

SEEVEND

Williams 

SCHALTPLÄNE



SEEVEND Automaten-GmbH

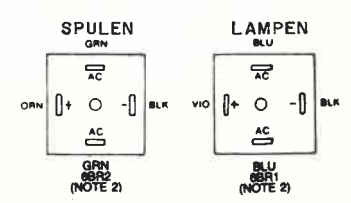
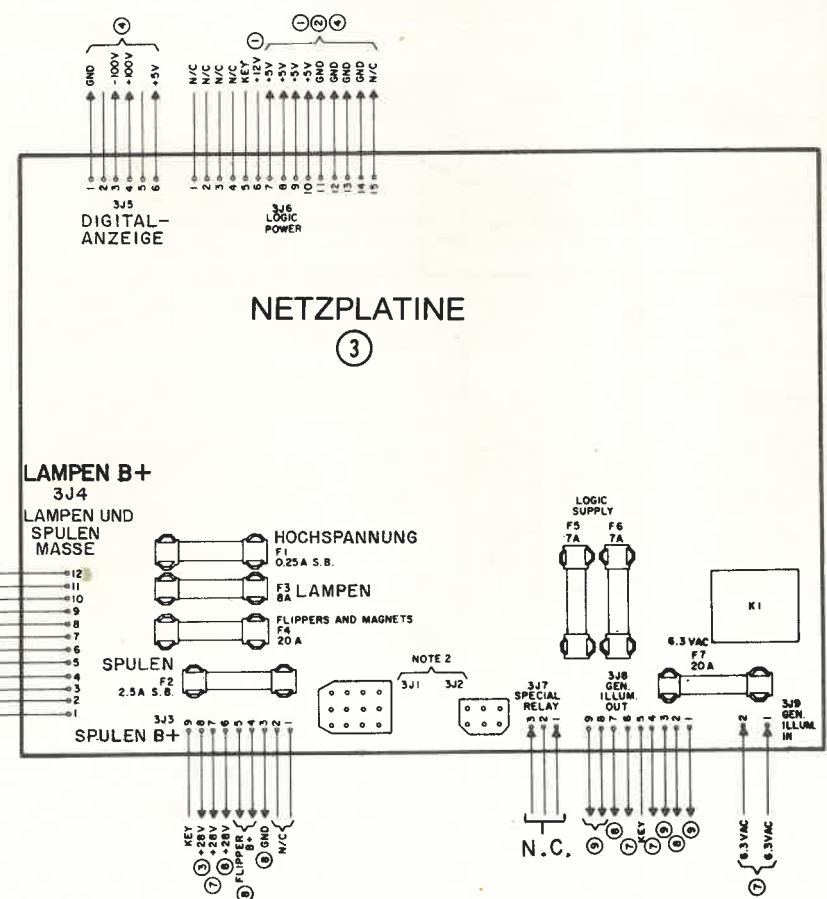
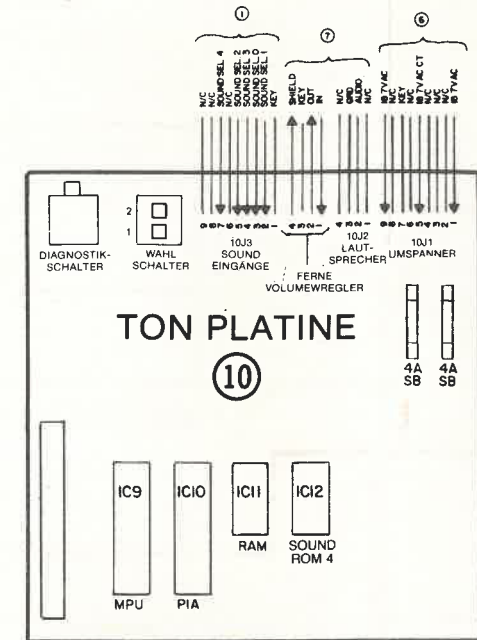
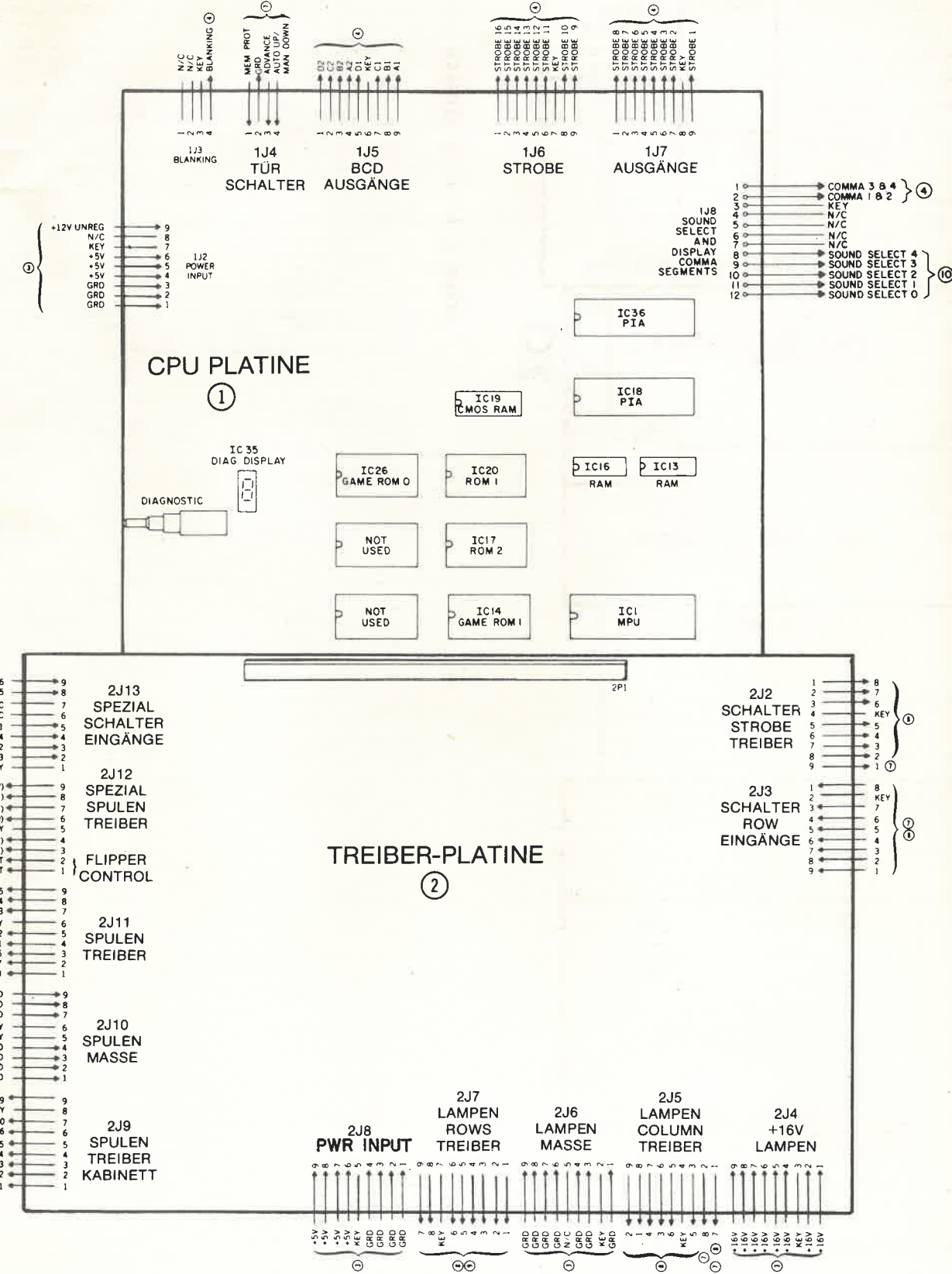
Carl-Petersen-Straße 70-76 · 2000 Hamburg 26 · ☎ (040) 25 73 31 · 📠 02-15 088

SCHALTPLÄNE

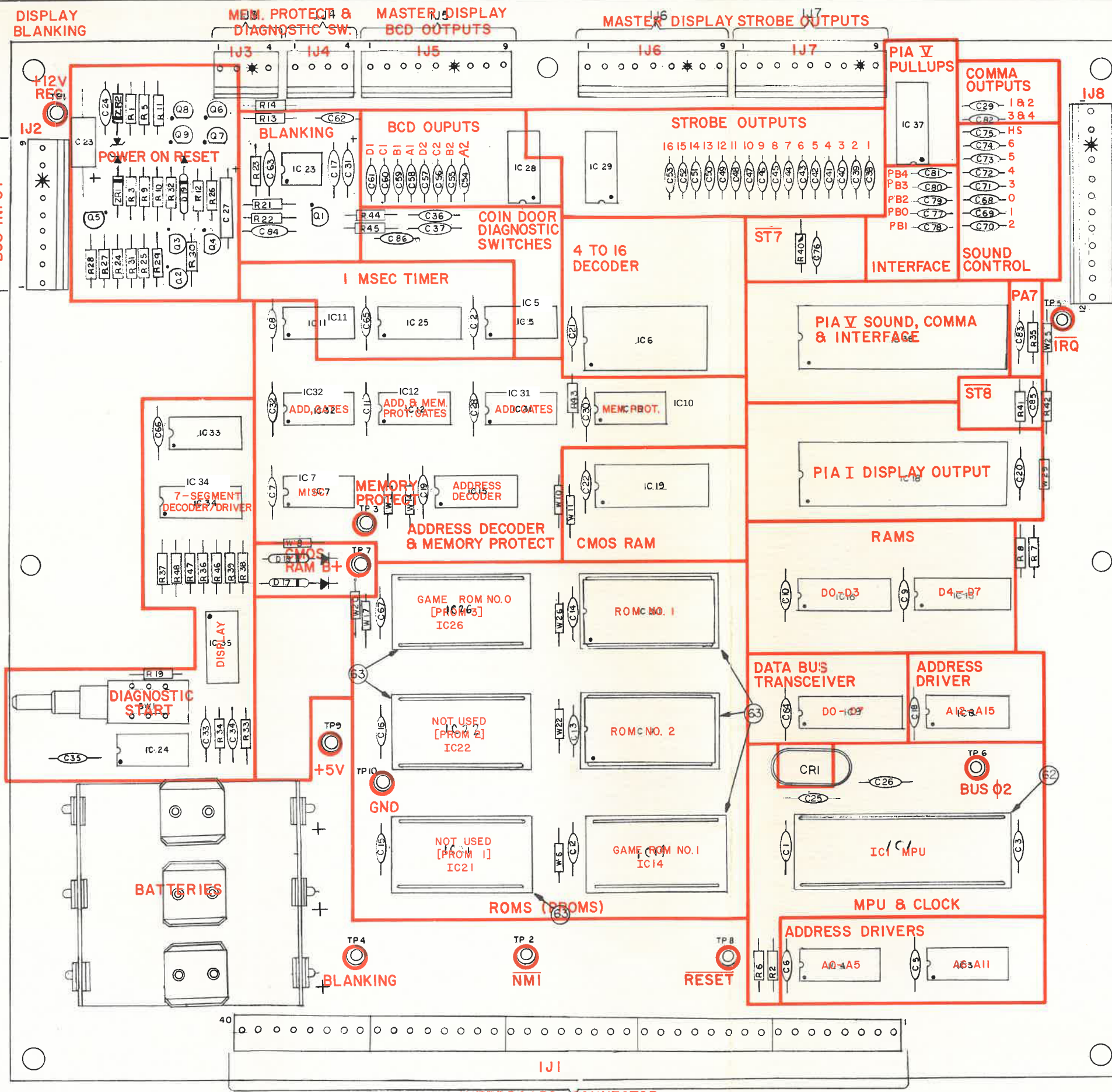
INHALTSVERZEICHNIS

SEITE

1. LICHTKASTEN - STECKVERBINDUNGEN
2. CPU - PLATINE
3. SCHALTBILD CPU - PLATINE
4. TREIBER - PLATINE
5. SCHALTBILD TREIBER - PLATINE - Blatt 1
6. SCHALTBILD TREIBER - PLATINE - Blatt 2
7. NETZTEIL - PLATINE
8. MASTER DISPLAY
9. SCHALTBILD MASTER DISPLAY
10. SCHALTBILD SLAVE DISPLAY
11. BLOCKDIAGRAMM STEUERPLATINE UND TREIBERPLATINE
12. VERDRAHTUNGSPLAN
13. SCHALTPLAN FÜR KABINETT
14. SCHALTPLAN FÜR SPIELFELDLAMPEN
15. SCHALTPLAN FÜR SPIELFELDSPULEN UND KONTAKTE
16. SCHALTPLAN FÜR SPIELFELDKONTAKTE
17. SCHALTPLAN STEUERPLATINE (DISPLAYS) FÜR SPIELANZEIGEN
18. SOUND PLATINE
19. SCHALTBILD SOUND - PLATINE



