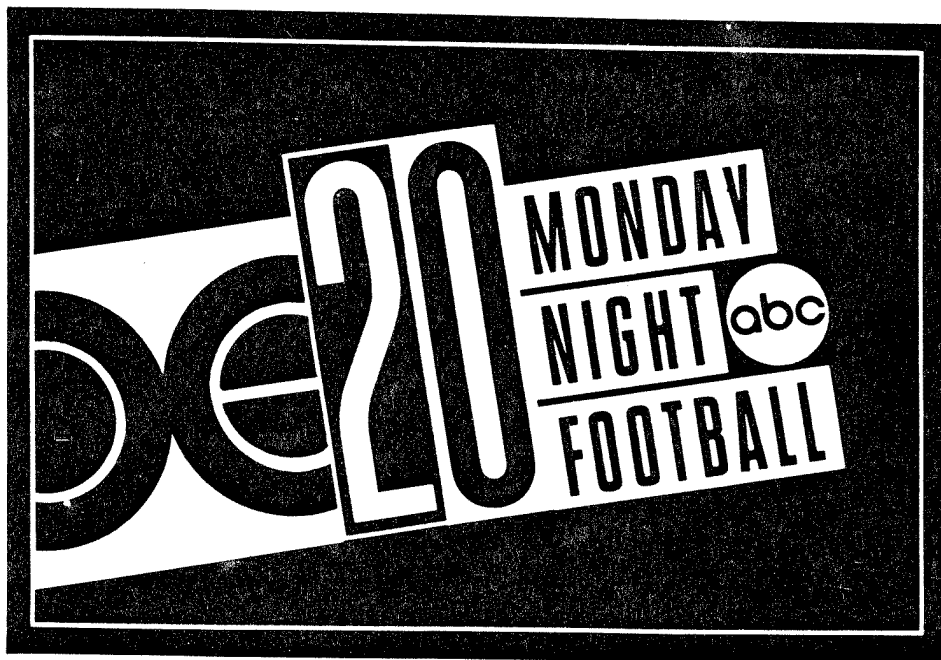




# MONDAY NIGHT FOOTBALL



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**DATA EAST PINBALL**

1990 Janice Avenue  
Melrose Park, IL 60160  
312-345-7700  
FAX 312-345-7718  
**1-800-KICKERS**

## CPU JUMPER TABLE

Game	CPU* Version	ROM Location	Jumpers	
			Installed	Removed
Laser Wars	Ver 1	5C	J1b,J3,J4,J6a,J7a,&J8	J1a,J2,J5,J6,&J7b
	Ver 2	5C	J1b,J3,J4,J5a,J6a,J7b,&J8	J1a,J2,J5,J5b,J6b,&J7a
Secret Service	Ver 2	5B,5C	J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a
Torpedo Alley	Ver 2	5B,5C	J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a
Time Machine	Ver 2	5B,5C	J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a
Playboy	Ver 2	5B,5C	J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a
ABC M.N. Football	Ver 2	5B,5C	J1b,J3,J4,J5b,J6b,J7b,&J8	J1a,J2,J5,J5a,J6a,&J7a

\*Version 1 has a 2K RAM which is a 24-pin IC at location 5D.

\*Version 2 has an 8K RAM which is a 28-pin IC at location 5D.

## Power-up CPU Self Tests

Upon power-up, the CPU board performs a series of self tests of major components. Turn the game on while observing the LEDS on the CPU board. Tests of the PIAs, RAM, and EPROMs are performed automatically and results of the test are indicated by the PIA LED.

With all tests passed, the LEDs illuminate in the following sequence at power turn-on. The PIA and +5V LED<sub>s</sub> illuminate immediately. Approximately 1/2-second later the PIA LED goes out and the Blanking LED illuminates; the +5V and Blanking LEDs remain illuminated until the game is turned off. Test failures are indicated with the PIA LED:

### PIA LED

Stays On  
Flashes 1 Time  
Flashes 2 Times  
Flashes 3 Times

### SUSPECT COMPONENT

One of the 6821 PIAs  
6064 RAM at location D5.  
EPROM at location B5.  
EPROM at location C5.

## QUICK REFERENCE FUSE CHART

### PPB BOARD

F1 5A Slo-Blo G.I. 6.3VAC  
F2 5A Slo-Blo G.I. 6.3VAC  
F3 5A Slo-Blo G.I. 6.3VAC  
F4 5A Slo-Blo G.I. 6.3VAC  
F5 5A Slo-Blo Flipper Power 48VAC  
F6 3A Slo-Blo PPB Solenoids/Flash Lamps (34VDC)

### POWER SUPPLY BOARD

F1 7A Slo-Blo +5VDC Regulator Input (9VAC)  
F2 7A Slo-Blo +5VDC Regulator Input (9VAC)  
F3 0.25A Slo-Blo Display Reg. Input (90VAC)  
F4 8A Slo-Blo Switched Illumination Buss (18VDC)  
F5 4A Slo-Blo Solenoid Buss (34VDC)  
F6 5A Slo-Blo Solenoid Buss (34VDC)

# Game Adjustment Table

Adjustment Number (Player 3)	Description (Players 1 & 2)	Factory Setting (Player 4)
AD 01	Replay/Manual	15%
AD 02	Start Replay/Level 1 Replay	2,400,000
AD 03	Levels Replay/Level 2 Replay	01
AD 04	Level 3 Replay	-
AD 05	Level 4 Replay	-
AD 06	Extra Easy Rules	OFF
AD 07	Easy Rules	OFF
AD 08	Factory Rules	ON
AD 09	Hard Rules	OFF
AD 10	Extra Hard Rules	OFF
AD 11	Novelty Rules	OFF
AD 12	5 Ball Rules	OFF
AD 13	Addaball Rules	OFF
AD 14	Standard/Custom Pricing	USA 1
AD 15	Time Setting	-
AD 16	Coin Reset	OFF
AD 17	Audits Reset	OFF
AD 18	Restore Hiscr	OFF
AD 19	Expand Adjustments	OFF
E Ad 20	Awards Replay	CREDITS
E Ad 21	Awards Special	CREDITS
E Ad 22	Match Feature	ON
E Ad 23	Balls/Game	03
E Ad 24	Warning Tilt	01
E Ad 25	Maximum Extra Balls	03
E Ad 26	Credits Limit	30
E Ad 27	Scores Highest	ON
E Ad 28	Credits High Score 1	03
E Ad 29	Credits High Score 2	00
E Ad 30	Credits High Score 3	00
E Ad 31	Credits High Score 4	00
E Ad 32	High Score 1 Backup	5,000,000
E Ad 33	High Score 2 Backup	4,000,000
E Ad 34	High Score 3 Backup	3,000,000
E Ad 35	High Score 4 Backup	2,500,000
E Ad 36	High Score Reset Every	700
E Ad 37	Free Play	OFF
E Ad 38	Left Coin Pulses	-
E Ad 39	Right Coin Pulses	-
E Ad 40	Center Coin Pulses	-
E Ad 41	Pulses For Credit	-
E Ad 42	Pulses For Bonus Credit	-
E Ad 43	Message Custom	ON
E Ad 44	Text	ENGLISH
E Ad 45	Attract Mode Music	ON
E Ad 46	Buy In Feature	ALL
E Ad 47	Bozo Ball	ON
E Ad 48	Flash Lamps	ON
E Ad 49	General Scores	FACTORY
E Ad 50	General Timer	FACTORY
E Ad 51	Spots Lock Lit	ON
E Ad 52	General Memory	ON
E Ad 53	Bonus Lit	14
E Ad 54	Ex Ball Lit	28
E Ad 55	Special Lit	49
E Ad 56	Yardage Memory	OFF
E Ad 57	Lane Percent	FACTORY
E Ad 58	Lane Extra Ball	ON
E Ad 59	Alert Operator	ON
E Ad 60	Factory Restore	OFF

