

DIGITAL PIANO
CN2

Service Manual

Manufacturing Date December 2004

KAWAI Kawai Musical Instruments
Manufacturing Co., Ltd.

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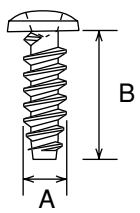
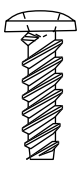
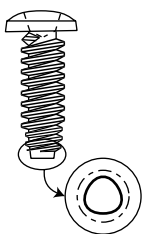
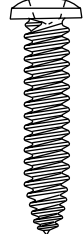
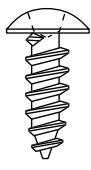
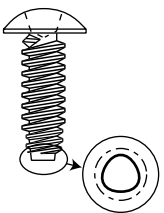
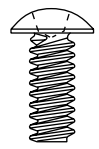
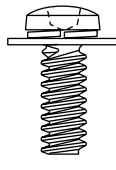
■ Specifications

Keyboard	88 Keys, Advanced Hammer Action IV
Touch Type	4 Types (Normal, Light, Heavy, Constant)
Max Polyphony	72 Notes
Tones	15 Tones
Reverb	Room, Stage, Hall
Metronome	Beat: 1/4, 2/4, 3/4, 4/4, 5/4, 3/8, 6/8 Tempo: 30-300 BPM
Recorder	1 song, 1 track
Other Functions	Dual, Transpose, Tuning, Concert Magic (40 Songs), MIDI Functions, 15 Demo Songs
Pedals	Damper, Soft, Sostenuto
Jacks	Headphones x 2, Pedal, MIDI IN/OUT
Speakers	12 cm (4 3/4") x 2
Output Power	16 W x 2
Power Consumption	50 W
Dimensions	139 (W) x 43 (D) x 83 (H) cm, 54 3/4" x 17" x 32 3/4"
Weight	39.5 kg, 87 lbs

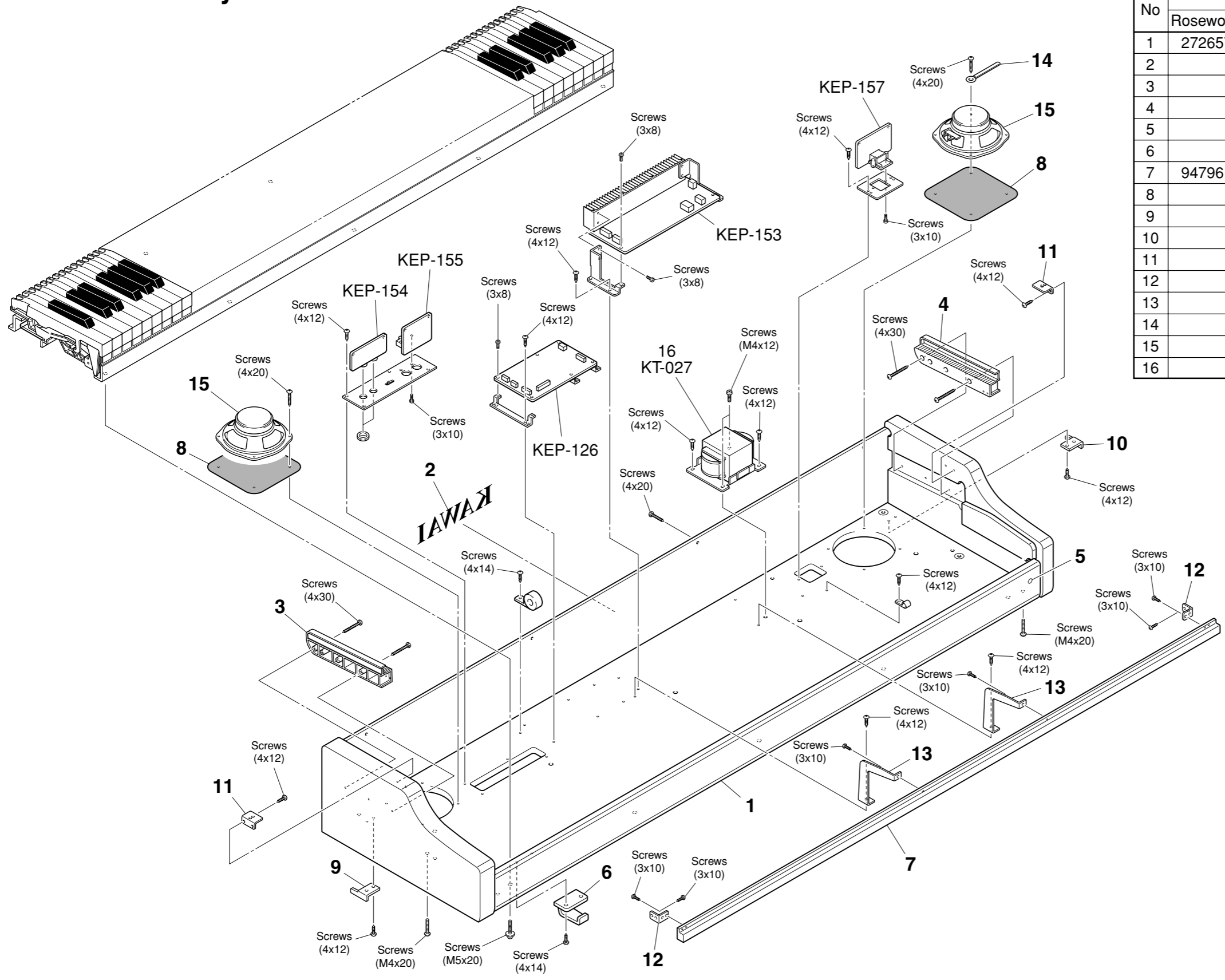
* Specifications are subject to change without notice.

Hardware List

Type	Size (A x B)	Remarks
Binding Head B-tite	3 x 8	Chromating
Binding Head B-tite	3 x 12	Chromating
Binding Head P-tite	3 x 10	Chromating (Black)
Binding Head P-tite	3 x 16	Chromating (Black)
Binding Head P-tite	4 x 8	Chromating
Binding Head S-tite	3 x 6	Chromating
Binding Head S-tite	3 x 8	Chromating
Binding Head S-tite	3 x 12	Chromating (Black)
Binding Head Tapping #1	3 x 6	Chromating (Black)
Binding Head Tapping #1	3 x 8	Chromating (Black)
Binding Head Tapping #1	3 x 10	Chromating (Black)
Binding Head Tapping #1	3 x 16	Chromating
Binding Head Tapping #1	4 x 30	Chromating
Pan Head Machine Screw w/Washer	M3 x 6	Chromating, Spring + Plain
Pan Head Machine Screw w/Washer	M5 x 20	Chromating, Spring + Plain
Pan Head Machine Screw w/Washer	M3 X 10	Chromating, Spring + Plain
Truss Head Machine Screw	M4 x 12	Chromating
Truss Head Machine Screw	M4 x 20	Chromating
Truss Head S-tite	4 x 10	Chromating
Truss Head Tapping #1	4 x 10	Chromating
Truss Head Tapping #1	4 x 12	Chromating
Truss Head Tapping #1	4 x 14	Chromating (Black)
Truss Head Tapping #1	4 x 20	Chromating (Black)
Volume Nut	M12	Chromating (Black or Yellow)
Plain Washer	M3	Chromating (Black or Yellow)
Staple	W=4, L=25	
Pin Staple	L=30	

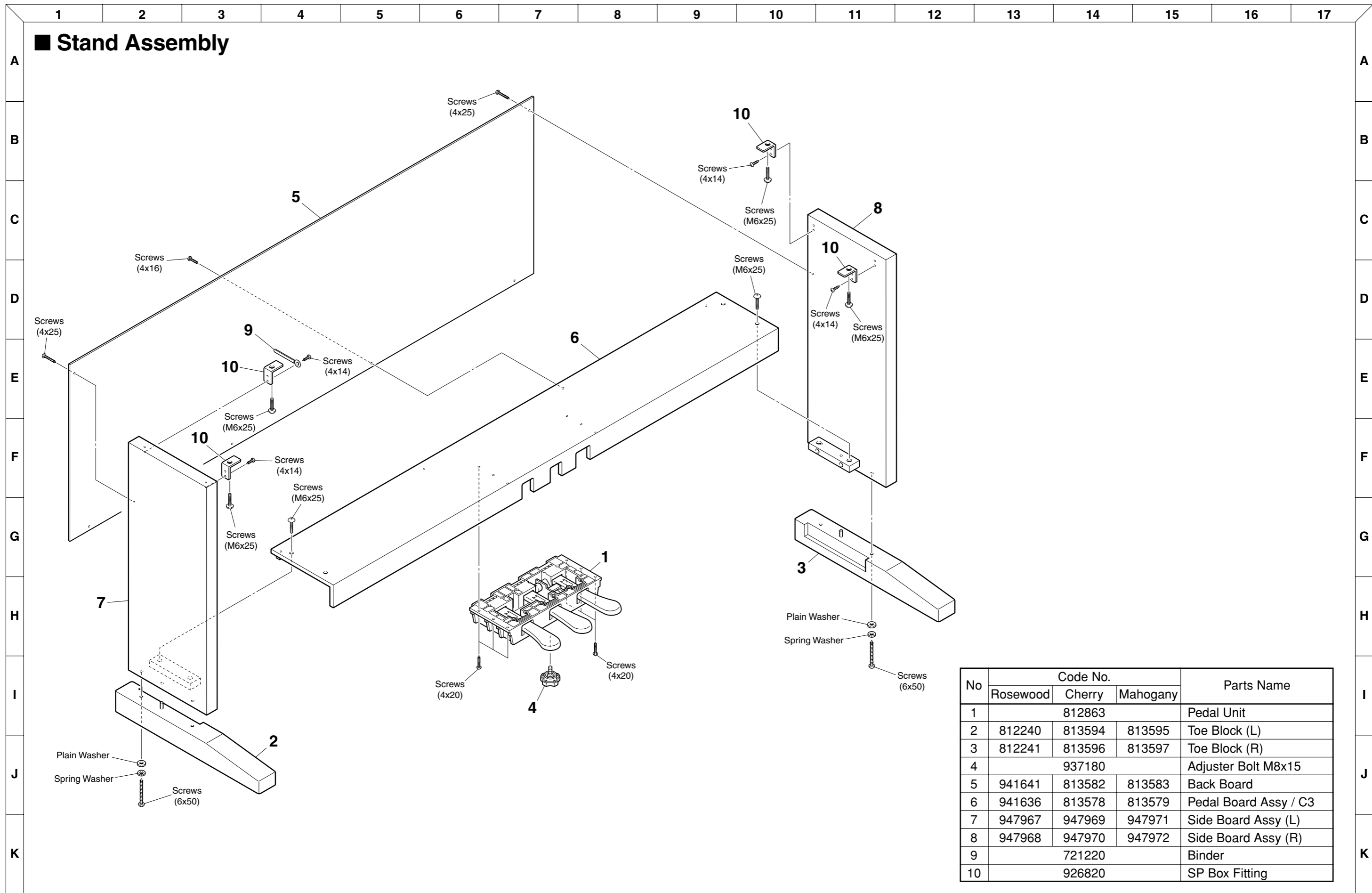
+Binding Head Tapping			
B-Tite	P-Tite	S-Tite	Tapping #1
			
