

WARNING

**THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY
RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.**

WARNING: This equipment generates, uses, and can radiate radio frequency energy and if not used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a CLASS A computing device pursuant to SUBPART J of PART 15 of FCC RULES, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

ELECTRICAL BULLETIN: FOR ALL APPARATUS COVERED BY THE CANADIAN STANDARDS ASSOCIATION (CSA) STANDARD C22.2 NO. 1, WHICH EMPLOYS A SUPPLY CORD TERMINATED WITH A POLARIZED 2-PRONG ATTACHMENT PLUG.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

***Bally* MIDWAY**

Invites You To Use

**OUR TOLL FREE NUMBERS FOR
SERVICE INFORMATION CONCERNING THIS GAME, OR ANY
OTHER BALLY MIDWAY GAME YOU NOW HAVE ON LOCATION.**

**CALL US FOR PROMPT, COURTEOUS
ANSWERS TO YOUR PROBLEMS.**

VIDEO ———> Continental U.S. 1-800-323-7182

PINBALL ———> Continental U.S. 1-800-323-3555

***Bally* MIDWAY**

10601 West Belmont Avenue Franklin Park, Illinois 60131

phone (312) 451-6200

* COPYRIGHT MCMLXXXIV BY BALLY MIDWAY MFG. CO.

ALL RIGHTS RESERVED

NO PART OF THIS PUBLICATION MAY BE REPRODUCED BY ANY MECHANICAL, PHOTOGRAPHIC, OR ELECTRONIC PROCESS, OR IN THE FORM OF A PHONOGRAPHIC RECORDING, NOR MAY IT BE TRANSMITTED, OR OTHERWISE COPIED FOR PUBLIC OR PRIVATE USE, WITHOUT PERMISSION FROM THE PUBLISHER. THIS MANUAL IS FOR SERVICE USE ONLY, AND NOT FOR GENERAL DISTRIBUTION. FOR PERMISSION REQUESTS, WRITE: BALLY MIDWAY MFG. CO., 10601 W. BELMONT AVE., FRANKLIN PARK, IL 60131

Printed in U.S.A.

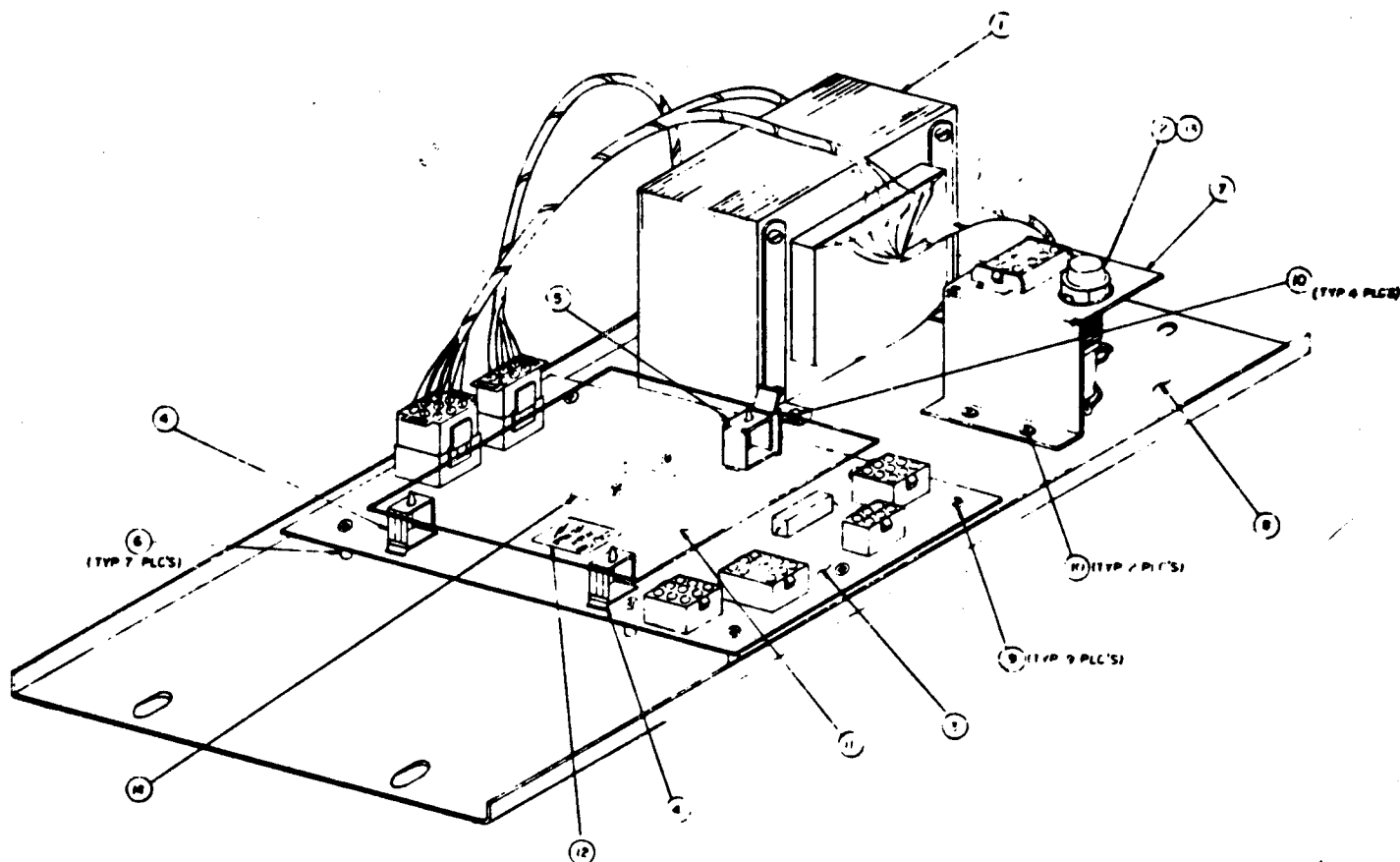
PLEASE NOTE:

A complete OPERATOR'S MANUAL was not available when your new game was shipped. If you will complete the enclosed postage free card and drop it in the mail to us, BALLY/MIDWAY MFG. CO. will be happy to send you the OPERATOR'S MANUAL for your new game by return mail.

ELECTRICAL SECTION **TABLE OF CONTENTS**

DESCRIPTION	PAGE
POWER TRANSFORMER MODULE - COMPONENT LAYOUT	2
POWER MODULE P.C.B. - COMPONENT LAYOUT	3
SOLENOID DRIVER/VOLTAGE REGULATOR P.C.B. - COMPONENT LAYOUT	4
SOLENOID EXPANDER P.C.B. - COMPONENT LAYOUT	5
MPU P.C.B. - COMPONENT LAYOUT	6
LAMP DRIVER P.C.B. - COMPONENT LAYOUT	7
CHEAP SQUEAK P.C.B. - COMPONENT LAYOUT	8
6-DIGIT DISPLAY P.C.B. - COMPONENT LAYOUT	9
7-DIGIT DISPLAY P.C.B. - COMPONENT LAYOUT	10
CABINET - WIRING DIAGRAM	11
PLAYFIELD - WIRING DIAGRAM	12
BACKBOX - WIRING DIAGRAM	13
POWER MODULE P.C.B. - SCHEMATIC	14
SOLENOID DRIVER/VOLTAGE REGULATOR P.C.B. - SCHEMATIC	15
SOLENOID EXPANDER P.C.B. - SCHEMATIC	16
MPU P.C.B. - SCHEMATIC	17
LAMP DRIVER P.C.B. - SCHEMATIC	18
CHEAP SQUEAK P.C.B. - SCHEMATIC	19
6-DIGIT DISPLAY P.C.B. - SCHEMATIC	20
7-DIGIT DISPLAY P.C.B. - SCHEMATIC	21
EPROM LIST	INSIDE BACK COVER

A2: POWER TRANSFORMER MODULE



A2: POWER TRANSFORMER MODULE COMPONENT PARTS LIST

ITEM	REFERENCE DESIGNATION	BALLY PART #	DESCRIPTION
0	A2	AA40-00037-0000	POWER TRANSFORMER MODULE, COMPLETE
1		MT00-00114-0000	TRANSFORMER
2		E-148-25	FUSE HOLDER
3	A2	AS-2518-54	POWER MODULE ASSEMBLY
4		M-1829-4	HINGED SUPPORT
5		M-1829-3	EDGE HOLDER
6		M-1829-5	SPACER
7		P-6442-244b	FUSE & CONNECT BRACKET
8		P-6442-246	CHASSIS
9		RLPP-832-1812	SCREW
10		RLPP-1032-1806	SCREW
11		P-2692-2	SHIELD
12		M-469-936a	HIGH VOLTAGE STICKER
13		E-133-24	3 AMP SLOW BLOW FUSE
14		M-1834	H. S. COMPOUND
15	(NOT SHOWN)	104E-00016-0014	TRIAC, MAC 38-2

NOTE 1 - ALL GAMES WITH 4 OR MORE FLIPPERS USE 7A

DESIGNATION LIST

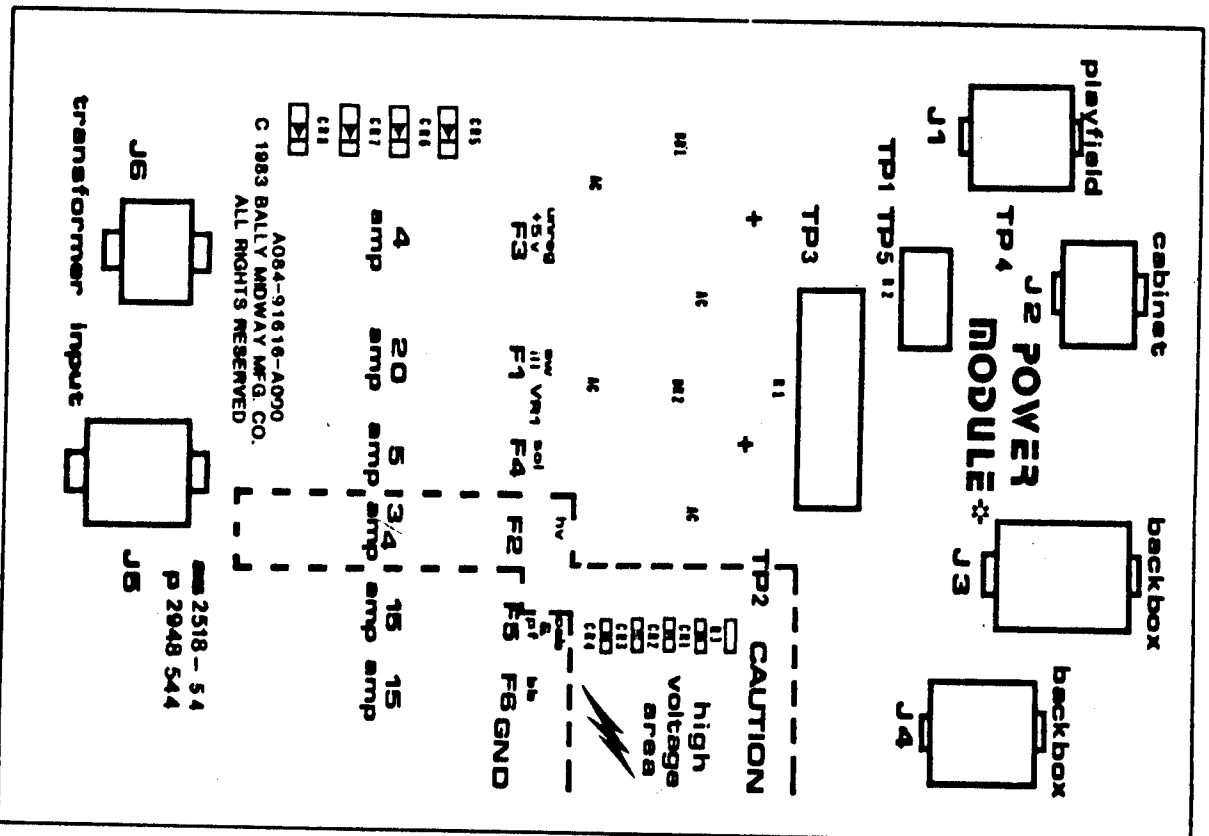
DESIGNATION NO.	DESCRIPTION
R1	600 OHM 10W 10%
R2	25 OHM 5W 10%
R3	100K OHM 1/4W 5%
VR1	VARIABLE
CR1-CR4	1N4004
CR5-CR8	GP30A/V330
HR1,HR2	KBPC35-02-W BRIDGE
P/O HR1,BR2	SPACER
F1	20 AMP FUSE - NOTE 1
F2	3/4 AMP FUSE
F3	4 AMP FUSE
F4	5 AMP FUSE - NOTE 2
F5,F6	15 AMP FUSE
P/O F1,F5,F6	FUSE CLIP BUSSMAN
P/O F2,F3,F4	FUSE CLIP LITTELFUSE
J1	9 COND. MEL PIN HEADER
J2	6 COND. MEL PIN HEADER
J3	12 COND. MEL PIN HEADER
J4	9 COND. MEL PIN HEADER
J5	9 COND. MEL PIN HEADER
J6	6 COND. MEL PIN HEADER
TP1-TP5,GND	TEST POINTS
PCB	POWER MODULE

