

# DN SERIES 1US5 CHOP MANUAL

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## INSTALLATION

1. Position cabinet at desired location.
  2. Adjust leg levelers so cabinet is balanced correctly.
  3. Plug the machine into a 120 volt outlet.
  4. Open the front service door.
    - a. If the game was pre-installed at the factory, proceed to line 9.
  5. Place cassette tape in the cassette deck. See Figure 1, game package installation.
  6. Install key module. See Figure 2, game package installation.
  7. Adjust dipswitches to desired settings. See Figure 3, and please refer to the game package dipswitch setting sheet.
  8. Install game top flashing.
  9. Turn power switch on, located at the front of the machine.
  10. Allow 2-3 minutes for the game to load the memory.
  11. The game is now ready for operation. \*
- \* If the game has any irregularities, refer to the system trouble shooting guide on the next pages.

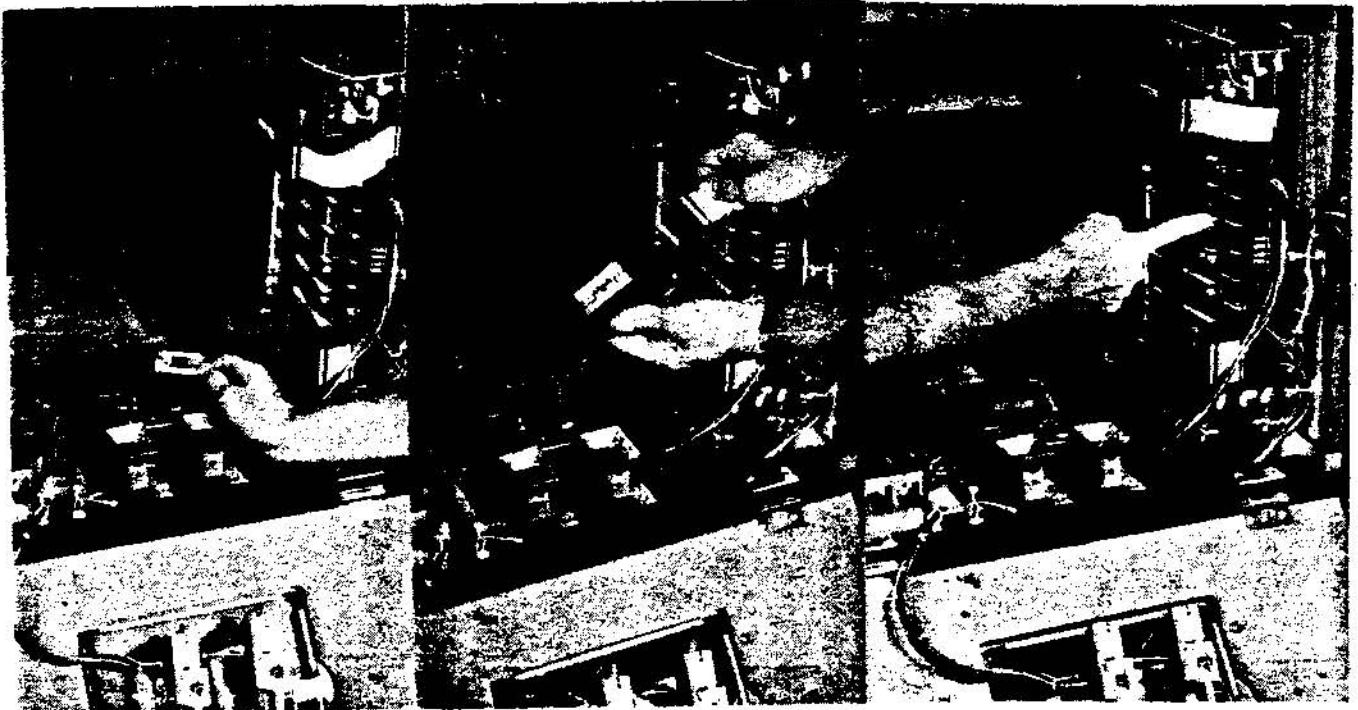


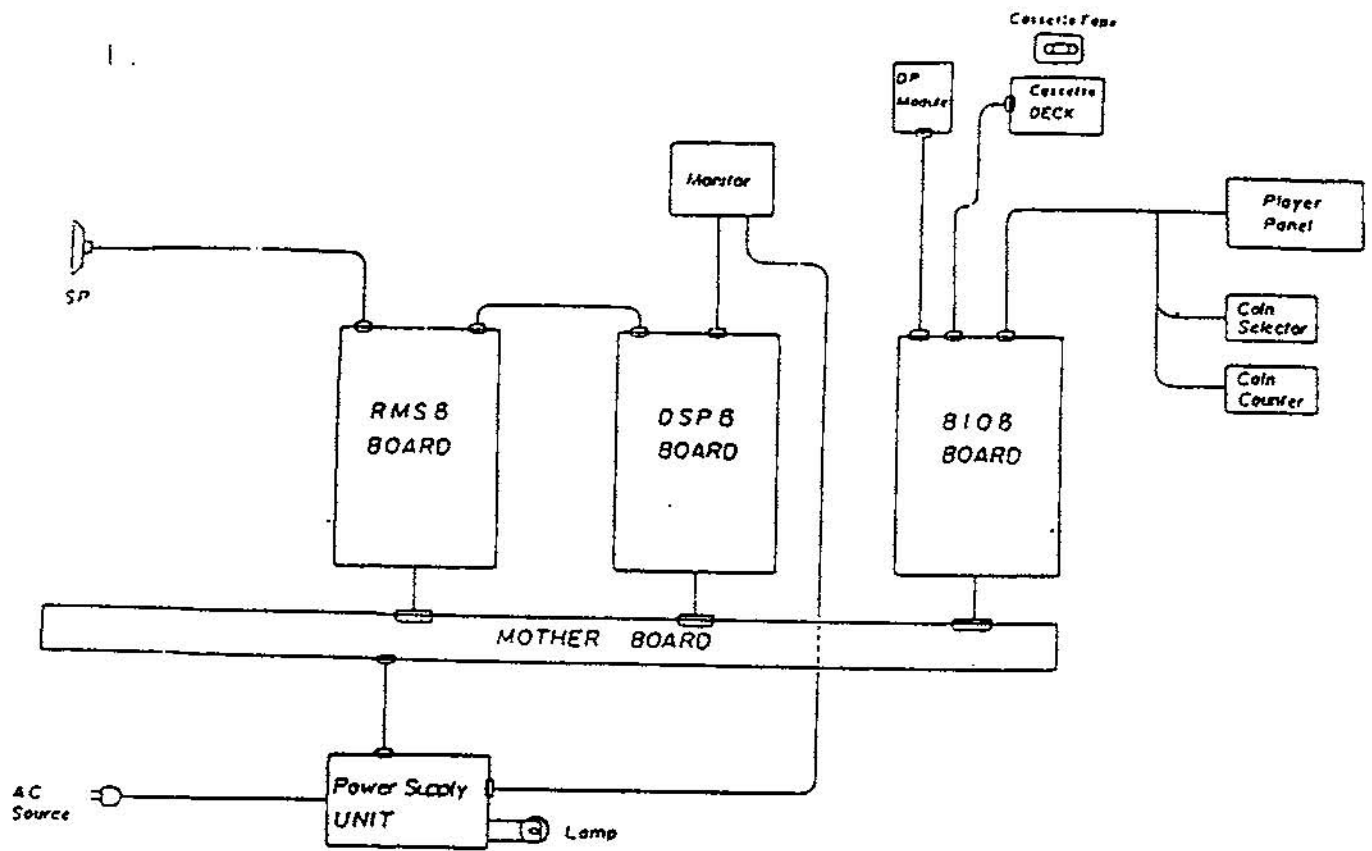
Figure 1

Figure 2

Figure 3

1. FUNCTIONS

THE THREE PCB'S DO NOT FUNCTION AS A GAME UNLESS  
TAPE PROGRAM IS LOADED TO THE PCB'S.



STRUCTURE Fig. 1

## 2. INDIVIDUAL FUNCTION OF EACH BLOCK

### DSP 8

- 1) CONTROL CPU AND ITS RELATED CIRCUIT
- 2) COLOR SIGNAL GENERATOR AND CONTROL
- 3) STANDARD PATTERN GENERATOR AND TIMING SIGNAL GENERATOR
  - \* CPU CLOCK
  - \* STROBE SIGNAL
  - \* DYNAMIC RAM TIMING SIGNAL
- 4) CRT TIMING SIGNAL GENERATOR
  - \* HORIZONTAL
  - \* VERTICAL
  - \* SYNCHRONIZE
- 5) DISPLAY CONTROL
  - \* MISSILE GENERATOR AND CONTROL
  - \* MIXMODE GENERATOR AND CONTROL
  - \* MAIN GRAPHIC GENERATOR AND CONTROL

### RMS 8

- 1) DYNAMIC MEMORY (48 K BYTE)
  - \* PROGRAM
  - \* DISPLAY
- 2) SOUND
  - \* CPU
  - \* ROM/RAM
  - \* SOUND CHIP
  - \* MIXING
  - \* COMMUNICATION WITH MAIN CPU

- 3) RESET SIGNAL GENERATOR
- 4) DIP SWITCH READING
- 5) BOOTSTRAP ROM

BIO 8

- 1) CONTROL PANEL SWITCH INPUT READING
- 2) COIN SWITCH ACTIVATION READING AND COIN COUNTER DRIVE
- 3) NMI GENERATION FROM SERVICE/COIN SWITCH ACTIVATION
- 4) VOLUME INPUT AD CONVERSION
- 5) BACK DISPLAY CONTROL
  - \* READING/WRITING PUNCTION FROM CPU TO MEMORY
  - \* HEAD LIGHT MODE
  - \* DISPLAY HORIZONTAL/VERTICAL SHIFT
- 6) CASSETTE DECK INTERFACE

CASSETTE DECK

- 1) GAME PROGRAM LOADING

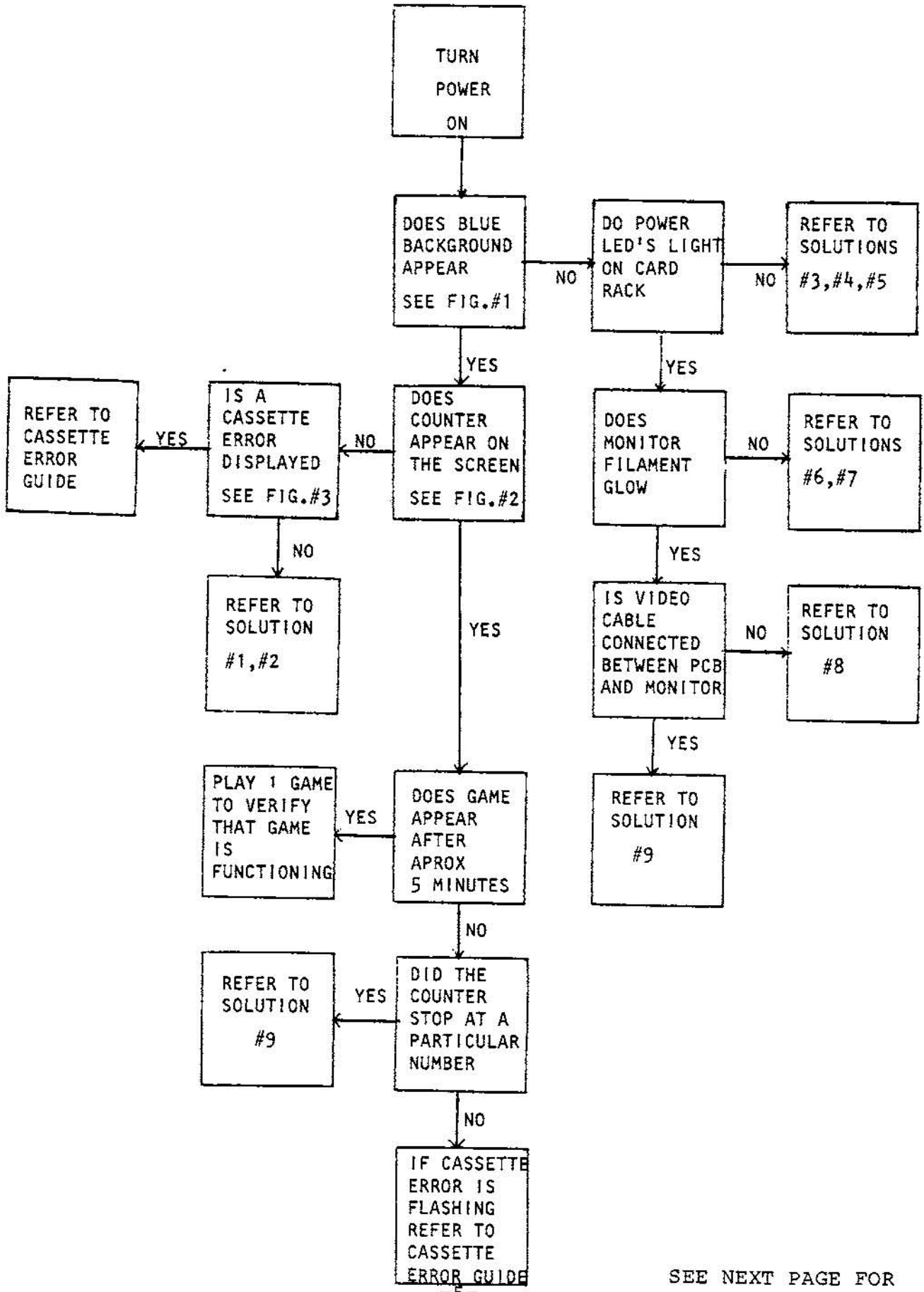
DC POWER SOURCE

- 1) SWITCHING REGULATOR

+5V (REGULATED)	6A
+12V ( " )	1A
+13V (UNREGULATED)	2A
-5V (REGULATED)	0.1A

IF REGULATED +12V, 3A COMBINATION IS USED IT ALLOWS  
+13V UNREGULATED POWER USE.