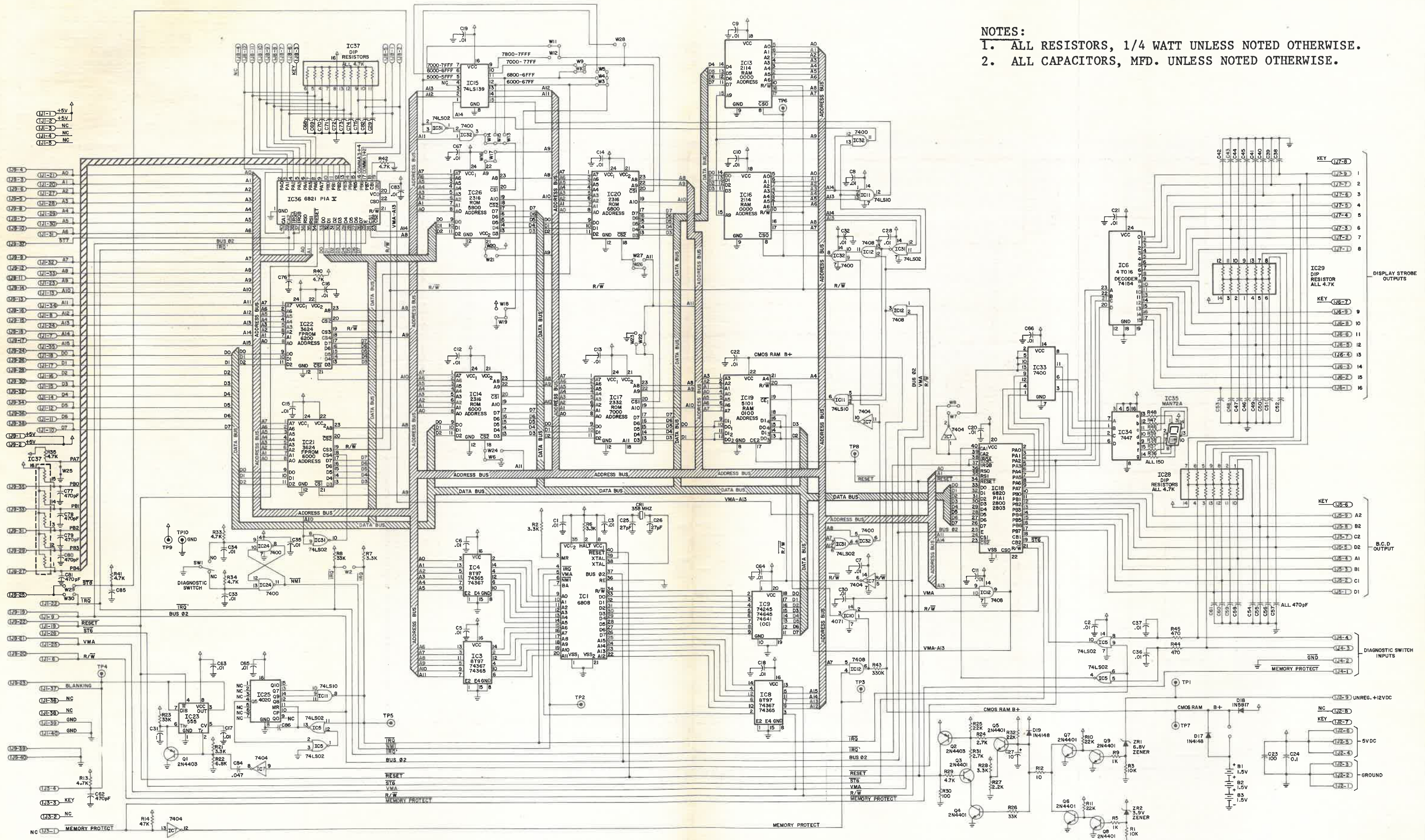
- ANMERKUNG:
- ① CPU PLATINE
 - ② TREIBER-PLATINE
 - ③ NETZPLATINE
 - ④ MASTER DISPLAY PLATINE
 - ⑤ SLAVE DISPLAY
 - ⑥ LICHTKASTEN
 - ⑦ KABINETT
 - ⑧ SPIELFELD
 - ⑨ LICHTBRETT
 - ⑩ TON PLATINE
 - ⑪ SPRACHE PLATINE



NOTE: USE EITHER 5641-09312-00, 5641-09024-00 OR 5641-09371-00

NOTES:

1. ALL RESISTORS, 1/4 WATT UNLESS NOTED OTHERWISE.
2. ALL CAPACITORS, MFD. UNLESS NOTED OTHERWISE.



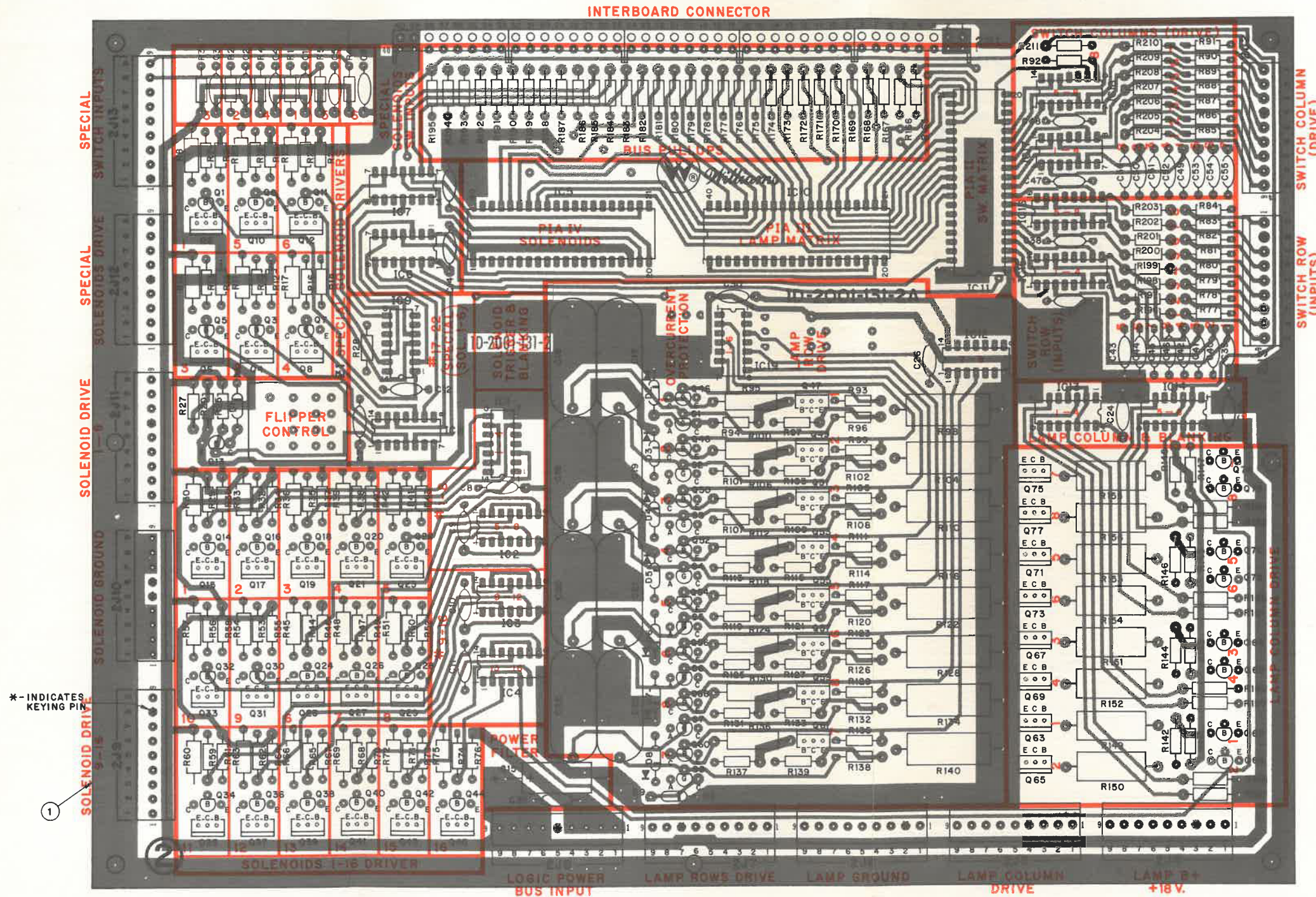
CPU — PLATINE SCHALTBILD

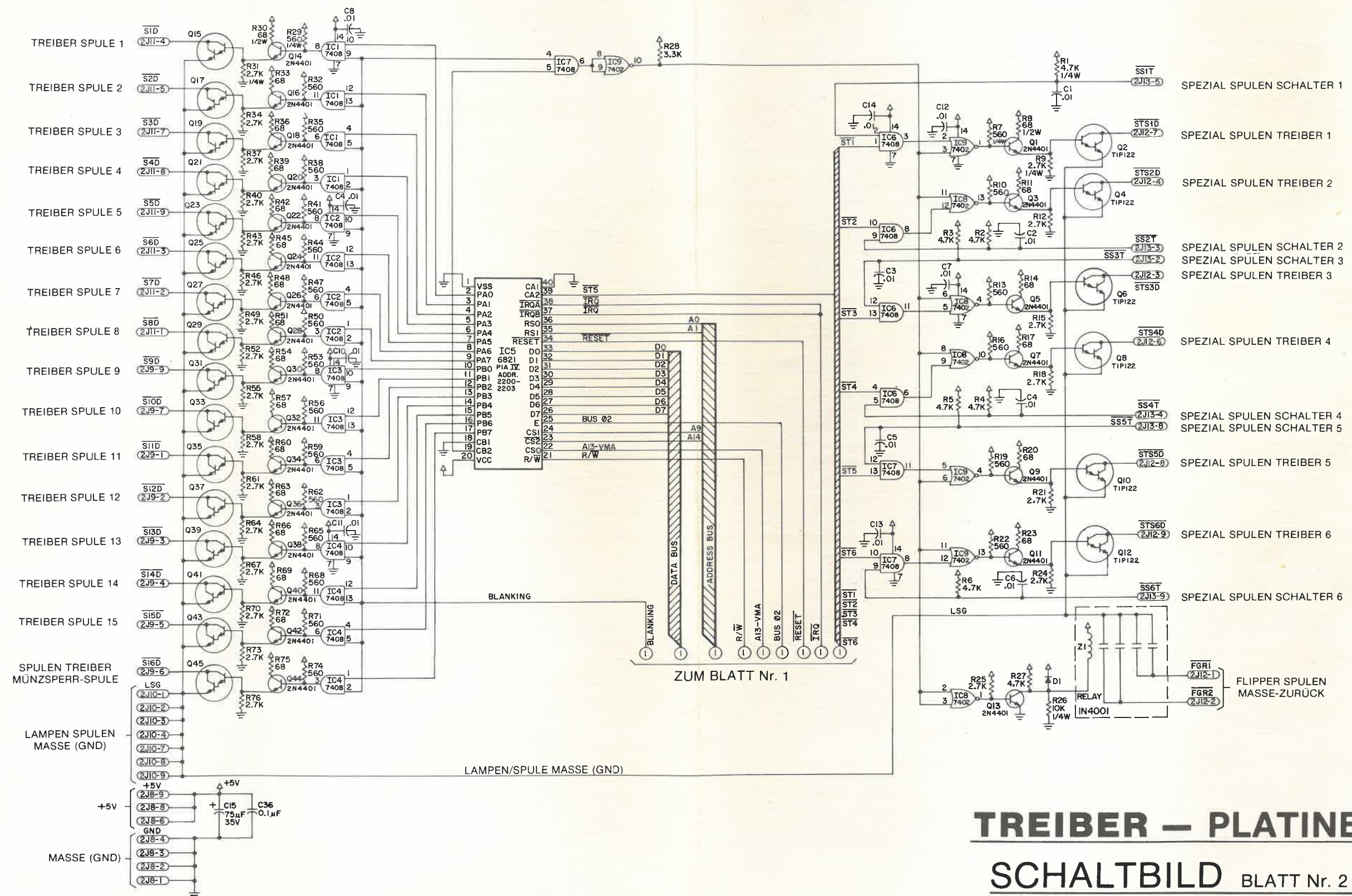
TREIBER — PLATINE

BILL OF MATERIAL

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
1	1B-2001-131		BARE P.C. BOARD	1
2	5A-8948	IC8, IC9	N7402 QUADRUPLE 2 INPUT POSITIVE NOR GATE	2
3	5A-8974	IC12, IC17, IC18, IC19	N7406 HEX. INVERTER BUFFER DRIVERS W/ OPEN COLLECTOR HIGH VOLTAGE OUTPUTS	4
4	5A-8973	IC1 THRU IC4, IC6, IC7, IC13, IC14	N7408 QUADRUPLE 2 INPUT POSITIVE AND GATE	8
5	5A-8975	IC15, IC16	MC14049 INVERTING HEX. BUFFER	2
6	5A-8972	IC5, IC10, IC11	MC6820 PERIPHERAL INTERFACE ADAPTER	3
7	5A-8938	Q1, Q3, Q5, Q7, Q9, Q11, Q13, Q14, Q16, Q18, Q20, Q22, Q24, Q26, Q28, Q30, Q32, Q34, Q36, Q38, Q40, Q42, Q44	2N4401 NPN TRANSISTOR	23
8	5A-8976	Q46, Q48, Q50, Q52, Q54, Q56, Q58, Q60, Q62, Q64, Q66, Q68, Q70, Q72, Q74, Q76	2N6427 DARLINGTON NPN TRANSISTOR	16
9	5A-8977	Q2, Q4, Q6, Q8, Q10, Q12, Q14, Q16, Q18, Q20, Q22, Q24, Q26, Q28, Q30, Q32, Q34, Q36, Q38, Q40, Q42, Q44	TIP126 DARLINGTON NPN POWER TRANSISTOR	22
10	5A-8978	Q63, Q65, Q67, Q69, Q71, Q73, Q75, Q77	TIP42 PNP POWER TRANSISTOR	8
11	5A-8979	Q47, Q49, Q51, Q53, Q55, Q57, Q59, Q61	2N6122 NPN POWER TRANSISTOR	8
12	5A-6258	D1	1N4001 DIODE	1
13	5A-8919	D2 THRU D8	1N4148 DIODE	8
14	5A-9014	S1 THRU S8	2N5060 SCR	8
15	5A-8980	C1 THRU C14, C24, C26, C28, C30, C32, C34, C36, C38, C40, C42, C44	CAPACITOR, CERAMIC, .01 MFD. +80 -20% 50 V.	22
16	5A-8995	C16 THRU C23	CAPACITOR, POLYESTER FILM, .1 MFD. 10%	7
17	5A-9065	C37 THRU C46, C49 THRU C56	CAPACITOR, CERAMIC, 470 PFD. 20% 50 V.	16
18	5A-8996	C15	CAPACITOR, ELECT. 100 MFD. 10 V.	1
19	5A-8996	C36	CAPACITOR, CERAMIC, 1 MFD. +80 -20% 50 V.	1
20	5A-8991	R1 THRU R6, R27, R77 THRU R92, R157 THRU R193	RESISTOR, FC, 4.7 K OHM 10% 1/4 W	62
21	5A-8983	R27	RESISTOR, FC, 3.3 K OHM 10% 1/4 W	1
22	5A-8984	R86, R97, R102, R103, R108, R109, R114, R115, R121, R122, R126, R127, R132, R133, R136, R139, R196 THRU R203	RESISTOR, FC, 1 K OHM 10% 1/4 W	24
23	5A-8992	R7, R10, R13, R16, R19, R22, R29, R32, R35, R38, R41, R44, R47, R50, R53, R56, R59, R62, R65, R68, R71, R74	RESISTOR, FC, 560 OHM 10% 1/4 W	22
24	5A-8993	R8, R11, R14, R17, R20, R23, R30, R33, R36, R39, R42, R45, R48, R51, R54, R57, R60, R63, R66, R69, R72, R75	RESISTOR, FC, 68 OHM 10% 1/4 W	22
25	5A-8997	R9, R12, R15, R18, R21, R24, R25, R31, R34, R37, R40, R43, R46, R49, R52, R55, R58, R61, R64, R67, R70, R73, R76	RESISTOR, FC, 2.7 K OHM 10% 1/4 W	23
26	5A-8817	R26	RESISTOR, FC, 10 K OHM 10% 1/4 W	1
27	5A-8998	R141 THRU R148	RESISTOR, FC, 2.2 K OHM 10% 1/4 W	8
28	5A-8999-1	R149 THRU R156	RESISTOR, FC, 27 OHM 10% 2 W	8
29	5A-9084	R95, R100, R106, R112, R116, R124, R130, R136	RESISTOR, FC, 100 OHM 10% 3 W	8
30	5A-9085	R93, R99, R105, R111, R117, R123, R129, R135	RESISTOR, FC, 1.5 K OHM 10% 1/4 W	8
31	5A-9086	R94, R101, R107, R113, R119, R125, R131, R137	RESISTOR, FC, 6.8 K OHM 10% 1/4 W	8
32	5A-9037	R98, R104, R110, R116, R122, R128, R134, R140	RESISTOR, WIREWOUND, .4 OHM 10% 3 WATT	8
33	5A-8994	Z1	RELAY - 4 POLE - 5 AMP. CONTACTS 40 OHM COIL & V.D.C.	1
34	5A-9066	2P1	8 PIN RECEPTACLE	5
35	5A-9027	2J2 THRU 2J13	9 PIN HEADER	12
36	5A-9001	R204 THRU R211	RESISTOR, FC, 330 OHM 10% 1/4 W	8

★ R149 THRU R156 MUST BE MOUNTED 1" ABOVE SURFACE OF BOARD.