## Switches

Switches are configured in an 8 x 8 matrix of columns (switch drives) and rows (switch returns) with up to 64 switches possible. The switch tests include three parts; switch test, active switches, and bad switches. Row and column wire colors are indicated in each test using corresponding resistor color code numbers.

### Switch Test

From the Display Manual test, operate STEP push-button switch. Player 1 and 2 displays indicate SWITCH TEST. Close each switch and observe the displays. The Player 1 and 2 displays will indicate the switch name, the Player 3 display indicates the row and column wire colors, and the Player 4 display indicates the switch number. When a switch is released, the name and number disappear until another switch is closed or the test is exited.

### Active Switches

Operate the STEP push-button switch from the Switch Test. Player 1 and 2 Displays Indicate ACTIVE SWITCHES. If any switches are stuck closed (or made from the presence of a ball), the Player 1 and 2 displays sequence through switch names, the Player 3 display indicates the row and column wire colors, and the switch numbers are indicated in the Player 4 display. This cycle continues until all switches are cleared or until the STEP push-button switch is depressed.

### Bad Switches

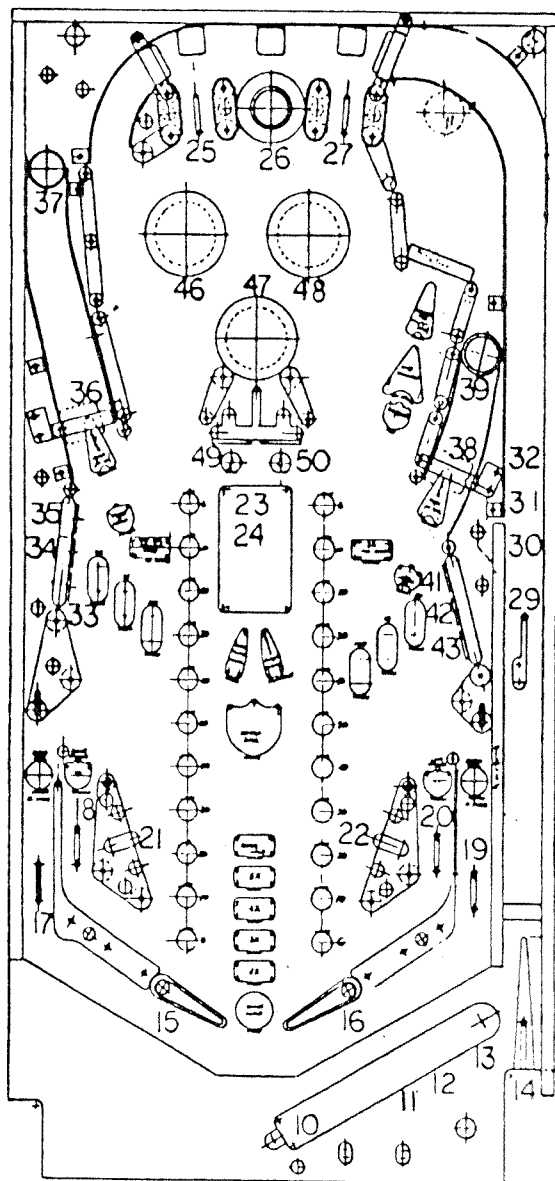
Operate the STEP push-button switch from the Switch Test. Player 1 and 2 Displays indicate BAD SWITCHES. During game play, the system keeps track of the last game in which each switch was made. Should a switch not be made for 100 games, it is considered to be bad. If there are any, the Player 1 and 2 displays sequence through switch names, the Player 3 display indicates the row and column wire colors, and the switch numbers are indicated in the Player 4 display. This cycle continues until the STEP push-button switch is depressed.

### SWITCH MATRIX CHART

COLUMN (*)	1 GRN-BRN (51) Q55	2 GRN-RED (52) Q54	3 GRN-ORN (53) Q53	4 GRN-YEL (54) Q52	5 GRN-BLK (50) Q51	6 GRN-BLU (56) Q50	7 GRN-VIO (57) Q49	8 GRN-GRY (58) Q48
ROW (*)	1 WHT-BRN (91) Plumb Tilt 1 Not Used 9	2 WHT-RED (92) Not Used 2 Outhole 10	3 WHT-ORN (93) Credit Button 3 Trough #1 11	4 WHT-YEL (94) Right Coin 4 Trough #2 12	5 WHT-GRN (95) Center Coin 5 Trough #3 13	6 WHT-BLU (96) Left Coin 6 Shooter Lane 14	7 WHT-VIO (97) Slam Tilt 7 Left EOS 15	8 WHT-GRY (98) Not Used 8 Right EOS 16
	Left Outlane 17	Left Return 18	Right Outlane 19	Right Return 20	Left Slingshot 21	Right Slingshot 22	Ramp Up 23	Ramp Down 24
	A Lane 25	B Eject 26	C Lane 27	Not Used 28	Kick-Off 10 Yards 29	Kick-Off 20 Yards 30	Kick-Off 30 Yards 31	Kick-Off 40 Yards 32
	Left Bank 1 33	Left Bank 2 34	Left Bank 3 35	Left Spinner 36	Left VUK 37	Right Spinner 38	Right Eject 39	Not Used 40
	Right Bank 1 41	Right Bank 2 42	Right Bank 3 43	Left Ramp Top 44	Right Ramp 45	Left Pop Bumper 46	Center Pop Bumper 47	Right Pop Bumper 48
	U Target 49	P Target 50	Left Ramp Bottom 51	Not Used 52	Not Used 53	Not Used 54	Not Used 55	Not Used 56
	Not Used 57	Not Used 58	Not Used 59	Not Used 60	Not Used 61	Not Used 62	Not Used 63	Not Used 64

(\*) 2 DIGIT NUMBER IN PARENTHESES INDICATES RESISTOR/WIRE COLOR CODE NUMBER DISPLAYED DURING DIAGNOSTICS.