DECO CASSETTE SYSTEM  
TROUBLE SHOOTING GUIDE



SEE NEXT PAGE FOR SOLUTIONS

OPERATING PROCEDURES, SOLUTION GUIDE

SOLUTIONS

#1 CHECK DIP SWITCH SETTINGS

SETTINGS MUST ALWAYS BE

DIP SW I	5.OFF	6.OFF
DIP SW II	6.ON	7.OFF 8.OFF

#2 CHECK KEY MODULE CONNECTION

#3 CHECK FUSES

#4 CHECK AC INPUT TO SWITCHING REGULATOR 100V.AC AND  
DC OUTPUT +5, -5, +12

#5 ASSURE POWER IS CONNECTED TO CARD RACK

#6 CHECK MONITOR POWER CONNECTOR FOR 100V.AC

#7 CHECK MONITOR FUSES

#8 CHECK VIDEO CONNECTOR

#9 EXCHANGE PCB'S

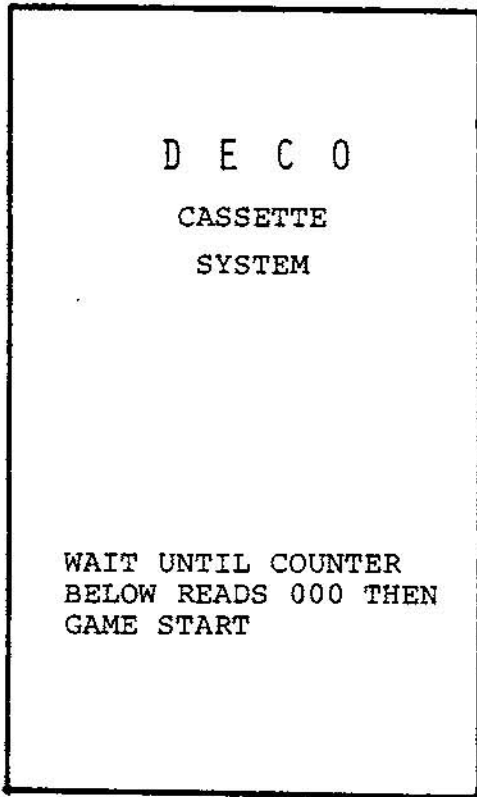


FIGURE #1

← BLUE BACKGROUND

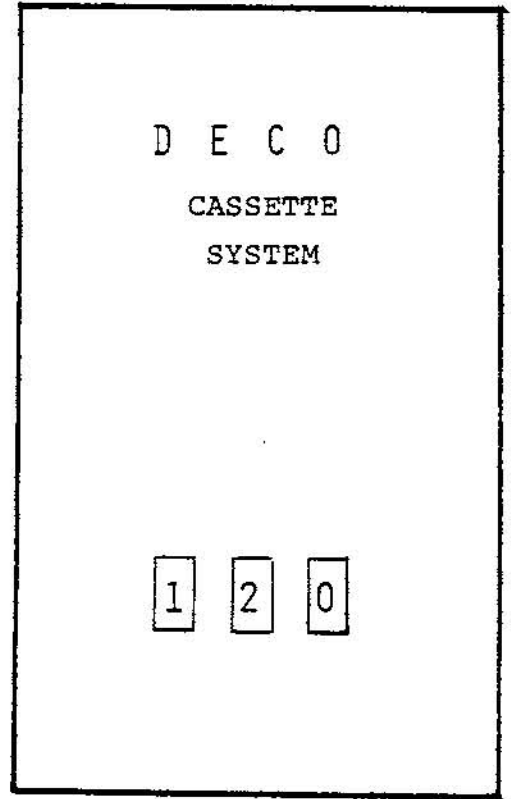


FIGURE #2

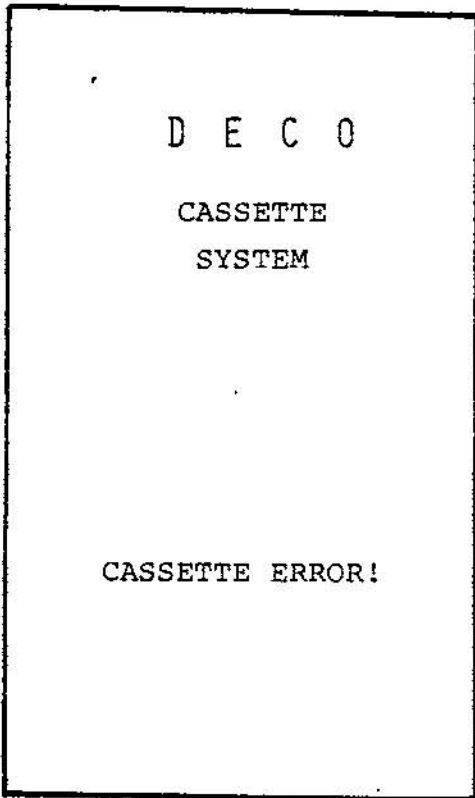
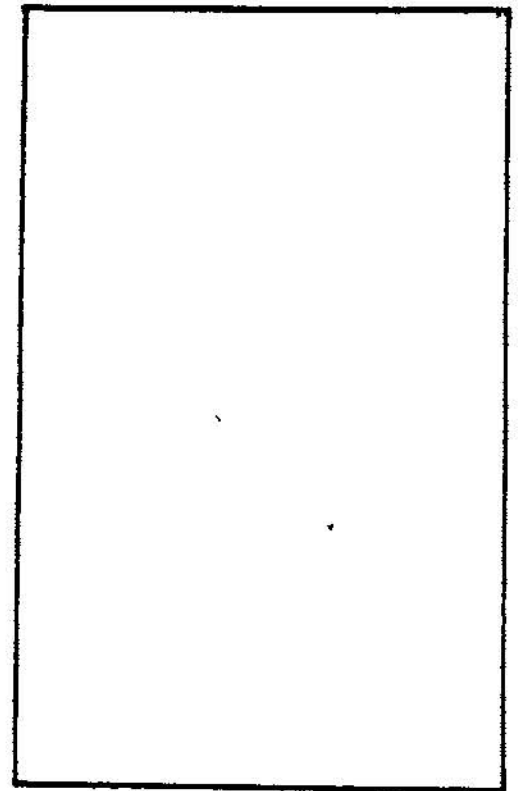


FIGURE #3

← REFER TO ERROR GUIDE  
#59



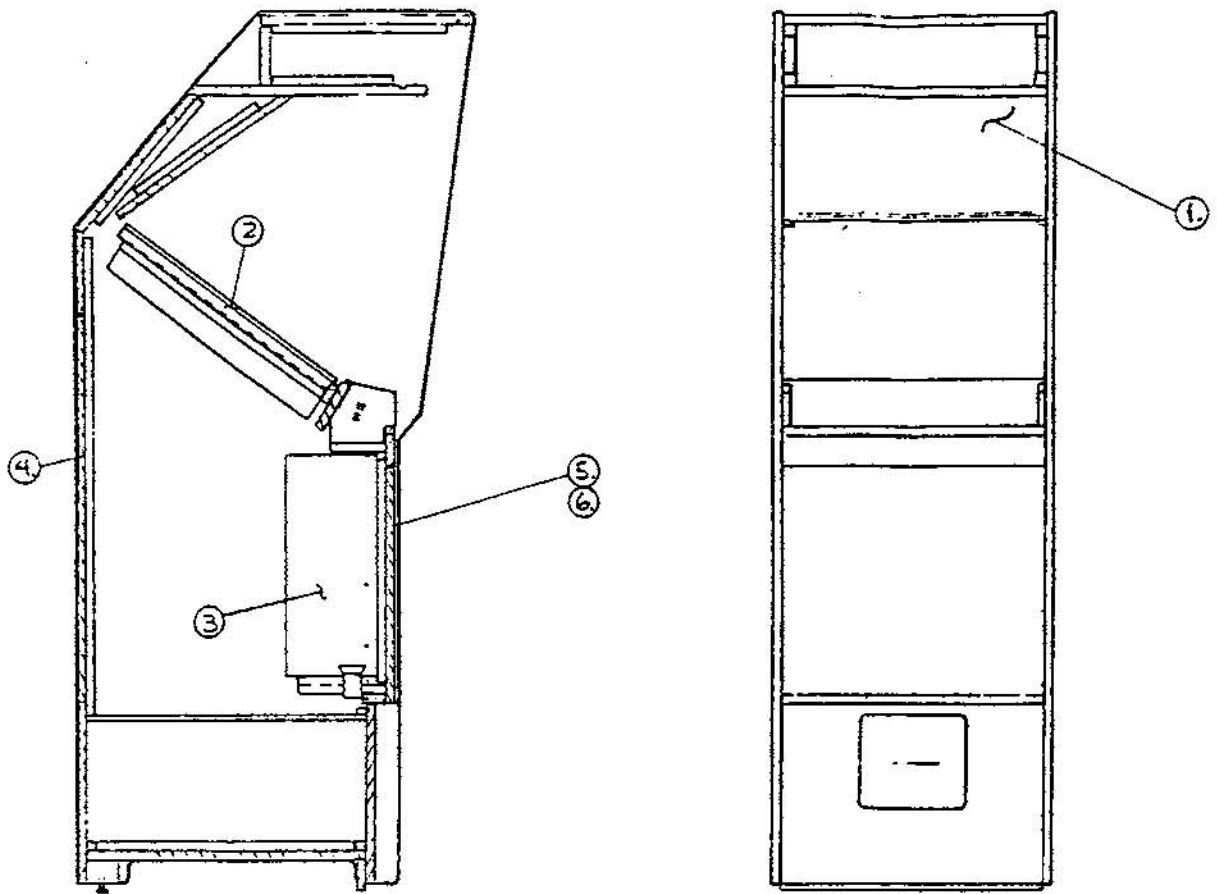


## CASSETTE ERROR GUIDE

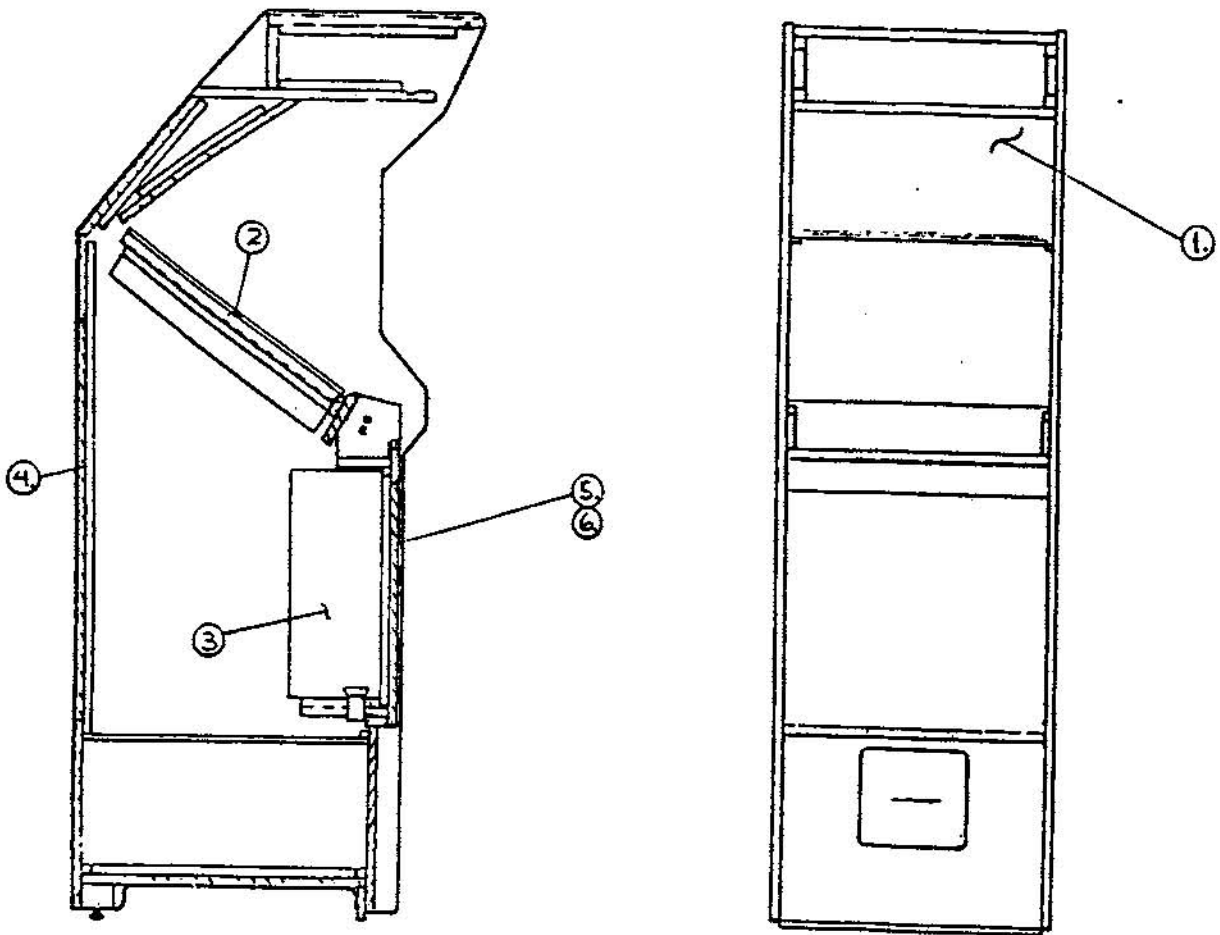
ERROR CODE	SOLUTIONS
01	1,8,9,3
02	3,4,5
03	3,4,5
04	3,4,5
32	2,3
33	5
52	8,9,4
58	3,4,5
59	6,7,8