NOTE 1 USE 10AMP FUSE WITH TRANSFORMER
 MTOO-00114-A000

NOTE 2 USE 6 AMP FUSE WITH 3 FLIPPER GAME
 AND 7 AMP FUSE WITH 4 FLIPPER GAME

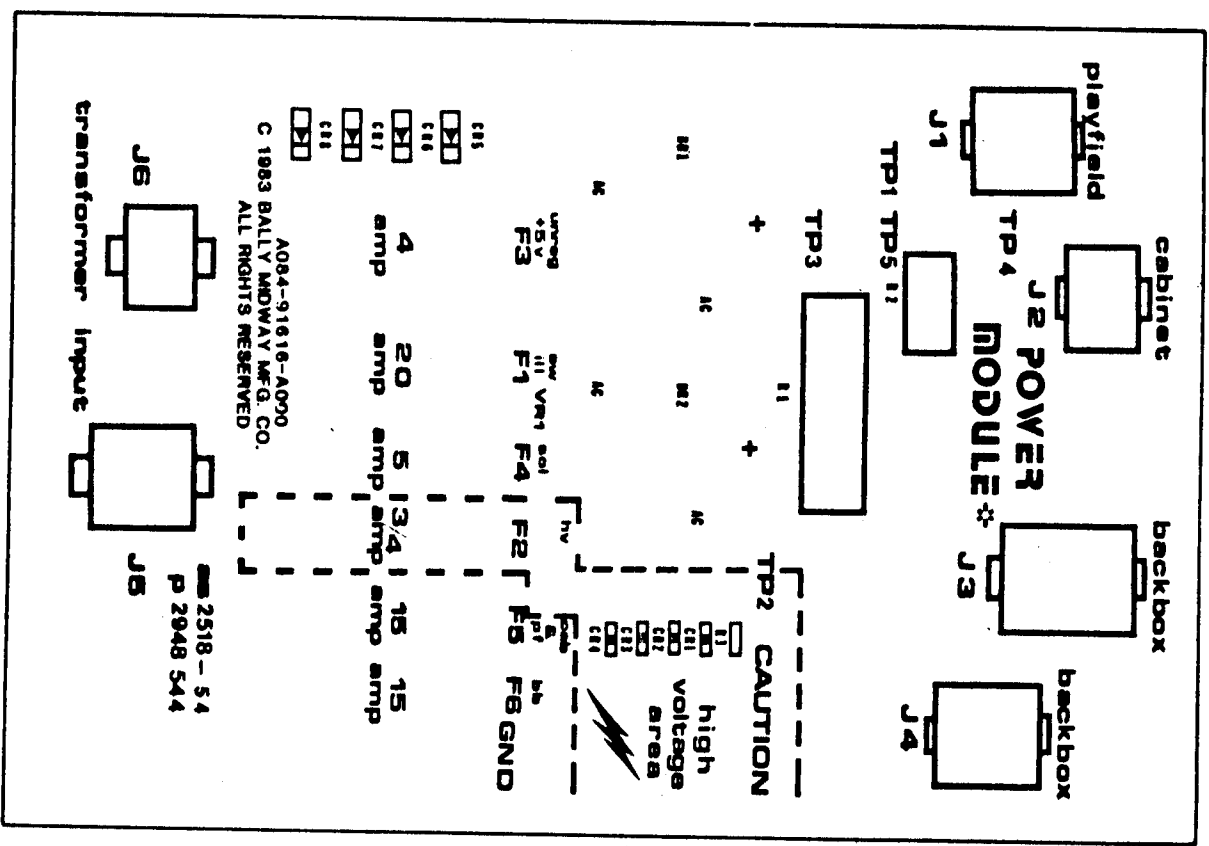
CROSS REF. LIST

DESCRIPTION
250 OHM 5W 10%
600 OHM 10W 10%
100K OHM 1/4W 5%
VARIABLE
1N4004
GP30A/V330
KBPC35-02-W
SPACER
3/4 AMP FUSE
4 AMP FUSE
5 AMP FUSE/EC
15 AMP FUSE
20 AMP FUSE
FUSE CLIP BUSSMAN
FUSE CLIP LITTELFUSE
6 COND. MEL PIN HEADER
9 COND. MEL PIN HEADER
12 COND. MEL PIN HEADER
TEST POINTS
POWER MODULE



CROSS REF. LIST

DESCRIPTION	QTY	DESIGNATION NO.	PART NOS.
250 OHM 5W 10%	1	R2	100E-00002-0028
600 OHM 5W 10%	1	R1	100E-00002-0049
100K OHM 1/4W 5%	1	R3	100E-00005-0115
VARISTOR	1	R4	115E-00001-0002
IN4004	4	CR1-CR4	103E-00003-0005
GP30A/V330	4	CR5-CR8	0360-00801-0007
KBR35-02-W	2	WR1,WR2	103E-00005-0005
SPACER	2	P/O WR1,WR2	118E-00001-0001
3/4 AMP FUSE	1	F2	0017-00003-0177
4 AMP FUSE	1	F3	0017-00003-0176
5 AMP FUSE	1	F4	0017-00003-0175
15 AMP FUSE	1	F5,F6	0017-00003-0313
20 AMP FUSE	2	F1	0017-00003-0173
FUSE CLIP BUSSMAN	6	P/O F1,F5,F6	0017-00071-0034
FUSE CLIP LITTELFUSE	6	P/O F2,F3,F4	0017-00071-0033
6 COND. M/L PIN HEADER	2	J2,J6	0017-00021-0424
9 COND. M/L PIN HEADER	2	J4,J5	0017-00021-0425
12 COND. M/L SOCKET HEADER	1	J1	0017-00021-0426
TEST POINTS	1	J3	0017-00021-0427
POWER MODULE	6	TP1-TP5,GND	0017-00007-0131
		PCB	A080-91616-A000



DESCRIPTION

600 OHM 5W 10%

25 OHM 5W 10%

100K OHM 1/4W 5%

VARISTOR

IN4004

GP30A/V330

KBR35-02-W BRIDGE

SPACER

20 AMP FUSE - NOTE 1

3/4 AMP FUSE

4 AMP FUSE

5 AMP FUSE

15 AMP FUSE

FUSE CLIP BUSSMAN

FUSE CLIP LITTELFUSE

6 COND. M/L PIN HEADER

9 COND. M/L PIN HEADER

12 COND. M/L PIN HEADER

9 COND. M/L PIN HEADER

6 COND. M/L PIN HEADER

12 COND. M/L PIN HEADER

TEST POINTS

POWER MODULE

TRANSFORMER

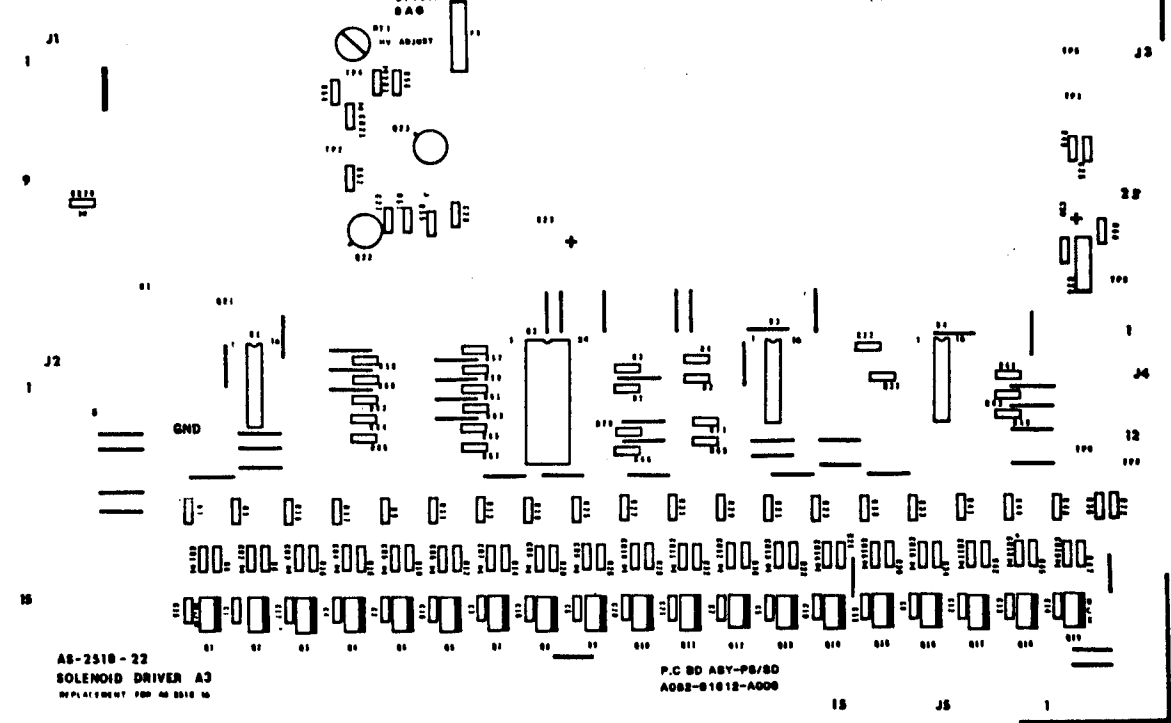
3 FLIPPER GAME

4 FLIPPER GAME

RESISTANCE LIST

RESISTANCE NO.	DESCRIPTION	RESISTANCE NO.	DESCRIPTION
C1-C2	.002 uf 1KV Cer.	C1-C2	TH4004 Diode
C11-C21	.002 uf 50V Cer.	C1-C21	2N3045 NPN Darl.
C22	.01 uf 50V Cer.	C21	1N4323 45V Reg.
C23	11,000 uf 20V Elec.	C21	2N3584 NPN
P/O C23	Cable Tie	C21	Insulator T066
P/O C23	2 uf 25V Elec.	C21	6-32 X 1/2 Screw
C24	1 uf 20V Elec.	C21	6-32 X 5 Screw
C25	160 uf 350V Elec.	C21	6-32 Hex Nut
P/O C26	Cable Tie	C21	145-290-019 Lockwasher
C27, C28	.01 uf 500V Cer.	C21	145-313-019 Lockwasher
C29	1 uf 20V Cer.	C21	145-315-012 Flat Washer
R1-R4	33K 1/4 W 5%	C21	6-32 Threaded Nut-Spacer
R5	330 ohm 1/4 W 5%	C21	Plastic Lug
R6	330 ohm 1/4 W 5%	C21	Insulator T03
R7	330 ohm 1/4 W 5%	C21	Insulator T03
R8	330 ohm 1/4 W 5%	C21	High Voltage Label
R9	330 ohm 1/4 W 5%	C21	2N3440 NPN
R10	330 ohm 1/4 W 5%	C21	Insulator T05
R11	330 ohm 1/4 W 5%	C21	Insulator T05
R12	330 ohm 1/4 W 5%	C21	Insulator T05
R13	330 ohm 1/4 W 5%	C21	Insulator T05
R14	330 ohm 1/4 W 5%	C21	Insulator T05
R15	330 ohm 1/4 W 5%	C21	Insulator T05
R16	330 ohm 1/4 W 5%	C21	Insulator T05
R17	330 ohm 1/4 W 5%	C21	Insulator T05
R18	330 ohm 1/4 W 5%	C21	Insulator T05
R19	330 ohm 1/4 W 5%	C21	Insulator T05
R20	330 ohm 1/4 W 5%	C21	Insulator T05
R21	330 ohm 1/4 W 5%	C21	Insulator T05
R22	330 ohm 1/4 W 5%	C21	Insulator T05
R23	330 ohm 1/4 W 5%	C21	Insulator T05
R24	330 ohm 1/4 W 5%	C21	Insulator T05
R25	330 ohm 1/4 W 5%	C21	Insulator T05
R26	330 ohm 1/4 W 5%	C21	Insulator T05
R27	330 ohm 1/4 W 5%	C21	Insulator T05
R28	330 ohm 1/4 W 5%	C21	Insulator T05
R29	330 ohm 1/4 W 5%	C21	Insulator T05
R30	330 ohm 1/4 W 5%	C21	Insulator T05
R31	330 ohm 1/4 W 5%	C21	Insulator T05
R32	330 ohm 1/4 W 5%	C21	Insulator T05
R33	330 ohm 1/4 W 5%	C21	Insulator T05
R34	330 ohm 1/4 W 5%	C21	Insulator T05
R35	330 ohm 1/4 W 5%	C21	Insulator T05
R36	330 ohm 1/4 W 5%	C21	Insulator T05
R37	330 ohm 1/4 W 5%	C21	Insulator T05
R38	330 ohm 1/4 W 5%	C21	Insulator T05
R39	330 ohm 1/4 W 5%	C21	Insulator T05
R40	330 ohm 1/4 W 5%	C21	Insulator T05
R41	330 ohm 1/4 W 5%	C21	Insulator T05
R42	330 ohm 1/4 W 5%	C21	Insulator T05
R43	330 ohm 1/4 W 5%	C21	Insulator T05
R44	330 ohm 1/4 W 5%	C21	Insulator T05
R45	330 ohm 1/4 W 5%	C21	Insulator T05
R46	330 ohm 1/4 W 5%	C21	Insulator T05
R47	330 ohm 1/4 W 5%	C21	Insulator T05
R48	330 ohm 1/4 W 5%	C21	Insulator T05
R49	330 ohm 1/4 W 5%	C21	Insulator T05
R50	330 ohm 1/4 W 5%	C21	Insulator T05
R51	330 ohm 1/4 W 5%	C21	Insulator T05
R52	330 ohm 1/4 W 5%	C21	Insulator T05
R53	330 ohm 1/4 W 5%	C21	Insulator T05
R54	330 ohm 1/4 W 5%	C21	Insulator T05
R55	330 ohm 1/4 W 5%	C21	Insulator T05
R56	330 ohm 1/4 W 5%	C21	Insulator T05
R57-R72	330 ohm 1/4 W 5%	C21	Insulator T05

©1983 BALLY MIDWAY MFG. CO.
ALL RIGHTS RESERVED



CROSS REF. LIST

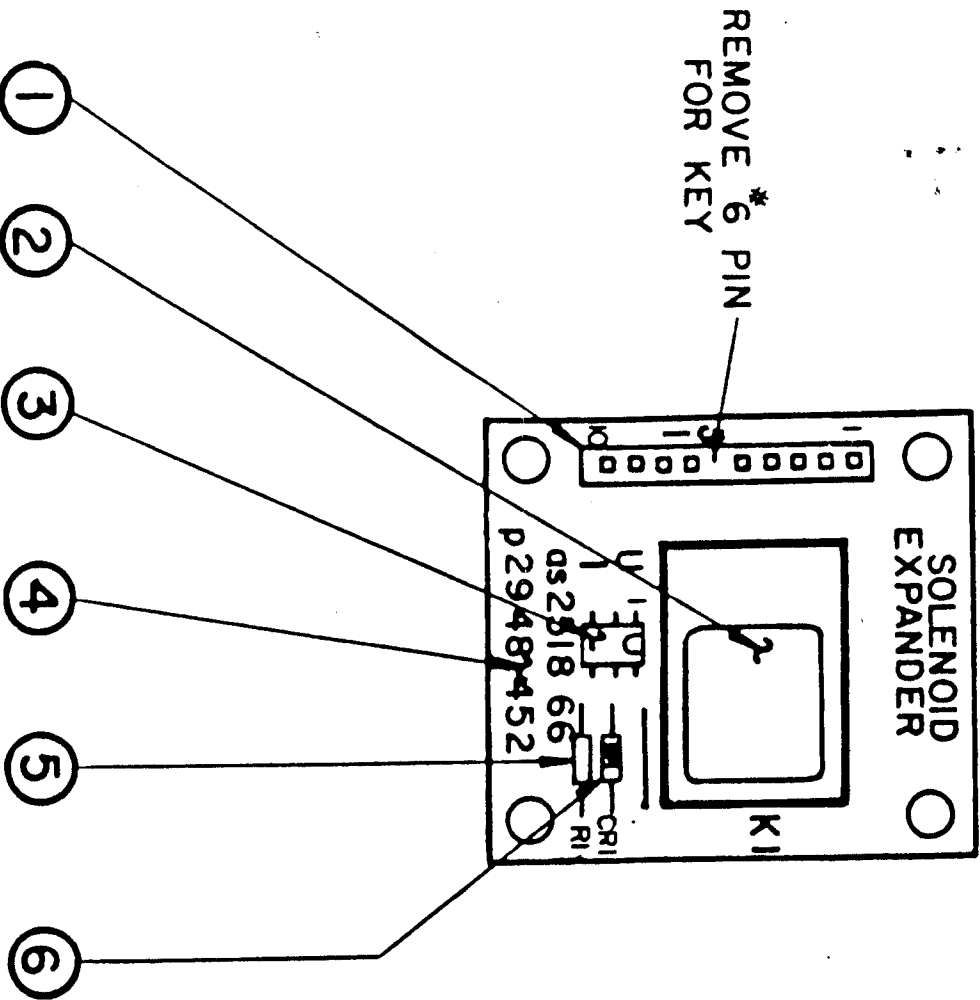
DESCRIPTION	QTY
.002 uf 1KV Cer.	19
.01 uf 50V Cer.	1
.01 uf 500V Cer.	2
1 uf 20V Cer.	2
2 uf 25V Elec.	1
160 uf 350V Elec.	1
11,000 uf 20V Elec.	1
2.2 ohm 1/4 W 5%	1
120 ohm 1/4 W 5%	20
330 ohm 1/4 W 5%	19
390 ohm 1/4 W 5%	1
1.2K 1/4 W 5%	17
3.9K 1/4 W 5%	4
8.2K 1/4 W 5%	1
33K 1/4 W 5%	4
100 ohm 1/2 W 5%	1
22K 1/2 W 5%	1
82K 1/2 W 5%	1
100K 1W 5%	1
RT1	1
1N4004	21
1N5275A 2 Zener	1
1N5275A 4V Reg.	1
2N3440 NPN	2
2N3584 NPN	1
2N3584 NPN Darl.	19
CA3081 NPN Array	3
74LS154 Bn. to 1/16 Dm.	49
1N 22ang Jumper	1
3/16 A Bagg Fuse	2
Fuse Clip	36
.045 Auto Insert Pins	36
.025 Auto Insert Pins	35
TEST POINT	8
Jumper Wire 24awg.	2
Solder Lug	2
Washer T05	1
Insulator T05	2
Insulator T066	1
6-32 X 1/2 Screw	4
6-32 Hex Nut	2
145-290-019 Lockwasher	4
145-313-019	4
145-315-012 Flat Washer	4
6-32 Threaded Nut	2
Spacer	1
Washer T03	1
Insulator T03	1
High Voltage Label	1
48VDC Relay	1
P.C.B.	1

