



**STERN**

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## I. INSTALLATION

### **Assemble the game as follows:**

Bolt legs to cabinet. Using flat washers under bolt heads, bolt back box to cabinet. Feed cable connectors and ground braid through cable port in back box. Screw ground braid to braid in back box. Insert connectors so they are completely seated on printed circuit board assemblies.

On all games there are some items that must be checked after shipment. Making these visual inspections may avoid time consuming service work later. Minor troubles caused by abusive handling in shipment are unavoidable. Cable connectors may be loosened, switches (especially tilt switches) may go out of adjustment. Plumb bob tilt switches should always be adjusted after game is set on location and leg levelers are adjusted.

### **Visual inspections before plugging in line cord:**

1. Check wiring of transformer to correspond to location voltage.
2. Check the transformer for any foreign material shorting across wiring lugs.
3. Check that fuses are firmly seated and making good contact.
4. Check wire on coils for proper soldering. Cold solder connections may not show up in factory inspection, but vibration in shipment may break contact.
5. Check switches for loose solder or other foreign material that may have come loose in shipment and could cause shorting of contacts.
6. Check for any wires that may have become disconnected.
7. Check that all cable connectors are completely seated on printed circuit board assemblies.
8. Check that cables are clear of all moving parts.

### **Check adjustment of the three (normally open) tilt switches:**

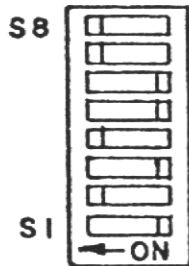
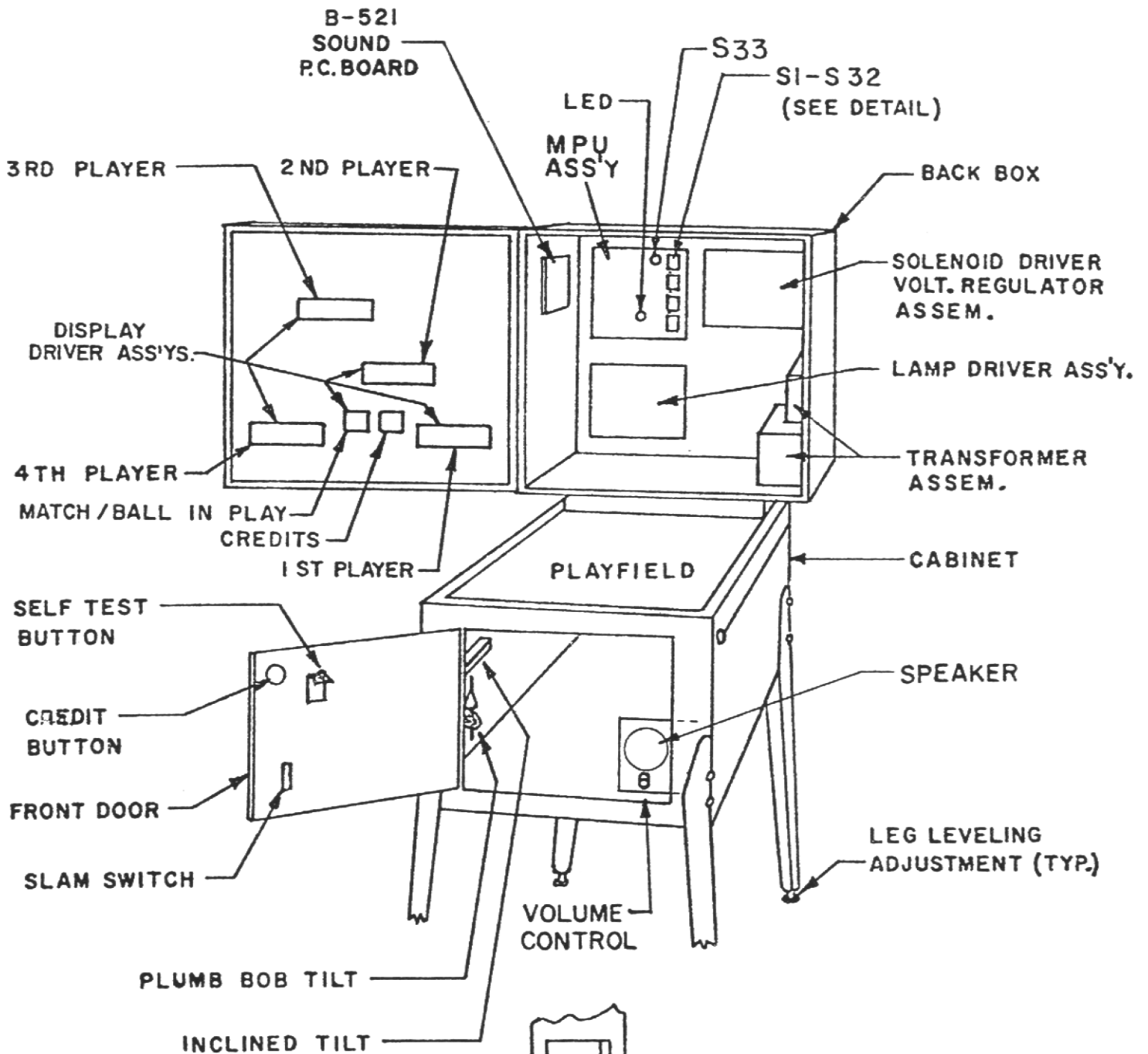
1. Plumb bob tilt on left side of cabinet near front door.
2. Ball tilt above plumb bob tilt. Insert the smaller ball (gold 15/16" dia.) into the ball tilt assembly, and adjust the bracket so the ball will roll free to contact the switch blade, if front of cabinet is raised.
3. Panel tilt on bottom of playfield panel.

