

D-10

SERVICE NOTES

First Edition

ERRATA & SUPPLEMENT is attached at the end of the page.
最終頁に正誤表 & 追加情報があります。

SPECIFICATIONS/仕様

SPECIFICATIONS

KEYBOARD	61 key, 5 octave, C scale with Velocity	
TUNE	MASTER TUNE	±50 cents
	FINE TUNE	±50 cents
PITCH MODULATION	LFO	±117 cents
	ENV	±5000 cents
	BENDER	±2400 cents
ENV TIME	PITCH T1 — T4	4ms — 17s
	TVF T1 — T4	4ms — 22s
	TVA T1 — T4	4ms — 22s
LFO	RATE	4ms — 17s
OUTPUT	AUDIO	+2dBm
	PHONES	+10dBm
POWER CONSUMPTION	20W, 15W (Japan)	
DIMENSIONS	974(W) x 301(D) x 98(H)mm/38-3/8" x 11-7/8" x 3-7/8"	
WEIGHT	8.8kg/19 lb 7 oz	

INTERNAL MEMORY

Synthesizer Section	Patches	128
	Timbers	128
	Preset Tones	128
	Programmable Tones	64
	Preset Rhythm Tones	63
Rhythm Section	Setups	85 types (C1 to C8)
Rhythm Pattern	Preset Patterns	32
	Programmable Patterns	32

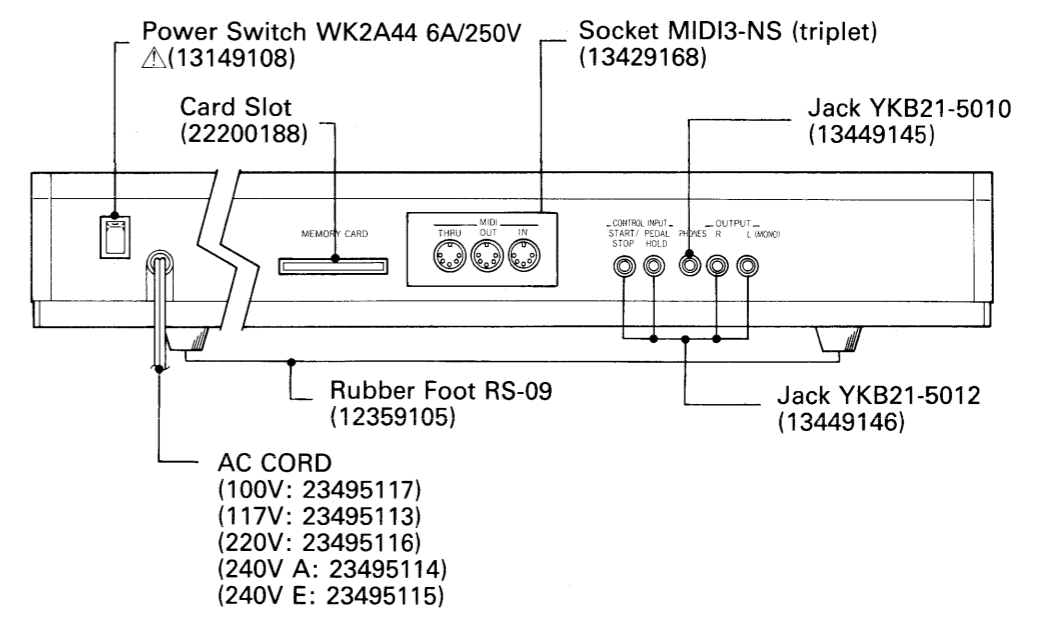
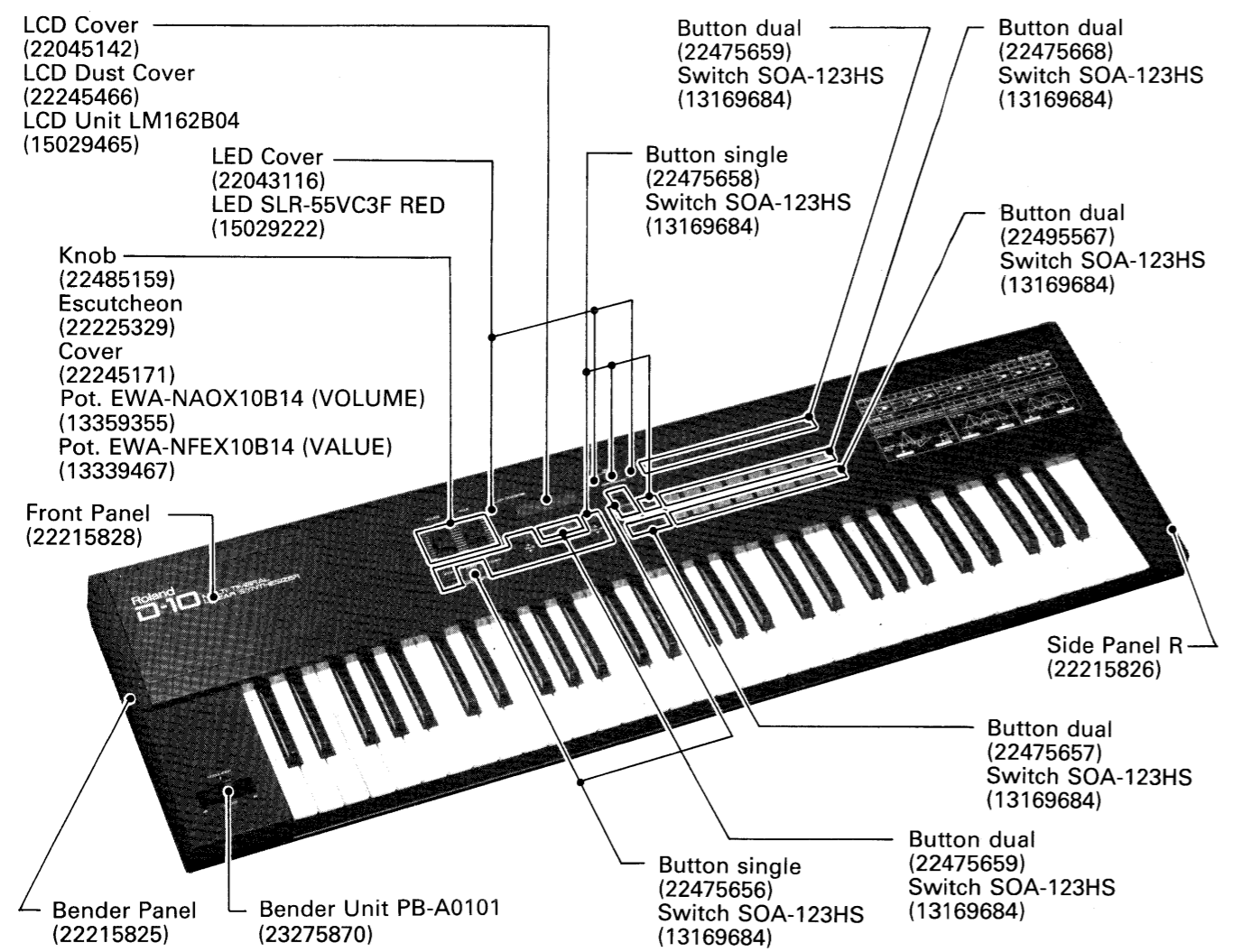
Maximum number of notes simultaneously recordable 8

Maximum number of notes recordable (in each Rhythm Pattern) 96

Rhythm Track Maximum number of bars 500 recordable

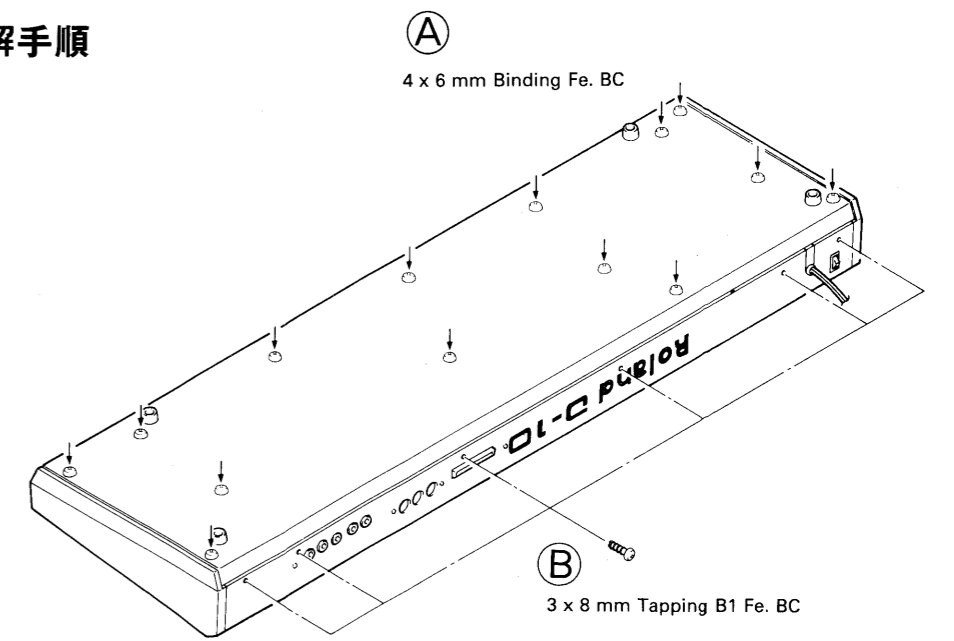
MEMORY CARD (M-256D)

.....	Patches	128
	Timberes	128
	Tones	64
	Rhythm Setup	1 set
	Rhythm Patterns	32
	Rhythm Track	One song

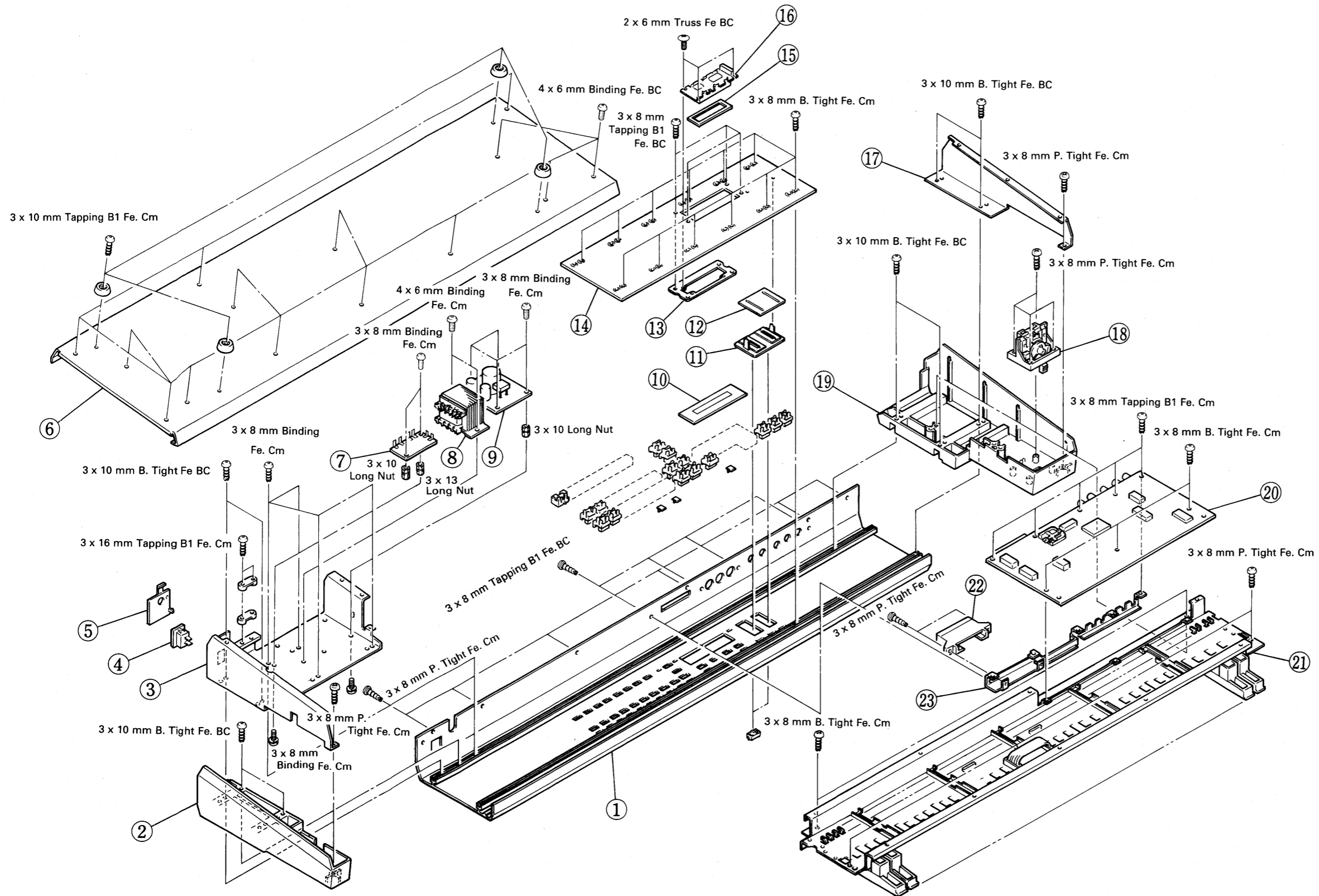


DISASSEMBLING/分解手順

1. Remove screws (A).
2. Remove screws (B).



EXPLODED / 分解図



No.	PART NAME	PART No.
1	Front Panel	22215828
2	Side Panel R	22215826
3	Power Transformer Holder	22205164
4	Power Switch Δ	13149108
5	Switch Cover	22045144
6	Bottom Cover	22815617
7	Fuse Board	100V 7619715100 117V 7619715200 220/240V 7619715400
8	Power Transformer (universal) Δ	22455512U0
9	Power Supply Board	100V 7619712100 107V 7619712200 220/240V 7619712400
10	LCD Cover	22045142
11	Volume Escutcheon	22225329
12	Volume Cover	22245171
13	LCD Holder	22205161
14	Panel Board	7619708000
15	LCD Dust Cover	22245466
16	LCD Unit	15029465
17	Side Holder L	22205166
18	Bender Unit	23275870
19	Bender Panel	22215825
20	Main Board	7619705000
21	Keyboard	7619720000
22	Card Slot Holder	22200188
23	Jack Holder	22205162

PARTS LIST

Chip components except for special parts are excluded in this list.

Unlisted chip components, such as capacitors and resistors, are considered to be substituted by locally available ordinary ones.

チップ部品について

パーツ・リストには、特殊なチップ部品以外は記載していません。

コンデンサーや抵抗などのチップ部品については、通常のパーツで代用して下さい。

SAFETY PRECAUTIONS:

The parts marked Δ have safety-related characteristics.

Use only listed parts for replacement.

安全上の注意:

Δ が付いている部品は、安全上特別な規格でつくられたものです。交換の際は、指定された部品番号以外の部品は使わないようにして下さい。

CASING

22215828	Front Panel
22815617	Bottom Cover
22215826	Side Panel R
22215825	Bender Panel
22043116	LED Cover
22225329	Volume Escutcheon
22045142	LCD Cover
22245171	Volume Cover
22245466	LCD Dust Cover
12359105	Rubber Foot RS-09
22045144	Switch Cover

BUTTON, KNOB

22485159	Knob	VOLUME, VALUE
22475656	Button single (with LED window)	START, ROM PLAY, etc.
22475657	Button dual (with LED window)	SYNTH, A/B
22475658	Button single	STOP, TEMPO, INT/CARD, etc.
22475668	Button dual	BANK 1 — BANK 8
22495209	Button dual	EXIT, EDIT, MIDI, ENTER, etc.
22495567	Button dual (with LED window)	NUMBER 1 — NUMBER 8
22475659	Button dual	LOWER, UPPER

HOLDER

12199570	*BBH-1	battery retainer
22195889	*	MIDI
22205162	*	Jack
22200188	*	Card slot
22205166		Side L
22205164		Power transformer
22205161		LCD

*Attaching parts to main board.

メイン・ボード付属品。

KEYBOARD

7619720000	SK-361-TR	61 key
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See KEYBOARD PARTS LIST for details.
詳細は鍵盤パーツ・リスト参照。

BENDER UNIT

23275870	PB-A0101
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LCD UNIT

15029465	LM162B04 with LED, PCB and wiring
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No replacement for individual parts.
補修品はユニット単位

AC COAD

Δ 23495117	100V
Δ 23495113	117V
Δ 23495116	220V
Δ 23495114	240V Australian
Δ 23495115	240V England

PCB ASSEMBLY

7619705000	Main Board (PCB 22925582)
7619708000	Panel Board (PCB 22925583)
7619712100	Power Supply Board 100V (PCB 22925584)
7619712200	Power Supply Board 117V (PCB 22925584)
7619712400	Power Supply Board 220/240V (PCB 22925584)
7619715100	Fuse Board 100V (PCB 22925584)
7619715200	Fuse Board 117V (PCB 22925584)
7619715400	Fuse Board 220/240V (PCB 22925584)

Difference between voltage versions: Only in fuse system. Any version can be supplied as a replacement for particular voltage order, with correct fuses. Specify the line voltage when ordering.