## CASSETTE ERROR SOLUTIONS

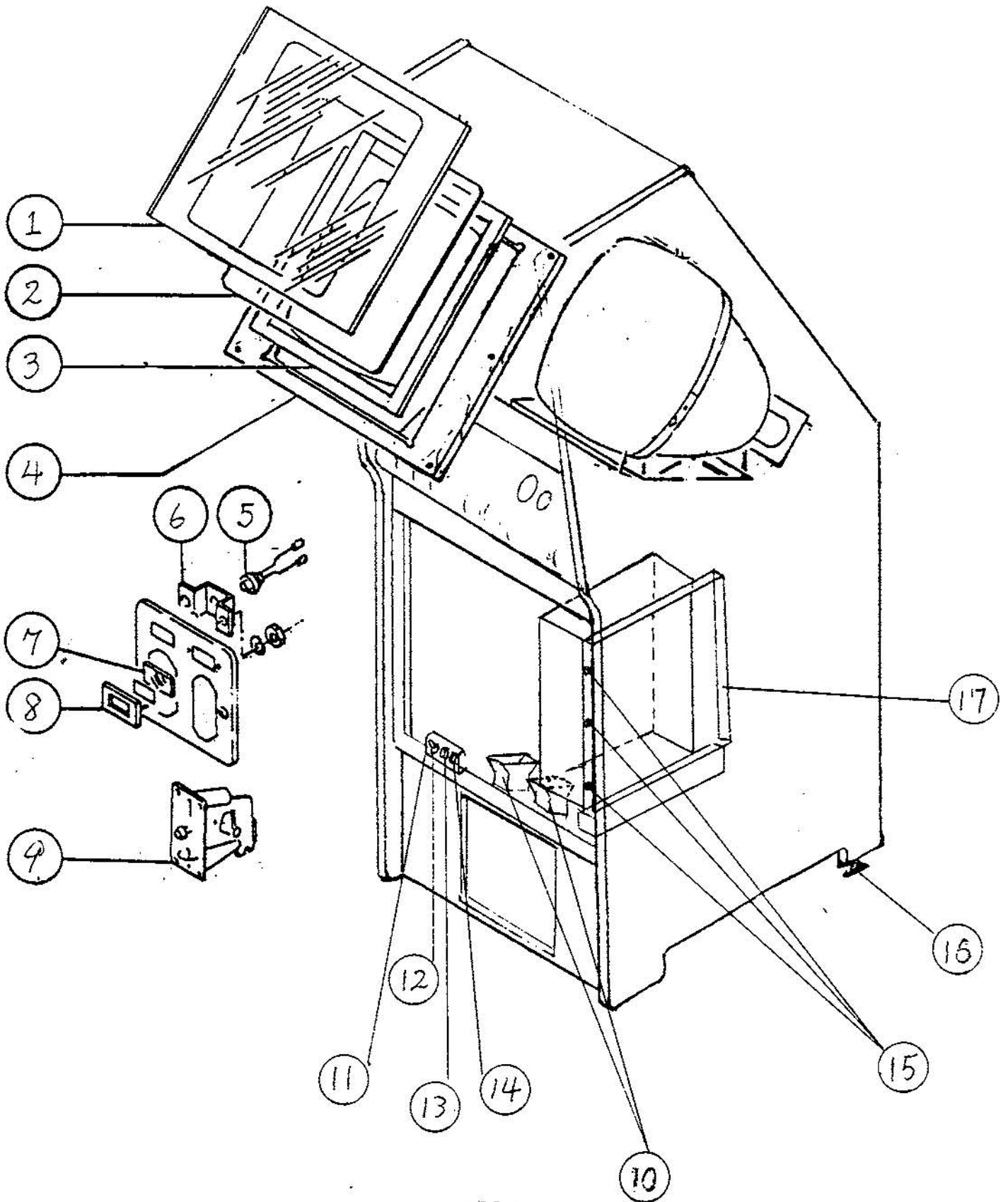
- #1 CHECK THE TAPE AND MODULE GAME NAME TO INSURE THEY ARE PROPERLY MATCHED.
- #2 CLEAN THE TAPE DECK HEAD WITH ALCOHOL AND COTTON SWAB
- #3 CHANGE THE CASSETTE TAPE
- #4 CHANGE THE CASSETTE DECK
- #5 IF THE ERROR PERSISTS CHANGE THE BIO-8 BOARD
- #6 CHECK THE TAPE DECK CONNECTOR
- #7 CHECK THE KEY MODULE CONNECTOR
- #8 CHECK THE TAPE TO INSURE SIDE "A" IS FACING UP
- #9 CHECK THE TAPE TO INSURE THAT THE TAPE IS ON THE SPOOL OPPOSITE THE CAPITOL "A", IF NOT ADVANCE THE TAPE TO THE CORRECT SPOOL WITH A SCREWDRIVER



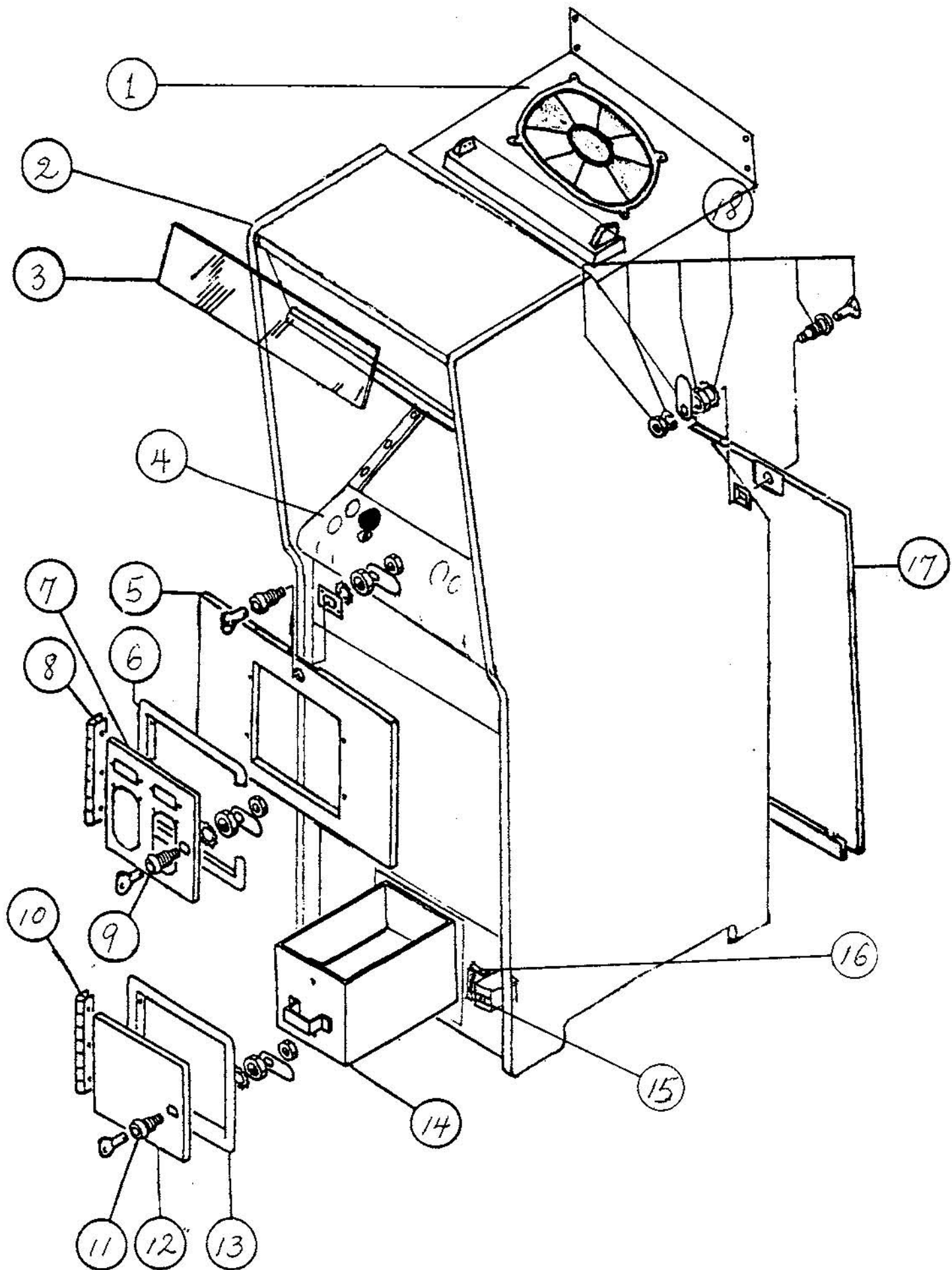
	CABINET 1-US-5-A	Q'TY
1	PRELIM CAB ASSY	1
2	BEZEL HOUSING	1
3	CARD CAGE BOARD	1
4	BACK DOOR ASSY	1
5	FRONT PANEL DOOR ASSY	1
6	#8 x 5/8 PH SMS PHIL	1



	CABINET 1-US-5-B	Q'TY
1	PRELIM CAB ASSY	1
2	BEZEL HOUSING	1
3	CARD CAGE BOARD	1
4	BACK DOOR ASSY	1
5	FRONT PANEL DOOR ASSY	1
6	#8 x 5/8 PH SMS PHIL	1

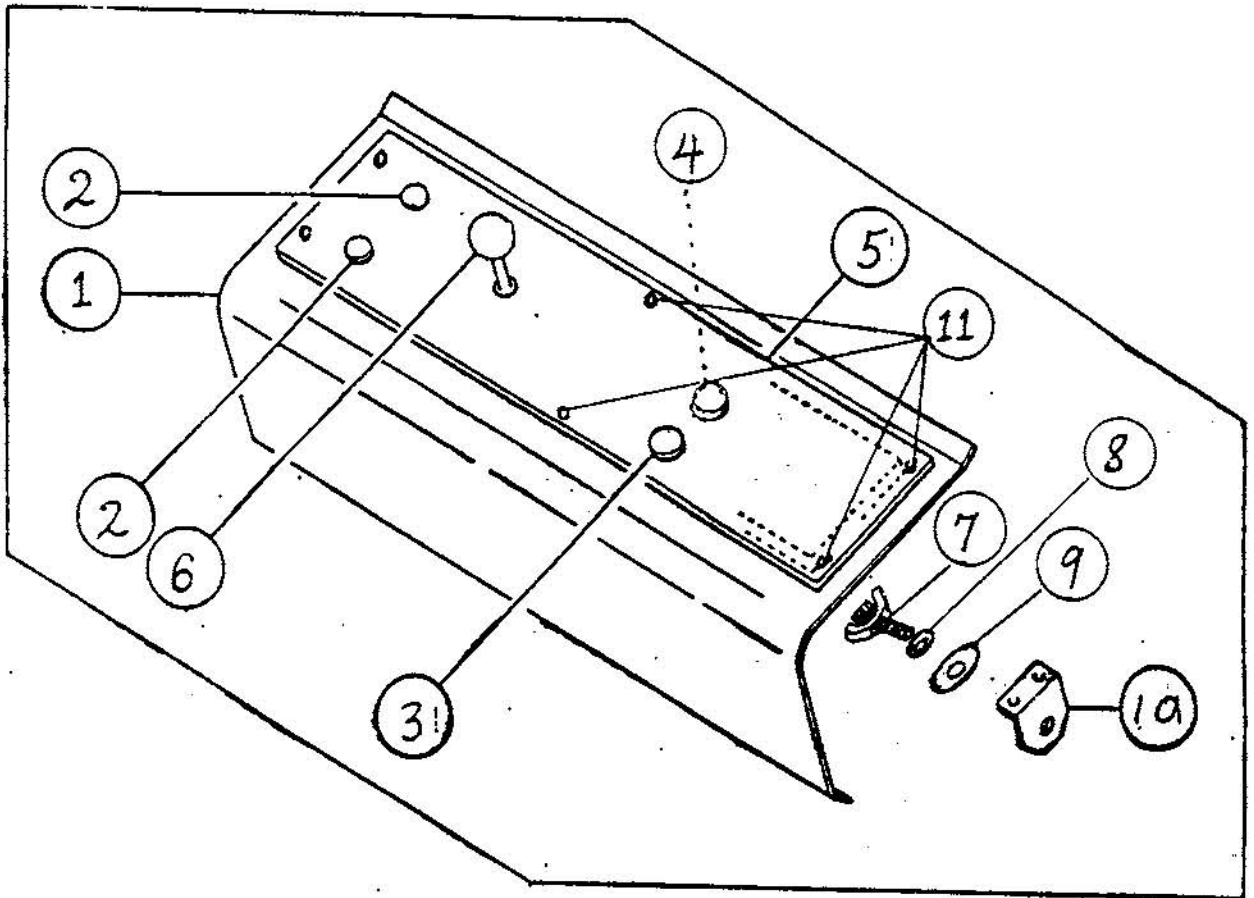


1	FACIAL PANEL	1
2	FILTER	1
3	ESCUTCHEON	1
4	MASKING PANEL	1
5	LIGHT BULB	2
6	LIGHT BRACKET	2
7	25¢ SEAL	2
8	SEAL FRAME	2
9	COIN SELECTOR	2
10	COIN FUNNEL	2
11	SWITCH BRACKET	1
12	POWER SWITCH	1
13	MAIN FUSE	1
14	DEMAGNETIZER SWITCH	1
15	PCB MOUNTING SCREWS	3
16	LEVELER	2
17	PCB MOUNTING BOARD	1



1	SPEAKER & LIGHT HOUSING ASS'Y	1
2	GOLD T MOLD	2
3	TOP FLASH	1
4	CONTROL PANEL ASS'Y	1
5	FRONT DOOR PANEL	1
6	COIN SELECTOR DOOR FRAME	1
7	SELECTOR DOOR	1
8	SELECTOR DOOR HINGE	1
9	SELECTOR DOOR LOCK	1
10	CASH BOX DOOR HINGE	1
11	CASH BOX LOCK	1
12	CASH BOX DOOR	1
13	CASH BOX DOOR FRAME	1
14	CASH BOX	1
15	COIN COUNTER	1
16	COIN COUNTER CIRCUIT BOARD	1
17	BACK DOOR	1
18	BACK DOOR LOCK	1

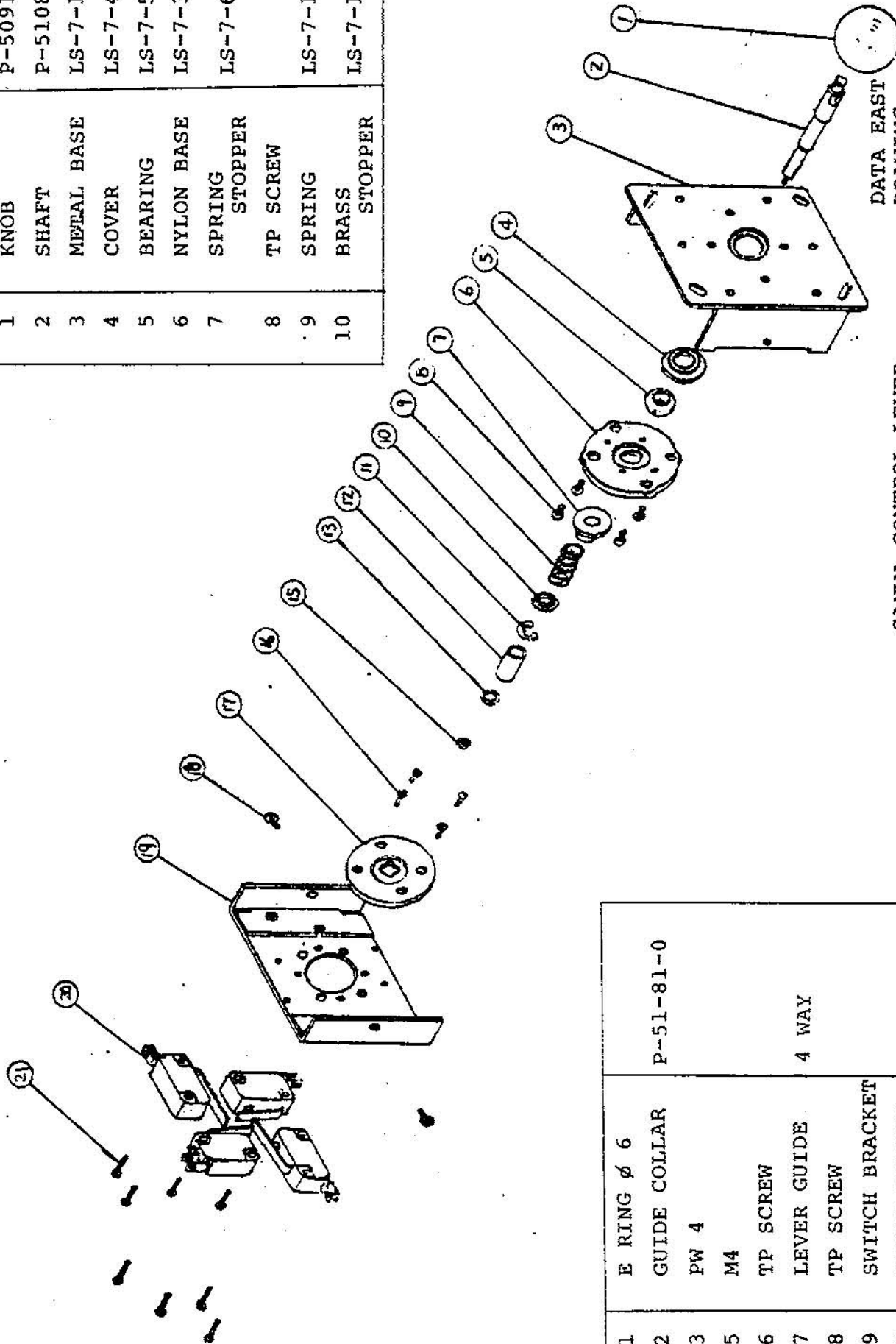
CONTROL PANEL



CONTROL PANEL ASSEMBLY FOR US-5		Q'TY
1	CONTROL PANEL CHASSIS	1
2	PLAYER I & II BUTTONS (YELLOW)	2
3	SHOOT BUTTON-I (RED)	1
4	SHOOT BUTTON-II (BLUE)	1
5	CONTROL PANEL OVERLAY -A WITH 2 SHOOT BUTTON HOLE -B WITH 1 SHOOT BUTTON HOLE	1
6	CONTROL LEVER ASS'Y	1
7	WING NUT	2
8	SPRING WASHER	2
9	LARGE WASHER	2
10	CONTROL PANEL INSTALLATION BRACKET	2
11	OVERLAY PLASTIC FASTNER	6



