

technical manual for

**SPACE
PIRATE**

cocktail table

ZACCARIA

SECTION 1
INTRODUCTION

INTRODUCTION

SPACE PIRATE is a one or two player action game that offers features guaranteed to capture and prolong player interest: an accelerating competitive level with a clearly visible object and a team competition option that allows players to combine scores as well as skills in defense strategy against a futuristic enemy.

The center of the playfield is occupied by a selectable number of triangular fuel cells that pulsate with radioactive energy. The player commandeers a land craft that turns left, right, accelerates and fires torpedo energy bursts activated by push-buttons mounted on the "bridge" control panel. All is quiet as the background audio repeats an ominous low frequency tone. Suddenly, alien craft enter in waves from the edges of the playfield attempting to attach their vehicles to the fuel cells and drag them off to restock their own dwindling supplies. The player maneuvers his land ship into position and fires a volley of torpedoes at the first invader, causing his vehicle to explode in a thunderous roar and a flash of light. A second invader retaliates by firing short range laser bursts at the defender ship while a third invader escapes, dragging off a precious fuel cell. The background audio quickens its pitch and tempo as another wave of sleeker, faster invaders attack and maneuver to rip off fuel cannisters — and the battle rages on!

GAME PLAY

There are three modes of play in **S. P.**: a) the attract mode; b) the one player mode; and c) the two player mode.

The attract mode is activated when power is applied. In the attract mode, triangular figures appear in the center of the screen. "Enemy" vehicles then appear in groups of three from various points on the edge of the screen and gravitate toward the triangles in the center. Upon reaching the triangle, the "enemy" vehicle comes to a full stop with its nose pointed directly at the triangle. The vehicle then makes a 180 degree rotation, attaches itself to the triangle, and drags the triangle off the screen toward a randomly selected point. When all the triangles have left the screen, the attract mode begins its cycle again.

The one player mode is activated when a coin is accepted and the player pushes the one player button. As play begins the first player's vehicle appears on the right side of the screen and moves slightly forward. The enemy vehicles then appear in pairs from various points on the edge of the screen and gravitate toward the player and the triangles. The enemies fire lasers while they move. The player scores points by either shooting the enemy or colliding with him before the enemy can shoot the player, collide with him or drag his triangle off the screen. When a player's vehicle is exploded, it reappears on the right side of the screen where it began.

When a player has sufficient points to achieve a bonus level, the enemies will appear three at a time instead of in pairs and their point value increases. Each bonus level increases the enemies' point value, as well as their ability to seek out and destroy the player. When all the triangles have been dragged off the screen, the game is over and the unit reverts to attract mode.

The two player mode is activated when two coins have been accepted and a player pushes the two player button. As play begins, the first player's vehicle appears on the right side of the screen and the second player's vehicle appears on the left. Both vehicles move forward slightly. Enemy vehicles then appear in groups of three and attack the players and seek to drag off the triangles. Players score points by colliding with the enemy vehicles or shooting them. No points are scored by shooting or colliding with the other player. Should the players'

ships collide, an explosion will occur and the players' vehicles will reappear at the points where they began.

In the two player operator selectable opponent mode, individual scores are displayed after each wave of attackers are destroyed or successfully leave the screen. In the team mode, the combined score of both defenders is displayed. At the end of the game, when all fuel cannisters have been removed, the individual high score for the day is displayed at the bottom of the screen and the high team score is displayed at the top.

A player achieves bonus levels in which the value of each invader vehicle is increased by the displayed amount of the bonus. There are six different types of invader vehicles, each wave becoming increasingly offensive and more difficult to destroy. The point bonus is in effect after six waves, the full compliment of ship types, have been destroyed. There are three similar craft in a wave, and in the two player mode twelve waves must be eliminated before bonus goes into effect.

There are no time units per game credit, and the battle goes on until all fuel cannisters have been "ripped off" from the playfield. The length of play is solely dependent upon the skill of the player — but it takes an experienced, practiced captain to hold off the swift invaders for long!

SECTION 2
INSTALLATION

SECTION 2

INSTALLATION

RECEIVING INSPECTION

Your game was shipped in ready-to-play condition. However, after removal of the shipping carton, a brief visual examination is suggested.

Naturally, you'll want to make note of any physical damage to the game cabinet and its external components for freight claim purposes. Considering the quality of the shipping carton, any damage to the exterior would indicate possible interior damage as well.

The interior of the game should also undergo a brief examination for: loose mounting hardware (check to be sure that the major components are still securely mounted); disconnected or loose wires, cables or harnesses; electronic devices loose in their sockets; etc.

At this time the game serial number should be logged. Please remember that the game serial number will be required if you need service from your distributor.

ELECTRICAL REQUIREMENTS

Unless specified otherwise, your game was shipped to operate at 220VAC, 50/60 Hz. Four other voltage settings are possible

A good earth ground is essential for the

proper operation of this game or for that matter any electronic device. Problems with instability and erratic operation of computer-type devices can usually be traced to an ineffective ground system.

INITIAL ADJUSTMENTS

NOTE

When the game is connected to AC power, one of the game sounds may be heard. This is normal.

SOUND POTENTIOMETER IS PLACED INSIDE THE "COCKTAIL TABLE" AND REACHABLE THROUGH THE TOP PANEL.

Display brightness is another easy adjustment. The monitor assembly has several adjustments, but the brightness control is the only one which does not require a "screwdriver" for rotation. Keep the brightness at the correct level for appeal.

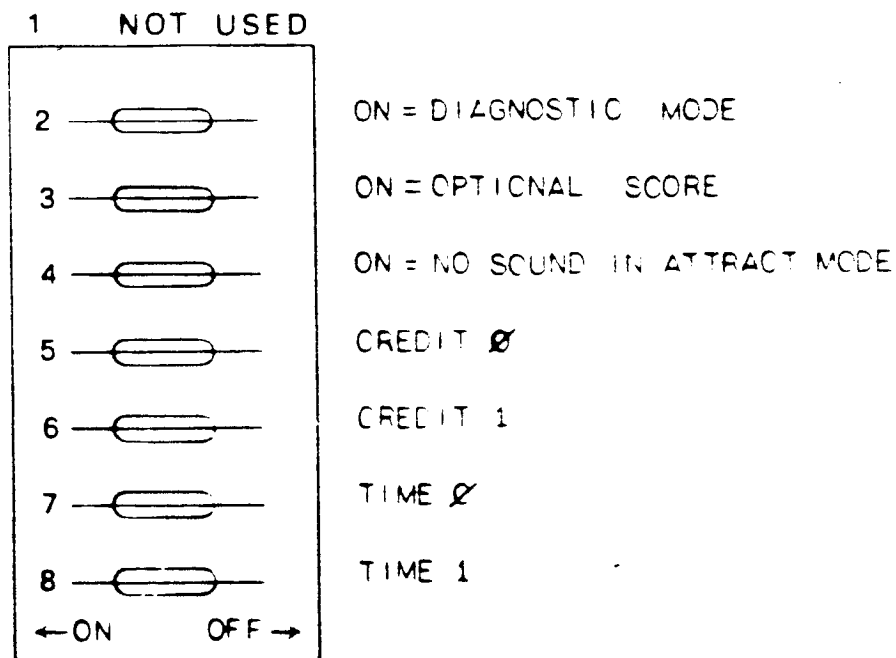
OPERATOR OPTIONS

The option switch is located on the logic or game board. It is not necessary to remove the board from the cabinet to set the options. In fact, the option switch and audio control can be reached easily through the coin door opening. Table 2-1 will assist you with your selections:

LOGIC BOARD OPTION SELECT TABLE

The following chart diagrams the switch settings of the option switches for "S. P.". The 7 station switch is located at position E:2 on the logic board (refer to logic board layout in appendix).

SPACE PIRATE OPTION SWITCHES



To adjust coin receptor, operate on the board (coin switches adjustment), moving switches n° 5 and n° 6 of game board, in "ON" position. Adjust, as wished, switches on table 2-2

TABLE A

TIME 1	TIME \emptyset	UNITS PER PLAY
ON	ON	12
ON	OFF	16
OFF	ON	4
OFF	OFF	8

TABLE B

TABLE 2-1

Switch Descriptions

- 7 — Generates a test pattern for alignment purposes
- 6 — Displays individual scores for each player or one combined score.
- 5 — Allows motor audio in attract mode
- 4,3 — Credit per coin selectors defined in Table A.
- 2,1 — Fuel cell selectors defined in Table B.

TABLE 2-2

COIN SWITCH ADJUSTMENT

COIN MECHANISM 1

1	2	3	8	
OFF	ON	OFF	OFF	2 COINS - 1 PLAY
OFF	ON	OFF	ON	1 COIN - 1 PLAY
OFF	OFF	ON	ON	1 COIN - 2 PLAYS
OFF	ON	ON	ON	1 COIN - 3 PLAYS
ON	OFF	OFF	ON	1 COIN - 4 PLAYS
ON	ON	OFF	ON	1 COIN - 5 PLAYS
ON	OFF	ON	ON	1 COIN - 6 PLAYS
ON	ON	ON	ON	1 COIN - 7 PLAYS

COIN MECHANISM 2

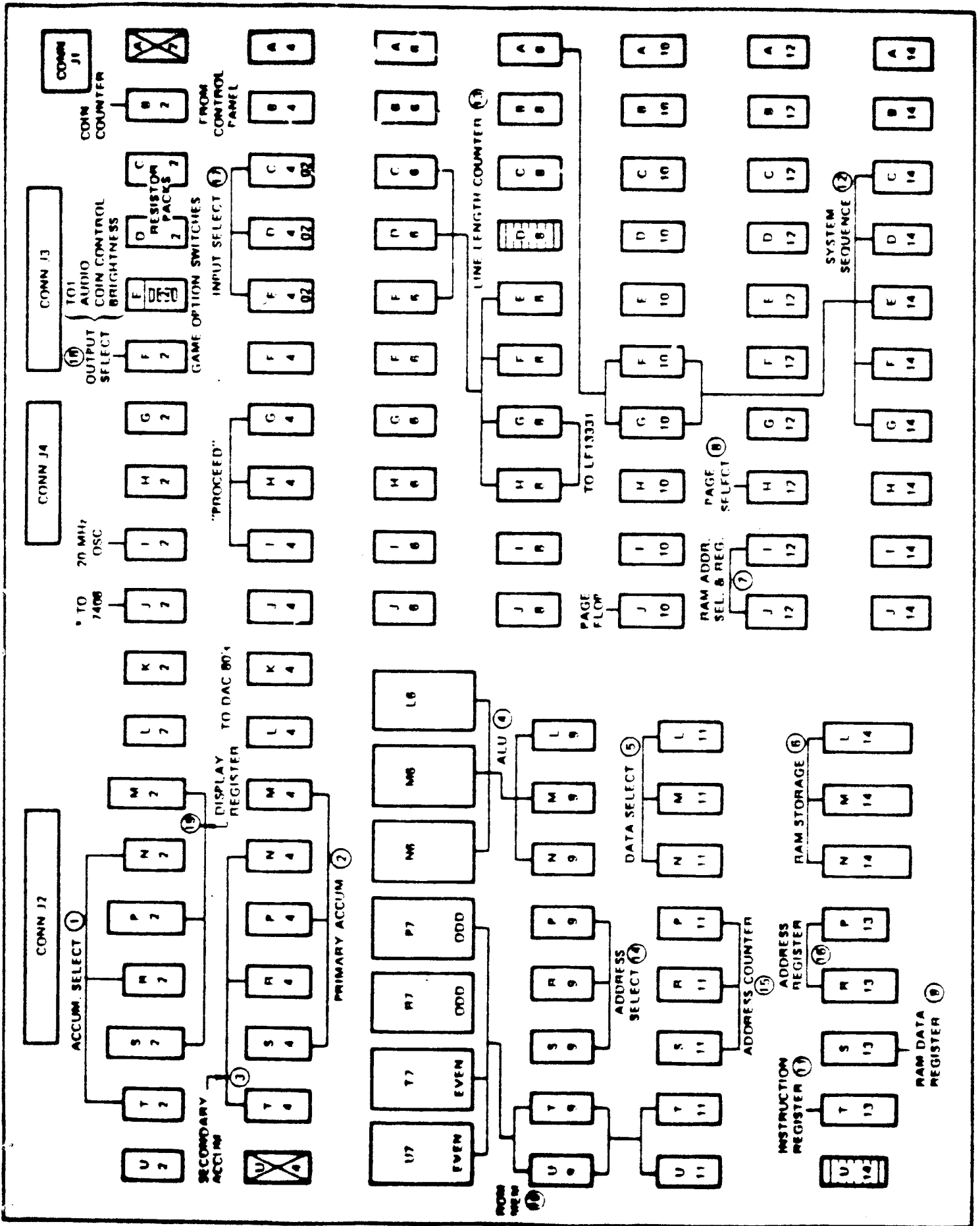
4	5	6	7	
OFF	ON	OFF	OFF	2 COINS - 1 PLAY
OFF	ON	OFF	ON	1 COIN - 1 PLAY
OFF	OFF	ON	ON	1 COIN - 2 PLAYS
OFF	ON	ON	ON	1 COIN - 3 PLAYS
ON	OFF	OFF	ON	1 COIN - 4 PLAYS
ON	ON	OFF	ON	1 COIN - 5 PLAYS
ON	OFF	ON	ON	1 COIN - 6 PLAYS
ON	ON	ON	ON	1 COIN - 7 PLAYS