電圧による違いはヒューズの値のみですので、補修用には異なった電圧のものが供給されることもあります。この際は、ヒューズが適当な値のものに取り換えられているか確認して下さい。

POWER TRANSFORMER

Δ 22455512U0	Universal	100/117/220/240V
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FUSE

Δ 12559360	SGC-4A	power supply board 100V
Δ 12559585	19198-400MA	fuse board 100/117V
Δ 12559599	19198-2.5A	power supply board 117V
Δ 12559571	CEE-2.5AT WICKMANN	power supply board 220/240V
Δ 12559552	CEE-2.5AT BESWICK	
Δ 12559561	CEE-250MAT WICKMANN	fuse board 220/240V
Δ 12559542	CEE-250MAT BESWICK	

BATTERY

12569249	CR2032 (leadless)	lithium
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OPT-ISOLATOR

15229706S0	PC-910	main board
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IC

(main board)		
15179276	8097BH	CPU
15449129	μ PD27C256D-15	EP-ROM A
15449130	μ PD27C256D-15	EP-ROM B
15179879	HN623257PZ20	ROM (reverb)
15179873	LH5310	ROM (TONE)
15179878	HN62304BPC99	ROM (PCM A)
15179880	HN62304BPD10	ROM (PCM B)
15229899	MB87136APF-G-LBND-001	synthe chip
15229863	HG61H20R36F	reverb chip
15239106	HG-61H15B-72F	gate array
15229848	μ PD65005G-O62	gate array
15229830	MB63H149PF-G-BND	gate array
15279506	SRM2064M-15	64K SRAM
(15279511)	HM6264LFP-15)	
15279508	HM62256LFP-12T	256K SRAM
15279509	LC3517AM-12	16K SRAM
(15279512)	HM6116)	
15179380	μ PD41416C-12	DRAM
15219162	PCM54	D/A converter
15289105	μ PC4570G	low noise OP amp (dual in line)
15289106	M5238FP	low noise OP amp (dual in line)
15189210	BA15218F	low noise OP amp (dual in line)
15289110	μ PC4062G	J-FET OP amp (dual in line)
15269201	SN74LS04NS TAP-L	hex inverter
15259701T0	TC74HC00F-T2	quad 2-input NAND gate
15259702T0	TC74HC02F-T2	quad 2-input NOR gate
15259704T0	TC74HC04F-T2	hex inverter
15259713T0	TC74HC21F-T2	dual 4-input AND gate
15259714T0	TC74HC27F-T2	triple 3-input NOR gate
15259738T0	TC74HC138F-T2	3-to-8 line decoder
15259863T0	TC74HC4051AF-T2	8-channel analog multiplexer
15199172	TA79L005P-TPE5	+5V voltage regulator
15289113	TD62305F-T2	transistor array
15289114	TD62506F-T2	transistor array
(power supply board)		
Δ 15199155	L78MR05R	+5V voltage ragulator
Δ 15199176	L78M12ML	+12V voltage ragulator
Δ 15199177	L79M12ML	-12V voltage ragulator
(panel board)		
15189209	BA15218	low noise OP amp (dual in line)

TRANSISTOR

15309101	2SA1037KR T-96	main board
15319101	2SC2412KR T-96	main board
15329502	DTC-124EK T-96	main board
15329503	DTA-124EK T-96	main board
15329505	DTC-314TK T-96	main board
15329501	DTA-143EK T-96	main board

RESONATOR

12389792	16.384MHZ	crystal	main board
12389794	FAR-C4SB-12000000-K02-u	ceralock	main board

DIODE

(main board)			
15339104	RLS-71 TE-11	chip	
15339105	DAN202K T-96	chip	
15339103	MA-153	chip	
(panel board)			
15029222	SLR55VC3F	LED (red)	
15029224	SLR55MC3F	LED (green)	
15029258	TLSG126	LED (red/green)	
15019120	1S-2473-T77		
(power board)			
△15019245	1B4B41	100V 1A rectifier	
△15019293	3B4B41 LC1	100V 3A bridge rectifier	
15019520	05Z-5.1Y	5V zener	
(150196120X)	05Z-5.1X)	5V zener	
15019281	1SR35-100A T-93	100V 1A	

CAPACITOR

(main board)			
13649105M0	ECEAIEN100SB	10 μF/25V BP	
13639565S0	25MV4R7HA+T	4.7 μF/25V	
13639546S0	16MV10HA+T	10 μF/16V	
13639549S0	16MV47HA+T	47 μF/16V	
13639550J0	SME16VB100TP	100 μF/16V	
13639609S0	50MV47HA+T	47 μF/50V	
13639602S0	50MV1HA+T	1 μF/50V	
13639510S0	6MV100HA+T	100 μF/6.3V	
13549263M0	ECQ-MIH472JF3	0.0047	
13549269M0	ECQ-MIH153JF3	0.015	
(power board)			
13639194S0	35MV1000H	1000 μF/35V	
13659216M0	ECESIEV682K	6800 μF/25V	
13639602S0	50MV1HA+T	1 μF/50V	
13639549S0	16MV47HA+T	47 μF/16V	
13519640M0	50VK10000PF	0.01 μF 50V ceramic	
13519641M0	ECFR1H104ZFS	0.1 μF 50V ceramic	
13519452	DD306-959-F104Z25	0.1 μF 25V ceramic	
△13529104	DE7150F472MVA1	line bypass	
(panel board)			
13639146S0	16MV10HA	10 μF/16V	

CAPACITOR ARRAY

13529141	N3Q9E220K 22P X 8	main board
13529147	CXKD8X101M 100P X 8	main board

RESISTOR ARRAY

15399907	MNRDM4JX153E 15K X 4	main board
15399914	MNRDM4JX222E 2.2K X 4	main board
15399917	MNRDM4JX103E 10K X 4	main board
15239108	MNRDM4JX681E 680 X 4	main board

POTENTIOMETER

13299217	RVF6P51-5-104N 100K	D/A	main board
13359355	EWA-NAOX 10B14 10KB (stereo)	VOLUME.	panel board
13339467	EWA-NFEX 10B14 10KB (mono)	VALUE.	panel board

SWITCH

△13149108	WK2A44 6A/250V		power panel board
13169684	SOA-123HS		

SOCKET

13429541	268-7234-51-3851	CPU	
13429536	100-028-000	EP-ROM	
13449145	YKB21-5010(stereo)	PHONES	
13449146	YKB21-5012(mono)	OUTPUT, CONTROL INPUT	
13429168	MIDI3-NS(triplet)	MIDI IN/OUT/THRU	

CONNECTOR

(wire trap)			
13439411	52004-0610	6P	main board CN2
13439410	52004-0710	7P	main board CN12
13439414	52004-1210	12P	main board CN4
13439435	52004-1310	13P	main board CN5
13439436	52004-1410	14P	main board CN6
(cable holder)			
13439463	SD-51016-0600	6P	power supply board CN2
13429219	SD-51016-0700	7P	power supply board CN1
13429220	SD-51016-0800	8P	main board CN8, CN9, CN10
13429224	SD-51016-1200	12P	panel board CN3
13429225	SD-51016-1300	13P	panel board CN1
(pin header)			
13439330	IL-S-3P-S2T2-EF	3P	main board CN7
13439335	IL-S-6P-S2T2-EF	6P	main board CN13
13439298	IL-S-10P-S2T2-EF	10P	main board CN11
(memory card connector)			
13429233	7508095A		main board CN3

FILTER

12449326	SBT-0460	main board
13529165	NFV510-655T2A506	main board
13529164	DSS306-55F223Z16	main board

INDUCTOR

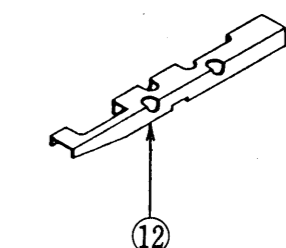
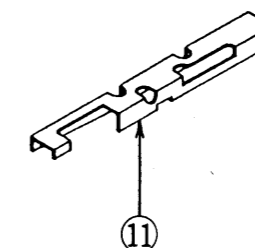
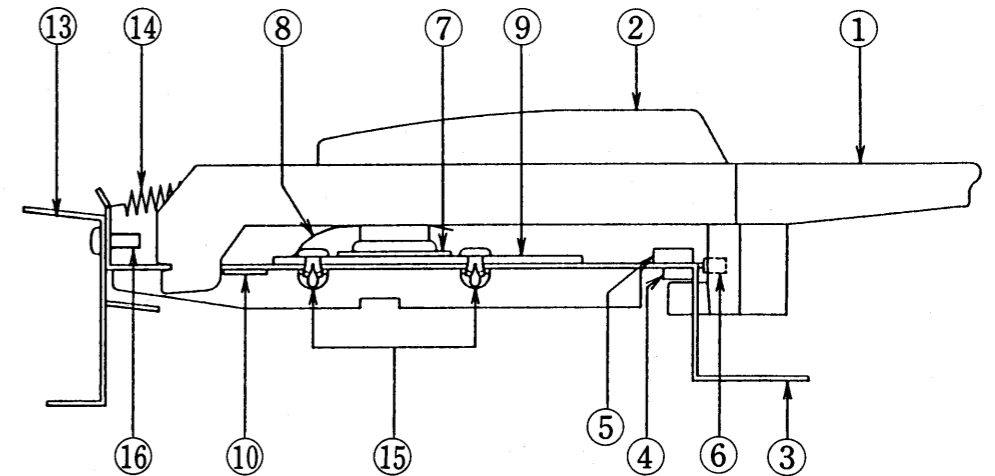
12449273	BL03RN2-R62	main board
12449294	BL03RN2-R62T2	main board

MISCELLANEOUS

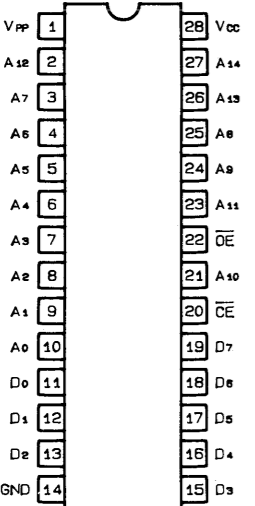
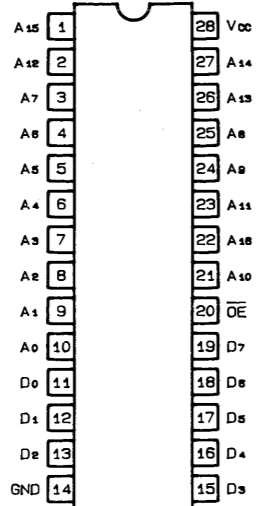
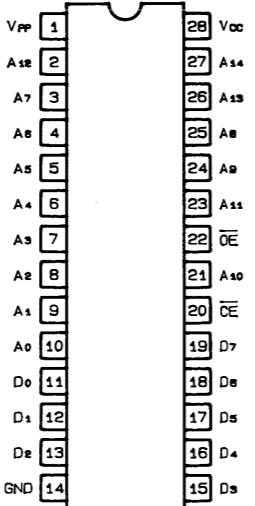
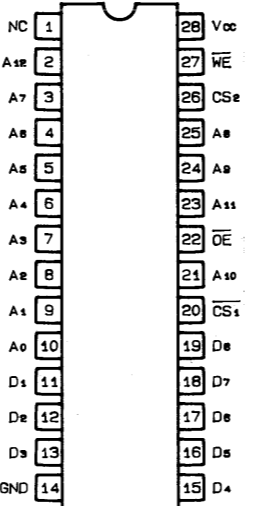
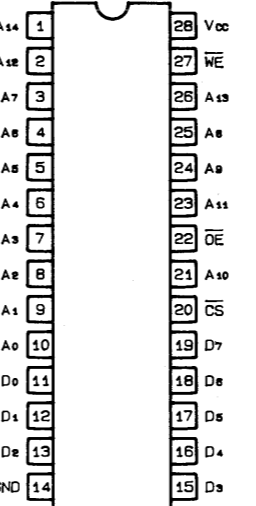
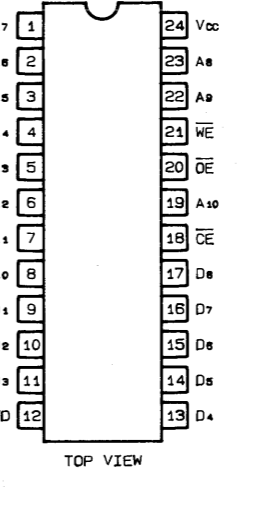
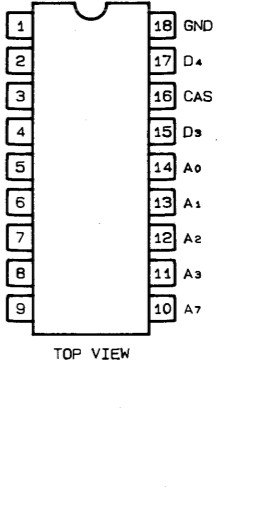
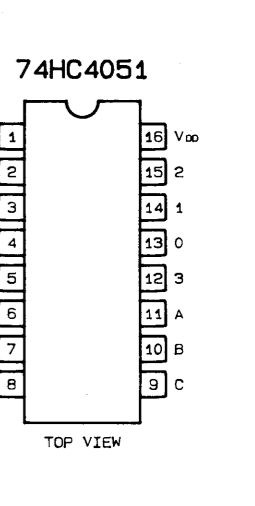
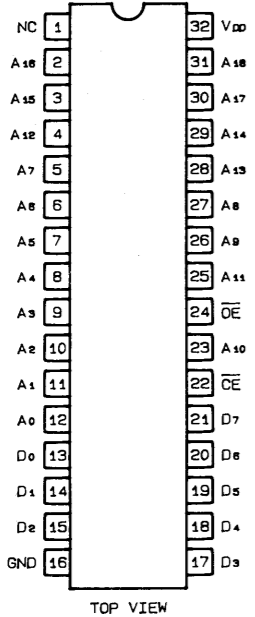
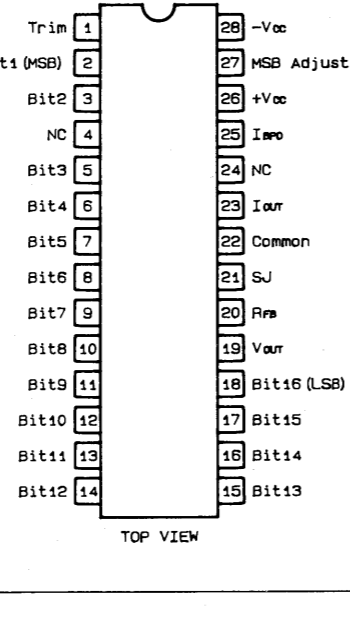
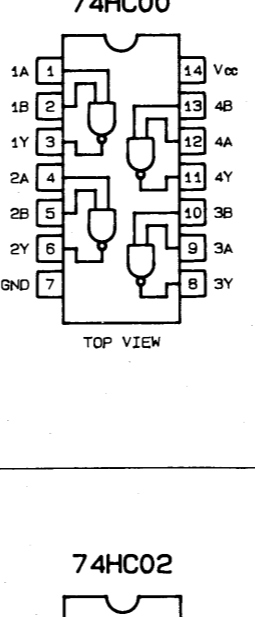
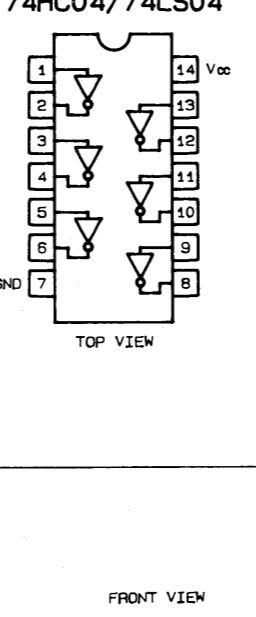
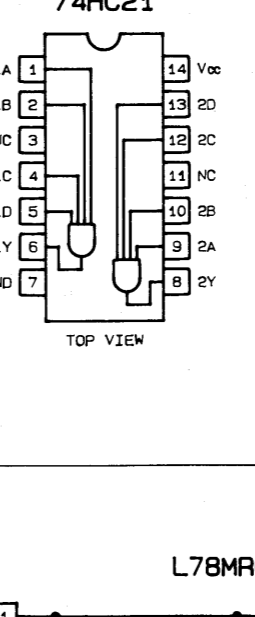
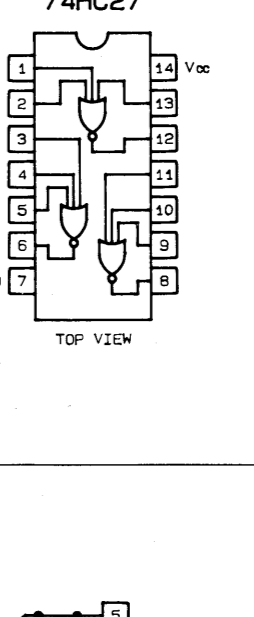
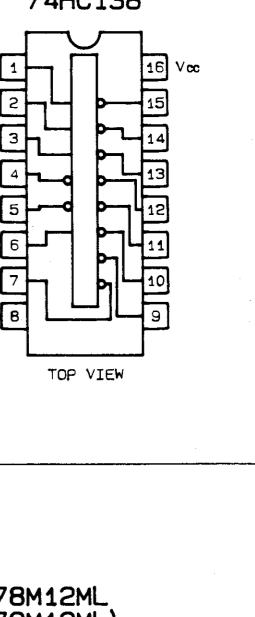
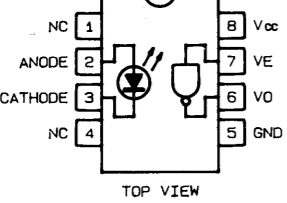
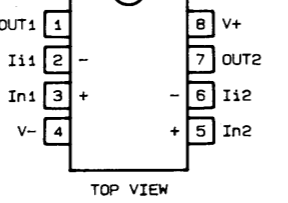
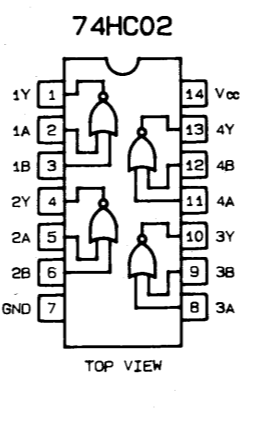
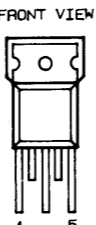
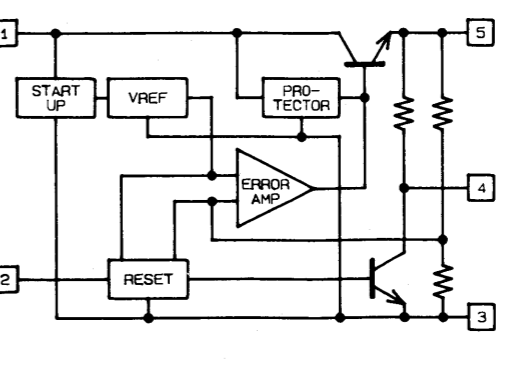