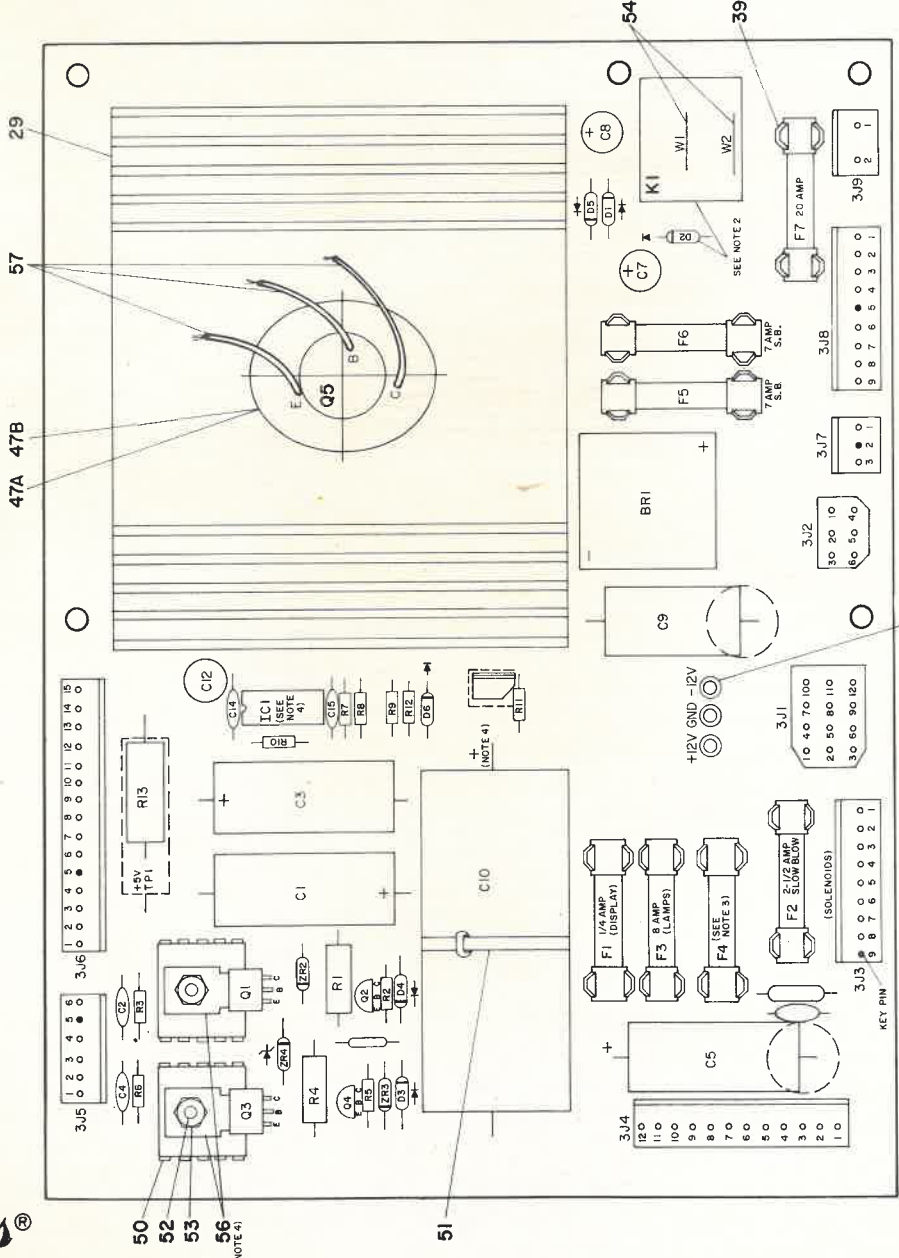




NETZTEIL — PLATINE

BILL OF MATERIAL

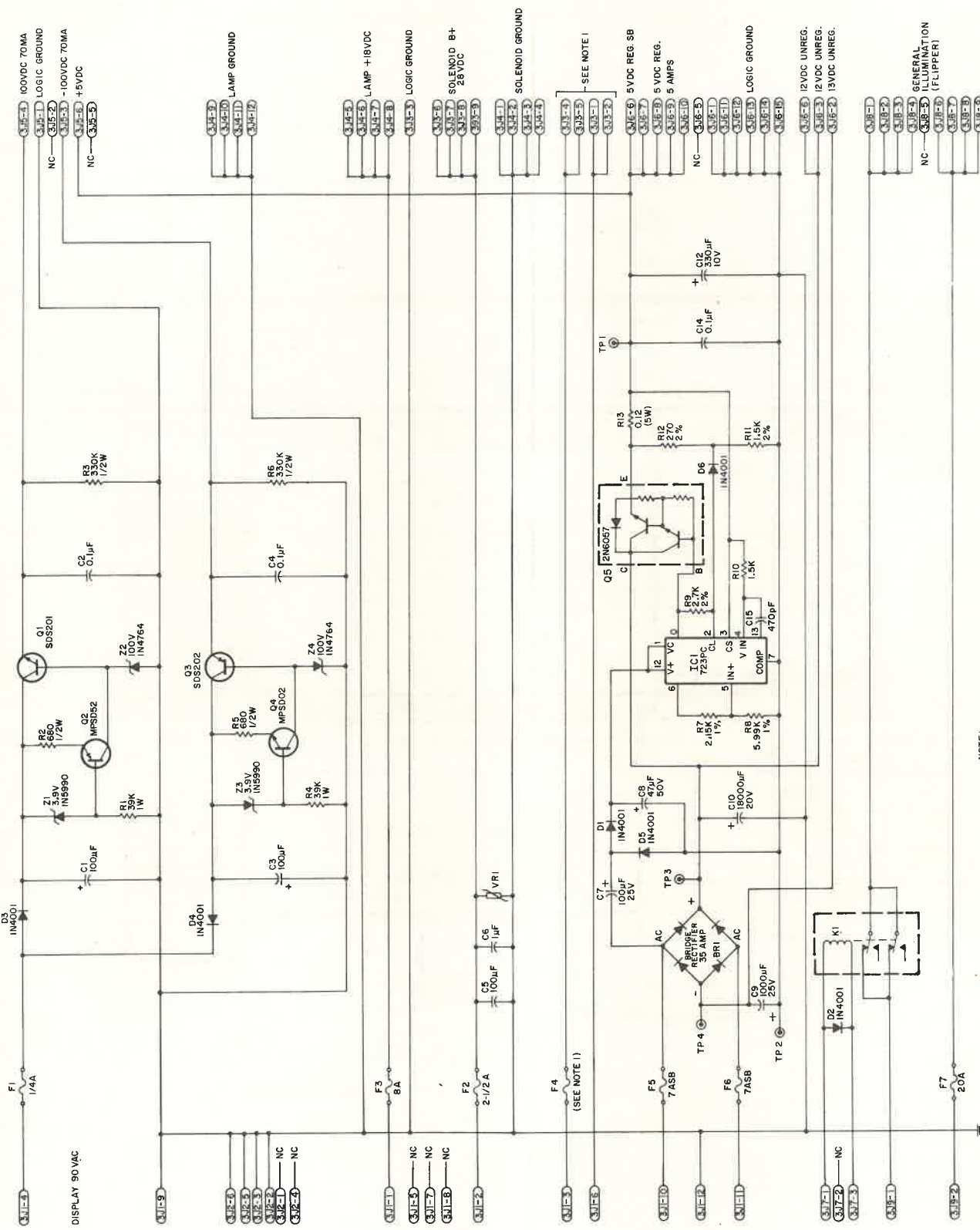
ITEM NO.	PART NO.	DESCRIPTION	REQ'D NO.
1	5765-09466	BARE P.C. BOARD	1
2	5013-09426	RESISTOR, 2.15K, 1%, 1/4 W, METAL FILM	1
3	5013-09427	RESISTOR, 2.15K, 1%, 1/4 W, METAL FILM	1
4	5010-09428	RESISTOR, 1.5K, 2%, 1/4 W, CARBON FILM	1
5	5010-09085	RESISTOR, 2.7K, 2%, 1/4 W	1
6	5010-09541	RESISTOR, 2.7K, 2%, 1/4 W	1
7	5010-09508	RESISTOR, 270 OHM, 2%, 1/4 W, CARBON FILM	1
8	5012-09429	POWER RESISTOR, 0.12 OHM, 5%, 5W	1
9	5010-09536	RESISTOR, 39K, 5%, 1 W	2
10	5010-09061	RESISTOR, 680 OHM, 2 W	2
11	5010-09069	RESISTOR, 330K, 5%, 1/2 W	2
12	5040-09419	CAP., ELECTROLYTIC, 18,000 MFD, 20V, AXIAL	1
13	5040-09420	CAP., ELECTROLYTIC, 1,000 MFD, 20V, RADIAL OR AXIAL	1
14	5040-09423	CAP., ELECTROLYTIC, 330 MFD, 10V, RADIAL	1
15	5043-09065	CAPACITOR, 470 pF	1
16	5040-09053	CAPACITOR, 100 MFD, ELECT., 150V	2
17	5040-09070	CAPACITOR, 100 MFD, ELECT., 100V, AXIAL OR RADIAL	1
18	5043-09537	DIODE, IN4001	1
19	5070-09446	DIODE, IN4001	1
20	5070-09458	ZENER, IN5900, 3.9V, 5% 6	2
21	5075-09059	ZENER, IN4764, 100V, 5% 2	2
22	5060-09424	VOLTAGE REGULATOR, MC1723 PC	1
23	5043-09443	CAPACITOR, 0.1 MFD, 200V, DISC	1
24	5040-09421	CAPACITOR, 100 MFD, 25V, RADIAL	1
25	5164-09057	TRANSISTOR, S05 201 NPN	1
26	5164-09058	TRANSISTOR, S05 201 NPN	1
27	5194-09038	TRANSISTOR, S05 202 PNP	1
28	5194-09035	TRANSISTOR, NPS 952 PNP	1
29	5705-04431	HEAT SINK	1
30	5791-09067	CONNECTOR, 6 PIN (H)	1
31	5791-09067	CONNECTOR, 15 PIN (H)	1
32	5791-09027	CONNECTOR, 9 PIN (H)	2
33	5791-09038	CONNECTOR, 6 PIN (H)	1
34	5162-09425	TRANSISTOR, POWER, 2N6087 NPN	1
35	5791-09043	CONNECTOR, 12 PIN (H)	1
36	5791-09043	CONNECTOR, 3 PIN (H)	1
37	5791-09436	CONNECTOR, 2 PIN (H)	1
38	5791-09068	CONNECTOR, 12 PIN	14
39	5732-09178	FUSE HOLDER	1
40	5731-09128	FUSE, 2-1/2 AMP, S.B.	1
41	5730-09071	FUSE, 8 AMP, S.B.	1
42	5730-09071	FUSE, 15 AMP, OR, S.B.	1
43	5730-09071	FUSE, 15 AMP, OR, S.B.	1
44	5731-08761	FUSE, 20 AMP	1
45	5017-09061	VARIATOR	1
46	5700-09445	MICA INSULATOR	1
47	5701-09538	RELAY, 24 VDC, 10 AMP, DPDT	1
48	5880-09555	TERMINAL, #150-1 (TEST POST)	3
49	5884-09248	BRIDGE RECTIFIER, 35 AMP, 100V	1
50	5100-09418	HEAT SINK	2
51	5705-09042	TIE WRAP	1
52	3A-7520-1	5-40 x 7/16 R.H. MECH. SCREW	2
53	4005-01016-07	JUMPER, #18 AWG	2
54	4405-01117	LEAD WIRE, #18 AWG (3")	2
55	5040-09422	CAPACITOR, 100 MFD, 50V, RADIAL	1
56	20-9229	FUSE, 7A, S.B., 250V	3
57	5731-09432		
58			



NOTES:

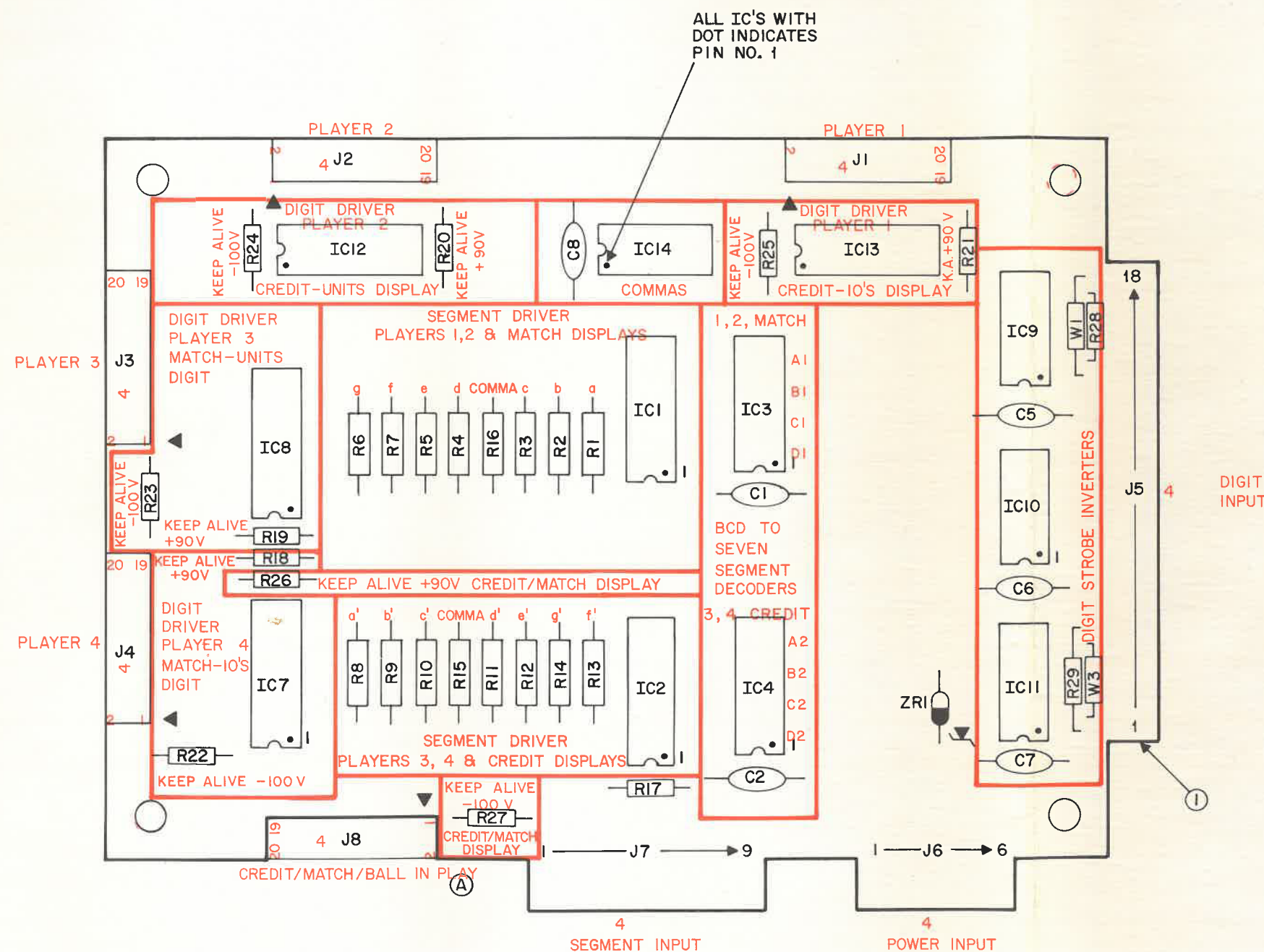
- HEAT SINK COMPOUND MUST BE APPLIED BETWEEN TRANSISTOR AND HEAT SINK.
- FOR BLACKOUT AND FUTURE GAME WITH SAME FEATURE REMOVE JUMPER W1 & W2.
- ON UPPER GAME F4 IS 10 AMPS ON DUAL ACTION FLIPPERS (5 AMPS ON SHUFFLE).
- ALL F4 IS 20 AMPS.
- POSITION OF TRANSISTORS.
- REFERENCE DWS: SCHEMATIC 10-8786.

SCHALTBILO NETZTEIL-PLATINE



BILL OF MATERIAL

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D NO.
1	5760-09461		BARE P.C. BOARD	1
2	5310-08971	IC9, IC10, IC11	MC14069 HEX INVERTER	3
3	5310-08970	IC3, IC4	MC14543 BCD TO SEVEN SEGMENT LATCH/DECODER/DRIVER	2
4	5680-08969	IC1, IC2	UDN-7180 GAS DISCHARGE DISPLAY SEGMENT DRIVER	2
5	5680-08968	IC7, IC8, IC12, IC13	UDN-6184A OR UDN-6118A GAS DISCHARGE DISPLAY SEGMENT DR.	4
6	5310-09450	IC14	MC14081 QUAD 2-INPUT AND GATE	1
7	5010-08981	R1-R14	RESISTOR, FC, 10K OHM, 5%, 1/2 WATT	14
8	5075-09135	#R1	IN4740A ZENER DIODE 10V, 5%, 1 WATT	1
9	5043-08980	C1, C2 C5 THRU C8	CAPACITOR, CERAMIC, 0.01 MFD., 50V, +80 -20%	6
10	5010-09035	R28, R29	RESISTOR, FC, 47K OHM, 5%, 1/4 WATT	2
11	5010-09086	R17	RESISTOR, FC, 6.8K OHM, 5%, 1/4 WATT	1
12	5010-08982	R18 THRU R27	RESISTOR, FC, 3 MEG. OHM, 5%, 1/4 WATT	10
13	5791-09437	J1 THRU J4, J8	20 PIN RIBBON HEADER	5
14	5010-09149	R15, R16	RESISTOR, FC, 15K OHM, 5%, 1/2 WATT	2
15	5010-09534	W1, W3	RESISTOR, 0 OHM	2



DIGIT CROSS REFERENCE

DIGIT	7-SEGMENT DECODER/DRIVER	STROBE (DRIVER)
Credit 10's	IC4/IC2	1 (IC13)
Credit Units	IC4/IC2	9 (IC12)
Match 10's	IC3/IC1	1 (IC7)
Match Units	IC3/IC1	9 (IC8)
#1 1,000,000's	IC3/IC1	2 (IC13)
#1 100,000's	IC3/IC1	3 (IC13)
#1 10,000's	IC3/IC1	4 (IC13)
#1 1,000's	IC3/IC1	5 (IC13)
#1 100's	IC3/IC1	6 (IC13)
#1 10's	IC3/IC1	7 (IC13)
#1 Units	IC3/IC1	8 (IC13)
#2 1,000,000's	IC3/IC1	10 (IC12)
#2 100,000's	IC3/IC1	11 (IC12)
#2 10,000's	IC3/IC1	12 (IC12)
#2 1,000's	IC3/IC1	13 (IC12)
#2 100's	IC3/IC1	14 (IC12)
#2 10's	IC3/IC1	15 (IC12)
#2 Units	IC3/IC1	16 (IC12)
#3 1,000,000's	IC4/IC2	2 (IC8)
#3 100,000's	IC4/IC2	3 (IC8)
#3 10,000's	IC4/IC2	4 (IC8)
#3 1,000's	IC4/IC2	5 (IC8)
#3 100's	IC4/IC2	6 (IC8)
#3 10's	IC4/IC2	7 (IC8)
#3 Units	IC4/IC2	8 (IC8)
#4 1,000,000's	IC4/IC2	10 (IC7)
#4 100,000's	IC4/IC2	11 (IC7)
#4 10,000's	IC4/IC2	12 (IC7)
#4 1,000's	IC4/IC2	13 (IC7)
#4 100's	IC4/IC2	14 (IC7)
#4 10's	IC4/IC2	15 (IC7)
#4 Units	IC4/IC2	16 (IC7)
#1 Comma	-/IC1	2.5 (IC13)
#2 Comma	-/IC2	10.13 (IC12)
#3 Comma	-/IC1	2.5 (IC8)
#4 Comma	-/IC2	10.13 (IC7)

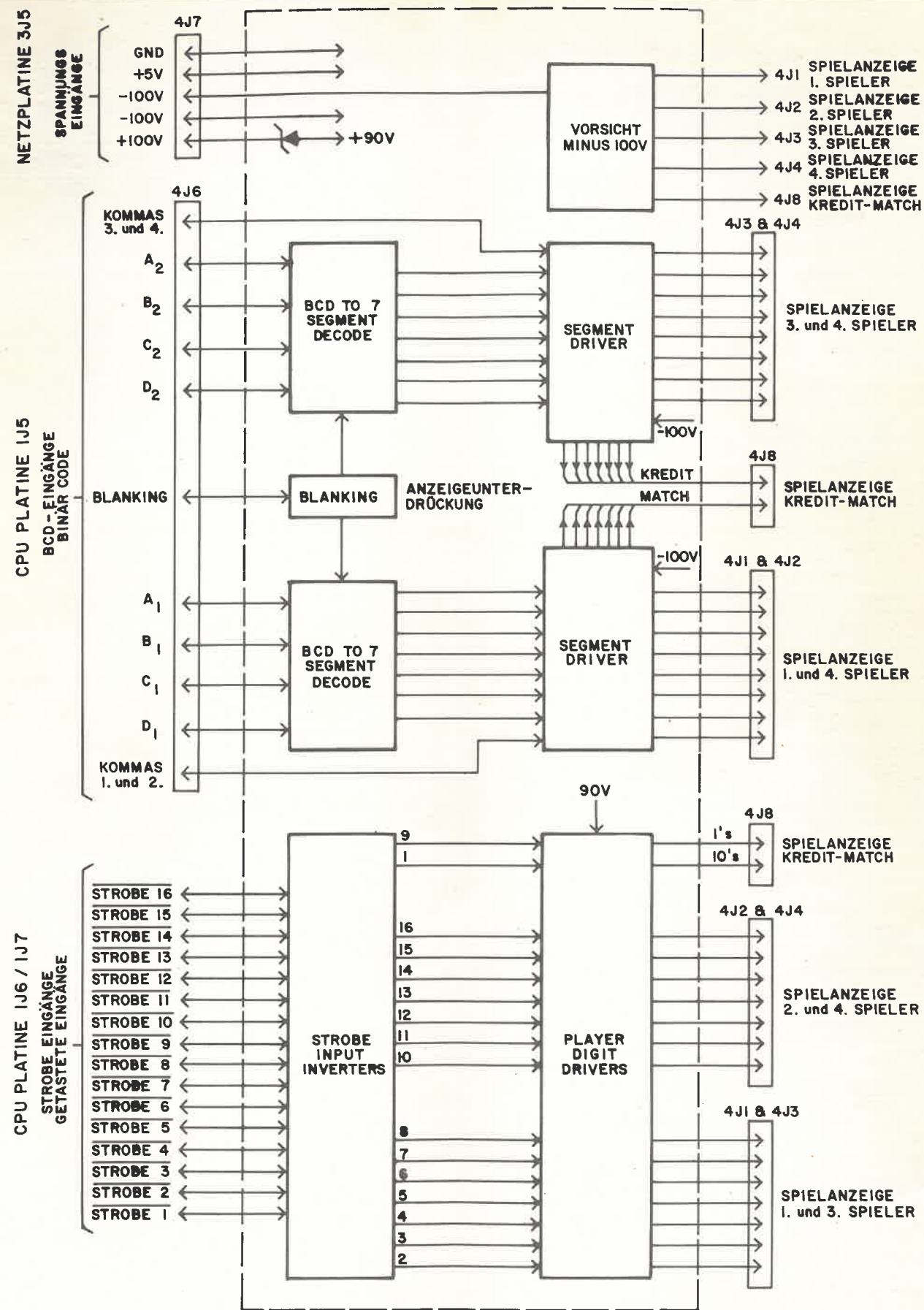
MASTER DISPLAY

DIGITALANZEIGE



-9-

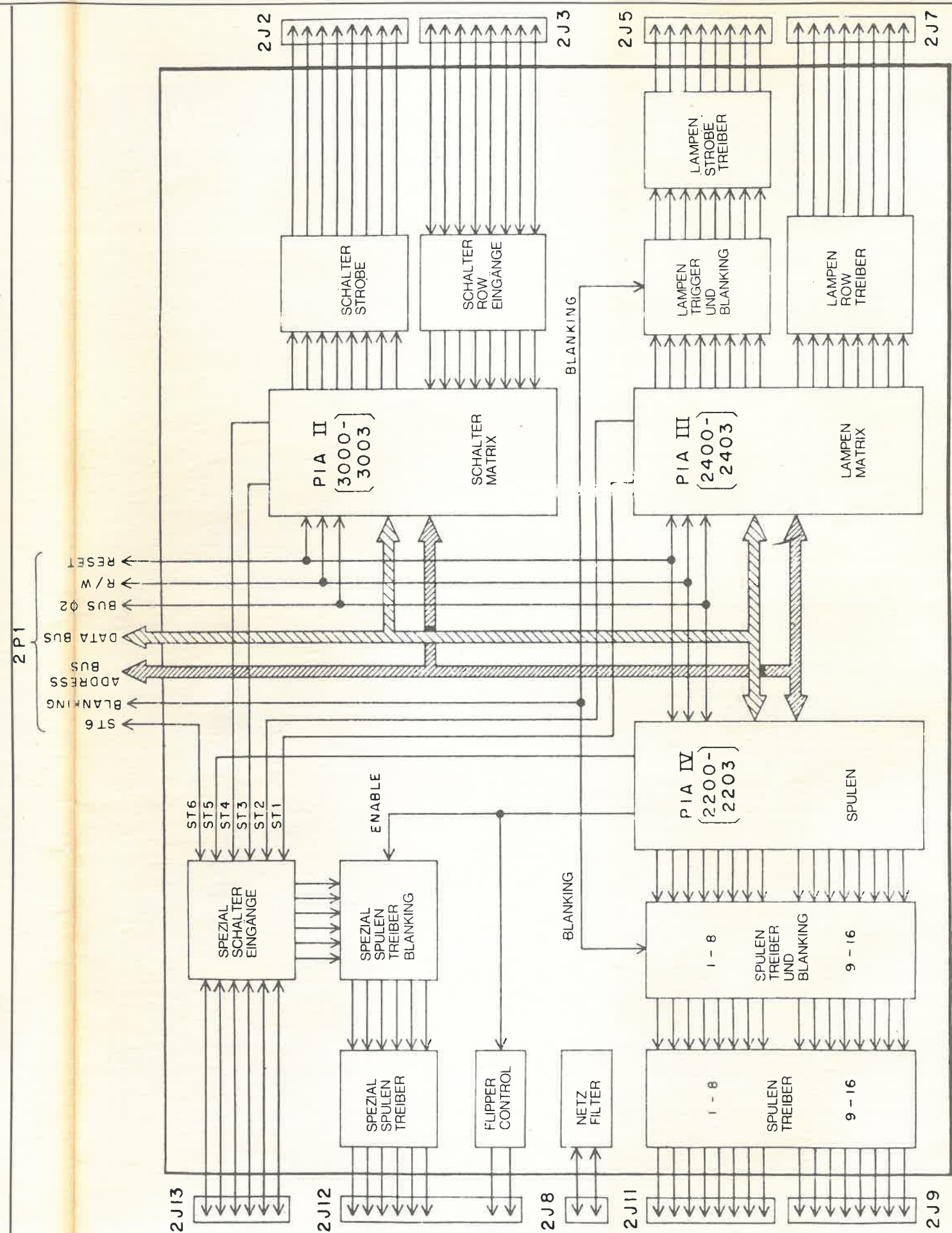
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BLOCKDIAGRAMM - STEUERPLATINE FÜR SPIELANZEIGEN

