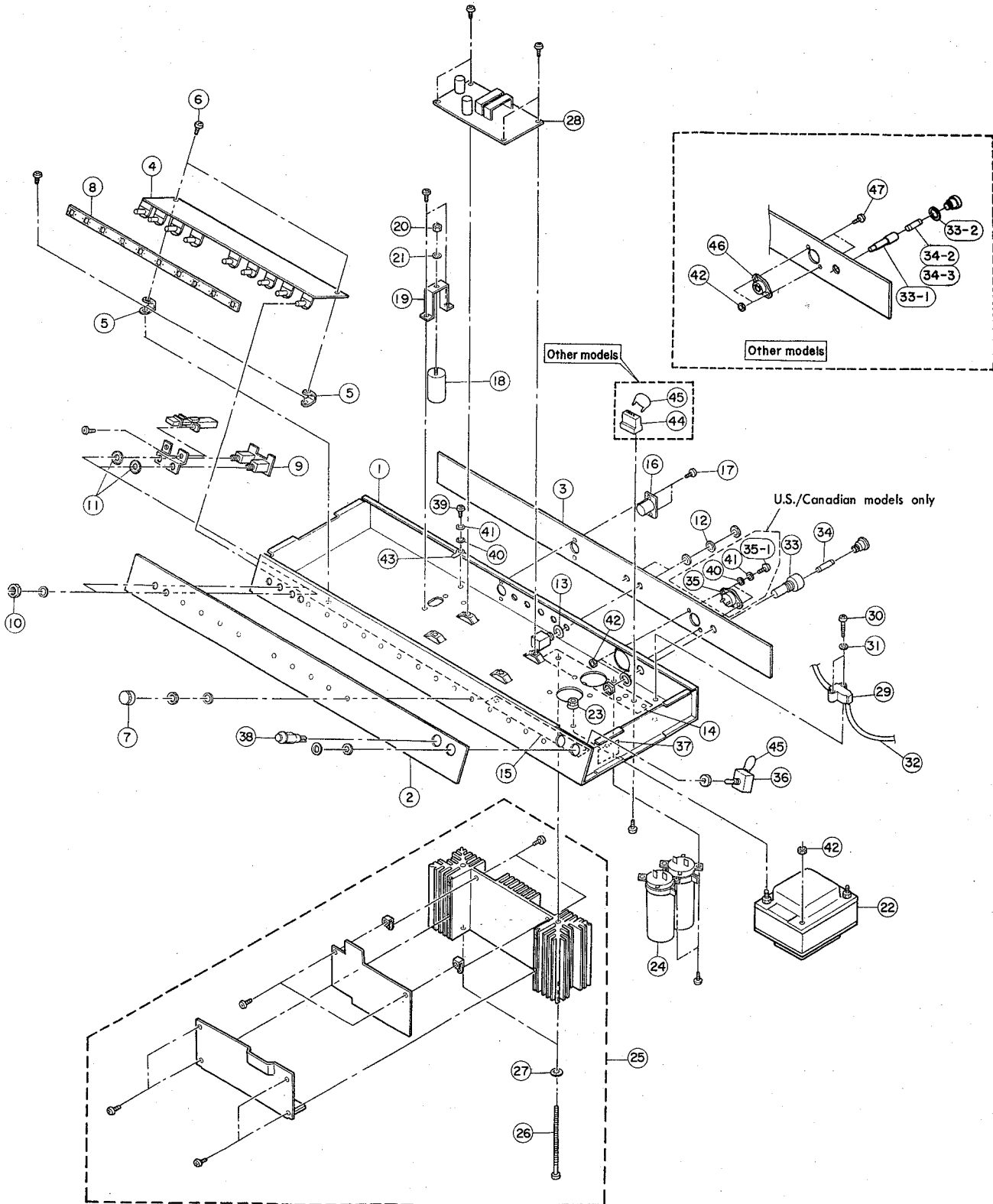


PARTS LIST

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
※	30:54:43 00:00:00:10	Cabinet	外装組上り	B100-115 II		
	30:54:44 00:00:00:10	"	"	B100-115 SE		
※	1 30:54:43 DA:80:40:50	Front Grille	前板集成	B100-115 II		
	" 30:54:44 DA:80:42:10	"	"	B100-115 SE		
※	2 30:54:43 DB:81:19:50	Back Board	裏板 (小)	B100-115 II		
	" 30:54:44 DB:81:19:50	"	"	B100-115 SE		
	3 40:10:10 EK:80:08:80	Screw 4x25 FNM3-3g	山型ワッシャ付タッピン グネジ			
	4 30:54:00 AA:80:76:40	Metal Corner (Right)	コーナー金具 (右)			
	5 30:54:00 AA:80:76:50	" (Left)	" (左)			
	6 40:10:00 ER:23:51:30	Oval Head Wood Screw 3.5x13 FNM3-3g	丸皿木ネジ			
	7 30:54:00 NB:81:26:40	Handle Assembly	取手Ass'y			
	9 40:10:00 CA:80:15:20	Velcro Tape	マジックテープ (オス)			
	10 40:10:00 CA:80:15:30	"	" (メス)			
	11 30:54:00 CB:81:37:90	Name Plate	ネームプレート			
