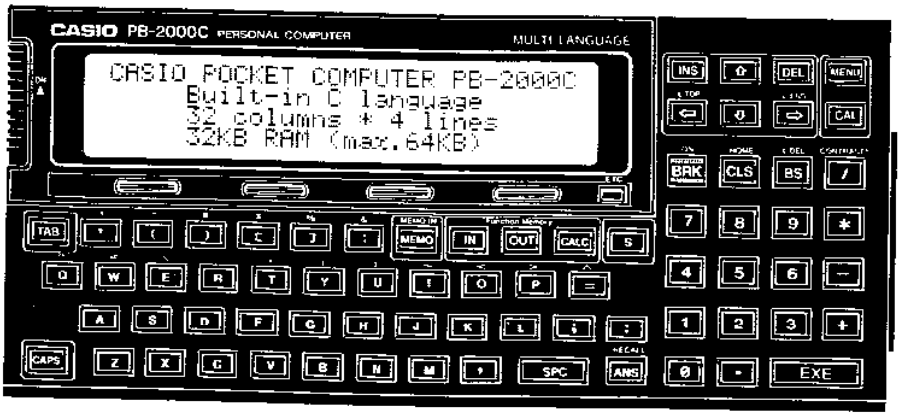
SERVICE MANUAL
& PARTS LIST (with price)

PB-2000C (VX-552)

JAN. 1989



PB-2000C

CONTENTS

1. SPECIFICATION 1
2. BLOCK DIAGRAM 2
3. LSI PIN FUNCTION 3
4. DISASSEMBLY 6
5. CHECK PROCEDURE 7
6. TROUBLESHOOTING 11
7. PARTS LOCATION 16
8. PARTS LIST 22
9. SCHEMATIC DIAGRAM 27

1. SPECIFICATION

Basic calculation functions:
Negative numbers, exponents, parenthetical arithmetic operations (with priority judgement function — true algebraic logic)

Built-in functions:
Trigonometric/inverse trigonometric functions (angular units: degrees, radians, grads), hyperbolic/inverse hyperbolic functions, logarithmic/exponential functions, square roots, powers, decimal-hexadecimal conversions, decimal sexagesimal conversions

Commands:
CLEAR, FORMAT, ANGLE, PI (π)

Calculation precision:
±1 at 10th digit of mantissa. However, errors may be cumulative for internal consecutive calculations when the following functions approach the values noted below:

sinx $|X| = 90° \times 2n$
cosx $|X| = 90° \times (2n + 1)$
tanx $|X| = 90° \times n$

Calculation range:
$\pm 1 \times 10^{-99} \sim \pm 9.999999999 \times 10^{99}$, or 0. Internal calculations are performed with a mantissa up to 13 digits long.

Programming language: C

Memory capacity:
32k bytes standard, optionally expandable up to 64k bytes.

Display capacity:
10-digit mantissa (including negative sign), or 10-digit mantissa plus 2-digit exponent.

Display elements:
192 x 32-dot (32-column x 4-line) dot matrix LCD

Main component:
C-MOS VLSI

Power supply:
Main power supply
Three CR2032 lithium batteries or AC adaptor (AD-4175)
Memory backup power supply
One CR1220 lithium battery

Power consumption: 0.09W

Battery life:
Main power supply
• Approximately 25 hours (continuous program execution).
• Approximately 35 hours (continuous display of 5555555555 at 20°C).
Memory backup battery
Approximately two years.

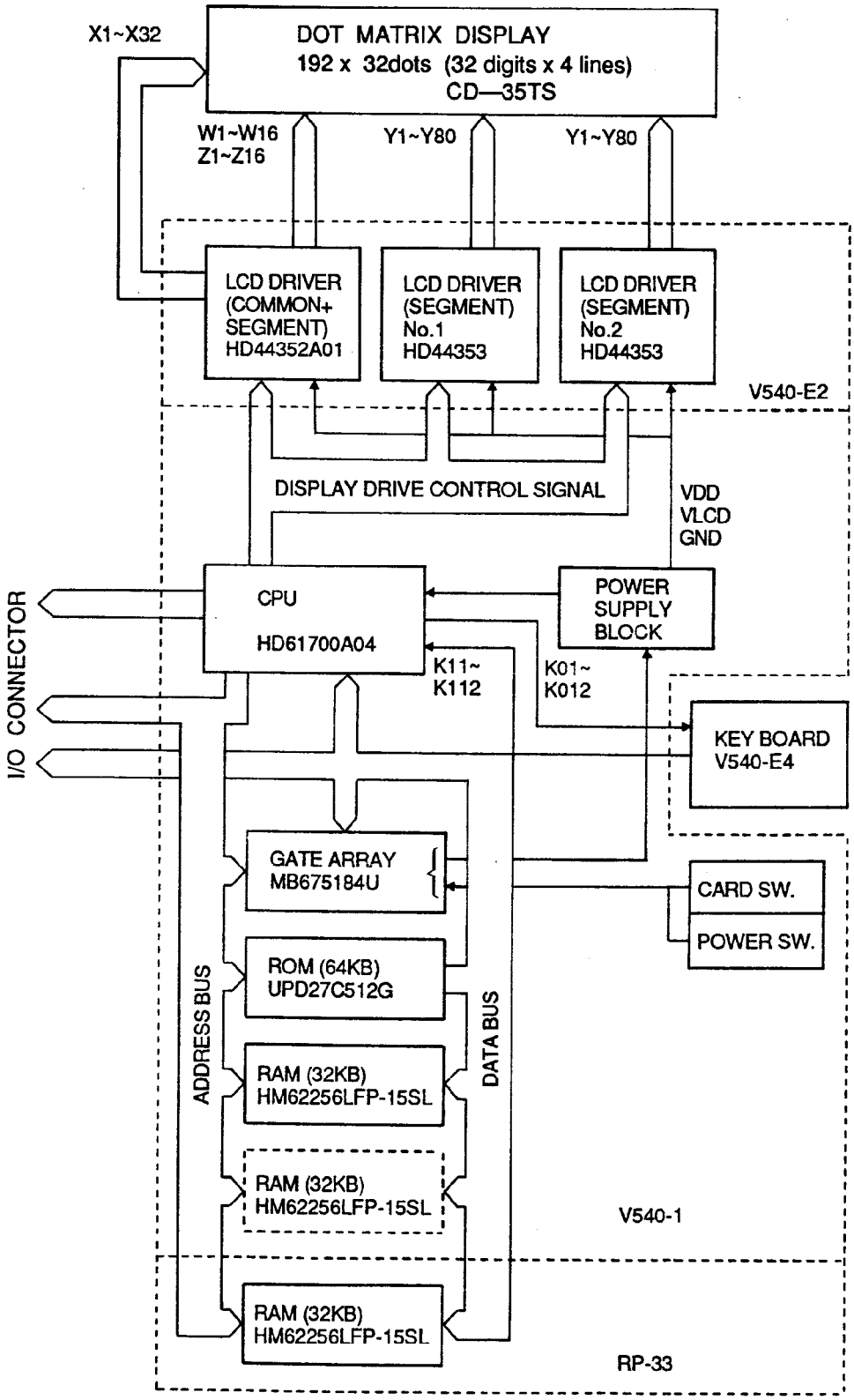
Auto power OFF:
Approximately 2 ~ 255 minutes (programmable)

Ambient temperature range:
0°C ~ 40°C (32°F ~ 104°F)

Dimensions:
15 (H) x 188 (W) x 83 (D) mm (5/8" (H) 7-3/8" (W) x 3-1/4" (D))

Weight:
249g (8.8 oz) including batteries

2. BLOCK DIAGRAM



3. LSI PIN FUNCTION

3-1. CPU (HD61700A04)

This LSI is 8 bits microprocessor containing ROM and RAM with CMOS static constraction.

Pin	Signal	I/O	Function
1	CS0	OUT	Chip select signal to RAM (HN62256LFP).
2	CS1	OUT	Chip select signal to RP-33.
3~6	CS2~5	OUT	Not used.
7	CS6	OUT	Chip select signal to Gatearray (MB675184U).
8	CS7	OUT	Chip select signal to I/O (MD-100 or FA-7).
9, 10	A16, A17	OUT	Address bus.
11	ON	IN	Receives timer signal from TM terminal of LCD driver and used for flashing the cursor with 18ms cycle.
12	INT1	IN	Interrupt signal from MD-100 or FA-7 connected to I/O connector.
13	INT2	IN	Not used
14, 15	F1, F2	OUT	Clock output signal for LCD driver.
16	OP	OUT	Operation signal for LCD driver.
17	CE1	OUT	LCD driver (HD44352A01) chip enable signal.
18	CE2	OUT	LCD driver (HD44353) chip enable signal.
19, 20	CE3, 5	OUT	Not used.
21	VDD2	OUT	Power supply to LCD driver.
22~25	D0 ~ 3	IN	Data input signal from LCD.
26	DB	IN	Debug terminal. Low state outputs M and ø3 explained in latter section.
27	VX	IN	Power input terminal for the clock pulse.
28, 29	XO, XI	O/I	Oscillator connection terminal for built-in clock, and the frequency is 32.768 Hz.
30	GND	IN	Ground level.
31, 32	OSCI/OSCO	I/O	Oscillator connection terminal for internal timing generator, and the frequency is 910KHz.

Pin	Signal	I/O	Function
33	VDD	OUT	–5V power supply. This output stops by power off order.
34	T	IN	Test terminal. Normally high.
35	RST	IN	Low level is a reset state, and initializes CPU.
36	SW	IN	Low level of SW from Gatearry supplies the power to internal logic circuit. High level of SW changes status flag only of SW, and does not turn the power off.
37	F	OUT	Output terminal whether during frequency dividing or not. This LSI can divide system clock pulse into 1/16 by frequency dividing mode (Slow order). High llevel is output during frequency dividing, and low level during non frequency dividing. Frequency dividing of system clock pulse reduces current consumption.
38, 39	M, F3	OUT	Debug terminal having output by setting DB terminal to Low. M outputs opecode-fetch, and F3 outputs an internal clock by dividing original oscillation by two or three.
40~51	KI1~KI12	IN	Key input terminals. Receives inputs from KI1 ~ KI12 by internal latch, and sends out KI1 ~ KI8 and KI9 ~ KI12 to data bus.
52~63	KO1~KO12	OUT	Key output terminal. Can output Low levels to all KO1 ~ KO12 terminals or to individuals by software control.
64~71	P0 ~ 7	I/O	8 bits input/outpout port. Selects input or output by software control. P0 : Short pad (S11, S12) P1 : RP-33 P2, P3, P4, P5 : MD-100 or FA-7 P6, P7: Buzzer
72	R/W	OUT	Control signal of Read or Write for external memory.
73	OE	OUT	Output designating signal for external memory.
74	CS	OUT	Access timing signal for external memory.
75~82	IO0~IO7	I/O	8 bits both way data bus.
83	GND	IN	Ground level.
84	VEX	IN	Not used. (connected ground)
85~100	A0~A15	OUT	Address bus

3-2. GATEARREY (MB675184U)

