

DIGITAL PIANO

CN 270

Service Manual

Manufacturing Date: June 2000

KAWAI Kawai Musical Instruments
Manufacturing Co., Ltd.

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PARTS LIST

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■ Electric Parts List

Code No.	Name		Q'ty
237347	P.W.B. Assembly Block	KKB-015 (1)	1
237351	"	KEP-062 (4)	1
237208	"	KEP-063 (2)	1
237352	"	KEP-064~068 (5)	1
813197	Transformer	KT-017	1
812952	Speaker	KS12-014	2
812805	AC Cord Set	UC-505-J01 (US,GE120)	1
809170	"	EC-511-E07 (CD,GE230)	1
809171	"	SC-078-J02 (AU)	1

P.W.B. KKB-015 Assembly Parts List (Key switch)

Code No.	Name		Q'ty
800760	IC (Logic)	74HC138P	3
807339	Diode	1S2076A-TE	176
708832	Resistor (Carbon)	AT 1/4W J391	1
708843	"	" " J332	5
805627	Electrolytic Capacitor	6.3×7 RC2 16V 100μF	1
808752	Ceramic Capacitor	AT EP050F 472Z 16V	4
803426	Connector	B15B-PH-K-S	1
806627	"	SBRK9S-1	2
806751	"	S2B-PH-K-S	1
808750	Jumper Wire	SMVJ-C 9×31.5P2.0-S5-3	1
808751	"	" 9×51.5P2.0-S5-3	1
813175	Rubber Switch	F-E (KBFD-0106)	8

P.W.B. KEP-062 Assembly Parts List (CPU)

Code No.	Name		Q'ty
237353	IC (Flash ROM)	KP286-F6FP	1
810368	" (REG)	NJM78L05AU	1
804056	" (Gate)	HD74HC245	1
811483	" (DAC)	PD63200GS	1

Code No.	Name		Q'ty
812979	IC (MPU)	MB91F109 QFP100	1
812427	" (SRAM)	CY62128LL-70SCT	1
811645	" (Rest)	PST575CMT	1
811653	" (OPA)	M5218AFP-600C;TP	1
812217	" (Buffer)	TC74HCT7007AF-TP1	3
812954	" (Tone generator)	K021-FP	1
812960	" (Mask ROM)	KP275-MBFW	1
813047	" (REG)	UPC2933T	1
810920	Transistor	DTC143EK-T146	5
812722	Crystal resonator	SMD-49 12.5MHZ	1
812958	"	DS0751SV33.8688	1
809000	Chip fixed resistor	2125 1/10W J0R0T	15
809025	"	" " J101T	2
809029	"	" " J221T	4
809037	"	" " J102T	16
809041	"	" " J222T	2
809043	"	" " J332T	5
809046	"	" " J562T	5
809049	"	" " J103T	5
809055	"	" " J333T	2
809061	"	" " J104T	8
809073	"	" " J105T	1
812131	Resistor arrey	MNR14EAB J101	2
812293	"	" J103	4
812727	"	" J102	1
811646	Chip coil	LK2125 R56K-T	1
809079	Chip ceramic capacitor	MCH215A 220JK	1
809842	"	UMK212B 102KQ	3
809843	"	" 222KQ	1
809844	"	TMK212F 473ZQ	2
811703	"	EMK212F 105Z	2
812957	"	UMK212SL 560K	25
811744	"	LMK316F 106Z	7
808945	Chip bead	BK2125HS 601-T	1
809834	Diode	HSK120TR	4
809847	Electrolytic capacitor	ECEV0JA 101SP	11
812133	"	EECS0HD 224V	1
803426	Connector	B15B-PH-K-S	2
803878	"	B13B-PH-K-S	1
804572	"	B5B-PH-K-S	1
804573	"	B7B-PH-K-S	1
804571	"	B4B-PH-K-S	1
807413	Connector base pin	B2P-VH	1
932975	PCB fitting	MPFB-0289	2

P.W.B. KEP-063 Assembly Parts List (PANEL)

Code No.	Name		Q'ty
800625	Diode	1SS133T-77	15
808345	Tact switch	KSH0612AT	15
813111	LED	EL-3105VRT	15
804978	Slide volume	RS30112AC 10KB×2	1
804578	Connector	S6B-PH-K-S	1
805640	"	S13B-PH-K-S	1

P.W.B. KEP-064~068 Assembly Parts List (JACK, AMP, Headphone)

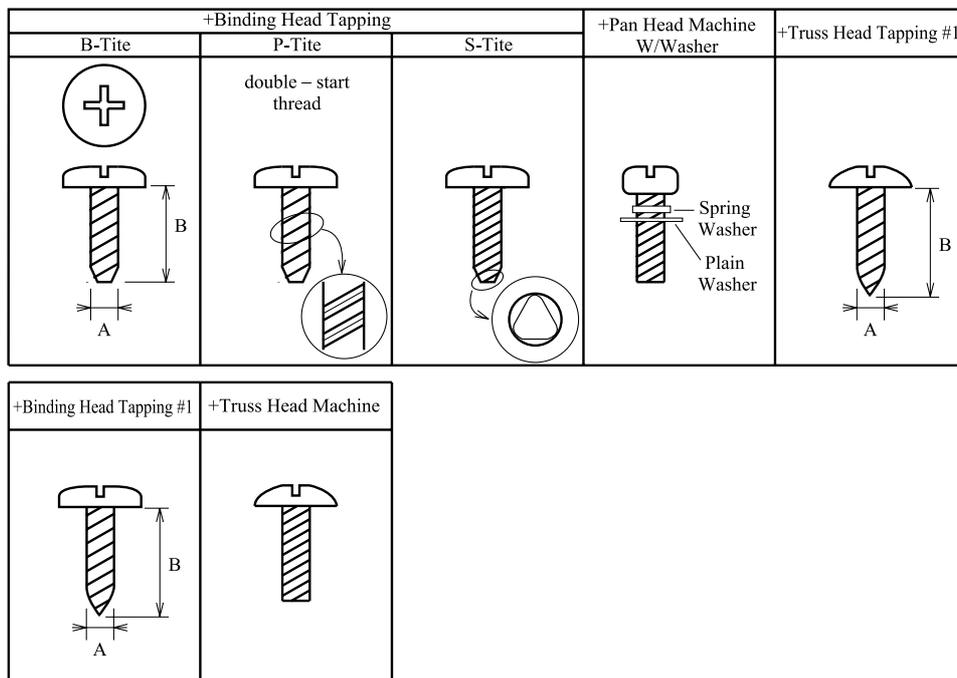
Code No.	Name		Q'ty
811018	IC (Reset)	PST600C	2
800676	" (OPA)	M5218AP	2
806719	" (Photo coupler)	PC900V	1
807032	" (REG)	PQ05RD11	1
812222	" (OPA)	LA6517	1
812950	" (Power AMP)	TA8221AH	1
812961	IC protector	ICP-N10	1
808973	Transistor	DTA114ES ATP	1
810851	"	DTC143ES	4
812125	"	2SC 3792-AA	2
812527	"	2SC 5395-T12-E	10
800625	Diode	1SS133T-77	3
805989	" (Zener)	HZS-4ALL-TD	1
807082	" (")	HZS-6C3 -TD	2
808952	"	DBF 40B (C)	1
805027	LED	S7949 (TPJ57) Red	1
809432	Metal oxide resistor	RNM 1/4 3301 FTP	2
813000	"	" 5601 FTP	1
800746	"	" 1002 FTP	1
810861	Fusible resistor	RSS2 L15 2R7J	1
811717	Retardant resistor	RDF50SST26 2R2J	4
811767	"	" 101J	1
812297	"	" 680J	4
801037	Carbon film resistor	AT R20 J 101	10
801045	"	" " " 471	2
801049	"	" " " 102	11
801052	"	" " " 182	2
801057	"	" " " 472	7
801058	"	" " " 562	4
801059	"	" " " 682	2
801061	"	" " " 103	14
801062	"	" " " 123	2

Code No.	Name		Q'ty
801065	Carbon film resistor	AT R20 J 223	7
801066	"	" " " 273	2
801067	"	" " " 333	2
801069	"	" " " 473	2
801071	"	" " " 683	6
801073	"	" " " 104	10
707418	Electrolytic capacitor	RT 16V 47MF	2
805921	"	" 50V 1MF	4
805922	"	" " 4.7MF	8
805923	"	" 16V 10MF	5
807028	"	" " 100MF	3
802892	"	" 25V 100MF	4
707333	"	25V 1000MF	1
811707	"	UVR1E103MRA 10000M25	1
707707	Film capacitor	ECQ-B1H 152 JF3	2
707713	"	" 472 "	2
707718	"	" 123 "	2
707724	"	" 393 "	2
800890	"	ECQ-V1H 394 JL3	2
809125	"	" 104 "	4
809130	"	" 274 "	4
806466	Ceramic capacitor	AT UP050F 104Z-A-B	4
808752	"	" EP050F 473Z 16V	1
809242	"	" UP050SL 220J	2
809252	"	" UP050B 102K	20
810355	"	" TP050F 223Z	2
811711	Hi voltage capacitor	DE16101E 472MKX	2
805764	Coil	SBT-0160W	4
802906	Connector base pin	B4P-VH	1
802908	"	B6P-VH	1
803428	"	B3P-VH	2
807413	"	B2P-VH	1
804572	Connector	B5B-PH-K-S	1
804573	"	B7B-PH-K-S	1
804574	"	B8B-PH-K-S	2
804577	"	S5B-PH-K-S	1
805737	"	B6B-PH-K-S	1
804571	"	B4B-PH-K-S	1
806751	"	S2B-PH-K-S	1
802576	Jack (Headphone)	YKB 21-5006	2
803439	"	" -5074	2
808473	" (DIN)	YKF 51-5053	1
808979	" (PIN)	YKC 21-3045	1

Code No.	Name		Q'ty
811358	AC input	CCT9302-0201 (US, GE120)	1
811191	"	" -0101 (AU, CD, GE230)	1
812953	Heat sink	KPFB-0260	1
933075	Heat sink fitting (R)	MPFB-0296	1
933080	" (L)	"	1
940690	AC fitting	KPFB-0249	1
941890	Jack fitting	" -0302	1
812416	FUSE	23402.5 2.5A 250V (US,GE120)	1
812356	"	218001 1A 250V (AU,CD,GE230)	1
808964	Fuse crip	H-0060	2
812267	Cable	1007 #18 Black 67 3-T	1

■ Hardware List

Type	Size (A × B)	Remarks
+Binding Head B-tite	3 × 8	Chromating
" "	3 × 12	"
" "	4 × 8	"
" P-tite	3 × 10	" (Black)
" "	3 × 16	"
" "	4 × 8	"
" S-tite	3 × 6	"
" "	3 × 8	"
" "	3 × 10	" (Black)
+Binding Head Tapping #1	3 × 8	" (")
"	3 × 10	" (")
"	3 × 16	"
"	4 × 30	"
+Pan Head Machine Screw w/Washer	M3 × 6	Chromating, Spring+Plain
"	M3 × 10	"
"	M5 × 20	"
+Truss Head Machine Screw	M4 × 20	Chromating
" "	M6 × 25	" (Black)
" " (Full Dog Point)	M6 × 50	" (")
+Truss Head S-site	4 × 10	"
+Truss Head Tapping #1	4 × 12	"
"	4 × 14	" (Black)
"	4 × 16	"
"	4 × 16	" (Black)
"	4 × 20	" (")
"	4 × 25	" (")
"	4 × 40	"
Plain Washer	φ 6	"
Plug Nut	M6 × 10 × 16	" (Black)
Spring Washer	φ 6	"
Volume Nut	M12	"