### **NOTE**

TO PROTECT SOLID STATE COMPONENTS  
BEFORE TOUCHING ANY COMPONENT IN THE  
BACK BOX, DISCHARGE ANY POSSIBLE STATIC  
BUILD-UP BY TOUCHING ANY GROUND  
CIRCUIT, e.g. SIDE ARMOR, GROUND BRAID.

# ELECTRONIC PIN GAME

Figure 1



DETAIL SI-S32  
MPU ASS'Y.

## II. GENERAL GAME OPERATION

### PLACE BALL INTO PLAYFIELD BY OUTHOLE:

**COIN GAME.** Coin should be rejected. Plug in line cord. For proper game operation grounding circuit must be used. Move power ON-OFF Toggle Switch at bottom right front corner of cabinet to "ON" position. The game will play a tune to announce game-readiness. Drop targets are reset, scores are reset to zero, alternating with the "high Game to Date," and the game is ready for play. Coin Game. The game should accept the coin and post credits\* for coins accepted (Adjustable). Pressing the credit button on the door will cause the outhole kicker to move the ball to the shooter lane. The 1st player-up lite becomes lit. A tune\* is played to announce play-readiness.

One player is registered each time the credit button is pressed (one to four can play). The credits are reduced by one each time the credit button is pressed until the credits are reduced to zero. Credit button is in-operative after 4 player's are registered.

Shooting the ball initiates play. Rebound switches score 10 points. Thumper-bumper scores 100 points in 5 ball, 1000 points in 3 ball.

When the ball enters the outhole, the bonus score is added to the player's score. The player-up and/or ball in play on the back box is advanced one position. The bonus score starts at 2,000 points. The outhole kicker moves the ball to the shooter lane and play is resumed. This continues until each player has played the allowable number of balls per game (adjustable). At this time the "Game Over" light becomes lit. A random Match\* number appears and the "Match" light becomes lit. If the match number is the same as the last two digits in the player's score a free game is awarded.

Extra Ball won during the course of the game is played immediately after the player's regular ball enters the outhole. The player-up and/or ball in play are not advanced for extra ball play. Bonus score is added to the player's score and the bonus is set to 2,000 points before the game moves the extra ball for play.

At the end of the game, a "High Game to Date" is alternately flashed with all player scores. If the "High Game to Date" is beat, this feature\* can award up to 3 free games.

Tilting the game results in loss of the ball in play. The flippers, thumper-bumpers, etc., go "dead". Bonus score is not added. 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 outhole kicker moves the ball to the shooter lane.

Slamming the machine results in the loss of the game. All feature lights go out and the game becomes "dead" through a built-in time delay circuit. The purpose of the time delay circuit is to discourage abuse of the machine. After the delay, the "Game Over" light lites and the game readiness tune is played. The time delay occurs anytime one of the slam switches is made to contact.

There is a slam switch on the front door. One on the tilt board and one on the playfield. (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 weighed blade should be adjusted to attain the desired sensitivity. Decreasing gap between contacts will make the switch more sensitive. Opening the gap will reduce sensitivity.

\* Some tunes and features can be disabled by operator if so desired. \*\*\* See back box adjustments. \*\*\*\*

### III. FRONT DOOR GAME ADJUSTMENTS:

#### HIGH SCORE FEATURE ADJUSTMENTS:

The game is designed to award an extra ball or a free game (option) at three score levels. (See High Score Feature in game book). The recommended levels are on the score card on the game.

Any level from 10,000 or 990,000 can be set, as desired. It is also possible to reset or turn off (00) any or all of the levels, if desired.