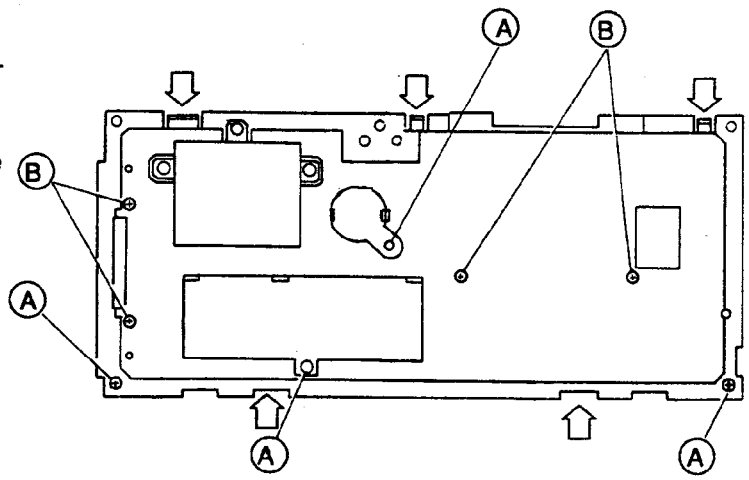
Pin	Signal	I/O	Function
1	RCE	OUT	Chip select signal to ROM (μPD27C512G).
2	RA1M	—	No connection.
3, 4	CCE1, 2	OUT	Chip select signal to ROM card.
5	LB	IN	Low battery signal input terminal.
6	SWI	IN	Switch ON signal input terminal.
7	GND	IN	Ground level (0V).
8	SWO	OUT	Switch ON signal output CPU.
9	RST	IN	OFF signal from CPU.
10	E910	IN	Chip select signal to I/O connector from CPU.
11	GCE	IN	Chip select signal from CPU.
12~19	I/O0~7	I/O	8 bits both way data bus.
20	R/W	IN	Read/Write signal from CPU.
21	VDD	IN	+5V
22	OE	IN	Designating signal from CPU.
23	CS	IN	Chip select signal to I/O connector from CPU.
24	DON	OUT	LCD voltage (VLCD) ON signal.
25~28	A0, A15~17	IN	Address bus from CPU.

4. DISASSEMBLY

1) Remove three screws from the lower pannel and remove the lower pannel.

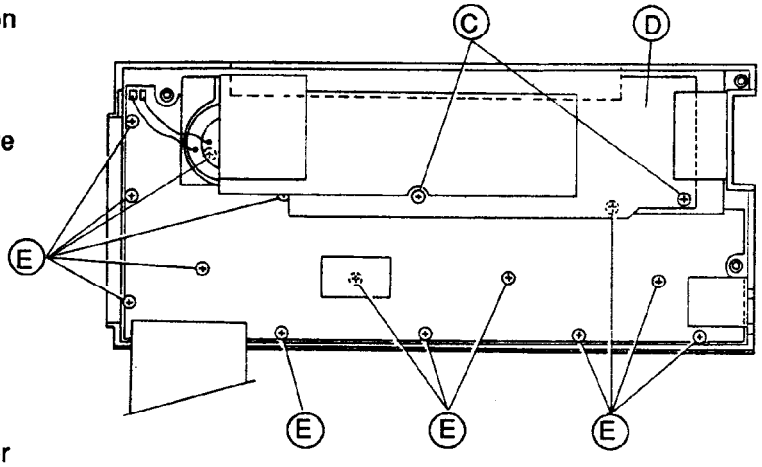
2) Remove four screws (A) from the lower case.
Remove four batteries.
Open the lower case while loosing the hook.

⇩ : Hook location

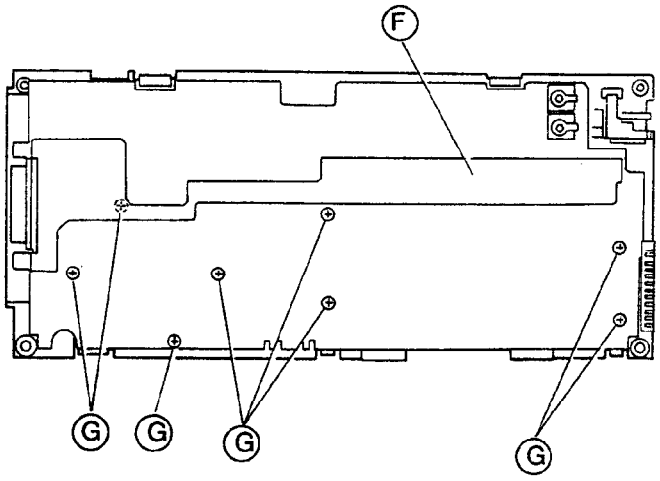


3) Remove two screws (C) from the PCB (D).
Disconnect two wires from the buzzer by the iron.
Disconnect the connector by the iron while lifting up the PCB (D).

4) Remove fourteen screws (E),
Disconnect the connector and remove the PCB.



5) Remove four screws (B) from the lower case and remove the plate (F).
Remove eight screws (G).



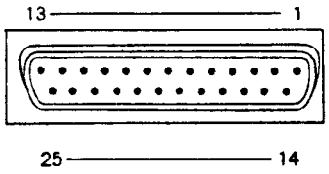
5. CHECKING PROCEDURE

5-1. Total Check

(1) Necessary materials
PB-2000C, RP-33, MD-100, AD-4175J or six AA batteries.
ROM card for check.
Loop back connector for RS-232C, Work disk sheet.

How to make the loop back connector for RS-232C.
* Necessary materials
  - Connector DB-25P (3510 2035)
  - Shell DB-C2-J9 (3513 1019)
* Connect the pins as follows

PIN	Signal
2	TXD
3	RXD
4	RTS
5	CTS
6	DSR
7	GND
8	CD
20	DTR



(2) Checking procedure

OPERATION	DISPLAY	CHECK POINTS
LOAD the Check ROM card Power switch OFF Push [RESET] Power switch ON Push [RESET] Push [NEW ALL]	VX-540 (カイガイ) チェック プログラム start Push <EXE > key —	
Power switch OFF Connect MD-100 Power switch ON	—	Confirm cursor blinking.
* Push [CALC] key	1: ROM 2: RAM 3: LCD 2: BUZZER 5: LOOP 6: KEY 7: PRINTER 8: FDD 9: RS232C 0: MT .: チェック J: JMI D: Disp	
Push [•] key	VX-540 (カイガイ) チェック プログラム start Push <EXE> key —	

OPERATION	DISPLAY	CHECK POINTS
Push [EXE] key	KEY チェック start Push <BRK> key	< Key entry check >
Push [BRK] key	OK Push <CLS> key	Confirm buzzer sound
Continue pushing keys which are displayed		
(After checking all keys)	All key OK Push <EXE> key —	
Push [EXE] key	LCD チェック start Push <EXE> key —	< LCD check >
Push [EXE] key		Confirm all dots disappears
Push [EXE] key		Confirm all dots appears
Push [EXE] key		Confirm half dots appears
Push [EXE] key		Confirm another half dots appears
Push [EXE] key	LCD OK PUSH <EXE> key —	
Push [EXE] key	ROM チェック start Push <EXE> key —	< ROM chec k>
Push [EXE] key	ROM SUM/XOR OK Push <EXE> key —	
Push [EXE] key	FDD チェック start Push <EXE> key —	< FDD check >
Insert the work sheet into MD-100. Push [EXE] key	FDD OK Push <EXE> key —	

OPERATION	DISPLAY	CHECK POINTS
Push [EXE] key	RS232C チェック start Push <EXE> key —	<RS-232C check>
Connect the loop back connector for RS-232C Push [EXE] key	RS232C OK Push <EXE> key —	
Power switch OFF Disconnect MD-100 Install RP-33 Power switch ON Push [RESET] Push [NEW ALL]	VX-540 (カイガイ) チェック プログラム start Push <EXE> key —	
Push [SPC] key five times	RAM チェック start Push <EXE> key —	<RAM check>
Push [EXE] key	RAM OK チェック プログラム END Push <NEW ALL> key	
Push [NEW ALL] key	VX-540 (カイガイ) チェック プログラム start Push <EXE> key —	
Power switch OFF Remove the check ROM card. Power switch ON	ROM card changed! Memory initialize OK? (EXE key)	
Push [NEW ALL]	—	
Input CLEAR SUM [EXE]	CLEAR SUM ROM – SUM A7 ROM – XOR 7F	Confirm displaying A7, 7F
Power switch OFF		

Note: 1) "NG" appears instead of "OK" in broken parts.
2) Each check can be done individually.
Push the number which you want to check in * parts refer to page 7.

5-2. Memory Check

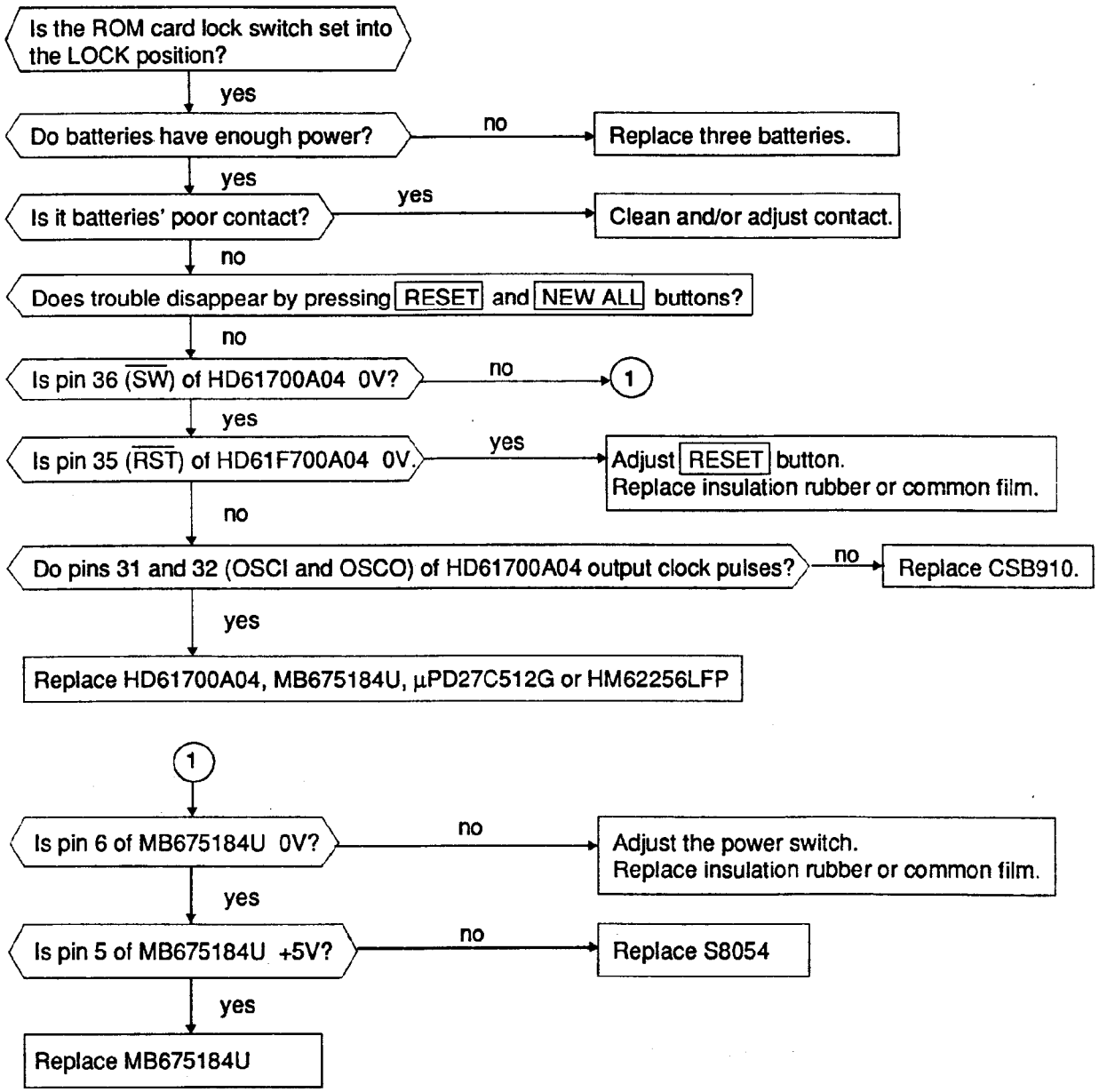
(1) Necessary materials
PB-2000C, ROM card for check, RP-33.