NO	DESCRIPTION	REF.
1	KNOB	P-50913-0
2	SHAFT	P-51080-0
3	METAL BASE	LS-7-1
4	COVER	LS-7-4
5	BEARING	LS-7-5
6	NYLON BASE	LS-7-3
7	SPRING STOPPER	LS-7-6
8	TP SCREW	LS-7-15
9	SPRING	LS-7-16
10	BRASS STOPPER	LS-7-16

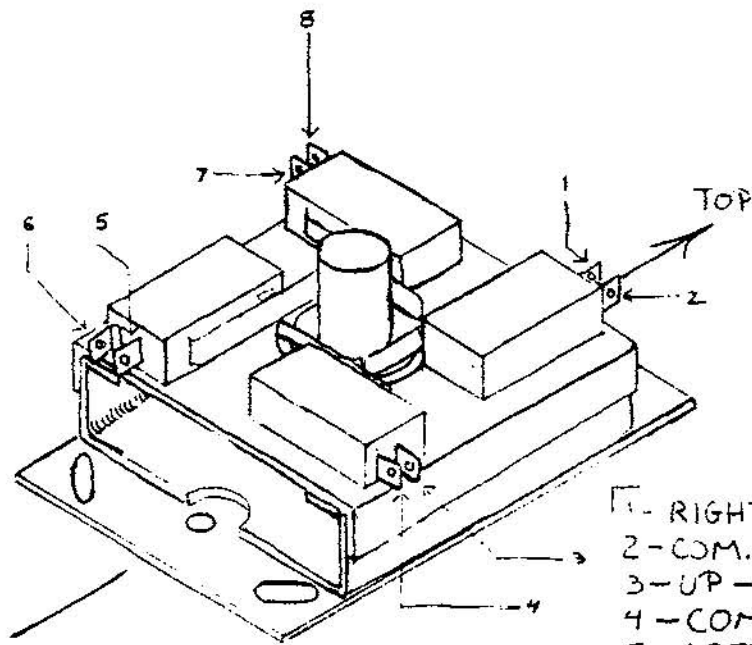


DATA EAST  
DRAWING

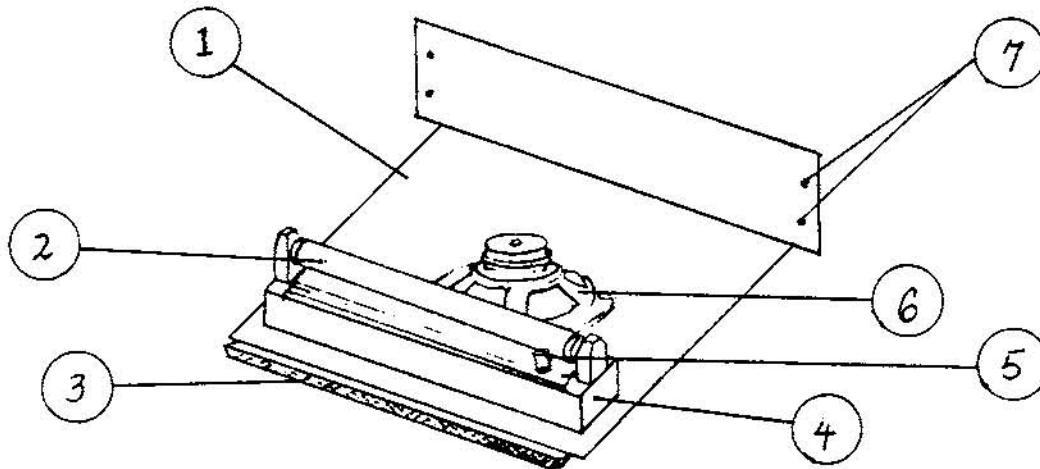
NO. K-50774-0

SANWA CONTROL LEVER  
(DLS-5)

11	E RING $\phi$ 6	P-51-81-0
12	GUIDE COLLAR	
13	PW 4	
15	M4	
16	TP SCREW	4 WAY
17	LEVER GUIDE	
18	TP SCREW	
19	SWITCH BRACKET	
20	MICRO SWITCH	
21	TP SCREW	

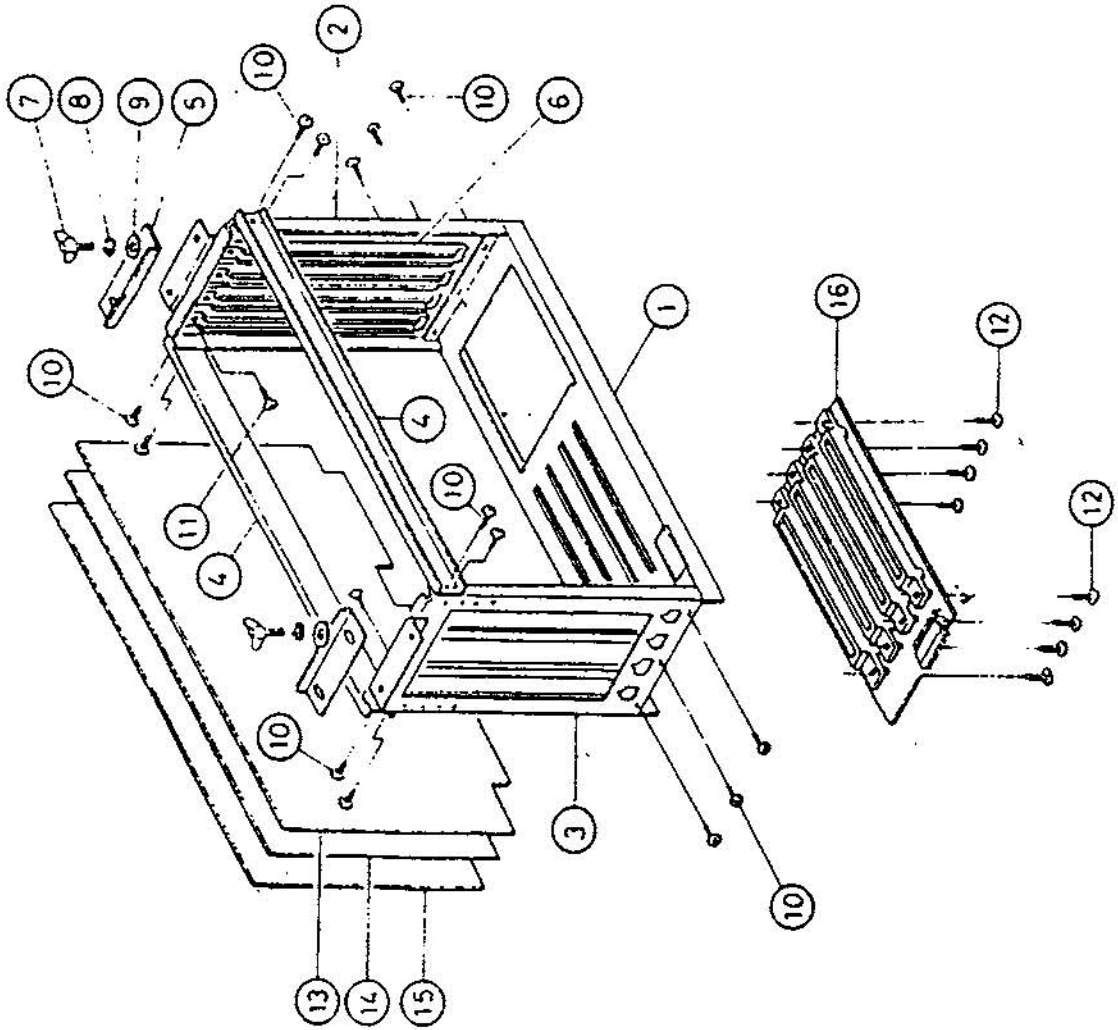


- 1 - RIGHT - RED
- 2 - COM. - BLACK
- 3 - UP - YELLOW
- 4 - COM. - BLACK
- 5 - LEFT - ORANGE
- 6 - COM. - BLACK
- 7 - DOWN - GREEN
- 8 - COM. - BLACK



SPEAKER & LIGHT HOUSING ASSEMBLY		UK-01111
1	SPEAKER & LIGHT HOUSING CHASSIS	1
2	FL BULB	1
3	FOAM CUSHION	1
4	LIGHT FIXTURE	1
5	FL STARTER	1
6	SPEAKER	1
7	SCREWS	4

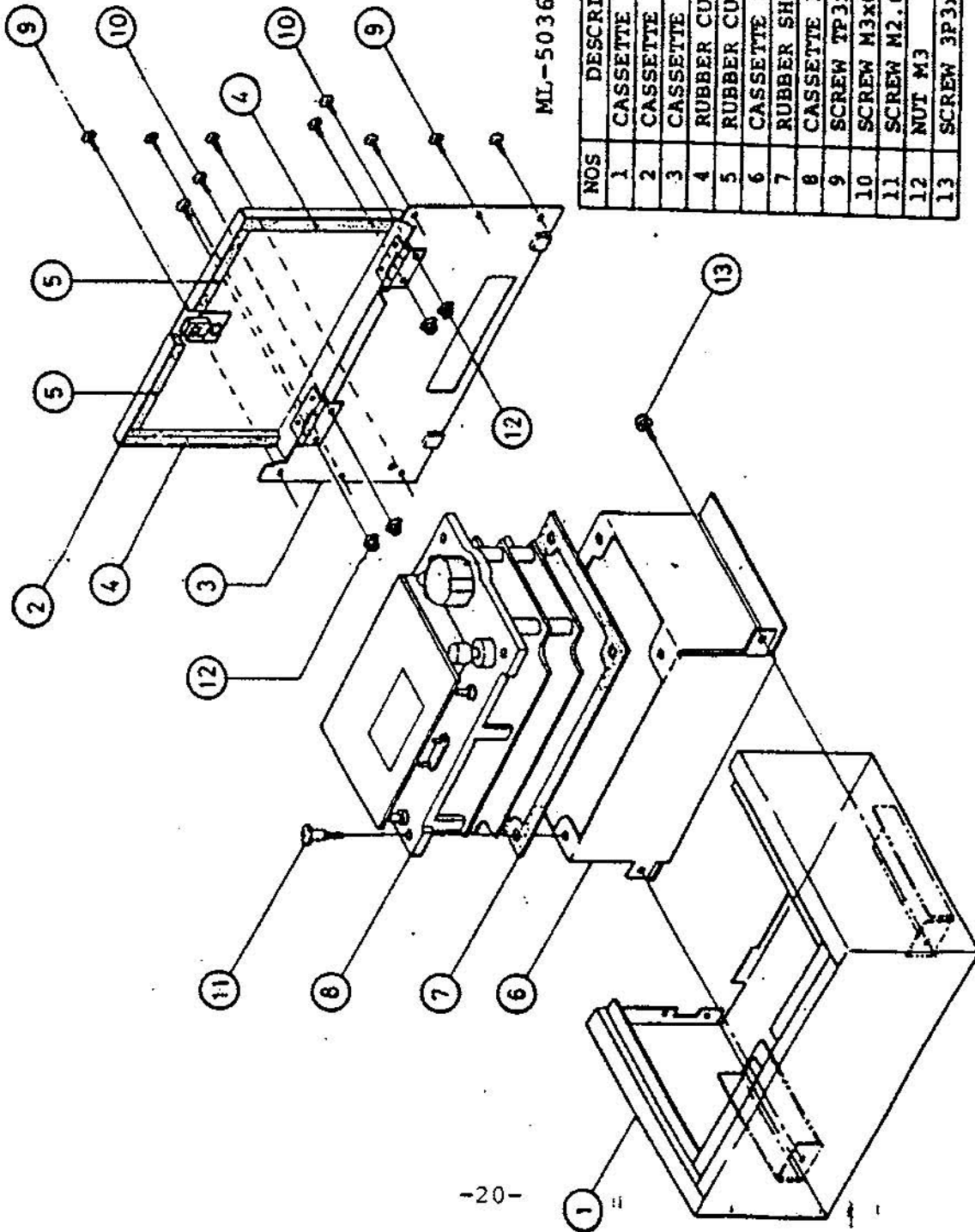
P.C.B. ASSEMBLY



K-50598-0

NOS	DESCRIPTION	PARTS NOS.	Q'TY/SET
1	CN SUPPORT	k-50216-3	1
2	SIDE PLATE(R)	k-50603-0	1
3	SIDE PLATE(L)	k-50604-0	1
4	SIDE PLATE		
	SUPPORT	P-50935-1	2
5	PCB STOPPER	P-59514-0	2
6	GUIDE RAIL	50-1030	8
7	WING BOLT		4
8	SW4		4
9	PW4		4
10	TP3x8		14
11	TP3x8		8
12	TP3x12		8
13	BI08	DE-0098	1
14	DSP8	DE-0096	1
15	RMS8	DE-0097	1
16	BUS10	DE-0109	1