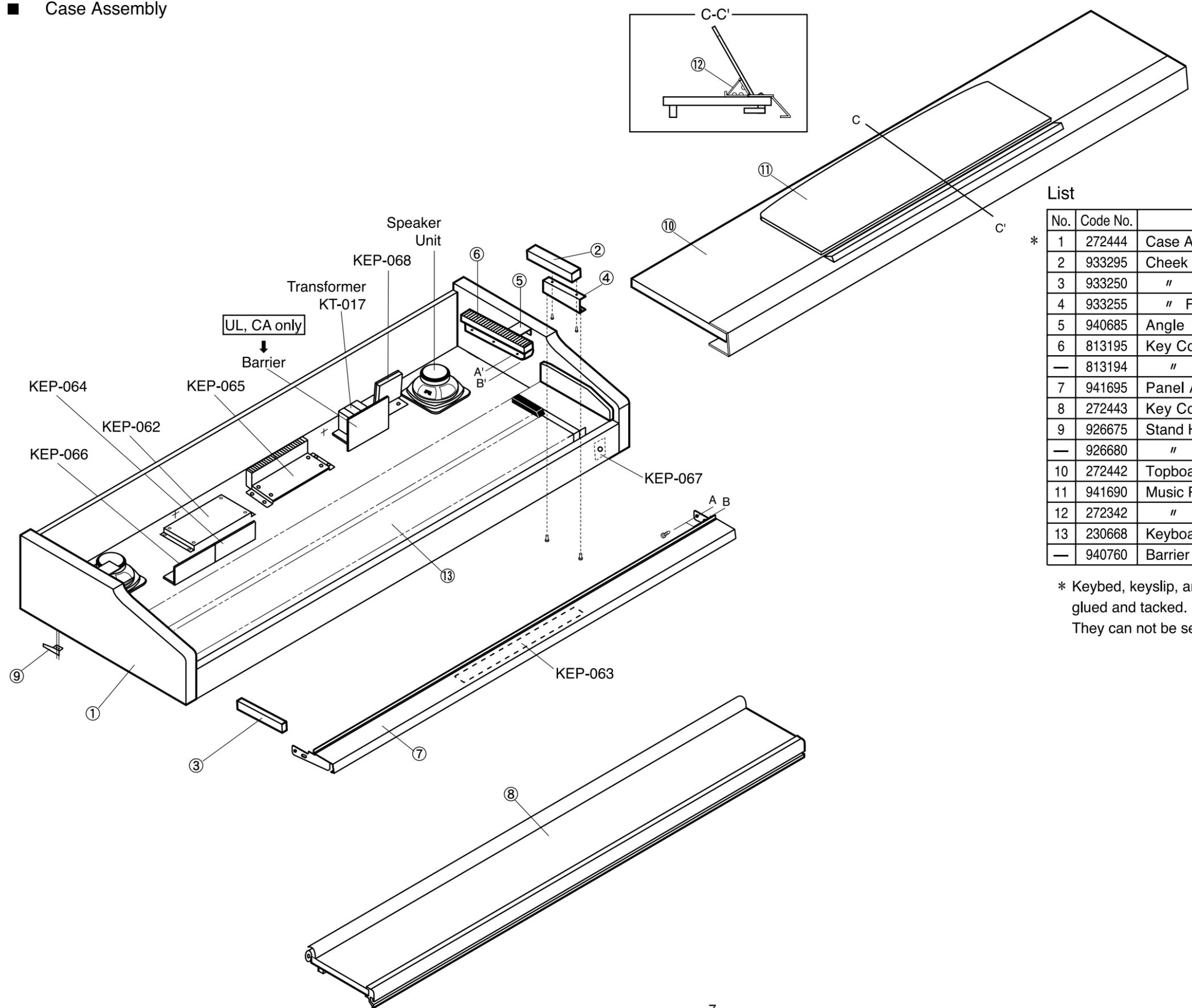


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■ Case Assembly



List

No.	Code No.	Name		Pieces
1	272444	Case Assy.	KPBN-0106	1
2	933295	Cheek Block (R)	KPFD-0012	1
3	933250	" (L)	"	1
4	933255	" Fitting	KPFB-0079	2
5	940685	Angle	" -0247	2
6	813195	Key Cover Rack (R)	KPFD-0063	1
—	813194	" (L)	"	1
7	941695	Panel Assy.	KPBH-0033	1
8	272443	Key Cover Assy.	" -0108	1
9	926675	Stand Hook (L)	MPFB-0094	1
—	926680	" (R)	"	1
10	272442	Topboard G. Assy.	KPBN-0107	1
11	941690	Music Rack	KPFC-0310	1
12	272342	" Hinge	MPFB-0912	2
13	230668	Keyboard Assy.	RF-88	1
—	940760	Barrier	KPFB-0248	1

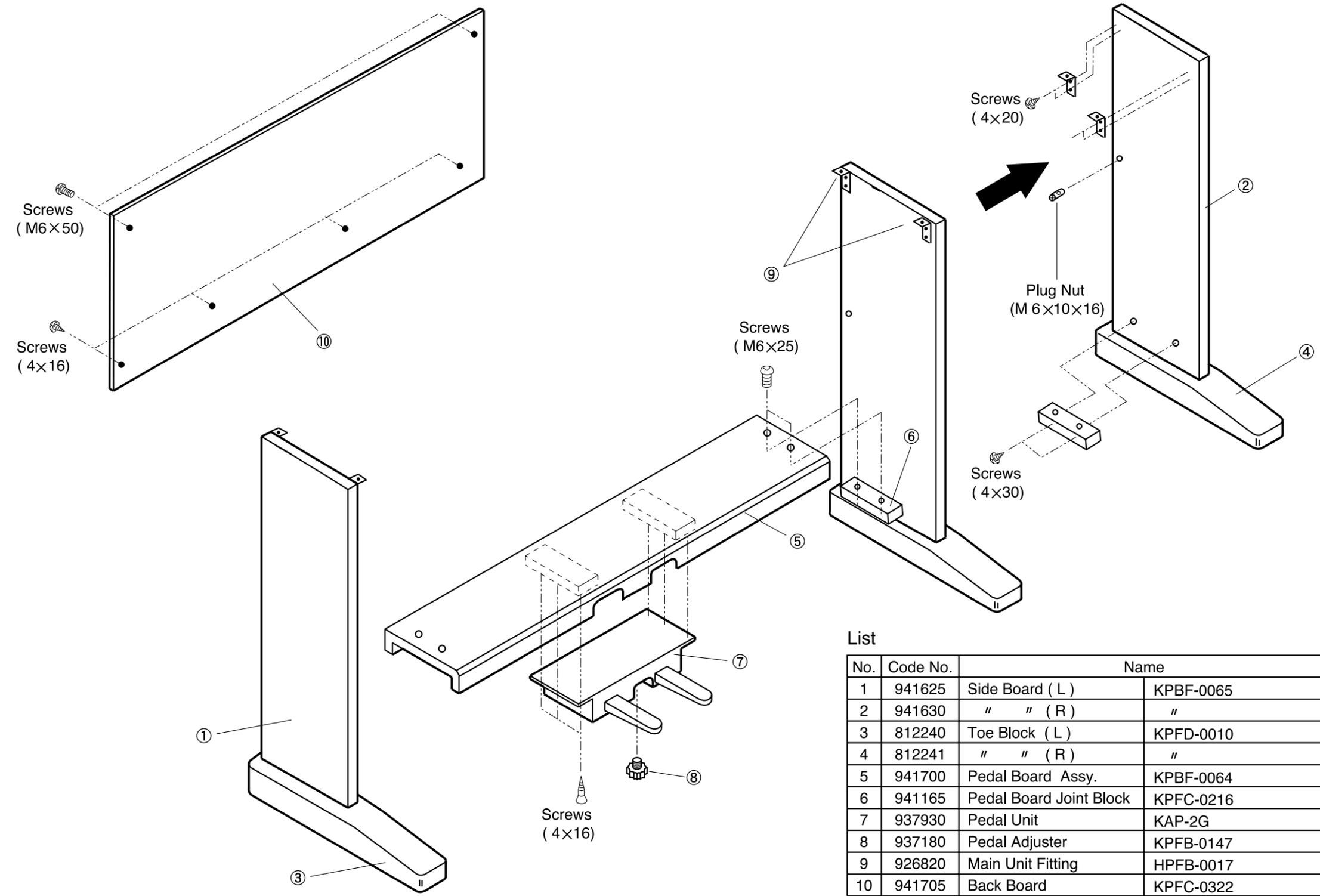
* Keybed, keyslip, arms (L & R) and backboard are glued and tacked. They can not be separated.

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■ Stand Assembly



List

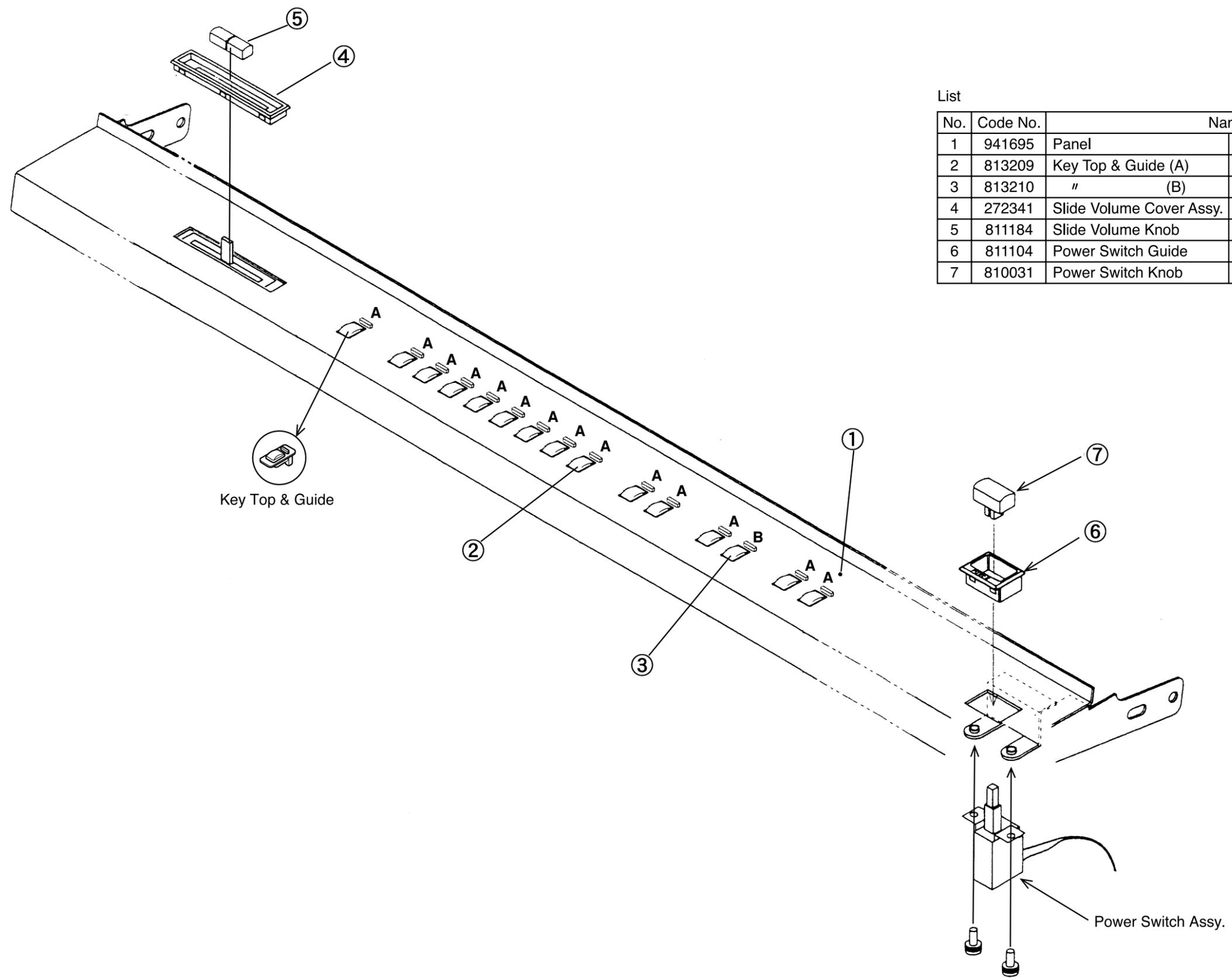
No.	Code No.	Name	Pieces
1	941625	Side Board (L)	1
2	941630	" " (R)	1
3	812240	Toe Block (L)	1
4	812241	" " (R)	1
5	941700	Pedal Board Assy.	1
6	941165	Pedal Board Joint Block	2
7	937930	Pedal Unit	1
8	937180	Pedal Adjuster	1
9	926820	Main Unit Fitting	4
10	941705	Back Board	1