(2) Checking procedure

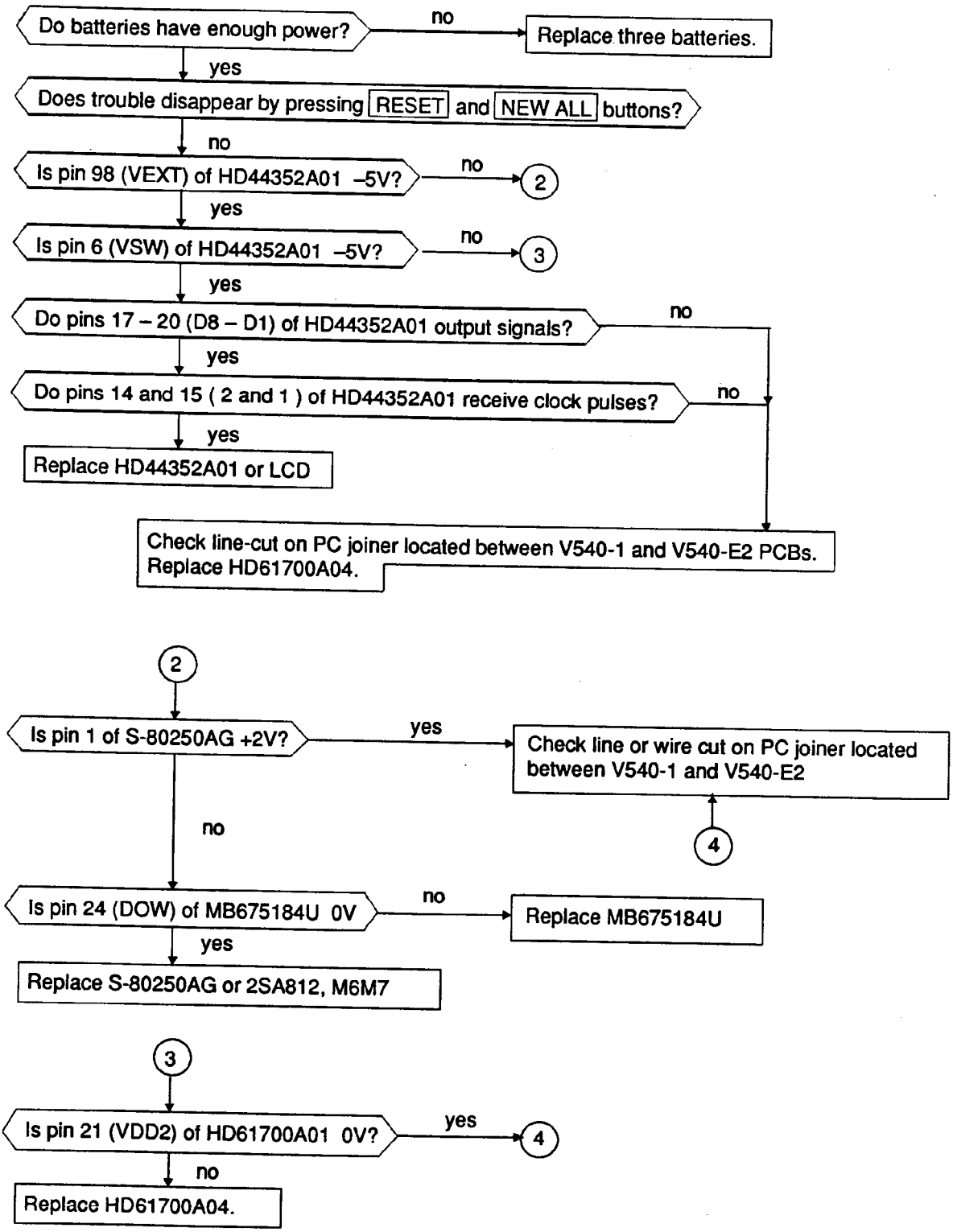
OPERATION	DISPLAY	CHECKPOINTS
Power switch OFF Install RP-33 Load the check ROM card Push [RESET] Power switch ON Push [RESET] Push [NEW ALL]	VX-540 (カイガイ) チェック プログラム start Push <EXE> key —	
Push [0] key	メモリーバックアップ チェック start Push <1> or <2> key —	
Power switch OFF (Leave the unit 24 hours)		
Power switch ON Push [CALC] [•]	VX-540 (カイガイ) チェック プログラム start Push <EXE> key —	
Push [0] key	メモリーバックアップ チェック start Push <1> or <2> key —	
Push [2] key	メモリーバックアップ OK —	Conbfirm Beep sound
Push [NEW ALL]	VX-540 (カイガイ) チェック プログラム start Push <EXE> key —	
Power switch OFF		

6. TROUBLESHOOTING

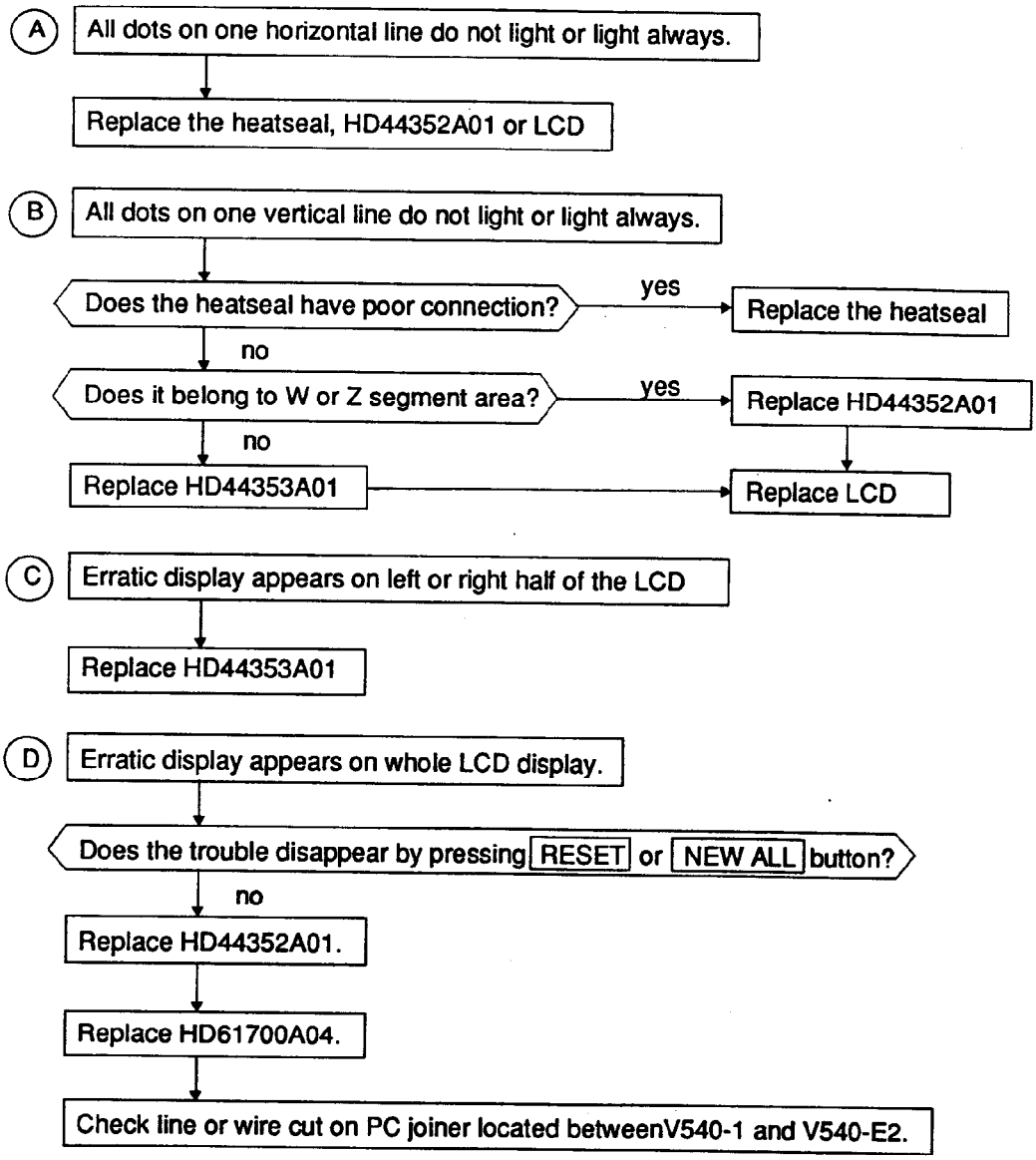
6-1. No display and no buzzer by pressing any key



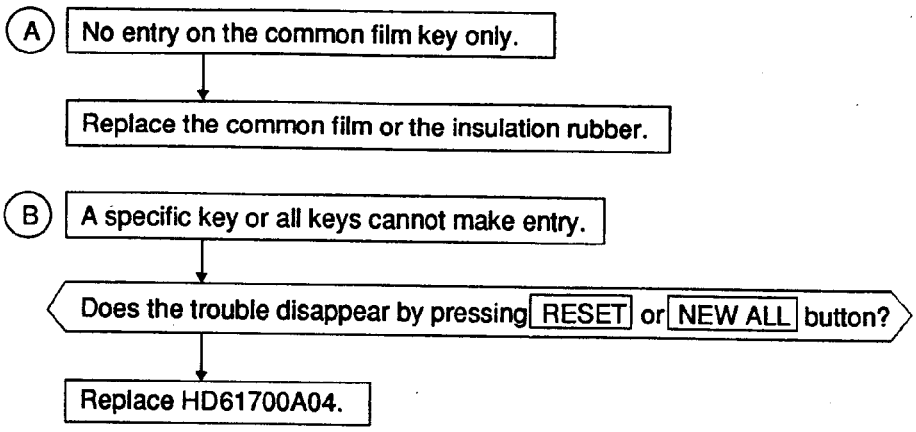
6-2. Buzzer sounds, but no display on screen when pressing keys



