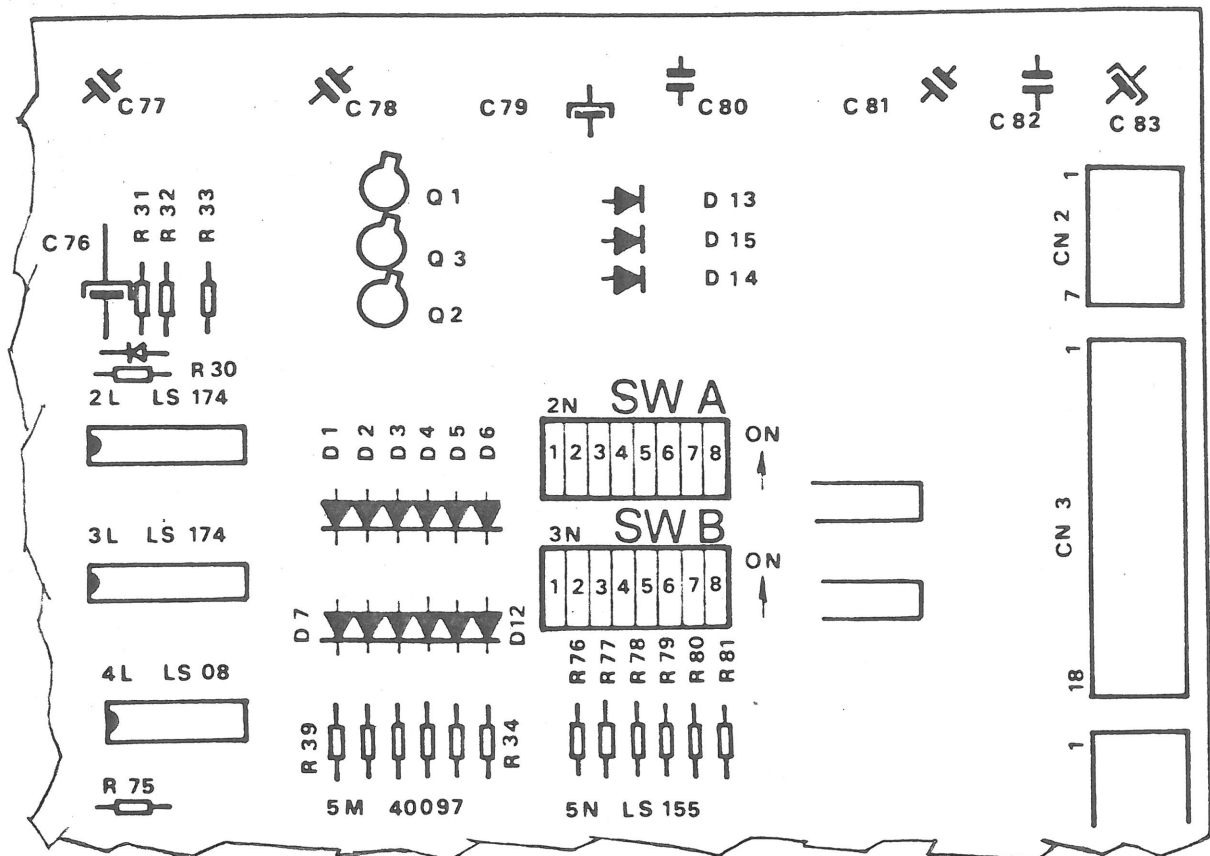


ASTRO WARS

EINSTELLMÖGLICHKEITEN



Schalterpaket 3 N

Schalter 1 + 8 sind nicht gesetzt

Schalter 2 + 3 Einstellung der Schwierigkeitsgrade für feindliche Objekte (Geschwindigkeit)

sehr leicht	=	Schalter 2 ein (ON)
		Schalter 3
leicht	=	Schalter 2 ein (ON)
		Schalter 3 aus (OFF)
schwer	=	Schalter 2 aus (OFF)
		Schalter 3 ein (ON)
sehr schwer	=	Schalter 2 aus (OFF)
		Schalter 3 aus (OFF)

Schalter 4 ON = 3 Raketen OFF = 5 Raketen

Schalter 5 linker Geldeinwurf
 2 x 1 Münze 1 Spiel ein (ON)
 1 x 1 Münze 1 Spiel aus (OFF)

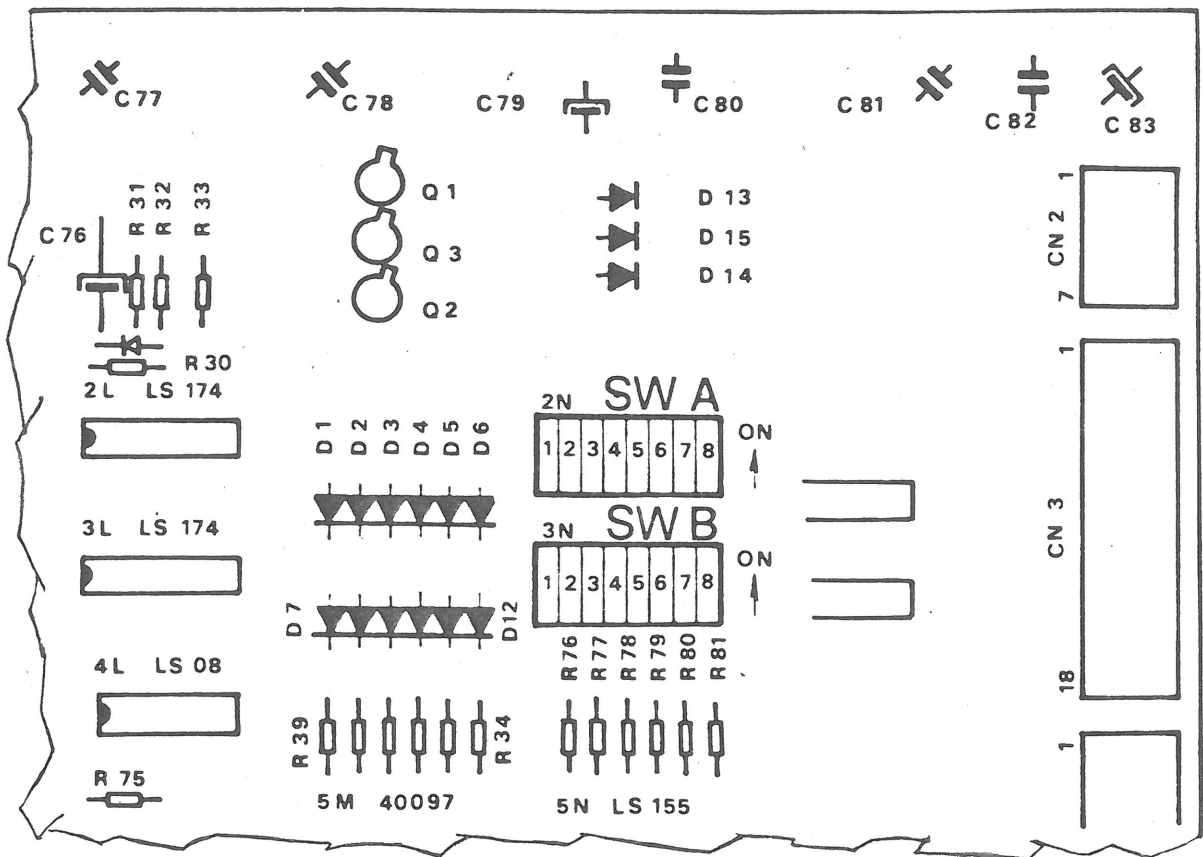
Schalter 6 + 7 rechter Geldeinwurf

6 = ON	ON	OFF	OFF
7 = ON	OFF	ON	OFF
1 Münze	1 Münze	1 Münze	1 Münze
1 Spiel	2 Spiele	3 Spiele	5 Spiele

Tankmenge ist nicht veränderbar!