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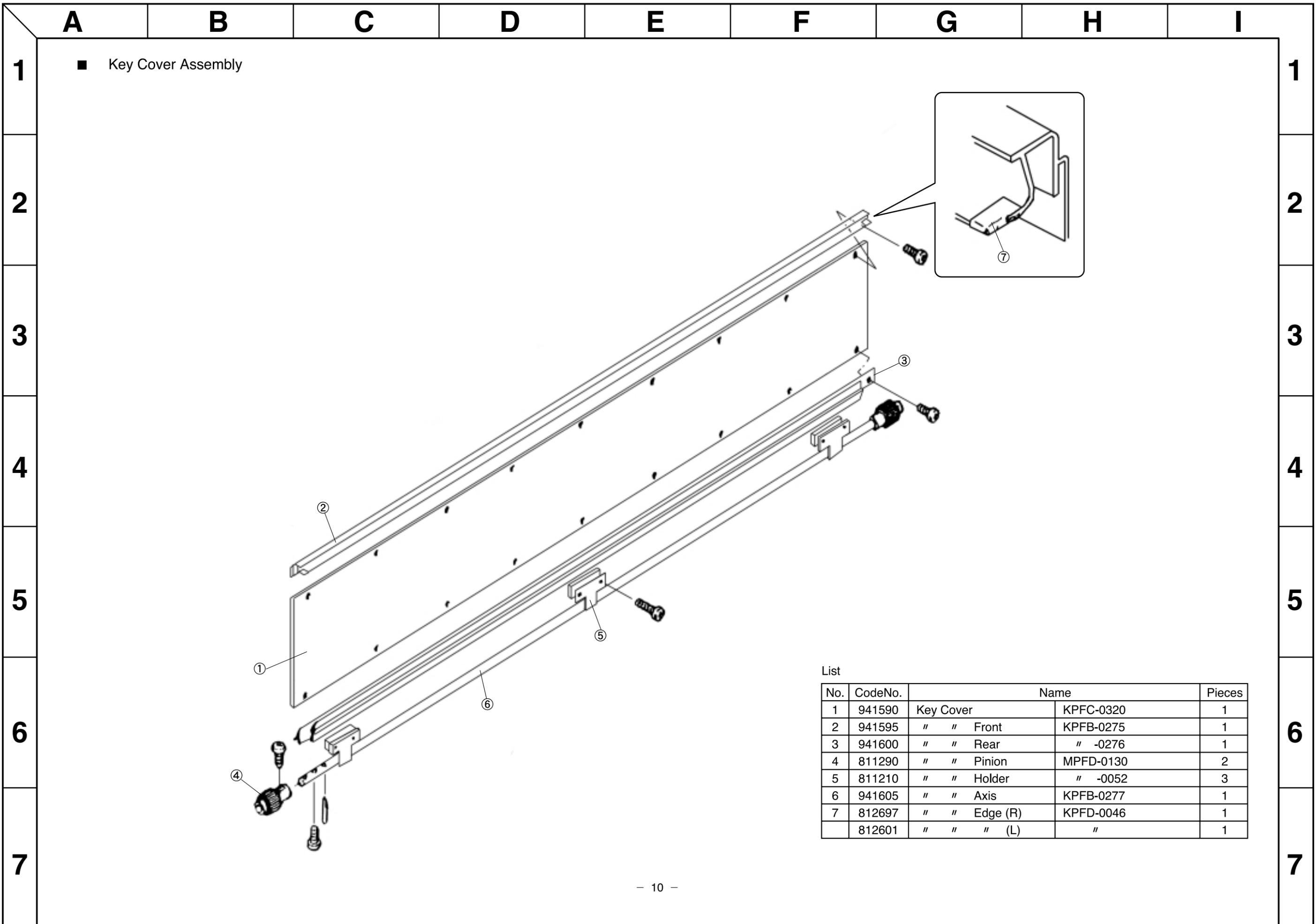
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■ Panel Assembly



List

No.	Code No.	Name	Pices
1	941695	Panel KPBH-0033	1
2	813209	Key Top & Guide (A) Black (with lens)	15
3	813210	" (B) Red (" ")	1
4	272341	Slide Volume Cover Assy. Black	1
5	811184	Slide Volume Knob KPFD-0028	1
6	811104	Power Switch Guide " -0009 (Black)	1
7	810031	Power Switch Knob " -0008 (")	1



■ Key Cover Assembly

List

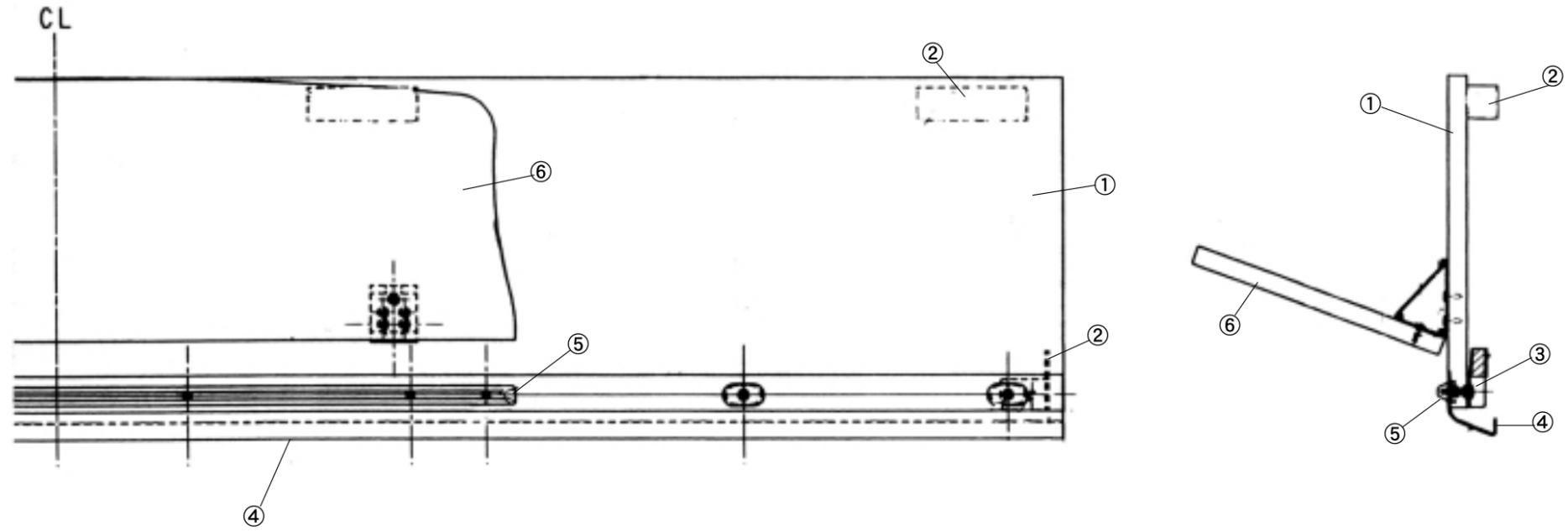
No.	CodeNo.	Name		Pieces
1	941590	Key Cover	KPFC-0320	1
2	941595	" " Front	KPFB-0275	1
3	941600	" " Rear	" -0276	1
4	811290	" " Pinion	MPFD-0130	2
5	811210	" " Holder	" -0052	3
6	941605	" " Axis	KPFB-0277	1
7	812697	" " Edge (R)	KPFD-0046	1
	812601	" " " (L)	"	1

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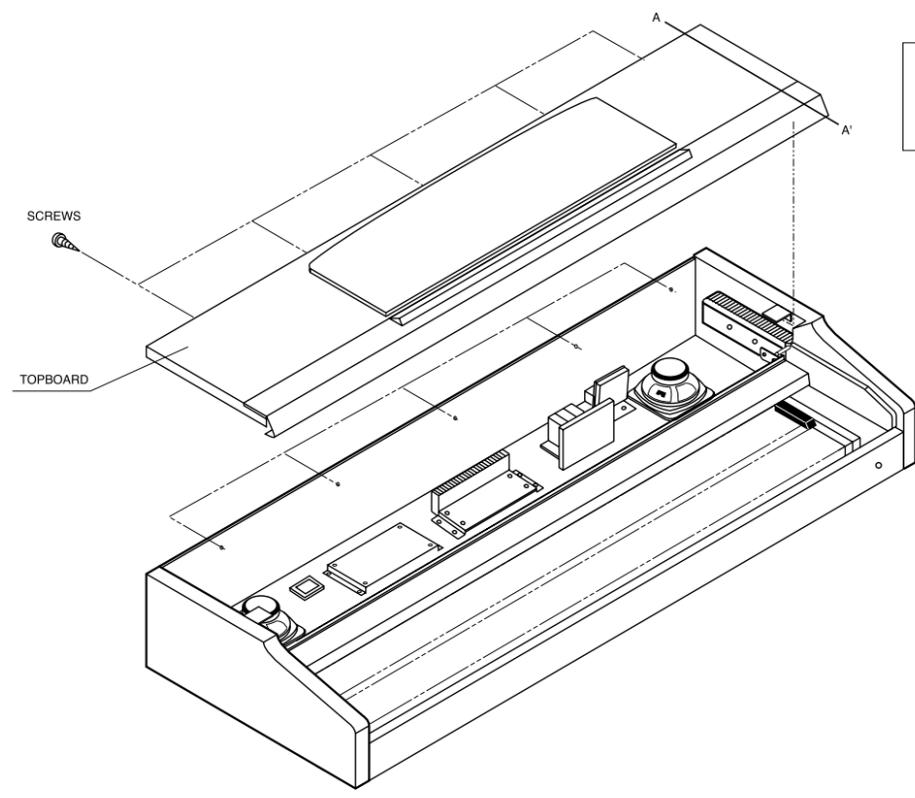
1 2 3 4 5 6 7

1 2 3 4 5 6 7

■ Topboard Assembly



TOPBOARD OPENING



- ① Remove the 5(five) back screws.
- ② Slide TOPBOARD forward.(keyboard side)
- ③ Lift TOPBOARD up and away from the piano.

List

No.	Code No.	Name		Pieces
1	941580	Topboard	KPFC-0311	1
2	941940	" Support	KKFC-0148	4
3	926680	Stand Hook (R)	MPFB-0094	1
—	926675	" (L)	"	1
4	941585	Topboard Front	KPBH-0032	1
5	811105	Score Stopper	KPFD-0027	1
6	941690	Music Rack	KPFC-0310	1

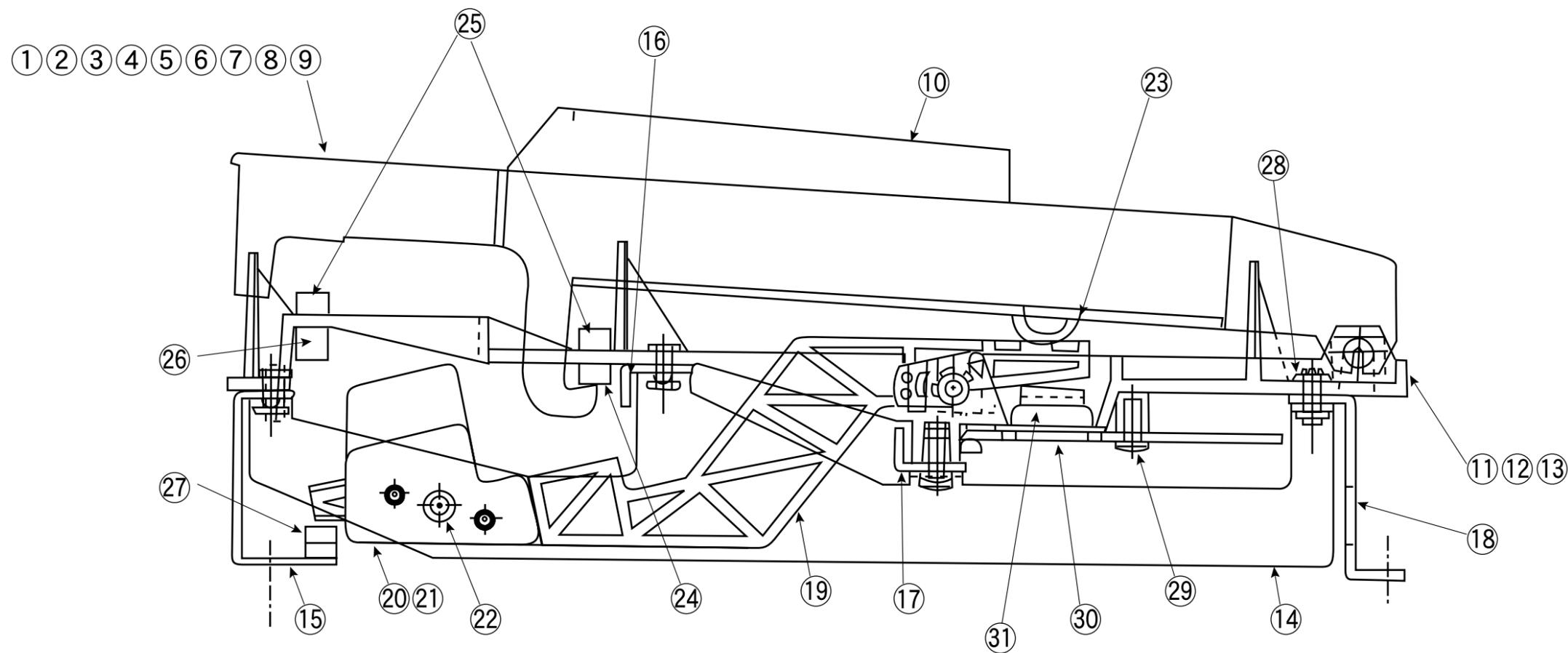
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■ Keyboard Unit

