DENON

SERVICE MANUAL

ELECTRONIC PIANO

MODEL EP-3300

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NIPPON COLUMBIA CO., LTD.

CAUTIONS

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 it the resistance from chassis to either side of the power cord is less than 240 Kohms, the unit is defective.

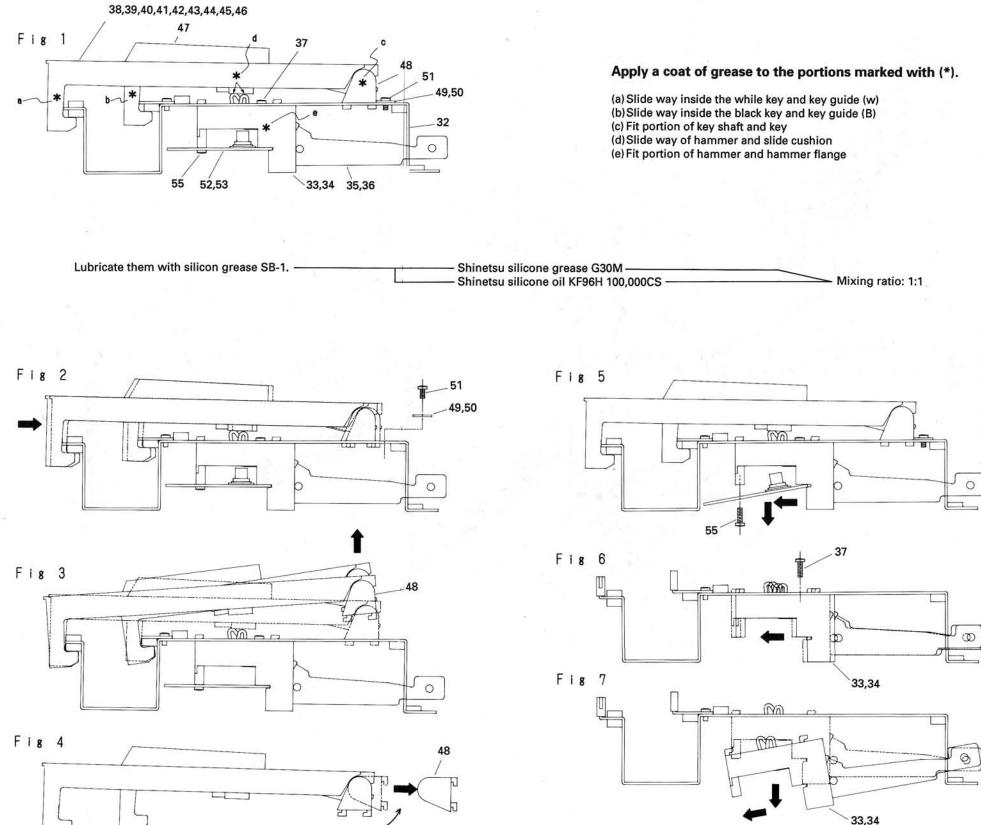
WARNING:

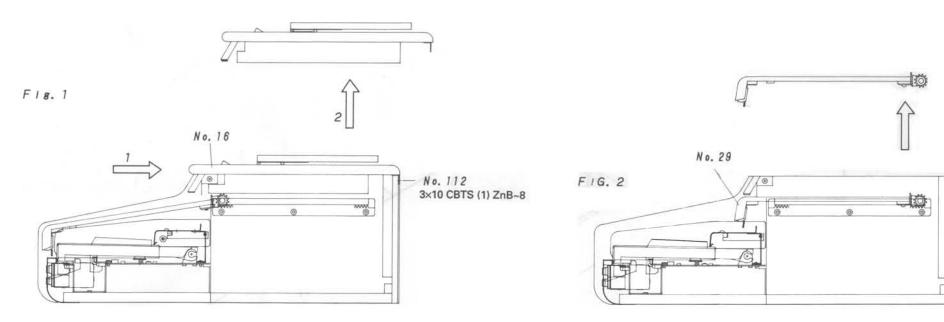
- Parts marked with <u>A</u> this symbol have critical characteristics.
 Use ONLY replacement parts recommended by the manufacturer.
- DO NOT return the unit to the customer until the problem is located and corrected.

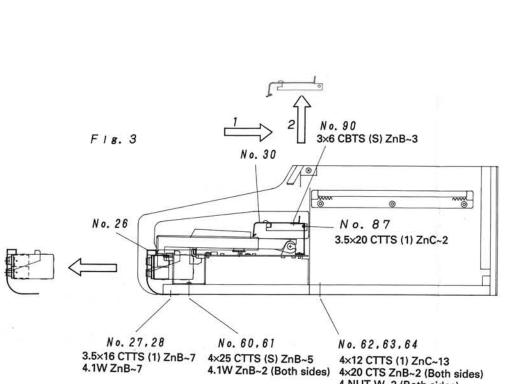
Name of P.C. Board	UNIT No.	Remarks
24 KEYS SWITCH BOARD	BP-380-2	
16 KEYS SWITCH BOARD	BP-383-2	
MAIN PCB	BP-421-2	
EFFECT BOARD	BP-422-1	÷ /
POWER BOARD	BP-419-1	4
PANEL BOARD	BP-420-3	
L/FILTER BOARD	BP-393-2	U.S.A., Canada Models
	BP-393-3	Europe, U.K., Asia Models

LIST OF P.C. Board UNIT

DISASSEMBLY OF KEY-148







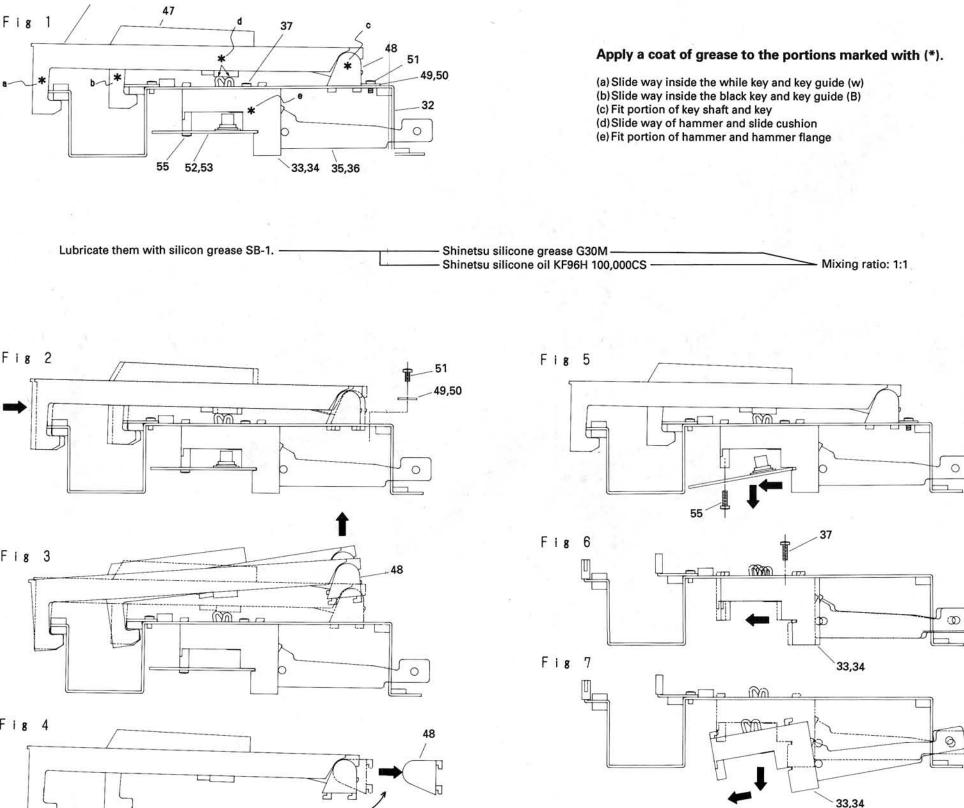
4 NUT-W~2 (Both sides)

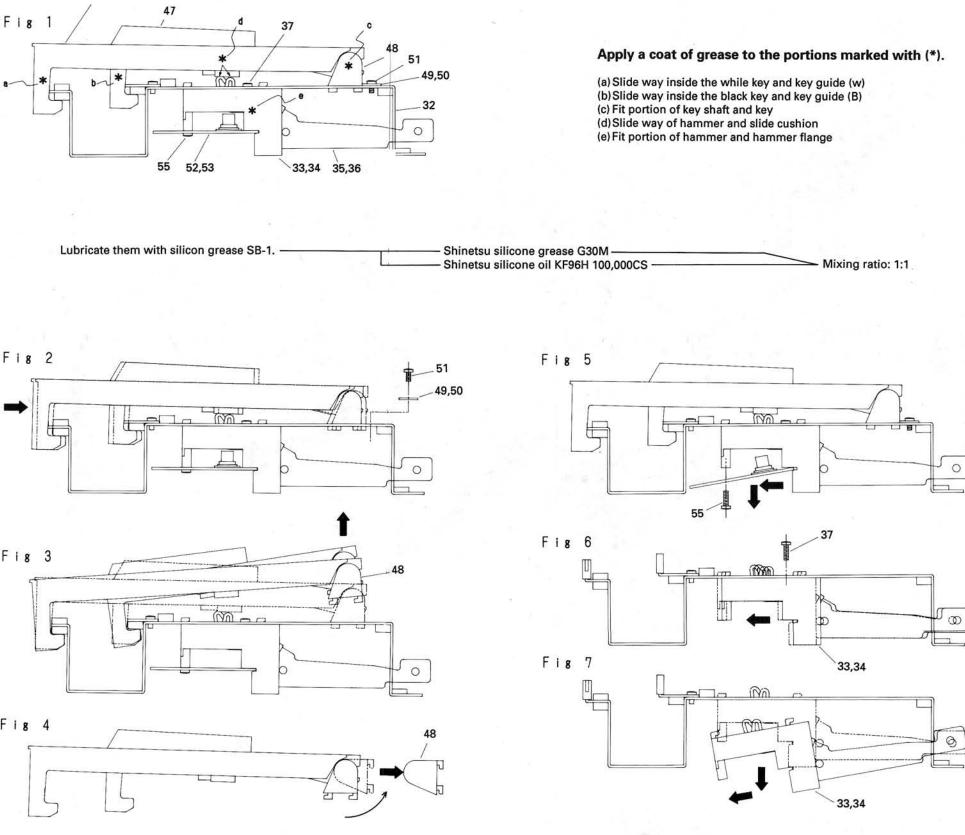
1. Remove roof board semi-assembly 16. (Fig. 1)

- 1) Remove eight (8) screws 112 (3×10 CBTS(1)).
- 2) Move roof board semi-assembly 16 in the direction of arrow 1 and lift it in the direction of arrow 2. 2. Remove key cover assembly 29. (Fig. 2)
- 1) Lift key cover assembly 29 to remove it.
- 3. Remove top panel semi-assembly 30 and front panel 26. (Fig. 3)
- 1) Remove two (2) screws 87 (3.5 × 20 CTTS(1)) and three (3) screws 90 (3 × 6 CBTS(1)) and move top panel semiassembly 30 in the direction of arrow 1 and then in the direction of arrow 2 to remove it.
- 2) Remove seven (7) screws 27 (3.5 × 16 CTTS(1)) and four (4) washers 28 (4.1 W), then remove front panel 26 in the direction of the arrow.

4. Remove the keyboard unit. (Fig. 3)

- 1) Remove five (5) screws 60 (4 × 25 CTTS(S)) and two (2) washers 61 (4.1W) from both ends.
- 2) Remove two (2) screws 63 (4 \times 20 CTS) and two (2) nuts 61 (4NUT-W) and then thirteen (13) screws 62 (4 \times 12 CTTS(1)).