ASTRO WARS

EINSTELLMÖGLICHKEITEN



Schalterpaket 2 N

Einstellung High Score

- normal = Schalter 7 ein (ON) High Score 5000 Punkte
- random = Schalter 7 aus (OFF) bei jedem Spiel
- High Score Veränderung von 5000 - 12500 Punkte

High Score Einstellung mit Schalter 5 + 6 einzeln

- 70 % 5000-7000 Punkte = Schalter 5 ein (ON)
Schalter 6 ein (ON)
- 70 % 7000-9000 Punkte = Schalter 5 ein (ON)
Schalter 6 aus (OFF)
- 70 % 8500-10500 Punkte = Schalter 5 aus (OFF)
Schalter 6 ein (ON)
- 70 % 10500-12500 Punkte = Schalter 5 aus (OFF)
Schalter 6 aus (OFF)

Schalter 2 schaltet nur, wenn

Schalter 7 High Score auf aus (OFF) geschaltet ist

Schalter 2 aus (OFF) = Freispiel

ein (ON) = kein Freispiel

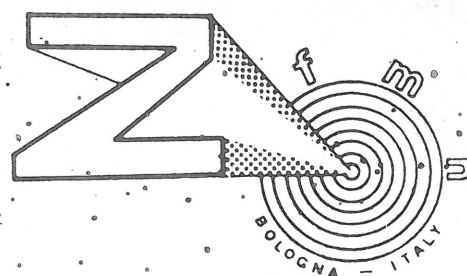
Schalter 3 + 4 sind für Zusatzraketen

3 ON = keine ON = 3000 P. OFF = 5000 P. OFF = 7000 P.
4 ON = keine OFF = 3000 P. ON = 5000 P. OFF = 7000 P.

Technical Manual

for

ASTRO WARS



F.LLI ZACCARIA S.n.c.

TECHNICAL MANUAL "ASTRO WARS"

TABLE OF CONTENTS

Installation - Game Instructions

Switch Adjustment

Spare Parts

C.P.U. Board

Sound Board

Wiring Diagram

SPECIFICATIONS

Power Supply	AC 100, 115, 200, 220, 240V $\pm$ 10%
Power Consumption	120W (AC 220)
CRT	20" Colour

INSTALLAZIONE

- Poiché il CRT usato é dello stesso tipo dei comuni televisori, evitare di danneggiarlo nel trasporto e durante la installazione.
- Non installare all'esterno poiché l'apparecchio va usato solo in ambienti chiusi.

MANUTENZIONE

- Se sullo schermo non compare nessuna immagine quando la macchina é accesa, controllare se il cavo é correttamente inserito o se il fusibile dello alimentatore é intatto.
- Se lo schermo é illuminato ma non compare nessuna immagine, controllare se il PC Board é correttamente inserito.
- Se l'immagine si sposta lateralmente, ciò é provocato da un forte magnete posto troppo vicino alla macchina.
- Se il suono é troppo alto o troppo basso, regolarlo girando il controllo volume montato sulla piastra del suono.

INSTALLATION

- As the CRT used is the same as that in home TVS care must be taken to avoid damage during transportation and installation.
- As this set is for indoor use do not install outdoors.

MAINTENANCE

- If the screen is blank. When the machine is ON.
Check to see if the cord is plugged in firmly or if the power supply fuse is intact.
- If the screen lights up but no image appears, check to see if the PC Board is plugged firmly.
- If the image shifts to the side, this will be caused by a strong magnet placed too close to the machine.
- If the sound is too high or too low, adjust it by turning the volume control mounted on sound Board.

COME GIOCARE

HOW TO PLAY

1. Inserire la moneta.
 2. Premere il pulsante di selezione 1 giocatore o 2 giocatori come desiderato.
 3. Ci sono 4 diversi gruppi di navicelle nemiche e quando il giocatore distrugge 1 gruppo, quello successivo apparirà ed attaccherà.
 4. Usare la leva per spostare la navicella sullo schermo.
 5. Premere il pulsante del fuoco quando si desidera attaccare il nemico o distruggere una meteorite.
 6. Quando una formazione nemica è stata distrutta, il gruppo successivo avanzerà sullo schermo ed attaccherà.
 - ° Ma se una navicella nemica va oltre la navicella del giocatore e raggiunge la linea sul fondo, il gruppo originale si ricostituirà ed attaccherà di nuovo senza tener conto di quanti sono stati distrutti in precedenza. La navicella del giocatore si avvicina ai nemici. La navicella nemica sparerà i razzi a destra e a sinistra a caso.
 7. Quando tutti e quattro i gruppi delle navicelle nemiche sono stati distrutti, apparirà sullo schermo il capo ed attaccherà.
 - ° Quando il capo è stato distrutto, il giocatore può fare rifornimento di carburante.
 8. Dopo essersi rifornito di carburante il giocatore può iniziare nuovamente il gioco.
 9. Se la navicella del giocatore e una navicella nemica vengono a collisione sono entrambe distrutte.
 10. Quando giocano 2 giocatori e la partita del primo è finita, il gioco si riassetta per il secondo giocatore.
 11. Il giocatore non può rifornirsi di carburante fino a quando non ha distrutto il capo. Se il giocatore rimane senza carburante prima, il gioco finisce.
 12. Se tutte le navicelle del giocatore sono distrutte, il gioco finisce.
 13. Se il giocatore raggiunge un certo punteggio ottiene una navicella.
1. Insert coin.
 2. Push single player or pair selection button as desired to start.
 3. There are four different groups of enemy craft and when the player destroys one group, the next group will appear and attack.
 4. Use the lever to move your rocket across the screen.
 5. Push the fireing button when you wish to attack the enemy or to destroy a meteorite.
 6. When one formation of enemy has been destroyed, the next group will come on screen and attack.
 - ° But, if one enemy craft gets past the player's rocket and reaches the bottom line, the original group will reform and attack again irrespective of how many had previously been destroyed. Player's rocket approaches to the enemies. Enemy craft will fire rockets forward or to the left or right at random.
 7. When all four groups of enemy craft have been destroyed, the master will appear on screen and attack.
 - ° When the master is destroyed, the player is able to refuel.
 8. After refueling the player can begin the game again.
 9. If the player's rocket and enemy craft collide both will be destroyed.
 10. When 2 players are playng and the first player game is over, the game will reset for the second player to commence.
 11. The player cannot refuel untill he has destroyed the master. If the player runs out of fuel before, then the game is over.
 12. If all of the player's rockets are destroyed the game is over.
 13. If the player achieves a certain score he may be awarded an extra rocket.

5A e 6A Con SW 7A in OFF, all'inizio della partita, si presenta un HIGH SCORE RANDOM, il cui valore é compreso fra 5000 punti e 12.500 punti. E' possibile favorire l'uscita di un gruppo di punteggi rispetto agli altri posizionando gli switches 5A e 6A.