	12 40:10:00 ER:33:11:30	Oval Head Wood Screw 3.1x13 FCM3-B ℓ	丸皿木ネジ			
	13 30:54:00 AA:80:16:80	Caster	キャスター			
	14 30:54:00 AA:80:16:90	Caster Socket	キャスターソケット			
	15 40:10:00 ED:35:02:00	Bind Head Screw 5x20 ZMC2-B ℓ	バインド小ネジ			
	16 40:10:00 FV:30:35:00	Spring Lock Washer 5S	バネ座金			
	17 30:54:00 CB:80:19:20	Trim	パッフルボードトリム			
※	18 30:54:00 JA:38:07:00	Speaker	スピーカー			
	19 40:10:00 EA:05:03:00	Pan Head Screw 5x30 ZMC2-B ℓ	ナベ小ネジ			
	20 40:10:00 EV:30:05:00	Spring Lock Washer 5S	バネ座金			
	21 30:54:00 AA:80:76:70	Fixing Plate	ユニット吊り金具			
	22 40:10:00 EK:80:08:70	Sharp Tip Oval Head Screw 5x90 FNM3-3g	尖先丸皿小ネジ			
※	23 40:10:00 Mi:80:10:70	Speaker Cord W/Jack	L型プラグ付コード			
	24 30:54:00 AA:80:76:60	Metal Corner	コーナー金具			
	25 30:54:00 AA:80:90:05	"	" (後下)			
	26 40:10:00 CB:80:19:10	Spacer	スピーカーバッキン			

※ : New Part (新部品)

