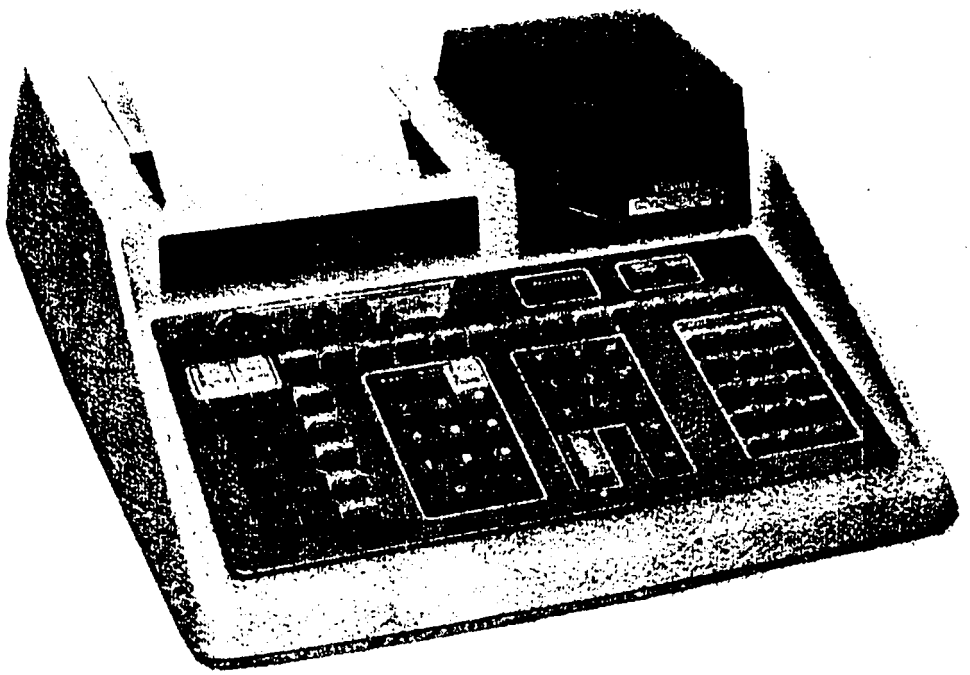
BA-2

Canon Canola SX-300

■ REPAIR GUIDE

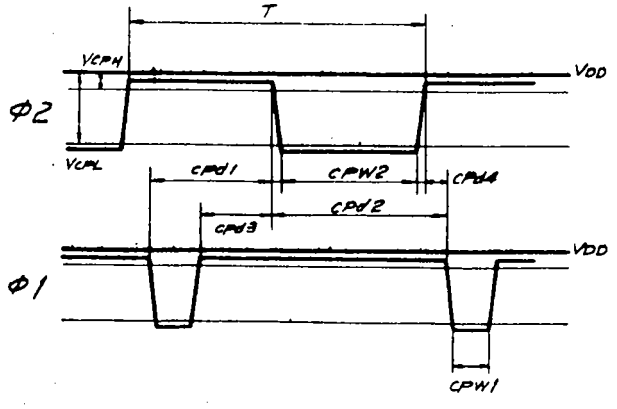
■ PARTS CATALOG



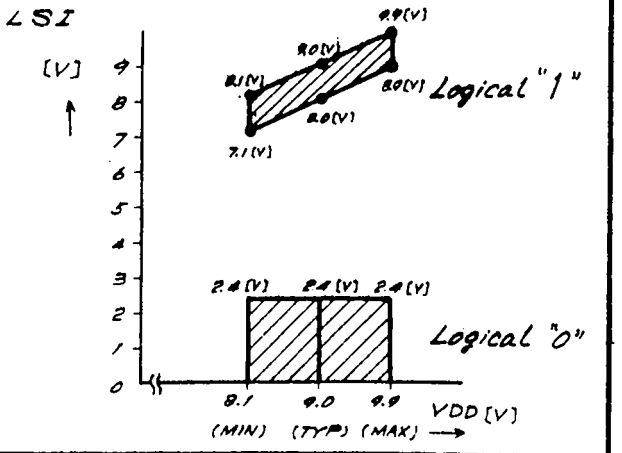
MODEL NUMBER 8–41231 ~ 5

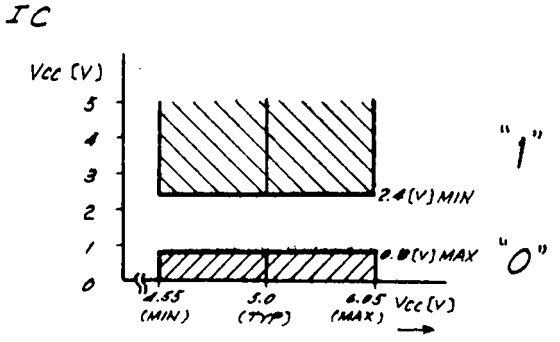
OPERATION CONDITIONS

SIGNAL 信号名	TYPICAL 基準電圧	ALLOWANCE 電圧範囲
+VOP	12.0 [V]	10.5 ~ 13.5 [V]
VDD	9.0 [V]	8.1 ~ 9.9 [V]
Vcc	5.0 [V]	4.5 ~ 5.5 [V]
VTP	-4.0 [V]	-3.0 ~ -5.0 [V]
VPM	-6.0 [V]	-3.0 ~ -7.0 [V]
VGG	-7.5 [V]	-6.75 ~ -8.25 [V]
-VOP	-12.0 [V]	-10.5 ~ -13.5 [V]



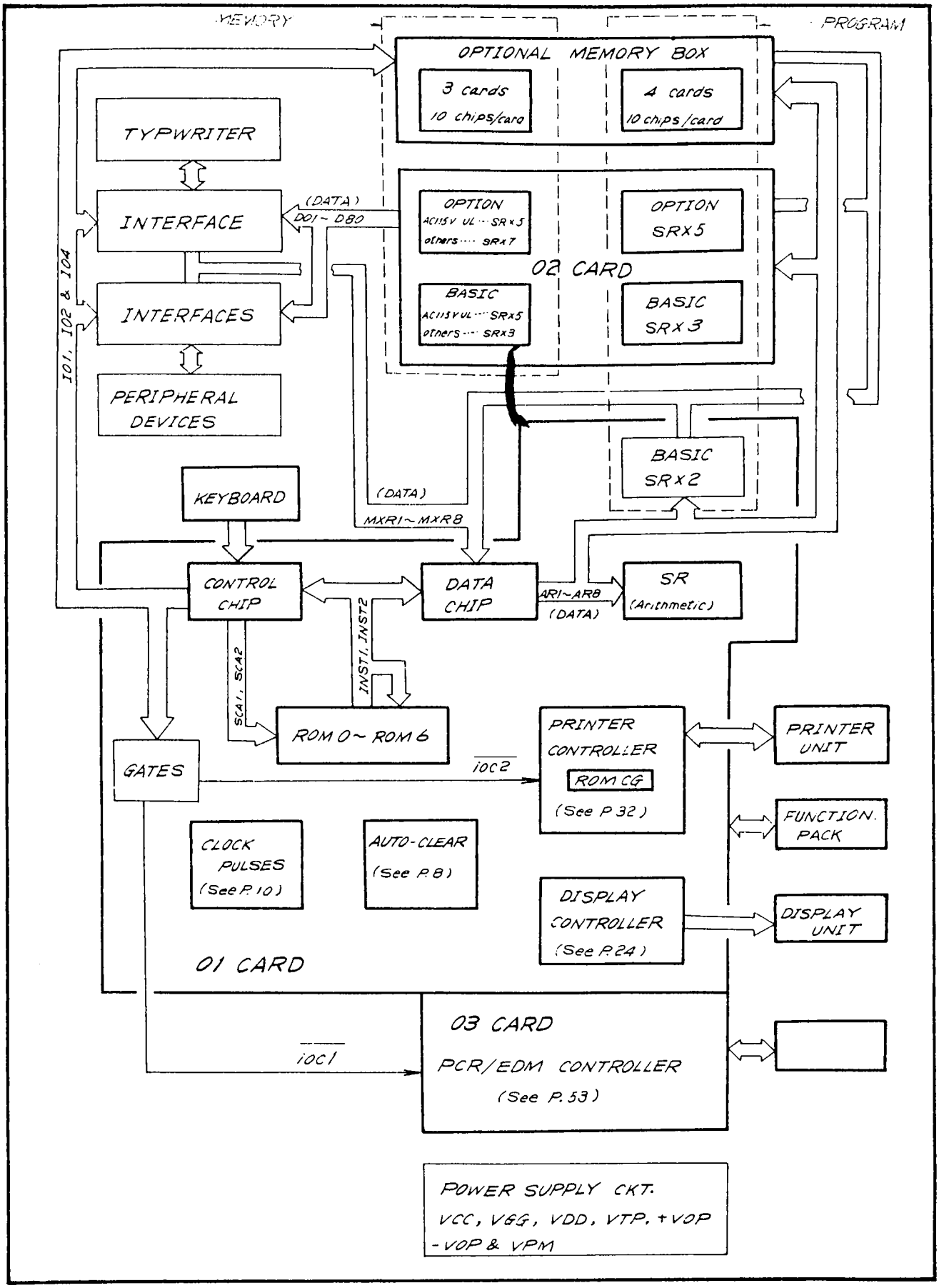
	MIN 最小	TYP 標準	MAX 最大	
T		2.2		[μsec]
CPW1	0.5			
CPW2	1.0			
CPd1	0.9			
CPd2	1.3			
CPd3	0.3			
CPd4	0.3			
VCPH	VDD-0.3	—	—	[V]
VCPL	—	—	VDD-14.5	



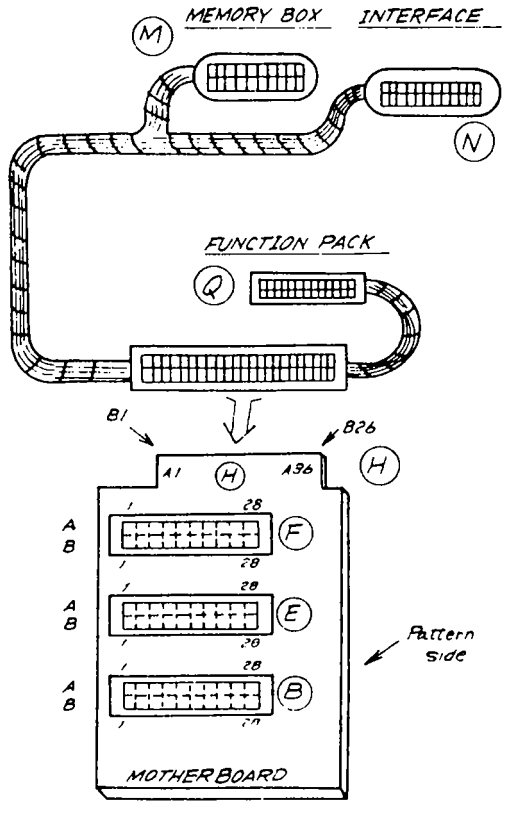


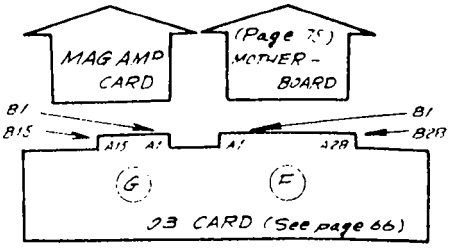
CONTENTS

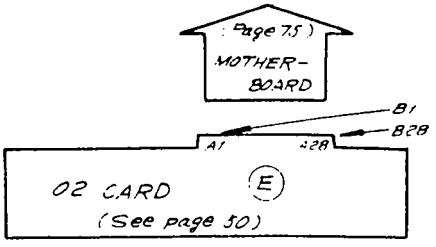
1. BLOCK DIAGRAM OF SX300 SERIES

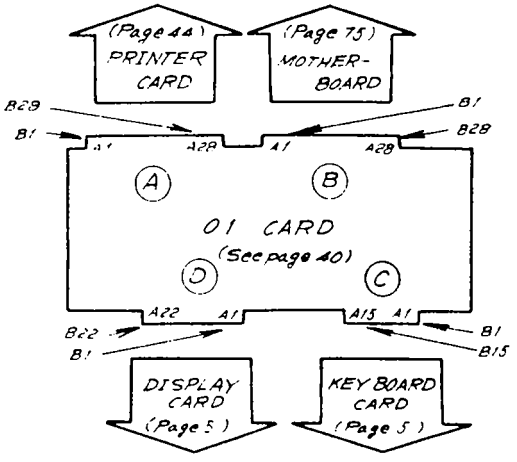


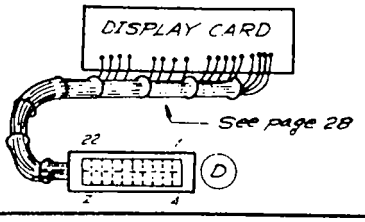
2. TERMINAL & CONNECTOR LOCATION

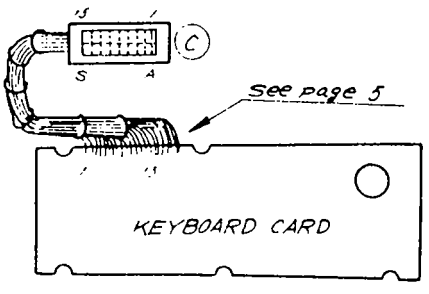




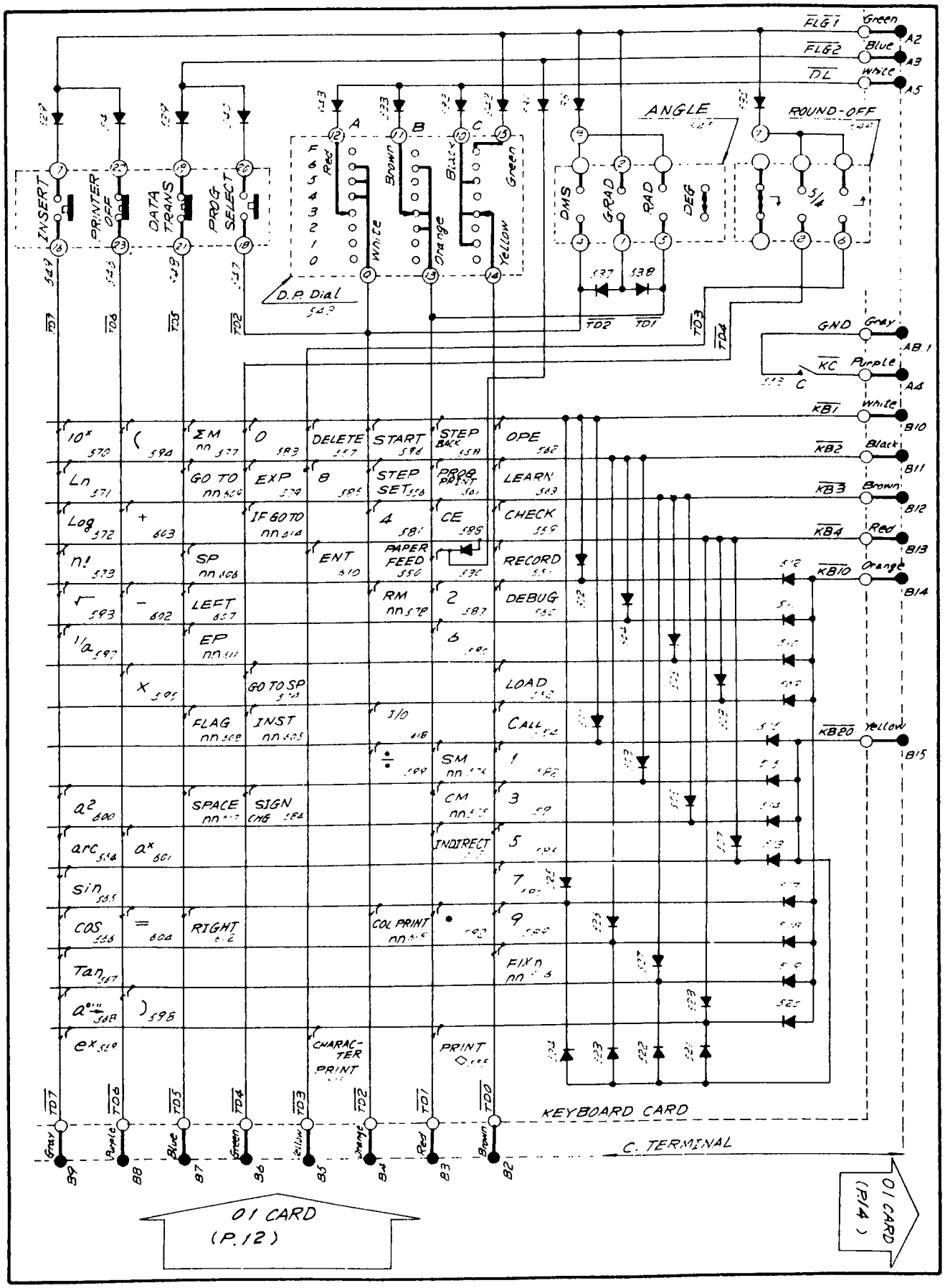




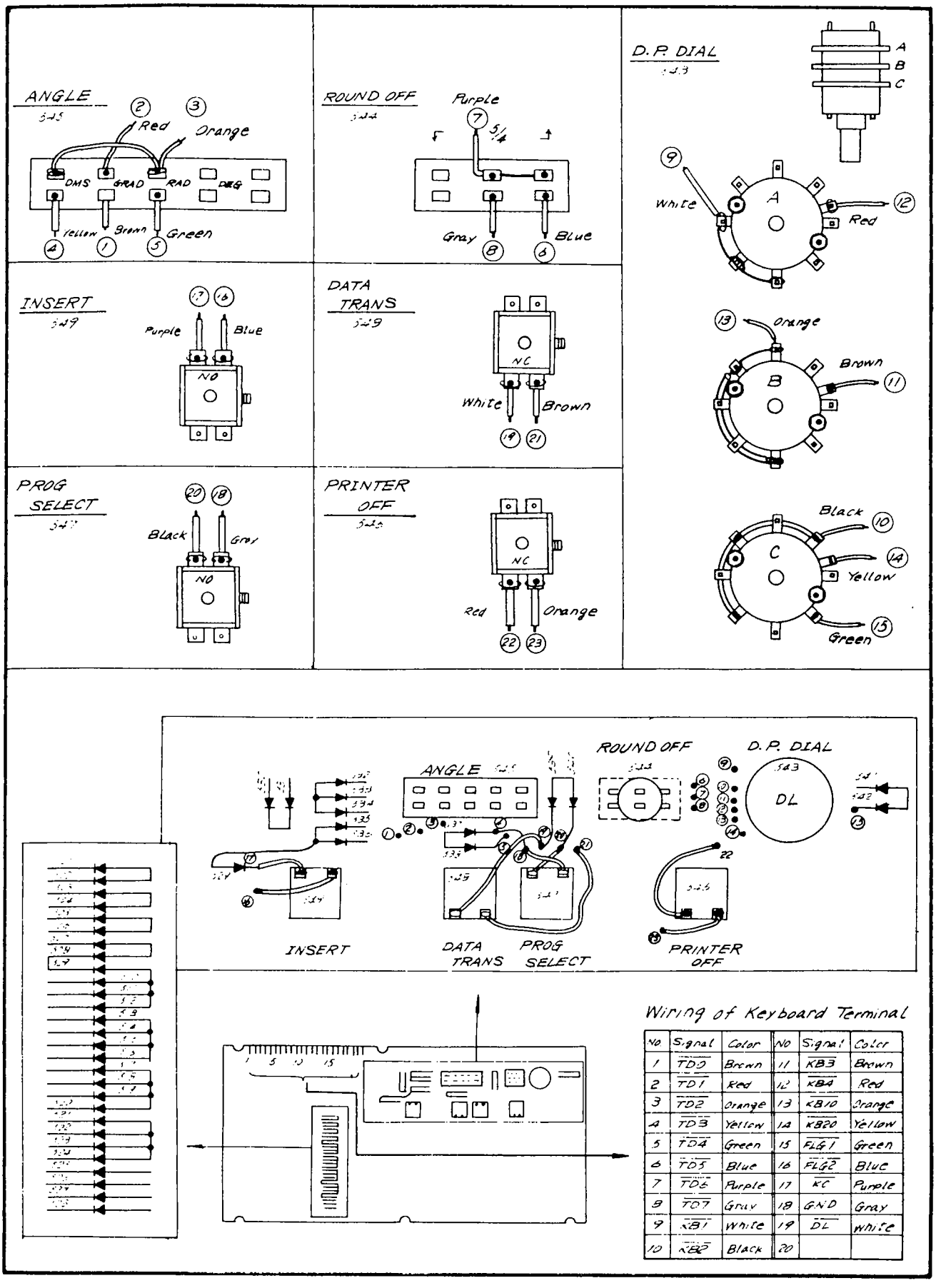




KEYBOARD CIRCUIT



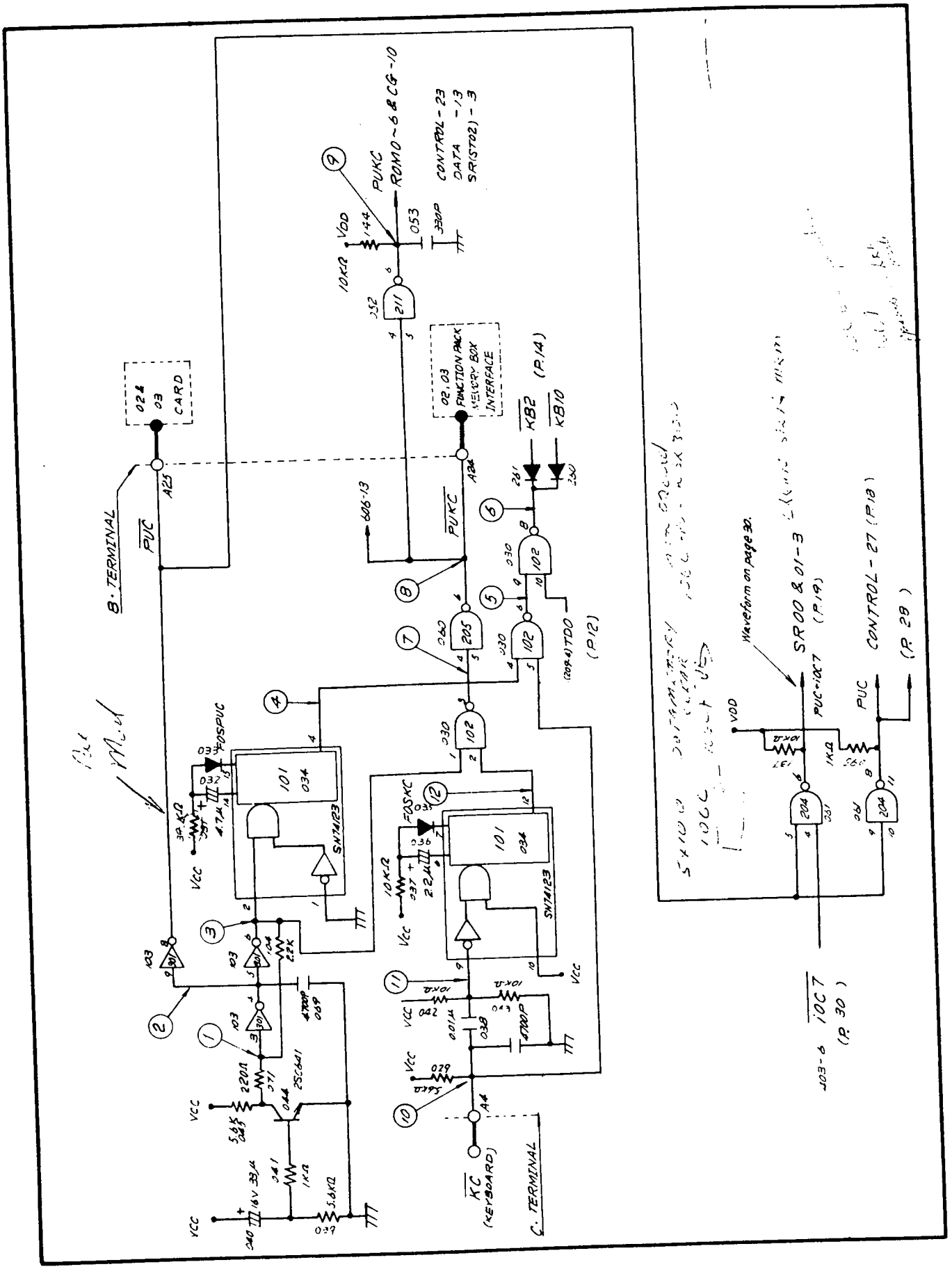
KEYBOARD CARD LAYOUT



Wiring of Keyboard Terminal

No	Signal	Color	No	Signal	Color
1	$\overline{TD0}$	Brown	11	$\overline{KB3}$	Brown
2	$\overline{TD1}$	Red	12	$\overline{KB4}$	Red
3	$\overline{TD2}$	Orange	13	$\overline{KB10}$	Orange
4	$\overline{TD3}$	Yellow	14	$\overline{KB20}$	Yellow
5	$\overline{TD4}$	Green	15	$\overline{FLG1}$	Green
6	$\overline{TD5}$	Blue	16	$\overline{FLG2}$	Blue
7	$\overline{TD6}$	Purple	17	$\overline{KC}$	Purple
8	$\overline{TD7}$	Gray	18	GND	Gray
9	$\overline{KB1}$	White	19	$\overline{DL}$	White
10	$\overline{KB2}$	Black	20		

AUTOCLEAR & C


8. TERMINAL
PUC
A25
024
03
CARD
PUKC
ROM0~6 & CG-10
CONTROL-23
DATA -13
SR(ST02)-3
02,03
FUNCTION PACK
VELOCITY BOX
INTERFACE
KB2
KB10
(P.14)
TDO
(P.12)
FOSPUC
FOSKC
SN74123
VCC
C. TERMINAL
KC
(KEYBOARD)
Waveform on page 30.
SR00 & 01-3
(P.19)
CONTROL-27 (P.18)
(P. 28)
IOC7
(P. 30)

NORMAL WAVEFORM OF AUTO CLEAR & [C]

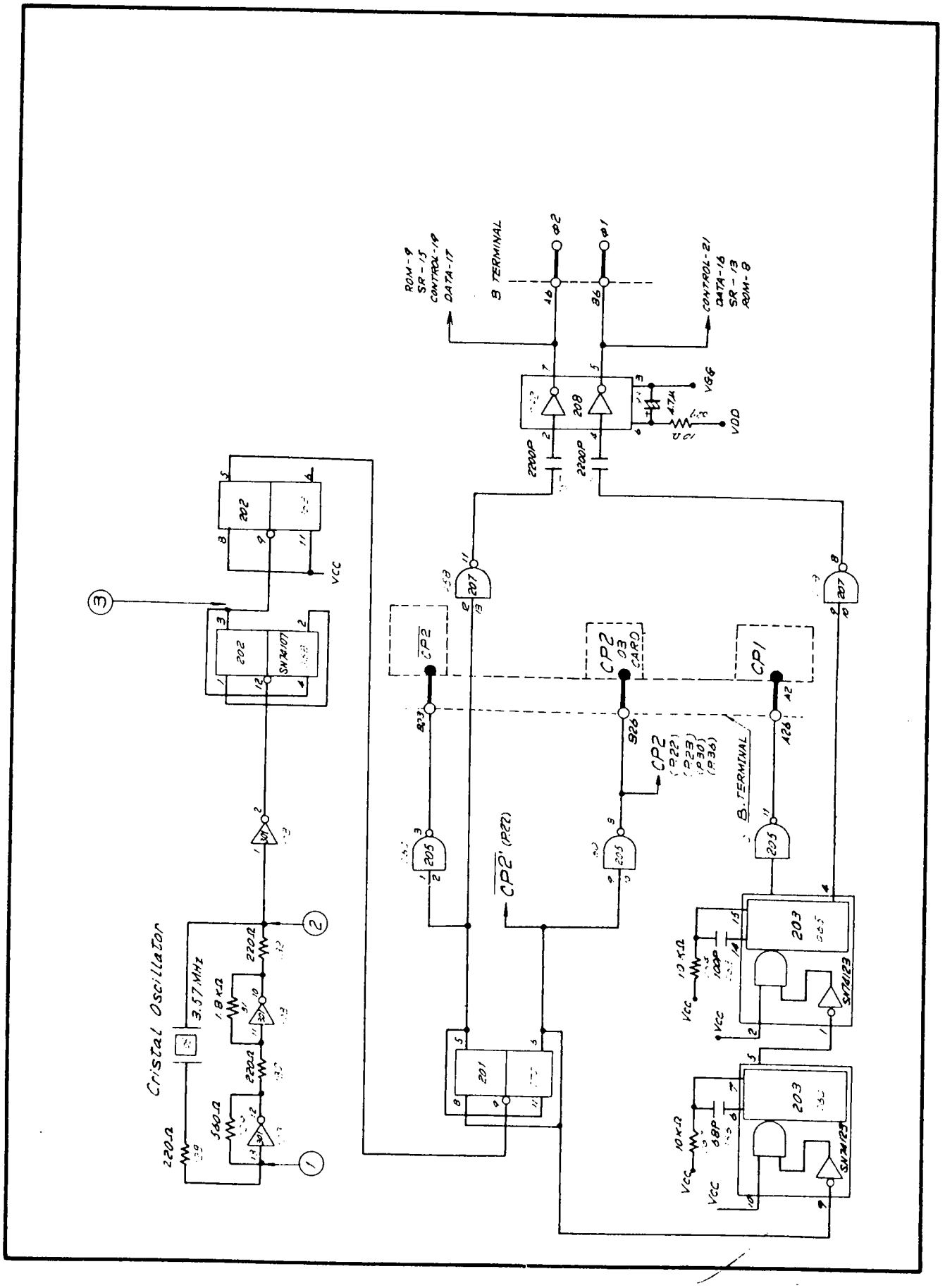
PRESSING [C]

TRIG	CH1	CH2
(IC2-5)	①②③④⑤⑥⑦⑧⑨	⑩
VOLT/DIV	0.2 V/DIV	0.2 V/DIV
TIME/DIV	1 msec/DIV	
SLOPE	—	
MODE	CHOP	

SWITCHING POWER ON

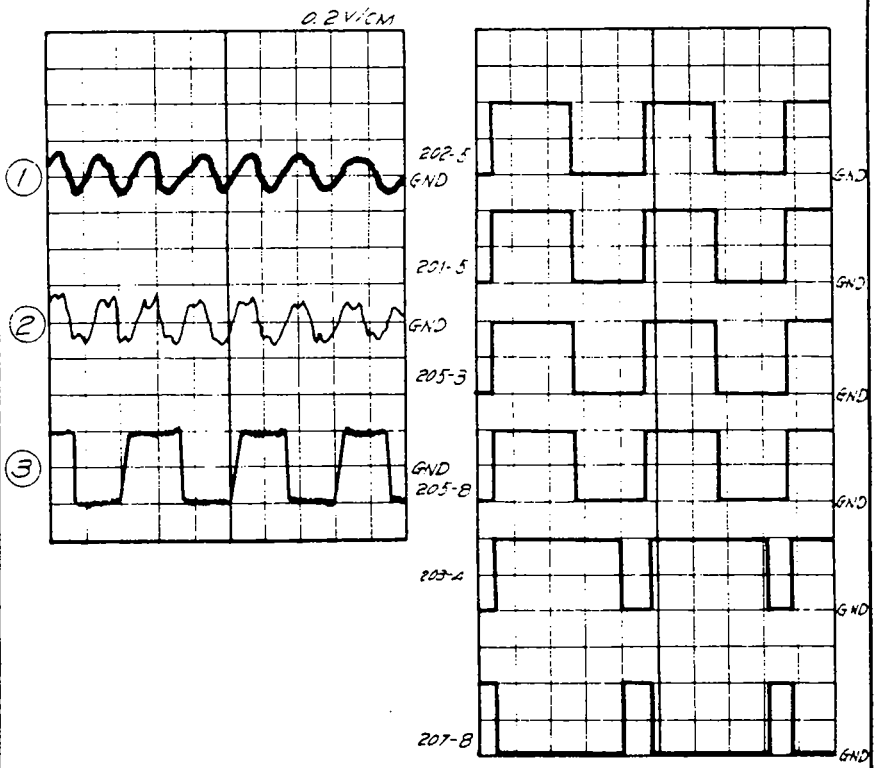
TRIG	CH1	CH2
①	②③④⑤⑥⑦⑧⑨	⑩
(IC1-3)		
VOLT/DIV	0.2 V/DIV	0.2 V/DIV
TIME/DIV	50 msec/DIV	
SLOPE	—	
MODE	CHOP	

CLOCK PULSES

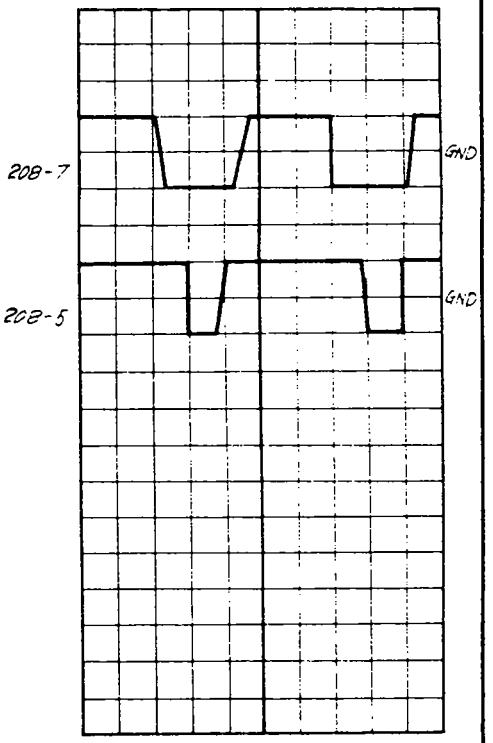


NOMAL WAVEFORM OF CLOCK PULSES

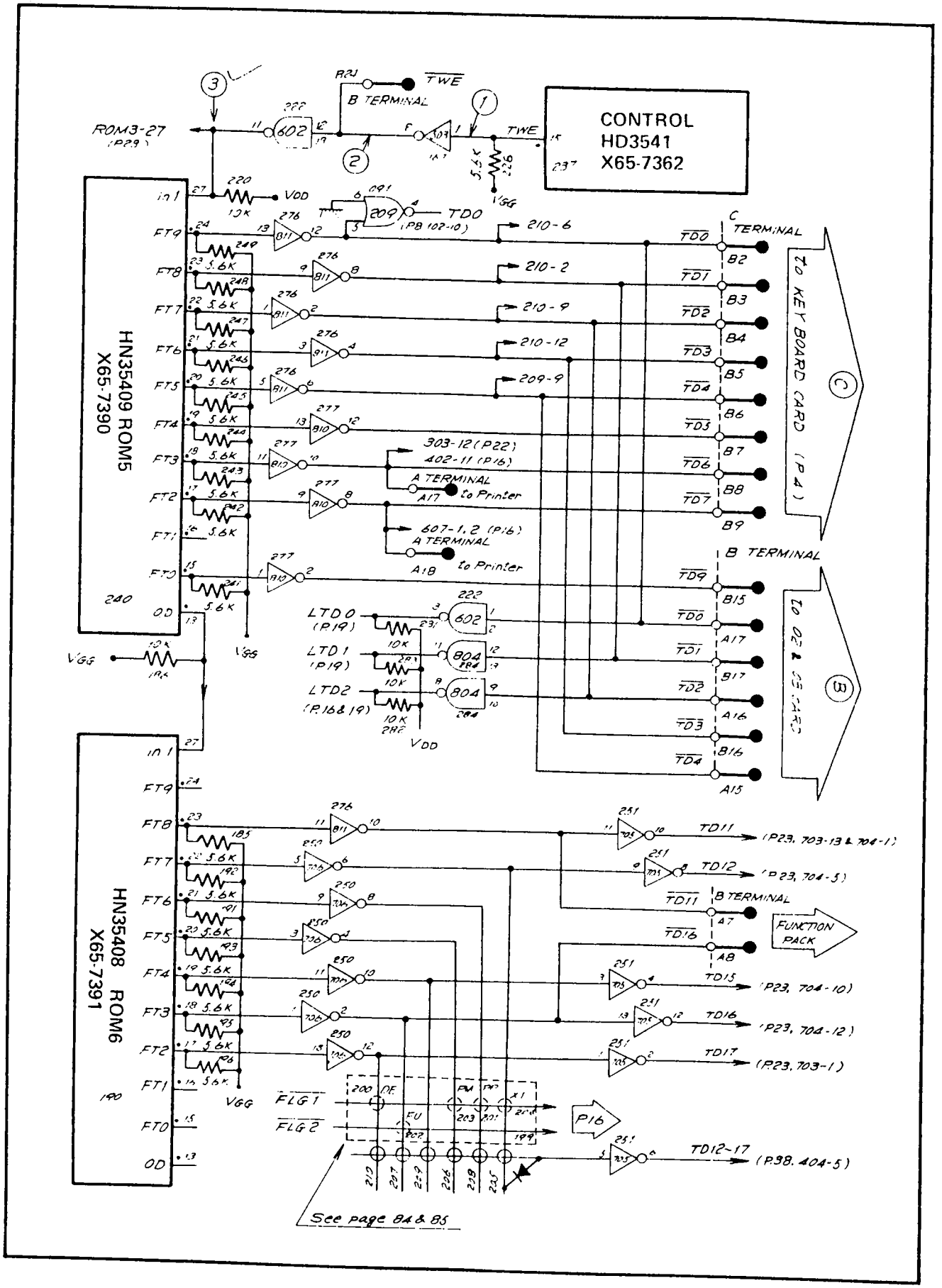
TRIG	CH 1	CH 2
AUTO INT.	1 2 ③ 4 8 201-5, 202-5 205-3 & 207-8	
VOLT/CM	0.2 V/CM	0.2 V/CM
TIME/CM	0.2 μsec/cm	
SLOPE	+	
MODE	CHOP	



TRIG	CH 1	CH 2
AUTO INT.	208-5, 7	
VOLT/CM	0.2σ-0.5 V/cm	0.2 V/CM
TIME/CM	0.5 μsec/cm	
SLOPE	+	
MODE	CHOP	

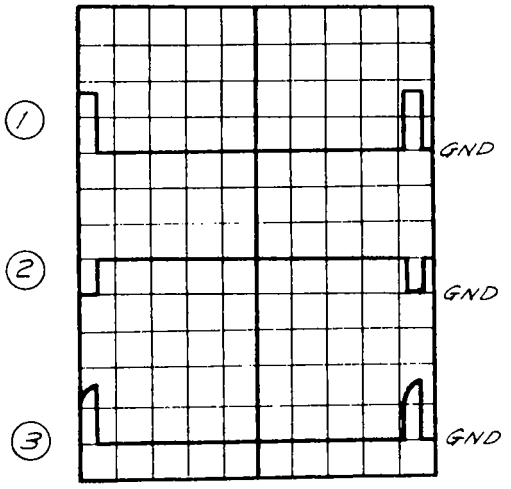


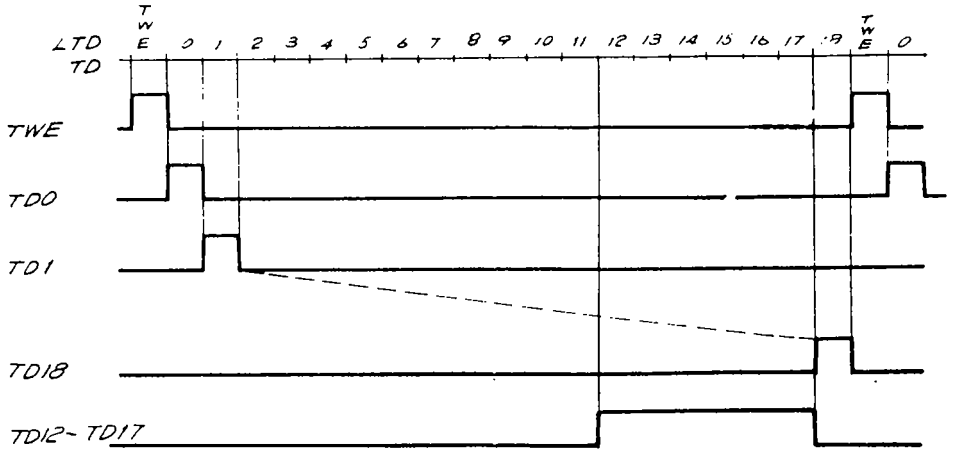
TWE & TD


CONTROL
HD3541
X65-7362
TWE
TDO
HN35409 ROM5
X65-7390
HN35408 ROM6
X65-7391
B TERMINAL
A TERMINAL
C TERMINAL
to KEY BOARD CARD (P4)
FUNCTION PACK
P16
FLG1
FLG2
VDD
VGG
LTD0 (P.19)
LTD1 (P.19)
LTD2 (P.16 & 19)
303-12 (P22)
402-11 (P16)
607-1, 2 (P16)
to Printer
TD11 (P23, 703-13 & 704-1)
TD12 (P23, 704-5)
TD15 (P23, 704-10)
TD16 (P23, 704-12)
TD17 (P23, 703-1)
TD12-17 (P.98, 404-5)
See page 84 & 85

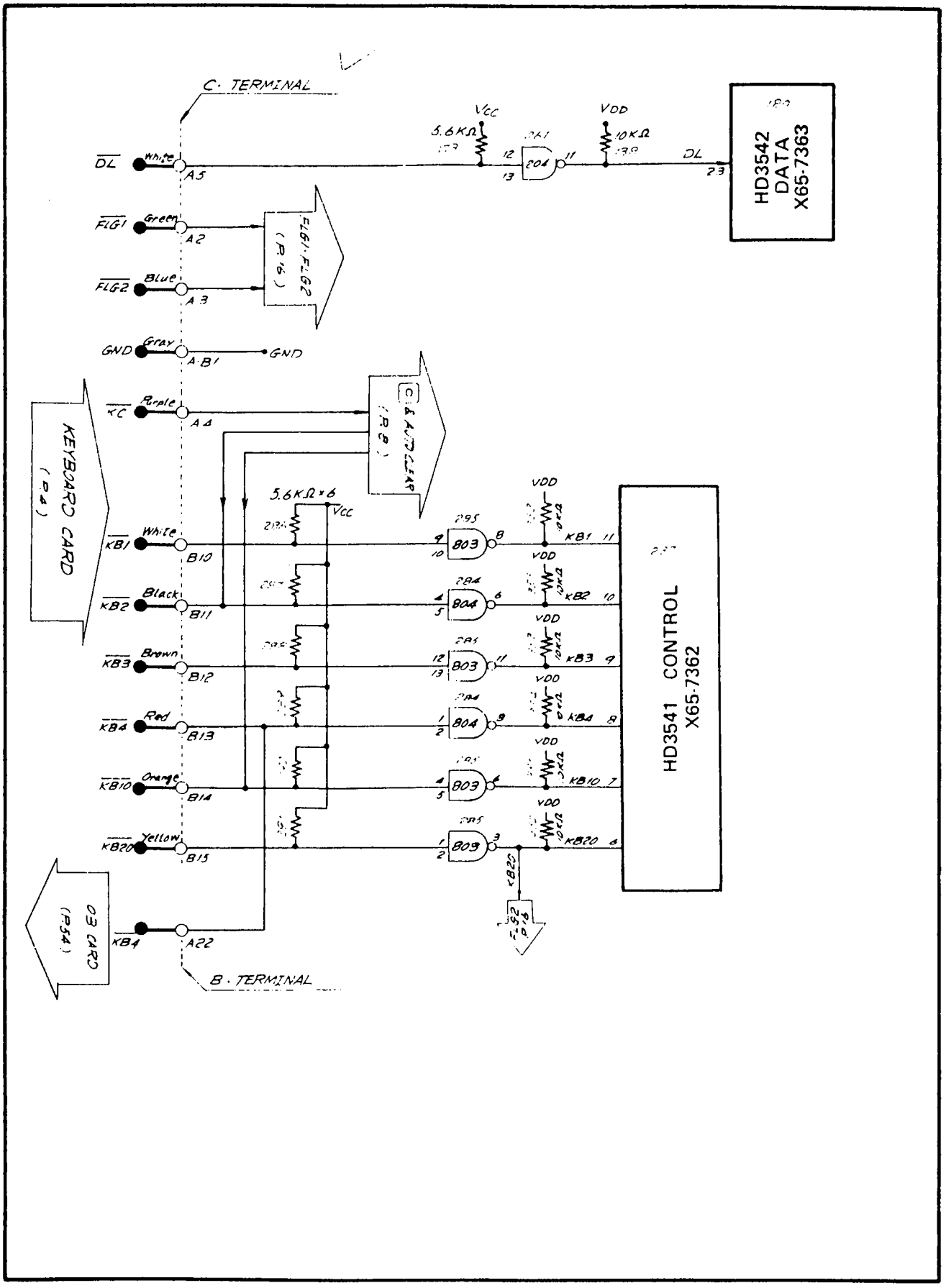
NORMAL WAVEFORM OF TWE & TD

TRIG	CH1	CH2
TWE CONTROL-IS HD3541	① ~ ③	TWE
VOLT/CM	0.5V/CM	0.5V/CM
TIME/CM	5 μ SEC/CM	
SLOPE	+	
MODE	CHOP	





KB1 ~ KB20 & DL

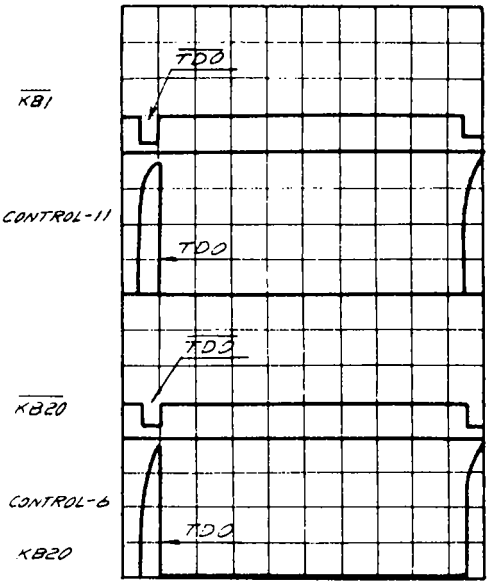

C. TERMINAL
DL
White
A5
5.6KΩ
Vcc
VDD
10KΩ
204
DL
HD3542
DATA
X65-7363
FLG1
Green
A2
FLG2
Blue
A3
FLG1, FLG2
GND
Gray
A, B1
GND
KC
Purple
A4
CLAMP
KEYBOARD CARD
KB1
White
B10
KB2
Black
B11
KB3
Brown
B12
KB4
Red
B13
KB10
Orange
B14
KB20
Yellow
B15
5.6KΩ×6
803
804
KB1
KB2
KB3
KB4
KB10
KB20
HD3541 CONTROL
X65-7362
03 CARD
KB4
A22
B. TERMINAL

NORMAL WAVEFORM OF KB1 ~ KB20 & DL

KB

TRIG	CH1	CH2
TWE CONTROL-15 HD3541		TWE
VOLT/CM	0.2 V/CM	0.5 V/CM
TIME/CM	5 μsec/CM	
SLOPE	+	
MODE	CHOP	

PRESSING [1]



DP dial position	DL	DP dial position	DL
0	—	4	TD2
1	TD0	5	TD0+TD2
2	TD1	6	TD1+TD2
3	TD0+TD1	F	—

KEY & KB

0 ~ 7 in Table indicates TD0 ~ TD7 signals

KEY & AUTO CLEAR	KB 1	2	3	4	10	20
OPE	0					
LEARN		0				
CHECK			0			
RECORD				0		
LOAD			0		0	
C or AUTO CLEAR		0			0	
CALL				0	0	
CE			1			
•	1				1	1
0	4					
1	0					0
2	1				1	
3		0				0
4			2			
5			0			0
6		1			1	
7				0		0
8		3				
9	0				0	0
SIGN CHG		4				4
EXP		4				
+			6			
−	6				6	
×			6		6	

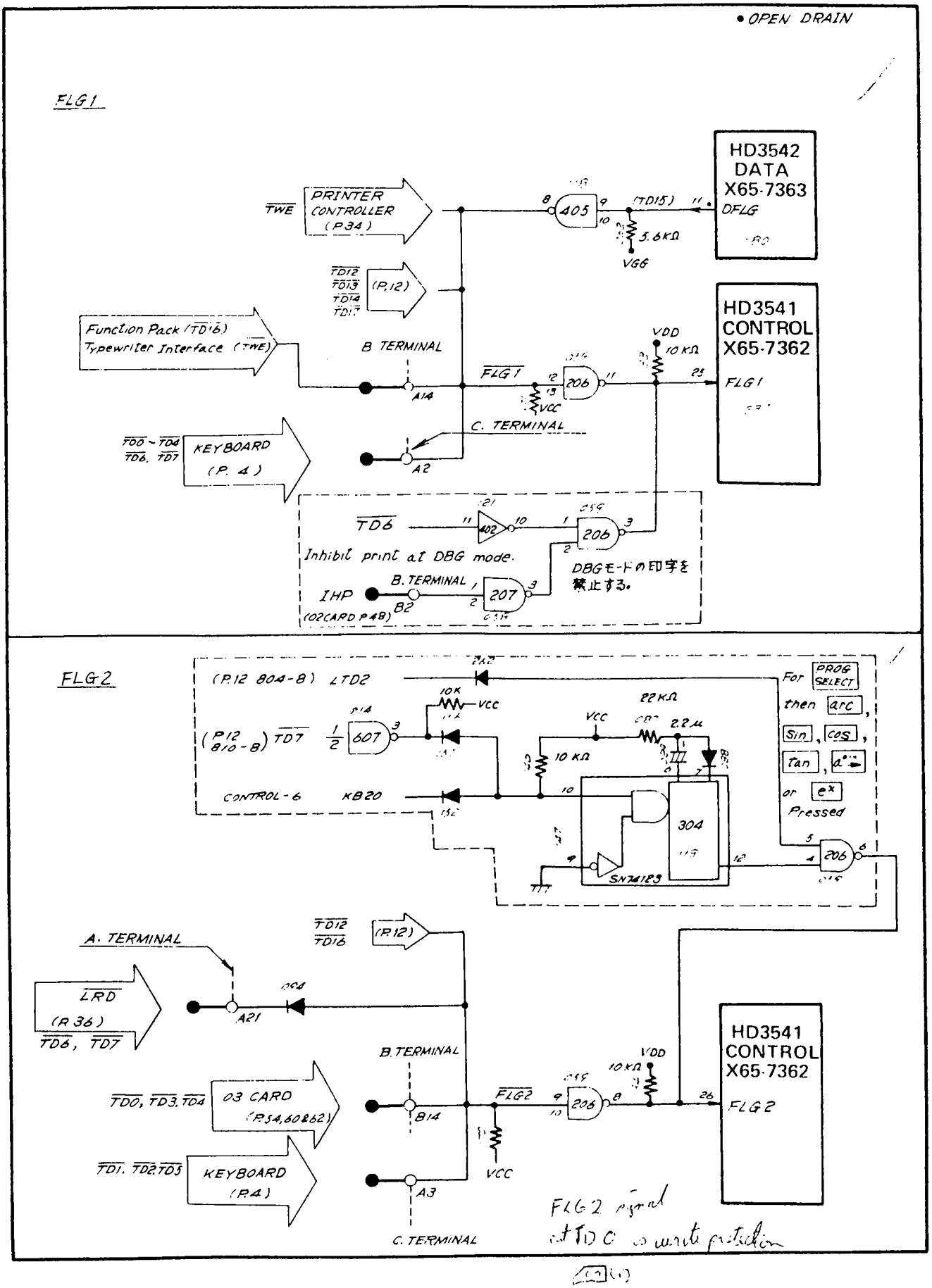
KEY	KB 1	2	3	4	10	20
÷	2					2
√	7				7	
1/a		7			7	
a^2		7				7
a^x			6			6
(	6					
)			6		6	6
=	6				6	6
e^x				7	7	7
10^x	7					
In		7				
log			7			
n!				7		
arc			7			7
Sin				7		7
Cos	7				7	7
Tan		7			7	7
x^{y}			7		7	7
CMnn		1				1
ΣMnn	5					
SMnn	1					1
RMnn	2				2	
SPnn				5		
EPnn		5			5	