5A and 6A At the beginning of the play, if SW 7A is OFF, there is an HIGH SCORE RANDOM from 5000 to 12.500 points. Adjusting switches 5A and 6A it is possible to facilitate the exit of a certain group of points instead of another one.

SW 5A	ON	ON	OFF	OFF
SW 6A	ON	OFF	ON	OFF
Score ranges	70%	70%	70%	70%
	5000	7000	8500	10500
	7000	9000	10500	12500

7A Programmazione del tipo di HIGH SCORE RANDOM o NORMALE

7A HIGH SCORE RANDOM programming or NORMAL SCORE RANDOM programming.

OFF	HIGH SCORE RANDOM
ON	HIGH SCORE NORMAL

Switches B (3 N)

1B e 8B non usati

2B e 3B si possono programmare 4 diversi gradi di difficoltà di gioco.

Switches B (3N)

1B and 8B not used

2B and 3B can program 4 different levels of game difficulties.

SW 2B	ON	ON	OFF	OFF
SW 3B	ON	OFF	ON	OFF
Diff.	Easy	Med.	Diff.	Very Diff.

4B Si programma il n° delle navicelle per partita.

4B The number of the rockets for each play is programmed.

ON	= 3 (2) ⁺ rockets
OFF	= 5 (3) ⁺ rockets

+ I numeri fra parentesi sono validi per il programma versione 03.

+ The numbers in brackets are used in programming 03.

5B Programmazione gettoniera n°1 (sinistra)

5B Coin chute n°1 (on the left hand) programming.

ON	2 coins	1 play
OFF	1 coin	1 play

6B e 7B Programmazione gettoniera n°2 (destra)

6B and 7B Coin chute n°2 (on the right hand) programming.

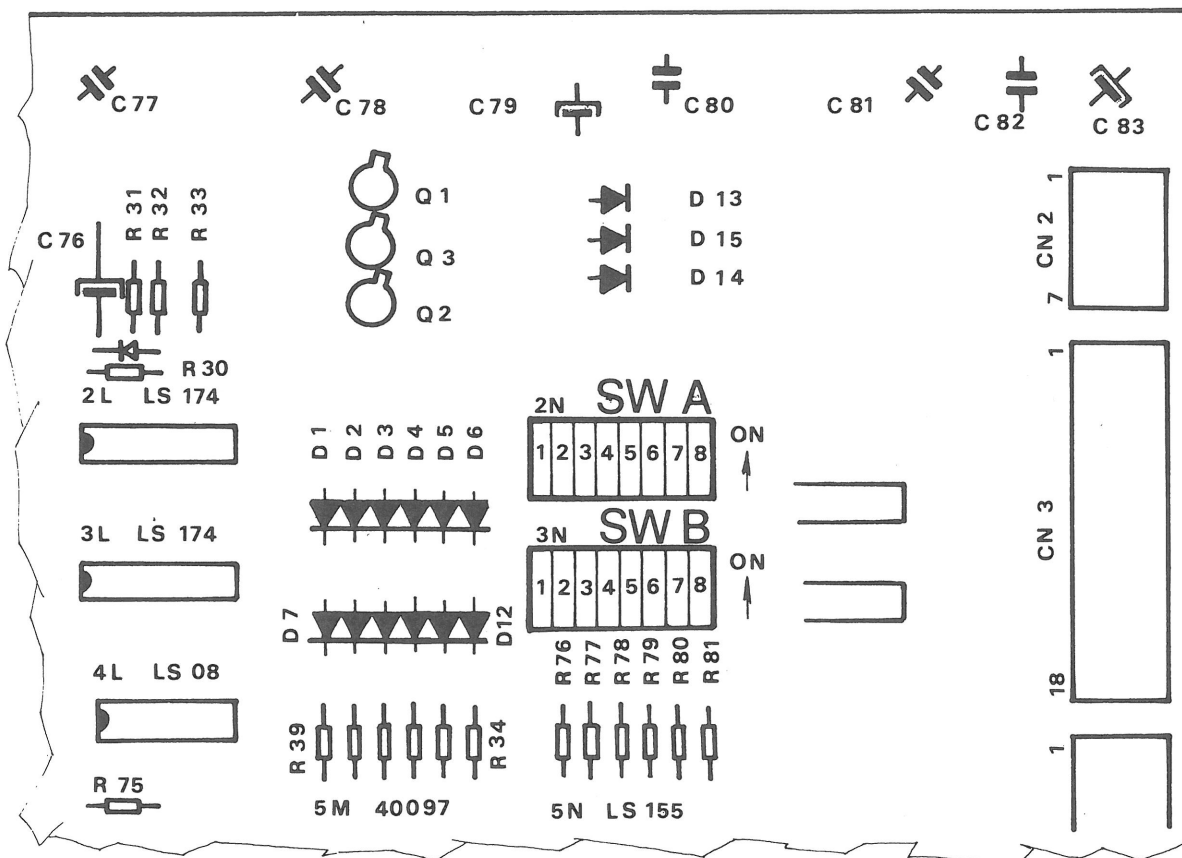
SW 6B	ON	ON	OFF	OFF
SW 7B	ON	OFF	ON	OFF
plays for coin	1 coin	1 coin	1 coin	1 coin
	1 play	2 plays	3 plays	5 plays

Prima di inserire il cavo della alimentazione controllare che la tensione della macchina sia conforme alla tensione di rete disponibile.

Usare gli SWITCHES per programmare la macchina. Sono collocati in basso a destra sul PC Board come indicato nello schema.

Before plugging in the Power Cord, check if the voltage of the machine is in accordance with the available voltage.

Use the Switches to set your machine. They are located in the lower right on PC Board as shown in the diagram.



REGOLAZIONE INTERRUITORI

Switches A (2 N)

1A e 8A non usati

2A Programmazione della possibilità di replay al superamento dello high Score solo con SW 7A in OFF.

SWITCHES ADJUSTMENT

Switches A (2 N)

1A and 8A not used

2A Replay possibilities programming getting over the HIGH SCORE only with SW 7A when OFF.

OFF	=	FREE PLAY
ON	=	NOT FREE PLAY

3A e 4A Programmazione dei punteggi ai quali si vince una navicella.

3A and 4A Score programming to win a rocket Extended play.

SW 3A	ON	ON	OFF	OFF
SW 4A	ON	OFF	ON	OFF
Points	not ext.	3000 p.	5000 p.	7000 p.