Number	Description	Part No.	Number	Description	Part No.
01*	Plumb Tilt	500-5023-00	10	Out Hole	180-5011-00
02	Not Used	--	11	Trough #1	180-5009-00
03	Credit Button	500-5097-00	12	Trough #2	180-5009-00
04*	Right Coin	180-5024-00	13	Trough #3	180-5010-00
05*	Center Coin	180-5024-00	14	Shooter Lane	500-5142-00
06*	Left Coin	180-5024-00	15	Left Flip. Instant Info.	180-5026-00
07*	Slam Tilt	180-5022-00		Left EOS	180-5018-00
08	Not Used	--	16	Right Flip. Instant Info.	180-5026-00
09	Not Used	--		Right EOS	180-5018-00
			17	Left Outlane	500-5142-00
			18	Left Return Lane	500-5142-00
			19	Right Outlane	515-5133-00
			20	Right Return Lane	515-5133-00
			21	Left Slingshot Trigger Sw.	180-5054-00
				Left Slingshot Point Sw.	180-5055-00
			22	Right Slingshot Trigger Sw.	180-5054-00
				Right Slingshot Point Sw.	180-5055-00
			23	Ramp Up	180-5056-00
			24	Ramp Down	180-5056-00
			25	A Lane	500-5142-00
			26	B Eject	515-5079-00
			27	C Lane	500-5142-00
			28	Not Used	--
			29	Kick-Off 10 Yards	515-5138-00
			30	Kick-Off 20 Yards	515-5138-00
			31	Kick-Off 30 Yards	515-5138-00
			32	Kick-Off 40 Yards	515-5138-00
			33	Left Bank 1 (Top)	180-5025-01
			34	Left Bank 2 (Center)	180-5025-01
			35	Left Bank 3 (Bottom)	180-5025-01
			36	Left Spinner	500-5119-00
			37	Left VUK	180-5041-00
			38	Right Spinner	500-5193-00
			39	Right Eject	515-5079-00
			40	Not Used	--
			41	Right Bank 1 (Top)	180-5025-01
			42	Right Bank 2 (Center)	180-5025-01
			43	Right Bank 3 (Bottom)	180-5025-01
			44	Left Ramp Top	180-5053-00
			45	Right Ramp	180-5057-00
			46	Left Pop Bumper	180-5036-00
			47	Center Pop Bumper	180-5036-00
			48	Right Pop Bumper	180-5036-00
			49	U Target	515-5252-00
			50	P Target	515-5252-00
			51	Left Ramp Bottom	180-5053-00
			52	Not Used Thru 64	



Switch Locations

\*INDICATES CABINET SWITCHES.

## LAMP TESTS

Controlled lamps are configured in an 8 x 8 matrix of columns (lamp drives) and rows (lamp returns) with up to 64 lamps possible. The lamp tests include four parts, all lamps, lamp return (row), lamp drive (column), and discrete (individual) lamps. Row and column wire colors are indicated in the discrete lamp test using corresponding resistor color code numbers.

### All Lamps

From the Bad Switch test, operate the STEP push-button switch. Player 1 and 2 displays indicate ALL LAMPS and all controlled lamps will light.

### Lamp Returns

From the ALL LAMPS test, depress the STEP push-button switch. Player 1 and 2 displays indicate LAMP ROWS and the Player 4 display indicates 01 for row 1. All controlled lamps in row 1 should be lit. Operating the Game Start push-button switch cycles through each of the rows separately.

### Lamp Drives

From the LAMP ROWS test, depress the STEP push-button switch. Player 1 and 2 displays indicate LAMP COLUMNS and the Player 4 display indicates 01 for column 1. All controlled lamps in column 1 should be lit. Operating the Game Start push-button switch, cycles through each of the columns separately.

### Discrete Lamp

From the LAMP COLUMNS test, depress the STEP push-button switch. Player 1 and 2 displays indicate LAMP TEST and then the name assigned to lamp 01; the Player 1 and 2 displays indicate the lamp name, the Player 3 display indicates the row and column wire colors, and the Player 4 display indicates 01. Lamp 01 should light. With the FORWARD/REVERSE push-button switch in the FORWARD (up) position, operating the Game Start push-button switch selects higher-numbered lamps; with it in the REVERSE (down) position, Game Start selects lower-numbered lamps.