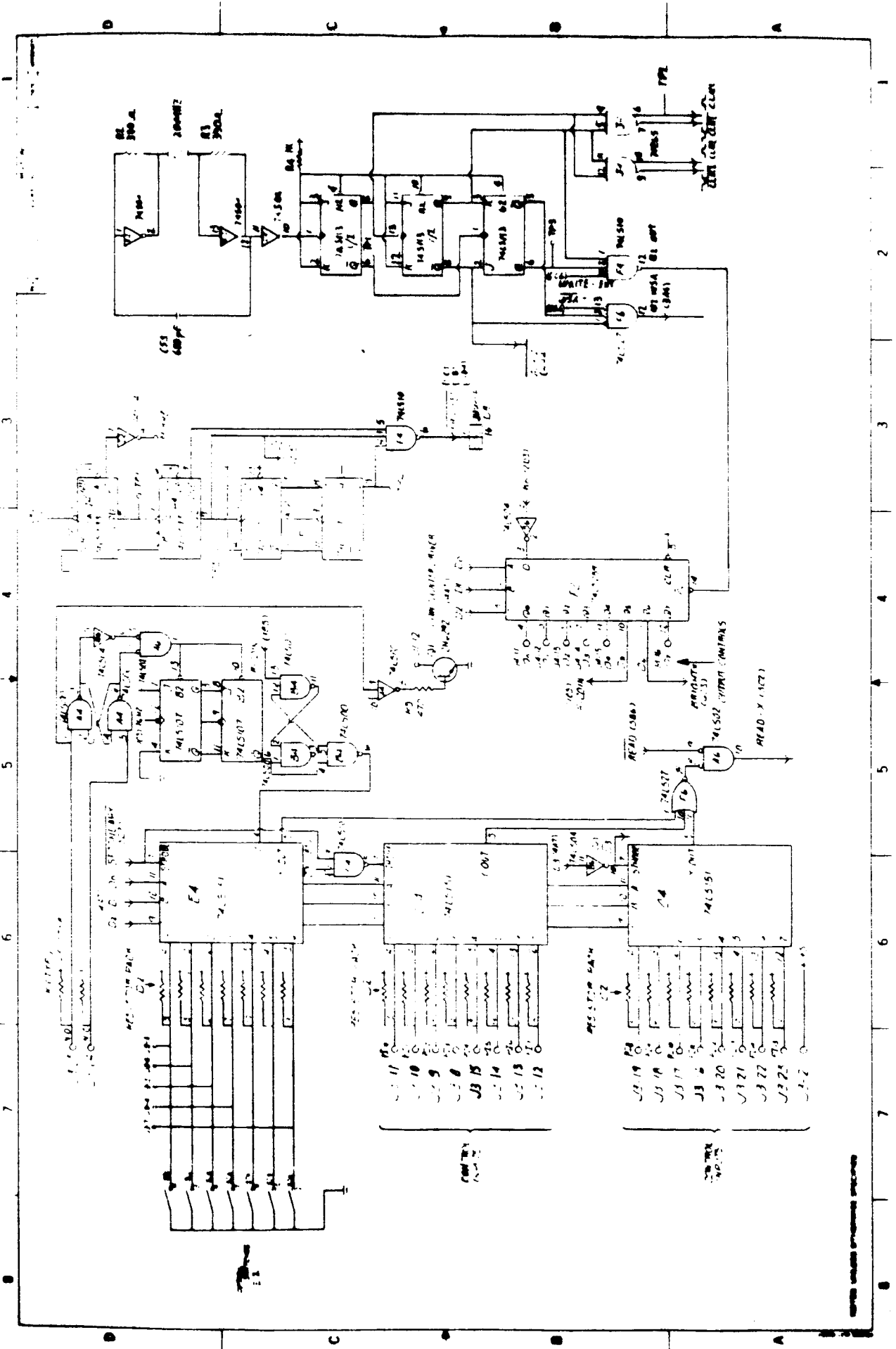
ATTENTION :

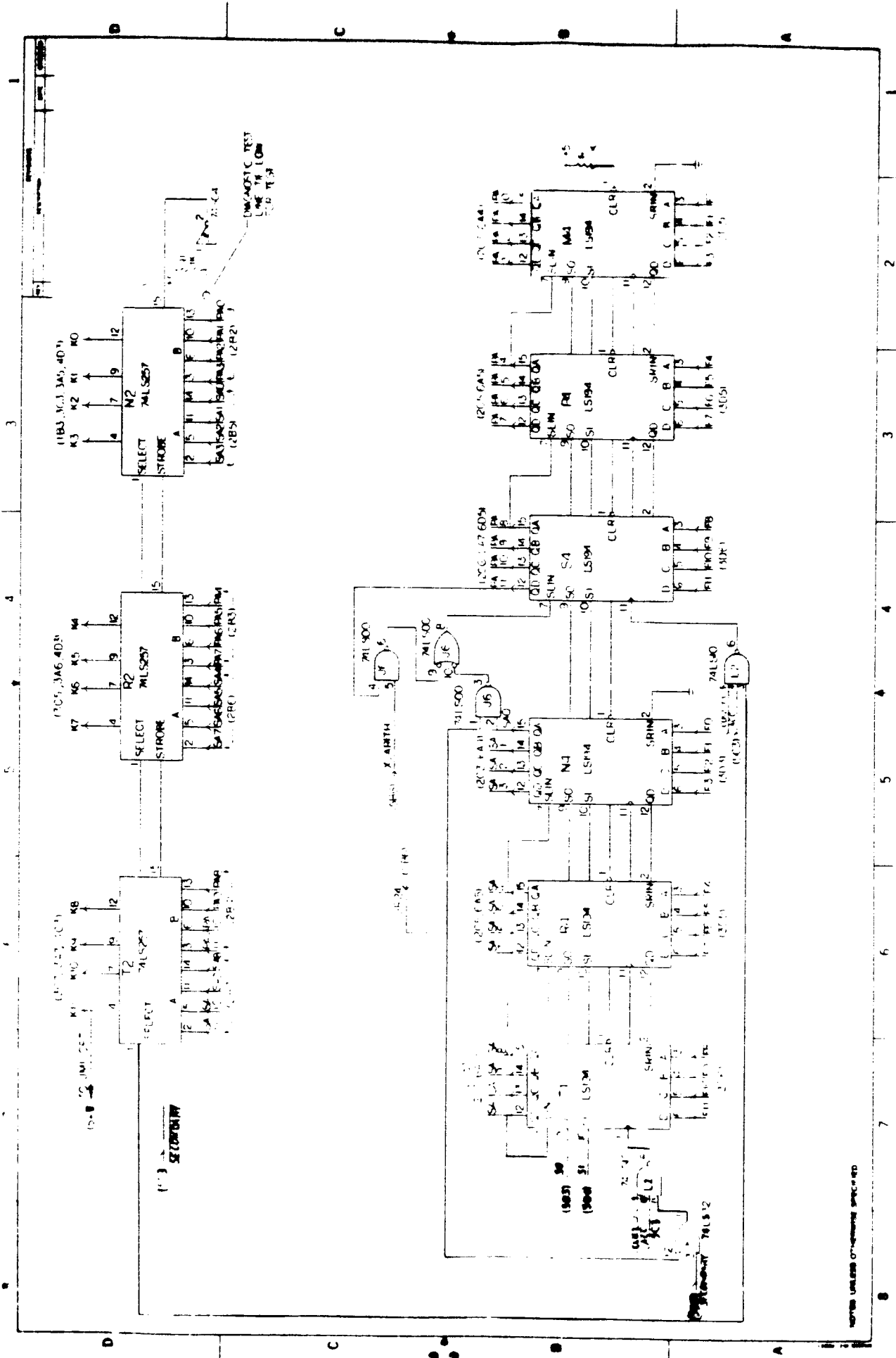
Do not use other possible combinations.