MRB 290 VETRO RICURVO "ASTRO WARS"

MV 034 GUARNIZIONE IN PVC

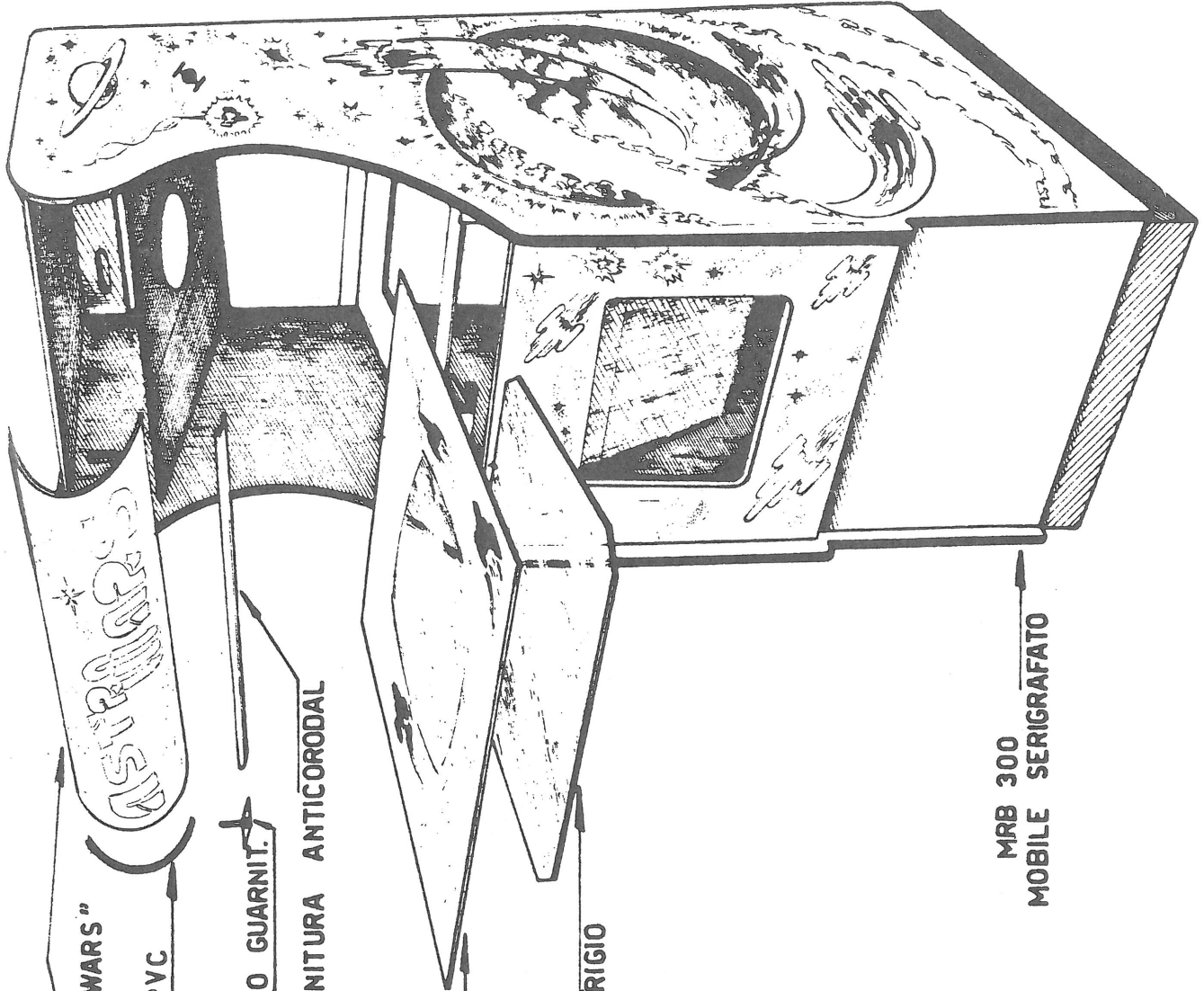
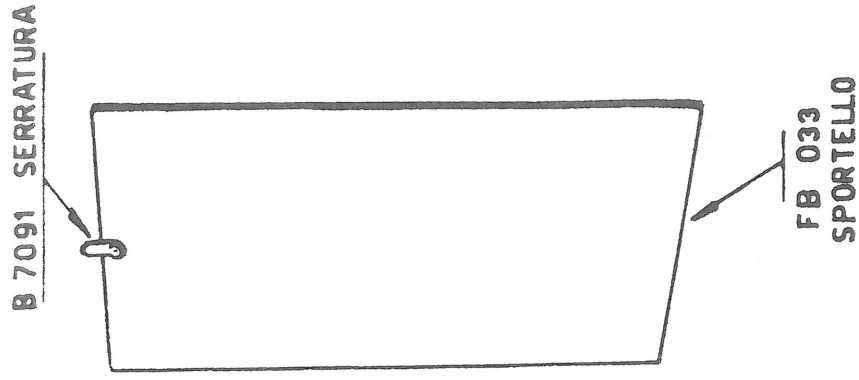
B 6143 PIASTRINA BLOCCAGGIO GUARNIT.