23455316	Grounding Leaf	
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SK-361-TR PARTS LIST

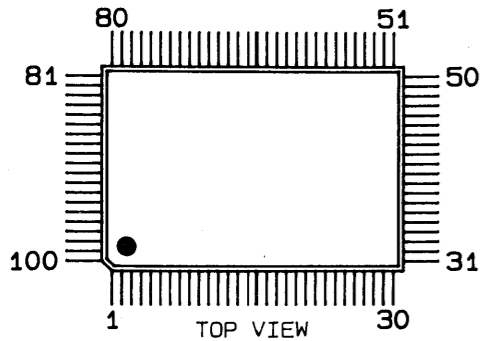
No.	PARTS No.	PARTS NAME	
1	22575136	NATURAL KEY C · F	257-136
	22575137	NATURAL KEY D	257-137
	22575135	NATURAL KEY E · B	257-135
	22575138	NATURAL KEY G	257-138
	22575134	NATURAL KEY A	257-134
	22575139	NATURAL KEY C' F'	257-139
2	22575140	SHARP KEY	257-140
3	22815575	CHASSIS 61P	281-575
4	22265147	SK-3 FELT	226-147
5	22265403	SK-3 FELT	226-403
6	22155716	HP-GUIDE BUSH	215-716
7	22185218	CONTACT RUBBER 12P	218-218
	22185219	CONTACT RUBBER 13P	218-219
8	22245144	SWITCH COVER 29P	224-144
	22245145	SWITCH COVER 32P	224-145
9	7618022000	P, C, B 32P ASSY	P, C, B ASSY
	7619722000	P, C, B 29P ASSY	7619721000
10	22135415	SK-3 STOPPER A	213-415
	22135416	SK-3 STOPPER B	213-416
	22135417	SK-3 STOPPER C	213-417
11	22125542	SK-3 ANGLE A-JX	212-542
12	22125541	SK-3 ANGLE B-JX	212-541
13	22125590	ANGLE	212-590
14	(22175187)	SK-3 SPRING (NATURAL)	217-187 ☆
	(22175188)	SK-3 SPRING (SHARP)	217-188 ☆
15		NYLON RIVET NRP-345	☆
16		TAPPING SCREWS 3X8 B1	☆



IC DATA

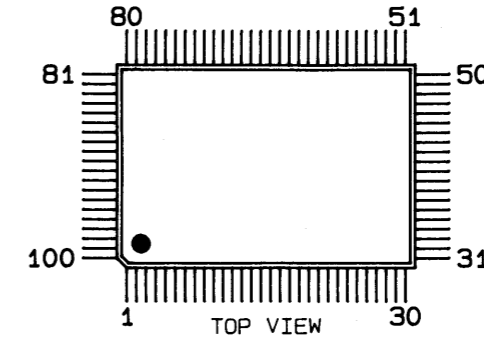
<p>REVERB MASK ROM HN623257PZ20</p>  <p>TOP VIEW</p>	<p>TONE ROM LH53100</p>  <p>TOP VIEW</p>	<p>EP ROM MPD27C256D-15</p>  <p>TOP VIEW</p>	<p>S RAM SRM2064M-15 HM6264LFP-15</p>  <p>TOP VIEW</p>	<p>S RAM HM62256LFP-12T</p>  <p>TOP VIEW</p>	<p>S RAM LC3517AM-12 HM6116</p>  <p>TOP VIEW</p>	<p>D RAM MPD41416C-12</p>  <p>TOP VIEW</p>	<p>74HC4051</p>  <p>TOP VIEW</p>
<p>PCM ROM A/B HN62304BPC99/HN62304BPD10</p>  <p>TOP VIEW</p>	<p>D/A CONVERTER PCM54</p>  <p>TOP VIEW</p>	<p>74HC00</p>  <p>TOP VIEW</p>	<p>74HC04/74LS04</p>  <p>TOP VIEW</p>	<p>74HC21</p>  <p>TOP VIEW</p>	<p>74HC27</p>  <p>TOP VIEW</p>	<p>74HC138</p>  <p>TOP VIEW</p>	
<p>PC-910</p>  <p>TOP VIEW</p>	<p>BA15218F MPC4062G MPC4570G M5238FP</p>  <p>TOP VIEW</p>	<p>74HC02</p>  <p>TOP VIEW</p>	<p>FRONT VIEW</p>  <p>1. INPUT 2. DELAY CAPACITOR 3. GND 4. RESET OUTPUT 5. OUTPUT</p>	<p>L78MR05R</p> 	<p>L78M12ML (L79M12ML)</p>  <p>1. INPUT (GND) 2. GND (INPUT) 3. OUTPUT</p> <p>FRONT VIEW</p>		

**SYNTHE CUSTOM IC
LA32**

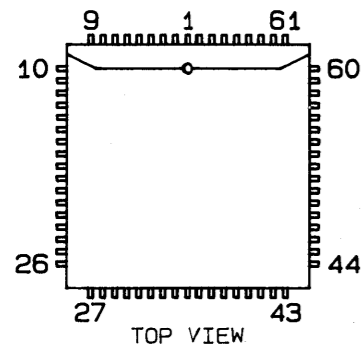


PIN.NO.	PIN NAME	I/O	DESCRIPTION	PIN.NO.	PIN NAME	I/O	DESCRIPTION
1	INT	O	Interrupt output インタラプト 出力端子	61-64, 67-76, 79, 80	O0-15	O	Data output データ・アウトプット・バス
2	OE	I	Output enable input アウトプット・イネーブル入力端子	81-84	SH0-3	O	Not used 未使用
3, 16, 28, 40, 53, 66, 78, 97	V _{DD}	-	+5 V	86	X1	I/O	Xtal input (32.768 MHz) 水晶振動子 (32.768 MHz) 接続端子
4, 27, 39, 42, 54, 77, 85, 87, 89, 95, 97, 99	-	-	Not used 未使用	88	X2	I/O	Xtal input 水晶振動子 (32.768 MHz) 接続端子
5	CS	I	Chip select チップ・セレクト入力端子	92	16M	O	Output frequency is one half of master clock マスター・クロックを1/2回分周した周波数を入力
6-14	A0-8	I	Connect to CPU address bus CPUとのアドレス・バス	93	32M	O	The same frequency as that of master clock マスター・クロックと同じ周波数を入力
15, 41, 65, 91	V _{SS}	-	GND	94	CKIN	I	Output frequency is a combination of the master clock and one half of master clock マスター・クロックと1/2回分周した周波数を入力
17-24	D0-7	I/O	Connect to CPU data bus CPUとのデータ・バス	96	SY1	I	Sync signal input シンク信号入力端子
25, 26, 29-33, 36	RD0-7	I	Connect to ROM data bus ROMとのデータ・バス	98	WR	I	Write pulse input ライト・パルス入力端子
34, 35, 37, 38, 43-50 55-60	RA0-19	O	Connect to ROM address bus ROMとのアドレス・バス	100	RD	I	Read pulse input リード・パルス入力端子

**REVERB CUSTOM IC
HG61H20R36F**

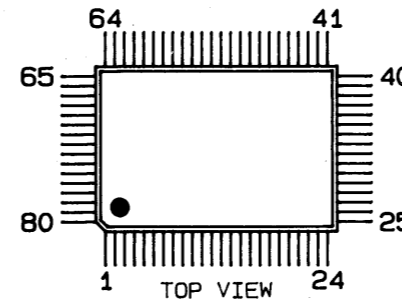


**CPU
8097BH**



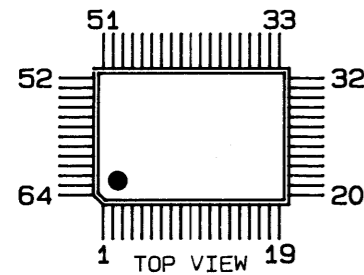
PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O
1	Vcc	-	21	P1.2	I/O	41	BHE	O	61	RD	O
2	EA	I	22	P1.3	I/O(NC)	42	P2.4	I/O	62	ALE	O
3	NMI	I	23	P1.4	I/O(NC)	43	READY	I(NC)	63	INST	O(NC)
4	ACH3	I	24	HS1.0	I	44	P2.3	I/O	64	-	I
5	ACH1	I	25	HS1.1	I	45	AD15	I/O	65	CLKOUT	O(NC)
6	ACH0	I	26	HS1.2	I(NC)	46	AD14	I/O	66	XTAL2	I
7	ACH2	I	27	HS1.3	I(NC)	47	AD13	I/O	67	XTAL1	I
8	ACH6	I	28	HSO.0	O(NC)	48	AD12	I/O	68	VSS	-
9	ACH7	I	29	HSO.1	O(NC)	49	AD11	I/O	-	-	-
10	ACH5	I	30	P1.5	I/O	50	AD10	I/O	-	-	-
11	ACH4	I	31	P1.6	I/O	51	AD9	I/O	-	-	-
12	ANGND	-	32	P1.7	I/O	52	AD8	I/O	-	-	-
13	VREF	-	33	P2.6	I/O	53	AD7	I/O	-	-	-
14	VPD	-	34	HSO.2	O(NC)	54	AD6	I/O	-	-	-
15	EXTINT	I	35	HSO.3	O(NC)	55	AD5	I/O	-	-	-
16	RESET	I	36	VSS	-	56	AD4	I/O	-	-	-
17	RXD	I	37	VBB	-	57	AD3	I/O	-	-	-
18	TXD	O	38	P2.7	I/O	58	AD2	I/O	-	-	-
19	P1.0	I/O	39	P2.5	I/O	59	AD1	I/O	-	-	-
20	P1.1	I/O	40	WR	O	60	AD0	I/O	-	-	-

**GATE ARRAY
HG61H15B72F**



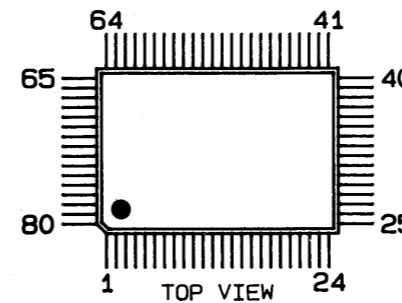
PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O
1	SI0	I	21	AD4	I	41	EXIO2	O	61	A17	O
2	SI1	I	22	AD5	I	42	EXIO3	O	62	BANK0	O
3	SI2	I	23	AD6	I	43	A0	O	63	BANK1	O
4	SI3	I	24	AD7	I	44	A1	O	64	WR L	O
5	SI4	I	25	AD8	I	45	A2	O	65	WR L	O
6	SI5	I	26	AD9	I	46	A3	O	66	SO0	O
7	SI6	I	27	AD10	I	47	A4	O	67	SO1	O
8	SI7	I	28	AD11	I	48	A5	O	68	SO2	O
9	AUXB2	O	29	AD12	I	49	A6	O	69	SO3	O
10	AUXB3	O	30	AD13	I	50	A7	O	70	SO4	O
11	CLK	I	31	AD14	I	51	A8	O	71	SO5	O
12	GND	-	32	AD15	I	52	GND	-	72	SO6	O
13	SC0	O	33	VCC	-	53	A9	O	73	VCC	-
14	SC1	O	34	RD	I	54	A10	O	74	SO7	O
15	SC2	O	35	WR	I	55	A11	O	75	LCD0	O
16	SC3	O	36	BHE	I	56	A12	O	76	LCD1	O
17	AD0	I	37	ALE	I	57	A13	O	77	LCD2	O
18	AD1	I	38	RES	I	58	A14	O	78	LCD3	O
19	AD2	I	39	INT	O	59	A15	O	79	LCDE	O
20	AD3	I	40	EXIO1	O	60	A16	O	80	LCDRS	O

**GATE ARRAY
MPD65005G-62**



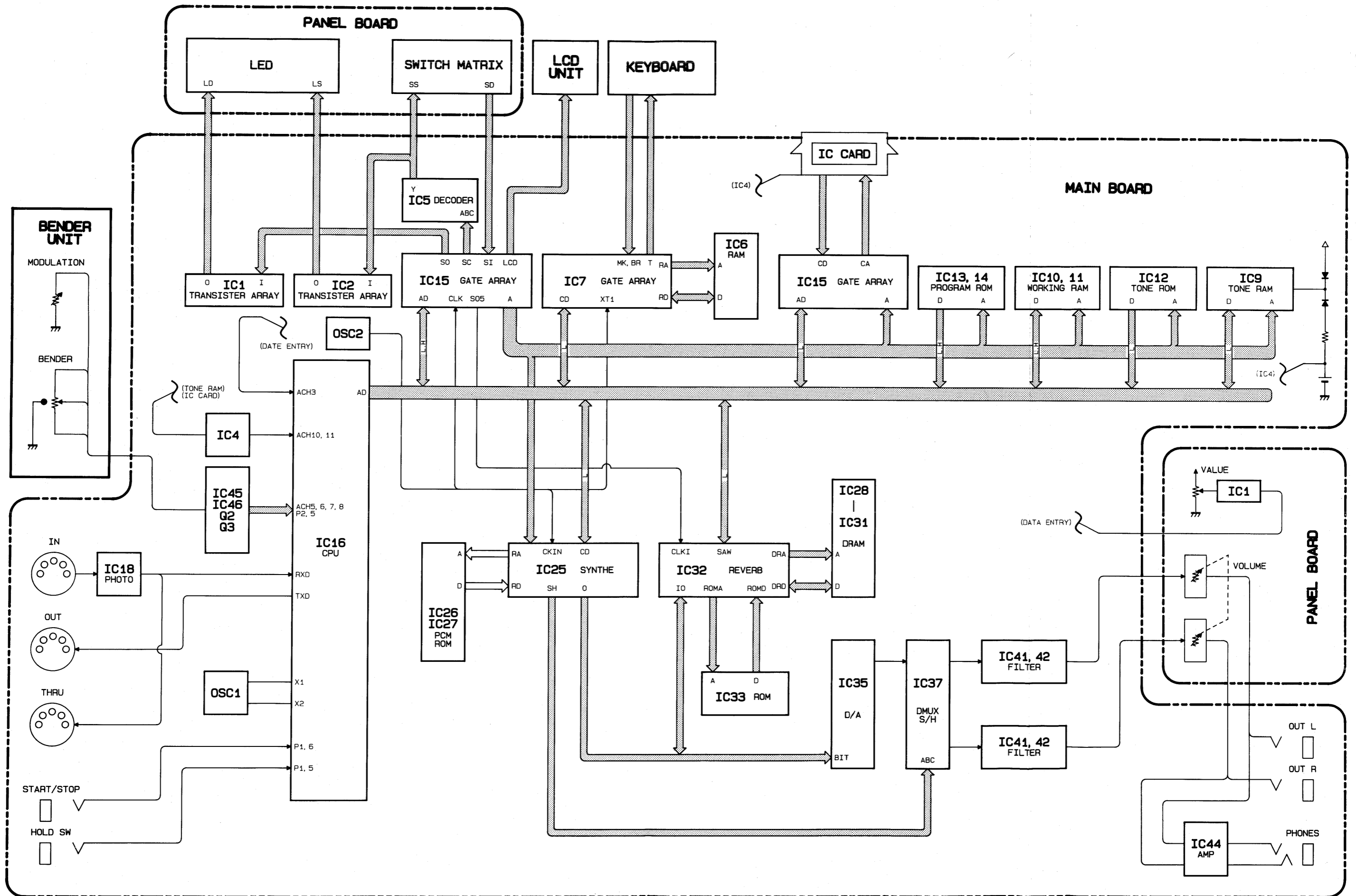
PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O
1	NC	-	17	NC	-	33	NC	-	49	NC	-
2	NC	-	18	NC	-	34	NC	-	50	CD0	I/O
3	AD7	I/O	19	A13	I	35	CA5	O	51	CD1	I/O
4	AD6	I/O	20	A12	I	36	CA6	O	52	CD2	I/O
5	AD5	I/O	21	A11	I	37	CA7	O	53	CD3	I/O
6	AD4	I/O	22	A10	I	38	CA8	O	54	CD4	I/O
7	AD3	I/O	23	A9	I	39	CA9	O	55	CD5	I/O
8	AD2	I/O	24	A8	I	40	CA10	O	56	CD6	I/O
9	AD1	I/O	25	SEL	I (LOW)	41	CA11	O	57	CD7	I/O
10	AD0	I/O	26	Vss	-	42	CA12	O	58	Vss	-
11	Vss	-	27	VDD	-	43	CA13	O	59	VDD	-
12	VDD	-	28	CA0	O	44	CA14	O	60	BATT	I (LOW)
13	ALE	I	29	CA1	O	45	MR	O	61	SENS	I (NC)
14	WR	I	30	CA2	O	46	CWR	O	62	RCS	I
15	RD	I	31	CA3	O	47	CCS	O	63	CS	I
16	A14	I	32	CA4	O	48	CRD	O	64	NC	-

**GATE ARRAY
MB63H149**



PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O	PIN NO.	NAME	I/O
1	T7	O	21	BR9	I	41	AD7	I/O	61	RA1	O
2	BR0	I	22	MK9	I	42	CA8	I	62	RA10	O
3	MK0	I	23	BR10	I	43	CA9	I	63	RA2	O
4	BR1	I	24	MK10	I	44	CA10	I (LOW)	64	ROE	I/O
5	MK1	I	25	RES	I	45	CS	I	65	RA3	O
6	BR2	I	26	EXCK	I/O	46	XT1	I	66	RWE	O
7	MK2	I	27	E	I (HIGH)	47	XT2	O (NC)	67	RA4	O
8	BR3	I	28	INT	O	48	ASEL	O (NC)	68	RA9	O
9	MK3	I	29	AS	I	49	MOD1	I (HIGH)	69	RA5	O
10	BR4	I	30	CRES	O (NC)	50	MOD2	I (LOW)	70	RA8	O
11	MK4	I	31	CRNW	I	51	RD3	I/O	71	RA6	O
12	Vss	-	32	SRCK	O (NC)	52	Vss	-	72	RA7	O
13	BR5	I	33	VDD	-	53	RD4	I/O	73	VDD	-
14	MK5	I	34	AD0	I/O	54	RD2	I/O	74	T0	O
15	BR6	I	35	AD1	I/O	55	RD5	I/O	75	T1	O
16	MK6	I	36	AD2	I/O	56	RD1	I/O	76	T2	O
17	BR7	I	37	AD3	I/O	57	RD6	I/O	77	T3	O
18	MK7	I	38	AD4	I/O	58	RD0	I/O	78	T4	O
19	BR8	I	39	AD5	I/O	59	RD7	I/O	79	T5	O
20	MK8	I	40	AD6	I/O	60	RA0	O	80	T6	O

BLOCK DIAGRAM



TEST MODE

Leave all sockets and card slot disengaged except for AC inlet.

テストを行なう前は、ペダルの接続やメモリー・カードを挿入しない。

Press and hold EXIT and EDIT buttons and then switch the power on.

