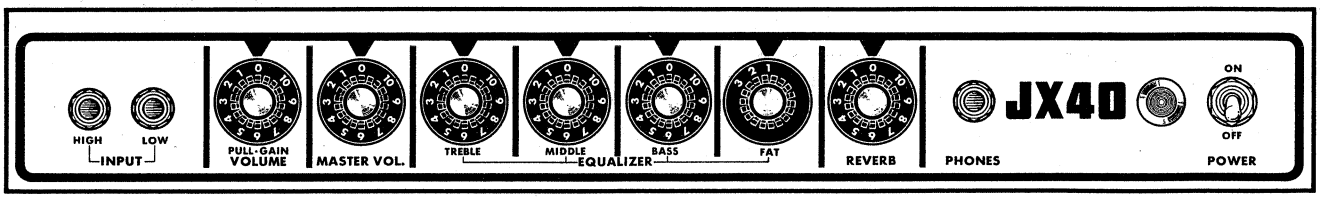
JX40

SERVICE MANUAL

■FRONT PANEL



■CONTENTS

006420

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

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■SPECIFICATIONS

OUTPUT POWER		30 W (8Ω T.H.D. 3%)
INPUT SENSIVITY (at 1kHz)	PULL·GAIN (push) HIGH	−39dB (9mV)
	LOW	−27dB (35mV)
MAS.VOL, EQ.VOL, VOLUME max. FAT→1	PULL·GAIN (pull) HIGH	−53dB (1.7mV)
	LOW	−41dB (7mV)
INPUT IMPEDANCE		HIGH 340KΩ, LOW 60KΩ
NOISE		−55dB (MAS. VOL →min. VOLUME →min.) −35dB (MAS. VOL →max. VOLUME →max. PULL. G →push) −25dB (MAS. VOL →max. VOLUME →max. PULL·G →pull)
REVERB		Spring Type

HEADPHONE JACK	−8dB (0.3V) @ 30W 8Ω
SPEAKER	YAMAHA JA3066 (30 cm) x 1
POWER CONSUMPTION	Canadian Model 40W 0.5A Other Models 65W
POWER SOURCE	120V AC fixed, or 110, 130, 220 or 240V AC selectable, 50/60 Hz
DIMENSIONS W x H x D	508 x 450 x 210 mm (20" x 17.7" x 8.3")
WEIGHT	14.2 kg (31 lbs 9 oz)

Specifications subject to change without notice.

■GENERAL ADJUSTMENT AND CHECK SPECIFICATIONS

For the measurements, use an oscillator with an output impedance of below 1KΩ, an oscilloscope and an AC voltmeter/dB meter with an input impedance of over 100KΩ.

I. GENERAL ADJUSTMENT

●Idling Current Adjustment

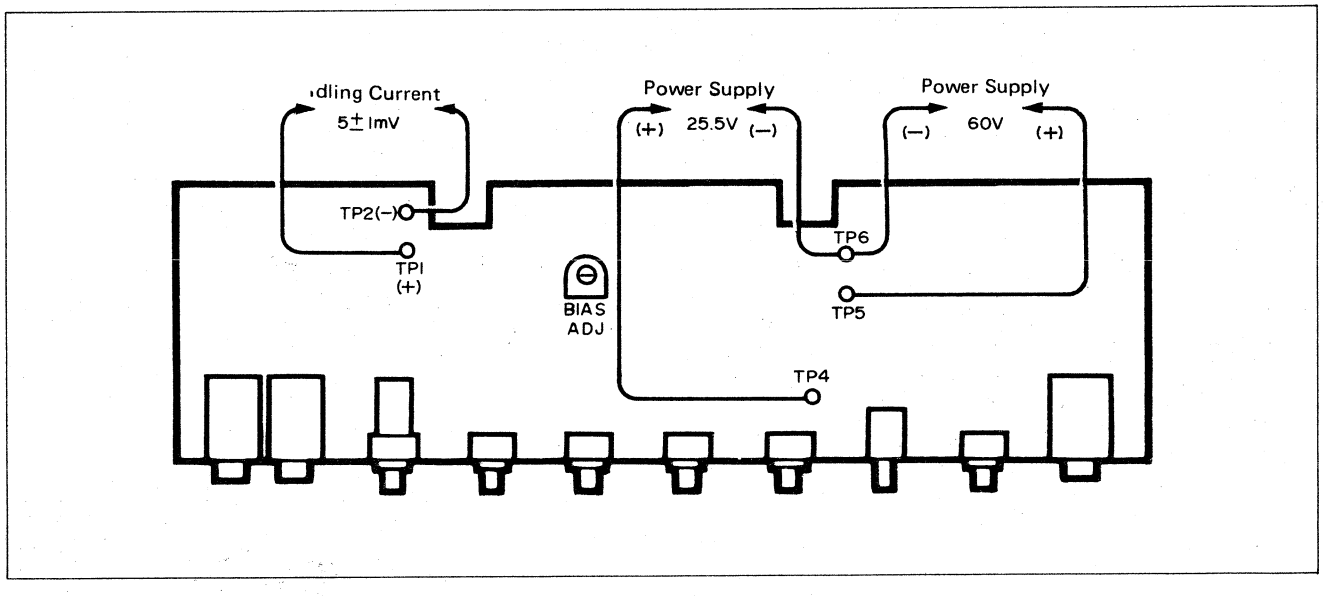
Adjust the pot (B500Ω) so that the voltage across the terminals TP1 (+) and TP2 (−) on PM circuit board is set to 5 ± 1mV.