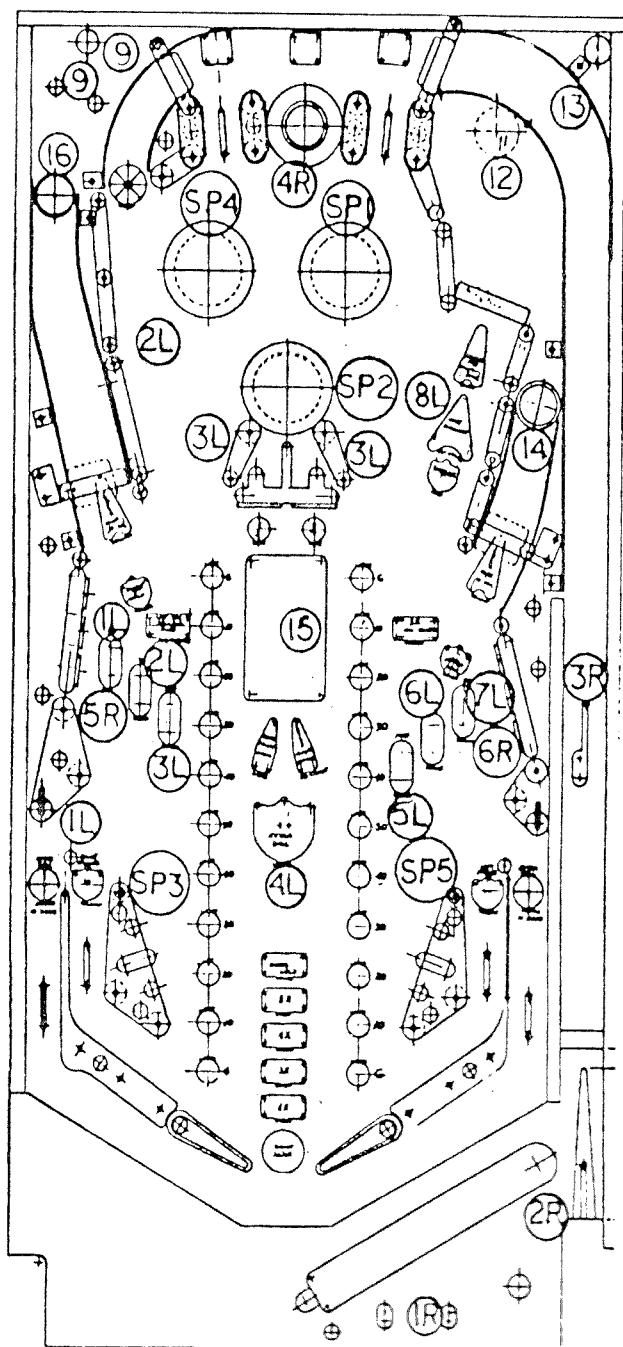
## LAMP MATRIX CHART

COLUMN (*) ROW (*)	1 YEL-BRN (41) Q71	2 YEL-RED (42) Q70	3 YEL-ORN (43) Q69	4 YEL-BLK (40) Q68	5 YEL-GRN (45) Q67	6 YEL-BLU (46) Q66	7 YEL-VIO (47) Q65	8 YEL-GRY (48) Q64
1 RED-BRN (21) Q72	10 Yard Bottom 1	Right Goal 9	5x 17	A Lane 25	10 Yard Lamp 33	Million Jackpot 41	Back Panel Sacked 49	Top Special 57
2 RED-BLK (20) Q73	2x 2	20 Yard Bottom 10	Bonus Hold 18	B Eject 26	20 Yard Lamp 34	Jackpot 1 42	Back Panel 10 Yard 50	Top Million 58
3 RED-ORN (23) Q74	3x 3	Shoot Again 11	30 Yard Bottom 19	C Lane 27	30 Yard Lamp 35	Jackpot 2 43	Back Panel 20 Yard 51	Right Release 59
4 RED-YEL (24) Q75	4x 4	Left Goal 12	Left Bank 100k 20	40 Yard Bottom 28	40 Yard Lamp 36	Jackpot 3 44	Back Panel 30 Yard 52	Jackpot 4 60
5 RED-GRN (25) Q76	Right Return 5	Right Bank 100k 13	Left Bank 75k 21	Top Goal 29	50 Yards 37	Center Extra Ball 45	Back Panel 40 Yard 53	Jackpot 5 61
6 RED-BLU (26) Q77	Right Extra Ball 6	Right Bank 75k 14	Left Bank 50k 22	Left Ball Lock 30	Right Arrow 38	40 Yard Top 46	Back Panel 50 Yard 54	Jackpot 6 62
7 RED-VIO (27) Q78	Left Extra Ball 7	Right Bank 50k 15	Bonus Shield 23	U Target 31	Left Arrow 39	Right Goal 47	30 Yard Top 55	10 Yard Top 63
8 RED-GRY (28) Q79	Left Return 8	Extra Ball Shield 16	Goal Targets 24	P Target 32	10 Yard Top 40	2x Scores 48	Right Ball Lock 56	20 Yard Top 64

(\*) 2 DIGIT NUMBER IN PARENTHESES INDICATES RESISTOR WIRE COLOR CODE DISPLAYED DURING DIAGNOSTICS.

Lamp Number	Description
01	10 Yard Bottom
02	2x
03	3x
04	4x
05	Right Return
06	Right Extra Ball
07	Left Extra Ball
08	Left Return
09	Right Goal
10	20 Yard Bottom

11	Shoot Again
12	Left Goal
13	Right Bank 100k
14	Right Bank 75k
15	Right Bank 50k
16	Extra Ball Shield
17	5x
18	Bonus Hold
19	30 Yard Bottom
20	Left Bank 100k
21	Left Bank 75k
22	Left Bank 50k
23	Bonus Shield
24	Goal Targets
25	A Lane
26	B Eject
27	C Lane
28	40 Yard Bottom
29	Top Goal
30	Left Lock Ball
31	U Target
32	P Target
33	10 Yard Lamp
34	20 Yard Lamp
35	30 Yard Lamp
36	40 Yard Lamp
37	50 Yards
38	Right Arrow
39	Left Arrow
40	10 Yard Top
41*	Million Jackpot
42*	Jackpot 1
43*	Jackpot 2
44*	Jackpot 3
45	Center Extra Ball
46	40 Yard Top
47	Right Goal
48	2x Scores
49	Back Panel Sacked
50	Back Panel 10 Yard
51	Back Panel 20 Yard
52	Back Panel 30 Yard
53	Back Panel 40 Yard
54	Back Panel 50 Yard
55	30 Yard Top
56	Right Ball Lock
57	Top Special
58	Top Million
59	Right Release
60*	Jackpot 4
61*	Jackpot 5
62*	Jackpot 6
63	10 Yard Top
64	20 Yard Top



Lamp Locations

\*Indicates Insert Lamp

## COIL TESTS

Sixteen regular (pulsed under microprocessor control) and six switch-triggered coil drivers are provided to switch ground to coils. Coil number 10 is used in conjunction with drives 1 through 8 to switch +32 volts between coils or flash lamps; these sets are termed "left" and "right". Coil number 10 is located on the PPB board which provides isolation diodes and current limiting resistors. This effectively provides 23 regular coils.

### Automatic Test

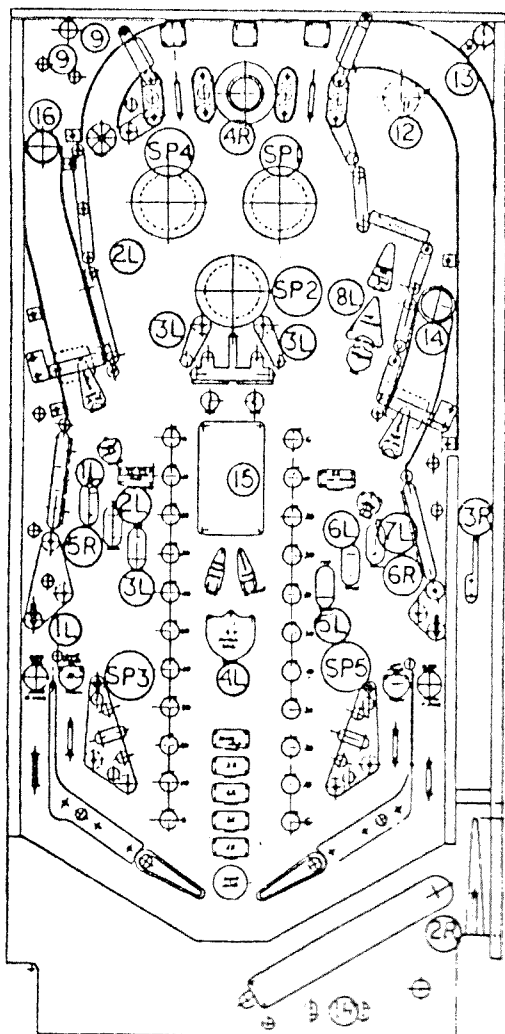
From the Discrete Lamps test, depress the STEP push-button switch. Player 1 and 2 displays indicate COIL TEST. The test pulses each regular solenoid or flash lamp sequentially with the coil/flash lamp name indicated in the Player 1 and 2 displays and the drive number in the Player 4 display.