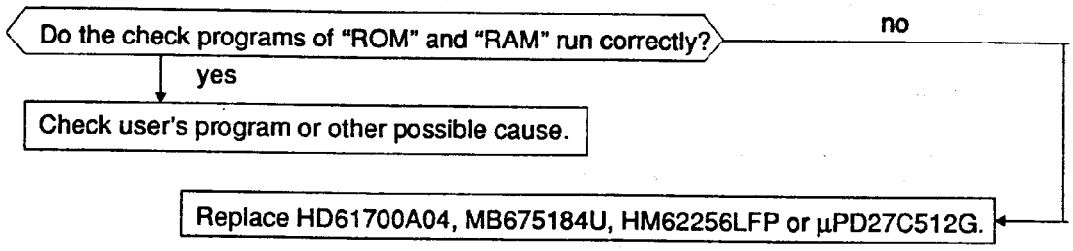
6-3. Erratic display



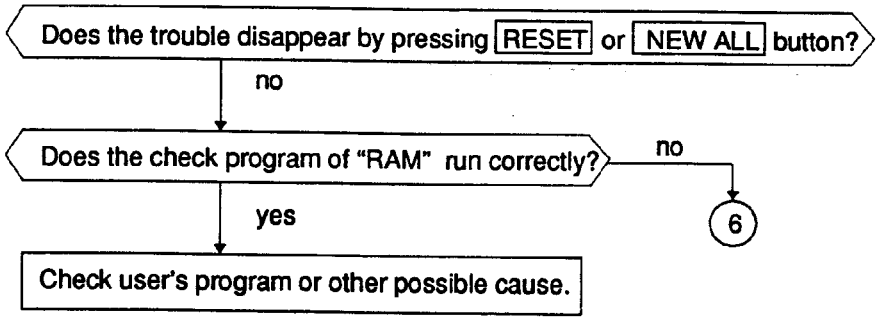
6-4. No key input possible

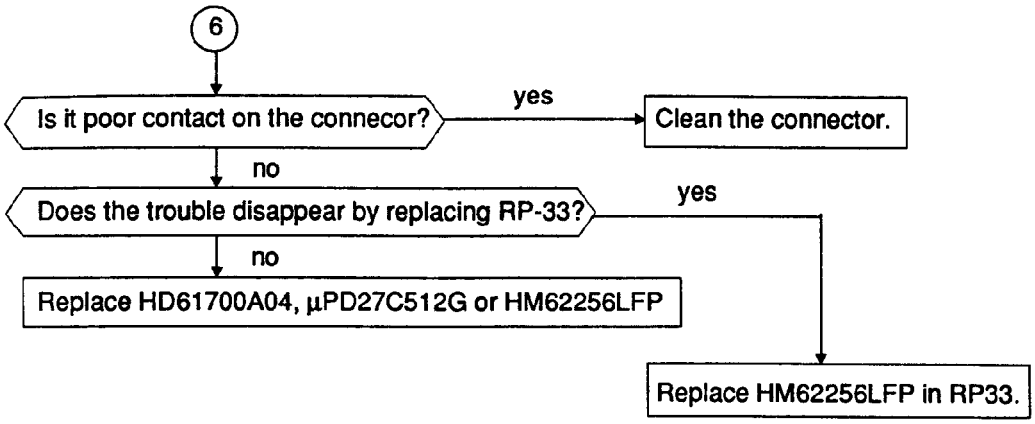


6-5. Miscalculation, No program execution or Error occurs

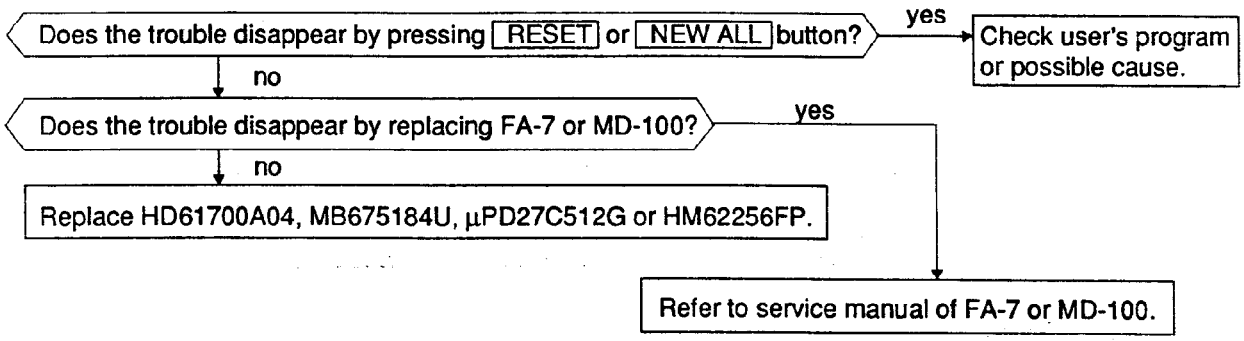


6-6. Memory capacity does not increase when RP-33 is used, and error occurs



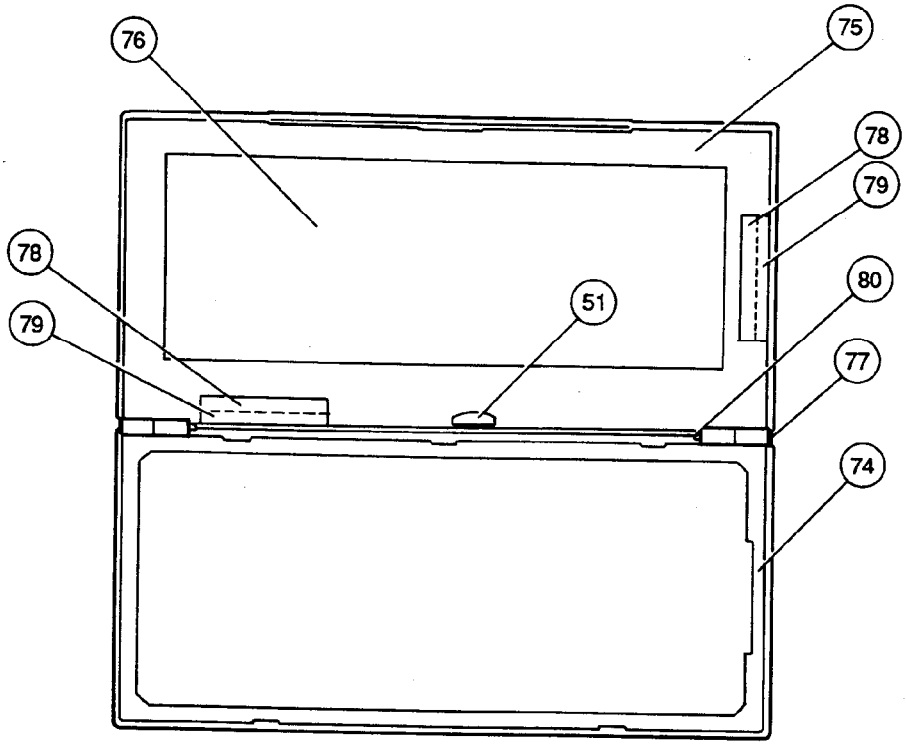


6-7. FA-7 or MD-100 does not work correctly.