PROJECT ENG: A. AARSTAD		DATE: 11/27/84
DO NOT SCALE DIMS		
DIM TOLERANCES	UNLESS SPECIFIED	
ASSEMBLY DWG	DRIVER/PWR SUP	
A080-91012-A000		

CROSS REF. LIST

DESCRIPTION	QTY	DESIGNATION NO.	PART NO.
.002 uf 1KV Cer.	19	C1-C8, C11-C21	010E-0000-0012
.01 uf 50V Cer.	1	C2	010E-0000-0005
.01 uf 50V Cer.	2	C3, C28	010E-0000-0013
.1 uf 20V Cer.	2	C25, C29	010E-0000-0013
2 uf 25V Elec.	1	C4	010E-0000-0019
160 uf 350V Elec.	1	C6	010E-0000-0020
11,000 uf 20V Elec.	1	C23	010E-0000-0024
2.2 OHM 1/4W 5%	1	R50	100E-0000-0035
120 OHM 1/4W 5%	20	R7, R9, R11, R13	100E-0000-0035
		R15, R17, R19, R21, R23	
		R25, R27, R29, R31, R33	
		R35, R37, R39, R41, R43	
		R45, R47, R49, R51, R53	
		R55, R57, R59, R61, R63	
		R65, R67, R69, R71, R73	
		R75, R77, R79, R81, R83	
		R85, R87, R89, R91, R93	
		R95, R97, R99, R101, R103	
		R105, R107, R109, R111, R113	
		R115, R117, R119, R121, R123	
		R125, R127, R129, R131, R133	
		R135, R137, R139, R141, R143	
		R145, R147, R149, R151, R153	
		R155, R157, R159, R161, R163	
		R165, R167, R169, R171, R173	
		R175, R177, R179, R181, R183	
		R185, R187, R189, R191, R193	
		R195, R197, R199, R201, R203	
		R205, R207, R209, R211, R213	
		R215, R217, R219, R221, R223	
		R225, R227, R229, R231, R233	
		R235, R237, R239, R241, R243	
		R245, R247, R249, R251, R253	
		R255, R257, R259, R261, R263	
		R265, R267, R269, R271, R273	
		R275, R277, R279, R281, R283	
		R285, R287, R289, R291, R293	
		R295, R297, R299, R301, R303	
		R305, R307, R309, R311, R313	
		R315, R317, R319, R321, R323	
		R325, R327, R329, R331, R333	
		R335, R337, R339, R341, R343	
		R345, R347, R349, R351, R353	
		R355, R357, R359, R361, R363	
		R365, R367, R369, R371, R373	
		R375, R377, R379, R381, R383	
		R385, R387, R389, R391, R393	
		R395, R397, R399, R401, R403	
		R405, R407, R409, R411, R413	
		R415, R417, R419, R421, R423	
		R425, R427, R429, R431, R433	
		R435, R437, R439, R441, R443	
		R445, R447, R449, R451, R453	
		R455, R457, R459, R461, R463	
		R465, R467, R469, R471, R473	
		R475, R477, R479, R481, R483	
		R485, R487, R489, R491, R493	
		R495, R497, R499, R501, R503	
		R505, R507, R509, R511, R513	
		R515, R517, R519, R521, R523	
		R525, R527, R529, R531, R533	
		R535, R537, R539, R541, R543	
		R545, R547, R549, R551, R553	
		R555, R557, R559, R561, R563	
		R565, R567, R569, R571, R573	
		R575, R577, R579, R581, R583	
		R585, R587, R589, R591, R593	
		R595, R597, R599, R601, R603	
		R605, R607, R609, R611, R613	
		R615, R617, R619, R621, R623	
		R625, R627, R629, R631, R633	
		R635, R637, R639, R641, R643	
		R645, R647, R649, R651, R653	
		R655, R657, R659, R661, R663	
		R665, R667, R669, R671, R673	
		R675, R677, R679, R681, R683	
		R685, R687, R689, R691, R693	
		R695, R697, R699, R701, R703	
		R705, R707, R709, R711, R713	
		R715, R717, R719, R721, R723	
		R725, R727, R729, R731, R733	
		R735, R737, R739, R741, R743	
		R745, R747, R749, R751, R753	
		R755, R757, R759, R761, R763	
		R765, R767, R769, R771, R773	
		R775, R777, R779, R781, R783	
		R785, R787, R789, R791, R793	
		R795, R797, R799, R801, R803	
		R805, R807, R809, R811, R813	
		R815, R817, R819, R821, R823	
		R825, R827, R829, R831, R833	
		R835, R837, R839, R841, R843	
		R845, R847, R849, R851, R853	
		R855, R857, R859, R861, R863	
		R865, R867, R869, R871, R873	
		R875, R877, R879, R881, R883	
		R885, R887, R889, R891, R893	
		R895, R897, R899, R901, R903	
		R905, R907, R909, R911, R913	
		R915, R917, R919, R921, R923	
		R925, R927, R929, R931, R933	
		R935, R937, R939, R941, R943	
		R945, R947, R949, R951, R953	
		R955, R957, R959, R961, R963	
		R965, R967, R969, R971, R973	
		R975, R977, R979, R981, R983	
		R985, R987, R989, R991, R993	
		R995, R997, R999, R1001, R1003	
		R1005, R1007, R1009, R1011, R1013	
		R1015, R1017, R1019, R1021, R1023	
		R1025, R1027, R1029, R1031, R1033	
		R1035, R1037, R1039, R1041, R1043	
		R1045, R1047, R1049, R1051, R1053	
		R1055, R1057, R1059, R1061, R1063	
		R1065, R1067, R1069, R1071, R1073	
		R1075, R1077, R1079, R1081, R1083	
		R1085, R1087, R1089, R1091, R1093	
		R1095, R1097, R1099, R1101, R1103	
		R1105, R1107, R1109, R1111, R1113	
		R1115, R1117, R1119, R1121, R1123	
		R1125, R1127, R1129, R1131, R1133	
		R1135, R1137, R1139, R1141, R1143	
		R1145, R1147, R1149, R1151, R1153	
		R1155, R1157, R1159, R1161, R1163	
		R1165, R1167, R1169, R1171, R1173	
		R1175, R1177, R1179, R1181, R1183	
		R1185, R1187, R1189, R1191, R1193	
		R1195, R1197, R1199, R1201, R1203	
		R1205, R1207, R1209, R1211, R1213	
		R1215, R1217, R1219, R1221, R1223	
		R1225, R1227, R1229, R1231, R1233	
		R1235, R1237, R1239, R1241, R1243	
		R1245, R1247, R1249, R1251, R1253	
		R1255, R1257, R1259, R1261, R1263	
		R1265, R1267, R1269, R1271, R1273	
		R1275, R1277, R1279, R1281, R1283	
		R1285, R1287, R1289, R1291, R1293	
		R1295, R1297, R1299, R1301, R1303	
		R1305, R1307, R1309, R1311, R1313	
		R1315, R1317, R1319, R1321, R1323	
		R1325, R1327, R1329, R1331, R1333	
		R1335, R1337, R1339, R1341, R1343	
		R1345, R1347, R1349, R1351, R1353	
		R1355, R1357, R1359, R1361, R1363	
		R1365, R1367, R1369, R1371, R1373	
		R1375, R1377, R1379, R1381, R1383	
		R1385, R1387, R1389, R1391, R1393	
		R1395, R1397, R1399, R1401, R1403	
		R1405, R1407, R1409, R1411, R1413	
		R1415, R1417, R1419, R1421, R1423	
		R1425, R1427, R1429, R1431, R1433	
		R1435, R1437, R1439, R1441, R1443	
		R1445, R1447, R1449, R1451, R1453	
		R1455, R1457, R1459, R1461, R1463	
		R1465, R1467, R1469, R1471, R1473	
		R1475, R1477, R1479, R1481, R1483	
		R1485, R1487, R1489, R1491, R1493	
		R1495, R1497, R1499, R1501, R1503	
		R1505, R1507, R1509, R1511, R1513	
		R1515, R1517, R1519, R1521, R1523	
		R1525, R1527, R1529, R1531, R1533	
		R1535, R1537, R1539, R1541, R1543	
		R1545, R1547, R1549, R1551, R1553	
		R1555, R1557, R1559, R1561, R1563	
		R1565, R1567, R1569, R1571, R1573	
		R1575, R1577, R1579, R1581, R1583	
		R1585, R1587, R1589, R1591, R1593	
		R1595, R1597, R1599, R1601, R1603	
		R1605, R1607, R1609, R1611, R1613	
		R1615, R1617, R1619, R1621, R1623	
		R1625, R1627, R1629, R1631, R1633	
		R1635, R1637, R1639, R1641, R1643	
		R1645, R1647, R1649, R1651, R1653	
		R1655, R1657, R1659, R1661, R1663	
		R1665, R1667, R1669, R1671, R1673	
		R1675, R1677, R1679, R1681, R1683	
		R1685, R1687, R1689, R1691, R1693	
		R1695, R1697, R1699, R1701, R1703	
		R1705, R1707, R1709, R1711, R1713	
		R1715, R1717, R1719, R1721, R1723	
		R1725, R1727, R1729, R1731, R1733	
		R1735, R1737, R1739, R1741, R1743	
		R1745, R1747, R1749, R1751, R1753	
		R1755, R1757, R1759, R1761, R1763	
		R1765, R1767, R1769, R1771, R1773	
		R1775, R1777, R1779, R1781, R1783	
		R1785, R1787, R1789, R1791, R1793	
		R1795, R1797, R1799, R1801, R1803	
		R1805, R1807, R1809, R1811, R1813	
		R1815, R1817, R1819, R1821, R1823	
		R1825, R1827, R1829, R1831, R1833	
		R1835, R1837, R1839, R1841, R1843	
		R1845, R1847, R1849, R1851, R1853	
		R1855, R1857, R1859, R1861, R1863	
		R1865, R1867, R1869, R1871, R1873	
		R1875, R1877, R1879, R1881, R1883	
		R1885, R1887, R1889, R1891, R1893	
		R1895, R1897, R1899, R1901, R1903	
		R1905, R1907, R1909, R1911, R1913	
		R1915, R1917, R1919, R1921, R1923	
		R1925, R1927, R1929, R1931, R1933	
		R1935, R1937, R1939, R1941, R1943	
		R1945, R1947, R1949, R1951, R1953	
		R1955, R1957, R1959, R1961, R1963	
		R1965, R1967, R1969, R1971, R1973	
		R1975, R1977, R1979, R1981, R1983	
		R1985, R1987, R1989, R1991, R1993	
		R1995, R1997, R1999, R2001, R2003	
		R2005, R2007, R2009, R2011, R2013	
		R2015, R2017, R2019, R2021, R2023	
		R2025, R2027, R2029, R2031, R2033	
		R2035, R2037, R2039, R2041, R2043	
		R2045, R2047, R2049, R2051, R2053	
		R2055, R2057, R2059, R2061, R2063	
		R2065, R2067, R2069, R2071, R2073	
		R2075, R2077, R2079, R2081, R2083	
		R2085, R2087, R2089, R2091, R2093	
		R2095, R2097, R2099, R2101, R2103	
		R2105, R2107, R2109, R2111, R2113	
		R2115, R2117, R2119, R2121, R2123	
		R2125, R2127, R2129, R2131, R2133	
		R2135, R2137, R2139, R2141, R2143	
		R2145, R2147, R2149, R2151, R2153	
		R2155, R2157, R2159, R2161, R2163	
		R2165, R2167, R2169, R2171, R2173	
		R2175, R2177, R2179, R2181, R2183	
		R2185, R2187, R2189, R2191, R2193	
		R2195, R2197, R2199, R2201, R2203	
		R2205, R2207, R2209, R2211, R2213	
		R2215, R2217, R2219, R2221, R2223	
		R2225, R2227, R2229, R2231, R2233	
		R2235, R2237, R2239, R2241, R2243	
		R2245, R2247, R2249, R2251, R2253	
		R2255, R2257, R2259, R2261, R2263	
		R2265, R2267, R2269, R2271, R2273	
		R2275, R2277, R2279, R2281, R2283	
		R2285, R2287, R2289, R2291, R2293	
		R2295, R2297, R2299, R2301, R2303	
		R2305, R2307, R2309, R2311, R2313	
		R2315, R2317, R2319, R2321, R2323	
		R2325, R2327, R2329, R2331, R2333	
		R2335, R2337, R2339, R2341, R2343	
		R2345, R2347, R2349, R2351, R2353	
		R2355, R2357, R2359, R2361, R2363	
		R2365, R2367, R2369, R2371, R2373	
		R2375, R2377, R2379, R2381, R2383	
		R2385, R2387, R2389, R2391, R2393	
		R2395, R2397, R2399, R2401, R2403	
		R2405, R2407, R2409, R2411, R2413	
		R2415, R2417, R2419, R2421, R2423	
		R2425, R2427,	