### Select Coil

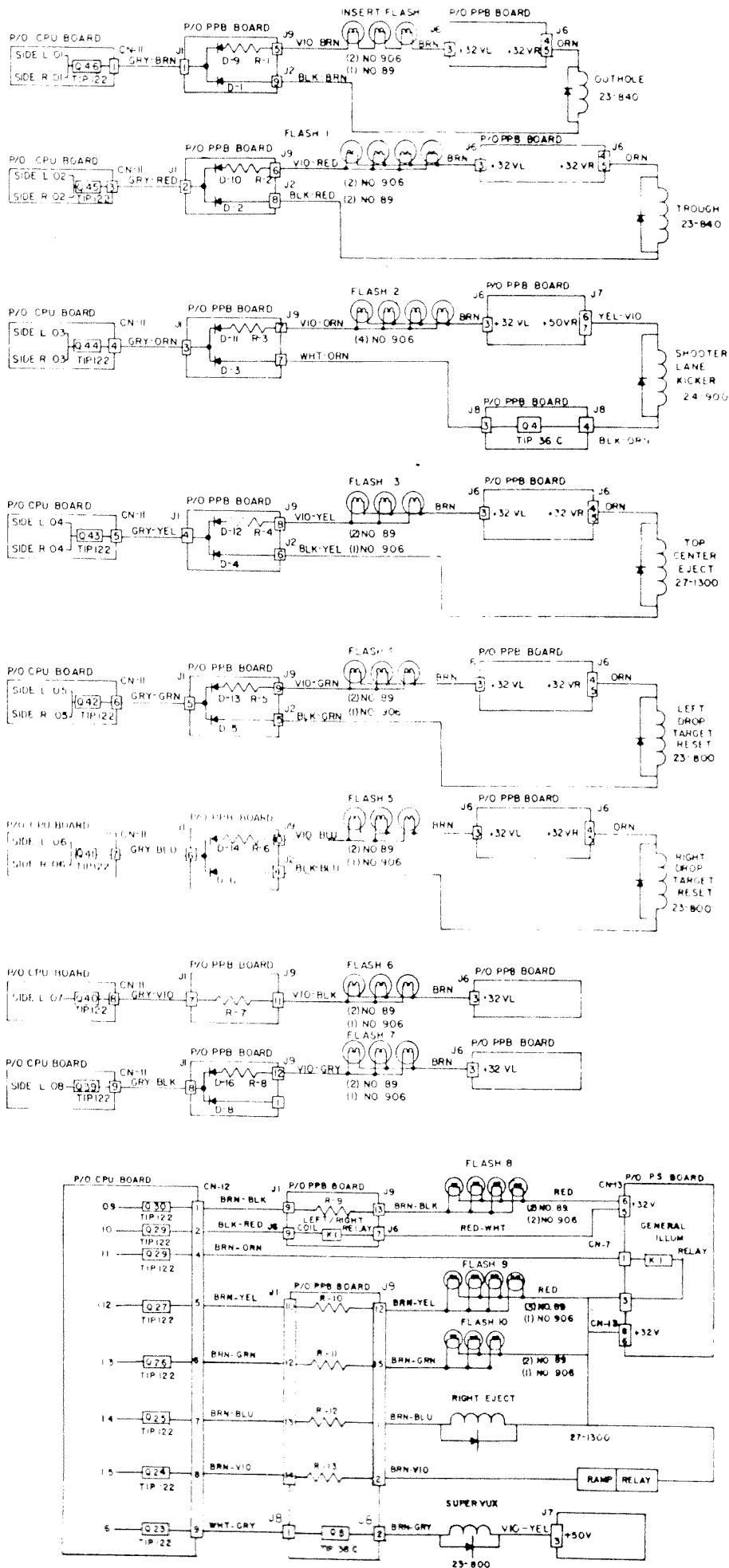
From the Coil Test, depress the STEP push-button switch. Player 1 and 2 displays indicate SELECT COIL and then the name of drive 1L, the drive number is indicated in the Player 4 display. Operate the Game Start push-button switch to select the coil or flash lamp to be tested. With the desired drive number indicated in the Player 4 display, depress the STEP push-button switch to cause it to be pulsed repeatedly.

### RETURN TO GAME OVER

From the Select Coil test, depress the STEP push-button switch one time if a selected coil is pulsing or two times if none is pulsing. The game returns to the game-over mode.