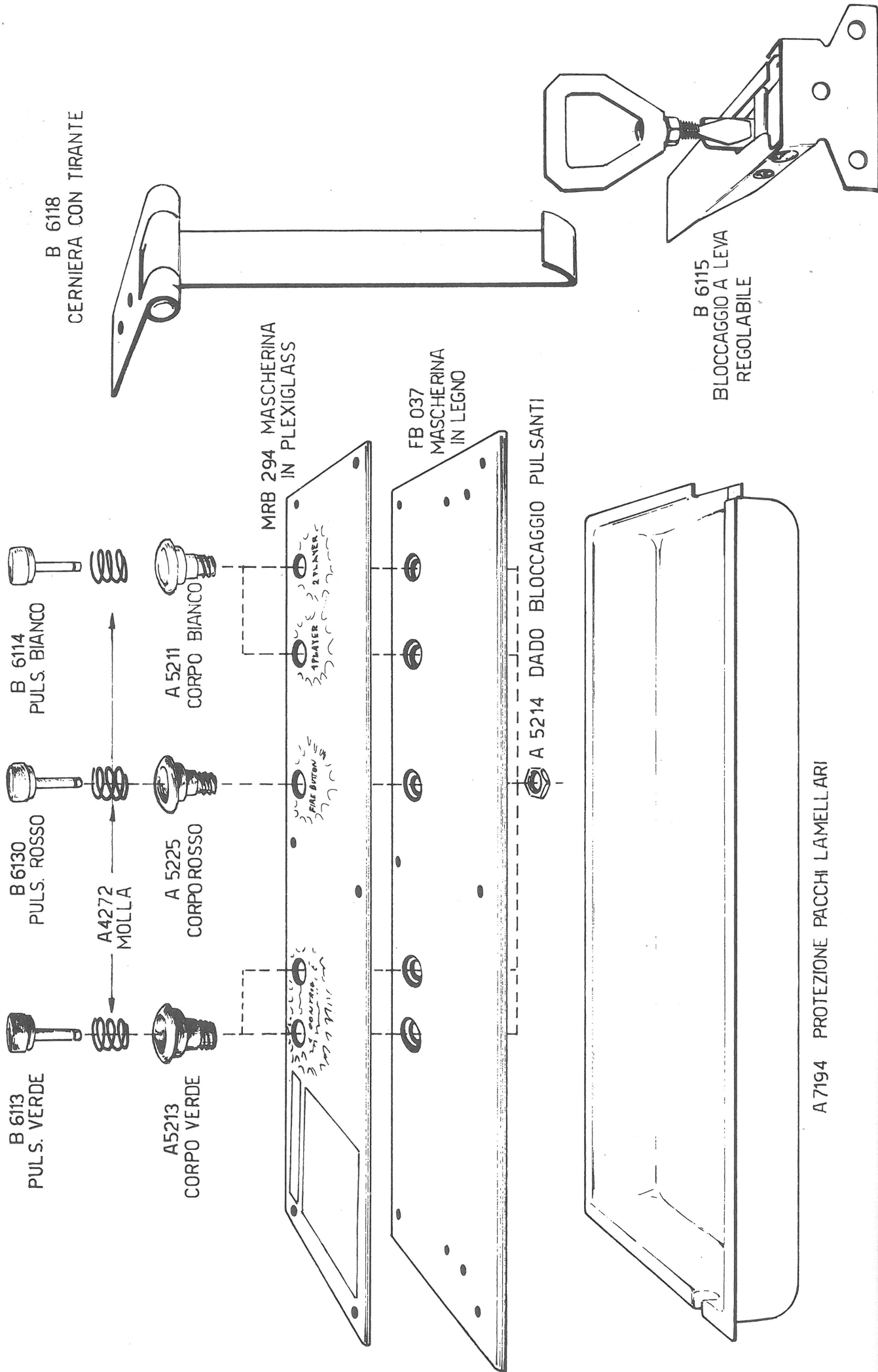
A 7227 GUARNITURA ANTICORODAL

MRB 292 VETRO SERIGRAFATO

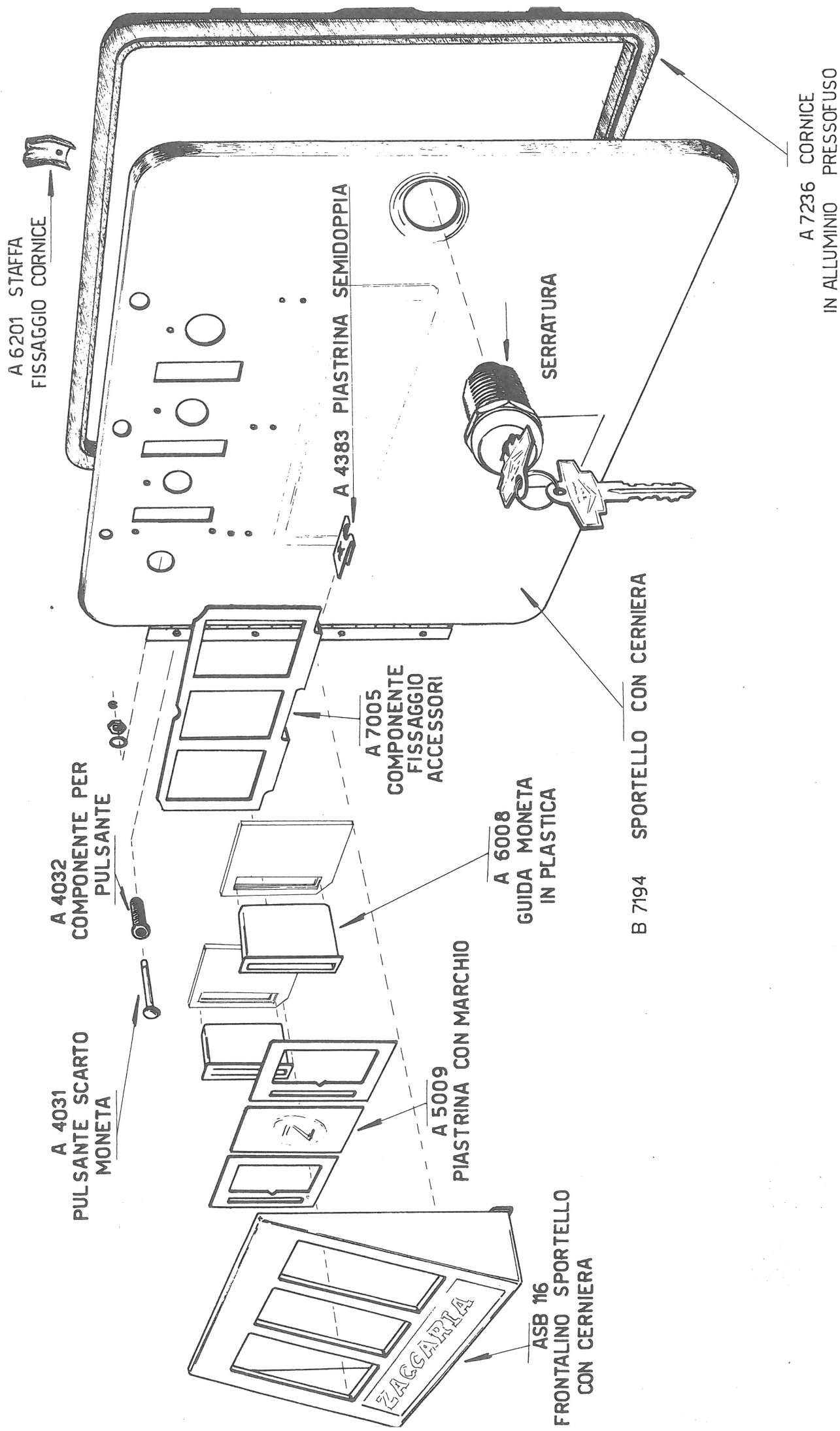
MV 035 LASTRA IN PERSPEX GRIGIO

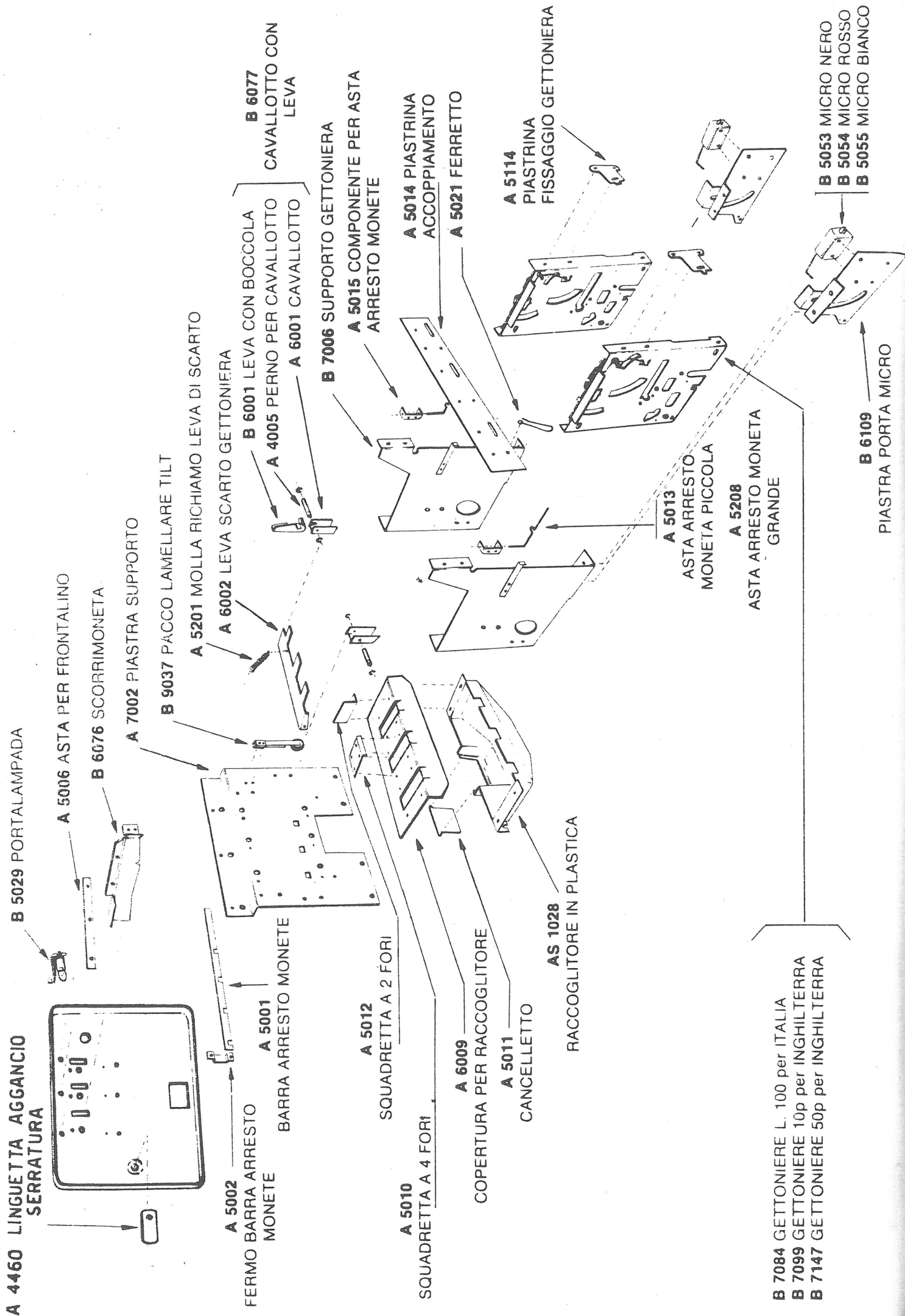
MRB 300
MOBILE SERIGRAFATO





C 8109 SPORTELLINO MONTATO

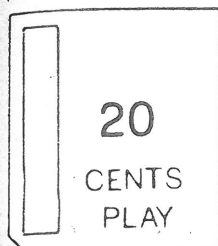




PIASTRINE SERIGRAFATE

& Introduzioni Monete

AUSTRALIA

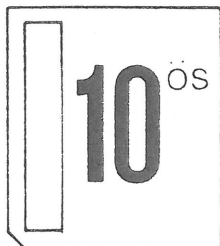


p.ser. B 5056
in. m. A 5007

AUSTRIA

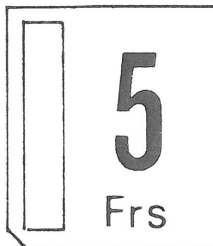


p.ser. B 5045
in. m. A 5008



p.ser. B 5047
in. m. A 5007

BELGIO



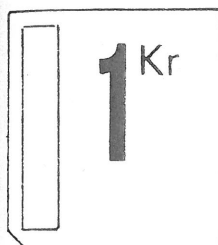
p.ser. B 5035
in. m. A 5008



p.ser. B 5034
in. m. A 5007

p. ser. =
PIASTRINA
serigrafata

DANIMARCA & SVEZIA



p. ser. B 4074
in. m. A 5007

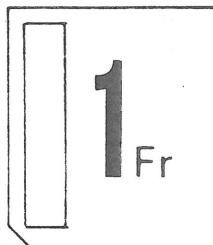


p. ser. B 5065
in. m. A 4401

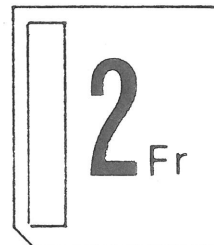


p. ser. B 5066
in. m. A 5007

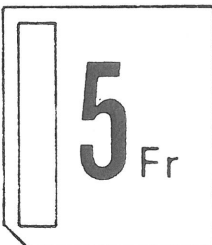
FRANCIA & SVIZZERA



p. ser. B 5024
in. m. A 5008