+Truss Head			+Pan Head Machine with washer
Tapping #1	S-Tite	Machine	
			

Case Assembly



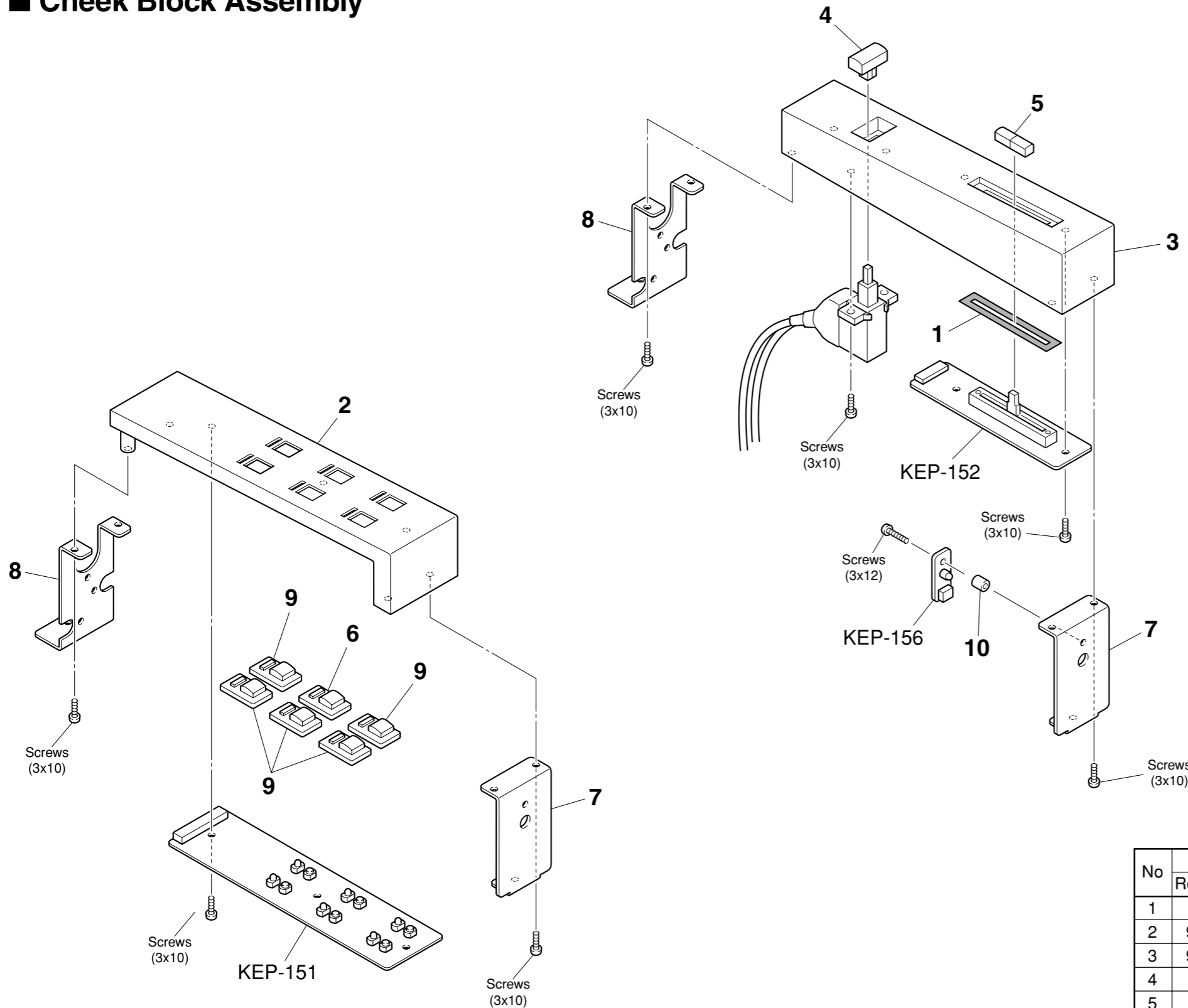
No	Code No.			Parts Name
	Rosewood	Cherry	Mahogany	
1	272657	272658	272659	Case Assy
2		813835		KAWAI sticker
3		947946		Key Cover Rack (Left)
4		947947		Key Cover Rack (Right)
5		787785		LED Cap
6		947700		Head Phone Hook
7	947961	947962	947963	Key Stop Rail
8		934155		Speaker Net
9		926675		Stand Hook (Left)
10		926680		Stand Hook (Right)
11		940685		Angle
12		944755		Top Board Fitting
13		947937		Key Stop Rail fitting
14		721220		Binder
15		813446		Speaker Unit
16		814688		Transformer

Stand Assembly



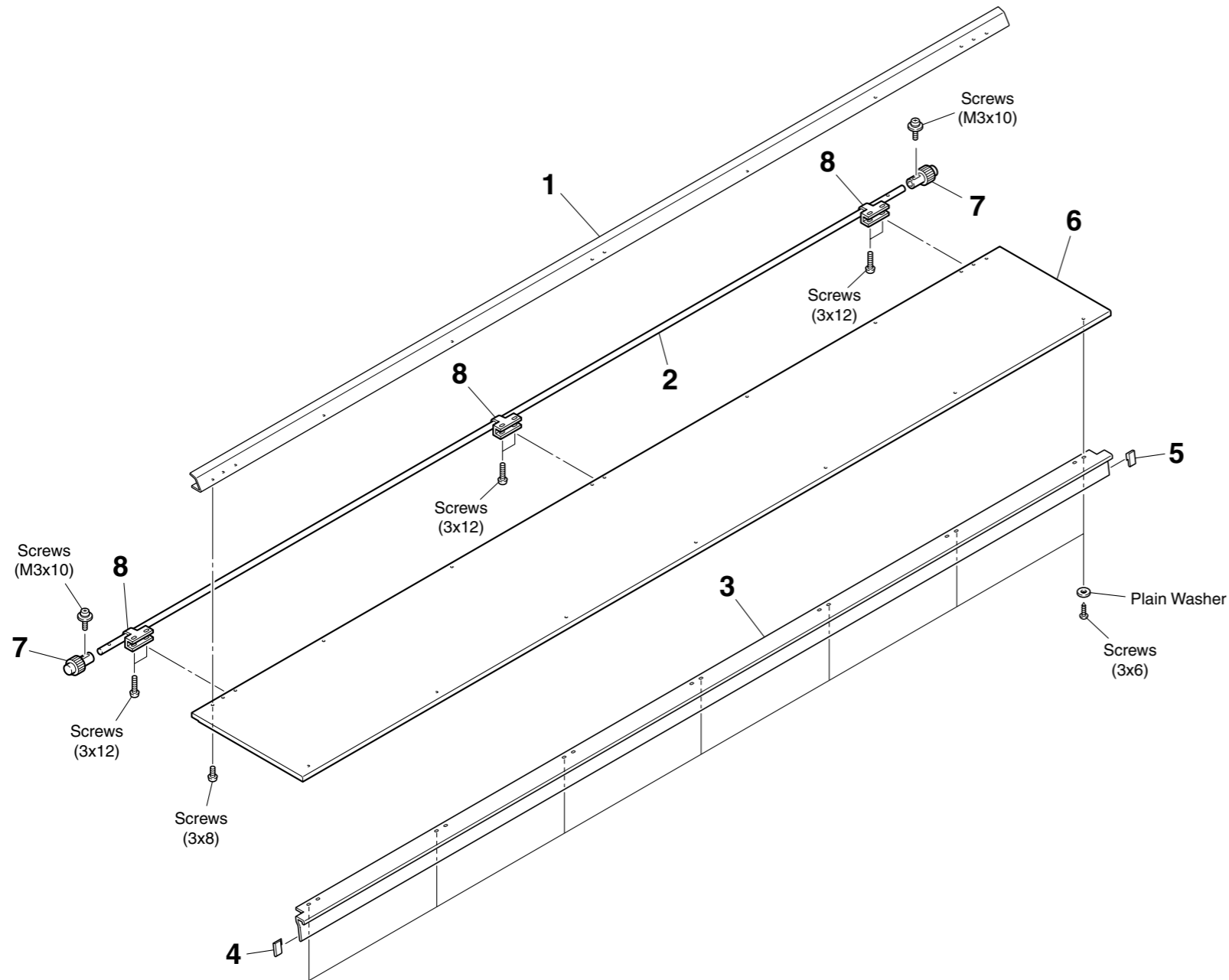
No	Code No.			Parts Name
	Rosewood	Cherry	Mahogany	
1		812863		Pedal Unit
2	812240	813594	813595	Toe Block (L)
3	812241	813596	813597	Toe Block (R)
4		937180		Adjuster Bolt M8x15
5	941641	813582	813583	Back Board
6	941636	813578	813579	Pedal Board Assy / C3
7	947967	947969	947971	Side Board Assy (L)
8	947968	947970	947972	Side Board Assy (R)
9		721220		Binder
10		926820		SP Box Fitting

■ Cheek Block Assembly

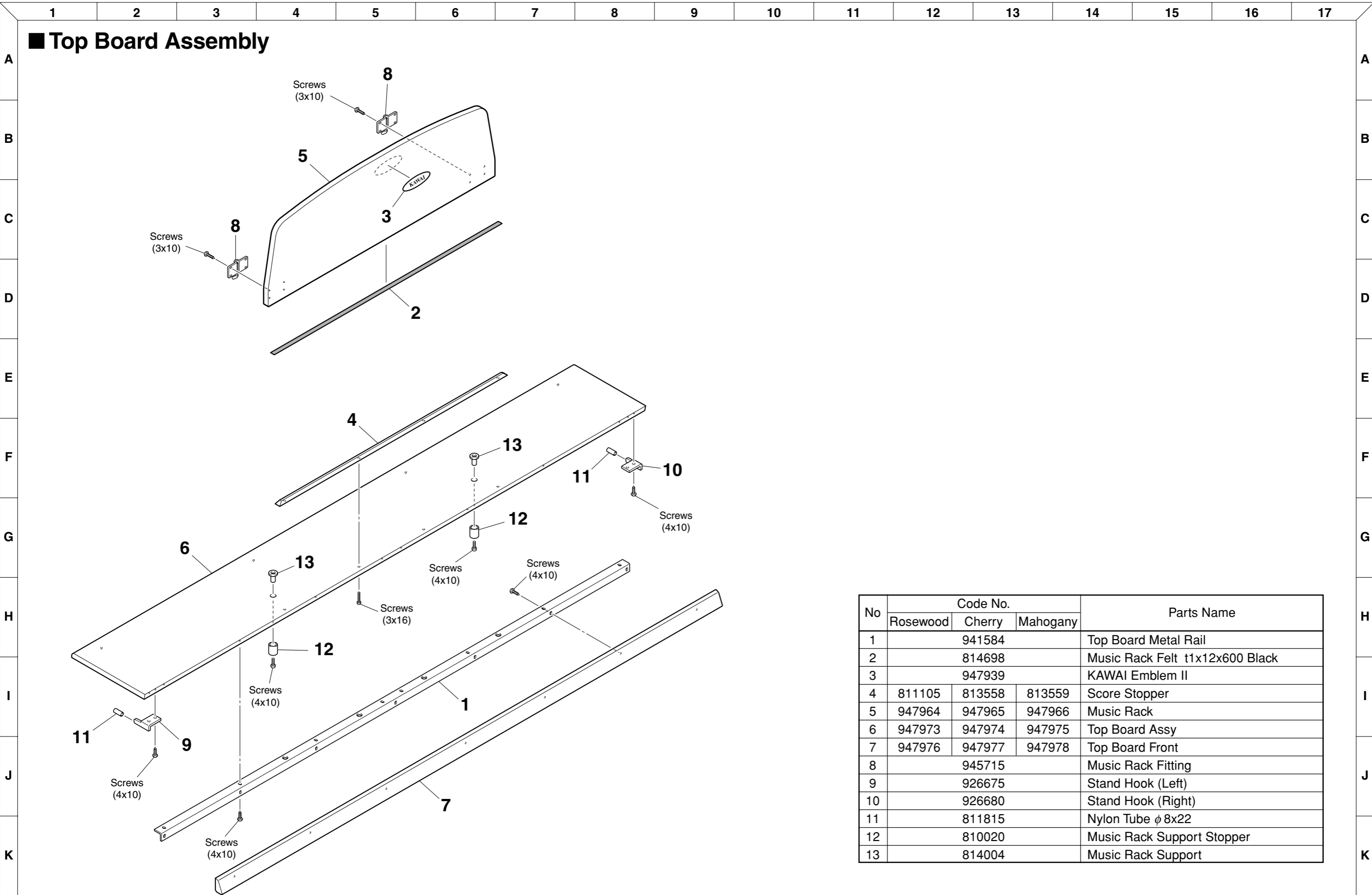


No	Code No.			Parts Name
	Rosewood	Cherry	Mahogany	
1		811034		Slide Volume Cover Cloth HN604B 9x52
2	947940	947942	947944	Cheek Block (L)
3	947941	947943	947945	Cheek Block (R)
4		810031		Power SW Key Top BLK
5		811184		Slide Vol. Knob
6		813210		Key Top & Guide (Red)
7		947929		Cheek Block Fitting (Front)
8		947930		Cheek Block Fitting (Rear)
9		813209		Key Top & Guide (Black)
10		812259		LED PCB Spacer