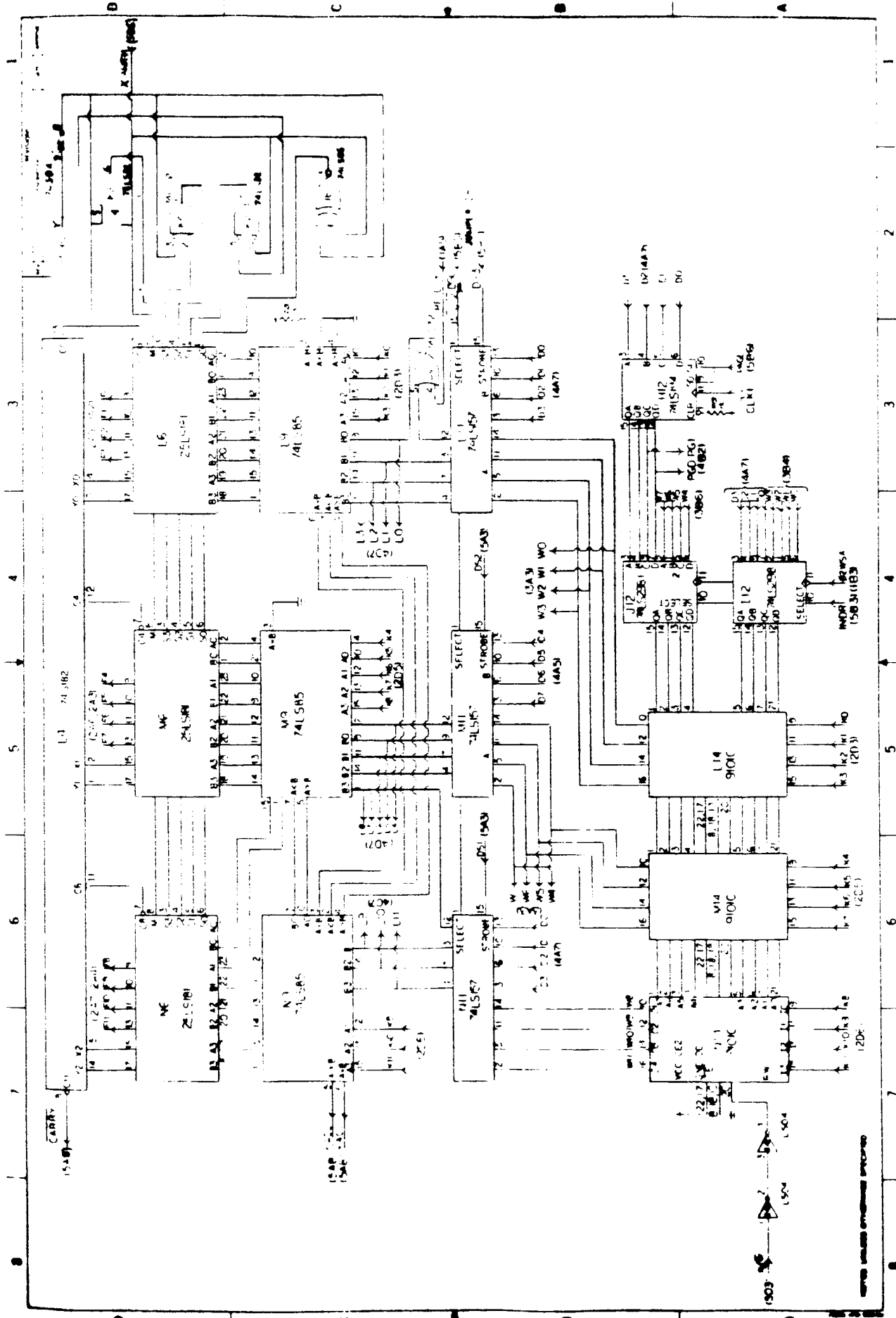
APPENDIX

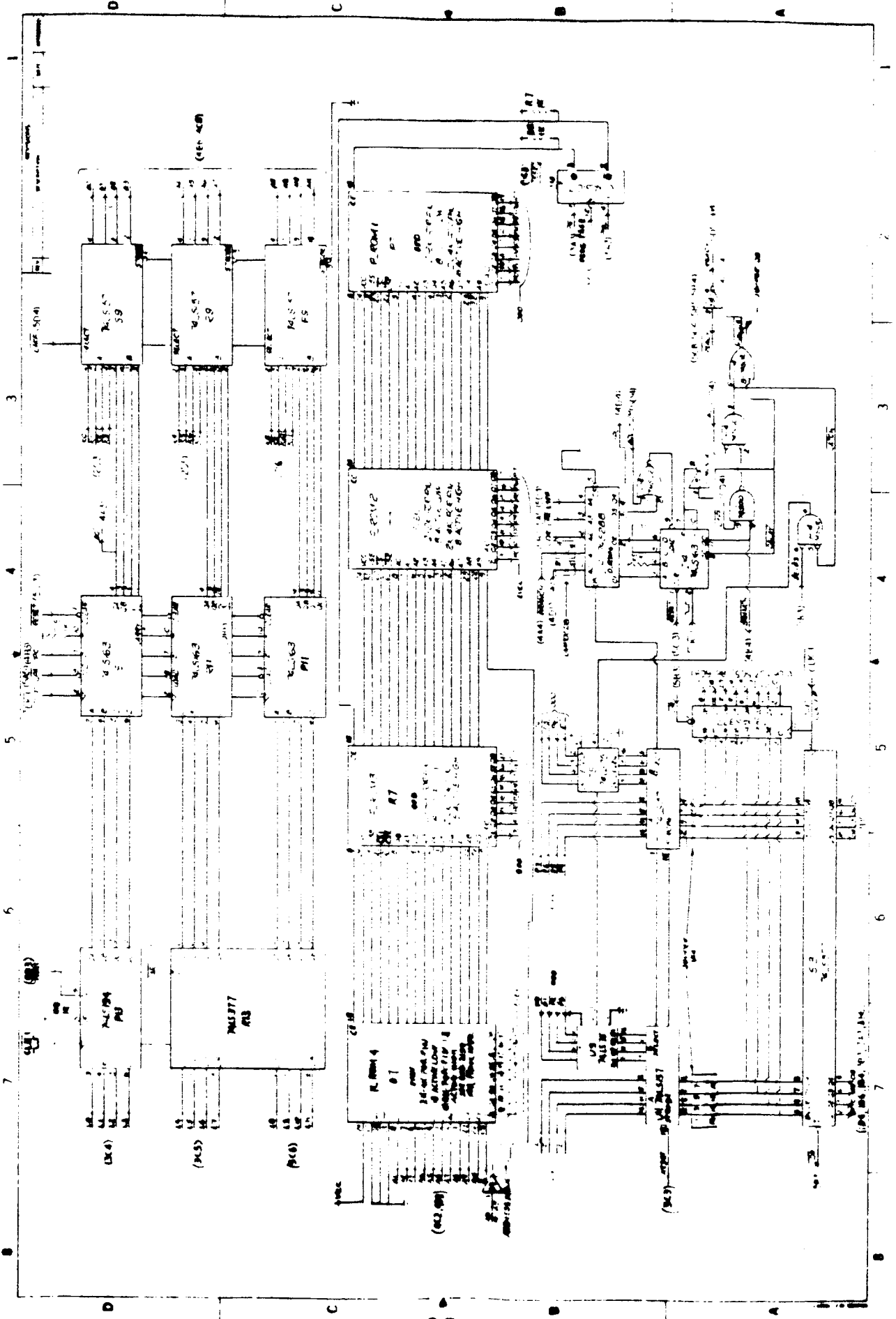
Assembly Drawings.
Schematics

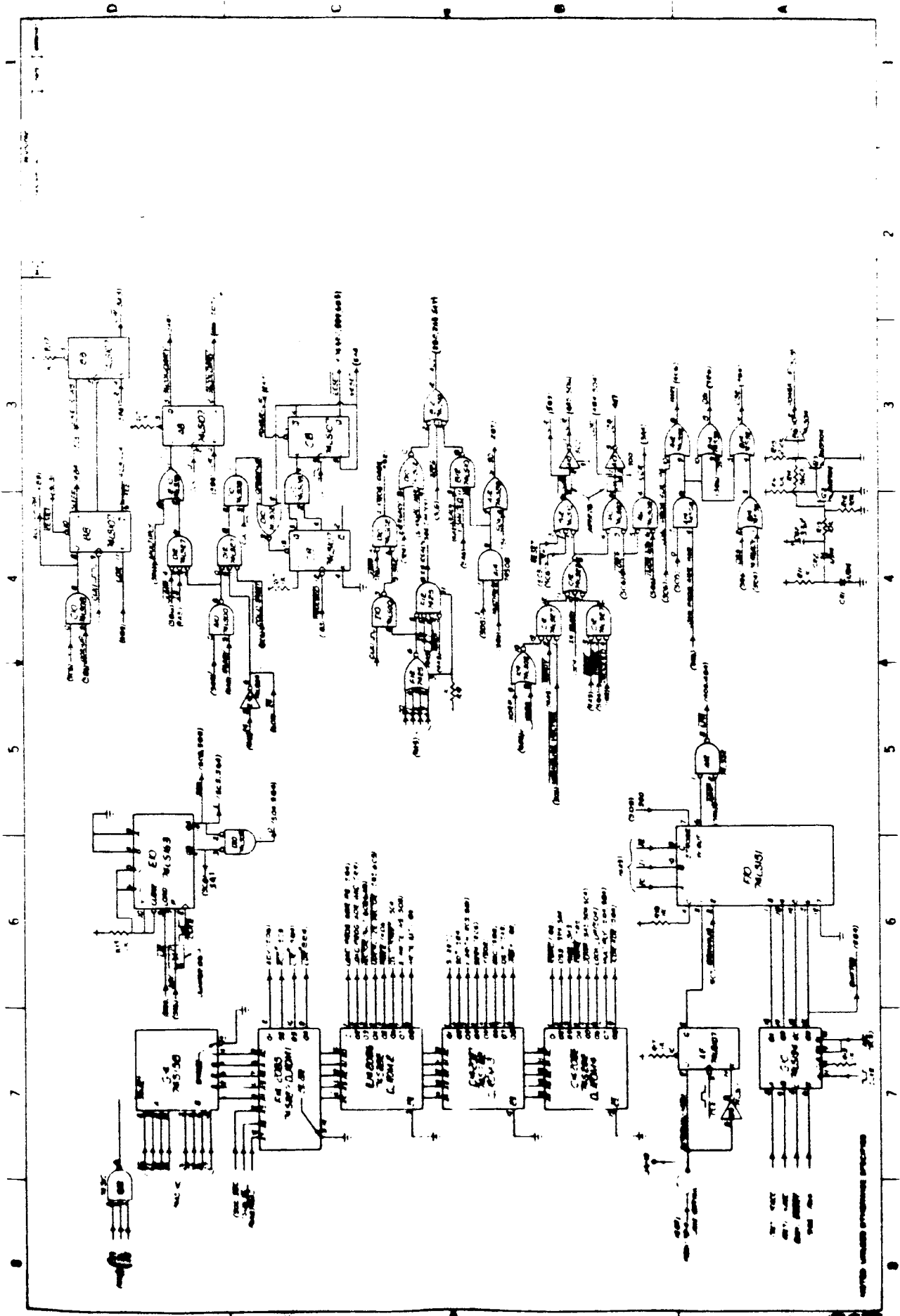


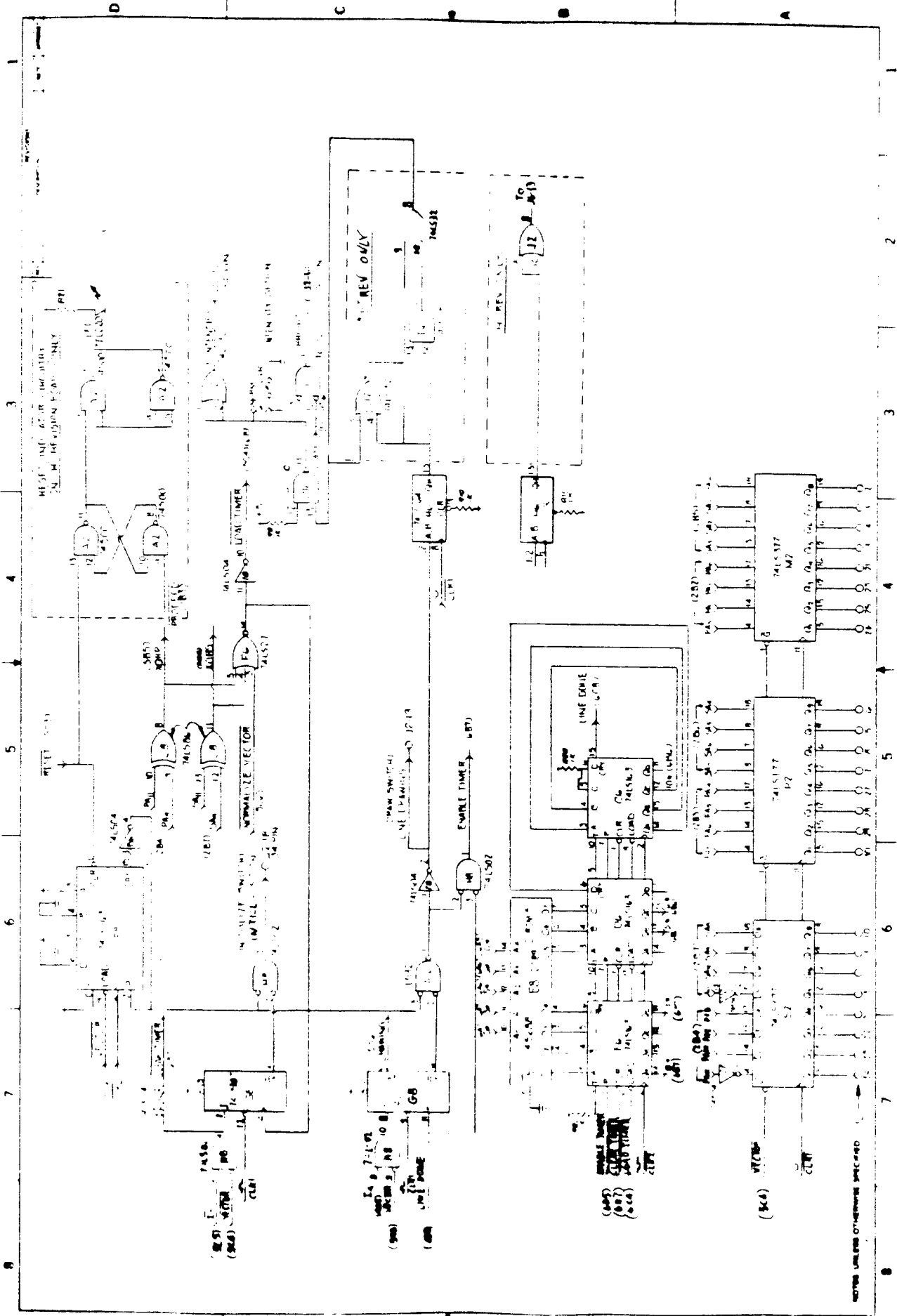








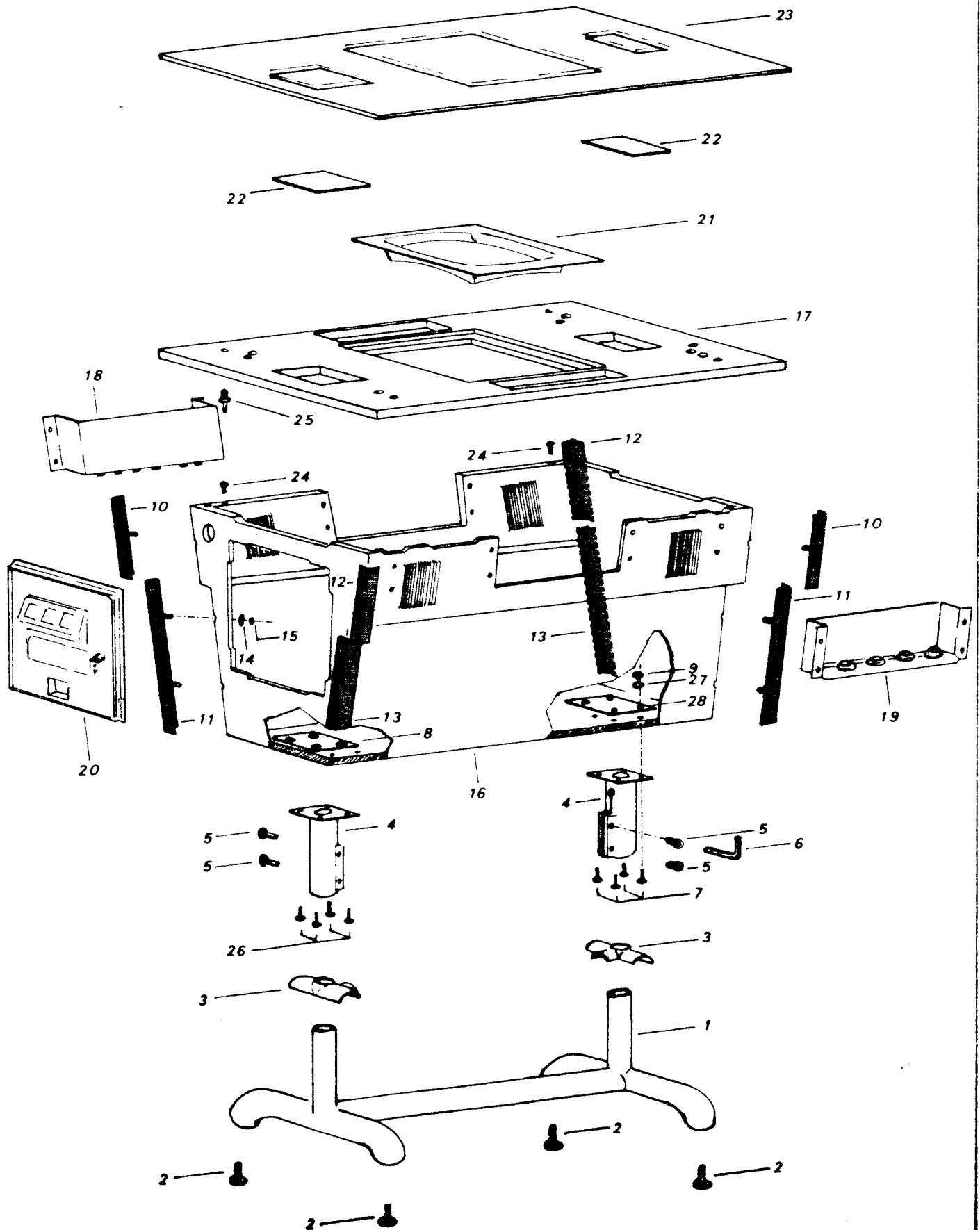






cocktail table

TAV. I





cocktail table

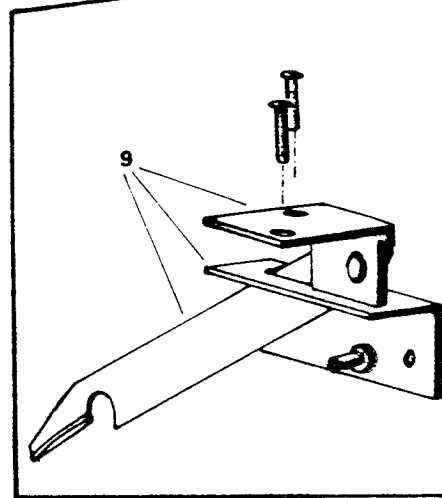
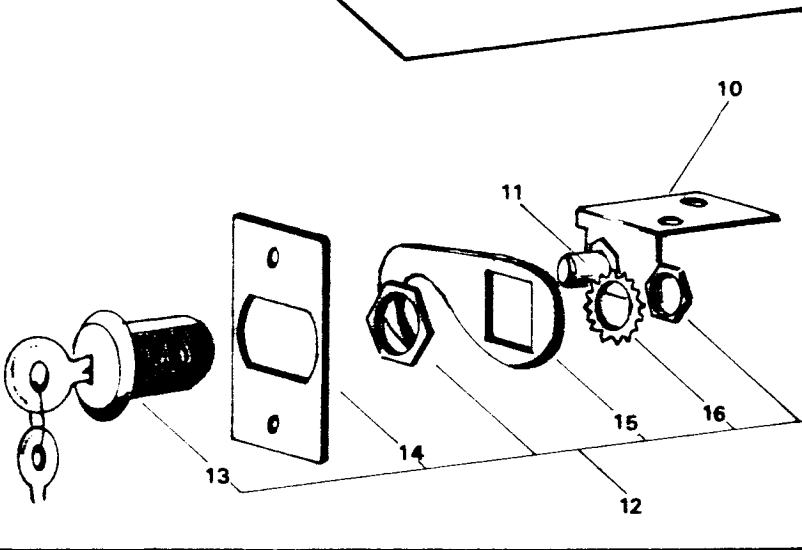
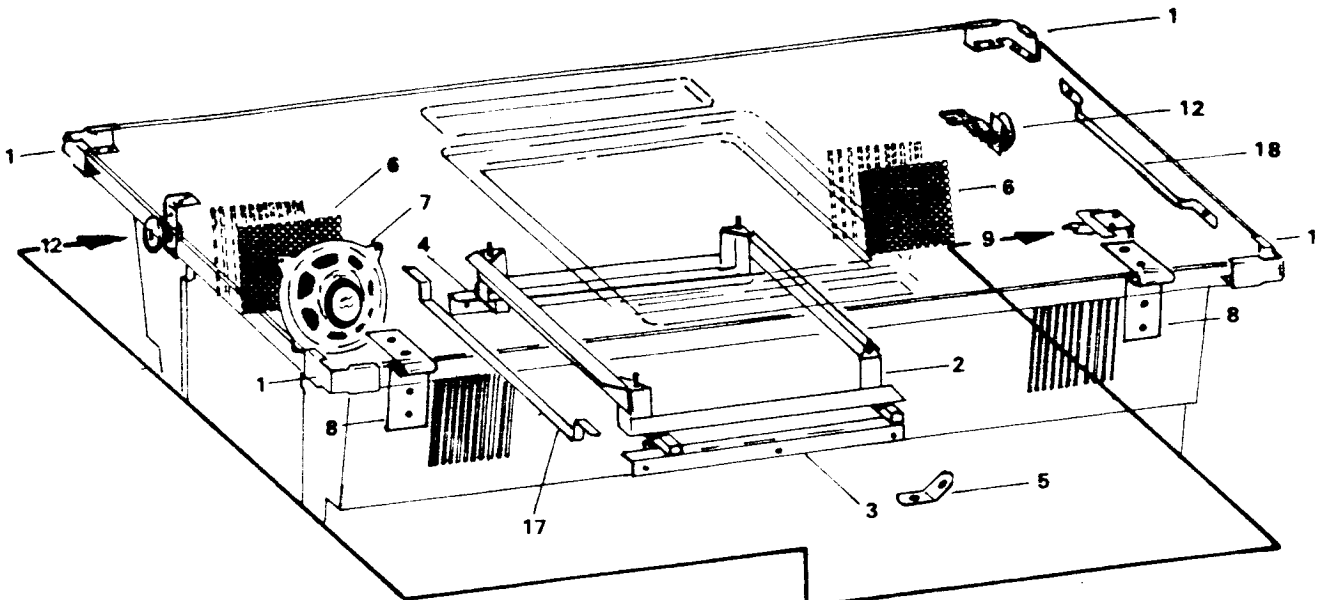
TAV. I

- | | | |
|----|---------|---|
| 1 | B 7181 | Supporto di base per tavolino video in tubo ferro
Ø 50 x 2,5 cromato |
| 2 | B 7188 | Piedino registrabile per supporto di base Ø 40 x 10 MA
in ottone con base in gomma |
| 3 | A 7229 | Guarnitura in ABS termoformata copri saldature |
| 4 | B 7182 | Supporto telescopico per telaio di base color nero |
| 5 | A 4462 | Vite ferro testa cilindrica TC esagono in testa 8MA x 20 |
| 6 | A 4463 | Chiave esagonale mm.6 |
| 7 | A 5238 | Vite ferro zinc. TT.QST. Ø 5MA x 20 fiss. supporto teles. |
| 8 | A 7275 | Piastrina imbutita forata rinforzo fondo |
| 9 | A 4441 | Dado ferro zinc. Ø 5MA ch.8 h.4 fiss. supporto teles. |
| 10 | B 7191 | Protezione ad angolo corta sinistra con tirante cromata |
| 11 | B 7193 | Protezione ad angolo lunga sinistra con tirante cromata |
| 12 | B 7190 | Protezione ad angolo corta destra con tirante cromata |
| 13 | B 7192 | Protezione ad angolo lunga destra con tirante cromata |
| 14 | A 5253 | Rondella ferro zinc. Øi 6,5 Øe 18 sp. 1,5 fiss. guarniz.
angoli |
| 15 | A 4238 | Dado ferro zinc. Ø 6MA ch. 10 h. 5 fiss. guarniz. angoli |
| 16 | FB 045 | Mobile legno placcato palissandro per 14" colore |
| 17 | FB 040 | Piano superiore porta cristallo |
