

H O T

H A N D

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:

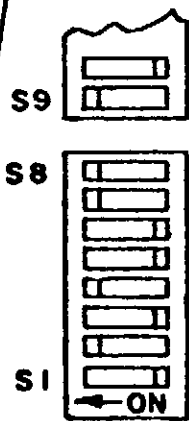
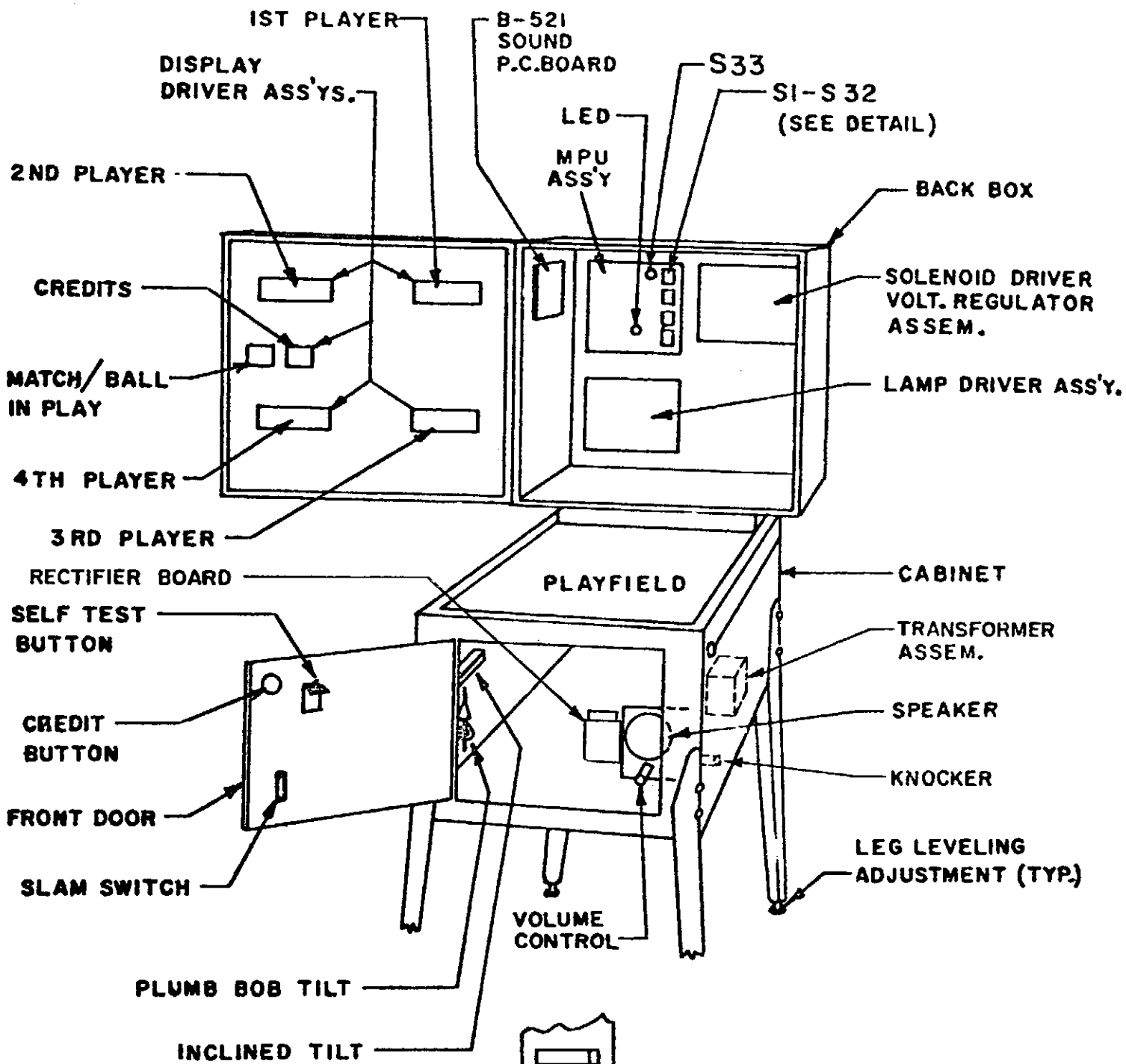
1. Plumb bob tilt on left side of cabinet near front door.
2. Ball tilt above plumb bob tilt. Insert the smaller ball (gold 15/16" dia.) into the ball tilt assembly, and adjust the bracket so the ball will roll free to contact the switch blade, if front of cabinet is raised.
3. Panel tilt on bottom of 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 BALL 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, Slingshot switches score 100 and changes card suit, Rebound switches score 10 points. Left Thumper-Bumper scores 100 points and changes card suit. Remaining two (2) Thumper-Bumpers score 10 points.