Type : RF-88



List

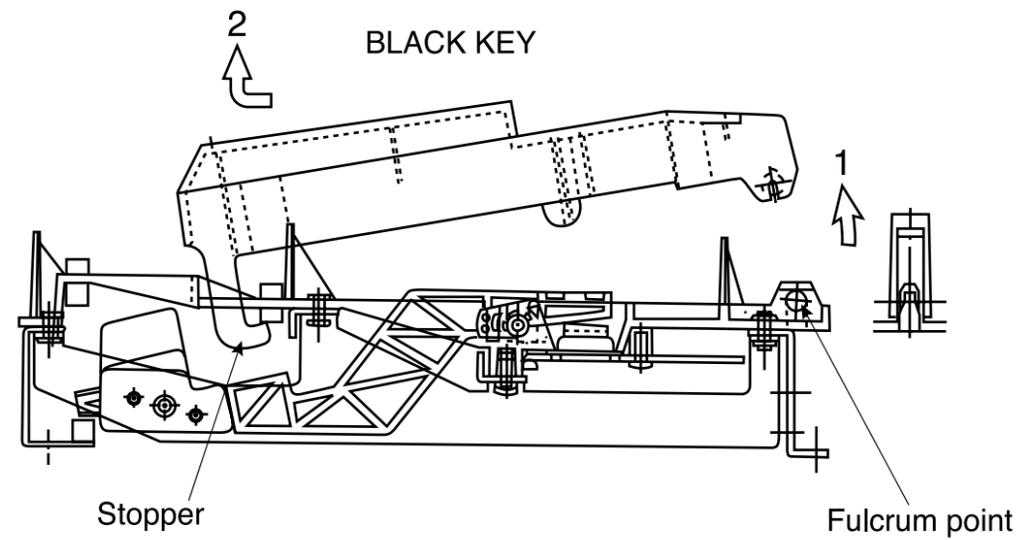
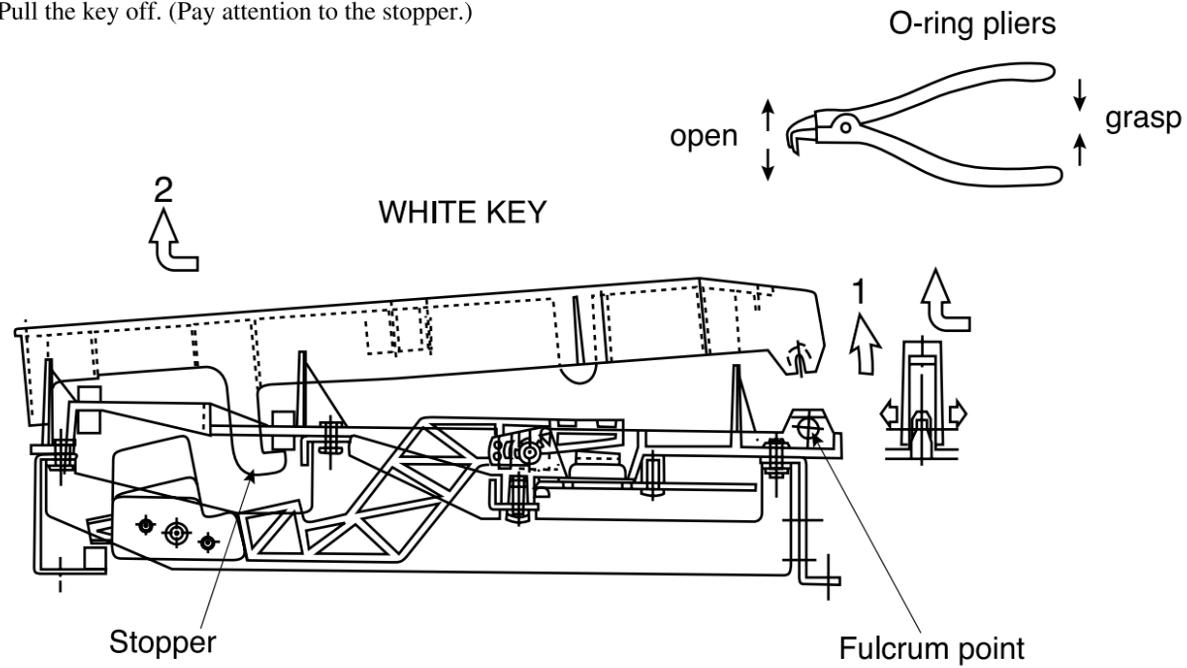
No.	Code No.	Name	Pices	No.	Code No.	Name	Pices	No.	Code No.	Name	Pices
1	813155	White Key (C)	7	11	813165	Chassis (F-E)	6	21	941525	Weight (Black Key)	72
2	813156	" (D)	7	12	813166	" (A-E)	1	22	813169	Rivet	88
3	813157	" (E)	7	13	813167	" (F-C)	1	23	813170	Slip tape	88
4	813158	" (F)	7	14	941495	Rib	8	24	813171	Stopper cushion	1
5	813159	" (G)	7	15	941500	Angle (Front)	1	25	813172	Stopper felt	2
6	813160	" (A)	7	16	941505	" (Stopper)	1	26	813173	Hammer stopper cushion	1
7	813161	" (B)	8	17	841510	" (Switch)	1	27	813174	"	1
8	813162	" (AA)	1	18	941515	" (Back)	1	28	—	Chassis fix screw (1)	94
9	813163	" (CC)	1	19	813168	Hammer	88	29	—	" (2)	46
10	813164	Black Key	36	20	941520	Weight (White Key)	104	30	237347	Switch PCB Assy.	1
								31	813175	Rubber switch	8

KEYBOARD DISASSEMBLING PROCEDURE

First, remove the keyboard fixing screws (10 pcs.) at the bottom of the piano and slide the keyboard unit backward.

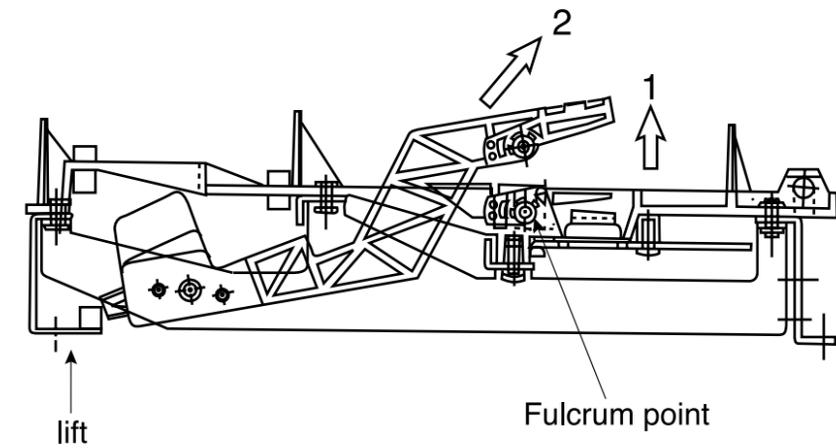
〈How to take a key off〉

1. Spread the key at fulcrum point and lift it up. (We recommend to use O-ring pliers. If not available, use a flat blade (tapered) screwdriver.)
2. Pull the key off. (Pay attention to the stopper.)



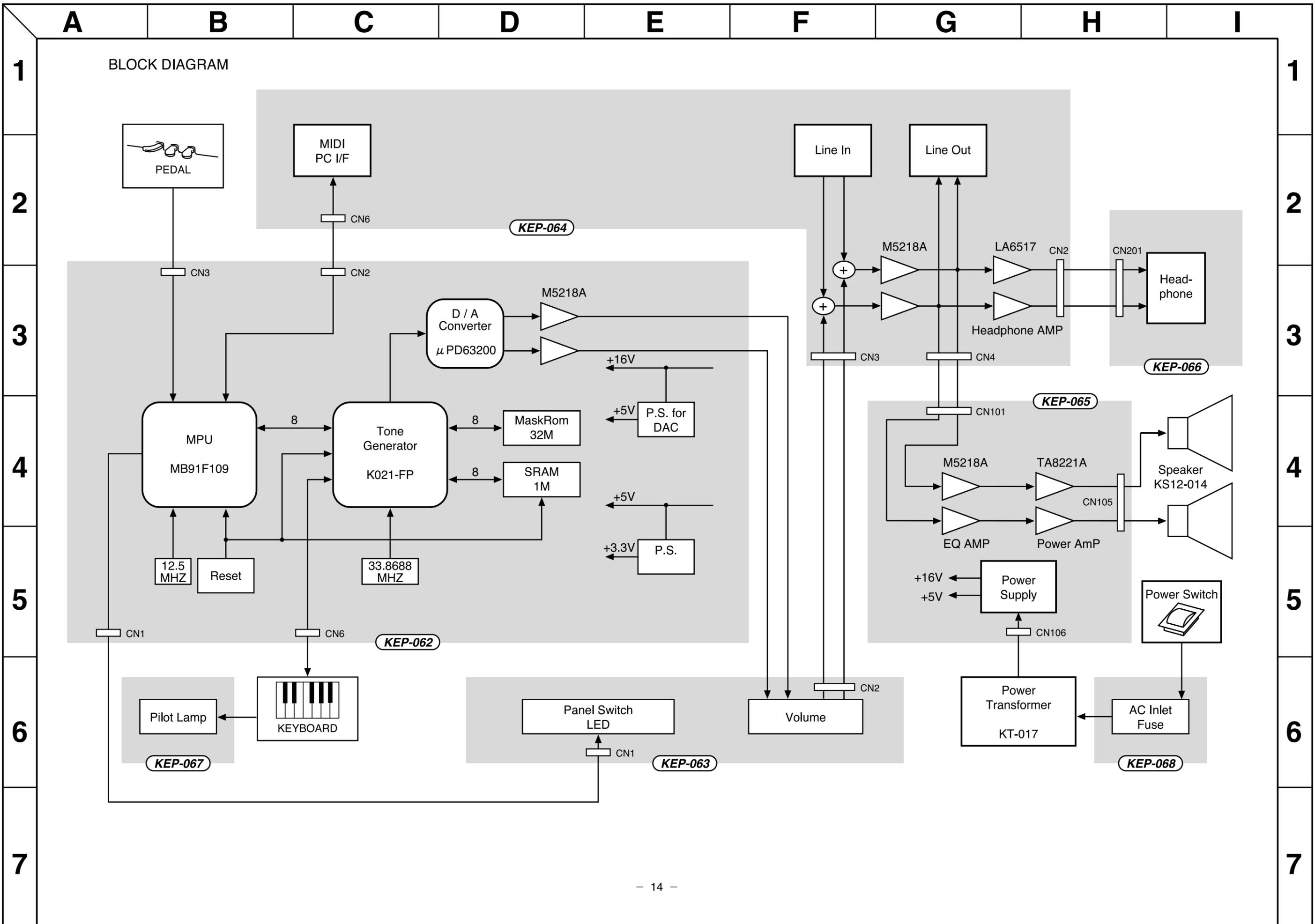
〈How to take a hammer off〉

1. Lift the hammer at the fulcrum point.
2. Pull the hammer off.



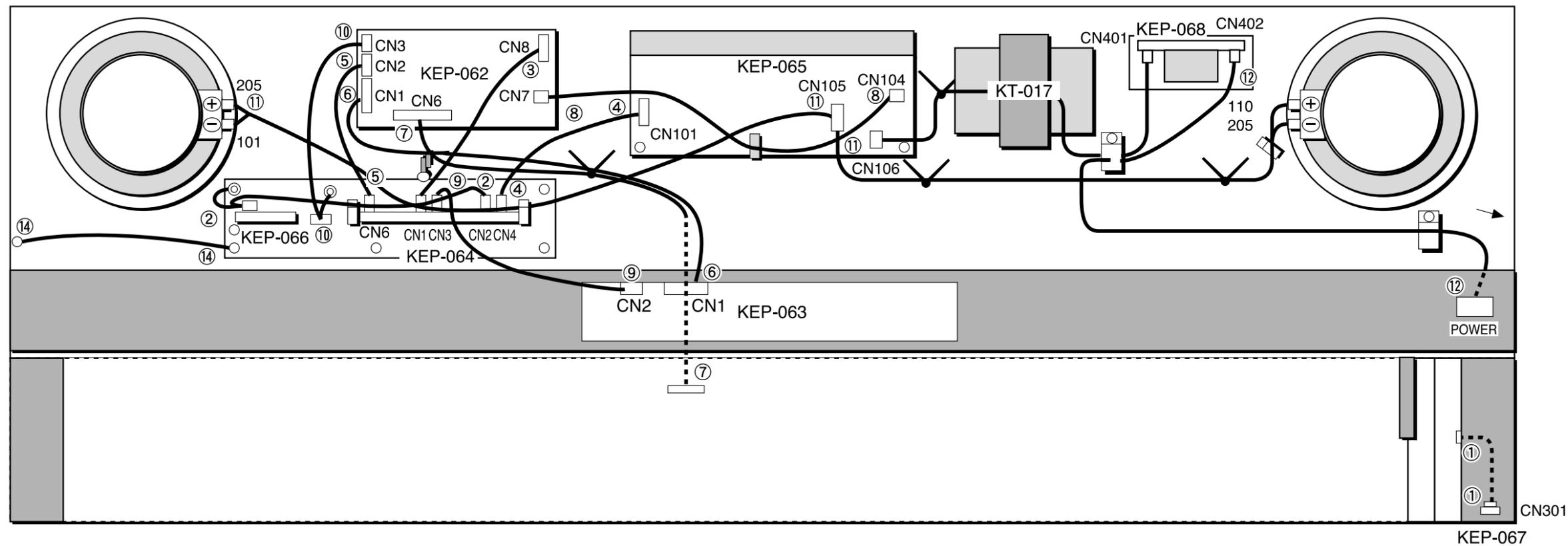
* When taking a hammer for **white key** off, lift the keyboard chassis up at front.

* To remove a black key, the white keys on either side must be removed first.