EXPLODED VIEW



■PARTS LIST

Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
1	30:54:00 A A:80:98:50	Chassis	シャーシ			
※ 2	Refer to page 14 Note 1	Panel	パネル			
※ 3	Refer to page 14 Note 2	Back Panel	バックパネル			
※ 4	30:54:00 N A:80:52:80	PA Board	PAシート			
5	30:54:00 A A:81:04:50	Fixing Metal For C,B	シート固定金具			
6	40:10:00 E i:03:00:60	Bind Head Tapping Screw 3×6 ZMC2-Y	バインドタッピングネジ			
7	30:54:00 C B:81:17:80	Knob	ツマミ			
8	30:54:00 A A:81:04:40	Spacer	スペーサー			
9	40:10:00 L C:84:29:10	JK Writing Board	J K基板			
10	40:10:00 L X:20:00:60	Hexagonal Nut 9S	特殊六角ナット			
11	40:10:00 L X:20:00:10	Plain Washer 9S	特殊平座金			
12	30:54:00 C B:81:40:00	Insulation Nut	絶縁ナット			
13	30:56:00 C B:81:00:90	"	"			
14	40:10:00 C B:81:37:50	Damper	緩衝材			
15	40:10:00 C B:81:37:60	"	"			
16	40:10:00 L B:30:01:60	Cannon Socket XLR-3-32	キャノンソケット			
17	40:10:00 E M:23:00:80	Oval Head Tapping Screw 3×8 FCrM3-3g	丸皿タッピングネジ			
18	30:54:00 G A:80:07:10	Input Transformer	マッチングトランス			
※ 19	30:54:00 A A:81:11:20	Transformer Holder	トランス固定金具			
20	40:10:00 E V:10:00:30	Hexagonal Nut 3S ZMC2-Y	六角ナット			
21	40:10:00 E V:41:00:30	Toothed Lock Washer A3S ZMC2-Y	歯付座金			
22	40:10:00 G A:80:84:00	Power Transformer	電源トランス			U,C
"	40:10:00 G A:80:85:00	"	"			O
23	40:10:00 E K:80:06:20	Flange Nut M4	フランジナット			
24	40:10:00 F L:10:92:20	Electrolytic Capacitor 2200/160	コンデンサ			
25	30:54:00 N B:81:26:20	MA Unit	MAユニット			U,C
"	30:54:00 N B:81:26:30	"	"			O
26	40:10:00 E K:00:09:80	Sharp Tip Pan Head Screw 5×10 7S	尖先ナベ小ネジ			
27	40:10:00 E V:43:00:50	Toothed Lock Washer AB5S ZMC2-Y	歯付座金			
※ 28	30:54:00 N A:80:53:00	DC Board	DCシート			U
"	30:54:00 N A:80:52:90	"	"			C
"	30:54:00 N A:80:53:10	"	"			O
29	30:54:00 C B:81:37:70	Cord Stopper	コード押え			
30	40:10:00 E i:03:02:00	Bind Head Tapping Screw 3×20 ZMC2-Y	バインドタッピングネジ			
31	40:10:00 E V:20:00:30	Flat Washer 3S ZMC2-Y	平座金			
32	40:10:00 M G:00:02:70	AC Cord	電源コード			U,C
"	40:10:00 M G:00:04:50	"	"			O
33	40:10:00 L B:20:04:90	Fuse Holder	ヒューズホルダー			U,C
33-1	40:10:00 L B:20:05:90	"	"			O
33-2	40:10:00 A A:03:15:80	Washer for Fuse Holder	ヒューズホルダーワッシャ			O
34	40:10:00 K B:00:03:60	Fuse 3A 250V	ヒューズ(タイラッシュ)	100V		C
34-1	40:10:00 K B:00:10:40	" UL SS-2 3A 250V	ULヒューズ			U
34-2	40:10:00 K B:00:07:40	" 1.6AT 250V	ヒューズSタイムラグ	200V		O
34-3	40:10:00 K B:00:07:60	" 3.15AT 250V	"	100V		O
35	40:10:00 L B:30:02:50	3P AC Outlet	AC Outlet(3P)			U,C
35-1	40:10:00 E A:30:10:30	Pan Head Screw 3×10S FCM3-B#	ナベ小ネジ			U,C
36	40:10:00 K A:30:03:50	Power Switch	パワースイッチ			U
36	40:10:00 K A:30:04:40	Power Switch	パワースイッチ			C
"	40:10:00 K A:30:37:00	"	"			O
37	40:10:00 C A:80:20:00	Isolation Paper	絶縁紙			
38	40:10:00 J B:00:00:72	Lamp Holder	ランプホルダー			
39	40:10:00 E D:04:00:80	Bind Head Screw 4×8 ZMC2-Y	バインド小ネジ			
40	40:10:00 E V:46:00:40	Toothed Lock Washer B4S "	歯付座金			