(DISPLAYS)

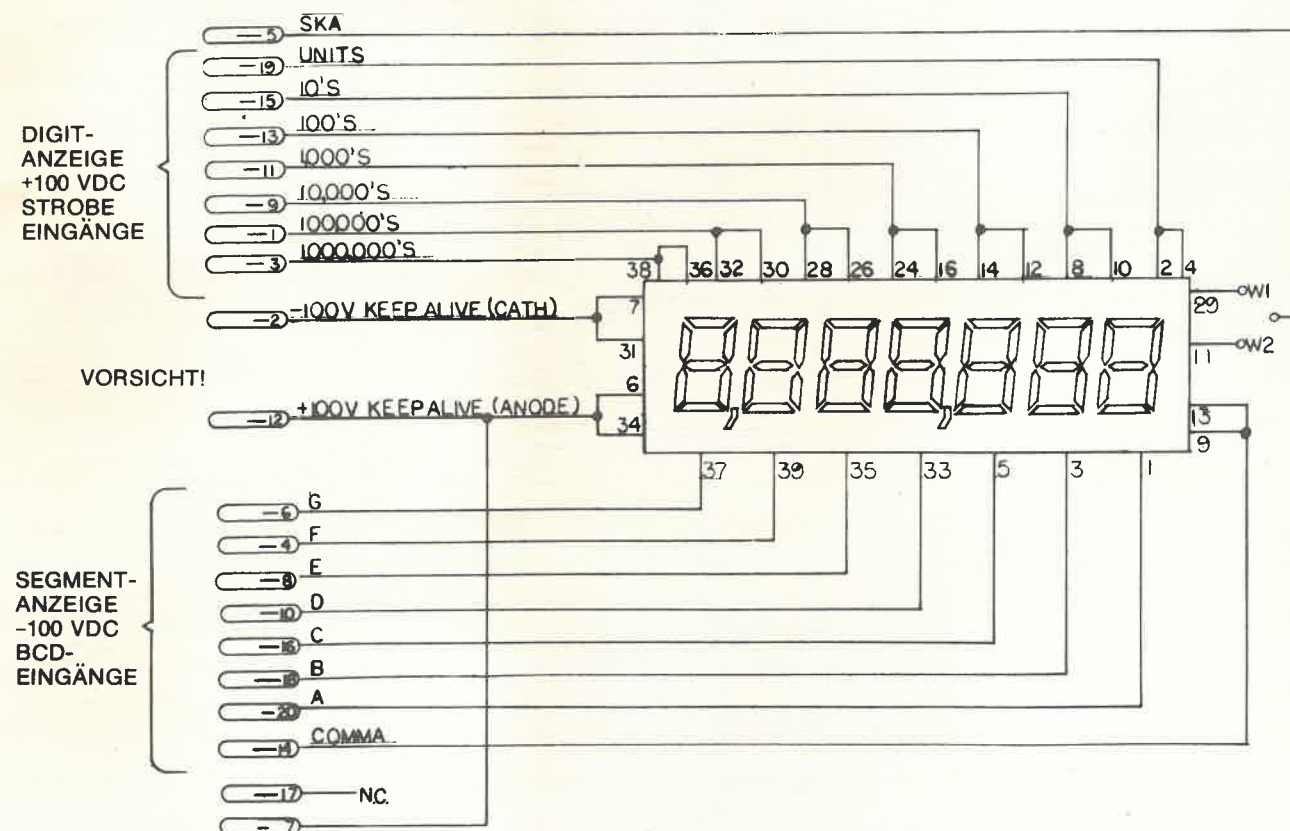
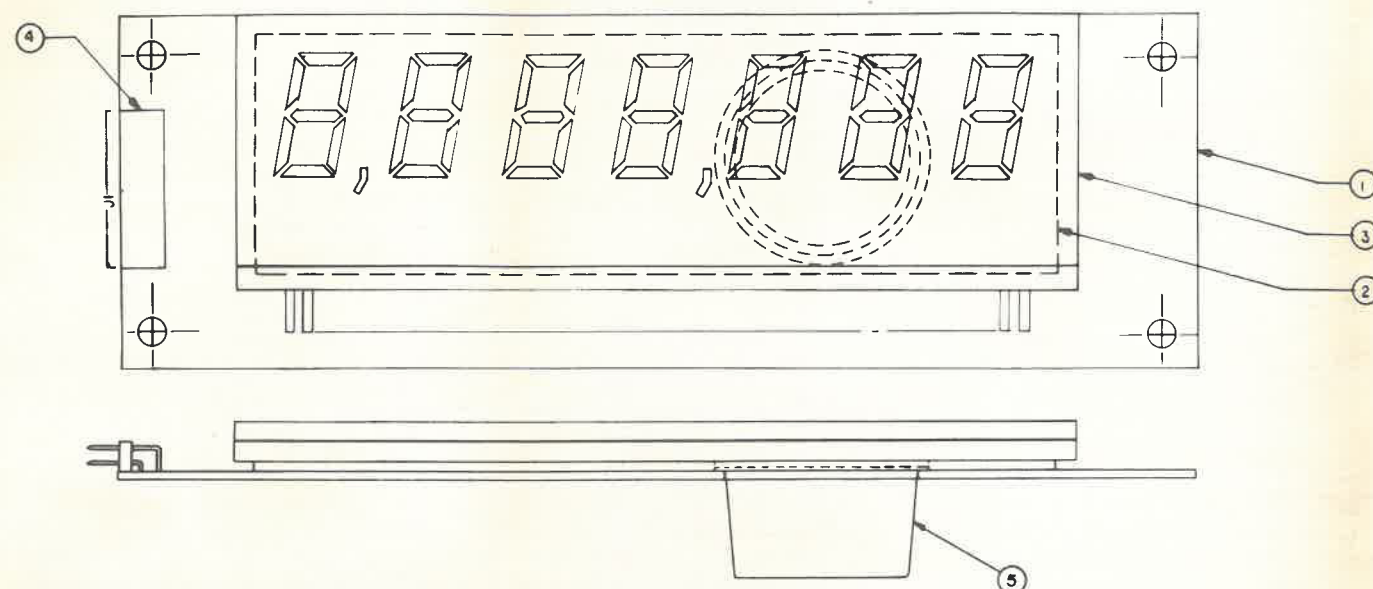
Williams®



TREIBERPLATINE - BLOCKSCHALTBIKD

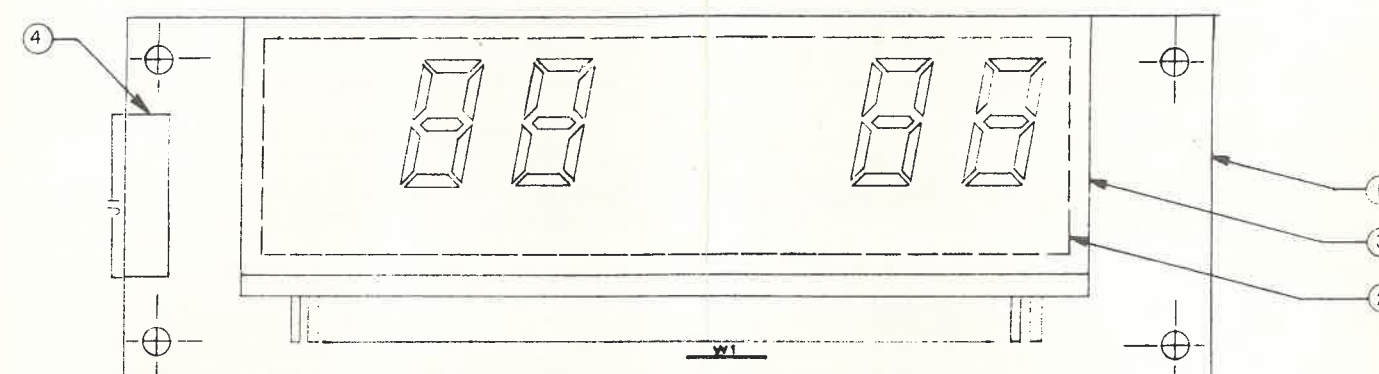
SEVEND

BILL OF MATERIAL				
ITEM	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D
1	5762-09463-XP		SLAVE DISPLAY P.C. BOARD	1
2	23-6543		DISPLAY MTG ADHESIVE FOAM	1
3	5670-09439-XP		7 DIGIT DISPLAY	1
4	5781-09438-XP	J1	20 PIN RIBBON HEADER	1
5	03-1613-2		CAPLUG	1



C 8364 SPIELANZEIGE

BILL OF MATERIAL				
ITEM	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D
1	1G-2001-154-A		CREDIT/MATCH SLAVE P.C. BOARD	1
2	23A-6534		DISPLAY MTG ADHESIVE FOAM	1
3			4 DIGIT DISPLAY	1
4		J1	20 PIN RIBBON HEADER	1
5		W1	JUMPER #20 GA SOLID WIRE	1

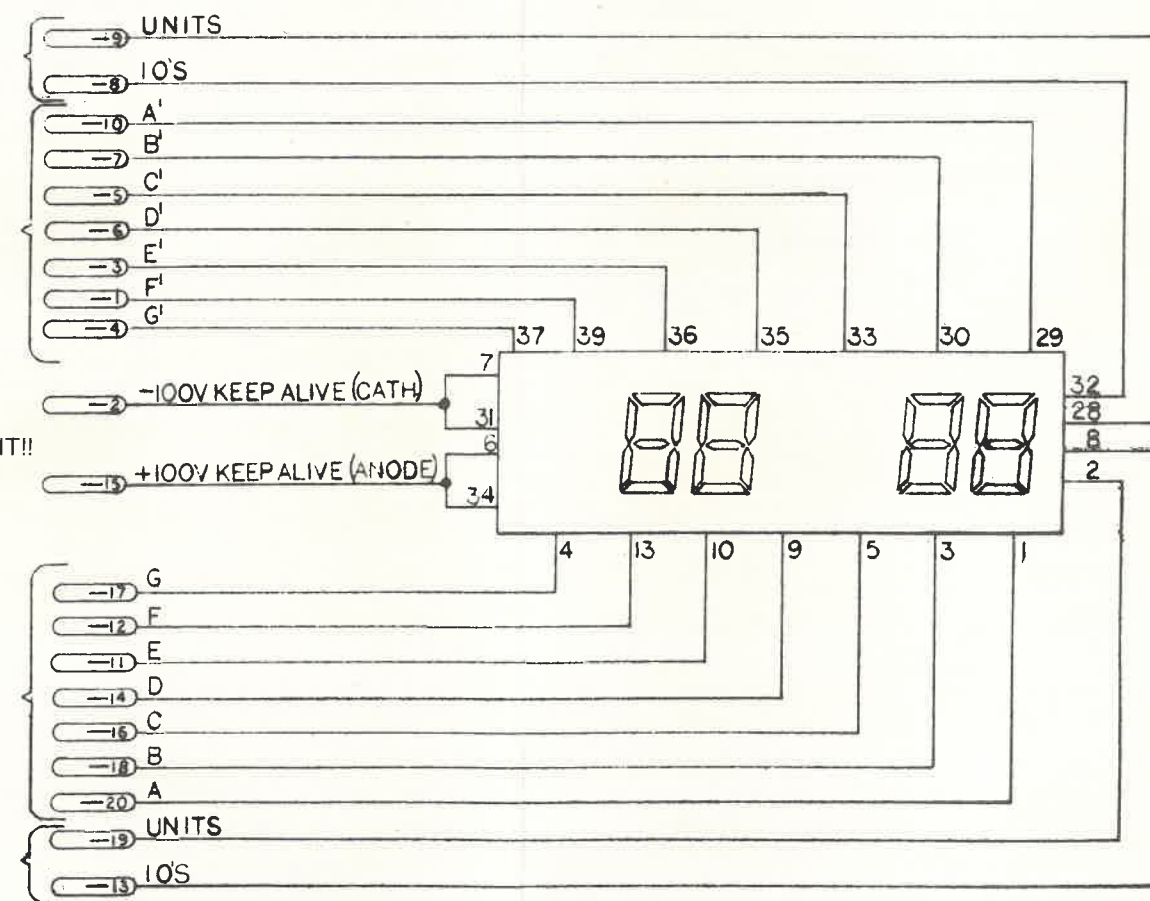


DIGIT-ANZEIGE
+100 VDC
STROBE
EINGÄNGE

SEGMENT-ANZEIGE
-100 VDC
BCD-
EINGÄNGE

VORSICHT!!