CABLE WIRING SPEC

-  Nylon Clamp (NK-6N)
-  Cable Tie (PTL1M)
-  Bind fix metal (EFB-0692)
-  Vinyl Binder (Small L=100)



List

No.	Code No.	Name	Q'ty	No.	Code No.	Name	Q'ty	No.	Code No.	Name	Q'ty
①	941645	Pilot Lamp Cable	1	⑥	940610	Panel Cable	1	⑪	940632	Speaker Cable	1
②	941650	Headphone Cable	1	⑦	940615	Keyboard Cable	1	⑫	940635	Power Switch Cable	1
③	940605	CPU Output Cable	1	⑧	940625	CPU Power Cable	1	⑬	—	Headphone Ground Cable	1
④	940595	Jack Output Cable	1	⑨	941935	Volume Cable	1	⑭	—	Panel Ground Cable	1
⑤	941655	MIDI Cable	1	⑩	941665	Pedal Cable	1				

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P.W.B. KEP-062 ASSEMBLY (TOP)

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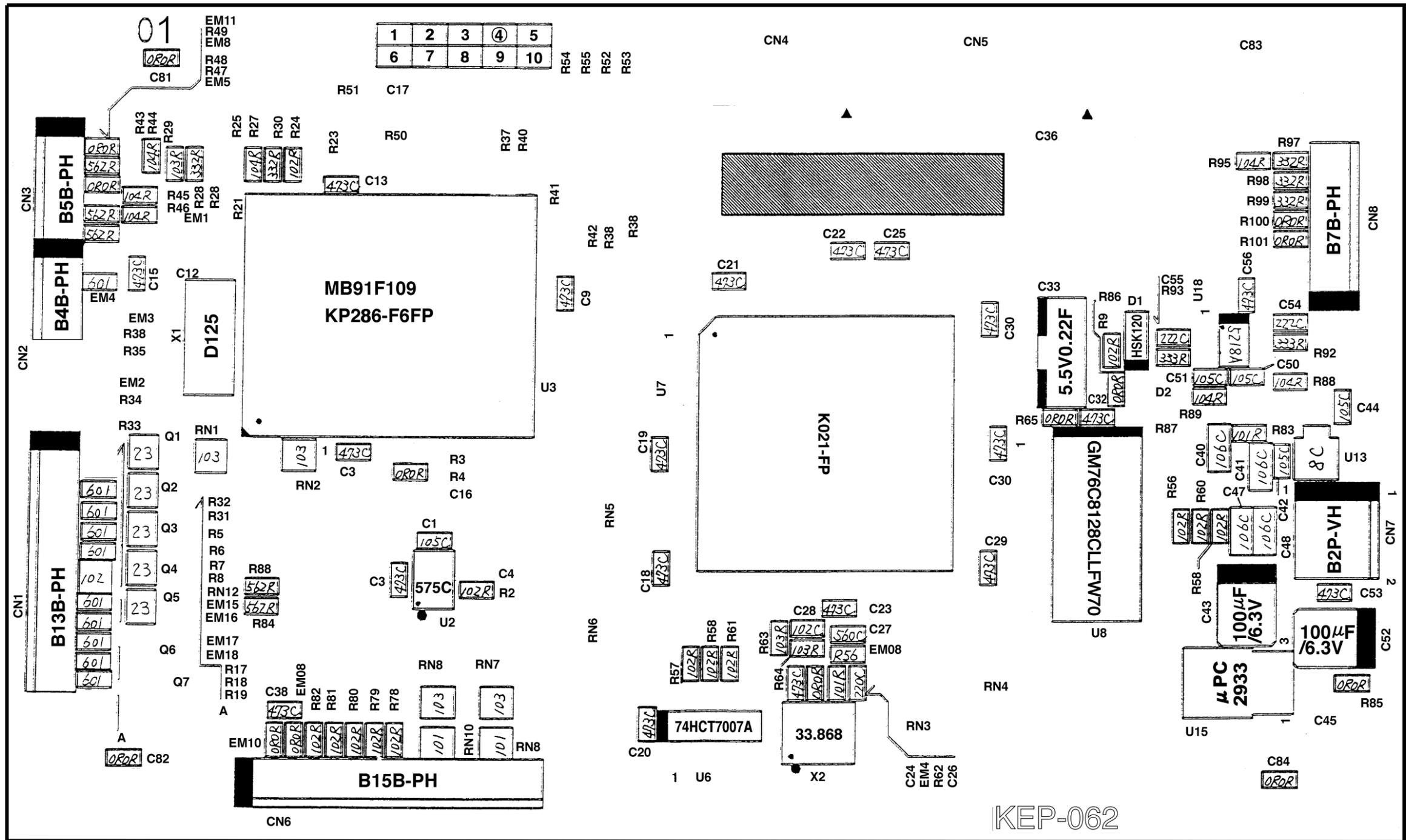
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P.W.B. KEP-062 ASSEMBLY (BACK)

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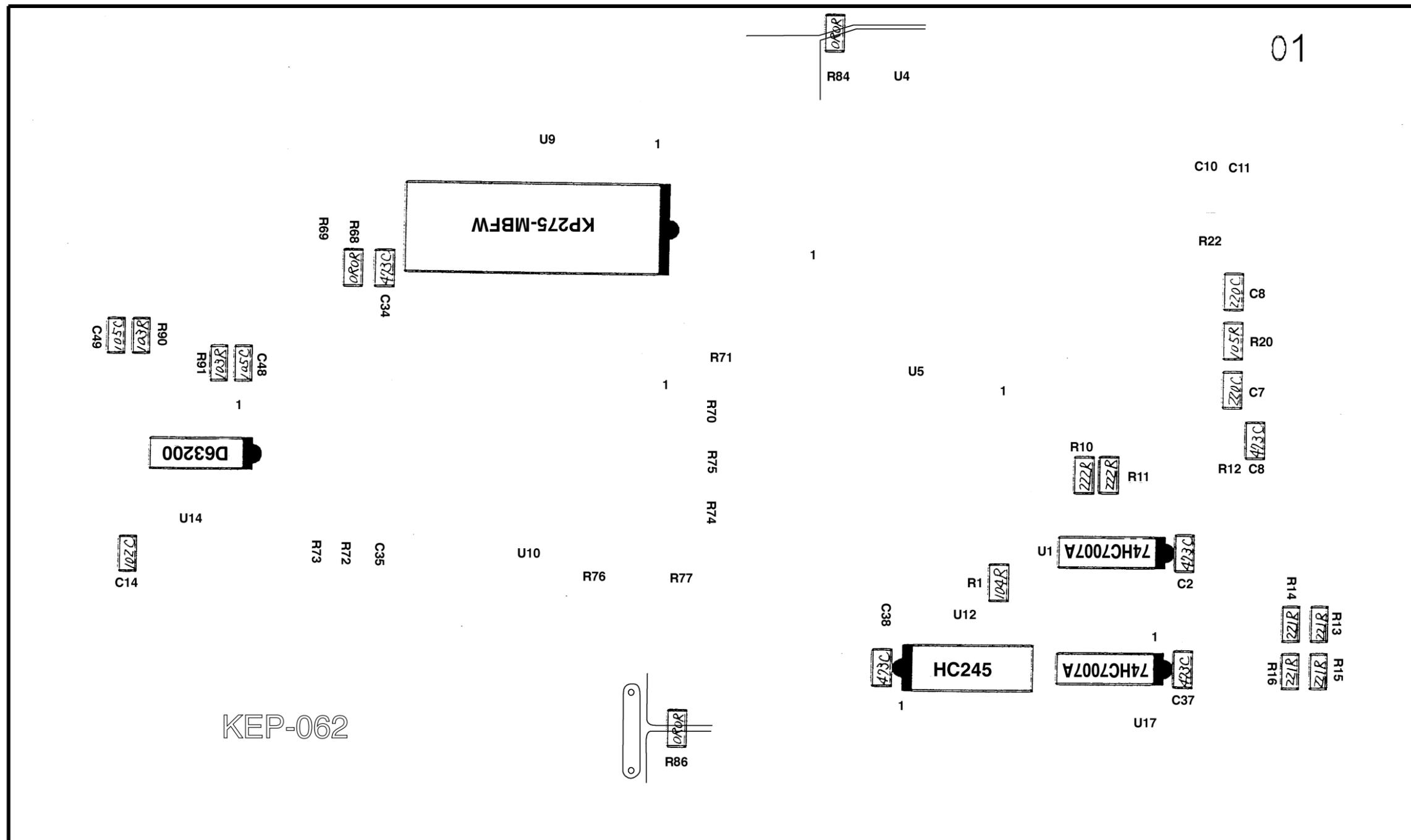
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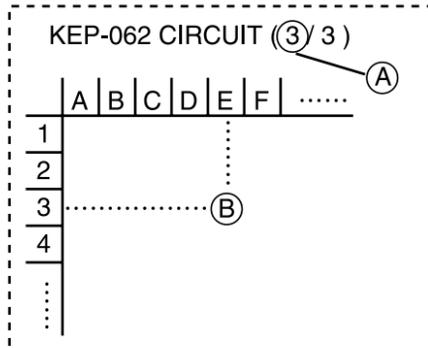
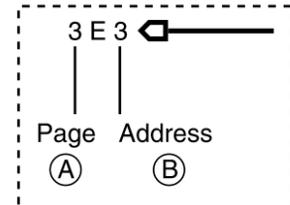
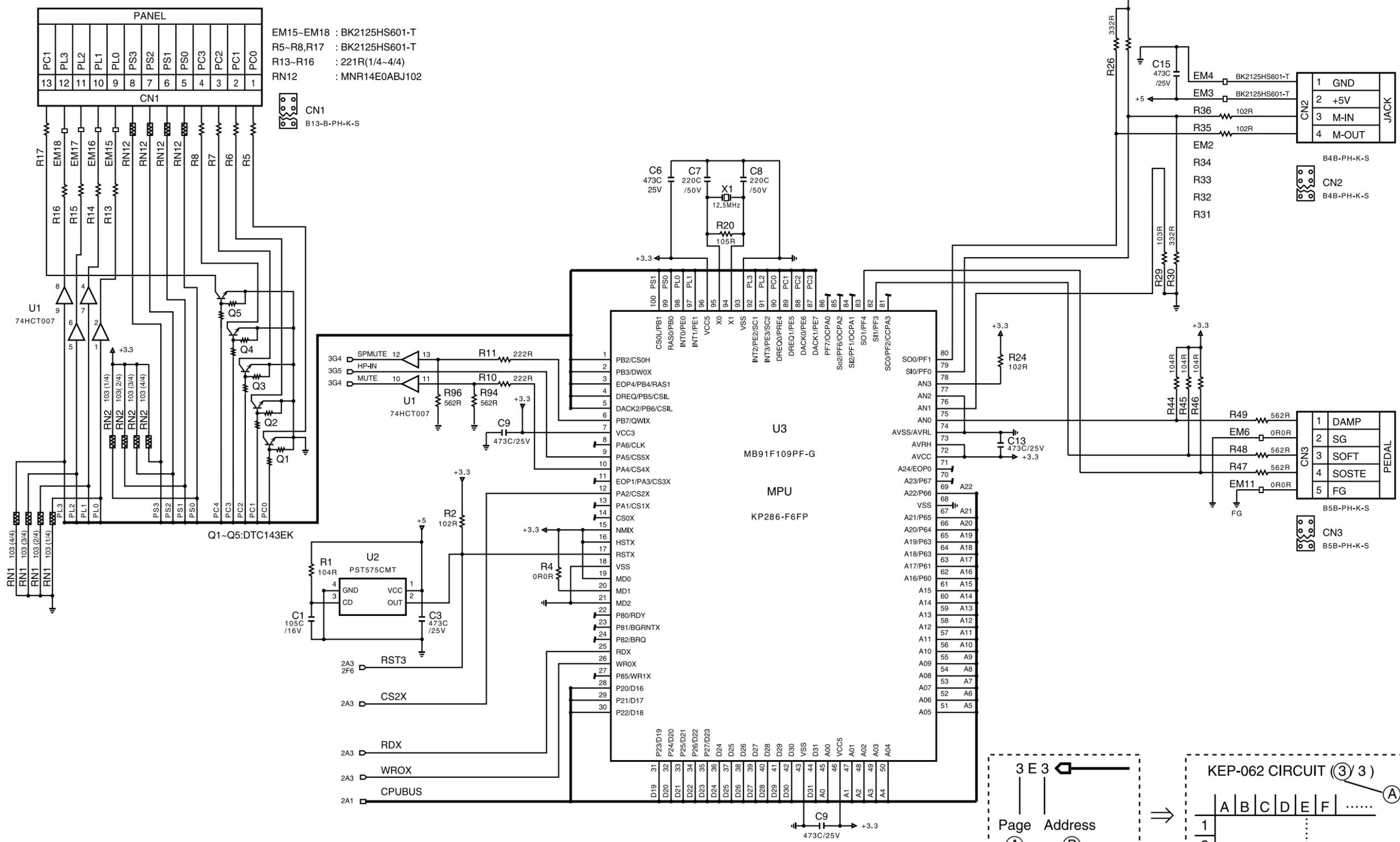
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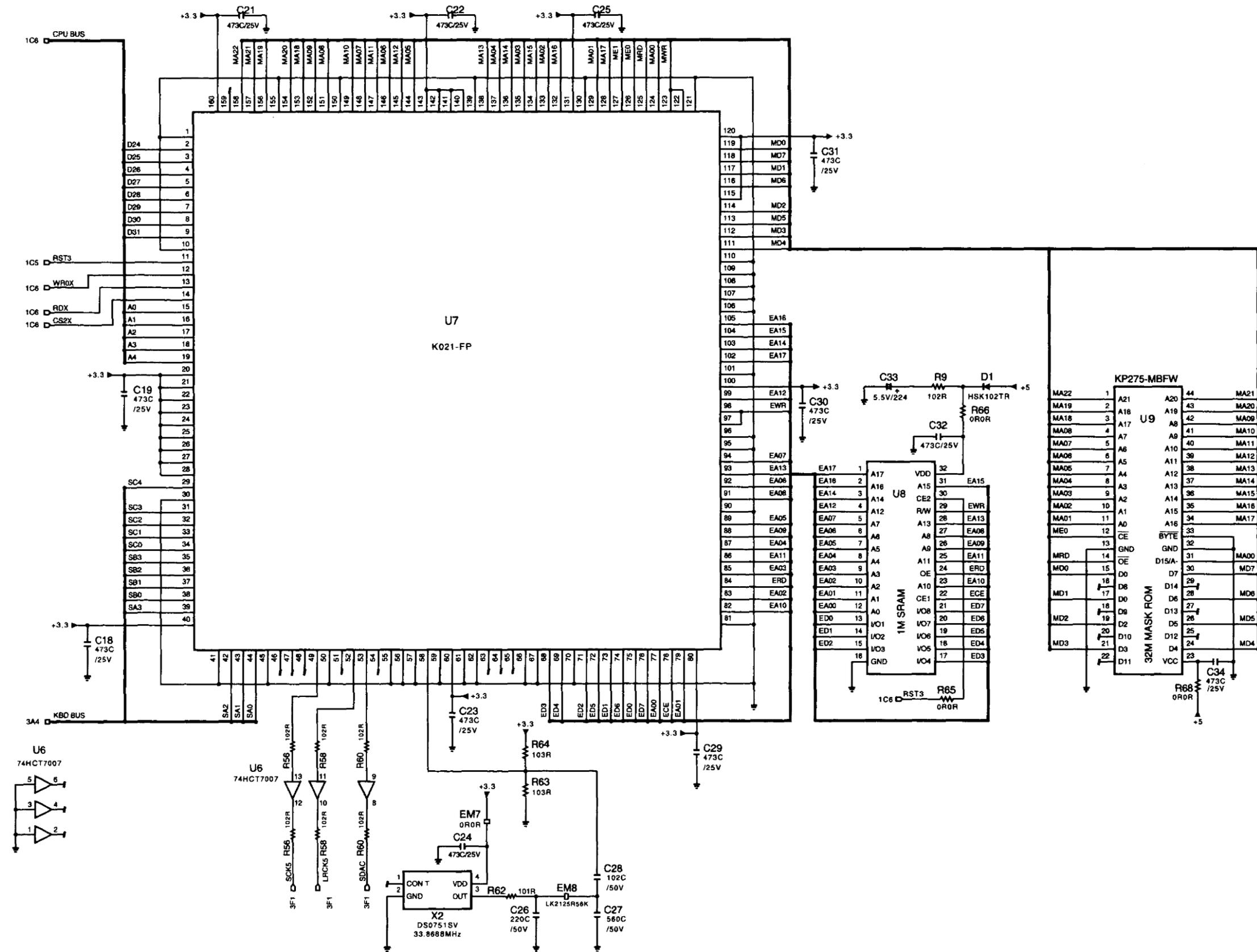
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KEP-062 CIRCUIT (1/3) <CPU>