KEY	KB 1	2	3	4	10	20
ENT				3		
LEFT	5				5	
RIGHT	5					
Fix nn		0			0	
GO TO nn		5				
IF GO TO nn			4			
FLAG nn				5	5	
INDIRECT			1			1
INST nn				4	4	
CHARACTER PRINT				3	3	3
SPACE nn		5				5
COL PRINT nn	2				2	2
I/O				2	2	
START	2					
GO TO SP nn			4		4	
DEBUG	0				0	
STEP BACK	1					
DELETE	3					
PRINT				1	1	1
PROG PRINT		1				
STEP SET		2				
* PAPER FEED				1		

* FLG2 is "1" at TD1

表中の0~7はTD信号の番号を表わす
(ex 0 = TD0)

FLG1 & FLG2

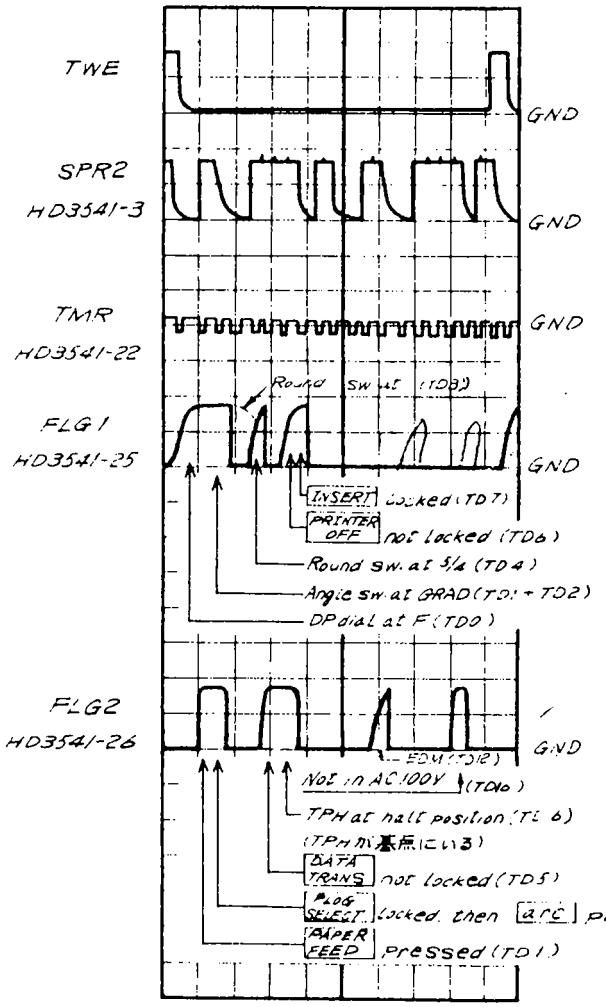

• OPEN DRAIN
FLG1
HD3542
DATA
X65-7363
DFLG
PRINTER
CONTROLLER
(P.34)
405
5.6KΩ
VGG
(P.12)
Function Pack (TD16)
Typewriter Interface (TWE)
B. TERMINAL
A14
FLG1
206
10 KΩ
VDD
VCC
HD3541
CONTROL
X65-7362
FLG1
C. TERMINAL
KEYBOARD
(P. 4)
A2
TD6
402
Inhibit print at DBG mode.
DBGモードの印字を
禁止する。
IHP
B2
207
(02CARD P4B)
FLG2
(P.12 804-8) LTD2
10K
VCC
22KΩ
2.2μ
607
10 KΩ
CONTROL-6
KB20
304
SN74123
For PROG SELECT
then arc,
sin, cos,
tan, a^b,
or e^x
Pressed
A. TERMINAL
LRD
(R 36)
A21
(P.12)
B. TERMINAL
B14
03 CARD
(P.54,60&62)
KEYBOARD
(P.4)
A3
C. TERMINAL
FLG2
HD3541
CONTROL
X65-7362
FLG2
FLG2 signal
at TD 0 is write protection

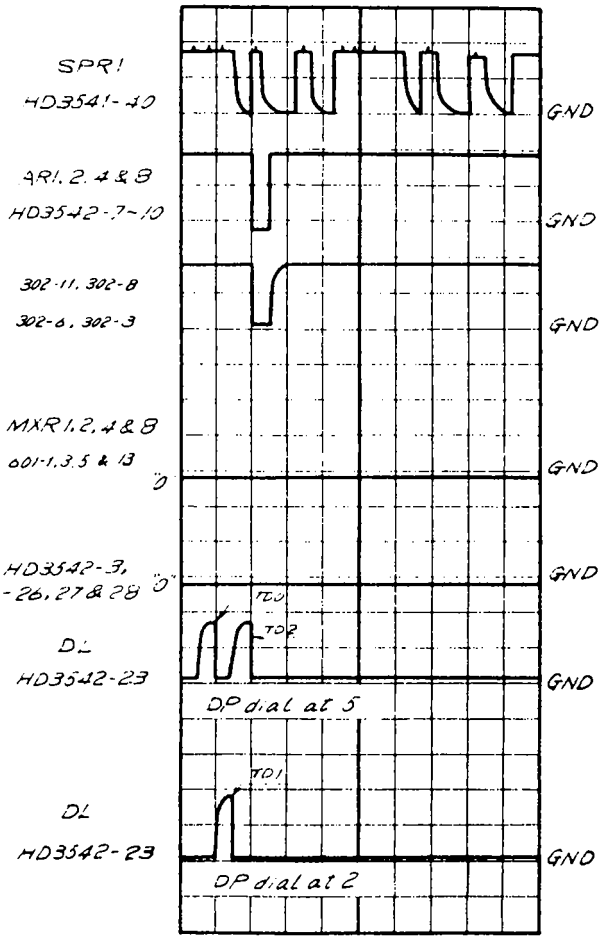
NORMAL WAVEFORM OF FLG1, FLG2, SPR1, SPR2, TMR, AR1 ~ AR8, MXR1 ~ MXR8 & DL

TRIG	CH1	CH2
TWE CONTROL -15 HD3541		TWE
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	5 μsec/CM	
SLOPE	+	
MODE	CHOP	

Switching power on.
電源スイッチ・オン

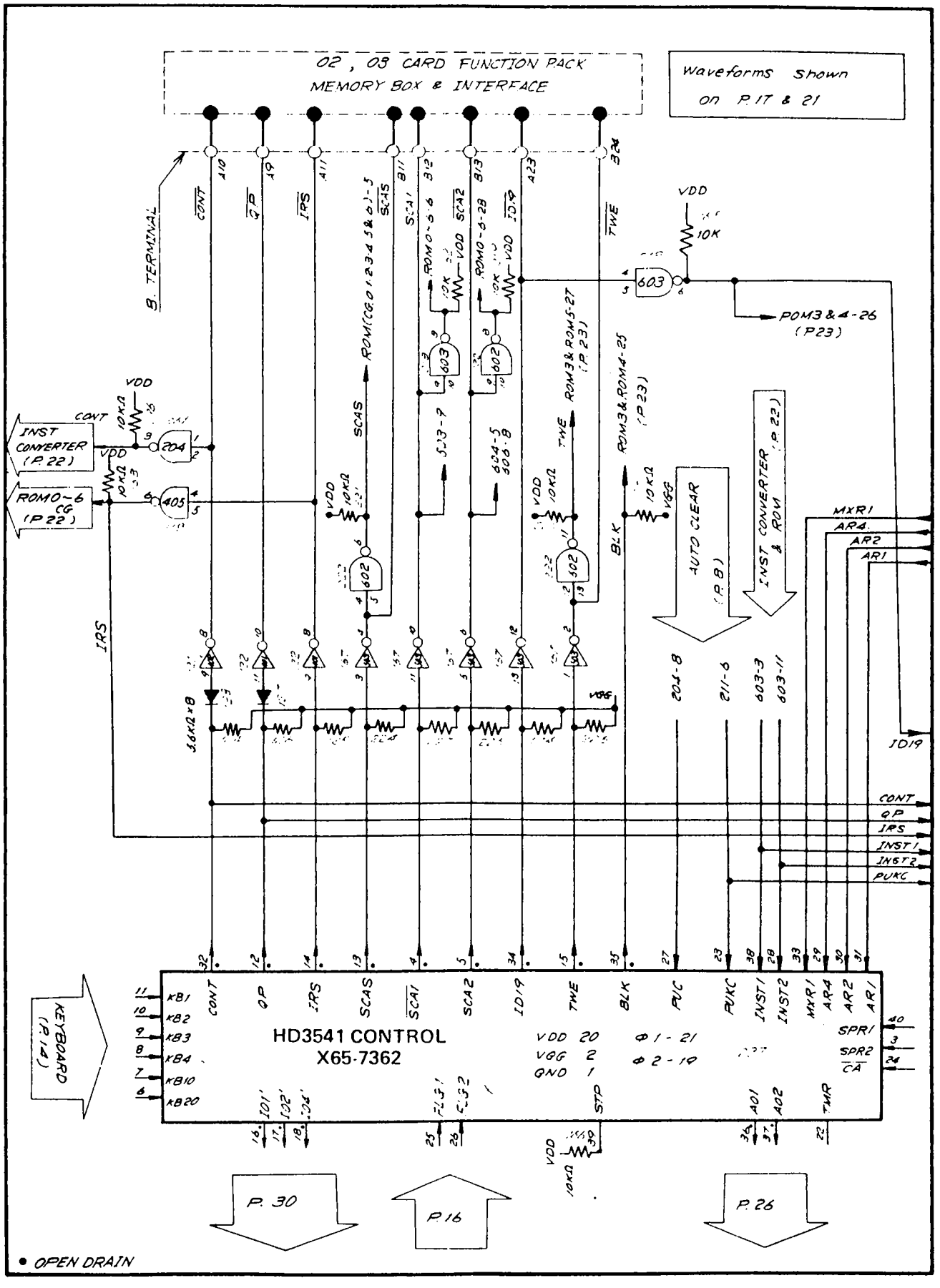
Circuit diagram of following signals are shown on P.18
観測信号の回路は 18 頁に示す.



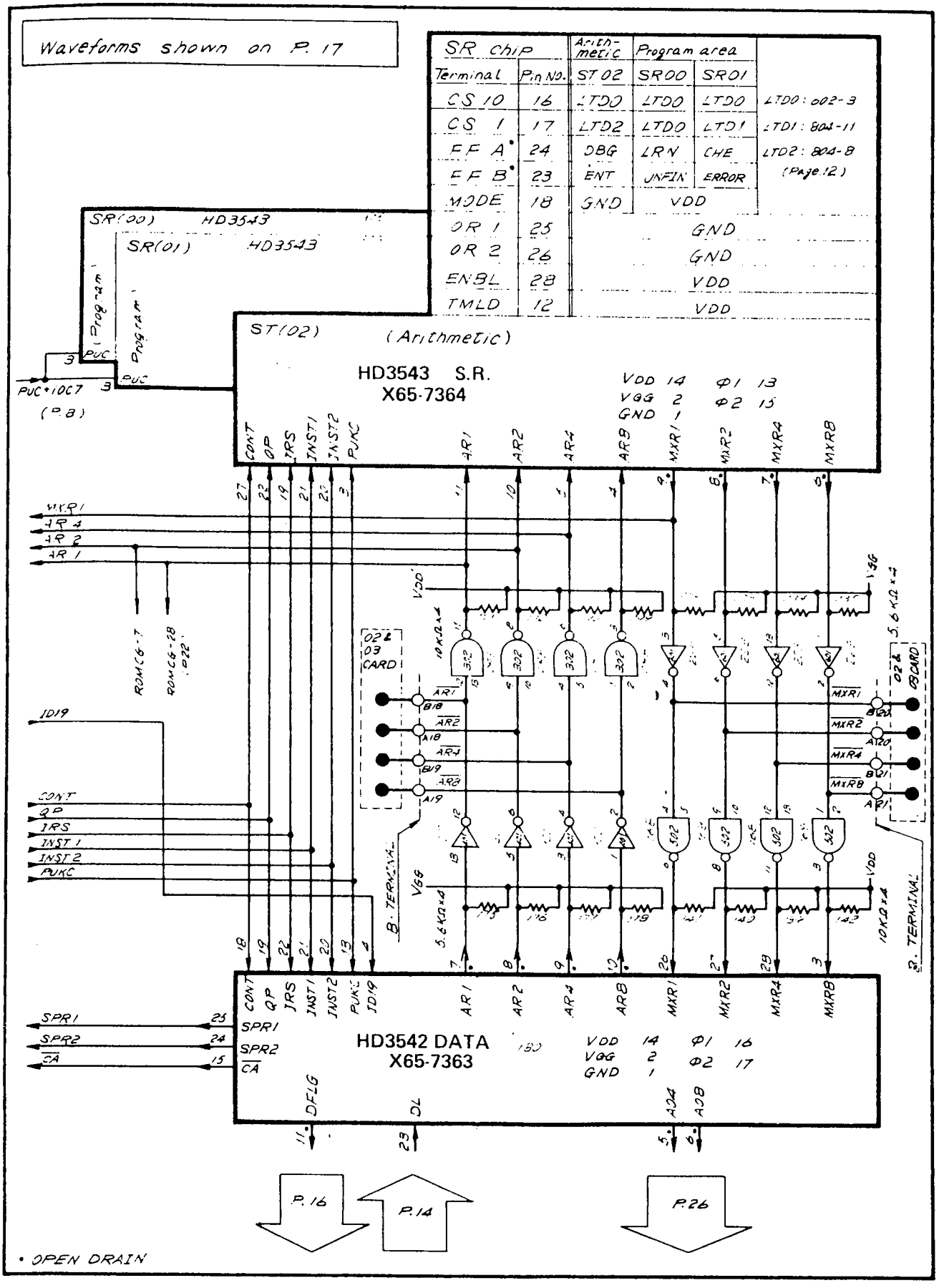


HD3541					
Pin no.	Signal	Level	Pin no.	Signal	Level
4	SCA1	1	17	102'	0
5	SCA2	0	18	104'	0
6	KB20	0	23	PUKC	0
7	KB10	0	24	CA	1
8	KB 4	0	27	PUC	0
9	KB 3	0	28	INST2	0
10	KB 2	0	32	CONT	0
11	KB 1	0	38	INST1	0
12	QP	0			
16	101'	0			

DATA TRANSFER CONTROL



DATA TRANSFER CONTROL



ROM COMBINATION FOR KEYS & INSTRUCTIONS

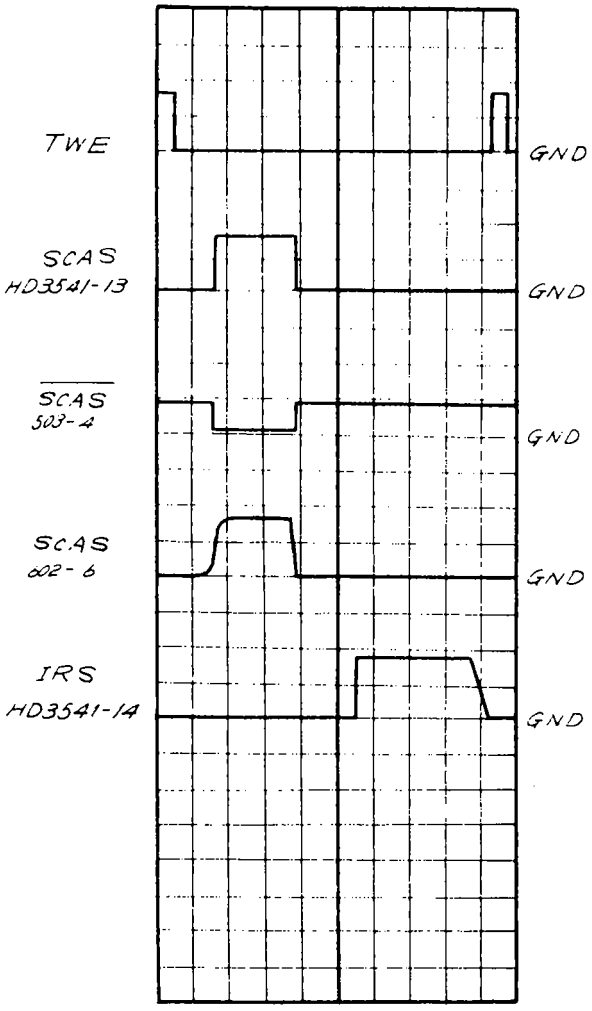
KEY	ROM0 HN35402	ROM1 HN35403	ROM2 HN35404	ROM3 HN35405	ROM4 HN35406	ROM5 HN35409	ROM6 HN35408
C all, TYPE, STEP BACK, LRN, START CHECK, PROG PRINT, DELETE, DAG, STEP SET C.M. Reset Set Reset Set all, OVF. OVF. FLG. FLG	○			○			
SIGN CHG, PAPER FEED, IOo	○				○		
C, ., ENT, EXP, Indirect CE, PRINT, CHARACTER PRINT, GO TO nn, FLG nn SP nn, EP nn, VECTOR nn, SPACE, POINT nn IF IF IF IF IF ≥0 <0 ≠0 FNT OVF	○			○	○		
RECORD, LOAD	○			○		○	
10^x, Ln, Log, N!, $\sqrt{\ }$, $\frac{1}{a}$ a^x, e^x, $a^{\cdots}$ |a|, Integer Fraction, e, DEG → D.MS	○	○		○	○		
(, +, −, ×, ÷ =,), $a^{r\,\prime\prime}\rightarrow$, Left, SM nn, Right RM nn, CM nn, FIX nn	○			○	○	○	
0, 1, 2, 3, 4 5, 6, 7, 8, 9	○	○		○		○	
Sin, Cos, Tan, π Sin^{-1}, Cos^{-1}, Tan^{-1}	○	○	○	○	○		
IO1	○			○	○	○	○
IO2 ~ IOF	○			○		○	○

NORMAL WAVEFORM OF SCAS, IRS, ID19 & BLK

TRIG	CH1	CH2
TWE (HD3541-15)		TWE
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	5 μsec/CM	
SLOPE	+	
MODE	CHOP	

Switching power on.
電源スイッチ・オン

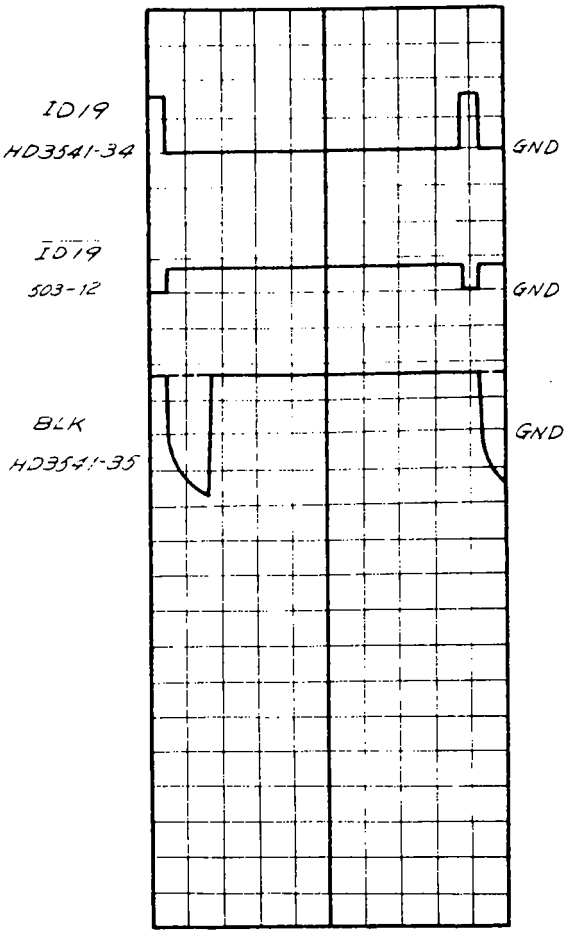
Circuit diagram of following signals are shown on P. 18
観測信号の回路は 18 頁に示す.



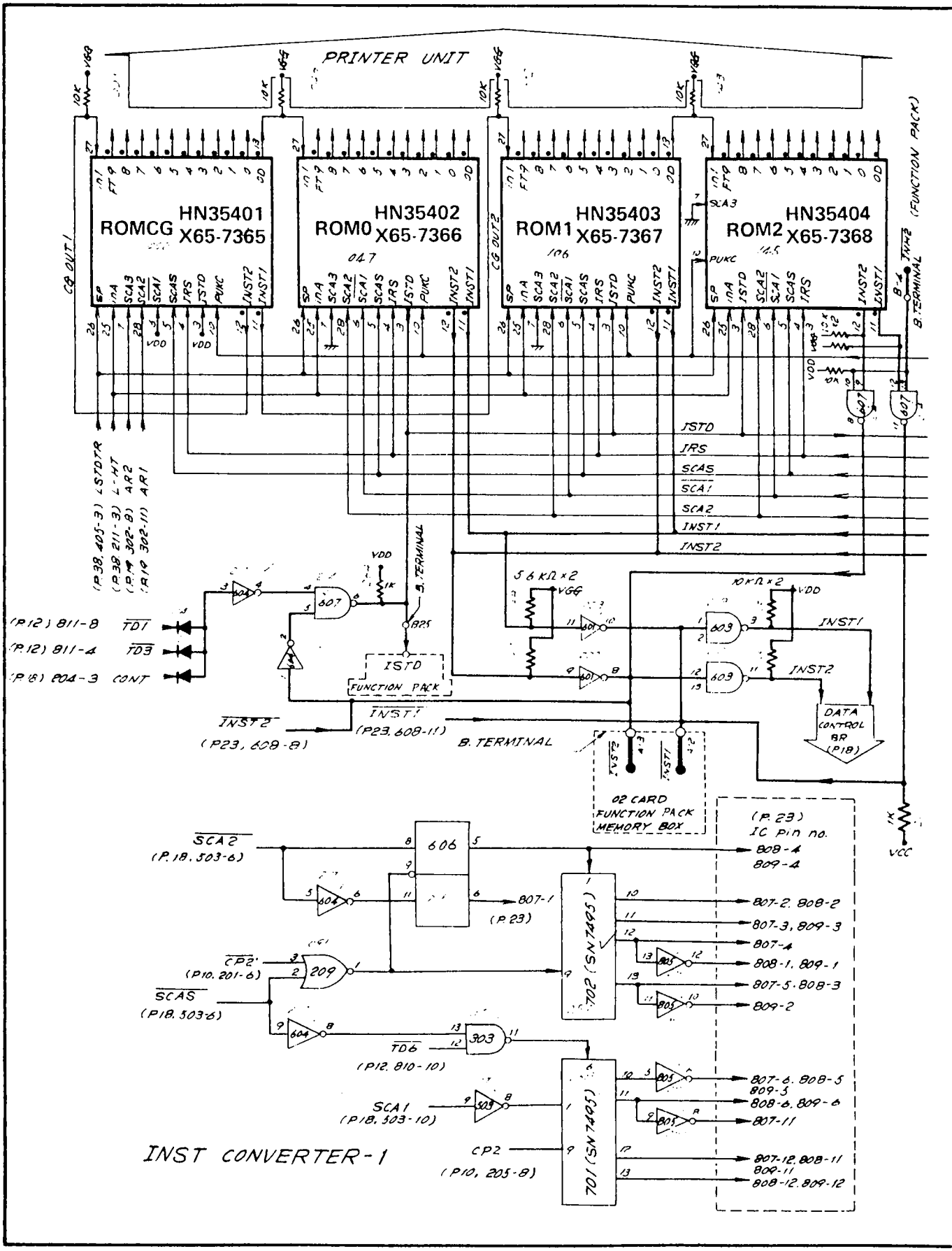
TRIG	CH1	CH2
ID19 (HD3541-34)		ID19
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	5 μsec/CM	
SLOPE	+	
MODE	CHOP	

Switching power on.
電源スイッチ・オン

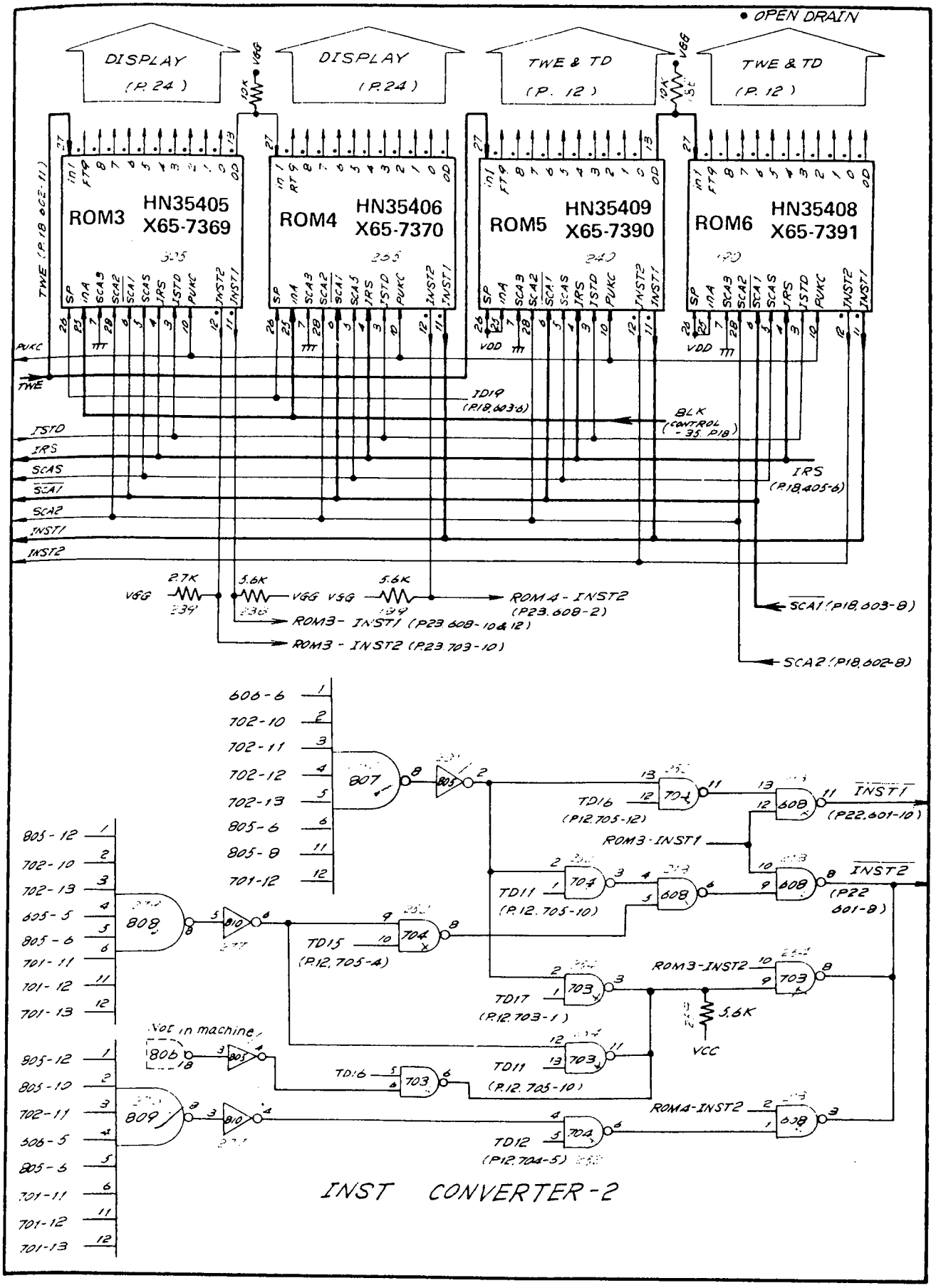
Circuit diagram of following signals are shown P. 18
観測信号の回路は 18 頁に示す.



INST CONVERTER & ROM

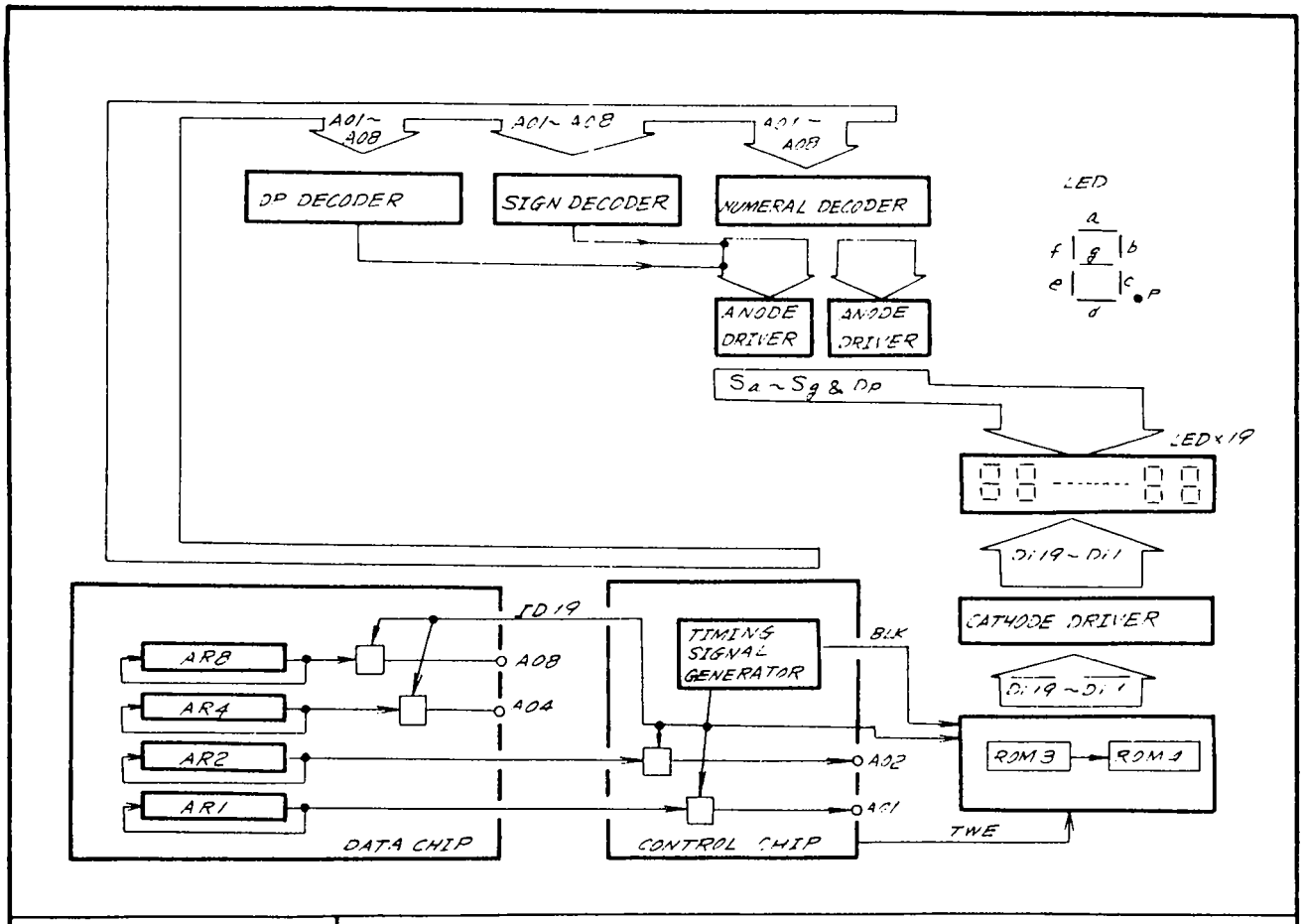


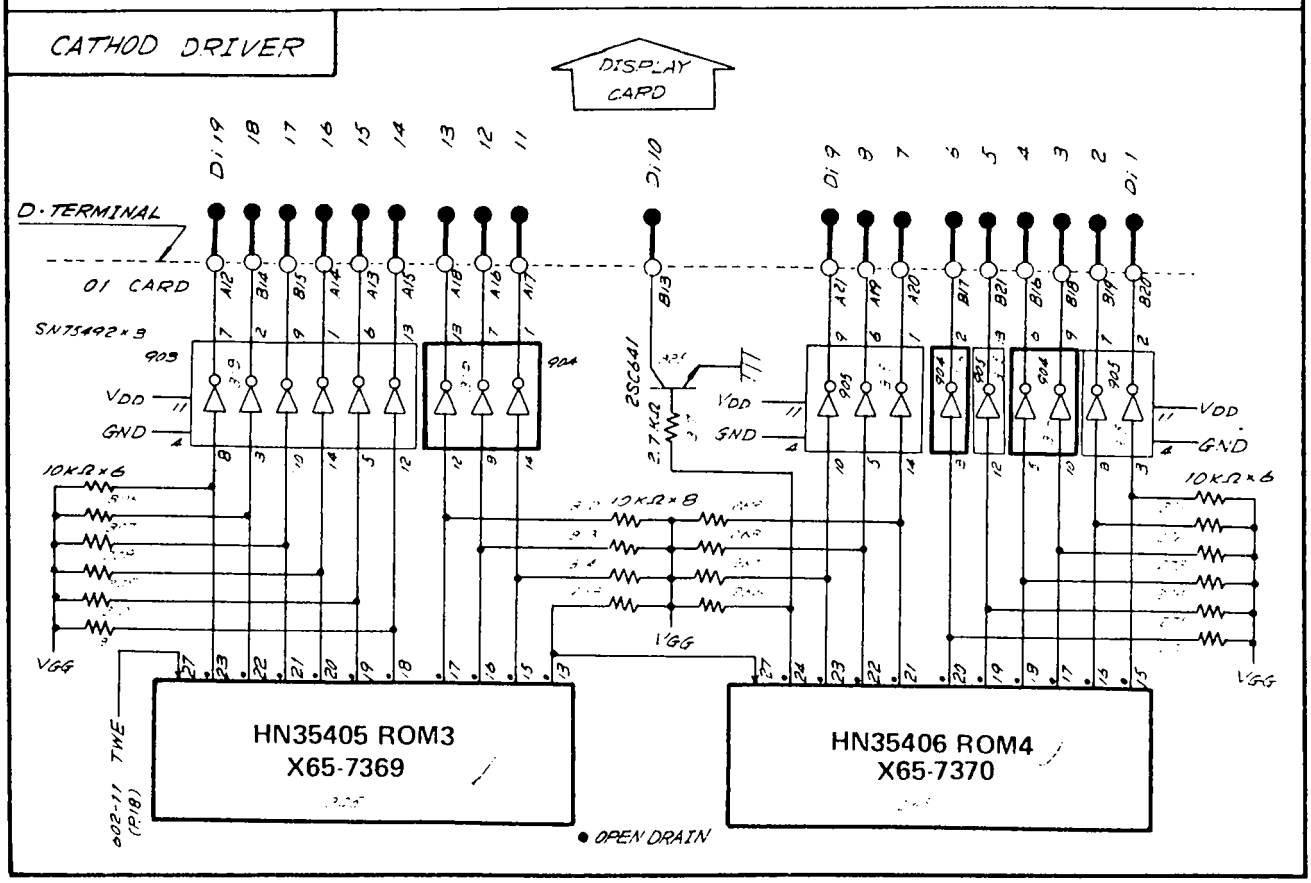
INST CONVERTER & ROM



INST CONVERTER-2

DISPLAY BLOCK DIAGLAM & CATHODE DRIVER

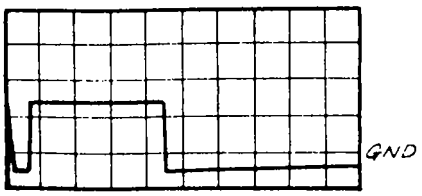




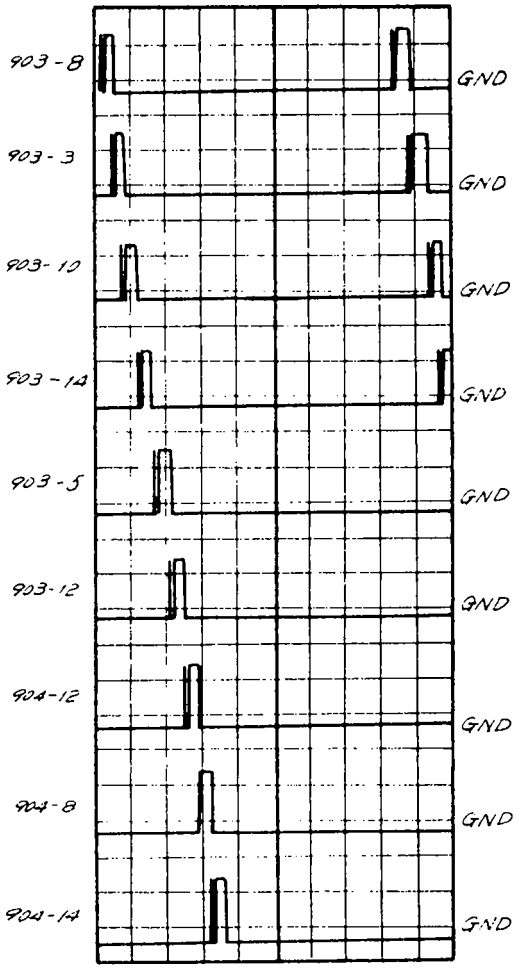
NORMAL WAVEFORM OF CATHODE DRIVER

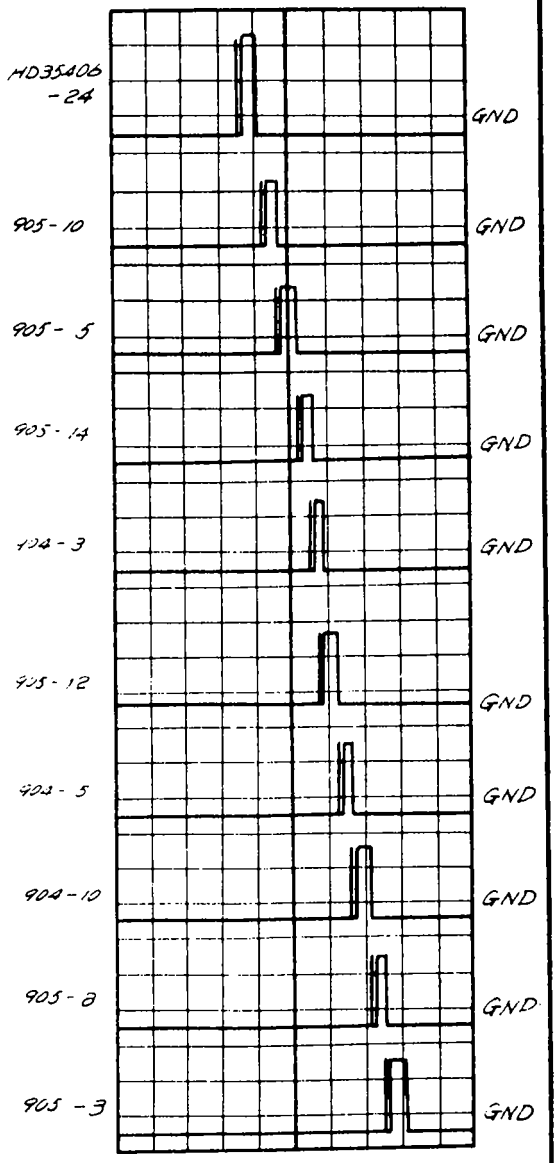
ROM3-23~15
ROM4-23~15

10μsec 0.5V/cm



TRIG	CH1	CH2
903-8 (Di19)		903-8
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	0.1 msec/CM	
SLOPE	+	
MODE	CHOP	



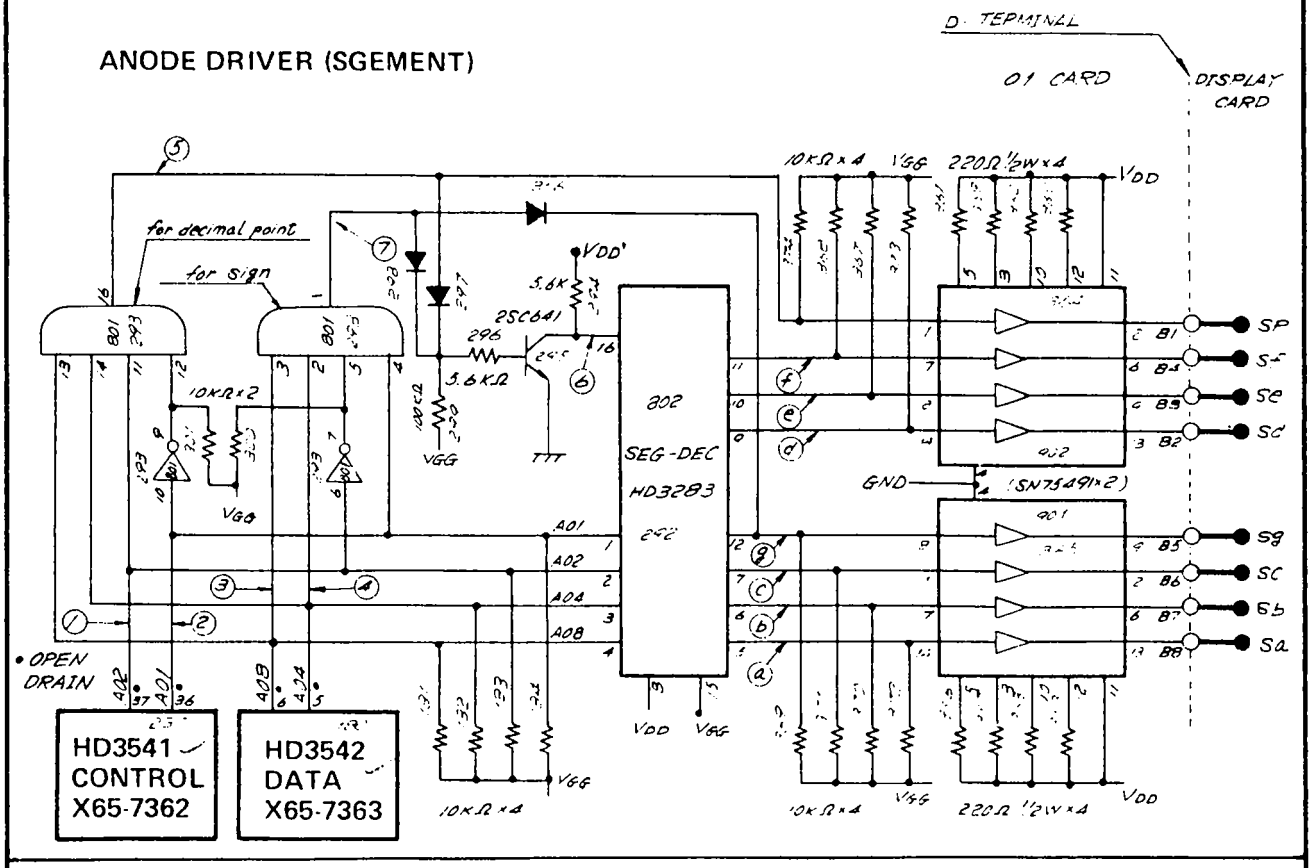


ENTRY 1234567890

Trig. 903-8 (Di19)
0.1msec slope +

ANODE DRIVER

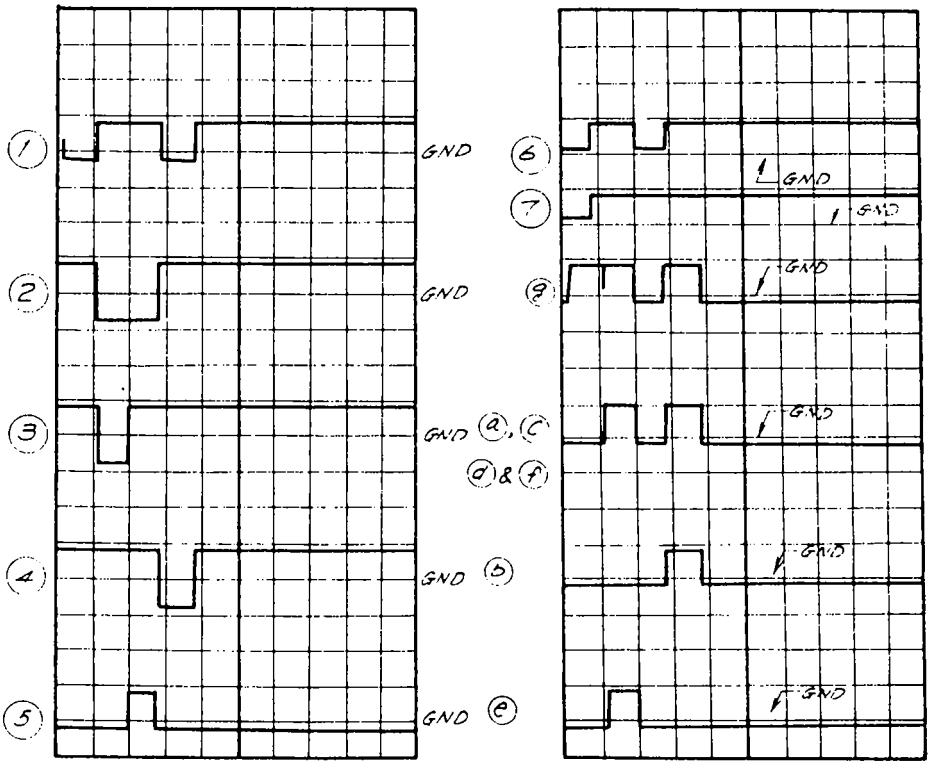
ANODE DRIVER (SGEMENT)



ENTRY - 6.9

置数 - 6.9

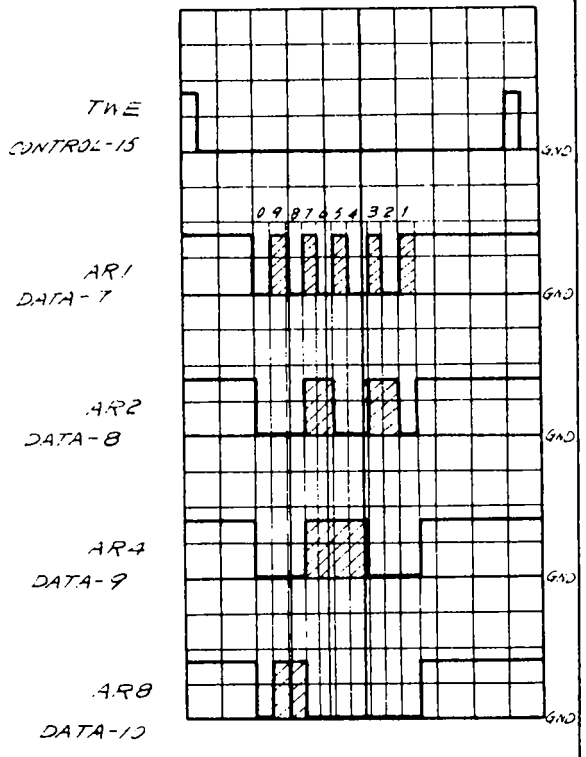
TRIG	CH1	CH2
A02 CONTROL -37	②-⑦ ⓐ-ⓖ	① A02
VOLT/CM	1V/CM	1V/CM
TIME/CM	50μsec	
SLOPE	—	
MODE	CHOP	



NORMAL WAVEFORM OF 0~9 DISPLAY

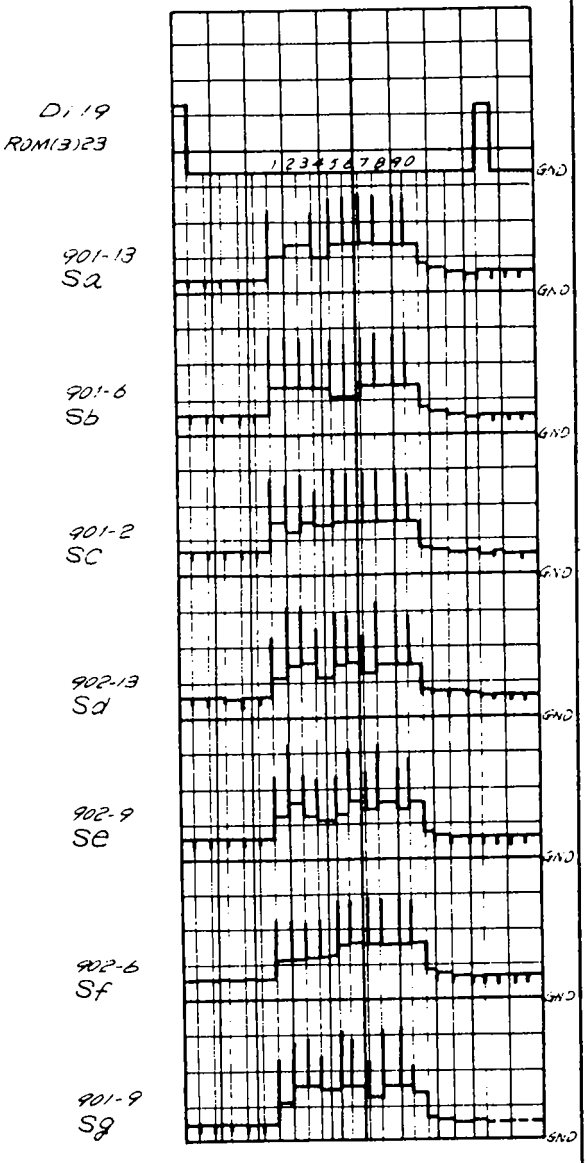
ENTRY 1234567890 (重数 1234567890)