DIGIT-ANZEIGE
+100 VDC
STROBE
EINGÄNGE

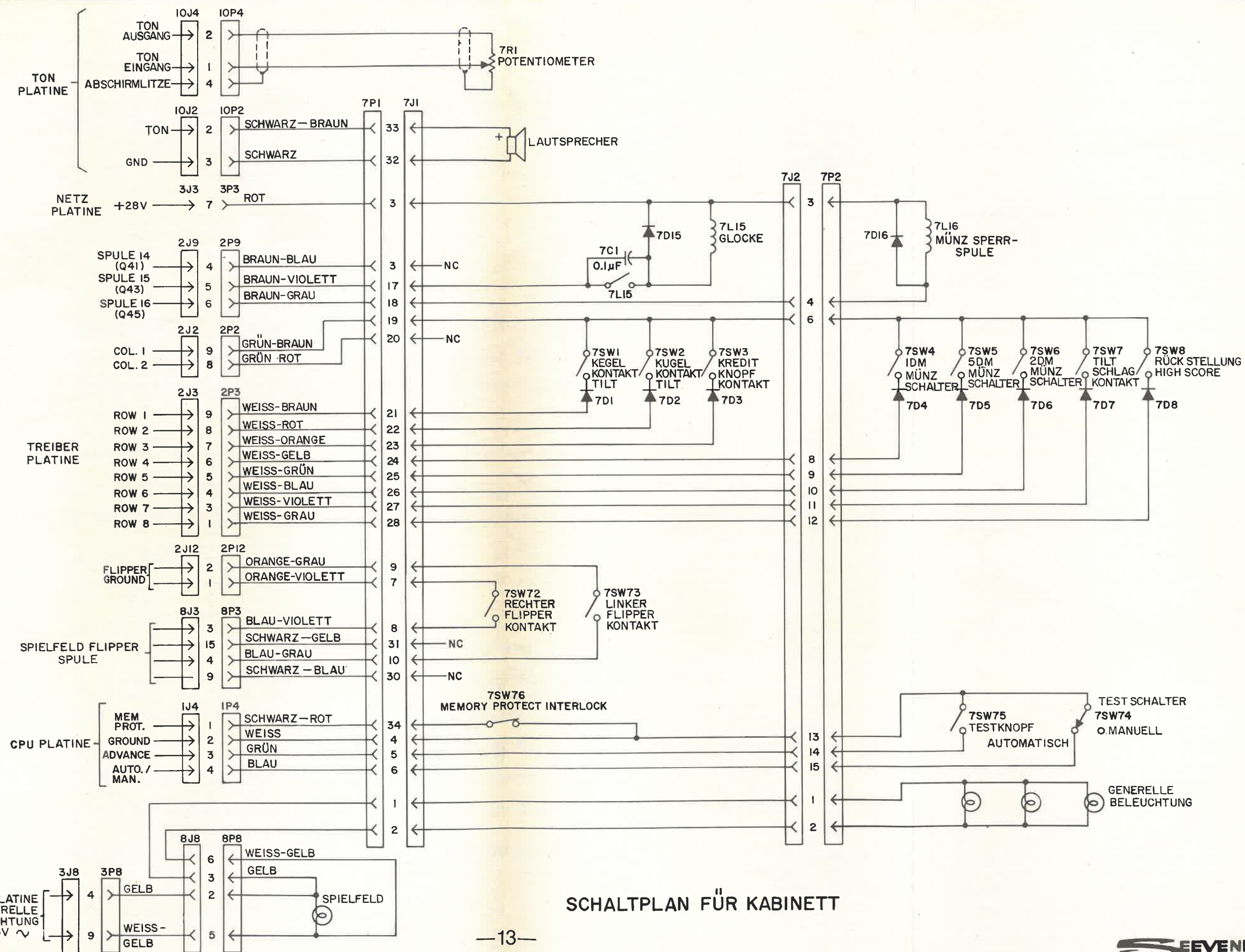


C 8365 KREDIT/MATCH-ANZEIGE

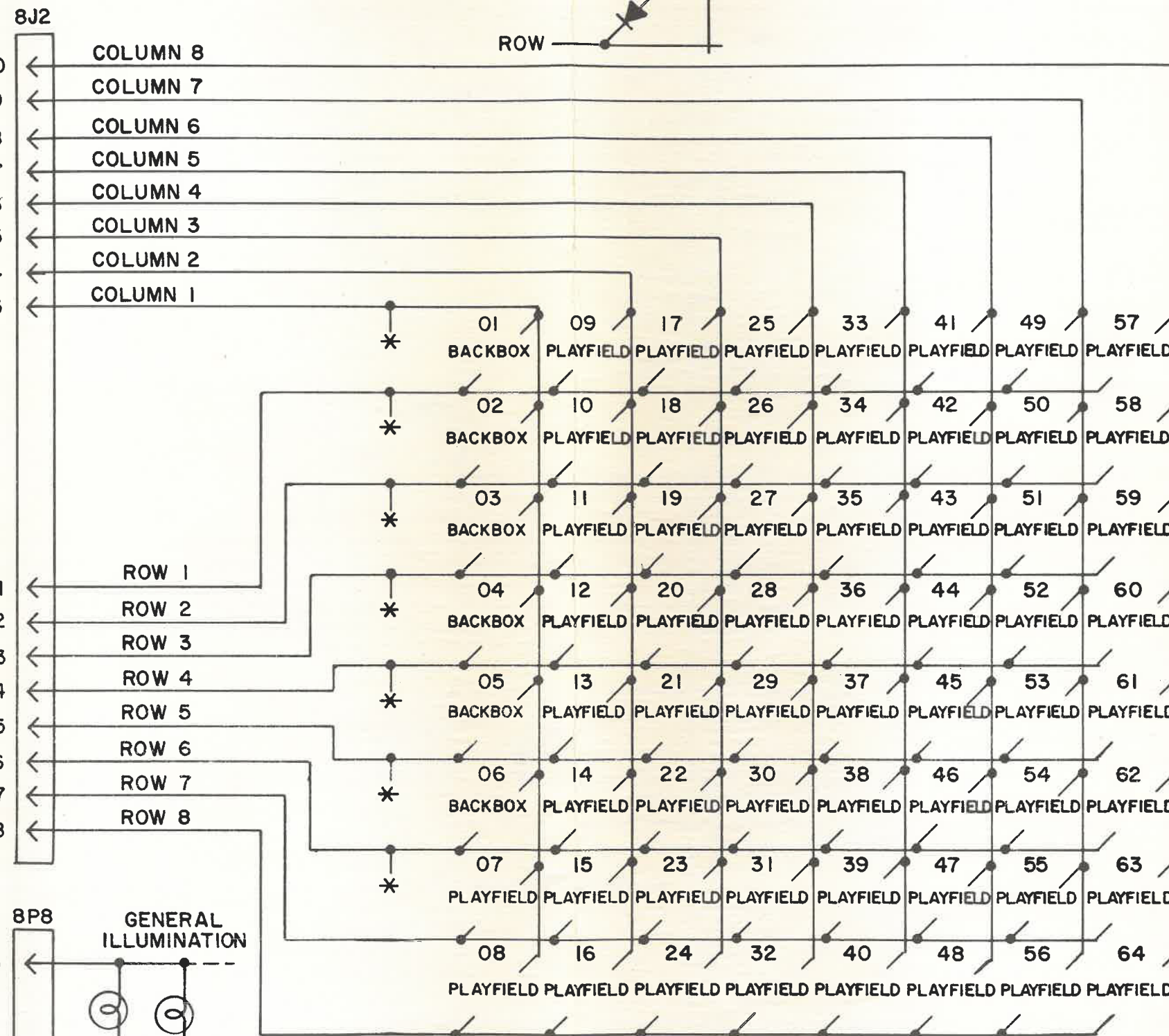
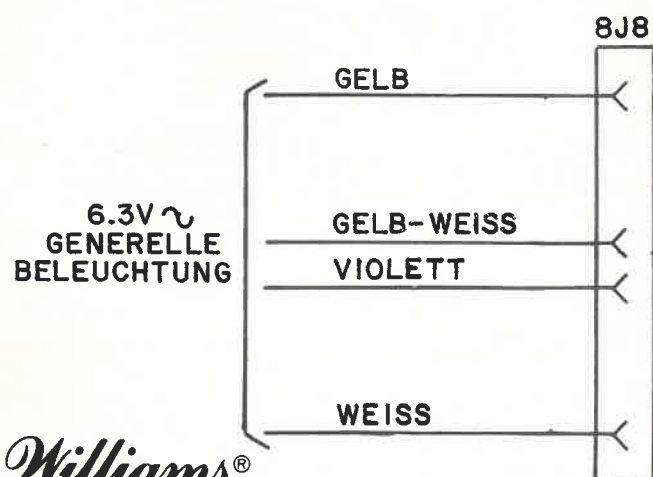
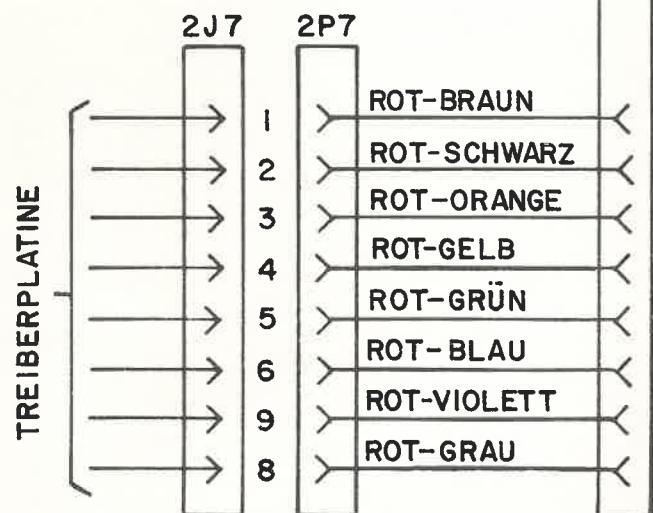
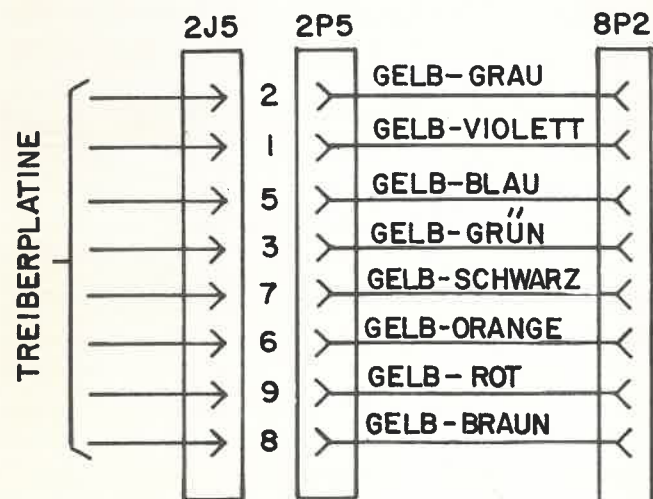
SLAVE DISPLAY

SCHALTBILD





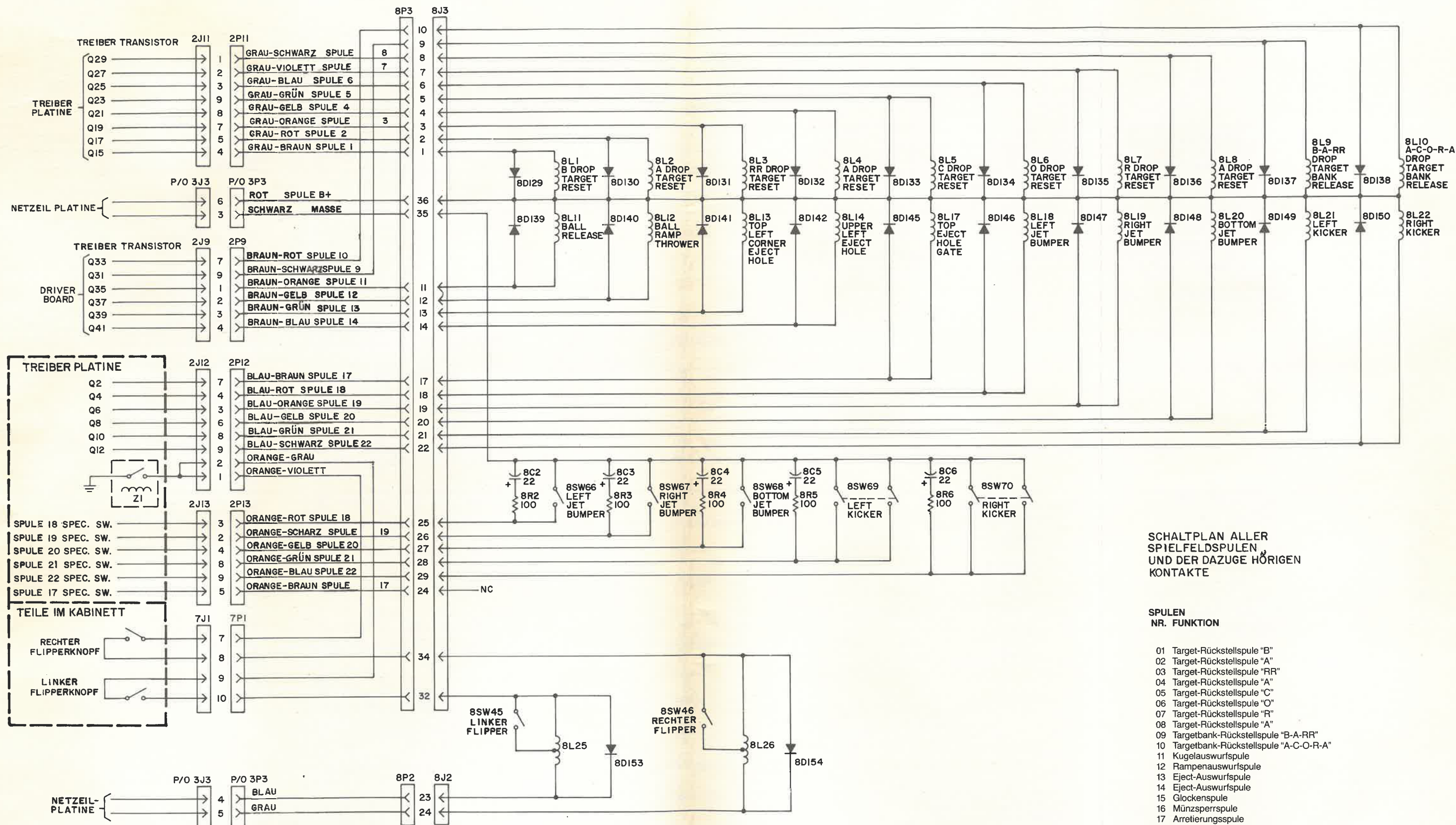
SCHALTPLAN FÜR KABINETT



LAMPEN NR. FUNKTION

- 01 Extrakugel (Lichtkasten)
- 02 Kugel im Spiel
- 03 Tilt
- 04 Spielende (Game Over)
- 05 Freispiel
- 06 Höchstsergebnis (High Score)
- 07 "B-A-RR" Targetlicht
- 08 "A-C-O-R-A" Targetlicht
- 09 "B"
- 10 "A"
- 11 "RR"
- 12 "A"
- 13 "C"
- 14 "O"
- 15 "R"
- 16 "A"
- 17 "1"
- 18 "2"
- 19 "3"
- 20 "4"
- 21 "5"
- 22 "6"
- 23 Freispielanzeige links
- 24 Freispielanzeige rechts
- 25 Bewegliches Target-Anzeige (1000)
- 26 Extrakugel
- 27 Anzeige Eject 30
- 28 Anzeige Eject 60
- 29 Anzeige Eject 90
- 30 Eject-Anzeige Verriegelung unten
- 31 Eject-Anzeige Verriegelung oben
- 32 Anzeige für Bonusaufzählung Eject
- 33 Anzeige Bull's Eye Target oben rechts (20.000)
- 34 Anzeige Bull's Eye Target oben rechts (40.000)
- 35 Anzeige Bull's Eye Target oben rechts Extra-Kugel
- 36 Anzeige Bull's Eye Target links (5000)
- 37 Anzeige Bull's Eye Target links (10.000)
- 38 Anzeige Bull's Eye Target links (15.000)
- 39 Anzeige Bull's Eye Target links (20.000)
- 40 Anzeige Bull's Eye Target links (25.000)
- 41 Anzeige Bull's Eye Target rechts 2x
- 42 Anzeige Bull's Eye Target rechts 3x
- 43 Anzeige Bull's Eye Target rechts 4x
- 44 Anzeige Bull's Eye Target rechts 5x
- 45 Anzeige Bull's Eye Target rechts 10x
- 46 Superbonus-Multiplikator 2x
- 47 Superbonus-Multiplikator 3x
- 48 Superbonus-Multiplikator 4x
- 49 Superbonus-Multiplikator 5x
- 50 Bonus-Multiplikator 2x
- 51 Bonus-Multiplikator 3x
- 52 Bonus-Multiplikator 4x
- 53 Bonus-Multiplikator 5x
- 54 Bonus 1
- 55 Bonus 2
- 56 Bonus 3
- 58 Bonus 5
- 59 Bonus 6
- 60 Bonus 7
- 61 Bonus 8
- 62 Bonus 9
- 63 Bonus 10
- 64 Bonus 20