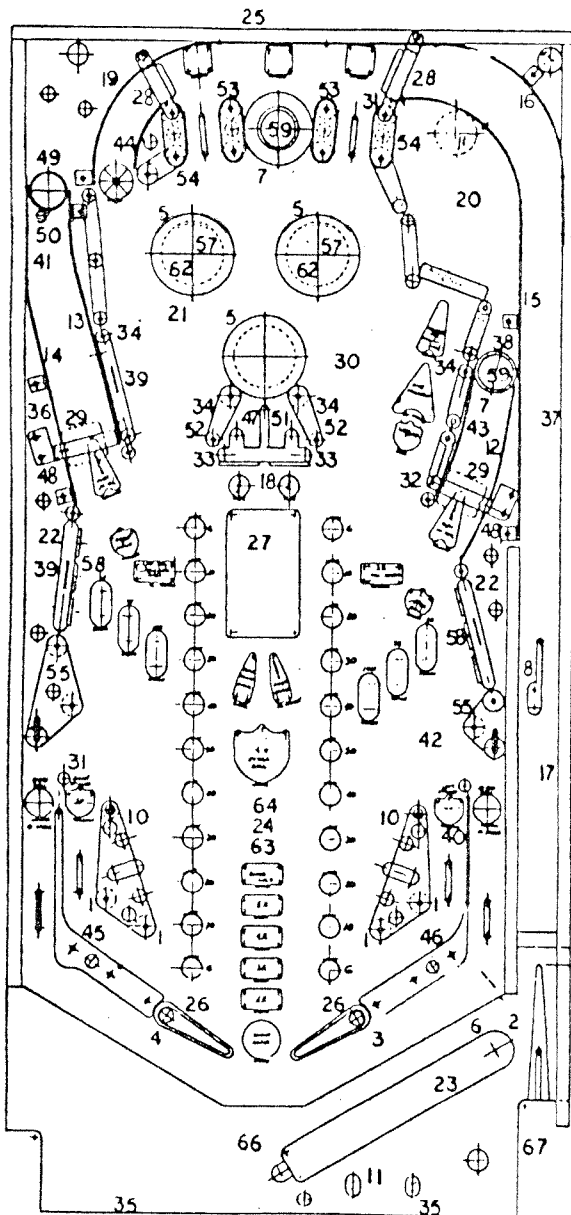






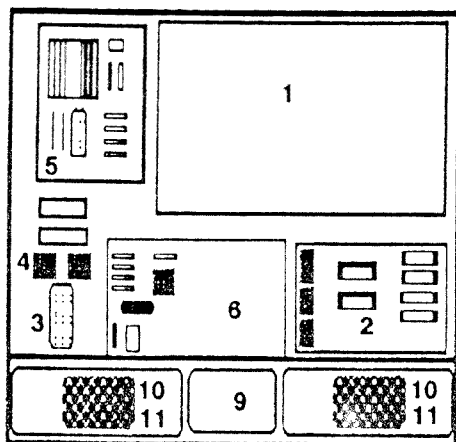
## Playfield Top Parts

Item	Description	Part Number
1.	Acorn Nuts (26)	240-5000-00
2.	Ball Feed Cam	500-5012-00
3.	Right Flipper Assy.	500-5031-51
4.	Left Flipper Assy.	500-5031-52
5.	Pop Bumpers (3)	500-5034-10
6.	#3 Ball Trough Eject	500-5042-00
7.	Ball Eject Assy. (2)	500-5051-00
8.	Kick Big Assy.	500-5053-00
9.	Vertical Up Kicker Assy.	500-5067-00
10.	Slingshot Assy. (2)	500-5077-00
11.	Outhole Ball Return Assy.	500-5082-00
12.	Right Eject Ball Guide	500-5164-00



13.	Left VUK Ball Guide	500-5165-00
14.	Left VUK Ball Guide	500-5166-00
15.	Kickbig Inside Ball Guide	500-5167-00
16.	Top Ball Guide	500-5168-00
17.	Shooter Lane Ramp Assy.	500-5170-00
18.	Two Standup Target Assy.	500-5176-00
19.	Top Arch Vacu-form Assy.	500-5179-00
20.	Bomb Ramp Assy.	500-5184-00
21.	Touchdown Ramp Assy.	500-5185-00
22.	Drop Target Assy. (2)	500-5187-00
23.	Ball Trough Sw. Plate Assy.	500-5190-00
24.	Playfield Complete	505-6004-00
25.	Back Panel Assy. Complete	505-6007-07
26.	Flipper Bat & Shaft	515-5133-02
27.	Field Goal & Ex. Point Ramp	515-5196-00
28.	Flap Gate (2)	515-5205-00
29.	Spinner Target (2)	515-5236-00
30.	Relay Board	520-5010-00
31.	Wood Screw Mini-Post (2)	530-5004-00
32.	Machine Screw Mini-Post	535-5005-00
33.	Machine Bumper Post (7)	530-5007-00
34.	Metal Standoff -Groove (18)	530-5035-00
35.	Playfield Hanger Brkt. (2)	525-5216-00
36.	Left Playfield Hinge	535-5222-00
37.	Right Playfield Hinge	535-5223-00
38.	Right Eject Ball Stop Brkt.	535-5273-00
39.	1" Wire Form (4)	535-5300-05
40.	3 3/4 " Wire Form	535-5300-06
41.	VUK Wire Ramp Feed	535-5342-01
42.	Bomb Wire Ramp	535-5369-00
43.	Right Eject Wire Guide	535-5370-00
44.	Top Left Wire Form	535-5371-00
45.	Left Return Ball Guide	535-5406-01
46.	Right Return Ball Guide	535-5407-01
47.	Ramp Support	535-5736-00
48.	Spinner Support Brkt. (2)	535-5744-01
49.	VUK Ball Stop Brkt.	535-5744-01
50.	VUK Rmp. Feed Support	535-5753-00
51.	Center Two Tgt. Cover	535-5755-00
52.	Red Mini Mars (7)	545-5004-02
53.	2 Sided Light Hood (2)	545-5011-02
54.	1 Sided Light Hood (2)	545-5012-02
55.	Red 1 1/32 Jeweled Post (26)	545-5013-02
56.	Red Lamp Cover (4)	545-5014-02
57.	Pop Bumper Cap (2)	545-5035-32
58.	Drop Target (6)	545-5048-01
59.	Yellow Eject Hole (2)	545-5060-06
60.	Ramp Decal Sheet	820-5027-XX
61.	Target Decal Sheet	820-5107-00
62.	Pop Bumper Decal (2)	820-5307-00
63.	Playfield Mylar	820-5806-00
64.	Screened Playfield	830-5107-00
65.	Screened Plastic Set	830-5408-00
66.	Bottom Arch	830-5507-01
67.	Shooter Guage	830-5507-02