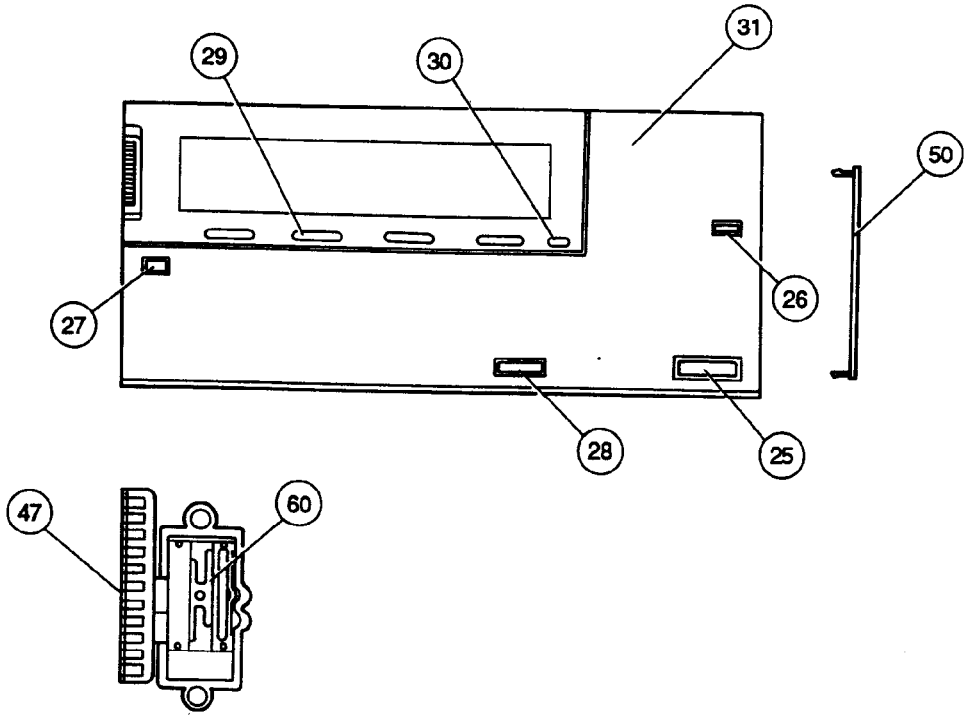


7. PARTS LOCATION

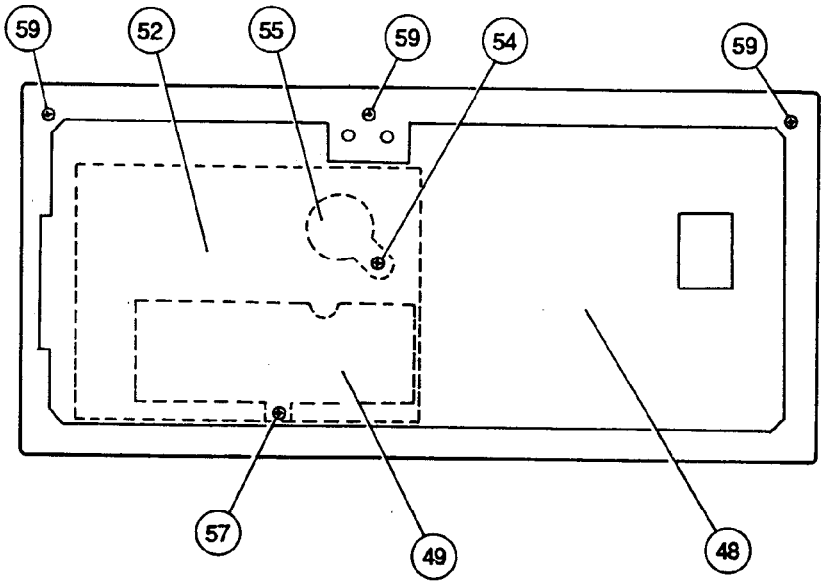
7-1. Hard Case



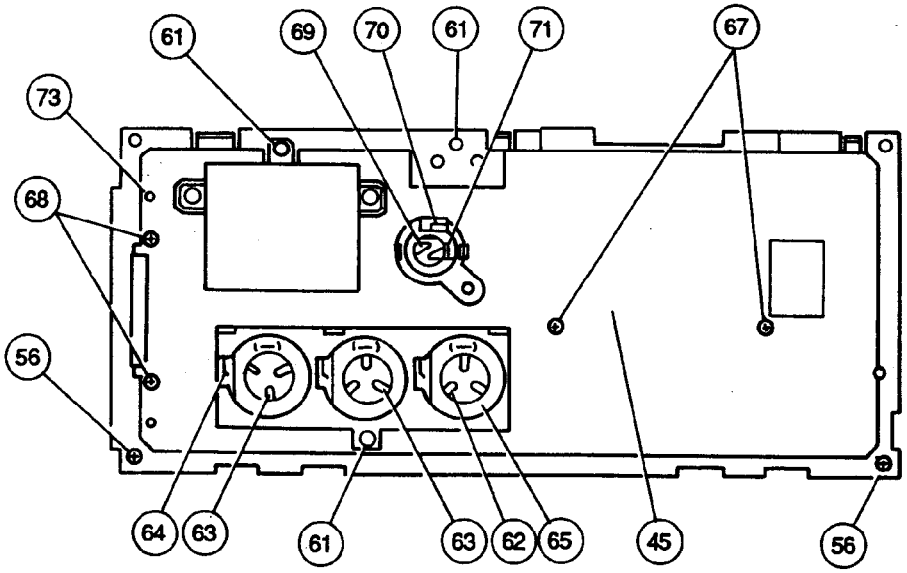
7-2. Upper Case



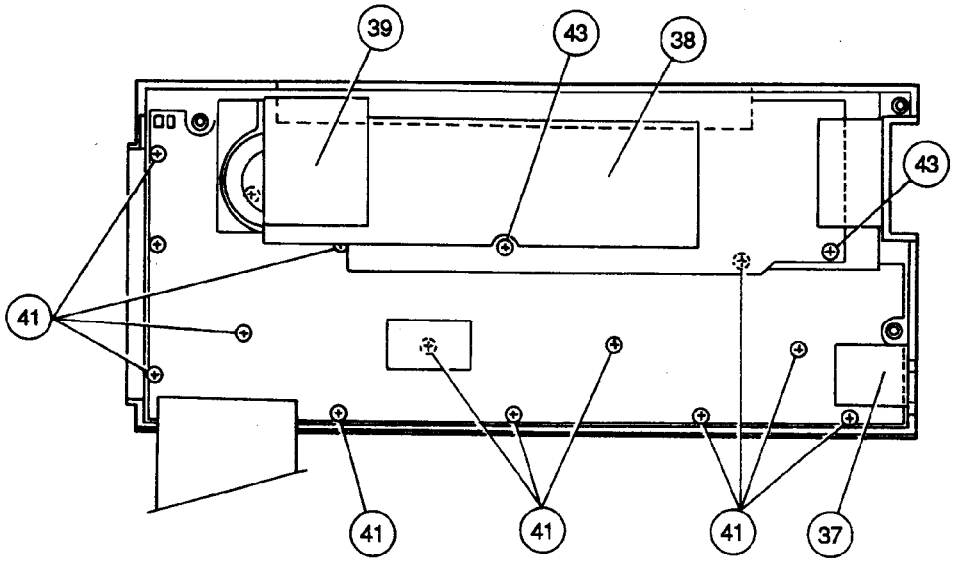
7-3. Lower Panel

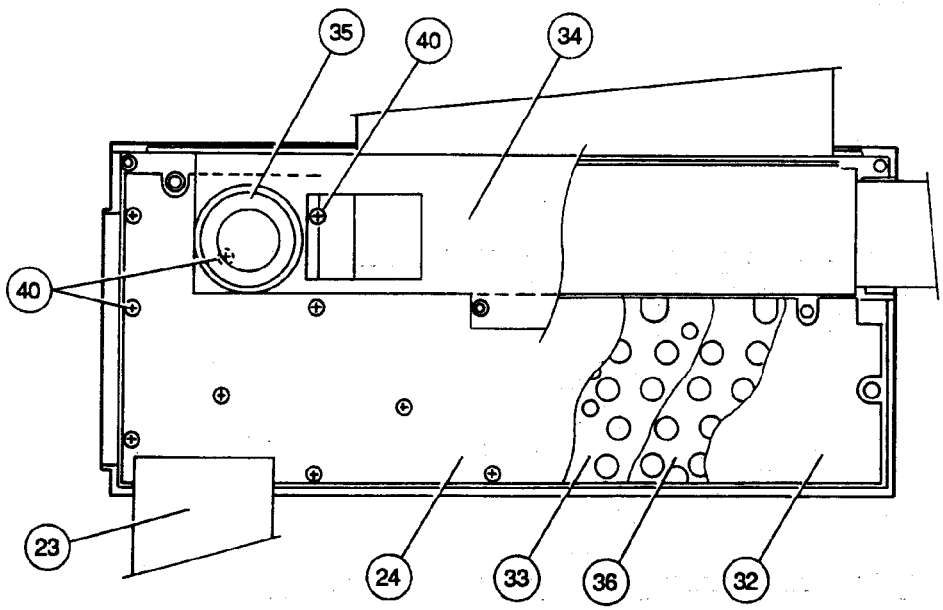


7-4. Lower Case

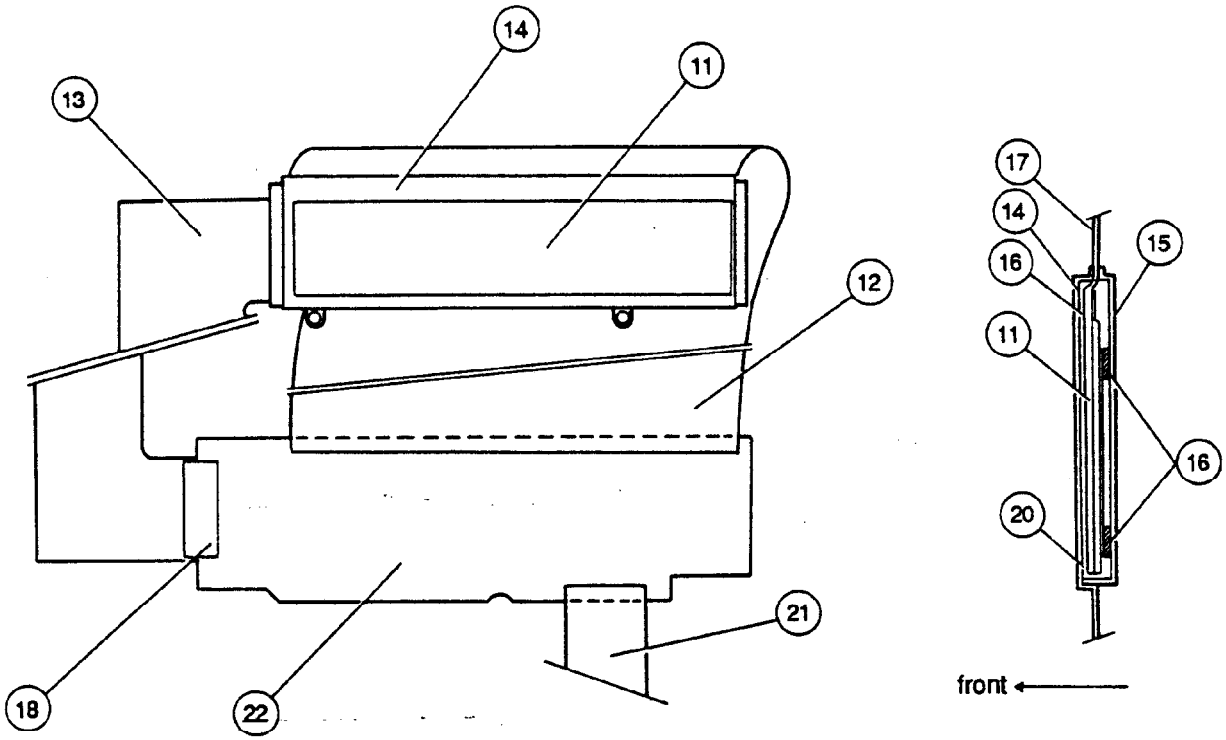


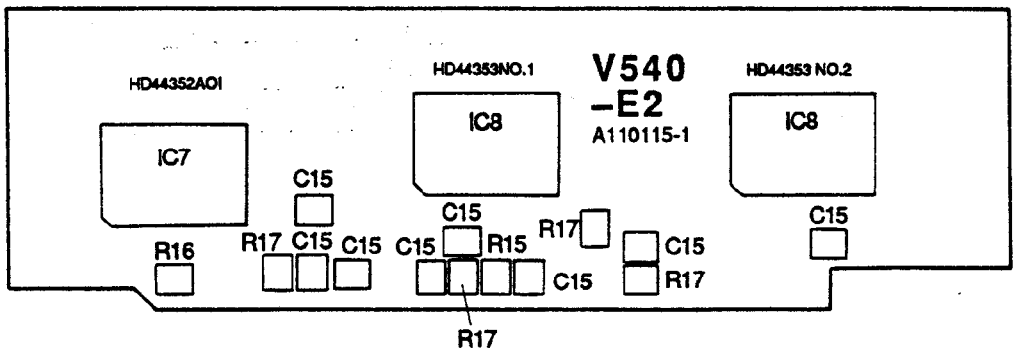
7-5. PCB-V540E4



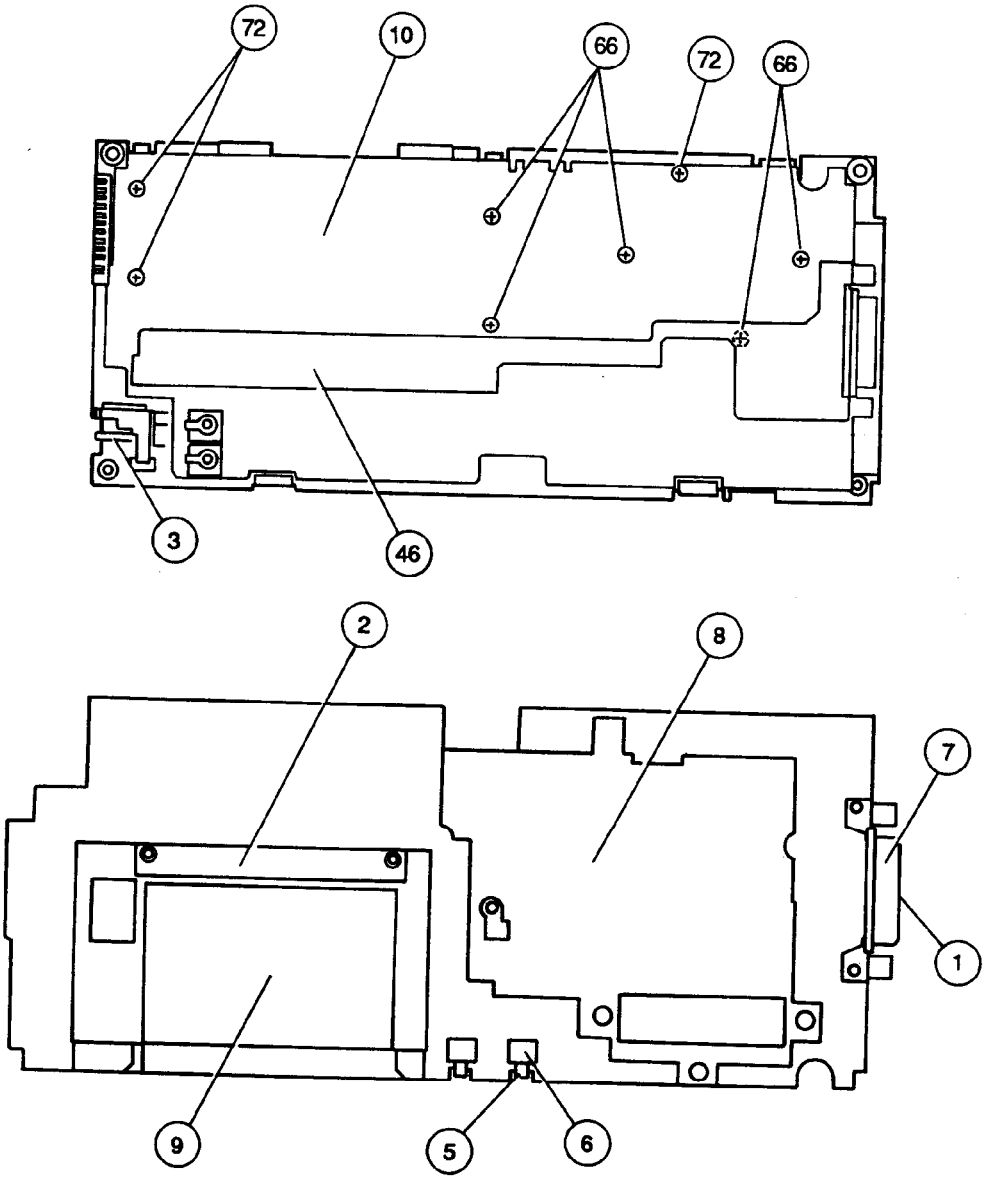


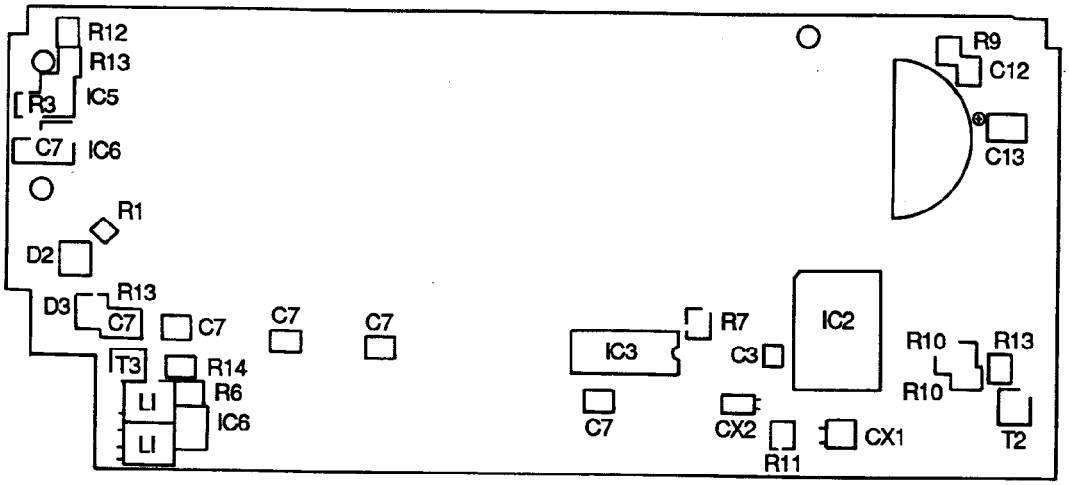
7-6. LCD & PCB-V540-E2

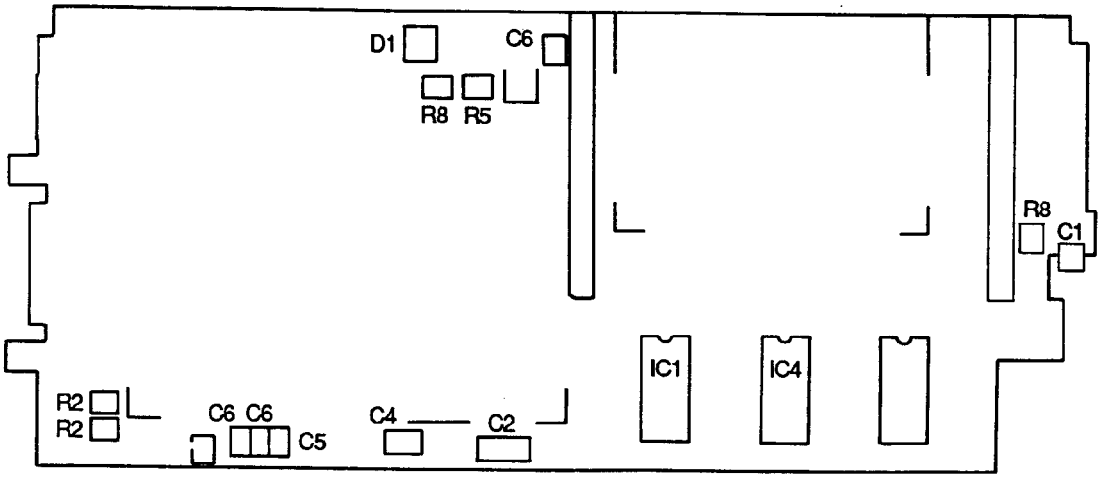




7-7. PCB-V540-1




R12
R13
IC5
R3
C7
IC6
R1
D2
D3
R13
C7
C7
C7
C7
T3
R14
R6
IC6
LI
LI
IC3
R7
C3
C7
IC2
CX2
R11
CX1
R10
R13
R10
T2
R9
C12
C13


D1
C6
R8
R5
R8
C1
IC1
IC4
R2
R2
C6
C6
C5
C4
C2

8. PARTS LIST

Ref.	Code No.	Part Name	Specification	Q'ty	*	Unit Price N.R. Yen (¥) (FOB: JAPAN)	Rank
		1. PCB-V540-1					
IC1*O	2010 4655	LSI	M5M5256FP-12,15LL	1		1,520	A
IC2*O	2010 4872	LSI	HD61700A04	1		1,160	A
IC3*O	2010 4879	LSI	MB675184U	1		220	A
IC4*O	2010 7826	LSI	µPD27C512G-1405	1		1,490	A
IC5	2180 0502	MOS-IC	S-8054ALR-LN-T1	1		100	B
IC6	3122 0476	Regulator	S-80250AG-GB	2		100	B
T1	2200 8269	Transistor	2SA1179-M5, M6	1	10	18	B
T2	2250 0105	Chip transistor	2SA812-T1B (M6, M7)	1	20	12	C
T3	2252 0112	Chip transistor	2SA1623-T1B (L6, L7)	1		110	C
D1	2301 2324	Chip doide	MA151K	1	10	24	C
D2	2315 0212	Chip diode	MA153-(TX)	1	20	27	C
D3	2390 0035	Schottky diode	SB007-03CP-TB	1	20	18	C
CX1	2590 0049	Ceramic oscillator	CSB910D	1		95	C
R1	2606 0042	Carbon film resistor	R-20-10K-J	1	20	2	C