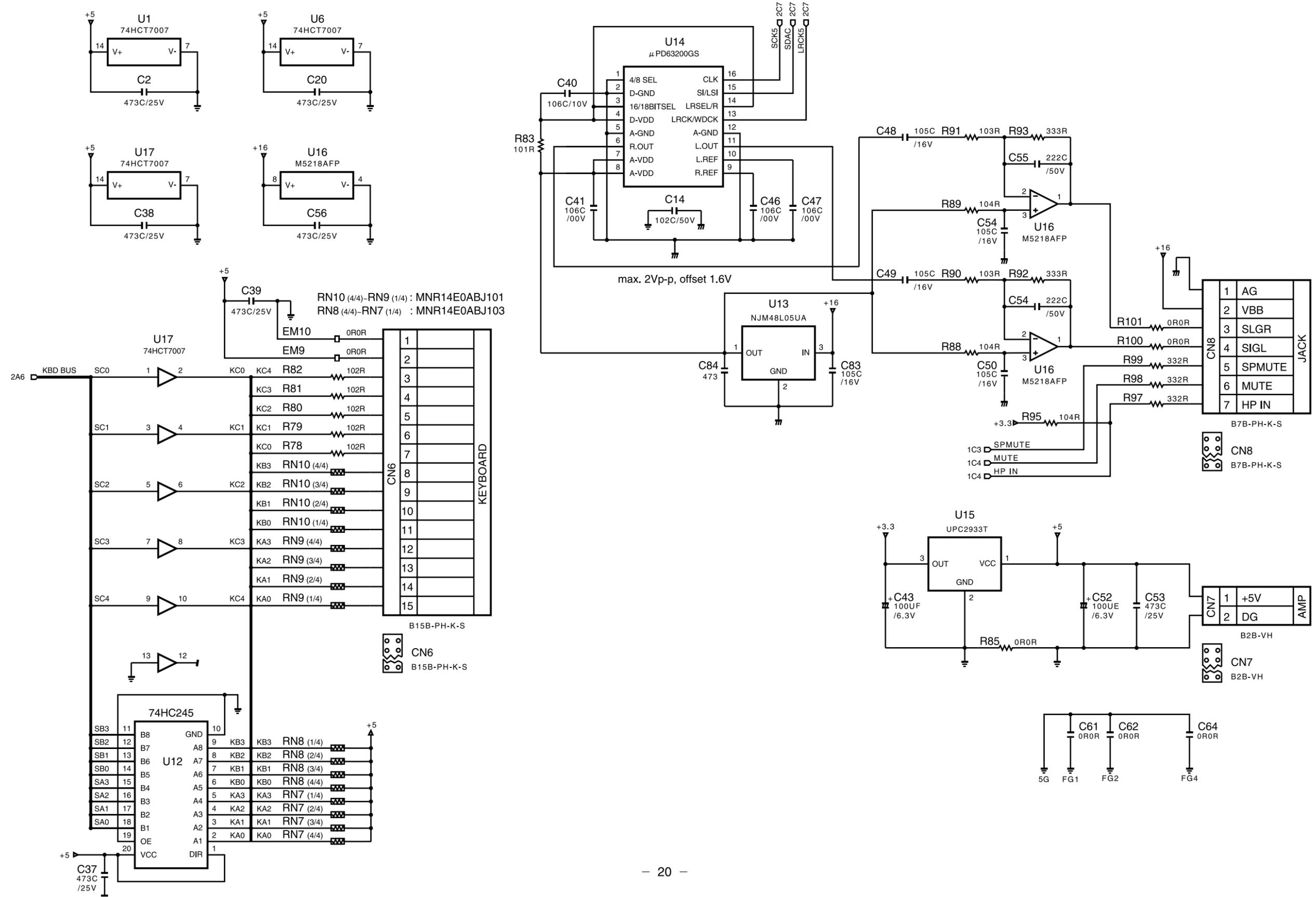
EM15-EM18 : BK2125HS601-T
 R5~R8,R17 : BK2125HS601-T
 R13~R16 : 221R(1/4~4/4)
 RN12 : MNR14E0ABJ102



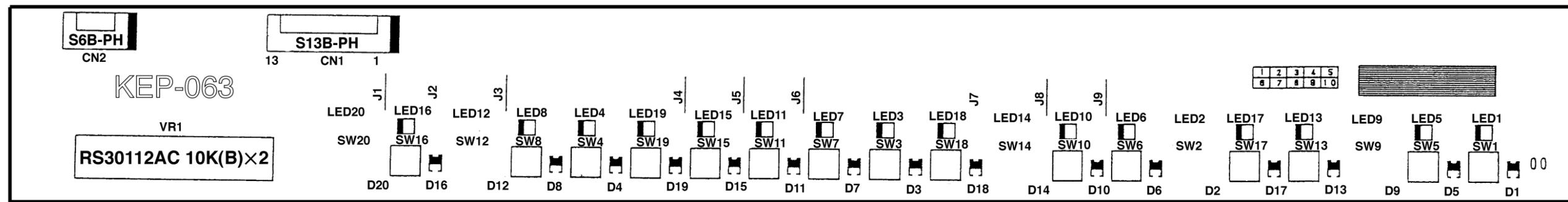
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KEP-062 CIRCUIT (3/3) <CPU>



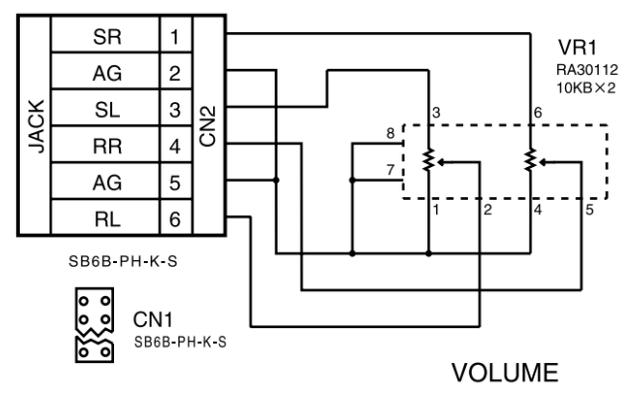
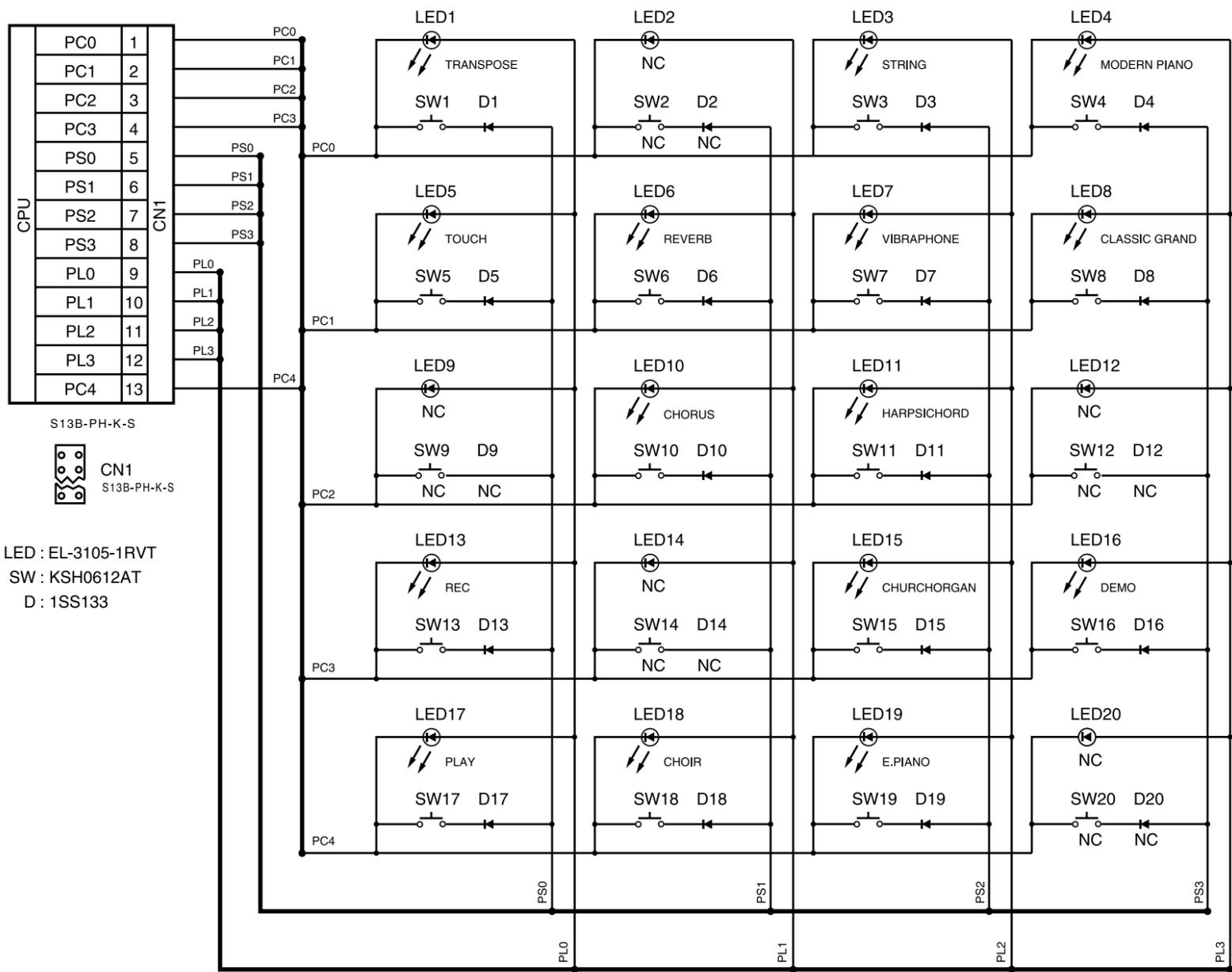
P.W.B. KEP-063 ASSEMBLY