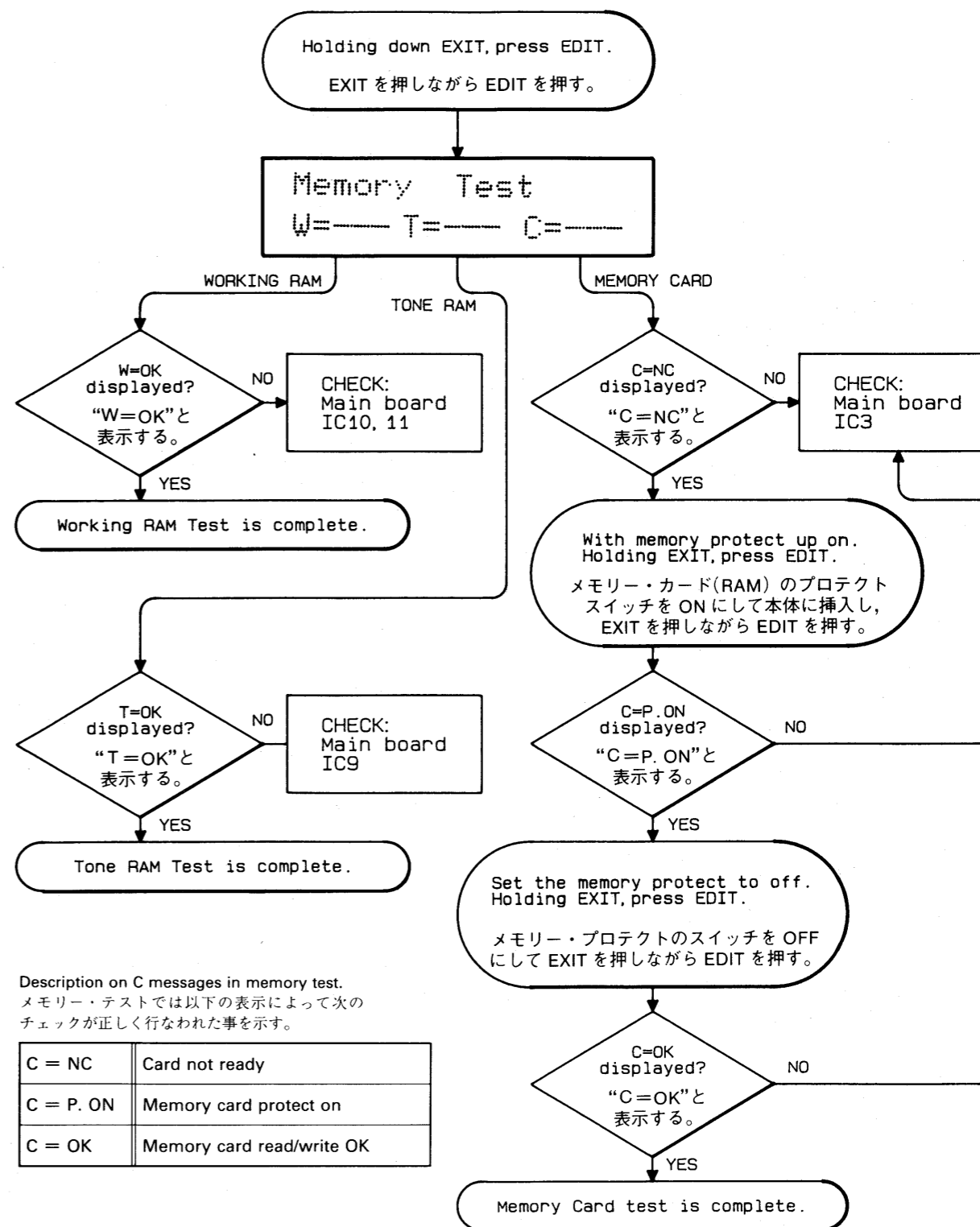
EXIT と EDIT を押しながら電源を投入。

Select Mode
EXIT + ***button

During the test mode the following buttons serve as test selector button.
テスト・モードに入ると、以下のボタン操作で各テスト・モードに移る。

EXIT + EDIT	Memory test
EXIT + TUNE	A/D test, switch test
EXIT + MIDI	Keyboard test
EXIT + COMPARE	D/A Adjust, PCM wave test
EXIT + WRITE	All LCD dots cleared
EXIT + DATA TRANSFER	All LCD dots light
EXIT + ENTER	LED test

MEMORY TEST



Description on C messages in memory test.
メモリー・テストでは以下の表示によって次の
チェックが正しく行なわれた事を示す。

C = NC	Card not ready
C = P. ON	Memory card protect on
C = OK	Memory card read/write OK

A/D CONVERTER, SWITCH TEST

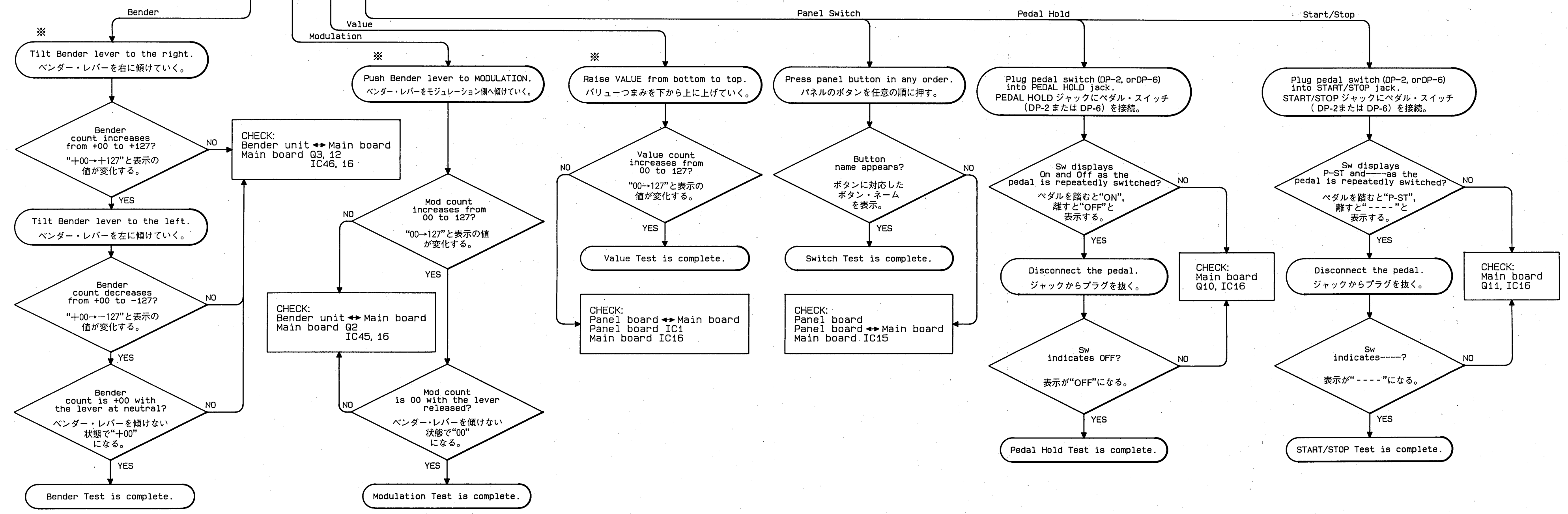
Holding down EXIT, press TUNE.
EXITを押しながらTUNEを押す。

Bend Mod Val Sw

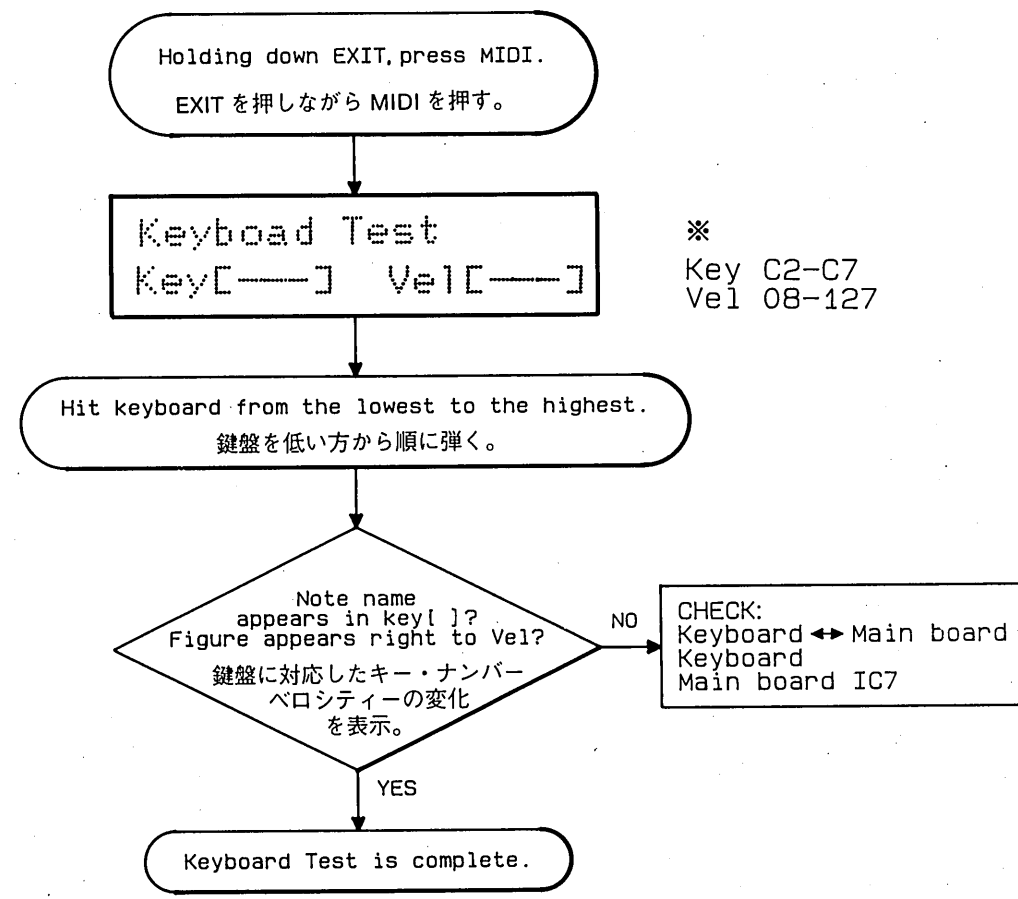
NOTE: Default values should be empty. Any figure indicates defect in corresponding circuit.

注 画面を呼び出した時は、数値は正しい。何らかの数値が表示された時は、該当する箇所をチェック。

※ During the test, the keyboard works as it should. The pitch of the sound varies in proportion to VALUE and BENDER setting.
BENDER -- As in normal play mode. That is, the pitch is raised up or down as the lever is tilt right or left, respectively.
VALUE -- Original pitch at bottom then raises the pitch as it is slid up.
※ 鍵盤は通常通りの働きをします。ピッチは次の通り変化します。ベンダー：通常通り。VALUE：一番下で本来の音程、上に動かすにつれて上昇します。

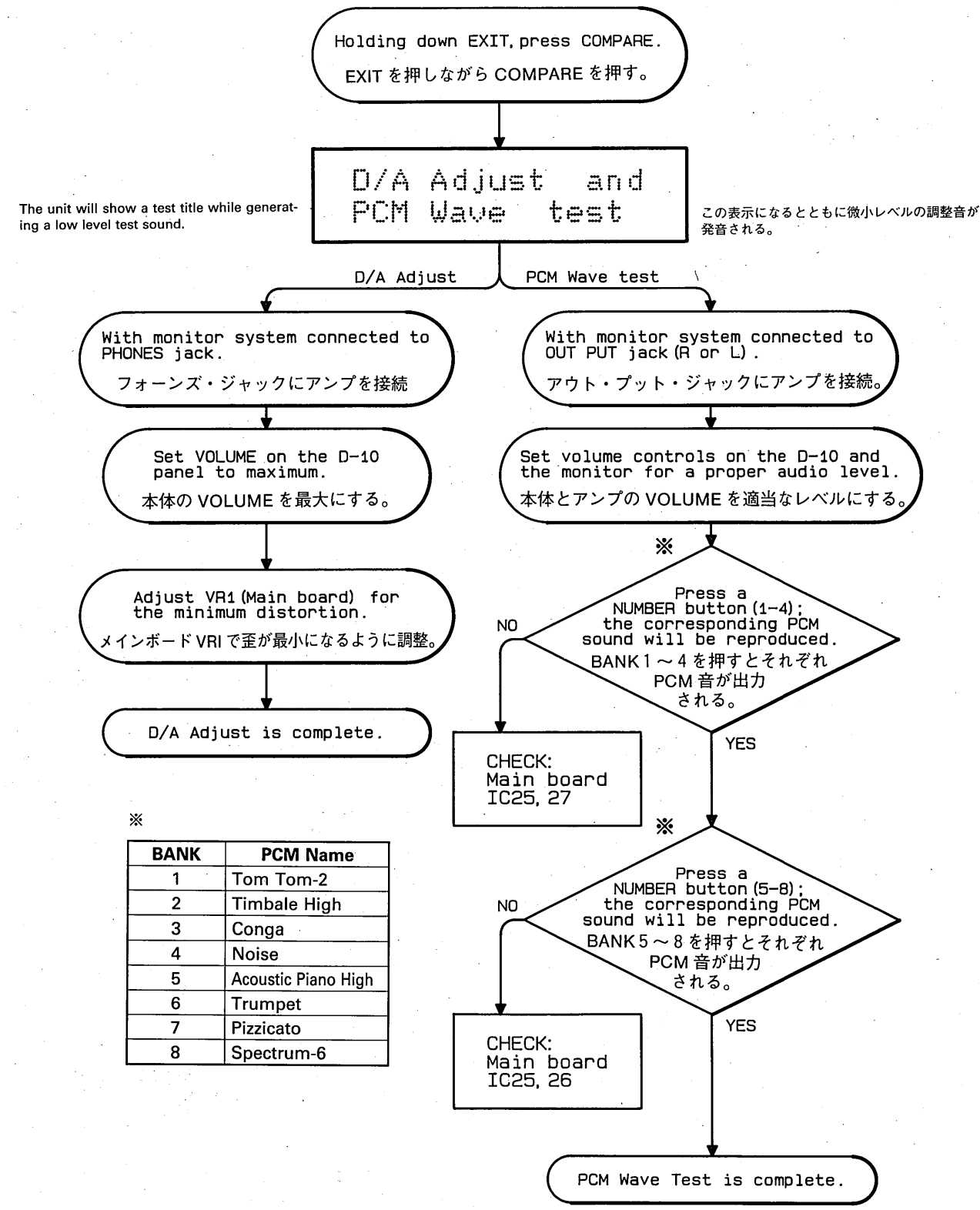


KEYBOARD TEST



※
Key C2-C7
Vel 08-127

D/A ADJUSTMENT AND PCM WAVE TEST



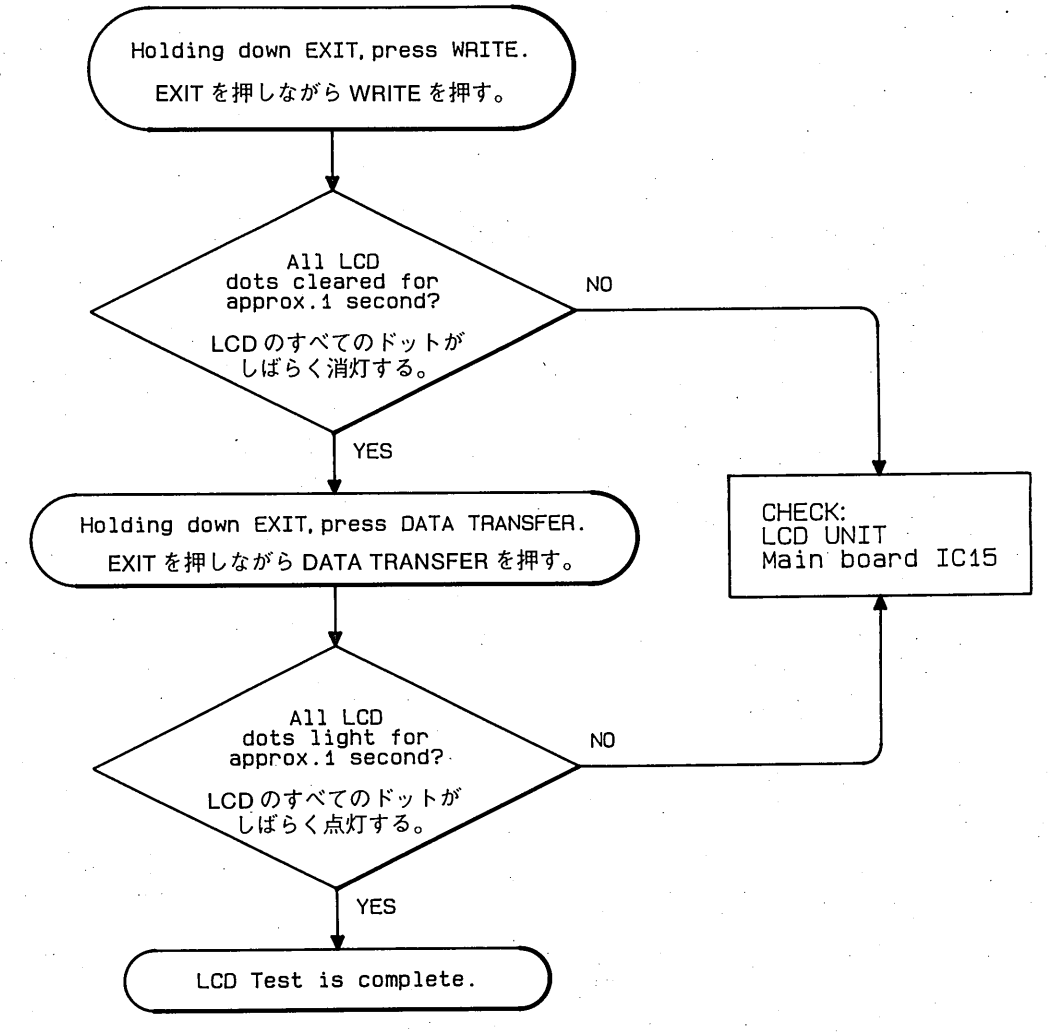
The unit will show a test title while generat-
ing a low level test sound.

