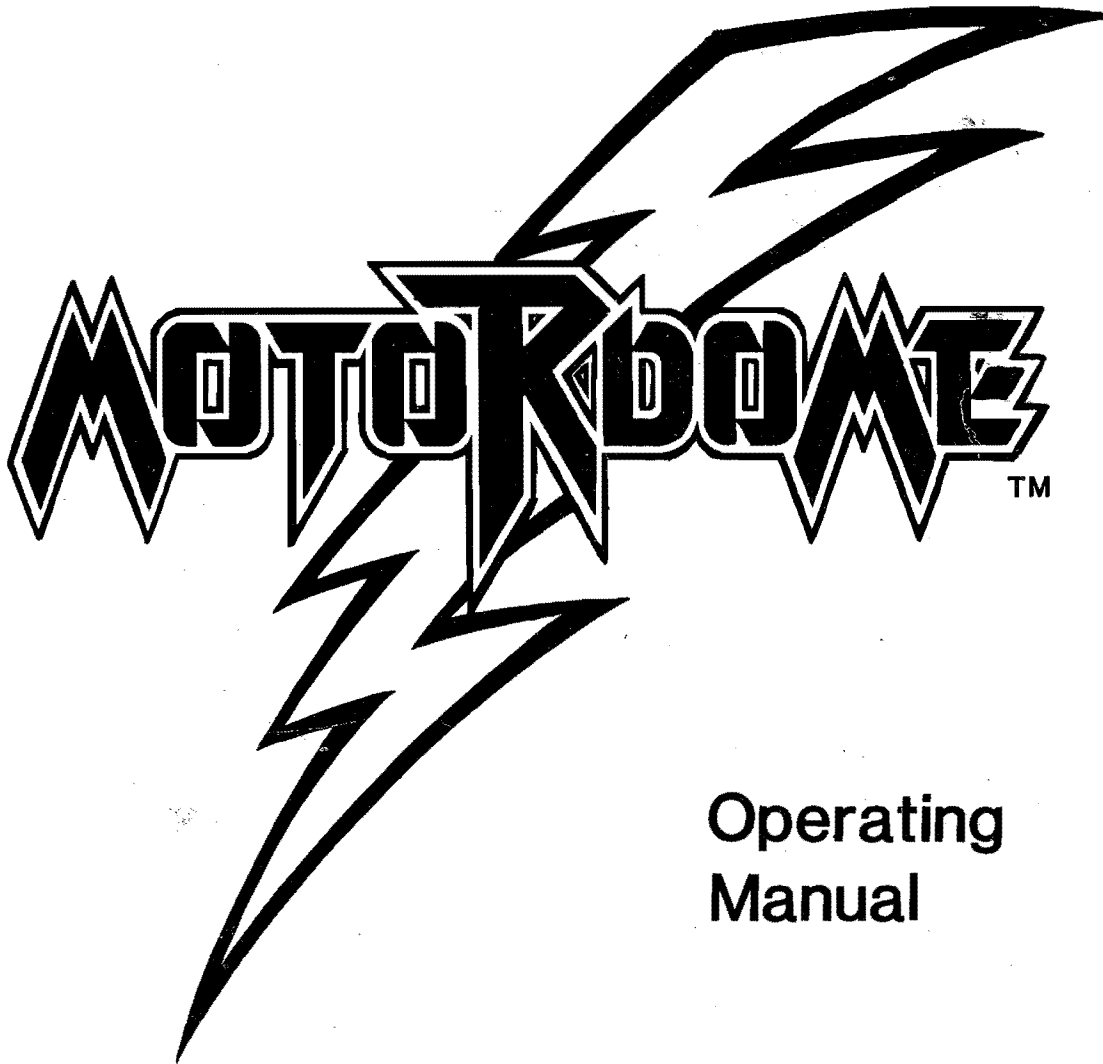


GAME NO. 0E14

Form No. 0E14-00300-0100



Operating Manual

Bally/MIDWAYTM MFG. CO.

10601 W. Belmont Ave. Franklin Park, Illinois 60131
Telephone (312) 451-9200



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 installed and used in accordance with the instruction 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
T.M.

Invites You To Use

**OUR TOLL FREE NUMBER 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 or Pinball - Continental U.S. 800-323-7182

Bally/MIDWAY
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Printed in U.S.A.

MOTORDOME

TABLE OF CONTENTS

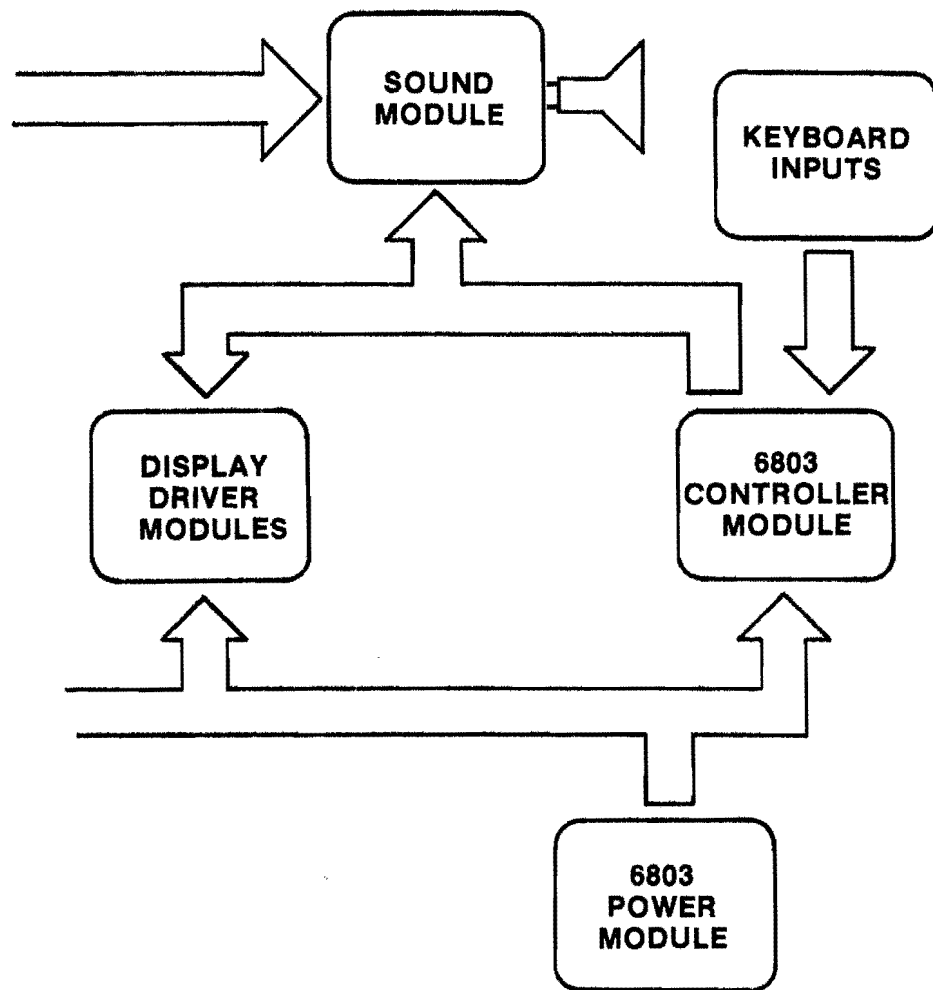
SECTION 1 INSTALLATION AND GENERAL GAME OPERATION INSTRUCTIONS

DESCRIPTION	PAGE
I. INSTALLATION	1-1
II. GENERAL GAME OPERATION	1-1
III. TAILORING & TESTING THE GAME	1-2
IV. KEYBOARD GAME ADJUSTMENTS	1-3
V. RECOMMENDED 3 & 5 BALL REGISTER OPTION SETTINGS	1-5
VI. TROUBLESHOOTING ON LOCATION	1-6
VII. SOLENOID & SWITCH IDENTIFICATION TABLES	1-9
VIII. ROUTINE MAINTENANCE ON LOCATION	1-10
IX. SWITCH ASSEMBLY ADJUSTMENTS	1-10
X. SERVICE HINTS	1-10
XI. MOTORDOME FEATURE OPERATION AND SCORING	1-14

SECTION 2 COMPONENT LAYOUTS, SCHEMATICS & WIRING DIAGRAMS

DESCRIPTION	PAGE
6803 PINBALL MODULE P.C.B. - COMPONENT LAYOUT	2-1 - 2-2
6803 PINBALL MODULE P.C.B. - SCHEMATIC	2-3
PINBALL TURBO CHEAP SQUEAK P.C.B. - COMPONENT LAYOUT	2-4 - 2-6
PINBALL TURBO CHEAP SQUEAK P.C.B. - SCHEMATIC	2-7
DUAL DISPLAY P.C.B. - COMPONENT LAYOUT	2-8 - 2-10
DUAL DISPLAY P.C.B. - SCHEMATIC	2-11
6803 CONTROL BOARD P.C.B. - COMPONENT LAYOUT	2-12 - 2-15
6803 CONTROL BOARD P.C.B. - SCHEMATIC	2-16 - 2-17
WIRING DIAGRAM - CABINET	2-18
WIRING DIAGRAM - PLAYFIELD	2-18
WIRING DIAGRAM - BACKBOX	2-19
EPROM LIST	INSIDE BACK COVER

BLOCK DIAGRAM—ELECTRONIC PINBALL GAME



DETACHING OF PIN-GAME BACK BOX

When the back box is in an up-right position and the 3/8" hold-down bolts are removed, the back box can be removed from the main cabinet by lifting the right corner of the back box (about 3/4") and pulling it slightly towards you. Now both hinges are disengaged and the back box can be removed.

SECTION 1

Installation and General Game Operation Instructions

I. INSTALLATION

First, bolt legs to cabinet. Second, feed line cord between back box and cabinet then lift the back box and secure with bolts. Insert the smaller ball (15/16" dia.) into the ball tilt assembly, and adjust the bracket so the ball will roll free to the contact switch blade, if the front of the cabinet is raised.

On all games these are certain items that should be checked after shipment.

1. Check that all cable connectors are completely seated on printed circuit assemblies.
2. Check that all cables are clear of moving parts.
3. Check for wires that may have been disconnected.
4. Check switches for loose solder or other foreign material that may have come loose in shipment and could cause shorting of contacts.
5. Check coils for proper soldering. Cold solder connections may not show up in factory inspection, but vibration in shipment may break contact.
6. Check that fuses are firmly seated and making good contact.
7. Check and adjust the plumb bob tilt on the left side of the cabinet.
8. Check wiring of the plug on the transformer to correspond to location voltage.
 - 115 VAC 2-8, 3-6, 7-10
 - 120 VAC 2-8, 4-6, 7-11
 - 220 VAC 4-8, 7-9
 - 240 VAC 4-8, 7-11
9. Place ball into playfield by outhole (or balls if the game requires more than one ball).
10. Plug in line cord.

II. GENERAL GAME OPERATION

Move the ON/OFF switch at the bottom right front corner of the cabinet to "ON" position. The game will play a power-up sequence and reset the drop targets. If any switches are stuck they will be displayed at this time. After a short delay "1-4 can play" will indicate that the game is ready to play. The game should accept the coin and post the appropriate credits. Pressing the credit button on the cabinet will cause the outhole kicker to serve the ball to the shooter alley. A game-up sequence is played to announce play-readiness.

Each time the credit button is pressed it posts one player and the credits are reduced by one.

Shooting the ball initiates play.

The game awards all points earned by the player. If a spinner is turned and scoring when the ball hits a target, the spinner and the target scores are awarded.

When the ball enters the outhole, the bonus score is added to the total score. The player-up and/or ball in play is advanced one position. The outhole kicker serves the ball to the shooter alley and play is resumed. This continues until each player has played the allowable number of balls per game. At this time a random Match number appears. If the number is the same as the last two digits in a player's score, a free game is awarded.

Extra balls won during the course of the game are played immediately after the player's regular ball enters the outhole. The player-up and/or ball in play are not advanced for extra score before the game serves the extra ball for play.

Slamming the machine results in loss of the game. This causes all feature lights to go out, the game goes "dead" and a time delay occurs. This occurs anytime either one of the slam switches make contact. This is to discourage unnecessary abuse to the game. After the delay, "1 to 4 can play" is displayed followed by the power-up sound sequence.

Any number of slam switches could be installed by the operator, to meet his individual requirement. The switch should be adjusted to have approximately 1/16" gap between the contacts. The weighted blade should be adjusted to attain the desired sensitivity. Decreasing the gap between contacts will make the switch more sensitive. Opening the gap will reduce sensitivity.

If at the end of the game either the "High Score to Date" is beaten or if the score is over 10,000,000 free games will be awarded according to the "High Score to Date" register setting.

Tilting the game results in loss of a ball. Bonus points are not scored. The flippers, thumper bumpers, etc. go 'dead'. The purpose of the tilt penalty is to discourage the player from jostling the machine in an attempt to prolong play. Game action becomes normal after the ball kicker assembly serves the ball to the shooter alley.

NOTE: These are general instructions. Therefore, if a spinner or Drop Target is not used on your specific pinball game, please disregard any operating instructions related to these devices.

III. TAILORING & TESTING THE GAME

INTRODUCTION

We at Bally/Midway are very proud to introduce our new system which not only provides more information to the operator but it also communicates with the player thru the use of alphanumericics.

It was our aim to design a system which could be used without a manual. This will come to light the moment you press the Self-test button and the displays come to life with their messages of assistance. This allows you to change game features, awards and threshold settings and monitor specific special awards, game percent and income just by reading what is displayed. The registers are now described with useful titles such as "Book-keeping Data" or "Self-Testing."

If you've ever changed the replay thresholds on a machine and you forgot to change the replay card because you were distracted by a customer, listen to this: "It will never happen again!" For when you change this replay threshold to 2,000,000 in "Percent Options" the corresponding message; "First Replay at 2,000,000" will be displayed on Game Over.

OPERATION

The keyboard is located on the right inside wall of the game near the front door. The cable is long enough, so that once the keyboard is removed, it may be operated from outside the machine. **Note:** The keypad is mounted with a 1/4" Hex screw for shipping purposes.

1. Press the Test button located on the front door. This tells the processor to do the following;
 - A. It checks the switches wired in parallel with the keypad. If any switches are closed the game automatically jumps to Stuck Switch Test and displays a stuck switch message.
 - B. If there were no stuck switches you will be welcomed with "Bally's Testing Is Easy As ABC."
2. When appropriate heading appears on backglass display, press "Enter" on keypad once.
Within each heading, there are categories which are operator selectable. When the appropriate category appears on the backglass display, press "Enter" once to access that category.
3. Set your registers with keypad.
4. Press "Enter" again to advance to next category setting. Press "CLR" to re-start Self-Test. Press "Game" to lock-in option settings.

STEPPING THROUGH

To choose a category quickly once the Test Mode has been selected just use the "A" button to step to the desired category. If you pass by the category you desired, use the "B" button to back-up to the appropriate position. Once you read the category desired, press the "ENTER" button to select that topic. The display will now show the first item in that category.

Again, use the "A" and "B" buttons to quickly step to the item you wish to look at or change. The "A" button allows you to step to the end of a category and then out to the next category. The "B" button allows you to step backwards in the same manner. **Please note:** When in the Self-Test category, the display will cycle automatically from one test to the next. Because the "A", "B", and "C" buttons are used for different functions in this category. They cannot be used to step from one test to another properly. To exit a test in this category just press the ENTER button & step to the next test.

IV. GAME REGISTERS & OPTIONS

BOOKKEEPING DATA

Total Coins	Number of coins thru chutes 1, 2, & 3
Game Percent	Percentage of replays
Coins Chute 1	# of coins thru chute 1
Coins Chute 2	# of coins thru chute 2
Coins Chute 3	# of coins thru chute 3
Bonus Credits	Number of Bonus Credits Given
Total Plays	Number of plays both paid and replays
Total Replays	Number of awarded games
Service Meter	Total # of service credits
Game Credits	Current game credits—Enter 0 thru 5 Added to Service Meter Not added to current Game Credits.
Special Meter	Total # of Playfield Specials awarded
Clear Booking	To clear bookkeeping press "65" then "Enter"

SELF-TESTING

Single Lamp	Steps one lamp at a time, and Connector I.D. Press "A" to advance, "B" to backup, and "C" to cycle
All Lamps	All lamps light alternately, 1st "A" phase then "B"
Display	Steps thru alphanumeric character set
Solenoid	Fires one driver at a time, and Displays Driver and Connector I.D.
Single Solenoid	Fires one driver at at time. Press A for same solenoid B for next
Sound	Plays game sounds
Game Rom I.D.	Displays your Rom or Roms I.D.
Switch Test	Displays stuck switch by description PRESS TEST BUTTON ON DOOR TO EXIT SWITCH TEST

PERCENT DATA VALUES

Game Percent	Percentage of replays
Total Plays	Number of plays both paid and replays
Game Time	Total number of minutes
Total Replays	Total number of replays
Threshold 1	# of times the first threshold was beaten
Threshold 2	# of times the second threshold was beaten
Threshold 3	# of times the third threshold was beaten
HiScore Beaten	Total number of times the high score was beaten
Free Balls	# of extra balls that were awarded
Bolt Special	# of Specials awarded by the Bolt Target

PERCENT OPTIONS

Threshold 1	Enter 0 thru 9,999,999; sets award level and display
Threshold 2	Enter 0 thru 9,999,999; sets award level and display
Threshold 3	Enter 0 thru 9,999,999; sets award level and display
Highest Score	Enter 0 thru 9,999,999; sets the HiScore replay level

BASIC OPTION VALUES

Credit Limit	Enter 1 thru 40
Balls per Game	Enter 1 thru 5
Tresh Mode	Enter 0 thru 3; 0=0, 1=Points, 2=Extra Ball, 3=Replay
Special Mode	Enter 0 thru 3; 0=0, 1=Points, 2=Extra Ball, 3=Replay
HiScore Mode	Enter 0 thru 3; 0=0, 1=1 Replay, 2=2 Replays, 3=3 Replays
Sound Mode.	Enter 0 thru 3; 0=Chimes w/o background, 2=Sounds w/o background 1=Chimes with background, 3=Sounds with background
German Prize	German Meter
Match Option	Enter 0 or 1; 0 disables match, 1 enables match
Credit Display	Enter 0 or 1; 0=No credits displayed, 1=Displayed credits
No Limit Replays	Enter 0 or 1; 0=Only 1 award per game, 1=More than 1 per game
Free Play	Enter 0 or 65; 0=Coins, 65=Free Play
Slingshot	Enter 0 or 1; 0=No slingshots, 1=slingshots
Tilt Warning	Enter 0 thru 3; 0=No warning, 1=1, 2=2, 3=3

FEATURE OPTIONS

Reset Factory	Enter 65 for factory selected scores and features
Center Arrow	Enter 0 thru 7; This entry controls the number of spotted letters in "MILLION" by the center arrow target
	Skill Levels
	I II III
	1= 1 spot 1 spot 1 spot
	2= 2 spots 1 spot 1 spot
	3= 2 spots 2 spots 1 spot
	4= 3 spots 2 spots 1 spot
	5= 3 spots 2 spots 2 spots
	6= 3 spots 3 spots 2 spots
	7= 3 spots 3 spots 3 spots
Left Spinner	Enter 0 thru 1; 0=No Memory 1=Memory
D.T. Timer	Enter 0 thru 3; For Drop Target Reset Control (Level III) 0= 9 sec. 1=15 sec. 2=21 sec. 3=27 sec.
Level 3 Timer	Enter 0 thru 3; For reset timer control on feature lights 0=10 sec. 1=20 sec. 2=20 sec. 3=30 sec.
Level 1 Gate	Enter 0 thru 4; 0=Conservative 1=Moderate 2=Medium 3=Easy 4=Liberal
Level 2 Gate	Enter 0 thru 4; 0=Conservative 1=Moderate 2=Medium 3=Easy 4=Liberal
Top Lanes	Enter 0 thru 1; 0=No memory on R.P.M. 1=Memory
Right Ramp	Enter 0 thru 3; "Spot" Light
	Skill Level
	I II III
	0=spots at 5K 5K 5K
	1=spots at 3K 5K 5K
	2=spots at 1K 3K 5K
	3=spots at 500 1K 3K
Bolt Targets	Enter 0 thru 1; 0=No Memory on the bolt targets 1=Memory
Center Targets	Enter 0 thru 1; 0=No Memory on the center target 1=Memory

PRICING OPTIONS

Chute 1 Options	
XX coin for yy credit;	Coins (xx) will flash first. Enter 1 thru 99 coins. Then credits (yy) will flash. Enter 1 thru credit limit. Then coins will flash again either press Enter if the values are correct or repeat the data entry.
Chute 1 Bonus;	Enter 0 thru 40; 0=No Bonus Credit 1 thru 40 sets the number of credits at which 1 Bonus Credit will be awarded.
Chute 2 Options	
XX coin for yy credit;	Coins (xx) will flash first. Enter 1 thru 99 coins. Then credits (yy) will flash. Enter 1 thru credit limit. Then coins will flash again either press Enter if the values are correct or repeat the data entry.
Chute 2 Bonus;	Enter 0 thru 40; 0=No Bonus Credit 1 thru 40 sets the number of credits at which 1 Bonus Credit will be awarded.
Chute 3 Options	
XX coin for yy credit;	Coins (xx) will flash first. Enter 1 thru 99 coins. Then credits (yy) will flash. Enter 1 thru credit limit. Then coins will flash again either press Enter if the values are correct or repeat the data entry.
Chute 3 Bonus;	Enter 0 thru 40; 0=No Bonus Credit 1 thru 40 sets the number of credits at which 1 Bonus Credit will be awarded.

Example:

To set Coin Chute 1 for 3 credits/2 Coins with no credits on the first coin;

Enter 02 Coin for 03 Credit Chute

Chute 1 Bonus 00

To set it for 3 Credits/2 Coins with one credit delivered on the 1st coin and 2 credits delivered on the second.

Enter 01 Coin for 01 Credit

Chute 1 Bonus 02

If all 3 Chute Options and Bonus Registers are set the same, then all Chutes will work "together."

V. RECOMMENDED 3 & 5 BALL OPTION SETTINGS

REPLAYS

	3-BALL	5-BALL
Special Mode	3	3
Match Option	1	1
High Score Mode	3	3
1st replay at	2,000,000	4,000,000
2nd replay at	5,000,000	7,000,000

X-BALL

	3-BALL	5-BALL
Special Mode	2	2
Match Option	0	0
High Score Mode	0	0
1st Extra Ball at	2,000,000	4,000,000
2nd Extra Ball at	5,000,000	7,000,000

NOVELTY

	3-BALL	5-BALL
Special Mode	1	1
Match Option	0	0
High Score Mode	0	0

HIGH GAME TO DATE (reset periodically)

3-BALL 6,500,000 5-BALL 8,000,000

MOTORDOME OPTION SETTINGS

FEATURE OPTIONS

REGISTER	3-BALL	5-BALL
CENTER ARROW	5	3
LEFT SPINNER	1	1
DROP TARGET TIMER	2	1
LEVEL 3 TIMER	2	1
LEVEL I GATE	2	2
LEVEL II GATE	2	2
TOP LANES	1	1
RIGHT RAMP	2	1
BOLT TARGETS	0	0
CENTER TARGETS	1	0
In Basic Options:		
SLINGSHOT	1	1
TILT WARNING	1	1

VI. TROUBLESHOOTING ON LOCATION

SYMPTOM: WON'T POWER UP

Game does not play power-up tune when power is turned on. General illumination is present.

ACTION:

- A. Check Fuses.
- B. Turn power OFF. Open back box. Locate light emitting diode (LED) on Control Board.
- C. Turn power ON. LED must flash 9X to indicate that the module is good. Correct sequence is flash-pause-flash and then seven more flashes and LED goes out.
- D. If LED does not come on or does not flash, or flashes, but less than 9X, turn off power. Check fuses. If fuses are good, replace Control Board.

CAUTION: Replacement Control Board must have same Part Number or incorrect operation will result! See Parts List for Control Board.

Turn power ON.

- E. If game is correct, it is now ready for play. If game is not correct, contact the Bally-Midway service department.

SYMPTOM: LAMPS

One or some switched lamps always ON or not all feature lamps light during play.

ACTION:

- A. With power ON, open front door. Select SELF TEST-Lamp Tests with keyboard. If game is correct **all** feature lamps flash ON and OFF.
- B. Carefully raise playfield or open back box to gain access to lamps.
- C. Replace bulbs that do not flash.
- D. If game is correct, it is now ready for play.
- E. If game is not correct, turn power OFF. Replace Control Board. Turn power ON and repeat A.
- F. If game is correct, it is now ready for play. If game is not correct, contact Bally-Midway service department.

SYMPTOM: DISPLAYS

- I. Display digits improper on **one or several**, but less than all Display Driver Module(s). Improper: One or several segments always OFF, digits mottled or several segments or digit(s) always ON.

ACTION:

- A. With power ON, open front door. Select SELF TEST-Display Test with keyboard. If the game is correct, each digit on each Display displays the count 0 through 9 and alphabet in all 7 digit positions. Note defective Display Driver modules.
- B. Turn power OFF.

WARNING: High Voltage is supplied to the Display Driver Modules, from the Power Module. Wait 30 seconds for High Voltage to Bleed Off.

- C. Replace Display Driver module(s). Turn power ON. Repeat A.
- D. If game is correct, it is now ready for play. If game is not correct contact Bally-Midway service department.

- II. **All** displays improper. Improper: Digit(s) always on or off/segment(s) always on or off, all displays.

ACTION:

- A. With power ON, open front door. Select SELF TEST-Display Test with keyboard. If the game is correct, each digit on each Display displays the count 0 through 9 and alphabet in all 7 digit positions. Note defective Display Driver modules.
- B. Replace Control Board. Turn power ON. Repeat A.

CAUTION: Replacement Control Board must have same Part Number or incorrect operation will result! See Parts List for Control Board.

- C. If game is correct, it is now ready to play. If game is not correct, contact Bally-Midway service department.

- III. One or several displays always off.

ACTION:

- A. With power ON, open front door. Select SELF TEST-Display Test with keyboard. If the game is correct, each digit on each Display displays the count 0 through 9 and alphabet in all 7 digit positions. Note defective Display Driver modules.
- B. Turn power OFF.
- C. Replace Display Driver module(s). Turn power ON. Repeat A.
- D. If game is correct, it is now ready for play. If game is not correct contact Bally-Midway service department.

SYMPTOM: SOLENOIDS

I. One or more solenoids do not pull-in during course of game.

ACTION:

- A. With power ON, open front door. Select SELF TEST-Solenoid Test with keyboard.
- B. If game was correct, each solenoid would be energized. The Solenoid name appears with the Driver Q Number and connector jack and pin numbers. (**NOTE:** If most of the Playfield Solenoids DO NOT operate, check the Playfield Fuse to see if it is blown. It is generally found near the Flipper Assemblies.)
- C. Carefully lift the playfield (or open the back box) to gain access to the solenoid. Turn power OFF. Inspect the solenoid.
- D. If a lead is broken off, repair. Repeat A & B. If game is correct, it is now ready for play. If solenoid wiring was correct, turn power OFF.
- E. Replace Control Board. See CAUTION NOTE.

CAUTION: Replacement Control Board must have same Part Number or incorrect operation will result! See Parts List for Control Board.

- F. Repeat A & B. If game is correct, it is not ready to play. If game is not correct, turn power OFF.
- G. Replace Sound Module A8.
- H. Repeat A & B. If game is correct, it is now ready to play. If game is not correct, contact the Bally-Midway service department.
- I. Solenoid(s) always energized. **NOTE:** If impulse solenoids (ball ejects, slingshots, thumper-bumpers, etc.) are energized continuously, they are subject to damage. Limit troubleshooting to one minute with power ON, followed by **five minutes with power OFF**. Repeat as necessary. Replace damaged solenoids. (**NOTE:** When troubleshooting Playfield Solenoid Circuits, be advised that a constantly energized Solenoid (i.e. Thumper-Bumper) will blow the Playfield Fuse in a few seconds. To avoid replacing the Fuse repeatedly, try to isolate the faulty Solenoid Circuit as soon as the game power switch is flipped ON.)

ACTION:

- A. With power ON, open front door. Select SELF TEST-Solenoid Test with keyboard.
- B. If game was correct, each solenoid would be energized. The Solenoid name appears with the Driver Q Number and connector jack and pin numbers. (**NOTE:** IF most of the Playfield Solenoids DO NOT operate, check the Playfield Fuse to see if it is blown. It is generally found near the Flipper Assemblies.)
- C. Carefully lift the playfield (or open the back box) to gain access to the solenoid. Turn power OFF. Inspect the solenoid.
- D. If a lead is broken off, repair. Repeat A & B. If game is correct, it is now ready for play. If Solenoid wiring was correct, turn power OFF.
- E. Replace Control Board.

CAUTION: Replacement Control Board must have same Part Number or incorrect operation will result! See Parts List on Control Board.

- F. Repeat A & B. If game is correct, it is now ready to play. If game is not correct, turn power OFF.
- G. Replace Sound Module A8.
- H. Repeat A & B. If game is correct, it is now ready to play. If game is not correct contact the Bally-Midway service department.

SYMPTOM: NO SOUND

ACTION:

- A. With power ON, open front door. Select SELF TEST-Sound Test with the keyboard.
- B. Turn volume control clockwise to Max.
- C. If correct, sound will be heard. If incorrect, try seating speaker lead connector (J2) and input connector (J1).
- D. If correct, sound will be heard. If incorrect, contact the Bally-Midway service department.

SYMPTOM: SWITCHES

Feature (Drop Targets, Stand-up, etc.) does not score.

ACTION:

- A. With power ON, open front door. Select SELF TEST-Switch Test with the keyboard.
- B. If the game is correct, "All Switches Open" is displayed. Otherwise, the name of the switch(es) will be displayed with jack and pin numbers.
- C. Carefully lift the playfield. Locate the switch assembly identified from the display. Visually inspect the switch assembly. If the contacts are stuck, re-gap them to 1/16". Repeat A & B. If the game is correct, it is now ready to play. If the game is not correct, turn power OFF.
- D. Replace Control Board.

CAUTION: Replacement Control Board must have same Part Number or incorrect operation will result! See Parts List for Control Board.

- E. Repeat A & B. If game is correct, it is now ready to play. If game is not correct, contact the Bally-Midway service department.

GAME: MOTORDOME PINBALL & FUTURE GAMES

SUBJECT: 6803 CONTROL BOARD POWER UP TEST SEQUENCE

The following is an abbreviated self-test routine for the 6803 Control Board used in Motordome and future pinball games.

- 1st Flash — (U6) Determine if the internal RAM is good. (6803)
- 2nd Flash — (U2) Checks to see if the program ROM is good (27128)
- 3rd Flash — (U3) Checks to see if the program ROM is good (27128)
- 4th Flash — (U4) Checks the C-MOS RAM. (6116P-3)
- 5th Flash — (U8) Tests PIA0 (6821)
- 6th Flash — (U7) Tests PIA1 (6821)
- 7th Flash — (U6) Checks the internal display interrupt generator (6803)
- 8th Flash — (U12 & U8) Verifies operation of the phase B switched ill. voltage. NOTE: F5 fuse on the Power Module provides the phase B signal to the Control Board. (U12, 14584) (U8, 6821)
- 9th Flash — (U1, U11 & U12) Verifies operation of the Phase A switched ill. voltage. NOTE: F4 fuse on the Power Module provides the phase A signal to the Control Board. (U1, 6803) (U11, 4011) (U12, 14584)

The following is an abbreviated self-test routine for the 6809 Sound Board used in Motordome and future pinball games.

- 1st Flash — (U7) Determine if the external ROM is good.
- 2nd Flash — (U6) Checks to see if the external RAM is good.
- 3rd Flash — (U8) Checks the PIA. (68B21)

MOTORDOME

SOLENOID IDENTIFICATION TABLE

SELF ☐ SOLENOID IDENTIFICATION
TEST # SEQUENCE

- 1 THUMPER BUMPER LEFT
- 2 THUMPER BUMPER MIDDLE
- 3 THUMPER BUMPER RIGHT
- 4 SLINGSHOT LEFT
- 5 SLINGSHOT RIGHT
- 6 SAUCER LEFT
- 7 SINGLE DROP TARGET
- 8 SAUCER RIGHT
- 9 BRIGHT LIGHTS TOP
- 10 BRIGHT LIGHTS MIDDLE
- 11 BRIGHT LIGHTS LEFT
- 12 BRIGHT LIGHTS RIGHT
- 13 RESERVED FOR GERMAN
- 14 OUTHOLE
- 15 KNOCKER
- 16 LEFT GATE
- 17 RIGHT GATE
- 18 MIDDLE GATE
- 19 FLIPPER (BACKBOX)

SWITCH ASSEMBLY IDENTIFICATION TABLE

SWITCH ☐
SELF TEST # DESCRIPTION
SEQUENCE

- 1 SHOOTER LANE
- 2 SINGLE DROP TARGET
- 3 SAUCER LEFT
- 4 SAUCER RIGHT
- 5 FLIPPER LEFT (CABINET)
- 6 CREDIT (CABINET)
- 7 FLIPPER RIGHT (CABINET)
- 8 OUTHOLE
- 9 COIN RIGHT (DOOR)
- 10 COIN LEFT (DOOR)
- 11 COIN MIDDLE (DOOR)
- 12 OUTLANE LEFT
- 13 OUTLANE RIGHT
- 14 SLAM
- 15 TILT (CABINET)
- 16 LEFT ALLEY
- 17 SPINNER LEFT
- 18 RAMP SWITCH
- 19 NOT USED
- 20 RETURN LANE LEFT
- 21 RETURN LANE RIGHT
- 22 TOP LANE "R"
- 23 TOP LANE "P"
- 24 TOP LANE "M"
- 25 THUMPER BUMPER LEFT
- 26 THUMPER BUMPER MIDDLE
- 27 THUMPER BUMPER RIGHT
- 28 SLINGSHOT LEFT
- 29 SLINGSHOT RIGHT
- 30 CENTER TARGET
- 31 LEFT ARROW TARGET
- 32 RIGHT ARROW TARGET
- 33 TARGET #1 (BOTTOM)
- 34 TARGET #2
- 35 TARGET #3
- 36 TARGET #4 (TOP)

NOTE: SEQUENCE NUMBERS SHOWN HERE ARE USED AS AN AID IN LOCATING FAULTY SOLENOID OR SWITCH USING DRAWING ON FOLLOWING PAGE.

VECTOR SHOWING FOR LEFT EJECT SAUCER.
VECTOR SHOWING FOR RIGHT EJECT SAUCER.
BALL SHOULD EXIT AS SHOWN.

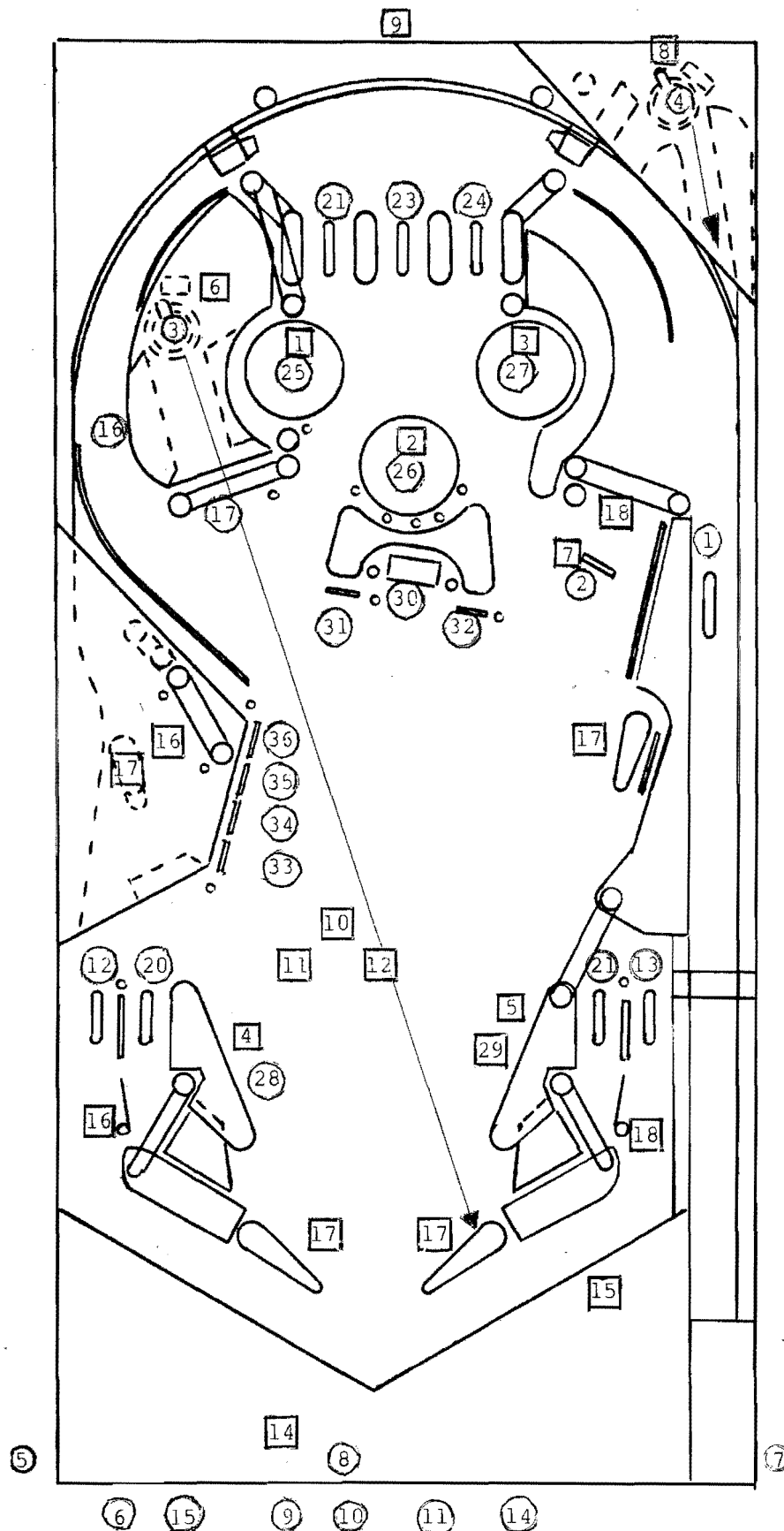


FIGURE 1

19 - NOT USED

VIII. ROUTINE MAINTENANCE ON LOCATION:

After successful completion of the Self Diagnostic Test Procedure, set the game up for play. Exercise each roll-over, thumper bumper, slingshot, etc., by hand until each switch assembly on the playfield has been checked for proper operation. If actuating a switch assembly results in intermittent or no response, clean contacts by gently closing them on a clean business card or piece of paper and wiping until they wipe clean. Re-gap, if necessary, to 1/16". Do not burnish or file Gold Plated Switch Contacts.

IX. SWITCH ASSEMBLY ADJUSTMENTS:

GENERAL:

All switch assemblies consist of leaf springs, contacts, separators, plastic tubing and screws to hold them to the mounting surface. Before attempting to adjust a switch assembly, make sure that these screws are tight. If not, tighten screw closest to the contact end of the leaf spring first. This will prevent the assembly from being secured in such a manner that the leaf springs tend to fan out. In general, all leaf springs are adjusted for a 1/16" gap in the open position and .010" over-travel or wipe in the closed position. All contacts should be in good condition. Unless otherwise instructed, they should be dry or non-lubricated. All contacts should be free of dust and dirt. Contacts, with the exception of the flipper button switch assemblies are plated to resist corrosion. Filing or burnishing breaks the finish and encourages corrosion. Clean by closing the contacts over a clean piece of paper (e.g. a lint free business card) and wiping gently until the contacts are clean. For the flipper button switch assemblies **ONLY**: Tarnish can be removed with a contact file followed by burnishing tool. Severely pitted contacts must be placed and adjusted only when they are found to be a source of game malfunction.

X. SERVICE HINTS:

The Bally playfield has an improved tuff-coat finish with excellent wearing properties. Life expectancy of the playfield as well as play appeal, can be extended by periodic cleaning.

DO: Bally recommends you clean your playfield with Wildcat #125 (Wildcat Chemical Co. 1349 East Seminary Drive; Fort Worth, Texas 76115; Phone 1-817/924-8321). Wildcat #125 is a combination cleaner and polish. Bally has tried and tested this product and found it to be very effective. If Wildcat #125 is not available, Bally suggests you ask your distributor to order it. Inspect and hand polish the ball in a clean cloth. A chipped ball must be replaced. It can ruin the finish on the playfield in a short period of time.

DON'T: Use water in large quantities, highly caustic cleaners, abrasive cleaners and cleaning pads on the playfield, or allow a wax or polish build up. Waxes yellow with age and spoil appeal.

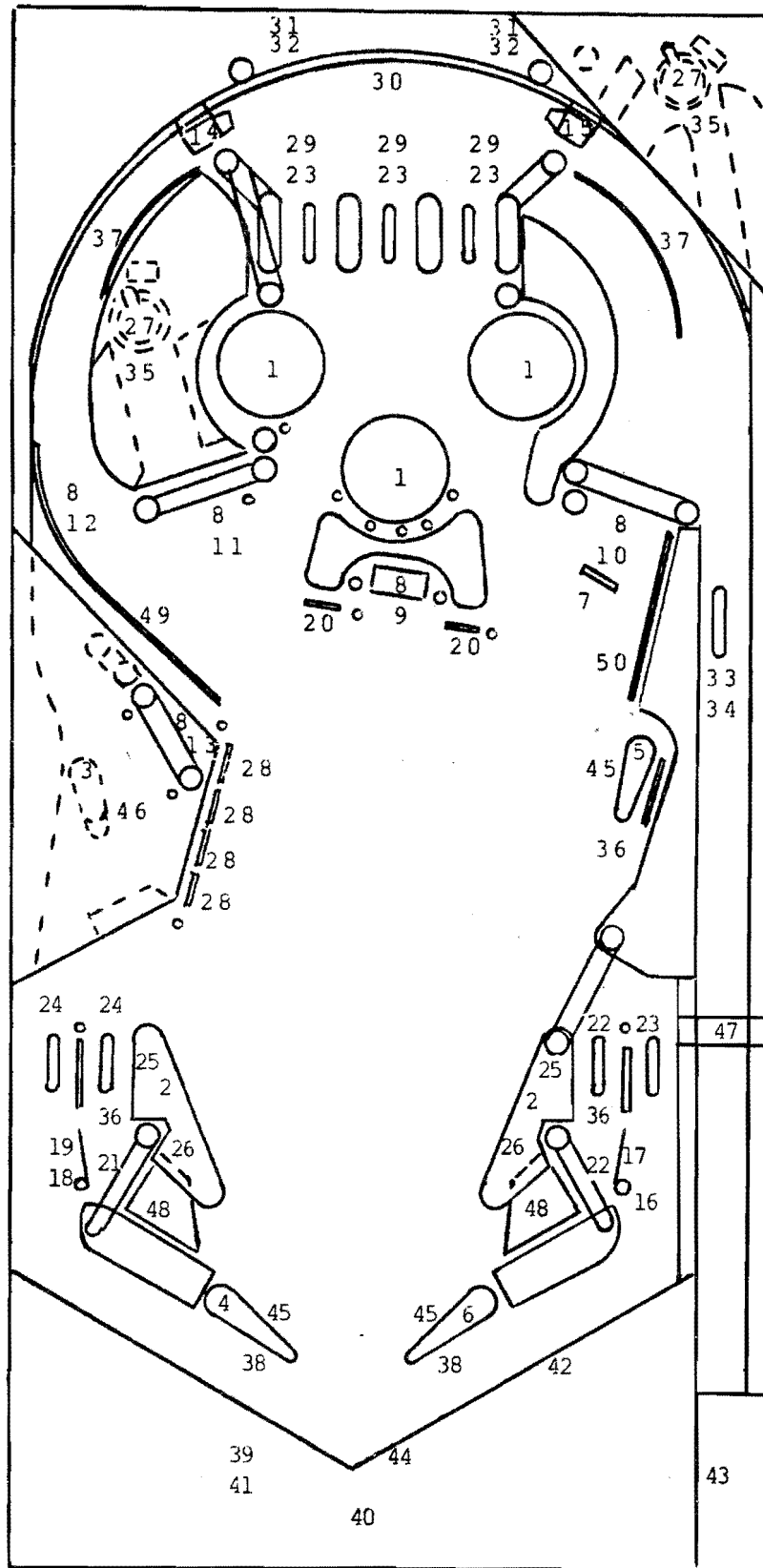


FIGURE II

**OE14 MOTORDOME
PANEL TOP PARTS (Without Ramps)**

1. THUMPER BUMPER ASSY.	A967-00053-0000
2. SLINGSHOT KICKER ASSY.	A967-00059-0000
3. FLIPPER ASSY. SINGLE SW. LF.	A070-00022-0200
4. FLIPPER ASSY. DOUBLE SW. LF.	A070-00023-0200
5. FLIPPER ASSY. SINGLE SW. RT.	A070-00022-0100
6. FLIPPER ASSY. DOUBLE SW. RT.	A070-00023-0100
7. DROP TARGET ASSY. (SINGLE L.H.)	AE14-00019-0000
8. SPINNER SWITCH ASSY.	A360-00245-0000
9. SPINNER & CENTER GATE ASSY.	AE14-00027-0000
10. SPINNER & GATE ASSY. (NO TARGET LF.)	AE14-00025-0000
11. SPINNER & GATE ASSY. (RIGHT)	AE14-00024-0000
12. WIRE GATE ASSY.	AE14-00013-0000
13. WIRE & GATE BRACKET ASSY.	A365-00093-0000
14. BALL GATE ASSY. (LEFT)	A360-00022-0000
15. BALL GATE ASSY. (RIGHT)	A360-00023-0000
16. FREE GATE RELAY ASSY.	AE34-00021-0000
17. FREE GATE WIRE FORM	0390-00110-0000
18. FREE BALL GATE ASSY.	A365-00083-0000
19. FREE GATE WIRE FORM	0A17-00106-0000
20. RED TARGET SWITCH ASSY.	AA17-00027-0000
21. GATE & WIRE ASSY. (LEFT)	AB42-00036-0000
22. GATE & WIRE ASSY. (RIGHT)	A391-00027-0000
23. WIRE ACTUATOR ASSY. (RIGHT)	A360-00216-0000
24. WIRE ACTUATOR ASSY. (LEFT)	A331-00042-0000
25. SLINGSHOT SWITCH & BRKT. ASSY.	A360-00230-0000
26. SLINGSHOT REBOUND SWITCH ASSY.	A360-00239-0000
27. BALL EJECT HOLE ASSY.	A331-00035-0000
28. YELLOW TARGET SWITCH ASSY.	A360-00603-0005
29. ROLLOVER SWITCH W/CAP ASSY.	A360-00603-0003
30. BALL GUIDE RAIL ROD	0011-00008-35XF
31. BALL GUIDE RAIL POST (NYLON)	0017-00042-0125
32. BALL GUIDE RAIL POST CAP	0017-00042-0126
33. WIRE ACTUATOR ASSY. (SHOOTER LANE)	A370-00061-0000
34. SHOOTER LANE SWITCH ASSY.	A360-00069-0000
35. BALL EJECT HOLE SWITCH ASSY.	A365-00036-0000
36. WIRE FORM 1/34 LG.	0360-00175-8400
37. WIRE FORM 6" LG.	0E34-00100-0000
38. BUFFER WIRE	0360-00175-5300
39. TOP MTG. BALL KICKER	A360-00234-0000
40. WIRE ACTUATOR ASSY.	A360-00241-0000
41. OUT HOLE SWITCH ASSY.	A360-00241-0000
42. BOTTOM ARCH	0E14-00111-00XF
43. BALL SHOOTER GAUGE	0370-00918-0300
44. BOTTOM ARCH EXTENSION	0370-00918-0300
45. MOLDED FLIPPER ASSY. (WHITE)	A967-00031-0000
46. LEFT FLIPPER & SHAFT ASSY. (BLACK)	A391-00052-0100
47. SHOOTER LANE HOOD	0967-00107-00XF
48. DROPPED BALL PROTECTOR PLATE	0E14-00100-0000
49. BALL GUIDE ASSY. (LEFT)	AE14-00017-0000
50. BALL GUIDE ASSY. (RIGHT)	AE14-00014-0000

OE14 MOTORDOME

PLASTIC RAMP PARTS

- | | |
|------------------------|-----------------|
| 1. ENTRANCE RAMP ASSY. | AE14-00038-0000 |
| 2. MAIN RAMP NETWORK | OE14-00905-0000 |

RUBBER RINGS

- | | |
|-----------------------|-----------------|
| A. RING: 3/4" | 0017-00041-0642 |
| B. RING: 1" | 0017-00041-0643 |
| C. RING: 1-1/2" | 0017-00041-0644 |
| D. RING: 2" | 0017-00041-0645 |
| E. RING: 2-1/2" | 0017-00041-0646 |
| F. RING: (YELLOW): 3" | 0017-00041-0653 |

POSTS

- | | |
|---|-----------------|
| G. POST (RED PLASTIC): 1" | 0017-00042-0588 |
| H. POST (RED PLASTIC): 1-3/16" | 0017-00042-0596 |
| J. METAL MINI POST
(W/THREADS FOR METAL) | 0365-00700-00XF |
| K. METAL MINI-POST
(W/THREADS FOR WOOD) | 0360-00732-00XF |
| L. METAL POST
(NO THREADS) | 0360-00733-00XF |

RUBBER BUMPERS FOR

- | | |
|--------------------------|-----------------|
| J & K - METAL MINI-POST | 0017-00041-0633 |
| G & H - PLASTIC RED POST | 0017-00041-0637 |
| L - METAL POST | 0017-00041-0641 |

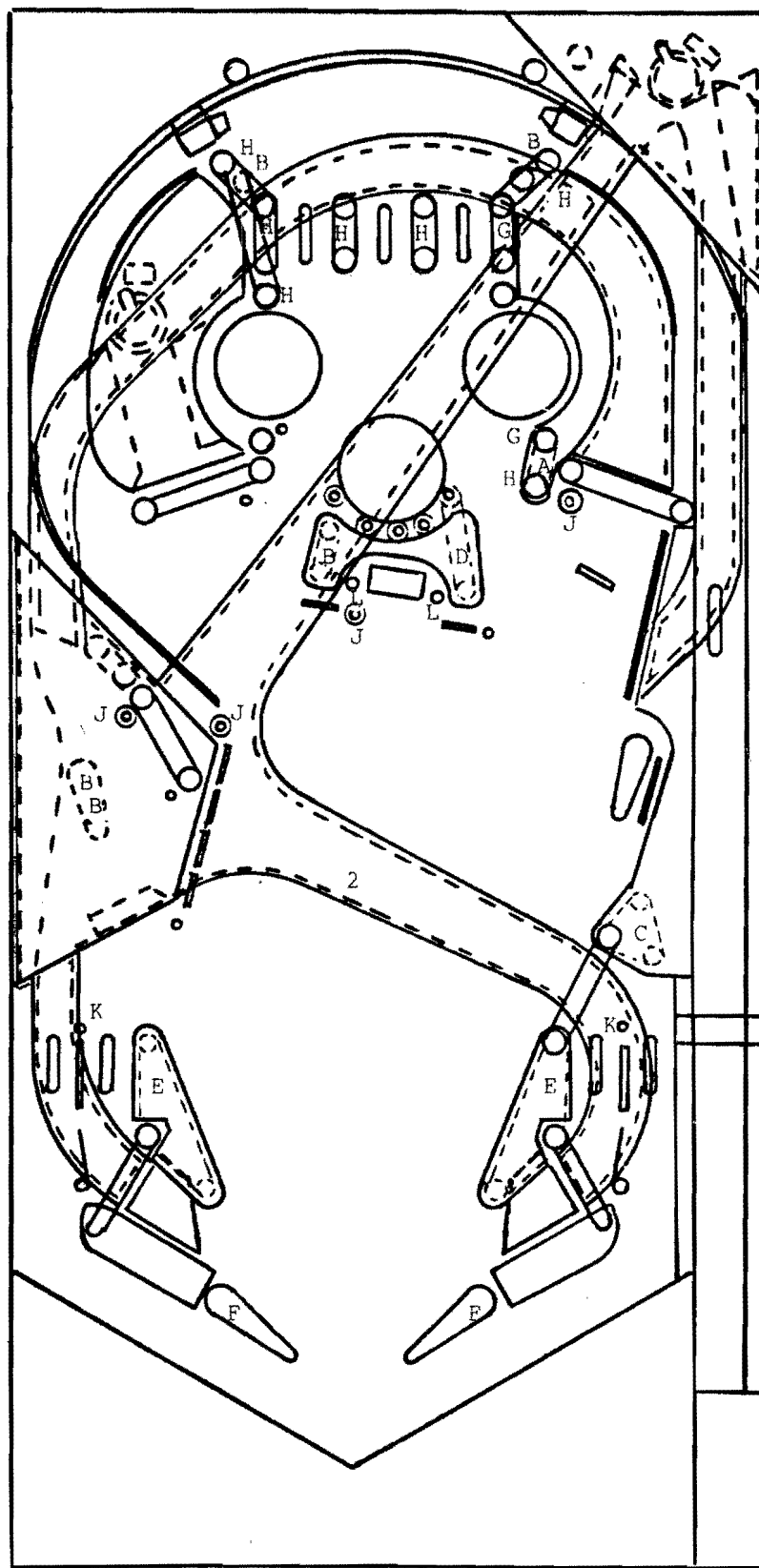


FIGURE IIa

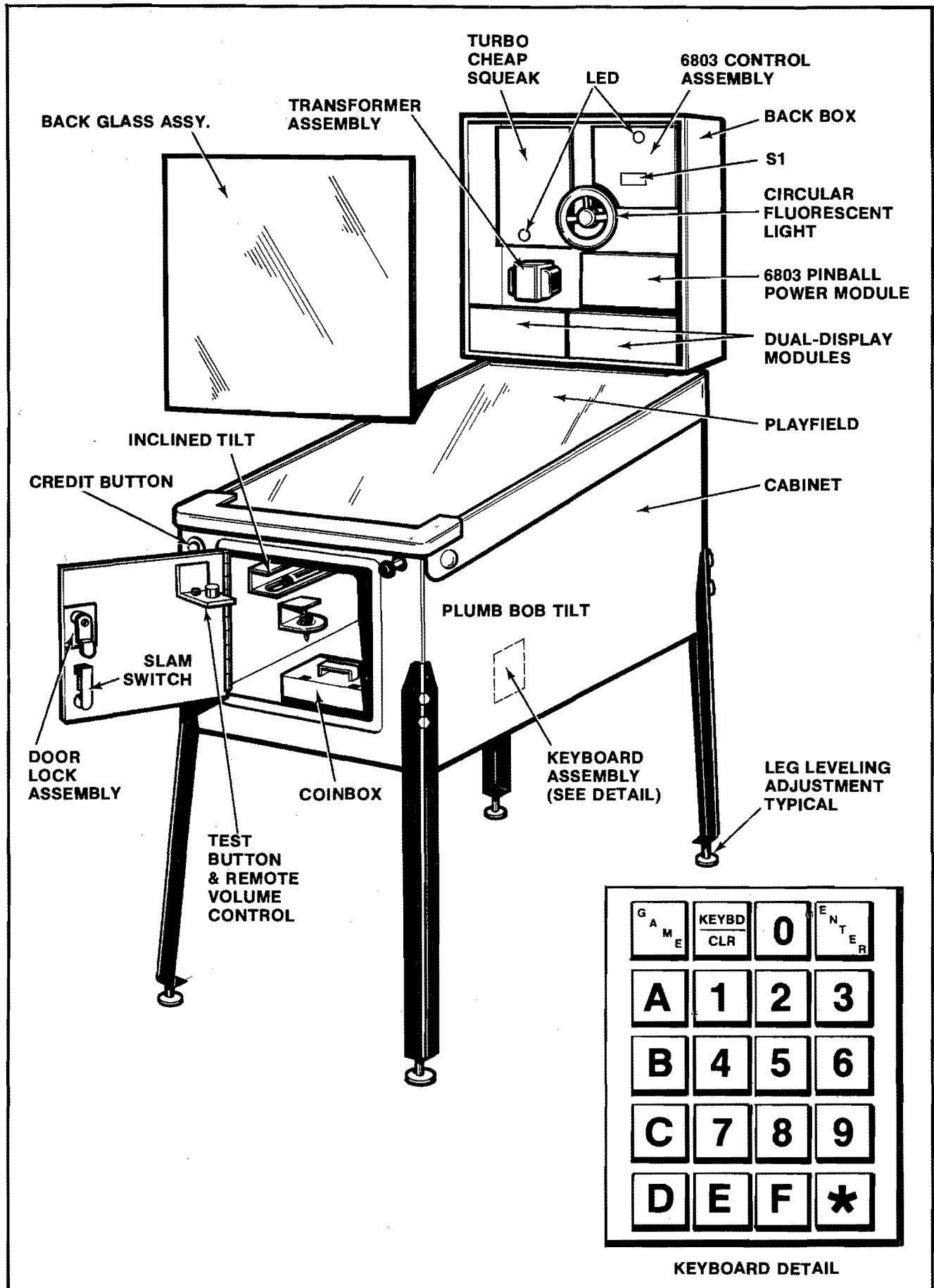


FIGURE III. ELECTRONIC PIN BALL MACHINE

XI. MOTORDOME FEATURE OPERATION AND SCORING

1. SKILL LEVEL FEATURE

*Each player sets his/her skill level as follows:

1. When the credit button is pressed, a ball is delivered to the shooter tip.
2. Each player, before shooting his/her first ball over the shooter lane switch, presses the right flipper button until the desired skill level is displayed.
3. Once the player's first ball passes over the shooter lane switch, the selected skill level is set for that player for the rest of the game.
4. The skill levels effect the game as follows:

	SKILL LEVEL I	SKILL LEVEL II	SKILL LEVEL III
PLAYFIELD SCORES	Single Value	Double Value	Triple Value
PLAYFIELD FEATURES	Easy	Medium	Hard
COMPLETING LIGHTNING BOLT TARGETS	25,000 Points	Extra-Ball	Special
PLAYER MODES	Gear-Head	Cruiser	Dome-Master

To Set Feature Options:

1. Press Self-Test button on door.
2. Press "Enter" on Keypad when "Feature Options" appears.
3. Re-press "Enter" again until appropriate register shows.
4. Press correct setting (i.e. numbers) and "Enter".

*REGISTER "Level 3 Timer" controls the length of the Timer, which resets the Playfield Lights in Skill Level III only.

RESETS PLAYFIELD LIGHTS EVERY	ENTER
10 Seconds	0
20 Seconds	1
30 Seconds	2
40 Seconds	3

2. SHOOTER LANE BONUS FEATURE

At the start of each ball:

1. 3 colored lights (2 Red & 1 Blue), located on the rider figure in the center of the playfield, will begin flashing sequentially.
2. The Shooter Lane Bonus (50,000 points) is awarded if the ball rolls over the shooter lane switch and stops the flashing lights on the color BLUE.
3. The player must shoot the ball within a certain time limit to take advantage of the Shooter Lane Bonus feature.

NOTE: Additional time is also given at the start of the first ball to allow the player to select a skill level.

3. R-P-M TOP ROLLOVER LANES & THUMPER BUMPERS FEATURES

Located at the top section of the playfield are three roll-over lane switches, identified with the illuminated letters R-P-M. Each lane awards 15,000 points when flashing and 5,000 points when unlit. As the ball rolls through a lit lane, its corresponding Thumper Bumper will light or flash. Thumper Bumpers award 100 points when unlit, 1,000 points when lit and 3,000 points when flashing. Completing all of the top rollover lanes will light the Collect Bonus light located at the left "Charger" saucer. Ball in saucer, when lit, awards the indicated Bonus value and turns off the "Collect Bonus" light. Completing all of the top roll-over lanes, when "Collect Bonus" is lit, lights the 50,000 point light. Completing all of the top rollover lanes awards 50,000 points when qualified.

The top roll-over lane feature is affected by the Skill Level selected at the beginning of the game.

SKILL LEVEL I All top rollover lanes flash and can be completed in any order. Lane Change feature on.

SKILL LEVEL II Top rollover lanes must be completed in sequence. Lane Change feature off.

SKILL LEVEL III Top rollover lanes must be completed in sequence and are reset one at a time when timer expires (see REGISTER "Level 3 Timer"). Lane Change feature off.

*REGISTER "Top Lanes" controls the R.P.M. Top Lanes Recall option:

R.P.M. TOP LANES RECALL	ENTER
No	0
Yes	1

4. SPINNER, COLLECT BONUS SAUCER & FREE BALL GATES FEATURES

Spinner awards 1000 points and advances the Spinner Bonus Lights 1,000 through 8,000 and Gate Open Light. The Spinner Bonus is collected when the ball is in the saucer. The free ball gates open when the "Gate Open" light, the 9th light of the Spinner Bonus, is lit.

The Spinner and Free Ball Gates features are affected by the Skill Level selected at the beginning of the game.

	SKILL LEVEL I	SKILL LEVEL II	SKILL LEVEL III
SPINNER FEATURE	1 spin = 1 light	2 spins = 1 light	3 spins = 1 light
FREE BALL GATES FEATURE	Both gates are open at start of 1st ball. Alternately open at start of each new ball. Collecting "Opens Gate" light opens one gate at a time.	No gates are open at start of 1st ball. Collecting "Opens Gate" light opens one gate. Ball closes only one gate at a time.	Same as Skill Level II. Also, ball through either gate closes both.

*REGISTER "Left Spinner" controls the Spinner Bonus Lights Recall:

SPINNER LIGHTS RECALL	ENTER
No	0
Yes	1

5. CENTER TARGETS FEATURE

Right and left Center Targets award 3,000 points when flashing and 2,000 points when not lit. The Center Standup Target, when flashing, awards 25,000 points and "SPOTS" a light in "-*-M-I-L-L-I-O-N". When not lit, the Center Standup Target awards 15,000 points.

The Center Targets are affected by the Skill Level selected at the beginning of the game.

SKILL LEVEL I Center Targets can be made in any order.

SKILL LEVEL II Center Targets must be made sequentially.

SKILL LEVEL III Center Targets must be made sequentially. All 3 target lights reset one at a time if not hit within a certain time limit (see REGISTER "Level 3 Timer").

REGISTER "Center Arrow" controls Center Target to spot light in "--M-I-L-L-I-O-N", when flashing:

CENTER TARGETS TO SPOT "***MILLION"		
Enter	Center Target spots # of lites	
0		Level I Level II Level III
1		0 0 0
2		1 1 1
3		2 1 1
4		2 2 1
5		3 2 1
6		3 2 2
7		3 3 2
		3 3 3

*REGISTER "Center Targets" controls the Center Targets Recall:

CENTER TARGETS RECALL	ENTER
No	0
Yes	1

6. DROP TARGETS AND RAMP VALUE FEATURES

The Drop Target awards 5,000 points. The Ramp Value starts at 100 points and advances every time the ramp is entered up to a maximum value of 5,000 points. "SPOT" will become illuminated and will light one light in "-*-M-I-L-L-I-O-N" for each time the ramp is entered (adjustable).

The Drop Target feature is affected by the Skill Level selected at the beginning of the game.

SKILL LEVEL I Once knocked down, the Drop Target stays down for the entire ball.

SKILL LEVEL II The Drop Target resets when the ball is in the Turbo Saucer.

SKILL LEVEL III The Drop Target resets when the ball is in the Turbo Saucer or the timer expires. (3-2-1 lights) (see REGISTER "Drop Target Timer").

***REGISTER "Drop Target Timer"** controls the length of the Drop Target Reset Timer (Level III Only):

DROP TARGET RESET AT	ENTER	
9 Seconds	0	Conservative
15 Seconds	1	
21 Seconds	2	
27 Seconds	3	Liberal

***REGISTER "Right Ramp"** controls the ramp value at which the "SPOT" light comes on:

"SPOT" ON WITH RAMP VALUE OF:			ENTER	
Level I	Level II	Level III		
5,000	5,000	5,000	0	Conservative
3,000	5,000	5,000	1	
1,000	3,000	5,000	2	
500	1,000	3,000	3	Liberal

EXAMPLE: Enter "2": "SPOT" light comes on at: 1000 on Level I
 Enter "2": "SPOT" light comes on at: 3000 on Level II
 Enter "2": "SPOT" light comes on at: 5000 on Level III

7. LIGHTNING BOLT TARGETS FEATURE

All Lightning Bolt Targets (left side) award 3,000 points when flashing, 2,000 points when lit and 100 points when unlit.

The Lightning Bolt Targets feature is affected by the Skill Level selected at the beginning of the game.

	SKILL LEVEL I	SKILL LEVEL II	SKILL LEVEL III
LIGHTNING BOLT TARGETS FEATURE	Flashing lights can be made in any order.	Flashing lights must be made in sequence.	Same as Skill Level II. Flashing lights reset one at a time when timer expires. (see REGISTER #09)
COMPLETION REWARD MAXIMUM LIMIT	25,000 points	Extra-Ball	Special

***REGISTER Bolt Targets** controls the Lightning Bolt Targets Recall option:

LIGHTNING BOLT TARGETS RECALL	ENTER
No	0
Yes	1

8. *-M-I-L-L-I-O-N POINT SHOT FEATURE

A ball in the Turbo Saucer, hitting the Center Standup Target when flashing or entering the ramp when the "SPOT" light is lit, illuminates one light in *-M-I-L-L-I-O-N. A ball in the Turbo Saucer when all lights in *-M-I-L-L-I-O-N are lit awards 1,000,000 points. Launch Platform Gate (left side, upper platform with flipper) either allows or prevents the ball being delivered back to the launch flipper.

The *-M-I-L-L-I-O-N and Launch Platform Gate features are effected by the Skill Level selected at the beginning of the game.

	SKILL LEVEL I	SKILL LEVEL II	SKILL LEVEL III
*-M-I-L-L-I-O-N FEATURE	Must spot 2 stars before spotting the letters in "M-I-L-L-I-O-N".	Must spot 1 star before spotting the letters in "M-I-L-L-I-O-N".	Game begins with 2 stars lit. Must only spot letters in "M-I-L-L-I-O-N".
LAUNCH PLATFORM GATE FEATURE	Open at start. Closes during play. (adjustable)	Open at start. Closes during play. (adjustable)	Closed.

***REGISTER Level I Gate** controls the operation of the Launch Platform Gate in Skill Level I.

***REGISTER Level II Gate** controls the operation of the Launch Platform Gate in Skill Level II.

NOTE: The following adjustment applies only to Skill Levels I and II. When selected, Skill Level III **always** has gate closed.

LAUNCH PLATFORM GATE CLOSURES ON:

	M	I	L	L	I	O	N
Level I Settings		0	1	2	3	4	
Level II Settings		0	1	2	3	4	

Example: To close launch platform gate on second "L" in M I L L I O N, on Level I, set "Level I Gate" Register to "2".

9. MISCELLANEOUS GAME FEATURES

*The BONUS values awarded are as follows:

10,000 points for each light lit in "-*-M-I-L-L-I-O-N" in outhole.

25,000 points for each light lit in "-*-M-I-L-L-I-O-N" in TURBO SAUCER.

1,000 points for each SAUCER BONUS light lit.

10,000 points for each LIGHTNING BOLT target light lit when qualified to collect Bonus.

In Basic Options:

*REGISTER Sling Shot on controls the Sling Shots:

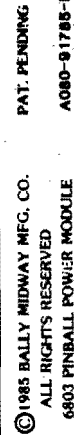
SLING SHOTS ACTIVE	ENTER
No	0
Yes	1

*REGISTER Tilt Warning controls the number of Tilt Warnings:

# OF TILT WARNINGS	ENTER
None	0
1	1
2	2
3	3

SECTION 2
Component Layouts,
Schematics & Wiring Diagrams

DESIGNATIO



C1
P/O C1
P/O C1
P/O C1
C2
P/O C2
C3
C4, C5
C6, C7
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
VR1
D1 - D4
D5 - D9
D10
BR1
P/O BR1
Q1
P/O Q1
P/O Q1
P/O Q1
P/O Q1
P/O Q1
P/O Q1
P/O Q1
P/O Q1
P/O Q1
P/O Q1
P/O Q1
Q2, Q3
P/O Q2,
P/O Q3
U1
P/O U1
P/O U1
P/O U1
P/O U1
P/O U1
P/O U1
VA1

DIM. TOLERANCES UNLESS OTHERWISE SPEC. CONCENTRICITY T/RC .002 FRACTIONAL . ± 1/64 DECIMAL . ± .005 HOLE DIA . ± .000 - .001 ANGLE . ± 1/2° DO NOT SCALE DIMS.		FIRST USED ON DATE 04/08/86 SCALE MECH DIM. MAT'L ELEC DIM. FINISH	THIS DWG IS CONFIDENTIAL & PROPERTY OF MIDWAY MFG. CO.  MIDWAY MFG. CO. FRANKLIN PARK, IL 60131 A BALLY CO.	PART NO. MO-5-1-0-0-C-5-3-D-0-0-1
		ASSY DRAWING 6803 PINBALL PWR MODULE A084-91785-0000	REVISIONS	

6803 PINBALL POWER MODULE
A084-91785-D000
M051-00C53-D001

ION LIST

ION

<u>DESCRIPTION</u>	<u>DESIGNATION</u>	<u>DESCRIPTION</u>
11,000uf 20V ELEC.	JW1 - JW16	ZERO OHM RES. JUMPER
TY-WRAP	TP1 - TP10	TEST POINTS
SOLDER LUG	F1*	5 AMP 3AG FUSE
WIRE 20AWG	F2	3/4 AMP 3AG FUSE
160uf 350V ELEC.	F3	6 AMP 3AG FUSE
TY-WRAP	F4, F5	8 AMP 3AG FUSE
2uf 25V ELEC.	F6, F7	15 AMP 3AG FUSE
.1uf 25V CER.	F8	3/16 AMP 8AG FUSE
.01uf 500V CER.	FC1A - FC3B, FC8A	FUSE CLIPS
600 OHM 10W	FC8B	
100K 1W 5%	FC4A - FC7B	FUSE CLIPS
2.2 OHM 1/4W 5%	J1	12 PIN M-N-L CONN. FEMALE
100 OHM 1/2W 5%	J2	6 PIN M-N-L CONN. MALE
22K 1/2W 5%	J3	15 PIN M-N-L CONN. MALE
100K 1/4W 5%	J4	9 PIN M-N-L CONN. MALE
390 OHM 1/4W 5%	J5	12 PIN M-N-L CONN. MALE
1.2K 1/4W 5%	J6	2 PIN M-N-L CONN. MALE
82K 1/2W 5%	6803 POWER MODULE	P.C. BOARD
8.2K 1/4W 5%		
0 - 25K 1/4W POT.	4-23-86 REV. 1.0 FIXED R2, R6	
MR751		
IN4004		
IN5275A ZENER		
KBPC-35-02-W		
BRIDGE SPACER		
2N3584		
SHIELD		
HEX SPACER		
6-32 X 5 SCREW		
6-32 X 12 SCREW		
LOCKWASHER EXT.		
LOCKWASHER INT.		
FLAT WASHER		
6-32 HEX NUT		
LABEL - CAUTION HIGH VOLT.		
HEATSINK 2		
INSULATOR TO-66		
2N3440		
INSULATOR TO-5		
HEATSINK 3		
78H05C REG.		
6-32 X 12 SCREW		
6-32 HEX NUT		
LOCKWASHER EXT.		
FLAT WASHER		
HEATSINK 1		
INSULATOR TO-3		
VARISTOR		

* TWO FLIPPER GAMES ONLY - SEE SCHEMATIC

6803 PINBALL POWER MODULE
A084-91785-D000
M051-00C53-D001

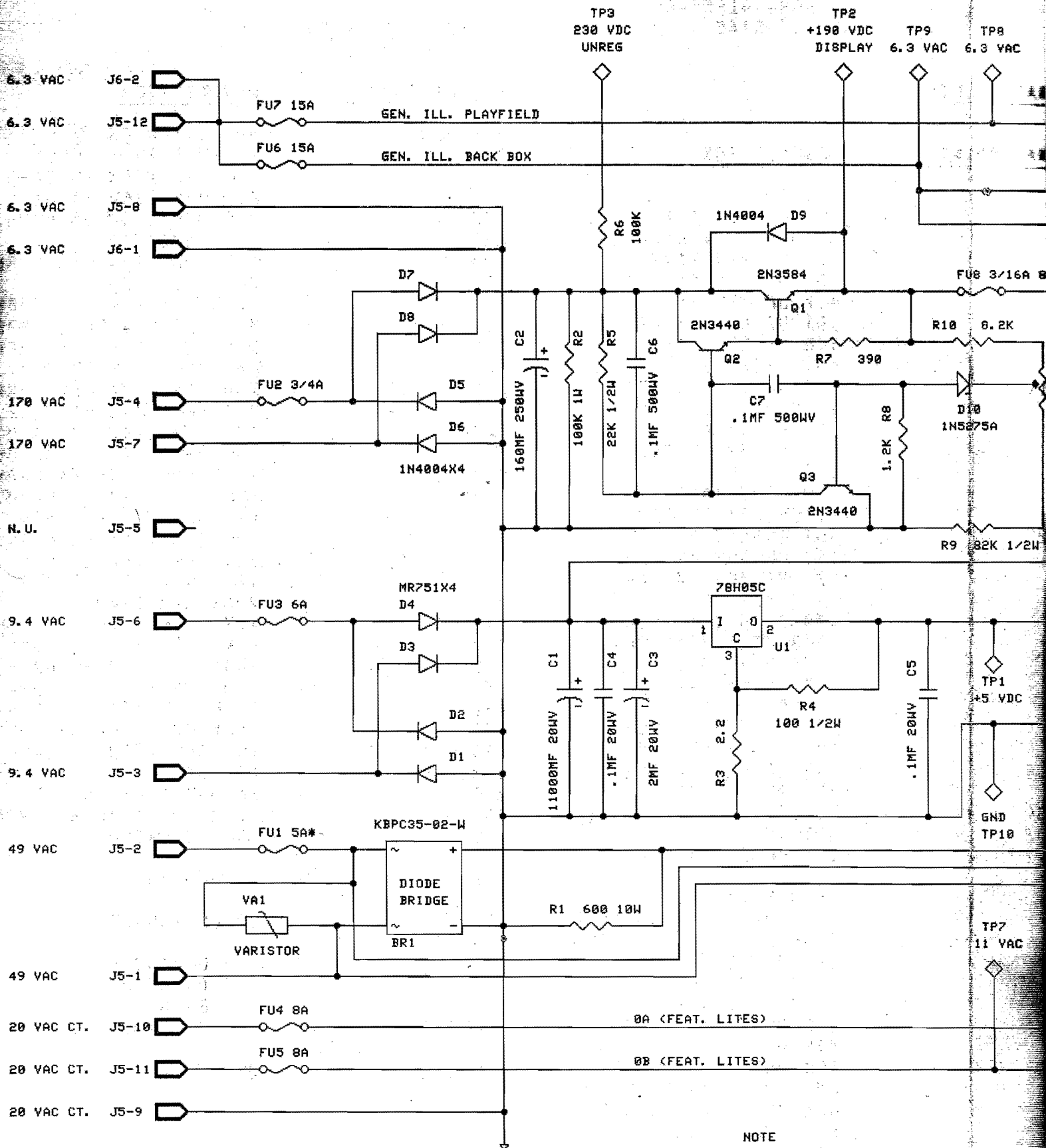
CROSS REFERENCE LIST

<u>DESCRIPTION</u>	<u>QTY.</u>	<u>DESIGNATION NO.</u>	<u>PART NOS.</u>
.01UF 500V CER.	2	C6,C7	0360-00800-0013
.1UF 25V CER.	2	C4,C5	0360-00800-0026
2UF 25V ELEC.	1	C3	0360-00800-0019
160UF 350V ELEC.	1	C2	0360-00800-0020
11,000UF 20V ELEC.	1	C1	0360-00800-0024
2.2 OHM 1/4W 5%	1	R3	100E-00005-0003
100 OHM 1/2W 5%	1	R4	100E-00006-0021
390 OHM 1/4W 5%	1	R7	100E-00005-0049
600 OHM 10W 10%	1	R1	100E-00002-0049
1.2K 1/4W 5%	1	R8	100E-00005-0063
8.2K 1/4W 5%	1	R10	100E-00005-0086
22K 1/2W 5%	1	R5	100E-00006-0065
82K 1/2W 5%	1	R9	100E-00006-0072
100K 1/4W 5%	1	R6	100E-00005-0115
100K 1W 5%	1	R2	100E-00007-0037
0-25K 1/4W POT	1	VR1	0360-00804-0004
MR 751	4	D1-D4	103E-00003-0016
1N4004	5	D5-D9	103E-00003-0005
1N5275	1	D10	103E-00001-0027
KRPC-35-02-W	1	BR1	103E-00005-0005
2N3440	2	Q2,Q3	104E-00003-0002
2N3584	1	Q1	104E-00005-0002
78H05C REG	1	U1	0360-00803-0021
VARISTOR METAL OXIDE 60V	1	VA1	115E-00001-0002
TY-WRAP	4	P/O C1,C2	0017-00042-0048
ZERO OHM RES. JUMPER	16	JW1-JW16	117E-00001-0001
TEST POINTS	10	TP1-TP10	0017-00007-0131
SOLDER LUG	2	P/O C1	0017-00021-0257
JUMPER WIRE 20AWG	2	P/O C1	0017-00033-0448
INSULATOR T0-3	1	P/O U1	0017-00042-0119
INSULATOR T0-5	2	P/O Q2,Q3	0017-00042-0151
INSULATOR T0-66	1	P/O Q1	0017-00042-0158
HEX SPACER	2	P/O Q1	0017-00042-0248
SHIELD	1	P/O Q1	0365-00952-0000
HEATSINK 1	1	P/O U1	112E-00001-0003
HEATSINK 2	1	P/O Q1	112E-00001-0002
HEATSINK 3	1	P/O Q3	112E-00001-0004
BRIDGE SPACER	1	P/O BR1	118E-00001-0001
6-32 X 12 SCREW	4	P/O Q1,U1	0017-00101-0132
6-32 X 5 SCREW	2	P/O Q1	0017-00101-0555
6-32 HEX NUT	4	P/O Q1,U1	0017-00103-0005
LOCKWASHER INT.	4	P/O Q1,	0017-00104-0008
LOCKWASHER EXT.	4	P/O Q1,U1	0017-00104-0009
FLAT WASHER	4	P/O Q1,U1	0017-00104-0106
FUSE CLIP	8	FC1A-FC3B, FC8A,FC8B	0017-00071-0033
FUSE CLIP	8	FC4A-FC7A	0017-00071-0034
3/16 AMP 8AG FUSE	1	F8	0017-00003-0206
3/4 AMP 3AG FUSE	1	F2	0017-00003-0010
5 AMP 3AG FUSE	1	F1*	0017-00003-0175
6 AMP 3AG FUSE	1	F3	0017-00003-0008

CROSS REFERENCE LIST

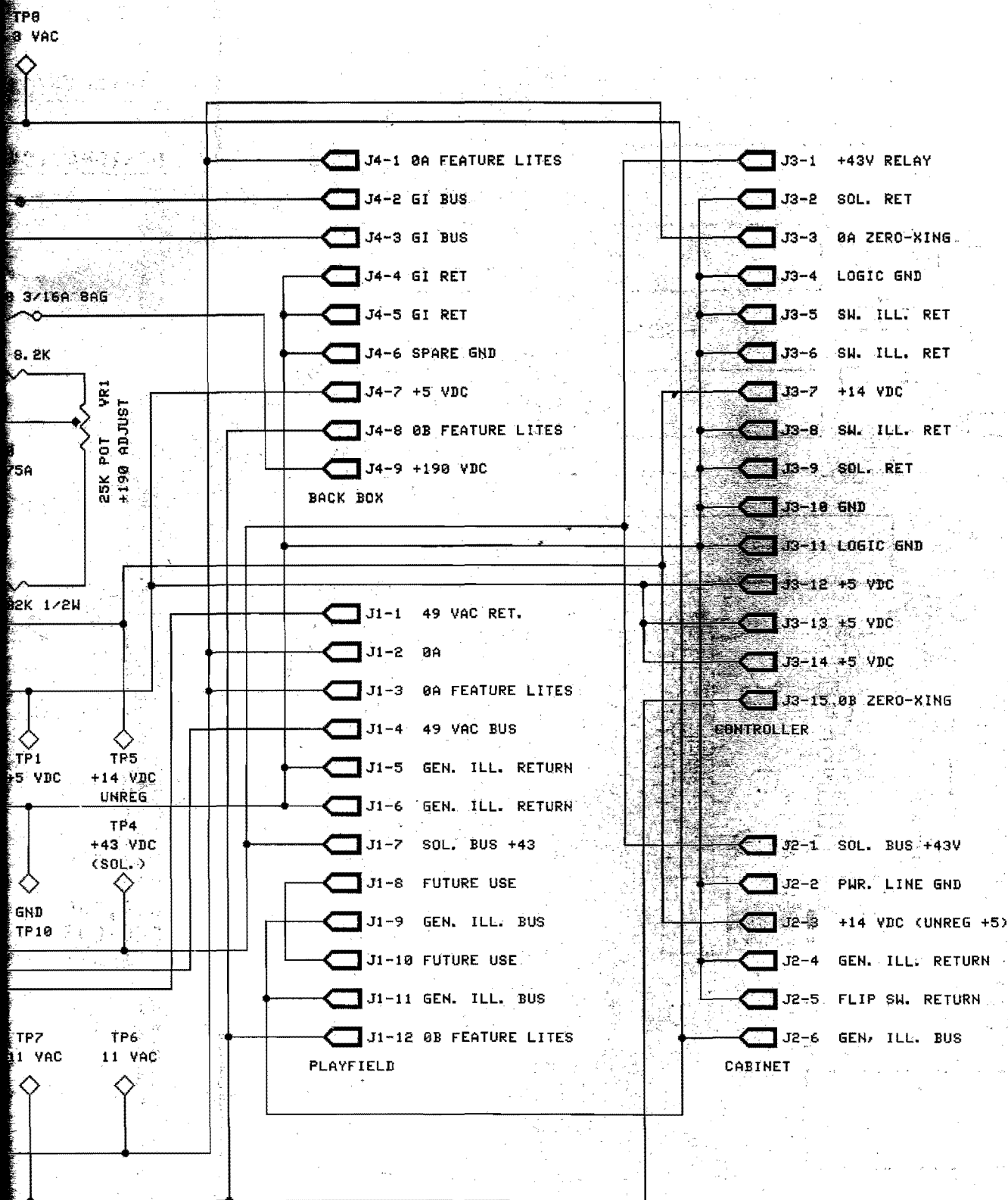
124

	<u>DESCRIPTION</u>	<u>QTY.</u>	<u>DESIGNATION NO.</u>	<u>PART NOS.</u>
0-0013	8 AMP 3AG FUSE	2	F4,F5	0017-00003-0387
0-0026	15 AMP 3AG FUSE	2	F6,F7	0017-00003-0011
0-0019	12 PIN M-N-L CONN. FEMALE	1	J1	0017-00021-0532
0-0020	6 PIN M-N-L CONN. MALE	1	J2	0017-00021-0424
0-0024	15 PIN M-N-L CONN. MALE	1	J3	0017-00021-0434
5-0003	9 PIN M-N-L CONN. MALE	1	J4	0017-00021-0425
6-0021	12 PIN M-N-L CONN. MALE	1	J5	0017-00021-0426
5-0049	2 PIN M-N-L CONN. MALE	1	J6	0017-00021-0488
2-0049	6803 POWER MODULE P.C.B.	1		A080-91785-D000
5-0063				
5-0086				
6-0065				
6-0072				
5-0115				
7-0037	* TWO FLIPPER GAMES ONLY - SEE SCHEMATIC			
4-0004				
3-0016				
3-0005				
1-0027				
5-0005				
3-0002				
5-0002				
3-0021				
1-0002				
2-0048				
1-0001				
7-0131				
1-0257				
3-0448				
2-0119				
2-0151				
2-0158				
2-0248				
2-0000				
1-0003				
1-0002				
1-0004				
1-0001				
1-0132				
1-0555				
5-0005				
4-0008				
4-0009				
4-0106				
1-0033				
1-0034				
2-0206				
3-0010				
2-0175				
5-0008				



NOTE

* WHEN 3FLIPPERS ARE USED FU1 SHOULD BE 3A
WHEN 4FLIPPERS ARE USED FU1 SHOULD BE 4A



SHOULD BE 6AMP
SHOULD BE 7AMP

NOTES:	BALLY MIDWAY MFG. CO.
R. KOHAN	
1PER	6803 PINBALL PWR MODULE
03/11/86	SCHEMATIC DRAWING
	A084-91785-D000
	M051-00C53-D002
	SHEET 1 OF 1 REV

22 APR 86 10:47 USER/CHON/ARAB 8. DRAM

DESIGNATION LIST

DESIGNATION NO.

C1
C2
C3
C4
C5
C6
C7
C8
C9
C10, C11
C12
C13
C14
C15
C16
C17
C18-C22
C23
C24
C25
C26
C27
C28
C29
C30
C31
C32
C33-C36
C37
C38, C39
C40-C43
CP1-CP10

R1
R2, R3
R4
R5
R6
R7
R8
R9
R10, R11
R12
R13
R14
R15

A084 - 91855 - C000
M051 - 00114 - C146

DESIGNATION LIST

DESCRIPTION

NOT INSERTED
10 UF 20V TANT
4700 UF 25V AX ELEC
4.7 UF 25V TANT
.01 UF 50V AX CER
4.7 UF 25V TANT
.01 UF 50V AX CER
6.8 UF 25V TANT
NOT INSERTED
.22 UF 50V AX CER
1000 UF 16V AX ELEC
.1 UF 50V AX CER
470 UF 6V AX ELEC
.05 UF CER
1 UF 20V TANT
.1 UF 50V AX CER
NOT INSERTED
150 PF 50V AX CER
270 PF 50V AX CER
1 UF 20V TANT
470 PF 50V AX CER
.003 UF 50V AX CER
1 UF 20V TANT
270 PF 50V AX CER
47 UF 16V AX ELEC
.01 UF 50V AX CER
18 PF 50V AX CER
100 PF 50V AX CER
470 PF 50V AX CER
.1 UF 50V AX CER
NOT INSERTED
.01 UF 50V AX CER

1K OHM 1/4W 5% CRBN.
2.7K OHM 1/4W 5% CRBN.
7.5K OHM 1/4W 5% CRBN.
39K OHM 1/4W 5% CRBN.
9.1K OHM 1/4W 5% CRBN.
82 OHM 1/4W 5% CRBN.
100 OHM 1/4W 5% CRBN.
47K OHM 1/4W 5% CRBN.
10K OHM 1/4W 5% CRBN.
82K OHM 1/4W 5% CRBN.
62K OHM 1/4W 5% CRBN.
5.6K OHM 1/4W 5% CRBN.
910 OHM 1/4W 5% CRBN.

DESIGNATION NO.

R16-R18
R19
R20
R21
R22
R23
R24
R25
R26
R27
R28
R29
R30
R31
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41-R47
R48
R49
R50
R51
R52
R53-R57
R58,R59
R60
R61
R62-R64

VR1

L1,L2

D1
D2,D3
D4
D5-D7

LED 1

DESCRIPTION

NOT INSERTED
1 OHM 1/4W 5% CRBN.
430 OHM 1/4W 5% CRBN.
2.2 OHM 1/4W 5% CRBN.
220 OHM 1/4W 5% CRBN.
NOT INSERTED
4.7K OHM 1/4W 5% CRBN.
NOT INSERTED
5.1K OHM 1/4W 5% CRBN.
0 OHM RESISTOR (JUMPER)
150K OHM 1/4W 5% CRBN.
82K OHM 1/4W 5% CRBN.
150K OHM 1/4W 5% CRBN.
33K OHM 1/4W 5% CRBN.
18K OHM 1/4W 5% CRBN.
33K OHM 1/4W 5% CRBN.
120K OHM 1/4W 5% CRBN.
62K OHM 1/4W 5% CRBN.
68 OHM 1/4W 5% CRBN.
180 OHM 1/4W 5% CRBN.
75K OHM 1/4W 5% CRBN.
47K OHM 1/4W 5% CRBN.
200K OHM 1/4W 5% CRBN.
4.7K OHM 1/4W 5% CRBN.
47K OHM 1/4W 5% CRBN.
100 OHM 1/4W 5% CRBN.
150 OHM 1/4W 5% CRBN.
3.3K OHM 1/4W 5% CRBN.
100K OHM 1/4W 5% CRBN.
10K OHM 1/4W 5% CRBN.
NOT USED
1K OHM 1/4W 5% CRBN.
2.7K OHM 1/4W 5% CRBN.
NOT INSERTED

1K OHM POT

10 UH INDUCTOR

VR330 DIODE
1N4004 DIODE
1N958B DIODE
1N4606 DIODE

GREEN LED

DESIGNATION LISTDESIGNATION NO.DESCRIPTION

Q1	2N3904 XSTR.
Q2	2N4403 XSTR.
Q3	2N3904 XSTR.
Q4	2N4403 XSTR.
Q5	NOT INSERTED
Q6	2N5305 XSTR.
Q7	MPS3646 XSTR.
Q8	2N5305 XSTR.
Q9	NOT INSERTED
OSC1	8 MHZ COSC
IC U1	74LS76
IC U2	74LS00
IC U3	74LS02
IC U4	74LS139
IC U5	MC68B09E
IC U6	6116 2KX8 RAM 200NS.
IC U7	PROG EPROM 128K 250NS.
IC U8	MC68B21
IC U9	AD7533
IC U10	LM3900
IC U11	NOT INSERTED
IC U12	TDA2002
IC U13	MC7805
IC U14	NOT INSERTED
ICS U5	40 PIN IC SOCKET (.600)
ICS U6,U7	28 PIN IC SOCKET (.600)
ICS U8	40 PIN IC SOCKET (.600)
ICS U9	16 PIN IC SOCKET (.300)
HS U12	6030B-TT HEAT SINK
HS U13	6100B HEAT SINK
MH U12	1 SCREW, 1 WASHER, 1 NUT
MH U13	1 SCREW, 1 WASHER, 1 NUT
INS U12, U13	SIL PAD THERMAL WASHER, TO 220
FB1,FB2	FERRITE BEAD
FB3-FB5	NOT INSERTED
SW1	SWITCH PC. MTG.
JW1-JW8	JUMPER
J1,J2	AUTO INSERT PINS TIN .045 SQ. PIN
TP1,TP2	TEST POINTS
T.C.S. FOR PINBALL	A080-91855-C000

CROSS REFERENCE LIST

<u>DESCRIPTION</u>	<u>QTY.</u>	<u>DESIGNATION NO.</u>	<u>PART NOS.</u>
18 PF 50V AX CER.	1	C32	0365-00800-0026
100 PF 50V AX CER.	4	C33-C36	0360-00800-0046
150 PF 50V AX CER.	1	C23	0360-00800-0053
270 PF 50V AX CER.	2	C24,C29	0307-00800-0009
470 PF 50V AX CER.	2	C26,C37	0307-00800-0008
.003 UF 50V AX CER.	1	C27	0360-00800-0056
.01 UF 50V AX CER.	13	C5,C7,C31,CP1-CP10	0360-00800-0005
.05 UF CER.	1	C15	0360-00800-0006
.1 UF 50V AX CER.	4	C13,C17,C38,C39	0360-00800-0058
.22 UF 50V AX CER.	2	C10,C11	0360-00800-0057
1 UF 20V TANT.	3	C16,C25,C28	0986-00800-1400
4.7 UF 25V TANT.	2	C4,C6	0360-00800-0008
6.8 UF 25V TANT.	1	C8	0360-00800-0048
10 UF 20V TANT.	1	C2	0986-00800-0700
47 UF 16V AX ELEC.	1	C30	0360-00800-0042
470 UF 6V AX ELEC.	1	C14	0360-00800-0021
1000 UF 16V AX ELEC.	1	C12	0360-00800-0044
4700 UF 25V AX ELEC.	1	C3	0360-00800-0023
1 OHM 1/4W 5% CRBN.	1	R19	100E-00005-0002
2.2 OHM 1/4W 5% CRBN.	1	R21	100E-00005-0003
68 OHM 1/4W 5% CRBN.	1	R36	100E-00005-0029
82 OHM 1/4W 5% CRBN.	1	R7	100E-00005-0031
100 OHM 1/4W 5% CRBN.	2	R8,R49	100E-00005-0033
150 OHM 1/4W 5% CRBN.	1	R50	100E-00005-0037
180 OHM 1/4W 5% CRBN.	1	R37	100E-00005-0039
220 OHM 1/4W 5% CRBN.	1	R22	100E-00005-0041
430 OHM 1/4W 5% CRBN.	1	R20	100E-00005-0050
910 OHM 1/4W 5% CRBN.	1	R15	100E-00005-0059
1K OHM 1/4W 5% CRBN.	2	R1,R60	100E-00005-0061
2.7K OHM 1/4W 5% CRBN.	3	R2, R3,R61	100E-00005-0071
3.3K OHM 1/4W 5% CRBN.	1	R51	100E-00005-0074
4.7K OHM 1/4W 5% CRBN.	8	R24,R41-R47	100E-00005-0079
5.1K OHM 1/4W 5% CRBN.	1	R26	100E-00005-0080
5.6K OHM 1/4W 5% CRBN.	1	R14	100E-00005-0082
7.5K OHM 1/4W 5% CRBN.	1	R4	100E-00005-0085
9.1K OHM 1/4W 5% CRBN.	1	R6	100E-00005-0087
10K OHM 1/4W 5% CRBN.	7	R10,R11,R53-R57	100E-00005-0088
18K OHM 1/4W 5% CRBN.	1	R32	100E-00005-0093
33K OHM 1/4W 5% CRBN.	2	R31,R33	100E-00005-0100
39K OHM 1/4W 5% CRBN.	1	R5	100E-00005-0102
47K OHM 1/4W 5% CRBN.	3	R9,R39,R48	100E-00005-0104
62K OHM 1/4W 5% CRBN.	2	R13,R35	100E-00005-0107
75K OHM 1/4W 5% CRBN.	1	R38	100E-00005-0110
82K OHM 1/4W 5% CRBN.	2	R12,R29	100E-00005-0112
100K OHM 1/4W 5% CRBN.	1	R52	100E-00005-0115
120K OHM 1/4W 5% CRBN.	1	R34	100E-00005-0118
150K OHM 1/4W 5% CRBN.	2	R28,R30	100E-00005-0120
200K OHM 1/4W 5% CRBN.	1	R40	100E-00005-0123

CROSS REFERENCE LIST

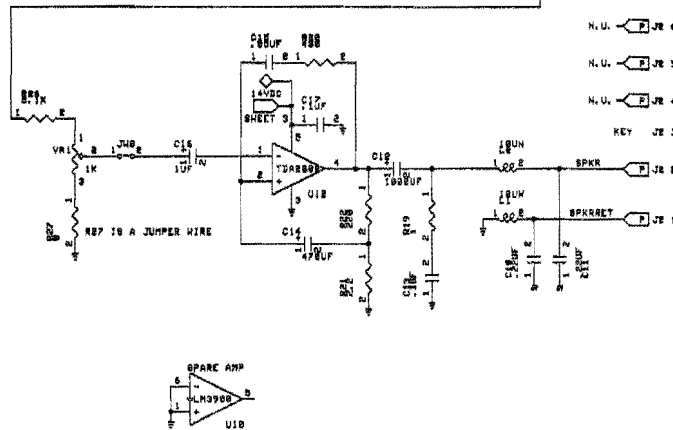
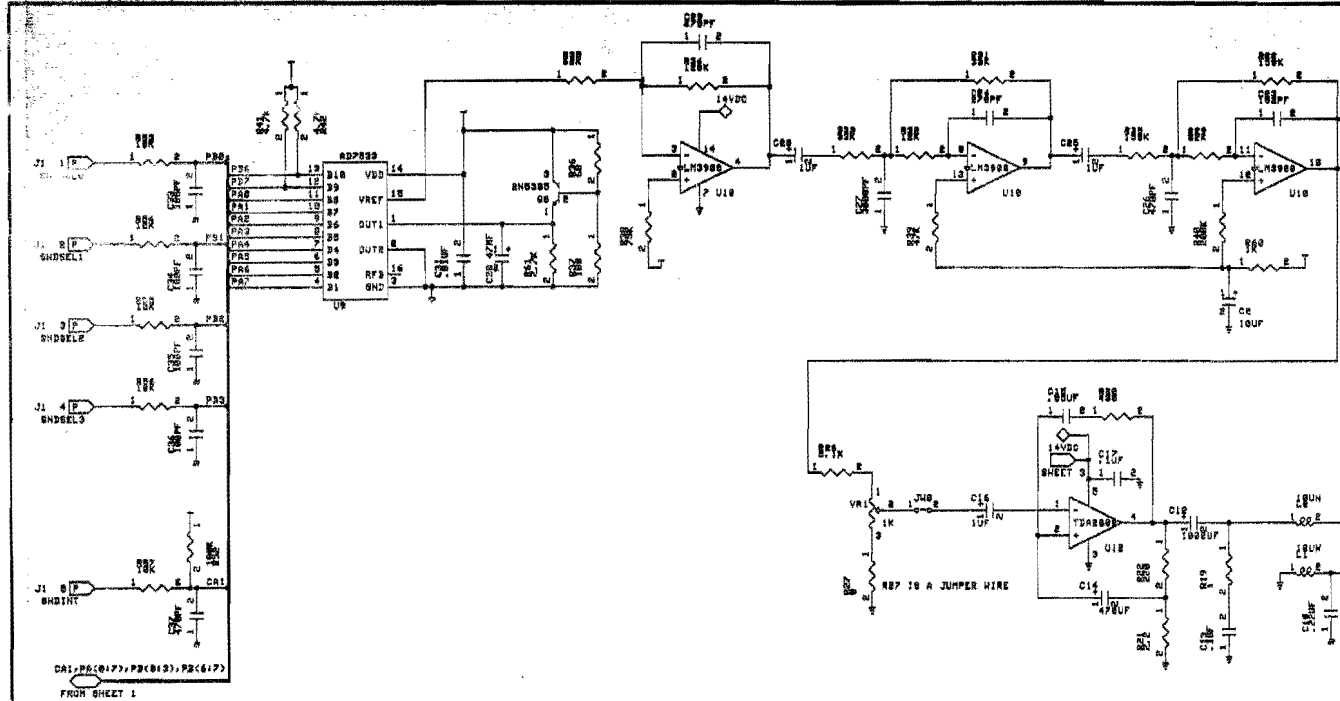
<u>DESCRIPTION</u>	<u>QTY.</u>	<u>DESIGNATION NO.</u>	<u>PART NOS.</u>
1K OHM POT	1	VR1	0360-00804-0003
10 UH INDUCTOR	2	L1,L2	0360-00804-0031
1N958B DIODE	1	D4	103E-00001-0002
1N4004 DIODE	2	D2,D3	103E-00003-0005
1N4606 DIODE	3	D5-D7	103E-00002-0006
VR330 DIODE	1	D1	0360-00801-0007
LED, GREEN	1	LED1	119E-00001-0001
2N3904	2	Q1,Q3	104E-00001-0006
2N4403	2	Q2,Q4	104E-00002-0006
2N5305	2	Q6,Q8	0360-00802-0012
MPS3646	1	Q7	104E-00001-0019
COSC, 8 MHZ	1	OSC1	119E-00002-0009
6116 2KX8 RAM 200NS.	1	IC U6	0304-00803-0057
74LS00	1	IC U2	0A15-00803-0046
74LS02	1	IC U3	0986-00803-7400
74LS76	1	IC U1	0A15-00803-0072
74LS139	1	IC U4	0A15-00803-0051
AD7533	1	IC U9	0304-00803-0055
LM3900	1	IC U10	0360-00803-0002
MC68B09E	1	IC U5	0C48-00803-0001
MC68B21	1	IC U8	0A15-00803-0074
MC7805	1	IC U13	0360-00803-0050
PROG EPROM	1	U7	SEE ROM/EPROM SHEET
TDA2002	1	IC U12	0360-00803-0009
16 PIN I.C. SOCKET	1	ICS U9	110E-00001-0003
28 PIN I.C. SOCKET	2	ICS U6,U7	110E-00001-0010
40 PIN I.C. SOCKET	2	ICS U5,U8	110E-00001-0011
6030B-TT HEAT SINK	1	HS U12	112E-00001-0011
6100B HEAT SINK	1	HS U13	0360-00804-0032
SCREW, 6-32	1	MH U12	0017-00101-0339
NUT, 6-32	1	MH U12	0017-00103-0005
WASHER, #6 STAR	1	MH U12	0017-00104-0009
SCREW, 4-40	1	MH U13	0017-00101-0731
NUT, 4-40	1	MH U13	0017-00103-0002
WASHER, #4 STAR	1	MH U13	0017-00104-0071
SIL PAD THERMAL WASHER	2	INS U12,U13	0017-00042-0319
FERRITE BEAD	2	FB1,FB2	0316-00804-0002
SWITCH, PC. MTG.	1	SW1	0986-00804-3100

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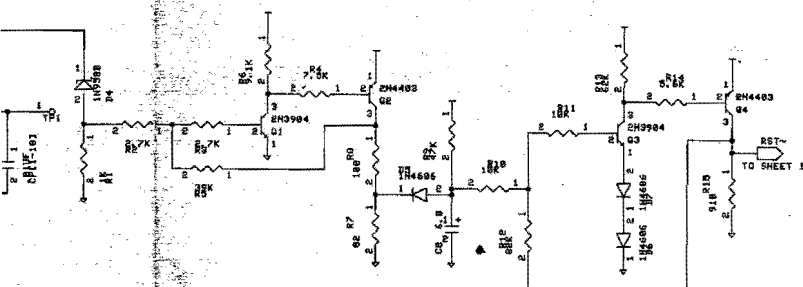
T.C.S FOR PINBALL
A084-91855-C000
M051-00114-C146

<u>DESCRIPTION</u>	<u>QTY.</u>	<u>DESIGNATION NO.</u>	<u>PART NOS.</u>
JUMPER (0 OHM RESISTOR)	9	JW1-JW8,R27	117E-00001-0003
AUTO INSERT PINS TIN .045 SQ. PIN	14	J1	0304-00804-0010
AUTO INSERT PINS TIN .045 SQ. PIN	5	J2	0304-00804-0010
TEST POINTS	2	TP1 TP2	0017-00007-0131
P.C. BOARD			A080-91855-C000

BALLY MIDWAY MFG. CO.
PINBALL TURBO CHEAP SQUEAK
14-C147
MS4-91055-C000
REV

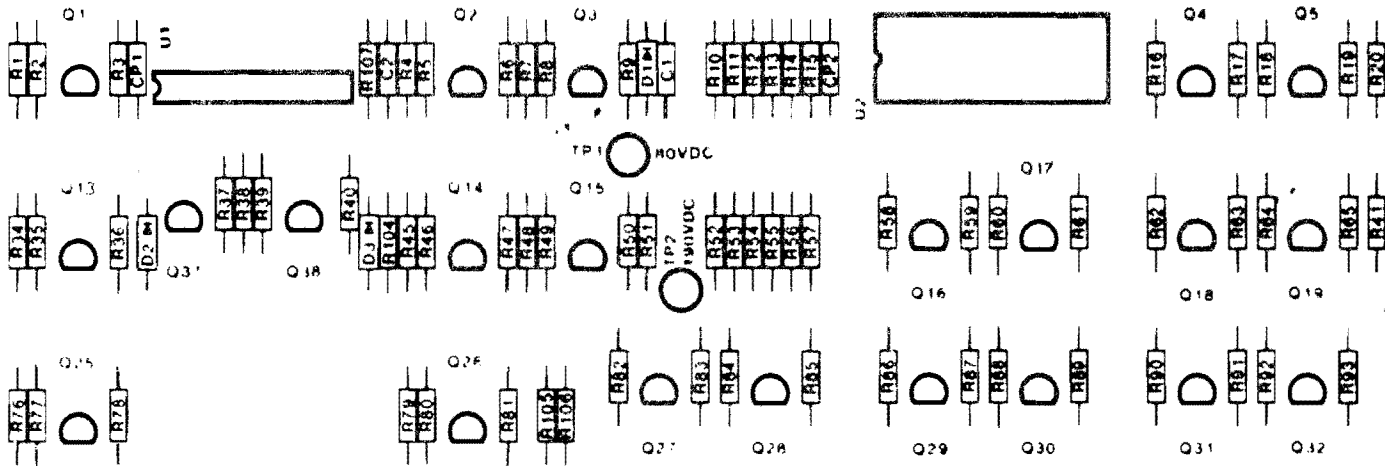


4/22/86 Reversed numbering of JE	
NOTES:	BALLY MIDWAY MFG. CO.
C. MEDNICK	
24 APR 86	PINBALL TURBO CHEAP SQUEAK
	MS4-90114-C147
	MS4-91055-C000
	SHEET 2 OF 3 REV



NOTES:	BALLY MIDWAY MFG. CO.
C. MEDNICK	
24 APR 86	PINBALL TURBO CHEAP SQUEAK
	MS4-90114-C147
	MS4-91055-C000
	SHEET 3 OF 3 REV

DUAL DISPLY MODULE



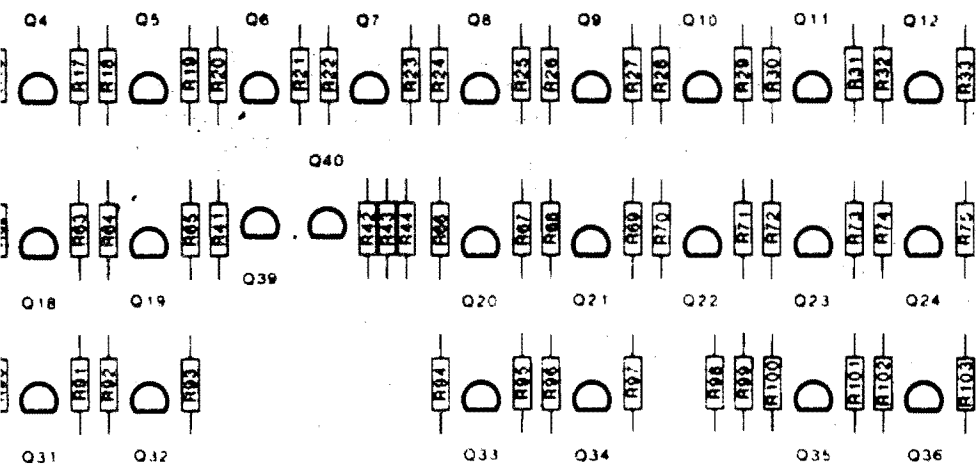
DISPLY

THIS DWG. IS CONFIDENTIAL & PROPERTY OF BALLY/MIDWAY MFG.

DIM. TOLERANCES UNLESS OTHERWISE SPEC. CONCENTRICITY T.I.R. .002 FRACTIONAL ± 1/64 DECIMAL ± .005 HOLE DIA. + .002 - .000 ANGLE ± 1/2° DO NOT SCALE DWG.	FIRST USED ON		
	DRN	DATE	SCALE
	CL	04/08/86	
	MECH CHK	MAT L	
	ELEC CHK	FINISH	
Bally/MIDWAY MFG. CO. FRANKLIN PARK, IL 60131			ASSY DRAWING DUAL DISPLAY MODULE A084-91851-E000

TP3 GND

A080-91851-E000



40

78

PAT. PENDING

DISPLY

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OF BALLY/MIDWAY MFG CO	
MIDWAY MFG. CO.	
LIN PARK, IL 60131	
IVING	
LAY MODULE	
351-E000	
	REVISIONS
	PART NO.
	M0.5.1 - 0.0.3.6.5 - E.0.3.3

DUAL DISPLAY MODULE
A084-91851-E000
M051-00365-E033

DESIGNATION LIST

DESIGNATION

DESIGNATION NO.

DESCRIPTION

DESIGNATION

R1	1.5K 1/4W 5% CARBON	R59
R2	820 OHM 1/4W 5% CARBON	R60
R3	300K 1/4W 5% CARBON	R61
R4	1.5K 1/4W 5% CARBON	R62
R5	510 OHM 1/4W 5% CARBON	R63
R6	300K 1/4W 5% CARBON	R64
R7	1.5K 1/4W 5% CARBON	R65
R8	820 OHM 1/4W 5% CARBON	R66
R9	300K 1/4W 5% CARBON	R67
R10 - R15	20K 1/4W 5% CARBON	R68
R16	9.1K 1/4W 5% CARBON	R69
R17	100K 1/4W 5% METAL FILM	R70
R18	2.2K 1/4W 5% CARBON	R71
R19	300K 1/4W 5% CARBON	R72
R20	9.1K 1/4W 5% CARBON	R73
R21	100K 1/4W 5% METAL FILM	R74
R22	2.2K 1/4W 5% CARBON	R75
R23	300K 1/4W 5% CARBON	R76
R24	9.1K 1/4W 5% CARBON	R77
R25	100K 1/4W 5% METAL FILM	R78
R26	2.2K 1/4W 5% CARBON	R79
R27	300K 1/4W 5% CARBON	R80
R28	9.1K 1/4W 5% CARBON	R81
R29	100K 1/4W 5% METAL FILM	R82
R30	9.1K 1/4W 5% CARBON	R83
R31	100K 1/4W 5% METAL FILM	R84
R32	9.1K 1/4W 5% CARBON	R85
R33	100K 1/4W 5% METAL FILM	R86
R34	1.5K 1/4W 5% CARBON	R87
R35	820 OHM 1/4W 5% CARBON	R88
R36	300K 1/4W 5% CARBON	R89
R37	300K 1/4W 5% CARBON	R90
R38	1.5K 1/4W 5% CARBON	R91
R39	1K 1/4W 5% CARBON	R92
R40	100K 1/4W 5% CARBON	R93
R41	100K 1/4W 5% CARBON	R94
R42	1K 1/4W 5% CARBON	R95
R43	1.5K 1/4W 5% CARBON	R96
R44	300K 1/4W 5% CARBON	R97
R45	1.5K 1/4W 5% CARBON	R98
R46	820 OHM 1/4W 5% CARBON	R99
R47	300K 1/4W 5% CARBON	R100
R48	1.5K 1/4W 5% CARBON	R101
R49	820 OHM 1/4W 5% CARBON	R102
R50	300K 1/4W 5% CARBON	R103
R51	100K 1/4W 5% METAL FILM	R104
R52 - R57	2.2M 1/4W 5% CARBON	R105
R58	9.1K 1/4W 5% CARBON	R106
		R107

DESIGNATION LIST

<u>DESIGNATION NO.</u>	<u>DESCRIPTION</u>
R59	100K 1/4W 5% METAL FILM
R60	100K 1/4W 5% METAL FILM
R61	9.1K 1/4W 5% CARBON
R62	9.1K 1/4W 5% CARBON
R63	100K 1/4W 5% METAL FILM
R64	9.1K 1/4W 5% CARBON
R65	100K 1/4W 5% METAL FILM
R66	9.1K 1/4W 5% CARBON
R67	100K 1/4W 5% METAL FILM
R68	9.1K 1/4W 5% CARBON
R69	100K 1/4W 5% METAL FILM
R70	300K 1/4W 5% CARBON
R71	2.2K 1/4W 5% CARBON
R72	300K 1/4W 5% CARBON
R73	2.2K 1/4W 5% CARBON
R74	300K 1/4W 5% CARBON
R75	2.2K 1/4W 5% CARBON
R76	1.5K 1/4W 5% CARBON
R77	820 OHM 1/4W 5% CARBON
R78	300K 1/4W 5% CARBON
R79	1.5K 1/4W 5% CARBON
R80	820 OHM 1/4W 5% CARBON
R81	300K 1/4W 5% CARBON
R82	300K 1/4W 5% CARBON
R83	2.2K 1/4W 5% CARBON
R84	100K 1/4W 5% METAL FILM
R85	9.1K 1/4W 5% CARBON
R86	300K 1/4W 5% CARBON
R87	2.2K 1/4W 5% CARBON
R88	2.2K 1/4W 5% CARBON
R89	300K 1/4W 5% CARBON
R90	300K 1/4W 5% CARBON
R91	2.2K 1/4W 5% CARBON
R92	300K 1/4W 5% CARBON
R93	2.2K 1/4W 5% CARBON
R94	300K 1/4W 5% CARBON
R95	2.2K 1/4W 5% CARBON
R96	300K 1/4W 5% CARBON
R97	2.2K 1/4W 5% CARBON
R98	10M 1/4W 5% CARBON
R99	1M 1/4W 5% CARBON
R100	300K 1/4W 5% CARBON
R101	2.2K 1/4W 5% CARBON
R102	100K 1/4W 5% METAL FILM
R103	9.1K 1/4W 5% CARBON
R104	150K 1/4W 5% CARBON
R105	10M 1/4W 5% CARBON
R106	1M 1/4W 5% CARBON
R107	10K 1/4W 5% CARBON

DUAL DISPLAY MODULE
A084-91851-E000
M051-00365-E033 (Page 3 of 4)

DESIGNATION LIST

DESIGNATION NO.

DESCRIPTION

C1	.01UF 500V CER.
C2	100PF 50V AX. CER.
CP1, CP2	.01UF 50V CER.
D1	1M110ZS10 110V ZENER DIODE
D2,D3	1N4148 DIODE
Q1 - Q4	MPS-A-42 NPN XSTR
Q5	2N5401 PNP XSTR
Q6	MPS-A-42
Q7	2N5401
Q8	MPS-A-42
Q9	2N5401
Q10 - Q21	MPS-A-42
Q22 - Q24	2N5401
Q25	MPS-A-42
Q26	MPS-A-42
Q27	2N5401
Q28	MPS-A-42
Q29 - Q35	2N5401
Q36 - Q40	MPS-A-42
U1	74HC373 CMOS OCTAL LATCH
U2	14514 1-16 DECODER
DISPLAY 1	14 DIGIT, 9 SEGMENT GAS DISCHARGE DISPLAY
J1	.025 SQ. PINS
TP1, TP2, TP3	TEST LOOPS
	FOAM TAPE
	BUMPER
A080-91851-E000	DUAL DISPLAY MODULE P.C.B.

CROSS

DESCR

510 OHM

820 OHM

1K 1/4W

1.5K 1/4W

2.2K 1/4W

9.1K 1/4W

10K 1/4W

20K 1/4W

100K 1/4W

100K 1/4W

150K 1/4W

300K 1/4W

1.0M OHM

2.2M OHM

10.0M OHM

100PF AX

.01UF

.01UF 50V

1N4148

1M110ZS10

2N5401

MPS-A-42

14514 1-16

74HC373

.025SQ.

14 DIGIT

GAS DISC

TEST LOO

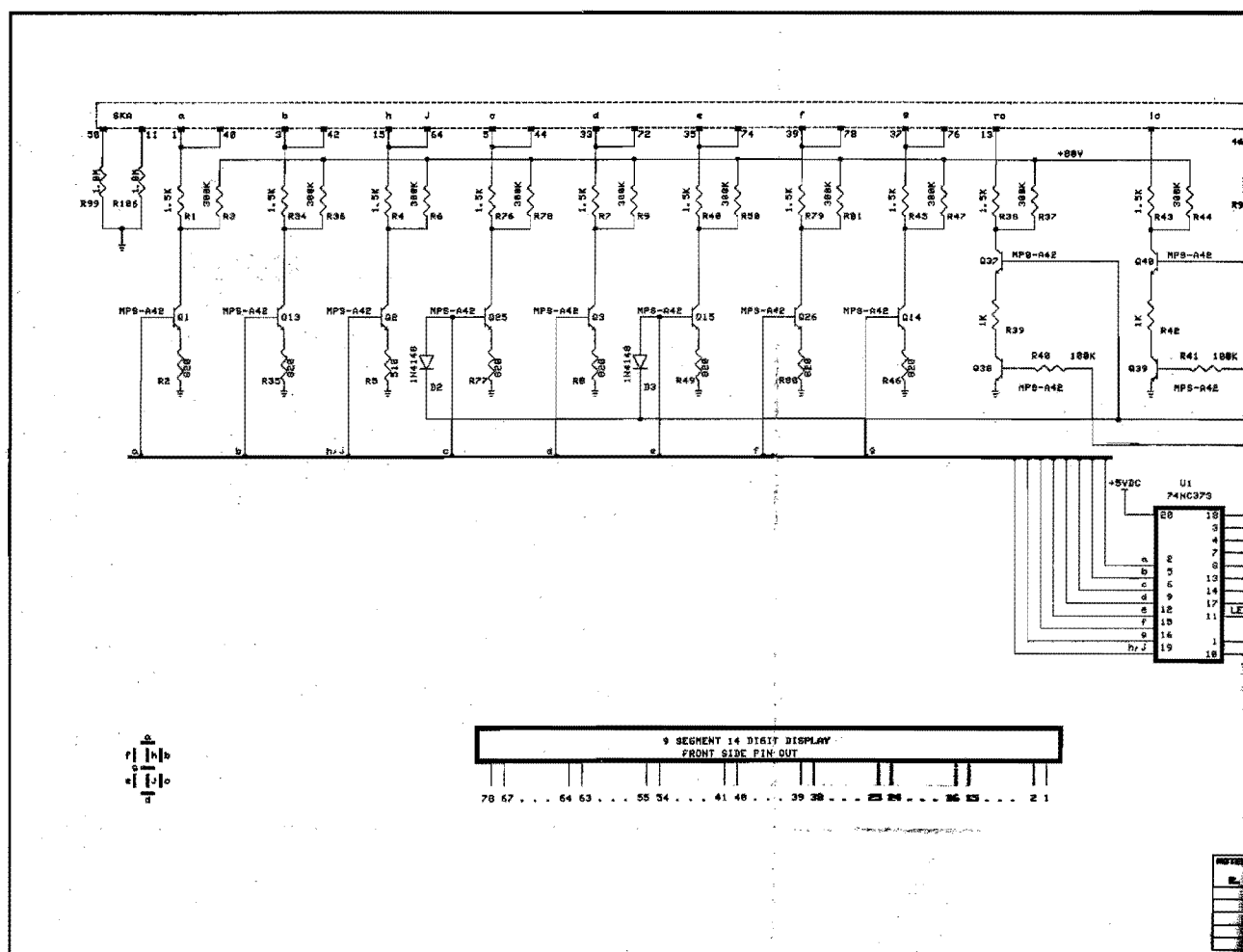
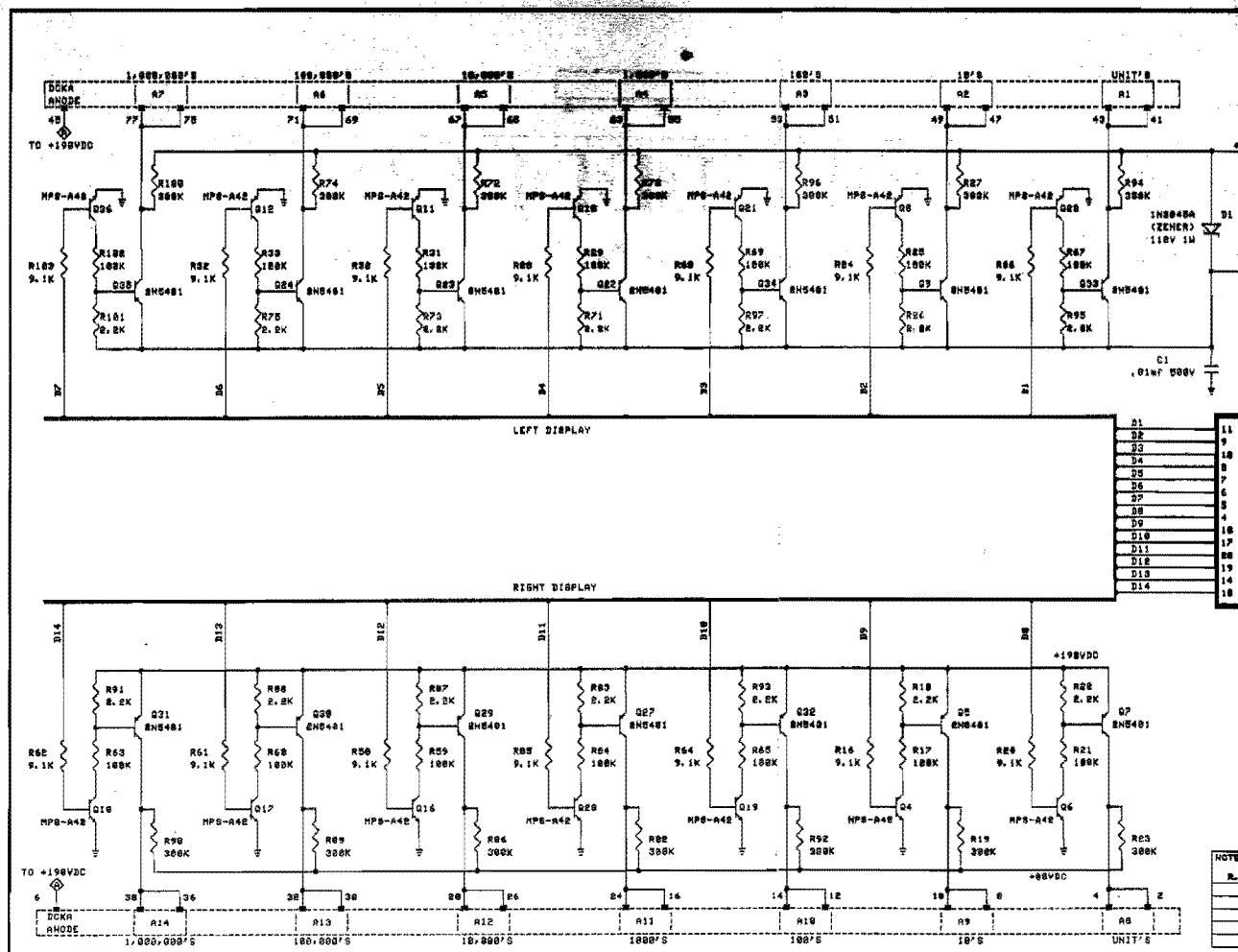
FOAM TAP

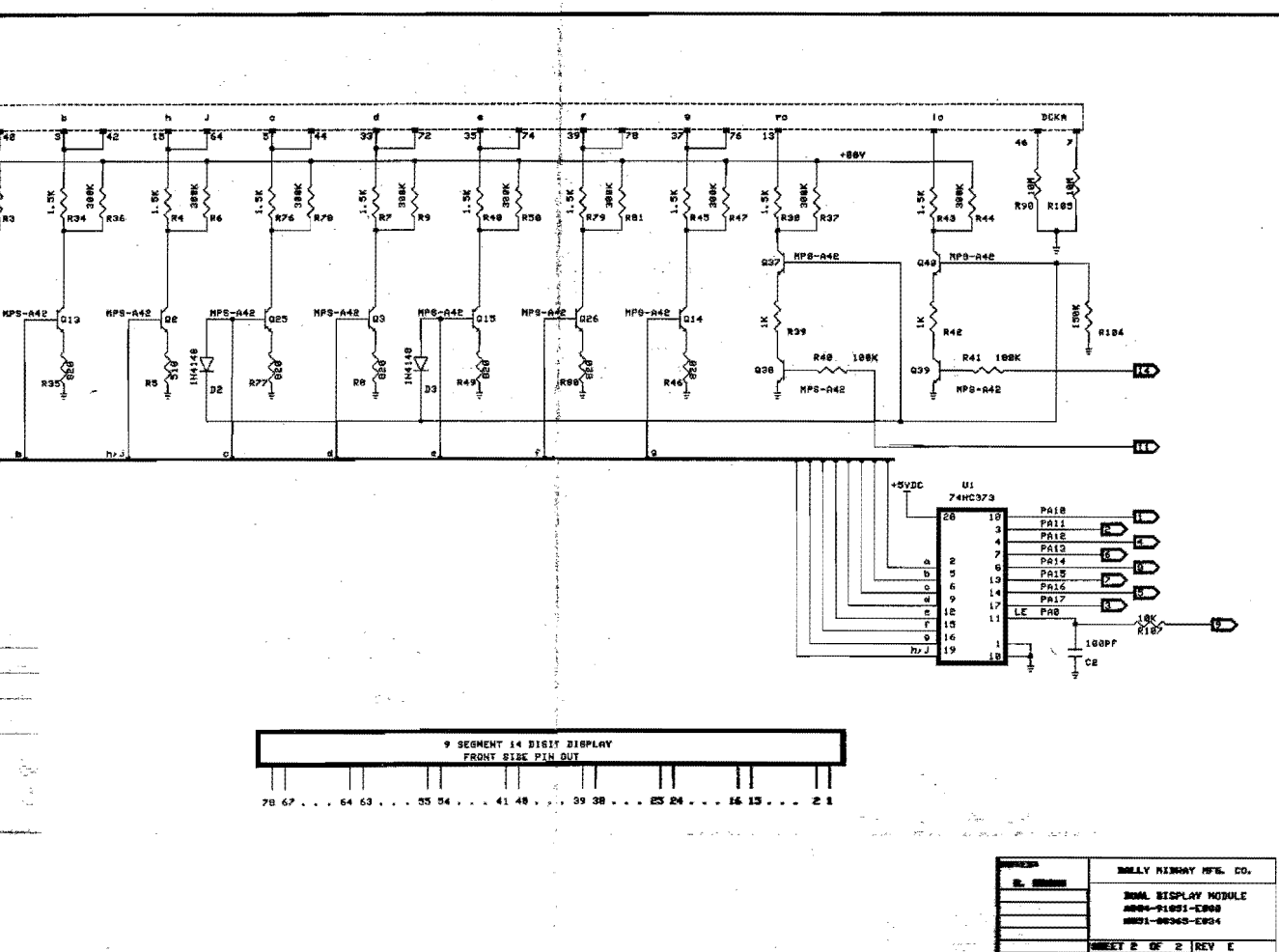
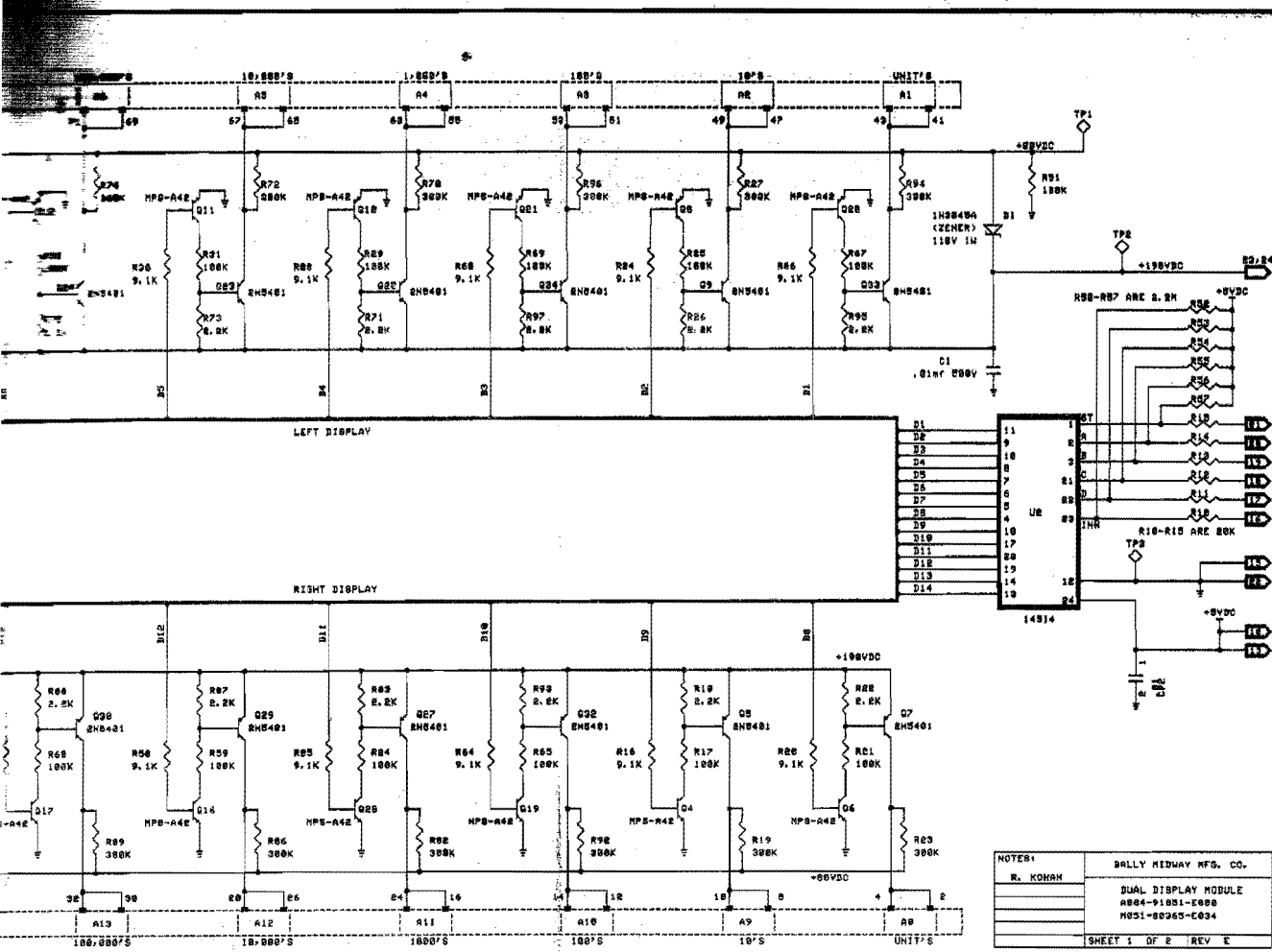
BUMPER

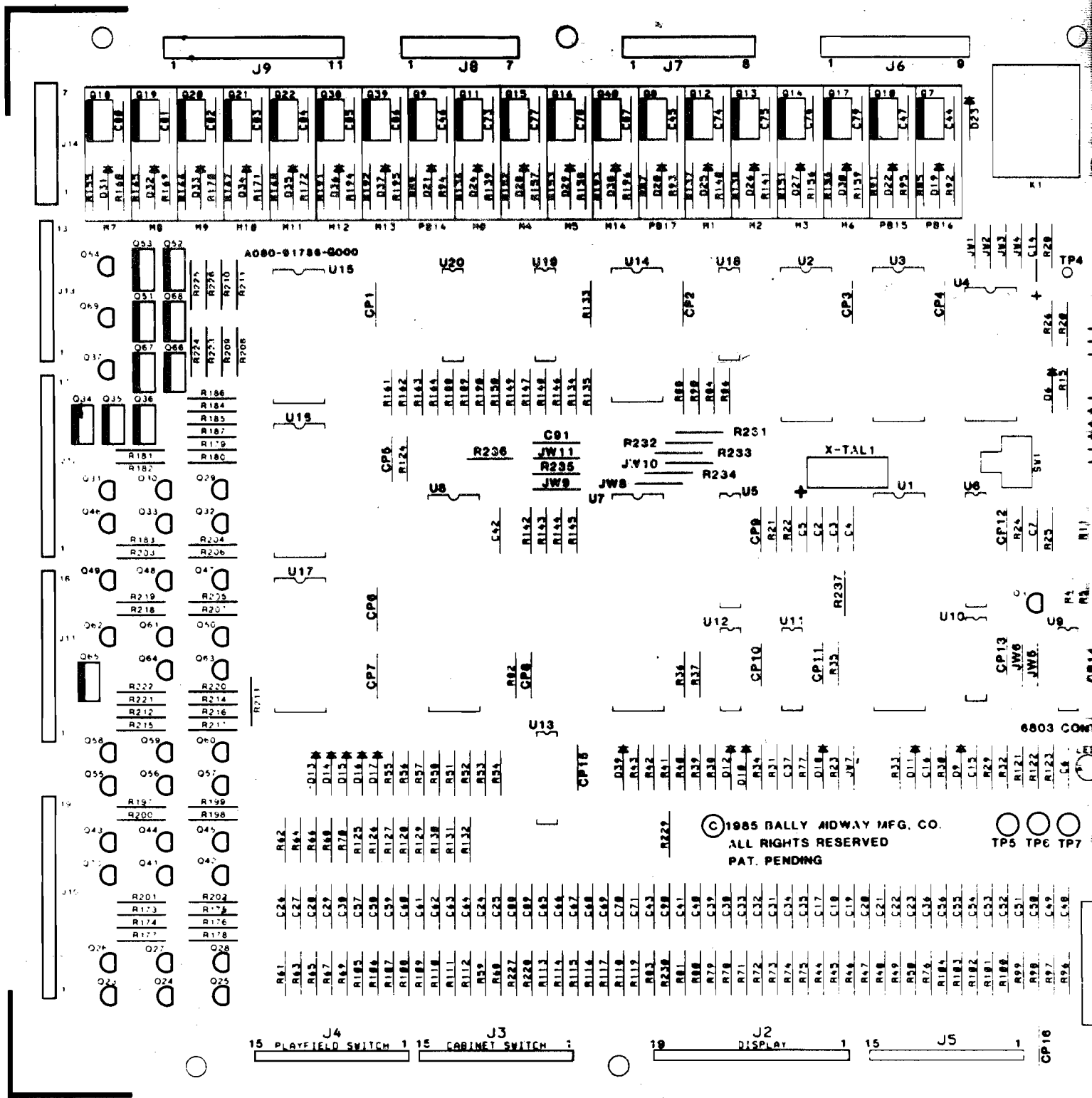
DUAL DIS

CROSS REFERENCE LIST

DESCRIPTION	QTY.	DESIGNATION NO.	PART NOS.
510 OHM 1/4W 5% CARBON	1	R5	100E-00005-0053
820 OHM 1/4W 5% CARBON	7	R2,R8,R35,R46 R49,R77,R80	100E-00005-0058
1K 1/4W 5% CARBON	2	R39,R42	100E-00005-0061
1.5K 1/4W 5% CARBON	10	R1,R4,R7,R34,R38 R43,R45,R48 R76,R79	100E-00005-0065
2.2K 1/4W 5% CARBON	14	R18,R22,R26,R71 R73,R75,R83,R87 R88,R91,R93,R95 R97,R101	100E-00005-0069
9.1K 1/4W 5% CARBON	14	R16,R20,R24,R28 R30,R32,R58,R61 R62,R64,R66,R68 R85,R103	100E-00005-0087
10K 1/4W 5% CARBON	1	R107	100E-00005-0088
20K 1/4W 5% CARBON	6	R10 - R15	100E-00005-0095
100K 1/4W 5% CARBON	2	R40,R41	100E-00005-0115
100K 1/4W 5% METAL FILM	15	R17,R21,R25,R29 R31,R33,R51,R59 R60,R63,R65,R67 R69,R84,R102	100E-00001-0011
150K 1/4W 5% CARBON	1	R104	100E-00005-0120
300K 1/4W 5% CARBON	24	R3,R6,R9,R19,R23 R27,R36,R37,R44, R47,R50,R70,R72, R74,R78,R81,R82, R86,R89,R90,R92, R94,R96,R100	100E-00005-0127
1.0M OHM 1/4W 5% CARBON	2	R99,R106	100E-00005-0140
2.2M OHM 1/4W 5% CARBON	6	R52 - R57	100E-00005-0147
10.0M OHM 1/4W 5% CARBON	2	R98,R105	100E-00005-0162
100PF AX. CER.	1	C2	0639-00800-0003
.01UF	2	CP1,CP2	0360-00800-0005
.01UF 500V	1	C1	0360-00800-0013
1N4148	2	D2,D3	103E-00002-0005
1M110ZS10 110V ZENER DIODE	1	D1	103E-00001-0028
2N5401 PNP XSTR	14	05,07,09,022,023 024,027,029,030 031,032,033,034 035	0360-00802-0006
MPS-A-42 NPN XSTR	26	01-04,06,08,010- 021,025,026,028 036-040	0360-00802-0007
14514 1-16 DECODER	1	U2	0360-00803-0013
74HC373 OCTAL LATCH	1	U1	0365-00803-0015
.025SQ. PINS	23	J1	0304-00804-0009
14 DIGIT, 9 SEGMENT GAS DISCHARGE DISPLAY	1	DISPLAY 1	119E-00002-0006
TEST LOOPS	3	TP1 - TP3	0017-00007-0131
FOAM TAPE	3		0017-00081-0288
BUMPER	1		0017-00041-0598
DUAL DISPLAY MODULE PCB	1		A080-91851-E000







THIS DWG IS CONFIDENTIAL & PROPERTY OF MIDWAY MFG. CO.			
DIM. TOLERANCES UNLESS OTHERWISE SPEC. CONCENTRICITY T.I.R. .002 FRACTIONAL ± 1/64 DECIMAL ± .005 HOLE DIA. + .002 - .000 ANGLE ± 1/2° DO NOT SCALE DWG.		FIRST USED ON DWN CL DATE 04/08/86 SCALE	
MECH CHK	MAT L	MIDWAY MFG. CO. FRANKLIN PK., IL. 60131 A BALLY CO. ASSY DRAWING 6803 CONTROL BD. A084-91786-G000	
ELEC CHK	FINISH		
		PART NO	REVISIO
		M0-5-1 - 0-0-C-5	

REVISIONS		
PART NO.		
M05-1-00C-5-3-G00-3		

CROSS REFERENCE LIST

DESCRIPTION	QTY.	DESIGNATION NO.	PART NOS.	CROSS REF
27pf 50V CER.	2	C2, C3	0360-00800-0052	7.5 1/4
47pf 50V CER.	1	C7	0360-00800-0027	9.1 1/4
390pf 50V CER.	25	C24-C30, C57-C71	0360-00800-0001	10K 1/4
		C88-C90		15K 1/4
470pf 1KV CER.	27	C17-C23, C31-C36,	0307-00800-0008	39K 1/4
		C38-C41, C48-C56, C91		47K 1/4
.002uf 1KV CER.	19	C44-C47, C73-C87	0360-00800-0012	56K 1/4
.003uf 1KV CER.	1	C43	0360-00800-0025	
.01uf 50V CER.	24	C6, C9, C10, C12, C13	0365-00800-0014	62K 1/4
		C15, C16, C42, CP1-CP16		82K 1/4
.05uf 16V CER.	1	C37	0360-00800-0006	100K 1/4
.1uf 50V CER.	1	C4	0360-00800-0058	270K 1/4
4.7uf 25V TANT	2	C5, C14	0360-00800-0008	82 OHM
6.8uf 25V TANT	1	C1	0360-00800-0048	
470uf 16V ELEC	1	C8	0360-00800-0022	IN958A
470uf 25V ELEC	1	C11	0360-00800-0024	IN4004
82 OHM 1/4W 5%	1	R9	100E-00005-0031	IN4148
100 OHM 1/4W 5%	1	R8	100E-00005-0033	IN4606
110 OHM 1/4W 5%	1	R83	100E-00005-0034	2N3904
120 OHM 1/4W 5%	21	R24, R85, R87, R89,	100E-00005-0035	2N4403
		R91, R121, R136-R138,		2N5060
		R151-R155, R165-R168,		
		R191-R193		2N5305
270 OHM 1/4W 5%	1	R28	100E-00005-0044	MCR106-
330 OHM 1/4W 5%	23	R92-R95, R139-R141,	100E-00005-0047	
		R156-R160, R169-R172,		SE9302
		R194-R196, R231-R234		4011
470 OHM 1/4W 5%	9	R96-R104	100E-00005-0051	4502
560 OHM 1/4W 5%	1	R1	100E-00005-0054	4514B
680 OHM 1/4W 5%	1	R25	100E-00005-0056	4584
750 OHM 1/4W 5%	1	R19	100E-00005-0057	6116 RA
910 OHM 1/4W 5%	1	R18	100E-00005-0059	6803 MP
1K 1/4W 5%	3	R3, R29, R32	100E-00005-0061	6821 PI
1.2K 1/4W 5%	60	R44-R50, R59-R61, R63,	100E-00005-0063	74LS04
		R65, R67, R69, R71-R76		74LS10
		R78-R82, R105-R119, R122		75LS154
		R133-R135, R146-R150,		74HCT24
		R161-R164, R188-R190,		74LS373
		R227, R228, R230, R236		CA3081
1.5K 1/4W 5%	1	R20	100E-00005-0065	
2K 1/4W 5%	46	R123, R173-R187	100E-00005-0068	3.580 M
		R197-R226		LED GRE
2.7K 1/4W 5%	2	R2, R6	100E-00005-0071	TEST PO
3K 1/4W 5%	1	R17	100E-00005-0073	SWITCH
3.3K 1/4W 5%	18	R21-R23, R35, R51-R58,	100E-00005-0074	BATTERY
		R124, R142-R145, R235		ZERO OH
3.9K 1/4W 5%	4	R84, R86, R88, R90	100E-00005-0077	
4.7K 1/4W 5%	8	R36-R43	100E-00005-0079	RELAY 4
5.6 1/4W 5%	1	R16	100E-00005-0082	40 PIN
				28 PIN
				24 PIN
				FERRITE

6803 CONTROL BOARD
A084-91786-G000
M051-00C53-G003

CROSS REFERENCE LIST

	<u>DESCRIPTION</u>	<u>QTY.</u>	<u>DESIGNATION NO.</u>	<u>PART NOS.</u>
00-0052	7.5 1/4W 5%	1	R5	100E-00005-0085
00-0027	9.1 1/4W 5%	1	R4	100E-00005-0087
00-0001	10K 1/4W 5%	4	R12, R13, R30, R33	100E-00005-0088
	15K 1/4W 5%	2	R31, R34	100E-00005-0092
	39K 1/4W 5%	1	R7	100E-00005-0102
00-0008	47K 1/4W 5%	2	R10, R11	100E-00005-0104
	56K 1/4W 5%	14	R62, R64, R66, R68	100E-00005-0106
00-0012			R70, R125-R132, R229	
00-0025	62K 1/4W 5%	1	R15	100E-00005-0107
00-0014	82K 1/4W 5%	1	R14	100E-00005-0112
	100K 1/4W 5%	2	R26, R237	100E-00005-0115
00-0006	270K 1/4W 5%	1	R77	100E-00005-0126
00-0058	82 OHM 1W 10%	1	R27	100E-00007-0014
00-0008				
00-0048	1N958B ZENER	1	D1	103E-00001-0002
00-0022	1N4004	20	D19-D38	103E-00003-0005
00-0024	1N4148	13	D3, D6, D9-D18, D39	103E-00002-0005
05-0031	1N4606	5	D2, D4, D5, D7, D8	103E-00002-0006
05-0033	2N3904	3	Q2, Q4, Q6	104E-00001-0006
05-0034	2N4403	2	Q3, Q5	104E-00002-0006
05-0035	2N5060	35	Q23-Q33, Q37, Q41-Q50, Q54-Q64, Q69, Q70	104E-00015-0001
	2N5305	1	Q1	104E-00007-0003
05-0044	MCR106-1	10	Q34-Q36, Q51-Q53	0360-00802-0009
05-0047			Q65-Q68	
	SE9302	19	Q7-Q22, Q38-Q40	0360-00802-0008
	4011	1	U11	0360-00803-0010
	4502	1	U13	0360-00803-0005
05-0051	4514B	3	U15-U17	0360-00803-0013
05-0054	4584	1	U12	0066-090BX-XXDX
05-0056	6116 RAM	1	U4	0365-00803-0013
05-0057	6803 MPU	1	U1	0360-00803-0048
05-0059	6821 PIA	2	U7, U8	0360-00803-0017
05-0061	74LS04	1	U10	0A15-00803-0010
05-0063	74LS10	1	U9	0A89-00803-0007
	75LS154	1	U14	0360-00803-0024
	74HCT245	1	U5	0365-00803-0014
	74LS373	1	U6	0A89-00803-0006
	CA3081	3	U18-U20	0360-00803-0007
05-0065	3.580 MHz CRYSTAL	1	XTAL-1	109E-00001-0003
05-0068	LED GREEN	1	LED 1	0017-00007-0131
	TEST POINTS	7	TP1-TP7	0017-00007-0131
05-0071	SWITCH P.B.	1	SW1	0017-00032-0038
05-0073	BATTERY 3.6V	1	BATT-1	0017-00003-0172
05-0074	ZERO OHM RES. JUMPER	5	JW2, JW4, JW6, JW8, JW10	117E-00001-0001
05-0077	RELAY 48VDC	1	K1	114E-00001-0011
05-0079	40 PIN I.C. SOCKET	3	XU1, XU7, XU8	110E-00001-0011
05-0082	28 PIN I.C. SOCKET	2	XU2, XU3	110E-00001-0010
	24 PIN I.C. SOCKET	1	XU4	110E-00001-0007
	FERRITE BEAD	4	FR1-FR4	0316-00804-0002

DESIGNATION LIST

<u>DESIGNATION</u>	<u>DESCRIPTION</u>	<u>DESIGNATION</u>	<u>DESCRIPTION</u>	<u>DESIGNATION</u>
C1	6.8UF 25V TANT.	R28	270 OHM 1/4W 5%	R165 - R168
C2,C3	27PF 50V CER.	R29	1K 1/4W 5%	R169 - R172
C4	.1UF 50V CER.	R30	10K 1/4W 5%	R173 - R176
C5	4.7UF 25V TANT.	R31	15K 1/4W 5%	R188 - R191
C6	.01UF 50V CER.	R32	1K 1/4W 5%	R191 - R194
C7	47PF 50V CER.	R33	10K 1/4W 5%	R194 - R197
C8	470UF 16V ELEC.	R34	15K 1/4W 5%	R197 - R200
C9,C10	.01UF 50V CER.	R35	3.3K 1/4W 5%	R227,R228
C11	470UF 25V ELEC.	R36 - R43	4.7K 1/4W 5%	R229
C12,C13	.01UF 50V CER.	R44 - R50	1.2K 1/4W 5%	R230
C14	4.7UF 25V TANT.	R51 - R58	3.3K 1/4W 5%	R231 - R234
C15,C16	.01UF 50V CER.	R59 - R61	1.2K 1/4W 5%	R235
C17 - C23	470PF 1KV CER.	R62	56K 1/4W 5%	R236
C24 - C30	390PF 50V CER.	R63	1.2K 1/4W 5%	R237
C31 - C36	470PF 1KV CER.	R64	56K 1/4W 5%	D1
C37	.05UF 16V CER.	R65	1.2K 1/4W 5%	D2
C38 - C41	470PF 1KV CER.	R66	56K 1/4W 5%	D3
C42	.01UF 50V CER.	R67	1.2K 1/4W 5%	D4,D5
C43	.003UF 1KV CER.	R68	56K 1/4W 5%	D6
C44 - C47	.002UF 1KV CER.	R69	1.2K 1/4W 5%	D7,D8
C48 - C56	470PF 1KV CER.	R70	56K 1/4W 5%	D9 - D18
C57 - C71	390PF 50V CER.	R71 - R76	1.2K 1/4W 5%	D19 - D38
C73 - C87	.002 1KV CER.	R77	270K 1/4W 5%	D39
C88 - C90	390PF 50V CER.	R78 - R82	1.2K 1/4W 5%	Q1
C91	470PF 1KV CER.	R83	110 OHM 1/4W 5%	Q2
CP1 - CP16	.01 50V CER.	R84	3.9K 1/4W 5%	Q3
R1	560 OHM 1/4W 5%	R85	120 OHM 1/4W 5%	Q4
R2	2.7K 1/4W 5%	R86	3.9K 1/4W 5%	Q5
R3	1K 1/4W 5%	R87	120 OHM 1/4W 5%	Q6
R4	9.1K 1/4W 5%	R88	3.9K 1/4W 5%	Q7 - Q22
R5	7.5K 1/4W 5%	R89	120 OHM 1/4W 5%	Q23 - Q33
R6	2.7K 1/4W 5%	R90	3.9K 1/4W 5%	Q34 - Q36
R7	39K 1/4W 5%	R91	120 OHM 1/4W 5%	Q37
R8	100 OHM 1/4W 5%	R92 - R95	330 OHM 1/4W 5%	Q38 - Q40
R9	82 OHM 1/4W 5%	R96 - R104	470 OHM 1/4W 5%	Q41 - Q50
R10,R11	47K 1/4W 5%	R105 - R119	1.2K 1/4W 5%	Q51 - Q53
R12,R13	10K 1/4W 5%	R121	120 OHM 1/4W 5%	Q54 - Q64
R14	82K 1/4W 5%	R122	1.2K 1/4W 5%	Q65 - Q68
R15	62K 1/4W 5%	R123	2K 1/4W 5%	Q69,Q70
R16	5.6K 1/4W 5%	R124	3.3K 1/4W 5%	U1
R17	3K 1/4W 5%	R125 - R132	56K 1/4W 5%	U4
R18	910 OHM 1/4W 5%	R133 - R135	1.2K 1/4W 5%	U5
R19	750 OHM 1/4W 5%	R136 - R138	120 OHM 1/4W 5%	U6
R20	1.5K 1/4W 5%	R139 - R141	330 OHM 1/4W 5%	U7,U8
R21 - R23	3.3K 1/4W 5%	R142 - R145	3.3K 1/4W 5%	U9
R24	120 OHM 1/4W 5%	R146 - R150	1.2K 1/4W 5%	U10
R25	680 OHM 1/4W 5%	R151 - R155	120 OHM 1/4W 5%	U11
R26	100K 1/4W 5%	R156 - R160	330 OHM 1/4W 5%	U12
R27	82 OHM 1W 10%	R161 - R164	1.2K OHM 1/4W 5%	U13
				U14

6803 CONTROL BOARD**A084-91786-G000****M051-00C53-G003****DESIGNATION****DESCRIPTION**

R165 - R168	120 OHM 1/4W 5%
R169 - R172	330 OHM 1/4W 5%
R173 - R187	2K 1/4W 5%
R188 - R190	1.2K 1/4W 5%
R191 - R193	120 OHM 1/4W 5%
R194 - R196	330 OHM 1/4W 5%
R197 - R226	2K 1/4W 5%
R227,R228	1.2K 1/4W 5%
R229	56K 1/4W 5%
R230	1.2K 1/4W 5%
R231 - R234	330 OHM 1/4W 5%
R235	3.3K 1/4W 5%
R236	1.2K 1/4W 5%
R237	100K OHM 1/4W 5%
D1	1N958B
D2	1N4606
D3	1N4148
D4,D5	1N4606
D6	1N4148
D7,D8	1N4606
D9 - D18	1N4148
D19 - D38	1N4004
D39	1N4148
Q1	2N5305
Q2	2N3904
Q3	2N4403
Q4	2N3904
Q5	2N4403
Q6	2N3904
Q7 - Q22	SE9302
Q23 - Q33	2N5060
Q34 - Q36	MCR 106-1
Q37	2N5060
Q38 - Q40	SE9302
Q41 - Q50	2N5060
Q51 - Q53	MCR 106-1
Q54 - Q64	2N5060
Q65 - Q68	MCR 106-1
Q69,Q70	2N5060
U1	6803
U4	6116 RAM
U5	74HCT245
U6	74LS373
U7,U8	6821
U9	74LS10
U10	74LS04
U11	4011
U12	4584
U13	4502
U14	74LS154

DESIGNATION**DESCRIPTION**

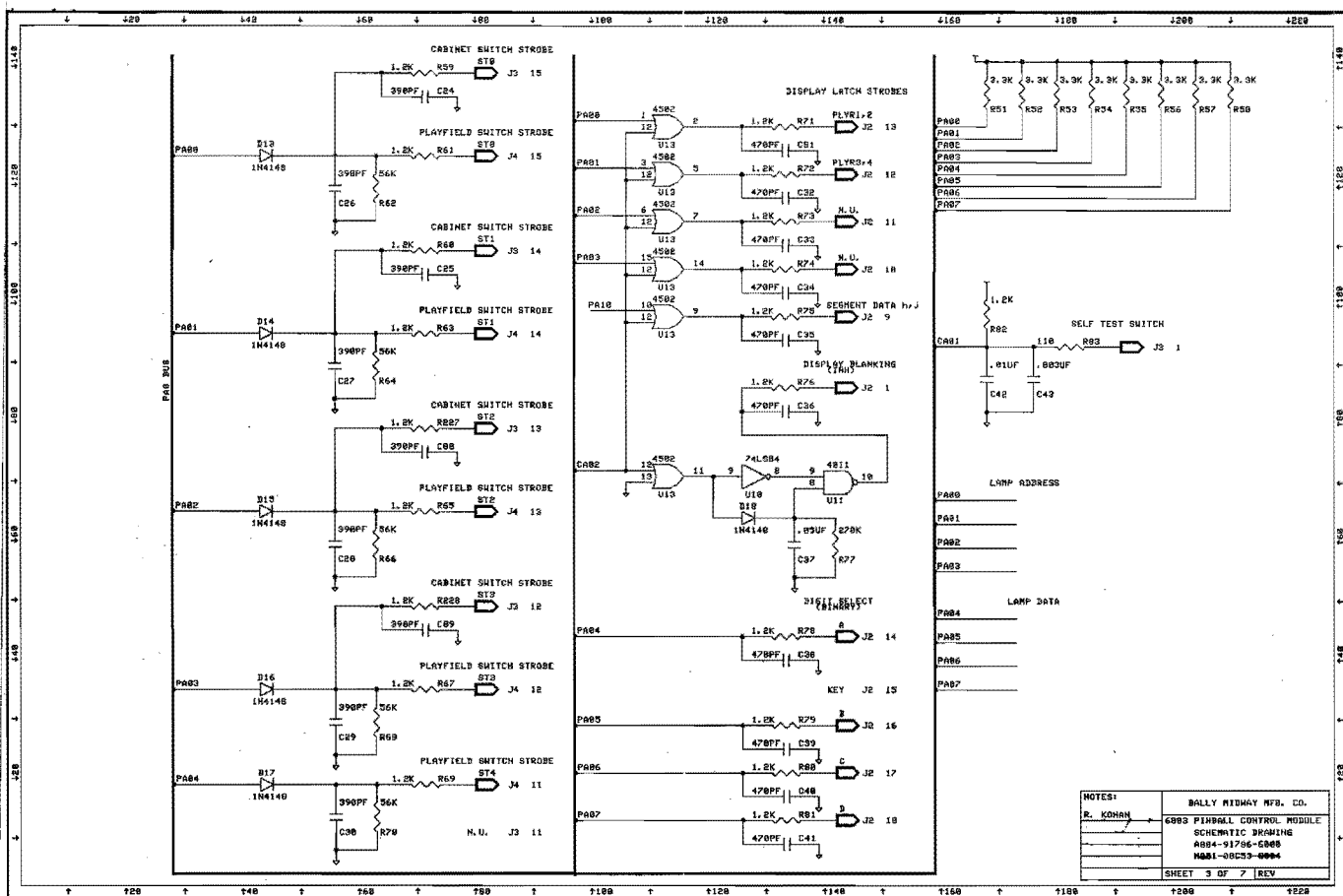
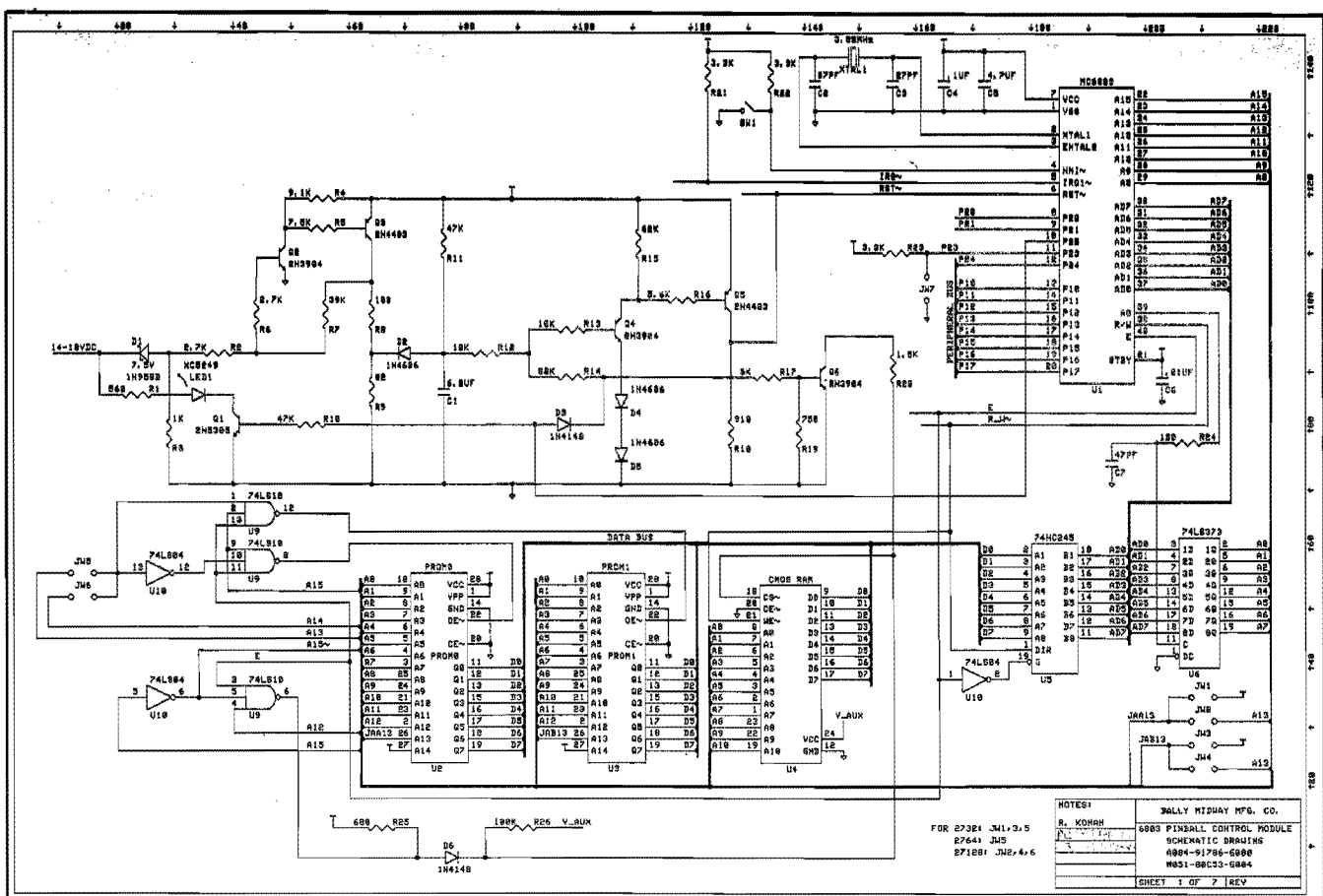
U15 - U17	4514B
U18 - U20	CA3081
XTAL-1	3.580 MHZ CRYSTAL
LED 1	LED GREEN
TP1 - TP7	TEST POINTS
SW1	SWITCH P.B.
BATT-1	BATTERY 3.6V
JW2	ZERO OHM RES. JUMPER
JW4	ZERO OHM RES. JUMPER
JW6	ZERO OHM RES. JUMPER
JW8	ZERO OHM RES. JUMPER
JW10	ZERO OHM RES. JUMPER
K1	RELAY 48V DC
XU1,XU7,XU8	40 PIN IC SOCKET
XU2, XU3	28 PIN IC SOCKET
XU4	24 PIN IC SOCKET
FB1 - FB4	FERRITE BEAD
J1	11 - .045 SQ. PINS
J2	18 - .025 SQ. PINS
J3	14 - .025 SQ. PINS
J4	14 - .025 SQ. PINS
J5	14 - .025 SQ. PINS
J6	8 - .045 SQ. PINS
J7	7 - .045 SQ. PINS
J8	6 - .045 SQ. PINS
J9	10 - .045 SQ. PINS
J10	18 - .025 SQ. PINS
J11	17 - .025 SQ. PINS
J12	16 - .025 SQ. PINS
J13	12 - .025 SQ. PINS
J14	5 - .045 SQ. PINS
P/O BATT-1	TY-WRAP
6803 CONTROL BD.	P.C. BOARD

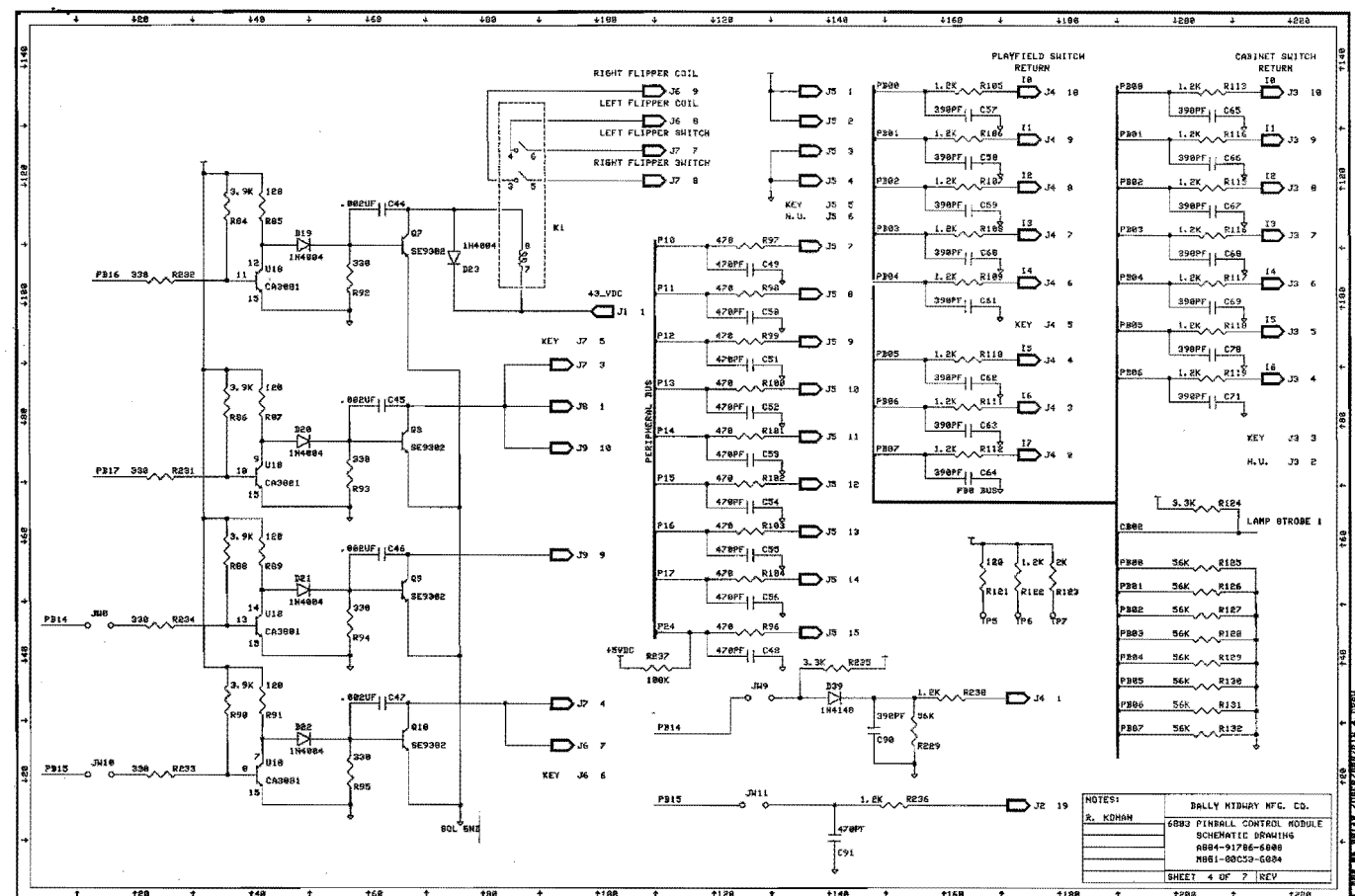
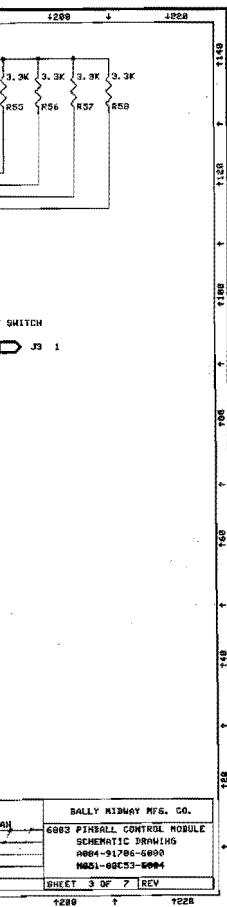
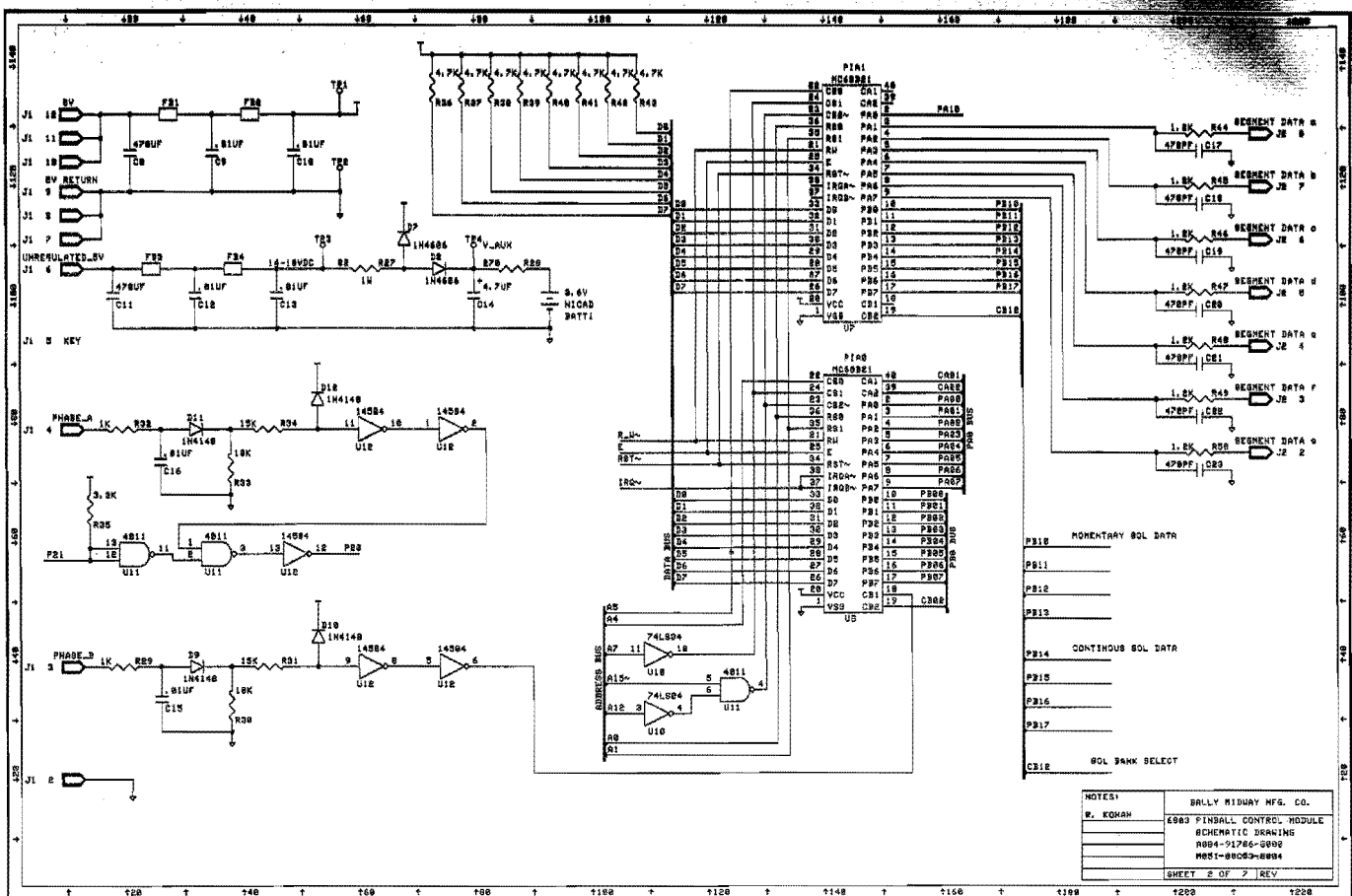
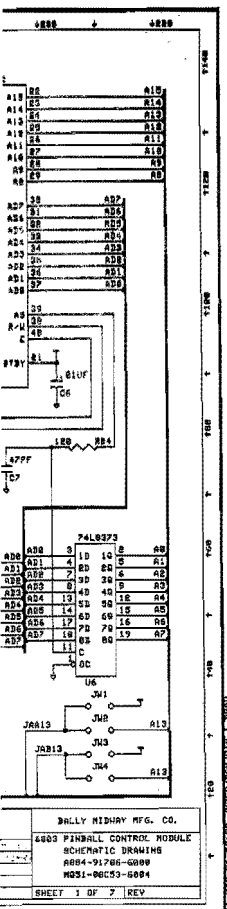
6803 CONTROL BOARD
A084-91786-G000
M051-000C53-G003

CROSS REFERENCE LIST

<u>DESCRIPTION</u>	<u>QTY.</u>	<u>DESIGNATION NO.</u>	<u>PART NOS.</u>
.025 SQ. PINS	123	J2, J3, J4, J5, J10, J11, J12, J13	0304-00804-0009
.045 SQ. PINS	47	J1, J6, J7, J8, J9, J14	0304-00804-0010
TY-WRAP	1	P/O BATT-1	0017-00042-0622
P.C. BOARD	1	6803 CONTROL BOARD	A080-91786-G000

4-23-86 REV. 1.0 Fixed Part Number for 470PF Cap.