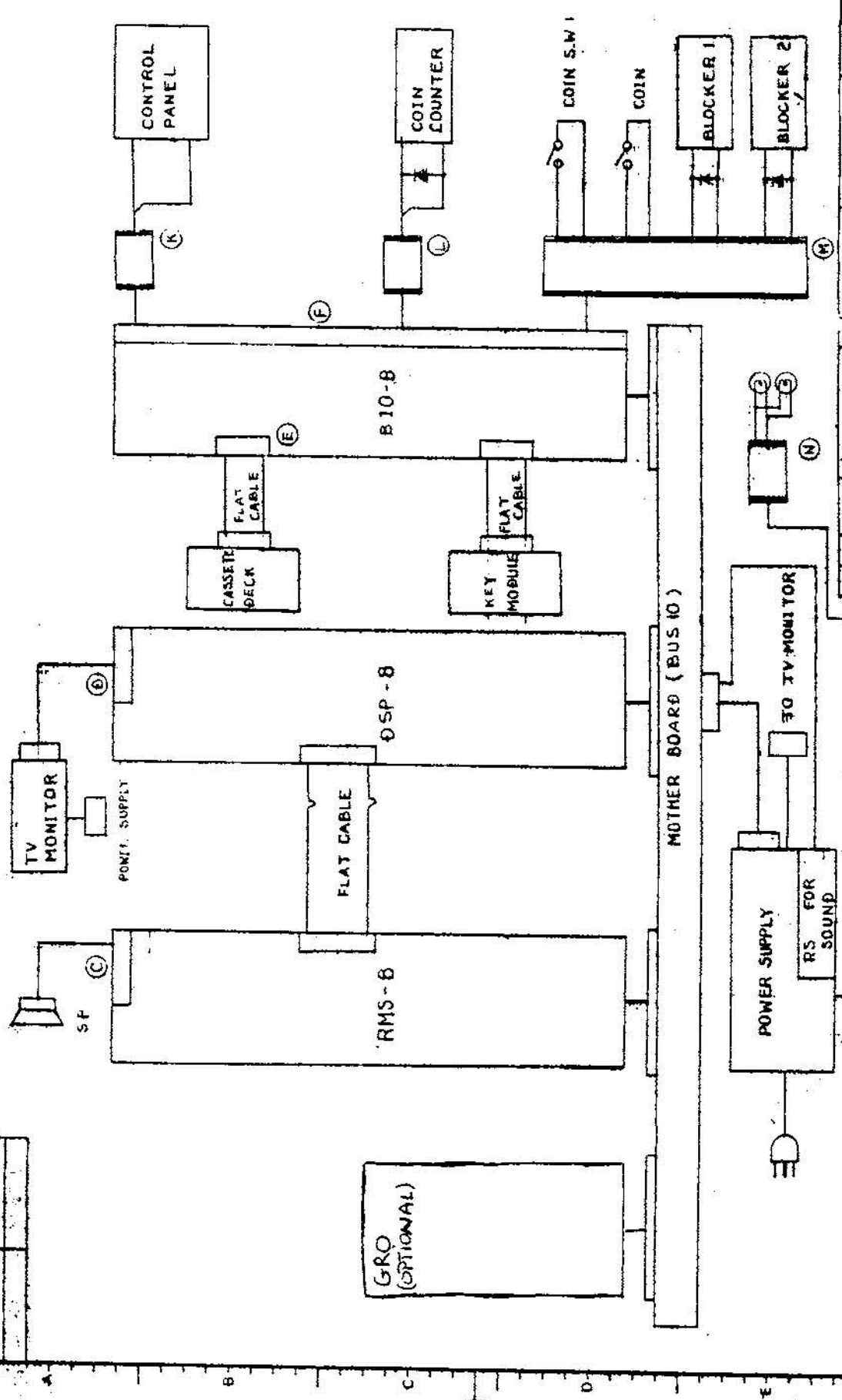
CASSETTE DECK ASSEMBLY



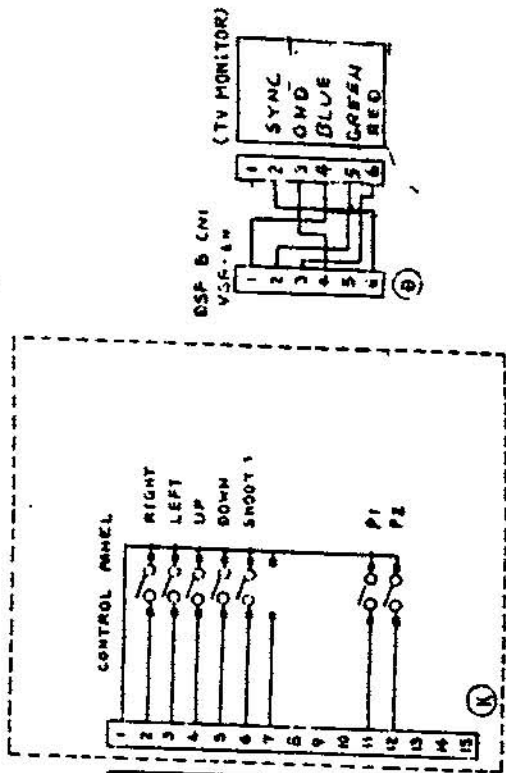
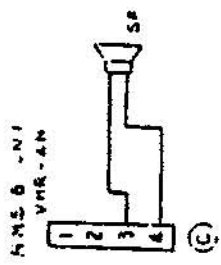
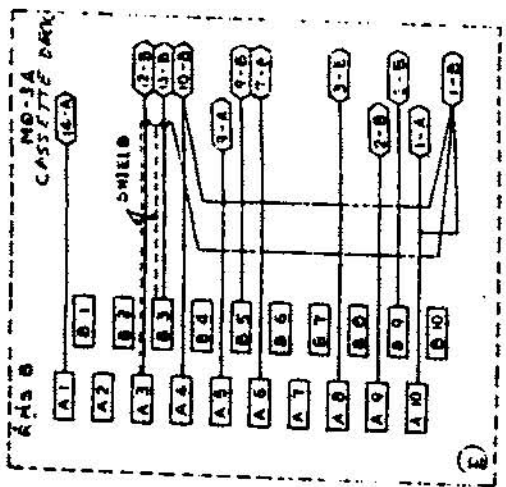
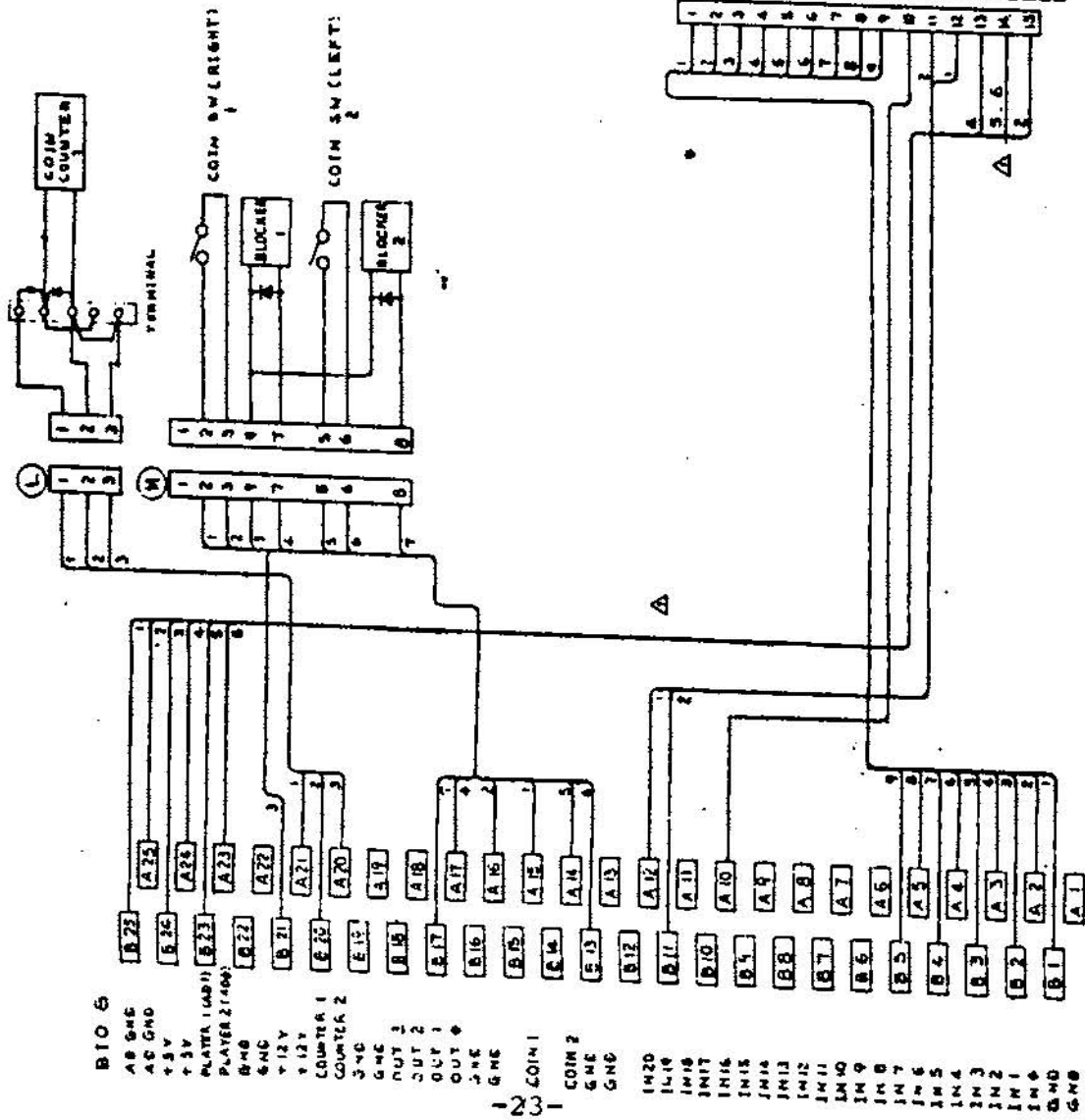
ML-50362-2

NOS	DESCRIPTION	PARTS NOS	Q' TY/SET
1	CASSETTE BRACKET (A)	G-50177-1	1
2	CASSETTE DOOR	K-50575-1	1
3	CASSETTE BRACKET (B)	P-50947-0	1
4	RUBBER CUSHION (A)	P-50949-0	2
5	RUBBER CUSHION (B)	P-50950-0	2
6	CASSETTE BRACKET	K-50141-2	1
7	RUBBER SHEET	P-50769-0	1
8	CASSETTE DECK	MD-3A	1
9	SCREW TP3x8		6
10	SCREW M3x6		4
11	SCREW M2.6x12		4
12	NUT M3		4
13	SCREW 3P3x8		2

原機番号	仕様名称

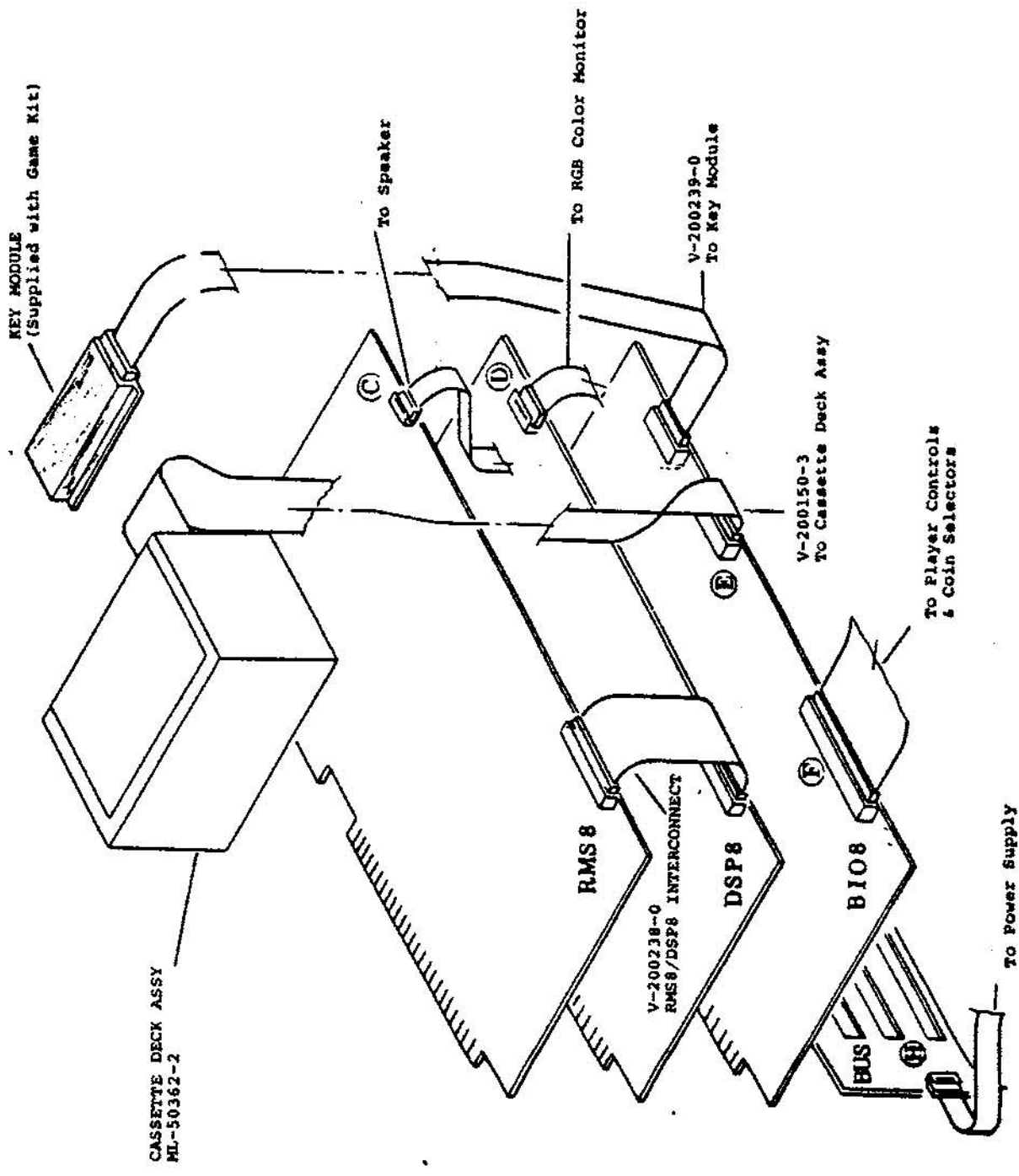


記号	年月日	改訂	場所	呼号	製品	製造番号	名称	仕様	材質
							名称 <b>ILS-B (NDP-DTX-USA)</b> <b>SCHEMATIC INSTRUMENT</b> 図番 <b>K-30451-1</b>		



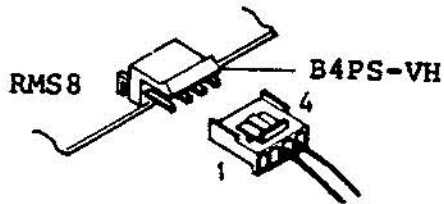
1 2 3 1

(E)