TRIG	CH1	CH2
TWE CONTROL-15	AR 1, 2, 4, 8, DATA 7, 8, 9, 10	TWE CONTROL-15
VOLT/CM	2.5 V/CM	2.5 V/CM
TIME/CM	5 μsec/CM	
SLOPE	+	
MODE	CHOP	



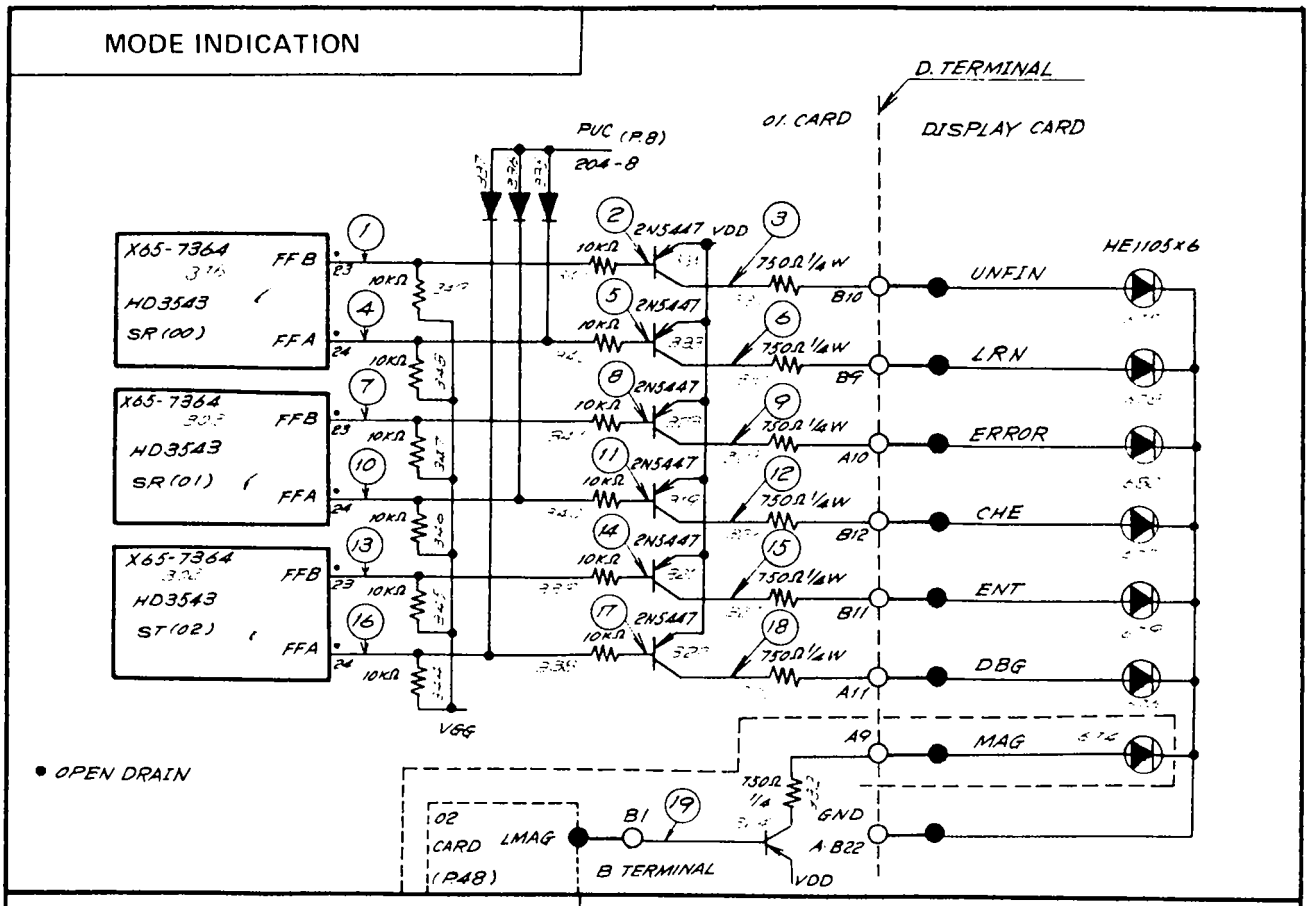
ENTRY 1234567890

TRIG	CH1	CH2
Di 19 ROM(3)-23	Sa, Sb, SC Sd, Se, Sf, Sg	ROM(3)-23
VOLT/CM	0.5	0.5 V/CM
TIME/CM	0.1 msec/CM	
SLOPE	+	
MODE	CHOP	

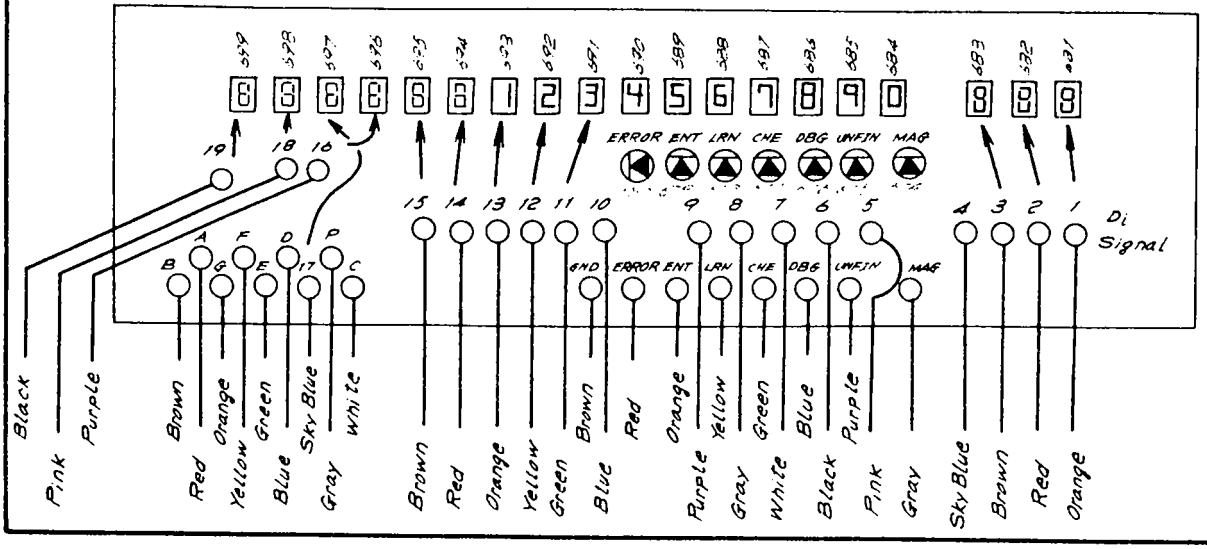


MODE INDICATION & DISPLAY UNIT LAYOUT

MODE INDICATION



DISPLAY UNIT LAYOUT

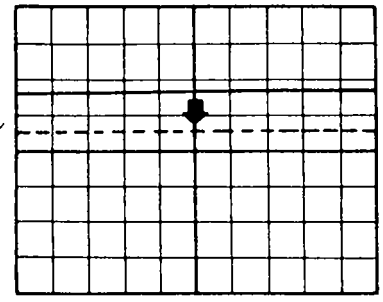


NORMAL WAVEFORM OF MODE LED

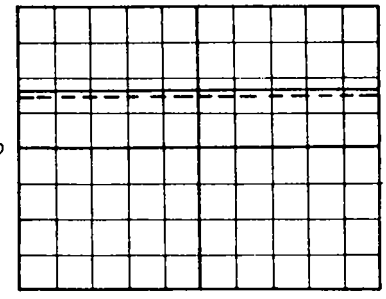
TRIG	CH 1	CH 2
	① ~ ⑲	
VOLT/CM	0.5 V/CM	
TIME/CM	1 msec/CM	
SLOPE	+	
MODE	CH 1	

UNFIN · LRN · ERROR · ENT · CHE

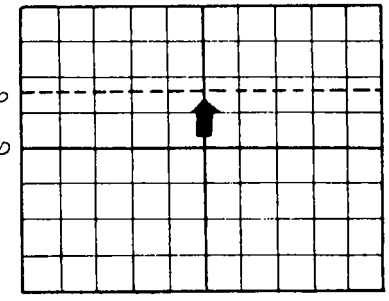
①④⑦⑩⑬



②⑤⑧⑪⑭⑰⑲

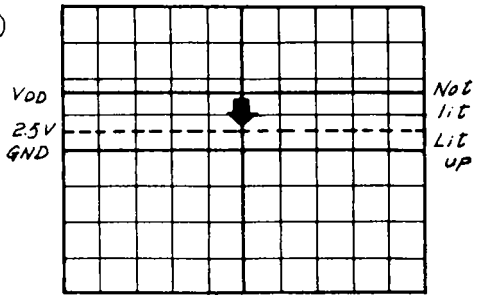


③⑥⑨⑫⑮

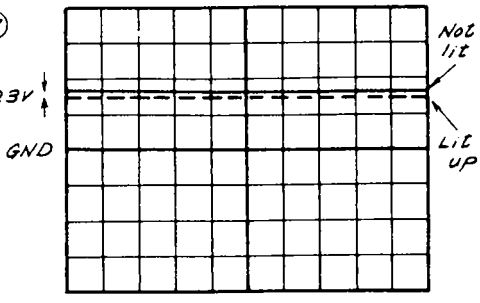


DBG

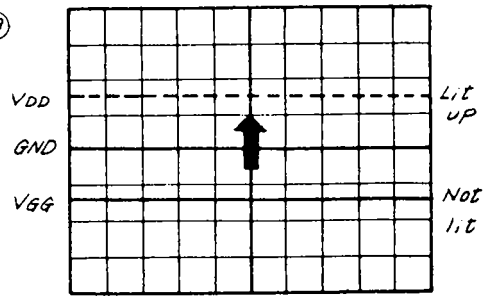
⑯



⑰

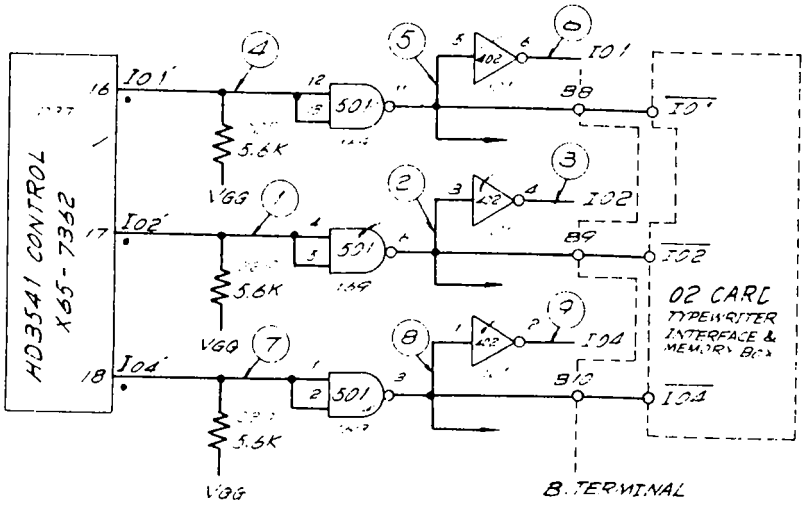


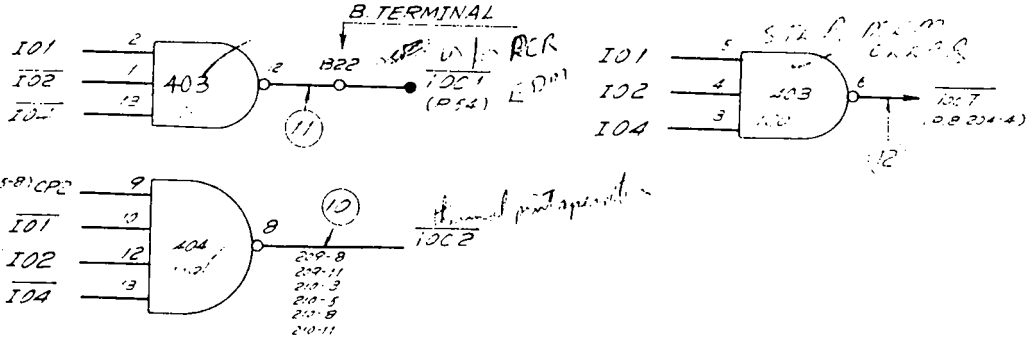
⑱



IO SIGNALS

• OPEN DRAIN

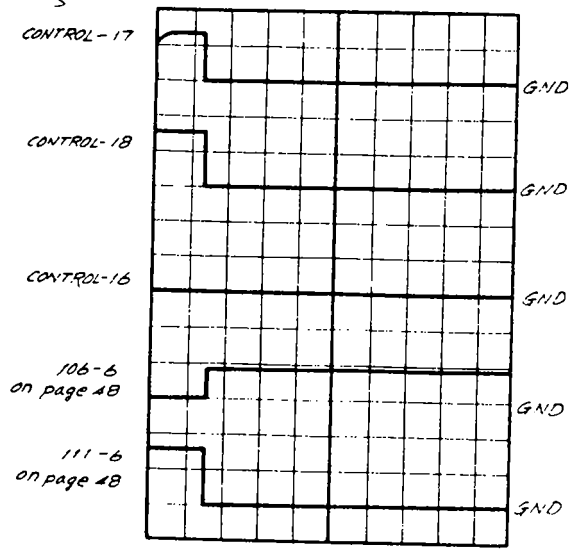




IOC6

Pressing C then CE ALL at OPE mode

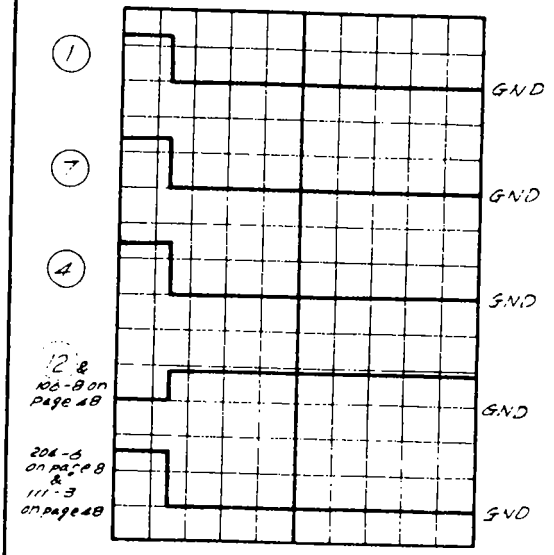
Trig. ① 20 μ sec
slope (+) 0.5 V/CM



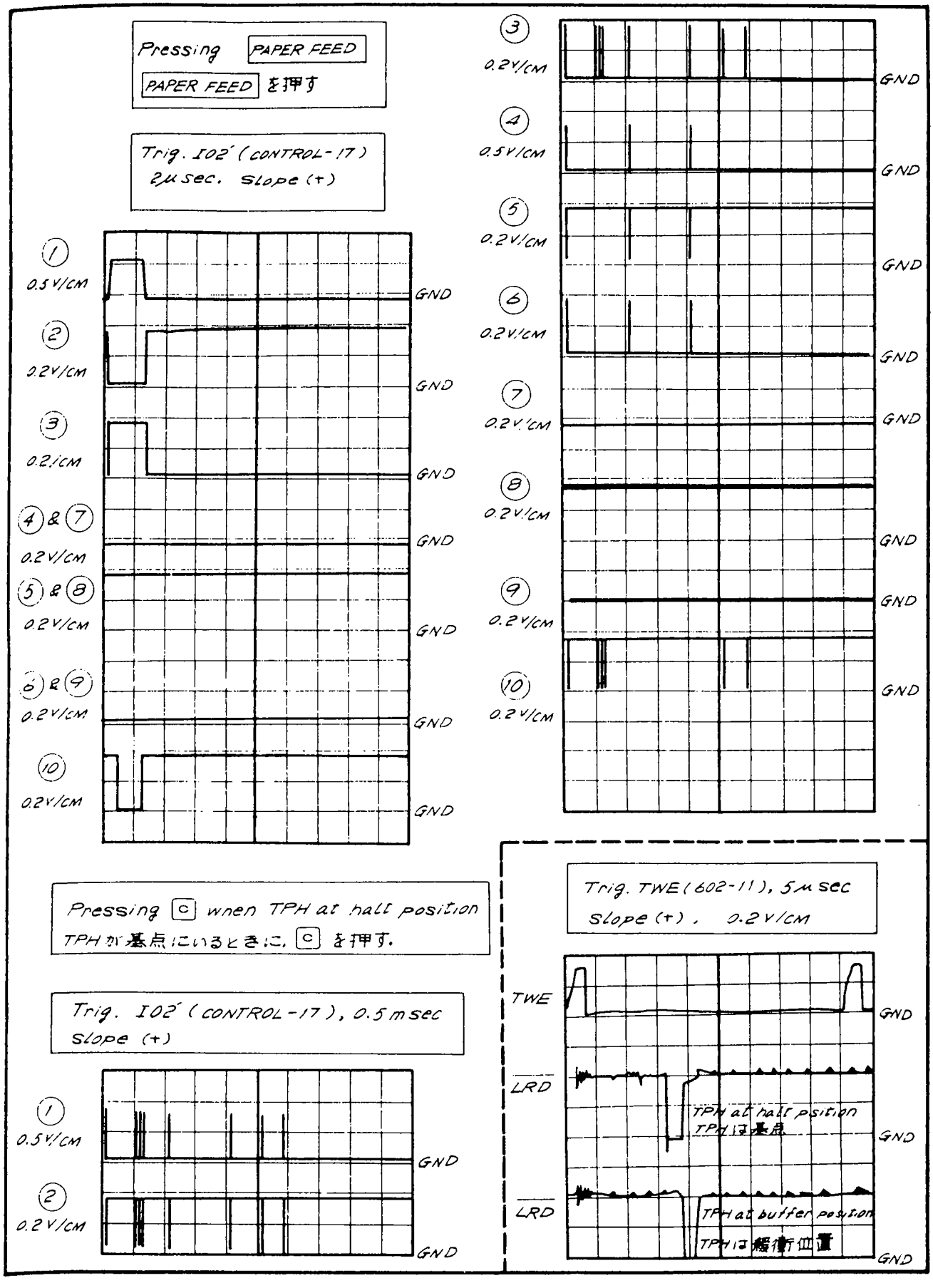
IOC7

Pressing C then CE ALL at LRN mode

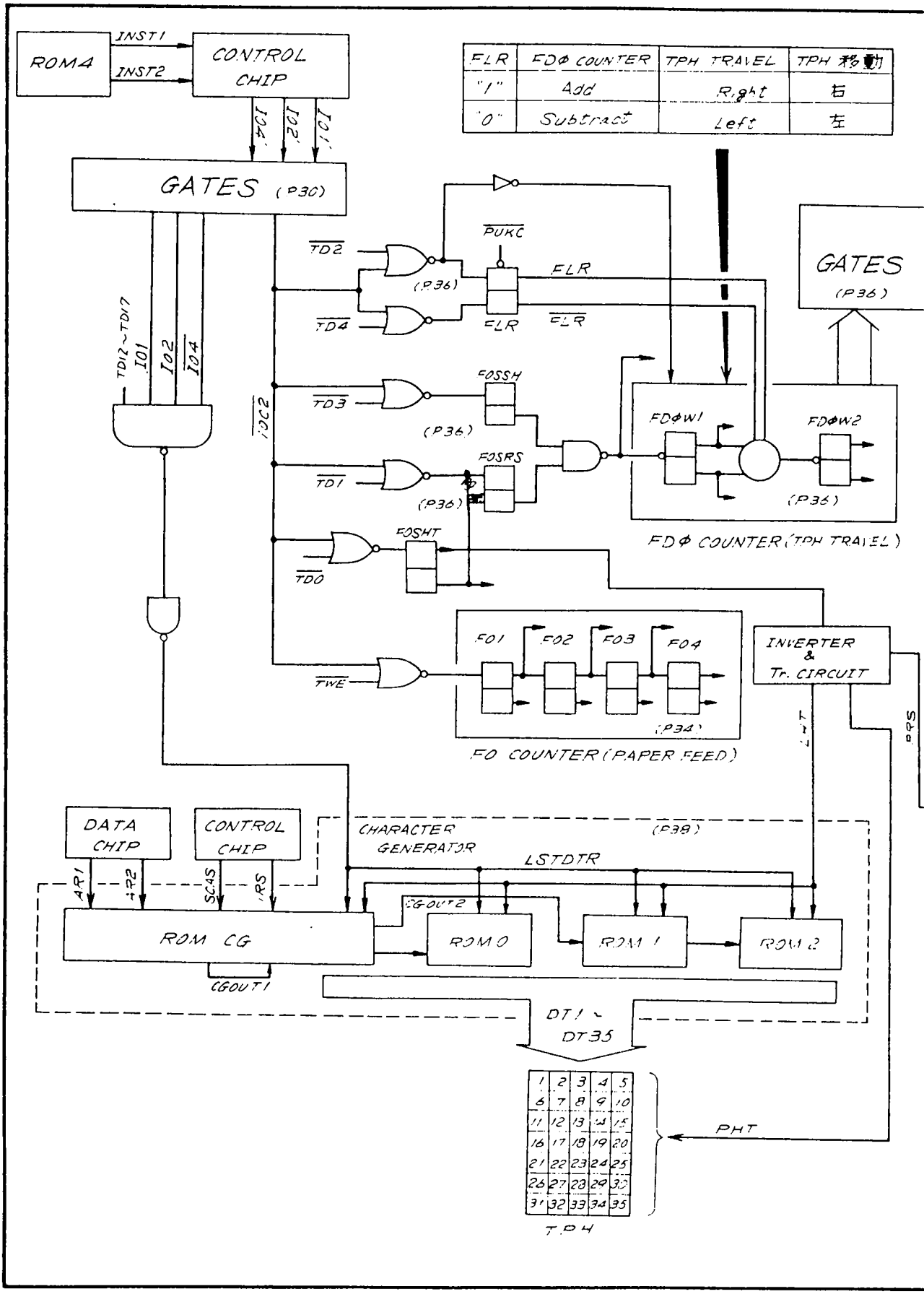
Trig. ① 20 μ sec
slope (+) 0.5 V/CM



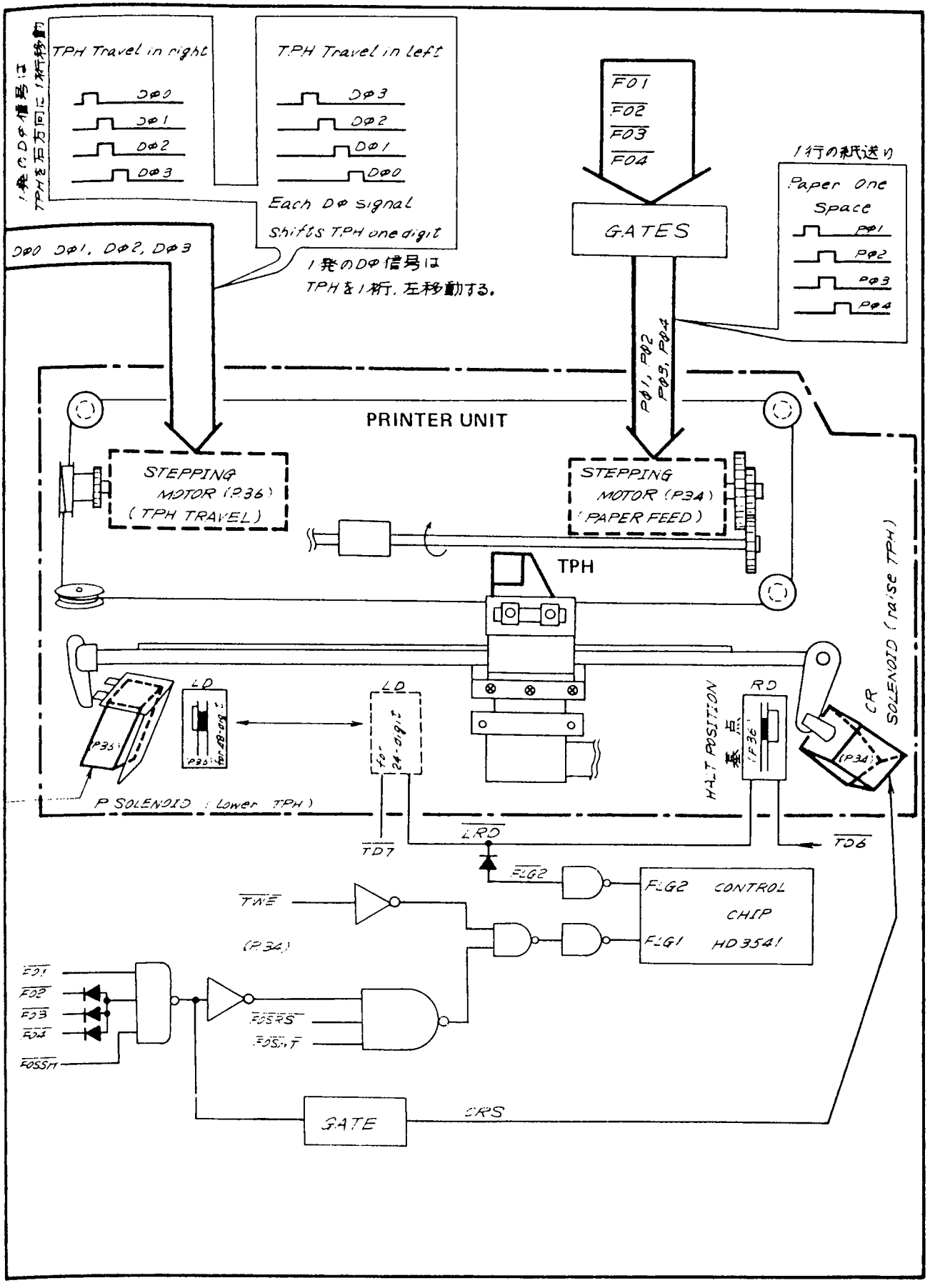
NORMAL WAVEFORM OF IO & $\overline{\text{LRD}}$ FOR PRINTING



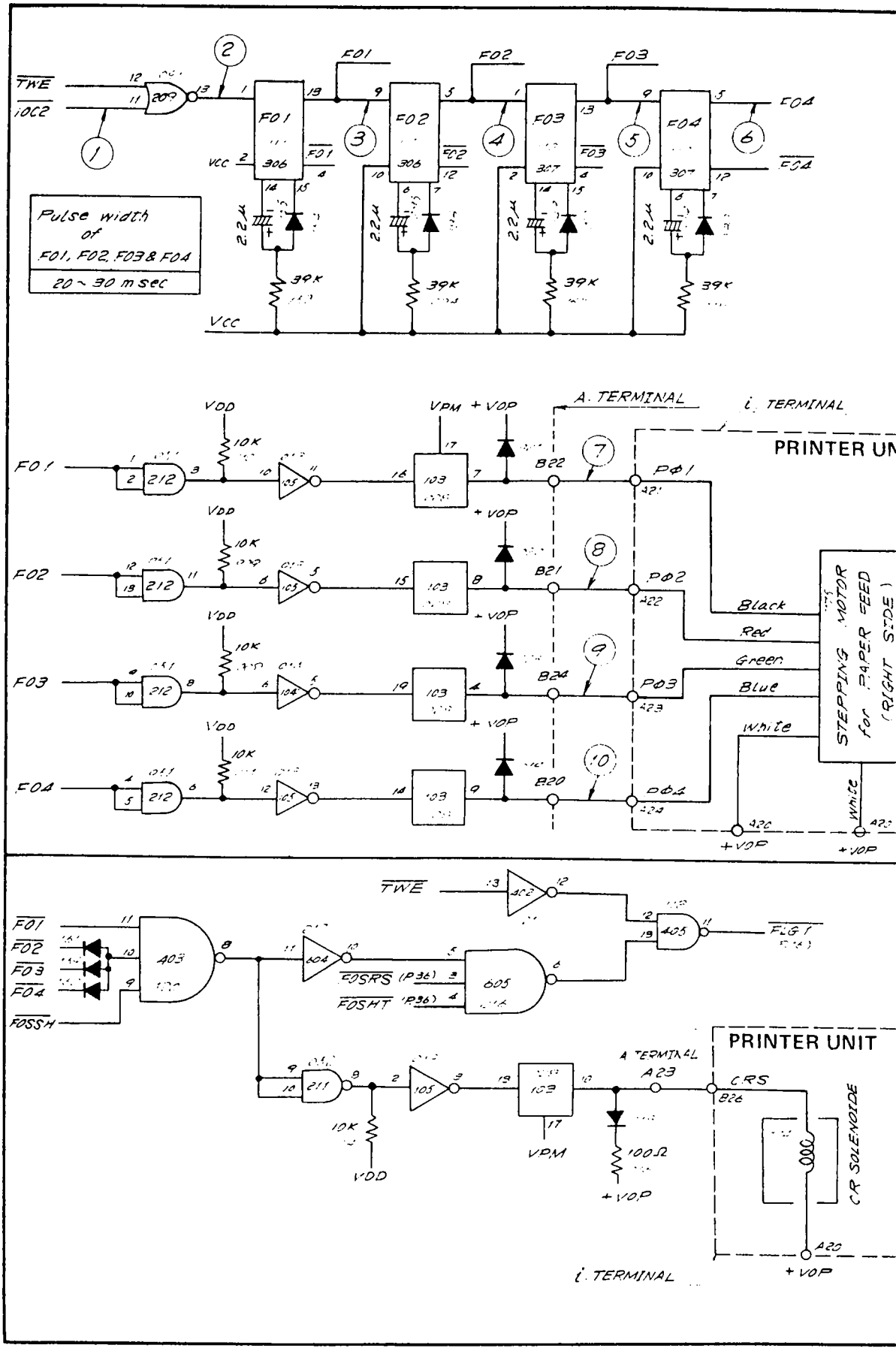
PRINTING BLOCK



PRINTING BLOCK



PAPER FEED


TWE
IOC2
F01
F02
F03
F04
Pulse width of F01, F02, F03 & F04
20 ~ 30 msec
Vcc
VDD
VPM + VOP
A. TERMINAL
i. TERMINAL
PRINTER UN
STEPPING MOTOR for PAPER FEED (RIGHT SIDE)
Black
Red
Green
Blue
White
+VOP
FOSSH
EOSRS (P36)
FOSHT (P36)
PRINTER UNIT
C.R SOLENOID

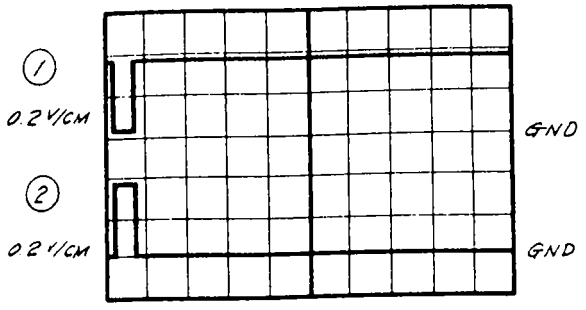
NORMAL WAVEFORM OF PAPER FEED

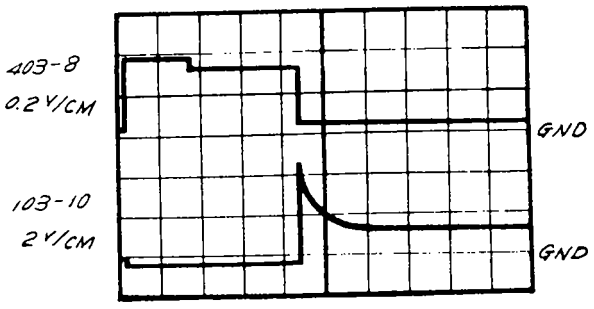
Pressing PAPER FEED

PAPER FEED を押す.

Trig. $\overline{\text{IOC2}}$ (209-11). 2μ sec

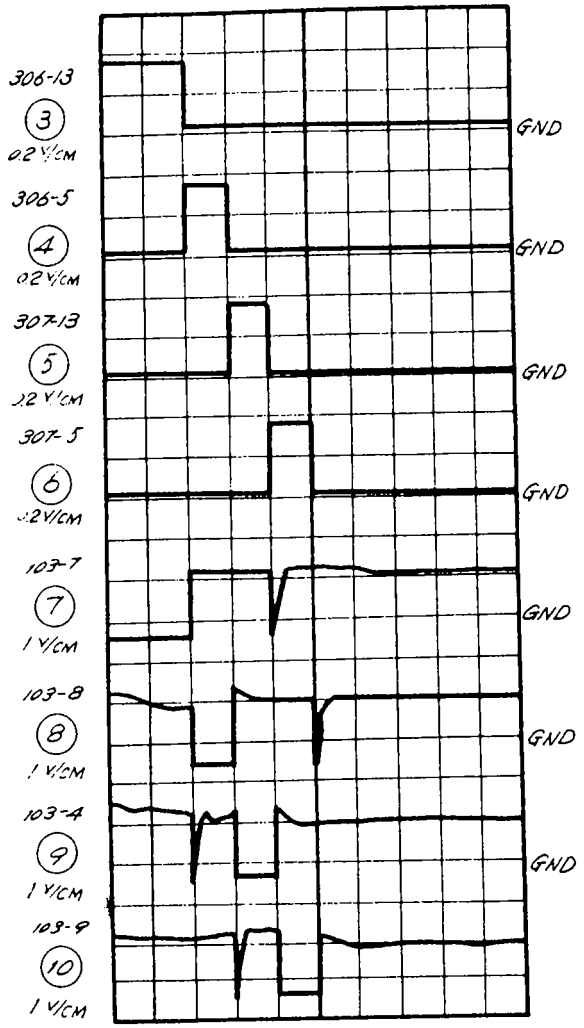
slope (-)





Trig. $\overline{\text{IOC2}}$ (209-11), 20m sec

Slope(-)

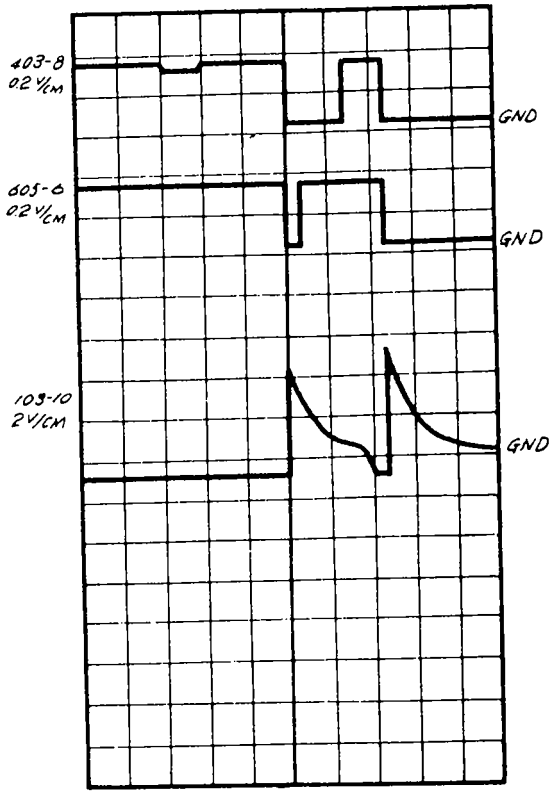


Pressing [C] when TPH at halt position

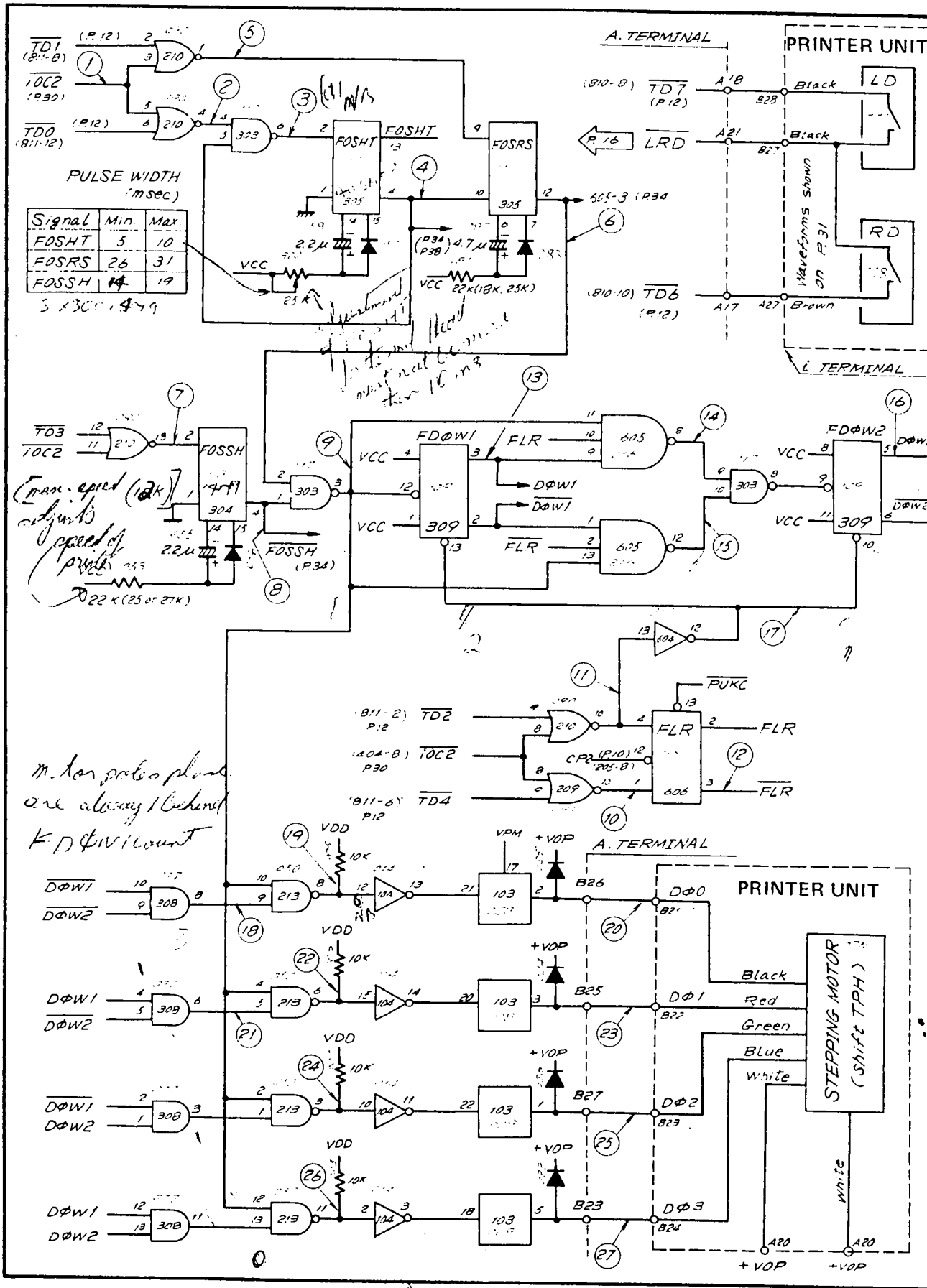
TPH が基点にいるときに [C] を押す

Trig. $\overline{\text{IOC2}}$ (209-11). 20m sec

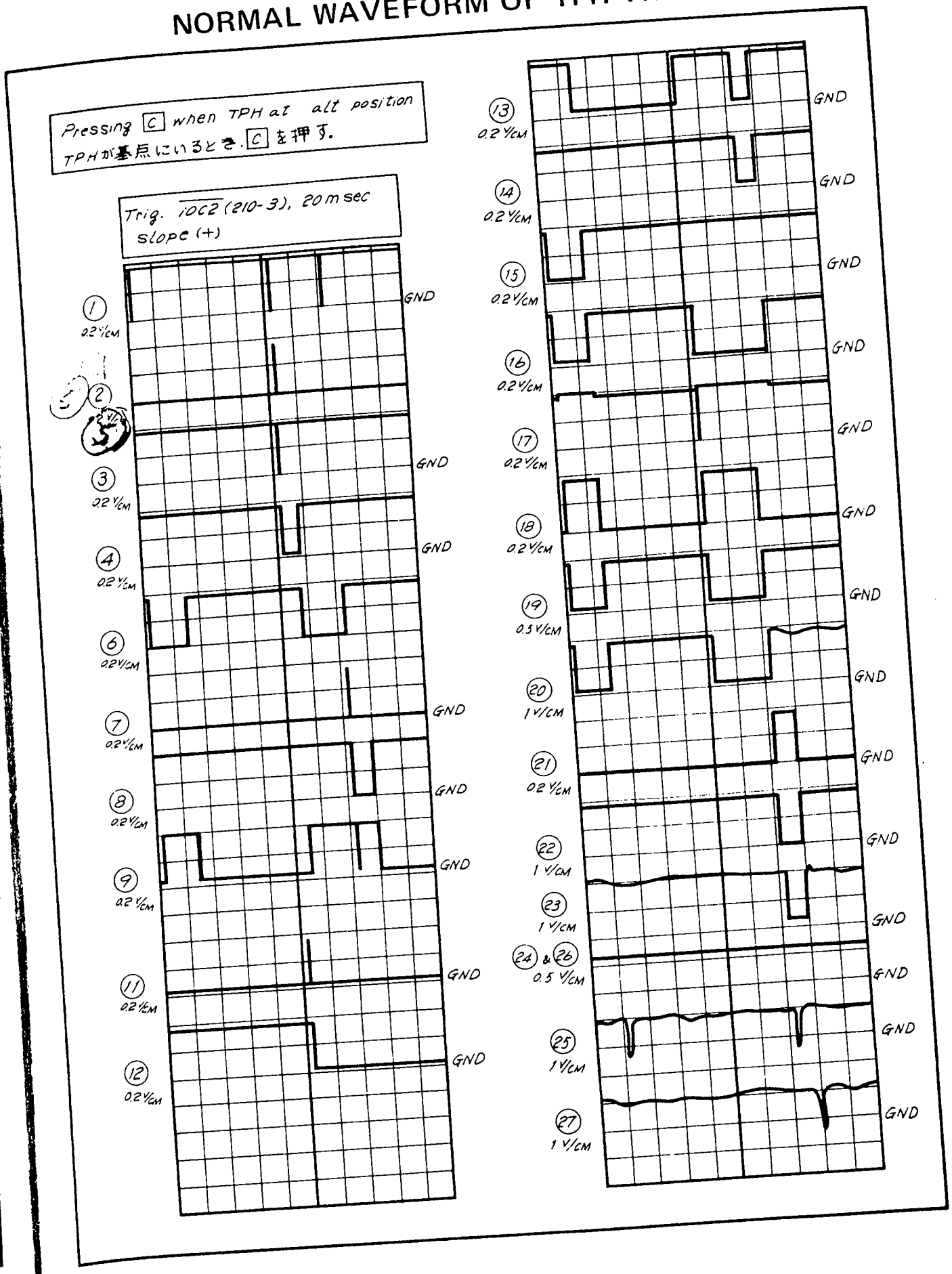
slope(+)



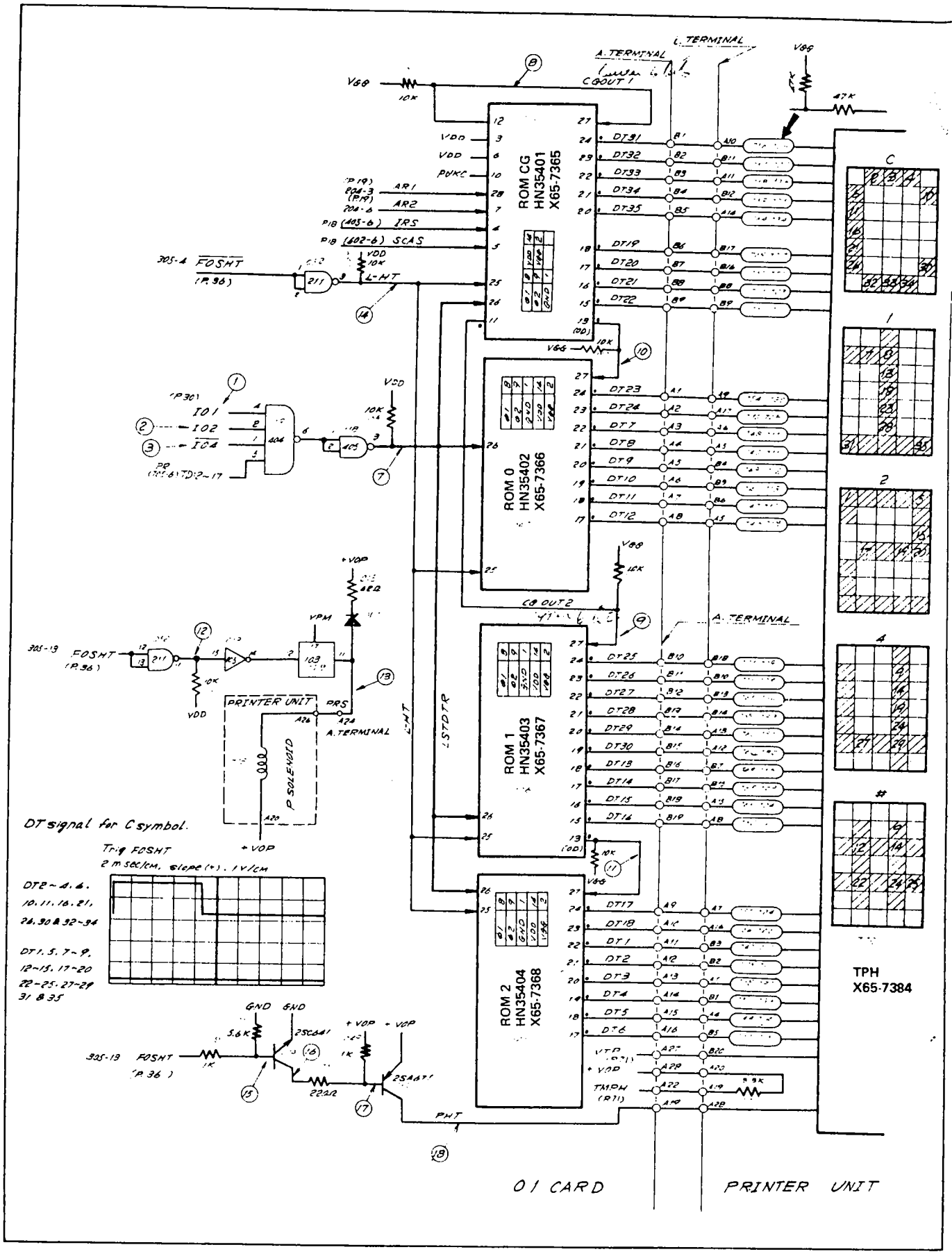
TPH TRAVEL


PULSE WIDTH (msec)
Signal | Min. | Max.
FOSHT | 5 | 10
FOSRS | 26 | 31
FOSSH | 14 | 19
PRINTER UNIT
A. TERMINAL
i TERMINAL
STEPPING MOTOR (SHIFT TPH)
Black
Red
Green
Blue
White
Brown
LD
RD
FOSHT
FOSRS
FOSSH
FDΦW1
FDΦW2
FLR
PUKC
VDD
VCC
+VOP
VPM
DΦ0
DΦ1
DΦ2
DΦ3
DΦW1
DΦW2
TD1
TD2
TD3
TD4
TD6
TD7
IOC2
TDO
LRD
Waveforms shown on P.31