| 18 | C 8142 | Mascherina di comando a 4+2 pulsanti |
| 19 | C 8143 | Mascherina di comando a 4 pulsanti |
| 20 | C 8109 | Sportello montato |
| 21 | A 7250 | Cornice troncopiramidale per 14" colore |
| 22 | MRB 380 | Piastrina istruzioni serigrafata |
| 23 | MRB 303 | Cristallo per tavolino video 14" colore serigrafato |
| 24 | A 4414 | Boccola per puntale |
| 25 | A 4415 | Puntale |
| 26 | A 6190 | Vite ferro zinc. TT.QST. Ø 5MA x 30 fiss. supporto teles. |
| 27 | A 4461 | Rondella dentellata Øi 5,3 fiss. supporto telescopico |
| 28 | A 7274 | Piastrina forata rinforzo fondo |

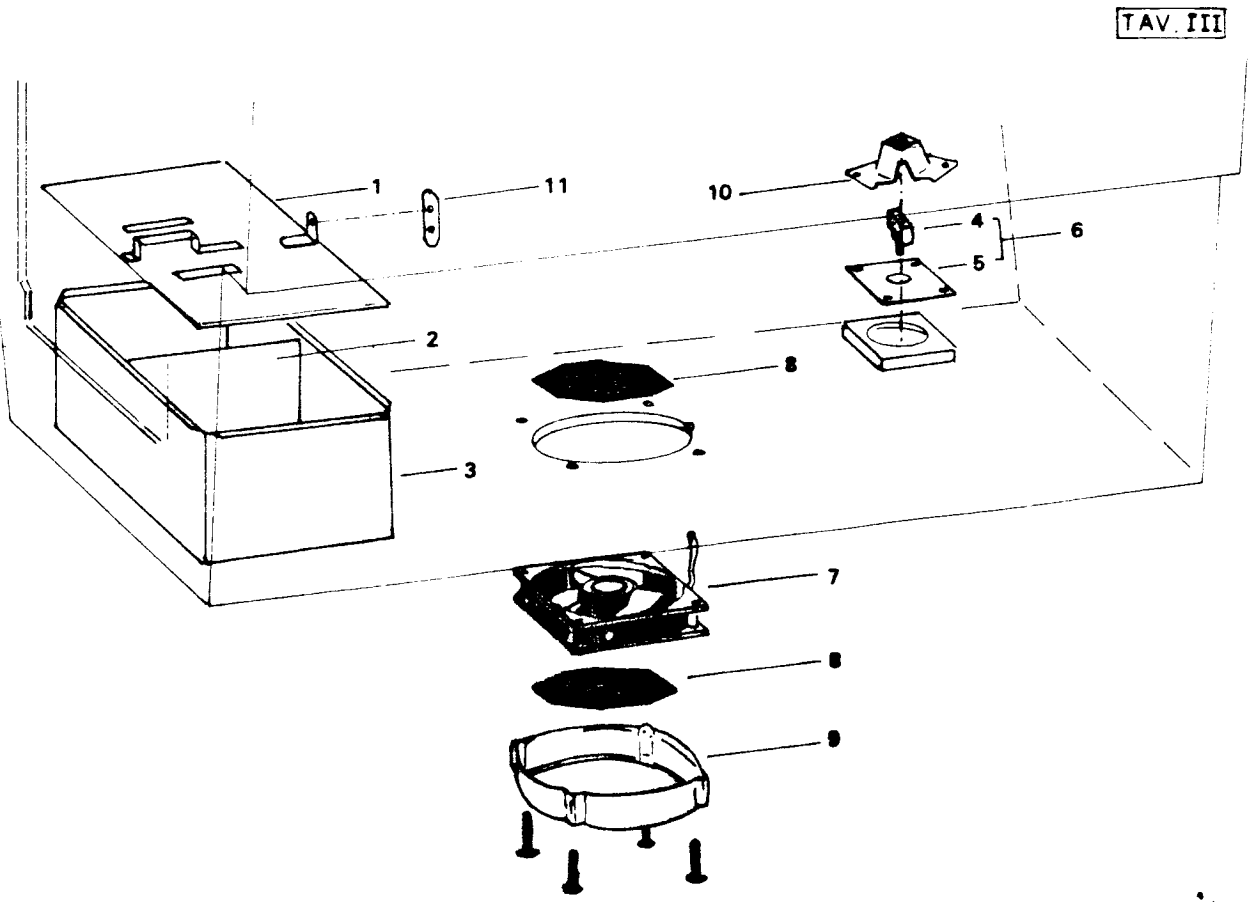


cocktail table

TAV. II



TAV. III





cocktail table

TAV. II

- | | | |
|----|--------|--|
| 1 | A 7230 | Guarnitura in lamiera stampata cromata per angolo tavolo |
| 2 | B 7201 | Telaio porta cinescopio 14" colore |
| 3 | B 7202 | Supporto telaio 14" colore destro |
| 4 | B 7203 | Supporto telaio 14" colore sinistro |
| 5 | A 4492 | Squadretta arresto monitor |
| 6 | A 7220 | Protezione in lamiera stirata mm. 75 x 150 |
| 7 | CE2082 | Altoparlante 6w. 4 ohm Ø 12 |
| 8 | B 7189 | Cerniera per piano tavolino video |
| 9 | B 7187 | Arpionismo assemblato per tavolo video |
| 10 | A 7233 | Squadretta supporto perno serratura |
| 11 | A 4412 | Perno aggancio serratura brunito |
| 12 | B 7168 | Serratura assemblata |
| 13 | B 7151 | Serratura "FORT LOCK" art. 3078 |
| 14 | A 7147 | Piastrina guida serratura zincata |
| 15 | A 7144 | Linguetta per serratura zincata |
| 16 | A 4435 | Rondella AW 3 concava per serratura |
| 17 | A 7309 | Asta ferma cablaggio |
| 18 | A 6233 | Asta fissaggio telaio monitor a mobile |