1. Push and release Self-Test button at one second intervals five times or until number 01 appears on the Match/Ball in Play display.
2. The number on the Player Score Displays is the first score level\*. It can be increased, if desired, by holding the credit button in. To decrease the score level, reset to '00', and then hold the credit button in. Release the credit button when the desired High Score appears. Note that the level changes 10,000 points at a time. If the number '00' is left on the displays, the high score feature is eliminated for that level.
3. Repeat steps 1 and 2 for the second and third high score levels. The number '02' and '03' on the Match/Ball-in-Play display are for the second and third levels, respectively.

**NOTE:** Only One Extra Ball Can Be Achieved Per Ball In Play.

#### HIGH GAME TO DATE FEATURE:

The game is designed to award up to 3 free games (option) when "High Game to Date" is beat. **For the recommended, factory present level, see game book.**

It is recommended that the level, which will build with game play, be periodically reset to the factory recommended level to encourage game play. The adjustment procedure is the same as for the High Score Feature Adjustment, Steps 1 and 2. Continue pushing the Self-Test button until the number '04' appears on the Match/Ball-in-Play display and then do Step 2.

Any level from '00' to 990,000 can be set as described. It is to be noted that '00' does not turn off the feature, as it does on High Score feature. The feature is turned off by positioning switches to the "OFF" position.

\*Can be quickly set to '00' by pressing S33 on the MPU assembly in the back box.

### IV. FEATURE OPERATION & SCORING

#### BONUS SCORE FEATURE:

A bonus score of 2,000 to 20,000 may be scored. The game starts with 2,000 bonus score. The bonus score is advanced by 2,000 every time the Stationary Target (upper right) is hit, Rollovers are made (center of playfield), or Right Middle Lane, is adjustable to 2 advances (4,000) or 3 advances (6,000).

#### MYSTERY BONUS ADVANCE:

Both outlanes are set up to advance the bonus from 0 advances (Min.) to 8 advances (Max.) from each lit symbol of 4 Bank Drop Target. The bonus is collected when the ball goes into the eject pocket (upper right side) or into the outhole. The Bonus is reset to 2,000 for the next ball.

#### 5X BONUS FEATURE:

On the last ball of every game if the Double Bonus is lit, the 5X Bonus lite alternates lighting with the 2X off the 10 point (rebound rubbers) going into the upper right side eject of the outhole when the 5X lite is lit will award 5 times the indicated Bonus.

**DROP TARGET FEATURES:**

**4 BANK:**

Each target scores 500 points and spots a symbol the first and second time. All targets down score 3,000 points, 1st time, 5,000 points each time after.

Spotting the 4 CATS or 4 CATS and 4 BATS (adjustable) lites the extra ball lane (lower right).  
Spotting the 4 CATS and 4 BATS lites the Special Lane (lower left) adjustable to closed or opened ended.

**3 BANK:**

Each target scores 500 points. All targets down score:

- 1) extra 3,000 points the first time and lites upper double bonus
- 2) extra 3,000 points and lites the lower Double Bonus lite (for award and the plus 4,000 (upper) the second time
- 3) extra 7,000 points each additional time all targets down.

**STAR FEATURE:**

The star may be advanced by hitting the stationary target (right side, middle top) or by going over the rollover-button (upper, left side) for 10,000 points and lites Double Bonus lite for award (lower middle). Making star rollover when lit scores 10,000 points and starts the feature over. Everytime the ball goes into the outhole the feature resets.

**SPINNER FEATURE:**

Spinner scores 100 points or 1,000 points when the bonus is at 2,000, 8,000, 14,000 when the Bonus reaches 20,000 the 1,000 lit lites and stays lit for the rest of the ball.

**THUMPER BUMPERS:**

Thumper Bumpers score 1,000 points on 3 ball and 100 points on 5 ball game.

**STANDARD BUMPER:**

Scores 1,000 points and advances Bonus 2,000 points.

**STATIONARY TARGETS:**

**UPPER** — scores 1,000 and advances star.

**MIDDLE** — (X, Y, Z) — scores 3,000 points after X, Y, Z are made at random (during the same ball). The Y target only is worth a total of 7,000 points. After X, Y, Z are made the second time (during the same ball, the Y target only lites for Special (adjustable to closed or open ended).

**LOWER** — scores 1,000 and advances bonus (2,000 points).

**BALL EJECT FEATURE:**

Upper left side eject, ball going into this pocket collects all bonus including any multiplier (2X or 5X on last ball). Bonus is reset to 2,000 before the ball is put back on the playfield.

**ROLLOVER BUTTONS:**

Upper Left Side — 1,000 points and Star advances or 10,000 points and Star Feature reset when lit.

Lower Center — 10 points and advance bonus.

**LEFT RETURN:**

Scores 500 points and Special when 4 CATS and 4 BATS are spotted.