How to disassemble the keyboard unit KEY-148 Sectional view (Fig.1)

1. Remove the keyboard unit from the piano body.

- 2. How to remove the keyboard (Fig.2,3, and 4)
- 1) After removing screws 51, remove K/S stoppers 49,50. Push the keyboard toward the arrow. (Fig.2)
- 2) Remove the key together with key shaft 48 from the chassis ass'y by lifting the rear part of the key in the arrow direction. (Fig.3) 3) Remove the while key first, and then, the black key. For mounting them, mount the black
- key first.
- 4) Remove the key shaft 48 backward by turning it 90° in the arrow direction. (Fig.4)

3. How to remove the switch board. (Fig.5)

- 1) Remove screw 55, and then, remove the switch board by moving it toward the arrow. 2) Removal of the keyboard is not necessary when removing the switch board only.
- 4. How to remove the hammer (Fig.6.7)
- 1) Remove screws 37, and move the hammer flanges in the arrow direction. (Fig.6) 2) Remove hammer flanges 33,34 (together with each hammer) by moving them in the arrow directions. (Fig.7)
- 3) For removing the hammer flanges, all screws 37 can be removed by removing five white/ black keys of octave G-B and four white/black keys on the high-pitched sound side.

5. How to remove the hammers

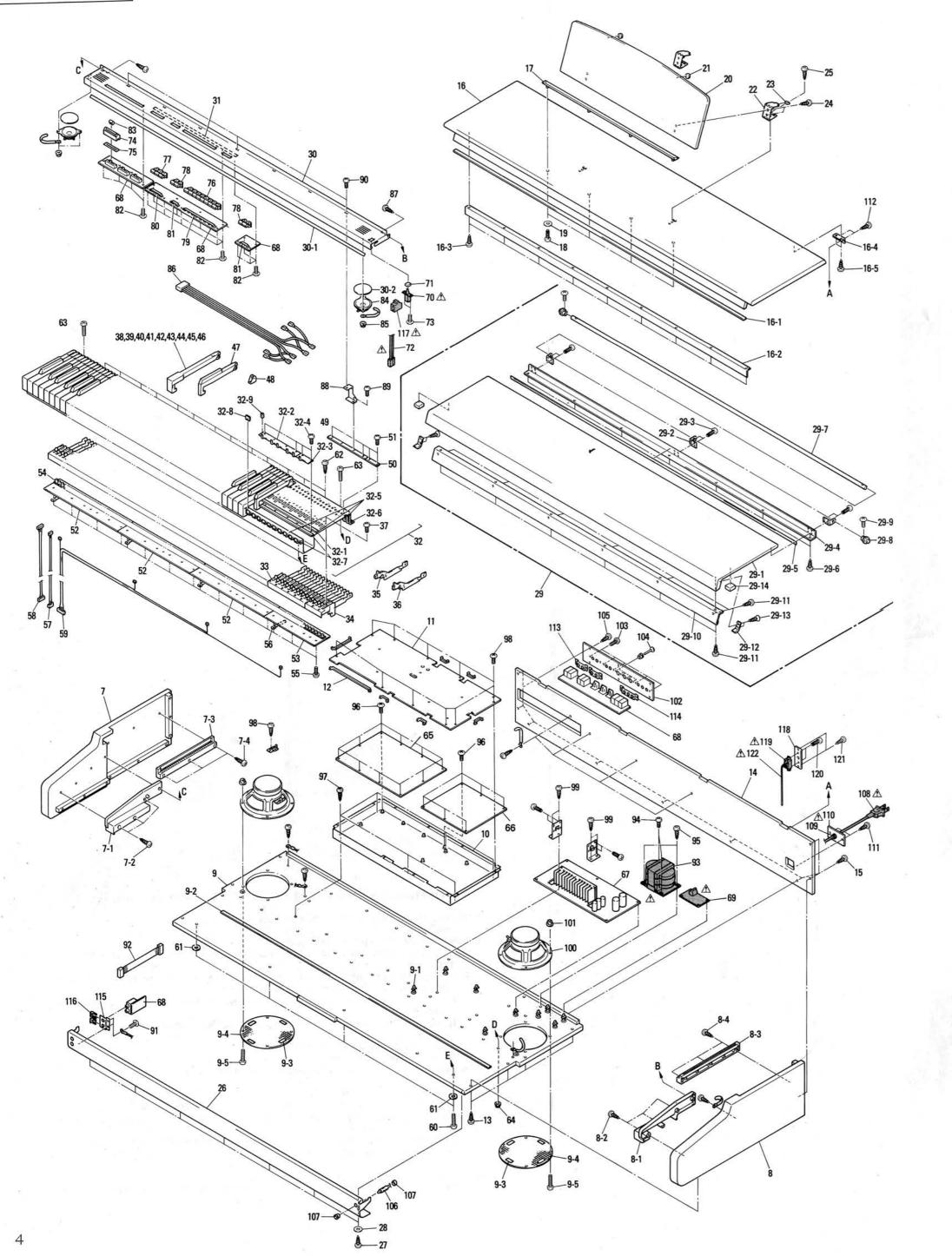
1) Remove hammer 35,36 in the arrow direction by turning them upward by 90°.

0 35,36 0

33,34

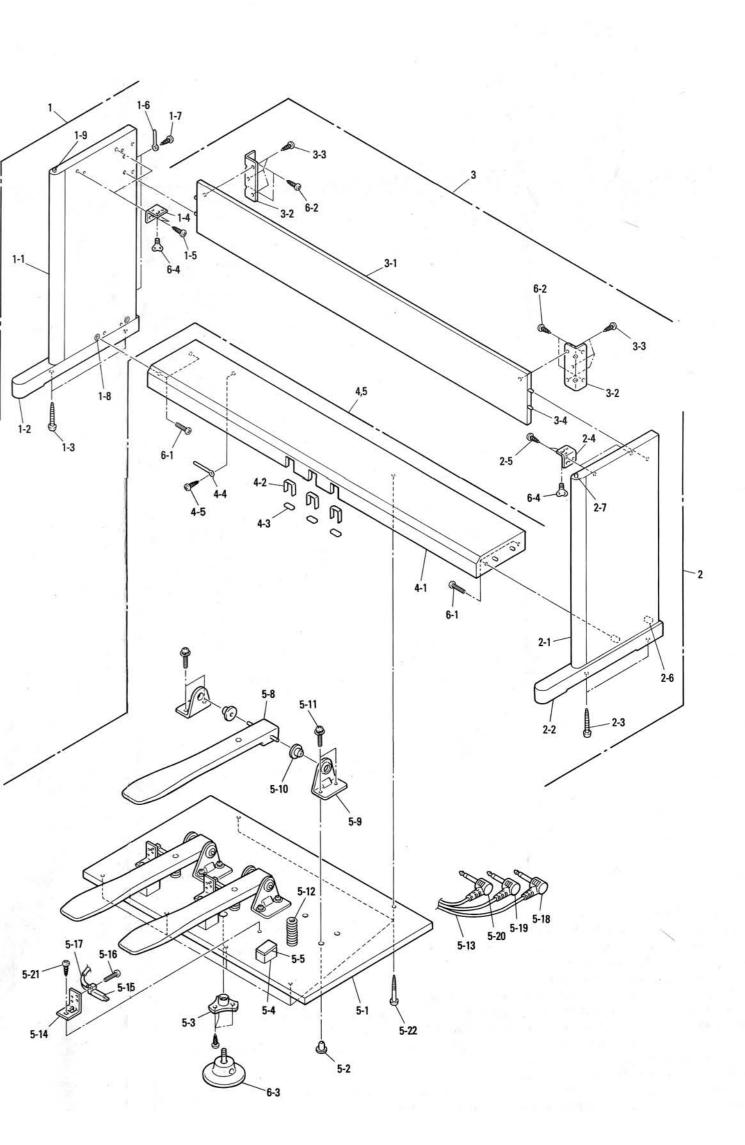
0

Fig 8



WARNING:

Parts marked with \triangle this symbol have critical character-istics. Use ONLY replacement parts recommended by the manufacturer. DO NOT return the unit to the customer until the problem is located and corrected.