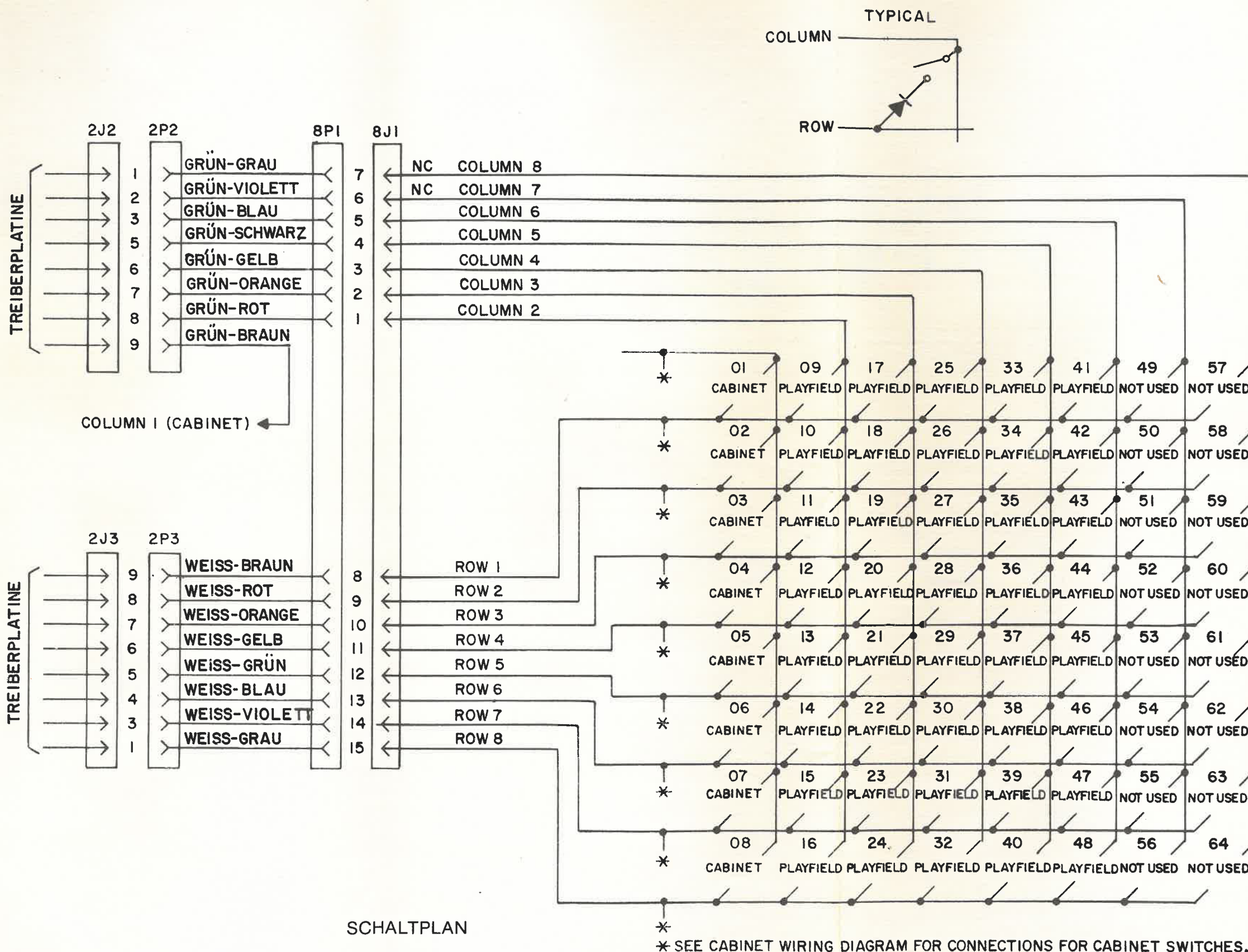
* SEE INSERT BOARD WIRING DIAGRAM FOR CONNECTIONS FOR BACKBOX LAMPS.



SCHALTPLAN ALLER
SPIELFELDSPULEN
UND DER DAZU GEHÖRIGEN
KONTAKTE

SPIELEN
NR. FUNKTION

- 01 Target-Rückstellspule "B"
- 02 Target-Rückstellspule "A"
- 03 Target-Rückstellspule "RR"
- 04 Target-Rückstellspule "A"
- 05 Target-Rückstellspule "C"
- 06 Target-Rückstellspule "O"
- 07 Target-Rückstellspule "R"
- 08 Target-Rückstellspule "A"
- 09 Targetbank-Rückstellspule "B-A-RR"
- 10 Targetbank-Rückstellspule "A-C-O-R-A"
- 11 Kugelauswurfspule
- 12 Rampeauswurfspule
- 13 Eject-Auswurfspule
- 14 Eject-Auswurfspule
- 15 Glockenspule
- 16 Münzsperrspule
- 17 Arretierungspule
- 18 Schlagturmsspule links
- 19 Schlagturmsspule rechts
- 20 Schlagturmsspule unten
- 21 Kickerspule links
- 22 Kickerspule rechts



SCHALTER
NR. FUNKTION

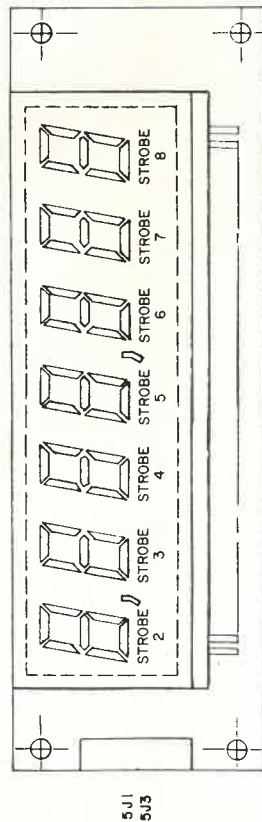
- 01 Kegeltitschalter
- 02 Kugeltitschalter
- 03 Kreditknopf
- 04 DM 2,— Münzschalter
- 05 DM 5,— Münzschalter
- 06 DM 1,— Münzschalter
- 07 Schlagkontakt (Tür)
- 08 Rückstellknopf für High Score
- 09 "BARRACORA" Überrollkontakt (10.000)
- 10 Eject-Auswurfkontakt oben (10.000)
- 11 Eject Auswurfkontakt unten (10.000)
- 12 Kugelauswurfkontakt
- 13 Linker Kugelrampenkontakt
- 14 Mittlerer Kugelrampenkontakt
- 15 Rechter Kugelrampenkontakt
- 16 Kugelüberrollkontakt (Rampe)
- 17 1-4 Überrollkontakt (1000)
- 18 2-5 Überrollkontakt (1000)
- 19 3-6 Überrollkontakt (1000)
- 20 Linker Schlagturmkontakt (100)
- 21 Rechter Schlagturmkontakt (100)
- 22 Unterer Schlagturmkontakt (1000)
- 23 Überrollkontakt links unten außen (5000)
- 24 Überrollkontakt rechts unten außen (5000)
- 25 Targetkontakt—bewegliches (100/1000)
- 26 Rechter Durchlaufkontakt (2000)
- 27 Linkes Bull's Eye Target (100)
- 28 Rechtes Bull's Eye Target (100)
- 29 Linker Kickerkontakt (10)
- 30 Rechter Kickerkontakt (10)
- 31 Überrollkontakt unten links innen (1000)
- 32 Überrollkontakt unten rechts innen (1000)
- 33 Bull's Eye Targetkontakt unten rechts (10.000)
- 34 Linker Flipper-Wechselkontakt
- 35 Rechter Flipper-Wechselkontakt
- 36 Spielfeld-Tilt
- 37 Anschlagkontakt oben rechts (10)
- 38 Anschlagkontakt oben links (10)
- 39 Anschlagkontakt 5er-Targetbank (10)
- 40 Anschlagkontakt links (10)
- 41 Targetkontakt "B" (1000)
- 42 Targetkontakt "A" (1000)
- 43 Targetkontakt "RR" (1000)
- 44 Targetkontakt "A" (1000)
- 45 Targetkontakt "C" (1000)
- 46 Targetkontakt "O" (1000)
- 47 Targetkontakt "R" (1000)
- 48 Targetkontakt "A" (1000)

SCHALTPLAN
FÜR
SPIELFELDKONTAKTE

MASTER DISPLAY

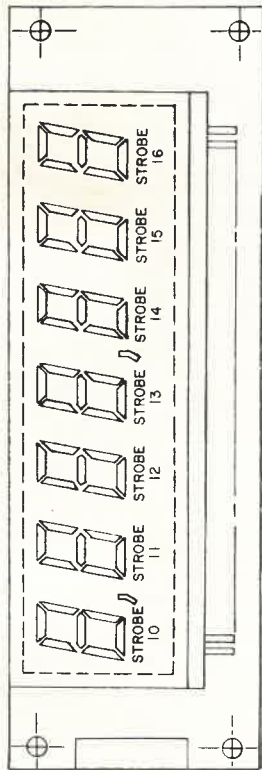
-17-

1 UND 3 SPIELER



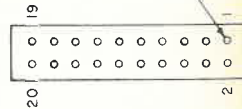
5J1
5J3

2 UND 4 SPIELER



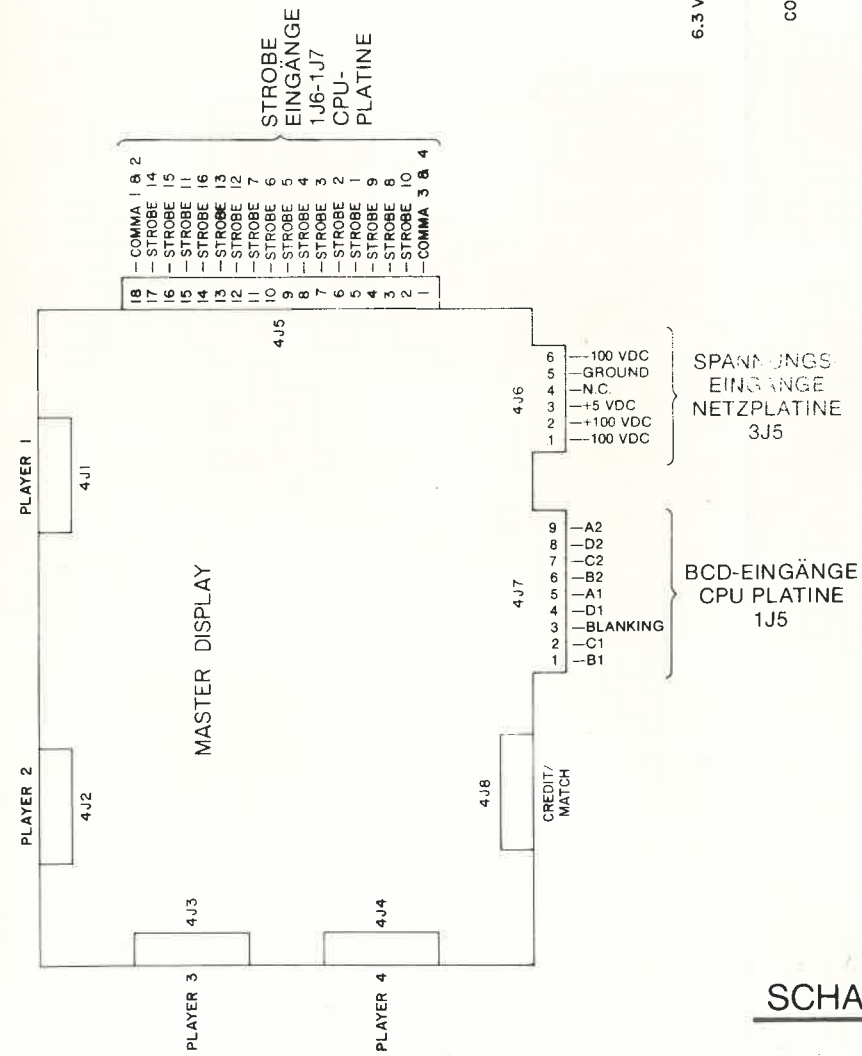
5J2
5J4

DETAIL A
4J1 - 4J4, 4J8
5J1 - 5J5
CONNECTORS



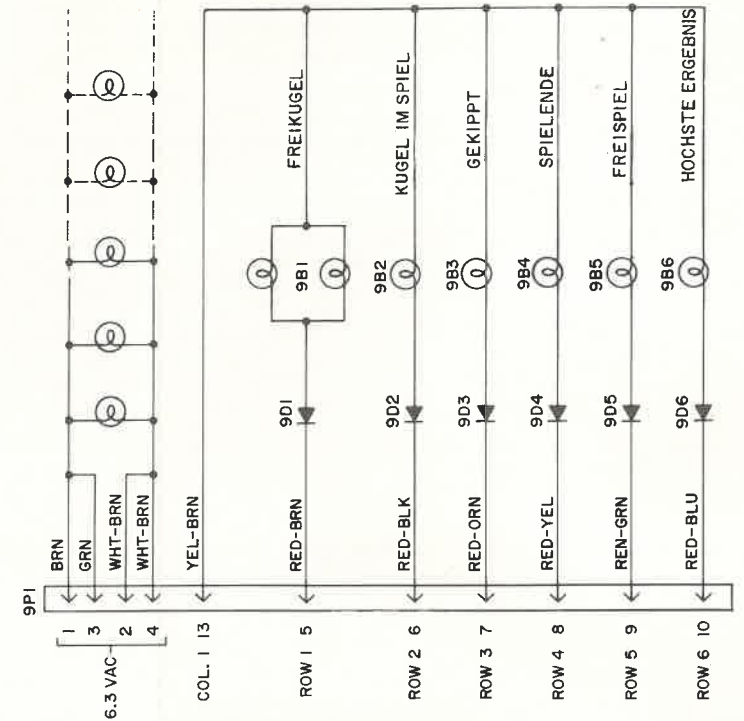
PIN 1
RED LEAD

- 4J1/5J1 (1. SPIELER)
4J3/5J3 (3. SPIELER)**
- 100,000's
 - 100V KEEP ALIVE
 - 1,000,000's
 - f' SEGMENT
 - N/C
 - 9 SEGMENT
 - +100V (N/C)
 - e' SEGMENT
 - 10,000's
 - d' SEGMENT
 - 1,000's
 - +100V KEEP ALIVE
 - 100's
 - COMMA
 - 10's
 - c' SEGMENT
 - N/C
 - b' SEGMENT
 - UNITS
 - a' SEGMENT
- 4J2/5J2 (2. SPIELER)
4J4/5J4 (4. SPIELER)**
- 100,000's
 - 100V KEEP ALIVE
 - 1,000,000's
 - f' SEGMENT
 - N/C
 - 9 SEGMENT
 - +100V (N/C)
 - e' SEGMENT
 - 10,000's
 - d' SEGMENT
 - 1,000's
 - +100V KEEP ALIVE
 - 100's
 - COMMA
 - 10's
 - c' SEGMENT
 - N/C
 - b' SEGMENT
 - UNITS
 - a' SEGMENT
- 4J8/5J5 (KREDIT/MATCH)**
- f' Segment (Kredit)
 - 100V Keep Alive
 - e' Segment
 - g' Segment
 - c' Segment
 - d' Segment
 - b' Segment
 - 10's
 - Units
 - a' Segment
 - e' Segment
 - f' Segment
 - 10's
 - d' Segment
 - +100V Keep Alive
 - c' Segment
 - 9 Segment
 - b' Segment
 - Units
 - a' Segment