**RIGHT RETURN LANE & EXTRA BALL FEATURE:**

Scores 500 points or 5,000 and Extra Ball when (adjustable) 4 CATS or 4 CATS and 4 BATS are spotted.

**OUTLANES:**

Scores 3,000 points and Mystery Bonus Advance (1 advance 2,000 points.)

REBOUND SWITCHES & SLINGSHOTS SCORE 10 POINTS.

## RECOMMENDED SETTINGS

	3 BALL	5 BALL
1st Level	190,000	280,000
2nd Level	280,000	460,000
3rd Level	—	—
HIGH SCORE TO DATE	400,000	550,000

## V. GAME ADJUSTMENTS

### A. Playfield Post Adjustments:

Posts that control left and right outlane openings on playfield can be moved to make access to outlanes conservative or liberal for ball to enter. See Figure 2.

Conservative entry will decrease playing time and scoring.

Liberal entry will increase playing time and scoring.

### B. Back Box Game Adjustments:

Each game has thirty-two switches located on the MPU module, located in the back box, that allow play to be customized to the location. See Figure 1. Credits per coin, maximum credits, credit display, balls per game, match feature, high game feature, special award and melody are selectable by means of the switches. The switches contained in four-sixteen lead packages numbered S1-8, S9-16, S17-24 and S25-32 for easy identification. The "On toggle" position is marked on the assembly. **TURN OFF POWER BEFORE MAKING ADJUSTMENTS. MAKE ADJUSTMENTS BEFORE TURNING POWER BACK ON.**

### MPU SWITCH ASSIGNMENT

1 thru 5	Coin Chute No. 2 Center
6	High Score
7	Balls Per Game
8	Chime Melody
9 thru 13	Coin Chute No. 3
14	Extra Ball Enable
15-16	High Game To Date
17 thru 19	Max. Credits
20	Credit Display
21	Match Feature
22	Special Side - 'Y' Target
23	Electronic Sound
24	Bottom Lane Special
25	Extra Ball Lane
26	Bonus Advance
27	Extra Ball Alternation
28 thru 30	Coin Chute No. 1
31-32	Special Award

**1. HIGH SCORE FEATURE:**

The game is designed to award an Extra Ball or Free Game at one, two or three high score levels. See Front Door Game Adjustments.

<b>AWARD</b>	<b>SWITCH 6</b>
EXTRA BALL	OFF
REPLAY	ON

**2. BALL PER GAME:**

<b>NO. of BALLS PER GAME</b>	<b>SWITCH 7</b>
5	ON
3	OFF

**3. MELODY OPTION:**

The game is designed to play melodies to announce power-up, credit, etc. Some tunes are adjustable by Switch 8.

<b>GAME MELODY</b>	<b>SWITCH 8</b>	<b>MELODY</b>
POWER-UP.....	ON	Full Melody
"	OFF	Full Melody
COIN.....	ON	Full Melody
"	OFF	2 Tones Only
CREDIT BUTTON.....	ON	Full Melody
"	OFF	2 Tones Only
GAME OVER.....	ON	Full Melody
"	OFF	Full Melody

**4. EXTRA BALL:**

This option can be adjusted as follows:

<b>NO EXTRA BALL (BYPASS)</b>	<b>SWITCH 14</b>
<b>AWARD EXTRA BALL</b>	OFF
	ON

**5. HIGH GAME TO DATE FEATURE:**

The game is designed to award up to 3 free games as an option of high score to date is beat. Each this happens, the winning score becomes the new high game score to beat. This score is displayed on all 4 player score displays at the end of each game as an incentive to play.

	<b>SWITCH</b>	
<b>NOVELTY</b>	<b>16</b>	<b>15</b>
1 FREE GAME	OFF	OFF
2 FREE GAMES	OFF	ON
3 FREE GAMES	ON	OFF
	ON	ON

**6. CREDIT DISPLAY:**

<b>CREDITS DISPLAY</b>	<b>SWITCH 20</b>
YES	ON
NO	OFF

**7. MATCH FEATURE:**

When the MATCH FEATURE is On, a random number appears in the "MATCH/BALL IN PLAY" window and the word "MATCH" is illuminated. If the number matches the tens digit in a player's score a free game is awarded. The MATCH features creates an incentive to play.