■ Key Cover Assembly



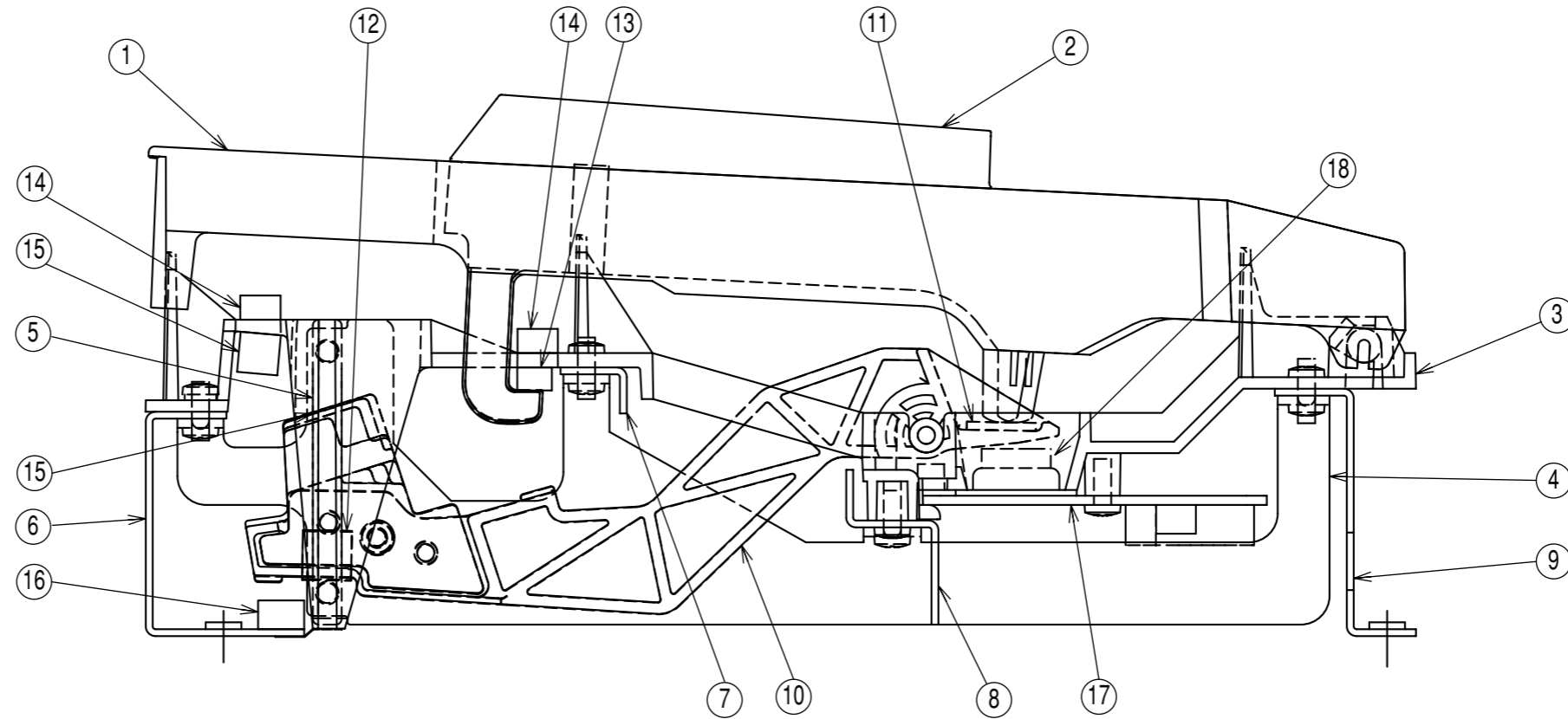
No	Code No.			Parts Name
	Rosewood	Cherry	Mahogany	
1	947931	947932	947933	Key Cover Back Angle
2		941605		Key Cover Shaft
3	947934	947935	947934	Key Cover Handle
4		812601		Key Cover Edge (Left)
5		812697		Key Cover Edge (Right)
6	947955	947956	947957	Key Cover
7		811290		Key Cover Pinion
8		811210		Key Cover Holder Black



Top Board Assembly

No	Code No.			Parts Name
	Rosewood	Cherry	Mahogany	
1		941584		Top Board Metal Rail
2		814698		Music Rack Felt t1x12x600 Black
3		947939		KAWAI Emblem II
4	811105	813558	813559	Score Stopper
5	947964	947965	947966	Music Rack
6	947973	947974	947975	Top Board Assy
7	947976	947977	947978	Top Board Front
8		945715		Music Rack Fitting
9		926675		Stand Hook (Left)
10		926680		Stand Hook (Right)
11		811815		Nylon Tube ϕ 8x22
12		810020		Music Rack Support Stopper
13		814004		Music Rack Support

Keyboard Unit (RG88 Type)



<Keyboard Parts List>

No.	Code No.	Parts Name	Description	Q'ty	No.	Code No.	Parts Name	Description	Q'ty
	814849	Complete Keyboard Unit		1	10	947907A	Hammer Assy (White Key Low)	Key No. 1- 15	9
1	814651	White Key (C)		7		947908A	Hammer Assy (White Key Mid-Low)	Key No. 16- 32	10
	814652	White Key (D)		7		947909A	Hammer Assy (White Key Mid-High)	Key No. 33- 63	18
	814653	White Key (E)		7		947910A	Hammer Assy (White Key High)	Key No. 64- 88	15
	814654	White Key (F)		7		947911A	Hammer Assy (Black Key Low)	Key No. 1- 15	6
	814655	White Key (G)		7		947912A	Hammer Assy (Black Key Mid-Low)	Key No. 16- 32	7
	814656	White Key (A)		7		947913A	Hammer Assy (Black Key Mid-High)	Key No. 33- 63	13
	814657	White Key (B)		8		947914A	Hammer Assy (Black Key High)	Key No. 64- 88	10
	814658	White Key (AA)	lowest A key	1	11	814664	Slip Tape		88
	814659	White Key (CC)	highest C key	1	12	814665	Guide Tape		88
2	814660	Black Key		36	13	813171	Key Stopper Cushion		1
	814661	Chassis (A-G#)		7	14	814666	Stopper Felt		2
3	814662	Chassis (A-C)		1	15	814667	Hammer Upper-Limit Cushion		1
	947901A	Rib Assy		8	16	814668	Hammer Lower-Limit Cushion		1
4	814650	Guide Spacer		16	17	237347	PWB, KKB-015 Assy		1
	947902	Front Rail		1		800760	IC (Decoder)	74HC138P	3
	947903	Stopper Rail		1		807339	Diode	1S2076A	176
	947904	Switch Rail		1	18	813175	Rubber Contact	F-E (12-cup)	8
5	947905	Back Rail		1					

Keyboard Disassembling Procedure

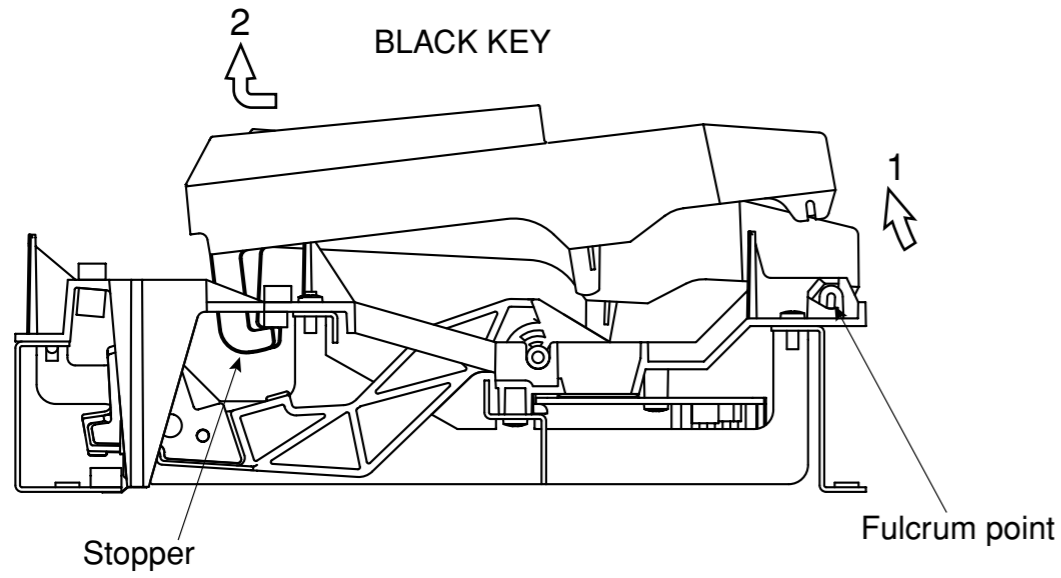
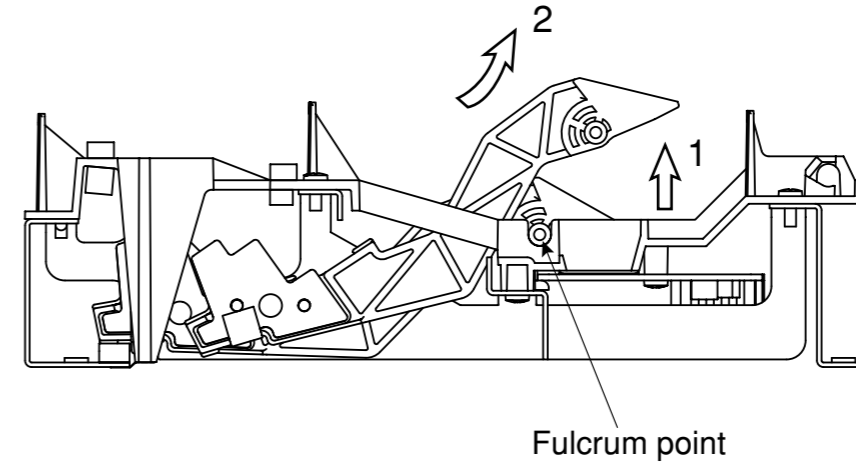
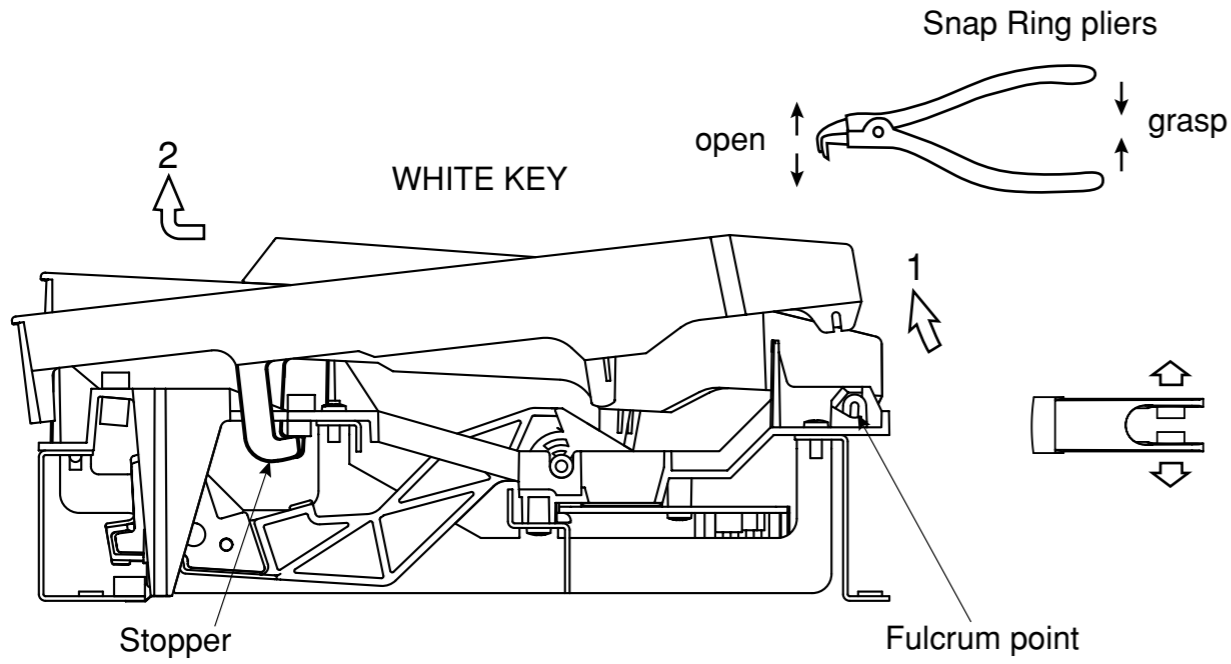
First, remove the keyboard fixing screws (10 pcs.) at the bottom of the piano and slide the Keyboard unit backward.

<How to take a key off>

1. Spread the key at fulcrum point and lift it up. (We recommend to use Snap 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.



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

■ Parts List

Electronic Parts

Code No.	Parts Name	Q'ty	Parts Number	Remarks	Model
237699	P.W.B. Assy	1	KEP-126 (10)	CPU	
237700	P.W.B. Assy	1	KEP-151-157 (2)	PANEL,VOLUME,AMP,HP,MIDI,LED,INLET	120V
237701	P.W.B. Assy	1	KEP-151-157 (3)	PANEL,VOLUME,AMP,HP,MIDI,LED,INLET	230V
237347	P.W.B. Assy	1	KKB-015 (1)	KEYBOARD	
814688	Transformer	1	KT-027		
813446	Speaker Unit	2	KS12-015		
812805	AC Cable	1	UC-505-J01	US,GE120	
809170	AC Cable	1	EC-511-E07	CD,GE230	
809171	AC Cable	1	SC-078-J02	AU	
813178	AC Cable	1	2P FOR BS 2.5M 13A	CG	
948020	PH Standard Cable	1	PH-02-0250-RED	LED-KEYBOARD	
948021	PH Standard Cable	1	PH-04-0200-YEL	MIDI-CPU	
947667	PH Standard Cable	1	PH-09-0150-WHT	AMP-CPU	
948022	PH Standard Cable	1	PH-11-0700-BRN	PANEL-CPU	
948023	PH Standard Cable	1	PH-15-0200-GRN	KEYBOARD-CPU	
947641	Power Switch Cable	1		SW-INLET	
948025	CPU Power Cable	1		AMP-CPU	
948026	Pedal Cable	1		PEDAL-CPU	
948027	Headphone Cable	1		HP-AMP	
948028	Speaker Cable	1		SPEAKER-AMP	
948029	Volume Cable	1		VOLUME-AMP	