R2*O	2795 0476	Chip resistor	MCR10PZHJ333	2	20	2	C
R3	2795 0539	Chip resistor	MCR10PZHJ103	1	20	3	C
R4	7102 1853	Resistor	MCR10PZHJ101	2	20	3	C
R5	7102 1861	Resistor	MCR10PZHJ105	1	20	3	C
R6*O	2730 0525	Chip resistor	MCR10EZHG333	1	20	3	C
R7	2730 0549	Chip resistor	MCR10EZHJ225	1	20	3	C
R8	2792 0217	Chip resistor	MCR10EZHJ101	2	20	3	C
R9	2792 0853	Chip resistor	MCR10EZHJ333	1	20	3	C
R10	2792 1116	Chip resistor	MCR10EZHJ224	3	10	9	C
R11	2795 0525	Chip resistor	MCR10EZHG105	1	20	5	C
R12	2795 0532	Chip resistor	MCR10EZHJ105	1	20	3	C
R13	2795 1309	Chip resistor	MCR10EZHJ684	3	10	9	C
R14*O	2795 2184	Chip resistor	MCR10EZHG823	1	20	3	C
C1*O	2800 9259	Electrolytic capacitor	CE04C-1C470MS5	1	20	19	C
C2*O	2801 7917	Electrolytic capacitor	CE04C-1E101SS	1	20	21	C
C3*O	2845 1414	SC capacitor	DSTC60SJYR223K	1	20	5	C
C4*O	2896 0770	Chip capacitor	C3K31P1HF224Z	1	20	17	C
C5*O	2896 0777	Chip capacitor	C2C21P1HCG120K	1	20	5	C
C6	2896 0784	Chip capacitor	C2C21P1HCG101K	3	20	6	C
C7	2845 0595	Chip capacitor	T1-C3K21P1EF104Z	5	20	8	C
C8*O	2845 0868	Chip capacitor	T1-C3K21P1ER102Z	1	20	6	C
C9*O	2845 0973	Chip capacitor	T1-C3K21PER223Z	1	20	10	C
C10*O	2845 1015	Chip capacitor	T1-C3K21P1ER102M	1	20	6	C
C11*O	2845 1029	Chip capacitor	T1-C3K21P1ER223M	1	20	9	C
C12*O	2845 1169	Chip capacitor	T1-C3K21P1ER222M	1	20	6	C
C13	2895 0042	Chip tantalum capacitor	ECSE1AY105R	1	10	30	C
C14	2895 0133	Chip tantalum capacitor	ECST1EY474R	1	10	27	C

Note: *O — New parts
Q'ty — Quantity used per unit
* — Minimum order and supply quantity