*When readjusting all over again (e.g. when replacing the power transistor), make sure to turn the pot full counterclockwise.

●Power Supply Voltage Check

Check to ensure that a voltage of 60V is obtained across TP5 (+) and TP6 (−) and 25.5V across TP4 (+) and TP6 (−).

● FIG. 1



II. CHECK SPECIFICATIONS

	Check item	Set position of control	Measurement conditions	Point of measurement	Specifications	Remarks
1	Gain	TABLE 1	Apply a 1kHz, –60dB sine wave signal to INPUT.	PM circuit board, across "O" and "E" (8Ω load)	Output level listed in TABLE 2.	
2	Maximum output power	TABLE 1 PULL·GAIN →pull	Apply a 1kHz sine wave signal to HIGH INPUT.	PM circuit board, across "O" and "E" (8Ω load)	30W (26.02dB) with T.H.D. less than 3%.	
3	Frequency response	TABLE 1	Apply a 1kHz, –60dB sine wave signal to HIGH INPUT.	PM circuit board, across "O" and "E" (8Ω load)	Within ±3dB of the basic curve in FIG. 2 with 1kHz as a standard.	
4	TREBLE response	TABLE 1	Apply a 7kHz, –60dB sine wave signal to HIGH INPUT and turn TREBLE control from its minimum to maximum positions.	PM circuit board, across "O" and "E" (8Ω load)	Output variation: 17 ± 3dB	
5	MIDDLE response	TABLE 1	Apply a 400Hz, –60dB sine wave signal to HIGH INPUT and turn MIDDLE control from its minimum to maximum positions.	PM circuit board, across "O" and "E" (8Ω load)	Output variation: 4 ± 3dB	
6	BASS response	TABLE 1	Apply a 70Hz, –60dB sine wave signal to HIGH INPUT and turn BASS control from its minimum to maximum positions.	PM circuit board, across "O" and "E" (8Ω load)	Output variation: 12 ± 3dB	
7	FAT response	TABLE 1	Apply a 1kHz, –60dB sine wave signal to HIGH INPUT and turn FAT switch from 1 →2 →3.	PM circuit board, across "O" and "E" (8Ω load)	Output variation: 3 ± 1dB (FAT switch 1 →2) 2 ± 0.5dB (FAT switch 2 →3)	
8	PHONES output power	TABLE 1 PULL·GAIN →pull	Apply a 1kHz, –60dB sine wave signal to HIGH INPUT.	PHONES jack (8Ω load)	–30dB output level at both L and R.	Connect the load resistance given in FIG. 3.
9	REVERB drive circuit	TABLE 1	Remove REVERB unit and apply a 1kHz, –60dB sine wave signal to HIGH INPUT.	PM circuit board, across DO and E (600Ω load)	Output level: –9 ± 2dB	
10	Reverberation output amplification circuit	TABLE 1 except REVERB →Max	Remove REVERB unit and apply a 1kHz, –60dB sine wave signal across P1 and E on PM circuit board.	PM circuit board, across "O" and "E" (8Ω load)	Output level: –2 ± 3dB	
11	Noise level	TABLE 1	(1) PULL · GAIN →pull (2) PULL · GAIN →push (3) MASTER VOL →Min	PM circuit board, across "O" and "E" (8Ω load)	(1) less than –28dB (2) less than –37dB (3) less than –55dB	

• TABLE 1

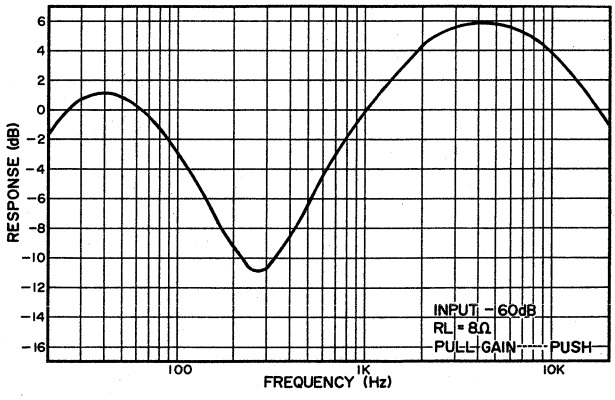
Knob	Set Position
PULL · GAIN/VOLUME	PULL : GAIN →Push
	VOLUME max.
MASTER VOL.	max.
TREBLE	max.
MIDDLE	max.
BASS	max.
FAT	1
REVERB	min.