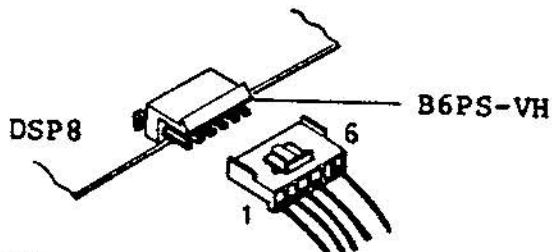
PC1 RMS8 CN1



CABLE C V-200236-1 To Speaker

1		
2		
3	SPEAKER- (GND)	BLACK
4	SPEAKER+	WHITE

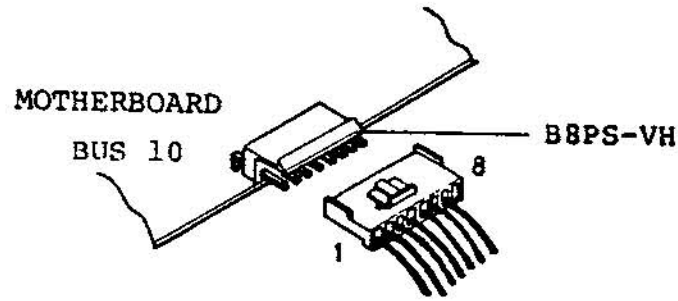
2. PC2 DSP8 CN1



CABLE D V-200235-1 To RGB Monitor

1	TV. B	BLUE
2	TV. G	GREEN
3	TV. R	RED
4	TV. GND	BLACK
5		
6	SYNC	WHITE

BUS 10 CN2

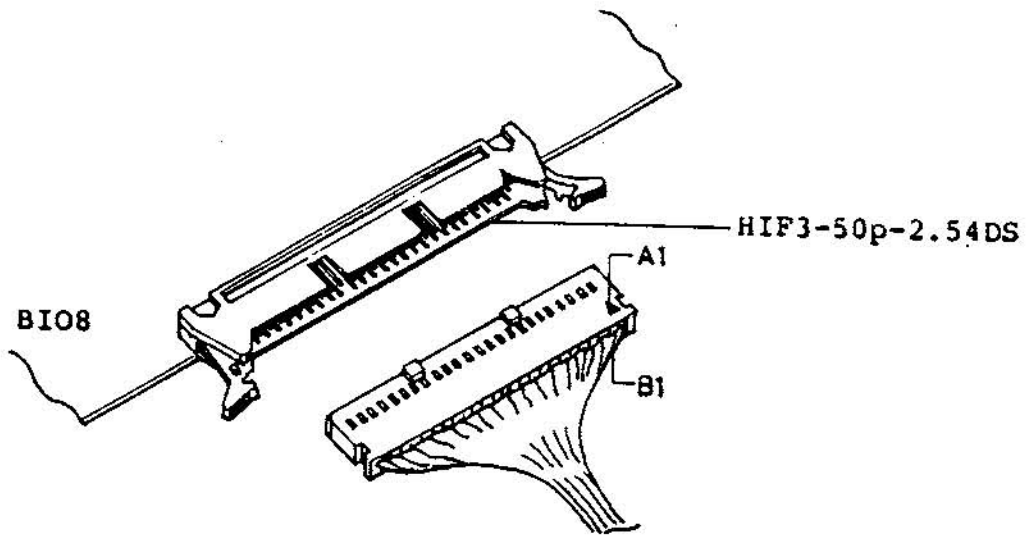


CABLE H V-200240-1 To Power Supply

1	+12V	ORANGE
* 2	+5V	RED
3	+13V	PINK
* 4	GND	BLACK
* 5	GND	BLACK
6	-5V	BLUE
* 7	+5V	RED
8		

\*2 & 7 connected internally  
on BUS 10

\*4 & 5 connected internally  
on BUS 10

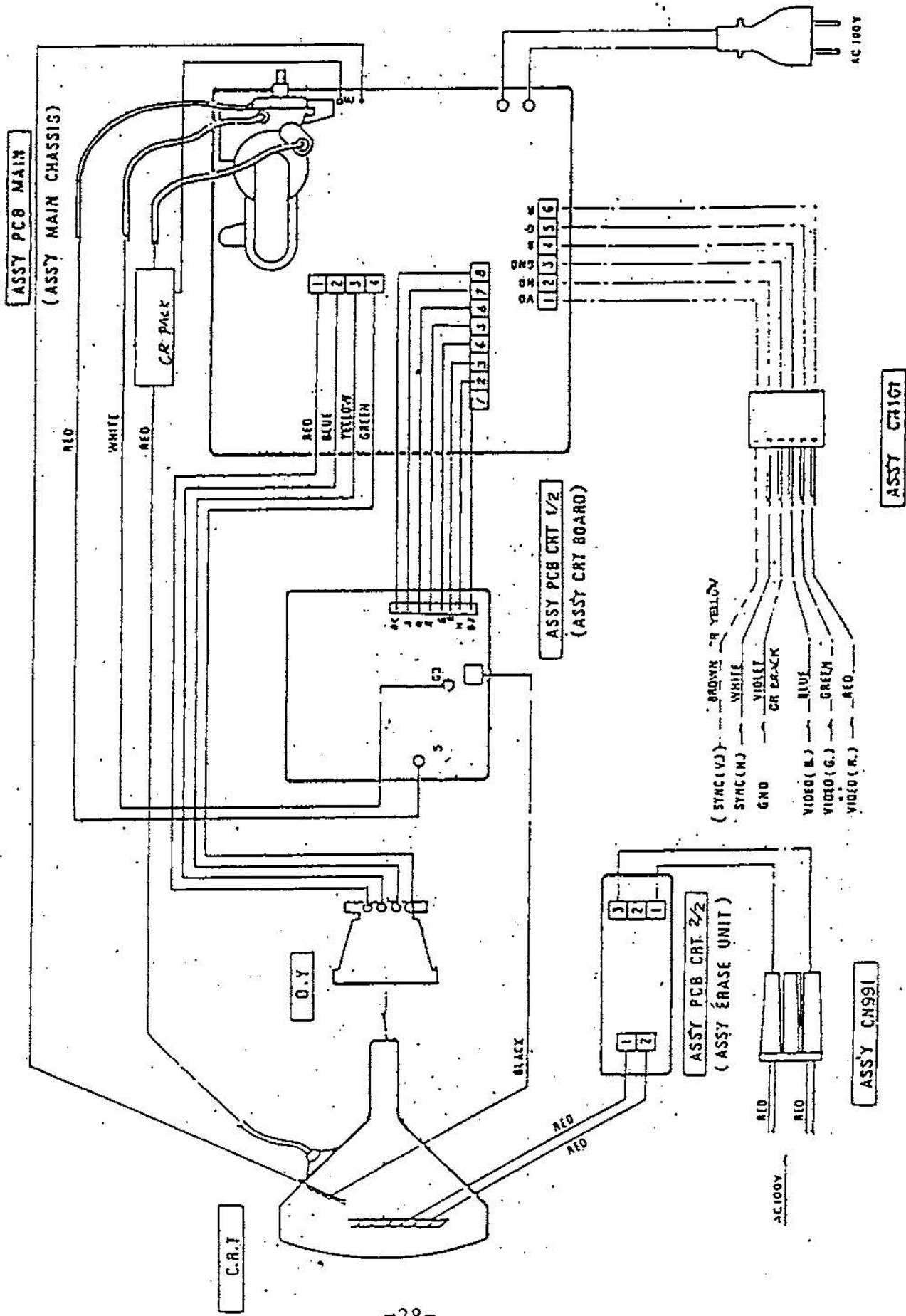


CABLE F V-200242-1 to Player Controls & Coin Selectors

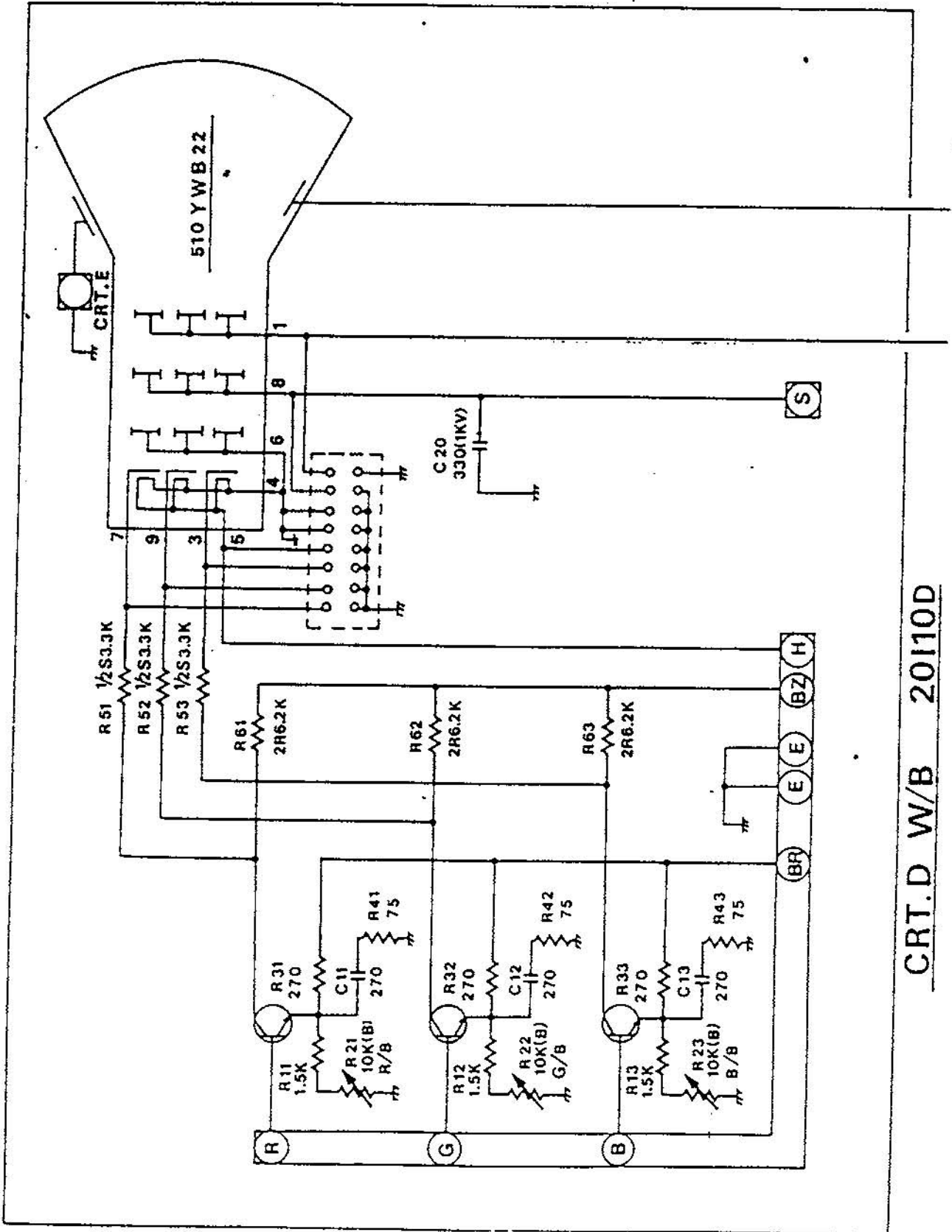
BLACK & WHITE	A1	GND	B1	GND	BLACK & WHITE
RED	A2	1p(R)	B2	1p(L)	ORANGE
RED	A3	1p(U)	B3	1p(D)	ORANGE
YELLOW	A4	1p SHOOT 1	B4	1p SHOOT 2	BLUE
	A5		B5		
RED	A6	2p(R)	B6	2p(L)	ORANGE
YELLOW	A7	2p(U)	B7	2p(D)	GREEN
VIOLET	A8	2p SHOOT 1	B8	2p SHOOT 2	BLUE
	A9		B9		
	A10		B10		
	A11		B11	1p	
BLUE & WHITE	A12	2p	B12		BROWN
	A13		B13		
WHITE	A14	COIN SW 2	B14		
GREEN	A15	COIN SW 1	B15		
BLACK & WHITE	A16	GND	B16		
BROWN	A17	BLOCKER 1	B17	BLOCKER 2	RED
	A18		B18		
	A19		B19		
WHITE	A20	COUNTER 2	B20	COUNTER 1	VIOLET
	A21		B21		
	A22		B22		
	A23		B23		
	A24		B24		
	A25		B25		