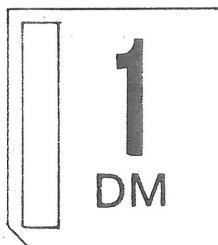


p. ser. B 5025
in. m. A 5007



p. ser. B 5060
in. m. A 4401

GERMANIA



p. ser. B 4059
in. m. A 5008

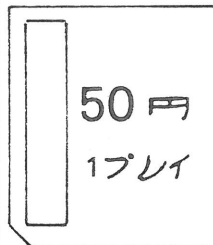


p. ser. B 4060
in. m. A 5007

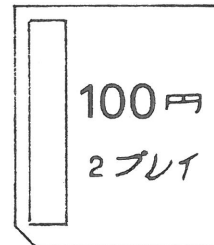


p. ser. B 4041
in. m. A 5007

GIAPPONE



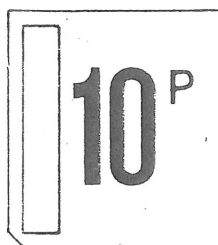
p. ser. B 5051
in. m. A 4399



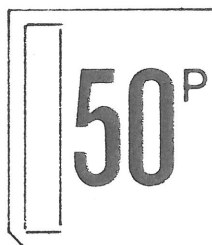
p. ser. B 5052
in. m. A 4398

in. m. =
PIASTRINA
introduzione
moneta

INGHILTERRA

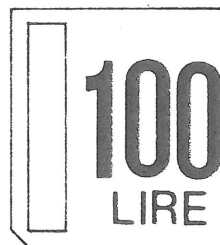


p. ser. B 4062
in. m. A 5007



p. ser. B 4091
in. m. A 4401

ITALIA

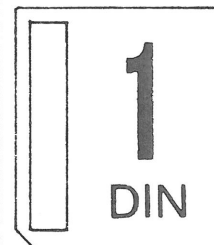


p. ser. B 5001
in. m. A 5007

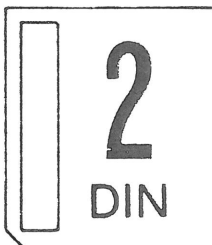


p. ser. B 6136
in. m. A 5242

JUGOSLAVIJA

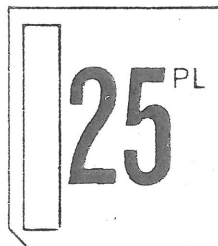


p. ser. B 4081
in. m. A 5008

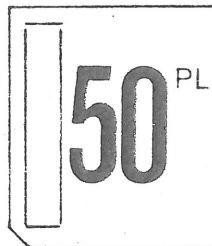


p. ser. B 4082
in. m. A 5007

LIBANO

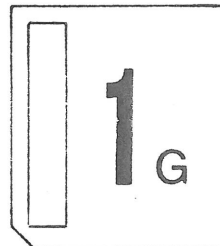


p. ser. B 5059
in. m. A 5008