この表示になるとともに微小レベルの調整音が
発音される。

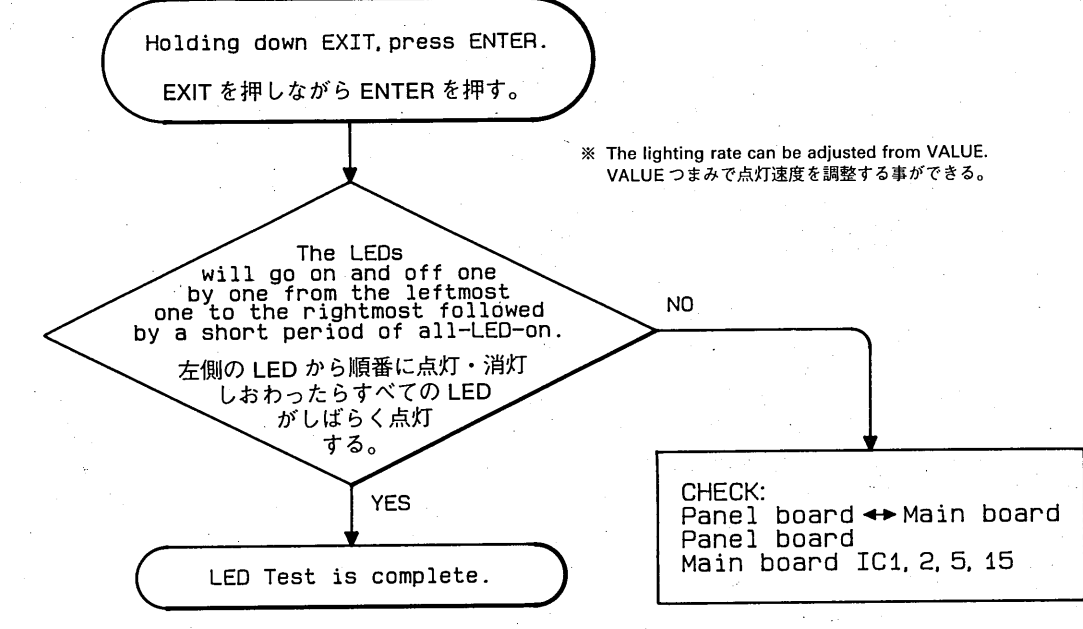
※

BANK	PCM Name
1	Tom Tom-2
2	Timbale High
3	Conga
4	Noise
5	Acoustic Piano High
6	Trumpet
7	Pizzicato
8	Spectrum-6

LCD TEST



LED TEST



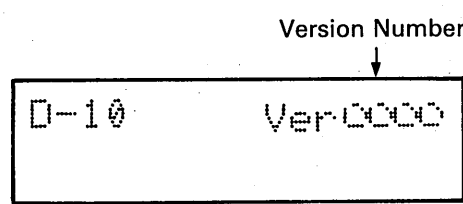
※ The lighting rate can be adjusted from VALUE.
VALUE つまみで点灯速度を調整する事ができる。

IDENTIFYING ROM (IC13, 14) VERSION NUMBER

Press and hold EDIT and DATA TRANSFER and then turn the switch on. The display should show the current ROM version number as well as acknowledgement followed by normal mode message.

バージョン・ナンバーの確認

EDIT と DATA TRANSFER を押しながら、電源オン。しばらく下記の画面が表示された後、通常の表示になる。



RECOVERING TONE RAM DATA

Holding down TUNE/FUNCTION and WRITE, turn the switch on: All the factory preset data except for programmable tone data are initialized to the original value.

データの設定

TUNE/FUNCTION と WRITE を押しながら電源を ON するとプログラマブルトーン以外のデータが工場出荷時の値にイニシャライズされる。プログラマブルトーンについては、プリセットトーン (a グループ) の値がコピーされる。

Programmable Tone
In the above sequence preset tone data of "a" group is copied into IC9.
To copy the factory programmable tone data, prepare the memory card (D-10/20 FACTORY PRESET) and then follow the procedure described below.

プログラマブルトーンを工場出荷時の値にするには、右に示す手順に従って、メモリ・カード (D-10/20 FACTORY PRESET CARD) をインターナルメモリにロードする。

Insert a Memory Card (D-10/20 FACTORY PRESET CARD) into the card slot. カード・スロットにメモリ・カード (D-10/20ファクトリー・プリセットカード) を挿入。

Press DATA TRANSFER. DATA TRANSFER を押す。

Card Select
Save Load

Press UPPER to select Load. UPPER を押す。Load が選択される。

Card Load Select
All

Press LOWER. LOWER を押す。

Card Load All
Sure? Enter

Press ENTER. ENTER を押す。

Turn Protect off
once? Write/Exit

Press WRITE to temporarily turn off the Memory protect. WRITE を押すと、メモリープロテクトが一時的に解除される。

Card Load All
Sure? Enter

Press ENTER. ENTER を押す。

Complete

When the data has been transferred properly, the display reads "Complete", then returns to the Play mode indication. (Memory Protect is automatically returned to ON.) データが正しく転送されると "Complete" と表示された後、通常の画面になる。(メモリー・プロテクトは自動的に ON に戻る。)

CHANGE INFORMATION

変更案内

SOFTWARE REVISION Program EPROM A (IC14) and B (IC13)

D-10では発売後下記に示すプログラム変更があり PROM A (IC14) PROM B (IC13) のバージョンアップが行なわれています。

Ver. EFF. SN	What is improved	改良点
1.01 870130	LCD won't change display when it should upon receiving a exclusive DTI message. Ver. 1.01 cures this problem. On power-up or when tone RAM is initialized, tune and timbre are set as follows: Ver. 1.00 Ver. 1.01 Master Tune A4 = 442Hz A4 = 440Hz Part 2 timber B-43 B-41	エクスクルーシブ DTI メッセージを受信しても LCD の表示だけが受信前の状態のままである。これを修正。 メモリー・イニシャライズ時のマスター・チューンが A4 = 442 Hz だったのを 440 Hz に変更。 メモリー・イニシャライズ時の Part 2 のティンバ No. が B-43 だったのを B-41 に変更。
1.02 895700	When in MIDI IN mode, there are sometimes phantom notes which MIDI doesn't turn on (likely to occur when running rhythm in internal clock). Rhythm changes to pattern play when changing from ROM play to Synth mode. Ver. 1.02 cures these problems.	MIDI IN よりデータを受信している時に受信していないはずの音が、発音する。これを修正。 ROM PLAY から SYNTH モードに移ると、リズムが必ずパターンプレイになってしまう。これを修正。
1.03 890100	The new software eliminates the following problems: The note which has been turned on from the keyboard will be turned off by MIDI Note off message no circuit resides in the D-10 to distinguish MIDI On/off from keyboard On/off. ROM play (demonstration) is disturbed by MIDI IN message. D-10 won't send the data from memory when requested to do so by a data request message. Cannot communicate with MC-500 set in bulk librarian (MRB-500) handshake mode.	キーボードで Note On した音が MIDI からの Note off で消えてしまう。これを修正。 ROM PLAY 中に MIDI IN からデータを受信すると、デモ曲の演奏がでたらめになる。これを修正。 メモリー・エリアに対して、データ・リクエスト・メッセージを D-10 に送っても、D-10 からデータを送ってこない。これを修正。 MC-500 のバルク・ライブラリアン (MRB-500) のハンドシェイクモードで D-10 → MC-500 ができない。これを修正。

CAUTION

注意

Since handshake problem is resolved by the change in protocol, D-10 of Ver. 1.02-below and D-10 of Ver. 1.03-up cannot communicate with each other in the way described in the D-10 Owner's manual. Do as follows:

D-10 Ver. 1.00-1.02 ↔ D-10 Ver. 1.03 のハンドシェイク・データ・トランスファー取扱説明書の操作方法ではできません。以下の操作方法で行なって下さい。
受信側 "H-shake Load All Sure?" で ENTER を押す。
送信側 "H-shake Dump All Sure?" で DATA TRANSFER を押しながら ENTER を押す。
受信側、送信側は順序が逆でも問題ありません。

Receiving D-10 Press ENTER in response to question "H-Shake Load Sure?".
Transmitting D-10 When "H-Shake Dump All Sure?" is displayed, press and hold DATA TRANSFER then press ENTER.

The above-mentioned communication can be initiated either on transmitter or receiver.

**Main Board
D-10 → D-20
Substitution**

**メインボード
D-10 → D-20
流用について**

Since D-10 and D-20 main boards are based on the same a circuit design they can be converted to the other.

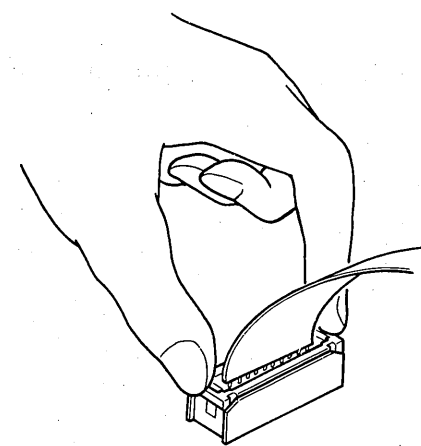
D-10とD-20のメインボードの基本構成は同じですので比較的簡単に転用することが出来ます。

In the event where substitution of D-10 main board for D-10 (and vice versa) becomes necessary, refer to the table below for modification information.

D-10のメインボードをD-20（または逆方向）へ流用する必要が生じた場合は、下表を参照して改造を行ってください。

NOTES:
Parts defined as "not used" in the table are parts that become unnecessary when used for the other model, but still can remain mounted without causing ill effect.
On the contrary, parts "not allowed to exist" will harmful to circuit function if not removed.

注:
表中の"未使用"部品は不要ですが、取り外さなくても別段支障を生じません。一方"無用"部品をそのまま残して置くと、回路に悪影響を及ぼします。



To disconnect the cable — While pressing down the both ends of the connector as shown below, pull out the cable.
ケーブルの抜き方
コネクタの両端を下に押さえながらケーブルを抜きます。

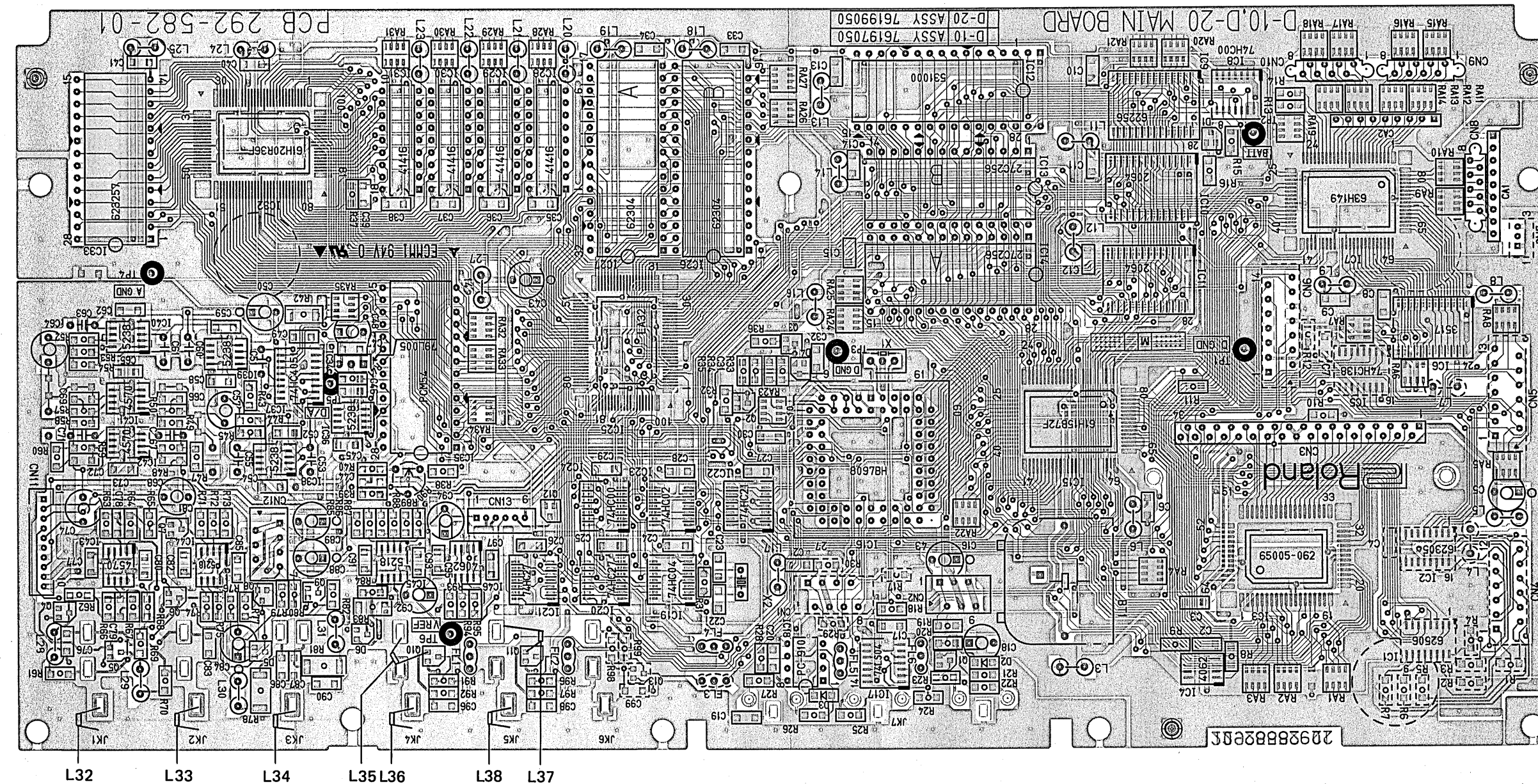
ADVARSEL!
Lithumbatteri: Explosionsfare.
Udsiktning må kun foretages af en sagkyrdig og som beskrevet i servicemanual.
Lithium batteri må kun udskiftes med samme type og fabrikat.

ADVARSEL!
Lithumbatteri: Fare for eksplosion.
Ma bare skiftes av kvalifisert tekniker som beskrevet i servicemanual.
Lithium batteri må kun utskiftes med samme type og fabrikat.

WARNING!
Lithumbatteri: Explosionsrisk.
For endast bytas av behörig service tekniker. Se instruktioner i servicemanualen.
Lithium batteri for endast ersättes med samma typ och fabrikat.

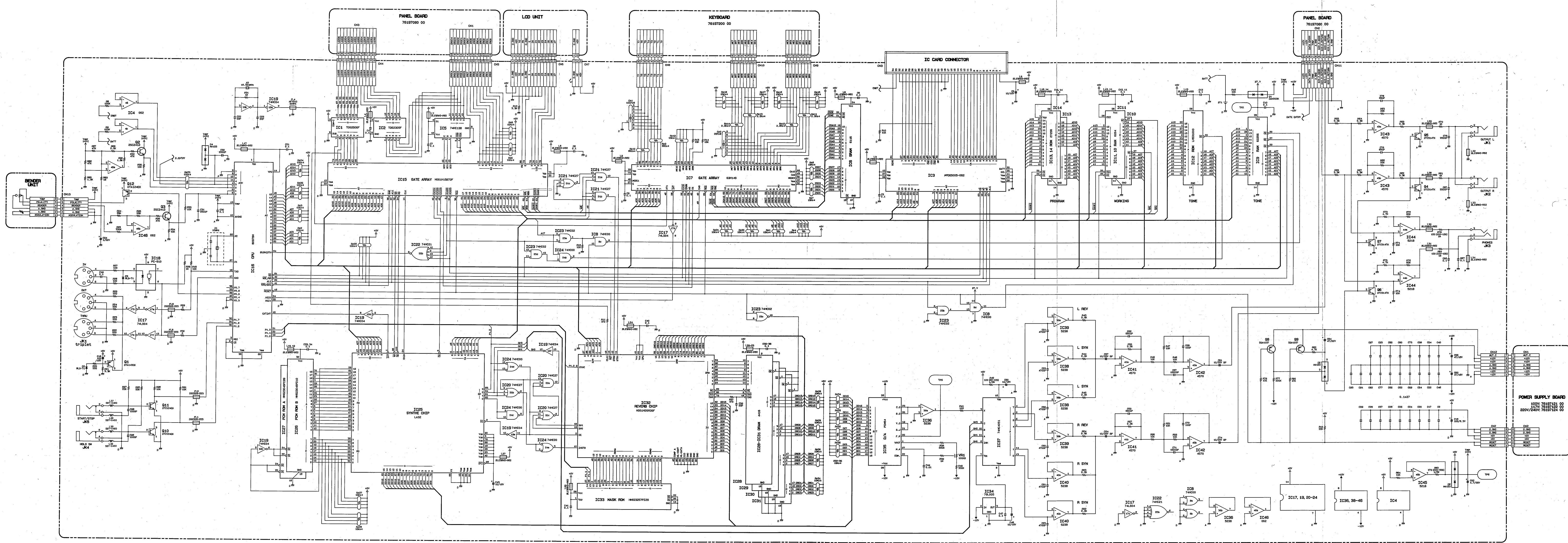
VAROITUS!
Lithumparisto: Räjähdysovaara.
Pariston saa vaihtaa ainoastaan alan ammattimes.
Kun vaihat lithium pariston KÄYTTÄ saman valmistajan samaa tyyppiä.