• TABLE 2

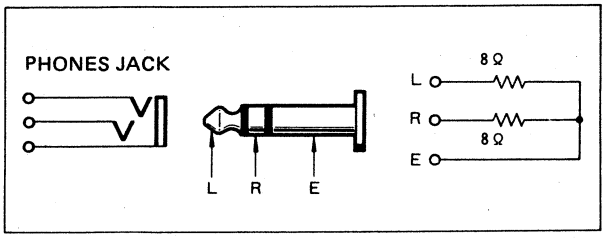
HIGH INPUT	PULL · GAIN →Pull	19 ± 3dB
	PULL · GAIN →Push	5 ± 3dB
LOW INPUT	PULL · GAIN →Pull	7 ± 3dB
	PULL · GAIN →Push	–7 ± 3dB

Note: 0dB is referenced to 0.775 V RMS.

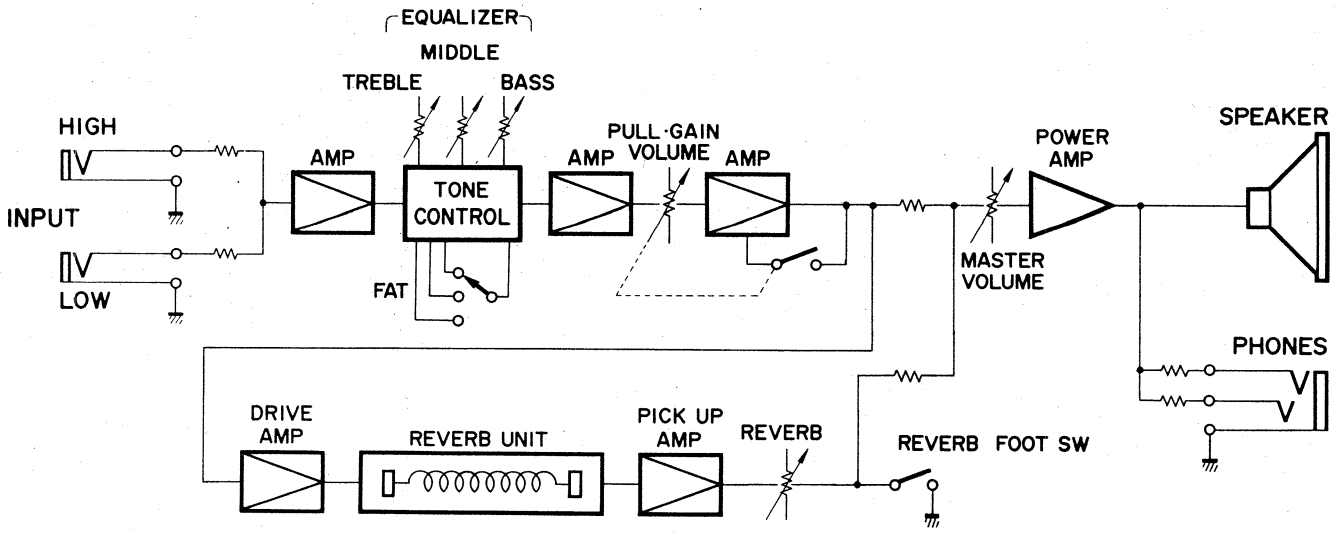
• FIG. 2 FREQUENCY RESPONSE



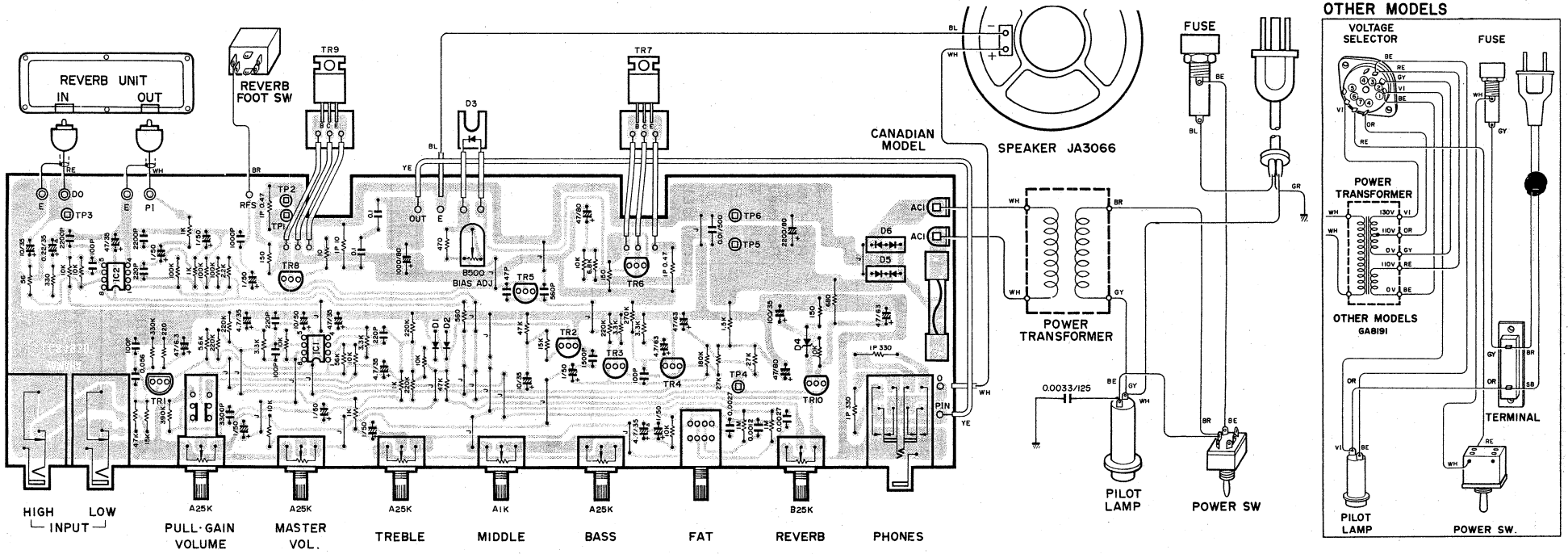
• FIG. 3 PHONES LOAD



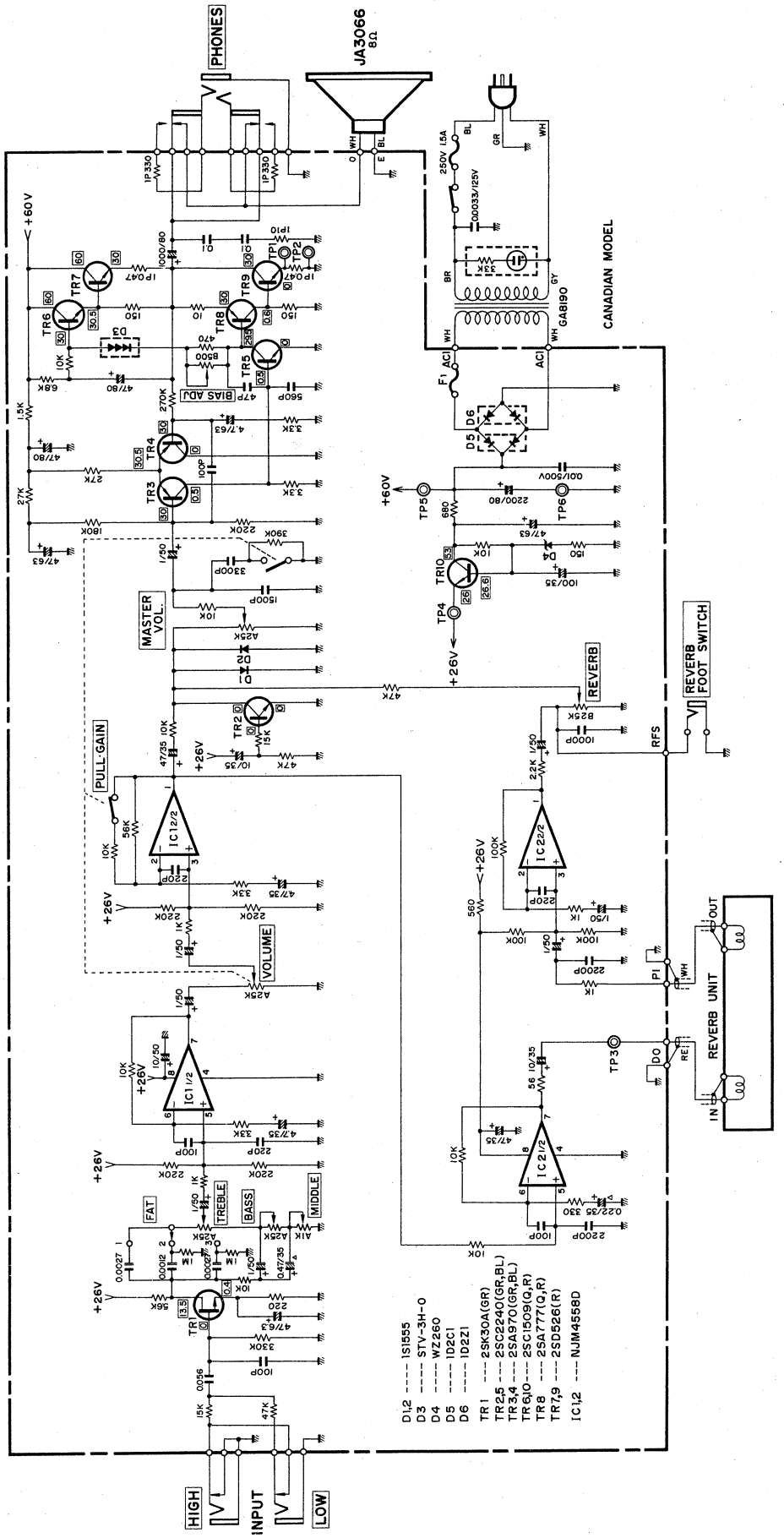
BLOCK DIAGRAM



PRINTED CIRCUIT BOARD



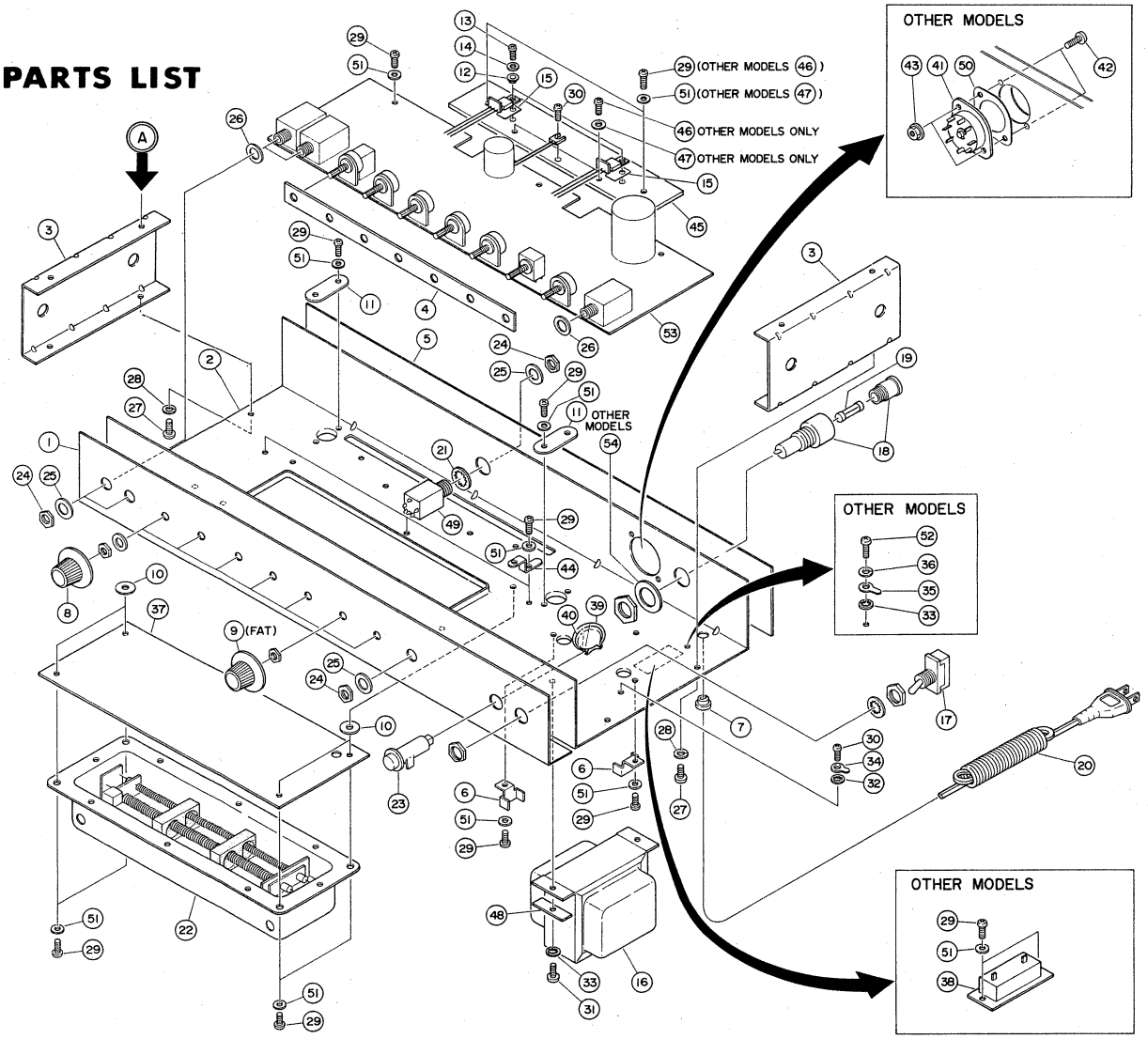
SCHEMATIC DIAGRAM



PIN-CONNECTION DIAGRAM OF TRANSISTORS, DIODS AND IC.

NJM4558D	2SC2240(GR, BL) 2SA970(GR, BL) 2SC1509(Q, R) 2SA777(Q, R)	2SD526(R)	2SK30A(GR)	1S1555 WZ260	1D2C1
				Anode Cathode	
				STV-3H-0	1D2Z1
				Anode Cathode	