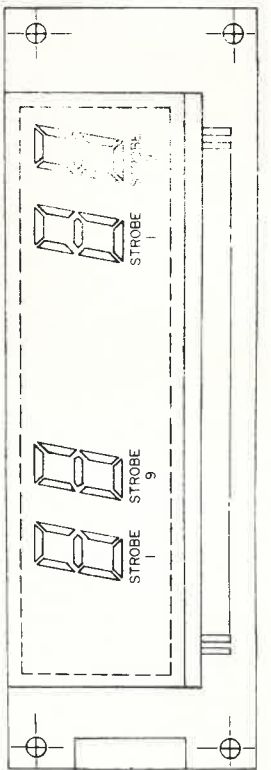


SCHALTPLAN

STEUERPLATINE FÜR SPIELANZEIGEN (DISPLAYS)



CREDITS / BALL IN PLAY



5J5

ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.	ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
58	4006-01009-08		6-32 X 3/8" P-PH-S	3	48	5A-6314	F1, F2	4 AMP SLOW BLOW FUSE	2
59	4406-0117-06		6-32 HEX NUT	3	49	5A-9178		FUSEHOLDER	4
60		W1, W2, W5, W7, W9, W10, W15	WIRE JUMPER 22 GAUGE WIRE WITH INSULATION	7	50	5A-9172		HEAT SINK THERMALLOY #6072B	1
61	5A-9248	TP1 THR TP4	TERMINAL #1502-1	4	51	5A-9173		HEAT SINK THERMALLOY #6071B	1
62	5A-9363	R11	RESISTOR, FC, 5.6 K OHM 5% 1/4 WATT	1	52	5A-9199		HEAT SINK THERMALLOY #6030	1
64	5A-9362	SRI	RESISTOR, 4.7 K OHM 10 PIN SIP	1	53	5A-9004		24 PIN SOCKET	1
65	3A-7520-1		TIE WRAP	1	54	5A-8985		40 PIN SOCKET	1
66			#6 EXT. LOCKWASHER	3	55	5A-9027	10J1, 10J3	9 PIN MALE CONNECTOR	2
					56	5A-9028	10J2, 10J4	4 PIN MALE CONNECTOR	2
					57	5A-9349	10J5	40 PIN RIBBON HEADER	1

BILL OF MATERIAL				
ITEM NO.	PART NO.	PART DESIGNATION	DESCRIPTION	REQ'D. NO.
1	1C-2001-146-3		BARE P.C. BOARD	1
2	5A-9156	IC1	TDA2002 V AUDIO AMPLIFIER	1
3	5A-9012	IC2	7442 BCD-DEC DECODER	1
4	5A-9073	IC3	7400 QUAD 2 INPUT NAND	1
5	5A-8973	IC4	7408 QUAD 2 INP. AND GATE	1
6	5A-9153	IC5	4050 BUFFER	1
7	5A-9154	IC6	4068 8 INPUT NAND GATE	1
8	5A-8971	IC7	14069 HEX INVERTER	1
9	5A-9157	IC8	7805 5 VOLT REG. W/TO220 CASE	1
10	5A-8972	IC10	6821 P.I.A.	1
11	5A-9003	IC11	6810 RAM	1
12	5A-9152	IC13	1408 D/A CONVERTER	1
13	5C-8938	Q2, Q3, Q4	2N4401 NPN TRANSISTOR	3
14				
15	5A-9018	ZR1	1N5996 6.8V. ZENER DIODE	1
16				
17	5A-9158	BR1	MDA 200/3N2B3 BRIDGE RECTIFIER	1
18	5A-9357	Y1	3.58 MHz CRYSTAL	1
19	5B-8991	R1, R18, R19, R21, R22, R27, R30, R31, R32, R34	RESISTOR, FC, 4.7K OHM 5% 1/4 WATT	9
20	5B-9036	R2 THRU R10	RESISTOR, FC, 100 OHM 10% 1/4 WATT	9
21	5A-8984	R12, R15, R28, R36, R38	RESISTOR, FC, 1K OHM 10% 1/4 WATT	5
22	5A-9181	R14	RESISTOR, FC, 1 OHM 10% 1/2 WATT	1
23	5A-9161	R16	RESISTOR, FC, 2.2 OHM 10% 1/4 WATT	1
24	5A-9361	R17	RESISTOR, FC, 220 OHM 10% 1/2 WATT	1
25				
26	5B-8983	R23, R24, R26	RESISTOR, FC, 3.3K OHM 10% 1/4 WATT	3
27	5A-9179	R25	RESISTOR, FC, 3.3M OHM 10% 1/4 WATT	1
28	5A-9359	R29	RESISTOR, FC, 47 K OHM 5% 1/4 WATT	1
29	5B-8817	R33, R35, R37	RESISTOR, FC, 10 K OHM 10% 1/4 WATT	3
30	5B-9039	R34	RESISTOR, FC, 10 OHM 10% 1/4 WATT	1
31	5A-8980	C1, C16 THRU C23, C34	CAPACITOR, CERAMIC, .01 MFD. 50 V. ±20%	11
32	5A-9065	C2 THRU C10	CAPACITOR, CERAMIC, .470 PFD. 50 V. ±20%	9
33	5A-9345	C11	CAPACITOR, CERAMIC, .001 MFD. 20% 100 V.	1
34	5A-9365	C12, C30, C36	CAPACITOR, ELECTROLYTIC, 1 MFD. 63 V. -10/+50%	3
35	5A-8996	C13, C24, C35	CAPACITOR, CERAMIC, .1 MFD. 50 V. ±20%	3
36	5D40-09145-00	C14	CAPACITOR, ELECTROLYTIC, 1,000 MFD. 16 V. ±20%	1
37	5D40-09144-00	C15	CAPACITOR, ELECTROLYTIC, 470 MFD. 16 V. ±20%	1
38	5A-8986	C25	CAPACITOR, ELECTROLYTIC, 100 MFD. 10 V. ±20%	1
39	5A-8893	C26	CAPACITOR, ELECTROLYTIC, 1,000 MFD. 25 V. ±20%	1
40	5D40-09374-00	C27	CAPACITOR, ELECTROLYTIC, 1,700 MFD. 16 V. ±20%	1
41	5A-9180	C28	CAPACITOR, CERAMIC, .47 PFD. 1K V. ±20%	1
42	5A-9343	C29	CAPACITOR, ELECTROLYTIC, 10 MFD. 25 V. LOW LEAK ±20%	1
43	5A-9169	C32, C33	CAPACITOR, CERAMIC DISC, 27 PFD. 1K V. ±10%	2
44	5A-9163	C34	CAPACITOR, TANTALUM, 2.2 MFD. 15 V. ±20%	1
45	5A-9031	C37	CAPACITOR, TANTALUM, 1 MFD. 25 V. ±20%	1
46	5A-9024	SW1	MOMENTARY SWITCH SPDT	1
47	5A-9330	DS1	2 STD. DIP SWITCH	1

- NOTES:**
- USE THERMAL COMPOUND BETWEEN IC8 AND HEAT SINK.
 - CAUTION: AVOID STATIC DISCHARGE DAMAGE TO MOS LOGIC.
 - SYMBOLS SHOWN ON COMPONENTS ARE FOR REFERENCE ONLY. DO NOT SCREEN OR STAMP.
 - OBSERVE INDEX MARK OF ALL INTEGRATED CIRCUITS, DIODES D1, D2, AND ZR1.
 - CAPACITORS C12, C14, C15, C25, C26, C27, CONNECTORS 10J1, 10J2, 10J4, 10J3, 10J5, POSITION OF TRANSISTORS Q1, Q2, Q3, Q4.

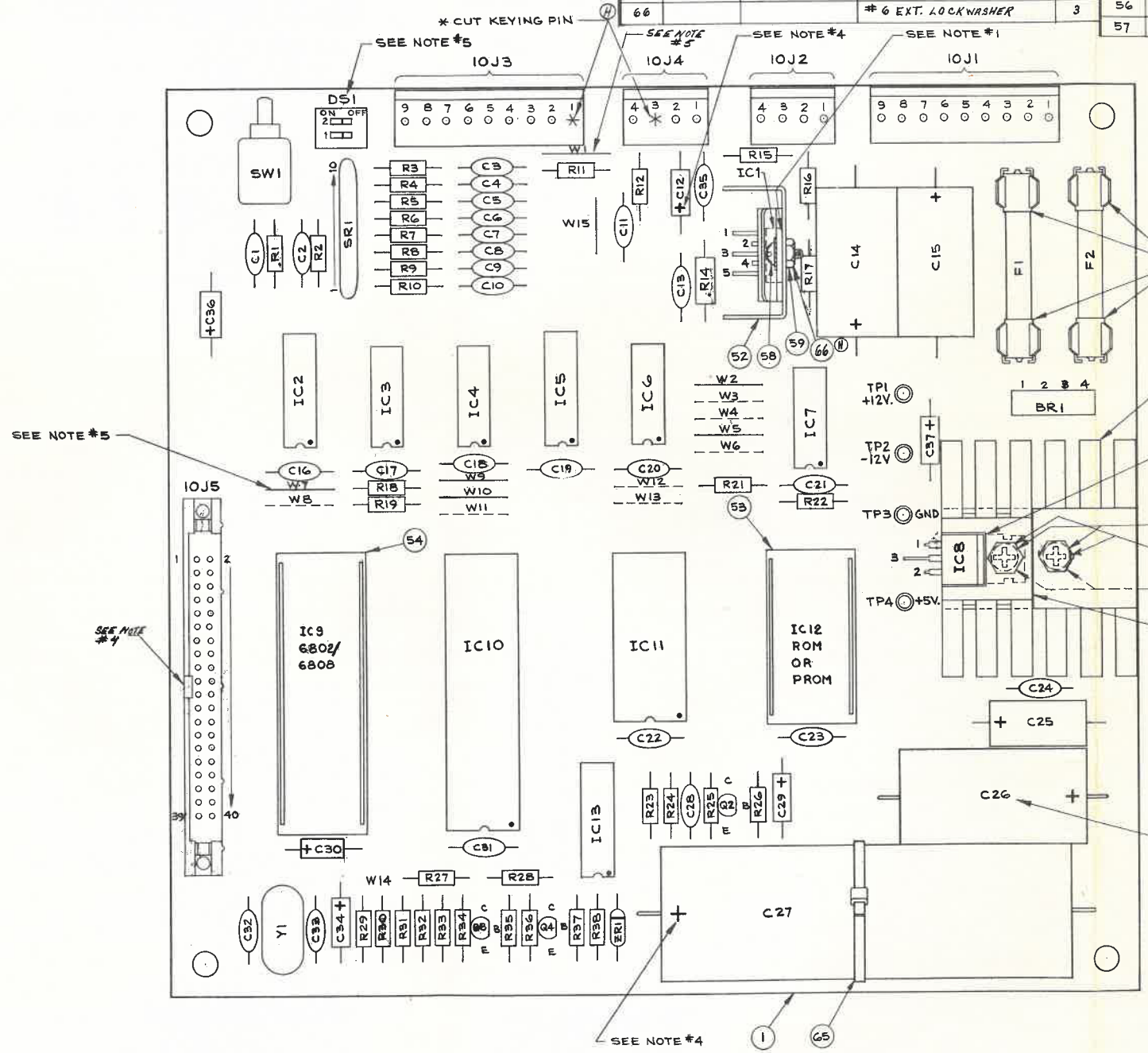
DS1 - 1 SELECTS SOUNDS/NOTES
2 SELECTS SPEECH/NO SPEECH (W9/W4)
W1 - SPEECH MODULE STATUS
IN - SPEECH MODULE NOT ATTACHED
OUT - SPEECH MODULE ATTACHED
W14 - MPU INTERNAL RAM ENABLE
W7 & W8 - MEMORY MAP CONTROL
W12 & W13 - PB7 STATUS CONTROL (W13 NEVER USED)
W4 & W9 - PB5 STATUS CONTROL

INSTALL THESE JUMPERS FOR FOLLOWING GAMES:
W15, W8, W12, W4, W1, W3, W6, W11 FOR:
WORLD CUP
DISCO FEVER
CONTACT
POKERINO
PHOENIX
ARISTOCRAT SHUFFLE
POMPEII SHUFFLE
KING TUT SHUFFLE
TAURUS SHUFFLE

W15, W8, W12, W4, W1, W2, W5, W10, FOR:
FLASH
STELLAR WARS
TRI ZONE
TIME WARP

W7, W15, W9, W1, (SEE NOTE #5) W2, W5, W10 FOR:
GORGAR } SOUND ROM 2 - 5T-4960

IC 12 SELECTION STRAPPING:
(2K x 8) W2 } IN (4K x 8) W3 } IN (512 x 8) W3 } IN
W5 } W6 } W11 }



SOUND-PLATINE