PARTS LIST OF EXPLODED VIEW

100	21 122		EP-3300			121 139	E	P-3300				25 1725		EP-3300		Г	10 10 10 10 10 10 10 10 10 10 10 10 10 1	F	P-3300	
No.	Part Name	-		Bemarka	No.	Part Name	-		Bomarka	No	lo.	Part Name	Q'ty	179.07 NO. 199.7	Remarka	r	No. Part Name			Dorseyler
		Q'ty	and the second second second	Remarks	-		Q'ty	Part No.	Remarks	\vdash	1 1/-			15, 196 A. C. A. A. Barr	Remarks				Part No.	Remarks
	DE PANEL (L) ASS'Y	(1)	1077545005		-	FIX BOLT (M4 × 30)	8	1117005000			-1 KE		8	4367266208			87 3.5 × 20 CTTS (1)	2	4734806000	
	DE PANEL (L)	1	1077546004			SHIELD CASE ASS'Y	1	4147025203			_		8	1247115100			88 T.P SUPPORTER	3	4337004005	
	DOT (L)	1	1077547003		_	SHIELD COVER	1	4147024408				EY ASS'Y (W) EY C	(7)	4367301309		H	89 3 × 6 CBTS (S)	3	4737002034	
	× 40 CTTS (1)	2	4734803032			EDGING 365mm	1 8	4734804002			_		7	4367267207		H	90 3 × 6 CBTS (S)	3	4737002034	
	DINT BRACKET 5 × 16 CTTS (1)	4	4127184009 4734806026			3.5 × 25 CTTS (1) REAR BOARD	0	1077487105				ENDER FELT	7	1247115100 1247147000		-	91 3 × 6 CBTS (S) 92 5P CONNECTOR ASS'Y		4737002034	
1	ORD HOLDER	2			101000	3.5 × 20 CTTS (1)	9	4734806000		_		EY ASS'Y (W)	(7)	4367290232			93 POWER TRANS	1	2039460017	11.0.4.0
1	1 × 16 CRWS	2				ROOF BOARD SEMI ASS'Y	(1)	1077489404			_	EY D	7	4367268206			93 POWER TRANS	1	2338539005 2338542005	U.S.A.,Canada Asia
	OOD ANCHOR	4	4770150008		-	PROTECTION FELT	1	1247146001				LIDE CUSHION	7	1247115100			93 POWER TRANS		2338542005	Europe
	OWEL #6 × 30	1	4770100000		_	REFORM RAIL	1	4097020206				EY ASS'Y (W)	(7)	4367290245			93 POWER TRANS		2338541006	U.K.
	DE PANEL (R) ASS'Y	(1)	1077548002			3.5 × 12 CBTS (1)	9	4733804045				EYE	7	4367269205			94 4 × 14 CTS		4714408017	0.10.
	DE PANEL (R)	1	1077549001			ANGLE BRACKET	4	4037010001			-2 SL	LIDE CUSHION	7	1247115100			95 4 × 12 CTTS (1)		4734406015	
-2 FC	DOT (R)	1	1077547003		-5	3 × 12 CBRTS (1)	8	4730306012		4	43 KE	EY ASS'Y (W)	(7)	4367301312			96 3 × 6 CBTS (S)		4777002034	
-3 4 3	× 40 CTTS (1)	2	4734803032		17	MUSIC STOPPER	1	4397035108			-1 KE	EY F	7	4367270207			97 3.5 × 10 CBTS (1)	6	4733804003	
-4 JC	DINT BRACKET	2	4127184009		18	3 × 18 CBTS (P)	4	4737500060		1	-2 SL	LIDE CUSHION	7	1247115100			98 3 × 6 CBTS (S)	11	4777002034	
-5 3.5	5 × 16 CTTS (1)	4	4734806026		19	3.5 W	4	4751134001			-3 FE	ENDER FELT	7	1247147000			99 3.5 × 10 CBTS (1)	4	4733804003	
-6 W	OOD ANCHOR	4	4770150008		20	SCORE HOLDER ASS'Y	(1)	1077464005		4	44 KE	EY ASS'Y (W)	(7)	4367290261		1	100 16RG03M	2	3017017009	
-7 DC	OWEL Ø6 × 30	1				LID CUSHION	2	4617026017			-1 KE	Contraction of the second s	7	4367271206		- E	101 4 NUT-W	8	SC-1050H	
	EAR BOARD ASS'Y	(1)	1077550003			SCORE HINGE	2	4017027108		-	_	LIDE CUSHION	7	1247115100			102 AUX PANEL (BLACK COATING)	1	1027193012	
1	EAR BOARD	1	1077551002			PROTECTION SHEET	2	1247123008				EY ASS'Y (W)	(1)	4367291202			102 AUX PANEL (VINYL CHLORIDE STEEL PLATE)	1	1027252005	
	DINT BRACKET	2	4127142106			3 × 8 CBTS (1)	4	4733830006		_	-1 KE		1	4367272205			103 3 × 8 CBTS (S)		4737002021	
	5 × 12 CTTS (1)	6	4734804015			3 × 10 CBTS (1)	4	4733804006				LIDE CUSHION	1	1247115100			104 PUSH RIVET		4770210003	
	OWEL Ø8 × 30	4	1077555555			FRONT PANEL	1	1027233503				EY ASS'Y (W)	(1)	4367301325			105 3 × 10 CBTS (1)		4733814006	
	EDAL BOX ASS'Y	(1)	1077552001			3.5 × 16 CTTS (1)	7	4734806013			_		1	4367273204			106 LED ASS'Y	1	3937019019	
	EDAL BOX	1	1077554009			4.1 WASHER KEY COVER ASS'Y	7	4751152009				LIDE CUSHION	1	1247115100			107 LED BUSHING	1	4430310007	
	EDAL FELT	3	1247117111		-1		(1)	1077492307				EY ASS'Y (B)	(36)	1247147000 4367292502			AC CORD WITH PLUG		2062021009	U.S.A.,Canada
	EDAL FELT ORD HOLDER	1	1247119009 EP-4772			BRACKET (A)	3	1077463006 4127202208				EY A#	36	4367292502			108 AC CORD WITH PLUG 108 AC CORD WITH PLUG		2062002031	Asia,Europe
	× 8 CBRTS (1)	1	4730304014			3 × 6 CBTS (S)	6	4737002005				LIDE CUSHION	36	1247115100			109 BUSHING	1	2007057009 4450047004	U.K.
	EDAL BOARD	1	1077380008		_	BRACKET (B)	1	4127203207		_	_	EY SHAFT	88	4367277200			110 BUSHING PLATE	1	4127133005	U.S.A.,Canada Asia,Europe U.S.A.,Canada Asia,Europe
	PECIAL NUT	12	SC-1123-1		-5		1	1247142018		-		S STOPPER	7	4367279004			110 BUSHING PLATE	2	4127133005	U.K.
-3 NI	and an all worked and a first a birth of the	1	OJ-0103M		-6		7	4733804003				S STOPPER (S)	1	4367287009			111 3 × 10 CBTS (1)		4733814006	0.R.
	EDAL STOPPER	3	1017960006			SHAFT	1	4357010105			_	× 6 CBTS (S)	16	4737002034			112 3 × 10 CBTS (1)	_	4733814006	
	TOPPER FELT	3	1247112006			GEAR	2	4247001101				KEYS SWITCH BOARD	3	BP-380-2			113 JACK BRACKET		4127138000	
-8 PE	EDAL	3	4367263023		-9	3 × 8 CBTS (S)	2	4737002018		5	53 16	KEYS SWITCH BOARD	1	BP-383-2		1	114 JACK BRACKET	1	4121185008	
-9 PE	EDAL FALNGE	6	4367082000		-10	FRONT COVER	1	1027229203		5	54 RU	UBBER SWITCH 8-II	11	2128598104			115 H/J BRACKET	1	4127207106	
-10 PF	F. BUSH	6	4367083106		-11	3.5 × 10 CBTS (1)	1	4733804003		5	55 3>	× 10 CBTS (Bo)	15	4733814019			116 SNAP PLATE	2		
-11 4	× 14 CPS (WITH W. SW)	12	4700021026		-12	PROTECTER	2	4317005202		5	56 CC	ORD HOLDER	4	EP-4772			117 SWITCH COVER	1	4157006005	
-12 PE	EDAL SPRING	3	4367148009		-13	2.6 × 10 CFTS (1)	4	4732205027		5	57 6P	CONNECTOR ASS'Y	1	2041435043		1	118 SWITCH PLATE	1	4127199007	Asia
	P PEDAL WIRE	1	2039458003		-14		2	1247144003				P CONNECTOR ASS'Y	1	2045037049			119 VOLTAGE SELECTOR SW.	1	2122001008	Asia
	EDAL SW BRACKET	3	4127160104			TOP PANEL SEMI ASS'Y	(1)	1027235307		5	59 11	IP CONNECTOR ASS'Y	1	2047420133		-	120 3 × 10 CBTS (P)		4737508017	Asia
	EDAL SWITCH	-	2127001003			KEN OSAE FELT	1	1247095068					-				121 3 × 10 CBTS (1)		4733804006	Asia
	× 10 CPS	-	4711810006			SPEAKER HIMELON	_	1227032009				× 25 CTTS (S)	5				122 1 WAY WIRE ASS'Y	1	2031448011	Asia
	L TUBE 14mm	-	MRB-1089		31	HIMELON SHEET	1	1247142021				1 WASHER	-	4751152009		V	VARNING:			
	AN. PLUG SHEET	1	5137146007		20	[KEY-148]	(1)	4117100011				× 12 CTTS (1)	13	4734406015				mbol	have critical cl	haracteristics
and the second s	OF. PLUG SHEET OS. PLUG SHEET	1	5137147006 5137148005			KEY CHASSIS ASS'Y KEY CHASSIS		4117100611 4117098309			_	× 20 CTS NUT-W	2	4714410021 4756131009			se ONLY replacement parts recomme			A REAL PROPERTY OF A PROPERTY OF A PROPERTY OF
	5 × 10 CBTS (1)	3	4733804003			KEY GUIDE RAIL	7	4367278005			_	AIN PCB UNIT	1	BP-421-1		D	O NOT return the unit to the custon	ner ur	til the problem	m is located and
	5 × 25 CRWS	6	4720411014		_	KEY GUIDE RAIL (S)	1	4367286000				FECT PCB UNIT	1	BP-421-1 BP-423		C	orrected.			
	NVELOPE ASS'Y	-	5057064007			3 × 6 CBTS (S)		4737002034			_	OWER PCB UNIT	1 i	BP-419-2						
	× 35 CTS	4	4714804022			KEY CUSHION	3	1247114004				ANLL PCB UNIT	1	BP-420-2						
	× 16 CTS	4	4714609023			KEY CUSHION	1	1247140007				FILTER PCB UNIT	1	BP-393-2	U.S.A.,Canada					
	DJUSTER	1	1047038005			KEY CUSHION	2	1247114046				FILTER PCB UNIT	1	BP-393-3	Asia,Europe U.K.					
	RESS WING SCREW	4	MMP1142			KEY GUIDE (W)	Concerning of the second	4317003204				OWER SWITCH	1	2128590018						
						KEY GUIDE (B)	36	4317004300				JSH BUTTON	1	1137015048						
7 SI	IDE BOARD (L) SEMI	(1)	1077476307		33	HAMMER FLANGE	7	4367284109				W. CONNECTOR ASS'Y	1	2033512055						
-1 K	EY BLOCK (L)	1	1037131103		_	HAMMER FLANGE (S)	1	4367285108		7	73 3>	× 6 CBTS (S)	2	4737002034						
-2 3.	5 × 16 CTTS (1)	3	4734806071		35	HAMMER (W) ASS'Y		4367299204				OLUME PANEL	3	1037092116	1.2					
	ACK (L)	1	4357011104		-1			4367297109				LIND SHEET	3	1227027108	10 1 m					
	.5 × 20 CTTS (1)	3	4734806039		1.111.000	HAMMER WEIGHT (W)		4367295004				WITCH BUTTON	1	1137030117						
1	IDE BOARD (R) SEMI		1077480306	120-0-0-0		HAMMER CUSHION	_	1247116109		_	_	WITCH BUTTON (S)	1	1137032021	1. A					
	EY BLOCK (R)	1				HAMMER (B) ASS'Y		the second se				WITCH BUTTON (S)	-	1137032034						
	5 × 16 CTTS (1)	-	4734806071			HAMMER (B)	_	4367298108				LIND SHEET	1	1227029164						
1	ACK (R)	1	4357012103			HAMMER WEIGHT (B)		4367296003			_	LIND SHEET	1	1227029177		2				
	5 × 20 CTTS (1)	3	4734806039			HAMMER CUSHION		1247116109				LIND SHEET	2	1227029135						
	OTTOM BOARD ASS'Y	_	1077485301			3 × 10 CBTS (Bo)		4733814019			_	× 6 CBTS (S)		4737002034						
1	OCKING SUPPORT	9	4498079005			KEY ASS'Y (W)	_	4367290203						1137031116						
	OTTOM CUSHION	1	1247090034			KEY A	7	4367265209 1247115100			84 PT		1 1 2 2 1	3017023006 SC-1082-2						
	INACL ON	0	1017070000							1 8										
-3 H	IMELON PEAKER NET	8	1247073006 1097035003			SLIDE CUSHION KEY ASS'Y (W)		4367290216				NUT-W CONNCTOR ASS'Y	4	2037475017						5

ADJUSTMENT

Troubleshooting of Key-148

1. A keyboard does not return normally.

a) The keyboard itself does not move normally.

- b) Its hammer does not function normally.
- c) Both keyboard and hammers function normally when they are not combined with each other, but they don't function normally together when they are combined with each other.

△ How to locate its cause

Lift the hammer tip. If the keyboard lowers due to its own weight, the trouble is not caused by (a). If the keyboard does not lowers, the trouble is caused by (a).

After fixing the keyboard under its lifted condition, lift the hammer up and down to check if a feeling of resistance of the hammer exists. If yes, the trouble is caused by (b),

If the keyboard lowers due to its own weight without any feeling of resistance of the hammer, the trouble is caused by (c)

Causes of (a)

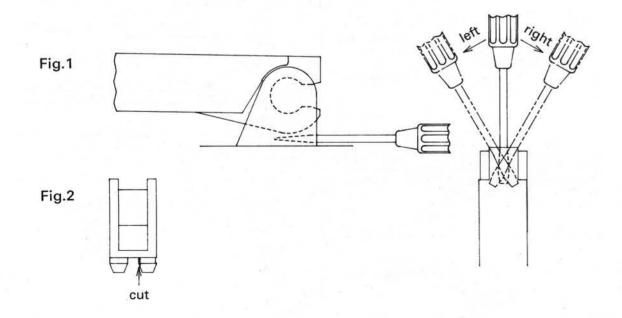
1) Malfunction due to the friction force between the key guide and the keyboard.

Repair method

Insert a small minus screwdriver into the key shaft rear part as shown in Fig.1, and position the key for normal movement while tilting it left ward or right ward.

If the key shaft can fully adjusted right ward, but it cannot fully be adjusted left ward, cut the inside of the rear lead of the key shaft by using a cutter knife as shown in Fig.2.