■ PARTS LIST



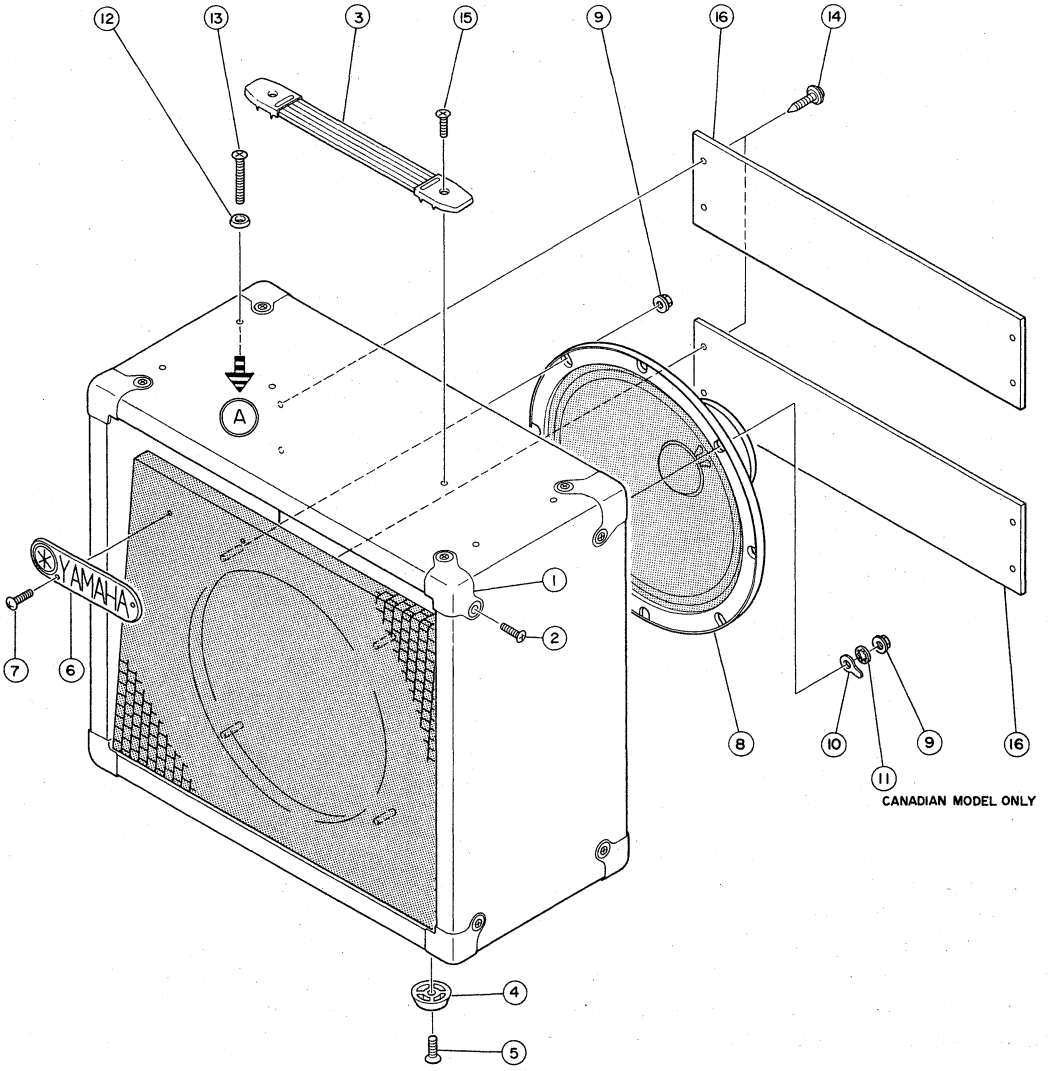
J : Japan Model
C : Canadian Model
O : Other Models

	Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model		
※	1	30 54 00 AA 81 26 90	Front Panel	フロントパネル	J, C			
※		30 54 00 AA 81 27 00	〃	〃	O			
	2	30 54 00 AA 81 21 10	Chassis	シャーシ	J			
		30 54 00 AA 81 21 60	〃	〃	C			
		30 54 00 AA 81 22 10	〃	〃	O			
	3	30 54 00 AA 81 25 50	Side Stay	サイドステー				
	4	30 54 00 AA 81 30 80	Spacer	スペーサー				
※	5	30 54 00 AA 81 23 90	Rear Panel	リアパネル	J			
※		30 54 00 AA 81 24 10	〃	〃	C			
※		30 54 00 AA 81 24 20	〃	〃	O			
	6	30 54 00 AA 81 25 70	Cover	トランスリードカバー				
	7	40 10 00 CB 06 86 30	Cord Bush	コードブッシュ	J			
		40 10 00 CB 80 68 50	〃	〃	C			
		40 10 00 CB 07 27 50	〃	〃	O			
	8	30 54 00 CB 81 46 40	Knob	ツマミ				
※	9	30 54 00 CB 81 52 30	〃 (FAT)	〃				
	10	40 10 00 CB 80 15 90	Rubber Bush	ゴムブッシュ				
	11	30 54 00 CB 81 46 50	Wire Push	線材押さえ				
	12	30 54 00 CB 07 28 80	Bush	絶縁ブッシュ				
	13	40 10 00 EA 02 60 50	Pan Head Screw 2.6 x 6 ZMC2-Y	ナベ小ネジ				