SANWA MONITOR

BLOCK DIAGRAM 20110D

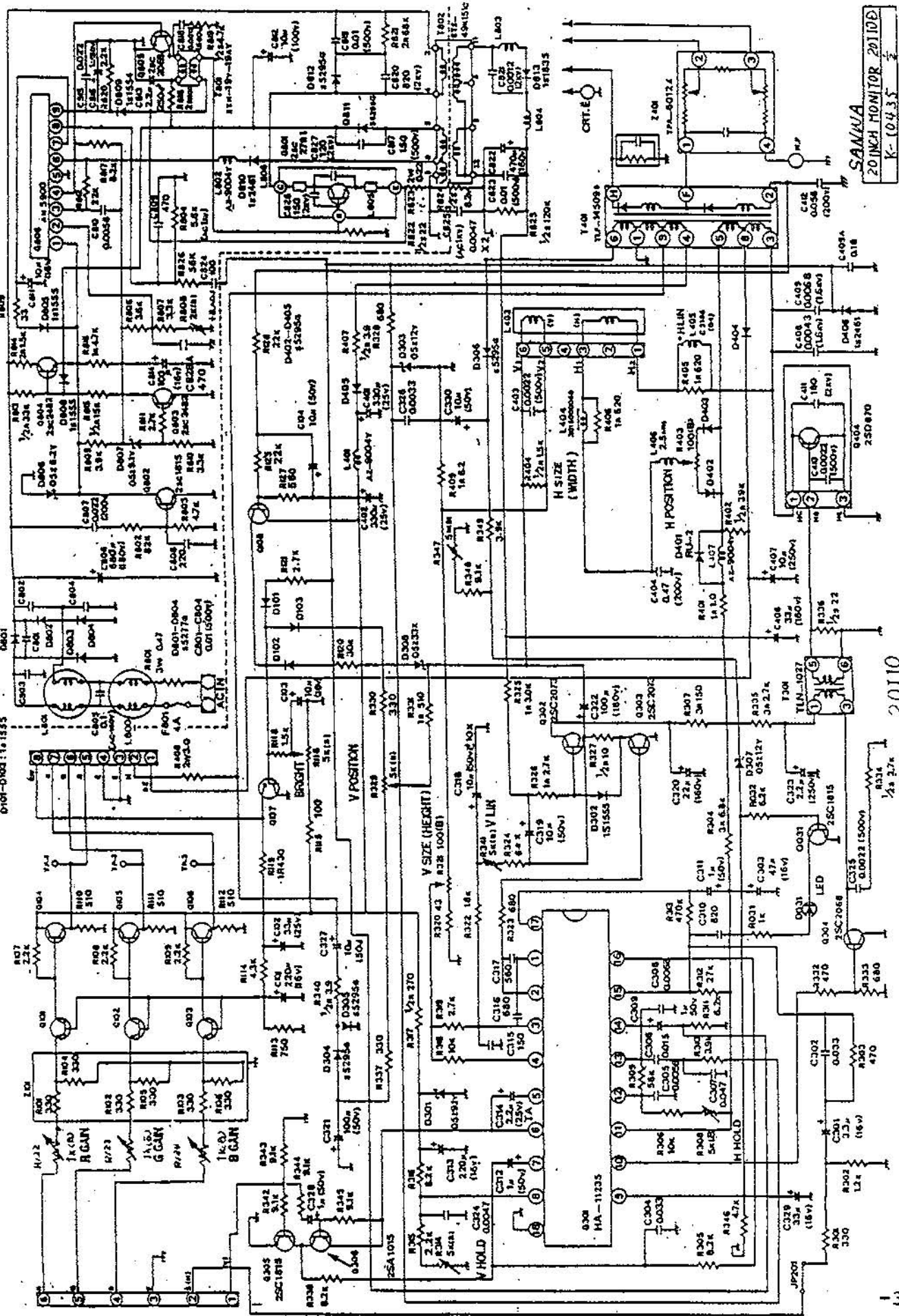


20 INCH MONITOR 201100  
K-10435 2



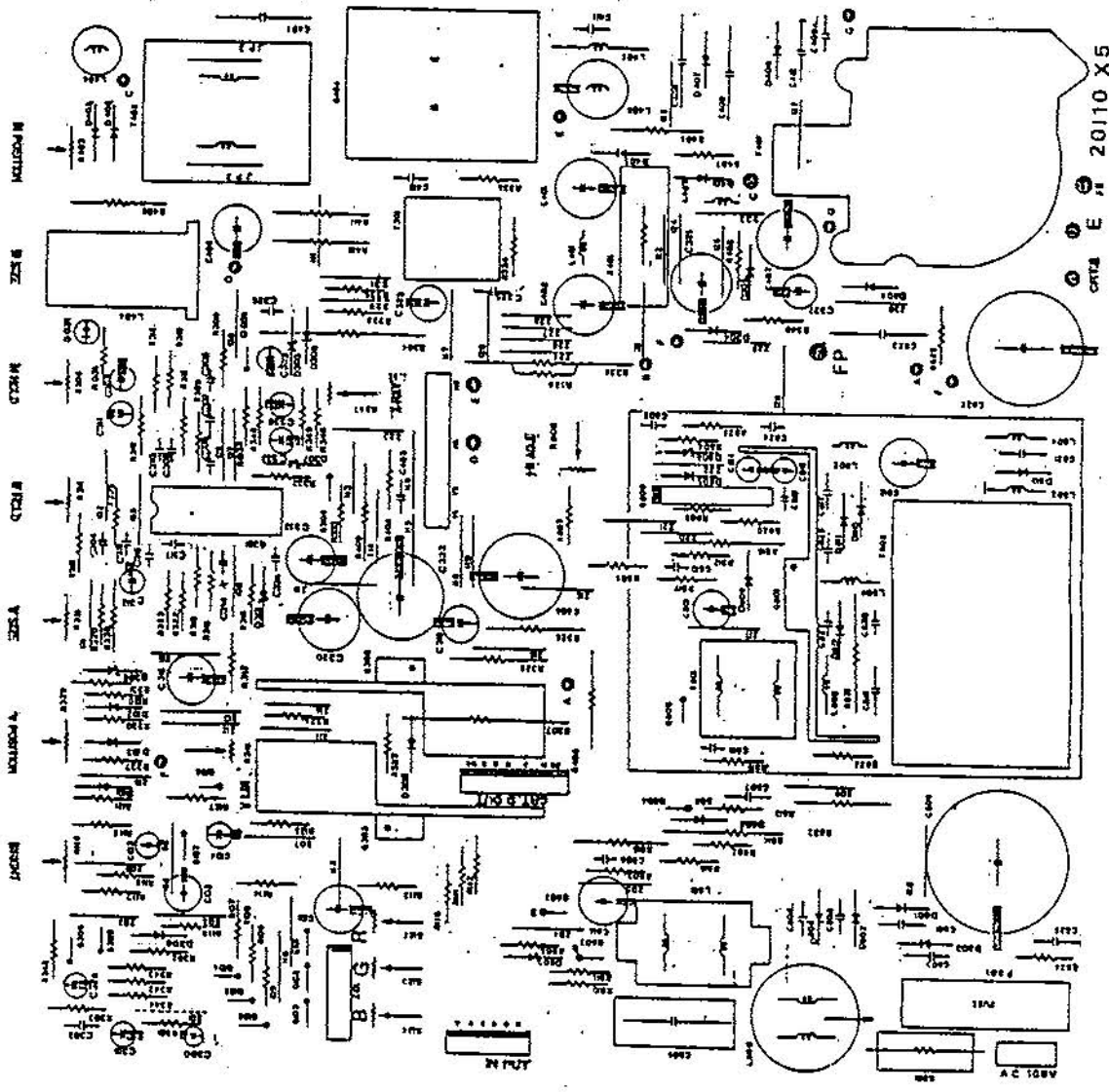
CRT.D W/B 20110D

D01-D03, D101-D106: 25C 1815  
 D107-D108: 25A 1015  
 D109-D100: 161555

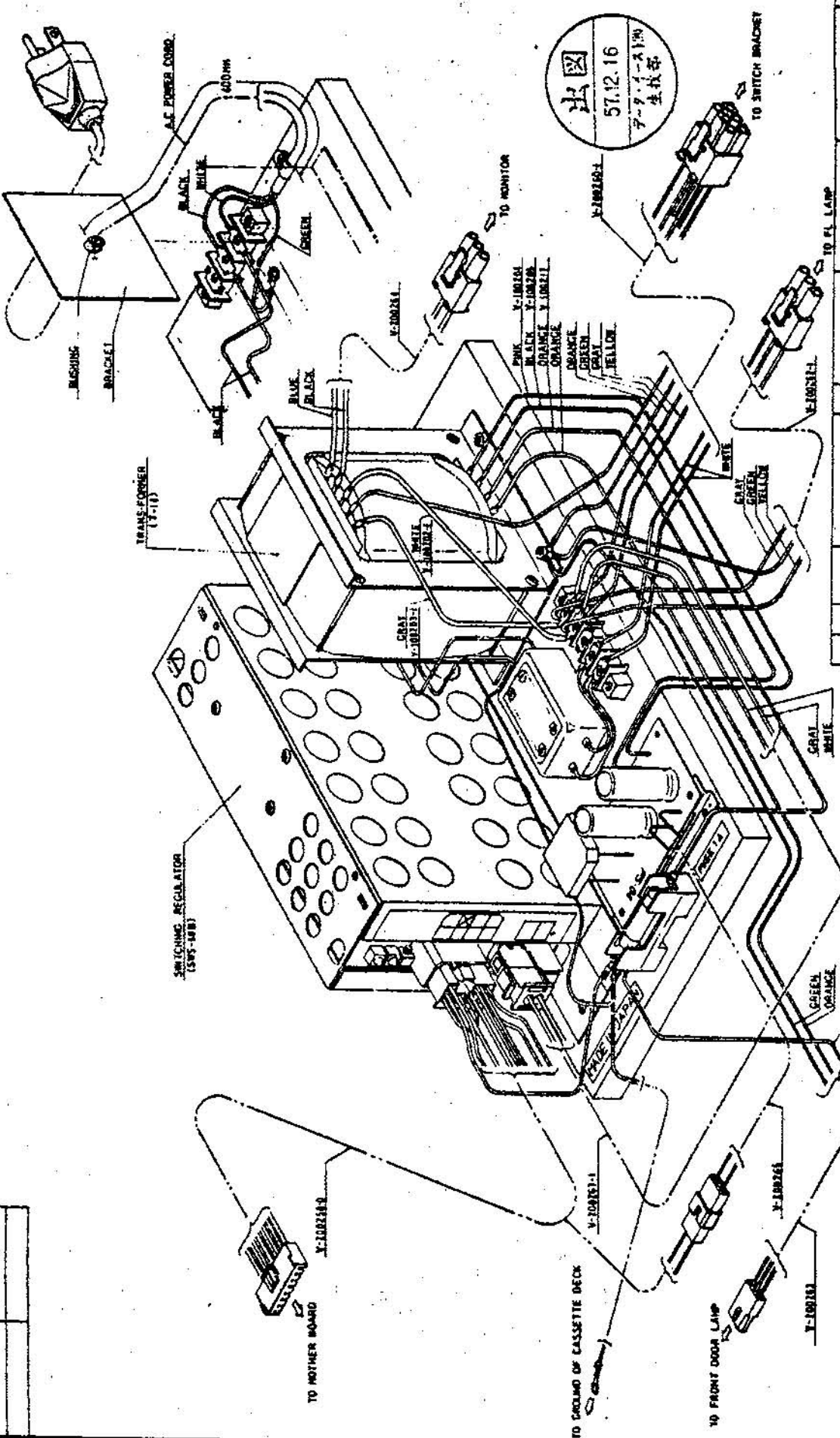


SANKU  
 20 INCH MONITOR 20110  
 K-10433

20110



機種番号	仕様、名称



記号	用途	年月日	改訂	場所	番号	製品、図面番号	名称	仕様	材質	数量
材料			処理			公産	NDB-04X-USA			
品名	規格	数量	単位	備考			PS ASSY			
1										
2										

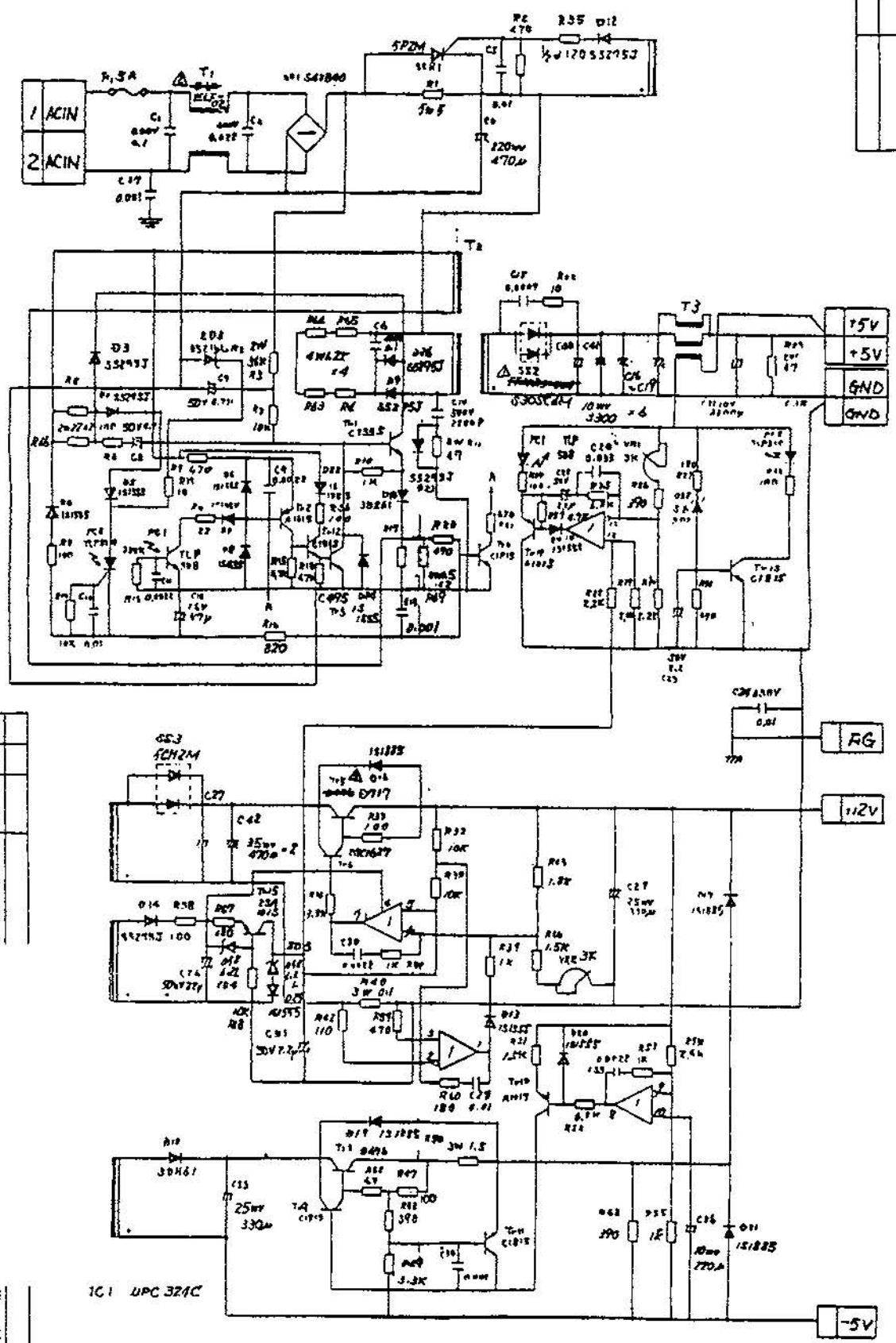
記号

第 3 角法

富士通株式会社



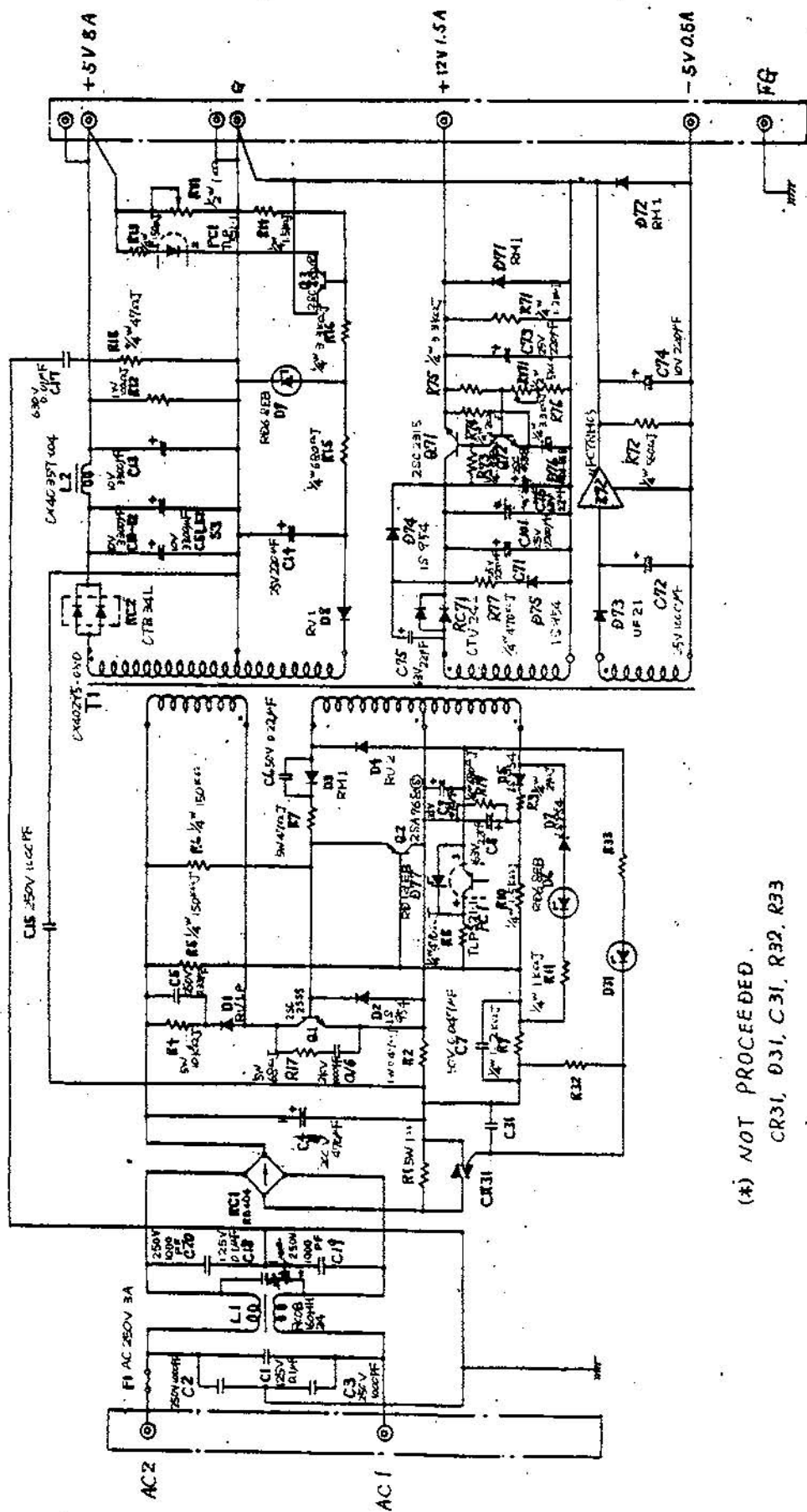
関連番号	仕様、名称
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電子回路