<b>MATCH</b>	<b>SWITCH 21</b>
ON	ON
OFF	OFF



**8. MAXIMUM CREDITS:**

The maximum credits accepted by the machine limits the number of games that can be accumulated by coining, by winning replays or both. The maximum number of credits are adjustable by means of switches 17, 18 and 19. Eight credit limits are available. Switch settings are listed below:

MAXIMUM CREDITS	SWITCHES		
	19	18	17
5 .....	OFF	OFF	OFF
10 .....	OFF	OFF	ON
15 .....	OFF	ON	OFF
20 .....	OFF	ON	ON
25 .....	ON	OFF	OFF
30 .....	ON	OFF	ON
35 .....	ON	ON	OFF
40 .....	ON	ON	ON

**9. SPECIAL-SIDE**

The number of replays made per ball from the "Y" TARGET SPECIAL can be controlled as follows:

	SWITCH 22
1 Special per ball	ON
Opened Ended	OFF

**10. ELECTRONIC SOUND:**

	SWITCH 23
Computer Type Sounds	ON

**11. SPECIAL-BOTTOM LANE SPECIAL:**

The number of replays made per ball after spotting 4 CATS and 4 BATS can be controlled as follows:

	SWITCH 24
1 Special per ball	ON
Open Ended	OFF

**12. EXTRA BALL-ON:**

This option can be adjusted as follows:

	SWITCH 25
Extra Ball Lane ON After Spotting 4 CATS	OFF
Extra Ball Lane ON After Spotting 4 CATS & 4 BATS	ON

**13. ADVANCE BONUS:**

The number of Bonus Advances given when going thru bottom lane can be controlled as follows:

	<b>SWITCH 26</b>
2 Advances (4,000)	OFF
3 Advances (6,000)	ON

**14. EXTRA BALL ALTERNATION:**

When EXTRA BALL LANE is lit it can be adjusted as follows:

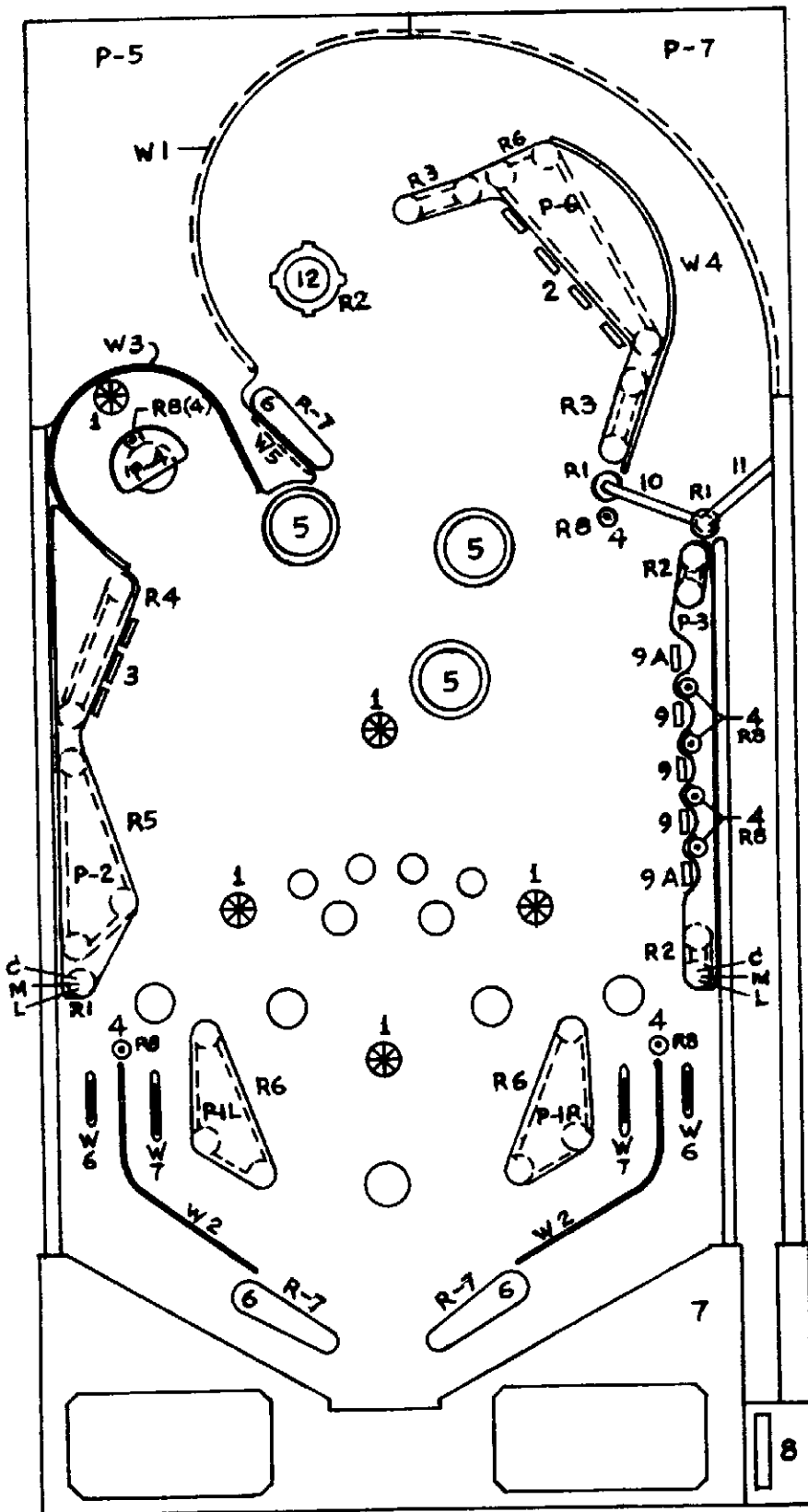
	<b>SWITCH 27</b>
Constant On (No Alternation)	OFF
Alternate On and Off	ON