※ NEW PARTS

Ref No.	Part No.	Description	(部品名)	Remarks	Common model		
14	40 10 00 EV 20 02 60	Flat Washer 2.6φ ZMC2-Y	平座金				
15	40 10 00 iL 00 02 70	Mica Base	マイカベース				
16	40 10 00 GA 81 89 00	Power Transformer	電源トランス	J	JX30		
	40 10 00 GA 81 90 00	〃	〃	C	〃		
	40 10 00 GA 81 91 00	〃	〃	O	〃		
17	40 10 00 KA 30 04 30	Toggle Switch	トグルスイッチ	J			
	40 10 00 KA 30 05 00	〃	〃	C			
	40 10 00 KA 30 03 00	〃	〃	O			
18	40 10 00 LB 20 04 90	Fuse Holder	ヒューズホルダー	J, C			
	40 10 00 LB 20 05 90	〃	〃	O			
19	40 10 00 KB 00 03 40	Fuse 250V 1.5A	ヒューズ	J, C			
	40 10 00 KB 00 07 30	〃 250V 1AT	〃	O			
20	40 10 00 MG 00 06 00	AC Cord	電源コード	J			
	40 10 00 MG 00 10 10	〃	〃	C			
	40 10 00 MG 00 09 90	〃	〃	O			
21	40 10 00 EV 40 00 90	Toothed Lock Washer A9S	歯付座金				
22	40 10 00 JH 00 01 20	Reverb Unit	リバーブユニット	J			
	40 10 00 JH 00 01 60	〃	〃	C, O			
23	40 10 00 JB 00 07 20	Lamp Holder	ランプホルダー				
24	40 10 00 LX 20 00 60	Hexagonal Nut 9φ	特殊六角ナット				
25	40 10 00 LX 20 00 10	Flat Washer 9φ	特殊平座金				
26	30 10 00 AA 80 58 20	Spacer 9S	スペーサー				
27	40 10 00 ED 35 00 80	Bind Head Screw 5 x 8 ZMC2-Bℓ	バインド小ネジ				
28	40 10 00 EV 30 30 50	Spring Washer 5φ ZMC2-Bℓ	バネ座金				
29	40 10 00 EJ 03 00 80	Pan Head Tapping Screw 3 x 8 ZMC2-Y	ナベタッピングネジ				
30	40 10 00 EA 03 00 60	Pan Head Screw 3 x 6 ZMC2-Y	ナベ小ネジ				
31	40 10 00 Ei 04 00 80	Bind Head Tapping Screw 4 x 8 ZMC2-Y	バインドタッピングネジ				
32	40 10 00 EV 41 00 30	Toothed Lock Washer 3φ ZMC2-Y	歯付座金				
33	40 10 00 EV 43 00 40	〃 4φ ZMC2-Y	〃				
34	40 10 00 LA 00 02 80	Ground Lug 3φ ZMC2-Y	アースラグ				
35	40 10 00 LA 00 02 90	〃 4φ ZMC2-Y	〃				
36	40 10 00 EV 30 00 40	Spring Washer 4φ ZMC2-Y	バネ座金				
37	30 54 00 AA 81 27 30	Shield Cover	シールドカバー				
38	40 10 00 LA 00 29 50	Terminal 2P	端子板	O			
※ 39	40 10 00 CB 07 21 90	Condenser Cover	コンデンサカバー	J, C			
40	40 10 00 Fi 18 33 30	Ceramic Cap. 0.0033μF 125V	セラコン	J, C			
41	40 10 00 LB 20 02 50	Voltage Selector	電圧切換器	O			
42	40 10 00 ED 33 01 00	Bind Head Screw 3 x 10 ZMC2-Bℓ	バインド小ネジ	O			
43	40 10 00 EK 80 11 20	Flange Nut M3 ZMC2-Bℓ	フランジナット	O			
44	30 54 00 AA 81 25 90	P.C. Board Holder	シートホルダー				
45	30 54 00 BA 80 40 20	Heat Sink	放熱板	J, C			
	30 54 00 BA 80 41 70	〃	〃	O			
46	40 10 00 EJ 03 01 00	Pan Head Tapping Screw 3 x 10 ZMC2-Y	ナベタッピングネジ	O			
47	40 10 00 EV 20 00 30	Flat Washer 3φ ZMC2-Y	平座金	O			
48	30 54 00 AA 81 25 80	Transformer Support	トランス補強板				
49	40 10 00 LB 20 15 40	Jack	ジャック				
※ 50	40 10 00 CB 07 64 00	VS Insulator	VS絶縁板	O			
51	40 10 00 EV 20 00 40	Flat Washer 4φ ZMC2-Y	平座金				
52	40 10 00 EA 04 00 80	Pan Head Screw 4 x 8 ZMC2-Y	ナベ小ネジ	C			
※ 53	30 54 00 NA 80 55 70	PM C. Board	PMシート	J, C			
※	30 54 00 NA 80 55 80	〃	〃	O			
54	40 10 00 AA 03 15 80	Fuse Holder Washer	ヒューズホルダーワッシャ	O			