A15: SOLENOID EXPANDER ASSEMBLY
AS-2518-66



[illegible]

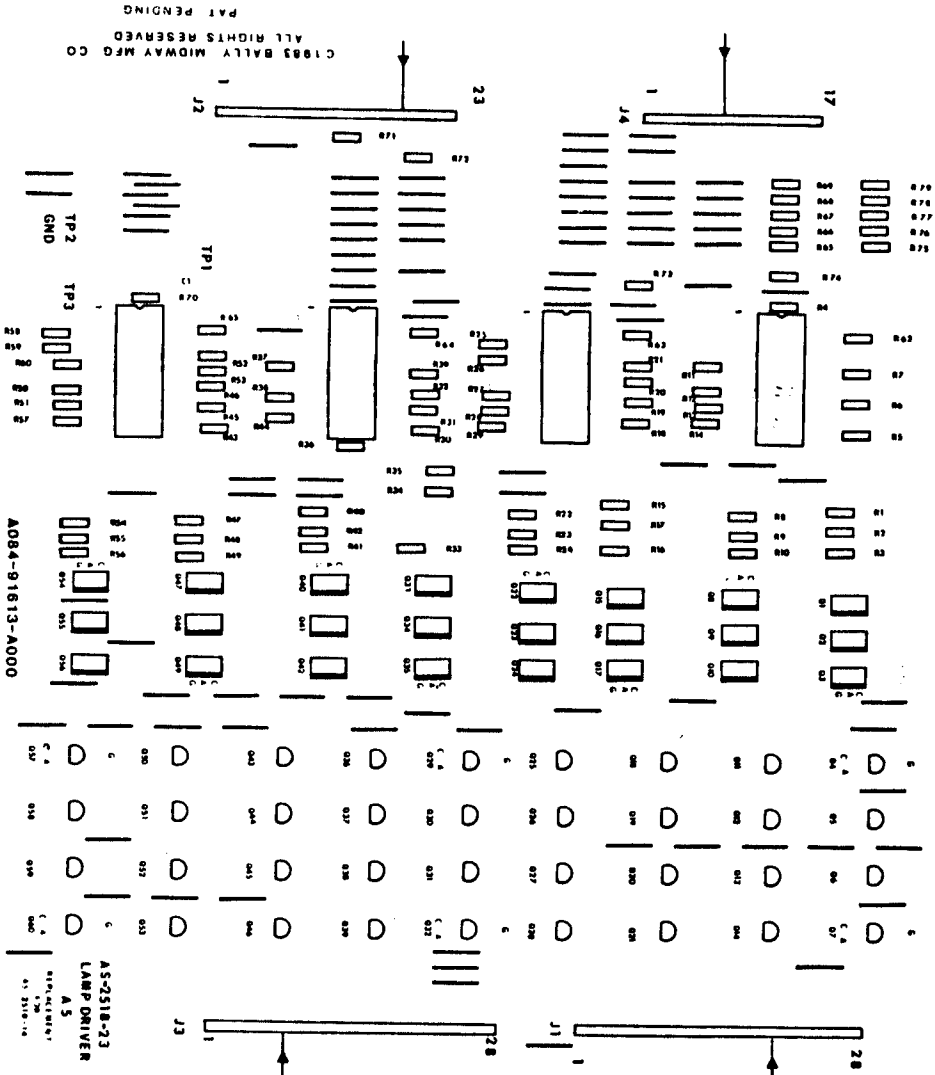
1

ORDER NO. 1. 6007740 ORDER DATE 01-01-80 ORDER TYPE ☐ NEW ☐ RENEWAL		SEND TO: F.B.I. PO BOX		Order / INQUIRY INFO. CO. ORDER NO. 1. 6007740
DATE RECEIVED 1/1/80		DATE ORDERED 1/1/80		
NAME J. E.		NAME J. E.		Part no MOD1 - 0011 - 9078
ADDRESS 5719/445		ADDRESS 5719/445		
PHONE 408-535-1111		PHONE 408-535-1111		MOD1 - 0011 - 9078 MOD2 - 0000 - 0000
FAX 408-535-1111		FAX 408-535-1111		

DESIGNATION LIST

CROSS REFERENCE

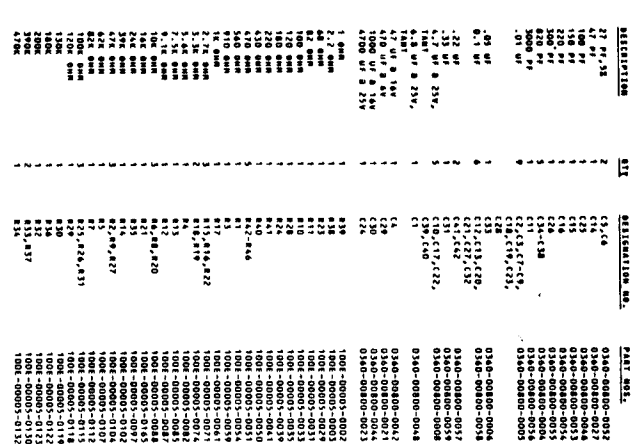
DESIGNATION NO.	DESCRIPTION	QTY	DESIGNATION NO.
C1	.01 MF 500V	1	C1
R1-R60	2K 5% 1/4W	9	R61-R69
R61-R69	2.2M 5% 1/4W	61	R1-R60, R70
R70	2K 5% 1/4W	9	R71-R79
R71-R79	20K 5% 1/4W	9	
Q1-Q3	MCR100-1	24	Q1-Q3, Q8-Q10, Q15
Q4-Q7	2N5060	36	Q17, Q22-Q24, Q33-Q35
Q8-Q10	MCR100-1		Q35, Q40-Q42, Q47-Q49
Q11-Q14	2N5060		Q49, Q54-Q56
Q15-Q17	MCR100-1		Q4-Q7, Q11-Q14, Q17
Q18-Q21	2N5060		Q21, Q25-Q32, Q36-Q39
Q22-Q24	MCR100-1		Q39, Q43-Q46, Q50-Q53
Q25-Q32	2N5060		Q53, Q57-Q60
Q33-Q35	MCR100-1		
Q36-Q39	2N5060		
Q40-Q42	MCR100-1		
Q43-Q46	2N5060		
Q47-Q49	MCR100-1		
Q50-Q53	2N5060		
Q54-Q56	MCR100-1		
Q57-Q60	2N5060		
U1-U4	MCT145148		
J1	28 PIN WAFER CONN.		
J2	23 PIN WAFER CONN.		
J3	28 PIN WAFER CONN.		
J4	17 PIN WAFER CONN.		
TP1-TP3	TEST CLIP		
	LABEL		
	JUMPER, 22 AWG		
	P.C. BOARD		



© 1983 BALLY MIDWAY MFG CO
ALL RIGHTS RESERVED
PAT. PENDING

PROJECT ENG		USED ON	
DO NOT SCALE	DATE	FULL	
DATE	TIME	NO RECD	
DATE	TIME	LAMP DRIVER ASSY DWG	
DATE	TIME	A084-91613-	

DESCRIPTION	DESCRIPTION
01-23	164600
02-05	164600
03-08	164600
04-08	164600
05-08	164600
06-08	164600
07-08	164600
08-08	164600
09-08	164600
10-08	164600
11-08	164600
12-08	164600
13-08	164600
14-08	164600
15-08	164600
16-08	164600
17-08	164600
18-08	164600
19-08	164600
20-08	164600
21-08	164600
22-08	164600
23-08	164600
24-08	164600
25-08	164600
26-08	164600
27-08	164600
28-08	164600
29-08	164600
30-08	164600
31-08	164600
32-08	164600
33-08	164600
34-08	164600
35-08	164600
36-08	164600
37-08	164600
38-08	164600
39-08	164600
40-08	164600
41-08	164600
42-08	164600
43-08	164600
44-08	164600
45-08	164600
46-08	164600
47-08	164600
48-08	164600
49-08	164600
50-08	164600
51-08	164600
52-08	164600
53-08	164600
54-08	164600
55-08	164600
56-08	164600
57-08	164600
58-08	164600
59-08	164600
60-08	164600
61-08	164600
62-08	164600
63-08	164600
64-08	164600
65-08	164600
66-08	164600
67-08	164600
68-08	164600
69-08	164600
70-08	164600
71-08	164600
72-08	164600
73-08	164600
74-08	164600
75-08	164600
76-08	164600
77-08	164600
78-08	164600
79-08	164600
80-08	164600
81-08	164600
82-08	164600
83-08	164600
84-08	164600
85-08	164600
86-08	164600
87-08	164600
88-08	164600
89-08	164600
90-08	164600
91-08	164600
92-08	164600
93-08	164600
94-08	164600
95-08	164600
96-08	164600
97-08	164600
98-08	164600
99-08	164600
100-08	164600

[illegible]

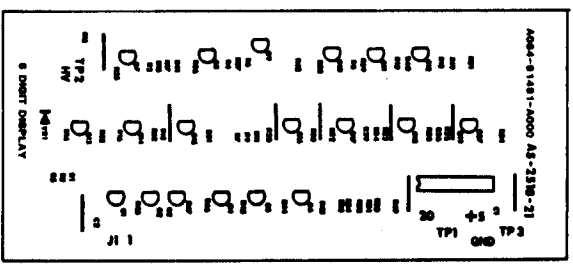
CROSS REFERENCE LIST

[illegible]

CROSS REFERENCE LIST

[illegible][illegible]

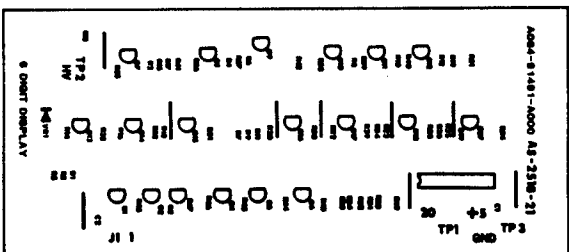
DESIGNATION NO.	DESCRIPTION	DESIGNATION NO.
C1	.01 NP 25V	DS1M
C2	.01 NP 500V	
R1	100K OHM 1/4W 5%	
R2	2.2K OHM 1/4W 5%	
R3	100K OHM 1/4W 5%	
R4	2.2K OHM 1/4W 5%	
R5	100K OHM 1/4W 5%	
R6	2.2K OHM 1/4W 5%	
R7	100K OHM 1/4W 5%	
R8	2.2K OHM 1/4W 5%	
R9	100K OHM 1/4W 5%	
R10	2.2K OHM 1/4W 5%	
R11	100K OHM 1/4W 5%	
R12	2.2K OHM 1/4W 5%	
R13	100K OHM 1/4W 5%	
R14	2.2K OHM 1/4W 5%	
R15	100K OHM 1/4W 5%	
R16	2.2K OHM 1/4W 5%	
R17	100K OHM 1/4W 5%	
R18	2.2K OHM 1/4W 5%	
R19	100K OHM 1/4W 5%	
R20	2.2K OHM 1/4W 5%	
R21	100K OHM 1/4W 5%	
R22	2.2K OHM 1/4W 5%	
R23	100K OHM 1/4W 5%	
R24	2.2K OHM 1/4W 5%	
R25	100K OHM 1/4W 5%	
R26	2.2K OHM 1/4W 5%	
R27-R33	100K OHM 1/4W 5%	
R34	2.2K OHM 1/4W 5%	
R35-R40	100K OHM 1/4W 5%	
R41	2.2K OHM 1/4W 5%	
R42	100K OHM 1/4W 5%	
R43-R48	2.2K OHM 1/4W 5%	
R49-R54	100K OHM 1/4W 5%	
VR1	1N3045A	
01-06	MPS-A42	
07-012	2N5401	
013-020	MPS-A42	
01	MC1543	
DS1	6 DIGIT DISPLAY	
	PANEL	



DESIGNATION NO.	DESCRIPTION	QTY.	DESIGNATION
C1	.01 NP 25V	1	C1
C2	.01 NP 500V	1	C2
R1	100K OHM 1/4W 5%	7	R27-R33
R2	2.2K OHM 1/4W 5%	7	R13, R15, R1
R3	100K OHM 1/4W 5%	7	R21, R23, R2
R4	2.2K OHM 1/4W 5%	6	R2, R4, R6,
R5	100K OHM 1/4W 5%	6	R12
R6	2.2K OHM 1/4W 5%	6	R13-R40
R7	100K OHM 1/4W 5%	6	R49-R54
R8	2.2K OHM 1/4W 5%	1	R1
R9	100K OHM 1/4W 5%	7	R11, R3, R5,
R10	2.2K OHM 1/4W 5%	1	R43, R14
R11	100K OHM 1/4W 5%	13	R14, R15, R1
R12	2.2K OHM 1/4W 5%	1	R22, R24, R2
R13	100K OHM 1/4W 5%	1	R40
R14	2.2K OHM 1/4W 5%	1	VR1
R15	100K OHM 1/4W 5%	6	07-012
R16	2.2K OHM 1/4W 5%	13	01-06 013-02
R17	100K OHM 1/4W 5%	1	01
R18	2.2K OHM 1/4W 5%	1	DS1
R19	100K OHM 1/4W 5%	2	DS1M
R20	2.2K OHM 1/4W 5%	1	
R21	100K OHM 1/4W 5%	1	
R22	2.2K OHM 1/4W 5%	1	
R23	100K OHM 1/4W 5%	1	
R24	2.2K OHM 1/4W 5%	1	
R25	100K OHM 1/4W 5%	1	
R26	2.2K OHM 1/4W 5%	1	
R27-R33	100K OHM 1/4W 5%	1	
R34	2.2K OHM 1/4W 5%	1	
R35-R40	100K OHM 1/4W 5%	1	
R41	2.2K OHM 1/4W 5%	1	
R42	100K OHM 1/4W 5%	1	
R43-R48	2.2K OHM 1/4W 5%	1	
R49-R54	100K OHM 1/4W 5%	1	
VR1	1N3045A	1	
01-06	MPS-A42	6	
07-012	2N5401	13	
013-020	MPS-A42	1	
01	MC1543	1	
DS1	6 DIGIT DISPLAY	1	
DS1M	6 DIGIT DISPLAY	1	
	PANEL	1	

PROJECT NO. A. MARSH		DATE	
11/14/64			
ASSEMBLY ORG. SIX DIGIT		A002-01491-A000	

DESIGNATION NO.
 DSI-M
 TACE-SCREEN REPLACMT
 DISPLAY MTC. TOP
 DISPLAY MTC. BOTTOM
 PRESSURE SENSITIVE
 TAPE
 BUMPER
 .045 SQ. PITM
 TEST POINTS
 JUMPER TIM 22 ANG
 6 DIGIT DISPLAY
 A080-91491-A000