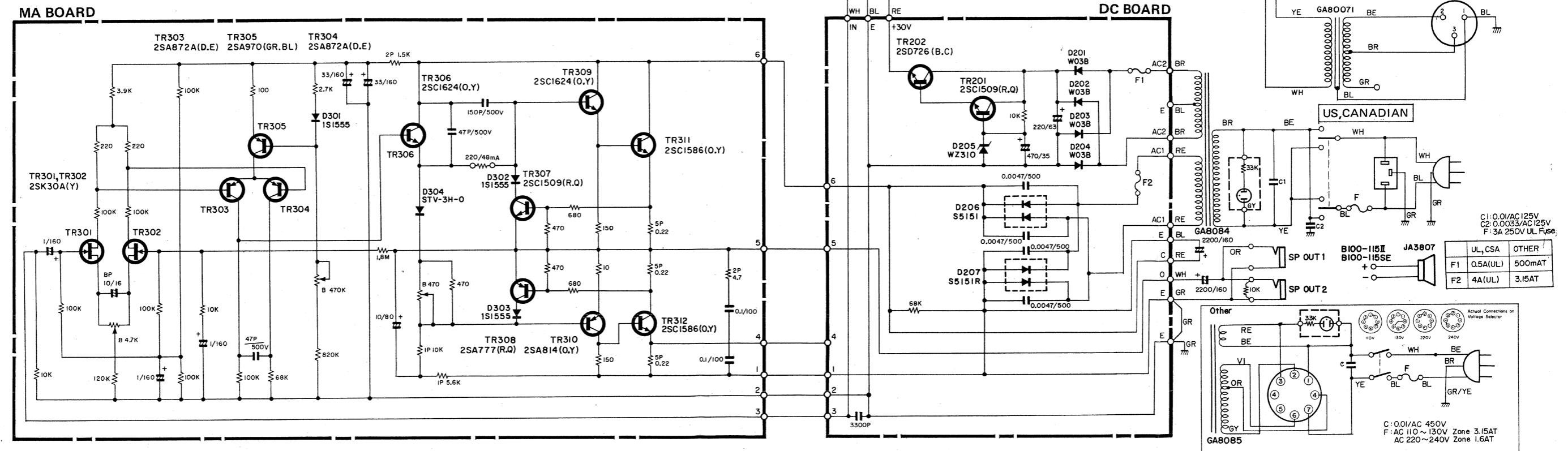
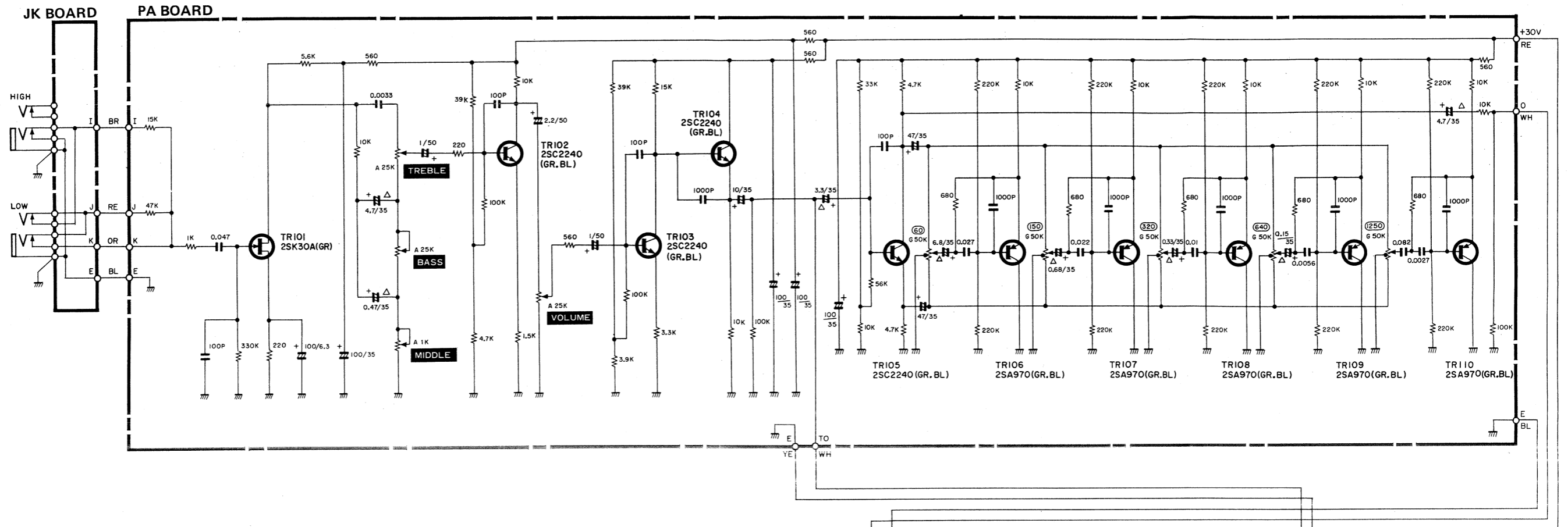
※ : New Part (新部品)