## BACKBOX PARTS ILLUSTRATION

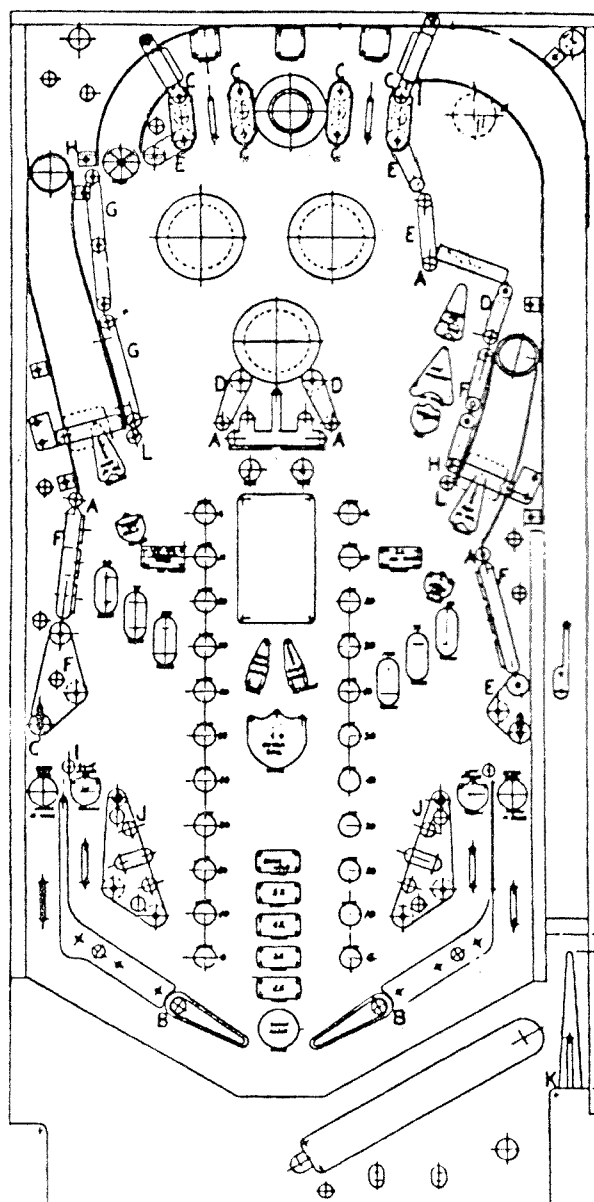


Item	Description	Part No.
1	CPU Board Assy.	520-5003-07
2	Sound Board Assy	520-5002-07
3	Capacitor 2C1	125-5000-00
4	Bridge Rectifiers	112-5000-00
5	Power Supply Bd. Assy	520-5000-00
6	PPB Board	520-5021-05
7	Combined Display Bd Assy*	520-5030-00
8	Display Ribbon Cable*	036-5001-30
9	Speaker Housing	500-5133-05
10	Speakers (2)	031-5003-00
11	Speaker Grill (2)	545-5086-00
12	Back Box Glass*	830-5207-00

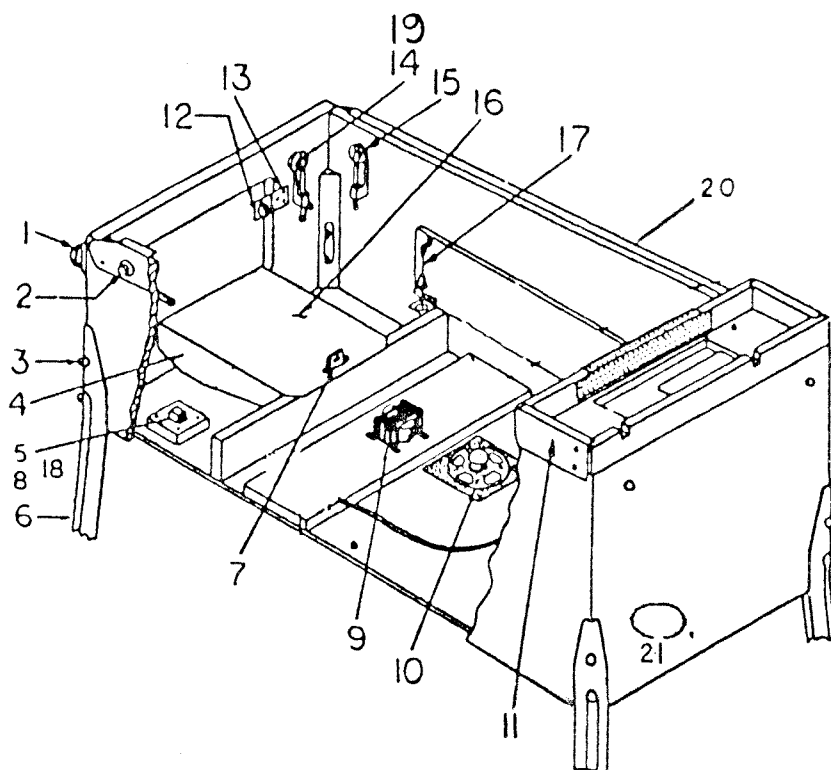
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## RUBBER PARTS ILLUSTRATION

Item	Description	Part #
A.	Black Rubber Post (5)	545-5009-00
B.	Red Flipper (2)	545-5024-02
C.	5/16" (7)	545-5025-02
D.	3/4" (3)	545-5025-04
E.	1" (4)	545-5025-05
F.	1 1/2" (4)	545-5025-07
G.	2" (2)	545-5025-08
H.	7/16" Outer Diameter (2)	545-5025-17
I.	3/8" Outer Diameter (2)	545-5025-19
J.	2 3/4" (2)	545-5025-20
K.	Shooter Tip (1)	545-5027-00
L.	Conical Rubber (2)	545-5150-00