Fig.1 Left Right Fig.2 Cut



2) The fit portion of the key and the key shaft is not lubricated with grease
3) The portion between the key and the key guide is not lubricated with grease
4) Tilting of key guide (in case of a black key, in particular)

Causes of (b)

1) Malfunction with the hammer flange due to the bending of hammer	Replace the hammer.
2) A contact to the chassis due to the bending of hammer	Replace the hammer.
3) A contact to the chassis due to the exfoliation of the hammer cushion	Replace the hammer cushion.
4) The fit portion of the hammer and hammer flange is not lubricated with grease	Apply a coat of grease. (SB-1)

Causes of (c)

1) Deformation of hammer (key contact part)	Replace the hammer.
2) Wrinkle of slide cushion.	Replace the slide cushion.

2. Action noises

1) The fit portion of the key shaft and key is out lubricated with grease.

- 2) The fit portion SB-1 of the hammer and hammer flange is not lubricated with grease. SB-1
- 3) No slide cushion exists. (Either hammer or key lowers.)
- 4) A tightening failure of key guide rail screw (key touches the screw head when pressing it, or noises are produced when key returns).

3. Others

- 1) Key arrangement adjustment failure
- 2) Key fluctuates
- 3) Key shaft is unstable longitudinally.

4) Slide cushion is worn.	Neither slide cushion nor hammer slide

portion is lubricated with grease, or they	
are lubricated insufficiently	Apply a coat of grease (SB-1)

Key shaft is broken Replace the key shaft.

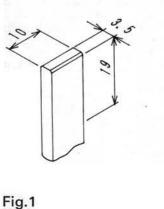
Adjusting method

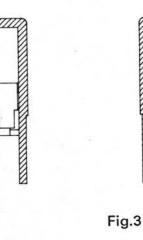
1) This action is not adjustable basically, except for the horizontal key arrangement.

2) For adjusting the key arrangement, insert the tool shown in Fig.1 into the groove key guide as shown in Fig.2 and 3, and wrench the groove toward the desired moving direction.

Fig.2

(After this adjustment lift each, and check if key moves normally.)





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TEST MODE AND ADJUSTMENT BP-421 MAIN PCB

Test Mode

(1) How to set to the test mode:

Press the BASS button and hold it, then set the POWER switch to ON. Only the PIANO 1 indicator lights.

(2) How to clear the test mode:

Press the timbre select button once or set the POWER switch to OFF and then ON again.

(3) Details of test mode

OFFSET adjustment

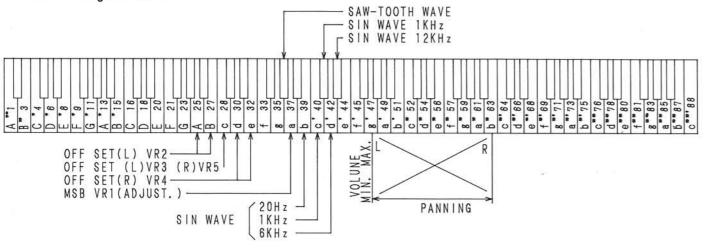
MSB adjustment

Sine-wave outputs (20Hz, 1kHz, 6kHz, 12kHz)

Sine-wave outputs (higher than the above at 1kHz)

Panning

(4) Relationship between test mode and keyboard See the diagram below.



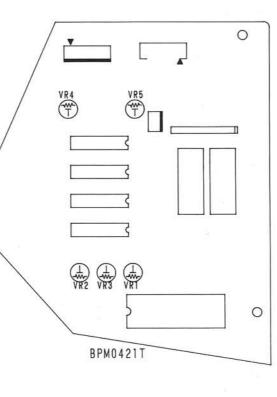
Adjustment

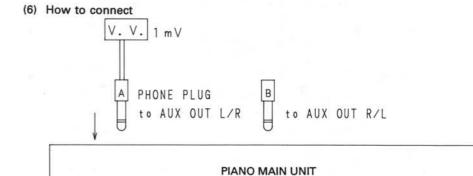
- (1) Test equipment necessary for adjustment Millivoltmeter
- (2) Before starting Warm up for 5 minutes and set to the test mode before starting adjustment.
- (3) Adjustment point locations See the diagram on the right.
- (4) Order of adjustments

1	Warm up	More than 5 minute				
2	Test mode					
3	MSB adjustment		VR1			
4	OFFSET adjustment	1	VR5 (R Side)			
		2	VR4 (R Side)			
		3	VR3 (L Side)			
		4	VR2 (L Side)			

(5) Settings of VRs on panel

Name of VR	VOLUME	BRILLIANCE
Setting	MAX.	BRIGHT



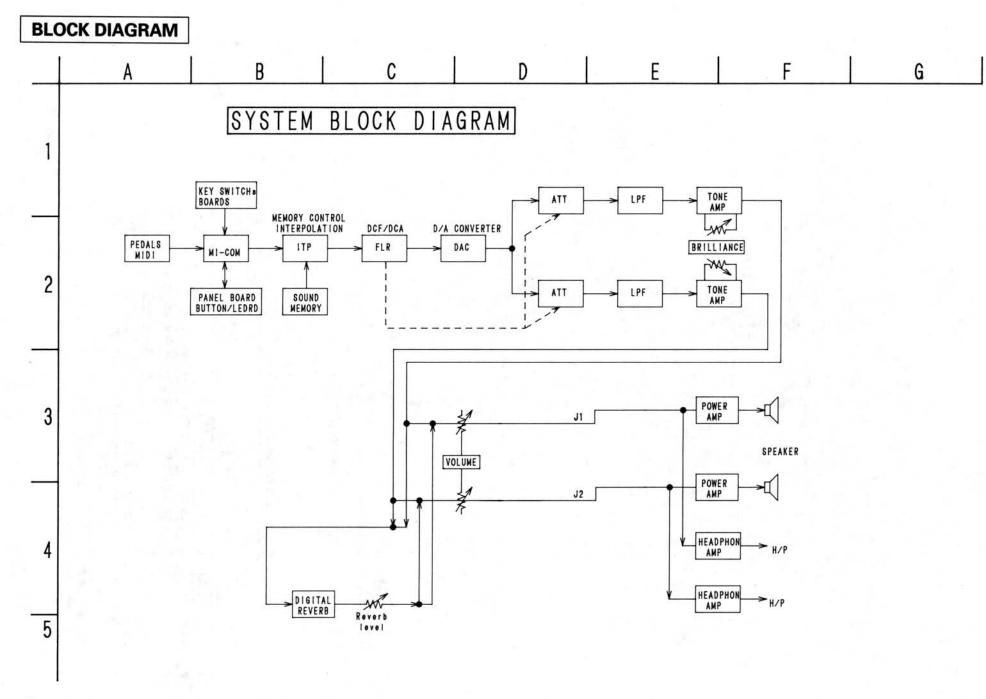


(7) Adjustment procedure

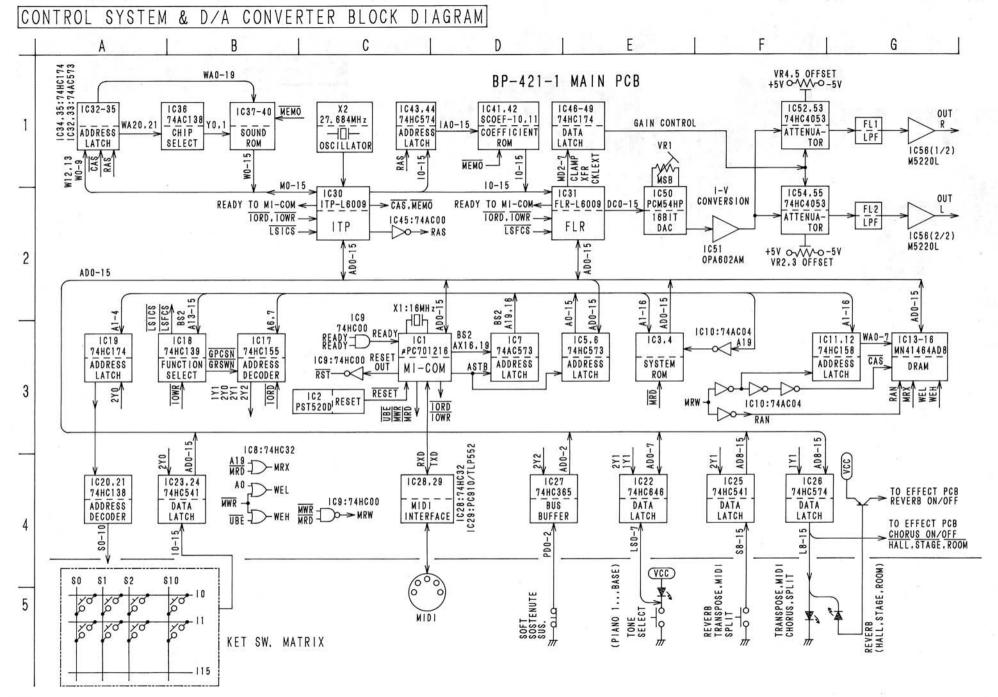
Adjust the VRs so the millivoltmeter reading is minimum.

	VR No.		ositions OUT)	No. of keys	Operation		
		A B					
1	VR1	R	L	37 (A)	Set A to ON.		
2	VR5	R	L	28 (C)	Set C to ON repeatedly.		
3	VR4	R	L	30, 32 (D, E)	Set D and E to ON alternately and repeatedly.		
4	VR3	L	R	28 (C)	Set C to ON repeatedly.		
5	VR2	L	R	25, 27 (A, B)	Set A and B to ON alternately and repeatedly.		

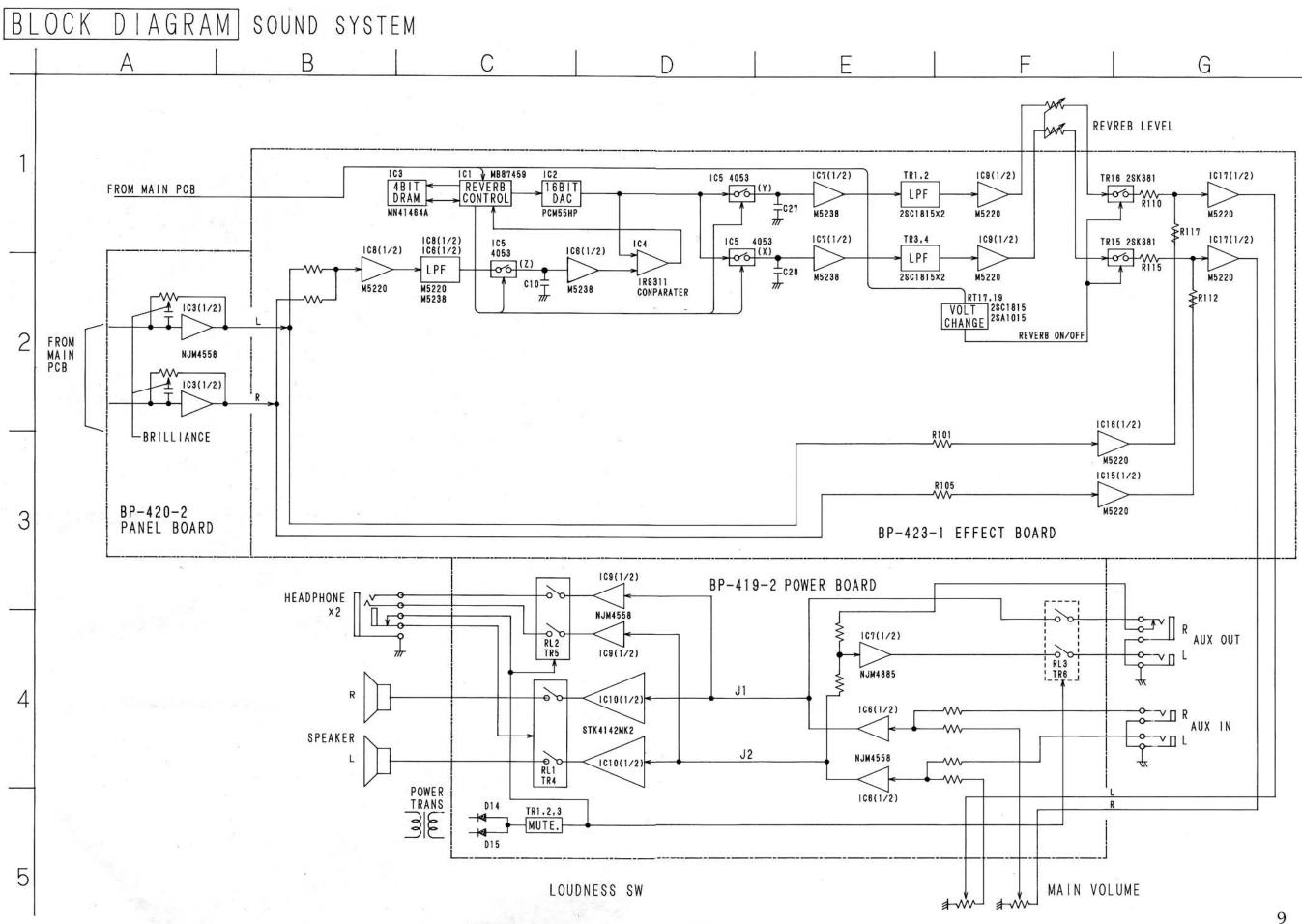
Note: For item 1 adjust to the volume is minimum when listening.