Ref. No.	Part No.			Description	(部 品 名)	Remarks	Common model	Markets
41	40:10:00	EV:30:00:40	Spring Lock Washer	4S "	バネ座金			
42	40:10:00	EV:10:00:40	Hexagonal Nut	4S "	六角ナット			
43	40:10:00	LA:00:02:90	Ground Lug	4φ	アースラグ			
44	40:10:00	LA:00:07:60	Lug Terminal		カラー端子板			
45	40:10:00	FZ:00:20:30	Spark Killer		スパークキラーコンデンサ			
46	40:10:00	LB:20:02:50	Voltage Selector		電圧切替器			O
47	40:10:00	EA:30:08:20	Pan Head Screw	3×8S ZMC2-B ₂	ナベ小ネジ			O
48	40:10:00	CA:80:19:90	Isolation Cover		絶縁カバー			U,C
			Note 1					
※	2	30:54:00	AA:81:06:90	Panel	パネル	} B100-115 II		U,C
※	"	30:54:00	AA:81:07:00	"	"			O
※	"	30:54:00	AA:81:07:20	"	"	} B100-115 SE		U,C
※	"	30:54:00	AA:81:07:30	"	"			O
			Note 2					
※	3	30:54:00	AA:81:05:80	Back Panel	バックパネル	} B100-115 II		U
※	"	30:54:00	AA:81:05:90	"	"			C
※	"	30:54:00	AA:81:06:10	"	"			O
※	"	30:54:00	AA:81:06:40	"	"	} B100-115 SE		U
※	"	30:54:00	AA:81:06:50	"	"			C
※	"	30:54:00	AA:81:06:70	"	"			O

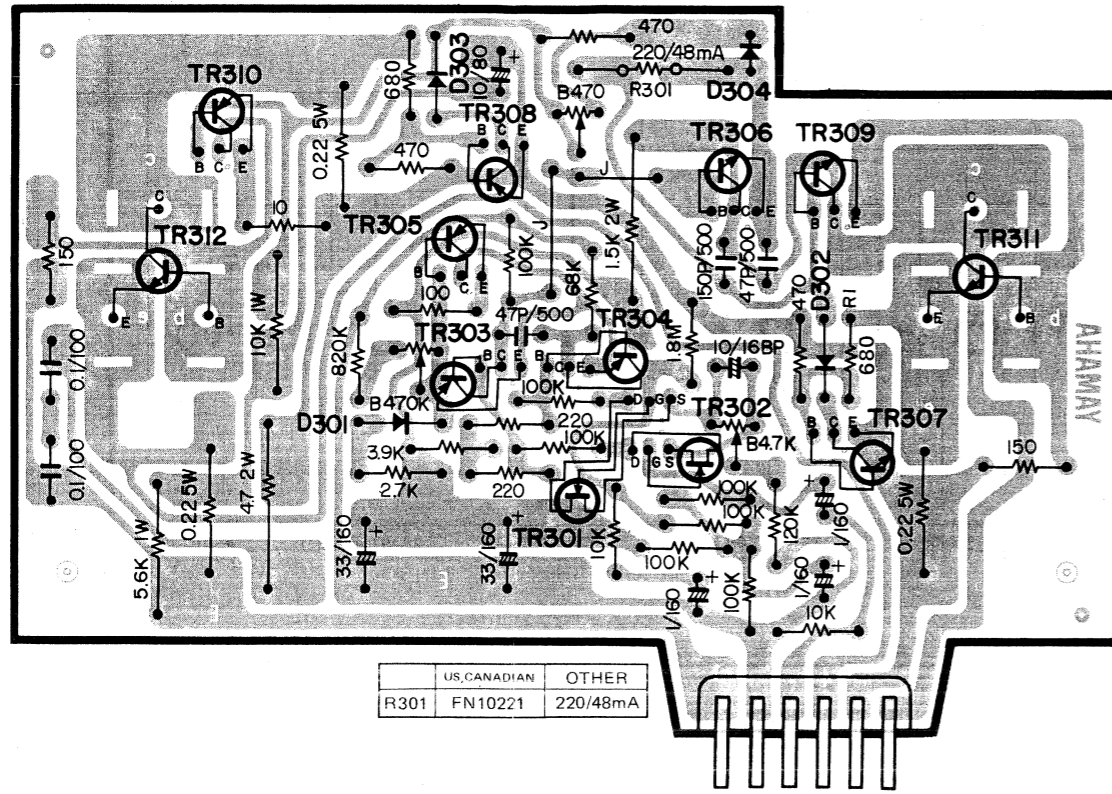
※ : New Part (新部品)