CROSS REF. LIST

DESCRIPTION	QTY.	DESIGNATION NO.	PART NUMBER
.01 MP 23V	1	C1	0160-00800-0005
.01 MP 500V	1	C2	0160-00800-0013
1.2E 1/4W 50	7	R21-R23	100E-00005-0063
1.5E 1/4W 50	7	R13, R15, R17, R19	100E-00005-0065
2.2E 1/4W 50	6	R21, R23, R25	100E-00005-0069
9.1E 1/4W 50	6	R2, R4, R6, R8, R10	100E-00005-0087
2.2E 1/4W 50	3	R43-R46	100E-00005-0095
2.2E 1/4W 50	3	R41-R44	100E-00005-0102
100E 1/4W 50	7	R1, R3, R5, R7, R9	100E-00001-0011
REPL. PITM	13	R11, R14	100E-00005-0125
200E 1/4W 50	13	R14, R16, R18, R20, R22, R24, R26, R28	100E-00005-0127
300E 1/4W 50	1	R40	103E-00001-0028
IN3045A	1	VX1	104E-00001-0007
2M5401	6	Q1-Q12	104E-00001-0014
MP5-842	13	Q1-Q6 Q13-Q20	0360-00804-0016
MP5-842	1	D81	0005-00900-0000
6 DIGIT DISPLAY	2	DSI-M	0017-00042-0155
TACE-SCREEN REPLACMT	1		0017-00042-0156
DISPLAY MTC. TOP	1		0017-00042-0155
DISPLAY MTC. BOTTOM	1		0017-00042-0156
PRESSURE SENSITIVE TAPE	1		0017-00042-0155
BUMPER	1		0017-00041-0598
.045 SQ. PITM	1	J1	0304-00804-0010
TEST POINTS	3	TP1-TP3	0017-00007-0131
JUMPER TIM 22 ANG	9		117E-00001-0001
6 DIGIT DISPLAY PCB.	1		A080-91491-A000

PRODUCT Dwg. A. AANSTAD

DATE

11/7/64

ASSEMBLY Dwg. SIX DIGIT DISPLAY

A080-91491-A000

MOBI - 00114 - A026

RAY/MIDWAY MFG. CO.

11/7/64

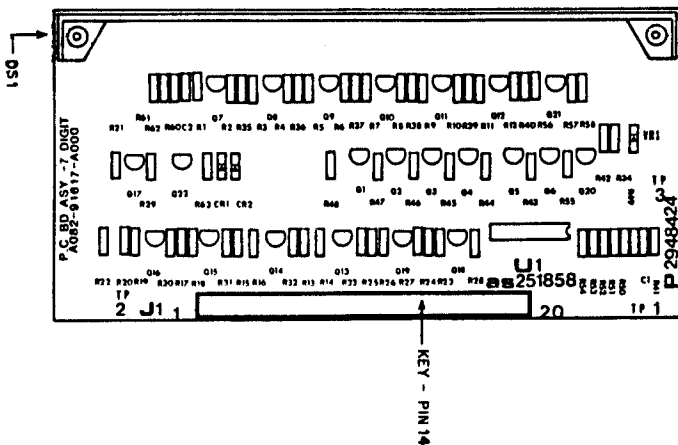
11/7/64

DESIGNATION LIST

DESIGNATION NO.	DESCRIPTION	DESIGNATION NO.	DESCRIPTION
C1	.01 MF 25V	CR1,CR2	1N4148
C2	.01 MF 500V	VR1	1N3045A/NOV ZENER
R1	100K OHM 1/4W 5%	Q1-Q6	MP5-A42
R2	2.2K OHM 1/4W 5%	Q7-Q12	2N5401
R3	100K OHM 1/4W 5%	Q13-Q20	MP5-A42
R4	2.2K OHM 1/4W 5%	Q21	2N5401
R5	100K OHM 1/4W 5%	Q22	MP5-A42
R6	2.2K OHM 1/4W 5%	U1	MC14543
R7	100K OHM 1/4W 5%	DS1	DISPLAY ASSY
R8	2.2K OHM 1/4W 5%	J1	10 PIN WAFER KK-156 (2)
R9	100K OHM 1/4W 5%	TP1-TP3	7 DIGIT DISPLAY PCB BUMPER
R10	2.2K OHM 1/4W 5%		
R11	100K OHM 1/4W 5%		
R12	2.2K OHM 1/4W 5%		
R13	1.5K OHM 1/4W 5%		
R14	300K OHM 1/4W 5%		
R15	1.5K OHM 1/4W 5%		
R16	300K OHM 1/4W 5%		
R17	1.5K OHM 1/4W 5%		
R18	300K OHM 1/4W 5%		
R19	1.5K OHM 1/4W 5%		
R20	300K OHM 1/4W 5%		
R21	1.5K OHM 1/4W 5%		
R22	300K OHM 1/4W 5%		
R23	1.5K OHM 1/4W 5%		
R24	300K OHM 1/4W 5%		
R25	1.5K OHM 1/4W 5%		
R26	300K OHM 1/4W 5%		
R27-R33	1.2K OHM 1/4W 5%		
R34	100K OHM 1/4W 5%		
R35-R40	300K OHM 1/4W 5%		
R41	39K OHM 1/4W 5%		
R42	240K OHM 1/4W 5%		
R43-R48	9.1K OHM 1/4W 5%		
R49-R54	20K OHM 1/4W 5%		
R55	9.1K OHM 1/4W 5%		
R56	100K OHM 1/4W 5%		
R57	2.2K OHM 1/4W 5%		
R58	300K OHM 1/4W 5%		
R59	NOT USED		
R60,R61	1.5K OHM 1/4W 5%		
R62	300K OHM 1/4W 5%		
R63	150K OHM 1/4W 5%		

CROSS REFERENCE

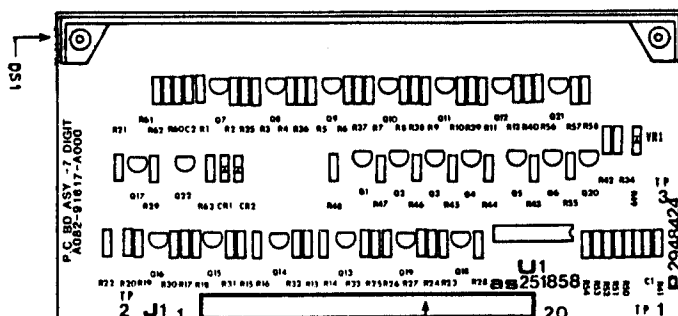
DESCRIPTION	QTY	DESIGNATION
.01 MF 25V	1	C1
.01 MF 500V	1	C2
1.2K 1/4W 5%	7	R27-R33
1.5K 1/4W 5%	9	R13,R15,R17,R19,R21,R23,R25
2.2K 1/4W 5%	7	R2,R4,R6,R8
9.1K 1/4W 5%	7	R12,R57
20K 1/4W 5%	6	R43-R48,R55
39K 1/4W 5%	1	R61
100K 1/4W 5%	8	R1,R3,R5,R7
150K 1/4W 5%	1	R11,R33,R56
20K 1/4W 5%	1	R62
300K 1/4W 5%	15	R14,R16,R18,R22,R24,R26,R40,R58,R62
1N3045A/NOV ZENER	1	VR1
1N4148	2	CR1,CR2
2N5401	7	Q7-Q12,Q21
MP5-A42	15	Q1-Q6,Q13-Q20
MC14543	1	U1
7 DIGIT DISPLAY	1	DS1
B51 MT6, HW	2	
TACK-SCREW	1	
REPLACEMENT	1	
DISPLAY MT6, TOP	1	
DISPLAY MT6, BOTTOM	1	
PRESSURE SENSITIVE TAPE	1	
BUMPER	1	
10 PIN WAFER KK156	2	J1
TEST LOOPS	3	TP1-TP3
7 DIGIT DISPLAY PCB	1	



PROJECT ENG. D. MACDONALD		DATE 12 09 83		REV. 1	
DO NOT CUT OUT		FULL		NO REVISION	
SEVEN DIGIT ASSY		A082 - 916			

ATION LIST

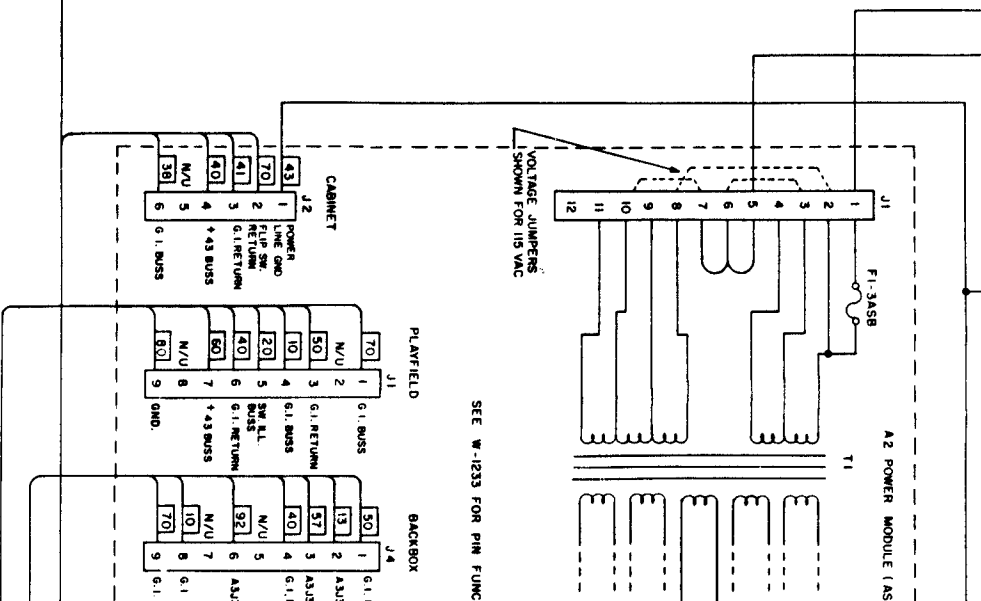
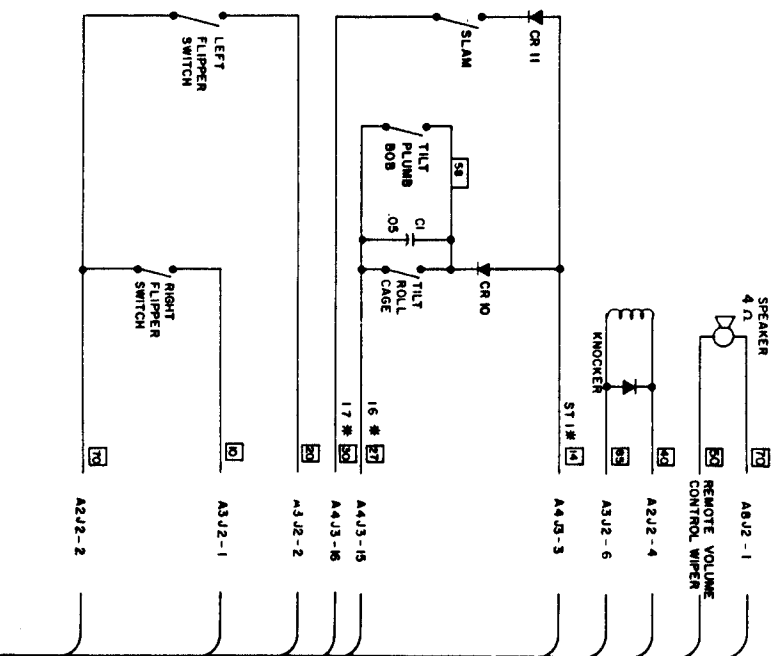
DESIGNATION NO.	DESCRIPTION
CR1, CR2	1M4148
VR1	1N3045A/110V ZENER
Q1-Q6	MP5-A42
Q7-Q12	2N5401
Q13-Q20	MP5-A42
Q21	2N5401
Q22	MP5-A42
U1	MC14543
DS1	DISPLAY ASSY
J1	10 PIN WAFER KK-156 (2)
TP1-TP3	TEST LOOPS
	7 DIGIT DISPLAY PCB
	BUMPER



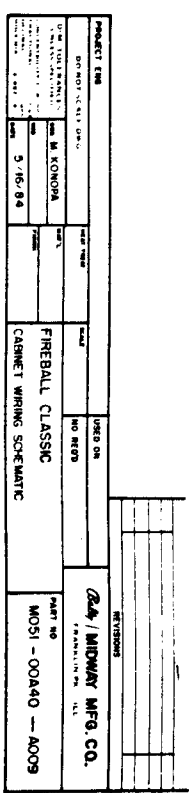
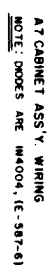
CROSS REFERENCE LIST

DESCRIPTION	QTY	DESIGNATION NO.	BALL'S PART NOS.	MIDWAY'S PART NOS.
.01 MF 25V	1	C1	E-586-85	0360-00800-0005
.01 MF 500V	1	C2	E-586-65	0360-00800-0013
1.2K 1/4W 5%	7	R27-R33	E-105-222	100E-00005-0063
1.5K 1/4W 5%	9	R13, R15, R17, R19	E-105-229	100E-00005-0066
2.2K 1/4W 5%	7	R21, R23, R25, R60		
9.1K 1/4W 5%	7	R2, R6, R8, R10	E-105-287	100E-00005-0069
20K 1/4W 5%	6	R12, R57	E-105-228	100E-00005-0087
39K 1/4W 5%	1	R43-R48, R55	E-105-242	100E-00005-0095
100K 1/4W 5%	8	R49-R54	E-105-231	100E-00005-0102
150K 1/4W 5%	1	R1, R3, R5, R7, R9,	E-105-331	100E-00001-0011
240K 1/4W 5%	1	R11, R34, R56	E-105-248	100E-00001-0120
300K 1/4W 5%	15	R63	E-105-271	100E-00001-0125
		R42	E-105-227	100E-00001-0127
		R14, R16, R18, R20,		
		R22, R24, R26, R35-		
		R40, R58, R62		
1N3045A/110V ZENER	1	VR1	E-598-7	103E-00001-0028
1M4148	2	CR1, CR2	E-587-16	103E-00002-0005
2N5401	7	Q7-Q12, Q21	E-585-32	0360-00802-0006
MP5-A42	15	Q1-Q6, Q13-Q20, Q22	E-585-33	0360-00802-0007
MC14543	1	U1	E-620-38	0360-00803-0014
7 DIGIT DISPLAY	1	DS1	E-680-7	0360-00804-0022
DS1 MTG. HDB	2			0095-00900-0000
TACK-SCREW	1			0017-00042-0155
REPLACEMENT	1			0017-00042-0156
DISPLAY MTG. TOP	1			0017-00007-0131
DISPLAY MTG. BOTTOM	1			0017-00081-0095
PRESSURE SENSITIVE TAPE	1			
BUMPER	1			
10 PIN WAFER KK156	2	J1	R-206-9	0017-00041-0598
TEST LOOPS	3	TP1-TP3	E-726-10	0151-00031-10X8
7 DIGIT DISPLAY PCB.	1		P-5399	0017-00007-0131
			P-2948-424	A080-91617-A000