Rank A: Essential
B: Stock recommended
C: Others
X: No stock recommended

Ref.	Code No.	Part Name	Specification	Q'ty	*	Unit Price N.R. Yen (¥) (FOB: JAPAN)	Rank
1	3501 0182	Connector	69836-001	1		560	C
2*O	3501 2415	Card connector	XW8Z-0008	1		620	C
3	3512 3211	Power jack	HEC0747-01-010	1	10	20	C
4*O	3841 0511	STB coil	SBT-0260S	2	10	45	C
5	6325 8131	P spring G195	A33138A-1	2	10	4	C
6	6380 1140	Tape B-G898	A48906-1	1	20	2	C
7	6381 1590	Connector shield plate	C31005-1	1		100	C
8*O	6388 2040	Tape A-V540	A410466-1	1	10	28	C
9*O	6388 2050	Tape B-V540	A410467-1	1	20	14	C
CX2	7110 0642	Crystal oscillator	DT-26S	1	10	57	C
10*O	4306 8791	PCB-V540-1	A110114A-1	1		880	C
		2. PCB-V540-E2					
IC7	2010 0434	LSI	HD44352A01	1		690	A
IC8	2010 0630	LSI	HD44353	2		760	A
R15*O	2795 0462	Chip resistor	MCR10PZHG472	1	20	3	C
R16	2795 0539	Chip resistor	MCR10PZHJ103	1	20	3	C
R17*O	2795 2086	Chip resistor	MCR10PZHG182	4	20	3	C
C15	2845 0679	Chip capacitor	C3K21P1EF104Z	8	20	8	C
11*O	3335 1561	LCD	CD35-TS	1		650	A
12*O	5600 9270	Heat seal A-V540	A310508-1	1		400	A
13*O	5600 9280	Heat seal B-V540	A310509-1	1		250	A
14*O	6388 1900	Plate A-V540	A310515-1	1	5	69	C
15*O	6388 1910	Plate B-V540	A310516-1	1	5	67	C
16*O	6388 1920	Cushion V540	A410474-1	2	20	8	C
17*O	6388 1930	Tape C-V540	A410475-1	2	20	4	C
18*O	6388 1940	Tape D-V540	A410475-2	1	20	3	C
19*O	6388 1950	Tape E-V540	A410475-3	1	20	3	C
20*O	6388 8860	Cushion B-V540	A410474-2	1	20	6	C
21*O	6388 1960	PC joiner A-V540	A410476-1	1	10	37	C
22*O	4306 8770	PCB-V540-E2	A110115-1	1		430	C
		3. PCB-V540-E4					
23*O	6388 1981	PC Joiner B-V540	A410476-A-2	1	10	33	C
24*O	4306 8780	PCB-V540-E4	A110116-1	1		310	C
		4. KEY TOP					
25*O	6388 1741	Large button V540	A35436A-19	1	20	21	C
26*O	6388 1730	Middle button ass'y	A410469*1	1		110	C

Note: *O — New parts
Q'ty — Quantity used per unit
* — Minimum order and supply quantity

Rank A: Essential
B: Stock recommended
C: Others
X: No stock recommended

Ref.	Code No.	Part Name	Specification	Q'ty	*	Unit Price N.R. Yen (¥) (FOB: JAPAN)	Rank
27*O	6388 1822	Small button ass'y	A310513B*2	1		190	C
28*O	6388 1750	Button A-V540	A310538-1	1	20	28	C
29*O	6388 1760	Button B-V540	A410471-1	4	10	49	C
30*O	6388 1770	Button C-V540	A410472-1	1	5	53	C
		5. UPPER CASE					
31*O	6391 3310	Upper case sub ass'y	A310544A*3	1		750	C
32*O	6388 1782	K rubber V540	A210180B-1	1		110	C
33*O	6388 1792	Spacer V540	A310521B-1	1	20	15	C
34*O	6388 1810	Plate B-V540	A310514-1	1	20	27	C
35	3240 1571	Buzzer	EFB-S55C41A3	1		36	C
36*O	6388 2131	Common film V540	A210181A-1	1	10	45	C
37*O	6388 1830	Tape G-V540	A410529-1	1	20	15	C
38*O	6388 1970	Tape F-V540	A410491-1	1	20	25	C
39*O	6389 2650	Tape H-V540	A410667-1	1	20	9	C
40	6327 4570	TS screw with washer G80B	A44527-1	3	50	2	C
41	6328 3830	Flat screw A-G403	A44793-5	12	50	2	C
42	6330 4750	Tape (for buzzer)	A45381-1	1	10	5	C
43	6332 8870	Flat screw A-G273	A33953-5	2	50	2	C
44	6381 0290	Earth spring B	A47157-0	1	40	6	C
		6. LOWER CASE					
45*O	6388 1992	Lower case V540	A110119B-1	1	5	61	C
46*O	6388 2010	Plate A-V540	A210182-1	1	20	23	C
47*O	6388 2021	SW knob V540	A310512A-1	1	20	17	C
48*O	6388 1632	Lower panel V540	A210176B-1	1		460	C
49*O	6350 1141	Battery cover G924	A37445A-1	1	10	33	C
50*O	6388 1670	Cap V540	A410478-1	1	10	31	C
51*O	6387 3370	Rubber foot	A410388-1	1	20	12	C
52*O	6388 1640	Label A-V540	A410477-1	1	20	22	C
53*O	6388 1660	Earth spring B-V540	A410468-2	2	20	5	C
54	6331 6670	Flat screw A-G324	A33953-3	1	50	2	C
55	6334 9650	Battery holder B	A35803-1	1	10	12	C
56	6337 9150	Flat screw C-G475	A33953-31	2	50	2	C
57	6347 2720	Decoration screw	C41077-1	1	50	2	C
58	6350 1160	Tape C-G924	A48768-1	1	20	5	C
59*O	6388 1650	Decoration screw A-V540	A49055-4	3	20	2	C
60	6324 2690	Contact spring G47	A43361A-1	1	10	17	C
61	6324 9394	Nut A-G144	A43705-8	5	20	5	C
62	6329 7621	Battery spring A-G272	A33938A-1	1	20	7	C
63	6329 7630	Battery spring B-G272	A33939-1	2	20	8	C

Note: *O — New parts
Q'ty — Quantity used per unit
* — Minimum order and supply quantity

Rank A: Essential
B: Stock recommended
C: Others
X: No stock recommended

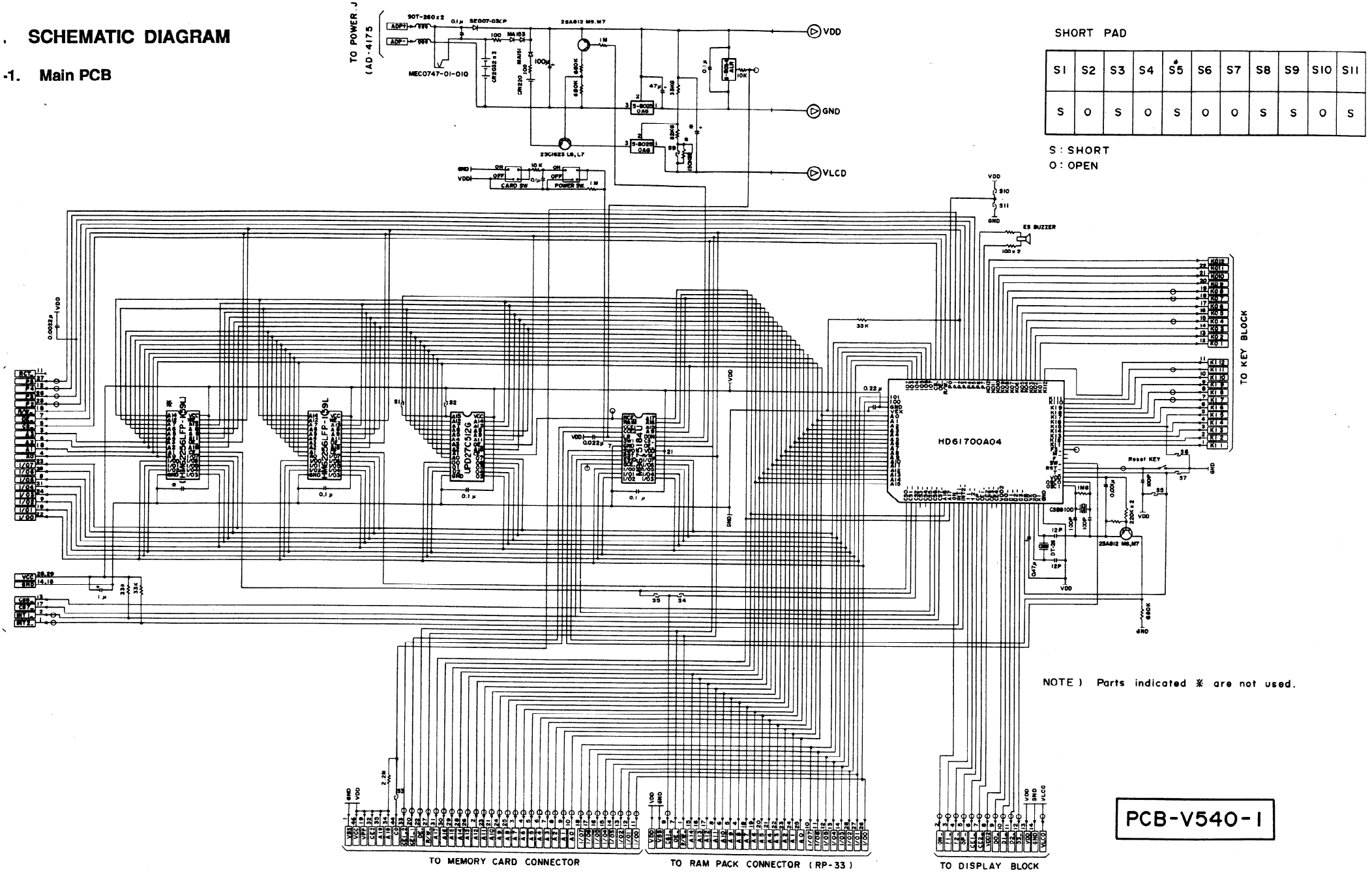
Ref.	Code No.	Part Name	Specification	Q'ty	*	Unit Price N.R. Yen (¥) (FOB: JAPAN)	Rank
64	6329 7640	Battery spring C-G272	A33940-1	1	10	6	C
65	6329 7660	Battery insulation seal	A45154-1	3	10	2	C
66	6332 0760	Flat screw A-G339	A45491-09	5	50	2	C
67	6332 8870	Flat screw A-G273	A33953-5	2	50	2	C
68	6333 9680	Flat screw A-G331	A33953-9	2	50	2	C
69	6334 9890	Battery spring A-G910	A35801-1	1	10	6	C
70	6334 9900	Battery spring B-G910	A35800-1	1	10	5	C
71	6334 9910	Battery insulation seal	A46472-1	1	10	3	C
72	6339 1750	Flat screw A-G912	A33953-33	3	50	2	C
73*O	6388 2030	Earth spring A-V540	A410468-1	2	20	5	C
		7. HARD CASE					
74*O	6391 3354	Hard case A-V552	A210177D-2	1		150	C
75*O	6388 2072	Hard case B-V540	A210178B-1	1		100	C
76*O	6388 2082	Label B-V540	A140479B-1	1	10	40	C
77*O	6388 2090	Shaft V540	A410490-1	2	20	8	C
78*O	6389 9800	Holder V540	A410827-1	2	20	8	C
79*O	6389 9810	Cushion C-V540	A410474-3	2	20	6	C
80*O	5330 0227	E ring	1.5		10	2	C