TAV. III

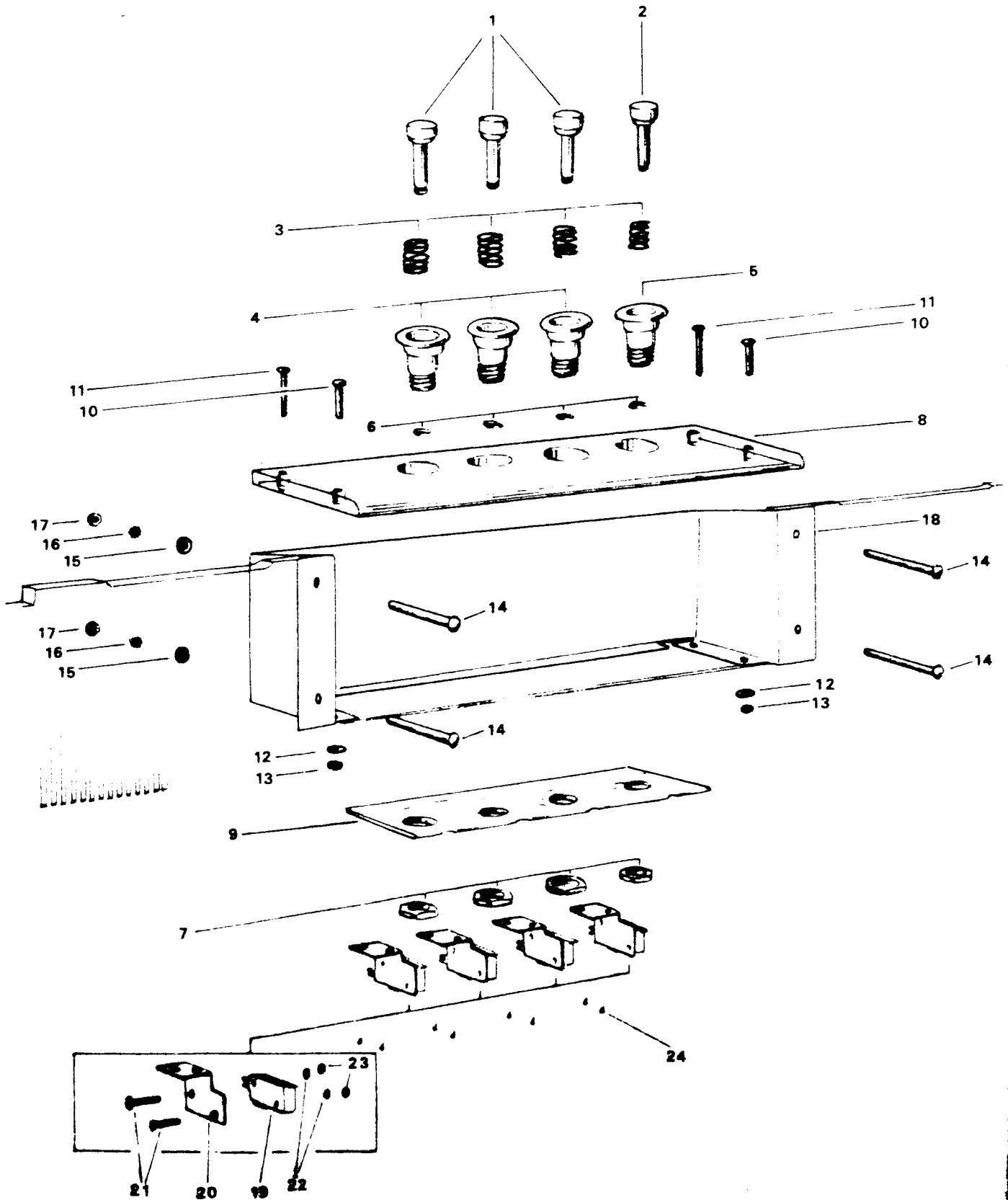
- | | | |
|----|--------|--|
| 1 | B 7185 | Coperchio per cassetta monete nichelato |
| 2 | A 6200 | Divisorio per cassetta monete nichelato |
| 3 | A 7228 | Cassetta monete nichelata |
| 4 | | Interruttore di rete a levetta bipolare |
| 5 | A 5112 | Piastrina porta interruttore zincata |
| 6 | B 7172 | Interruttore assemblato |
| 7 | B 7204 | Ventole a 3 pale 15 W. |
| 8 | A 7221 | Protezione ventilatore in rete stirata ch. 138 mm. |
| 9 | A 7239 | Contenitore per ventilatore in ABS goffrato termoformato |
| 10 | A 7298 | Protezione interruttore |
| 11 | A 6018 | Squadretta per cassetta monete |



cocktail table

TAV. IV

C 8143 Pannello comandi a 4 pulsanti





cocktail table

TAV. IV

C 8143 Pannello comandi a 4 pulsanti

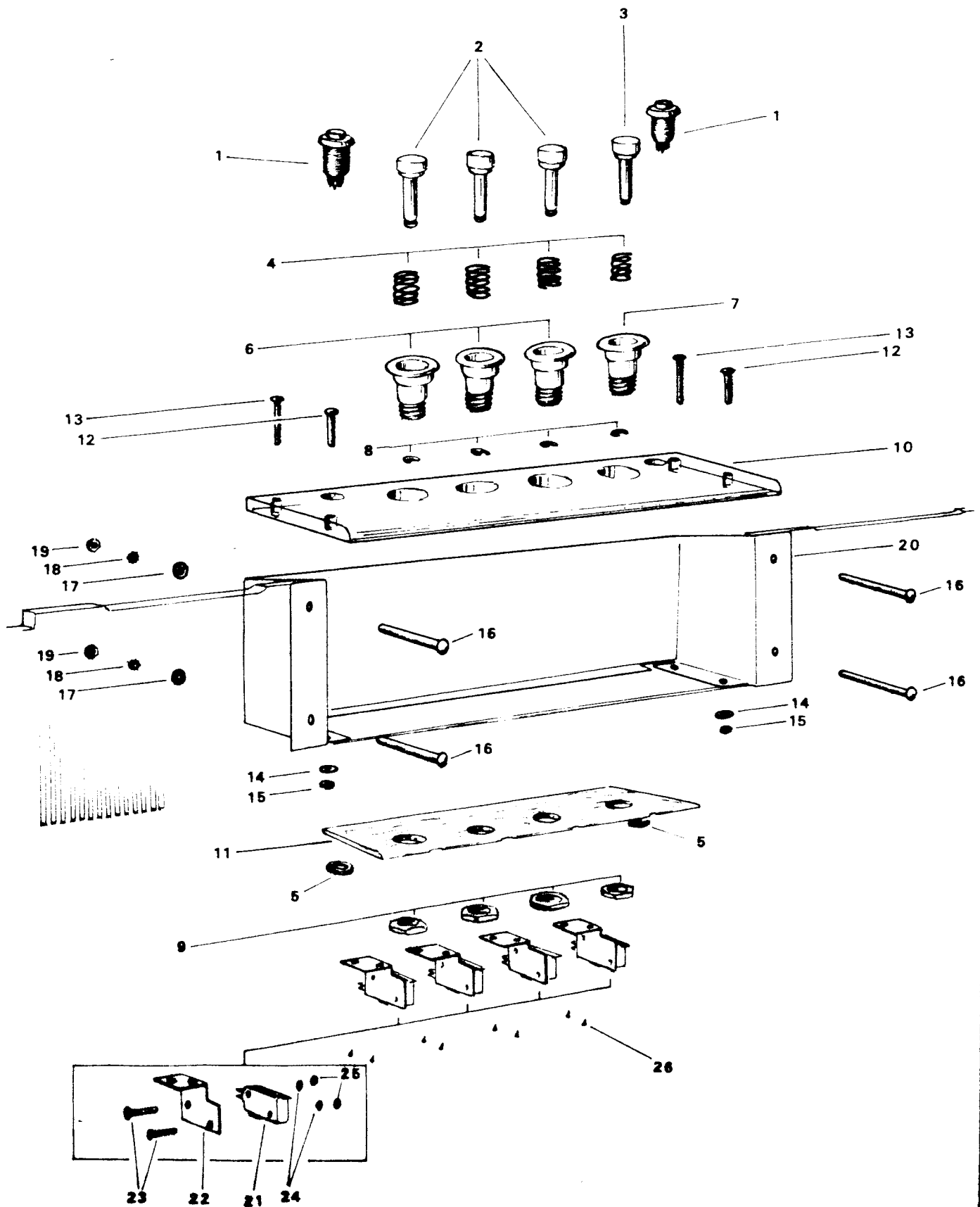
1	B 6113	Pulsante verde
2	B 6130	Pulsante rosso
3	A 4272 M	Molla richiamo pulsante
4	A 5213	Corpo pulsante verde
5	A 5225	Corpo pulsante rosso
6	A 4202	Anello Din mm. 6
7	A 5214	Dado ferro zinc. fissaggio corpo pulsante
8	MRB 374	Mascherina comando serigrafata in plexiglass sp. mm.10 a 4fori
9	FB 086	Mascherina in legno porta microint. a 4 posizioni
10	A 5176	Vite ferro zinc. TC.QST. 4MAx20 fissaggio mascherina
11	A 6191	Vite ferro zinc. TC.QST. 4MAx27 fissaggio mascherina
12	A 4008	Rondella ferro zinc. Øe12 Øi4,3 sp.1,5 fiss. mascherina
13	A 4107	Dado ferro zinc. 4MA ch.7 sp.4 fissaggio mascherina
14	A 6190	Vite ferro zinc. TT.QST. 5MAx30 fissaggio supporto
15	A 4147	Rondella ferro zinc. Øe15 Øi5,5 sp.1,5 fiss. supporto
16	A 4461	Rondella dentellata Ø15,3 fissaggio supporto
17	A 4441	Dado ferro zinc. 5MA fissaggio supporto
18	A 7235	Supporto mascherina in lamiera ferro piegata
19	B 6146	Microinterruttore a leva tipo AH 715
20	A 6203	Squadretta supporto microinterruttore zincata
21	A 4104	Vite ferro zinc. TC.TCR. Ø 3MAx16 fiss. microinterrut.
22	A 4161	Rondella dentellata brunita Øi 3,2 fiss. microinterrut.
23	A 4132	Dado ferro zinc. 3MA ch.5,5 sp.3 fiss. microinterruttori
24	A 4226	Vite autofilettante TC.TCR. Ø 4,2x12,7 fiss. squadretta