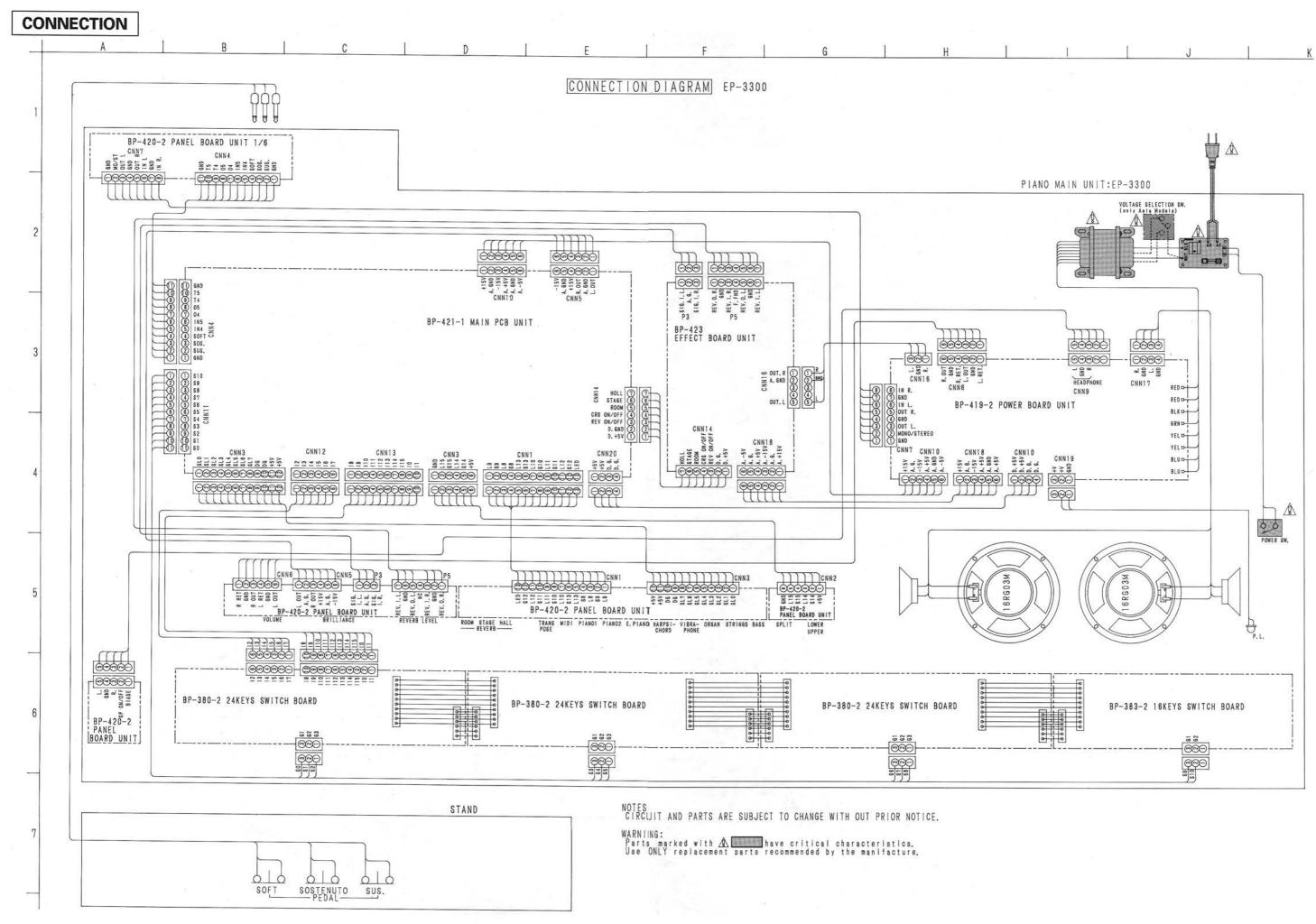


8a



8b





PARTS LIST Printed Circut Board: EP-3300

BP-421-1 MAIN PCB

Ref. No.	Part No.	Part Name	Remarks
101	2621535004	#PD70216GF-8-388	
102	2630803002	PST520D-2	
103	2621726062	27C512-3300-2.0-L	
1C4	2621727061	27C512-3300-2.0-M	
105.6	2621313006	TC74HC573AP	
107.32.33	2621538001	CD74AC573E	
108,28	2621321001	TC74HC32AP	
109	2621318001	TC74HC00AP	
1010	2621542000	HD74AC04P	
1011.12	2621552003	HD74AC158P	
1013-16	2621551004	MN4164A-08	
1017	2621544008	TC74HC155AP	
1018	2621159008	TC74HC139AP	
1C19.34.	2621543002	TC74HC174AP	
35.46-49			
1020,21	2621160000	TC74HC138AP	
1022	2621077009	TC74HC646AP	
1023-25	2621315004	TC74HC541AP	
1026.43.44	2621314005	TC74HC574AP	
1027	2621553002	TC74HC365AP	
1029	3939330000	TLP552/PC910	
1030	2621536003	ITP-L6009	
1031	2621537002	FLR-L6009	
1036	2621592005	TC74AC138P	
1037	2621730003	LH538K13 AWV-100-3	
1038	2621731002	LH538K14 AWV-100-4	
1039	2621728002	LH538K11 AWV-100-1	
1C40	2621729001	LH538K12 AWV-100-2	
1C41	2621545007	SCOEF10-512 9743-081	
1042	2621546006	SCOEF11-512 9743-081	
1045	2621541001	HD74AC00P	
1050	2620672007	PCM54HP	
1051	2630804001	OPA602AM	
1052-55	2621550005	CD74HC4053E	
1056	2630226003	M5220L	
FL1.2	2610123003	LP YC258BLR-5589N	
R20.21	2412315035	RD14B2E330GFRF	330
R38-41	2412371011	RD14B2E150GFRF	150
X1		HC-49/U-S 16.000MHz	a and a second secon
X2	3997002008	COX-042C 27. 684MHz	
RA1-3	2462045038	RK99=1H103JP8	10K 0×8
RA4	2462085001	RK99=1H103JP3	10K@×3
VR1	2116089010	- 278 CM CARL	B-1MK 0
VR2-5	2116089007	a na sana a na sana na sana na	B-5K₽

BP-423-1 EFFECT BOARD	
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12-16 LD1-10,

12-16. VR1.3

VR2

A R29-32

MIDI

AUX IN

AUX OUT

PEDAL

L1-12

Ref. No.	Part No.	Part Name	Remark
D1.9.10	2760432000	188270A	
TR1-4.17	2730198028	2SC1815(GR)	
TR15,16	2750048006	2CK381(D/E)	
TR18	2710102021	2SA1015(GR)	
101	2631486001	MB87459PF-001	
102	2621561007	PCM55HP	
103	2621551004	MN41464A-08	
1C4	2630806009	IR9311	
105	2621562006	TC74HC4053AP	
166.7	2630679000	M5238P	
108.9.15	2630317006	M5220P	
16,17		TOTAL CONTRACTOR	
X1	3997002024	HC-49/U-S 20.000MHz	
R201,202	2412371011	RD14B2E150GFRF	150
RA1	2462077006	RK99=1H104JP4	100K0×4
	2350023007	BL02RN2-R62	
L10-16.19	2350023007	DEDENIL NOL	
L10-16.19 21-25.27	2350023007	BEBERNE NOL	

3939490005 LN221RP

2117050006 J3020VBB103

2117050019 J3020VBB503

2049431007 DIN SOCKET

2049437001 PHONE JACK

2049436002 PHONE JACK

2049444007 PHONE JACK

HEADPHONE 2049443008 PHONE JACK

2350050009 BEAD INDUCTOR

2412314007 RD14B2E101JNBF

Ref. No.	Part No.	Part Name	Remarks
101	2360053006	NJM7805FA	
102	2630561001	NJM7915FA	
103	2630560002	NJM7815FA	
1C4	2630567005	NJM78M05FA	
105	2630501003	NJM79M05FA	
106.7	2630405002	NJM4558S	
109	2630485006	NJM4556S	
1010	2650074002	STK4142MK2	
D1	2760505005	DBA20B	
D2.3.5-12	2760432000	155270A	
14-19			
D4	2760504006	DBA10C	The Property lies of the lies of the
D13	2760576005	DBA40C	Three Column 1987
ZD1	2760468003	HZ\$9B-(1)	
TR1,4-6	2730198028	2SC1815(GR)	
TR2.3	2710102021	2SA1015(GR)	
RL1	2140146000	G6B2214P-US DC12V	
RL2.3	2140148008	G5A-234P DA12	
F1.2	2081039092	FUSE 4A 125V	U. S. A Canad
F1.2	2081015087	FUSE 4A 125V	Europe.U.K.
F1.2	2061035070	FUSE 4A 125V	Asla
53.4	2061039021	FUSE 500mA 125V	U. S. A Cened
F3.4	2061015003	FUSE 500mA 250V	Europe.U.K.
F3.4	2061035083	FUSE 630mA 125V	Asta
5 F5	2061039034	FUSE 1A 125V	U. S. A Canad
F5	2061015029	FUSE 1A 250V	Europe.U.K.
F5	2061053007	FUSE 1A 125V	Asla
R69.78	2412314007	RD1482E101JN8F	1000
R76,77	2452381003	RN14B3D4R7JNBF	4. 70
R80	2412321029	RD1482E152JNBF	1. 5KQ
R92	2412314081	RD1482E581JNBF	5804
R95.98	2412321087	RD1482E121JNBF	1200
L1-5	2350050009	BEAD INDUCTOR	ALCONDUCTION OF

EP-419-2 POWER BOARD

BP-380-2 24KEYS SWITCH BOARD

Ref. No.	Part No.	Part Name	Remarks
D0-47	2760049008	182706	
	2128598104	RUBBER SWITCH-I	

BP-383-2 16KEYS SWITCH BOARD

Ref. No.	Part No.	Part Name	Remarka
D0-31	2760049008	1\$2706	
	2128598104	RUBBER SWITCH-I	

BP-393-2 L/FILTER BOARD(U.S.A./Canada)

Ref. No.	Part No.	Part Name	Remarks
F	2061058004	FUSE 2A 125V	Contractorial
Δ	2397001008	LINE FILTER	20121052502
C1.2	2538012005	CK45F2GAC222M	
V C3	2538015002	CK45F2GAC103P	
SW	2033518004	2P CONNECTOR BASE	1000