**15. SPECIAL AWARD:**

Award received when hitting the rotating "Special" lite on the Stationary Targets, when Special light is lit can be adjusted as follows:

<b>AWARD</b>	<b>SWITCHES</b>	<b>POSITION</b>
FREE BALL	31	ON
	32	OFF
FREE GAME	31	OFF
	32	ON
100,000 POINTS	31	OFF
	32	OFF
FREE BALL & FREE GAME	31	ON
	32	ON

# DRACULA — PLAYFIELD PARTS



## RUBBER RINGS

- R1-7A-120-031
- R2-7A-120-100
- R3-7A-120-125
- R4-7A-120-225
- R5-7A-120-250
- R6-7A-120-300
- R7-7A-121
- R8-7A-125

## BALL GUIDES & ROLL-OVERS

- |           |           |
|-----------|-----------|
| W1-6C-231 | W5-6A-101 |
| W2-6B-233 | W6-A-383  |
| W3-B-566  | W7-A-149  |
| W4-B-577  |           |

## PLAYFIELD PLASTIC SHIELDS

- DRACULA SET 13A-109-1 TO - 7  
(P-1 TO P-7)

## MISCELLANEOUS PARTS

1. Roll-Over Button 4B-275
2. Bank Target D-580-4A
3. Bank Target D-580-3A
4. Ball Guide Post 2A-200
5. Thumper Cap 13A-24
6. Flipper & Shaft A-193
7. Instruction Plate 14B-1-1
8. Shooter Gauge 14A-2-1
9. Target Assembly A-461-2
- 9A. Target Assembly A-461-2Y
10. Spin Target A-563-6
11. Anti-Return Gate A-471
12. Bumper Cap 13A-25

## POST ADJUSTMENT

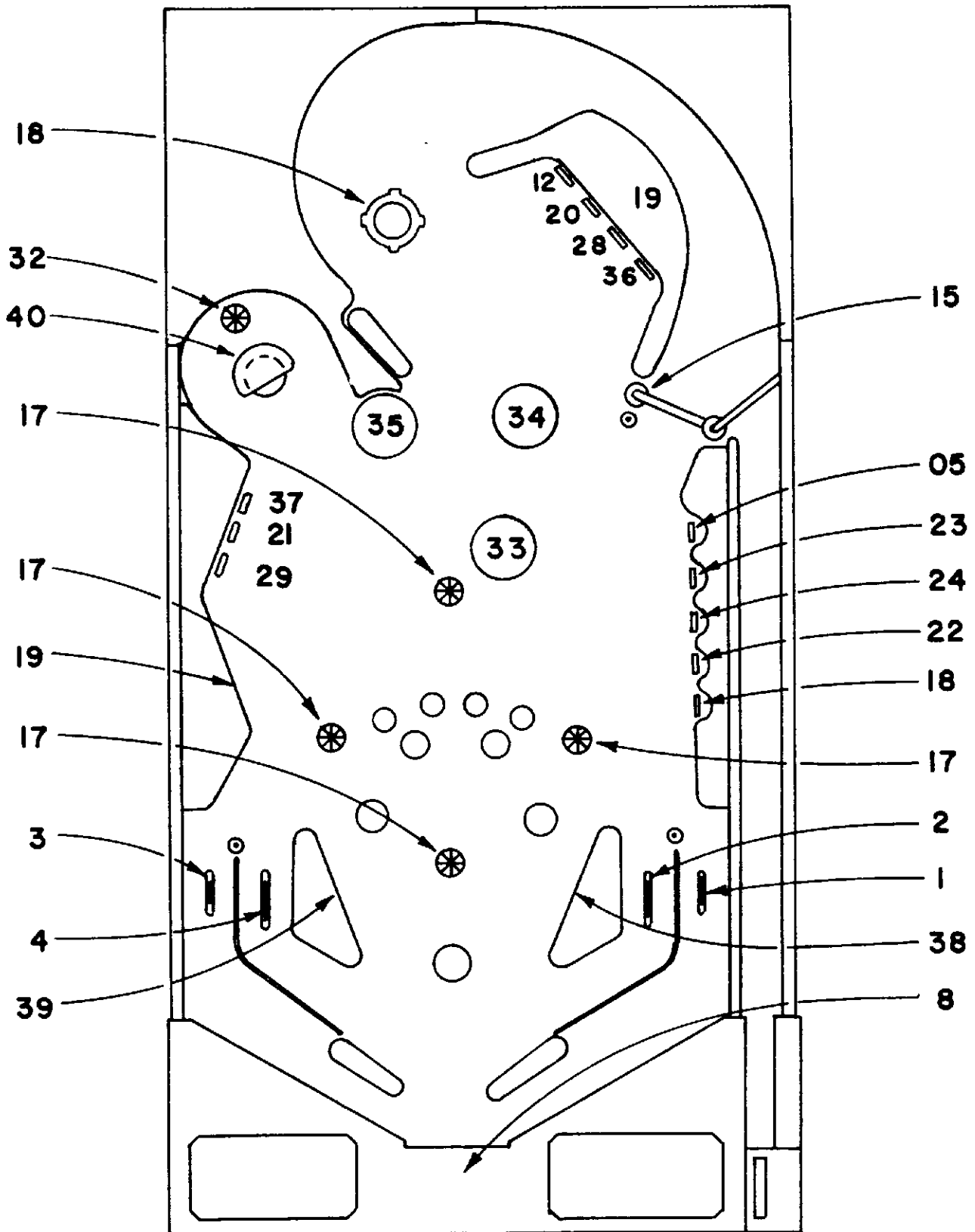
- C — CONSERVATIVE
- M — MEDIUM
- L — LIBERAL