PROJECT ENG. D. MACDONALD		DO NOT WRITE ON THIS		DATE		TIME		12 09 83	
FULL		NO RECD		1 PER		SEVEN DIGIT DISPLAY ASSY DWG.		A082-91617-A000	
PART NO		MOSI - 00114		- A056					



PROJECT ENG		DATE: 01/15/04		BY: [Signature]	
TO: Mr. KONODA		FROM: [Signature]		SUBJECT: FIRE CABINETS	
DATE: 5/16/04		BY: [Signature]		SUBJECT: FIRE CABINETS	



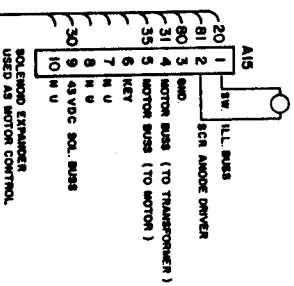
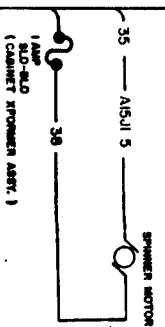
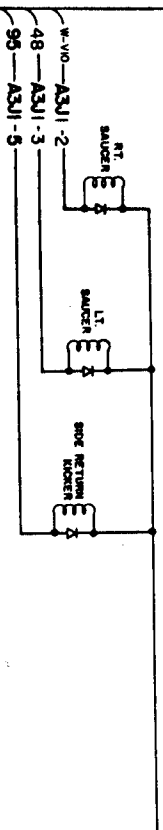
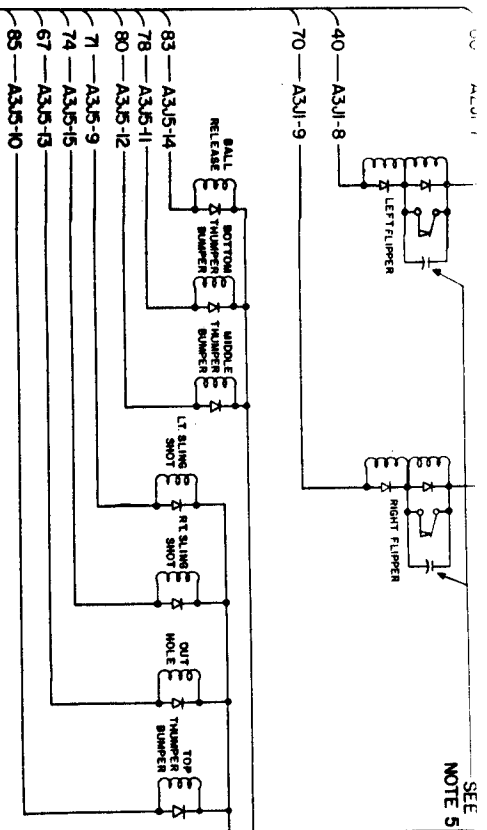
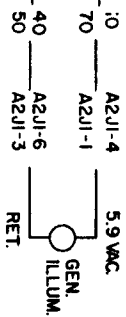
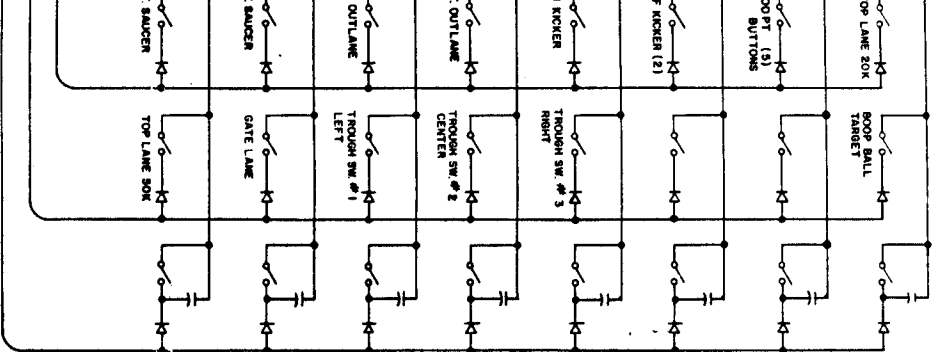


- SWITCH DIODES ARE IN4148

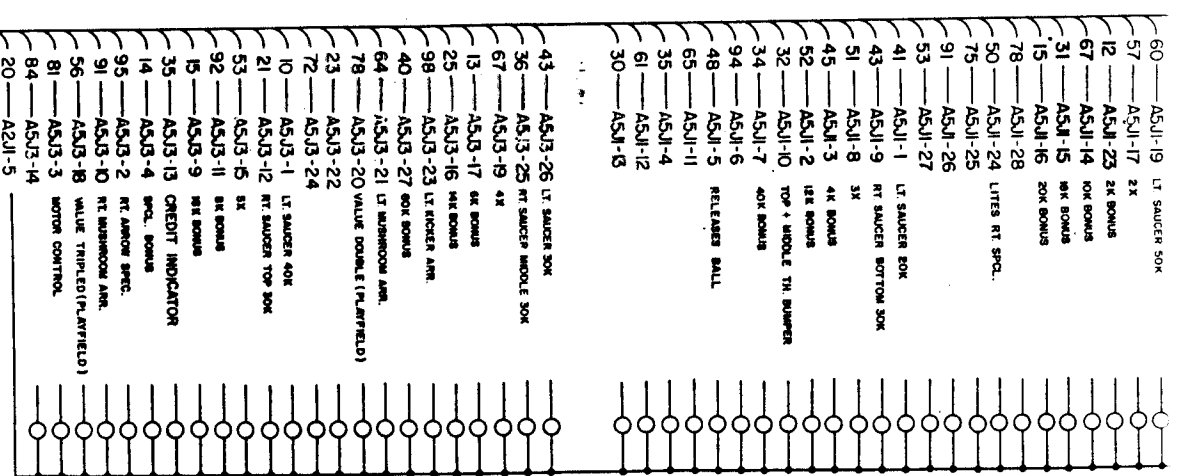


60	ASU
57	ASU
12	ASU
67	ASU
31	ASU
15	ASU
53	ASU
41	ASU
43	ASU
51	ASU
45	ASU
52	ASU
32	ASU
34	ASU
94	ASU
48	ASU
65	ASU
35	ASU
61	ASU
30	ASU
43	ASU
36	ASU
67	ASU
13	ASU
25	ASU
98	ASU
40	ASU
64	ASU
78	ASU
23	ASU
72	ASU
10	ASU
21	ASU
93	ASU
92	ASU
15	ASU
35	ASU
14	ASU
95	ASU
91	ASU
56	ASU
81	ASU
84	ASU
20	ASU

[illegible]



SEE
NOTE 5



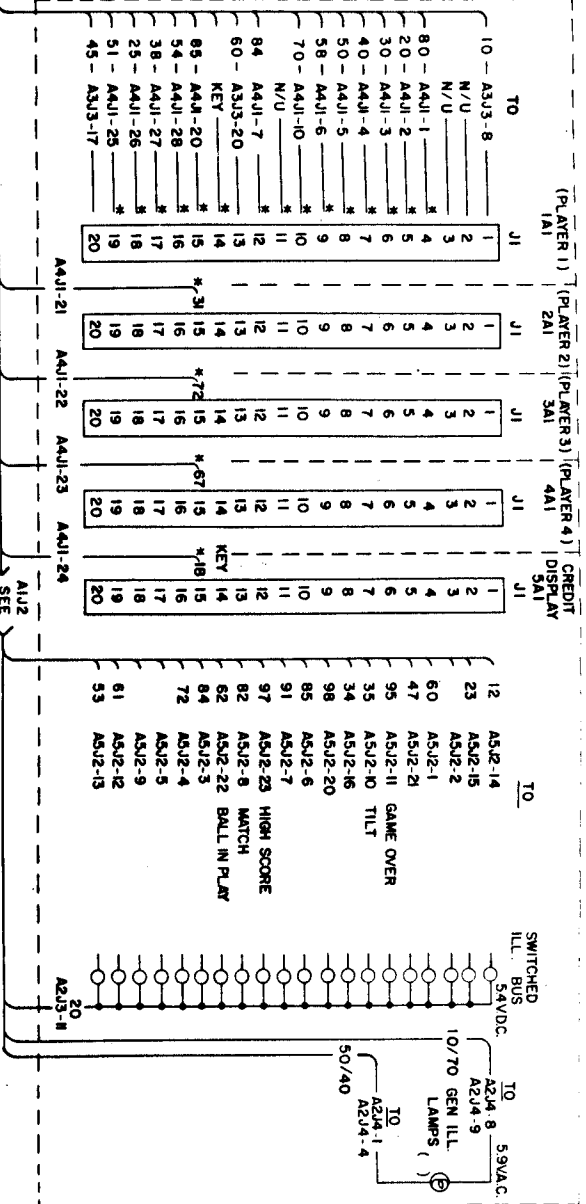
5.4 VDC

WIRE COLOR CODE	
1-RED	6-BROWN
2-BLUE	7-ORANGE
3-YELLOW	8-BLACK
4-GREEN	9-GRAY
5-WHITE	0-NO TRACE

PROJECT #99		USED ON		GARY / MIDWAY MFG. CO. FABRICATED BY: N.Y.
BY: MOTO S.C. & S. CO.		NO. REQ'D: 1 PER		
TIME TO COMPLETE DATE ORDERED: 11-1-78 DATE SHIPPED: 1-2-79 DATE RECEIVED: 1-2-79		PART NO. M051-00A40 - A010		
NAME: M. KIMURA TITLE: MGR. PHONE: / / FAX: / /	QTY: COMMENTS:	FIRE BALL CLASSIC PLAFIATED WIRING SCHEMATIC		

FROM	PIN	WIRE
A2J4-8	1	50
A2J4-1	2	50
A2J4-14	3	12
A2J4-2	4	PHK
A2J4-15	5	23
A2J4-16	6	34
A2J4-17	7	35
A2J4-21	8	47
A2J4-11	9	60
A2J4-12	10	20
A2J4-13	11	62
A2J4-14	12	85
A2J4-15	13	91
A2J4-16	14	95
A2J4-17	15	97
A2J4-18	16	98
A2J4-19	17	82
A2J4-20	18	19
A2J4-21	19	20
A2J4-22	20	21
A2J4-23	21	22
A2J4-24	22	40
A2J4-25	23	40
A2J4-26	24	70

INSERT TO BACK CAB.
PLUG



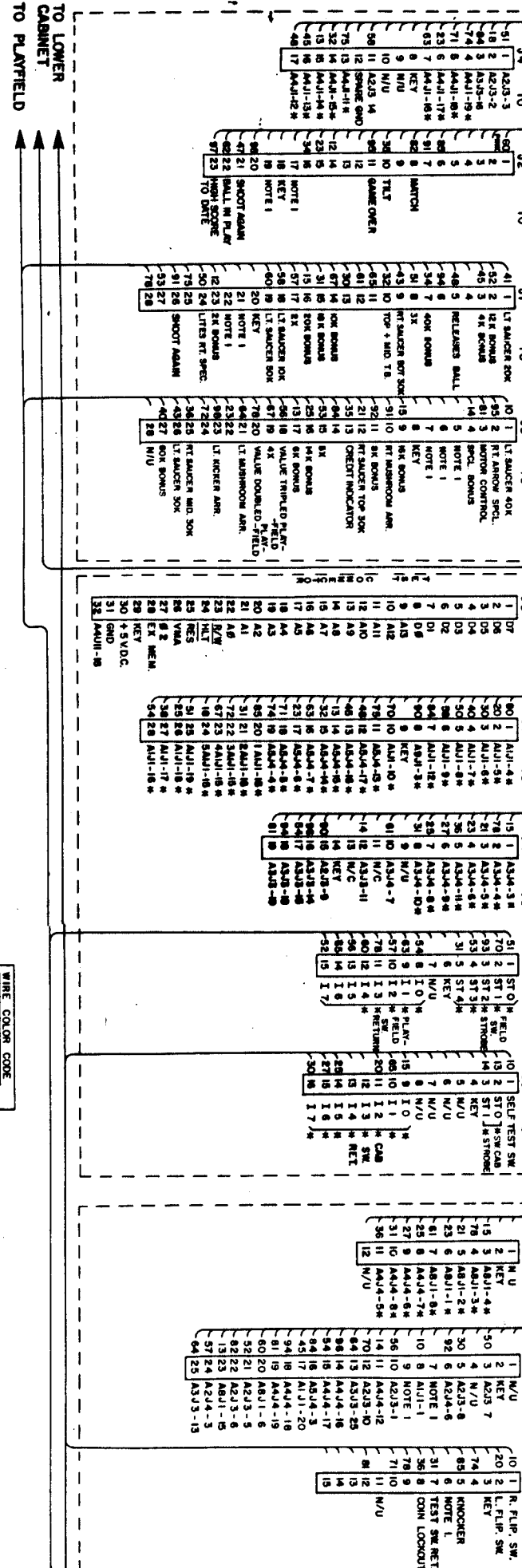
TO	FROM	WIRE
A2J4-4	1	40
A2J4-5	2	40
A2J4-6	3	40
A2J4-7	4	40
A2J4-8	5	40
A2J4-9	6	40
A2J4-10	7	40
A2J4-11	8	40
A2J4-12	9	40
A2J4-13	10	40
A2J4-14	11	40
A2J4-15	12	40
A2J4-16	13	40
A2J4-17	14	40
A2J4-18	15	40
A2J4-19	16	40
A2J4-20	17	40
A2J4-21	18	40
A2J4-22	19	40
A2J4-23	20	40
A2J4-24	21	40
A2J4-25	22	40
A2J4-26	23	40
A2J4-27	24	40

TO	FROM	WIRE
A2J4-4	1	40
A2J4-5	2	40
A2J4-6	3	40
A2J4-7	4	40
A2J4-8	5	40
A2J4-9	6	40
A2J4-10	7	40
A2J4-11	8	40
A2J4-12	9	40
A2J4-13	10	40
A2J4-14	11	40
A2J4-15	12	40
A2J4-16	13	40
A2J4-17	14	40
A2J4-18	15	40
A2J4-19	16	40
A2J4-20	17	40
A2J4-21	18	40
A2J4-22	19	40
A2J4-23	20	40
A2J4-24	21	40
A2J4-25	22	40
A2J4-26	23	40
A2J4-27	24	40

LAMP DRIVER A5

MPU A4

VOLTAGE REGULATOR / SOLENOID



- NOTES:
1. THESE PINS ARE RESERVED FOR FUTURE USE.
 2. WIRE COLOR ARE SHOWN FOR ALL CONNECTOR.
 3. * INDICATES AID TEST POINT.