BP-393-3 L/FILTER BOARD(Europe,U.K.,Asia)

	Ref. No.	Part No.	Part Name	Remarks
Λ	F	2061015081	FUSE 2A 250V	
Â		2020014003	FUSE CLIP	Constant of the local distance of the local
\wedge		2397001008	LINE FILTER	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
A	C1.2	2538012005	CK45F2GAC222M	
A	C3	2538015002	CK45F2GAC103P	State of the local division of the
1	SW	2033518004	2P CONNECTOR BASE	San ten ten te

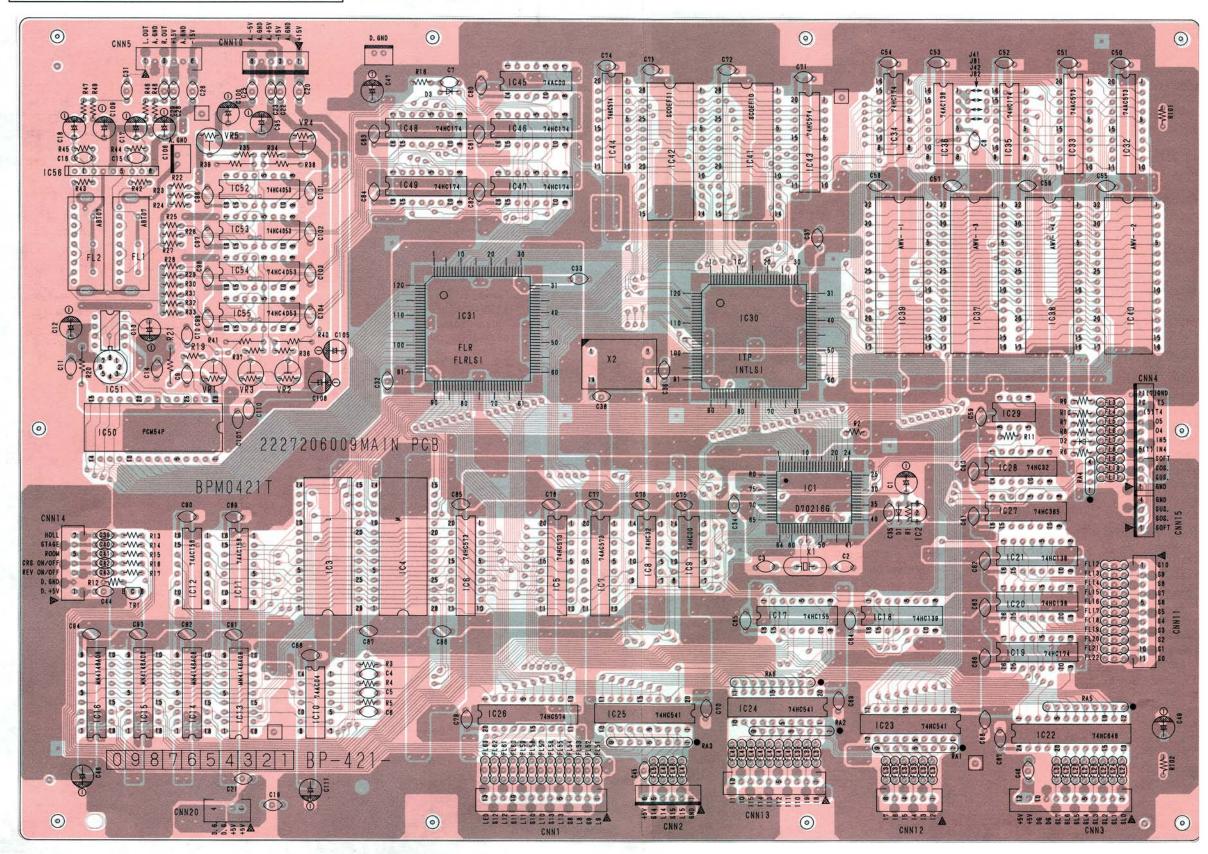
WARNING: Parts marked with A to have critical characteristics. Use ONLY replacement parts recommended by the manifacture.