Part Name	D-10	D-20
IC1 (TD62506F)	used 使用	not used 未使用
IC2 (TD62305F)	used 使用	not used 未使用
IC5 (74HC 138)	used 使用	not used 未使用
IC13 (ROM B)		
IC14 (ROM A)	Replace 交換	
Q13 (DTC124EK)	not used 未使用	used 使用
FL3 (DSS306-55F23Z16)	not allowed to exist 無用	used 使用
FL39, 40 (SBT-0460)	not used 未使用	used 使用
R1-7 (33Ω)	used 使用	not used 未使用
R12 (3.3KΩ)	used 使用	not used 未使用
R29, 30 (0Ω)	used 使用	not allowed to exist 無用
R98(22KΩ)	not used 未使用	used 使用
R99 (10KΩ)	not used 未使用	used 使用
C99 (100PF)	not used 未使用	used 使用
CN1 (52004-0810)	not used 未使用	used 使用
CN4 (52004-1210)	used 使用	not used 未使用
CN5 (52004-1310)	used 使用	not used 未使用
CN6 (52004-1410)	used 使用	not used 未使用
CN7 (IL-S-10P-S2T2-EF)	used 使用	not used 未使用
JK6 (YKB21-5012)	not allowed to exist 無用	used 使用



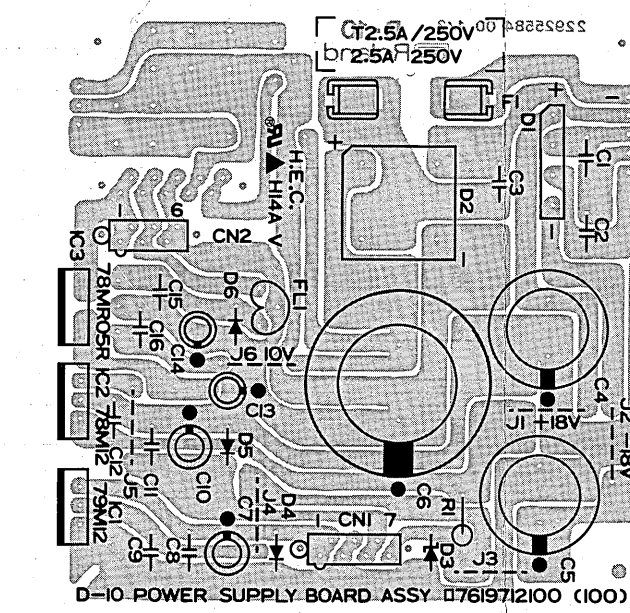
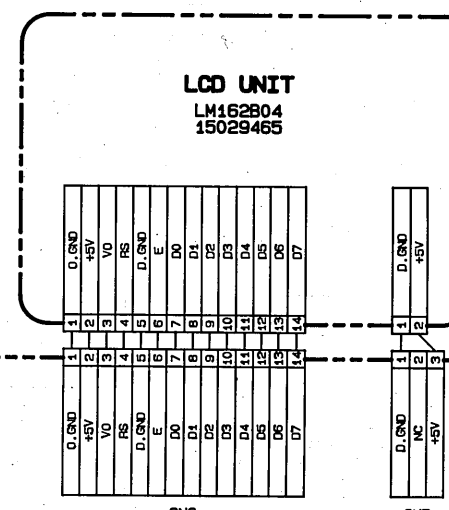
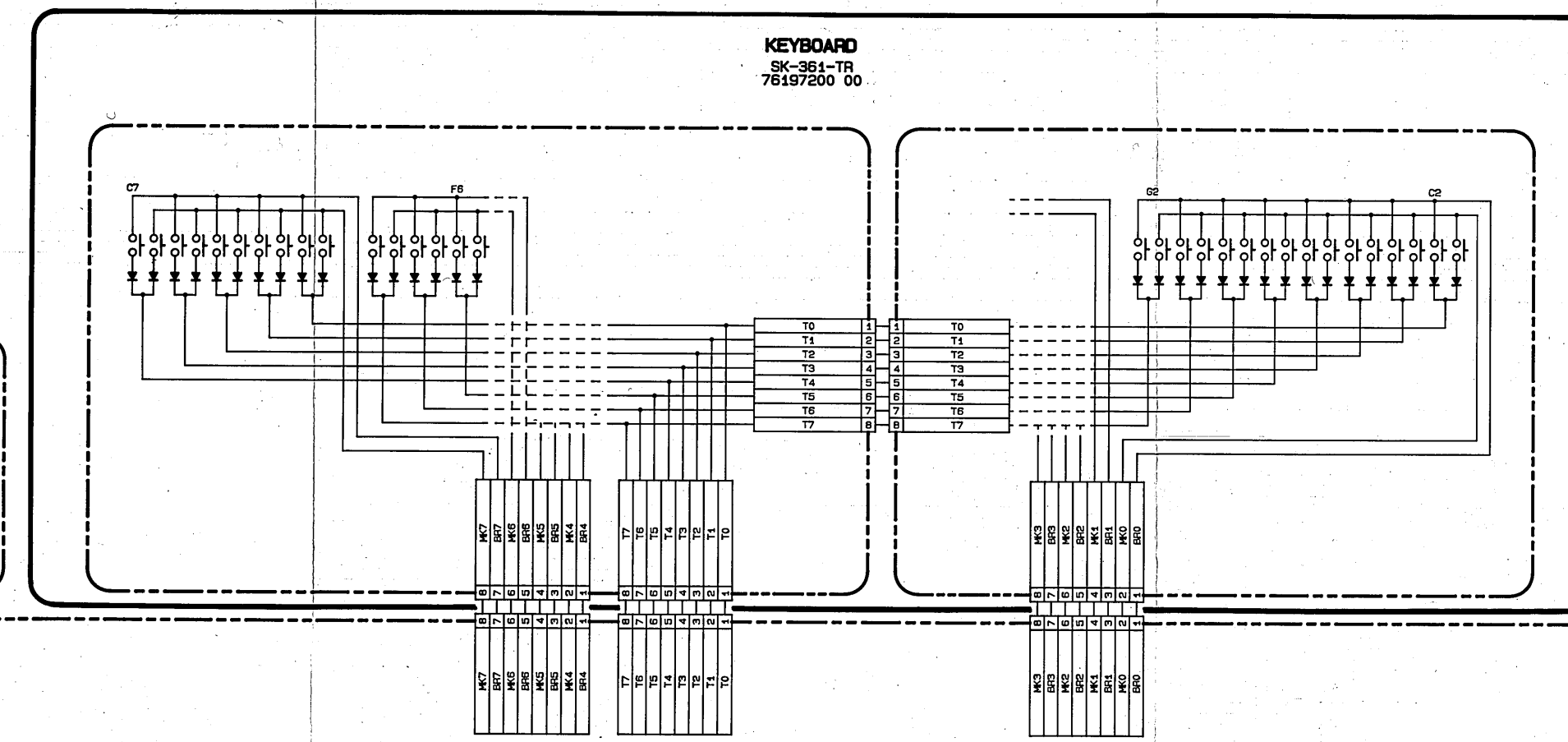
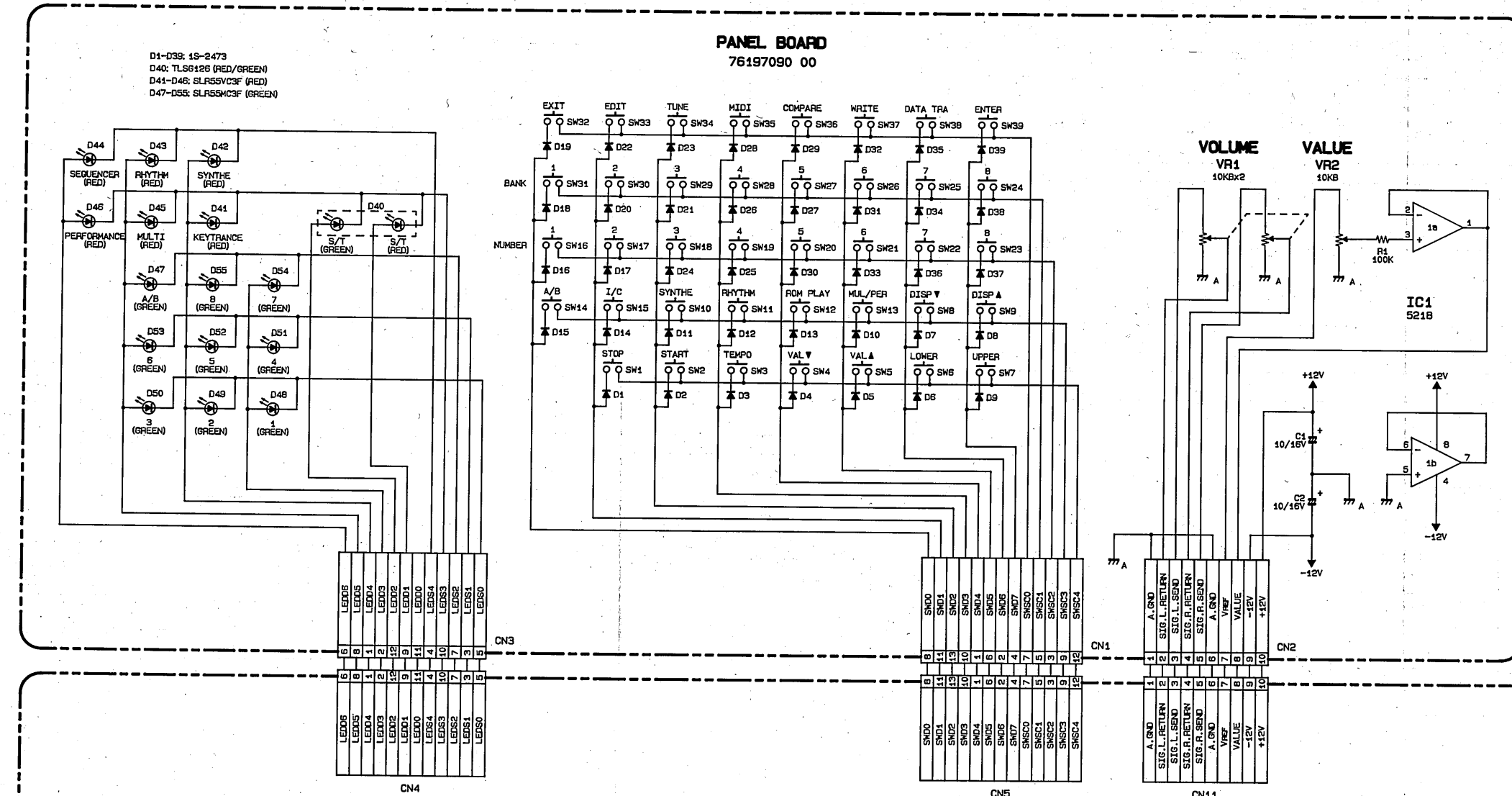
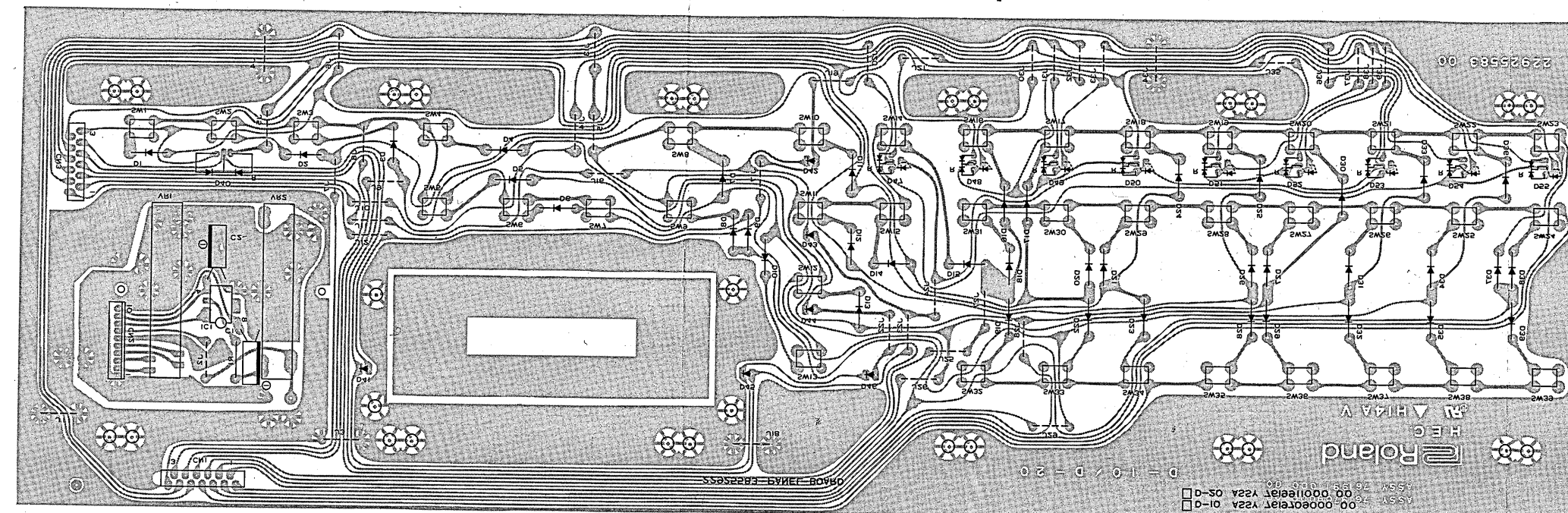
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70

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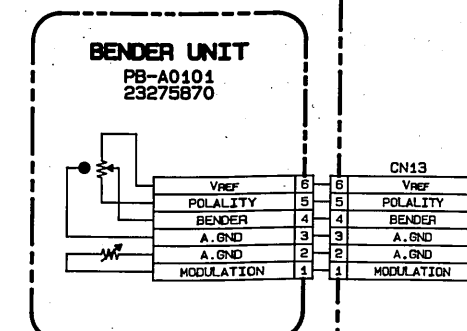
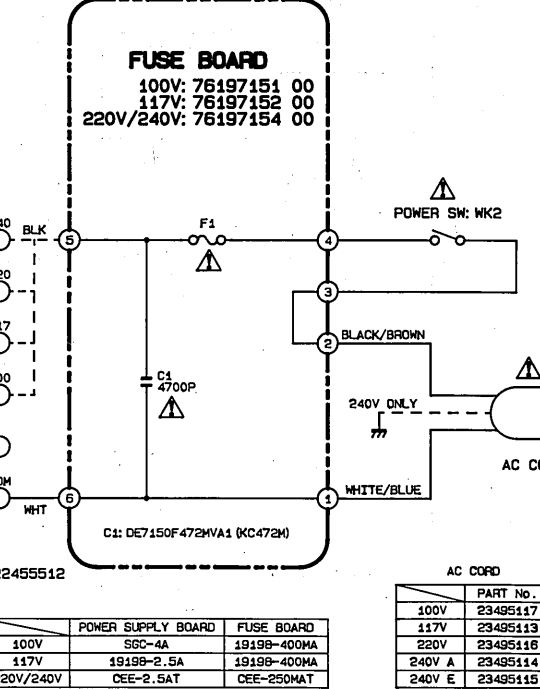
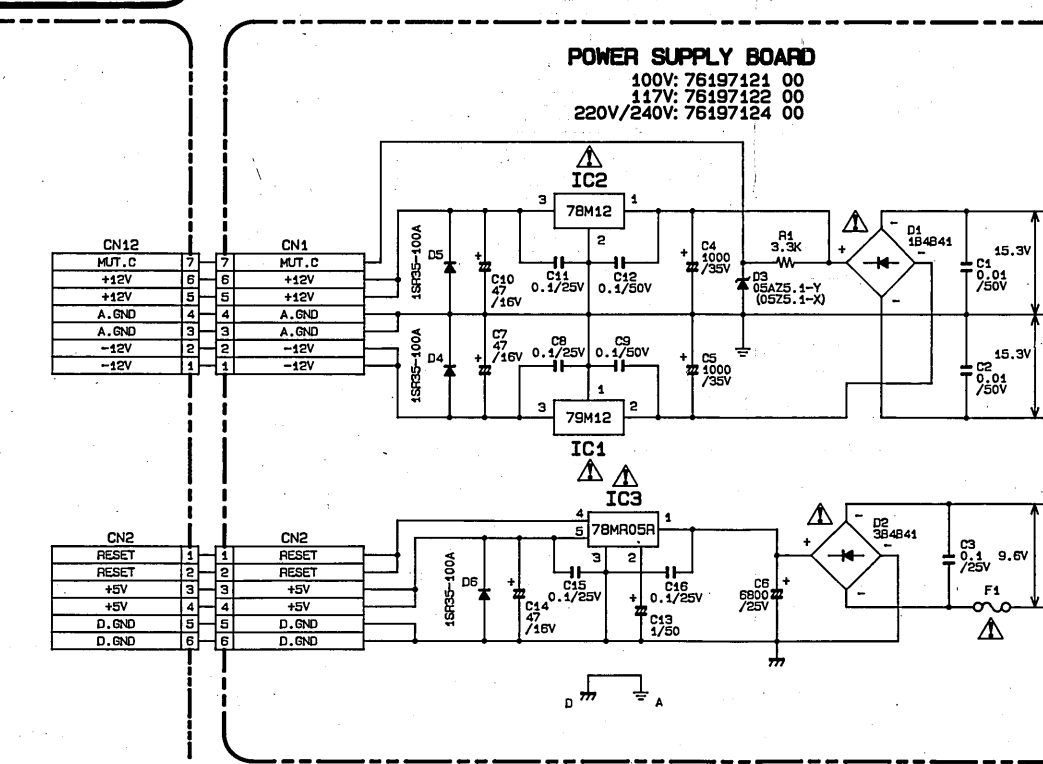
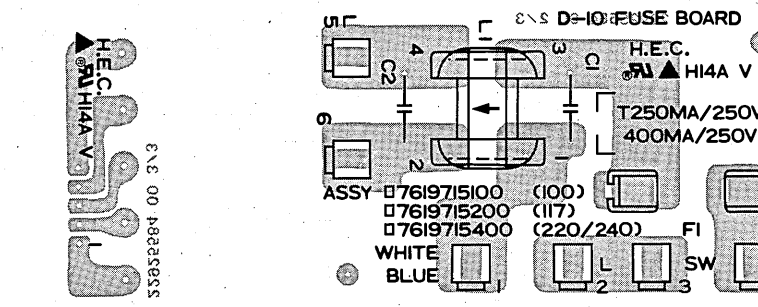


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70

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SAFETY PRECAUTIONS:
Using other than specified parts in this equipment could result in the failure of the equipment and the outbreak of a fire.
Replace parts marked with the same numbered parts, as specified in the circuit diagrams, for continued safety.



MAIN BOARD
76197000 00

LINEAR SYNTHESIZER (Performance mode)

Date : Dec.21 1987

Model D-10

MIDI Implimentation Chart

Version : 1.00

Function...	Transmitted	Recognized	Remarks
Basic Channel Default Changed	1-16 1-16	1-16 1-16	Memorized
Mode Default Messages Altered	Mode 3 POLY, OMNI OFF *****	Mode 3 ×	
Note Number : True voice	24-108 *****	0-127 12-108	
Velocity Note ON Note OFF	○ v= 1-127 × 9n v= 0	○ v= 1-127 ×	
After Touch Key's Ch's	× ×	× ×	
Pitch Bender	*	* 0-24 semi	9 bit resolution
Control Change	1 * 6 × 7 × 11 × 64 * 100, 101 × 121 ○	* *** * ○ * *** (0) ○	Modulation Data entry Volume Expression Hold 1 RPC LSB, MSB Reset all controllers
Prog Change : Ture #	* 0-127 *****	* 0-127 0-127	
System Exclusive	**	**	Tone Parameter
System Common : Song Pos Song Sel Tune	× × ×	× × ×	
System Real Time : Clock Commands	× ×	× ×	
Aux Messages : Local ON/OFF All Notes OFF Active Sense Reset	× ** ○ ×	○ ○ (123-127) ○ ×	
Notes	* Can be set to ○ or × manually, and memorized. ** Can be set to ○ or × manually ***RPC = Registered parameter control number. RPC #0 : Pitch bend sensitivity Parameter values are given by Data Entry.		