p. ser. B 5058
in. m. A 5007

OLANDA



p. ser. B 4085
in. m. A 5008

UNGHERIA

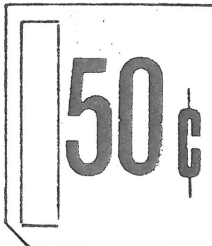


p. ser. B 6139
in. m. A 5008

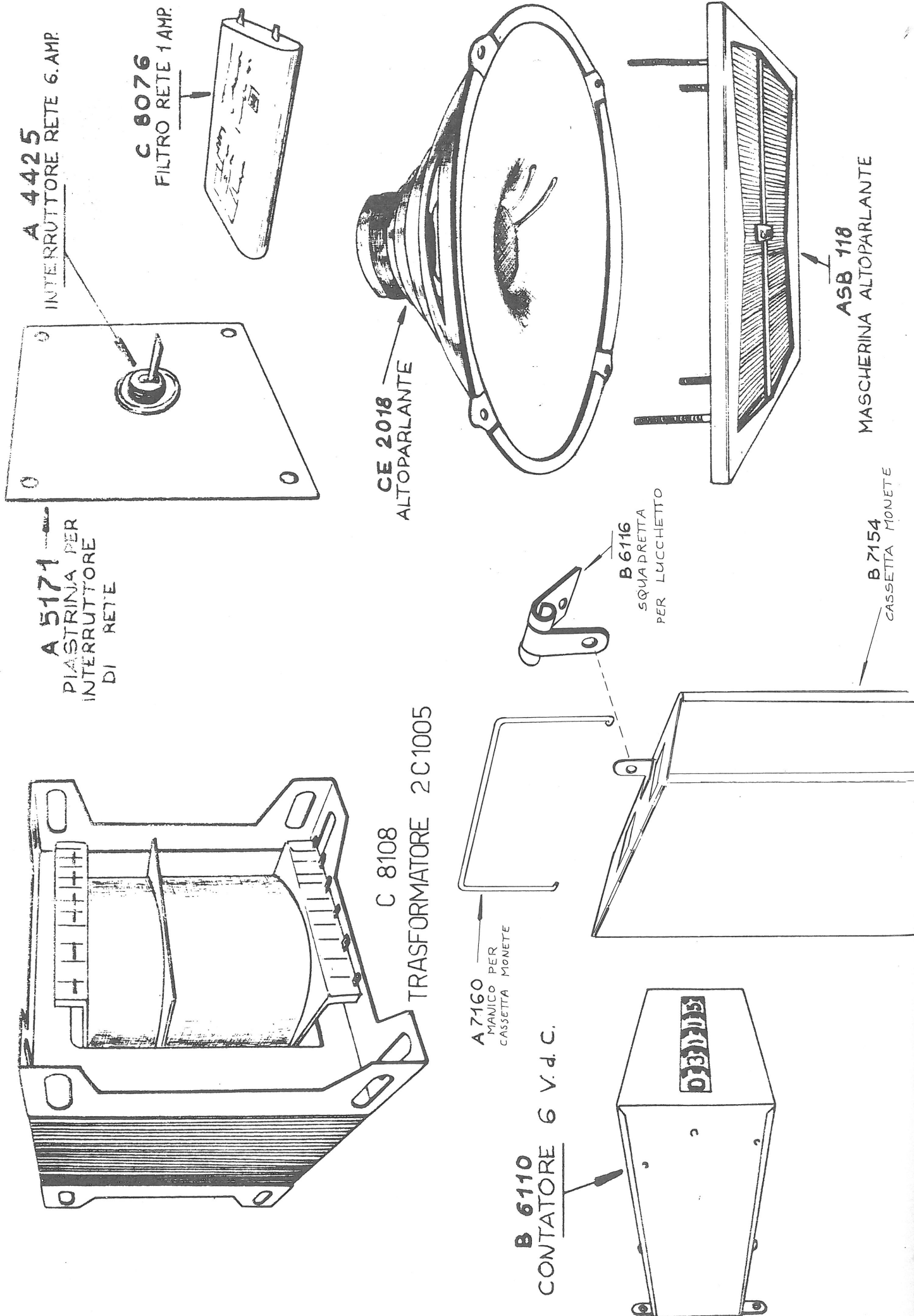
U.S.A. & CANADA



p. ser. B 5046
in. m. A 5008



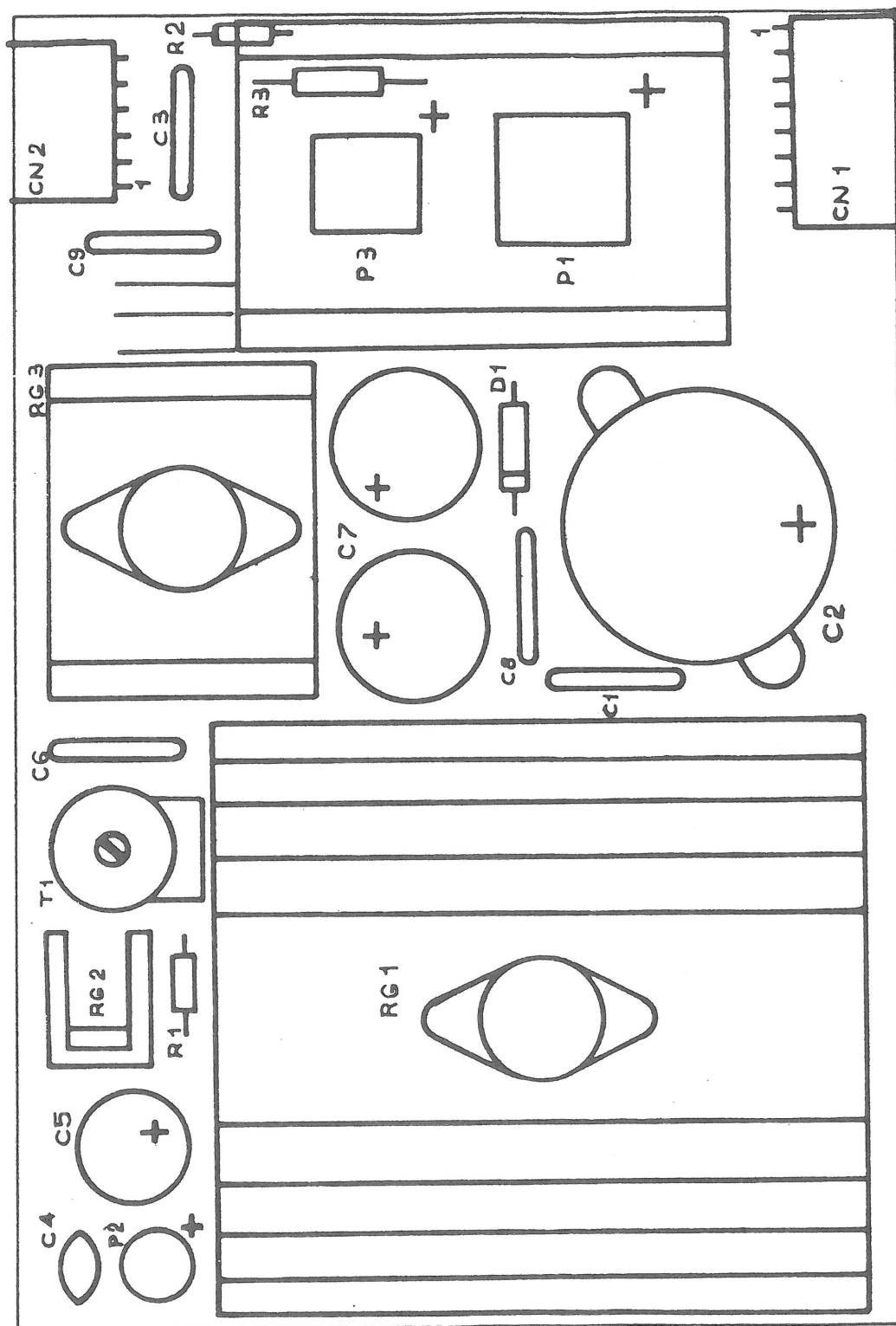
p. ser. B 5061
in. m. A 5007



56	R1-2-40+45 R84+86	CE 1163	470 OHM 1/4W 5% Carbon Resistors	11
57	R31+33	CE 1170	1K OHM 1/4W 5% Carbon Resistors	3
58	R5-R17+29- R34+39	CE 1164	2,2K OHM 1/4W 5% Carbon Resistors	20
59	R3-4-6+16- 30-59-68+75 82-83-87-88	CE 1165	4,7K OHM 1/4W 5% Carbon Resistors	27
60	R60+67	CE 1408	27K OHM 1/4W 5% Carbon Resistors	8
61	2N-3N	CE 1480	8 SWITCH DIP	2
62	8A-8F	CE 1494	40 Pin Sochet for I.C.	2
63	1D-3D-8H-8I 10H-10I-11H 11I-11L-13H 13I-13L	CE 1495	24 Pin Sochet for I.C.	12
64	CN3-CN4-CN5	CE 1336	18 Pin "CIS" Receptacle connectors	3
65	CN2-CN6	CE 1337	7 Pin "CIS" Receptacle connectors	2
66	CN1	CE 1361	8 Pin "MODU1" Male connectors	1
67	12C	CE 1053	14 Pin Sochet for I.C.	1