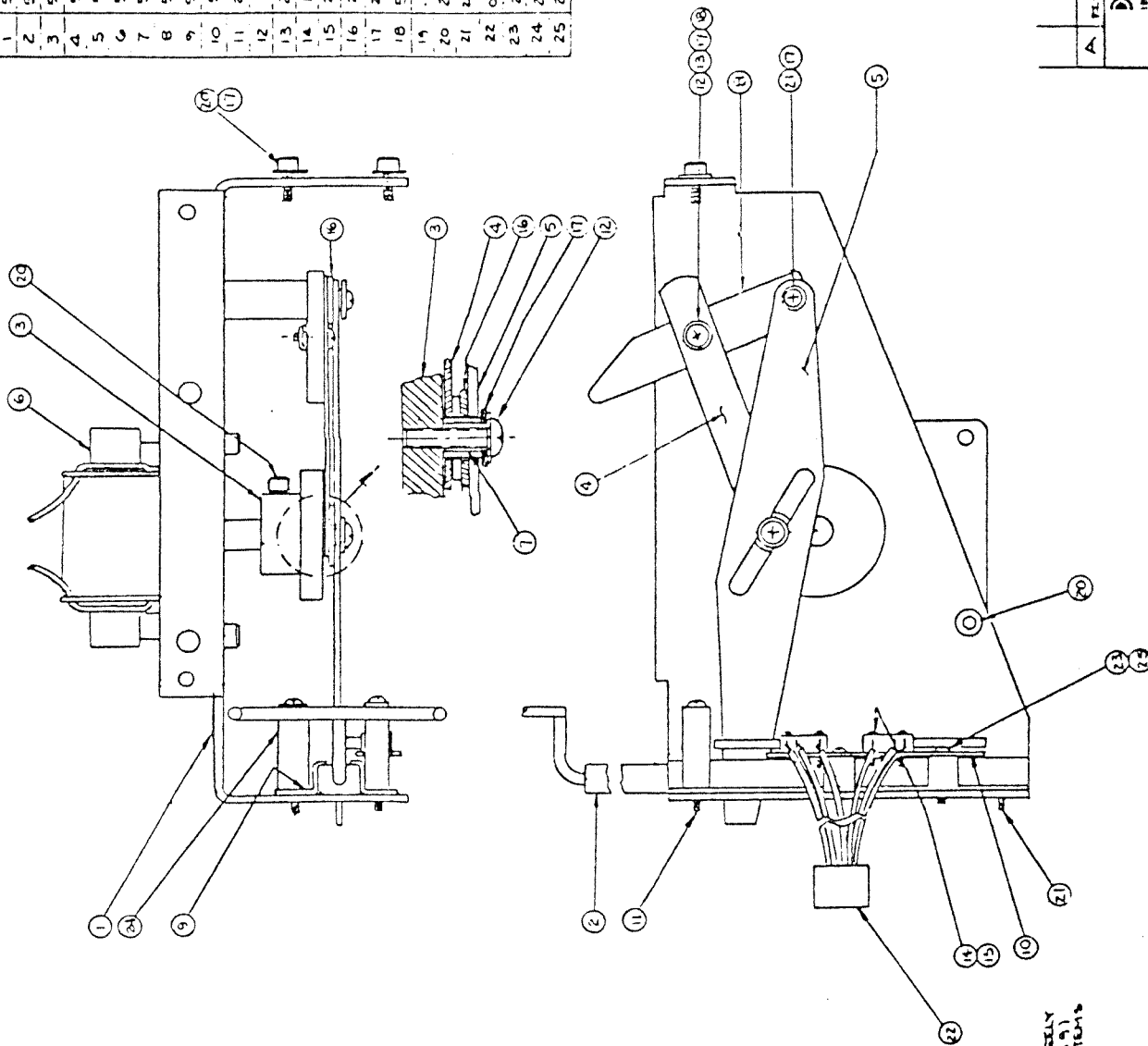


# CABINET PARTS ILLUSTRATION



Item	Description	Part No.
1	Ball-shooter Assy	500-5019-04
2	Flipper Button	500-5026-02
3	Leg Bolt (Chrome)	231-5000-01
4	Cash Box Bottom	545-5090-00
5	On/Off Switch DP/ST	180-5001-00
6	Leg (Black)	535-5020-30
7	Lock Bracket-Cash Box	535-5215-00
8	Power Input Box Assy	515-5153-01
9	Transformer	010-5002-00
10	Speaker-Round (6")	031-5000-00
11	Side Armor-Right	535-5010-11
12	Memory Protect Switch	180-5000-00
13	Memory Protect Switch Bracket	535-5225-00
14	Start Switch	500-5026-02
15	Tungston Switch-Flipper	180-5048-00
16	Cash Box Top	535-5013-01
17	Plumb Bob Tilt Mech. Assy	500-5023-00
18	Volume Control	123-5000-00
19	Playfield Glass (Tempered)	660-5001-00
20	Side Armor -Left	535-5010-12
21	Line Cord Receptacle	545-5122-00
22	Service Switch (Not Shown)	180-5012-00
23	Front Molding Lockdown Assy.	500-5020-00
24	Front Molding -Black (Not Shown)	500-5021-10

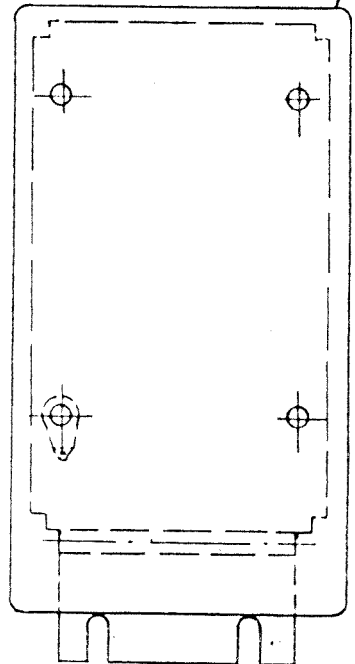
ITEM	PT. NO.	DESCRIPTION	QTY
1	545-522B-00	BLKT-POST SUB ASSY	1
2	515-522A-00	GOAL POST-SUP. ASSY	1
3	535-5137-00	DRIVE COUPLING	1
4	535-5134-00	RAMP-LIFT LINK	1
5	535-5136-00	GOAL POST-LIFT LINK	1
6	515-522Z-00	MOTOR ASSY	1
7	530-508A-01	SPACER 3/16 THK	1
8	545-5139-00	LIFT CASH	1
9	535-5135-04	GUIDE PAKT	2
10	535-5163-00	SWITCH MTC BEAT	1
11	237-550B-00	SCR 6-32 x 1 1/4	2
12	237-550Z-00	SCR 8-32 x 1/2	2
13	240-5102-00	NUT 8-32 NYLOC	1
14	180-5056-00	SWITCH	2
15	237-5806-00	SCREW 2-36 x 1/2	4
16	242-500B-00	WASHER 3/8 OD 1/4 ID	2
17	242-5010-00	WASHER 1/2 OD 7/16 ID	5
18	530-5009-02	SPACER .01 THK	1
19			
20	237-5845-00	SCREW 10-32 x 7/8	6
21	237-5501-00	SCREW 6-32 x 3/8	3
22	036-5091-00	CABLE ASSY	1
23	254-5000-01	SPACER	2
24	254-5000-04	SPACER	2
25	232-5203-00	SCREW 6-32 x 3/8	2



NOTE:  
 1. ITEM 2 MUST MOVE FREELY  
 WITHIN ITS GUIDES (ITEM 9)  
 2. ADJUST LOCATOR (RED) TO ITEMS  
 15, 11, 21, 20

A		REVIEWED	6.3.89
DATA EAST PINBALL, INC. 1880 JAMICE AVE. MELROSE PARK, IL 60110			
SCALE	1:1	APPROVED BY	JLL
DATE	4-20-89		
GOAL POST TOP ASSY			
		500-5146-00	

RAMP COVER  
535-5124-00



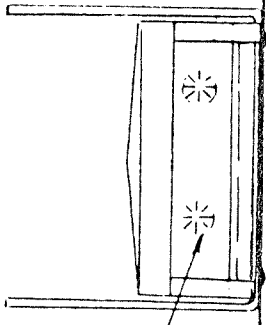
HINGE  
390-5003-00

NOTE:  
RAMP PLATE MUST LAY FLAT ON  
RAMP, SHOWING NO DISTORTION DUE  
TO RIVETING.

RIVET SECURELY  
4 PLACES  
RIVET  
249-5002-00  
(3)

RAMP  
535-5715-00

SPRING  
265-5000-00  
RIVET-249-  
LUG-055-5140-08  
WASHER-242-5001-00



SPOT WELD  
SECURELY

TO: GUNNERS  
FROM: GUNNERS  
DATE: 12/12/88  
BY: JLL  
SCALE: 1/1

REQ. 1	NEXT ASSEM. 2/12/88	DATE 12/12/88	TITLE RAMP SUB ASSY
MAT. 1	CHKD. 1/1	SCALE 1/1	
<p>DATA EAST PINBALL, INC. 1990 JANICE AVE. WELPOSE PARK, IL 60160</p>			
PART NO. 515-5196-00			

REV	DESCRIPTION	BY	DATE	APP
A	ADD NOTE	JLL	4-25-89	
B	ADD SPRING	JLL	5-19-89	