LINEAR SYNTHESIZER (Multi Timbral mode/Synthesizer section)

Date : Dec.21 1987

Model D-10

MIDI Implimentation Chart

Version : 1.00

Function...	Transmitted	Recognized	Remarks
Basic Channel Default Changed	×	1-16 1-16	Memorized
Mode Default Messages Altered	×	Mode 3 ×	
Note Number : True voice	×	0-127 12-108	
Velocity Note ON Note OFF	×	○ v= 1-127 ×	
After Touch Key's Ch's	×	× ×	
Pitch Bender	×	○ 0-24 semi	9 bit resolution
Control Change	1 × 6 × 7 × 10 × 11 × 64 × 100, 101 × 121 ×	○ ** ○ ○ ○ ○ ** (0) ○	Modulation Data entry Volume Panpot Expression Hold 1 RPC LSB, MSB Reset all controllers
Prog Change : Ture #	×	○ 0-127 0-127	
System Exclusive	*	*	Tone Parameter
System Common : Song Pos Song Sel Tune	×	× × ×	
System Real Time : Clock Commands	×	× ×	
Aux Messages : Local ON/OFF All Notes OFF Active Sense Reset	×	× ○ (123-127) ○ ×	
Notes	* Can be set ○ or × manually. ** RPC = Registered parameter control number. RPC #0 : Pitch bend sensitivity Parameter values are given by Data Entry.		

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

○ : YES
× : NO

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

○ : YES
× : NO

LINEAR SYNTHESIZER (Multi Timbral mode/Keyboard section)

Date : Dec.21 1987

Model D-10

MIDI Implimentation Chart

Version : 1.00

Function...	Transmitted	Recognized	Remarks
Basic Channel Default Changed	1-16 1-16	× ×	Memorized (upper/lower)
Mode Default Messages Altered	Mode 3 POLY, OMNI OFF *****	× ×	
Note Number True voice	24-108 *****	× ×	
Velocity Note ON Note OFF	○ v= 1-127 × 9n v= 0	× ×	
After Touch Key's Ch's	× ×	× ×	
Pitch Bender	**	×	
Control Change	1 ** 64 ** 121 **	× × ×	Modulation Hold 1 Reset all controllers
Prog Change Tune #	○ 0-127 *****	×	
System Exclusive	×	×	
System Common Song Pos Song Sel Tune	× × ×	× × ×	
System Real Time Clock Commands	× ×	× ×	
Aux Messages Local ON/OFF All Notes OFF Active Sense Reset	× * (123) ○ ×	× × × ×	
Notes	* Can be set to ○ or × manually. ** Transmitted to both upper/lower MIDI TX channels.		

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

○ : YES
× : NO

LINEAR SYNTHESIZER (Rhythm section)

Date : Dec.21 1987

Model D-10

MIDI Implimentation Chart

Version : 1.00

Function...	Transmitted	Recognized	Remarks
Basic Channel Default Changed	1-16 1-16	1-16 1-16	Memorized
Mode Default Messages Altered	× × *****	Mode 3 ×	
Note Number True voice	24-108 *****	24-108 24-108	
Velocity Note ON Note OFF	○ v= 1-127 × 9n v= 0	○ v= 1-127 ×	
After Touch Key's Ch's	× ×	× ×	
Pitch Bender	×	* 0-24 semi	9 bit resolution
Control Change	6 × 7 × 11 × 100, 101 × 121 ×	** * ○ ** (0) ○	Data entry Volume Expression RPC LSB, MSB Reset all controllers
Prog Change Tune #	× *****	×	
System Exclusive	○	***	Setup & Seq data
System Common Song Pos Song Sel Tune	× × ×	× × ×	
System Real Time Clock Commands	○ (Clock mode = INT) ○ (Clock mode = INT)	○ (Clock mode = MIDI) ○ (Clock mode = MIDI)	
Aux Messages Local ON/OFF All Notes OFF Active Sense Reset	× × × ×	× ○ ○ ×	
Notes	* Performance mode - Can be set to ○ or × manually and memorized. Multi Timbral mode - Always received. ** RPC = Registered parameter control number. RPC #0 : Pitch bend sensitivity ***Can be set to ○ or × manually.		

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

○ : YES
× : NO

LINEAR SYNTHESIZER

Date : Dec.21 1987

Model D-10

MIDI Implimentation

Version : 1.00

1. TRANSMITTED DATA (Synthesizer Section)

■ Note event

Note off
 Status Second Third
 9nH kkH 00H
 kk = note number 18H - 6CH (24 - 108)
 n = MIDI Channel 0H - FH (1 - 16)

Note on
 Status Second Third
 9nH kkH vvH
 kk = Note number 18H - 6CH (24 - 108)
 vv = Velocity 01H - 7FH (1 - 127)
 n = MIDI channel 0H - FH (1 - 16)

■ Control change

Modulation Depth
 Status Second Third
 BnH 01H vvH
 vv = Modulation depth 00H - 7FH (0 - 127)
 n = MIDI Channel 0H - FH (1 - 16)

In Performance mode, transmitted when MIDI Modulation function is on. In Multi Timbral mode, transmitted on both upper and lower MIDI TX channels of the keyboard. D-10 does not transmit this message repeatedly if both channels are the same.

Hold-1
 Status Second Third
 BnH 40H vvH
 vv = 00H : Off
 vv = 7FH : On
 n = MIDI Channel 0H - FH (1 - 16)

In Performance mode, transmitted when MIDI Hold function is on. In Multi Timbral mode, transmitted on the MIDI TX channel of upper and lower sides of the keyboard. D-10 does not transmit this message repeatedly if both channels are the same.

Reset All Controllers

Status Second Third
 BnH 79H 00H
 Transmitted upon changing modes (Performance → Multi timbral) or MIDI channels (on the previous channel).

■ Program change

Patch / Timbre Change
 Status Second
 CnH ppH
 pp = Patch Number 0H - 7FH (0 - 127)
 n = MIDI Channel 0H - FH (1 - 16)

In Performance mode, transmitted when MIDI Prog. Change function is on. In Multi Timbral mode and when the LCD is showing the status of either of upper or lower keyboard, transmitted on the MIDI TX channel assigned to the keyboard.

■ Pitch bender change

Pitch Bender
 Status Second Third
 EnH vvH vvH
 vv vv = Pitch Bender change Value
 n = MIDI Channel 0H - FH (1 - 16)

In Performance mode, transmitted when MIDI Bender function is on. In Multi Timbral mode, transmitted on the MIDI TX channel of both upper and lower sides of keyboard. Transmitted only once if both TX channels are the same.

■ Mode message

All Notes Off
 Status Second Third
 BnH 7BH 00H
 n = MIDI Channel 0H - FH (1 - 16)

When MIDI All notes off function is on, will be transmitted upon releasing of all the keys after pressing a key(s).

OMNI OFF

Status Second Third
 BnH 7CH 00H
 n = MIDI Channel 0H - FH (1 - 16)

Transmitted upon power-up or when MIDI TX channel is changed to the new channel (always accompanied by "POLY"). In Multi Timbral mode, transmitted on the MIDI TX channel of both upper side and lower side of keyboard. Transmitted only once if both channels are the same.

POLY
 Status Second Third
 BnH 7FH 00H
 n = MIDI Channel 0H - FH (1 - 16)

Transmitted upon power-up or when MIDI TX channel is changed to the new channel. (Always accompanied by "OMNI OFF"). In Multi Timbral mode, transmitted on the MIDI TX channel of both upper side and lower side of keyboard. Transmitted only once if both channels are the same.

■ Exclusive

Status
 FOH : System Exclusive
 F7H : EOX (End of Exclusive)
 A set of Patch/Timbre parameters is transmitted when MIDI Patch dump function is on. The contents in Device-ID is either of the following two: unit number and MIDI channel number. The type of the information in the Device-ID can be determined from the display mode:
 When display is showing,
 (in Multi timbre mode)
 Part --- unit number less 1
 Keyboard status --- MIDI channel less 1
 (in Performance mode)
 unit number less 1 (only)
 Also used for Bulk dump/load operation. Refer to Section 5 for details.

■ Active Sensing

Status
 FEH : Active Sensing
 Transmitted for checking MID connection between D-10 and external equipment.

2. TRANSMITTED DATA (Rhythm Section)

■ Note event

Will be transmitted when a rhythm track or rhythm pattern is played in internal clock mode. Note events are transmitted on the MIDI channel assigned to rhythm part.

Note off
 Status Second Third
 9nH kkH 00H
 kk = note number 18H - 6CH (24 - 108)

Note on
 Status Second Third
 9nH kkH vvH
 kk = note number 18H - 6CH (24 - 108)
 vv = Velocity 01H - 7FH (1 - 127)

■ Exclusive

Status
 FOH : System Exclusive
 F7H : EOX (End of Exclusive)
 Used for Bulk dump/load operation. Refer to Section 5 for details.

■ Timing Clock

Status
 FBH
 Transmitted only when Clock Mode is Internal.

■ Start

Status
 FAH
 Transmitted only when in Internal clock mode. Panel operation: Press Start button while holding Stop button.

■ Continue

Status
 FBH
 Transmitted only when in Internal clock mode. Panel operation: Press Start button.

■ Stop

Status
 FCH
 Transmitted only when in Internal clock mode. Panel operation: Press Stop button.

3. RECOGNIZED RECEIVE DATA (SYNTHESIZER SECTION)

■ Note event

Note off
 Status Second Third
 8nH kkH vvH
 9nH kkH 00H
 kk = note number 00H - 7FH (0 - 127)
 vv = velocity ignored
 n = MIDI Channel 0H - FH (1 - 16)

Note on
 Status Second Third
 9nH kkH vvH
 kk = note number 00H - 7FH (0 - 127)
 vv = Velocity 01H - 7FH (1 - 127)
 n = MIDI Channel 0H - FH (1 - 16)

Note numbers outside of the range 12-108 are transposed to the nearest octave inside the range.

■ Control change

Modulation Depth
 Status Second Third
 BnH 01H vvH
 vv = Modulation depth 00H - 7FH (0 - 127)
 n = MIDI Channel 0H - FH (1 - 16)

In Performance mode, recognized when MIDI Modulation function is on. In Multi Timbral mode, always recognized.

Data Entry

Status Second Third
 BnH 06H vvH
 vv = Value of RPC 00H - 18H (0 - 24)
 n = MIDI Channel 0H - FH (1 - 16)

Recognized as a value corresponding to the parameter specified by RPC. See RPC MSB section.

Main Volume

Status Second Third
 BnH 07H vvH
 vv = Volume Value 00H - 7FH (0 - 127)
 n = MIDI Channel 0H - FH (1 - 16)

In Performance mode, recognized when MIDI Volume function is on. In Multi Timbral mode, always recognized. Can control the volume of the Part played through the same MIDI channel. The maximum volume is determined by the Volume knob and Expression message.

Panpot

Status Second Third
 BnH 0AH vvH
 vv = Panpot Value 00H - 7FH (0 - 127)
 n = MIDI Channel 0H - FH (1 - 16)

Ignored when in Performance mode. Orientation of sound is as follows.
 0 = LEFT, 63 = CENTER, 127 = RIGHT

Expression

Status Second Third
 BnH 0BH vvH
 vv = Expression 00H - 7FH (0 - 127)
 n = MIDI Channel 0H - FH (1 - 16)

Can control the Volume of the Parts played through the same MIDI channel. The maximum volume is determined by the Volume knob and Main volume message.

Hold-1

Status Second Third
 BnH 40H vvH
 vv = 00H - 3FH : Off
 vv = 40H - 7FH : On
 n = MIDI Channel 0H - FH (1 - 16)

In Performance mode, recognized when MIDI Modulation function is on. In Multi Timbral mode, always recognized.

RPC LSB
 Status Second Third
 BnH 64H vvH

vv = LSB of the parameter number controlled by RPC
 00H - 7FH (0 - 127)
 n = MIDI Channel 0H - FH (1 - 16)

RPC MSB
 Status Second Third
 BnH 65H vvH

vv = MSB of the parameter number controlled by RPC
 00H - 7FH (0 - 127)
 n = MIDI Channel 0H - FH (1 - 16)

Using MIDI RPC, parameters can be changed by Control change messages. RPC MSB and LSB specify the parameter to be controlled, while Data entry shows the parameter value.

RPC MSB LSB Data Entry Description
 00H 00H vvH Bender Range
 vv = 0 - 24

Reset All Controllers

Status Second Third
 BnH 79H 00H

When Reset all controllers is recognized, each of the controllers is set as follows.

Controller	setting
Modulation Depth	OFF (0)
Main Volume	MAX (127)
Expression	MAX (127)
Hold-1	OFF (0)
Pitch Bender Change	CENTER

■ Program change

Patch / Timbre Change
 Status Second
 CnH ppH
 pp = Patch Number 0H - 7FH (0 - 127)
 n = MIDI Channel 0H - FH (1 - 16)

In Performance mode, recognized when MIDI Prog. Change function is on and the Patch is changed. In Multi Timbral mode, always recognized and the Timbre is changed. Cannot switch between Internal and Card through MIDI Program change message.

pp	A/B	BANK	NUMBER
00H (00)	A	1	1
3FH (63)	A	8	8
40H (64)	B	1	1
7FH (127)	B	8	8

■ Pitch Bender change

Pitch Bender
 Status Second Third
 EnH vvH vvH
 vv vv = Pitch Bender change Value
 n = MIDI Channel 0H - FH (1 - 16)

In Performance mode, recognized when MIDI Bender function is on. In Multi Timbral mode, always recognized.

■ Mode message

All notes off
 Status Second Third
 BnH 7BH 00H
 n = MIDI Channel 0H - FH (1 - 16)

When All notes off is recognized, all the notes which have been turned on by Note on message are turned off.

Local Control
 Status Second Third
 BnH 7AH vvH
 vv = 00H : Off
 vv = 7FH : On
 n = MIDI Channel 0H - FH (1 - 16)

Recognized in performance mode only.

All notes off

OMNI OFF

Status	Second	Third
BnH	7CH	00H

n = MIDI Channel 0H - FH (1 - 16)

Recognized as All Notes Off only.
The D-10 stays in MODE 3.

OMNI ON

Status	Second	Third
BnH	7DH	00H

n = MIDI Channel 0H - FH (1 - 16)

Recognized as All Notes Off only.
The D-10 stays in MODE 3.

MONO

Status	Second	Third
BnH	7EH	mmH

mm = MONO channel range ignored
n = MIDI Channel 0H - FH (1 - 16)

Recognized as All notes off only.
The D-10 stays in MODE 3.

POLY

Status	Second	Third
BnH	7FH	00H

n = MIDI Channel 0H - FH (1 - 16)

Recognized as All notes off only.
The D-10 stays in MODE 3.

Exclusive

Status
F0H : System Exclusive
F7H : EOX (End of Exclusive)

A set of Patch/Timbre parameters will be received when MIDI Exclusive function is on.
When in Multi timbral mode and if Device-ID contains "MIDI Channel number less 1", the timbre parameters enter into the parts of the same MIDI channel; if Device-ID contains "Unit number less 1", into the parts specified by address in the exclusive message.
In performance mode "Unit number less 1" is effective.

Also used for Bulk dump/load operation.
Refer to Section 5 for details.

Active Sensing

Status
FEH : Active Sensing

Once receiving this message, the D-10 expects to accept status or data in sequence, at least within 300ms intervals. If the unit fails to receive a message 300ms after the previous one, it judges there is a problem somewhere in MIDI path, muting the current sound and stopping 300ms-interval monitoring of incoming signal.

4. RECOGNIZED RECEIVE DATA (RHYTHM SECTION)

Note event

Status	Second	Third
8nH	kkH	vvH
9nH	kkH	00H

kk = note number 18H - 6CH (24 - 108)
vv = velocity ignored
n = MIDI Channel 0H - FH (1 - 16)

Status	Second	Third
9nH	kkH	vvH

kk = note number 18H - 6CH (24 - 108)
vv = Velocity 01H - 7FH (1 - 127)
n = MIDI Channel 0H - FH (1 - 16)

Status	Second	Third
9nH	kkH	vvH

kk = note number 18H - 6CH (24 - 108)
vv = Velocity 01H - 7FH (1 - 127)
n = MIDI Channel 0H - FH (1 - 16)

Status	Second	Third
9nH	kkH	vvH

vv = Velocity 01H - 7FH (1 - 127)
n = MIDI Channel 0H - FH (1 - 16)

Note numbers outside of the range 24-108 are ignored.

Control change

Status	Second	Third
RnH	06H	vvH

vv = Value of RPC 00H - 18H (0 - 24)
n = MIDI Channel 0H - FH (1 - 16)

Recognized as a value corresponding to the parameter specified by RPC.

Main Volume

Status	Second	Third
BnH	07H	vvH

vv = Volume Value 00H - 7FH (0 - 127)
n = MIDI Channel 0H - FH (1 - 16)

Can control the volume of the Rhythm section.
The maximum volume is determined by the Volume knob setting and Expression message.

Expression

Status	Second	Third
BnH	08H	vvH

vv = Expression 00H - 7FH (0 - 127)
n = MIDI Channel 0H - FH (1 - 16)

Can control the volume of the Rhythm section.
The maximum volume is determined by the volume knob setting and Main volume message.

RPC LSB

Status	Second	Third
BnH	64H	vvH

vv = LSB of parameter number controlled by RPC
00H - 7FH (0 - 127)
n = MIDI Channel 0H - FH (1 - 16)

Using MIDI RPC, parameters can be changed by Control change messages. RPC MSB and LSB specify the parameter to be controlled, and Data entry shows the parameter value.

Status	Second	Third
BnH	65H	vvH

vv = MSB of parameter number controlled by RPC
00H - 7FH (0 - 127)
n = MIDI Channel 0H - FH (1 - 16)

Using MIDI RPC, parameters can be changed by Control change messages. RPC MSB and LSB specify the parameter to be controlled, and Data entry shows the parameter value.