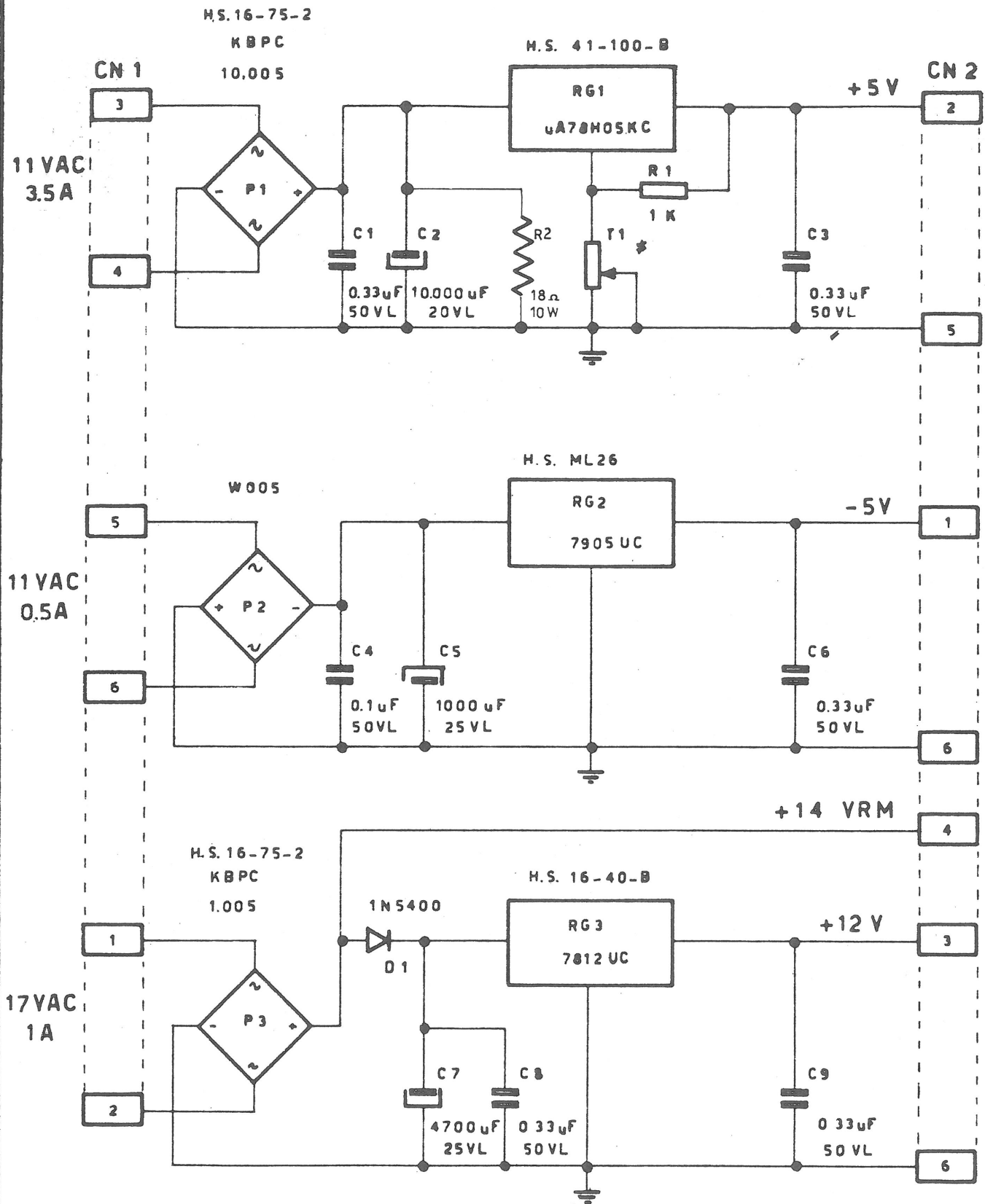
CEC 043

POWER BOARD VIDEO GAME ZACCARIA



ITEM NO.	PART Designation	CODE Part NO.	DESCRIPTION	REQ'D NO.
	PC 1	CE 2070	Printed Circuit 1B 1126	1
	P 1	CE 1405	50V. 10 AMP Rectifier Bridge (KBPC 10-005)	1
	P 2	CE 1233	50V. 1 AMP Rectifier Bridge (W - 005)	1
	P 3	CE 1276	50V. 3 AMP Rectifier Bridge (KBPC 1-005)	1
	RG 1	CE 1238	+5V. 5 AMP Voltage Regulator(μ A 78H05KC)	1
	RG 2	CE 1648	-5V. 1 AMP Voltage Regulator(μ A 7905 UC)	1
	RG 3	CE 1688	+12V. 1 AMP Voltage Regulator(μ A 7812 UC)	1
	D 1	CE 1299	1N 5400 Diode	1
	CN 1	CE 1332	6 Pin Modu 1 Male Connector	1
	CN 2	CE 1361	8 Pin Modu 1 Male Connector	1
	HS 1	CE 1566	Heat Sink 16/75/2	1
	HS 2	CE 1278	Heat Sink 41/100/B	1
	HS 3	CE 1099	Heat Sink ML 26 TO-220	1
	HS 4	CE 1529	Heat Sink 16/40/B	1
	C 1-3-6-8-9	CE 1261	0,33 μ F 50V. Poliester Film Capacitors	5
	C 2	CE 1384	10.000 μ F 16V. Electr. Cap. Single Ended	1
	C 4	CE 1005	0,1 μ F 50V. Ceramic Capacitor	1
	C 5	CE 1026	1.000 μ F 25V. Electr. Cap. Single Ended	1
	C 7	CE 1579	2.200 μ F 25V. Electr. Cap. Single Ended	2
	R 1	CE 1170	1 KOHM 1/4W. 5% Carbon Resistor	1
	R 2	CE 1701	18 OHM 20W. 10% Wire Resistor	1
	T 1		47 OHM 1 Turn Vertical Trimmer (Commonly mounted 22 OHM 1/4W. 5% carbon resistor)	1

★ 47 Ω TRIMMER OR 22 $\frac{1}{4}$ 5% RESISTOR



ZACCARIA

CEC-043

ELECTRICAL DIAGRAM for
POWER SUPPLY (1B1126)

Electrical diagram