cocktail table

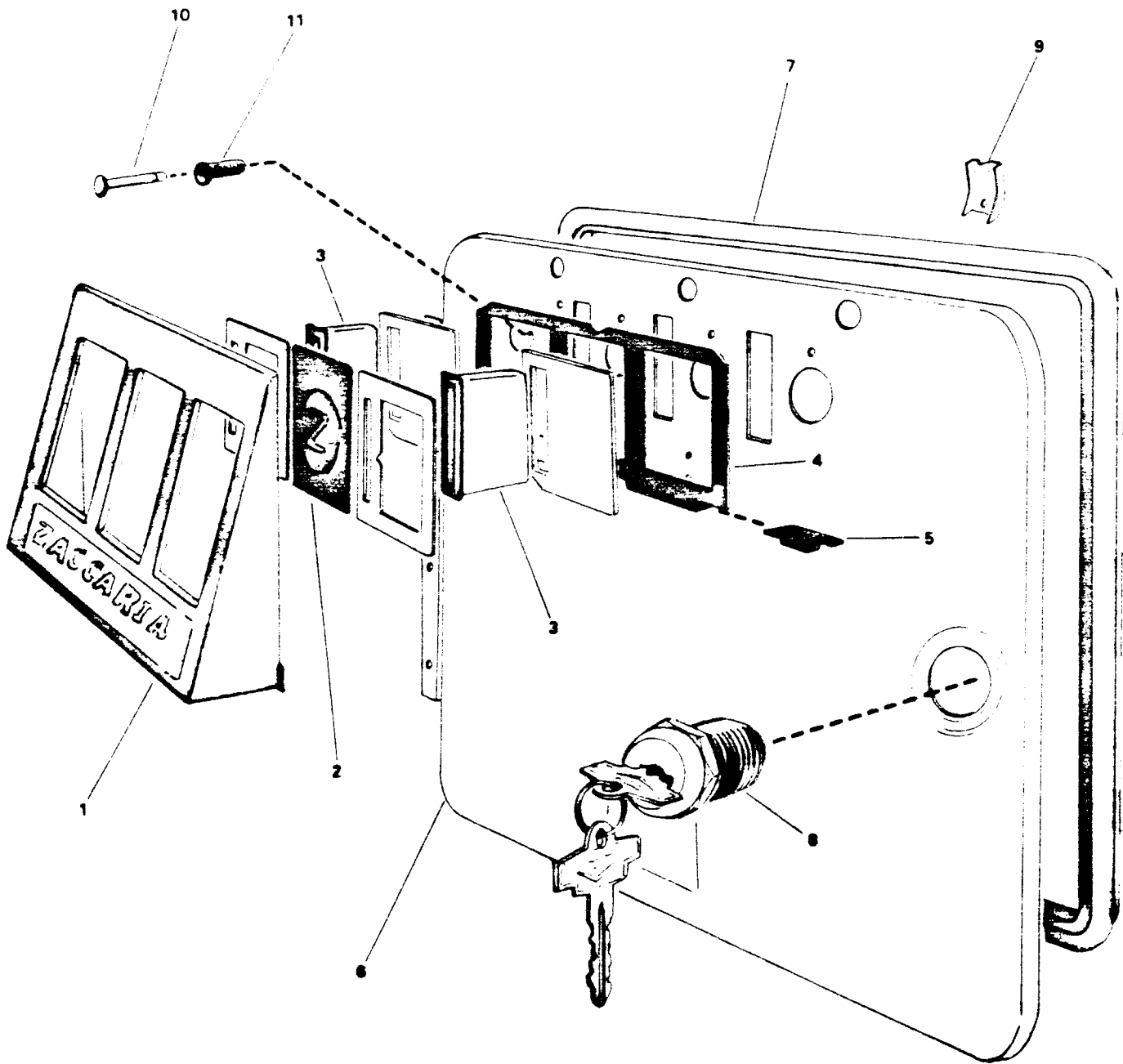
TAV V

C 8142 Pannello comandi a 4+2 pulsanti





C 8109 Sportello montato





C 8109 Sportello per gettoniere assemblato

1	B 7194	Sportello con cerniera completo di accessori
2	B 5029	Porta lampada alto sportello
3	A 4328	Leva per serratura sportello
4	A 7002	Piastra supporto gettoniere
5	A 4005	Perno per cavallotto sportello
6	A 6001	Cavallotto sportello
7	B 6001	Leva con boccola
8	A 6002	LLEVA DI SCARTO GETTONIERA
9	A 5201	Molla richiamo leva di scarto
10	A 5021	Ferretto porta chiave sportello
11	A 7009	Scorrimonete maschio
12	A 7008	Scorrimonete femmina
13	B 7006	Supporto gettoniere
14	A 5252	Forcellina fissaggio gettoniera
15	A 5014	Piastrina accoppiamento supporto gettoniera
16	A 5015	Componente per asta arresto monete
17	B 7083	Gettoniera L. 50
"	B 7084	" L.100
"	B 7175	" L.200
"	B 7092	" 25 Cents
"	B 7096	" 5 F
"	B 7097	" 10 F
"	B 7098	" 5 P
"	B 7099	" 10 P
"	B 7147	" 50 P
"	B 7111	" 0,50 pfg
"	B 7112	" 1 DM
"	B 7113	" 2 DM
"	B 7114	" 5 DM
"	B 7128	" 1 FS
"	B 7129	" 2 FS
"	B 7148	" 10 Fr belgi
"	B 7233	" 5 Dinari
"	B 7234	" 10 Dinari
18	A 5114	Piastrina fissaggio gettoniera
19	A 5006	Asta per frontalino
20	B 6109	Piastra porta micro
21	B 5053	Micro nero
"	B 5054	" rosso
"	B 5055	" bianco
22	A 5012	Squadretta a 2fori
23	A 5010	Squadretta a 4fori
24	A 6009	Copertura per raccoglitore monete
25	A 5011	Cancelletto
26	AS 1028	Raccoglitore in plastica



PIASTRINE SERIGRAFATE

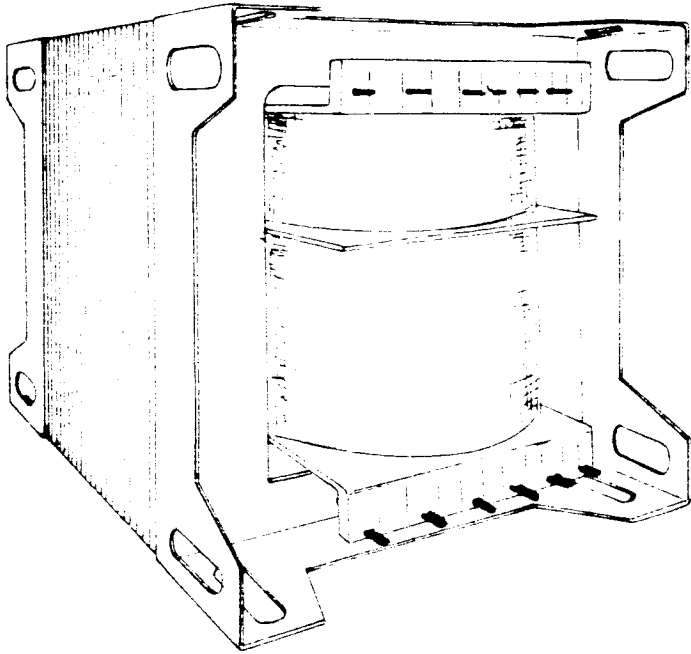
& Introduzioni Monete

AUSTRALIA		AUSTRIA		BELGIO		
					<p>p. ser = PIASTRINA serigrafata</p>	
p. ser. B 5056 in. m. A 5007	p. ser. B 5045 in. m. A 5008	p. ser. B 5047 in. m. A 5007	p. ser. B 5035 in. m. A 5006	p. ser. B 5034 in. m. A 5007		
DANIMARCA & SVEZIA			FRANCIA & SVIZZERA			
p. ser. B 4074 in. m. A 5007	p. ser. B 5065 in. m. A 4401	p. ser. B 5066 in. m. A 5007	p. ser. B 5024 in. m. A 5006	p. ser. B 5025 in. m. A 5007	p. ser. B 5060 in. m. A 4401	
GERMANIA			GIAPPONE			
					<p>in. m. = PIASTRINA introduzione moneta</p>	
p. ser. B 4059 in. m. A 5008	p. ser. B 4060 in. m. A 5007	p. ser. B 4041 in. m. A 5007	p. ser. B 5051 in. m. A 4399	p. ser. B 5052 in. m. A 4398		
INGHILTERRA		ITALIA		JUGOSLAVIJA		
p. ser. B 4062 in. m. A 5007	p. ser. B 4091 in. m. A 4401	p. ser. B 5001 in. m. A 5007	p. ser. B 6136 in. m. A 5242	p. ser. B 4081 in. m. A 5008	p. ser. B 4082 in. m. A 5007	
LIBANO		OLANDA	UNGHERIA	USA & CANADA		
p. ser. B 5059 in. m. A 5008	p. ser. B 5058 in. m. A 5007	p. ser. B 4085 in. m. A 5008	p. ser. B 6139 in. m. A 5008	p. ser. B 5046 in. m. A 5008	p. ser. B 5061 in. m. A 5007	



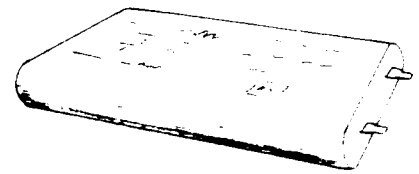
cocktail table

Cabinet parts



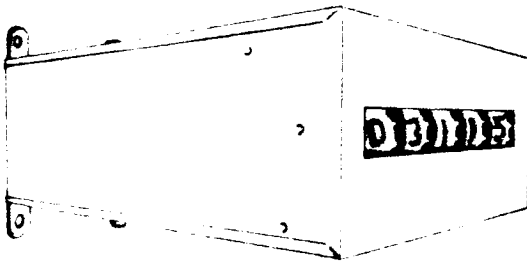
C 8128

Trasformatore
2 C 1012



C 8130

Filtro rete AMP. 2,5



B 6110

Contatore 6 V.d.C.