RPC	Data Entry	Description
MSB	LSB	
00H	00H	vvH Bender Range vv = 0 - 24

Reset All Controllers

Status	Second	Third
EnH	79H	00H

When Reset All Controllers is recognized, each of the following controllers is set as follows.

Controller	setting
Main Volume	MAX (127)
Expression	MAX (127)
Pitch Bender Change	CENTER

Pitch Bender change

Status	Second	Third
EnH	79H	00H

vv = Pitch Bender change Value
n = MIDI Channel 0H - FH (1 - 16)

Exclusive

Status
F0H : System Exclusive
F7H : EOX (End of Exclusive)

Used for Bulk dump/load operation.
Refer to Section 5 for details.

Timing Clock

Status	Second	Third
F8H		

Recognized only when Clock mode is MIDI.

Start

Status
FAH

Recognized only when Clock mode is MIDI.

Continue

Status
FBH

Recognized only when Clock mode is MIDI.

Stop

Status
FCH

Recognized only when Clock mode is MIDI.

5. EXCLUSIVE COMMUNICATION

The MODEL-ID # of the D-10 is 16H.
Device-ID # is the basic channel number of each part or unit number of D-10.
Unit # can be set through MIDI function. Device ID numbers, 16-31 are represented on the display as 17-32, respectively.

ONE-WAY COMMUNICATION

Request Data RQ1 11H

When the RQ1 received contains start address listed in the Parameter base address table; and address size is 1 or more, D-10 sends the data stored in that address location and the subsequent locations, if any.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
16H	Model ID
11H	Command ID
aaH	Address MSB * 3-1
aaH	Address
aaH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size LSB
sum	Check sum
F7H	End of exclusive

Data set 1 DTI 12H

When the DTI contains a start address listed in the Parameter base address table, D-10 stores the data into that memory location and the subsequent locations, if any.
D-10 transmits this message on condition that:
* One way bulk dump is executed in Data transfer mode.
(Unit # less 1 is put in Device ID # field.)
* Timbre change is activated while Patch dump (performance mode) or Timbre dump (Multi timbral mode) is turned on through MIDI.
Program change message is sent before timbre data with the Device ID # Set as follows:
a) IN Performance mode --- Unit # less 1
b) In multi timbral mode ---
Unit # less 1 if the LCD is displaying part status
MIDI TX channel # less 1 if the LCD is displaying keyboard status

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
16H	Model ID
11H	Command ID
aaH	Address MSB * 3-1
aaH	Address
aaH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size LSB
sum	Check sum
F7H	End of exclusive

Data set 1 DTI 12H

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Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
16H	Model ID
12H	Command ID
aaH	Address MSB * 3-1
aaH	Address
aaH	Address LSB
ddH	Data * 3-2
:	:
sum	Check sum
F7H	End of exclusive

Data set 1 DTI 12H

When the DTI contains a start address listed in the Parameter base address table, D-10 stores the data into that memory location and the subsequent locations, if any.
D-10 transmits this message on condition that:
* One way bulk dump is executed in Data transfer mode.
(Unit # less 1 is put in Device ID # field.)
* Timbre change is activated while Patch dump (performance mode) or Timbre dump (Multi timbral mode) is turned on through MIDI.
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Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
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aaH	Address MSB * 3-1
aaH	Address
aaH	Address LSB
ddH	Data * 3-2
:	:
sum	Check sum
F7H	End of exclusive

Data set 1 DTI 12H

When the DTI contains a start address listed in the Parameter base address table, D-10 stores the data into that memory location and the subsequent locations, if any.
D-10 transmits this message on condition that:
* One way bulk dump is executed in Data transfer mode.
(Unit # less 1 is put in Device ID # field.)
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Program change message is sent before timbre data with the Device ID # Set as follows:
a) IN Performance mode --- Unit # less 1
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Unit # less 1 if the LCD is displaying part status
MIDI TX channel # less 1 if the LCD is displaying keyboard status

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
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aaH	Address MSB * 3-1
aaH	Address
aaH	Address LSB
ddH	Data * 3-2
:	:
sum	Check sum
F7H	End of exclusive

Data set 1 DTI 12H

When the DTI contains a start address listed in the Parameter base address table, D-10 stores the data into that memory location and the subsequent locations, if any.
D-10 transmits this message on condition that:
* One way bulk dump is executed in Data transfer mode.
(Unit # less 1 is put in Device ID # field.)
* Timbre change is activated while Patch dump (performance mode) or Timbre dump (Multi timbral mode) is turned on through MIDI.
Program change message is sent before timbre data with the Device ID # Set as follows:
a) IN Performance mode --- Unit # less 1
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Unit # less 1 if the LCD is displaying part status
MIDI TX channel # less 1 if the LCD is displaying keyboard status

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
16H	Model ID
12H	Command ID
aaH	Address MSB * 3-1
aaH	Address
aaH	Address LSB
ddH	Data * 3-2
:	:
sum	Check sum
F7H	End of exclusive

Data set 1 DTI 12H

When the DTI contains a start address listed in the Parameter base address table, D-10 stores the data into that memory location and the subsequent locations, if any.
D-10 transmits this message on condition that:
* One way bulk dump is executed in Data transfer mode.
(Unit # less 1 is put in Device ID # field.)
* Timbre change is activated while Patch dump (performance mode) or Timbre dump (Multi timbral mode) is turned on through MIDI.
Program change message is sent before timbre data with the Device ID # Set as follows:
a) IN Performance mode --- Unit # less 1
b) In multi timbral mode ---
Unit # less 1 if the LCD is displaying part status
MIDI TX channel # less 1 if the LCD is displaying keyboard status

HANDSHAKE COMMUNICATION

Bulk dump/load to and from D-10 through handshaking communication in Data transfer mode starts with the following message.

Want to send data WSD 40H

D-10 sends acknowledge upon receiving this message and waits for coming data.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
16H	Model ID
40H	Command ID
aaH	Address MSB * 3-1
aaH	Address
aaH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size LSB
sum	Check sum
F7H	End of exclusive

Request data RQD 41H

When the RQD received contains start address listed in the Parameter base address table; and the address size is 1 or more, D-10 sends the data stored in that address location and the subsequent locations, if any.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
16H	Model ID
41H	Command ID
aaH	Address MSB * 3-1
aaH	Address
aaH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size LSB
sum	Check sum
F7H	End of exclusive

Request data RQD 41H

When the RQD received contains start address listed in the Parameter base address table; and the address size is 1 or more, D-10 sends the data stored in that address location and the subsequent locations, if any.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
16H	Model ID
41H	Command ID
aaH	Address MSB * 3-1
aaH	Address
aaH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size LSB
sum	Check sum
F7H	End of exclusive

Request data RQD 41H

When the RQD received contains start address listed in the Parameter base address table; and the address size is 1 or more, D-10 sends the data stored in that address location and the subsequent locations, if any.

Byte	Description
F0H	Exclusive status
41H	Manufactures ID (Roland)
DEV	Device ID
16H	Model ID
41H	Command ID
aaH	Address MSB * 3-1
aaH	Address
aaH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size LSB
sum	Check sum
F7H	End of exclusive

Request data RQD 41H

When the RQD received contains start address listed in the Parameter base address table; and the address size is 1 or more, D-10 sends the data stored in that address location and the subsequent locations, if any.

Data set DAT 42H

When the DAT received contains address listed in the Parameter base address table, D-10 stores the data in that address location.

Parameter base address

Temporary area (Accessed on each basic channel)

Table with 4 columns: Start address, Description, Synth part, and Parameter #. Rows include Timbre Temporary Area, Setup Temporary Area, and Tone Temporary Area.

Whole part (Accessible on Unit #)

Table with 4 columns: Start address, Description, Part, and Parameter #. Rows include Timbre Temporary Area (parts 1, 2, 7, 8), Rhythm Setup Temporary Area, Patch Temporary Area, Tone Temporary Area (parts 1/upper, 2/lower, 7, 8), Timbre Memory, Patch Memory, Tone Memory, Rhythm Setup, Rhythm Pattern, Rhythm Track, System Area, Display, and Write Request.

Notes:

*6-1 Tone Temporary area / Tone Memory

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe common parameters for Partial* 1, 2, 3, and 4.

*6-1-1 Common parameter

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe parameters for Tone Name, Structure of Partial, Partial Mute, and ENV MODE.

*6-1-2 Partial parameter

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe parameters for WG PITCH COARSE/FINE, WG PITCH KEYFOLLOW, WG PITCH BENDER SW, WG WAVEFORM/PCM BANK, WG PCM WAVE, WG PULSE WIDTH, WG PW VELO SENS, P-ENV DEPTH/VELO SENS/TIME KEYF, P-ENV TIME, P-ENV LEVEL, END LEVEL, P-LFO RATE/DEPTH/SENS, TVF CUTOFF FREQ, TVF RESONANCE, TVF KEYFOLLOW, TVF BIAS POINT, TVF ENV DEPTH/VELO SENS/TIME KEYF, TVF ENV TIME, TVF ENV LEVEL, TVF ENV SUSTAIN LEVEL, TVA LEVEL/VELO SENS, TVA BIAS POINT, TVA ENV TIME KEYF, TVA ENV LEVEL, and TVA ENV SUSTAIN LEVEL.

Example of RQ1 and DT1 application.... 1

* This example sets Unit number to 17. Sending the following data string lets D-10 send Part 2/Lower tone data from the temporary area. FO 41 10 16 11 04 01 76 00 01 76 0E F7

*6-2 Rhythm Setup

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe parameters for TONE, OUTPUT LEVEL, PANPOT, and REVERB SWITCH.

*6-3 Timbre temporary area

D-10 accepts the data for the area below only in Multi mode.

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe parameters for TONE GROUP, TONE NUMBER, KEY SHIFT, FINE TUNE, BENDER RANGE, ASSIGN MODE, REVERB SWITCH, REVERB SWITCH, OUTPUT LEVEL, PANPOT, and dummy.

*6-4 Patch Temporary area/Patch Memory

D-10 accepts the data for Patch temporary area only in Performance mode.

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe parameters for KEY MODE, SPLIT POINT, LOWER TONE GROUP, LOWER TONE NUMBER, UPPER TONE GROUP, UPPER TONE NUMBER, LOWER KEY SHIFT, UPPER KEY SHIFT, LOWER FINE TUNE, UPPER FINE TUNE, LOWER BENDER RANGE, UPPER BENDER RANGE, LOWER ASSIGN MODE, UPPER ASSIGN MODE, LOWER REVERB SWITCH, UPPER REVERB SWITCH, REVERB MODE, REVERB TIME, REVERB LEVEL, U/L BALANCE, PATCH LEVEL, PATCH NAME CHAR, and PATCH NAME CHAR.

Example of RQ1 and DT1 application 2

* This example sets Unit # to 17. When D-10 receives the following message in Performance mode, it sends Patch data in the temporary area. FO 41 10 16 11 03 04 00 00 00 26 53 F7

*6-5 Timbre memory

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe parameters for TONE GROUP, TONE NUMBER, KEY SHIFT, FINE TUNE, BENDER RANGE, ASSIGN MODE, REVERB SWITCH, and dummy.

*6-6 Rhythm pattern

The data listed below are divided-by-two 8-bit data and sent/ received as two 4-bit data. (bbbbaaaa -> 0000aaaa, 0000bbbb) Events are listed in an ascending order.

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe parameters for TIME, TOTAL # OF NOTES, dummy, EVENT #1, EVENT #2, EVENT #95, EVENT #96, END MARK, dummy, dummy, and dummy.

*6-6-1 Event

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe parameters for STEP, NOTE NUMBER, dummy, and VELOCITY.

*6-7 Rhythm track

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe parameters for TRACK LENGTH LSB, TRACK LENGTH MSB, Pattern 1, and Pattern 500.

*6-8 System area

If "All" is selected for data type in Bulk Dump/Load, D-10 transmits data including this system area. Partial reserve must be sent as a package of 9 parts, which in total, should contain no more than 32 partials.

Table with 4 columns: Offset address, Description, Parameter #, and Total size. Rows describe parameters for MASTER TUNE, REVERB MODE, REVERB TIME, REVERB LEVEL, PARTIAL RESERVE (Parts 1-8), and OUTPUT LEVEL (Parts 1-8).

Example of RQ1 and DT1 application 3

* This example sets Unit # to 17. The byte arrangement below will set Partial reserve of each part as follows: Part 1 8 Part 3 thru 8 0 Part 2 10 Rhythm part 8 FO 41 10 16 12 10 00 04 00 08 0A 00 00 00 00 00 08 66 F7

*6-9 Display

D-10 deciphers incoming data and sends them to the LCD as a string of ASCII code characters.
The display data in this area cannot be brought outside D-10 through MIDI message, such as RQ1 and DT1.

Offset address	Description
00H	0aaa aaaa DISPLAYED LETTER 32 - 127 (ASCII)
1FH	0aaa aaaa DISPLAYED LETTER
Total size = 00 00 20H	

*6-10 Write Request

This message simulates write switch; D-10 stores the data of each part in the temporary area into individual memory locations specified by two byte data.
Timbre write is effective only in Multi timbral mode; Patch write only in Performance mode.
The data in this area cannot be brought outside D-10 through MIDI message, such as RQ1 and DT1.
D-10 returns the Result.

Offset address	Description
00 00H	00aa aaaa Tone Write 0 - 63 (01 - 64)
00 01H	0000 000a (part 1/upper) 0, 1 (Internal,Card)
00 02H	00aa aaaa Tone Write
00 03H	0000 000a (part 2/lower)
00 0EH	00aa aaaa Tone Write
00 0FH	0000 000a (part 8)
01 00H	0aaa aaaa Timbre Write 0 - 127 (A11 - B88)
01 01H	0000 000a (part 1)
01 02H	0aaa aaaa Timbre Write
01 03H	0000 000a (part 2)
01 0EH	0aaa aaaa Timbre Write
01 0FH	0000 000a (part 8)
03 00H	0aaa aaaa Patch Write 0 - 127 (A11 - B88)
03 01H	0000 000a (part 1)
10 00H	0000 00aa Result 0 - 3 0 = Function Completed 1 = Card Not Ready 2 = Write Protected 3 = Incorrect Mode

Example of RQ1 and DT1 application 4

* This example sets Unit # to 17.

◆ Sending the following byte strings will enable D-10 to write data in Part 3 in temporary data into I-B24.

FO 41 10 16 12 40 04 4B 00 71 F7

Address	Block	Sub Block	Reference
00 00 00	Timbre Temp. (Basic Ch)		6-3
01 00 00	Rhythm Setup Temp(Basic Ch)	Note# 24	6-2
		Note# 25	
		Note# 107	
		Note# 108	
02 00 00	Tone Temp. (Basic Ch)	Common	6-1-1
		Partial 1	6-1-2
		Partial 2	
		Partial 3	
		Partial 4	
03 00 00	Timbre Temp. (Unit#)	Part 1	6-3
		Part 2	
		Part 8	
		Part R	
04 00 00	Tone Temp. (Unit#)	Part 1	6-1
		Part 2	
		Part 7	
		Part 8	
05 00 00	Timbre Memory	I-A11 (# 1)	6-5
		I-A12 (# 2)	
		I-B87 (#127)	
		I-B88 (#128)	
07 00 00	Patch Memory	I-A11 (# 1)	6-4
		I-A12 (# 2)	
		I-B87 (#127)	
		I-B88 (#128)	
08 00 00	Tone Memory	I-01	6-1
		I-02	
		I-63	
		I-64	
09 00 00	Rhythm Setup	#1	6-2
		#2	
		#84	
		#85	
0A 00 00	Rhythm Pattern	P-51	6-6
		P-52	
		P-87	
		P-88	
0C 00 00	Rhythm Track		6-7
10 00 00	System Area		6-8
20 00 00	Display		6-9
40 00 00	Write Request		6-10

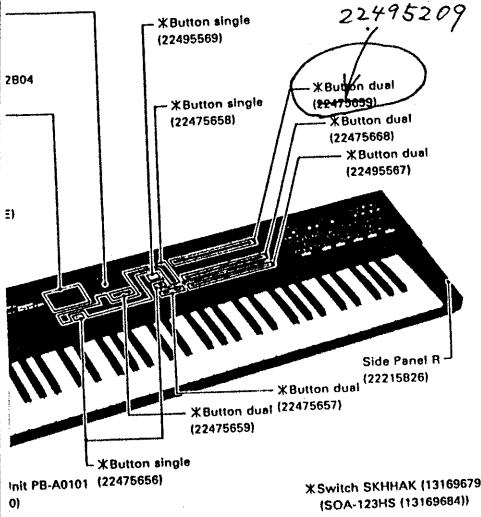
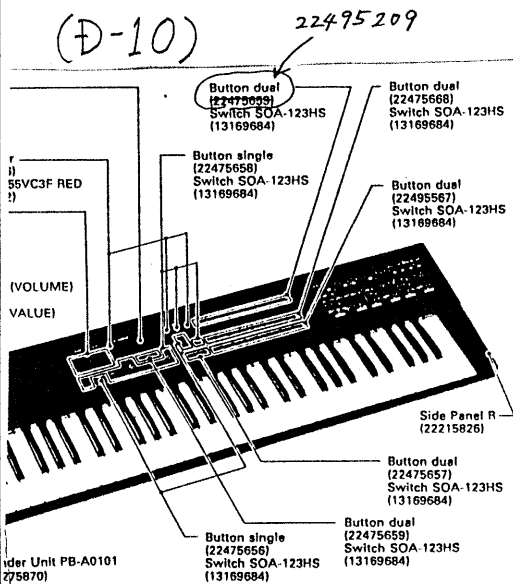
ER00007

Page	WRONG 誤 →	CORRECT 正
1	<p>PART NUMBER ERROR Button dual (22475668)</p>	<p>Button dual (22495209)</p> <p>(D-20)</p> <p>(D-10)</p> <p>* Please amend all existing service notes as above. * 該当サービスマニュアルを上記のように修正して下さい。</p>

FAX
 MAY.24.1991
 済

ER00008

D-20 & D-10 SERVICE NOTES 1991.05.24
 ERRATA & SUPPLEMENT 正誤表 & 追加情報
 (Small errors are ignored. 重要でないエラーは無視します。)

Page	WRONG 誤 →	CORRECT 正
1	<p>PART NUMBER ERROR Button dual (22475668)</p>	<p>Button dual (22495209)</p> <p>(D-20)</p>  <p>(D-10)</p>  <p>* Please amend all existing service notes as above. * 該当サービスノートを上記のように修正して下さい。</p>