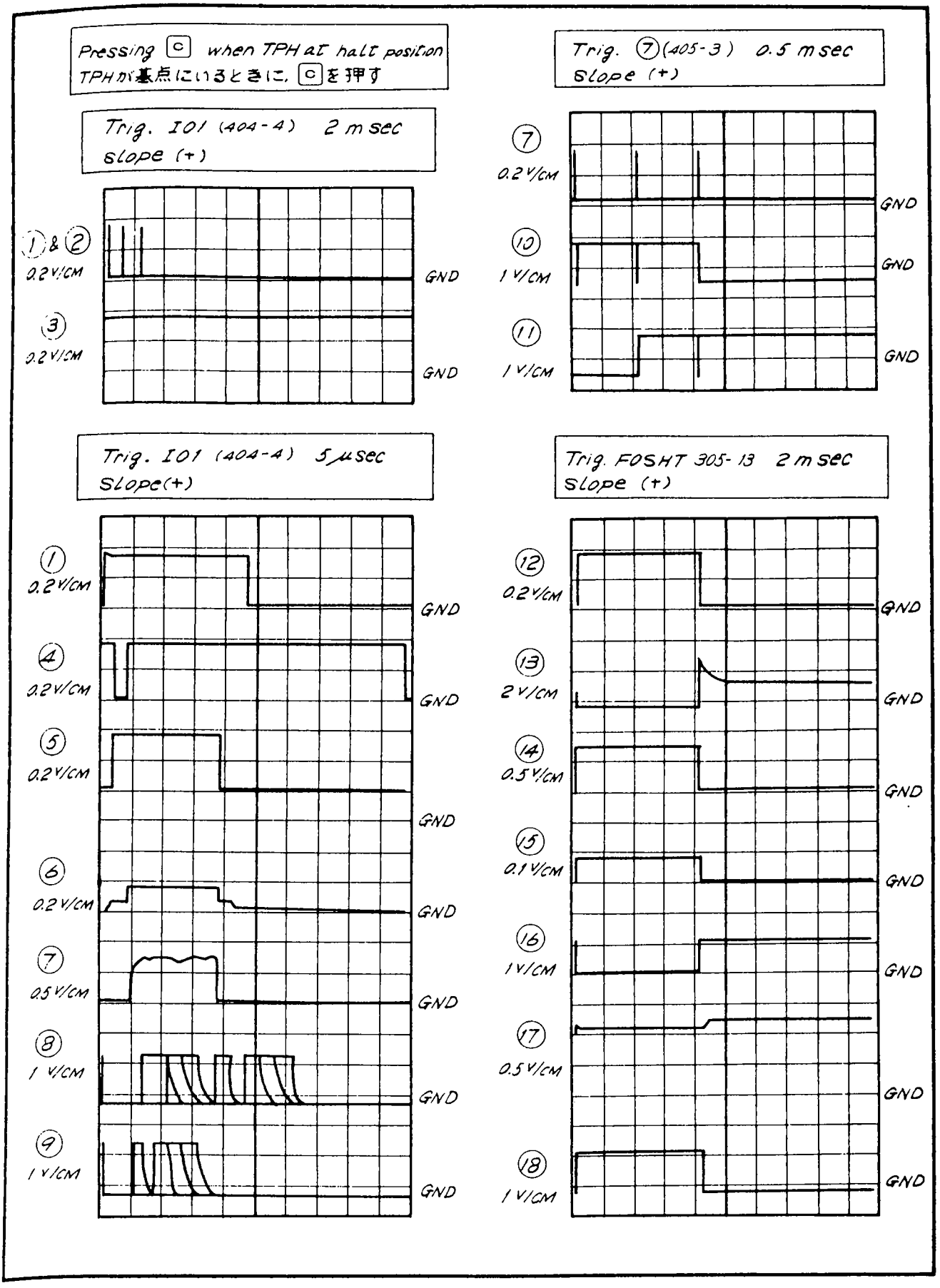
NORMAL WAVEFORM OF TPH TRAVEL



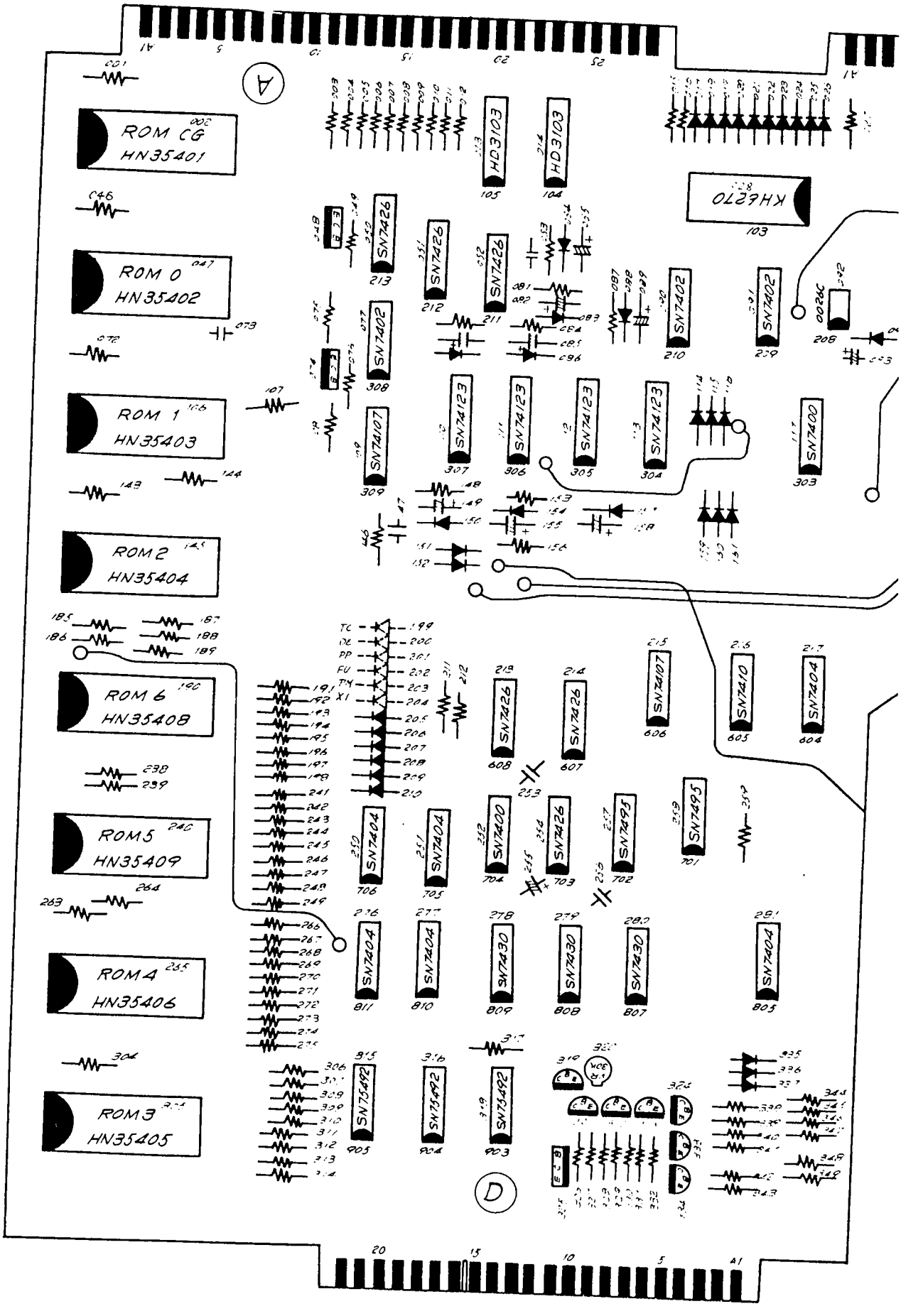
TPH HEATING UNIT



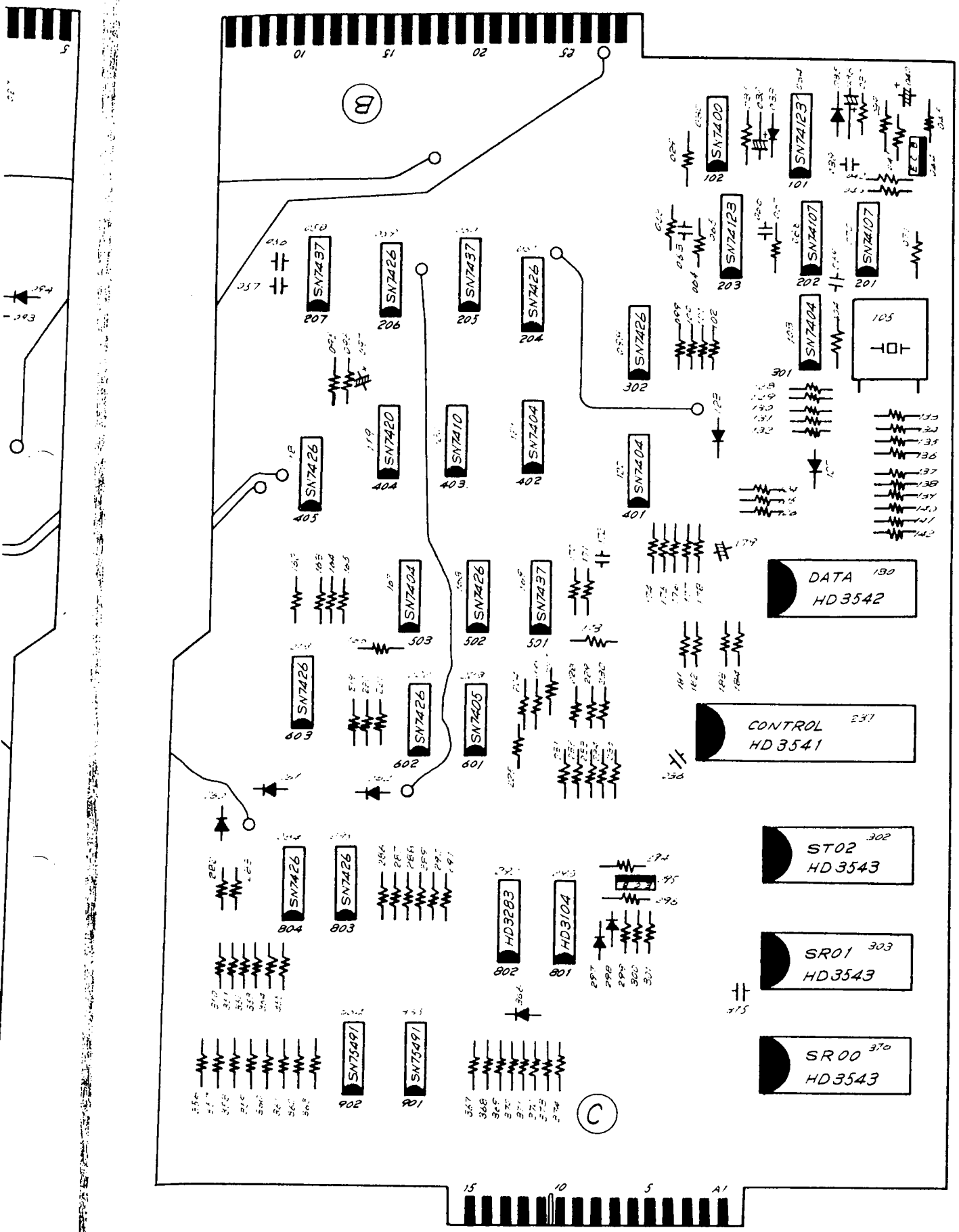
NORMAL WAVEFORM OF TPH HEATING



01 CARD LAYOUT



01 CARD LAYOUT



(A) & (B) TERMINAL SIGNAL TABLE

(A) TERMINALS & CONNECTOR

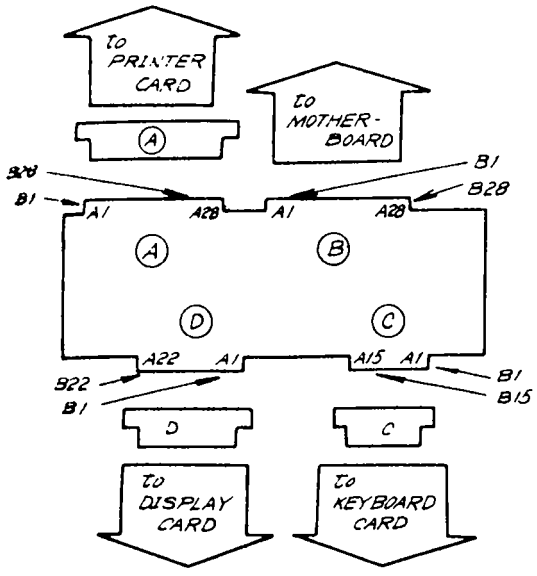
TERMINAL NO.	(A) CONNECTOR					
	A (Part side)			B (Pattern side)		
	Signal	Pin No	Color	Signal	Pin No	Color
1	DT23	28	Yellow	DT31	$\overline{F}$	Yellow
2	DT24	27	Orange	DT32	$\overline{E}$	Orange
3	DT 7	26	Red	DT33	$\overline{D}$	Red
4	DT 8	25	Brown	DT34	$\overline{C}$	Brown
5	DT 9	24	Sky Blue	DT35	$\overline{B}$	Sky Blue
6	DT10	23	Pink	DT19	$\overline{A}$	Pink
7	DT11	22	Black	DT20	Z	Black
8	DT12	21	White	DT21	Y	White
9	DT17	20	Gray	DT22	X	Gray
10	DT18	19	Purple	DT25	W	Purple
11	DT 1	18	Blue	DT26	V	Blue
12	DT 2	17	Green	DT27	U	Green
13	DT 3	16	Yellow	DT28	T	Yellow
14	DT 4	15	Orange	DT29	S	Orange
15	DT 5	14	Red	DT30	R	Red
16	DT 6	13	Brown	DT13	P	Brown
17	$\overline{TD6}$	12	Sky Blue	DT14	N	Sky Blue
18	$\overline{TD7}$	11	Pink	DT15	M	Pink
19	PHT	10	Black	DT16	L	Black
20		9		PΦ4	K	White
21	$\overline{LRD}$	8	Gray	PΦ2	J	Gray
22	TMP H	7	Purple	PΦ1	H	Purple
23	CRS	6	Blue	DΦ3	F	Blue
24	PRS	5	Green	PΦ3	E	Green
25	VGG	4	Yellow	DΦ1	D	Yellow
26		3		DΦ0	C	Orange
27	VTP	2	Red	DΦ2	B	Red
28	+VOP	1	Brown	+VOP	A	

(B) TERMINALS

A : PART SIDE
B : PATTERN SIDE

NO.	A	B
1	VDD	L MAG
2	VPM	IHP
3	VTP	VTP
4	VGG	$\overline{INH2}$
5	+VOP	+VOP
6	Φ2	Φ1
7	$\overline{TD11}$	TMP H
8	$\overline{TD16}$	$\overline{IO1}$
9	$\overline{QP}$	$\overline{IO2}$
10	$\overline{CONT}$	$\overline{IO4}$
11	$\overline{IRS}$	$\overline{SCAS}$
12	$\overline{INST1}$	SCA1
13	$\overline{INST2}$	$\overline{SCA2}$
14	$\overline{FLG1}$	$\overline{FLG2}$
15	$\overline{TD4}$	$\overline{TD9}$
16	$\overline{TD2}$	$\overline{TD3}$
17	$\overline{TD0}$	$\overline{TD1}$
18	$\overline{AR2}$	$\overline{AR1}$
19	$\overline{AR8}$	$\overline{AR4}$
20	$\overline{MXR2}$	$\overline{MXR1}$
21	$\overline{MXR8}$	$\overline{MXR4}$
22	$\overline{KB4}$	$\overline{IOC1}$
23	$\overline{ID19}$	$\overline{CP2}$
24	$\overline{DUKC}$	$\overline{TWE}$
25	$\overline{PUC}$	$\overline{ISTD}$
26	CP1	CP2
27	VCC	VCC
28	GND	GND

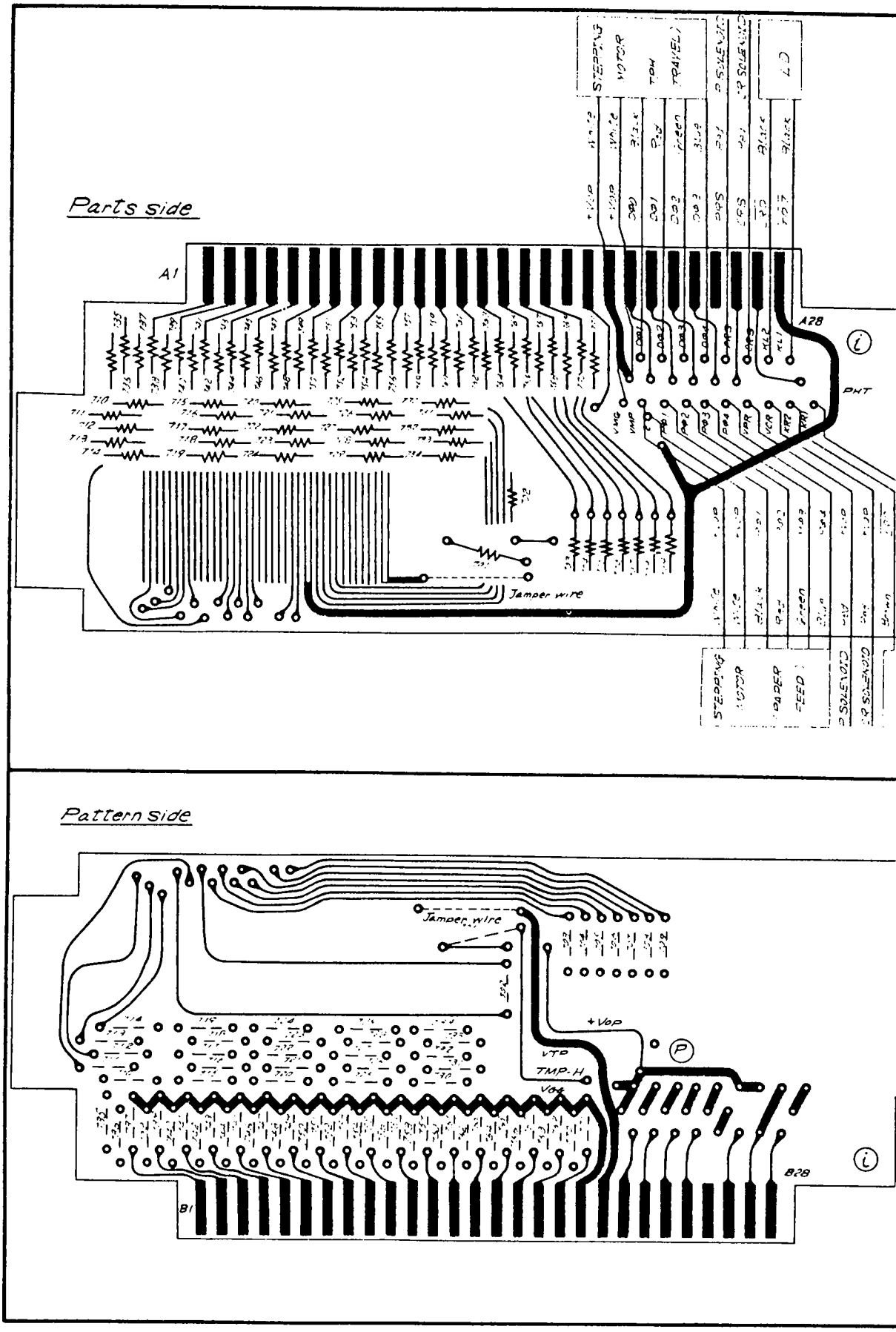
Ⓒ & Ⓓ TERMINAL SIGNAL TABLE



TERMINAL NO.	Ⓒ CONNECTOR					
	A (Part side)			B (Pattern side)		
	Signal	Pin No	Color	Signal	Pin No	Color
1	GND	15		GND	S	Gray
2	$\overline{FLG1}$	14	Green	$\overline{TD0}$	R	Brown
3	$\overline{FLG2}$	13	Blue	$\overline{TD1}$	P	Red
4	$\overline{KC}$	12	Purple	$\overline{TD2}$	N	Orange
5	$\overline{DL}$	11	White	$\overline{TD3}$	M	Yellow
6		10		$\overline{TD4}$	L	Green
7		9		$\overline{TD5}$	K	Blue
8		8		$\overline{TD6}$	J	Purple
9		7		$\overline{TD7}$	H	Gray
10		6		$\overline{KB1}$	F	White
11		5		$\overline{KB2}$	E	Black
12		4		$\overline{KB3}$	D	Brown
13		3		$\overline{KB4}$	C	Red
14		2		$\overline{KB10}$	B	Orange
15		1		$\overline{KB20}$	A	Yellow

TERMINAL NO.	Ⓓ CONNECTOR					
	A (Part side)			B (Pattern side)		
	Signal	Pin No	Color	Signal	Pin No	Color
1		22		SP	Z	Gray
2		21		Sd	Y	Blue
3		20		Se	X	Green
4		19		Sf	W	Yellow
5		18		Sg	V	Orange
6		17		SC	U	White
7		16		Sb	T	Brown
8		15		Sa	S	Red
9	MAG	14		LRN	R	Yellow
10	ERROR	13	Gray	UNFIN	P	Purple
11	DBG	12	Blue	ENT	N	Orange
12	Di 19	11	Black	CHE	M	Green
13	Di 15	10	Brown	Di 10	L	Blue
14	Di 16	9	Purple	Di 18	K	Pink
15	Di 14	8	Red	Di 17	J	Sky Blue
16	Di 12	7	Yellow	Di 4	H	"
17	Di 11	6	Green	Di 6	F	Black
18	Di 13	5	Orange	Di 3	E	Brown
19	Di 8	4	Gray	Di 2	D	Red
20	Di 7	3	White	Di 1	C	Orange
21	Di 9	2	Purple	Di 5	B	Pink
22		1		GND	A	Brown

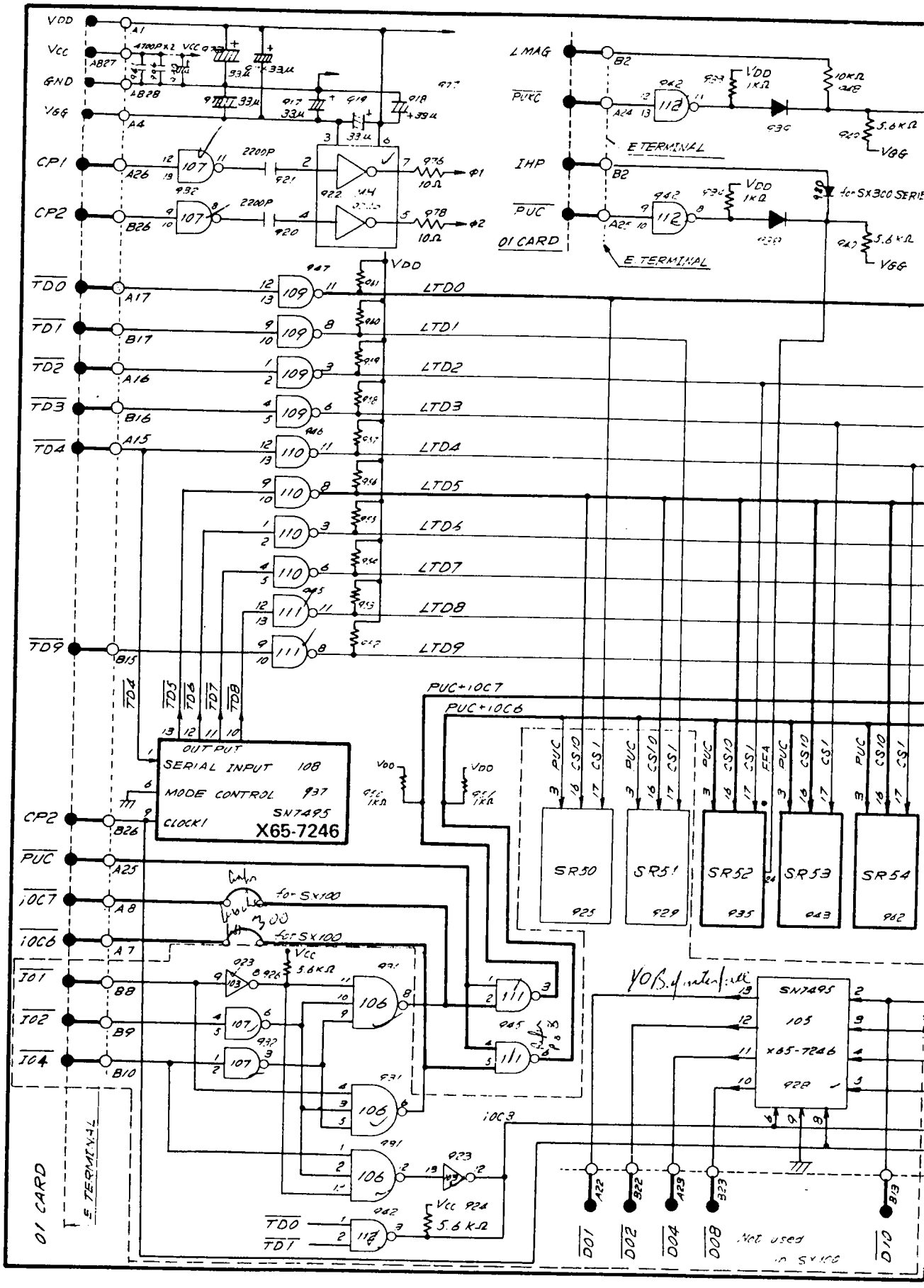
PRINTER CARD LAYOUT



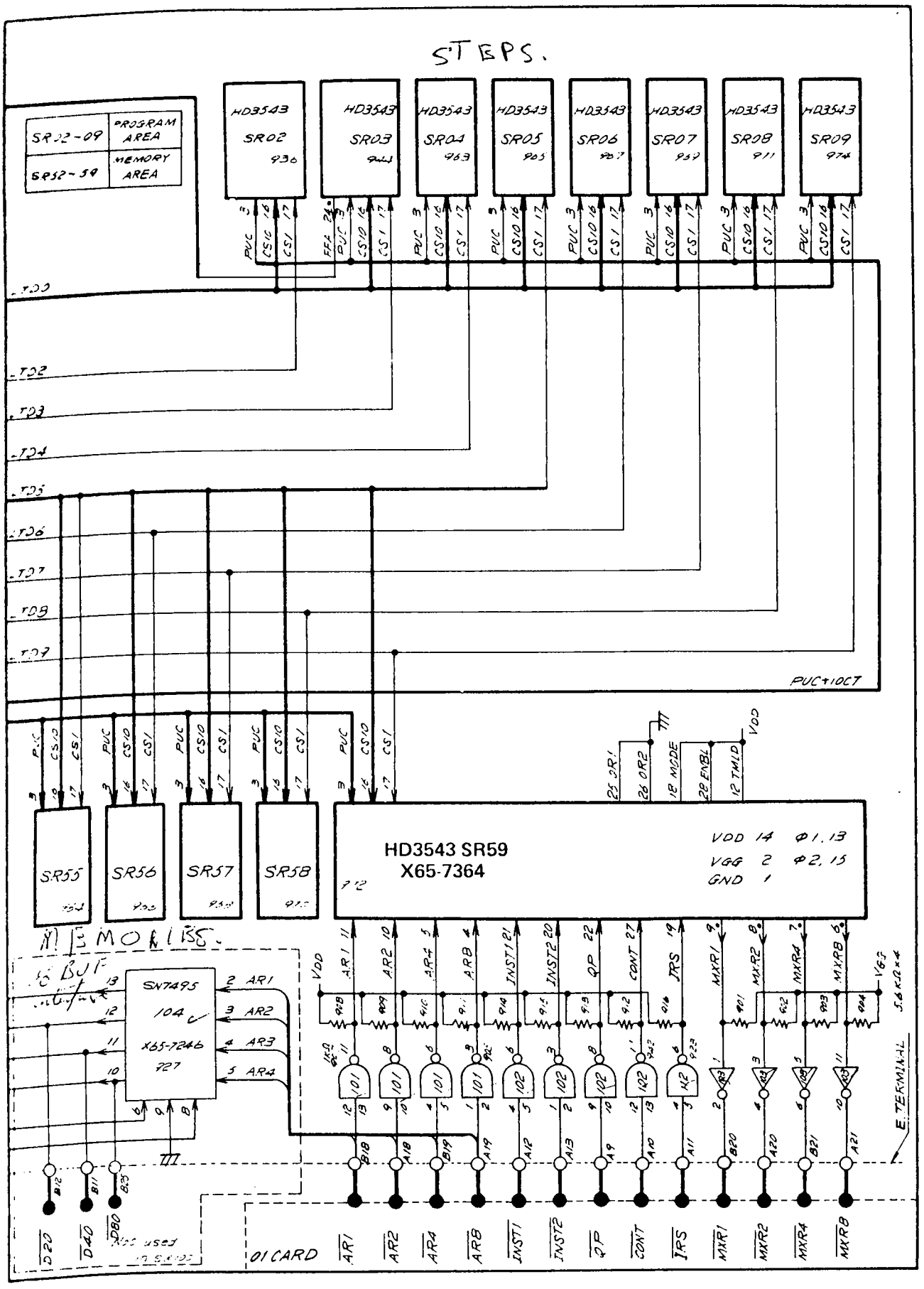
ⓘ TERMINAL SIGNAL TABLE

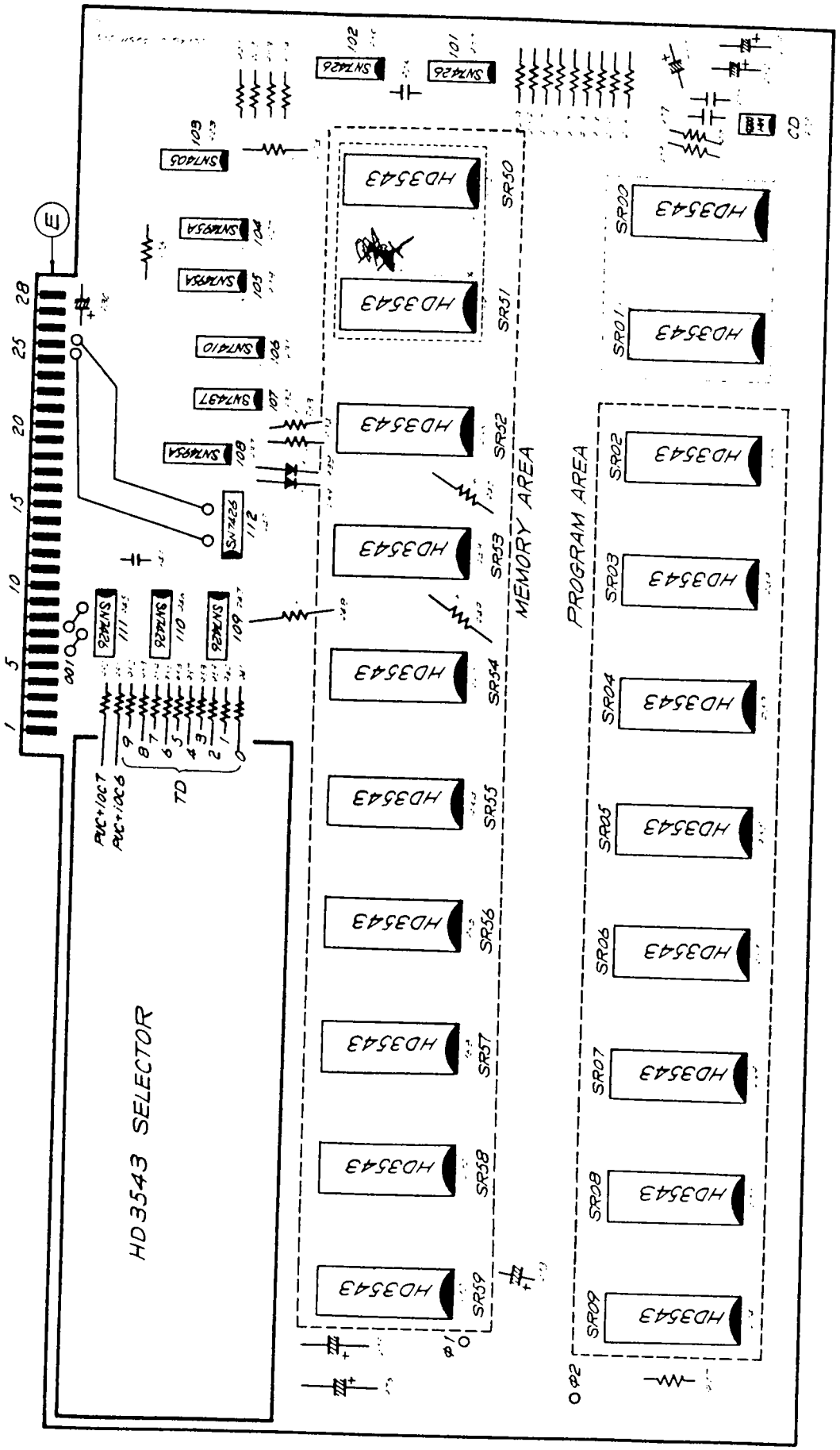
TERMINAL NO.	ⓘ					
	A (Parts side)			B (Pattern side)		
	Signal	Pin No	Color	Signal	Pin No	Color
1	DT3	28	Yellow	DT4	$\overline{F}$	Orange
2	DT8	27	Brown	DT2	$\overline{E}$	Green
3	DT1	26	Blue	DT10	$\overline{D}$	Pink
4	DT5	25	Red	DT9	$\overline{C}$	Sky Blue
5	DT12	24	White	DT6	$\overline{B}$	Brown
6	DT7	23	Red	DT11	$\overline{A}$	Black
7	DT17	22	Gray	DT13	Z	Brown
8	DT16	21	Black	DT21	Y	White
9	DT23	20	Yellow	DT22	X	Gray
10	DT31	19	Yellow	DT26	W	Blue
11	DT33	18	Red	DT32	V	Orange
12	DT30	17	Red	DT34	U	Brown
13	DT29	16	Orange	DT27	T	Green
14	DT35	15	Sky Blue	DT28	S	Yellow
15	DT15	14	Pink	DT14	R	Sky Blue
16	DT18	13	Purple	DT20	P	Black
17	DT24	12	Orange	DT19	N	Pink
18		11		DT25	M	Purple
19	TMP-H	10	Purple	VGG	L	Yellow
20	+VOP	9	Brown	VTP	K	Red
21	PΦ1	8	Purple	DΦ0	J	Orange
22	PΦ2	7	Gray	DΦ1	H	Yellow
23	PΦ3	6	Green	DΦ2	F	Red
24	PΦ4	5	White	DΦ3	E	Blue
25		4			D	
26	PRS	3	Green	CRS	C	Blue
27	TD5	2	Sky Blue	$\overline{LRD}$	B	Gray
28	PHT	1	Black	$\overline{TD7}$	A	Pink

O2 CARD CIRCUIT



O2 CARD CIRCUIT




HD3543 SELECTOR
MEMORY AREA
PROGRAM AREA
HD3543
SR50
SR51
SR52
SR53
SR54
SR55
SR56
SR57
SR58
SR59
SR00
SR01
SR02
SR03
SR04
SR05
SR06
SR07
SR08
SR09
SN7426
SN74LS37
SN74LS10
SN74LS05
SN74LS14
TD
CD

(E) TERMINAL SIGNAL TABLE & HD3543 SELECTOR

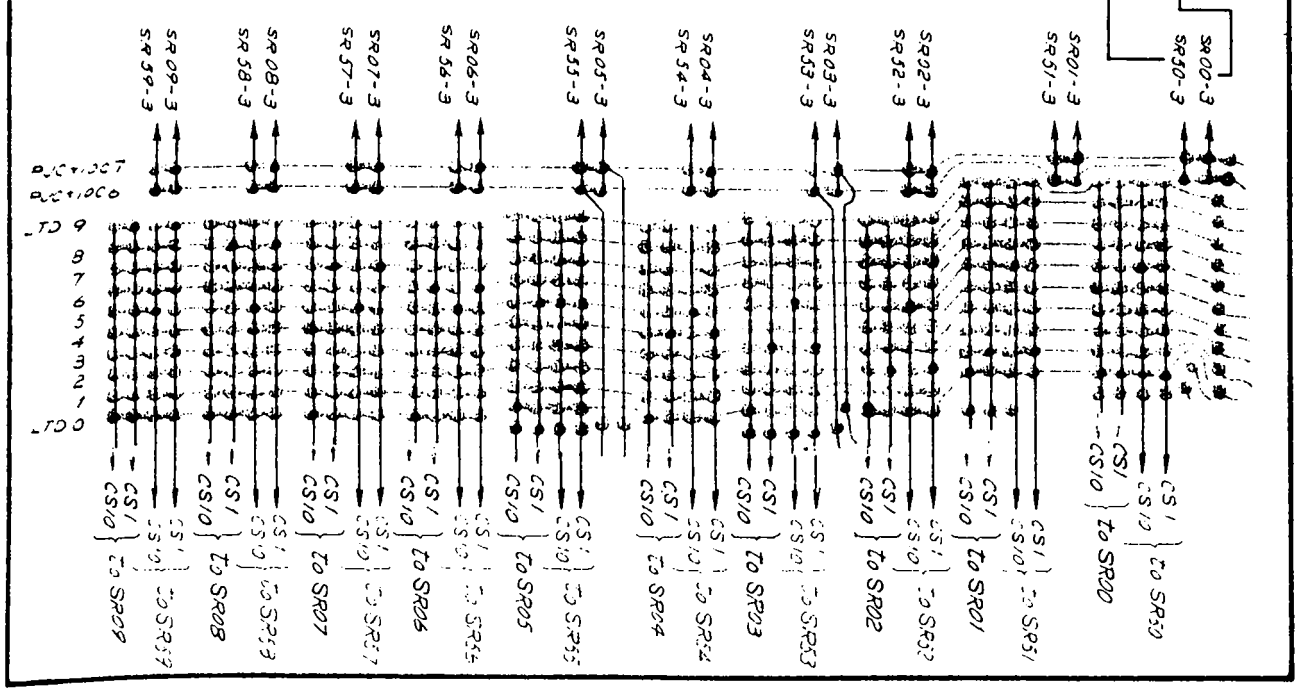
E. TERMINALS SIGNAL TABLE

Terminal No.	Part side A	Pattern side B	Terminal No.	Part side A	Pattern side B
1	VDD	LMAG	15	$\overline{TD4}$	$\overline{TD9}$
2		IHP	16	$\overline{TD2}$	$\overline{TD3}$
3			17	$\overline{TD0}$	$\overline{TD1}$
4	VGG		18	$\overline{AR2}$	$\overline{AR1}$
5			19	$\overline{AR8}$	$\overline{AR4}$
6			20	$\overline{MXR2}$	$\overline{MXR1}$
7	$\overline{IOC0}$		21	$\overline{MXR8}$	$\overline{MXR4}$
8	$\overline{IOC7}$	$\overline{I01}$	22	$\overline{D01}$	$\overline{D02}$
9	$\overline{QP}$	$\overline{I02}$	23	$\overline{D04}$	$\overline{D08}$
10	$\overline{CONT}$	$\overline{I04}$	24	$\overline{PUKC}$	
11	$\overline{IRS}$	D40	25	$\overline{PUC}$	D80
12	$\overline{INST1}$	D20	26	CP1	CP2
13	$\overline{INST2}$	D10	27	VCC	VCC
14			28	GND	GND

HD3543 SELECTOR

RELATION OF TD & ADDRESS

TD	CS10	CS1
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9



6. 03 CARD

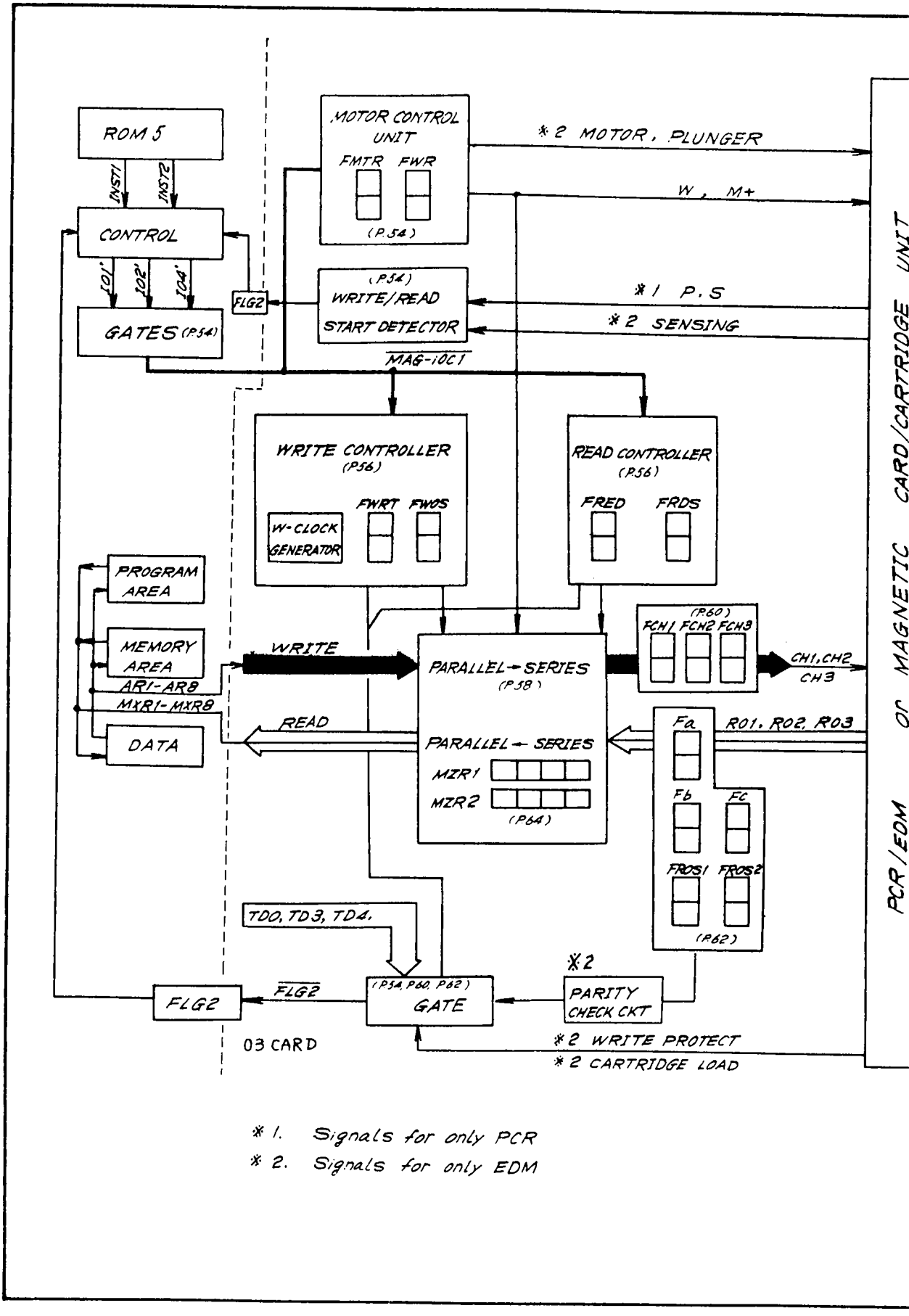
Asterisk & diagonal marked elements & signals are for EDM (magnetic cartridge unit).

回路図中，※印の素子および信号はEDM（カートリッジ・ユニット）のみに使用される。

Dotted line with MC refers to jumper for PCR (magnetic card unit), while MT is for EDM.

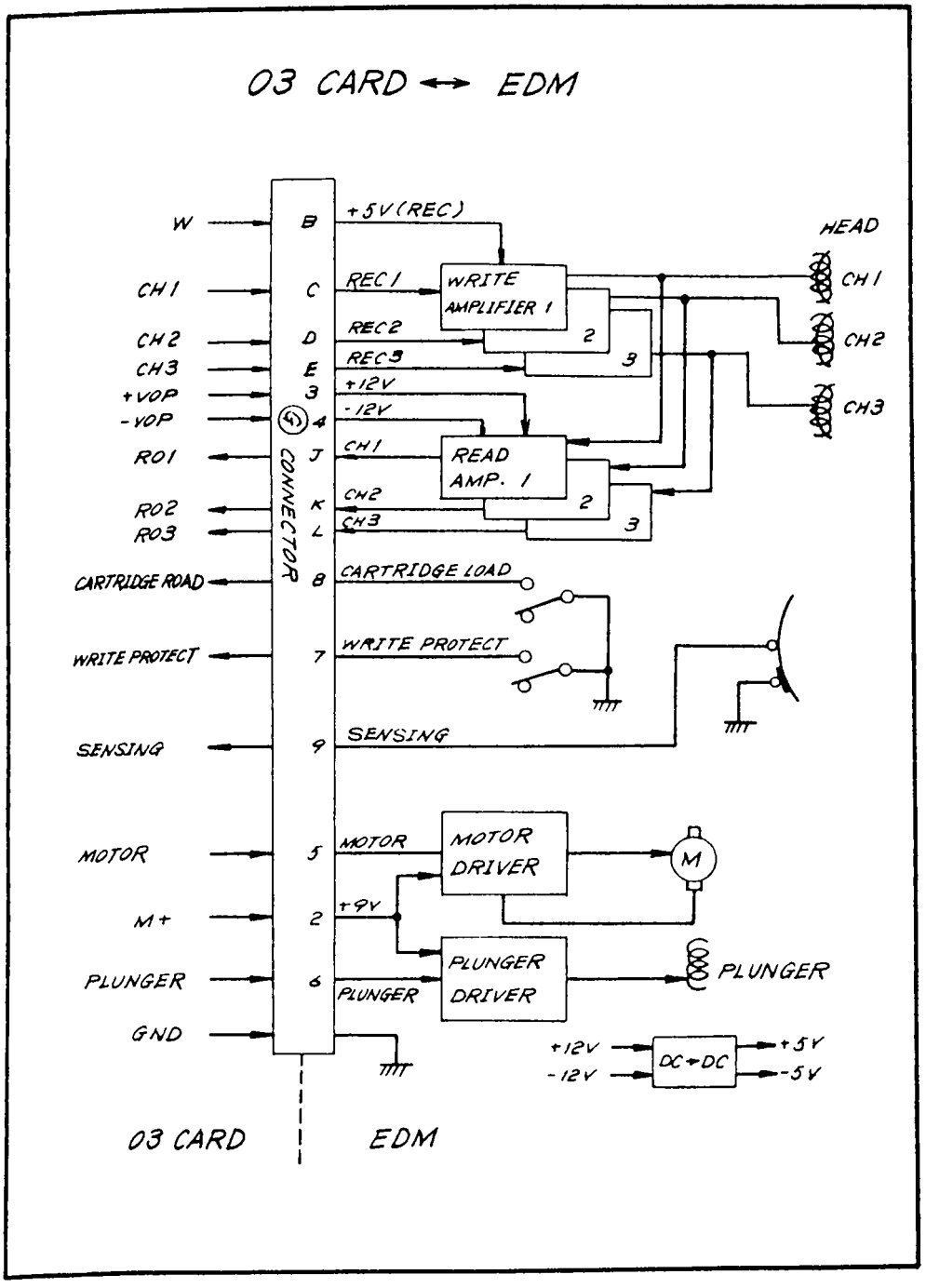
本回路図および03カードに印刷されたMCはPCR（磁気カード・ユニット）のジャンパ線を示す。
そしてMTはEDM（磁気カートリッジ・ユニット）を示す。

BLOCK DIAGRAM OF PCR/EDM CONTROLLER

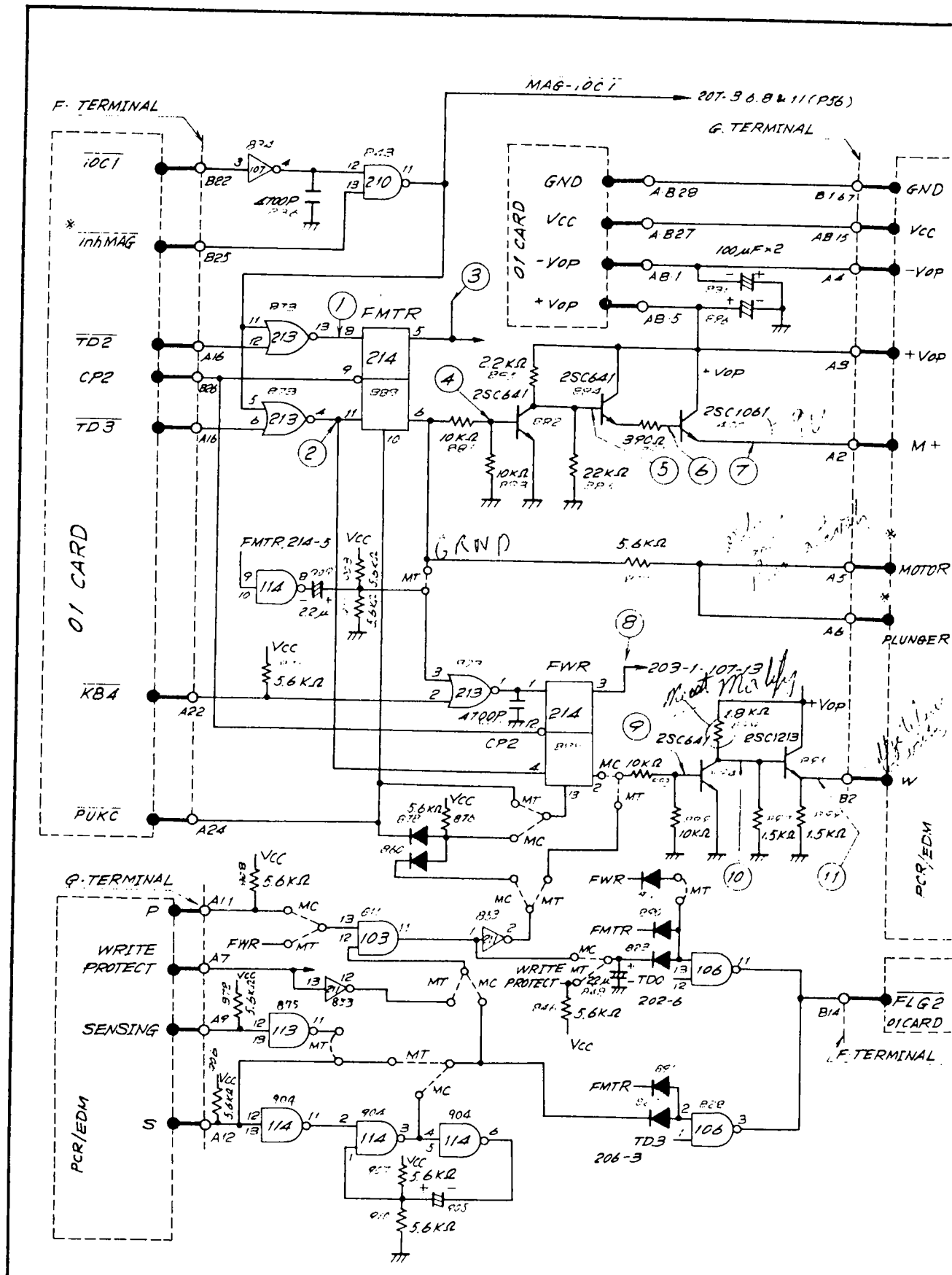


* 1. Signals for only PCR

* 2. Signals for only EDM


03 CARD ↔ EDM
W
CH1
CH2
CH3
+VOP
-VOP
RO1
RO2
RO3
CARTRIDGE ROAD
WRITE PROTECT
SENSING
MOTOR
M+
PLUNGER
GND
B
C
D
E
3
4
J
K
L
8
7
9
5
2
6
CONNECTOR
+5V(REC)
REC1
REC2
REC3
+12V
-12V
CH1
CH2
CH3
CARTRIDGE LOAD
WRITE PROTECT
SENSING
MOTOR
+9V
PLUNGER
WRITE AMPLIFIER 1
2
3
READ AMP. 1
2
3
MOTOR DRIVER
M
PLUNGER DRIVER
PLUNGER
+12V
-12V
DC→DC
+5V
-5V
HEAD
CH1
CH2
CH3
03 CARD
EDM