記号	年月日	改訂番号
仕様		
材料		
部品		
公差		
単位		
図番		
8相 ELCO SWS-50 SWITCHING REGULATOR		
K-10240		
株式会社		

IC1 UPC324C

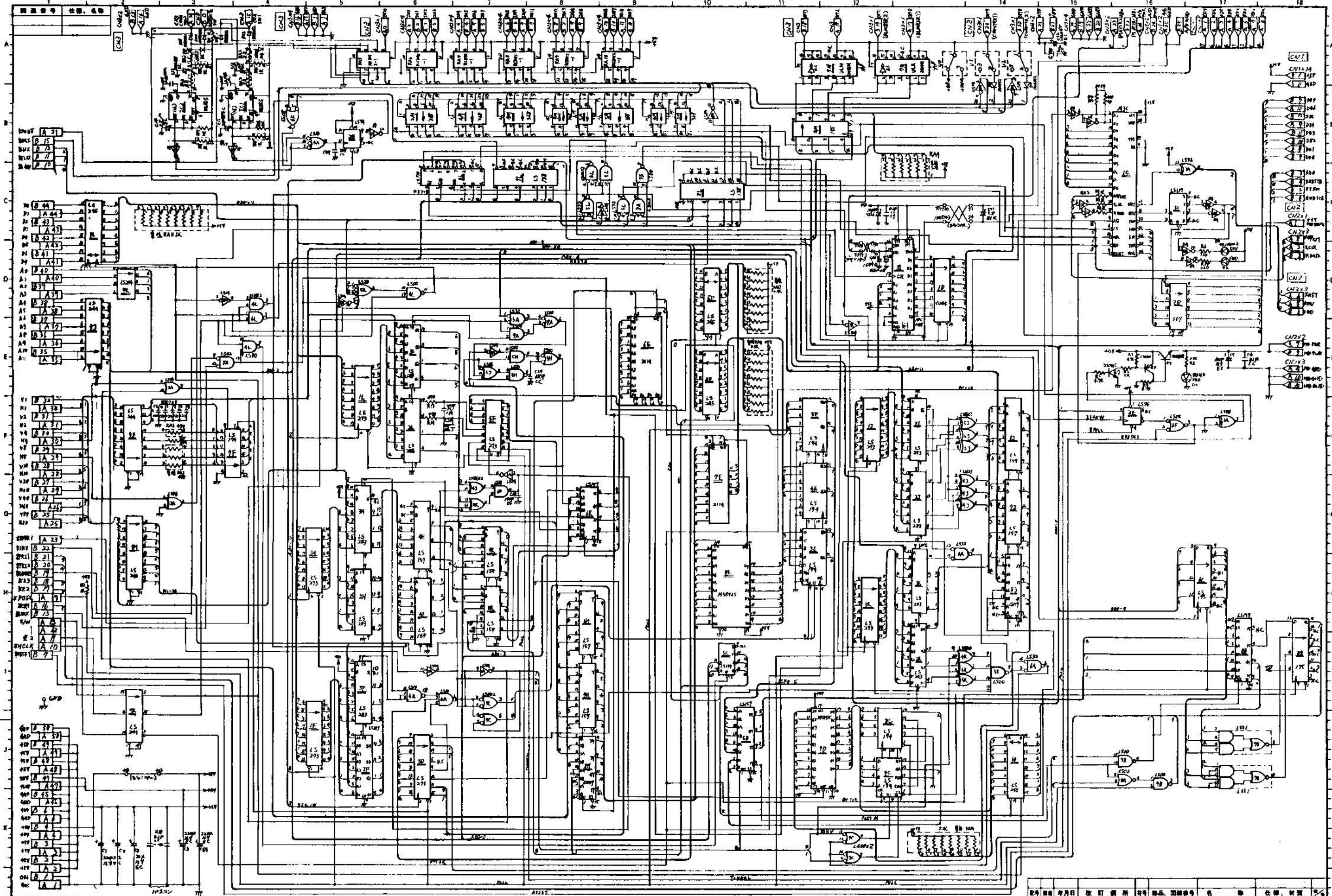


(\* ) NOT PROCEEDED.  
 CR31, 031, C31, R32, R33

材質	処理	公差	名称
承認	検出	位置	SAKKEN SWS-60B
検出	検出	尺取	SWITCHING REGULATOR
			国産
			K-10505

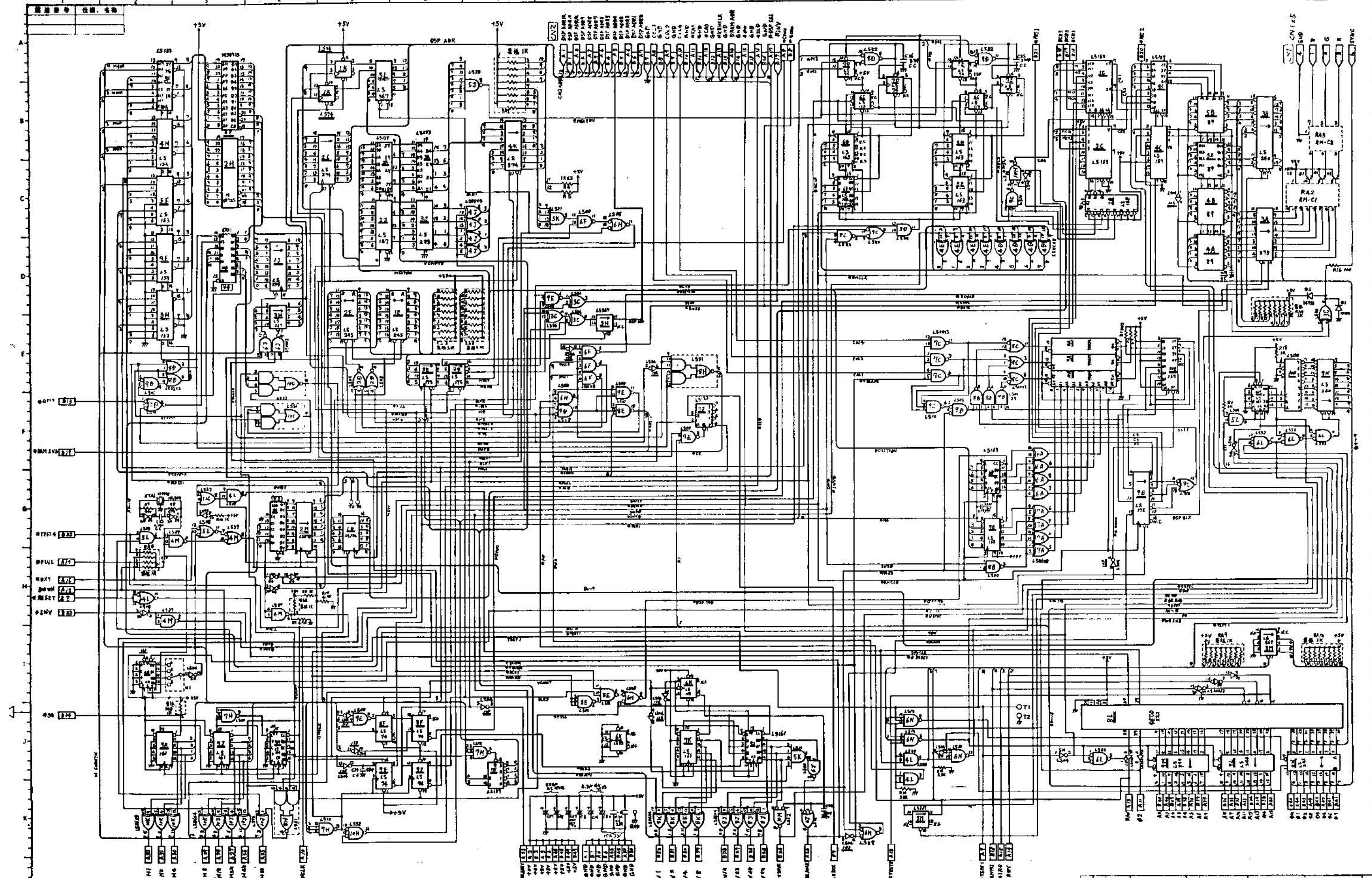
第3角法

テラポニ株式会社

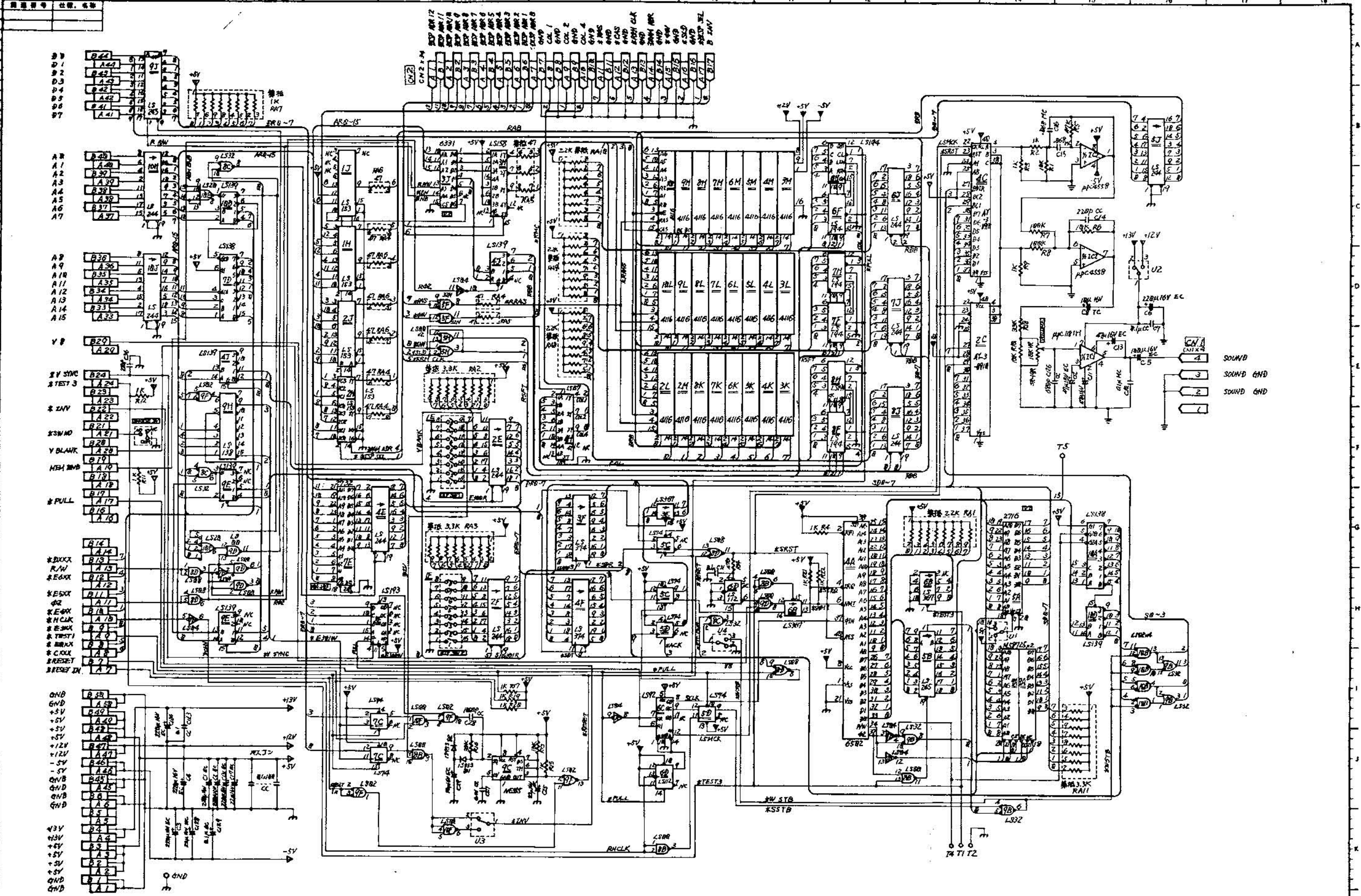


A 31  
 B 15  
 C 44  
 D 43  
 E 42  
 F 41  
 G 40  
 H 39  
 I 38  
 J 37  
 K 36  
 L 35  
 M 34  
 N 33  
 O 32  
 P 31  
 Q 30  
 R 29  
 S 28  
 T 27  
 U 26  
 V 25  
 W 24  
 X 23  
 Y 22  
 Z 21  
 AA 20  
 AB 19  
 AC 18  
 AD 17  
 AE 16  
 AF 15  
 AG 14  
 AH 13  
 AI 12  
 AJ 11  
 AK 10  
 AL 9  
 AM 8  
 AN 7  
 AO 6  
 AP 5  
 AQ 4  
 AR 3  
 AS 2  
 AT 1

图号	年月日	设计	审核	校对	制图	零件	数量	材料	备注
								B10-8	
								G-10023-0	



図名	図番	図種	図尺	図式	図紙	図面	図号	図名	図番	図種	図尺	図式	図紙	図面	図号
								DSP 8							
								G-10022-0							



图号	年月日	设计	所用	材料	规格	数量	备注
							RMR-8
							G-10024-0
							7-9721-825