KEP-126






Code No.	Parts Name	Q'ty	Parts Number	Parts Address
812215	CPU	1	MB91101APF-G	U2
814414	TG	1	K022-FP MB87L8040	U6
814435	Reset IC	1	BD5245 FVE-TR	U29
810368	Regulator	1	NJM78L05UA-TE1	U17
813047	Regulator	1	μPC2933AT-E1	U27
812219	OP-AMP	4	NJM4580E-T1	U13,14,18,22
237690	Flash ROM	1	KP438-F9FP(A29L800TV-70)	U3
814418	DRAM	1	IC41LV16257-35T-EL	U4
814416	SRAM	1	UT62L2568LS-70LL/UT62L2568LS-70LLI	U9
814690	ROM	1	KP437-MCFW(MR27V6402G-xxxTN)	U28
814074	DAC	1	AK4393VF-E2	U15
812217	LOGIC	2	TC74HCT7007AF(TP1)	U23,25
804056	LOGIC	1	HD74HC245FPEL	U24
812958	X'tal Oscillator	1	DSO751SV 33.8688MHz	X2
812722	X'tal Resonator	1	SMD-49 12.5MHz / CX-49G 12.5MHz	X1
813358	Chip Bead	34	BLM18AG601SN1D	EM1,3,5,8,9,10,13,14,16, 17,19,22,32,33,34,40,41, 42,43,44,45,46,47,48,49, 50,51,52,53,54, R16,17,92,93

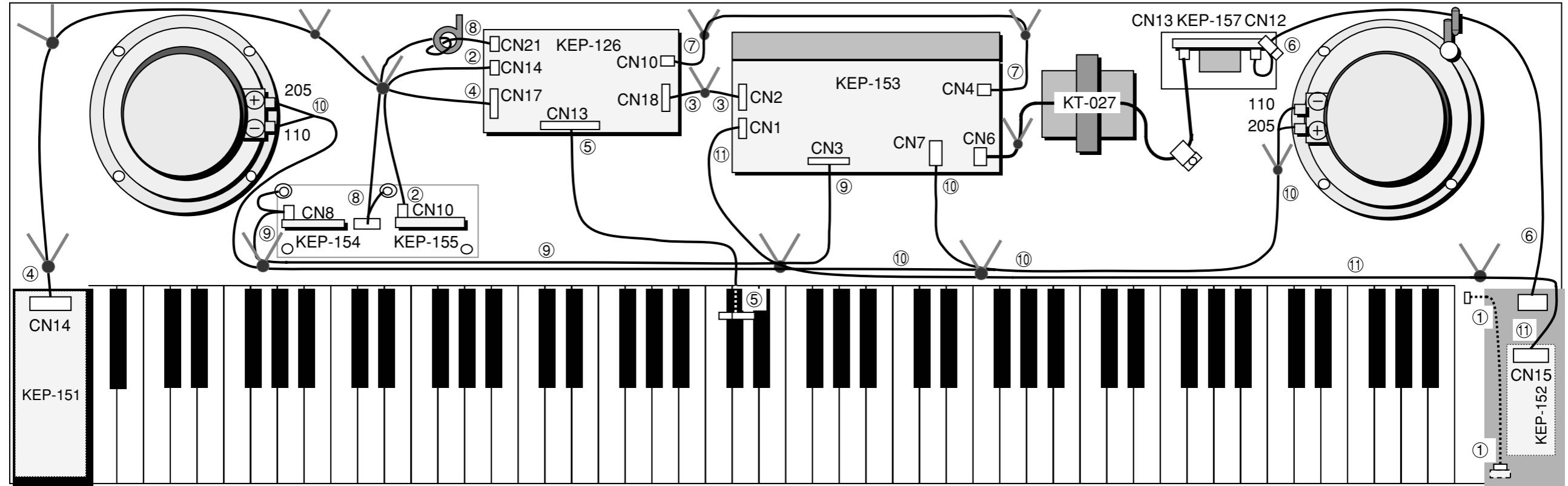
KEP-151~157

Code No.	Parts Name	Q'ty	Parts Number	Parts Address	Model
	KEP-151(PANEL)				
808457	LOGIC	1	HD74HC595P	U8	
813111	LED	6	EL3105VRT/TR1-11(A)	LED2,3,4,5,6,7	
800625	Diode	6	1SS133T-77	D9,10,11,12,13,14	
808345	Switch	6	KSH0612AT / EVQ21305R	SW1,2,3,4,5,6	
	KEP-152(VOLUME)				
804978	Slide Volume	1	RS30112AC00QA	VR1	
	KEP-153(AMP)				
812950	AMP	1	TA8221AH	U5	
812222	Headphone AMP	1	LA6517	U3	
813252	Regulator	1	PQ05RF21	U4	
814530	Reset IC	2	PST600D	U2,6	
812125	Transistor	2	2SC3792	Q4,5	
812527	Transistor	4	2SC5395-T12-E	Q2,8,10,11	
808973	Transistor	1	DTA114ESATP	Q1	
810851	Transistor	2	DTC143ESATP	Q3,9	
812961	IC Protector	1	ICP-N10T104	F1	
808952	Bridge Diode	1	DBF40C	D7	
800625	Diode	2	1SS133T-77	D1,2,	
807082	Zener Diode	2	HZS6C3TD	D3,5	
805989	Zener Diode	1	HZS4ALL	D4	
811767	Retardant Resistor	1	ERDS1FJ101T/CPFS1/2CT26A101J	R28	
813000	Metal Film Resistor	1	RNM 1/4 C3 5601 F TP	R16	
800746	Metal Film Resistor	1	RNM 1/4 C3 1002 F TP	R17	
813823	Metal Film Resistor	4	MOSX 1/2 C T26 A 1R2 J	R46,47,48,49	
810861	Metal Film Resistor	1	MOSX 2 C L15A 2R7 J	R45	
809125	Film Capacitor	4	ECQ-V1H 104JL3	C39,40,41,42	
707333	Electrolytic Capacitor	1	TC04RSMG25VB1000M F50E1	C27	
811707	Electrolytic Capacitor	1	SMQ25VB10000M	C38	

Code No.	Parts Name	Q'ty	Parts Number	Parts Address	Model
	KEP-154(HP)				
812297	Retardant Resistor	4	CPFS1/2CT26A68RJ	R50,51,52,53	
805764	EMI Coil	4	SBT0160W	L1,2,3,4	230V
802576	Phone Jack	2	YKB21-5006/HTJ-064-04A	JA1,2	
	KEP-155(MIDI)				
806719	Photocoupler	1	PC900V	U7	
810851	Transistor	2	DTC143ESATP	Q12,13	
800625	Diode	1	1SS133T-77	D8	
811020	Surge Absorber	2	ERZVA5D220	C54,55	
808473	MIDI Jack	1	YKF51-5053/HDC-052-A-12	JA3	
	KEP-156(LED)				
813111	LED	1	EL3105VRT/TR1-11(A)	LED1	
	KEP-157(INLET)				
811711	High Voltage Capacitor	1	DE1E3KX472MB5BA01	C52	
814467	High Voltage Capacitor	1	ECQU3A104MG	C51	
811358	AC Inlet	1	HJC-028A/CCT9302-0201	AC1	120V
811191	AC Inlet	1	HJC-028/CCT9302-0101	AC1	230V
812416	Fuse	1	234 02.5M	F2	120V
814333	Fuse	1	218.630M	F2	230V

Cable Wiring Specification

	Cable Tie(Inshlock Tie) (PTL1M)	1		Nylon Clamp (NK-6N)	1
	Binder (EFB-0692)	1		Ferrite Core (KR06TB251512B1)	1
	Vinyl Binder(small) (L=100)	13			



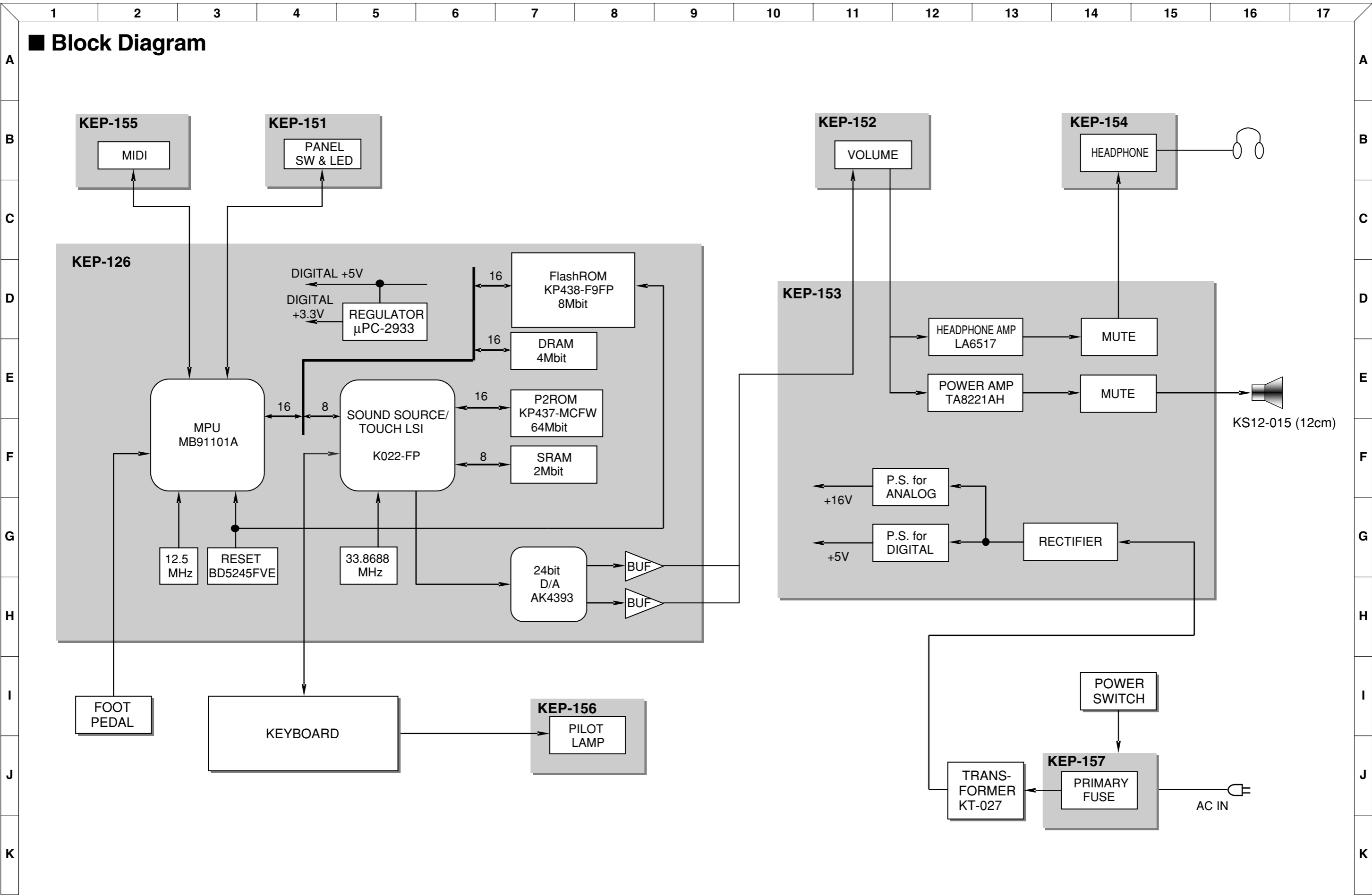
Cable Parts List

No.	Code No.	Name	Termination 1	Termination 2	Q'ty
1	948020	PH-02-0250-RED	KEP-156-CN9	Keyboard(RG88)	1
2	948021	PH-04-0200-YEL	KEP-126-CN14	KEP-155-CN10	1
3	947667	PH-09-0150-WHT	KEP-126-CN18	KEP-153-CN2	1
4	948022	PH-11-0700-BRN	KEP-126-CN17	KEP-151-CN14	1
5	948023	PH-15-0200-GRN	KEP-126-CN13	Keyboard(RG88)	1
6	—	Power Switch Cable	KEP-157-CN12	Switch	1
7	948025	CPU Power Cable	KEP-126-CN10	KEP-153-CN4	1
8	—	Pedal Cable	KEP-126-CN21	Pedal(JACK PANEL)	1
9	948027	Headphone Cable	KEP-153-CN3	KEP-154-CN8	1
10	948028	Speaker Cable	KEP-153-CN7	Speaker(L,R)	1
11	948029	Volume Cable	KEP-152-CN15	KEP-153-CN1	1

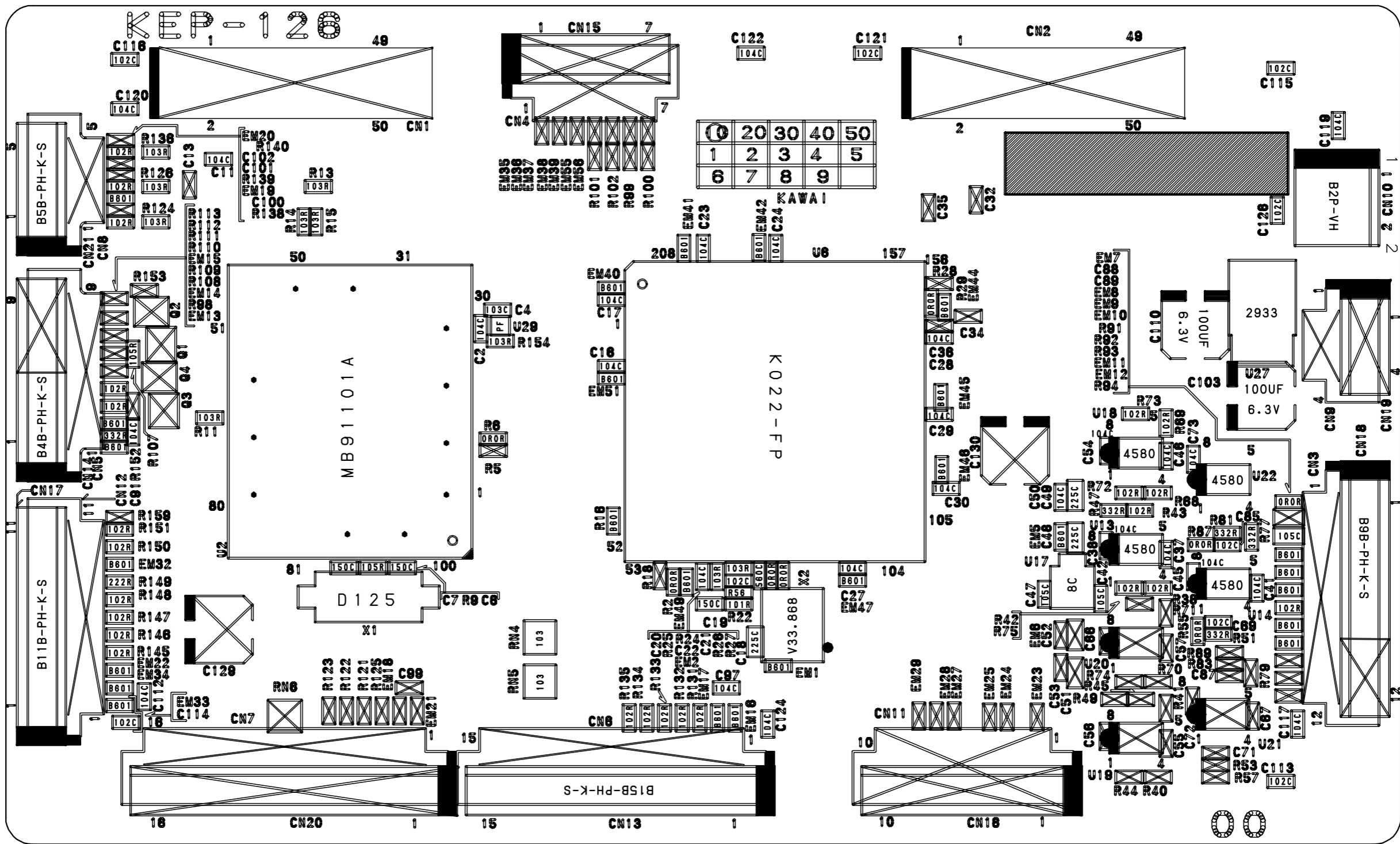
AC Cable List

Description	Code No.	Q'ty
for 120V area	812805	1
for 230V area	809170	1
for Australia	809171	1
for England	813178	1

KEP-156 CN9

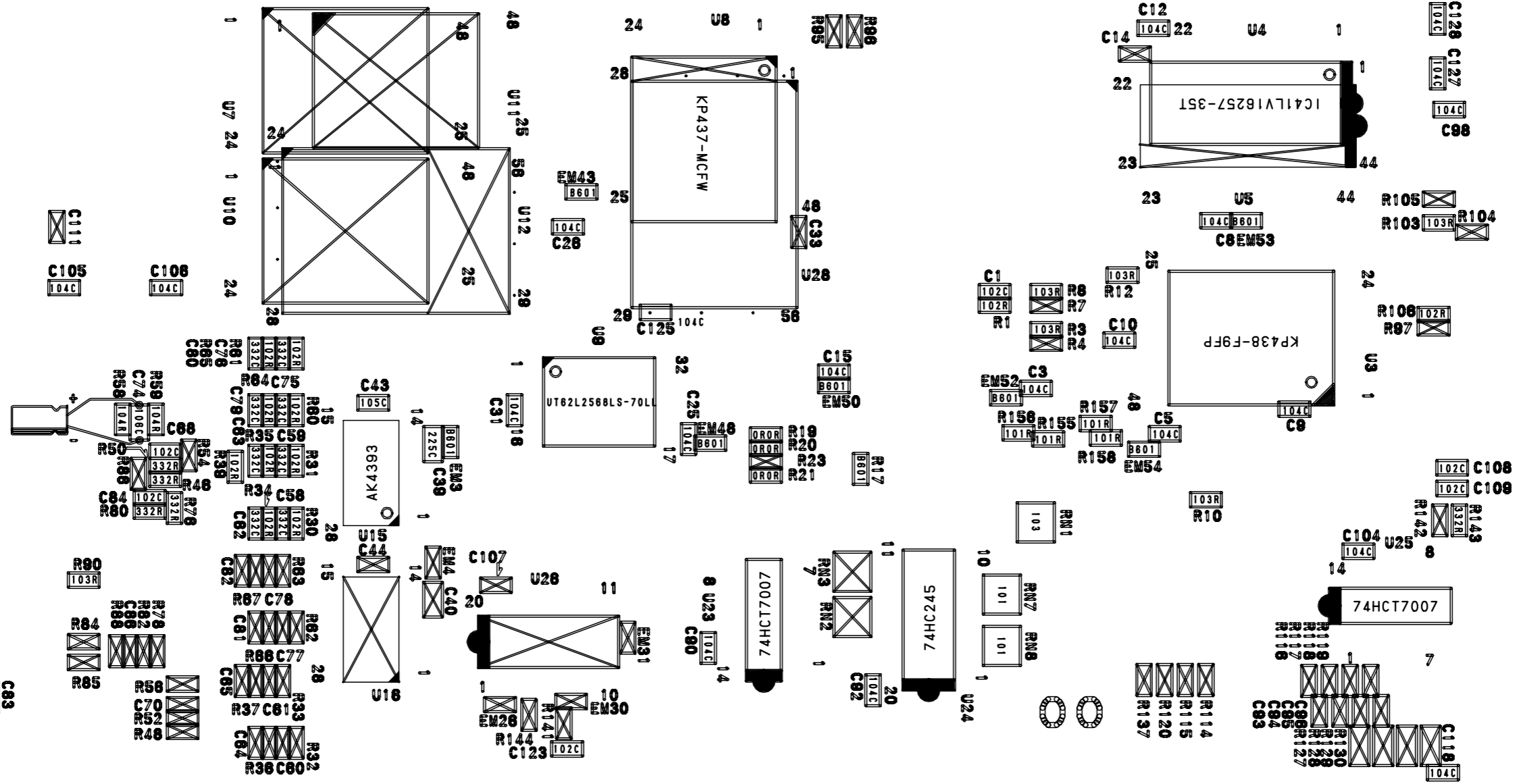


P.W.B. KEP-126 (10) Assembly [Top]



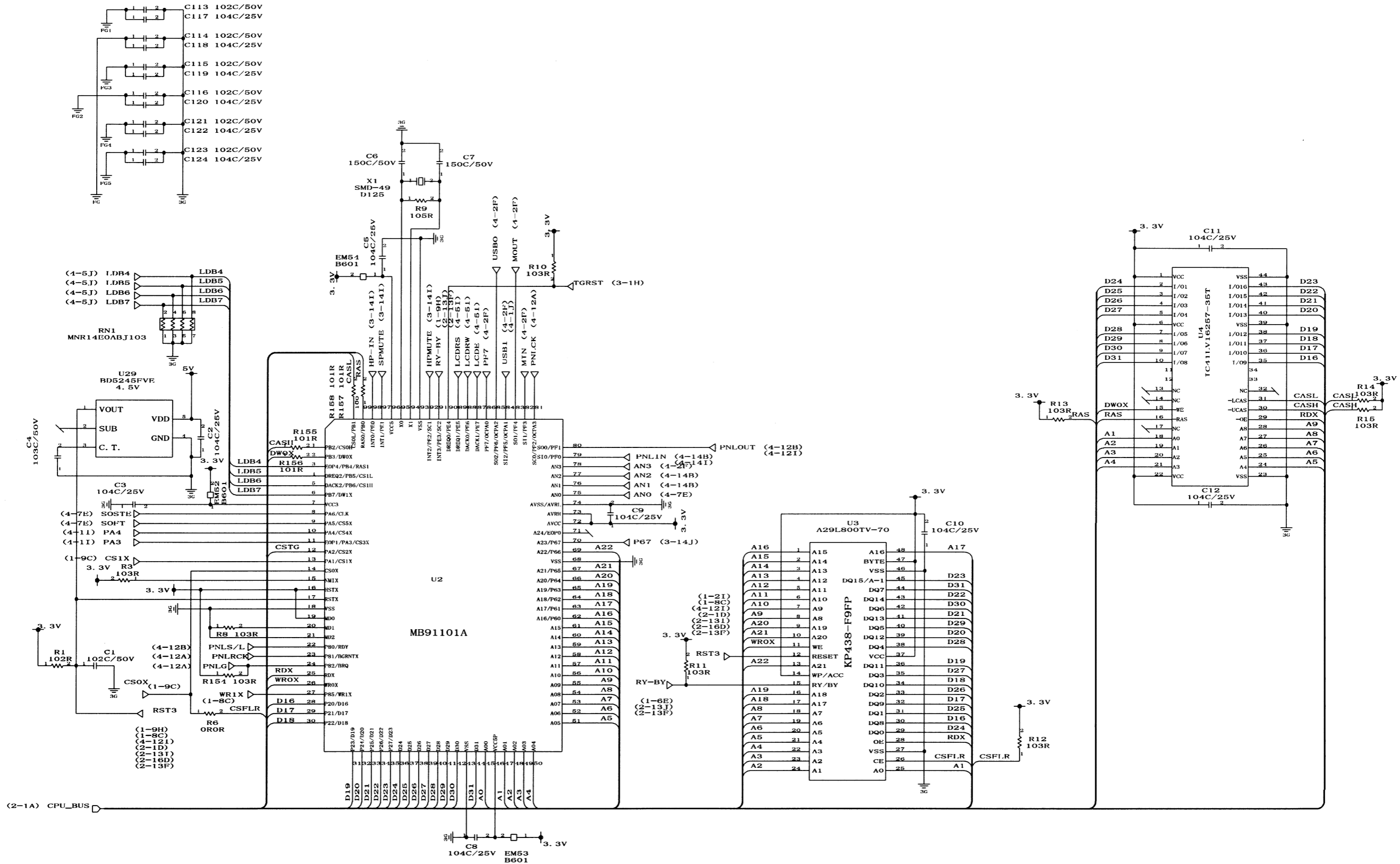
■ P.W.B. KEP-126 (10) Assembly [Back]

KEP-126
KAWAI

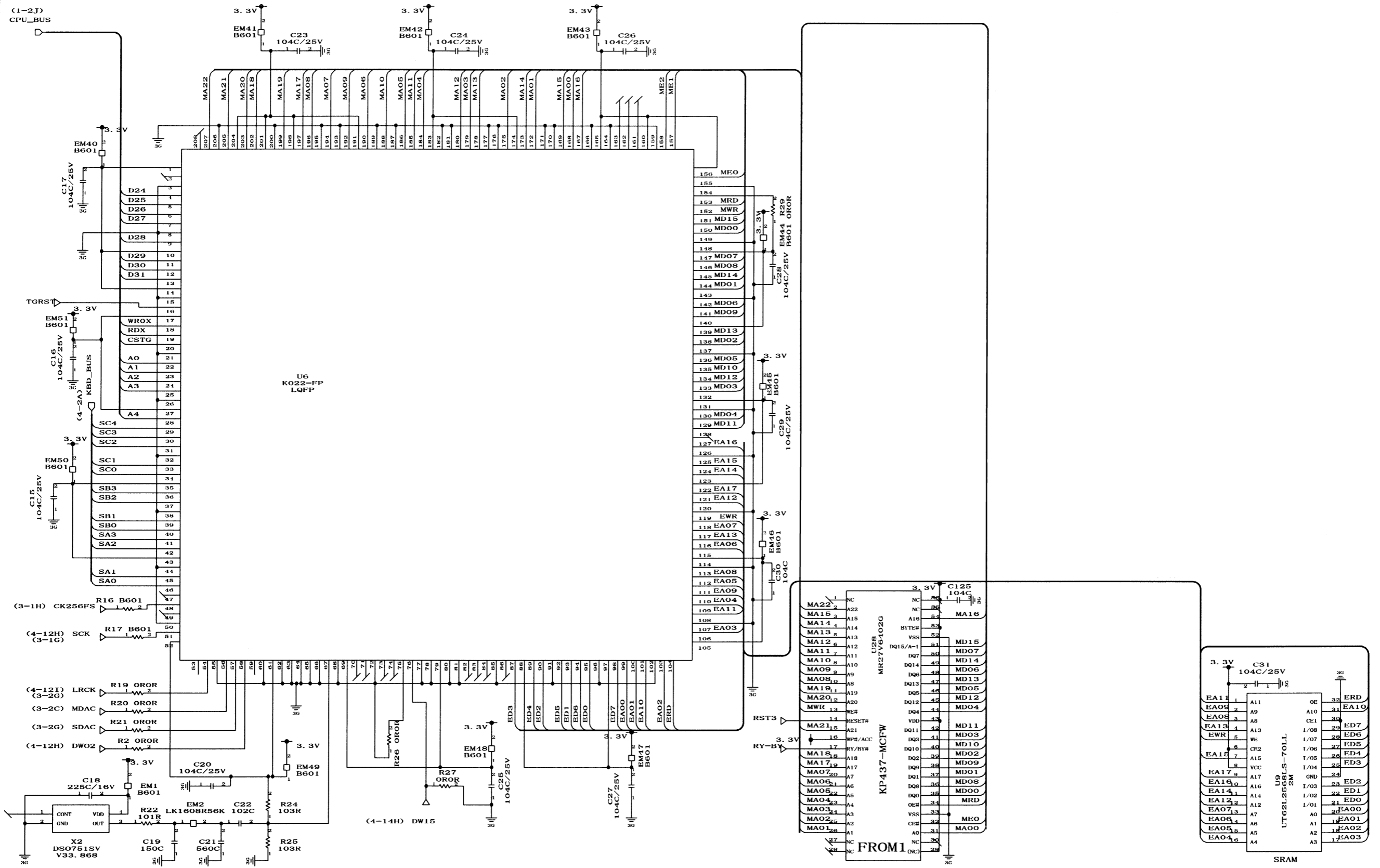


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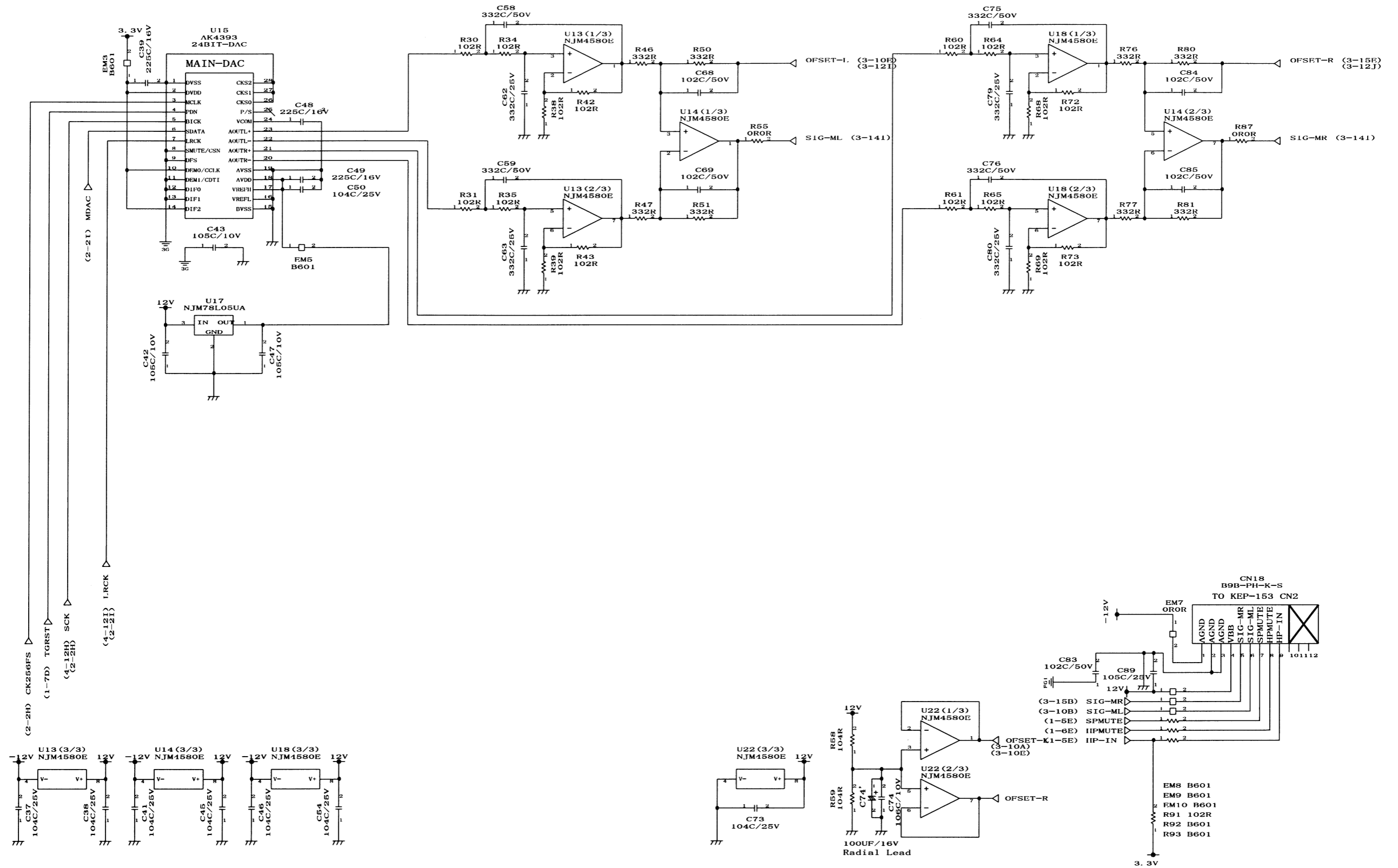
P.W.B. KEP-126 Circuit 1/4