FMTR, FWR, M+, MOTOR, PLUNGER & W

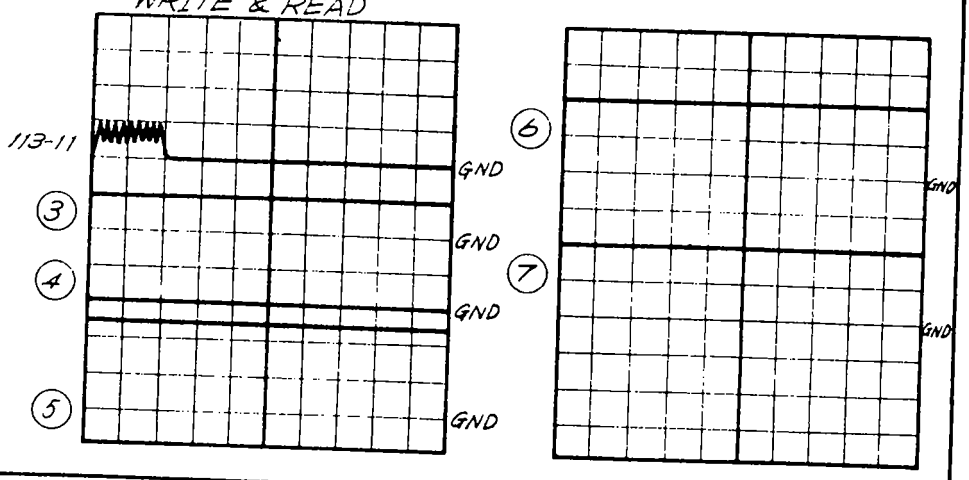


Rad 4.99 mm
axial 3.98 mm

NORMAL WAVEFORM OF FMTR, FWR, M+ MOTOR, PLUNGER & W

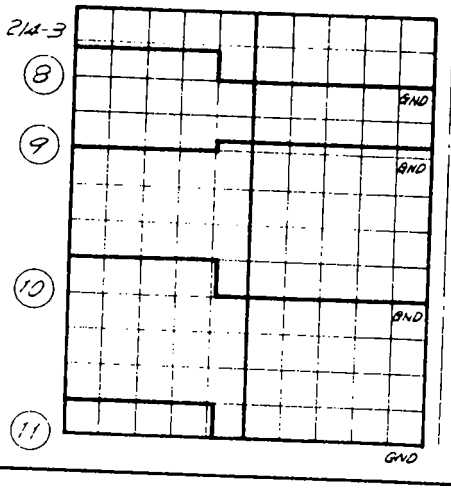
TRIG	CH1	CH2
	③ ④	
113-11	⑤ ⑥ ⑦	113-11
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	50 msec/CM	
SLOPE	+	
MODE	CHOP	

WRITE & READ

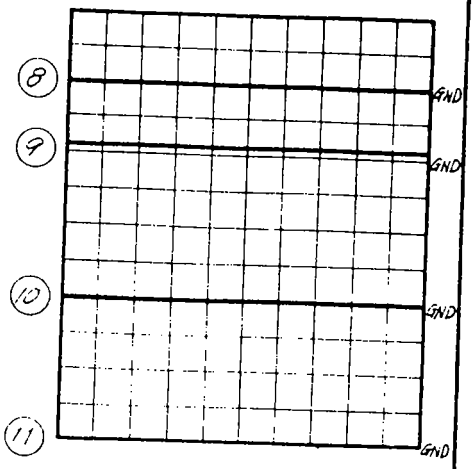


TRIG	CH1	CH2
	⑧ ⑨	
113-11	⑩ ⑪	113-11
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	2 sec/CM	
SLOPE	+	
MODE	CHOP	

WRITE

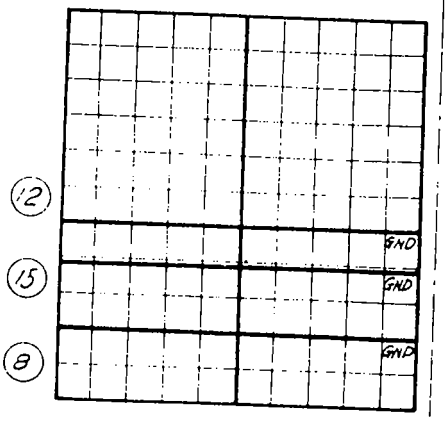


READ

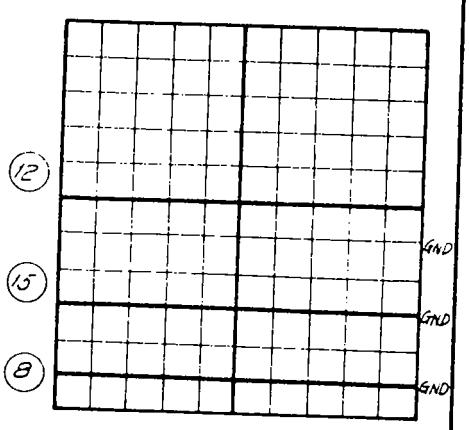


TRIG	CH1	CH2
AUTO	⑫ ⑮ ⑧	
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	0.5 sec/CM	
SLOPE	+	
MODE	CHOP	

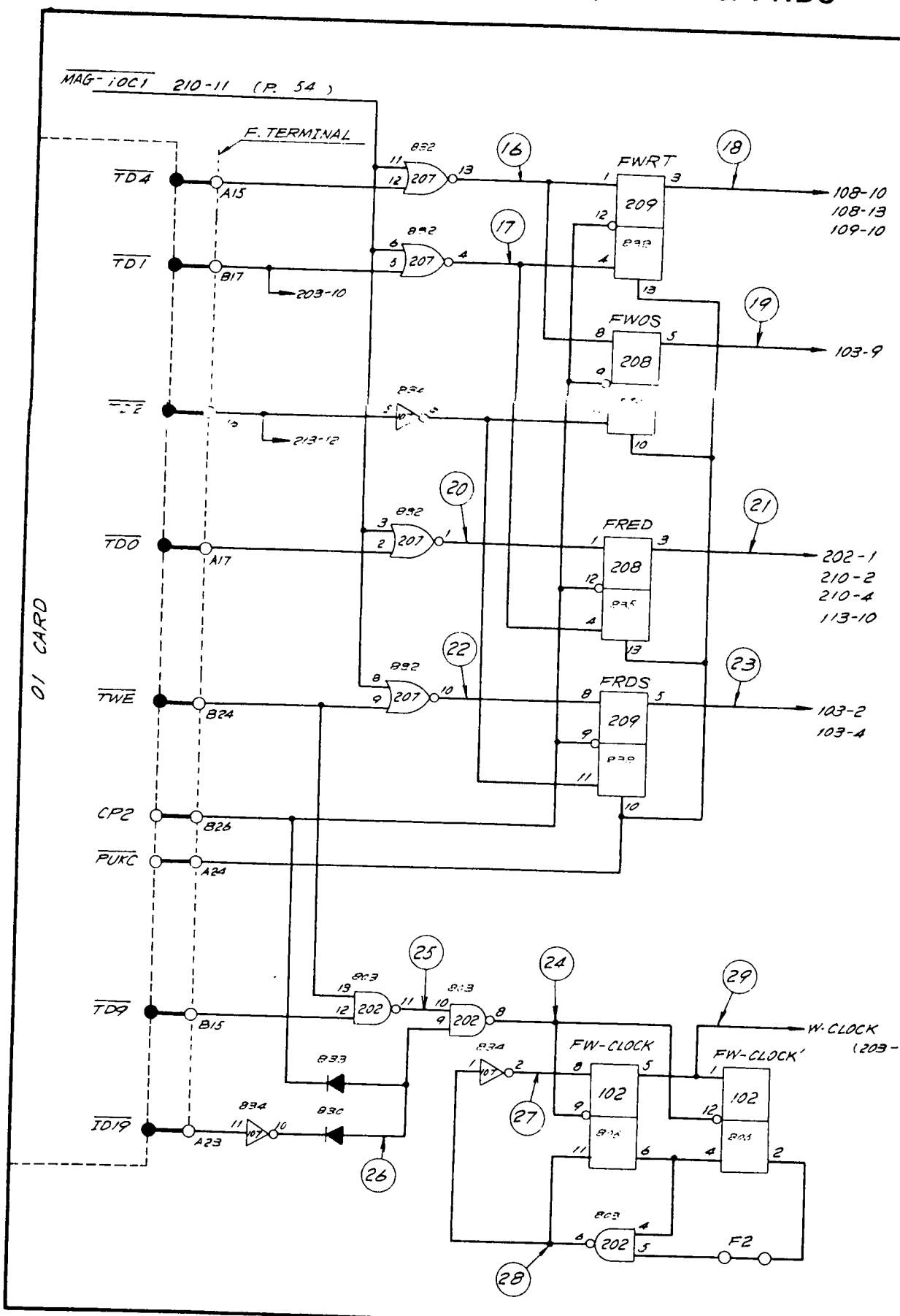
WRITE



READ



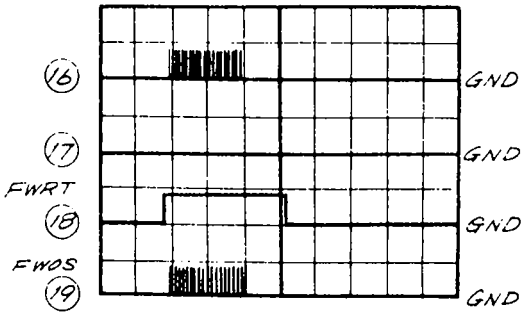
W-CLOCK, FWRT, PWOS, FRED & FRDS



NORMAL WAVEFORM OF W-CLOCK, FWRT, FWOS, FRED & FRDS

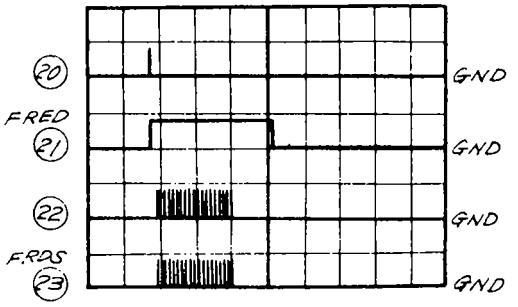
WRITE

TRIG	CH1	CH2
113-11(RSH) (SENSING)	(16) (17) (18) (19)	
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	0.5 SEC/CM	
SLOPE	+	
MODE	CHOP	



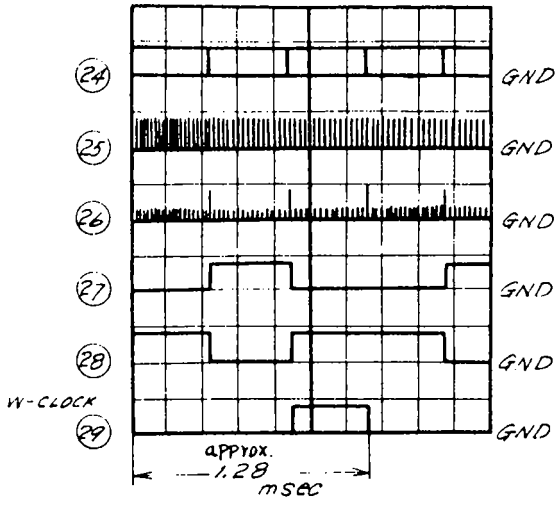
READ

TRIG	CH1	CH2
113-11	(20) (21) (22) (23)	
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	0.5 SEC/CM	
SLOPE	+	
MODE	CHOP	

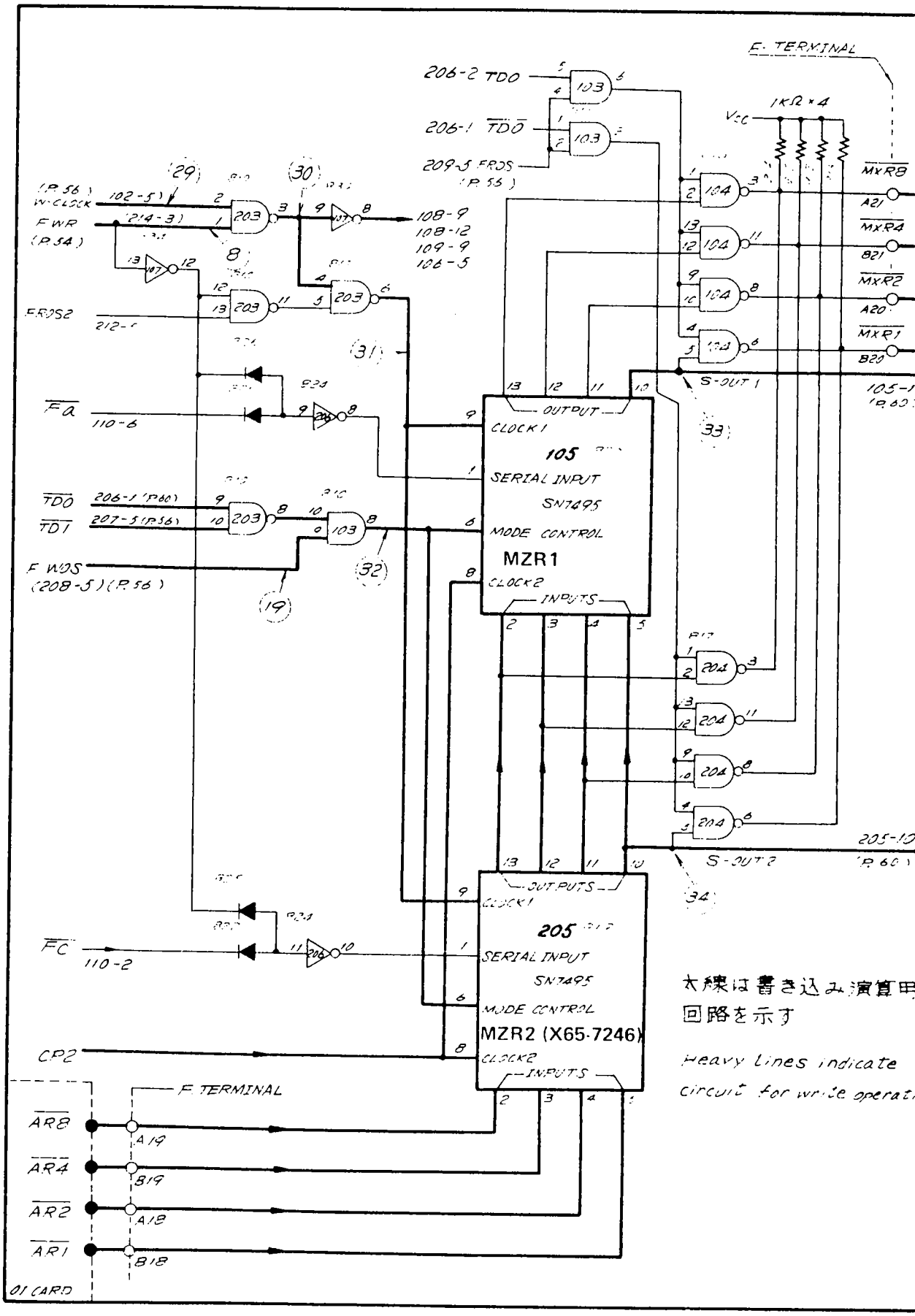


W-CLOCK

TRIG	CH1	CH2
(24) 202-8	(25) (26)	(24)
(24) 202-5	(27) (28)	(29)
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	0.2 msec/CM	
SLOPE	+	
MODE	CHOP	



MZR1 & MZR2


F. TERMINAL
206-2 TDO
206-1 TDO
209-5 FRDS (P.55)
1KΩ×4
Vcc
MXR8
A21
MXR4
B21
MXR2
A20
MXR1
B20
S-OUT 1
105-1 (P.60)
33
OUTPUT
CLOCK 1
105
SERIAL INPUT
SN7495
MODE CONTROL
MZR1
CLOCK 2
INPUTS
(P.56) W-CLOCK
102-5
214-3
FWR (P.54)
29
30
108-9
108-12
109-9
106-5
FRDS2
212-1
31
FA
110-6
TDO
206-1 (P.60)
TD1
207-5 (P.56)
32
F WDS (208-5) (P.56)
19
S-OUT 2
205-10 (P.60)
34
OUTPUTS
205
MZR2 (X65-7246)
FC
110-2
CP2
F TERMINAL
AR8
AR4
AR2
AR1
A19
B19
A18
B18
01 CARD
太線は書き込み演算回路を示す
Heavy lines indicate circuit for write operat

NORMAL WAVEFORM OF FCH1, FCH2 & FCH3

WRITE

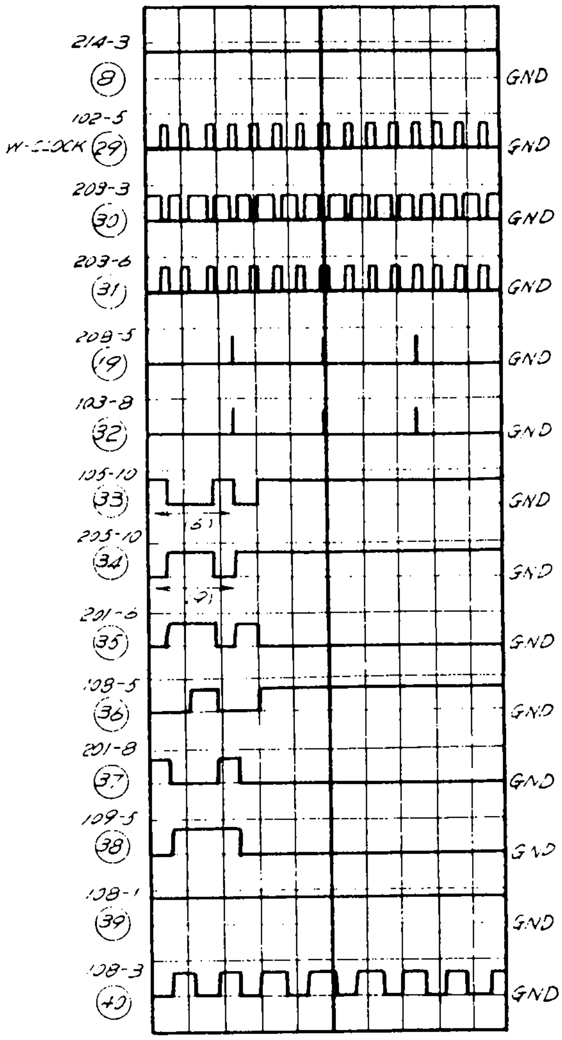
OPERATION

1 Lock [DATA TRANS]
2 Press [1] [EXP] [9] [6] [SM 00] [0] [0]
3 Press [STEP SET] [0] [0] [0]
4 Press [C]
5 Insert magnetic tape to position
6. Press [RECORD]
7 Repeat 4. 5. 6

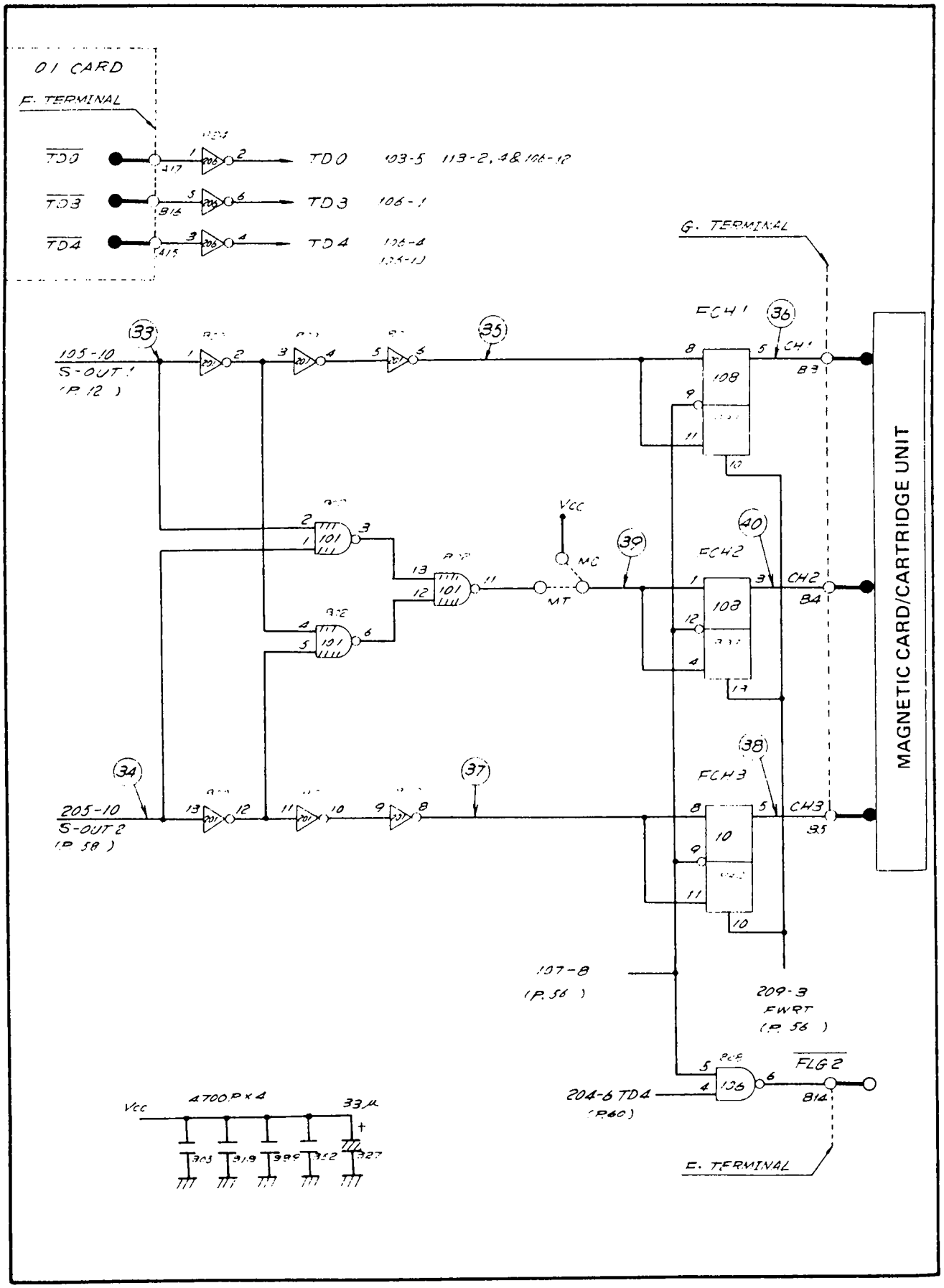
DISPLAY | 1 .00000000000000 96 |

MIR (SM00) | 6 7 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 |

TRIG	CH1	CH2
(19) 103-9	(8) (29) (30) (31) (19) (32) (33) (34) (36) (37) (38) (39)	
VOLT/CM	2.5 V/CM	0.5 V/CM
TIME/CM	2 m sec	
SLOPE	−	
MODE	CHOP	



FCH1, FCH2 & FCH3



NORMAL WAVEFORM OF MZR1 & MZR2

WRITE

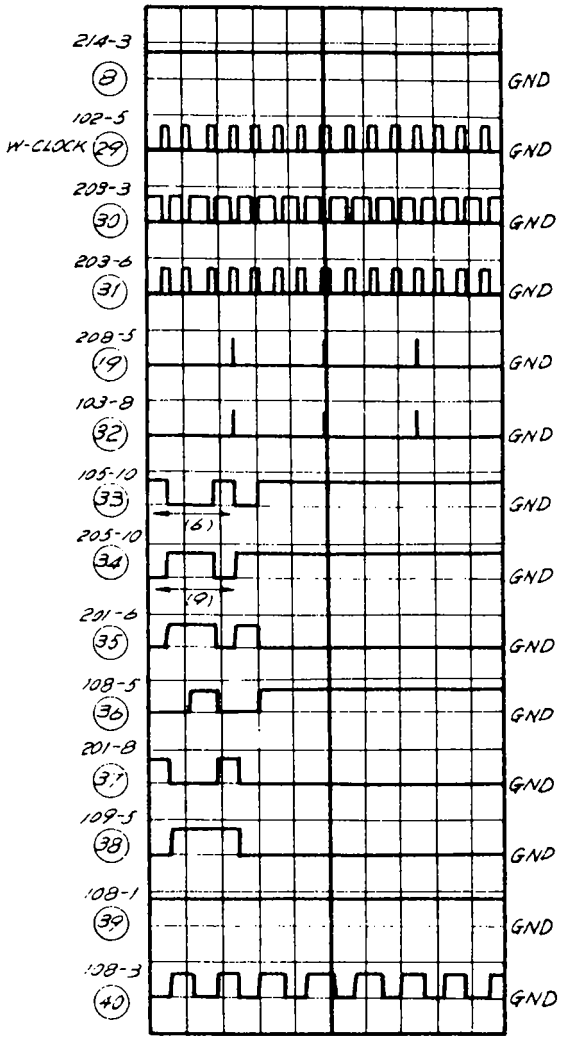
OPERATION

1. Lock [DATA TRANS]
2. Press [1] [EXP] [9] [5] [SM 00] [0] [0]
3. Press [STEP SET] [0] [0] [0]
4. Press [C]
5. Insert magnetic tape to position
6. Press [RECORD]
7. Repeat 4. 5. 6

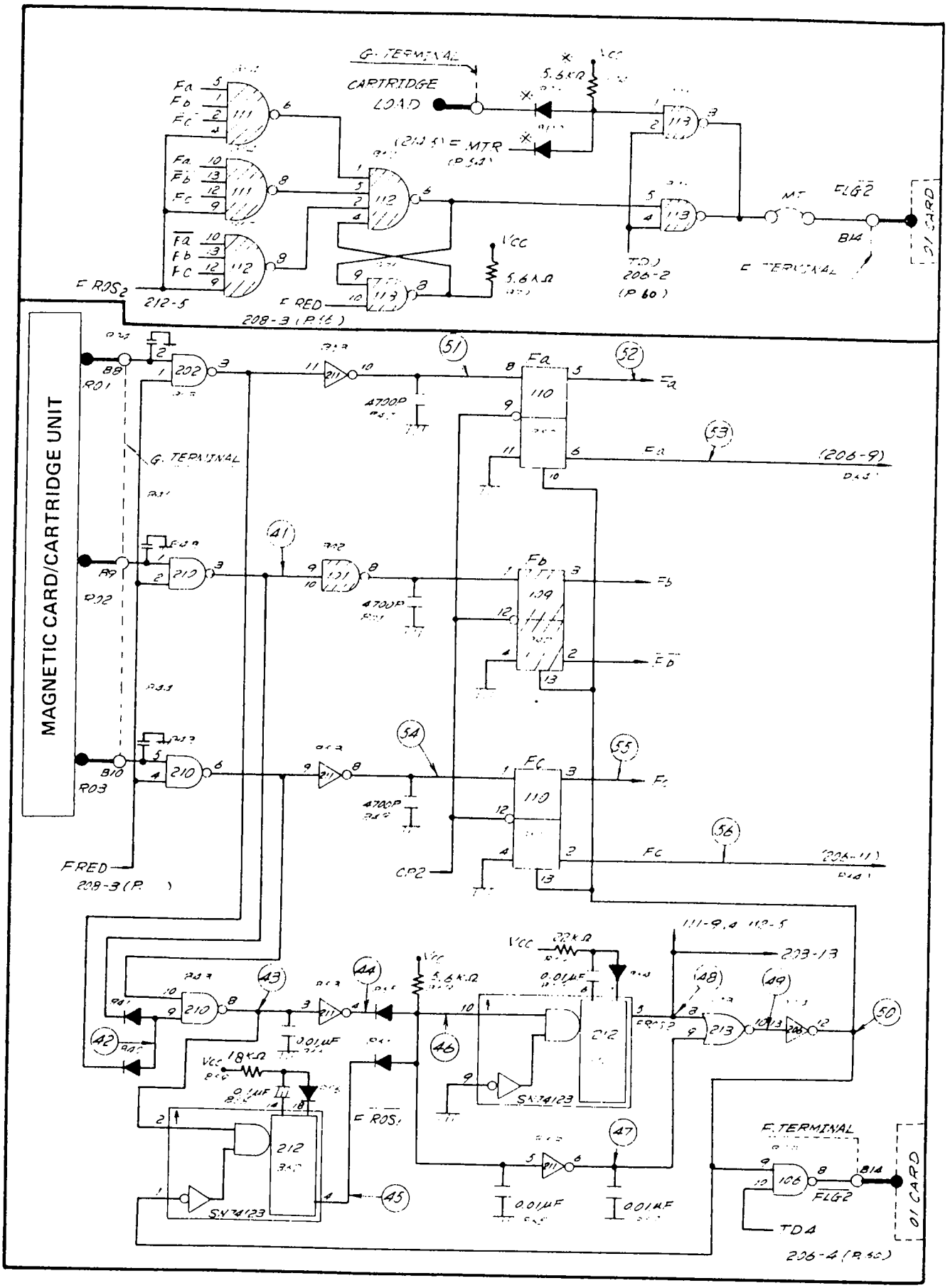
DISPLAY: H 1 .0000000000000000 H 96

MIR (SM00): 6 9 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0

TRIG	CH1	CH2
(19) 103-9	(8) (27) (30) (31) (1) (32) (33) (34) (36) (37) (38) (39)	
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	2 m SEC	
SLOPE	–	
MODE	CHOP	



Fa, Fb, Fc, FROS1 & FROS2



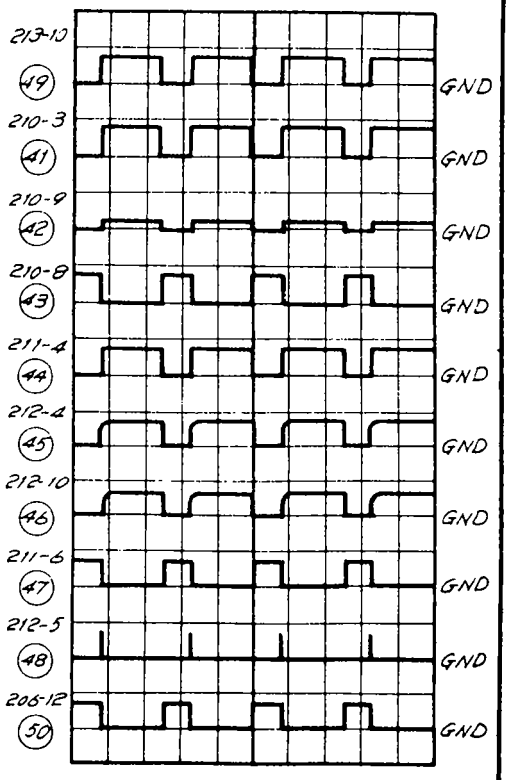
NORMAL WAVEFORM OF Fa, Fb, Fc, FROS1 & FROS2

READ

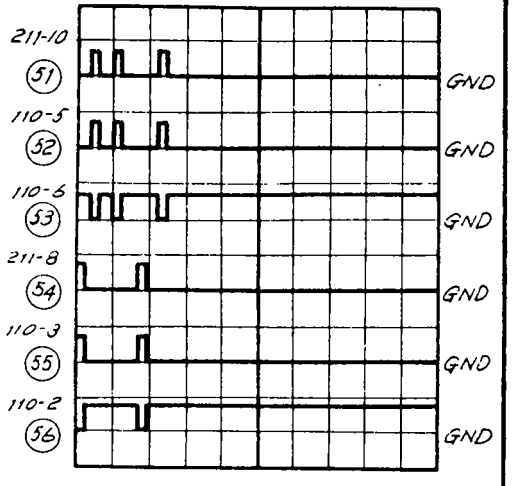
Operation

1. Press [DATA TRANS]
2. Press [1] [EXP] [2] [2]
3. [SM No.] [0] [0]
4. Press [STEP SET] [0] [0] [0]
5. Press [RECORD]
6. Insert magnetic tape to position
7. Press [C]
8. Insert magnetic tape in position
9. Press [LOAD]

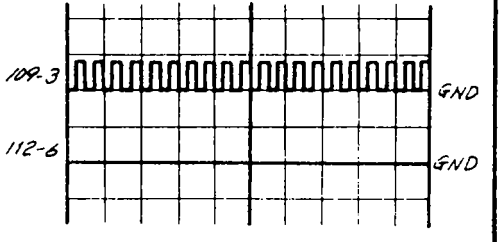
TRIG	CH1	CH2
(49) 213-10	(41)(42)(43)(44)(45)(46)(47)(48)(50)	(49)
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	0.5 m SEC/CM	
SLOPE	−	
MODE	CHOP	



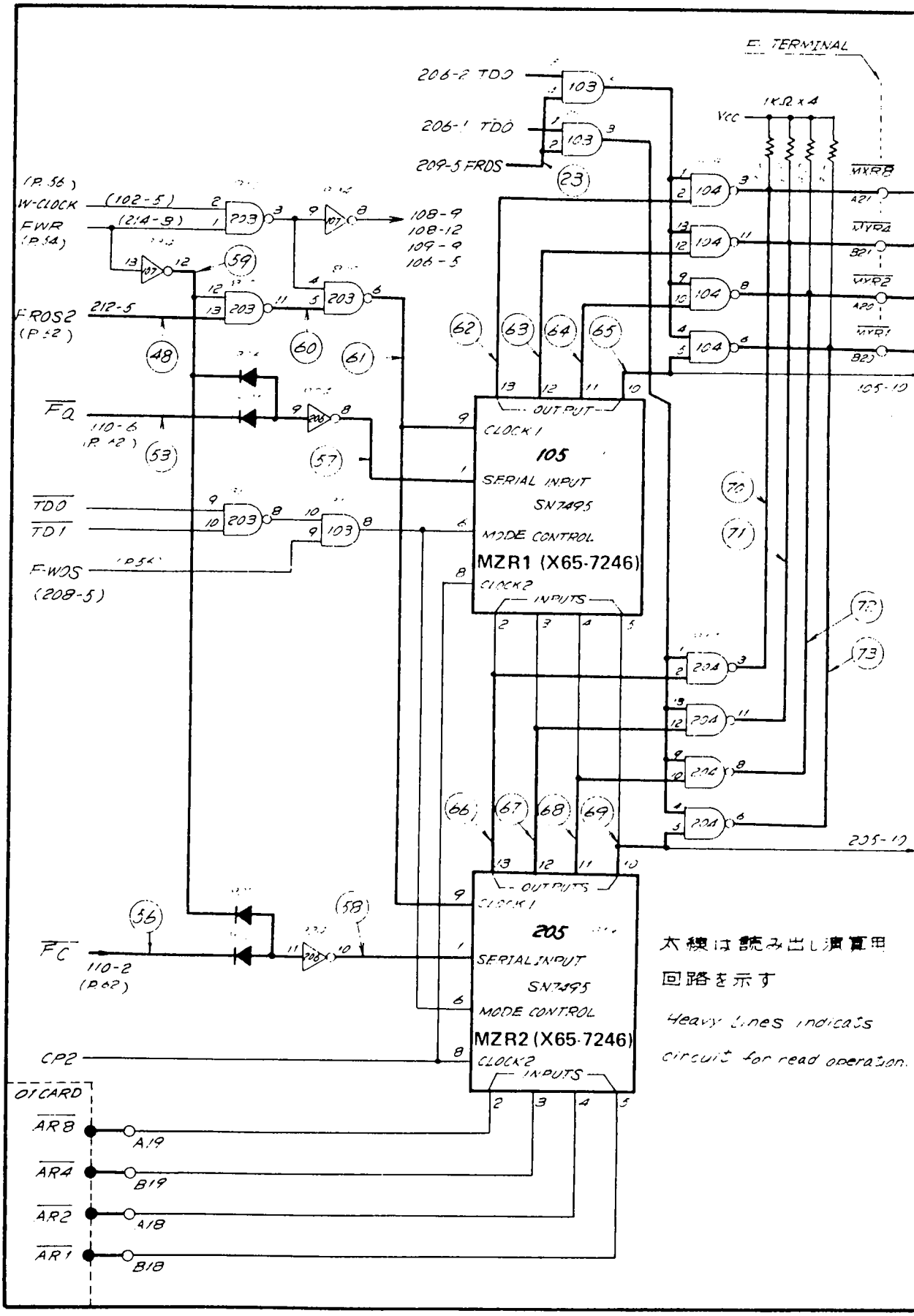
TRIG	CH1	CH2
(55) 110-3	(51)(52)(53)(54)(56)	(55)
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	2 msec/CM	
SLOPE	+	
MODE	CHOP	



TRIG	CH1	CH2
(49) 213-10	109-3 112-6	(49)
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	10 msec/CM	
SLOPE	+	
MODE	CHOP	



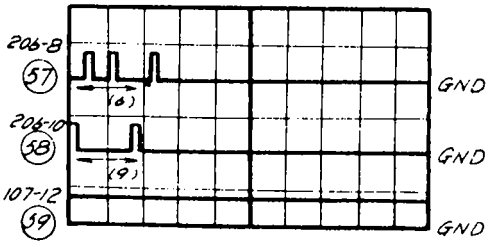
MZR1 & MZR2


E. TERMINAL
206-2 TDO
206-1 TDO
209-5 FROS
1KΩ x 4
Vcc
MXR8
MXR4
MXR2
MXR1
A21
B21
A20
B20
105-10
(P.56)
W-CLOCK
(102-5)
(214-5)
FWR
(P.54)
108-9
108-12
109-9
106-5
FROS2
212-5
(P.52)
FQ
110-6
(P.42)
TDO
TD1
FWDS
(208-5)
OUTPUT
CLOCK1
105
SERIAL INPUT
SN7495
MODE CONTROL
MZR1 (X65-7246)
CLOCK2
INPUTS
OUTPUTS
205
MZR2 (X65-7246)
205-10
FC
110-2
(P.62)
CP2
01 CARD
AR8
AR4
AR2
AR1
A19
B19
A18
B18
太線は読み出し演算用
回路を示す
Heavy lines indicate
circuit for read operation.

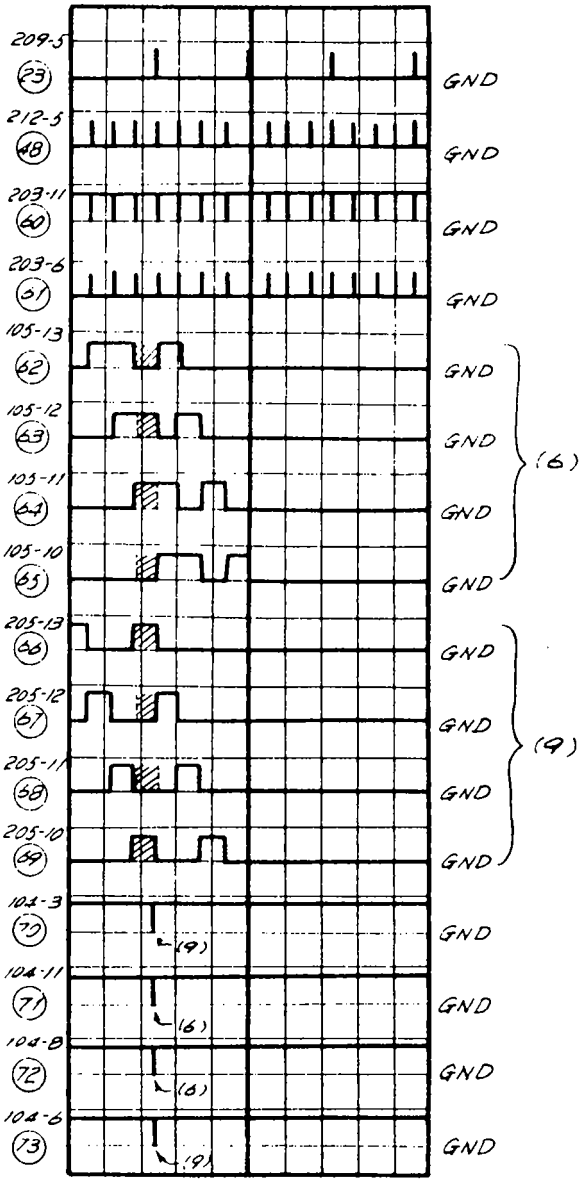
NORMAL WAVEFORM OF MZR1 & MZR2

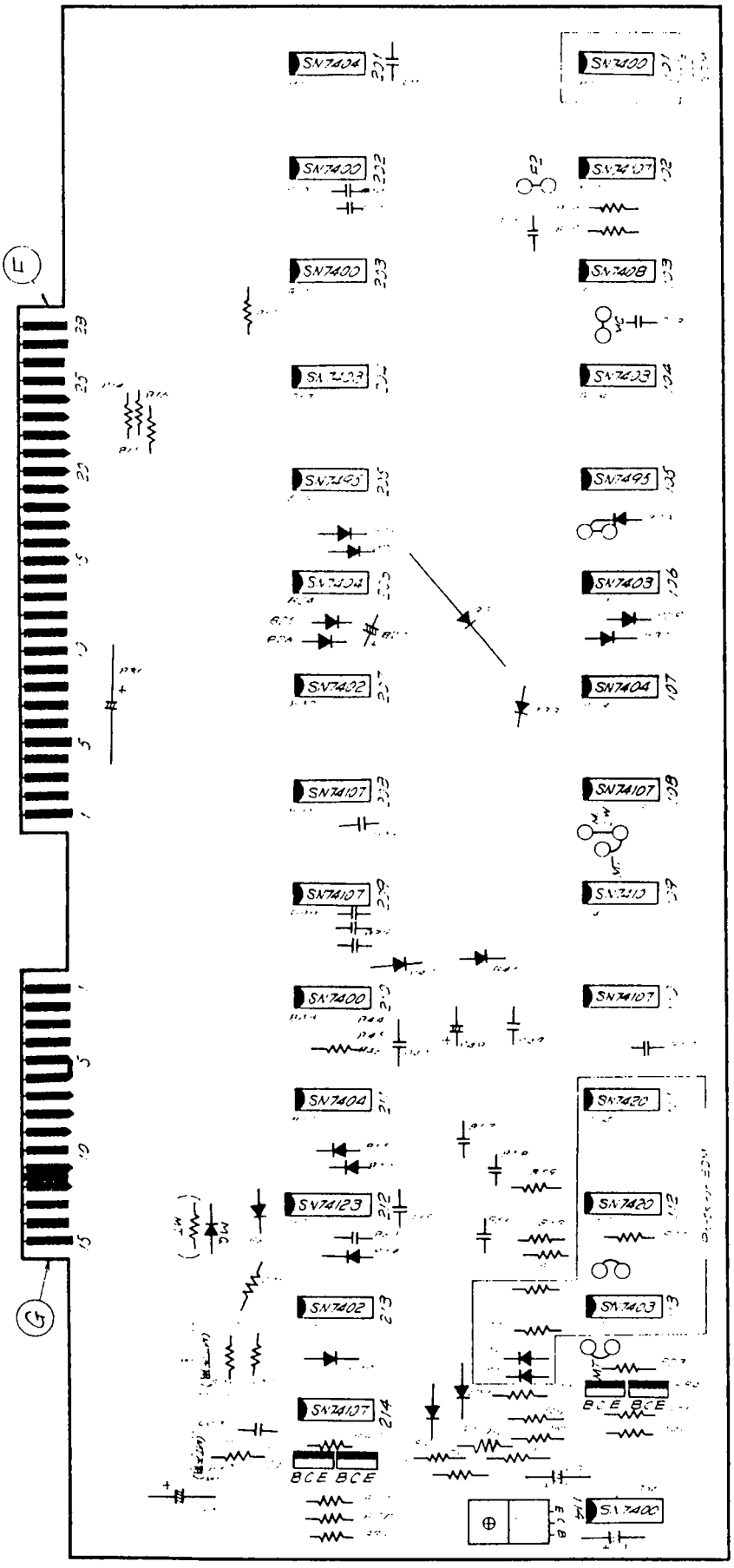
READ.