SCHEMATIC DIAGRAM

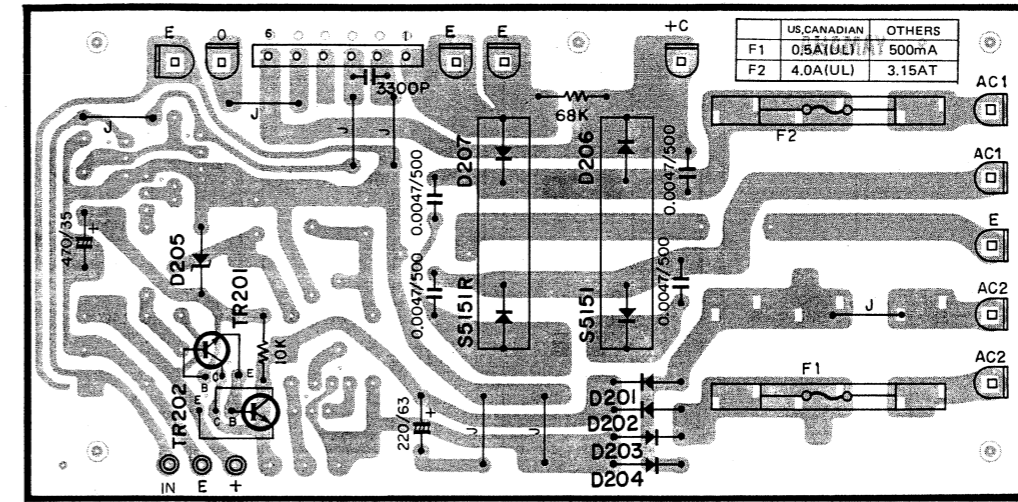
B100-115II, B100-115SE



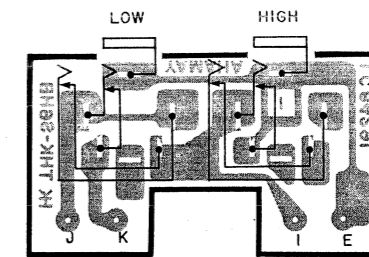
MA Parts side view



DC Parts side view



JK Parts side view



Board	Markets	B100-115II B100-115SE
MA	U.S.A	NA805150
	Canadian	-do.-
	Others	NA805160
DC	U.S.A	NA805300
	Canadian	NA805290
	Others	NA805310
PA	U.S.A	NA805280
	Canadian	-do.-
	Others	-do.-

PA Pattern side view