Note: *O — New parts
Q'ty — Quantity used per unit
* — Minimum order and supply quantity

Rank A: Essential
B: Stock recommended
C: Others
X: No stock recommended

. SCHEMATIC DIAGRAM

-1. Main PCB



SHORT PAD

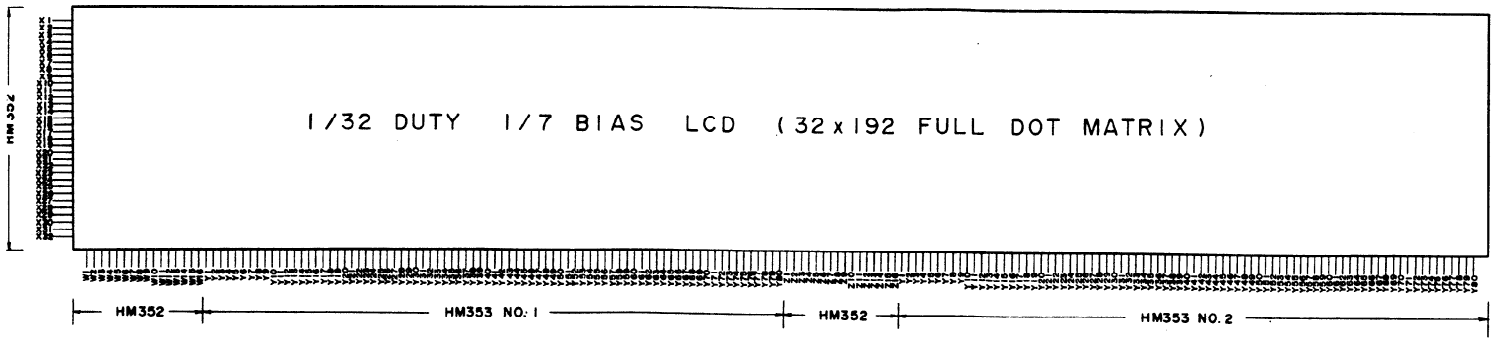
S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
S	O	S	O	S	O	O	S	S	O	S

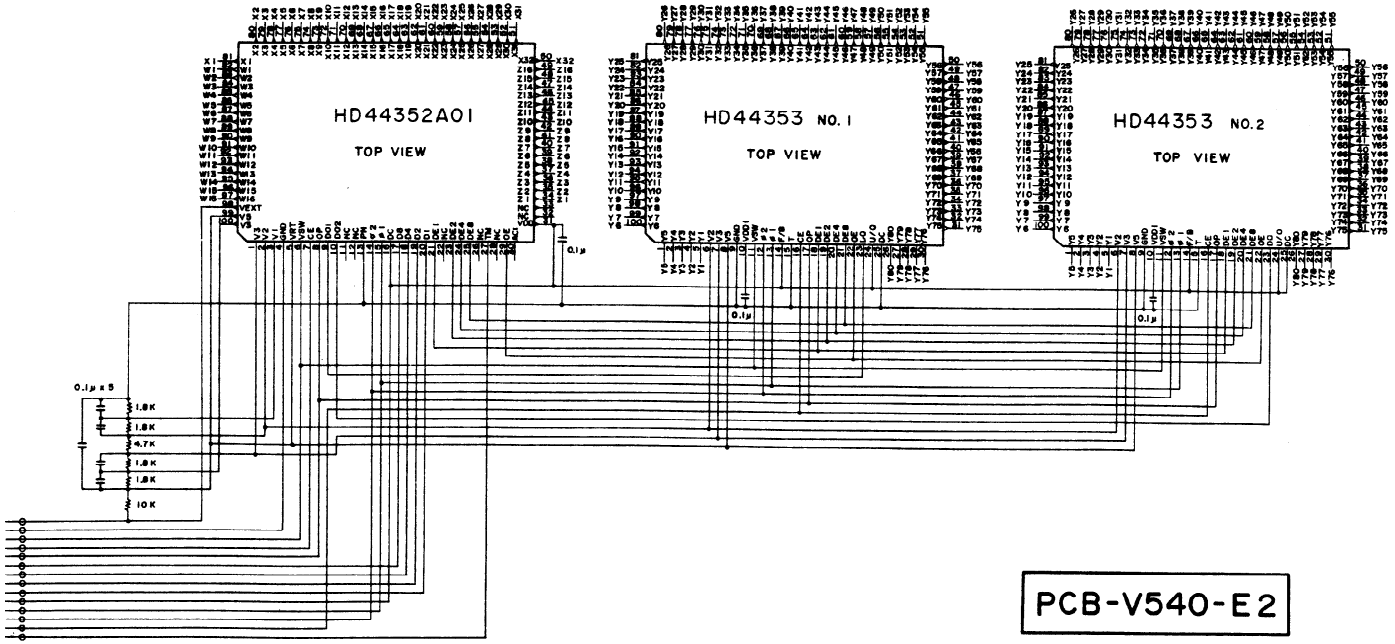
S : SHORT
O : OPEN

NOTE) Parts indicated ※ are not used.

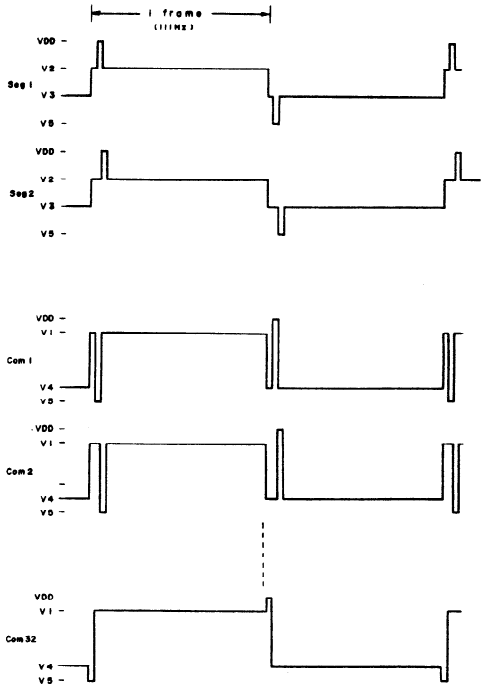
PCB-V540-1

splay Block

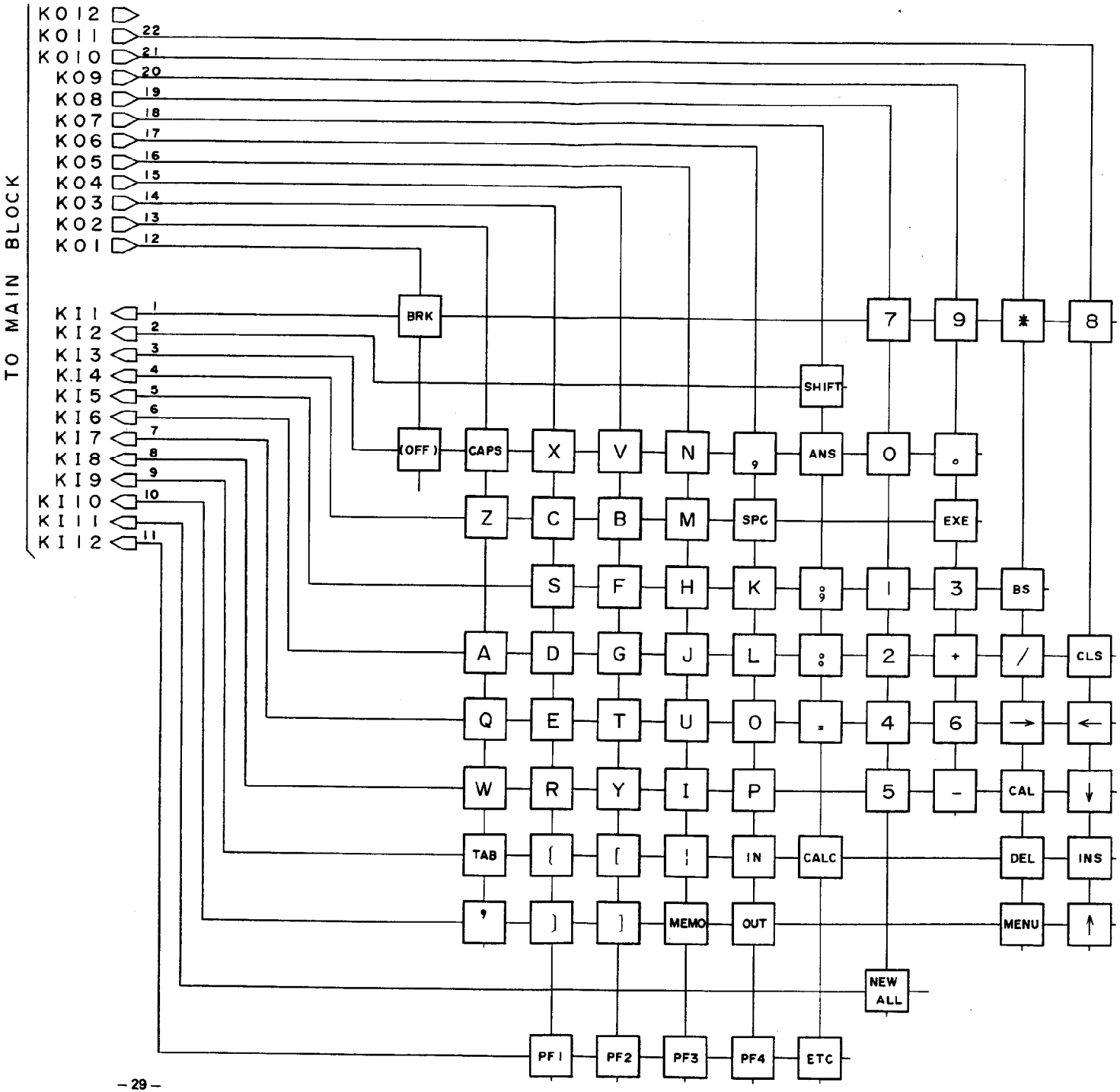




PCB-V540-E2



9-3. Key Block


TO MAIN BLOCK
KO12
KO11
KO10
KO9
KO8
KO7
KO6
KO5
KO4
KO3
KO2
KO1
KI1
KI2
KI3
KI4
KI5
KI6
KI7
KI8
KI9
KI10
KI11
KI12
22
21
20
19
18
17
16
15
14
13
12
1
2
3
4
5
6
7
8
9
10
11
BRK
(OFF)
CAPS
SHIFT
ANS
EXE
SPC
BS
CLS
TAB
CALC
DEL
INS
MEMO
OUT
MENU
NEW ALL
PF1
PF2
PF3
PF4
ETC
CAL
Z C B M , 7 9 * 8
S F H K ? I 3
A D G J L ; 2 + / CLS
Q E T U O = 4 6 → ←
W R Y I P 5 - CAL ↓
TAB { [¦ IN CALC DEL INS
' }] MEMO OUT MENU ↑