**VI. SWITCH IDENTIFICATION**  
**Self Test Display Numbers**

SWITCH NO.	SWITCH LOCATION	SWITCH NO.	SWITCH LOCATION
1	RIGHT OUTLANE	21	MIDDLE TARGET (3-BANK)
2	RIGHT RETURN LANE	22	"Z" TARGET
3	LEFT OUTLANE	23	"X" TARGET
4	LEFT RETURN LANE	24	"Y" TARGET
5	1,000 & ADVANCE STAR	25	
6	CREDIT BUTTON	26	
7	TILT	27	
8	OUT-HOLE	28	LOWER MIDDLE TARGET (4-BANK)
9	COIN #3 (RIGHT)	29	LOWER TARGET (3-BANK)
10	COIN #1 (CENTER)	30	
11	COIN #2 (LEFT)	31	
12	UPPER TARGET (4-BANK)	32	ROLL-OVER (STAR)
13		33	LOWER THUMPER
14		34	RIGHT THUMPER
15	SPIN-TARGET	35	LEFT THUMPER
16	SLAM-TILT (3)	36	LOWER TARGET (4-BANK)
17	(4) ROLL-OVER BUTTON (10-PTS)	37	UPPER TARGET (3-BANK)
18	(2) 1,000 & ADVANCE BONUS	38	RIGHT SLING-SHOT
19	(2) 10 POINTS	39	LEFT SLING-SHOT
20	UPPER MIDDLE TARGET (4-BANK)	40	EJECT POCKET