※ NEW PARTS



	Ref No.	Part No.	Description	(部品名)	Remarks	Common model		
※		30 54 97 00 00 00 10	Cabinet	外装組上がり				
	1	30 54 00 AA 80 76 60	Corner Angle	コーナー金具				
	2	40 10 00 ER 23 51 30	Oval Head Wood Screw 3.5 x 13 FNM3-3g	丸皿木ネジ				
	3	30 54 00 NB 81 26 40	Handle Ass'y	取手 Ass'y				
	4	30 10 00 CB 02 32 00	Leg	滑り座		PM400		
	5	40 10 00 EP 33 82 50	Flat Head Wood Screw 3.8 x 25 ZMC2-Bℓ	皿木ネジ				
	6	30 54 00 CB 81 46 30	Name Plate	ネームプレート				
	7	40 10 00 ER 33 11 30	Oval Head Wood Screw 3.1 x 13 FCM3-Bℓ	丸皿木ネジ				
	8	30 54 00 JA 30 66 00	Speaker 30 cm (12") 8Ω	スピーカ				
※	9	40 10 00 EK 80 06 20	Flange Nut M4 ZMC2-Y	フランジナット				
	10	40 10 00 LA 00 02 90	Ground Lug 4φ	アースラグ	C			
	11	40 10 00 EV 42 00 40	Toothed Lock Washer B4S ZMC2-Y	歯付座金	C			
	12	40 10 00 EK 80 00 30	Washer 5φ ZMC2-Bℓ	山型ワッシャー				
	13	40 10 00 EF 35 04 00	Oval Head Screw 5 x 40 ZMC2-Bℓ	丸皿小ネジ				
	14	40 10 00 EM 84 02 50	Oval Head Tapping Screw 4 x 25 FNM3-3g	山型ワッシャー付丸皿タッピングネジ				
	15	40 10 00 EF 24 02 50	Oval Head Screw M4 x 25 FNM3-3g	丸皿小ネジ				
	16	30 54 97 DB 81 31 40	Back Board	裏板				

※ NEW PARTS

ELECTRICAL PARTS

	Ref No.	Part No.	Description	(部品名)	Remarks	Common model		
※		30 54 00 NA 80 55 70	PM C. Board #84930	P M シート	J, C			
※		30 54 00 NA 80 55 80	〃 〃	〃	O			
		40 10 00 FM 77 91 00	Electrolytic Cap. 1000μF/80V	ケミコン				
		40 10 00 FM 77 92 20	〃 2200μF/80V	〃				
		40 10 00 FP 35 52 20	Tantalum Cap. 0.22μF/35V	タンタルコン				
		40 10 00 FP 35 54 70	〃 0.47μF/35V	〃				
		40 10 00 HL 31 24 70	Metal Oxide Film Resistor 0.47Ω 1W	酸金抵抗				
		40 10 00 HL 31 41 00	〃 10Ω 1W	〃				
		40 10 00 HL 31 53 30	〃 330Ω 1W	〃				
		40 10 00 HS 31 07 50	〃 A1KΩ	可変抵抗器				
		40 10 00 HS 31 07 60	Variable Resistor A25KΩ	〃				
		40 10 00 HS 31 07 70	〃 (with SW) A25KΩ	〃				
		40 10 00 HS 31 08 60	〃 B25KΩ	〃				
		40 10 00 HT 77 00 20	Semi-Fixed Variable Resistor B500Ω	半固定抵抗				
		40 10 00 iA 07 77 30	Transistor 2SA777 (Q, R)	トランジスタ				
		40 10 00 iA 09 70 00	〃 2SA970 (GR, BL)	〃				
		40 10 00 iC 15 09 30	〃 2SC1509 (Q, R)	〃				
		40 10 00 iC 22 40 00	〃 2SC2240 (GR, BL)	〃				
		40 10 00 iD 05 26 10	〃 2SD526 (R)	〃				
		40 10 00 iE 00 00 20	FET 2SK30A (GR)	FET				
		40 10 00 iF 00 00 40	Diode 1S1555	ダイオード				
		40 10 00 iF 00 02 50	Zener Diode WZ260	ツェナーダイオード				
		40 10 00 iF 00 04 50	Varistor Diode STV-3H-0	バリスタ				
		40 10 00 iG 00 13 90	IC NJM4558D	IC				
		40 10 00 iH 00 02 80	Diode 1D2C1	ダイオード				
		40 10 00 iH 00 02 90	〃 1D2Z1	〃				
		40 10 00 KB 00 03 50	Fuse 250V2A	ヒューズ	J, C			
		40 10 00 KB 00 06 80	〃 Mini 250V1.25AT	〃	O			
		40 10 00 LB 10 05 00	Jack (INPUT)	ジャック				
		40 10 00 LB 30 10 80	〃 Stereo (HEADPHONE)	〃				
※		40 10 00 KA 50 15 00	Rotary Switch	ロータリースイッチ				

※ NEW PARTS

YAMAHA MUSIKINSTRUMENTE

DIN A4: 9
DIN A3:
DIN A2:
DIN A1:

TYP: JX 40
LDFNR: 158
VORRAT:

PREIS SCHALTPLÄNE :
PREIS GESAMTANLEITUNG:

HZ:

PRODUKTION: