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KORG DIGTAL PIANO
SP-170S
SERVICE MANUAL



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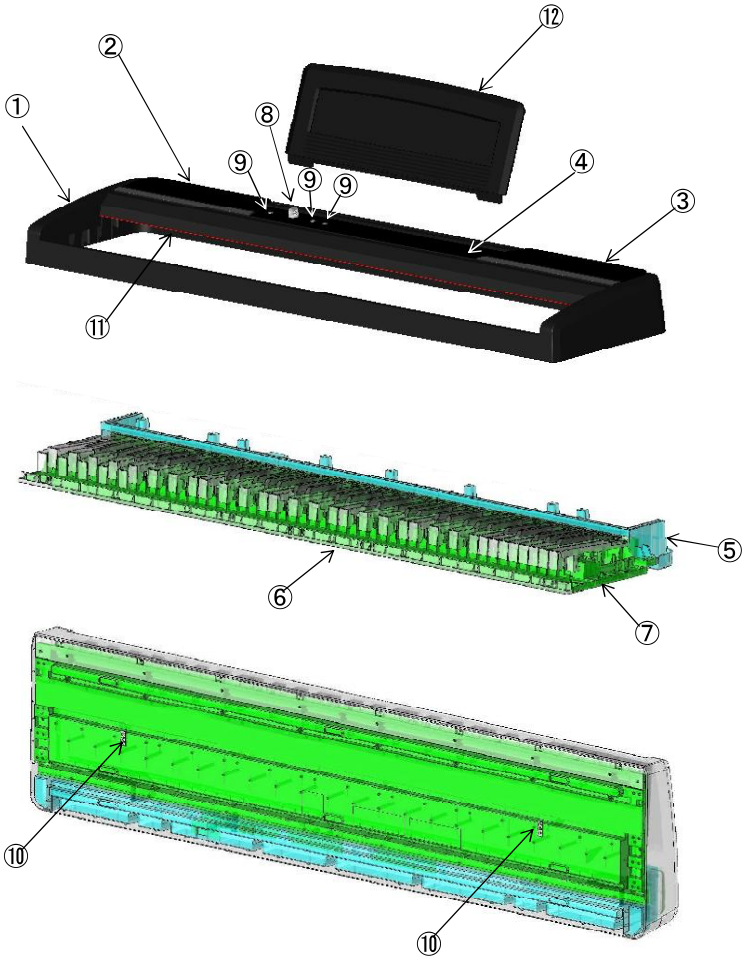
KORG

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SP-170S

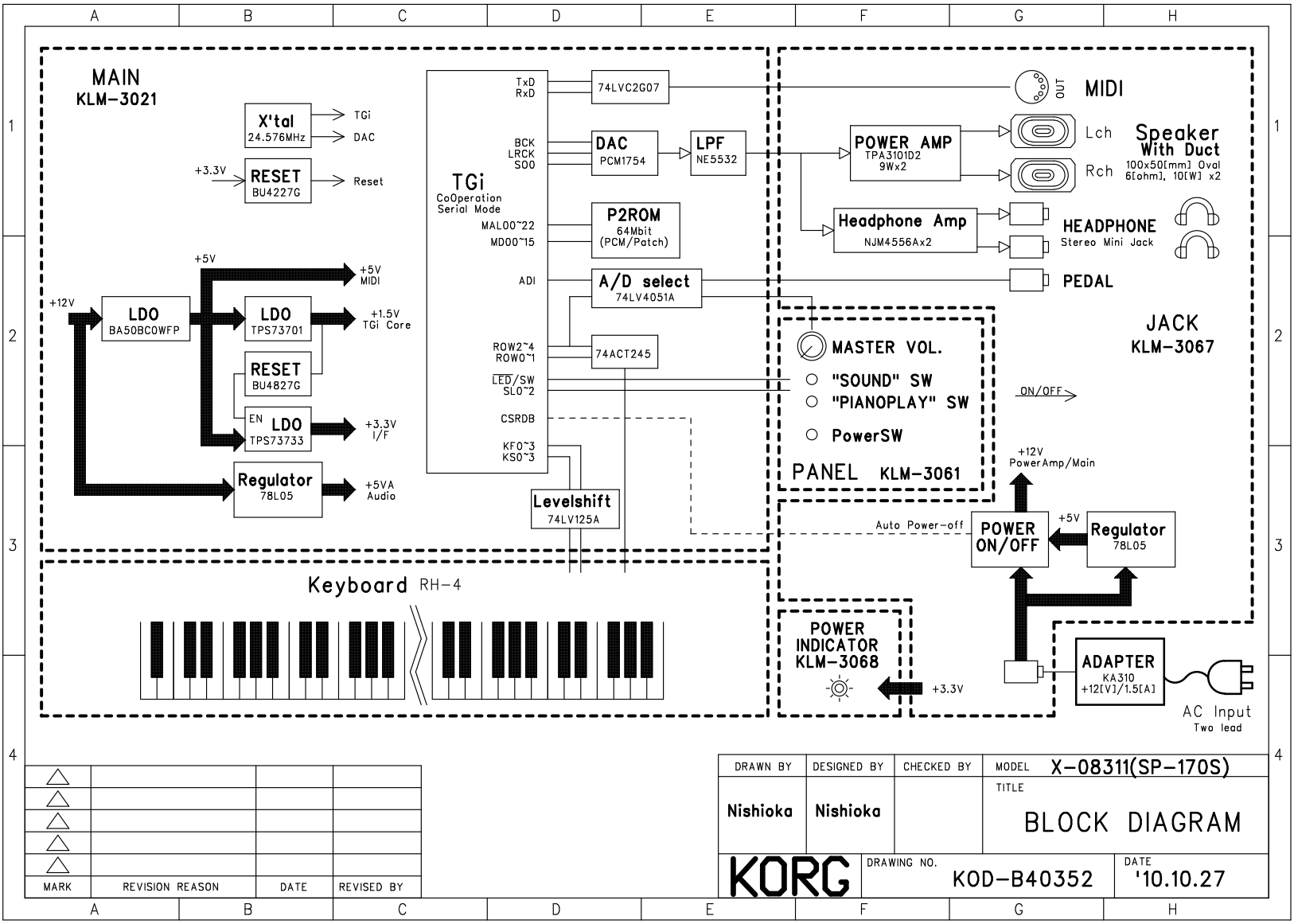


Parts List

No	Part No.	Part Name	QTY BK	QTY WH	QTY RD
1		X-08311BK UPPER CASE E20341-1	1		
		X-08311WH UPPER CASE E20341-2		1	
	*1	X-08311RD UPPER CASE E20341-3			1
2	510646508019	X-08310BK SP NET L E30538-1	1		1
	510646508021	X-08310WH SP NET L E30538-3		1	
3	510646508020	X-08310BK SP NET R E30538-2	1		1
	510646508022	X-08310WH SP NET R E30538-4		1	
4	510500505555	X-08311BK PanelPlate F41637-1	1		1
	510500505556	X-08311WH PanelPlate F41637-2		1	
5	*1	X-08310 SP BOX E20322	1	1	1
6	*1	X-08310 FRONT BAR E30537	1	1	1
7		RH-4	1	1	1
8	510646502018	X-1200/10 VR KONB L KOC-E30313	1	1	1
9	510646508522	08311 CIRCLE SW NL LG E40724-2	3	3	3
10	*1	STAND SUPPORT PLATE C41657	2	2	2
11	*1	X08310 KB FELT F41576	1	1	1
12	510646508023	X08310BK MUSIC STAND E30539-1	1		
	510646508024	X08310WH MUSIC STAND E30539-2		1	
	510646508026	X08310RD MUSIC STAND E30539-3			1

*1) Service part not provided

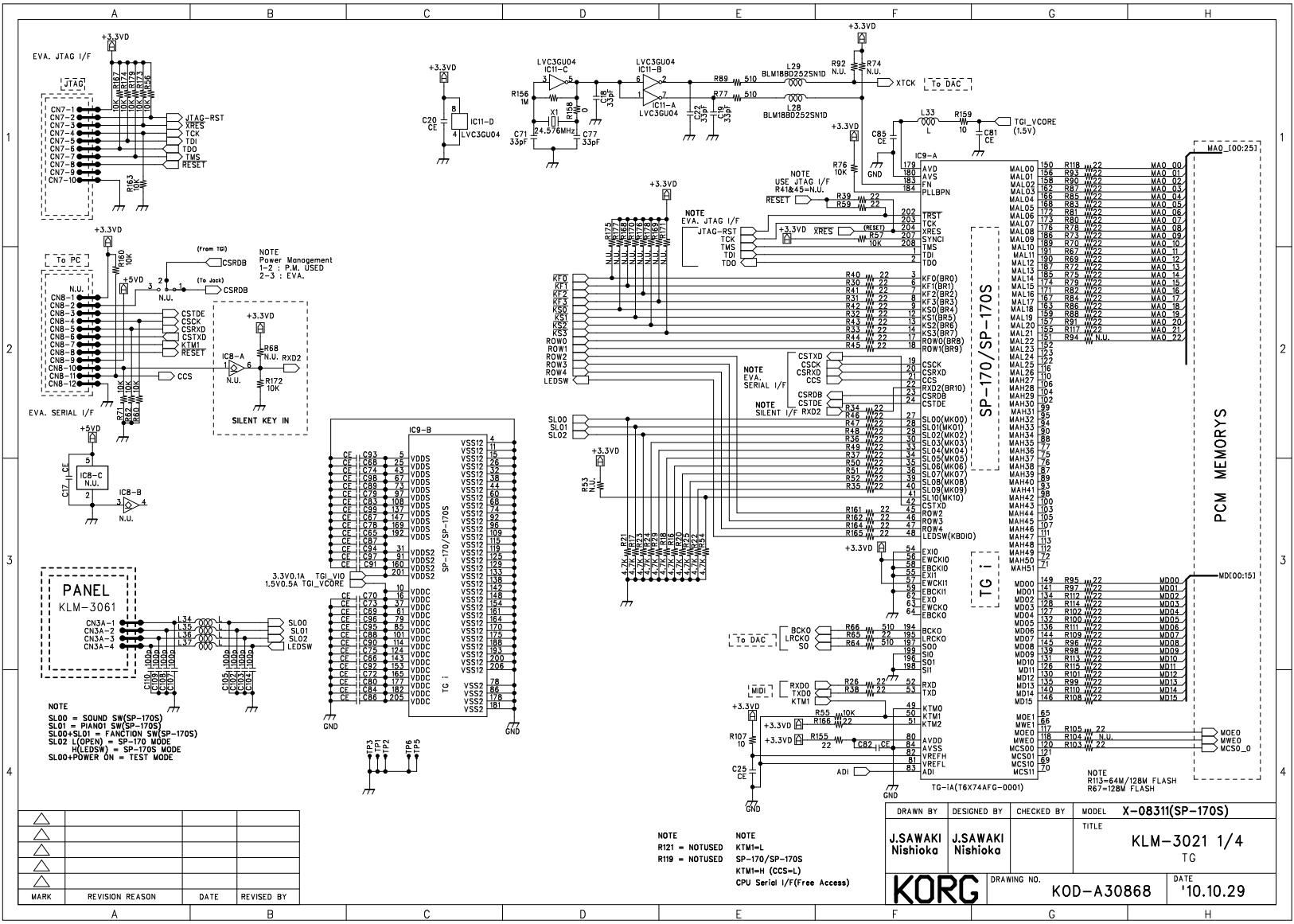
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Nishioka	Nishioka		TITLE BLOCK DIAGRAM
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J.SAWAKI Nishioka	J.SAWAKI Nishioka		TITLE KLM-3021 1/4 TG

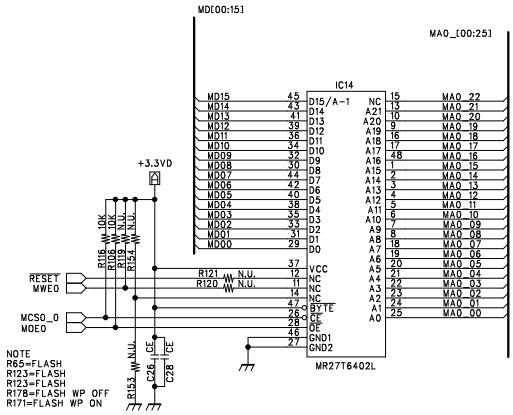
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Bank0 For PCM ROM(64Mbit/128Mbit)

64Mbit P2 ROM MR27T6402L
64Mbit FLASH ROM S29JL064H
MX29LV640DT/B
M29W640GB70NA6E
128Mbit FLASH ROM MX29LV128DT/B
64Mbit MASK ROM A23L261661V
A23L26162V
MX23L6423A

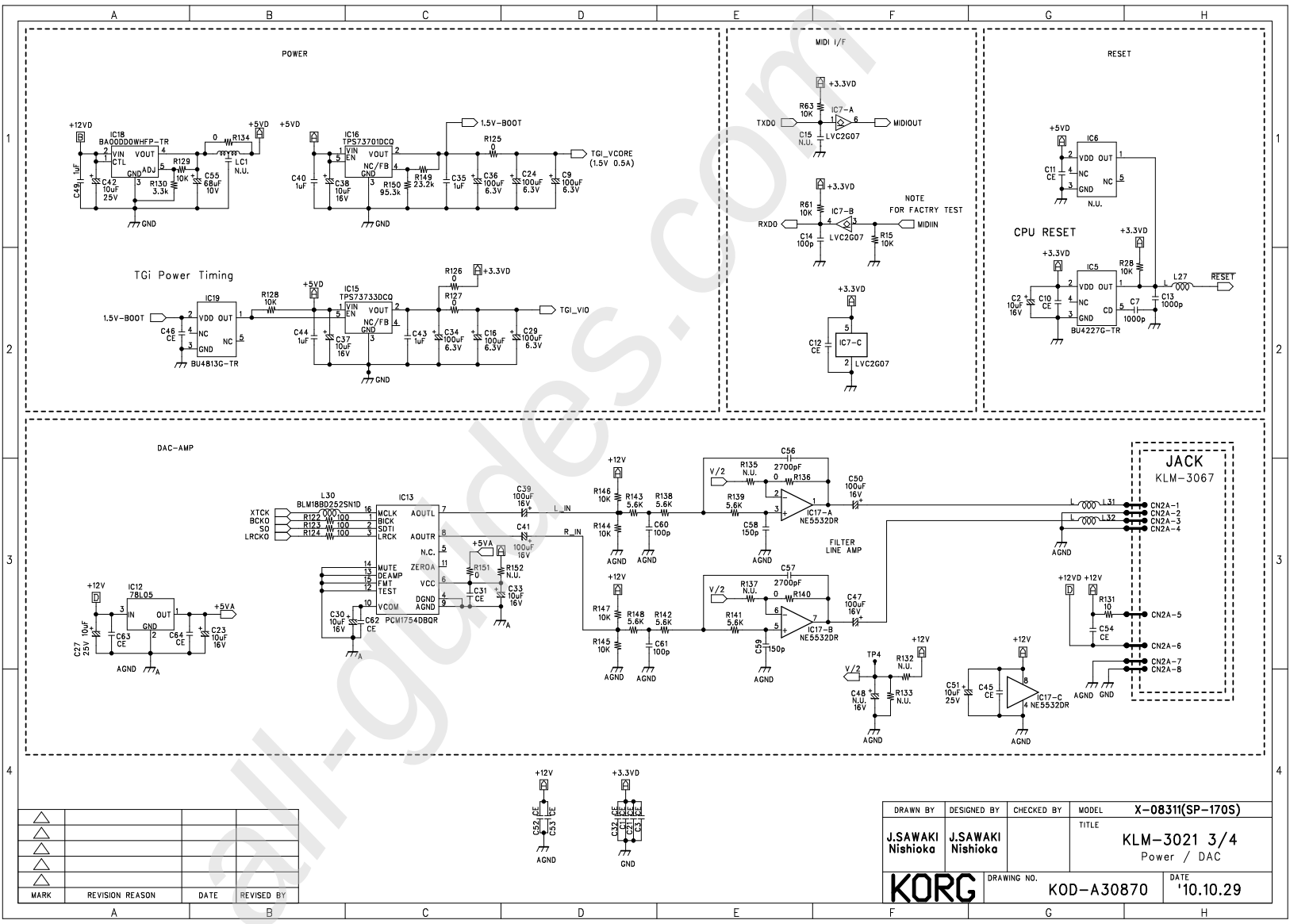
ROM Speed = 100nS = 80Voice
ROM Speed = 70nS = 120Voice



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KORG	DRAWING NO. KOD-A30869		DATE '10.10.29

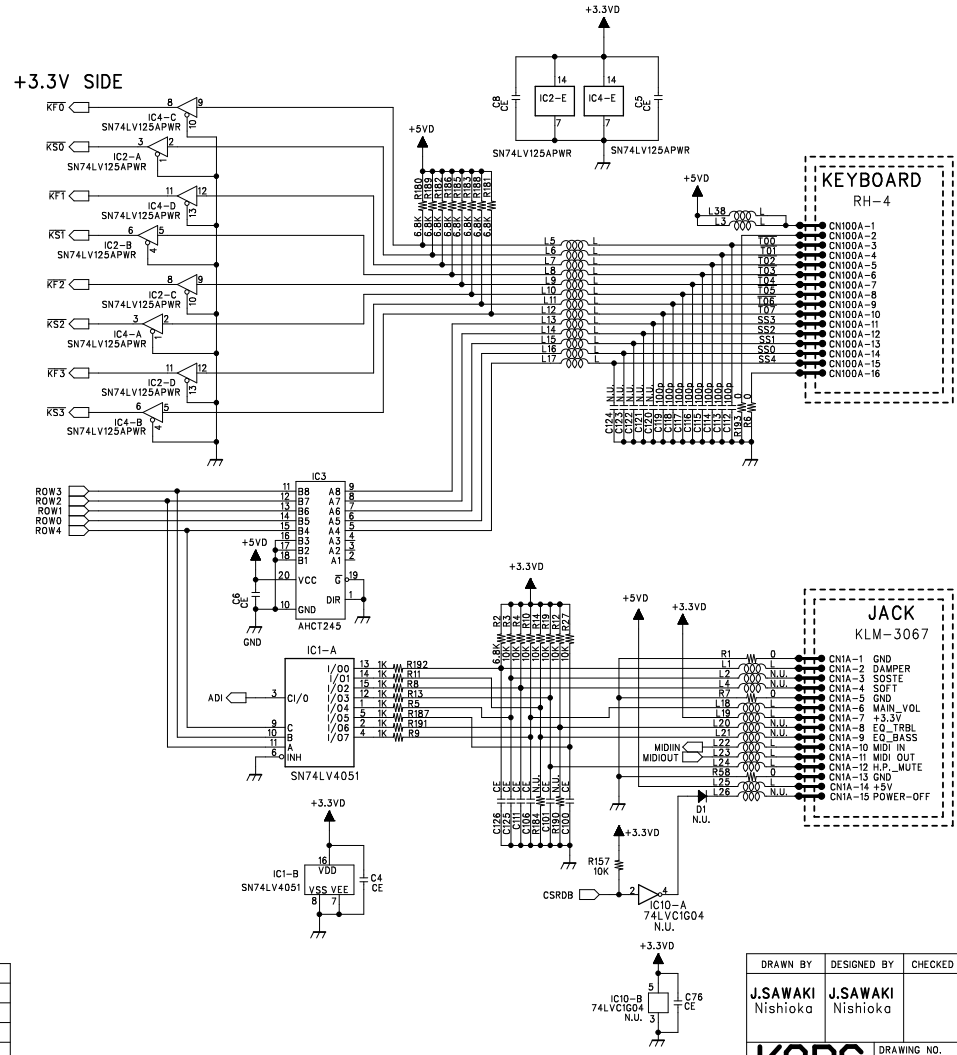
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J.SAWAKI Nishioka	J.SAWAKI Nishioka		TITLE	KLM-3021 3/4 Power / DAC
KORG	DRAWING NO.	KOD-A30870	DATE	'10.10.29

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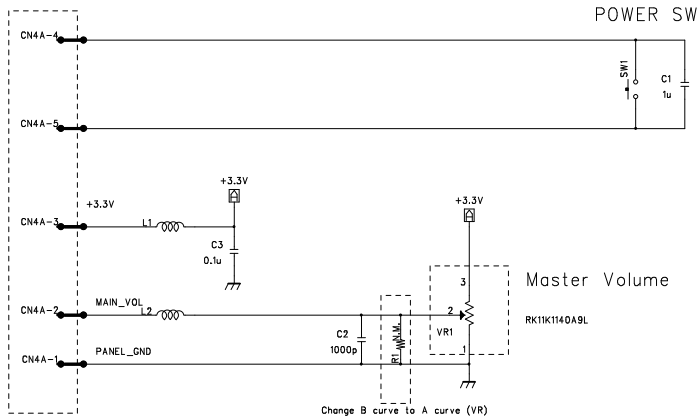


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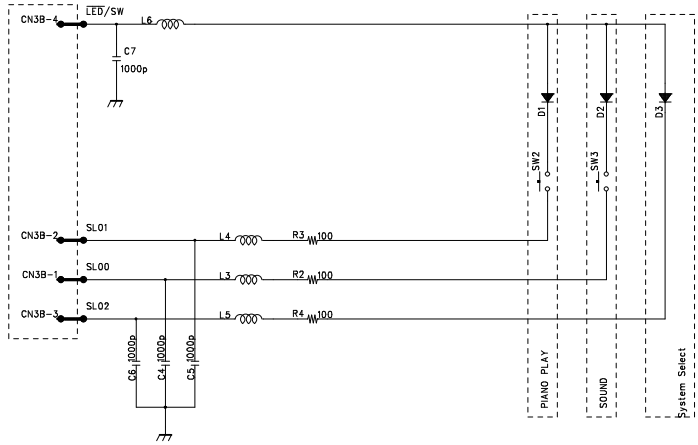
DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	X-08311(SP-170S)
J.SAWAKI Nishioka	J.SAWAKI Nishioka		TITLE	KLM-3021 4/4 Keyborad / A/D
KORG	DRAWING NO.	KOD-A30871	DATE	'10.10.29

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FROM KLM-3067



FROM KLM-3021

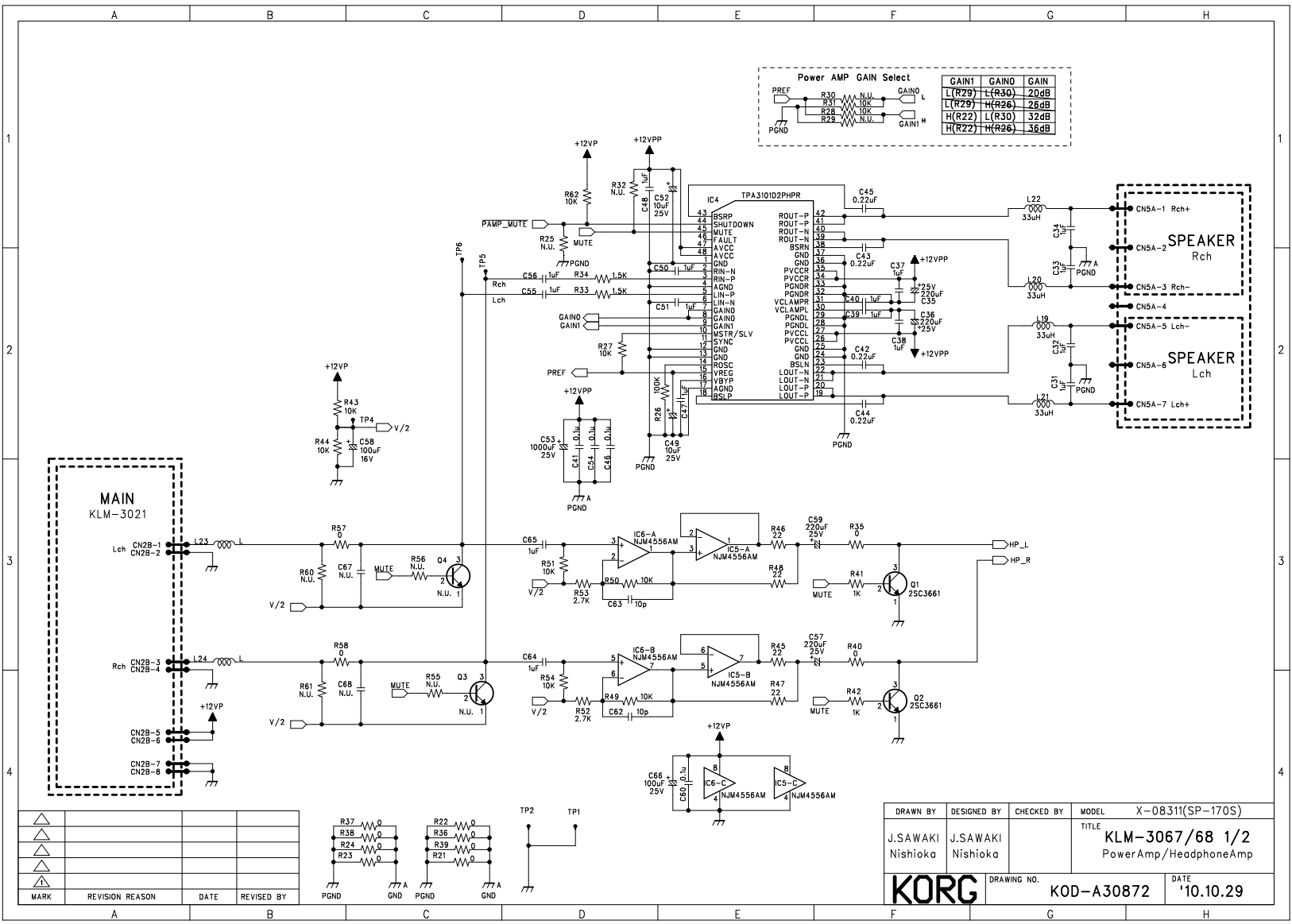


System Select : Short = SP-170S
: Open = KS-10

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DRAWN BY	DESIGNED BY	CHECKED BY	MODEL X-0831(SP-170S)
Henmi			TITLE KLM-3061(Panel)
KORG	DRAWING NO. KOD-A40718		DATE 10.11.10

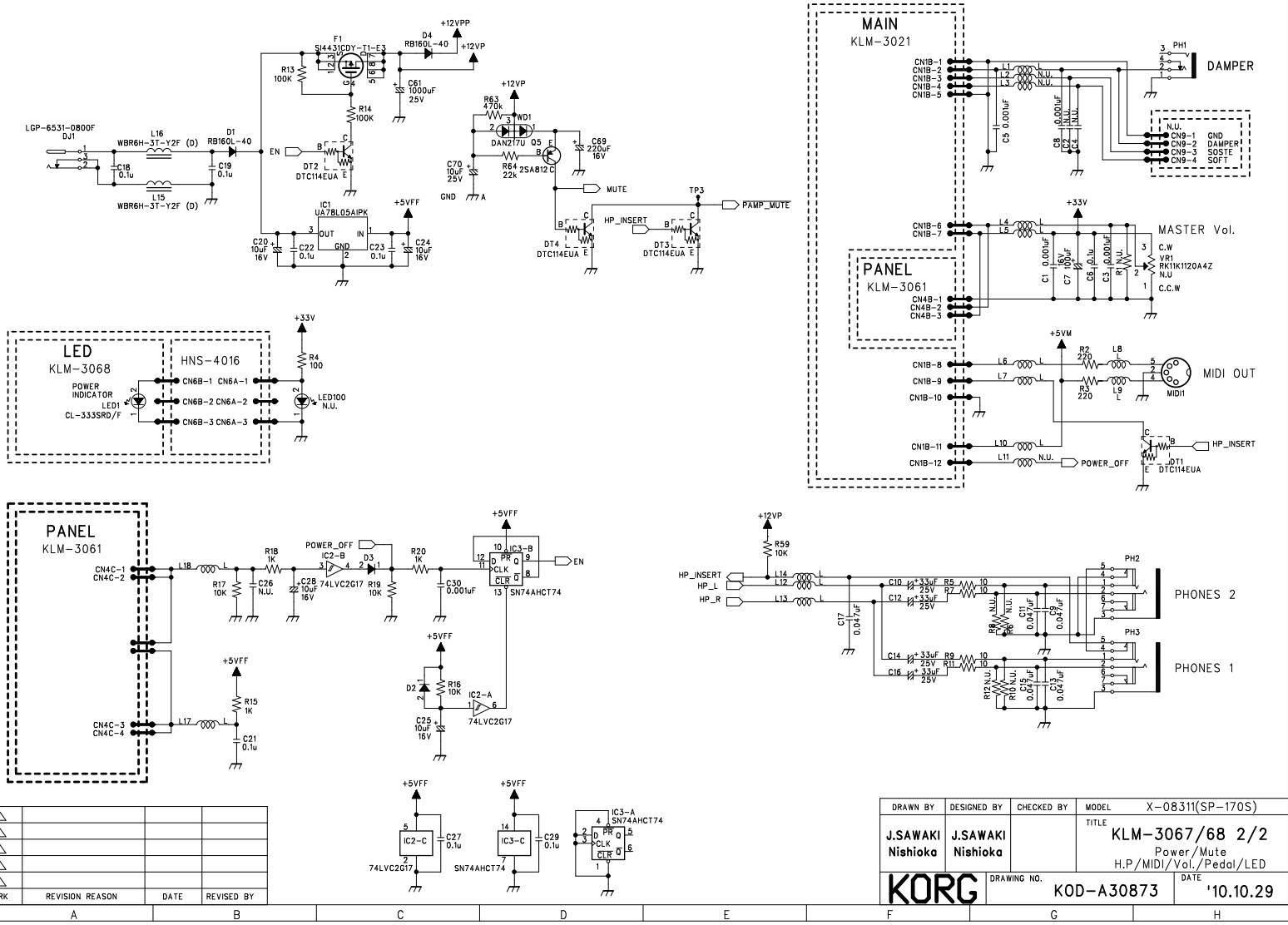
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DRAWN BY	DESIGNED BY	CHECKED BY	MODEL X-08311(SP-170S)
J.SAWAKI Nishioka	J.SAWAKI Nishioka		TITLE KLM-3067/68 1/2 PowerAmp/HeadphoneAmp
KORG	DRAWING NO. KOD-A30872		DATE '10.10.29

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DRAWN BY	DESIGNED BY	CHECKED BY	MODEL	X-08311(SP-170S)
J.SAWAKI Nishioka	J.SAWAKI Nishioka		TITLE	KLM-3067/68 2/2 Power/Mute H.P/MIDI/Vol./Pedal/LED
KORG	DRAWING NO.	KOD-A30873	DATE	'10.10.29

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SP-170S Test Mode

Preparation

Check that the model name is “SP-170S”





Please connect AC adapter and pedal switch.

(Note) Ship the product with the adaptor used in the test.

Check proper resistance when the plug of the AC adaptor is connected with Jack of the product.

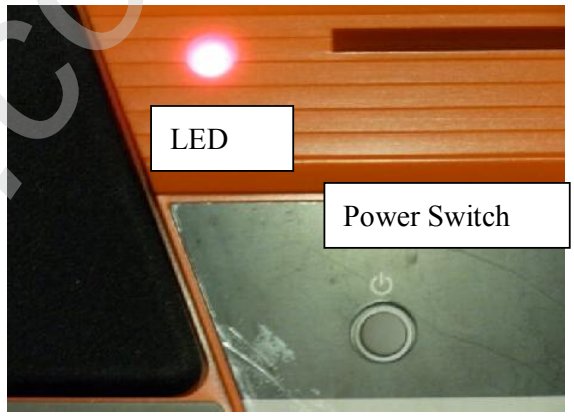
LED

Push the power switch.

Check that LED turn on.

Confirm not turning off to LED until turning off power.

Confirm the instruments alternately turn on and are turned off every time the power switch is pushed.



Click Noise

Check that the clicking sound is not so large when turning the power switch on.

Keyboard check

Set volume maximum. (It turns clockwise.)

Play one key with medium velocity from right edge key (C8) to left edge key(A0).

Check the following point.

1) Sound is correct note and proper velocity

2) There is no mechanical noise.

3) Confirm not to find abnormality in sound and key action.

Set volume center.(12 o'clock direction)

Play one key with hard velocity from right key(C8) to left key(A0)

Check above 1) 2) 3) point.

Pedal check

1) Push pedal switch and keep on.

Push 3 key one by one

Confirm the sound is keeping if the key are released.

2) Push 3 key one by one again.

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Confirm the sounds are stopped if pedal is released.

3) Now don't push pedal switch

Push 3 key one by one

Confirm the sound is stop if each key is released.

Speaker check

1) Push left edge key (= A0) with medium velocity.

Confirm sound location is left

2) Push right edge key (=C8) with medium velocity

Confirm sound location is right

Note) Please adjust sound volume and try hard velocity if you can't confirm sound location.

Demo check



1) Push "PIANO PLAY" and "SOUND" at the same time and keep on.
The keyboard is used as a function switch while these two buttons are being pushed.

2) Push key C6 with keep on above 2 buttons.
Release key
Confirm demo start with piano sound after click sound.

3) Push "PIANO PLAY" and "SOUND" at the same time and release.
Confirm demo is stopped.

Volume check



Check following point with sound volume on panel.

1) The volume must rotate smoothly.
2) Turn up the sound volume with turning clockwise.
3) Confirm coming to the position of **MAX** to the line of the volume cap with turning clockwise full.
4) Turn down the sound volume with turning counterclockwise.
5) Confirm coming to the position of **MIN** to the line of the volume cap and no sound in speaker with turning counterclockwise full.

(The volume set to center in above photo)

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Head Phone check



Start Demo (see **Demo check)**

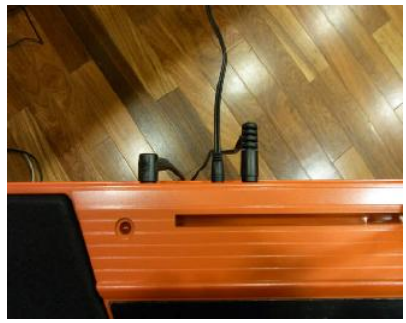
Connect head phone to the PHONES1 and confirm following

1) Check that there is no sound from the speaker.

2) Check hearing of the sound only from the head phone.

3) Disconnect head pone from PHONES1.

Check hearing of the sound only from the speaker.



Connect head phone to the **PHONES2** and confirm above 1),2),3) point same as **PHONES1**

SOUND button and PIANO PLAY button

Disconnect the headphone from PHONES1 and PHONES2.

Stop demo with pushing “SOUND” and “PIANO PLAY” at the same time after hearing of the sound from the speaker.

1) “SOUND” button check

Push “SOUND” button while hitting C6KEY repeatedly.

Confirm the sound changes every time "SOUND" button is pushed.

(The sound change becomes a repetition of ten sounds.)

2) “PIANO PLAY” button check

Push “SOUND” button while hitting C6KEY repeatedly.

Push “PIANO PLAY” button.

Confirm the sound changes to the PIANO sound.

(Whenever this button is pushed, sound changes PIANO tone.)

Power off



Set the volume knob in the direction at 12 o'clock.

Turn the power off.

After LED turn off, disconnect AC adapter and pedal switch.

It is necessary to ship the product with the adaptor used in the test.

Note) Packing of adaptor

1) The adaptor is put in the direction where the label is seen.
2) Put the cable bundled on the adaptor.
3) Put the plug in the space on the side of the adaptor.

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KORG SP-170S Digital Piano Parts List

* part is common with SP170.

	Part Number	Category	Part Name	Location	Reference	QTY
*	510320514030	RESET IC	BU4227G-TR	Main	[TOP] IC5	1
	510320514038	REGULATOR IC	BA00DD0WHFP-TR	Main	[TOP] IC18	1
*	510320514043	RESET IC	BU4813G-TR	Main	[TOP] IC19	1
*	510320516106	D/A Converter	PCM1754DBQR	Main	[TOP] IC13	1
*	510320516110	REGULATOR IC	TPS73701DCQ	Main	[TOP] IC16	1
*	510320516111	REGULATOR IC	TPS73733DCQ	Main	[TOP] IC15	1
*	510320516112	REGULATOR IC	UA78L05AIPK	Main	[TOP] IC12	1
*	510324021160	OPAMP	NE5532DR (TS)	Main	[TOP] IC17	1
*	510335522003	CRYSTAL	HC49/USM4-024M576000BR	Main	[TOP] X1	1
	510C80783021	PC ASSY	KLM-3021ASSY (SP-170S)	Main		1
	510306510503	POWER MOS FET	SI4431CDY-T1-E3	Amp LED	F1	1
*	510320511008	OPAMP	NJM4556AM-TE1-#ZZZB (S)	Amp LED	IC5-6	2
*	510320516109	POWER AMP IC	TPA3101D2PHP	Amp LED	IC4	1
*	510320516112	REGULATOR IC	UA78L05AIPK	Amp LED	IC1	1
*	510450520017	PHONE JACK	PJ-603A-02	Amp LED	PH1	1
*	510450528003	DC JACK	LGP-6531-0800F	Amp LED	DJ1	1
*	510450520506	DIN JACK	DS-05-02(DIN5P W/OUT SW) (D)	Amp LED	MIDI1	1
*	510450520512	PHONE JACK	EJS-7-1535	Amp LED	PH2-3	2
*	510312524502	LED	CL-333SRD/F2	Amp LED	LED1	1
*	510476501032	HARNESS	HNS-4016 (AMP-LED)	Amp LED	CN6B	1
	510C80783067	PC ASSY	KLM-3067/8 ASSY (SP-170S)	Amp LED		1
	510360520044	VR	RK11K1140A9L	Panel		1
	510374520026	TACT SW	SKRGAED010	Panel		3
	510C80783061	PC ASSY	KLM-3061ASSY (SP-170S)	Panel		1
*	510476501027	HARNESS	HNS-4011(MAIN-AMP)	ELEC		1
	510476501060	HARNESS	HNS-4107(MAIN-AMP2)	ELEC		1
	510476501061	HARNESS	HNS-4108(MAIN-RH4)	ELEC		1
*	510476501030	HARNESS	HNS-4014(AMP-SP)	ELEC		1
	510476501062	HARNESS	HNS-4098(PANEL - MAIN)	ELEC		1
	510476501063	HARNESS	HNS-4099(PANEL - JACK)	ELEC		1
	510C9017	KEYBOARD UNIT	RH-4 KEYBOARD UNIT	ELEC		1
	510410524002	Speaker	C112P01K0000	ELEC		2
	510500505555		X-08311BK PanelPlate F41637-1	MECH	BK,RD	1
	510500505556		X-08311WH PanelPlate F41637-2	MECH	WH	
*	510646508019		X-08310BK SP NET L E30538-1	MECH	BK,RD	1
*	510646508021		X-08310WH SP NET L E30538-3		WH	
*	510646508020		X-08310BK SP NET R E30538-2	MECH	BK,RD	1
*	510646508022		X-08310WH SP NET R E30538-4		WH	
	510646502018		X-1200/10 VR-KNOB-L KOC-E30313	MECH		1
	510646508522		08311 CIRCLE SW NL LG E40724-2	MECH		3
*	510640520509		STAND SUPPORT PLATE C41657	MECH		2
*	510646508023		X-08310BK MUSIC STAND E30539-1	MECH	BK	1
*	510646508024		X-08310WH MUSIC STAND E30539-2	MECH	WH	
*	510646508026		X08310RD MUSIC STAND E30539-3	MECH	RD	
*	510C9018		PEDAL PS-3（X-0831S）	MECH		1
	500405016600	AC ADAPTER	KA310EUP II:DSA-20D-12 2120180			1
*	500600006513	AC CABLE	DC-1800-DO2LY(PSE)			1
	500600006510	AC CABLE	UC-1800-UO2LY(UL/NISPT2)(W/PB)			
	500600006509	AC CABLE	EC-1800-E02LY(VDE) (W/POLYBAG)			
	510600006512	AC CABLE	SC-1800-SO2LY(SAA)			
	510600006511	AC CABLE	BC-1800-BO2LY(BS) (W/POLYBAG)			
	510600540504	AC CABLE	CC-1800-C02LY(CCC)			