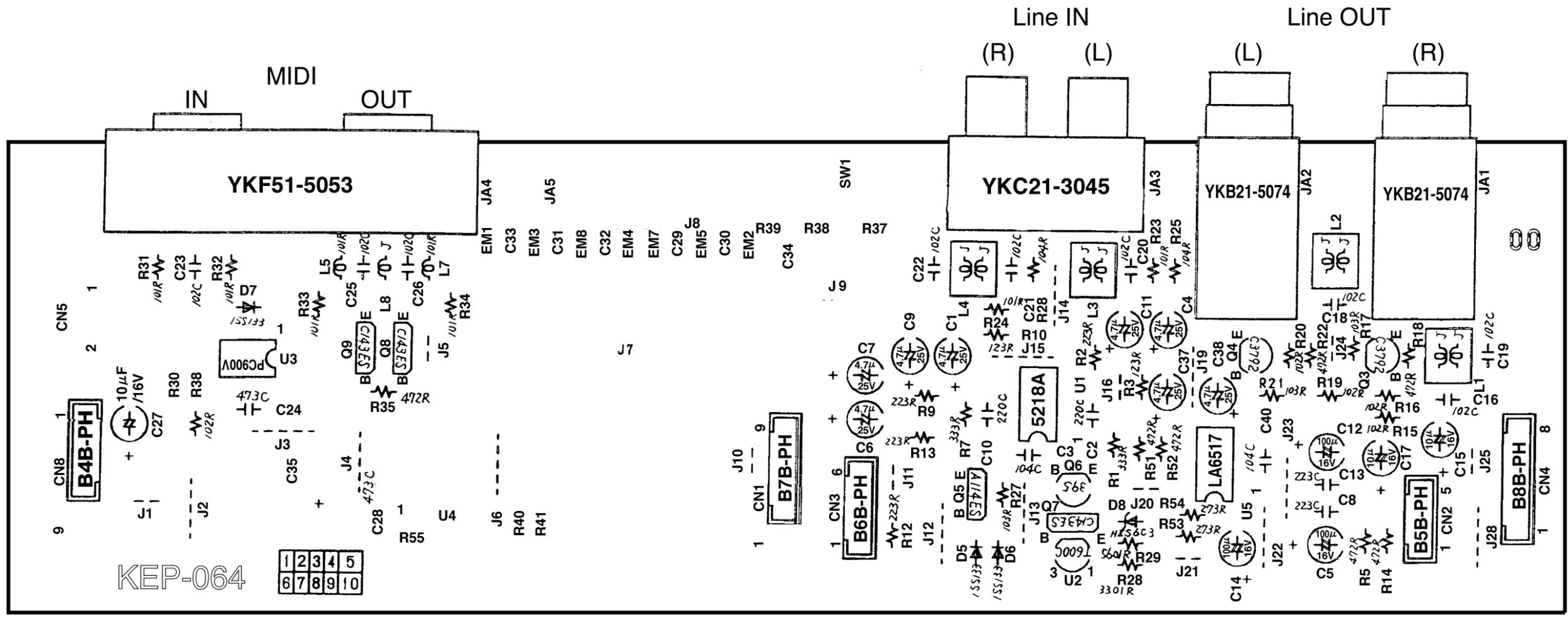
LED** : EL-3105-1VRT
 D** : 1SS133
 SW** : KSH0612AT or B3F-6020 or EVQ21305R

SW10	SW9	SW8	SW7	SW6	SW5	SW4	SW3	SW2	SW1
CHORUS	NC	CLASSIC GRAND	VIBRA-PHONE	REVERB	TOUCH	MODERN PIANO	STRING	NC	TRANS-POSE
SW20	SW19	SW18	SW17	SW16	SW15	SW14	SW13	SW12	SW11
NC	E.PIANO	CHOIR	PLAY/STOP	DEMO	CHURCH ORGAN	NC	REC	NC	HARPSI-CHORD

KEP-063 CIRCUIT (Panel)



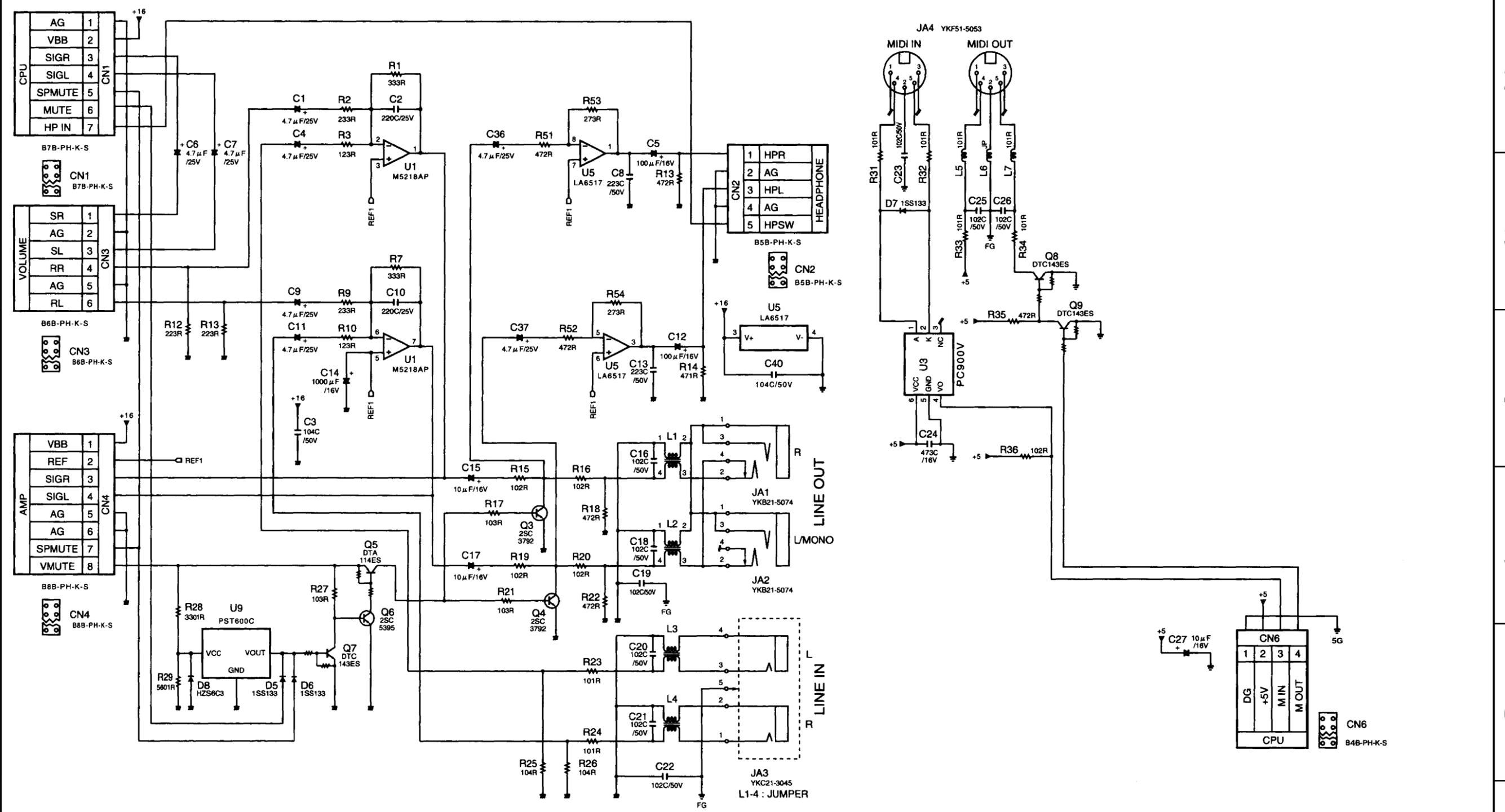
P.W.B. KEP-064 ASSEMBLY



KEP-064

1	2	3	4	5
6	7	8	9	10

KEP-064 CIRCUIT (JACK)