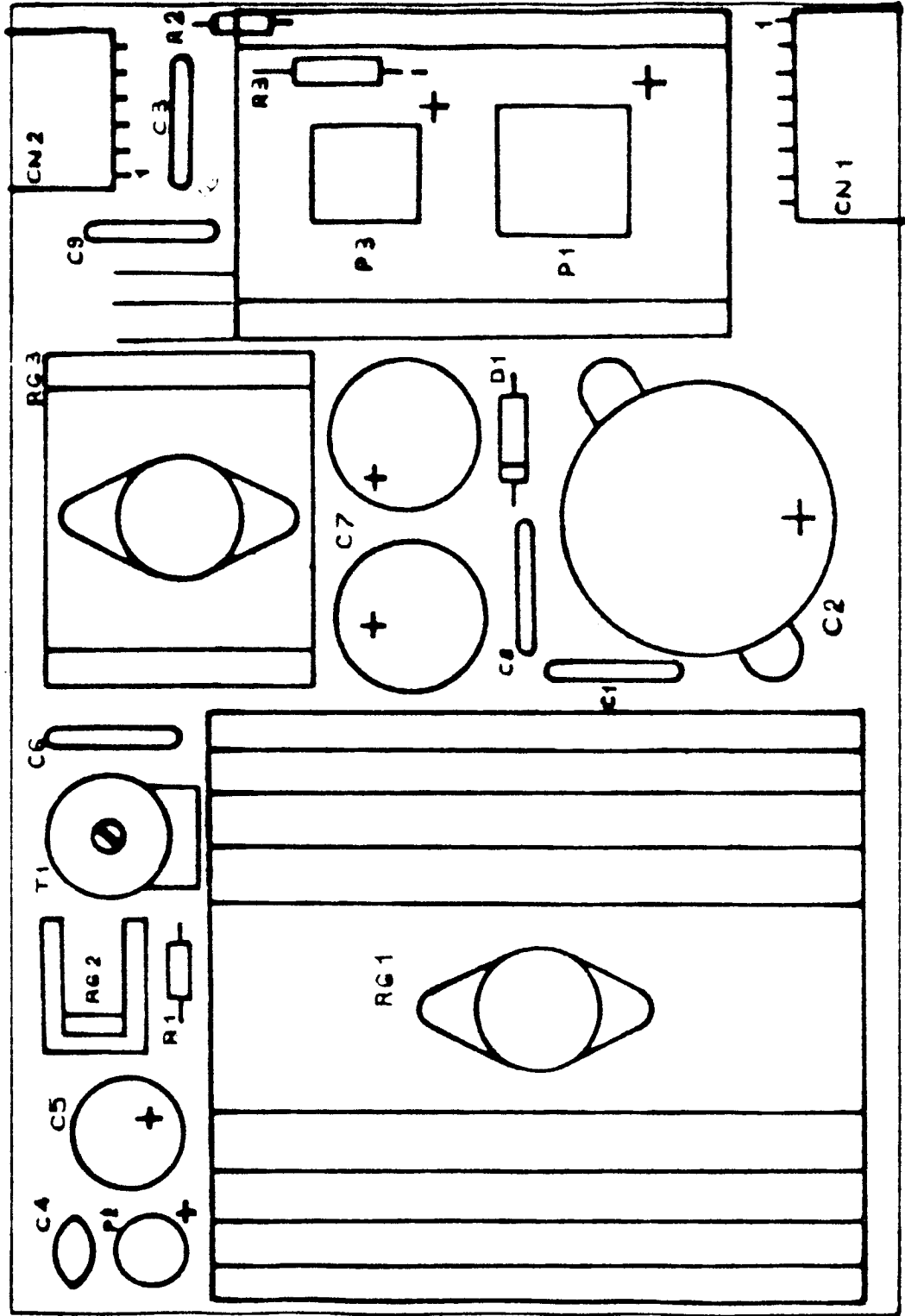


B 7055

Portafusibile

CEC 075

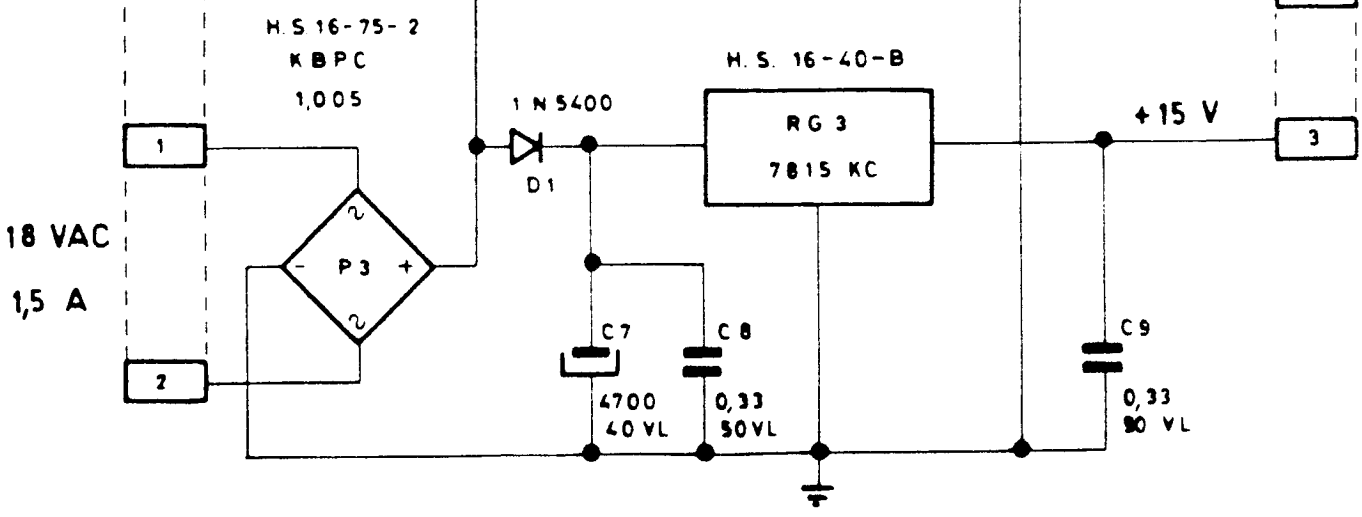
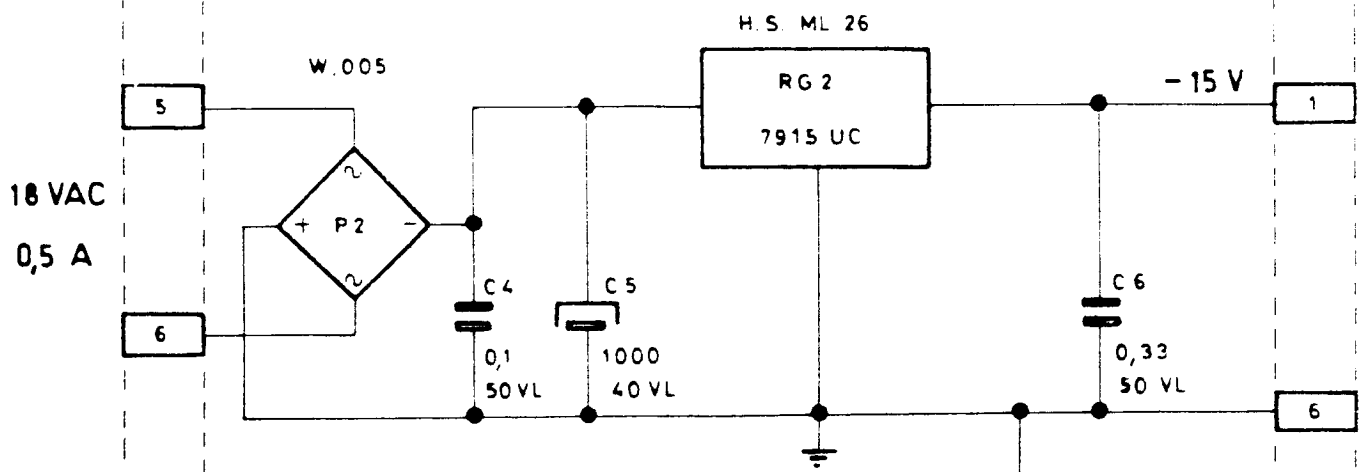
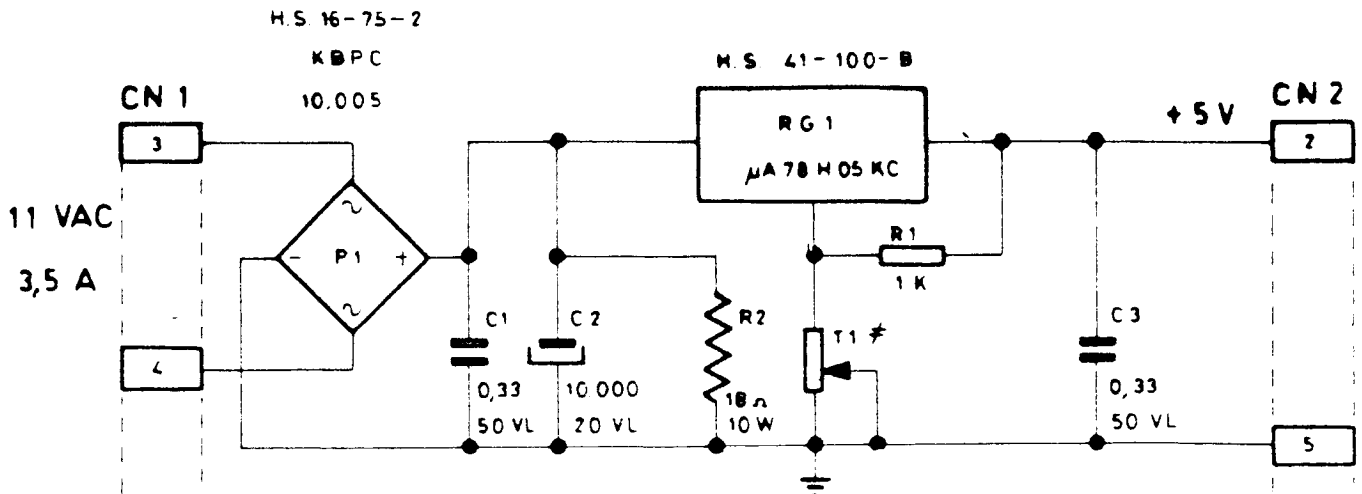
POWER BOARD VIDEO GAME ZACCARIA



POWER BOARD ASSEMBLY

CEC 075

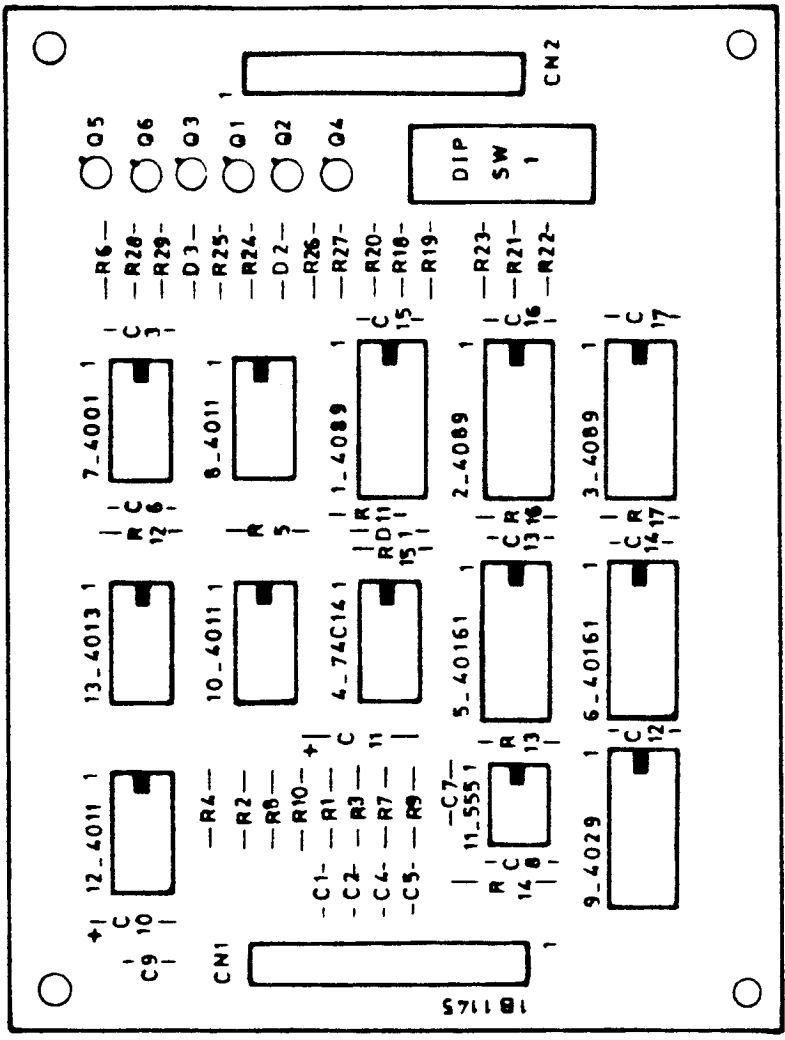
ITEM NO.	PART Designation	CODEL Part NO.	DESCRIPTION	REQ'D NO.
1	PC 1	CE 2070	Printed Circuit 1B 1126	1
2	P 1	CE 1405	50V. 10 AMP Rectifier Bridge (KBPC 10-005)	1
3	P 2	CE 1233	50V. 1 AMP Rectifier Bridge (W - 005)	1
4	P 3	CE 1276	50V. 3 AMP Rectifier Bridge (KBPC 1-005)	1
5	RG 1	CE 1238	+5V. 5 AMP Voltage Regulator(μ A 75H05KC)	1
6	RG 2	CE 1750	-15V. 1 AMP Voltage Regulator(μ A 7915 UC)	1
7	RG 3	CE 1749	+12V. 1 AMP Voltage Regulator(μ A 7815 KC)	1
8	D 1	CE 1299	1N 5400 Diode	1
9	CN 1	CE 1332	6 Pin Modu 1 Male Connector	1
10	CN 2	CE 1361	8 Pin Modu 1 Male Connector	1
11	HS 1	CE 1566	Heat Sink 16/75/2	1
12	HS 2	CE 1278	Heat Sink 41/100/B	1
13	HS 3	CE 1099	Heat Sink ML 26 TO-220	1
14	HS 4	CE 1529	Heat Sink 16/40/B	1
15	C 1-3-6-8-9	CE 1261	0,33 μ F 50V. Poliester Film Capacitors	5
16	C 2	CE 1384	10.000 μ F 16V. Electr. Cap. Single Ended	1
17	C 4	CE 1005	0,1 μ F 50V. Ceramic Capacitor	1
18	C 5	CE 1580	1.000 μ F 40V. Electr. Cap. Single Ended	1
19	C 7	CE 1579	2.200 μ F 40 V. Electr. Cap. Single Ended	2
20	R 1	CE 1170	1 KOHM 1/4W. 5% Carbon Resistor	1
21	R 2	CE 1701	18 OHM 20W. 10% Wire Resistor	1
22	T 1		47 OHM 1 Turn Vertical Trimmer (Commonly mounted 22 OHM 1/4W. 5% carbon resistor)	1



⚡: 47 Ω TRIMMER or 22 Ω 1/4 W 9% RESISTOR

F.LI ZACCARIA S.R.C.
Via Armaroli, 16 - 40012 CALDERARA DI RENO (BO) Italy

PART NAME		PART NO	
POWER BOARD 101126 (SEC 075)		101226 -D	
DAW	DATE	REV	DATE REV
	10-10-88		
NOTE: ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED		SHR11	
1) ALL RESISTORS VALUES IN Ω		-1-	
2) ALL CAPACITORS VALUES IN µF			