TRIG	CH1	CH2
(55) 110-3	(57) (58) (59)	(55)
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	2 msec/CM	
SLOPE	+	
MODE	CHOP	

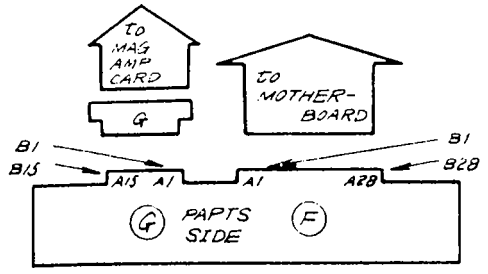


TRIG	CH1	CH2
(66) 205-15	(23) (48) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (71) (72) (73)	(66)
VOLT/CM	0.5 V/CM	0.5 V/CM
TIME/CM	2 msec/CM	
SLOPE	+	
MODE	CHOP	




SN7400
SN7404
SN7400
SN7400
SN7403
SN7495
SN7404
SN7402
SN74107
SN74107
SN7400
SN7404
SN74123
SN7402
SN74107
SN74107
SN7408
SN7403
SN7495
SN7403
SN7404
SN7410
SN74107
SN7420
SN7420
SN7403
SN7400
BCE BCE
BCE BCE
E
G

(G) & (F) TERMINAL SIGNAL TABLE



A : PART SIDE

B : PATTERN SIDE

(G) TERMINALS & CONNECTOR

(G) TERMINAL NO	(G) CONNECTOR					
	A (PARTS SIDE)			B (PATTERN SIDE)		
	Signal	Pin No.	Color	Signal	Pin No.	Color
1	GND	1	Black	GND	A	Black
2	M+	2	Blue	W	B	Blue
3	+VOP	3	Brown	CH1	C	Brown
4	-VOP	4	Yellow	CH2	D	Yellow
5	*2 MOTOR	5	Red	CH3	E	Red
6	*2 PLUNGER	6	Green	*2 GND	F	Green
7	*2 WRITE PROTECT	7	Purple	*2 GND	H	Purple
8	*2 CART-RIDGE LOAD	8	Gray	R01	J	*1 Green *2 Gray
9	*2 SENSING	9	White	R02	K	*1 Purple *2 White
10		10	Orange	R03	L	*1 Gray *2 Orange
11	*1 P	11	Red		M	
12	*1 S	12	Green		N	
13		13			P	
14		14			R	
15	*1 VCC	15	Purple		S	

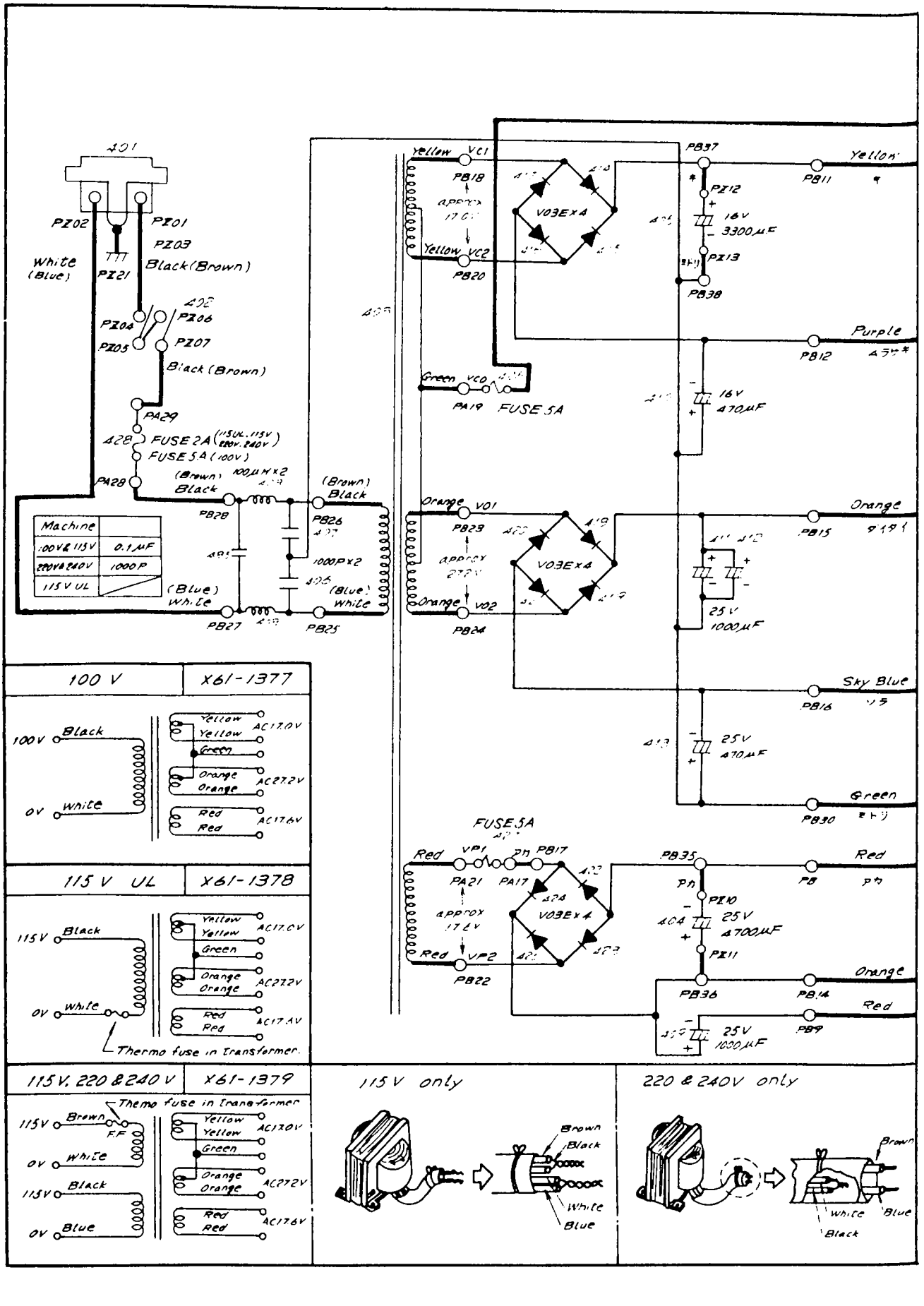
※1. Signals for only PCR

※2. Signals for only EDM

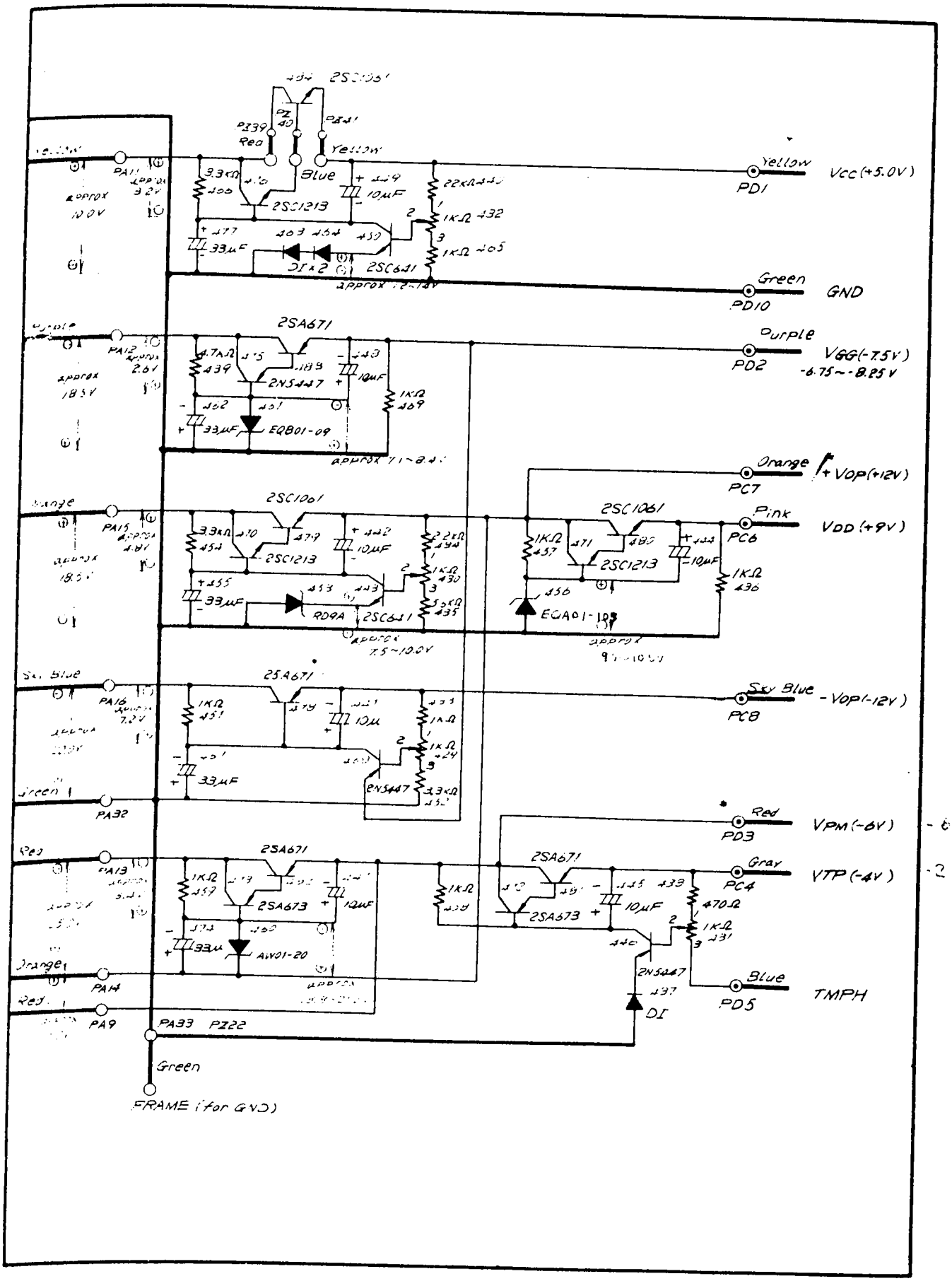
(F) TERMINALS

NO.	A	B
1	-VOP	-VOP
2		
3		
4		
5	+VOP	+VOP
6		
7		
8		
9		
10		
11		
12		
13		
14		
15	$\overline{TD4}$	$\overline{TD9}$
16	$\overline{TD2}$	$\overline{TD3}$
17	$\overline{TD0}$	$\overline{TD1}$
18	$\overline{AR2}$	$\overline{AR1}$
19	$\overline{AR8}$	$\overline{AR4}$
20	$\overline{MXR2}$	$\overline{MXR1}$
21	$\overline{MXR8}$	$\overline{MXR4}$
22	$\overline{KB4}$	$\overline{IOC1}$
23	$\overline{ID19}$	
24	$\overline{PUKC}$	$\overline{TWE}$
25		$\overline{INH\ MAG}$
26		CP2
27	VCC	VCC
28	GND	GND

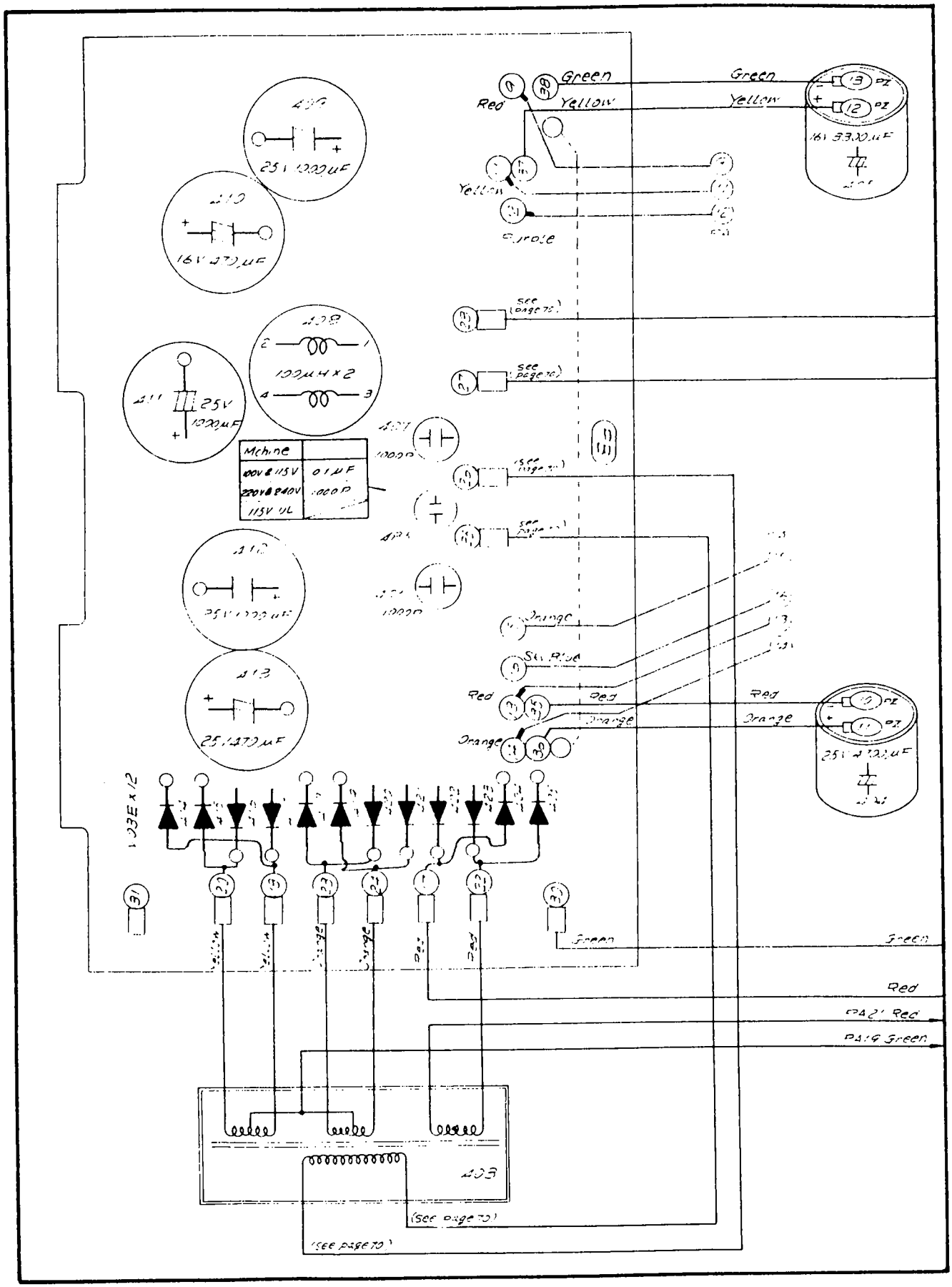
POWER SUPPLY CIRCUIT



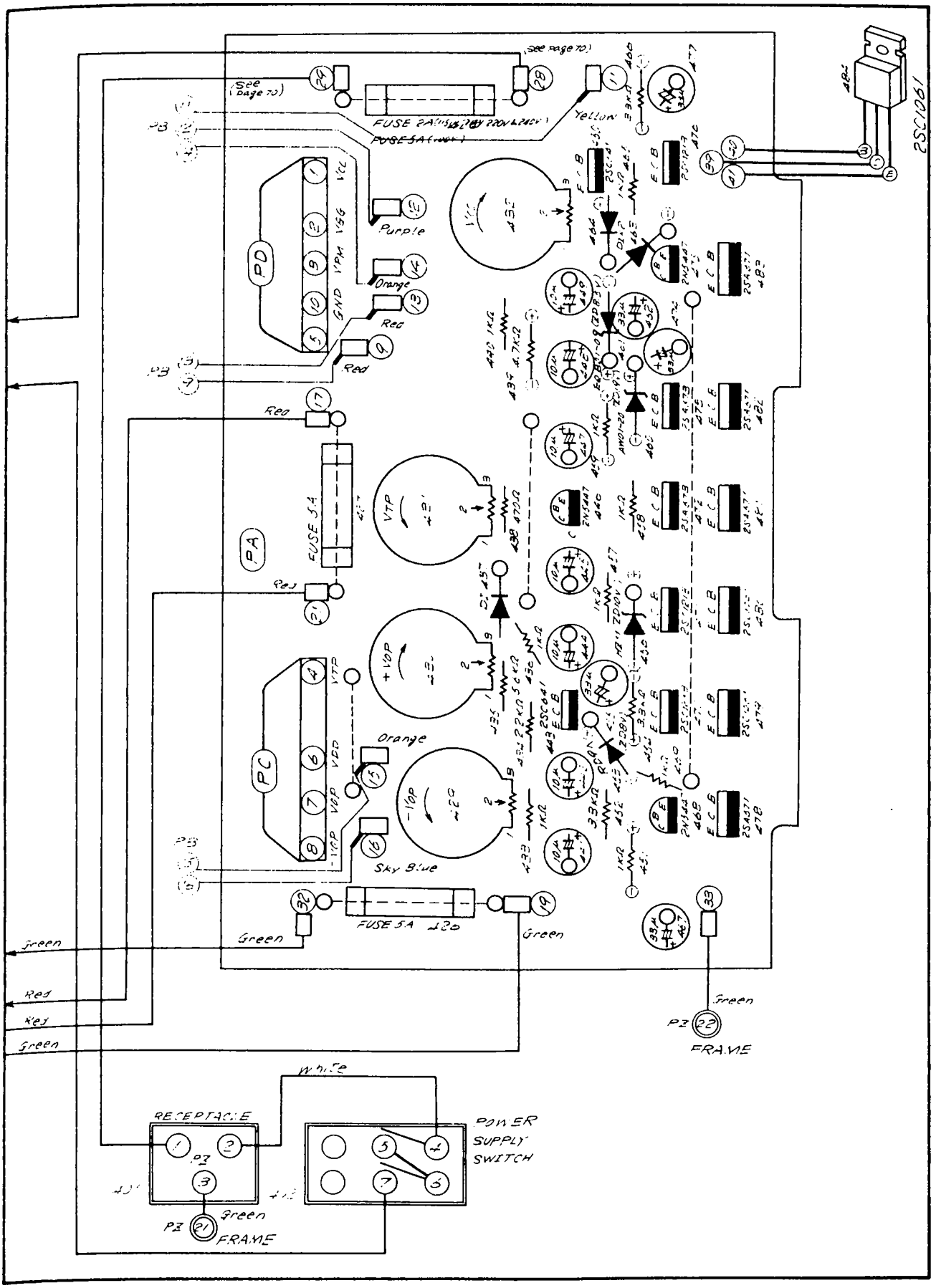
POWER SUPPLY CIRCUIT



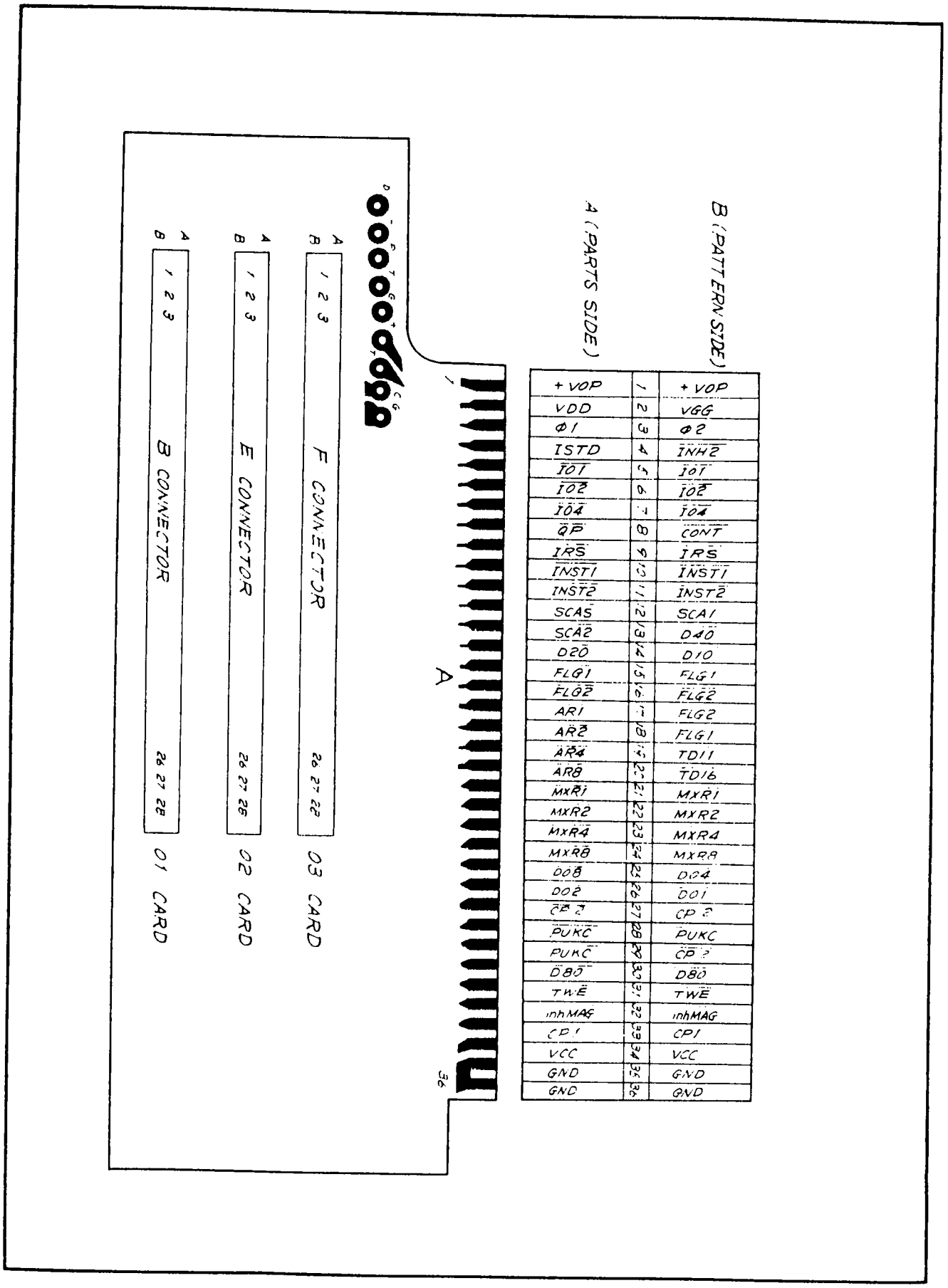
POWER SUPPLY CARD LAYOUT-PB



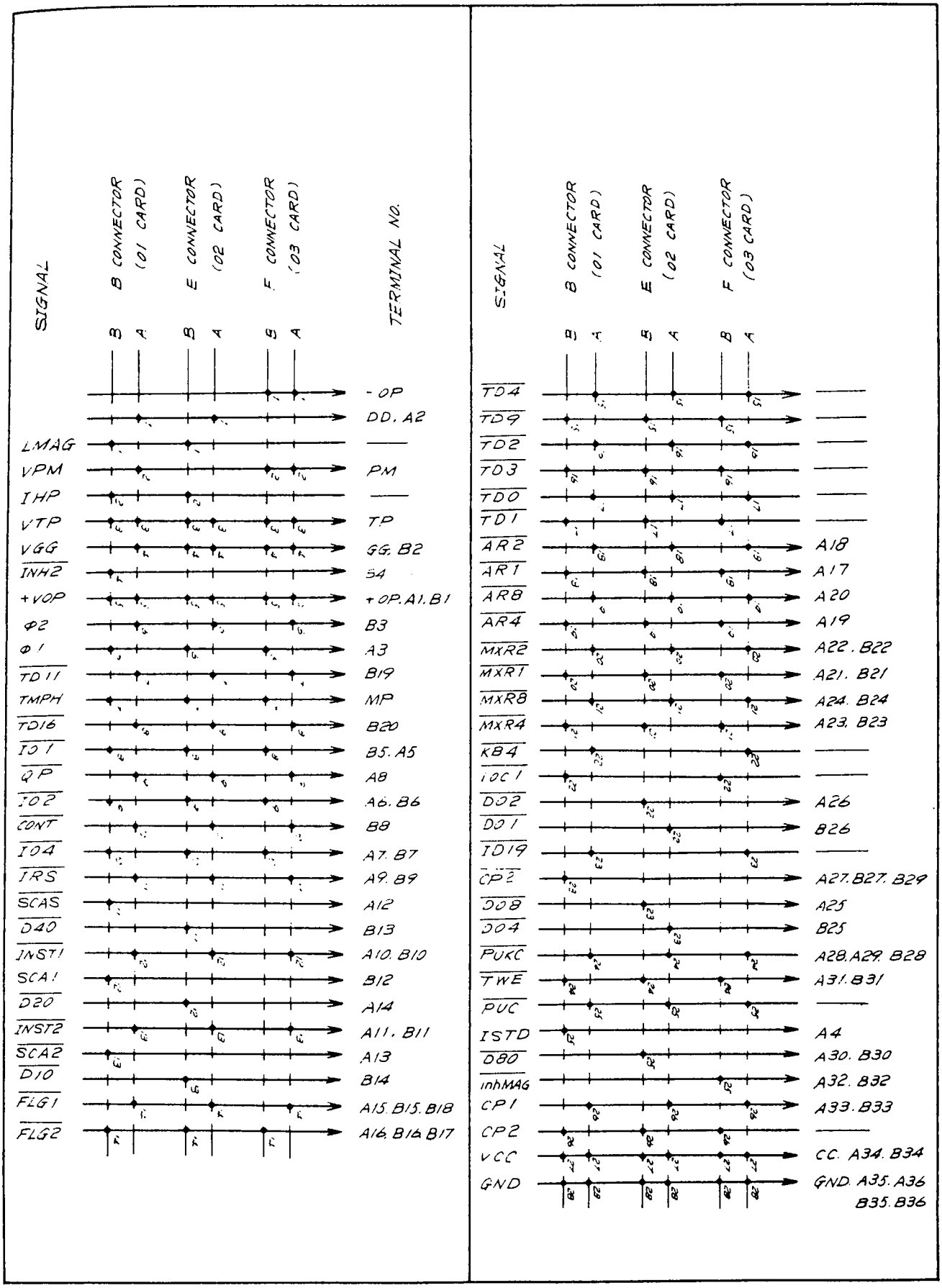
POWER SUPPLY CARD LAYOUT-PA



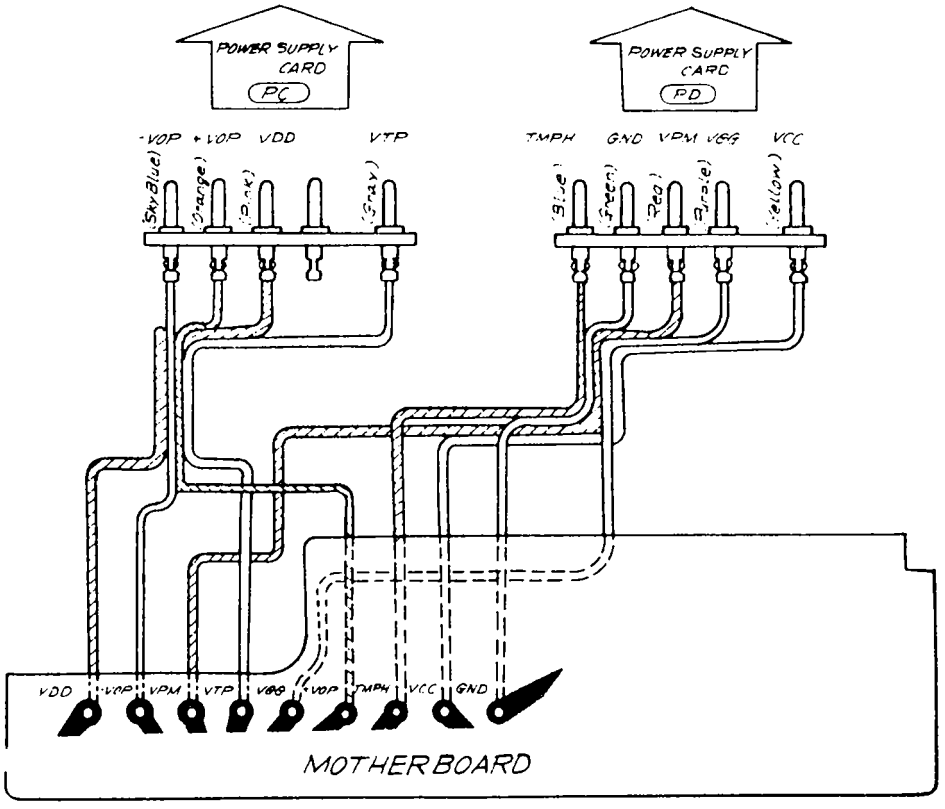
8. MOTHER BOARD CARD LAYOUT



MOTHERBOARD CONNECTOR'S SIGNAL



CONNECTION 1 (MOTHERBOARD ⟷ POWER SUPPLY CARD)



CONNECTION 2 (MOTHERBOARD ⟷ FUNCTION PACK, MEMORY BOX & INTERFACE)

FUNCTION PACK ⟷ MOTHERBOARD (Q) (H)

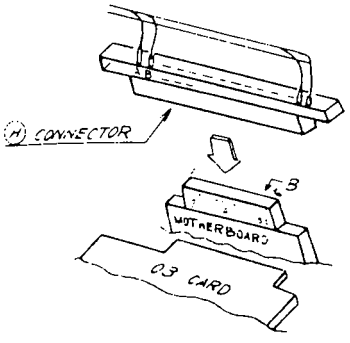
(Q) PIN NO.	(H) PIN NO	SIGNAL	COLOR
A & 1	B	VDD	Black
B & 2	2	VGG	Brown
C) 3 & 4	R	GND	Green
E & 5	N	VCC	Red
F	C	Φ1	Orange
-	-	[illegible]	[illegible]
-	-	[illegible]	[illegible]
K	19	TDI1	Blue
L	20	TDI6	Purple
M	P	SCA2	Gray
N	10	INST1	White
P	12	SCA1	Pink
R	9	IRS	Light Blue
6	3	Φ2	Orange
8	4	[illegible]	Green
9	18	FLG1	Blue
10	17	FLG2	Purple
12	11	INST2	White
13	H	PUKC	Pink
14	N	SCAS	Blue

MEMORY BOX ⟷ MOTHERBOARD (M) (H)

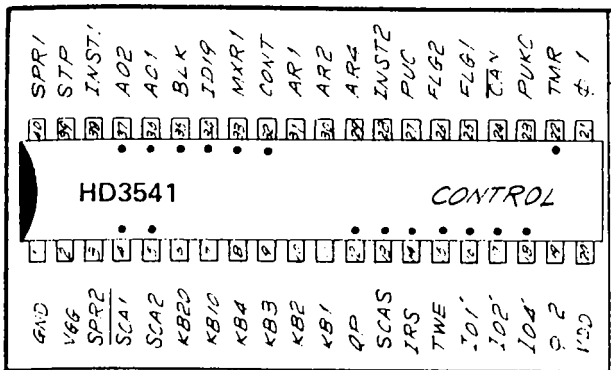
(M) PIN NO	(H) PIN NO	SIGNAL	COLOR
1	U	AR1	Black
2	V	AR2	Brown
3	W	AR4	Red
4	X	AR8	Orange
5	Y	MXR1	Yellow
6	Z	MXR2	Green
-	-	MXR4	Blue
8	B	MXR8	Purple
9	——	——	——
10	——	——	——
11	——	——	——
12	A	+VOP	Blue
13	——	——	——
14	——	——	——
15	——	——	——
16	——	——	——
17	L	INST1	Yellow
18	M	INST2	Green
19	L	inhMAG	Blue
20	E	IO1	Purple
21	F	IO2	Gray
22	H	IO4	White
23	S	FLG1	Pink
24	T	FLG2	Blue
25	K	TWE	Black
26	K	IRS	Brown
27	F	PUKC	Red
28	J	QP	Orange
29	8	CONT	Yellow
30	N	VCC	Green
31	M	CP1	Blue
32	E	CP2	Purple
33, 34 35 & 36	R	GND	Green

INTERFACE ⟷ MOTHERBOARD (N) (H)

(N) PIN NO.	(H) PIN NO.	SIGNAL	COLOR
1	——	——	——
2	——	——	——
3	——	——	——
4	——	——	——
5	21	MXR1	Yellow
-	-	MXR2	Green
-	-	MXR4	Blue
8	24	MXR8	Purple
9	26	DO1	Gray
10	D	DO2	White
11	25	DO4	Pink
12	1	+VOP	Blue
13	C	DO8	Black
14	14	DO10	Brown
15	R	DO20	Red
16	13	DO40	Orange
17	——	——	——
18	——	——	——
19	30	DBB	Blue
20	5	IO1	Purple
21	6	IO2	Gray
22	7	IO4	White
23	15	FLG1	Pink
24	16	FLG2	Light Blue
25	31	TWE	Black
26	——	——	——
27	28	PUKC	Red
28	——	——	——
29	——	——	——
30	34	VCC	Green
31	33	CP1	Blue
32	27	CP2	Purple
33, 34 35 & 36	35	GND	Green

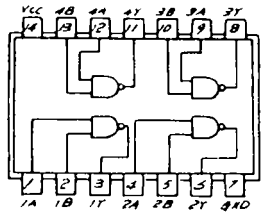


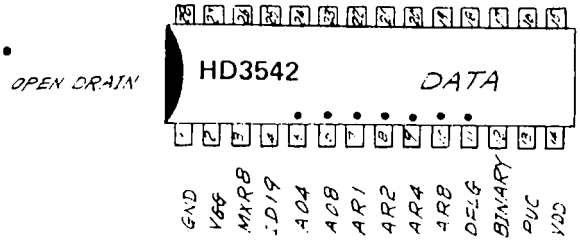
INTERNAL CIRCUIT, SIGNAL & PIN LOCATIONS OF SEMICONDUCTORS-1



SN7400 **SN74L00** QUADRUPLE 2-INPUT POSITIVE-NAND GATES

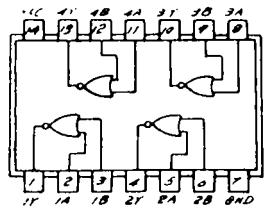
Positive logic:
$Y = \overline{AB}$

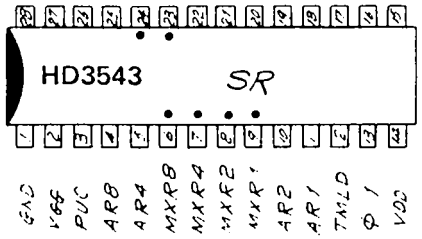




SN7402 QUADRUPLE 2-INPUT POSITIVE-NOR GATES

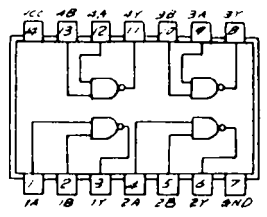
Positive logic:
$Y = \overline{A+B}$

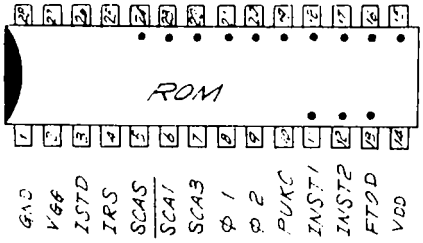




SN7403 QUADRUPLE 2-INPUT POSITIVE-NAND GATES WITH OPEN-COLLECTOR OUTPUTS

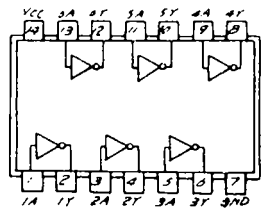
Positive logic:
$Y = \overline{AB}$



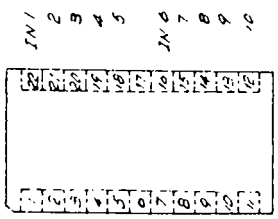


SN7404 **SN74L04** HEX INVERTERS

Positive logic:
$Y = \overline{A}$

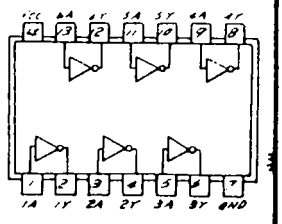


KH6270



SN7405 HEX INVERTERS WITH OPEN-COLLECTOR OUTPUTS

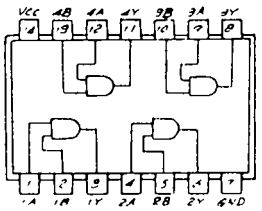
Positive logic:
$Y = \overline{A}$



INTERNAL CIRCUIT, SIGNAL & PIN LOCATIONS OF SEMICONDUCTORS-2

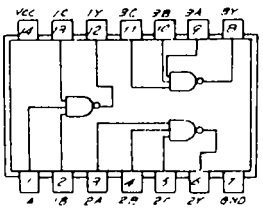
SN7408 QUADRUPLE 2-INPUT POSITIVE-AND GATES

positive logic
$Y = AB$



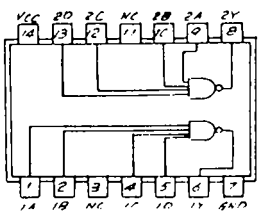
SN7410 TRIPLE 3-INPUT POSITIVE-NAND GATES

positive logic
$Y = \overline{ABC}$



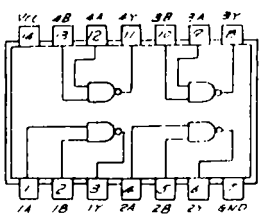
SN7420 DUAL 4-INPUT POSITIVE-NAND GATES

positive logic
$Y = \overline{ABCD}$



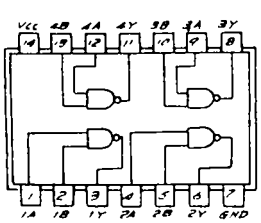
SN7426 QUADRUPLE 2-INPUT HIGH VOLTAGE INTERFACE POSITIVE-NAND GATES

positive logic
$Y = \overline{AB}$

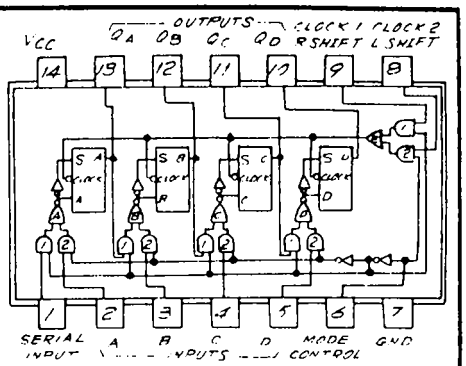


SN7437 QUADRUPLE 2-INPUT POSITIVE-NAND BUFFERS

positive logic
$Y = \overline{AB}$



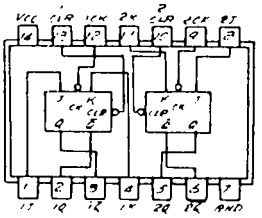
SN7495A



SN74107 DUAL J-K MASTER-SLAVE FLIP-FLOPS WITH CLEAR

FUNCTION TABLE

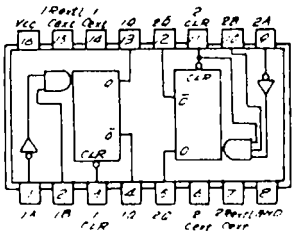
INPUTS				OUTPUTS	
CLEAR	CLOCK	J	K	Q	$\bar{Q}$
L	X	X	X	L	H
H	⊓	L	L	Q_0	$\bar{Q}_0$
H	⊓	H	L	H	L
H	⊓	L	H	L	H
H	⊓	H	H	TOGGLE	



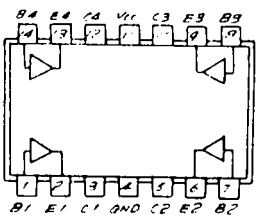
SN74123 DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS WITH CLEAR

FUNCTION TABLE

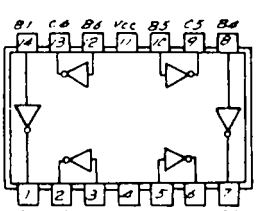
INPUTS			OUTPUTS	
CLEAR	A	B	Q	$\bar{Q}$
L	X	X	L	H
X	H	X	L	H
X	X	L	L	H
H	L	↑	⊓	⊔
H	↓	H	⊓	⊔
↑	L	H	⊓	⊔



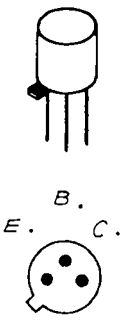
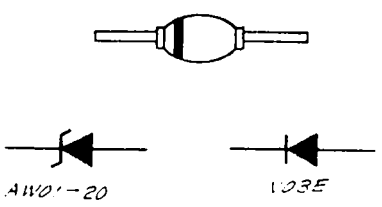
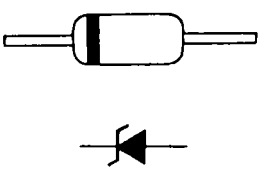
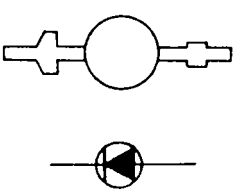
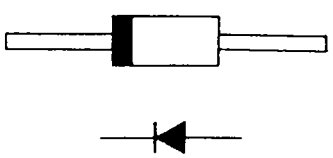
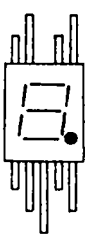
SN75491 ANODE DRIVER (SGEMENT)



SN75492 CATHODE DRIVER (DIGIT)



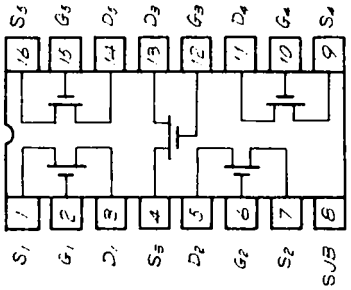
INTERNAL CIRCUIT, SIGNAL & PIN LOCATIONS OF SEMICONDUCTORS-4

2SC708  	AW01-20 & V03E (ZD9V) 
2SC1061  	EQA01-10S (ZD10V) 
2SC1213  	RD9A & EQB01-08 (ZD8.0V) (ZD8.5V) 
2N5447  	HE1105 
1S1588 	LED 

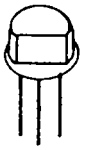
INTERNAL CIRCUIT, SIGNAL & PIN LOCATIONS OF SEMICONDUCTORS-3

HD3103P

5-MOS FETs



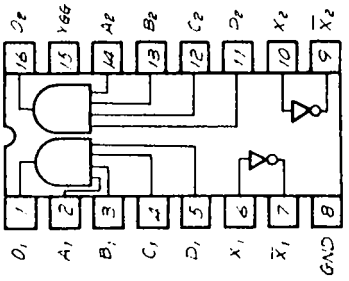
2SA495



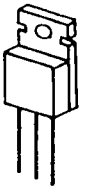
E . C . B .

HD3104P

Dual 4-input AND Gates +2-inverters



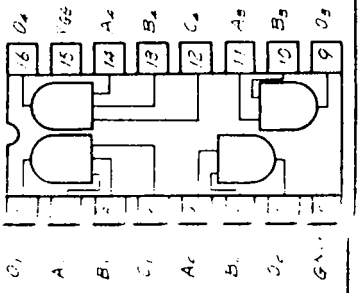
2SA671



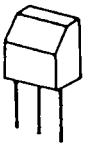
B . C . E .

HD3226P

Dual 2-input +Dual 3-input AND Gates



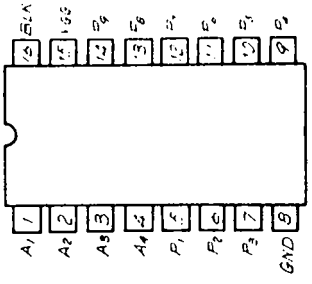
2SA673



E . C . B .

HD3280P

Programable Display Decoder

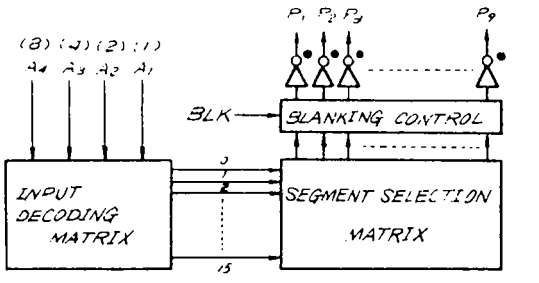


2SC372

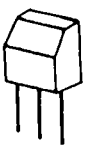
E . C . B .

BLOCK DIAGRAM

• OPEN DRAIN



2SC641



E . C . B .

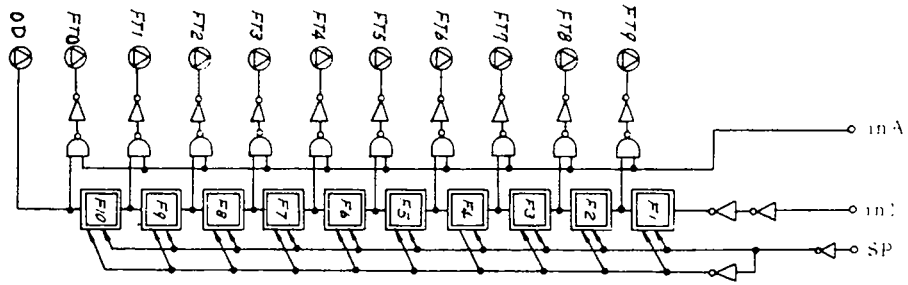
Signal	Level	Signal Description	信　　号　　説　　明
A01 A02 A04 A08		Weight 1 Weight 2　Indication signal for SA～SG & SP. Weight 4 Weight 8	重み 1 重み 2 重み 4 重み 8　SA～SGとSPをつくる.
AR1 AR2 AR4 AR8		Weight 1　(1)　Data bus for AR→MXR. Weight 2 Weight 4 Weight 8　(2)　Indication signal for A01～A08.	重み 1 重み 2 重み 4 重み 8　(1) AR→MXRのデータ・バス (2) A01～A08をつくる.
BLK		Prevent double image.	点灯もれ防止
$\overline{CA}$	1	(1)　Carry. (2)　Borrow. (3)　Data coincidence of a digit of AR with DRor ER.	(1) キャリー (2) ボロー (3) ARとDRまたはERの内1桁データの一致を検出する.
CARTRIDGE LOAD		Detect whether cartridge inserted in position.	カードリッジが挿入されたことを検出する.
CGOUT1 CGOUT2	0 0	Emitted three times to generate DT1～DT35 to designate heater elements of TPH according to character to be printed out.	印字されるキャラクタにしたがって，TPHのヒータ・エレメントを指定するためにDT1～DT35信号をつくる. 1つのキャラクタを印字するために，CGOUT1とCGOUT2信号はROMCGから3回発生される.
CONT	0	Control signal to obtain intermediate result of multiplication, division or square root by a micro-instruction.	1つのマイクロ命令によって，乗，除または開平算の部分根を求めるための制御信号
CP1 CP2		Basic clock pulses.	クロック・パルス
CRS	1	Activate CR solenoid to raise TPH.	TPHをおこすためにCRソレノイドを動作する.
CS1		Terminal to select 3rd digit of address(N1) which consists of 4-digit to designate each register in program/memory area.	プログラム／メモリ・エリア内のシフト・レジスター・チップ内のそれぞれのレジスタには4桁で構成されるアドレスがついている. CS1のアドレスの3桁目を選択する端子で，TD信号が加えられる.
CS10		Terminal to select 4th digit or page of address(N0).	アドレスの4桁目またはページを選択する端子でTD信号が加えられる.
DFLG	0	Data coincidence of two digits of AR with DR or ER.	ARとDRまたはERの内，2桁データの一致を検出する.
Di1 Di19		Display digit selection.	表示の桁選択

Signal	Level	Signal Description	信　号　説　明
DL		Decimal point position except F.	F以外の位置の小数点ダイヤル
DT1 ～ DT35		Select heater element of TPH.	TPHのヒータ・エレメント選択
Dϕ0 ～Dϕ3 DϕW1&DϕW2		Move TPH.	TPH移動
Fa ～ Fc	0	Read PCR/EDM. R01→ Fa → MZR1 → AR → MXR. R02→ Fc → MZR2 → AR → MXR. R03→ Fb → FROS1 → FROS2.	読み出し演算において，下記に示す記号の流れの途中記号 R01 → Fa → MZR1 → AR → MXR R02 → Fc → MZR2 → AR → MXR R03 → Fb → FROS1 → FROS2
FFA FFB	1 1	Select various mode LED.	各モードのLEDを点灯する.
FLG1		Flag bus 1 detects following states.	フラッグ・バス1記号で，下記のことを検出する.
	TD0	Decimal point set at F.	小数点ダイヤルがFの位置
	TD1 TD2	Angle switch set at GRAD(TD1+TD2),DMS. (TD2), RAD(TD1) or DEG(no TD).	アングル・スイッチの検出（GRAD = $TD_1 + TD_2$, DMS（TD2）, RAD(TD1), DEG(TDなし)
	TD3	Round-off switch at ⌊	四捨五入スイッチが⌊の位置
	TD4	Round-off switch at 5/4.	四捨五入スイッチが5/4の位置
	TD5	Clock pulse frequency at 455 KHz approx.	クロック・パルスの周波数が約455 KH_Z
	TD6	PRINTER OFF not locked at any mode except DBG.	PRINTER OFF がロックされない．ただし，DBGモードは除く．
	TD7	INSERT locked.	INSERT がロックされた.
	TD12 (X1)	Discriminate whether SX300 type or SX100.	SX300とSX100を区別させる.
	TD13 (PP)	Discriminate whether program area is more than one page or not.	プログラム・エリアが一ページ以上であることを検出する.
	TD14 (PM)	Discriminate whether memory area is more than one page or not.	メモリ・エリアが一ページ以上であることを検出する.
	TD15	Detect DFLG signal being "1".	DFLG信号が"1"になったことを検出する.
	TD16	Discriminate whether function pack is inserted or not.	ファンクション・パックが計算機に挿入されたことを検出する.