A B C D E F G H I

1

P.W.B. KEP-065 ASSEMBLY

1

2

2

3

3

4

4

5

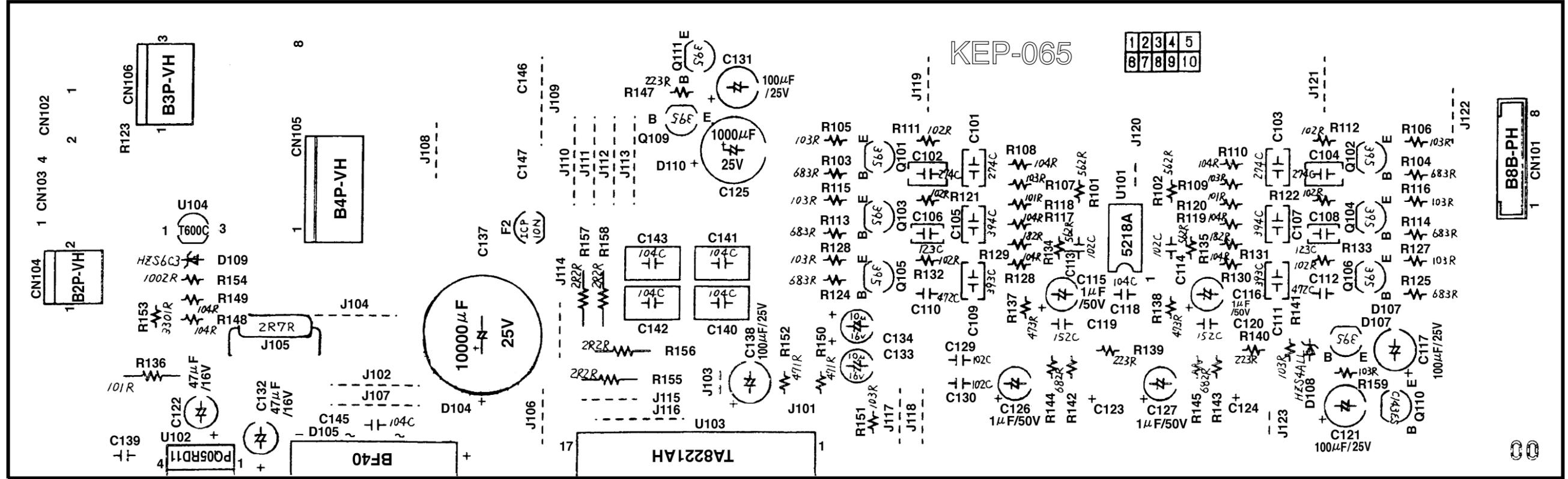
5

6

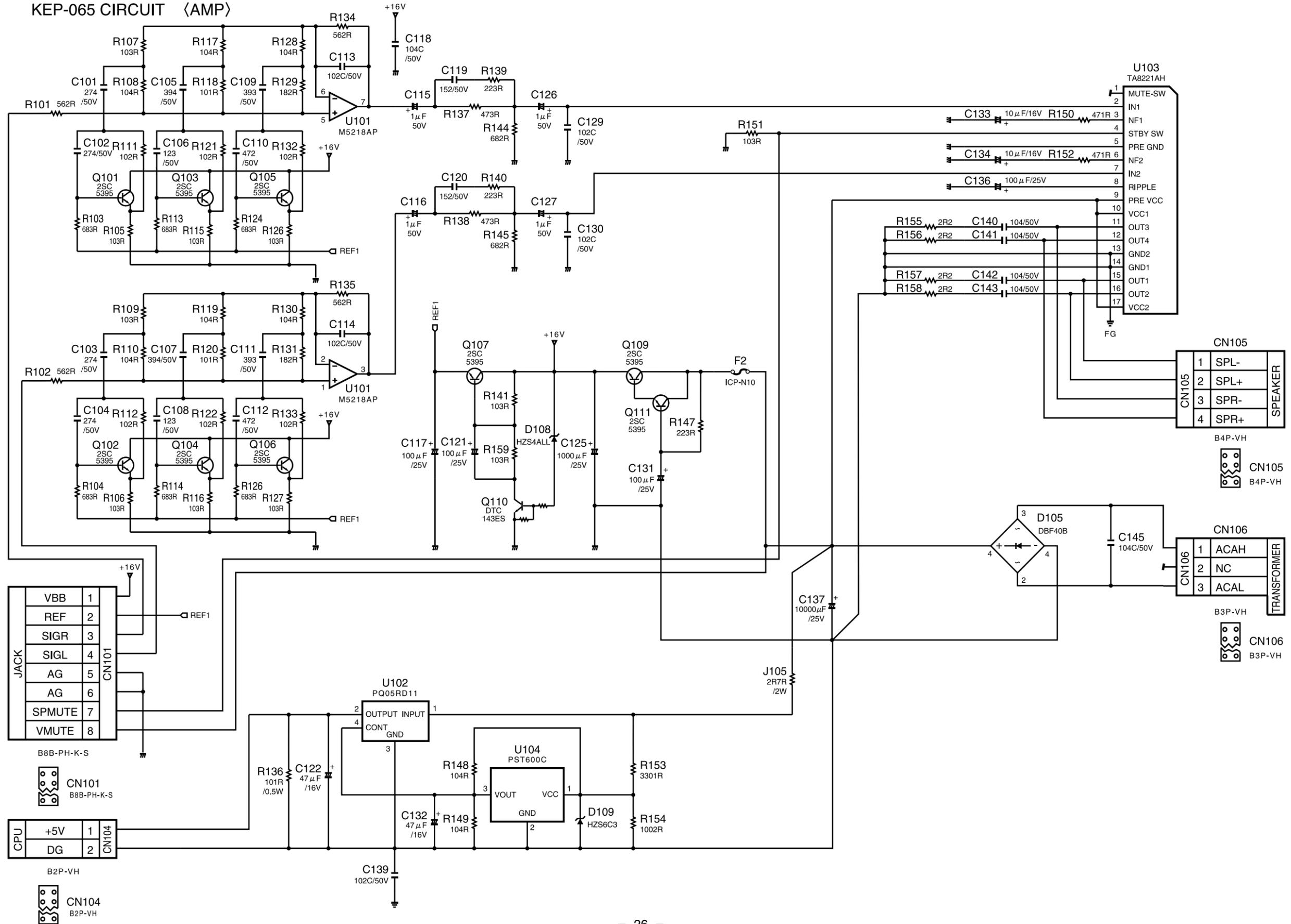
6

7

7

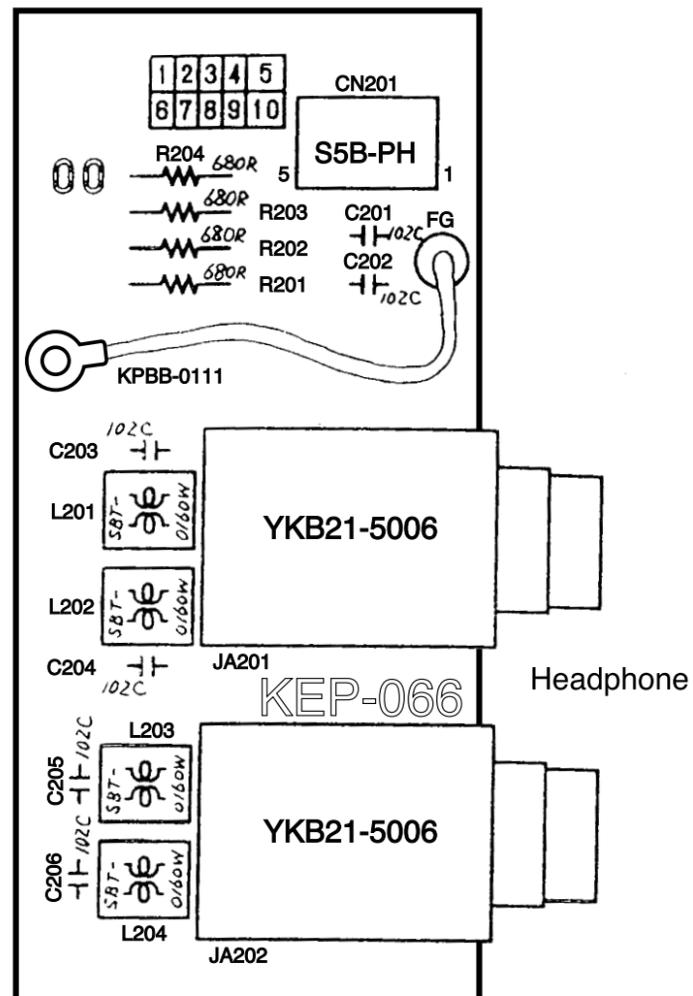


KEP-065 CIRCUIT (AMP)

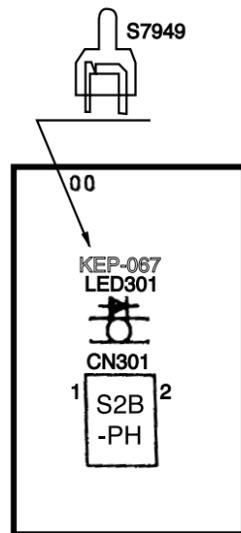


P.W.B. KEP-066, 067, 068 ASSEMBLY

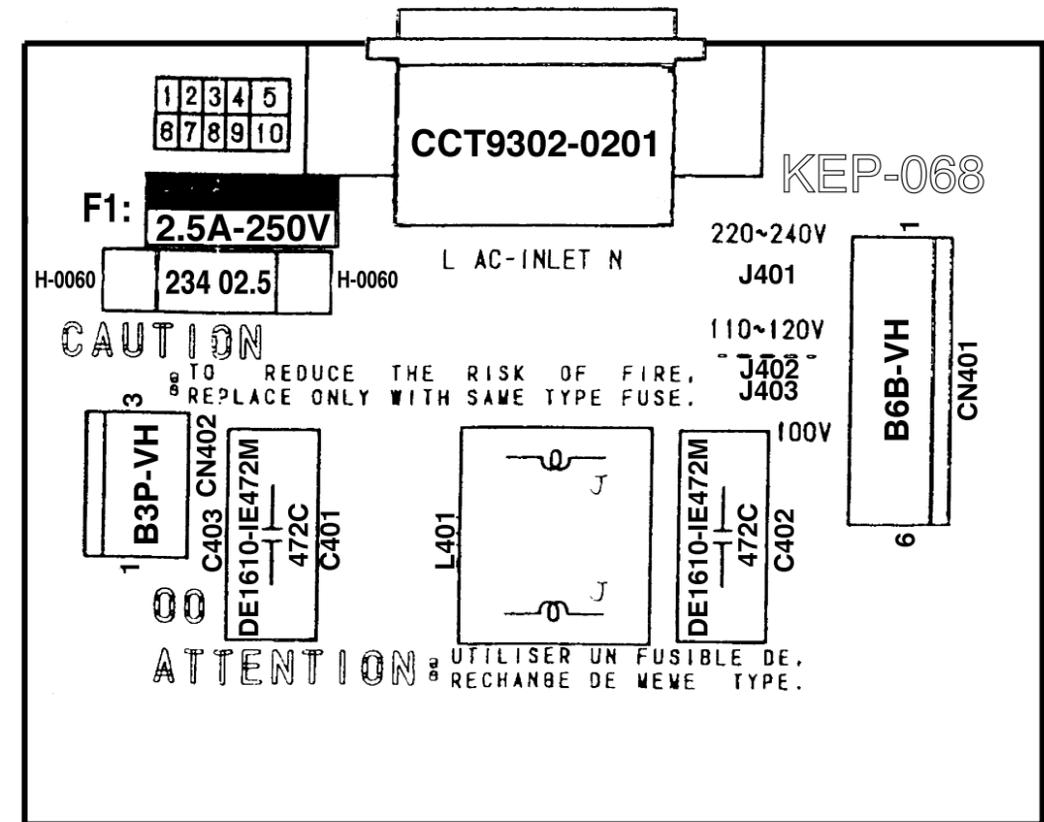
KEP-066



KEP-067



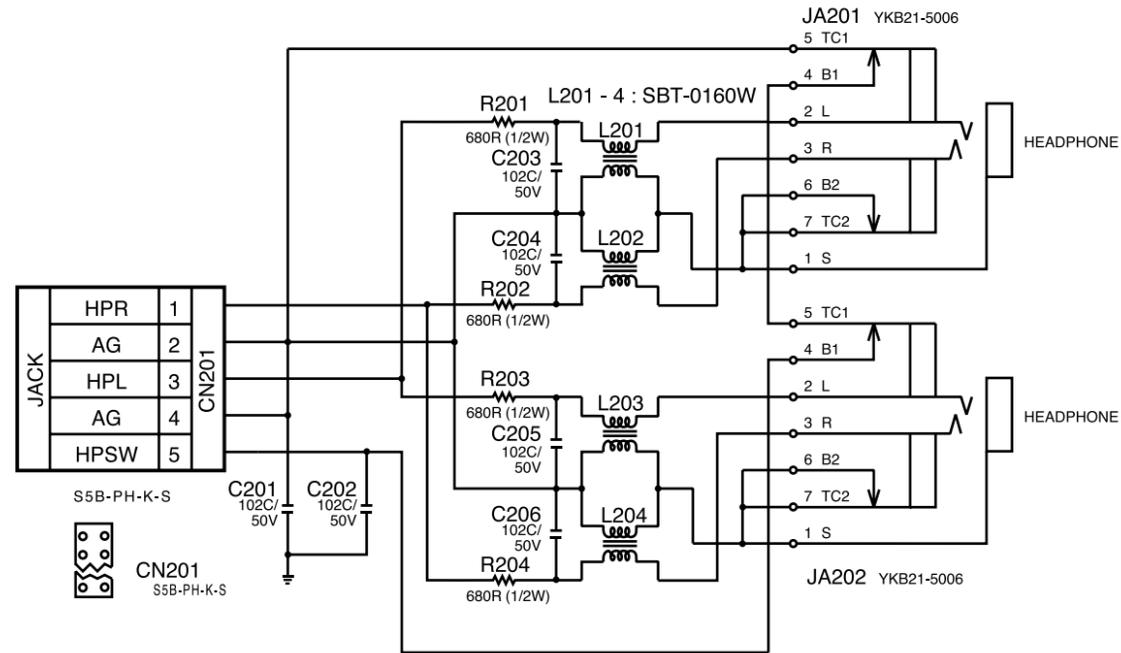
KEP-068



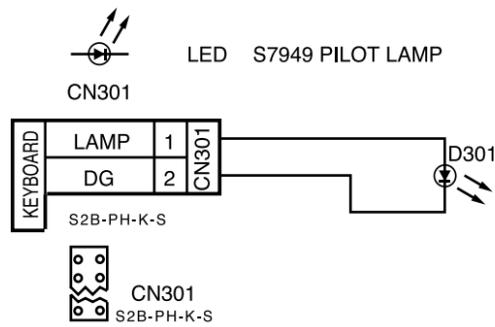
MODEL	PN270	CN270	CN270
RATED POWER VOLTAGE	AC 100V	AC 110 -120V	AC 220 -240V
JUMPER ADDRESS	J403	J402	J401
FUSE TYPE	234 02.5	234 02.5	218 001

KEP-066, 067, 068 CIRCUIT

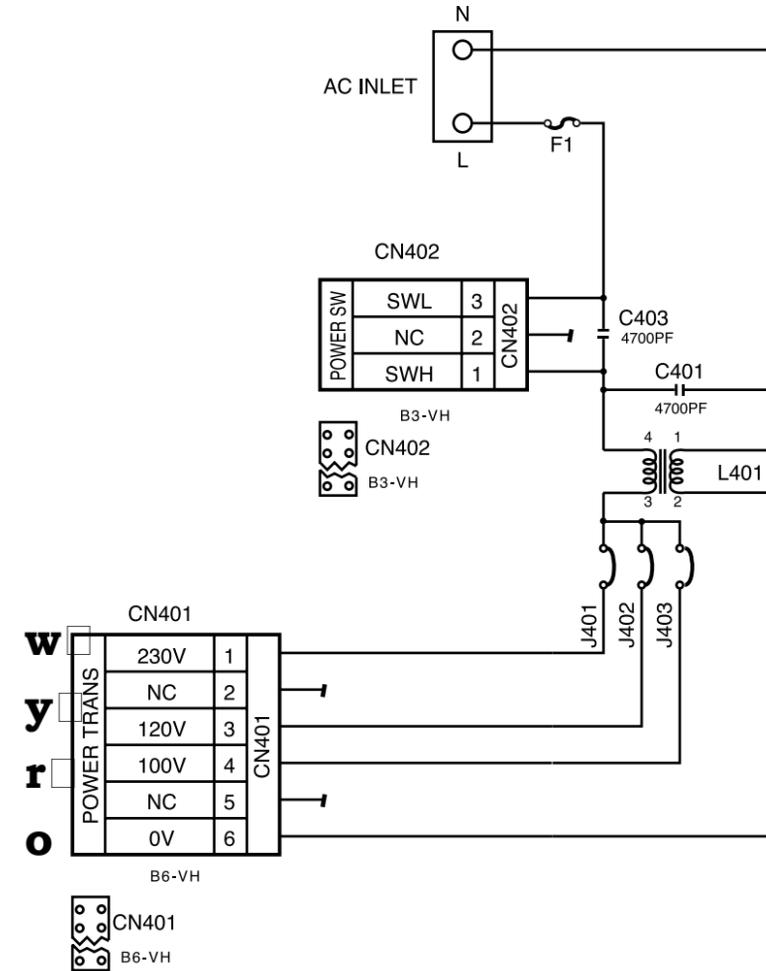
KEP-066 <Headphone>



KEP-067 <Pilot lamp>



KEP-068 <Power supply>



MODEL	PN270	CN270	CN270
RATED POWER VOLTAGE	AC 100V	AC 110 -120V	AC 220 -240V
JUMPER ADDRESS	J403	J402	J401
FUSE TYPE	234 02.5	234 02.5	218 001