**NOTE: 1 FLIPPER BUTTON CABINET SWITCHES DO NOT APPEAR ON TEST.**

# DRACULA SWITCHES



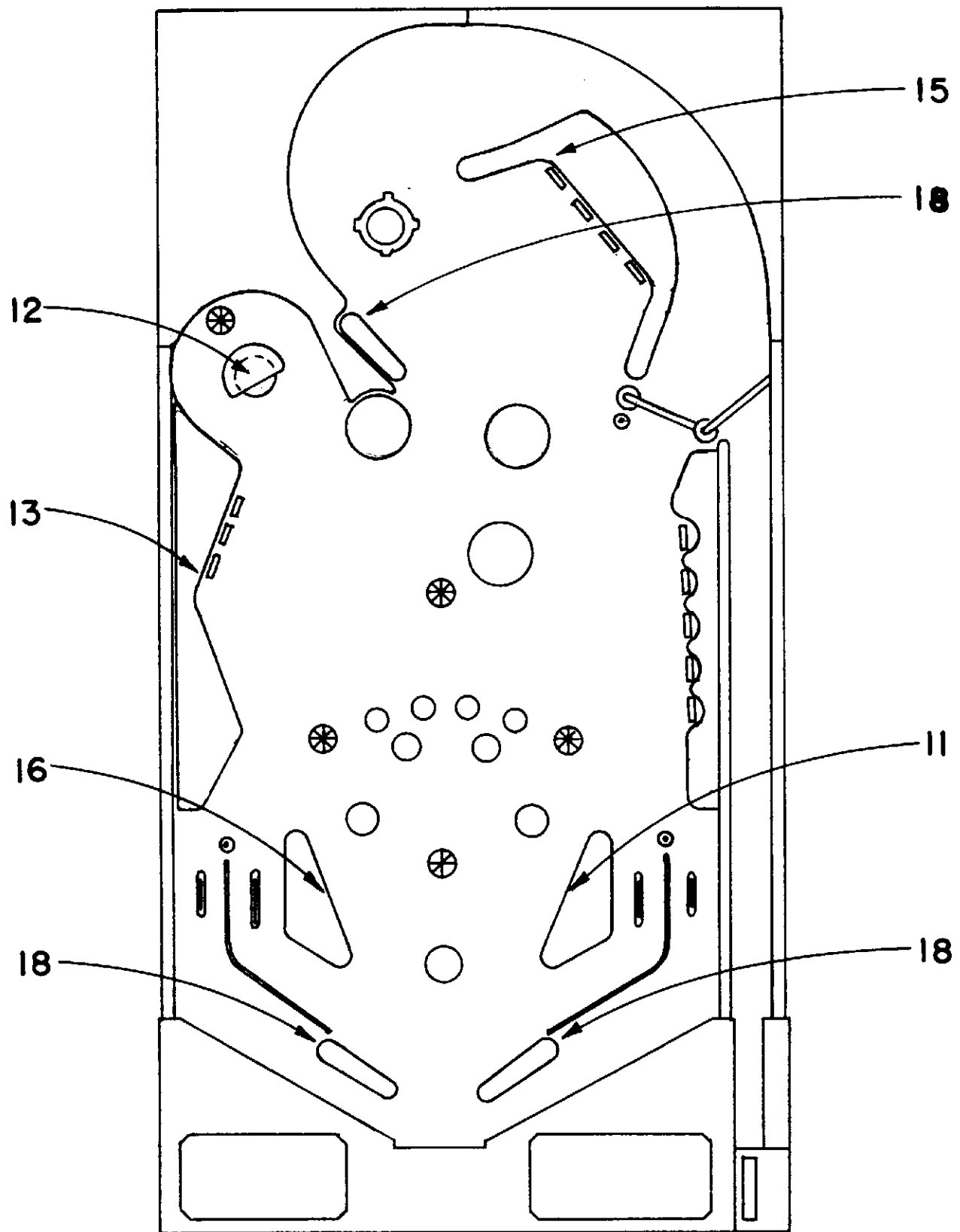
## SWITCHES NOT ON PLAYFIELD:

- |                 |                          |
|-----------------|--------------------------|
| 6 CREDIT BUTTON | 11 LEFT CHUTE            |
| 7 ROLL TILT     | 10 CENTER CHUTE          |
| 7 PENDULUM      | 16 TILTBOARD VIB.        |
| 9 RIGHT CHUTE   | 16 DOOR & PLAYFIELD VIB. |

**VII. SOLENOID IDENTIFICATION**  
**Self Test Display Numbers**

SOLENOID NO.		SOLENOID LOCATION
1 THRU 6	.....	ELECTRONIC SOUNDS
7	.....	LEFT THUMPER
8	.....	RIGHT THUMPER
9	.....	CENTER THUMPER
10	.....	OUT-HOLE
11	.....	RIGHT SLING-SHOT
12	.....	EJECT POCKET
13	.....	3-BANK DROP TARGET
14	.....	(NOT USED)
15	.....	4-BANK DROP TARGET
16	.....	LEFT SLING-SHOT
17	.....	KNOCKER
18	.....	FLIPPERS
19	.....	COIN LOCK-OUT

# DRACULA SOLENOIDS



SOLENOIDS NOT ON PLAYFIELD:  
17 KNOCKER      19 LOCK-OUTS

**VIII. PARTS LIST  
GAME #109 DRACULA**

<b>MISCELLANEOUS</b>	<b>PART NUMBER</b>
Transformer (Domestic or Export) .....	16B-3
Transformer & Rectifier Board .....	C-464
BULBS, #44. ....	8A-101

**ASSEMBLY COILS**

Coin Lockout .....	C-36-5500
Flipper Left & Right & Upper (3) .....	J-25-500/34-5050
Knocker .....	N-26-1200
Outhole Kicker .....	J-26-1100
Saucer Eject .....	J-28-2300
Thumper Bumper 3 .....	J-26-1200
Sling-Shot (2) .....	J-26-1200
Drop Target Reset (2) .....	B-27-2300

**MODULES**

Lamp Driver .....	B-431
Display Driver (5 Used) .....	A-434
Solenoid Driver/Voltage Regulator .....	B-432
MPU .....	C-433
Rectifier Board .....	A-430
Sound Module .....	B-521

**PLAYFIELD PARTS** ..... SEE PLAYFIELD DIAGRAM