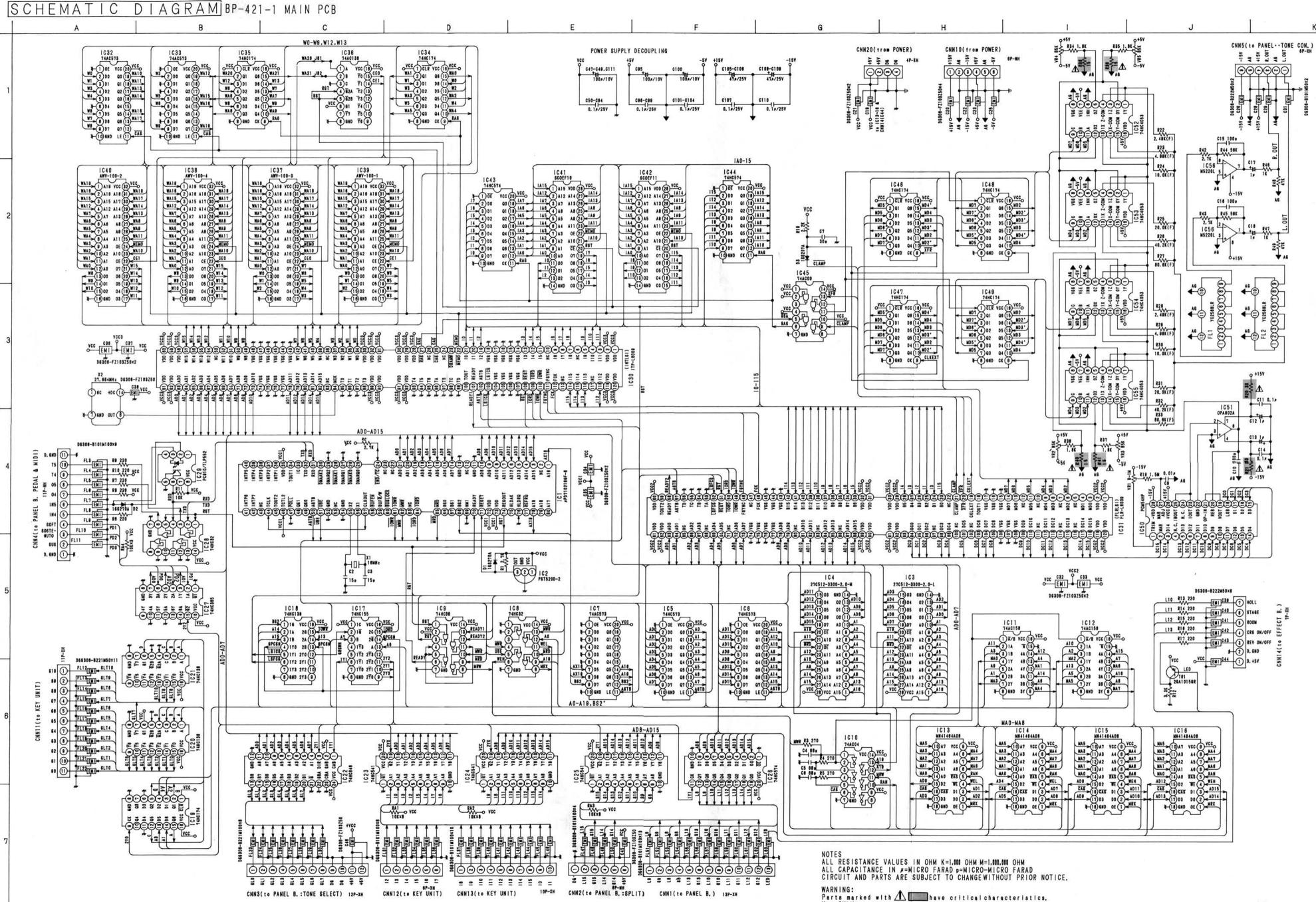
B-10KO

B-50KQ

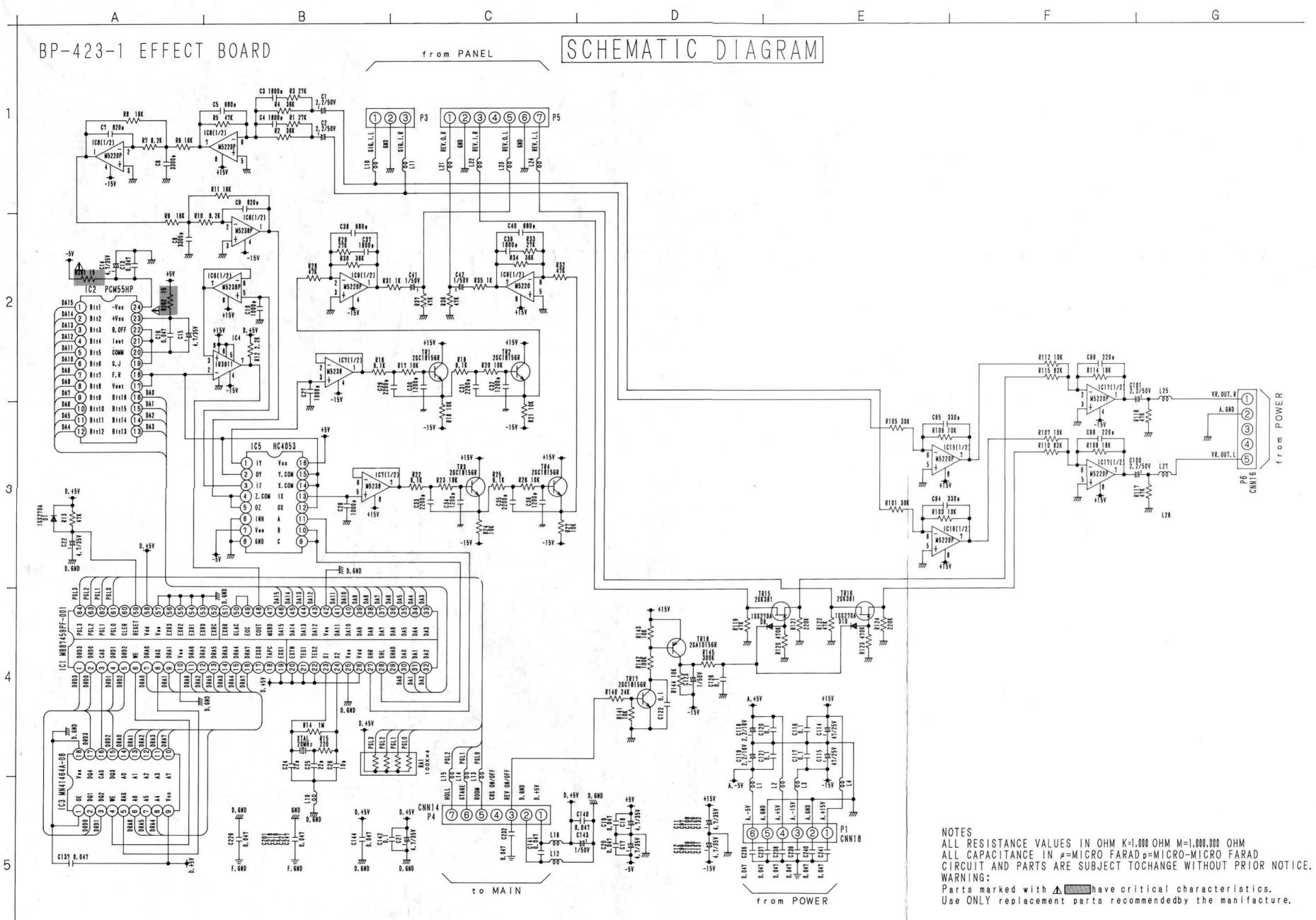
BP-421 MAIN PCB UNIT Soldering side

Mounting Side

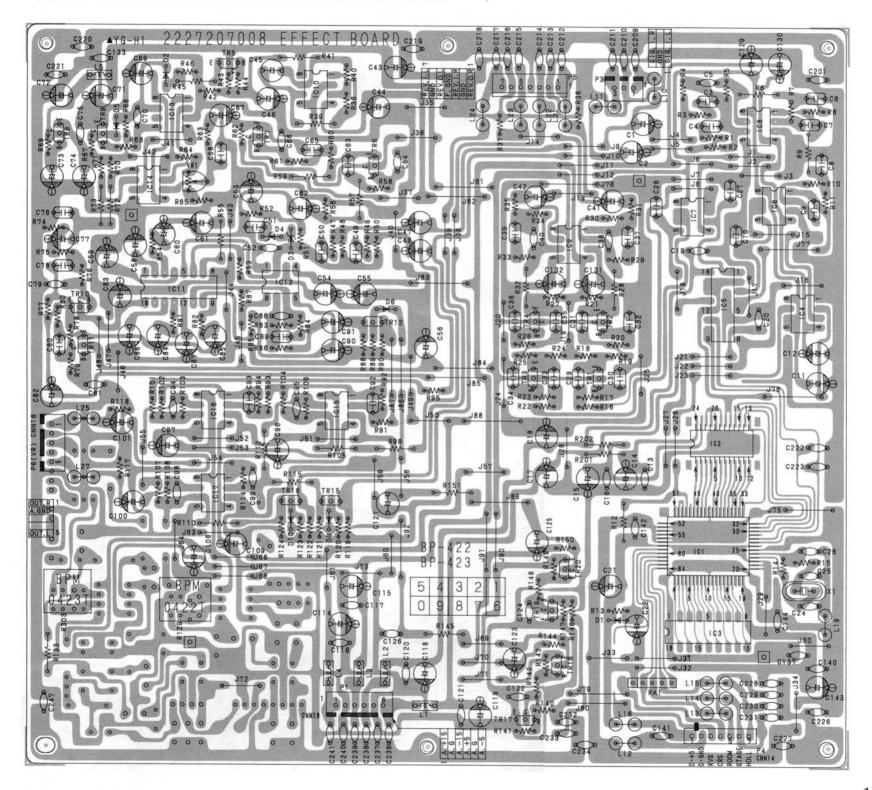




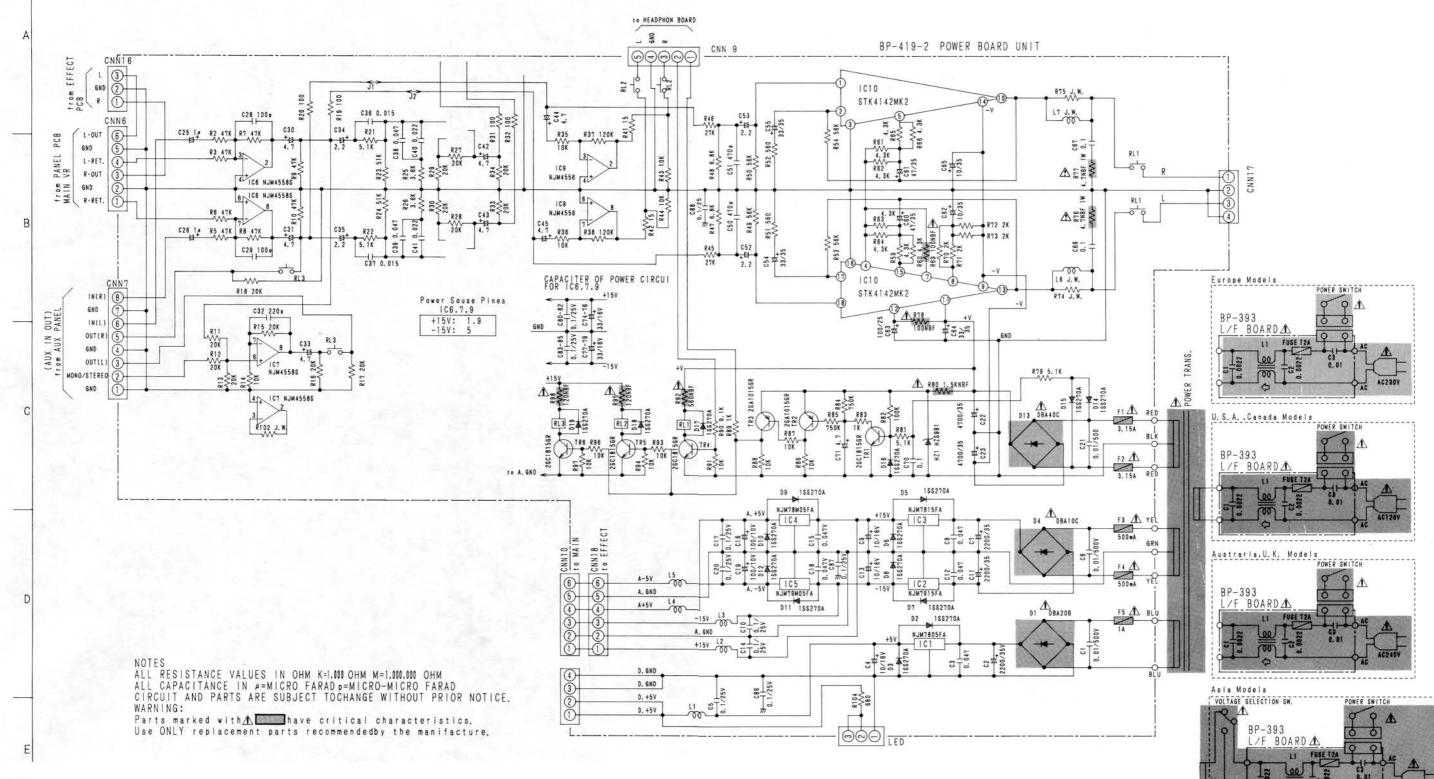
Parts marked with A free critical characteristics. Use ONLY replacement parts recommended by the manifacture.



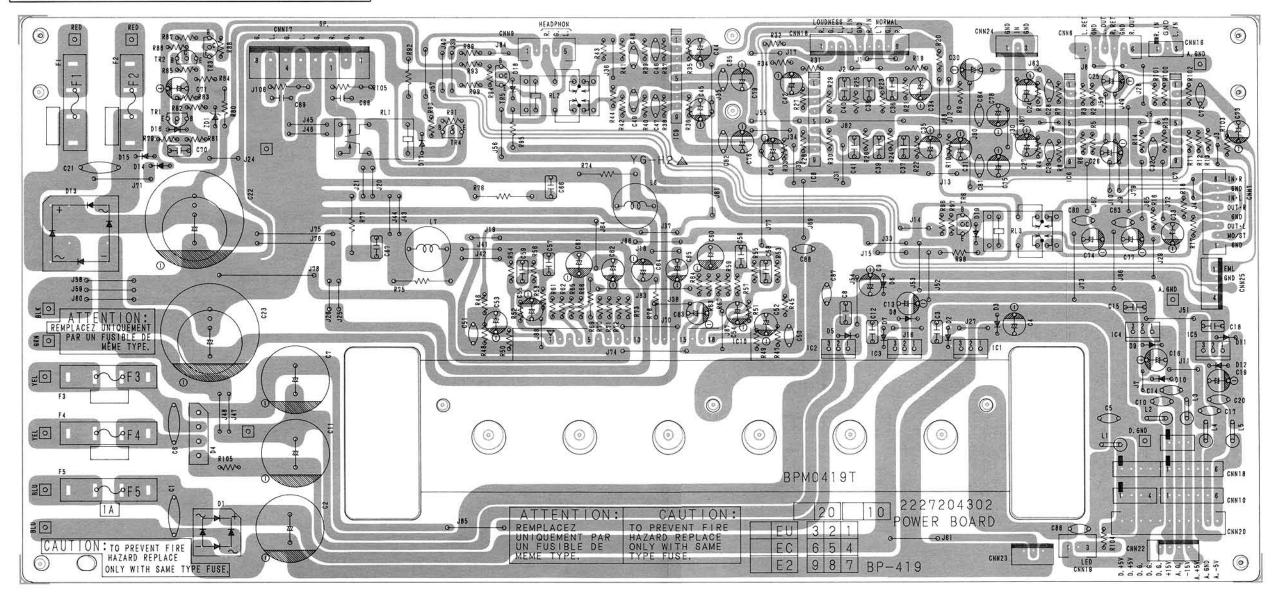
BP-422, BP-423 EFFECT BOARD UNIT Pattern side