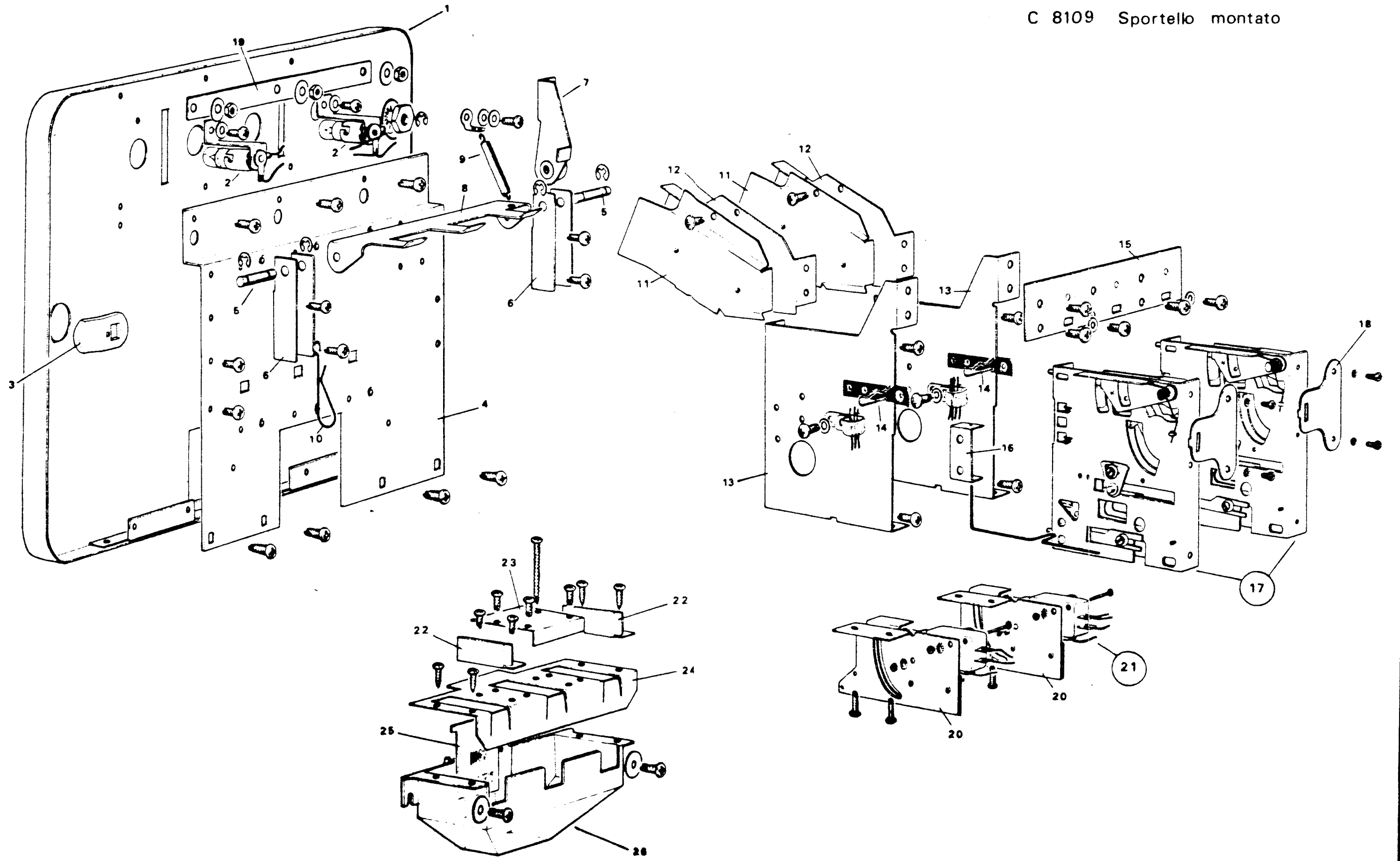


ZACCARIA

CEC 069

COIN SWITCHES ADJUSTMENT BOARD 181145

C 8109 Sportello montato

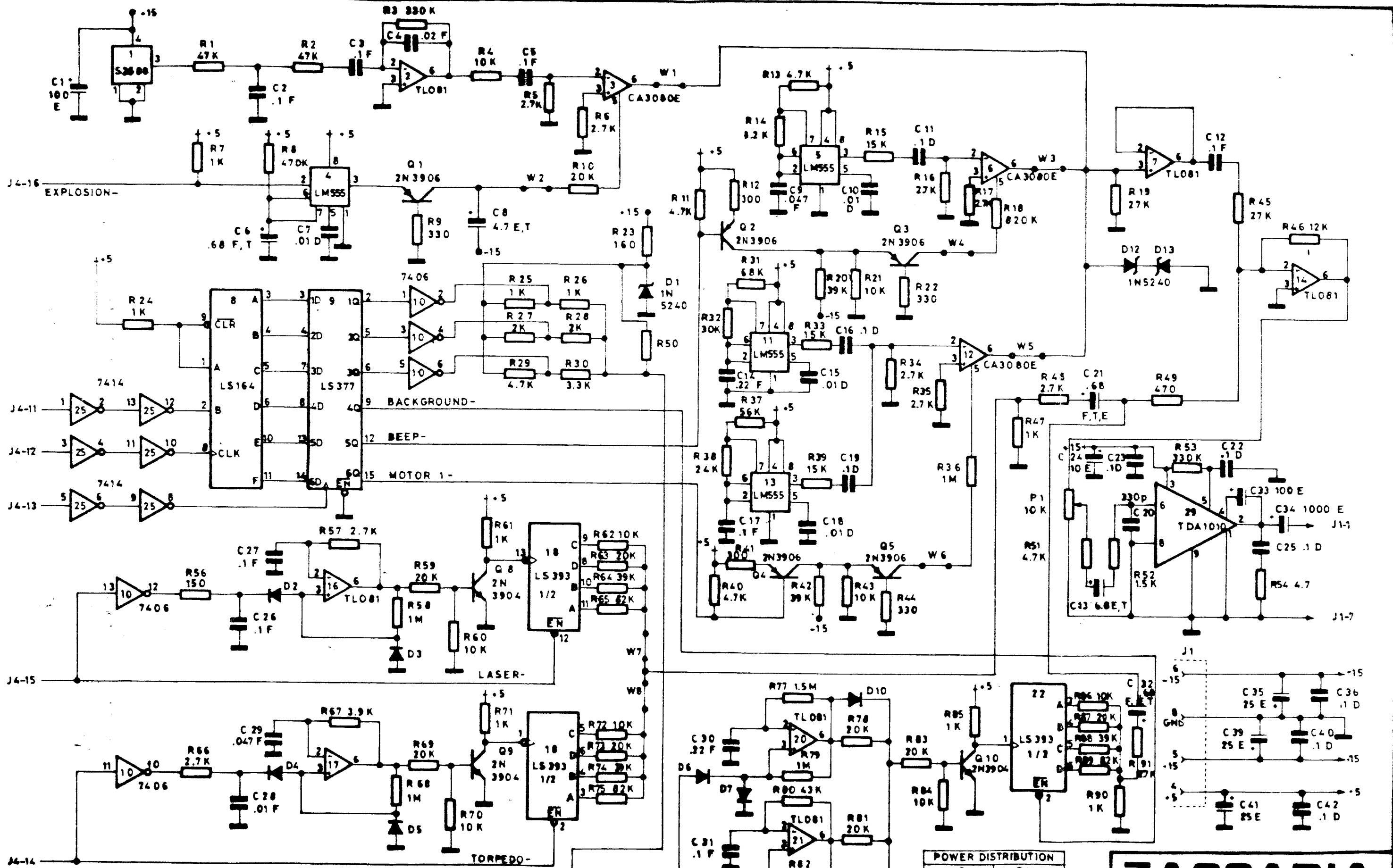


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NOTES:
ADD ONE BYPASS CAP. (BETWEEN GND & +5) FOR EVERY TWO IC PACKAGES USING +5V.

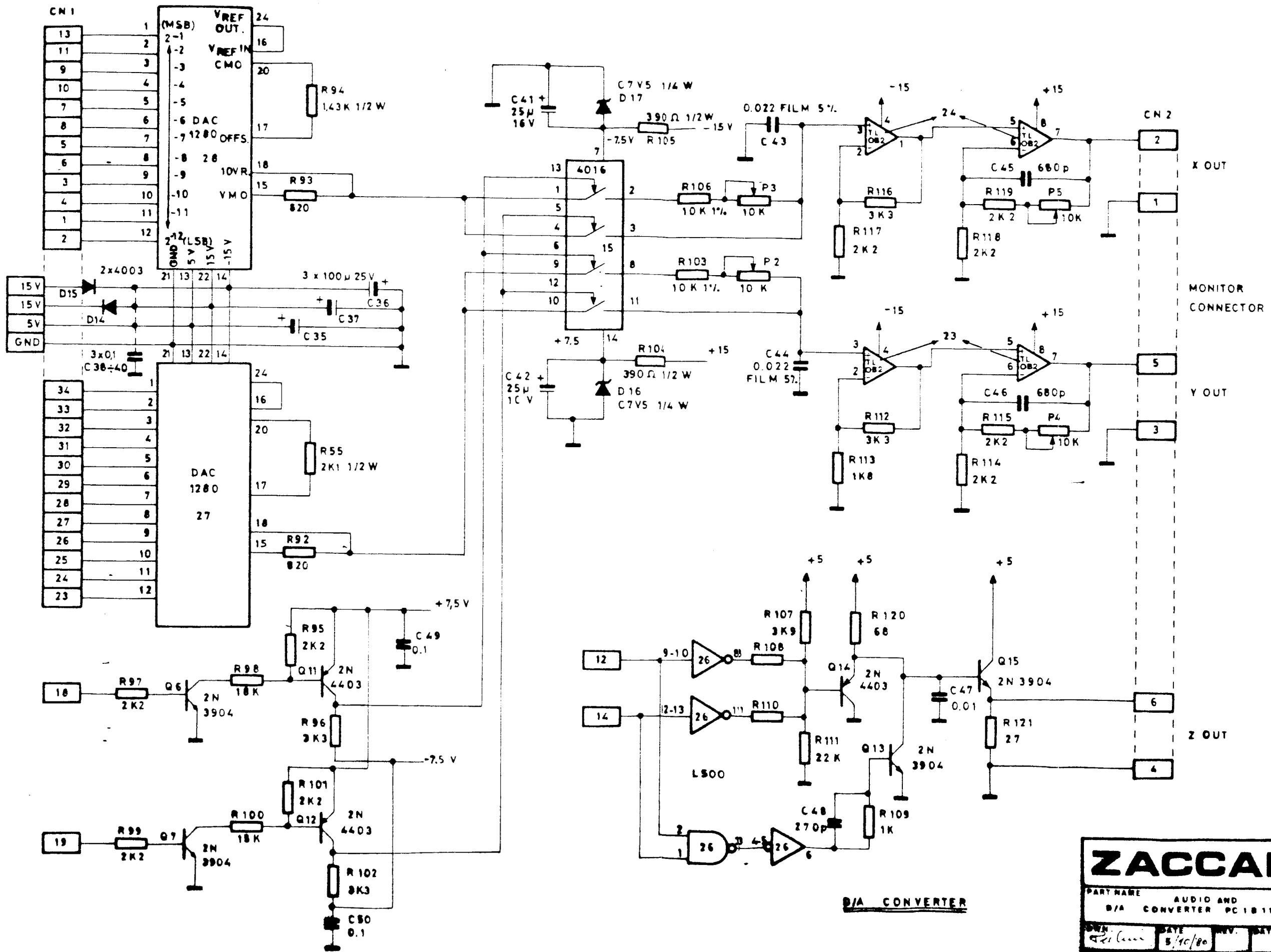
CAPACITOR LEGEND	
E	= ELECTROLYTIC
D	= DISC
T	= TANT
F	= FILM

POWER DISTRIBUTION			
	+5		GND
IC	PIN	IC	PIN
8	14	8	7
9	20	9	10
10	14	10	7
19	14	19	7
22	14	22	7
25	14	25	7

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PART NAME	AUDIO AND D/A CONVERTER PC 1B1148	PART NO.	1 B 1348
REV.	8/10	REV. DATE	REV. SHEET
		2 OF 2	

NOTES: UNLESS OTHERWISE SPECIFIED:
ALL CAPACITORS VALUES IN PF UNLESS OTHERWISE SPECIFIED.
ALL RESISTORS VALUES IN OHMS UNLESS OTHERWISE SPECIFIED.
ALL DIODES ARE 1N914 EXCEPT D1, D12, D13.

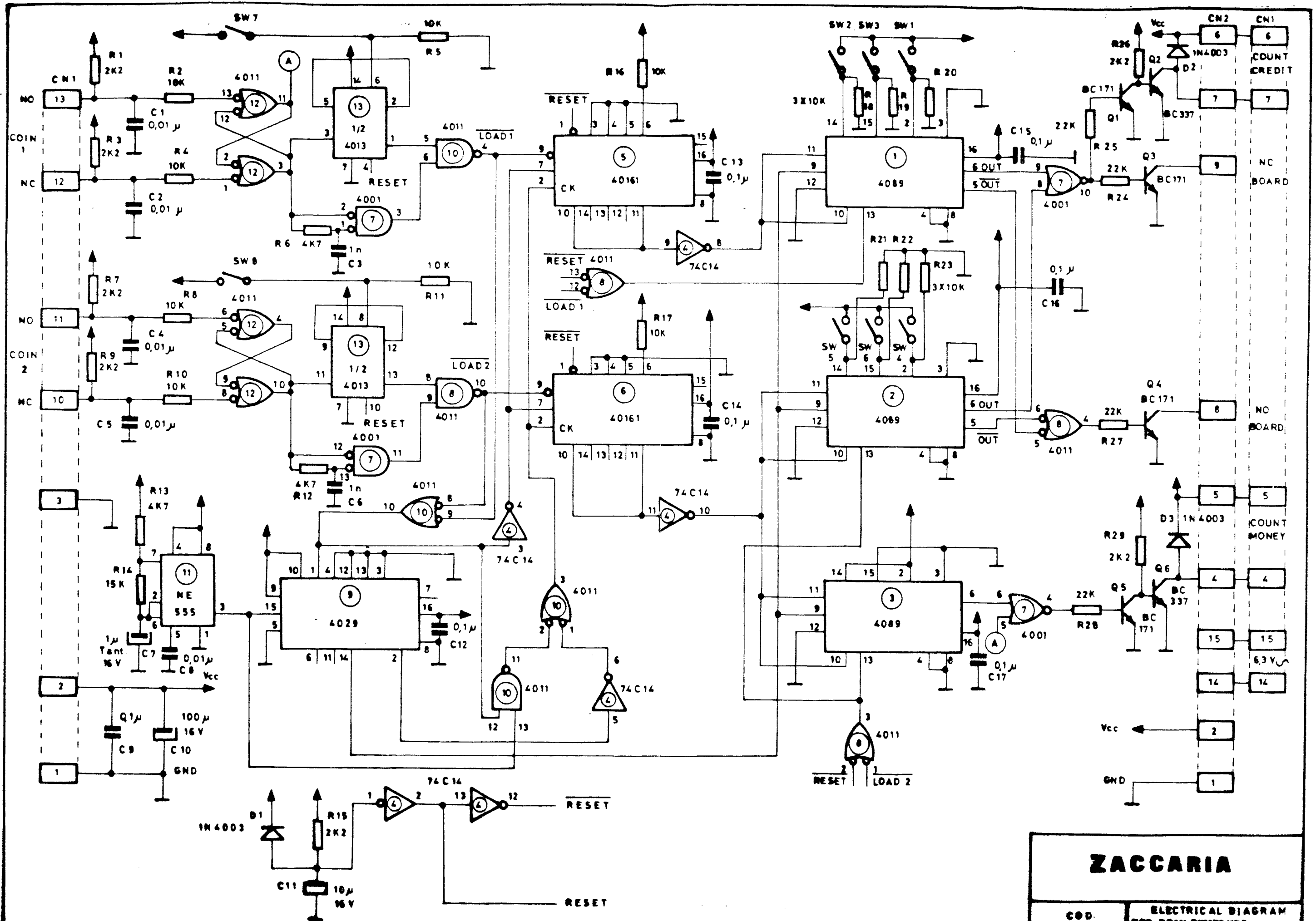


B/A CONVERTER

ZACCARIA		
PART NAME	AUDIO AND B/A CONVERTER PC181148	PART NO. 181348
DATE	5/10/80	REV. DATE REV. SHEET 1 OF 2
NOTES UNLESS OTHERWISE SPECIFIED		
1) ALL RESISTORS VALUES IN ...		
2) ALL CAPACITORS VALUES IN ...		

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COD. 18 1945	ELECTRICAL DIAGRAM FOR COIN SWITCHES ADJUSTMENT BOARD 181145
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