Signal	Level	Signal Description		信　　号　　説　　明
FLG1		TD17 (D.E)	Inhibit to print characters for AC100V machine.	海外向け計算機に使用される。 （輸出される計算機においてカタカナの印字を禁止する。）
		TWE	Printer in operation.	プリンタ動作中
FLG2		Flag bus 2 detects following states.		フラッグ・バス2信号で，下記のことを検出する。
		TD0	Write protection of magnetic card/cartridge.	書き込み禁止された磁気カード／カートリッジ
		TD1	[PAPER FEED] pressed.	[PAPER TEED] が押された。
		TD2	[PROG SELECT] locked & [arc], [sin], [cos], [tan], [$a^{0'11''}$] or [e^x] pressed.	[PROG SELECT] がロックされ，[arc]，[sin]，[cos]，[tan]，[$a^{0'11''}$] または [e^x] が押された。
		TD3	Start write/read operation.	書き入み／読み出し演算のスタート
		TD4	Detect write/read operation of a digit.	1桁情報の書き込み／読み出し演算終了
		TD5	[DATA TRANS] not locked.	[DATA TRANS] がロックされていない。
		TD6	TPH at halt position.	TPHが基点にいる。
		TD7	TPH at buffer position.	TPHが緩衝点にいる。
		TD11	Discriminate whether ROM of I/O except typewriter is working or not.	タイプライタを除いたI／O制御用ROMが動作中であることを検出する。
		TD16 (FU)	Inhibit overflow when data enters 15th digit in round-off operation.	四捨五入／切り上げされたデータの桁数が14より大きい場合オーバ・フローを禁止するためのTD16信号であるが，日本国内に出荷される計算機はこの信号を接続されていない。
		TD18	Timing signal to detect encoded signal in key buffer of control chip.	コントロール・チップ内のキーバッファに，キー信号があるかどうかを検出するタイミング信号として使用される。
		TWE	Timing signal to detect overflow.	オーバ・フロー検出のタイミング信号として使用される。

Signal	Level	Signal Description	信　号　説　明
FLR	1	Control direction of TPH travel. FLR: 0 → FDØCOUNTER: ADD → TPH TRAVEL: RIGHT FLR: 1 → FDØCOUNTER: SUBTRACT → TPH TRAVEL: LEFT	TPHの移動方向を決める. FLR: 0 → FDØカウンタ: 加算 → 移動: 右 FLR: 1 → FDØカウンタ: 減算 → 移動: 左
FMTR	0	(1) Supply + 5V to + terminal of motor in PCR. (2) Activate motor & plunger solenoid of EDM.	(1) PCR内のモータ＋端子に＋5Vを加える. (2) EDM内のモータとプランジャーを動作させる.
FOSHT	0	(1) Apply heat to TPH. (2) Set FOSRS to shift TPH one digit.	(1) TPHをヒートさせる. (2) 印字後TPHを1桁移動させるために, FOSRSをセットする.
$\overline{D01}$,$\overline{D02}$ $\overline{D04}$,$\overline{D08}$ $\overline{D10}$,$\overline{D20}$ $\overline{D40}$,$\overline{D80}$	1	Data to be transferred to I/O device.	メモリ・ボックスを除いたI/O機器へ送られるデータ
FOSSH	0	(1) Shift TPH in raised state one digit to right or left according to FLR. (2) Add or subtract one to FDØcounter for TPH travel.	(1) おこされている状態のTPHを, 右または左に1桁移動する. (2) TPH移動のために, FDØカウンタに＋1または－1を行なう.
FOSRS	0	Shift TPH in lowered state one digit.	おかされている状態のTPHを1桁移動する.
FRDS	0	2-digit read operation.	2桁毎の読み出し演算の実行
FRED	0	Read operation.	読み出し演算の実行
FROS2	0	Read clock pulse.	読み出し演算用クロック・パルス
FT0 ～ FT9		Output terminal of 10-bit shift register in ROMs. (See in1 signal)	ROM内にある10ビット・シフト・レジスタの出力端子 (in1信号参照)
FWOS	0	2-digit write operation.	2桁毎の書き込み演算の実行
FWR	0	Discriminate write or read operation.	書き込みまたは読み出し演算の判断
FWRT	0	Write operation.	書き込み演算の実行
ID19		Timing pulse for display & W-CLOCK (See P.90).	表示とW-CLOCKをつくるタイミング信号 (90頁参照)
inA		Inhibit terminal of FT0～FT9 of 10-bit shift register in ROMs. (See in1 signal)	ROM内にある10ビット・シフト・レジスタの出力信号をインヒビットする端子 (in1信号参照)

Signal	Level	Signal Description	信　号　説　明
inl		Input terminal of 10-bit shift register in ROMs.	ROM内にある10ビット・シフト・レジスタの入力端子

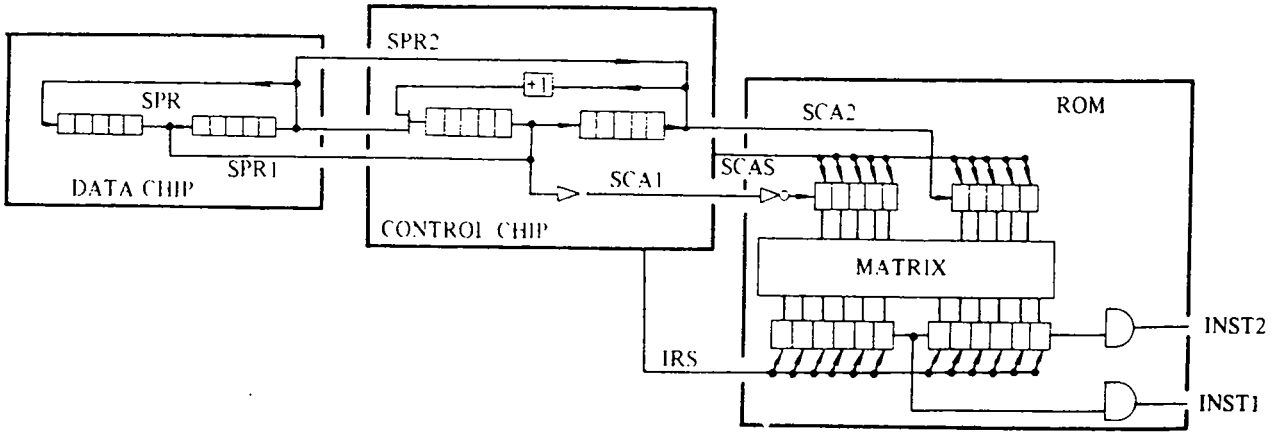


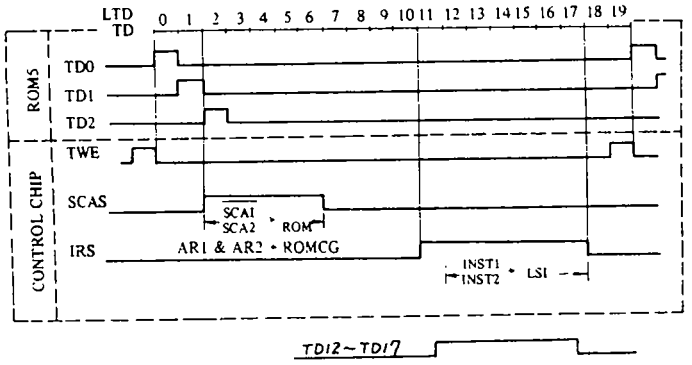
10-bit shift register in ROMs

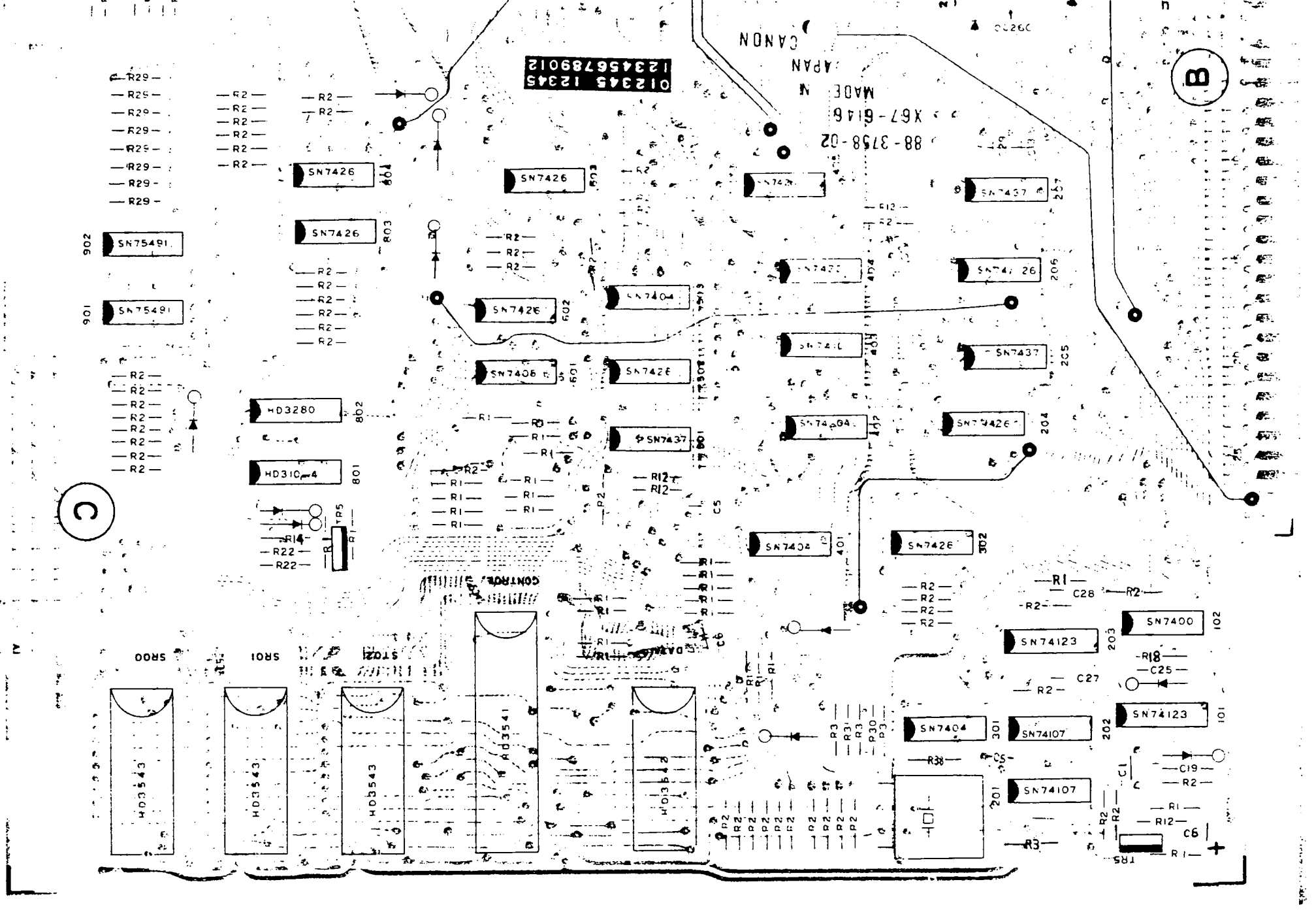
$\overline{\text{INH2}}$	1	Inhibit ROM2 and select three ROM chips of function pack.	ROM2を禁止して，ファンクション・パック内のROMを選ぶ
$\overline{\text{inh MAG}}$	1	Inhibit EDM during operation of I/O device.	I/O動作中，EDMを禁止する．
INST1 INST2	0 0	Micro-instruction.	マイクロ命令
IO1 IO2 IO4	0 0 0	Weight 1 Weight 2 Weight 4 Generates control bus $\overline{\text{iocl}}$, $\overline{\text{ioc2}}$, ioc3, $\overline{\text{ioc6}}$ or $\overline{\text{ioc7}}$ signal.	重み1 重み2 重み4 コントロール・バスの $\overline{\text{iocl}}$, $\overline{\text{ioc2}}$, ioc3, $\overline{\text{ioc6}}$ または $\overline{\text{ioc7}}$ 信号をつくる．
$\overline{\text{iocl}}$ MAG-$\overline{\text{iocl}}$	1	Control PCR/EDM controller as follows.	PCR/EDM・コントローラをTD信号のタイミングにしたがって，次のように制御する．
		TD0 Set FRED.	TD0 FREDをセットする．
		TD1 Reset FWRT & FRED.	TD1 FWRTとFREDをリセットする．
		TD2 Set FMTR.	TD2 FMTRをセットする．
		TD3 Reset FMTR & FWR.	TD3 FMTRとFWRをリセットする．
		TD4 Set FWRT & FWOS.	TD4 FWRTとFWOSをセットする．
		TWE Set FRDS.	TWE FRDSをセットする．
$\overline{\text{ioc2}}$	1	Control printer controller as follows.	プリンタ・ユニット・コントローラをTD信号のタイミングにしたがって，次のように制御する．
		TD0 Set FOSHT.	TD0 FOSHTをセットする．
		TD1 Set FOSRS.	TD1 FOSRSをセットする．
		TD2 Set FLR.	TD2 FLRをセットする．
		TD3 Set FOSSH.	TD3 FOSSHをセットする．
		TD4 Reset FLR.	TD4 FLRをリセットする．
		TWE Feed paper one space.	TWE 記録紙を1行送る．

Signal	Level	Signal Description	信　号　説　明
ioc3	0	Transfer data of 1st & 2nd digit of AR to I/O device through $\overline{D01}$ ～ $\overline{D80}$.	$\overline{D01}$～$\overline{D80}$を通して，ARの1桁目と2桁目のデータをI/O(メモリ・ボックスは除く)に送る.
$\overline{ioc6}$	1	Clear memory area by pressing [C] & then [C ALL] at OPE mode or auto-clear at any mode.	次のときに，メモリ・エリアをクリアする. (1) OPEモードにおいて，[C]に続いて，[C ALL]を押す. (2) オート・クリア
$\overline{ioc7}$	1	Clear program area by pressing [C] & then [C ALL] at LRN mode or auto-clear at any mode.	次のときに，プログラム・エリアをクリアする. (1) LRNにおいて，[C]に続いて，[C ALL]を押す. (2) オート・クリア
IRS		Transfer CGOUT1 & CGOUT2 signals to ROMCG or INST1 & INST2 signals to every chip except ROM.	(1) CGOUT1とCGOUT2信号をROMCGに転送する. (2) INST1とINST2信号をLSIに転送する.
ISTD		Transfer INST2 signal to every ROM except ROMCG.	INST2信号をROMCGを除いたROMに転送する.
KB1 KB2 KB3 KB4 KB10 KB20	0 0 0 0 0 0	Recall micro-program when any key is pressed or power is switched on.	キーを押したときまたは電源スイッチをONにしたとき，マイクロ・プログラムを呼び出す.
$\overline{KC}$	1	[C] signal.	C¦信号
LHT	0	Transfer DT1～DT35 signals to TPH.	DT1～DT35信号をTPHに送る.
$\overline{LRD}$		Detect TPH at halt or buffer position.	TPHが基点または緩衝位置にいることを検出する.
LSTDTR	0	(1) Transfer CGOUT1 signal to 10-bit shift register in ROMCG and register's data to ROM0. (2) Transfer CGOUT2 signal to 10-bit shift register in ROM1 and register's data to ROM2.	(1) CGOUT1信号をROMCG内の10ビット・シフト・レジスタに転送する．このレジスタ内の情報をROMOに送る. (2) CGOUT2信号をROM1内の10ビット・シフト・レジスタに転送する．このレジスタ内の情報をROM2に送る.
LTD0 ～ LTD9		Basic timing pulses (See Page. 89)	基本タイミング信号(89頁参照)
MAG-$\overline{ioc1}$	1	See $\overline{ioc1}$ signal	ioc1信号参照
MOTOR	0	Rotate EDM motor.	EDMのモータを回転する.
M+		Supply +9V voltage for motor PCR/EDM and for plunger of EDM.	PCR／EDM内のモータ電源 EDMのプランジャ電源　(+9V)

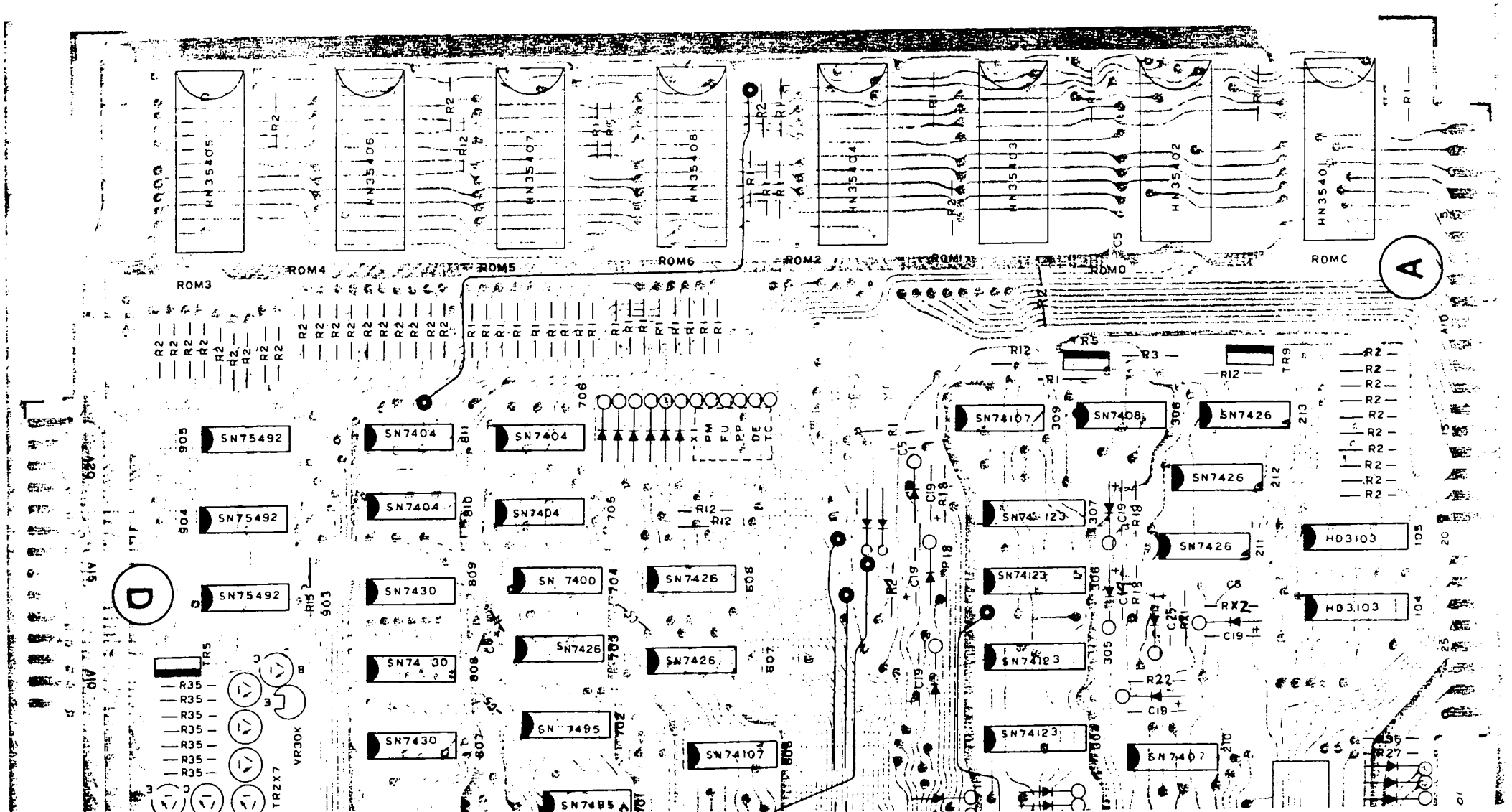
Signal	Level	Signal Description	信　　号　　説　　明
OD		Output terminal of last bit of 10-bit shift register in ROMs.	ROM内 10ビット・シフト・レジスタの10ビット目の出力端子
P	1	With S signal detect cut corner of magnetic card.	S信号を組み合わせて，マグ・カードの書き込み禁止を検出する.
PLUNGER	0	Activate plunger in EDM.	EDM内のプランジャを動作する.
PHT	0	Common voltage of TPH.	TPHの駆動電源
PRS	1	Activate P solenoid to lower TPH for printing.	印字のとき，TPHをねかすため，Pソレノイドを動作させる.
PUC	0	Auto-clear.	オート・クリア
PUC+ioc6		See $\overline{ioc6}$	$\overline{ioc6}$ 参照
PUC+ioc7		See $\overline{ioc7}$	$\overline{ioc7}$ 参照
PUKC	0	(1) Auto-clear. (2) [C] pressed.	(1) オートクリア (2) [C] 信号
Pø1 ～ Pø4		Rotate stepping motor for paper feed.	紙送り用のステッピング・モータを回す.
QP	0	Execute micro-instruction.	マイクロ命令の実行
S	0	(1) Start write/read operation for magnetic card unit. (2) With P signal detect cut corner of magnetic card.	(1) 磁気カード・ユニット書き込み／読み出し演算スタート (2) P信号を組み合わせて，マグ・カードの書き込み禁止を検出する.
SENSING	0	Detect write/read start position of magnetic tape.	カートリッジの書き込み／読み出し演算のスタート位置検出
SPR1 SPR2		Designate jump address of micro-program.	マイクロ・プログラムの実行中，ジャンプアドレスを指定する.

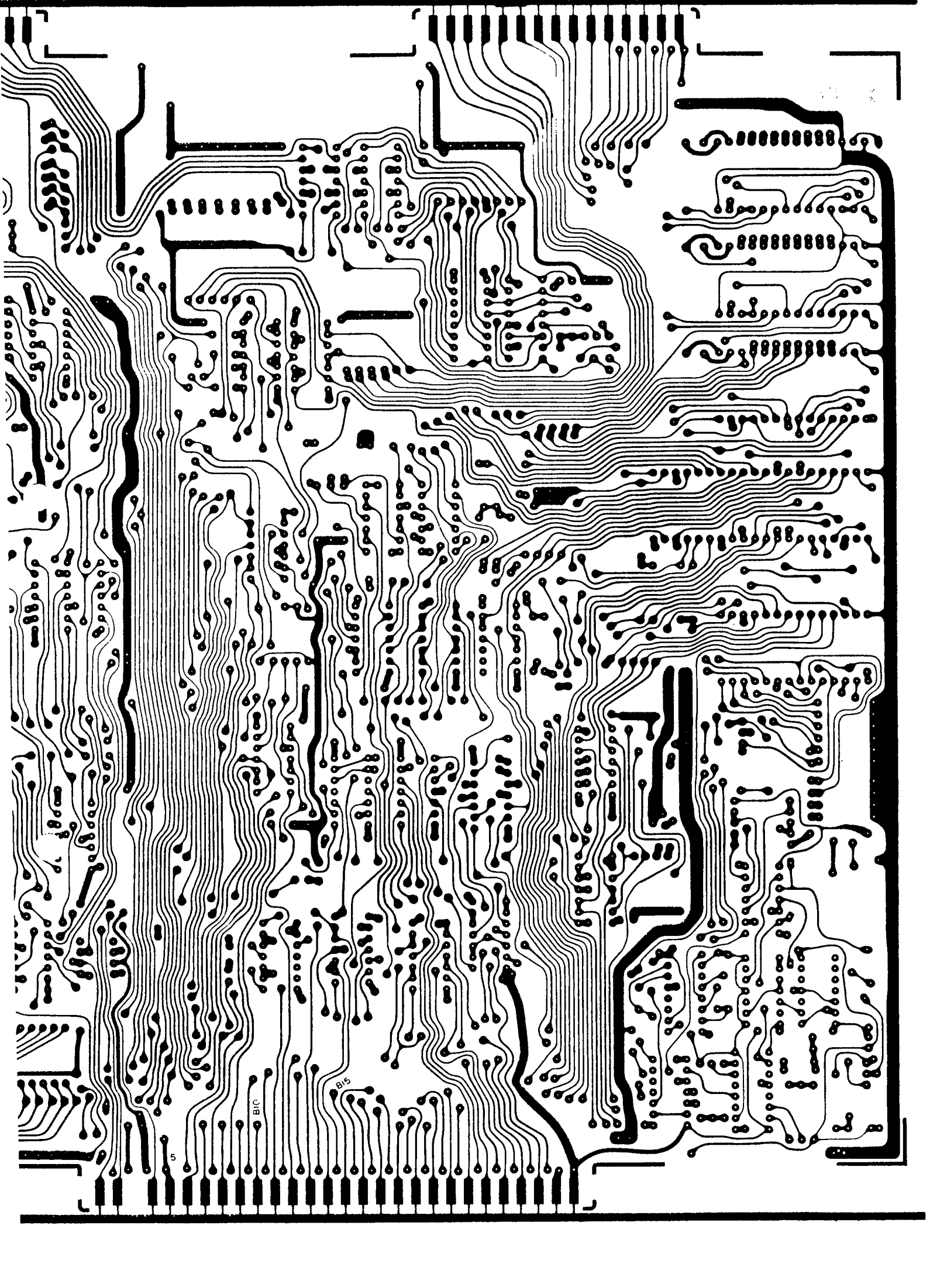


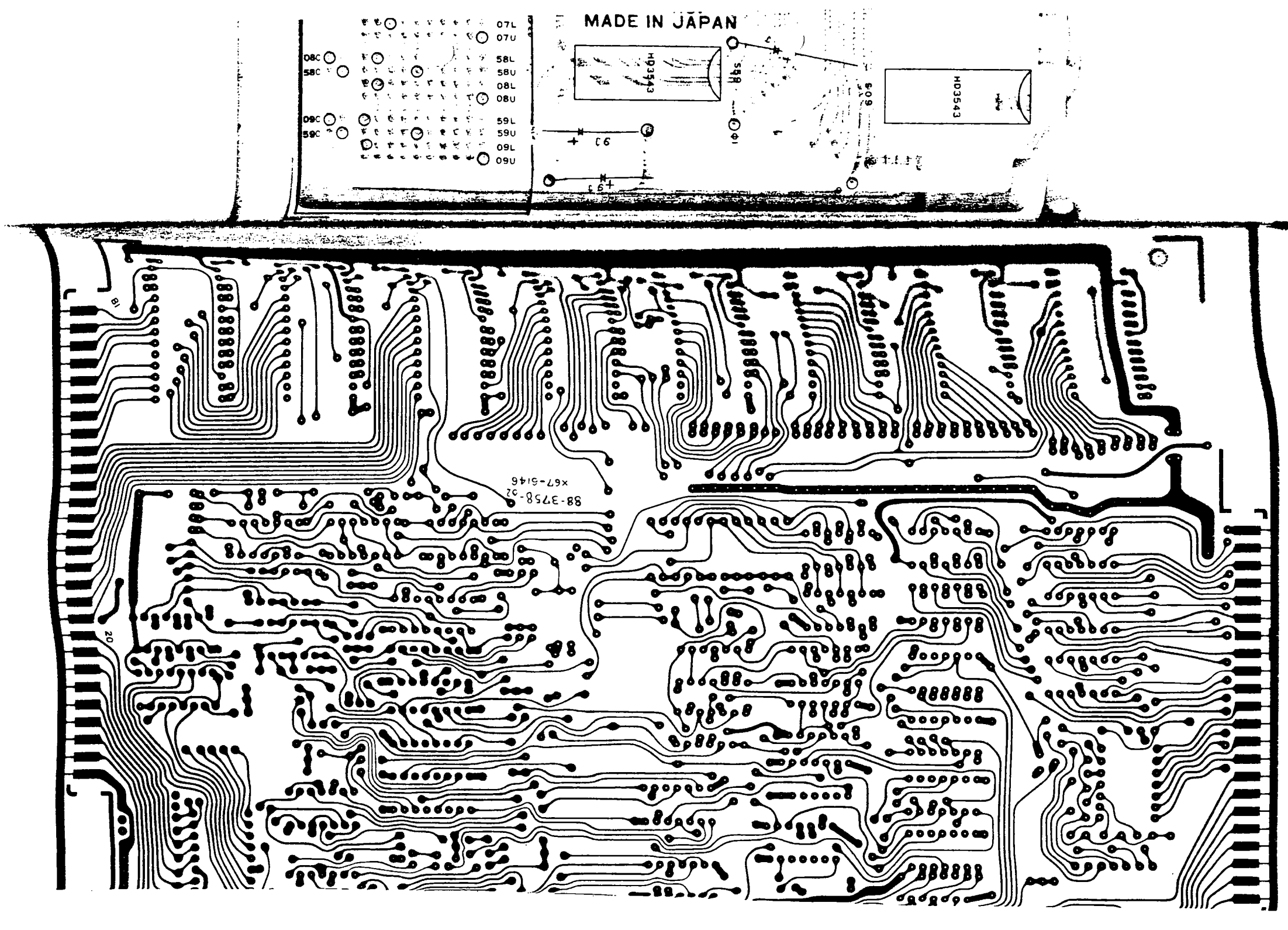
Signal	Level	Signal Description	信　　号　　説　　明
$\overline{SCA1}$ SCA2	1 0	Recall micro-instruction from ROM0 ～ ROM6.	ROM0～ROM6からマイクロ命令を呼び出す.
SCAS		Transfer $\overline{SCA1}$ & SCA2 signals to ROM0～ROM6.	SCA1とSCA2信号をROM0～ROM6に転送する.
SP		Clock pulse terminal of 10-bit shift register in ROMs. (See in1 signal)	ROM内10ビット・シフト・レジスタのクロックパルス用端子（in1信号参照）
TD0 ∫ TD18 LTD0 ∫ LTD9 TWE TD12 TD17		Basic timing pulses. 	基本タイミング・パルス
VCC		+5.0V	
VDD		+8.1 ～ +9.9V(Typ. +9.0V)	（Typ. はTypicalの略で標準を表わす）
VGG		+6.75 ～ +8.25V(Typ. -7.5V)	
+VOP		+10.8 ～ +13.2V(Typ. +12.0V)	
-VOP		-10.8 ～ -13.2V(Typ. -12.0V)	
VPM		-5.4 ～-6.6V(Typ. -6.0V)	
VTP		-3.6 ～ -4.4V(Typ. -4.0V)	
W	0	Change PCR/EDM to write state.	PCR/EDMを書き込み状態にセットする.
W-CLOCK		Write clock pulse.	書き込み用クロック・パルス
WRITE PROTECT		Detect whether possible to write or not for cartridge.	書き込みされたカートリッジを検出する.


SN7426
SN75491
HD3280
HD3543
SN7404
SN7437
SN74123
SN7400
SN74107
R1
R2
R3
R12
R14
R18
R22
R29
C1
C5
C6
C19
C25
C27
C28
TR5
CONTROL
DATA
SROO
SRO1
STO2
CANON
JAPAN
MADE IN
88-3758-02
X67-6146
01234 12345
1234567890123

		write clock pulse.	き込み用クロック・パルス
WRITE PROTECT		Detect whether p ible to write or not for cartridge.	書き込みされたカートリッジを検出する.




B15
B10
5


MADE IN JAPAN
HD3543
HD3543
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07U
08C
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58L
58U
08L
08U
09C
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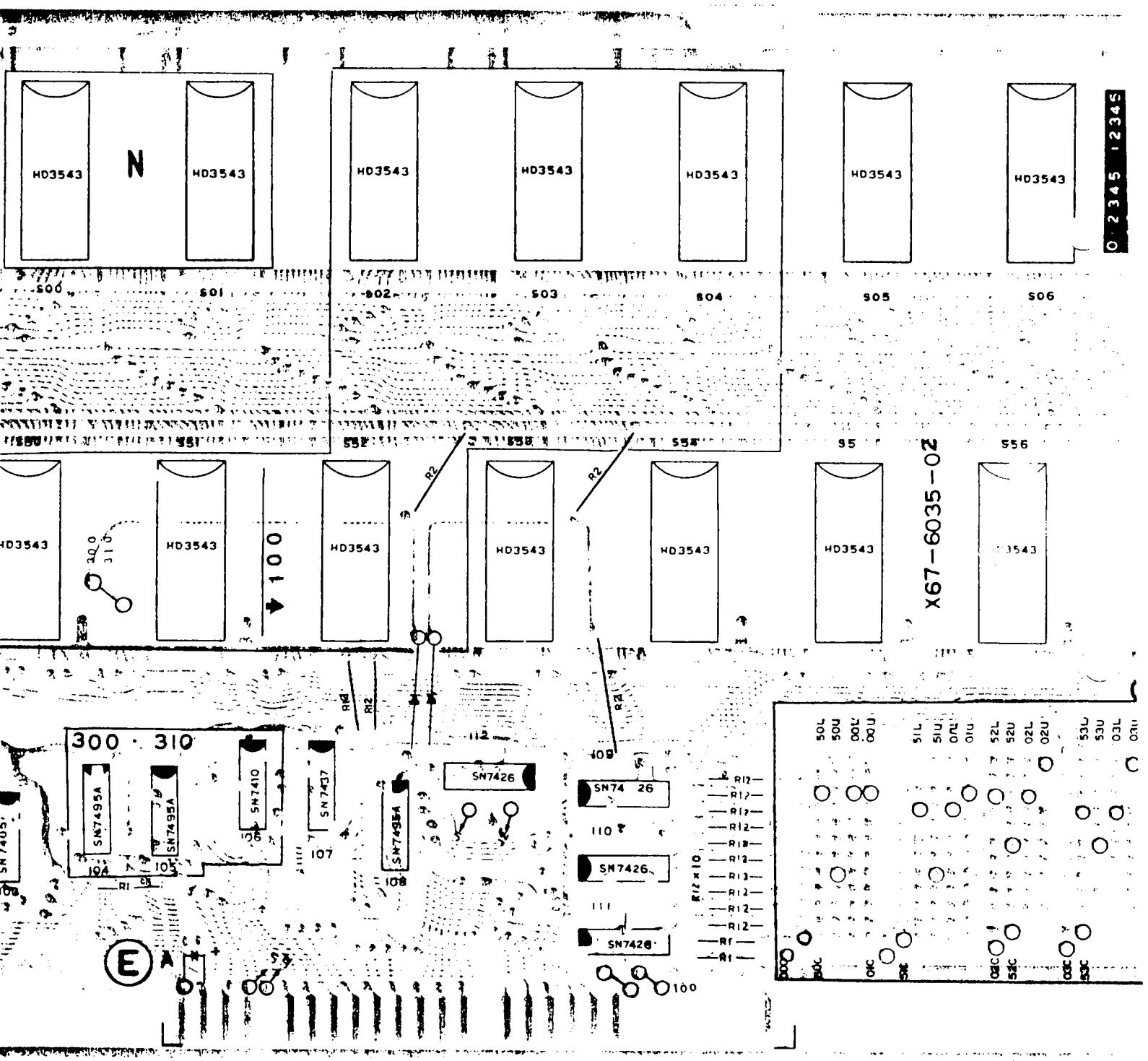
88-3758-02
x67-6146


HD3543
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S51
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S53
S54
S55
S56
0 2345 12345
X67-6035-02
100
300 310
SN7495A
SN7410
SN7437
SN7426
SN74 26
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R1
R2
R4
R12 x 10
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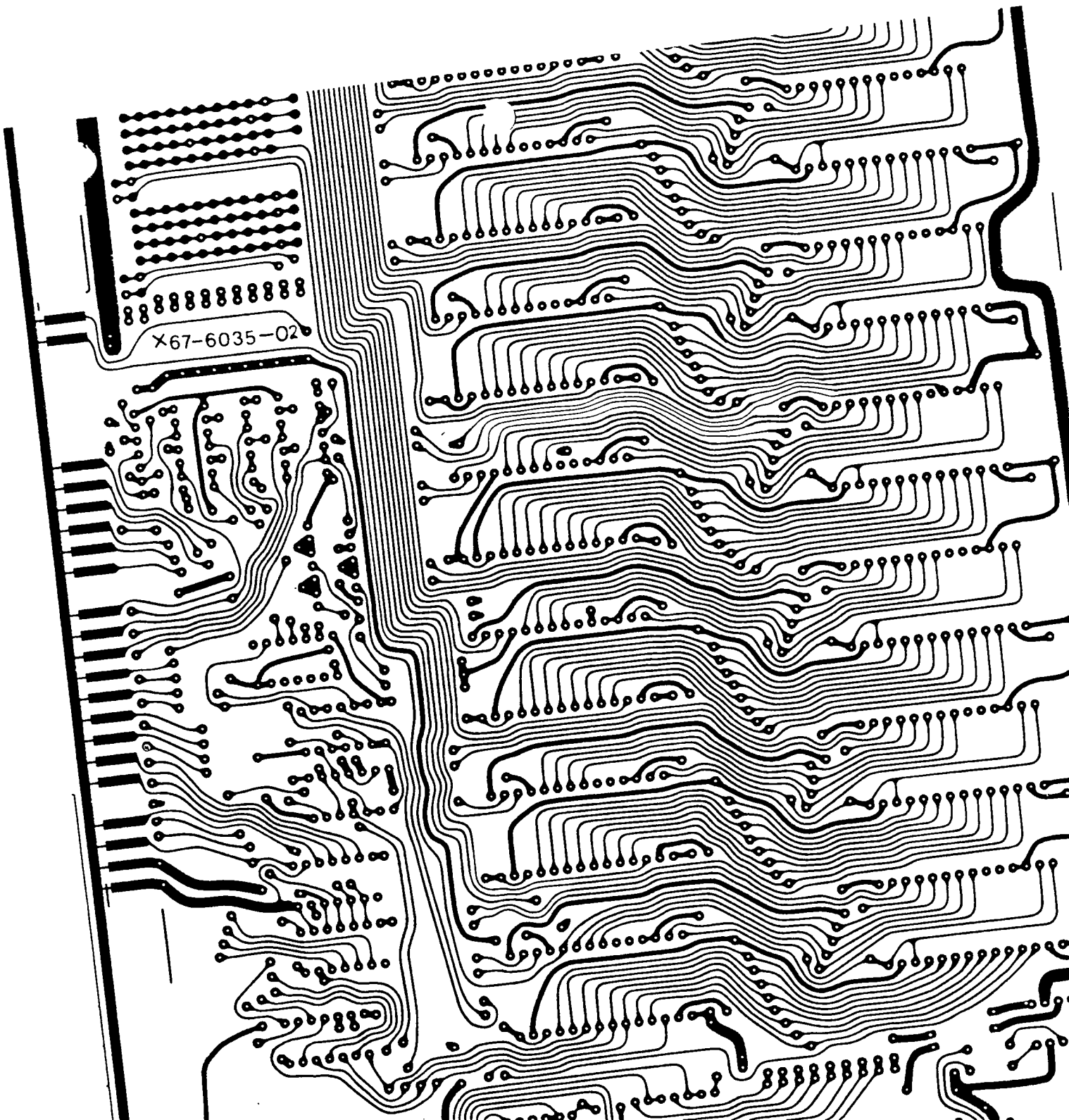
Canon INC.
MADE IN JAPAN
X67-6035-02
(CHIP SELECT)
HD3543
C6
C9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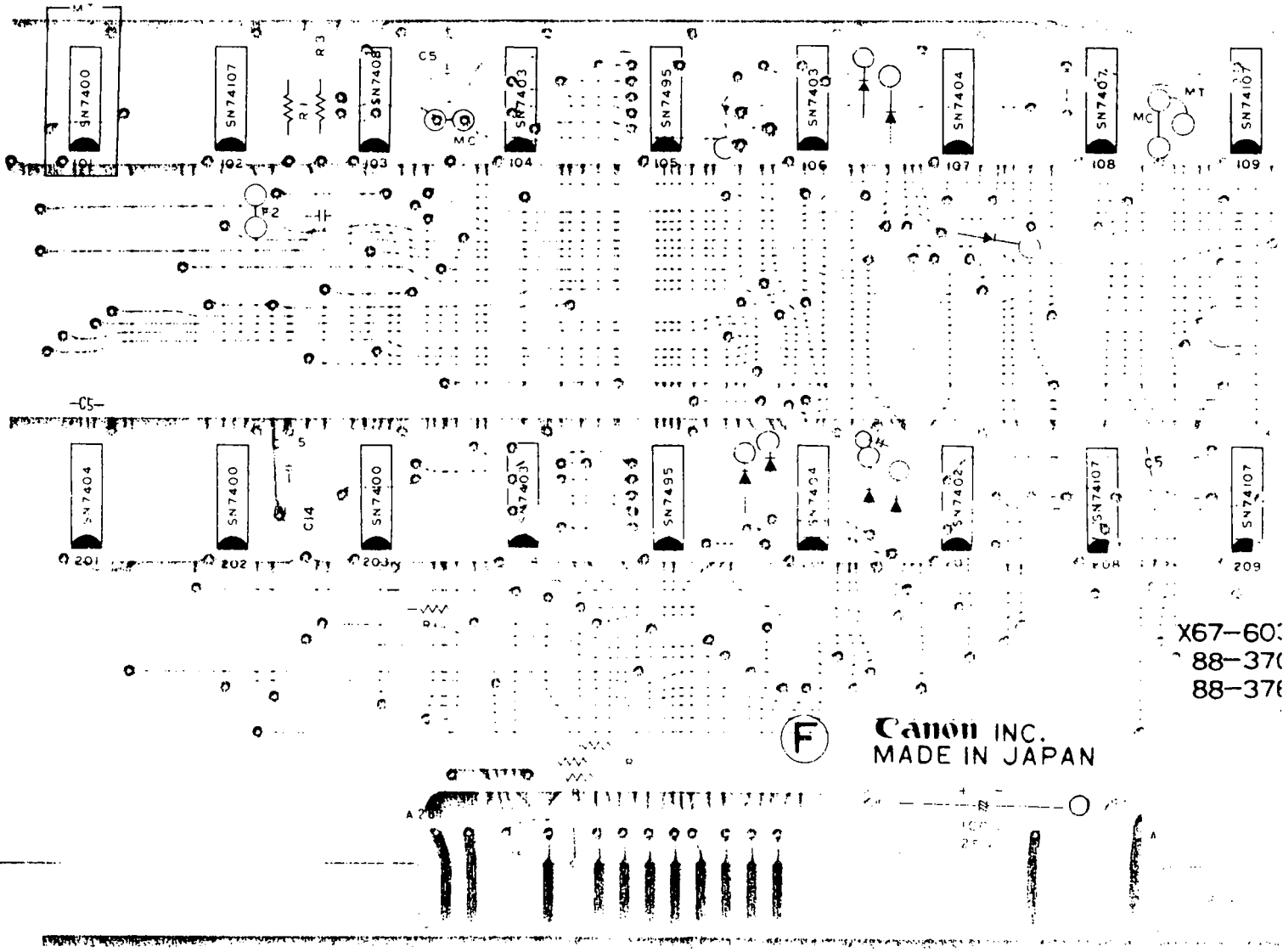
SN7400
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SN7403
SN7495
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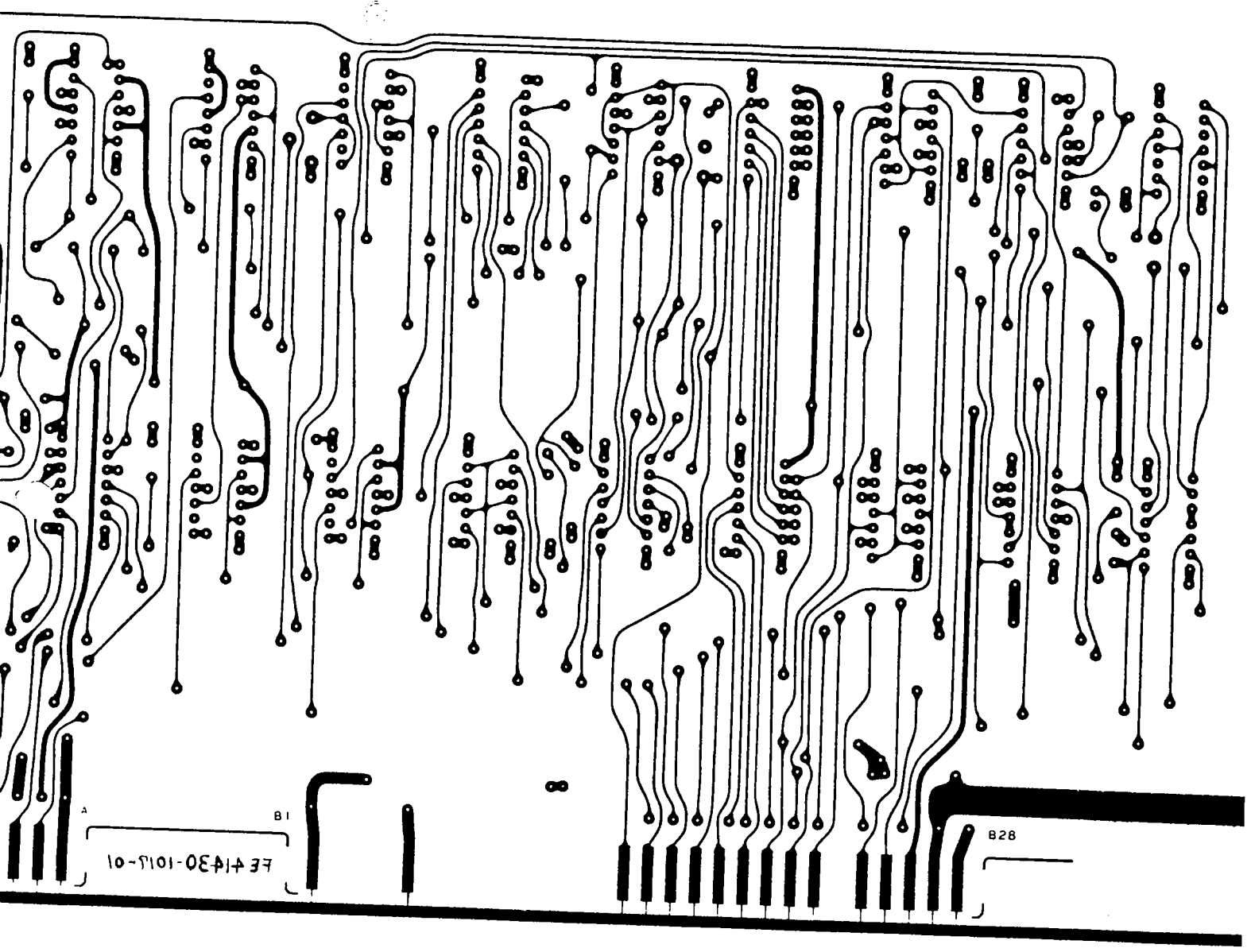
SN7402
SN74107
SN74107
C5
C14
X67-603
88-370
88-376
Canon INC.
MADE IN JAPAN

X67-6036-03
88-3706 (MC)
88-3760 (MT)
01234 12345
1234567890123
SN74107
SN7402
SN74123
SN7404
SN7400
SN7403
SN7420
R1
R2
R25
R31
R40
TR5
C14
C19
100μ 25V
4.7μ 25V
MT
MC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FE 4130-1012-01

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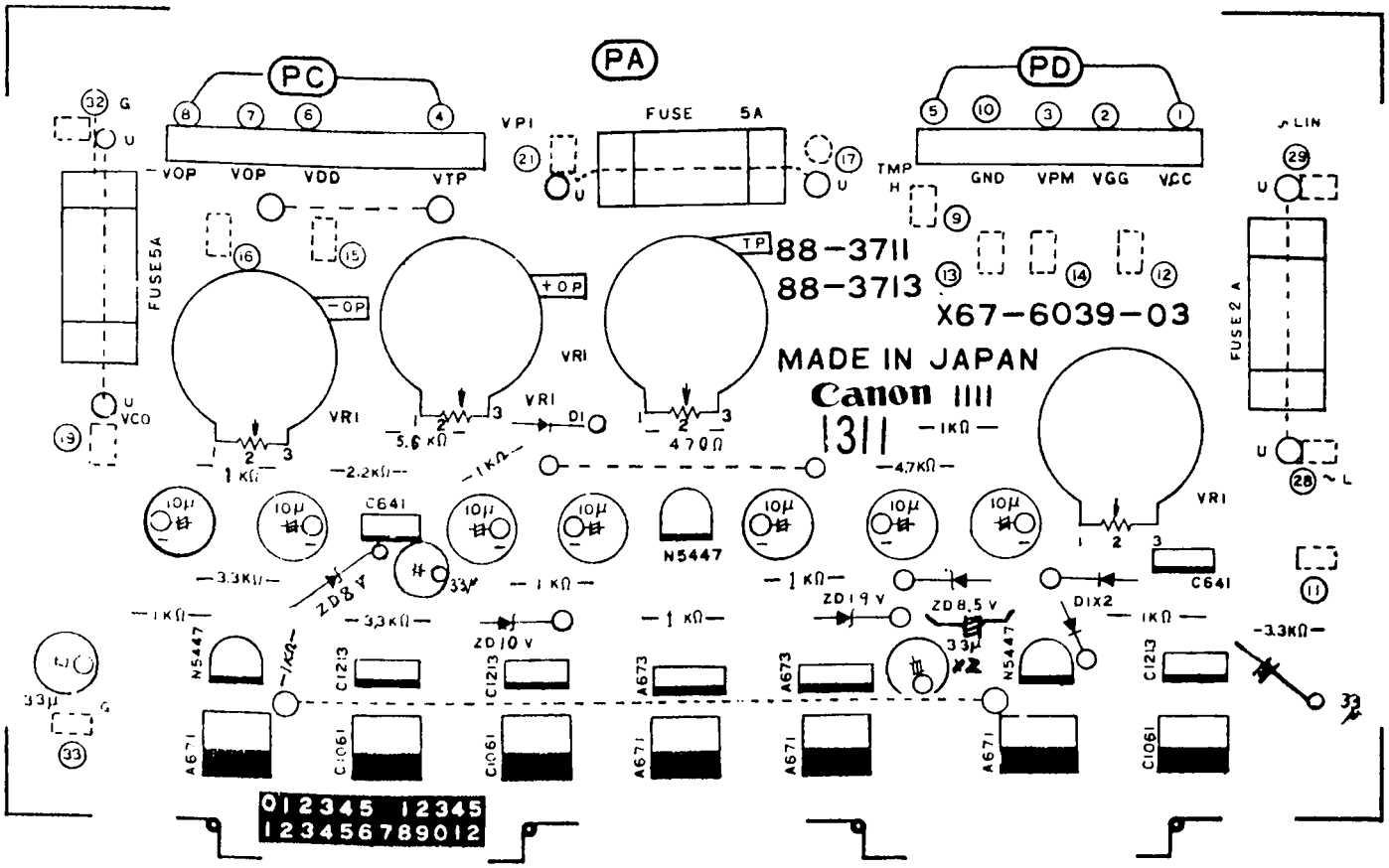
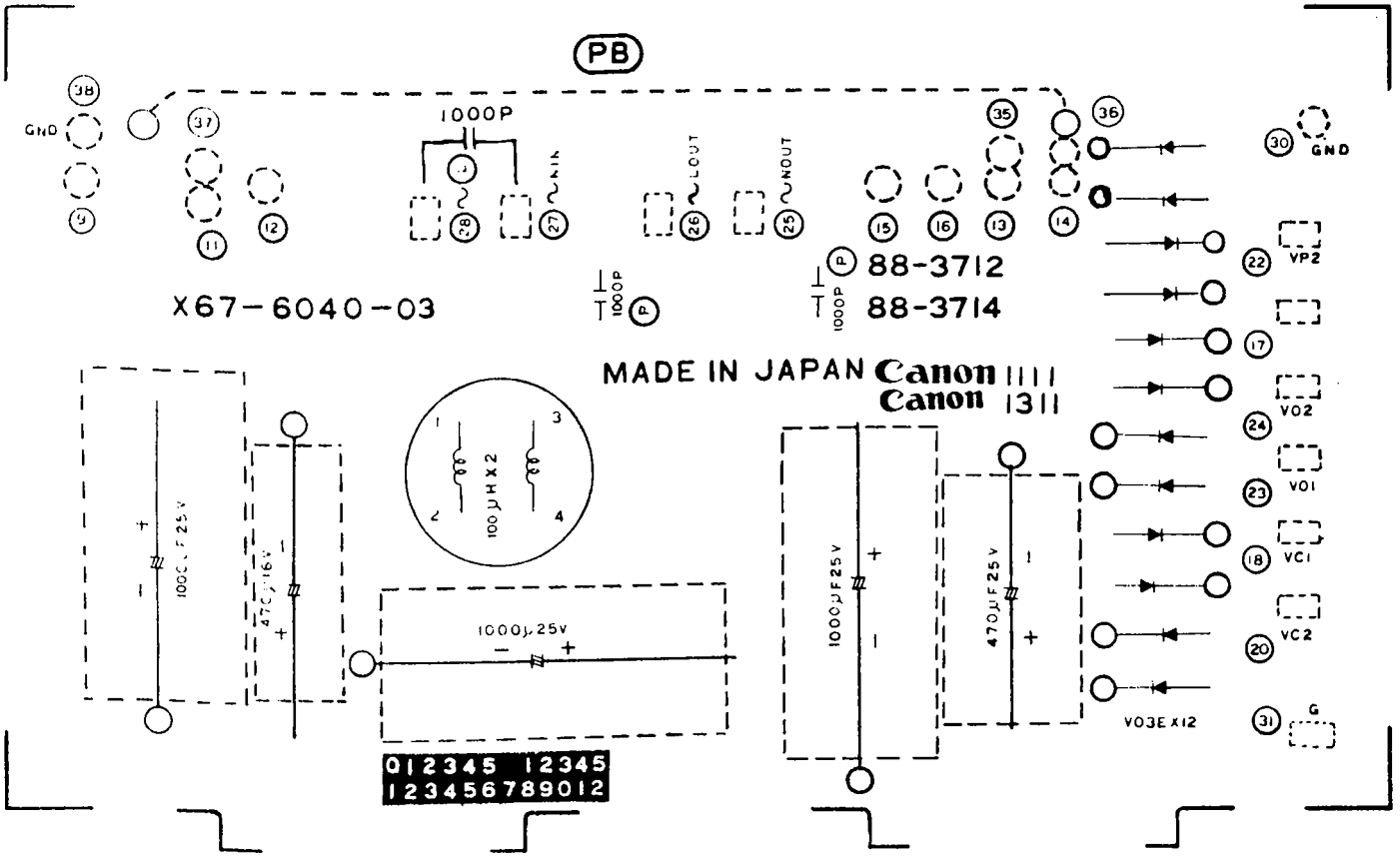
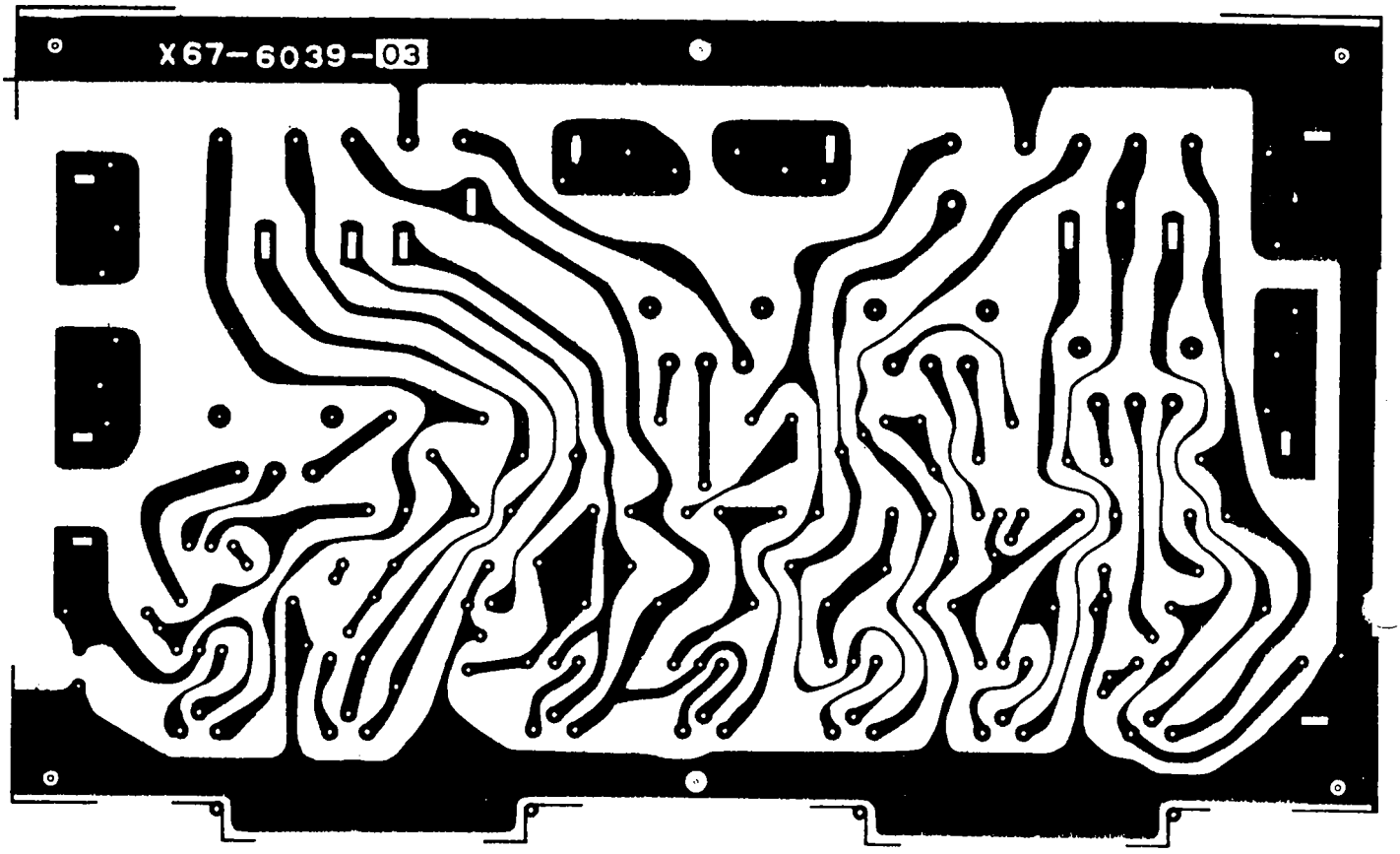
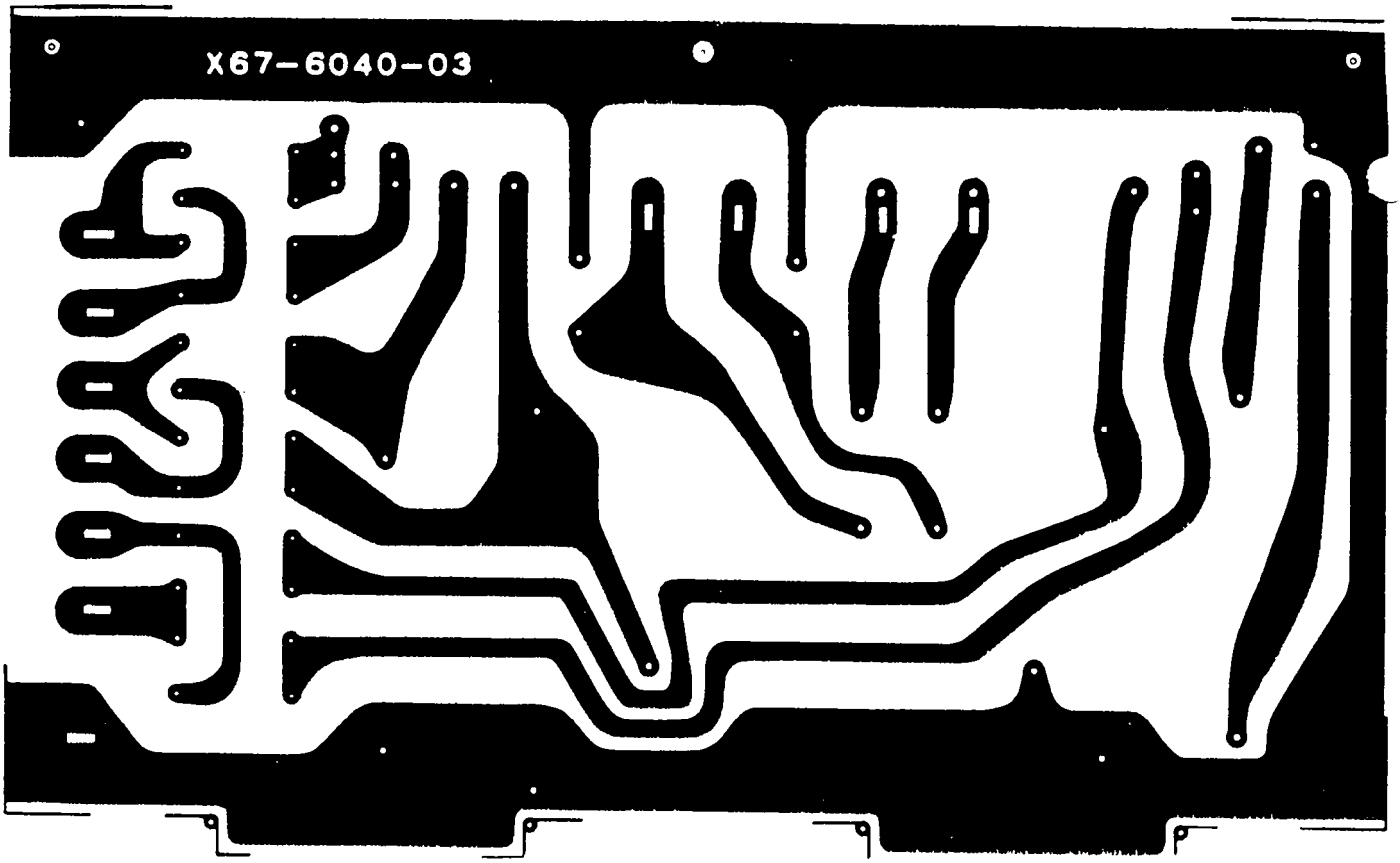
FE4430-1012-01