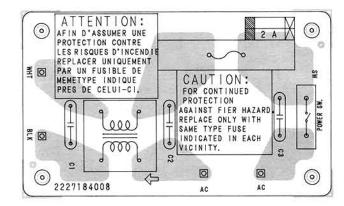


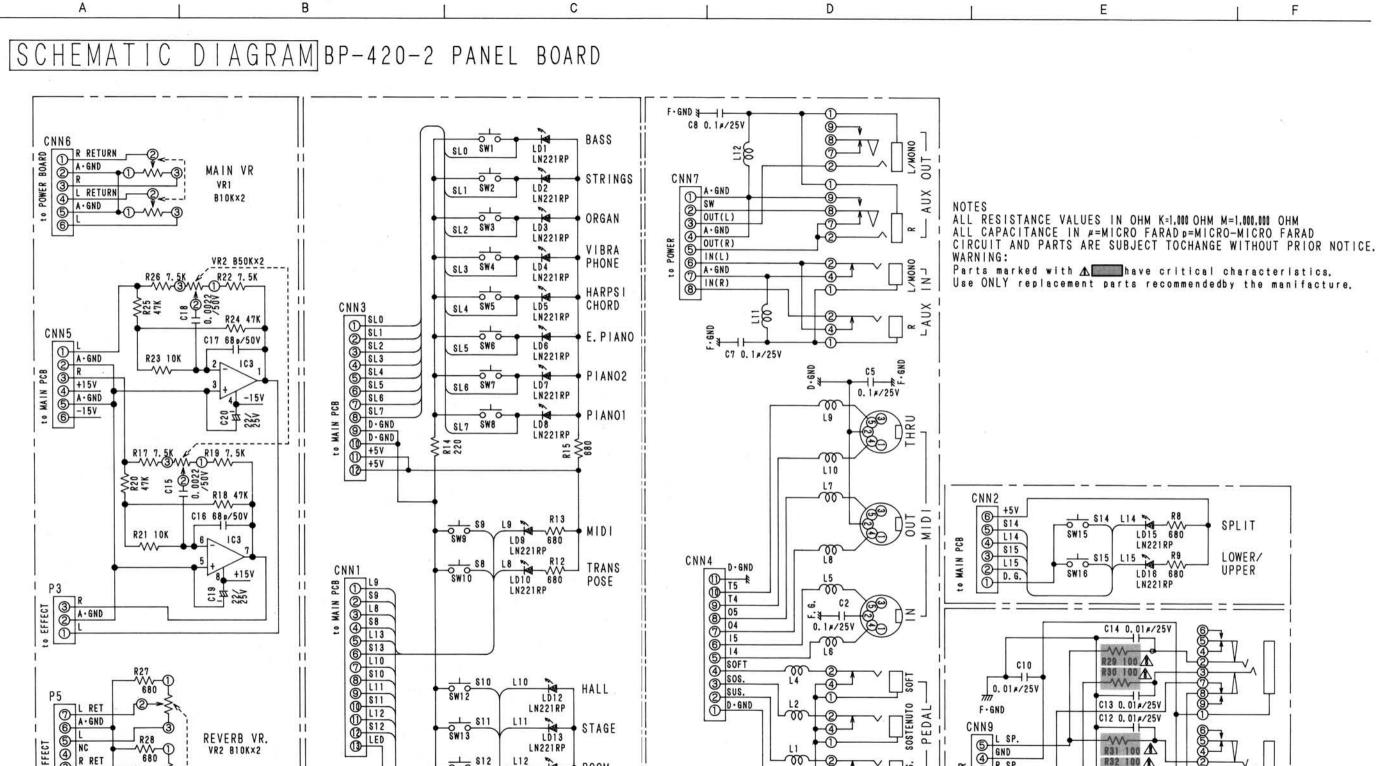


BP-419 POWER BOARD UNIT Pattern side



BP-393 L/FILTER BOARD Pattern side





L2

-00

L1

00

L3

00

C1

0.1#/25V

SW12

SW13

5W14

L10

L11

L12

LD12

LD13

LDI4

LN221RP

LN221RP

HALL

STAGE

ROOM

R30 100

C13 0. 01#/25V

C12 0. 01#/25V

R31 100 A

R32 100

 \dashv

C11 0. 01#/25V

-~~

+⊢

0. 01#/25V

B L SP. G GND G R SP. SP ON/OFF D BIASE

F . GND

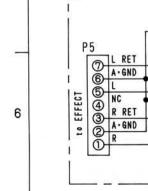
CNN9

POWER

L OM

SOSTENUTO

PEDAL



2

12-

3

R28

REVERB VR. VR2 B10K×2

11

18

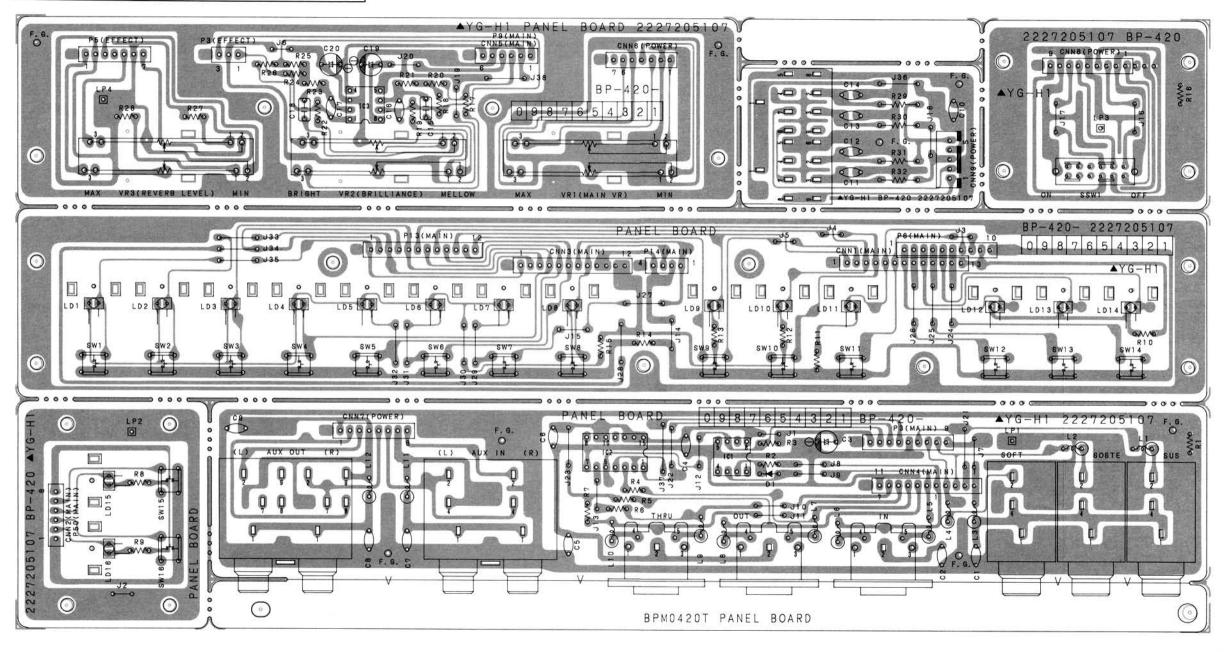
1

2

3

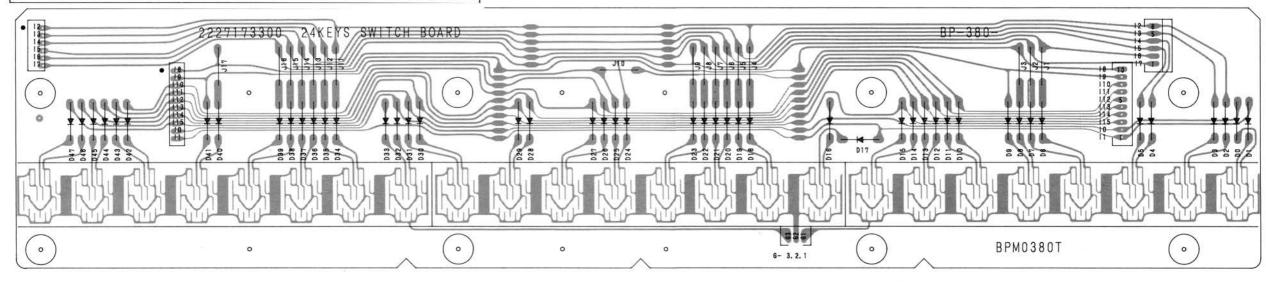
4

BP-420 PANEL BOARD UNIT Pattern side

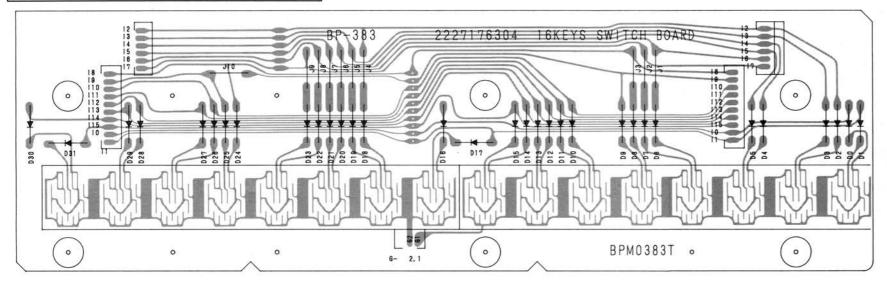


1 2 3	4 5 6	7 8	9 10
SCHEMATIC DIAGRAM REA	L HAMMER ACTION TYPE	NOTES	
from MAIN PCB from MAIN PCB emergence emergenc	KEY SWITCHes BOARDs (88 KEYs Key S		SUBJECT TO CHANGE
BP-380	BP-380:24KEYS SWITCH BOARD	BP-380:24KEYS SWITCH BOARD	BP-383:16KEYS SWITCH BOARD
LOWER KEYs			- ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
1 2 3 20	4 5 6	7 8	9 10

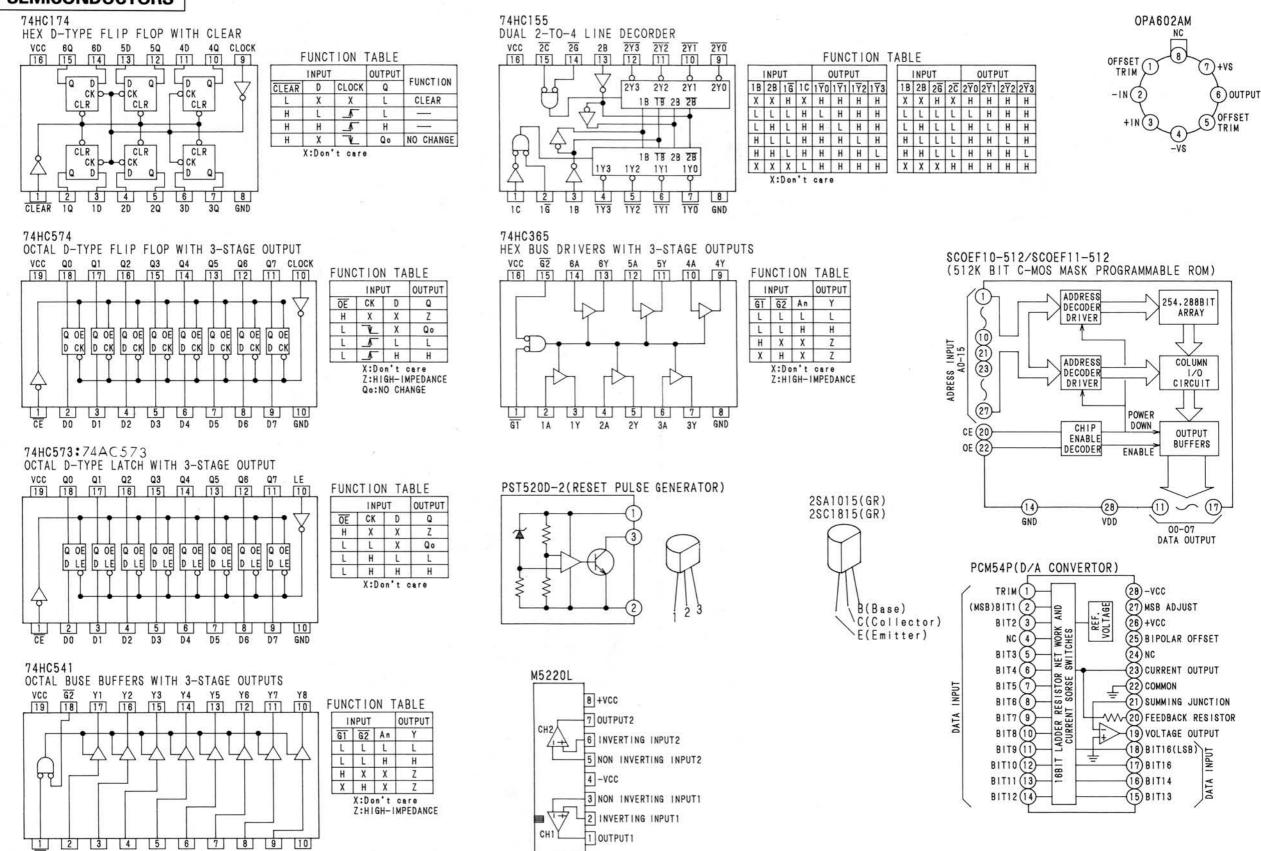
BP-344, BP-339, BP-343 SWITCH BOARD Soldering side



BP-341 SW BOARD IV Soldering side



SEMICONDUCTORS



22

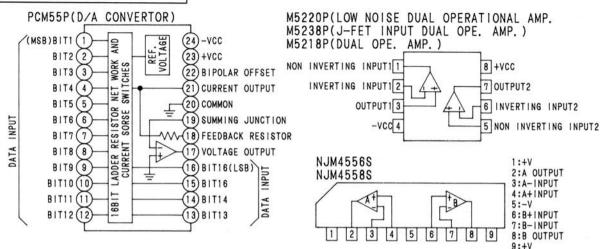
A1 A2 A3 A4 A5 A6

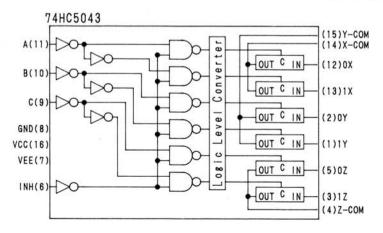
A7

A8

GND

SEMICONDUCTORS





INHIBIT	C	B	A	ON CHANNEL
Ĺ	L	L	L	0X.0Y.0Z
L	L	L	Н	1X.0Y.0Z
L	L	Н	L	0X.1Y.0Z
L	L	Н	Н	1X.1Y.0Z
L	Н	L	L	0X.0Y.1Z
L	Н	L	Н	1X.0Y.1Z
L	H	Н	L	0X.1Y.1Z
L	H	Н	Н	1X.1Y.1Z
Н	X	Х	X	NONE