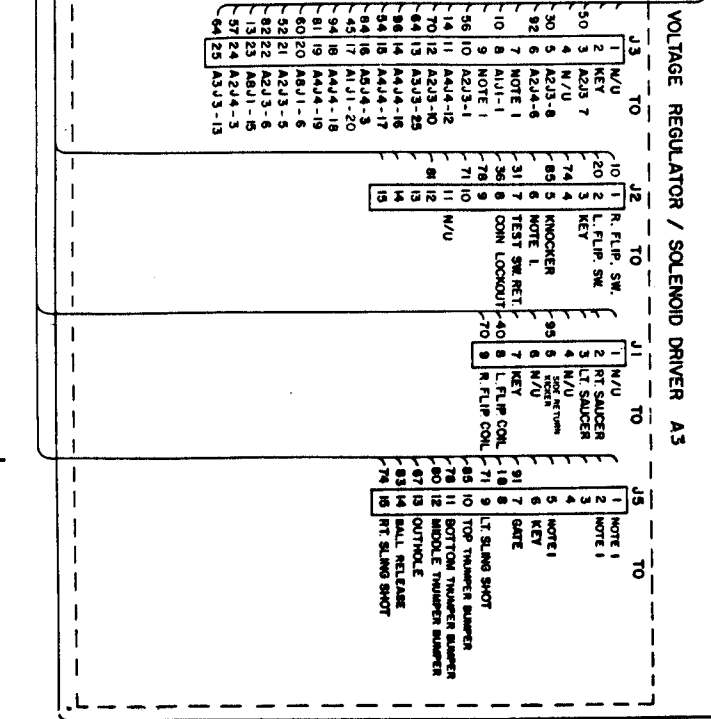
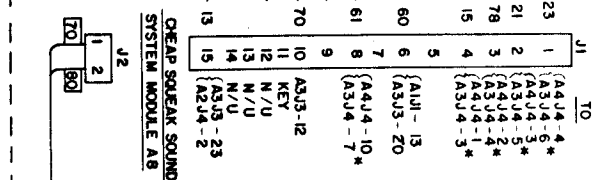
WIRE COLOR CODE

- 1-RED
- 2-BLUE
- 3-YELLOW
- 4-BROWN
- 5-WHITE
- 6-BROWN
- 7-BLACK
- 8-BLACK
- 9-BLACK
- 10-NO TRACE
- 11-FIRST NUMBER = BODY
- 12-COLOR
- 13-SECOND NUMBER = BODY
- 14-NO TRACE
- 15-SECOND COLOR = BODY
- 16-NO TRACE
- 17-NO TRACE
- 18-NO TRACE
- 19-NO TRACE
- 20-NO TRACE
- 21-NO TRACE
- 22-NO TRACE
- 23-NO TRACE
- 24-NO TRACE

EXAMPLE:

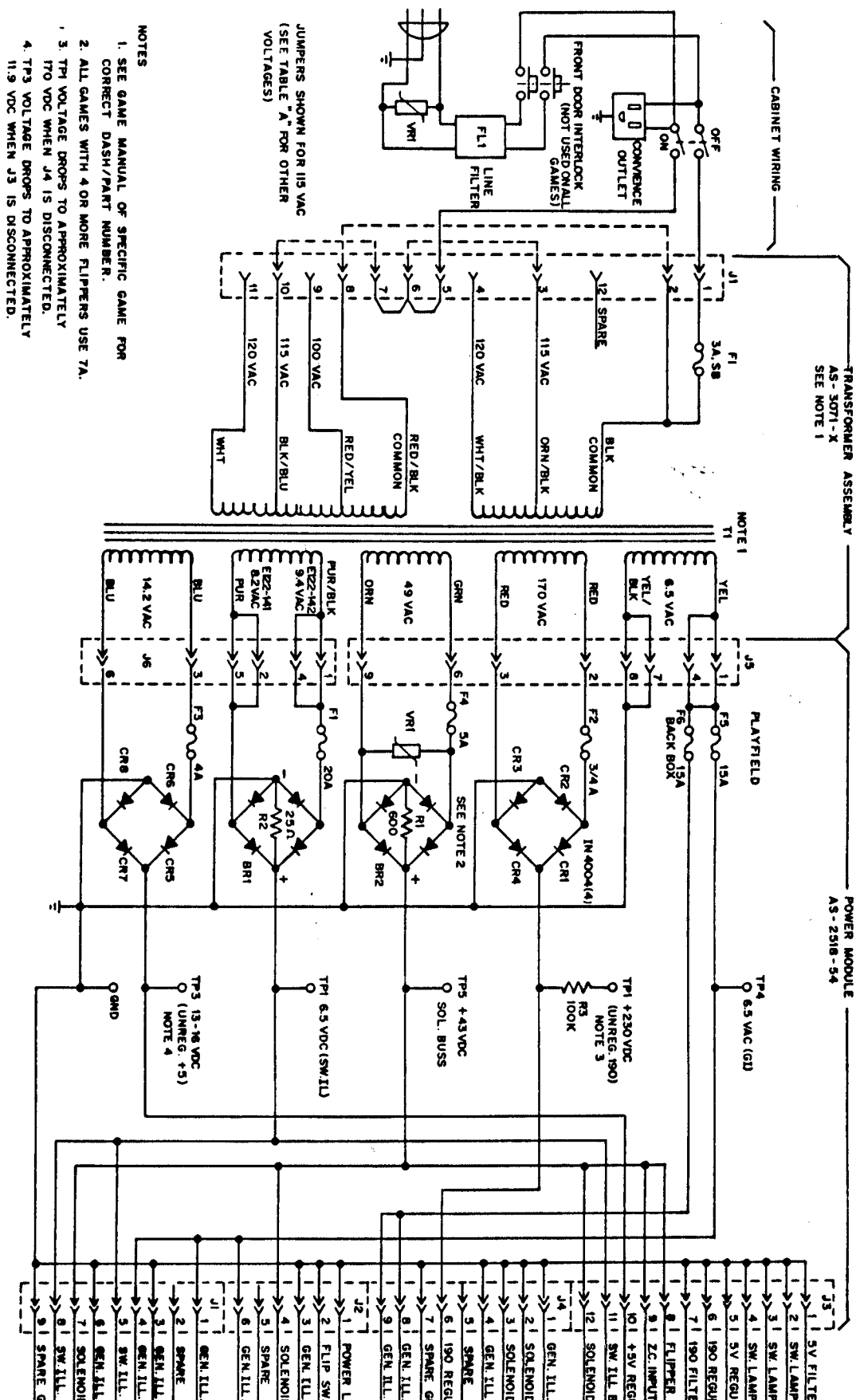
- 50 - WHITE
- 51 - WHITE RED

PROJECT NAME	DO NOT KILL ONE
DATE	11/11/11
DESIGNED BY	M. KONOPKA
WIRE	WIRE
FILE	FILE

[illegible]

TRANSFORMER POWER ASSEMBLY
AS-2877-X
SEE NOTE 1

POWER MODULE
AS-2918-94



PRODUCT ENG: A. AARSTAD

DO NOT SCALE DRAW

DATE: 5/5/84

SCHEMATIC DWG
POWER MODULE
A080-91616-A000

1 PER

AS-2877-X
SEE NOTE 1

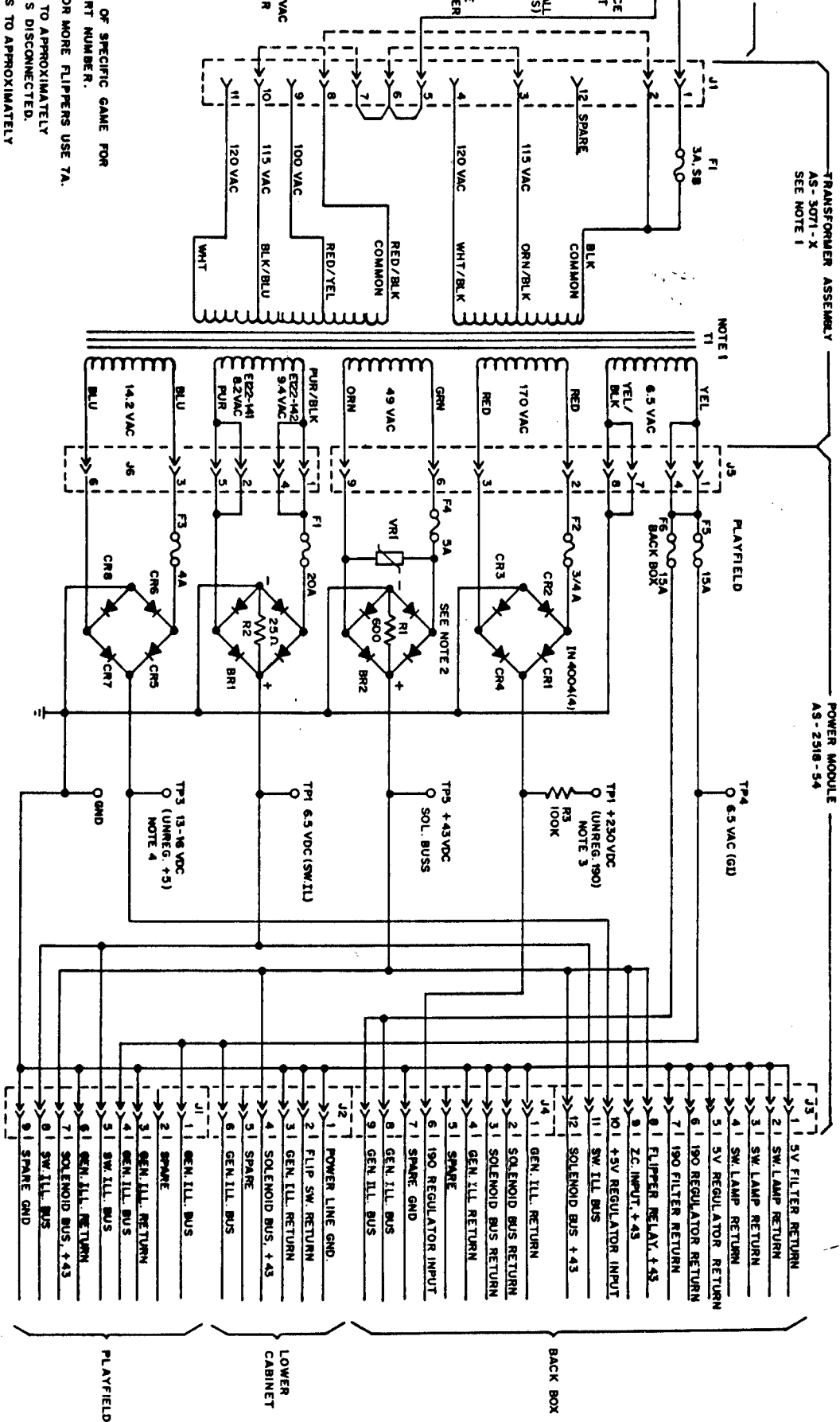
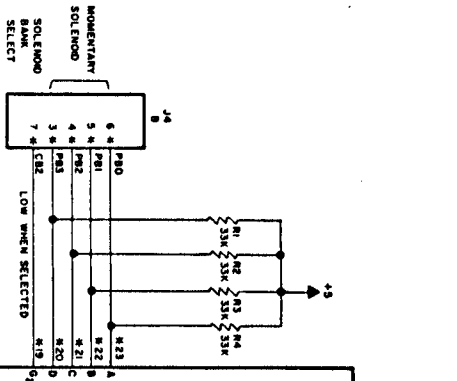


TABLE "A"

2-8, 3-8, 7-10
2-8, 4-8, 7-11
4-8, 7-9
4-8, 7-11

[illegible]



NOTES:

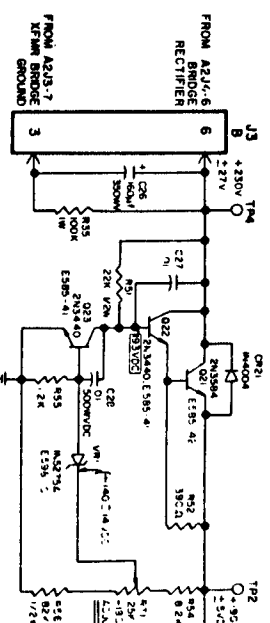
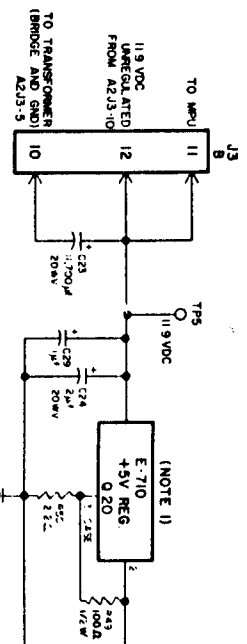
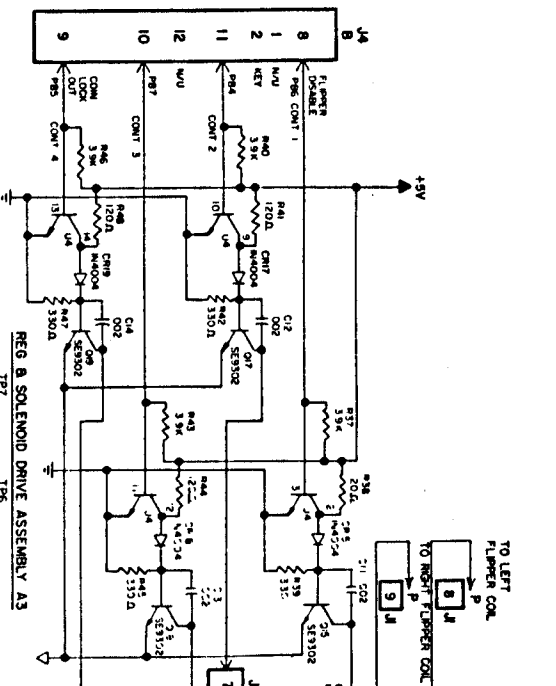
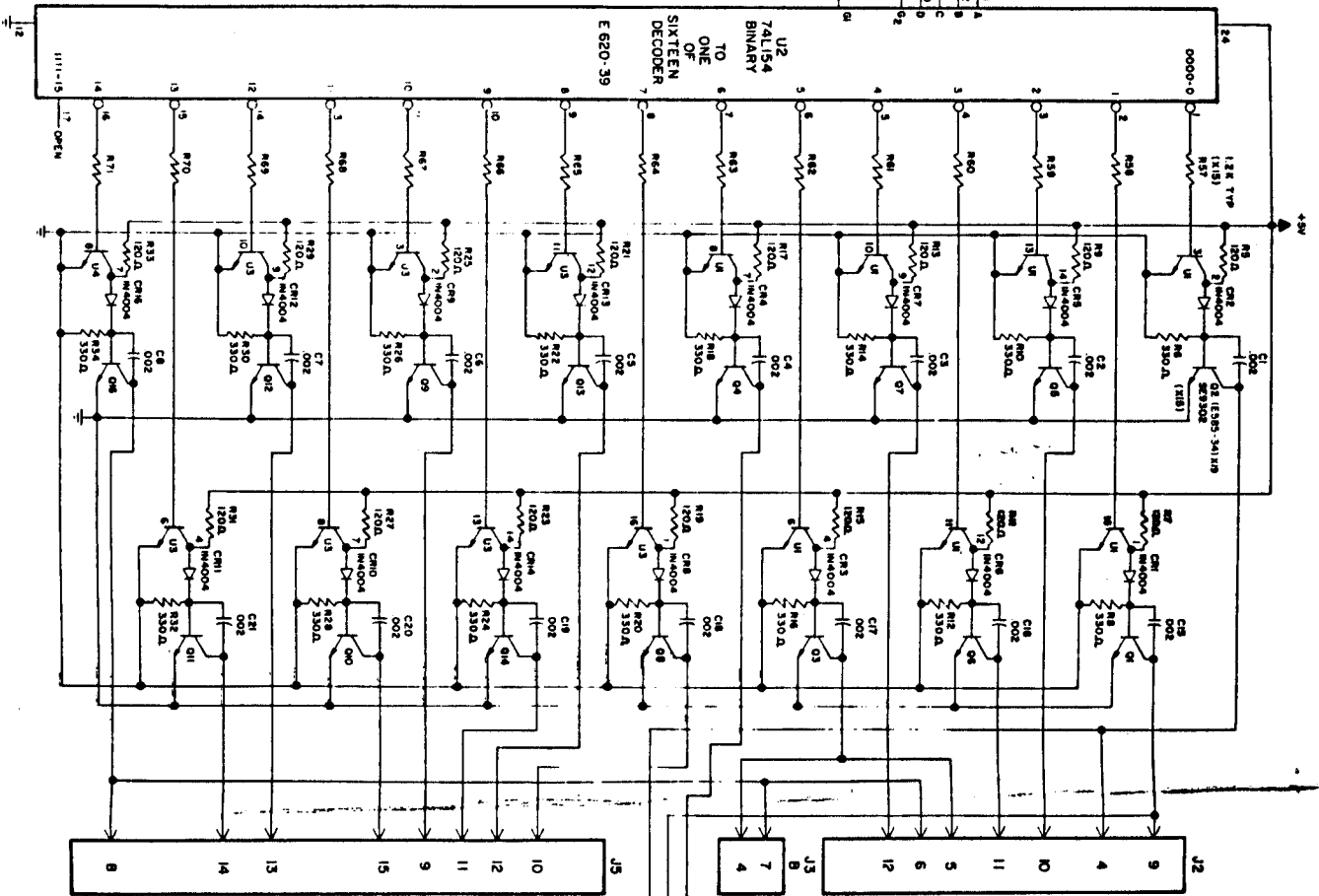
- 1 E 710 LAMBDA LAS 1405 NATIONAL LM323K FAIRCHILD 780503K
- 2 J1-KK156-9 PIN KEY PIN 7
- 3 J2-KK156-15 PIN KEY PIN 3
- 4 J3-KK156-25 PIN KEY PIN 2
- 5 J4-KK156-12 PIN KEY PIN 2
- 6 J5-KK156-15 PIN KEY PIN 6
- 7 * PREFIX ALL REFERENCE DESIGNATIONS WITH "A3"
- 8 "U1", "A3", "3" PINS 5 AND 15 ARE GROUNDED
- 9 VOLTAGES SHOWN ARE FOR A GAME-UP CONDITION
- 10 "U1", "U3" AND "U4" ARE CA-5081(6681)
- 11 * INDICATES A/D TEST POINT

CONNECTOR CODE

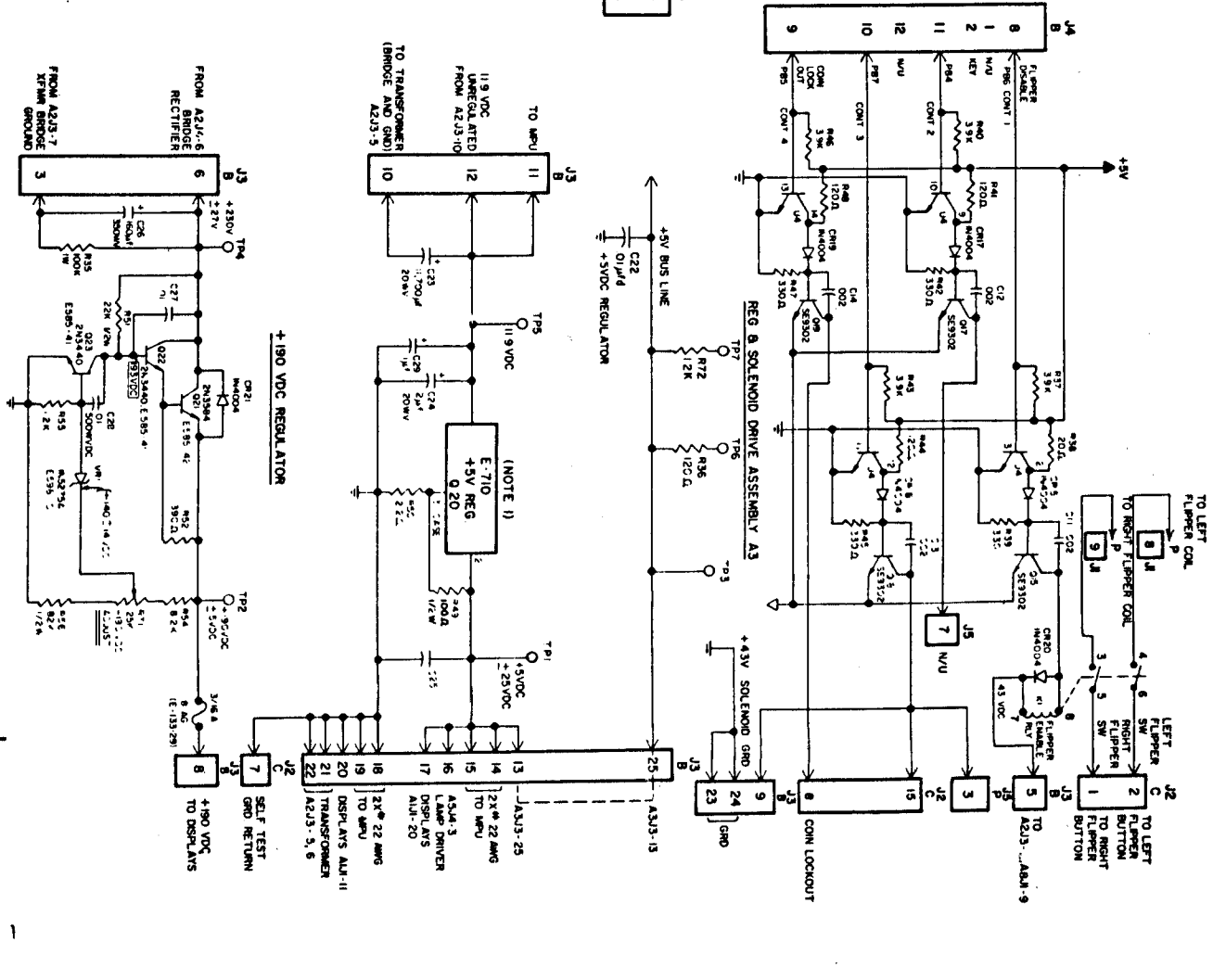
- C ROUTE TO CABINET CONN
- B ROUTE TO BACK BOX CONN
- P ROUTE TO PLAYFIELD CONN

LAST NUMBER USED

- R72 N/U C9 C10
- C29 N/U C20
- C821 N/U
- VRI



COMPONENT	VALUE	UNIT
R1	10K	Ω
R2	10K	Ω
R3	10K	Ω
R4	10K	Ω
R5	10K	Ω
R6	10K	Ω
R7	10K	Ω
R8	10K	Ω
R9	10K	Ω
R10	10K	Ω
C1	100K	Ω
C2	100K	Ω
C3	100K	Ω
C4	100K	Ω
C5	100K	Ω
C6	100K	Ω
C7	100K	Ω
C8	100K	Ω
C9	100K	Ω
C10	100K	Ω
U1	74154	IC
U2	74154	IC
U3	74154	IC
U4	74154	IC
J1	100K	Ω
J2	100K	Ω
J3	100K	Ω
J4	100K	Ω
J5	100K	Ω
J6	100K	Ω
J7	100K	Ω
J8	100K	Ω
J9	100K	Ω
J10	100K	Ω
J11	100K	Ω
J12	100K	Ω
J13	100K	Ω
J14	100K	Ω
J15	100K	Ω
J16	100K	Ω
J17	100K	Ω
J18	100K	Ω
J19	100K	Ω
J20	100K	Ω
J21	100K	Ω
J22	100K	Ω
J23	100K	Ω
J24	100K	Ω
J25	100K	Ω
J26	100K	Ω
J27	100K	Ω
J28	100K	Ω
J29	100K	Ω
J30	100K	Ω
J31	100K	Ω
J32	100K	Ω
J33	100K	Ω
J34	100K	Ω
J35	100K	Ω
J36	100K	Ω
J37	100K	Ω
J38	100K	Ω
J39	100K	Ω
J40	100K	Ω
J41	100K	Ω
J42	100K	Ω
J43	100K	Ω
J44	100K	Ω
J45	100K	Ω
J46	100K	Ω
J47	100K	Ω
J48	100K	Ω
J49	100K	Ω
J50	100K	Ω
J51	100K	Ω
J52	100K	Ω
J53	100K	Ω
J54	100K	Ω
J55	100K	Ω
J56	100K	Ω
J57	100K	Ω
J58	100K	Ω
J59	100K	Ω
J60	100K	Ω
J61	100K	Ω
J62	100K	Ω
J63	100K	Ω
J64	100K	Ω
J65	100K	Ω
J66	100K	Ω
J67	100K	Ω
J68	100K	Ω
J69	100K	Ω
J70	100K	Ω
J71	100K	Ω
J72	100K	Ω
J73	100K	Ω
J74	100K	Ω
J75	100K	Ω
J76	100K	Ω
J77	100K	Ω
J78	100K	Ω
J79	100K	Ω
J80	100K	Ω
J81	100K	Ω
J82	100K	Ω
J83	100K	Ω
J84	100K	Ω
J85	100K	Ω
J86	100K	Ω
J87	100K	Ω
J88	100K	Ω
J89	100K	Ω
J90	100K	Ω
J91	100K	Ω
J92	100K	Ω
J93	100K	Ω
J94	100K	Ω
J95	100K	Ω
J96	100K	Ω
J97	100K	Ω
J98	100K	Ω
J99	100K	Ω
J100	100K	Ω



SOLENOID DRIVER VOLTAGE
REGULATOR SCHEMATIC

24 / MIDWAY MFG. CO.

PLANT NO.	001
-----------	-----

FIREBALL CLASSIC 0M40

SCR	DESCRIPTION	JACK	PIN	WIRE COLOR
058058	RT. ARROW SPTL.	J3	2	95
016**	BALL IN PLAY	J2	22	62
024	BALL RELEASE	J1	5	48
08**	BONDS 2K	J1	23	12
035**	BONDS 4K	J1	3	45
049**	BONDS 6K	J3	17	13
054**	BONDS 8K	J3	11	93
09**	BONDS 10K	J1	14	67
034**	BONDS 12K	J1	52	52
048**	BONDS 14K	J3	16	25
055**	BONDS 16K	J3	9	15
010	BONDS 18K	J1	15	31
011	BONDS 20K	J1	16	15
026	BONDS 40K	J3	7	34
032	BONDS 60K	J3	27	40
053	BONDS SPTL.	J3	4	14
052	CREDIT INDICATOR	J3	13	35
033	GAME OVER BACK BOX	J2	11	95
015	HIGH SCORE BACK BOX	J2	23	97
037	LT. KICKER ARROW	J3	23	98
023	LT. KICKER ARROW	J2	8	82
037	WITCH	J3	3	81
060	MOTOR CONTROL	J3	10	91
056	RT. MISSROOM ARROW	J3	21	64
042	LT. MISSROOM ARROW	J1	18	58
014	SAUCER LT. 10K	J1	1	41
029	SAUCER LT. 20K	J3	26	43
036	SAUCER LT. 30K	J1	1	10
057	SAUCER LT. 40K	J3	1	60
012	SAUCER LT. 50K	J1	19	43
027	SAUCER RT. BOT. 30K	J3	9	36
038	SAUCER RT. MID. 30K	J3	25	21
050	SAUCER RT. TOP 30K	J2	12	47
	SPEA BACK BOX	J2	21	91
	SPEA PLAYFIELD	J2	26	50
01	SPTL. RT. LITE	J1	24	32
022**	THREE RUMPER TOP & MID.	J2	10	35
047	TILT	J1	17	57
013	2K	J1	8	51
028	3K	J1	19	67
044	4K	J3	15	53
051	5K	J3	20	78
046	VALUE DOUBLE	J3	18	56
	VALUE TRIPLE	J3		

NOTE: ** INDICATES MCR 106-1 ALL OTHERS ARE -2N5060 OR EQUIVALENT.

FIREBALL CLASSIC SOLAROID DRIVER LOCATIONS A5

TRANSISTOR	DESCRIPTION	JACK	PIN	WIRE COLOR
014	BUMPER BOTTOM	J5	11	78
013	BUMPER MIDDLE	J5	12	80
08	BUMPER TOP	J5	10	85
019	COIN BOX LOCKOUT	J2	8	36
	FLIPPERS			
017	GATE	J5	7	91
016	SIDE RETURN KICKER	J1	5	95
012	KICKER	J2	5	85
011	OUTSOLE	J5	13	67
02	BALL PYLENSE	J5	14	83
01	SAUCER LT.	J1	3	
09	SAUCER RT.	J1	2	
010	SLINGSHOT LT.	J5	9	71
	SLINGSHOT RT.	J5	15	74

NOTE: TRANSISTORS ARE SE9302 OR EQUIVALENT.

WIRE COLOR CODE
1 - RED -R-
2 - BLUE -BL-
3 - YELLOW -Y-
4 - GREEN
5 - WHITE -W-
6 - BROWN -BR-
7 - ORANGE -O-
8 - BLACK -B-
9 - GRAY
0 - NO TRACER
1 - FIRST NUMBER-BODY COLOR
2 - SECOND NUMBER-TRACER COLOR
EXAMPLE: 50 - WHITE
51 - WHITE-RED