PA
PC
PD
FUSE 5A
VOP VOP VDD VTP
GND VPM VGG VCC
88-3711
88-3713
X67-6039-03
MADE IN JAPAN
Canon IIII
Canon 1311
FUSE5A
FUSE2 A
VCO
VRI
+OP
-OP
TP
DI
N5447
C641
ZD8.4 V
ZD10 V
ZD19 V
ZD8.5 V
DIX2
A671
A673
C1213
C1061
0 1 2 3 4 5 12345
1 2 3 4 5 6 7 8 9 0 1 2

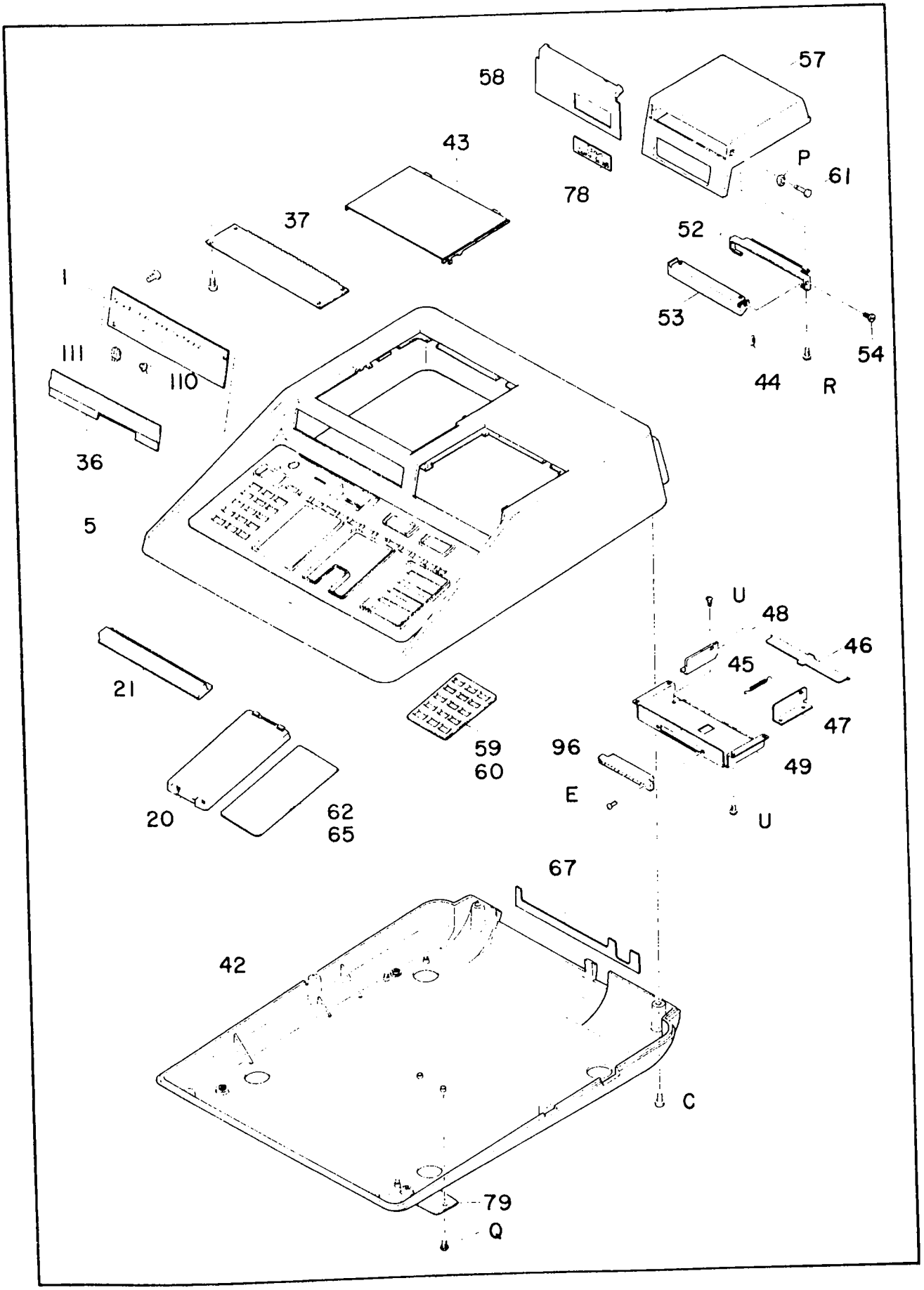

PB
GND
1000P
LIN
LOUT
NOUT
X67-6040-03
88-3712
88-3714
MADE IN JAPAN
Canon IIII
Canon 1311
100μH X2
1000μF25V
470μF25V
VO3EX12
VP2
VO2
VO1
VC1
VC2
G
0 1 2 3 4 5 12345
1 2 3 4 5 6 7 8 9 0 1 2


X67-6039-03


X67-6040-03

INSTRUCTION	KEY	PRINT
+	[+]	+
−	[−]	−
×	[×]	×
÷	[÷]	÷
a^x	[y^x]	a^
(	[(]	(
)	[)]	)
=	[=]	=
0 ~ 9	[0] ~ [9]	0 ~ 9
.	[.]	.
EXP	[EXP]	EXP
SIGN CHANGE	[+/−]	SC
ENT	[ENT]	E
CE	[CE]	CE
$\sqrt{}$	[$\sqrt{}$]	√
$\frac{1}{a}$	[1/x]	1/a
a^2	[x^2]	a2
FIX ↑ nn	[FIX nn] [0] [n] [n]	FIX9
FIX ⅝ nn	[FIX nn] [5] [n] [n]	FIX5
FIX ↓ nn	[FIX nn] [0] [n] [n]	FIX0
SM nn	[SM nn] [n] [n]	SM
RM nn	[RM nn] [n] [n]	RM
CM nn	[CM nn] [n] [n]	CM
ΣM nn	[ΣM nn] [n] [n]	ΣM
CM ALL	[INST nn] [F] [1]	F1
RIGHT	[RIGHT]	R
LEFT	[LEFT]	L
INDIRECT	[INDIRECT]	IND
GO TO nn	[GO TO nn] [n] [n]	GT
IF ≠ 0 GOTO nn	[IF GO TO nn] [−] [n] [n]	IF≠
IF ≥ 0 GOTO nn	[IF GO TO nn] [+] [n] [n]	IF+
IF < 0 GOTO nn	[IF GO TO nn] [−] [n] [n]	IF−
IF ERROR GOTO nn	[IF GO TO nn] [CE] [n] [n]	IFE
IF ENT GOTO nn	[IF GO TO nn] [ENT] [n] [n]	IFER
FLAG nn	[FLAG nn] [n] [n]	FLG
SP nn	[EP nn] [n] [n]	SP
EP nn	[SP nn] [n] [n]	EP

INSTRUCTION	KEY	PRINT
GO TO SP nn	GO TO SP nn [n][n]	GTS
PRINT	PRINT ◇	◇
LINE FEED	LINE FEED	LF
SPACE nn	SPACE nn [n][n]	S
COL-PRINT nn	COL PRINT nn [n][n]	COL
CHARACTER-PRINT	CHARACTER PRINT	CHR
SET ERROR DISABLE	INST nn [ ] [9]	FS
RESET ERROR DISABLE	INST nn [ ] [7]	F7
SET ERROR	INST nn [ ] [8]	F5
RESET ERROR	INST nn [ ] [1]	F3
NON OPERATION	INST nn [0] [0]	NOP
sin	sin	SIN
cos	cos	COS
tan	tan	TAN
arc sin	arc sin	ASIN
arc cos	arc cos	ACOS
arc tan	arc tan	ATAN
to DEG	a °	DEG
to DMS	arc a ° ' "	DMS
e^x	e^x	e^x
10^x	10^x	10^x
ln	ln	LN
log	log	LOG
n !	n !	n!
|a|	INST nn [a] [6]	|a|
INTEGER	INST nn [a] [7]	INT
FRACTION	INST nn [a] [8]	FRC
e	arc e^x	e
π	arc arc	π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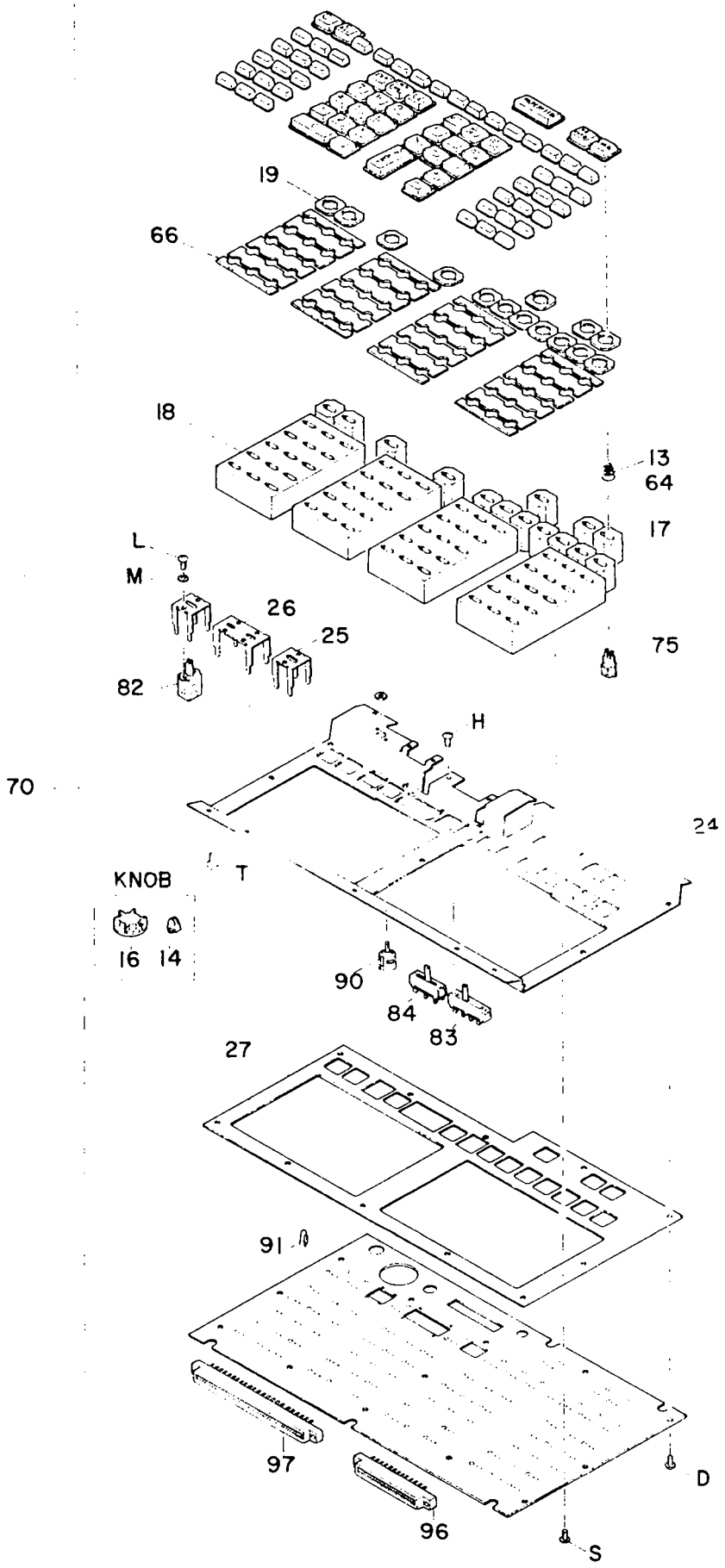
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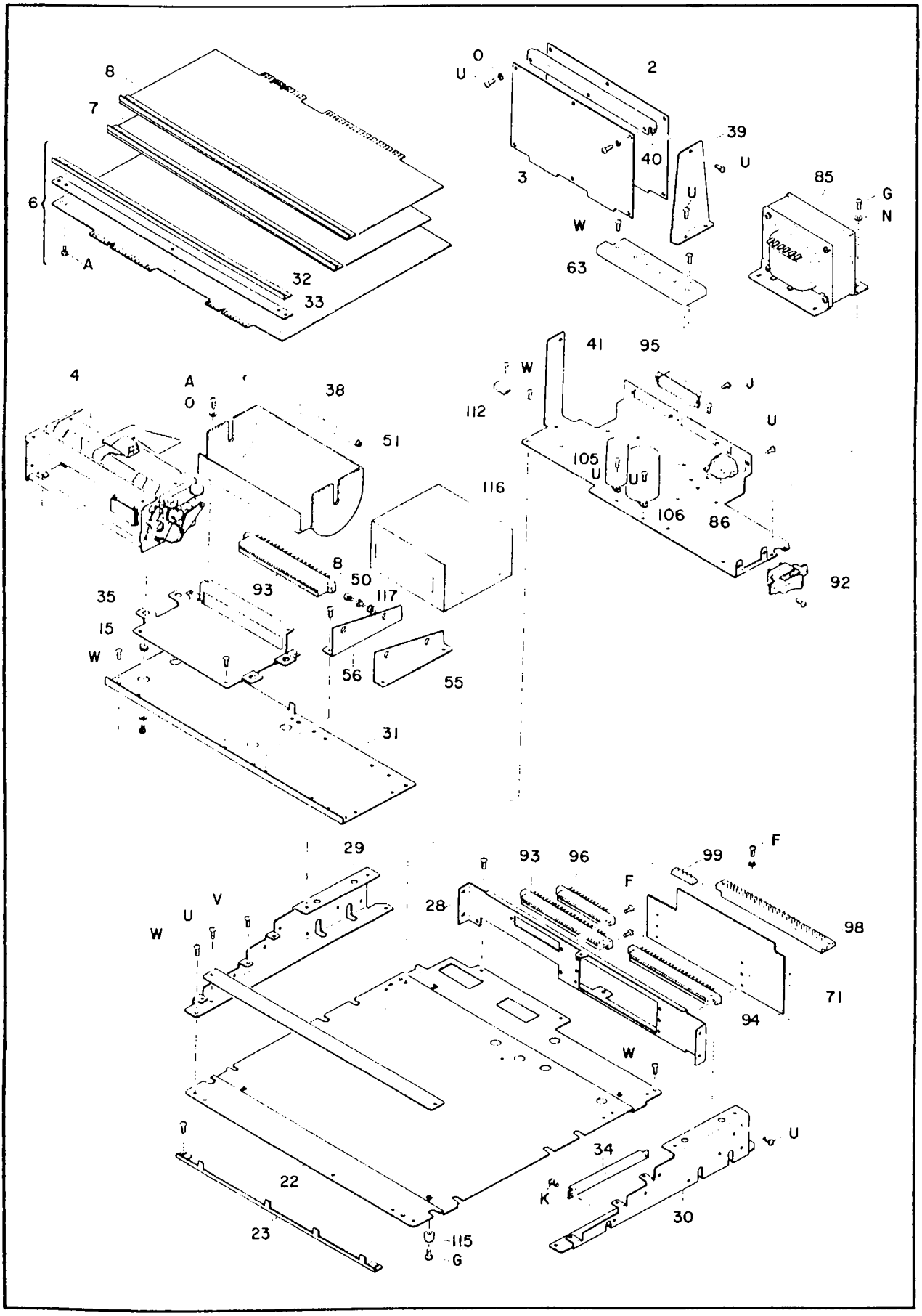
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40
U
3
U
W
63
85
G
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A
0
38
51
116
8
50
93
117
35
15
W
56
55
31
41
95
W
112
J
U
105
U
U
106
86
92
29
V
U
W
93
96
28
99
F
F
98
71
94
W
34
K
U
30
22
23
115
G

N	KEY NO.	PART NO.	Q'TY	DESCRIPTION		REMARKS	REVISION	PRICE( )
		86-3243-01	1	KEYTOP, α^2	キートップ			
		86-3244-01	1	" , X	"			
		86-3245-01	1	" , ÷	"			
		86-3246-01	1	" , $\sqrt{\ }$	"			
		86-3247-01	1	" , −	"			
		86-3248-01	1	" , +	"			
		86-3249-01	1	" , =	"			
		86-3290-01	1	" , C	"			
		86-3291-01	1	" , C ALL	"			
		86-3301-01	1	" , START	"			
	37	86-3302-01	1	PAPER CUTTER	ペーパーカッター			
	38	86-3303-01	1	SHAFT, ROLL PAPER	ロール紙軸			
	39	86-3304-01	1	HOLDER	ホルダー			
	40	86-3305-01	1	HOLDER, POWER SUPPLY CARD	電源カード取付板			
	41	86-3306-01	1	CHASSIS, POWER SUPPLY	シャーシ			
	42	86-3312-01	1	BASE COVER	底カバー			
	43	86-3313-01	1	COVER, ROLL PAPER	ロールカバー			
*	44	86-3318-01	2	SPRING	バネ			
*	45	86-3319-01	1	"	"			
*	46	86-3321-01	1	PLATE	メクラ板			
*	47	86-3322-01	1	ANGLE	止め板			
*	48	86-3323-01	1	"	"			
*	49	86-3324-01	1	FRAME	フレーム			
	50	86-3329-01	4	WASHER	座金			
	51	86-3330-01	1	HOLDER, ROLL PAPER	ロール紙ホルダー			
*		86-3345-01	1	DUST COVER	ダストカバー			
*	52	86-3348-01	1	ANGLE	取付板			
*	53	86-3349-01	1	"	基内板			
*	54	86-3350-01	2	PIN	段ビス			
*	55	86-3351-01	1	HOLDER, EDM TAPE DECK	取付板			
*	56	86-3352-01	1	"	"			
*	57	86-3353-01	1	HOOD, EDM TAPE DECK	カセットカバー			
*	58	86-3354-01	1	LID, EDM TAPE DECK	フタ			
*	59	86-3430-01	1	PLATE	プレート			
*	60	86-3431-01	1	"	"			
		86-3518-01	1	SWITCH COVER	スイッチカバー	K		
*	61	86-3523-01	2	PIN	止め軸			
*	62	86-3524-01	1	PROGRAM TABLE, 100V	プログラムシート			
	63	86-3596-01	1	HEAT SINK	放熱板			
		86-3615-01	2	CORD HOLDER	コードホルダー	220V ONLY		
		86-3649-01	1	KEYTOP, α^2	キートップ			
		86-3650-01	1	" , 1/α	"			
		86-3655-01	1	HOLDER, CORD BUSH	コードブッシュホルダー	220V ONLY		
		86-3656-01	1	CORD BUSH	コードブッシュ	"		
	64	86-3668-01	68	SPRING, KEY	バネ			
	65	86-3756-01	1	PROGRAM TABLE, EXC, 100V	プログラムシート			
*	66	86-3781-01	4	DAMPER, KEY	ダンパー			
		86-3785-01	1	BRACKET	止め板	220V ONLY		
	67	86-3802-01	1	BACK PLATE	背面板			
	70	88-3694-01	1	KEYBOARD BLOCK	キーボードブロック			
*	71	88-3762-01	1	MOTHER BOARD UNIT	基板板ユニット			
	75	89-3773-01	72	KEY SHAFT	キー軸			
*	78	96-9473-01	1	NAME PLATE	ネームプレート			
*	79	96-9474-01	1	RATING PLATE, 100V	定格銘板			

N	KEY NO.	PART NO.	Q'TY	DESCRIPTION		REMARKS	REVISION	PRICE( )
*	79	96-9475-01	1	RATING PLATE, 115VUL	定格銘板			
*	79	96-9476-01	1	" , 220V	"			
*	79	96-9477-01	1	" , 240V	"			
*	79	96-9478-01	1	" , 115V	"			
	82	X61-0042-01	4	PUSH SWITCH	プッシュスイッチ			
	83	X61-0050-01	1	SLIDE SWITCH 5P	スライドスイッチ			
	84	X61-0060-01	1	" 3P	"			
	85	X61-1377-01	1	POWER TRANSFORMER 100V	電源トランス			
	85	X61-1378-01	1	" 115VUL	"			
	85	X61-1379-01	1	" 220V,240V,115V	"			
		X61-3036-01	1	CRYSTAL OSCILLATOR	水晶発振器	01		
	86	X61-5072-01	1	RECEPTACLE, EXCEPT 220V	リセプタクル			
		X61-9041-01	1	POWER SUPPLY CORD 100V,115V	電源コード			
		X61-9042-01	1	" 115VUL	"			
		X61-9044-01	1	" 240V	"			
		X61-9053-01	1	" 220V	"			
	90	X62-0018-01	1	ROTARY SWITCH	ロータリースイッチ			
	91	X62-0606-01	70	REED SWITCH	リードスイッチ			
	92	X62-0812-01	1	POWER SUPPLY SWITCH,EXC.220V	電源スイッチ			
	92	X62-0898-01	1	" ,220V	"			
		X62-1535-01	1	FILTER CHOKE COIL 100μH	チョークコイル	PB		
	93	X62-5793-01	2	CONNECTOR 56P	コネクタ			
		X62-5992-01	2	" 5P FEMALE	"	PA		
		X62-6982-01	6	FUSE HOLDER	ヒューズホルダー	PA		
		X62-8707-01	3	FILM CONDENSER 50V 0.01μF	フィルムコンデンサ	01,03		
		X62-8724-01	3	" 400V 0.01μF	"	03		
		X62-8735-01	2	" 50V 0.1μF	"	03		
		X62-8764-01	1	CERAMIC CONDENSER 400V 0.1μF	セラミックコンデンサ	PB(100,115V)		
		X62-8805-01	9	TANTALUM CONDENSER 20V 2.2μF	タンタルコンデンサ	01,03		
		X62-8854-01	2	" 15V 4.7μF	"	01		
		X62-9274-01	2	FUSE 5A	ヒューズ 5A	PA		
		X62-9275-01	2	UL FUSE 5A	ヒューズ UL 5A	PA		
	94	X62-9445-01	3	CONNECTOR 56P	コネクタ			
	95	X62-9462-01	2	" 36P	"			
	96	X62-9477-01	3	" 30P	"			
	97	X62-9478-01	1	" 44P	"			
	98	X62-9479-01	1	CONNECTOR 72P	コネクタ			
	99	X62-9916-01	2	" 5P, MALE	"			
		X63-2010-01	1	CERAMIC CONDENSER 50V 100PF	セラミックコンデンサ	01		
		X63-2011-01	2	" 150V 1000PF	"	PB (115VUL)		
		X63-2012-01	20	" 50V 4700PF	"	01,02,03		
		X63-2015-01	1	" 50V 68PF	"	01		
		X63-2018-01	2	" 240V 1000PF	"	PB(100,240, 115V)		
		X63-2022-01	1	CERAMIC CONDENSER 50V 1000PF	セラミックコンデンサ	03		
		X63-2026-01	1	" 50V 330PF	"	01		
		X63-2052-01	2	" 50V 2200PF	"	01,02		
		X63-2077-01	3	" 250V 1000PF	"	PB (220V)		
		X63-3080-01	3	CHEMICAL CONDENSER 25V 1000μF	ケミカルコンデンサ	PB		
		X63-3119-01	1	" 25V 470μF	"	PB		
		X63-3186-01	2	" 25V 100μF	"	03		
		X63-3212-01	1	" 25V 4.7μF	"	01		
		X63-3217-01	1	" 16V 470μF	"	PB		
		X63-3228-01	5	" 16V 33μF	"	02		

N	KEY NO.	PART NO.	Q'TY	DESCRIPTION		REMARKS	REVISION	PRICE( )
		X63-3253-01	12	CHEMICAL CONDENSER 16V 33UF	ケミカルコンデンサ	01,02,03		
		X63-3265-01	7	" 16V 10UF	"	PA		
		X63-3266-01	1	" 25V 10UF	"			
	105	X63-3366-01	1	" 16V 3300UF	"			
*	106	X63-3381-01	1	" 25V 4700UF	"			
		X64-0148-01	1	CARBON RESISTOR 620 OHM T1/4W	炭素皮膜固定抵抗器	01		
		X64-0165-01	3	" 10 OHM T1/4W	"	01,02		
		X64-0244-01	1	" 470 OHM T1/8W	"	PA		
		X64-0248-01	1	" 100 OHM T1/8W	"	01		
		X64-0627-01	1	" 560 OHM T1/8W	"	01		
		X64-0669-01	2	" 27K OHM T1/8W	"	01		
		X64-0828-01	40	" 1K OHM T1/8W	"	01,02,03		
		X64-0829-01	2	" 1.8K OHM T1/8W	"	01,03		
		X64-0830-01	2	" 2.7K OHM T1/8W	"	01		
		X64-0831-01	4	" 3.3K OHM T1/8W	"	PA		
		X64-0832-01	75	" 5.6K OHM T1/8W	"	01,02,03		
		X64-0833-01	106	" 10K OHM T1/8W	"	01,02,03		
		X64-0834-01	43	" 22K OHM T1/8W	"	01,03		
		X64-0853-01	1	CARBON RESISTOR 4.7K OHM T1/8W	炭素皮膜固定抵抗器	PA		
		X64-0855-01	3	" 2.2K OHM T1/8W	"	01,03,PA		
		X64-0865-01	2	" 1.5K OHM T1/8W	"	03		
		X64-0873-01	1	" 18K OHM T1/8W	"	03		
		X64-0880-01	6	" 220 OHM T1/8W	"	01		
		X64-0889-01	7	" 750 OHM T1/8W	"	01		
		X64-0891-01	5	" 39K OHM T1/8W	"	01		
		X64-2508-01	1	SOLID RESISTOR 100K OHM T1/8W	ソリッド抵抗器	01		
		X64-4316-01	4	VARIABLE RESISTOR 1K OHM (B)	可変抵抗器	PA		
		X64-4497-01	1	" 25K OHM (B)	"	01		
		X64-9062-01	8	CARBON RESISTOR 220 OHM T1/2W	炭素皮膜固定抵抗器	01		
		X64-9094-01	1	" 390 OHM T1/8W	"	03		
		X65-5027-01	12	DIODE V03E	ダイオード	PR		
		X65-5032-01	117	" 1S1588	"	01,02,03,PA		
		X65-5090-01	10	TRANSISTOR 2N5447	トランジスタ	01,PA		
		X65-5243-01	1	ZENER DIODE RD9A	ツェナーダイオード	PA		
	110	X65-5265-01	7	LED HE1105	LED			
		X65-5353-01	1	ZENER DIODE EQB01-09	ツェナーダイオード	PA		
		X65-5359-01	1	ZENER DIODE AW0-20	ツェナーダイオード	PA		
		X65-5360-01	1	" EQA01-10S	"	PA		
	111	X65-5434-01	19	LED GL-91AR1	LED			
		X65-6044-01	9	TRANSISTOR 2SC641	トランジスタ	01,03		
		X65-6143-01	2	" 2SA673	"	PA		
		X65-6171-01	5	" 2SA671	"	PA		
		X65-6174-01	4	" 2SC1213	"	03		
	112	X65-6212-01	4	" 2SC1061	"			
		X65-7011-01	8	TTL IC SN7400	TTL IC SN7400	01,03		
		X65-7095-01	1	MOS IC HD3104	MOS IC HD3104	01		
		X65-7142-01	14	TTL IC SN7404	TTL IC SN7404	01,03		
	"	X65-7143-01	3	" SN7410	" SN7410	01,02		
		X65-7144-01	3	" SN7420	" SN7420	01,03		
	-	X65-7145-01	11	" SN74107	" SN74107	01,03		
	-	X65-7159-01	4	" SN7402	" SN7402	01,03		
		X65-7161-01	2	" SN7408	" SN7408	01,03		
		X65-7162-01	3	" SN7430N	" SN7430N	01		
		X65-7163-01	4	" SN7437	" SN7437	01,02		
		X65-7166-01	7	" SN74123	" SN74123	01,03		
		X65-7179-01	21	" SN7426	" SN7426	01,02		

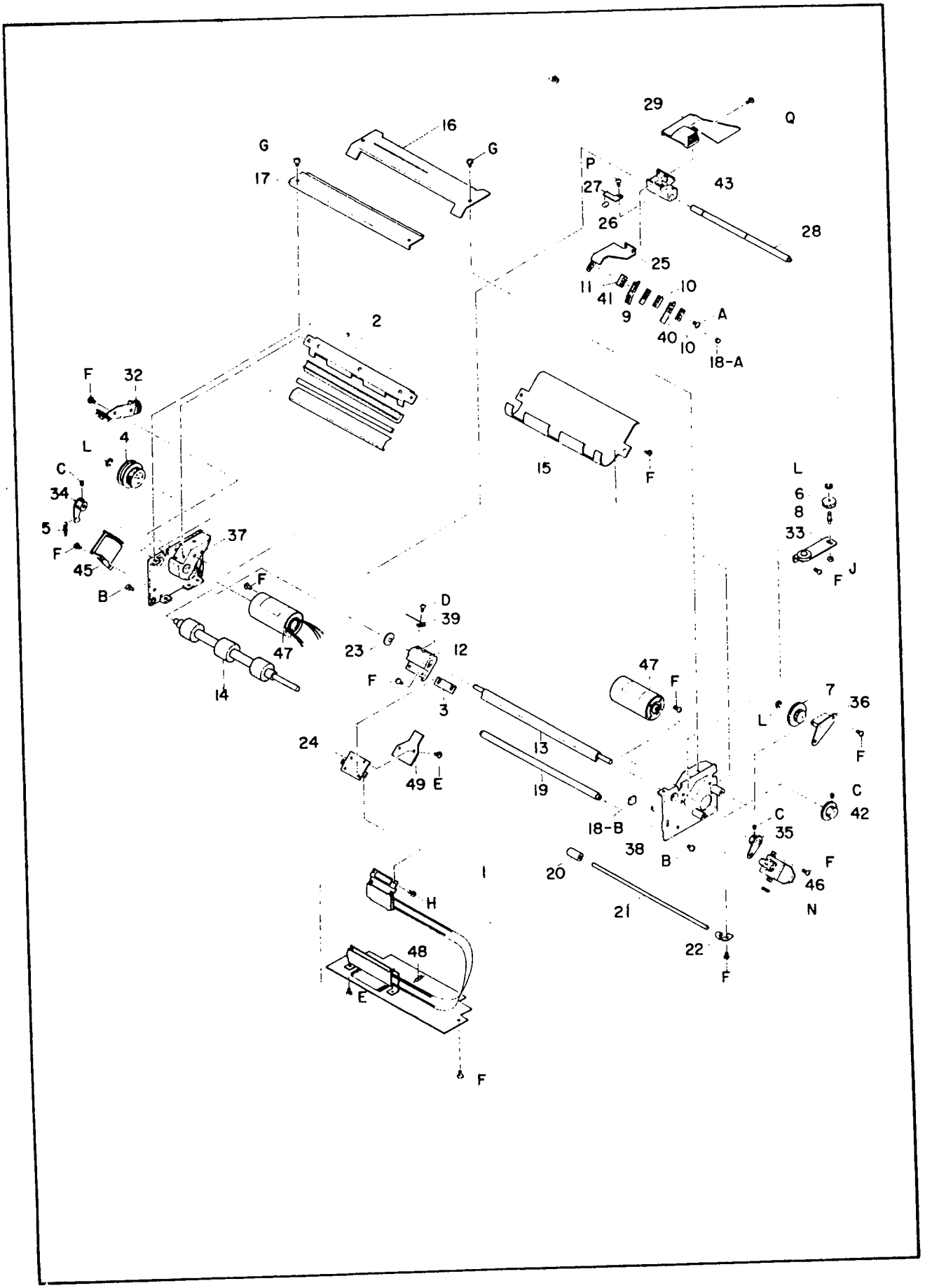
N	KEY NO.	PART NO.	Q'TY	DESCRIPTION		REMARKS	REVISION	PRICE( )
		X65-7192-01	2	TTL IC SN75491	TTL IC SN75491	01		
		X65-7193-01	3	" SN75492	" SN75492	01		
		X65-7223-01	1	IC KN6270	IC KN6270	01		
		X65-7239-01	1	MOS IC HD3283	MOS IC HD3283	01		
		X65-7244-01	4	TTL IC SN7403	TTL IC SN7403	03		
		X65-7246-01	7	" SN7495	" SN7495	01,02,03		
		X65-7251-01	2	" SN7405	" SN7405	01,02		
		X65-7280-01	2	IC MH0026CN	IC MH0026CN	01,02		
		X65-7311-01	2	MOS IC HD3103	MOS IC HD3103	01		
		X65-7362-01	1	MOS LSI HD3541 (CONTROL)	MOS LSI HD3541	01		
		X65-7363-01	1	" HD3542 (DATA)	" HD3542	01		
		X65-7364-01	9	" HD3543 (SHIFT R.)	" HD3543	01,02		
		X65-7365-01	1	" HN35401 (ROM)	" HN35401	01		
		X65-7366-01	1	" HN35402 (")	" HN35402	01		
		X65-7367-01	1	" HN35403 (")	" HN35403	01		
		X65-7368-01	1	" HN35404 (")	" HN35404	01		
		X65-7369-01	1	" HN35405 (")	" HN35405	01		
		X65-7370-01	1	" HN35406 (")	" HN35406	01		
		X65-7390-01	1	" HN35409 (")	" HN35409	01		
•		X65-7391-01	1	" HN35408 (")	" HN35408	01		
		X66-6610-01	1	UL FUSE 3A	ヒューズ UL	PA		
		X66-6611-01	1	FUSE 3A	ヒューズ	PA		
	115	X71-2501-01	4	PAD, RUBBER	ゴム足			
	116	X71-9417-01	1	EDM TAPE DECK	テープデッキ			
	117	X71-9496-01	4	PAD, RUBBER	ゴム足			
A		X06-300605	11	SCREW, PH3x6	十字丸ビス			
B		X06-300805	4	" PH3x8	"			
		X06-301605	2	" PH3x16	"			
		X06-301805	2	" PH3x18	"			
		X06-400603	1	" PH4x6	"			
C		X06-400807	6	" PH4x8	"			
D		X07-300607	13	SCREW, BH3x6	十字バインドビス			
E		X07-300807	2	" BH3x8	"			
F		X07-301207	10	" BH3x12	"			
G		X07-400807	8	" BH4x8	"			
H		X16-230405	4	SCREW, PH2.3x4	十字丸ビス			
J		X16-230605	4	" PH2.3x6	"			
K		X16-260505	12	" PH2.6x5	"			
L		X16-260508	8	" PH2.6x5	"			
M		X32-102627	8	SPRING WASHER	スプリングワッシャ			
N		X32-104027	4	"	"			
O		X32-301307	10	WASHER, PLAIN	平ワッシャ			
P		X32-401242	2	WASHER, RETAINING	抜止ワッシャ			
Q		X36-230507	2	SCREW, TAPPING PH2.3x5	十字タッピングビス			
R		X36-260505	3	" PH2.6x6	"			
S		X36-260805	50	" PH2.6x8	"			
T		X36-300605	11	" PH3x6	"			
U		X50-300605	23	SCREW WITH WASHER PH3x6	ワッシャ付丸ビス			
V		X50-300805	6	" PH3x8	"			
W		X50-400605	17	" PH4x6	"			
X		X50-400805	1	" PH4x8	"			

N	KEY NO.	PART NO.	Q'TY	DESCRIPTION		REMARKS	REVISION	PRICE( )
Y		X71-5271-01	1	SCREW, TAPPING PH4x6	ナベタッピンネジ			

* DENOTES NEW PART

SYMBOLES ON REMARKS COLUMN DENOTE AS FOLLOWS,

01: 01 CARD UNIT
02: 02 CARD UNIT
03: 03 CARD UNIT
PA: POWER SUPPLY CARD UNIT (A)
PB: POWER SUPPLY CARD UNIT (B)
K: KEYBOARD


29
Q
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C
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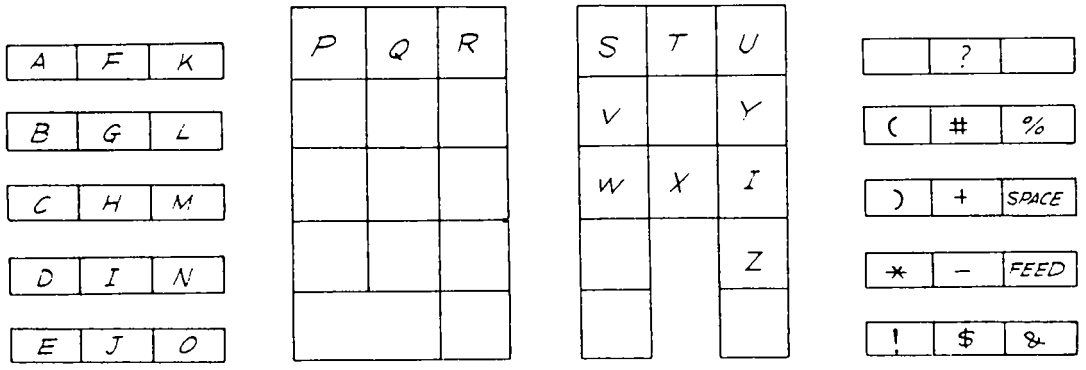
F

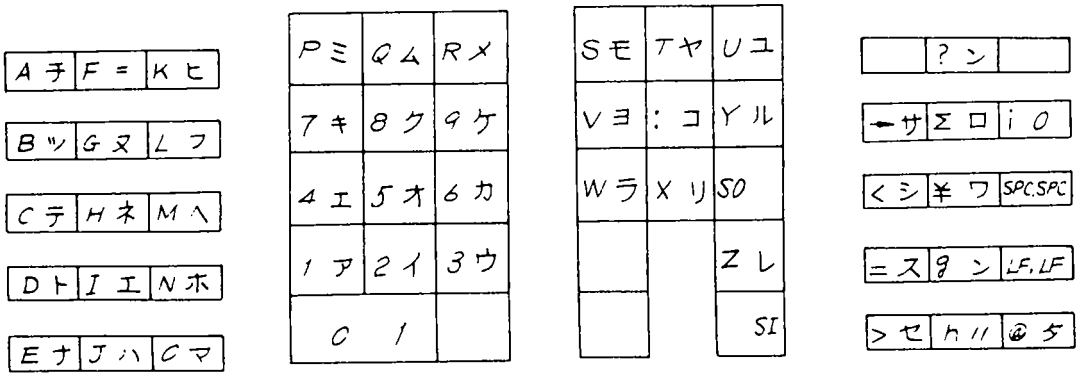
N	KEY NO.	PART NO.	Q'TY	DESCRIPTION		REMARKS	REVISION	PRICE( )
	1	Y80-1146-01	1	FLAT CABLE UNIT	ジャンパーリードユニット			
	2	Y80-1147-01	1	PRINT PAD UNIT	パッドユニット			
	3	Y80-1148-01	N	SHIM SET, PH PRESSURE ADJUSTMENT	調整用ワッシャー			
	4	86-3095-01	1	HEAD DRIVE PULLEY	巻軸			
	5	86-3102-01	1	LOWER LEVER RETURN SPRING	コイルバネ			
	6	86-3105-01	4	PULLEY	プーリー			
	7	86-3117-01	1	PAPER FEED ROLLER DRIVE GEAR	ギヤ			
	8	86-3118-01	1	PULLEY SHAFT	プーリー軸			
	9	86-3122-01	2	PLATE, CONTACT	板			
	10	86-3123-01	4	〃	〃			
	11	86-3124-01	2	HOLDER, PLATE	接点台			
	12	86-3125-01	1	THERMAL HEAD CARRIER	スライド			
	13	86-3126-01	1	CARRIER GUIDE RAIL	軸			
	14	86-3127-01	1	PAPER FEED ROLLER	ゴムローラー			
	15	86-3130-01	1	PAPER GUIDE (REAR)	ガイド			
	16	86-3131-01	1	PAPER GUIDE COVER	カバー			
	17	86-3132-01	1	CARRIER GUIDE RAIL COVER	〃			
	18-A	86-3133-01	1	DAMPER, RUBBER	ゴム			
	18-B	86-3134-01	1	〃	〃			
	19	86-3144-01	2	MAIN STAY	ステー			
	20	86-3145-01	3	PRESSURE ROLLER	ピンチローラー			
	21	86-3146-01	1	PRESSURE ROLLER SHAFT	ピンチローラー軸			
	22	86-3147-01	2	PRESSURE ROLLER SHAFT SUPPORTER	板バネ			
	23	86-3148-01	1	TENSION WASHER	バネリング			
	24	86-3151-01	1	HEAT SINK, TPH	ヒートシンク			
	25	86-3152-01	1	PAPER GUIDE LEVER HOLDER	アングル			
	26	86-3155-01	1	ROLLER	ローラー			
	27	86-3156-01	1	ROLLER SUPPORT	板バネ			
	28	86-3157-01	1	PAPER GUIDE LEVER RAIL	ガイドステー			
	29	86-3158-01	1	PAPER GUIDE LEVER	ペーパーガイド			
	32	89-3395-01	1	PULLEY SUB ASS'Y	プーリー			
	33	89-3396-01	1	〃	〃			
	34	89-3397-01	1	TPH LOWER LEVER	レバー			
	35	89-3398-01	1	TPH LIFT LEVER	〃			
	36	89-3399-01	1	GEAR SHAFT ASS'Y	軸			
	37	89-3400-01	1	END PLATE (LEFT)	左ボデー			
	38	89-3401-01	1	〃 (RIGHT)	右ボデー			
	39	Y80-1155-01	1	TPH DRIVE WIRE	ワイヤー			
	40	89-3403-01	2	CONTACT	接点バネ			
	41	89-3404-01	2	〃	〃			
	42	89-3405-01	1	PAPER FEED ROLLER GEAR	ギア			
	43	89-3406-01	1	PAPER GUIDE LEVER CARRIER	スライド			
	45	X61-1397-01	1	TPH LOWER SOLENOID	ソレノイド			
	46	X61-1398-01	1	TPH LIFT SOLENOID	〃			
	47	X61-2191-01	2	STEPPING MOTOR	ステッピングモーター			

N	KEY NO.	PART NO.	Q'TY	DESCRIPTION		REMARKS	REVISION	PRICE( )
	48	X64-0496-01	35	CARBON RESISTOR 47K OHM T1/8W	炭素被膜固定抵抗器			
	48	X64-0831-01	1	" 3.3K OHM T1/8W	"			
	48	X64-0834-01	35	" 22K OHM T1/8W	"			
X	49	X65-7384-01	1	THERMAL PRINT HEAD	サーマルヘッド			
A		X16-261407	1	SCREW PH2.6x14	十字ナベネジ			
B		X07-300607	6	SCREW BH3x6	十字バインドネジ			
C		X10-200307	6	SCREW 2x3	止メネジ			
D		X16-200407	2	SCREW PH2x4	十字ナベネジ			
E		X16-200505	4	" PH2x5	"			
F		X16-260607	16	" PH2.6x6	"			
G		X16-260608	4	" PH2.6x6	"			
H		X16-261007	3	" PH2.6x10	"			
J		X31-201357	1	NUT	ナット			
L		X32-401282	3	RETAINING WASHER	緊定ワッシャ			
N		X33-325062	1	SPRING PIN	スプリングピン			
P		X36-200607	1	SCREW, TAPPING PH2x6	タッピンネジ			
Q		X36-260607	2	" PH2.6x6	"			
		X71-7694-01		CLEANING SET FOR [illegible]				
		X71-9616-01		CLEANING CARD FOR THERMAL PRINT HEAD				
		X50-1153-01		WRIGHT ENABLE PLUG FOR CARTRIDGE TAPE				

CHARACTER KEYS



CHARACTER KEYS（海外）



[illegible]

KEYBOARD LAYOUT

KEY COMBINATIONS FOR CERTAIN FUNCTIONS

$\sin^{-1}$	arc sin	e	arc e^x
$\cos^{-1}$	arc cos	π	arc arc
$\tan^{-1}$	arc tan	FRACTION	INST nn 8 7
$a^{\circ\prime\prime}\rightleftarrows$	arc $a^{\circ\prime\prime}\rightleftarrows$	INTEGER	INST nn 8 8
FIX ⌟	FIX nn 9	ABSOLUTE VALUE	INST nn 8 6
FIX 5/4	FIX nn 5	CMALL	INST nn F 1
FIX ⌝	FIX nn 0	NON OPERATION	INST nn 0 0
IF ≥ 0 GOTO	IF GOTO nn +	SET ERROR DISABLE	INST nn F 9
IF ≠ 0 GOTO	IF GOTO nn =	RESET ERROR DISABLE	INST nn F 7
IF < 0 GOTO	IF GOTO nn −	SET ERROR	INST nn F 5
IF ENT GOTO	IF GOTO nn ENT	RESET ERROR	INST nn F 9
IF ERROR GOTO	IF GOTO nn CE		

TABLE OF CHARACTER CODE

m \ n	0n	1n	2n	3n	4n	5n	6n	7n	8n	9n	An	Bn	Cn	Dn	En	Fn
m0			SP	0	@	P					SP	｜	タ	ミ		
m1			!	1	A	Q					｡	ア	チ	ム		
m2			◇	2	B	R					「	イ	ツ	メ		
m3			#	3	C	S					」	ウ	テ	モ		
m4			$	4	D	T					π	エ	ト	ヤ		
m5			%	5	E	U					×	オ	ナ	ユ		
m6			&	6	F	V					ヲ	カ	ニ	ヨ		
m7			¥	7	G	W					ァ	キ	ヌ	ラ		
m8			(	8	H	X					ィ	ク	ネ	リ		
m9			)	9	I	Y					ゥ	ケ	ノ	ル		
mA	C/R		*	:	J	Z					ェ	コ	ハ	レ		
mB			+	;	K	Σ					ォ	サ	ヒ	ロ		
mC			,	<	L	↑					ャ	シ	フ	ワ		
mD			−	=	M	θ					ュ	ス	ヘ	ン		
mE			.	>	N	η					ョ	セ	ホ	゛		
mF			/	?	O	;					ッ	ソ	マ	°