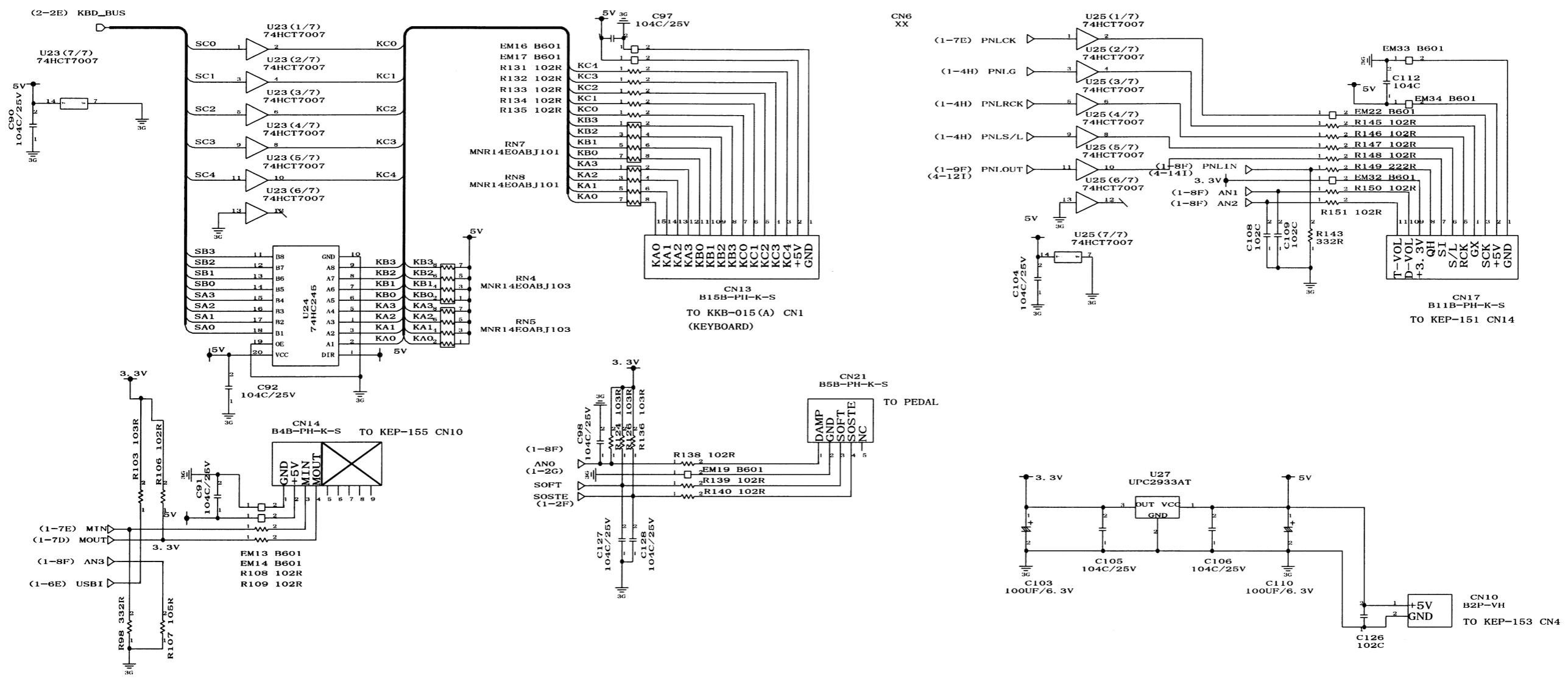
P.W.B. KEP-126 Circuit 2/4



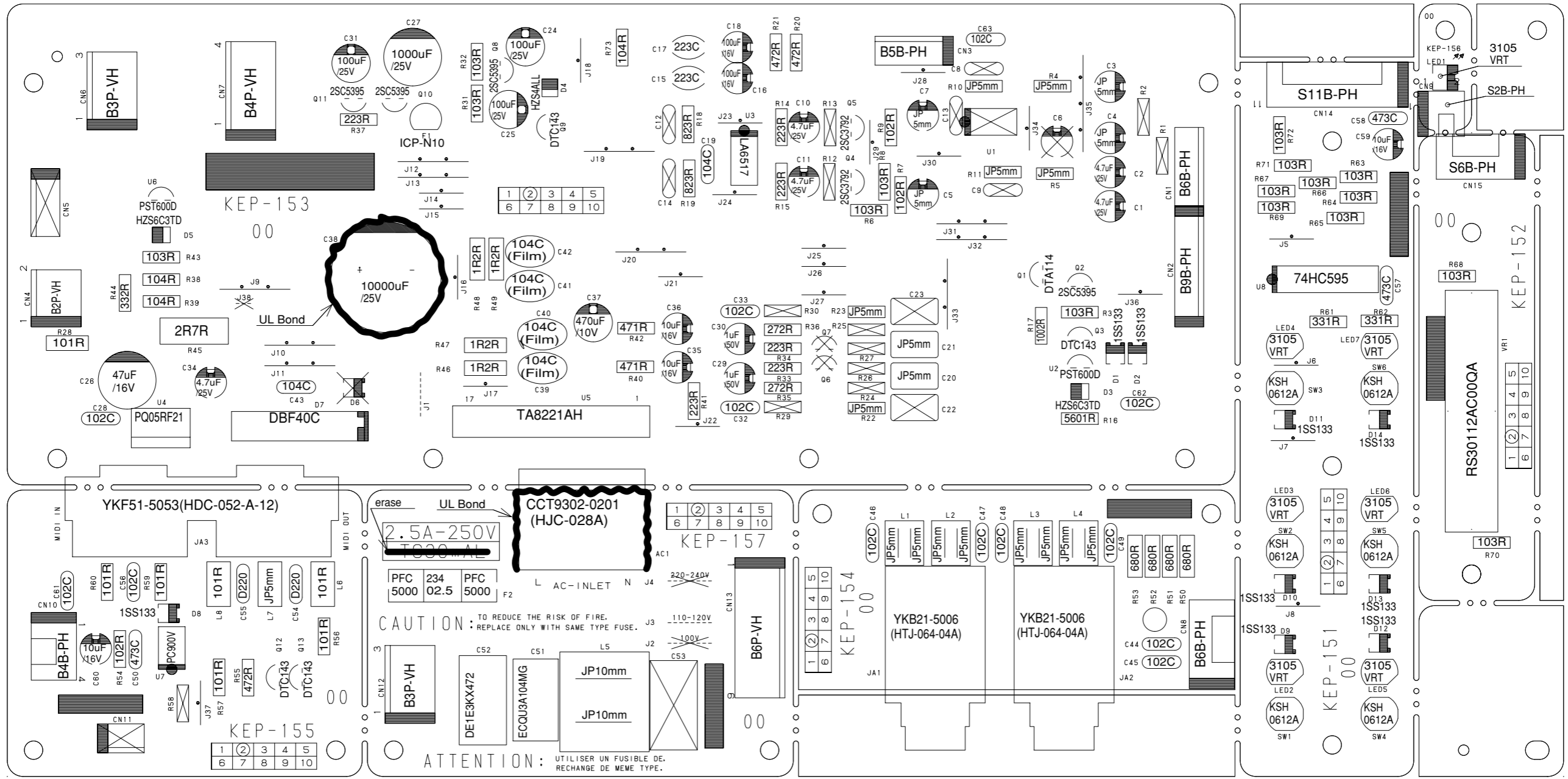
P.W.B. KEP-126 Circuit 3/4



P.W.B. KEP-126 Circuit 4/4



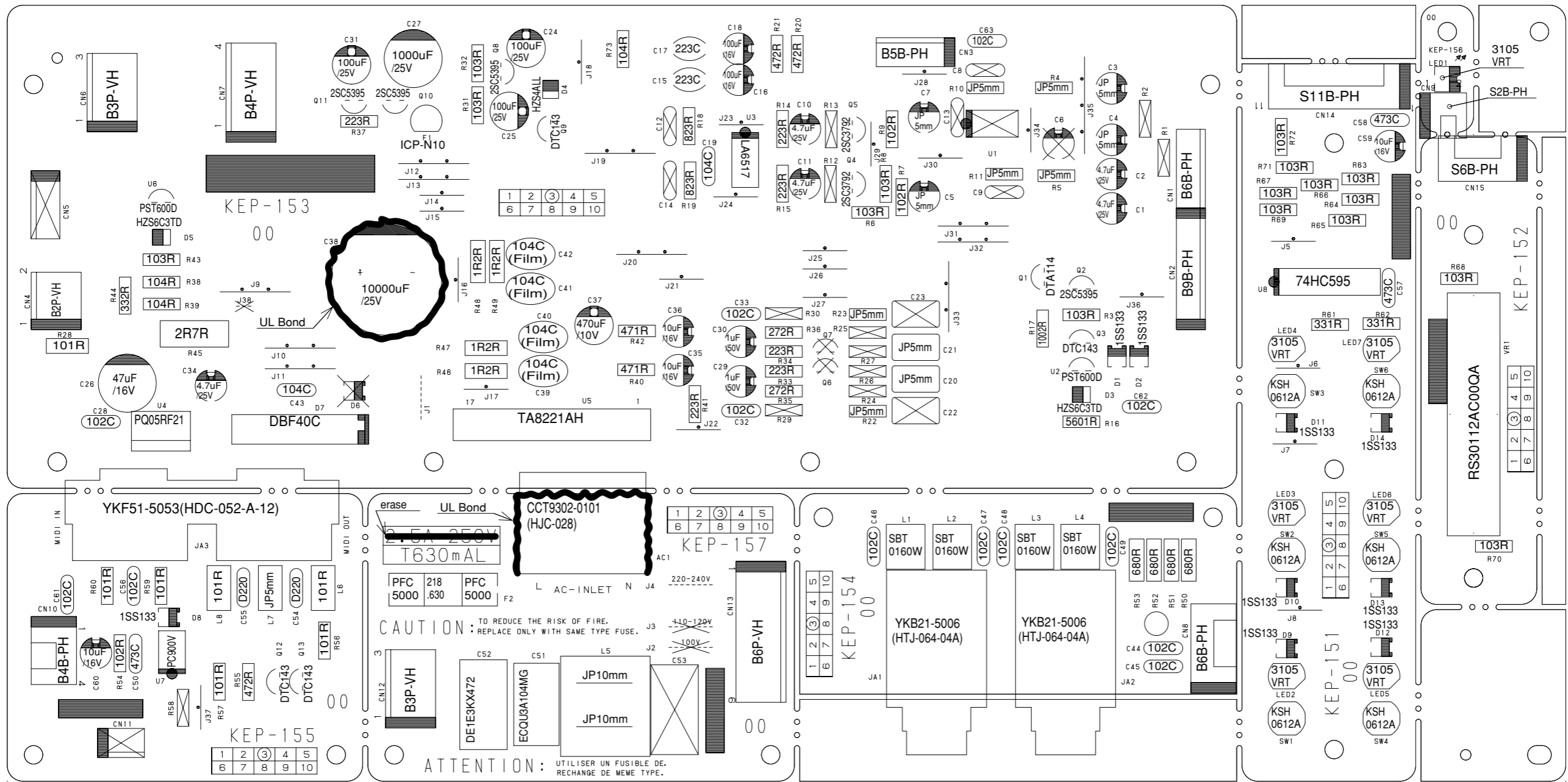
P.W.B. KEP-151- 157 (2) Assembly



C54,55 : Surge Absorber ERZVA5D220

SW1	SW2	SW3	SW4	SW5	SW6
METRO-NOME	PLAY/STOP	CONCERT MAGIC	SOUND SELECT	REC	DEMO

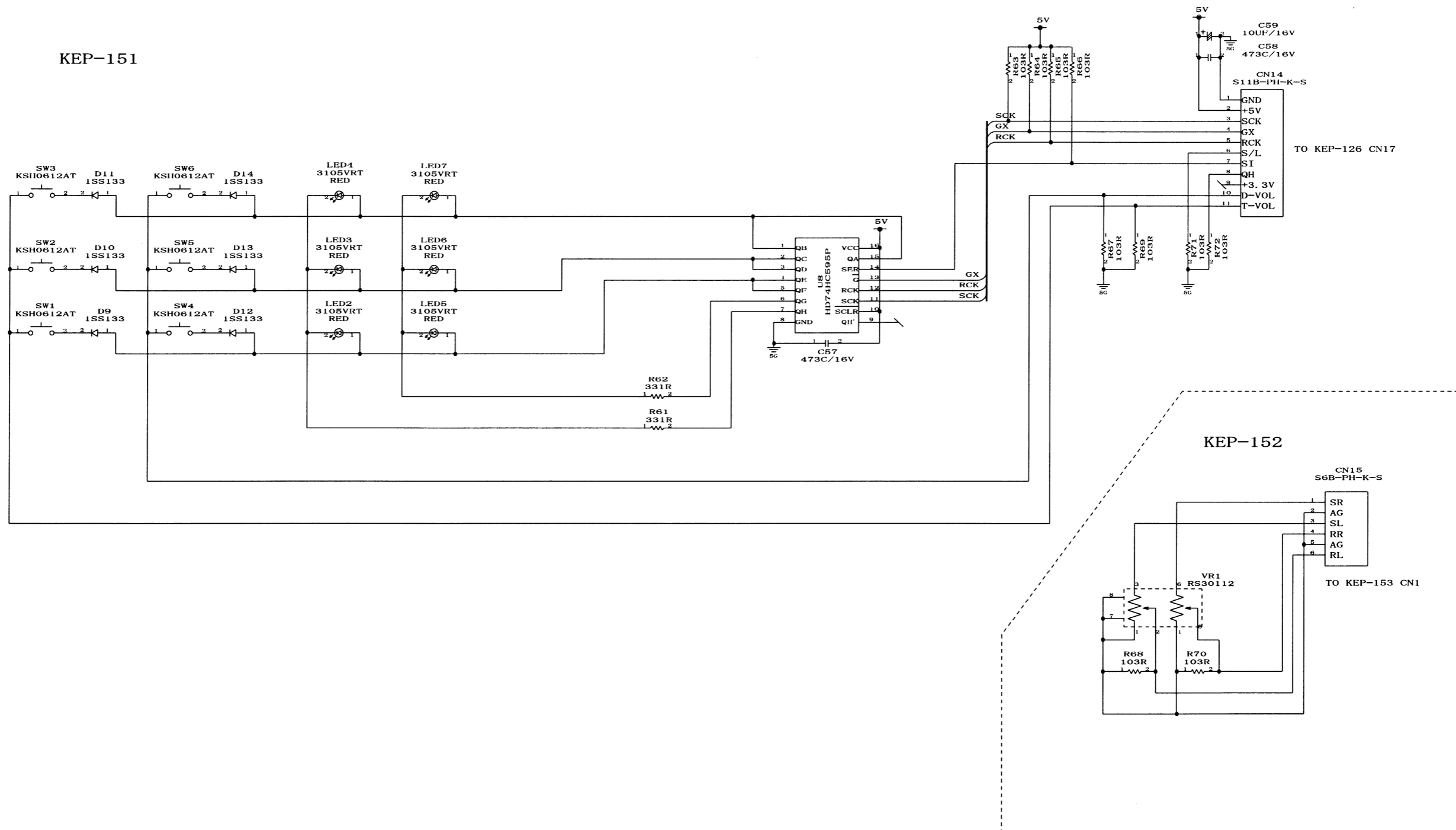
■ P.W.B. KEP-151- 157 (3) Assembly



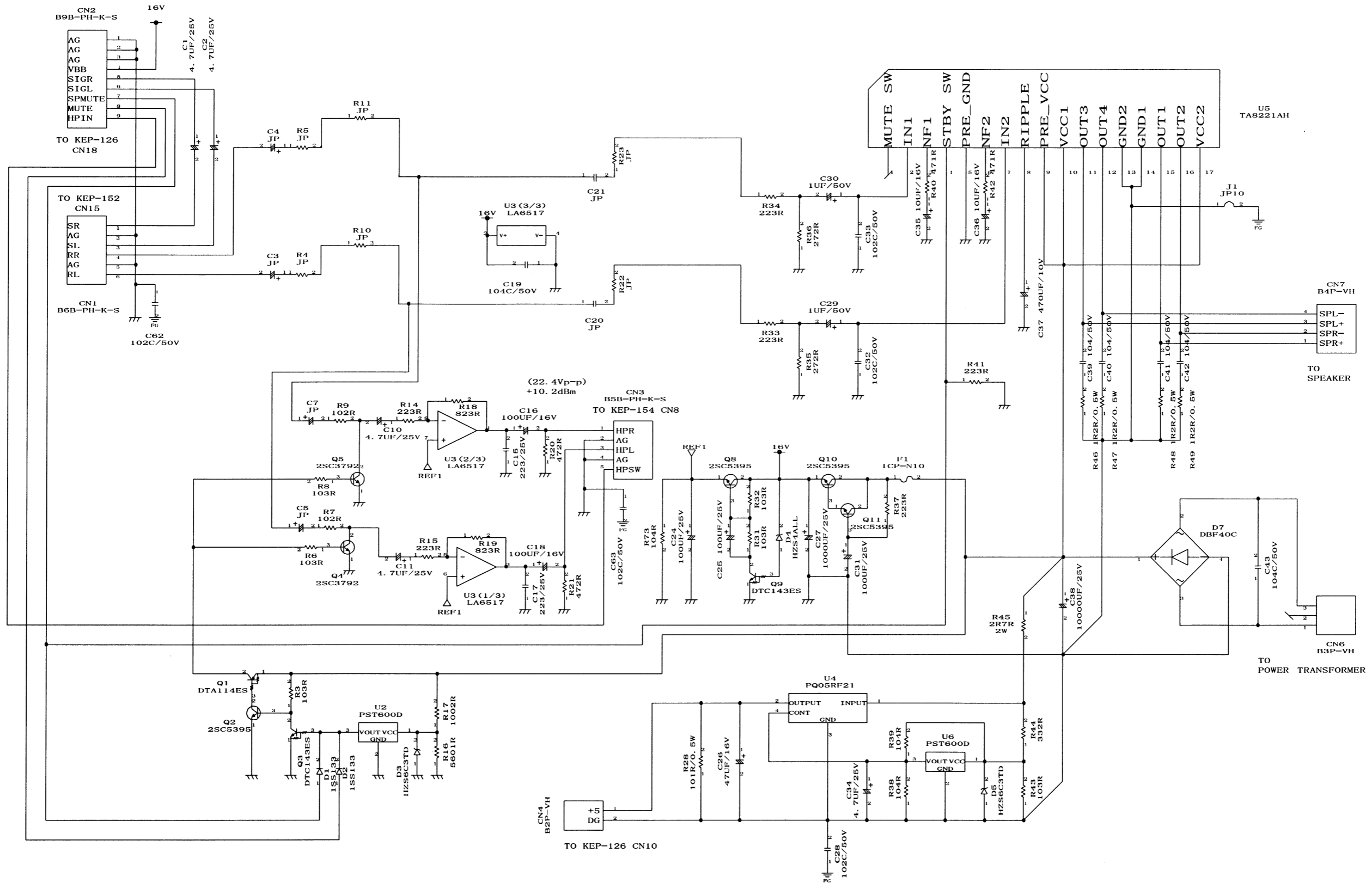
C54,55 : Surge Absorber ERZVA5D220

SW1	SW2	SW3	SW4	SW5	SW6
METRO-NOME	PLAY/STOP	CONCERT MAGIC	SOUND SELECT	REC	DEMO

P.W.B. KEP-151 – 157 Circuit 1/3

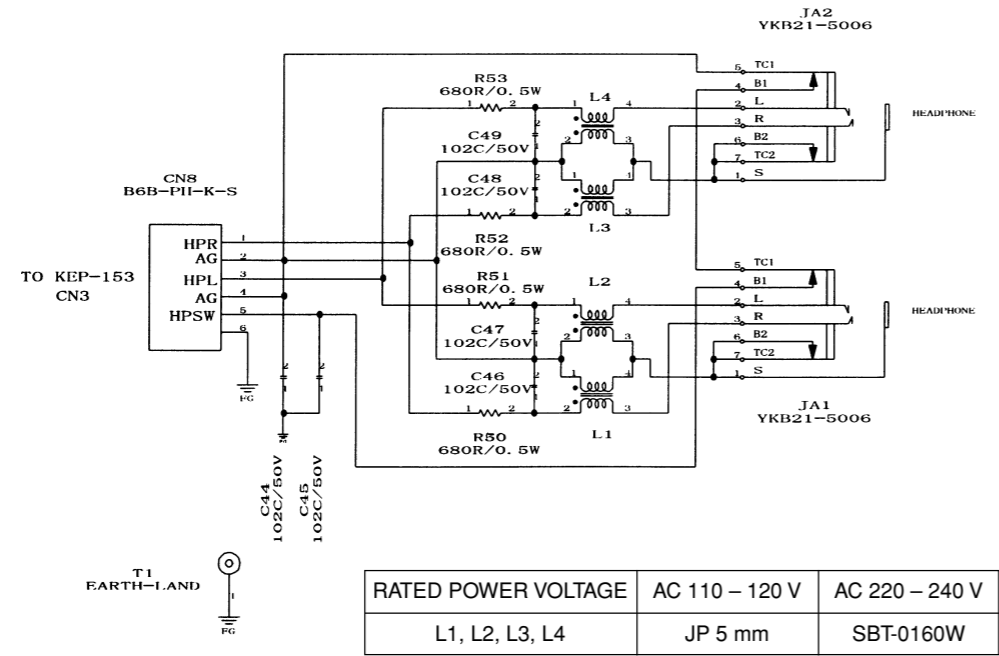


■ P.W.B. KEP-151 – 157 Circuit 2/3

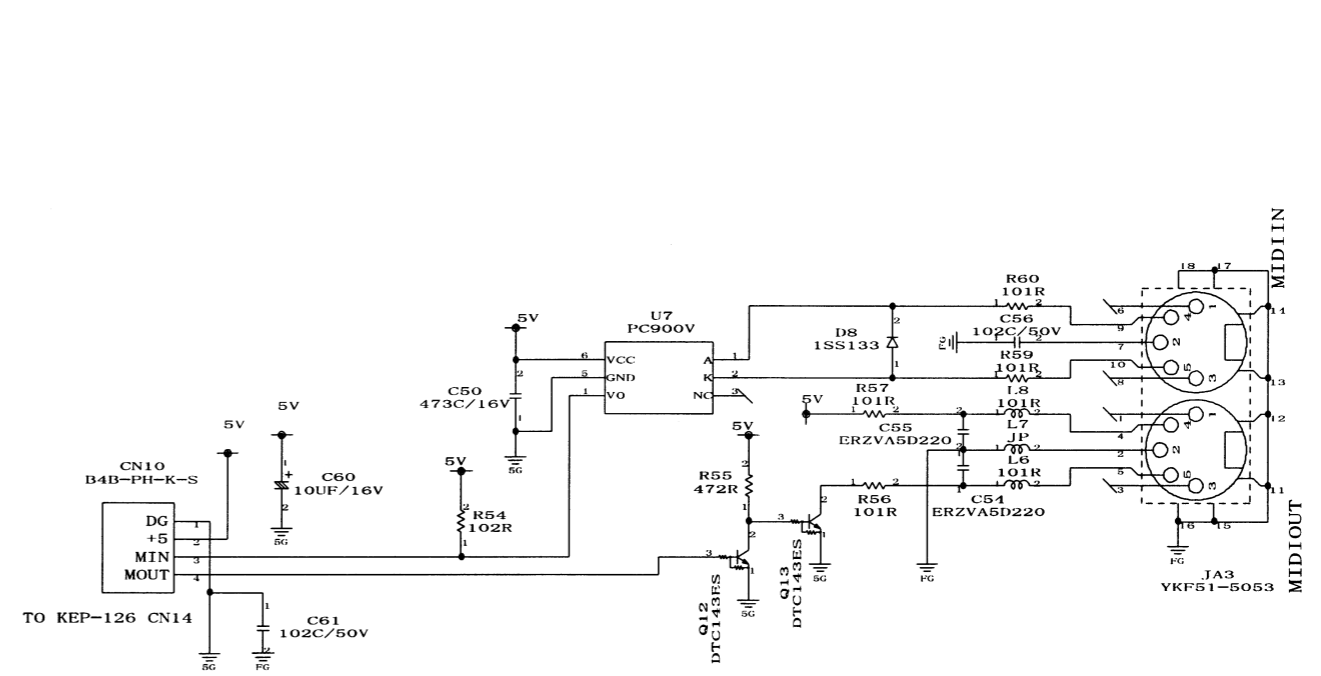


P.W.B. KEP-151 – 157 Circuit 3/3

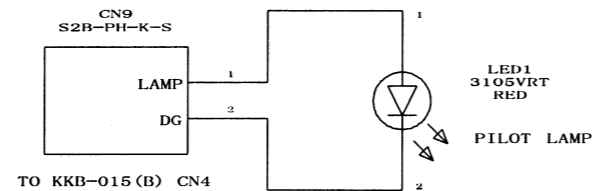
KEP-154



KEP-155

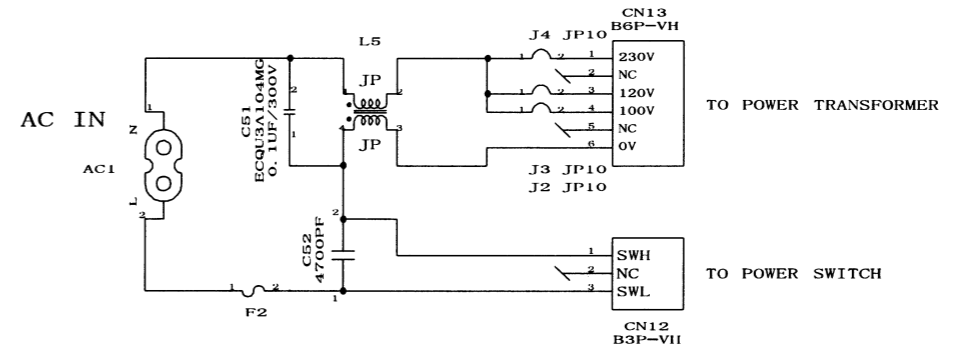


KEP-156

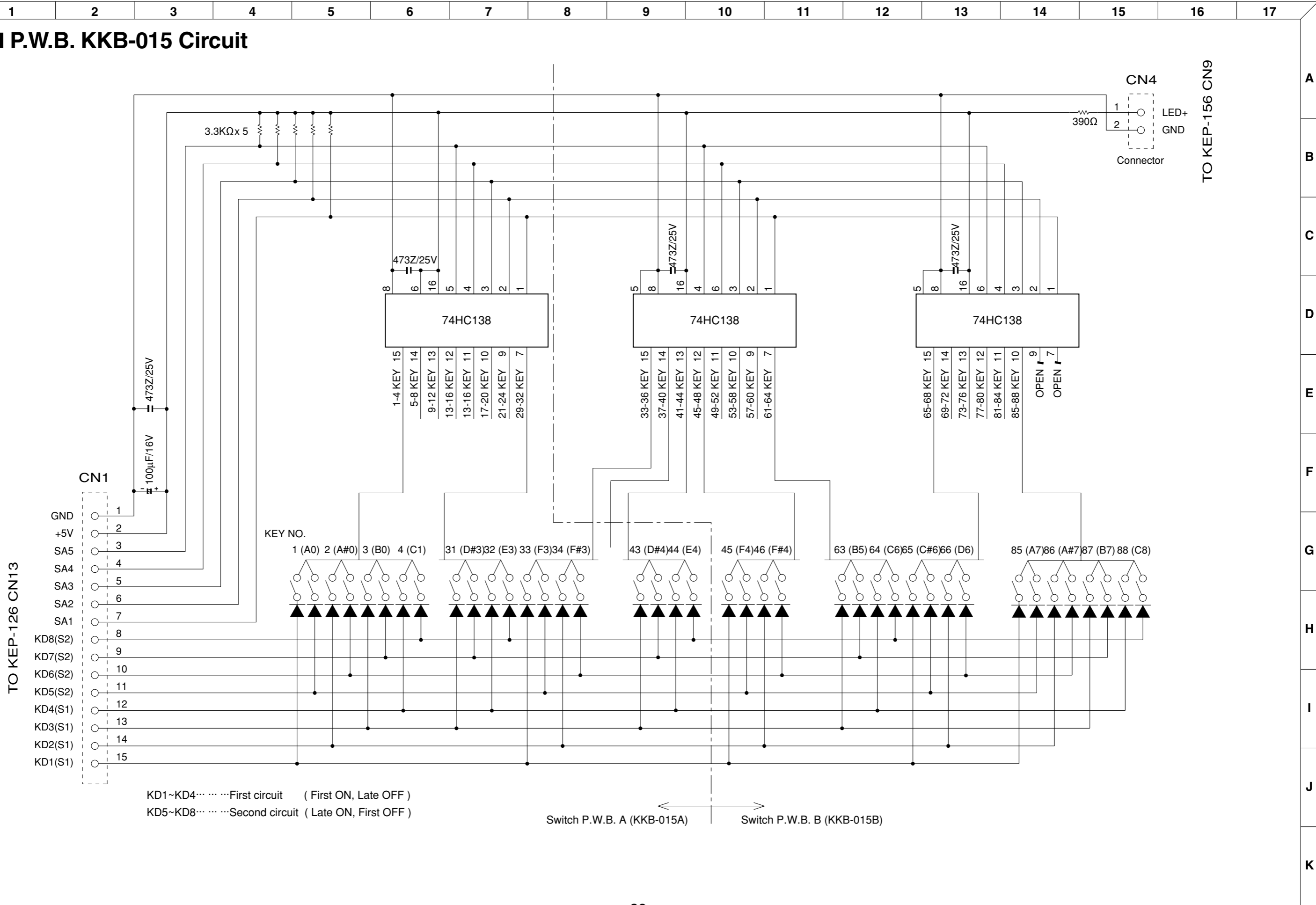


KEP-157

RATED POWER VOLTAGE	AC 110 – 120 V	AC 220 – 240 V
JUMPER ADDRESS	J3	J4
FUSE TYPE	234 02.5 (2.5 A / 250 V)	218 .630 (630 mA / 250 V)
AC INLET	CCT9302-0201	CCT9302-0101



■ P.W.B. KKB-015 Circuit



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A	■ Key Switch Matrix																
B																	
C																	
D																	
E																	
F																	
G																	
H																	
I																	
J																	
K																	

KEY	NOTE	IC-PIN	S1	S2	KEY	NOTE	IC-PIN	S1	S2	KEY	NOTE	IC-PIN	S1	S2	KEY	NOTE	IC-PIN	S1	S2
1	A0	U1-15	KD1	KD5	25	A2	U1-9	KD1	KD5	49	A4	U2-11	KD1	KD5	73	A6	U3-13	KD1	KD5
2	A#0	U1-15	KD2	KD6	26	A#2	U1-9	KD2	KD6	50	A#4	U2-11	KD2	KD6	74	A#6	U3-13	KD2	KD6
3	B0	U1-15	KD3	KD7	27	B2	U1-9	KD3	KD7	51	B4	U2-11	KD3	KD7	75	B6	U3-13	KD3	KD7
4	C1	U1-15	KD4	KD8	28	C3	U1-9	KD4	KD8	52	C5	U2-11	KD4	KD8	76	C7	U3-13	KD4	KD8
5	C#1	U1-14	KD1	KD5	29	C#3	U1-7	KD1	KD5	53	C#5	U2-10	KD1	KD5	77	C#7	U3-12	KD1	KD5
6	D1	U1-14	KD2	KD6	30	D3	U1-7	KD2	KD6	54	D5	U2-10	KD2	KD6	78	D7	U3-12	KD2	KD6
7	D#1	U1-14	KD3	KD7	31	D#3	U1-7	KD3	KD7	55	D#5	U2-10	KD3	KD7	79	D#7	U3-12	KD3	KD7
8	E1	U1-14	KD4	KD8	32	E3	U1-7	KD4	KD8	56	E5	U2-10	KD4	KD8	80	E7	U3-12	KD4	KD8
9	F1	U1-13	KD1	KD5	33	F3	U2-15	KD1	KD5	57	F5	U2-9	KD1	KD5	81	F7	U3-11	KD1	KD5
10	F#1	U1-13	KD2	KD6	34	F#3	U2-15	KD2	KD6	58	F#5	U2-9	KD2	KD6	82	F#7	U3-11	KD2	KD6
11	G1	U1-13	KD3	KD7	35	G3	U2-15	KD3	KD7	59	G5	U2-9	KD3	KD7	83	G7	U3-11	KD3	KD7
12	G#1	U1-13	KD4	KD8	36	G#3	U2-15	KD4	KD8	60	G#5	U2-9	KD4	KD8	84	G#7	U3-11	KD4	KD8
13	A1	U1-12	KD1	KD5	37	A3	U2-14	KD1	KD5	61	A5	U2-7	KD1	KD5	85	A7	U3-10	KD1	KD5
14	A#1	U1-12	KD2	KD6	38	A#3	U2-14	KD2	KD6	62	A#5	U2-7	KD2	KD6	86	A#7	U3-10	KD2	KD6
15	B1	U1-12	KD3	KD7	39	B3	U2-14	KD3	KD7	63	B5	U2-7	KD3	KD7	87	B7	U3-10	KD3	KD7
16	C2	U1-12	KD4	KD8	40	C4	U2-14	KD4	KD8	64	C6	U2-7	KD4	KD8	88	C8	U3-10	KD4	KD8
17	C#2	U1-11	KD1	KD5	41	C#4	U2-13	KD1	KD5	65	C#6	U3-15	KD1	KD5					
18	D2	U1-11	KD2	KD6	42	D4	U2-13	KD2	KD6	66	D6	U3-15	KD2	KD6					
19	D#2	U1-11	KD3	KD7	43	D#4	U2-13	KD3	KD7	67	D#6	U3-15	KD3	KD7					
20	E2	U1-11	KD4	KD8	44	E4	U2-13	KD4	KD8	68	E6	U3-15	KD4	KD8					
21	F2	U1-10	KD1	KD5	45	F4	U2-12	KD1	KD5	69	F6	U3-14	KD1	KD5					
22	F#2	U1-10	KD2	KD6	46	F#4	U2-12	KD2	KD6	70	F#6	U3-14	KD2	KD6					
23	G2	U1-10	KD3	KD7	47	G4	U2-12	KD3	KD7	71	G6	U3-14	KD3	KD7					
24	G#2	U1-10	KD4	KD8	48	G#4	U2-12	KD4	KD8	72	G#6	U3-14	KD4	KD8					