MOTORDOME LAMP DRIVER LOCATIONS

DRIVER	CONNECTOR	PIN	PHASE	WIRE CODE	DESCRIPTION	DRIVER	CONNECTOR
Q57	J10	18	B	43	BOLT #1	Q62	J11
Q26	J10	4	B	15	BOLT #2	Q55	J10
Q43	J10	11	B	31	BOLT #3	Q70	J10
Q58	J10	19	B	45	BOLT #4	Q23	J10
Q27	J10	5	B	18	BOLT #5	Q52	J13
Q44	J10	12	B	32	BOLT #6	Q67	J13
Q47	J11	11	B	71	FLIPPER LIGHT	Q36	J13
Q51	J13	8	A	93	LEFT "RED" ARROW	Q65	J11
Q66	J13	6	A	87	LEFT "YELLOW" ARROW	Q69	J13
Q53	J13	12	B	96	LEFT BUMPER	Q54	J13
Q53	J13	12	A	96	LEFT OUTLANE	Q37	J13
Q62	J11	4	A	61	LEFT SAUCER COLLECT BONUS		
Q47	J11	11	A	71	LEFT SAUCER OPEN GATE		
Q25	J10	3	A	14	LEFT SELECT		
Q57	J10	18	A	43	LEFT SPINNER 1000		
Q26	J10	4	A	15	LEFT SPINNER 2000		
Q43	J10	11	A	31	LEFT SPINNER 3000		
Q58	J10	19	A	45	LEFT SPINNER 4000		
Q27	J10	5	A	18	LEFT SPINNER 5000		
Q44	J10	12	A	32	LEFT SPINNER 6000		
Q59	J10	14	A	37	LEFT SPINNER 7000		
Q28	J10	6	A	21	LEFT SPINNER 8000		
Q33	J11	15	B	75	LEFT STAR		
Q23	J10	1	A	12	LEVEL 1 BOTTOM		
Q24	J10	2	A	13	LEVEL 1 TOP		
Q70	J10	7	A	24	LEVEL 2 BOTTOM		
Q41	J10	8	A	25	LEVEL 2 TOP		
Q55	J10	16	A	38	LEVEL 3 BOTTOM		
Q56	J10	17	A	41	LEVEL 3 TOP		
Q68	J13	10	B	94	MIDDLE BUMPER		
Q31	J11	13	A	73	MILLION		
Q48	J11	10	A	68	MILLION		
Q63	J11	3	A	59	MILLION		
Q32	J11	14	A	74	MILLION		
Q49	J11	9	A	67	MILLION		
Q64	J11	2	A	58	MILLION		
Q33	J11	15	A	75	MILLION		
Q34	J13	1	A	81	RIGHT "RED" ARROW		
Q35	J13	2	A	83	RIGHT "YELLOW" ARROW		
Q37	J13	4	B	85	RIGHT BUMPER		
Q68	J13	10	A	94	RIGHT OUTLANE		
Q54	J13	11	B	95	RIGHT SAUCER #1		
Q69	J13	7	B	91	RIGHT SAUCER #2		
Q42	J10	9	A	26	RIGHT SELECT		
Q29	J11	8	A	64	RIGHT SPINNER 1000		
Q45	J10	10	A	28	RIGHT SPINNER 300		
Q46	J11	16	A	78	RIGHT SPINNER 3000		
Q60	J10	13	A	36	RIGHT SPINNER 500		
Q61	J11	6	A	62	RIGHT SPINNER 5000		
Q30	J11	12	A	72	RIGHT SPINNER SPOT		
Q50	J11	7	B	63	RIGHT STAR		

TRANSISTOR

Q7
Q40
Q21
Q9
Q15
Q14
Q11
Q20
Q10
Q12
Q39
Q22
Q8
Q18
Q16
Q13
Q17
Q19

1-RED -R-
2-BLUE -B-
3-YELLOW
4-GREEN
5-WHITE
J-JUMPER
1-FIRST
2-SECOND

EXAMPLE:

<u>DESCRIPTION</u>	<u>DRIVER</u>	<u>CONNECTOR</u>	<u>PIN</u>	<u>PHASE</u>	<u>WIRE CODE</u>	<u>LAMP</u>
	Q62	J11	4	B	61	SAME PLAYER SHOOT'S AGAIN
SLT #1	Q55	J10	16	B	38	TARGET RESET #1
SLT #2	Q70	J10	7	B	24	TARGET RESET #2
SLT #3	Q23	J10	1	B	12	TARGET RESET #3
SLT #4	Q52	J13	13	A	97	TARGETS "25,000"
SLT #5	Q67	J13	5	A	86	TARGETS "EXTRA BALL"
SLT #6	Q36	J13	3	A	84	TARGETS SPECIAL
SLIPPER LIGHT	Q65	J11	1	A	48	TOP "50,000"
LEFT "RED" ARROW	Q69	J13	7	A	91	TOP LANE "M"
LEFT "YELLOW" ARROW	Q54	J13	11	A	95	TOP LANE "P"
LEFT BUMPER	Q37	J13	4	A	85	TOP LANE "R"

MOTORDOME SOLENOID DRIVER LOCATIONS

	<u>TRANSISTOR</u>	<u>CONNECTOR PIN</u>	<u>DESCRIPTION</u>	<u>WIRE CODE</u>
LEFT SPINNER 2000				
LEFT SPINNER 3000				
LEFT SPINNER 4000				
LEFT SPINNER 5000	Q7	ON CONTROL BOARD	K1 FLIPPER RELAY	
LEFT SPINNER 6000	Q40	J9-11	KNOCKER	59
LEFT SPINNER 7000	Q21	J9-4	LEFT BRIGHT LITES	54
LEFT SPINNER 8000	Q9	J9-9	LEFT GATE	511
LEFT STAR	Q15	J8-6	LEFT SAUCER	25
LEVEL 1 BOTTOM	Q14	J6-4	LEFT SLINGSHOT	35
LEVEL 1 TOP	Q11	J6-1	LEFT THUMPER BUMPER	31
LEVEL 2 BOTTOM	Q20	J9-3	MIDDLE BRIGHT LITES	53
LEVEL 2 TOP	Q10	J6-7	MIDDLE GATE	311
LEVEL 3 BOTTOM	Q12	J6-2	MIDDLE THUMPER BUMPER	32
LEVEL 3 TOP	Q39	J9-8	OUTHOLE	58
MIDDLE BUMPER	Q22	J9-6	RIGHT BRIGHT LITES	56
MILLION	Q8	J9-10	RIGHT GATE	24
MILLION	Q18	J9-1	RIGHT SAUCER	51
MILLION	Q16	J8-7	RIGHT SLINGSHOT	27
MILLION	Q13	J6-3	RIGHT THUMPER BUMPER	34
MILLION	Q17	J6-5	SINGLE DROP TARGET	36
MILLION	Q19	J9-2	TOP BRIGHT LITES	52
MILLION				

```

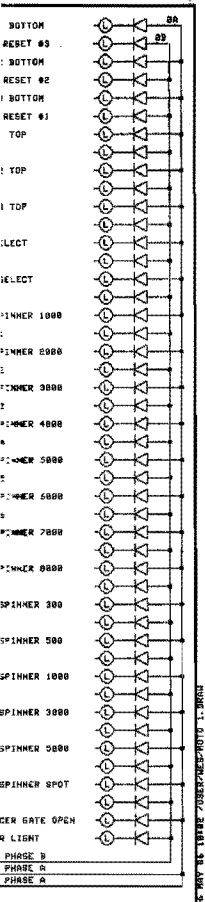
LIGHT "RED" ARROW
LIGHT "YELLOW" ARROW
LIGHT BUMPER
LIGHT OUTLANE
LIGHT SAUCER #1
LIGHT SAUCER #2
LIGHT SELECT
LIGHT SPINNER 1000
LIGHT SPINNER 300
LIGHT SPINNER 3000
LIGHT SPINNER 500
LIGHT SPINNER 5000
LIGHT SPINNER SPOT
LIGHT STAR

```

WIRE COLOR CODE

1-RED -R-	6-BROWN -BR-
2-BLUE -BLU-	7-ORANGE -O-
3-YELLOW -Y-	8-BLACK -B-
4-GREEN	9-GRAY
5-WHITE -W-	0-NO TRACER
J-JUMPER	11-VIOLET
1-FIRST NUMBER-BODY COLOR	
2-SECOND NUMBER-TRACER COLOR	

EXAMPLE: 50 -WHITE
51 -WHITE-RED



NOTES:	BALLY MIDWAY MFG. CO.
U. STONE	
4/25/86	
	NOTORBOONE PLAYFIELD
	SWITCH MATRIX
	MO51-00E14-0011
	SHEET 2 OF 2 REV

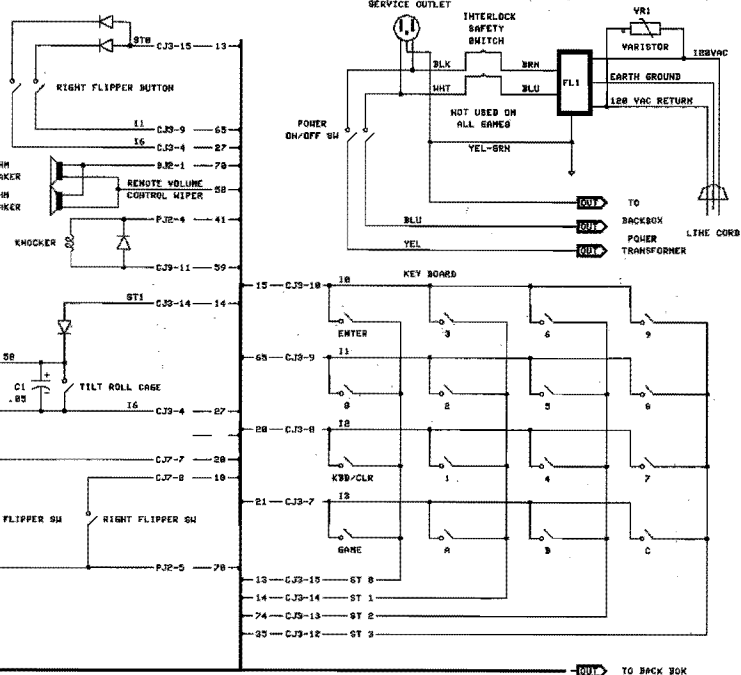
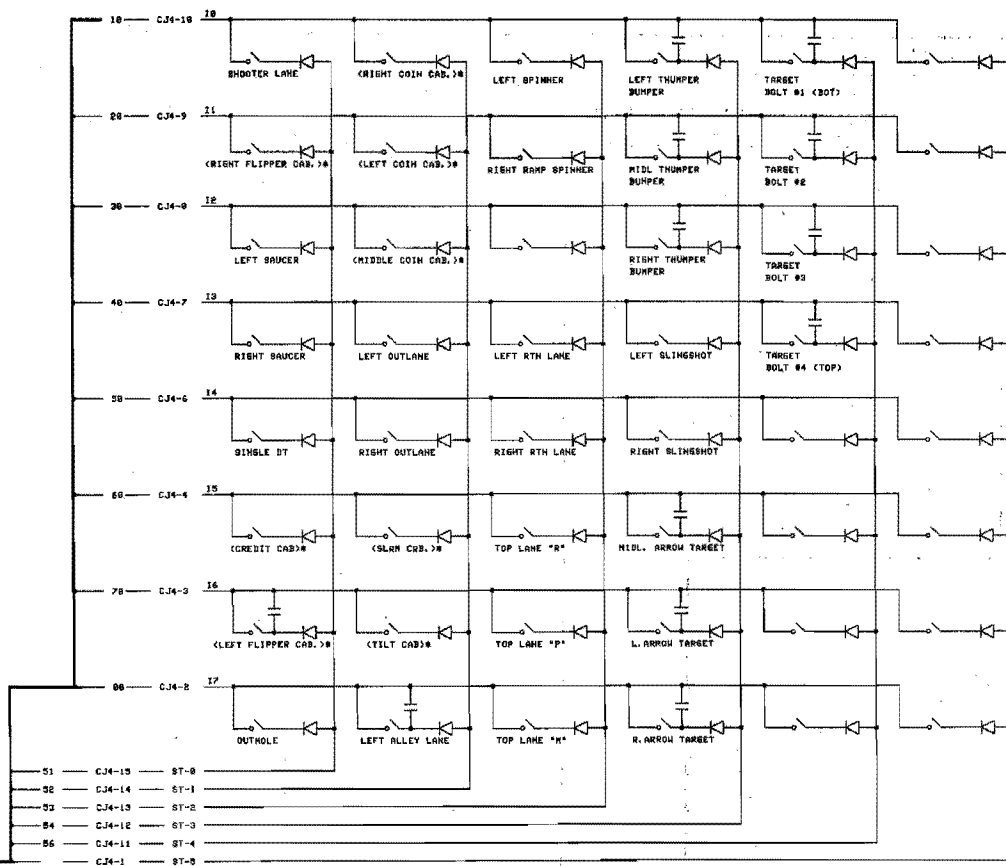
NOTE 1. ALL SWITCH DIODES ARE 1N4148

NOTE 2. ALL CAPACITORS ARE .05 MF

NOTE 3. * INDICATES NOT USED ON PLAYFIELD. BRAINING ONLY TO SHOW RESPECTIVE CABINET SWITCH POSITION IN SWITCH MATRIX.

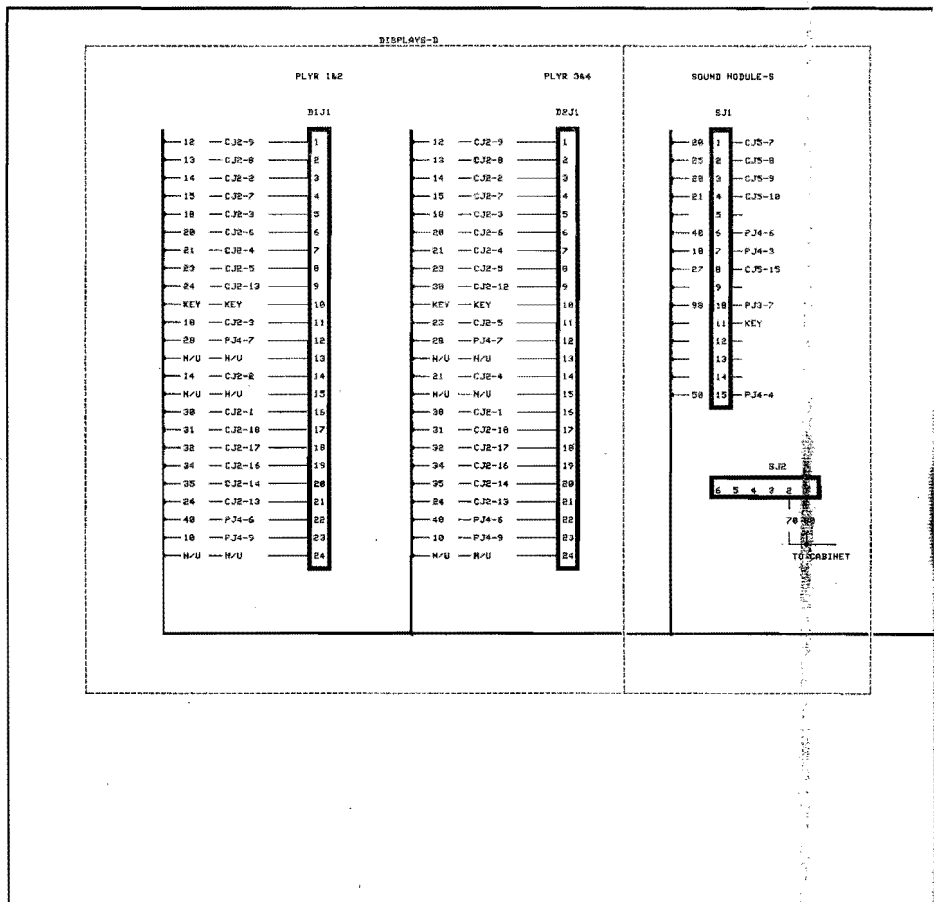
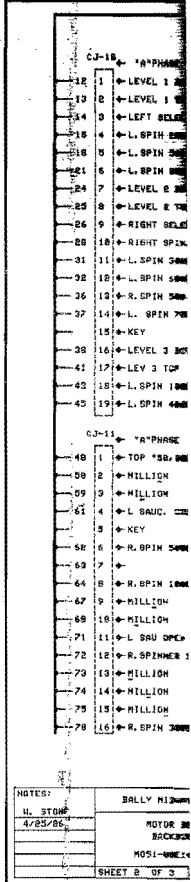
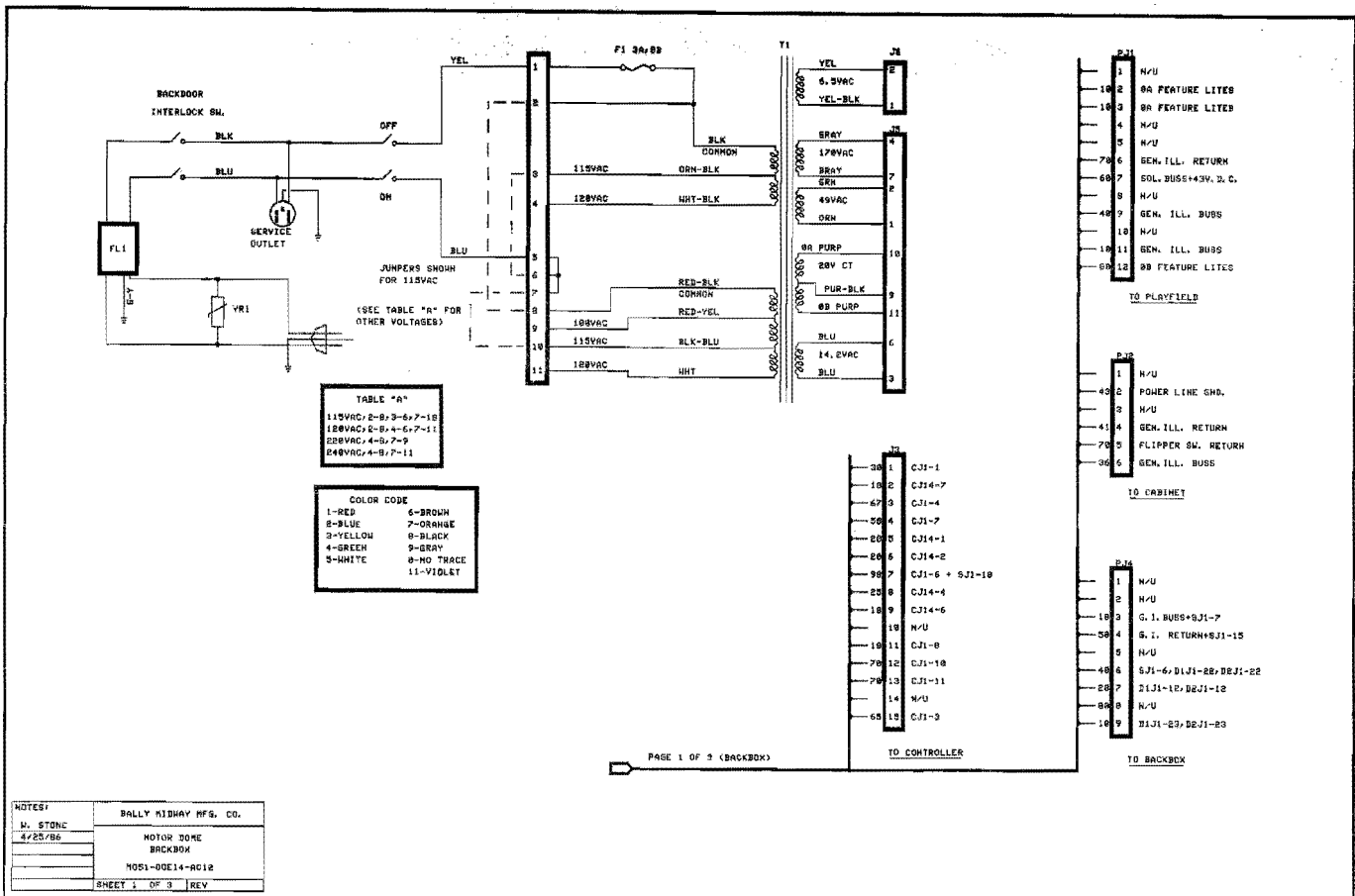
COLOR CODE	
1-RED	6-BROWN
2-BLUE	7-ORANGE
3-YELLOW	8-BLACK
4-GREEN	9-GRAY
5-WHITE	10-NO TRACE
	11-VIOLET

TO PLAYFIELD LIGHTS SHEET



COLOR CODE	
1-RED	7-ORANGE
2-BLUE	8-BLACK
3-YELLOW	9-GRAY
4-GREEN	10-NO TRACE
5-WHITE	11-VIOLET
6-BROWN	

NOTES:	BALLY MIDWAY MFG. CO.
U. STONE	
4/25/86	
	NOTORBOONE
	CABINET DIAGRAM
	MO51-00E14-0013
	SHEET 1 OF 2 REV



CJ-10	"A" PHASE	"B" PHASE
1	LEVEL 1 BOTTOM	TARGET RESET #3
2	LEVEL 1 TOP	
3	LEFT SELECT	
4	L.SPIN 3000	BOLT #2
5	L.SPIN 3000	BOLT #5
6	L.SPIN 3000	
7	LEVEL 2 BOTTOM	TARGET RESET #2
8	LEVEL 2 TOP	
9	RIGHT SELECT	
10	RIGHT SPIN 3000	
11	L.SPIN 3000	BOLT #3
12	L.SPIN 3000	BOLT #6
13	R.SPIN 300	
14	L.SPIN 7000	
15	KEY	
16	LEVEL 3 BOTTOM	TARGET RESET #1
17	LEV 3 TOP	
18	L.SPIN 1000	BOLT #1
19	L.SPIN 4000	BOLT #4

CJ-11	"A" PHASE	"B" PHASE
1	TOP "50,000"	
2	MILLION	
3	MILLION	
4	L. BAUC. COL. BOW-SPR	
5	KEY	
6	R.SPIN 3000	
7		RIGHT STAR
8	R.SPIN 1000	
9	MILLION	
10	MILLION	
11	L. BAUC. OPEN GATE-FLIPPER LIGHT	
12	R. SPINNER SPOT	
13	MILLION	
14	MILLION	
15	MILLION	LEFT STAR
16	R.SPIN 3000	

LAMP OUTPUTS

NOTES:	BALLY MIDWAY MFG. CO.
W. STONE	MOTOR HOME
4/23/86	BACKBOX
	MOSI-00E14-AD12
	SHEET 2 OF 3 REV

CJ-12	"A" PHASE	"B" PHASE
1		
2		
3		
4		
5	KEY	
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		

CJ-13	"A" PHASE	"B" PHASE
1	R "RED" ARROW	
2	R "YEL" ARROW	
3	TGTS SPECIAL	
4	TOP LANE "R"	RIGHT NUMBER
5	TGTS "KICKBALL"	
6	L "YEL" ARROW	
7	TOP LANE "H"	R. BAUC #2
8	L "RED" ARROW	
9	KEY	
10	RIGHT OUTLANE	MIDDLE BUMPER
11	TOP LANE "P"	R. BAUC #1
12	LEFT OUTLANE	LEFT BUMPER
13	TGTS "25,000"	

CJ-6	
1	L. THUMPER BUMPER
2	MID. THUMPER BUMPER
3	R. THUMPER BUMPER
4	LEFT BLINGSHOT
5	SINGLE DROP TARGET
6	KEY
7	MIDDLE GATE
8	LEFT FLIPPER
9	RIGHT FLIPPER

CJ-8	
1	MIDDLE GATE
2	
3	
4	
5	
6	LEFT BAUCER
7	RIGHT BLINGSHOT

CJ-7	
1	
2	
3	
4	
5	
6	
7	LEFT FLIPPER SWITCH
8	RIGHT FLIPPER SWITCH

CJ-9	
1	RIGHT BAUCER
2	TOP BRIGHT LITES
3	MIDDLE BRIGHT LITES
4	LEFT BRIGHT LITES
5	KEY
6	RIGHT BRIGHT LITES
7	
8	OUTHOLE
9	LEFT GATE
10	RIGHT GATE
11	KNOCKER

SOLENOID OUTPUTS

CJ-5	
1	
2	
3	
4	
5	KEY
6	
7	B.JI-1
8	B.JI-2
9	B.JI-3
10	B.JI-4
11	
12	
13	
14	
15	B.JI-7

SOUND INFO. OUTPUT

CJ-4	
1	
2	17
3	16
4	15
5	KEY
6	14
7	13
8	12
9	11
10	10
11	ST4
12	ST3
13	ST2
14	ST1
15	ST0

PLAYFIELD SWITCHES

CJ-3	
1	TEST BUTTON
2	
3	KEY
4	16
5	15
6	14
7	13
8	12
9	11
10	10
11	9
12	8
13	7
14	6
15	5
16	4
17	3
18	2
19	1

CABINET SWITCHES

CJ-2	
1	D1J1-16 + D2J1-16
2	D1J1-3, D1J1-14, D2J1-3
3	D1J1-5, D2J1-5, D1J1-11
4	D1J1-7, D2J1-7, D2J1-14
5	D1J1-8, D2J1-8, D2J1-11
6	D1J1-6, D2J1-6
7	D1J1-4, D2J1-4
8	D1J1-2, D2J1-2
9	D1J1-1, D2J1-1
10	N/U
11	N/U
12	D2J1-9
13	D1J1-9, D1J1-21, D2J1-21
14	D1J1-20, D2J1-20
15	KEY
16	D1J1-19, D2J1-19
17	D1J1-18, D2J1-18
18	D1J1-17, D2J1-17
19	N/U

DIGITAL DISPLAY OUTPUTS

CJ-1	
1	PJ3-1
2	
3	PJ3-15
4	PJ3-3
5	KEY
6	PJ3-7
7	PJ3-4
8	PJ3-11
9	
10	PJ3-18
11	PJ3-13
12	

POWER INPUTS

CJ-14	
1	
2	PJ3-6
3	KEY
4	PJ3-5
5	PJ3-8
6	PJ3-9
7	PJ3-2

COLOR CODE	
1-RED	6-BROWN
2-BLUE	7-BLACK
3-YELLOW	8-BLACK
4-GREEN	9-GRAY
5-WHITE	10-NO TRACE
	11-VIOLET

NOTES
1. CJ-18 NOT USED

SOUND MODULE-5

SJ1	
1	CJ5-7
2	CJ5-8
3	CJ5-9
4	CJ5-10
5	
6	PJ4-6
7	PJ4-3
8	CJ5-15
9	
10	PJ3-7
11	KEY
12	
13	
14	
15	PJ4-4

SJ2

5 5 4 3 2 1

TO CABINET

NOTES:	BALLY MIDWAY MFG. CO.
W. STONE	MOTOR HOME
4/23/86	BACKBOX
	MOSI-00E14-AD12
	SHEET 3 OF 3 REV

BALLY/MIDWAY'S MOTORDOME**#E14****ROM/EPROM PART NUMBERS****UNPROGRAMMED CONTROL BOARD A084-91786-G000****PROGRAMMED CONTROL BOARD A084-91786-AE14**

POS.	MIDWAY PART NUMBER
U2	E14A-42AAE-BX4D
U3	E14A-42AAE-CX4D

JUMPERS	IN	OUT
JW1		**
JW2	**	
JW3		**
JW4	**	
JW5		**
JW6	**	
JW7		**
JW8	**	
JW9		**
JW10	**	
JW11		**

UNPROGRAMMED TURBO CHEAP SQUEAK FOR PINBALL A084-91855-C000**PROGRAMMED TURBO CHEAP SQUEAK FOR PINBALL A084-91855-AE14**

POS.	MIDWAY PART NUMBER
U7	E14A-47AAE-AX4D

JUMPERS	IN	OUT
JW1		**
JW2	**	
JW3	**	
JW4	**	
JW5	**	
JW6	**	
JW7	**	
JW8	**	

M051-00E14-A008	REVISIONS
04-21-86	RELEASE FOR PRODUCTION