When the ball enters the outhole, a bonus score for each card spotted is added to the players score. The player-up and/or ball in play on the back box is advanced one position. The bonus score starts at 0,000 points. The outhole kicker moves the ball in 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 players score a free game is awarded.

Extra Ball won during the course of the game is played immediately after the players 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 number of cards made is remembered and restored 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 is 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.

	RECOMMENDED SETTING	
	3 BALL	5 BALL
1st Level -	280,000	580,000
2nd Level -	460,000	740,000
3rd Level -	—	—
High Score To Date	600,000	900,000

IV. FEATURE OPERATION & SCORING

BONUS SCORE FEATURE:

A bonus score of 200,000 may be scored. The game starts with no bonus score. A bonus score of 1,000 is awarded for every card spotted. When all 4 Royal Flushes (20 Cards) are made and the ball enters the outhole the "Super bonus" lite lites and additional cards may be spotted on the following ball.

NOTE: All spotted cards and bonus multiplier are remembered and carried over from ball to ball.

TOP POCKETS:

This feature spots cards in the lited suit and scores according to the length of time the ball sits in the hole with minimum score being 200 or 2,000 if all the cards are spotted in the diamond suit.

TOP ROLL-OVER:

Top Roll-Over scores 10 points and changes lit suit.

THUMPER-BUMPER:

The center and right bumper score 10 points. The left bumper scores 100 points and changes the card suit.

STATIONARY TARGETS:

The four (4) stationary targets on the right side spot the indicated cards in the lit suit and score 500 points. If four of a kind is made, targets lite for 2,000 points. The stationary target on the upper left scores 500 points, if a Heart Royal Flush is made, target lites for 2,000.

DROP TARGET:

Targets score 500 and spot card in lit suit if 4 of a kind is spotted that particular target lites for 2,000. If 4 Aces are spotted and a Spade Royal Flush is spotted the Ace Target lites for 5,000.

KICKER LANE:

Kicker scores 10,000 and when Spade Royal Flush is spotted (adj.), lane lites for possible "Extra Ball."

SPINNER:

Spinner scores 1,000 except when Spade Royal Flush is spotted, Spinner then scores 2,000.

OUT LANES:

Out Lane scores 3,000 and lite for Special award on 2 of 3 Royal Flushes (adj.)

LEFT RETURN LANE:

Scores 500 points, when "Club" Royal Flush is spotted scores 5,000 points.

RIGHT RETURN LANE:

Scores 500 points, when "Heart" Royal Flush is spotted scores 5,000 points.

SLINGSHOTS:

Score 100 points and change card suit.

ROYAL FLUSH FEATURE:

"Diamond" Royal Flush lites top holes for 10X. "Spade" Royal Flush lites Kicker, Spinner and Drop Target Ace. "Heart" Royal Flush lites right return lane and upper left stationary target for 10X. "Club" Royal Flush lites left return lane for 10X.

NOTE: All spotted cards are carried over from ball to ball.

BONUS MULTIPLIER FEATURE:

Any pair lites "2X", any 3 of a kind lites "3X", any 4 of a kind lites "4X", 4 Royal Flushes lite "5X", and "Super Bonus" lite.

NOTE: All Bonus Multipliers and Super Bonus are carried over from ball to ball.

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 allows 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 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	
31-32	Special Award
28 thru 30	Coin Chute No. 1 (On 3 chute doors)
27	Special Selection
26	N/U
25	Special Adjustment
24	Special Lights Alternation
23	Extra Ball Award
22	Extra Ball Enable
21	Match Feature
20	Credit Display
17 thru 19	Maximum Credits
15-16	High Game to Date
14	N/U
9 thru 13	Coin Chute No. 3 — Right
8	Tone Melody
7	Balls Per Game
6	High Score
1 thru 5	Coin Chute No. 1 — Left (Center on 3 chute doors)

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.

AWARD	SWITCH 6
EXTRA BALL	OFF
REPLAY	ON

2. BALL PER GAME:

No. of BALLS PER GAME	SWITCH 7
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.

GAME MELODY	SWITCH 8	MELODY
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. 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 time 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.

	SWITCH	
	16	15
NOVELTY	OFF	OFF
1 FREE GAME	OFF	ON
2 FREE GAMES	ON	OFF
3 FREE GAMES	ON	ON

5. 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

6. CREDIT DISPLAY:

CREDITS DISPLAY

YES
NO

SWITCH 20

ON
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.

MATCH

ON
OFF

SWITCH 21

ON
OFF

8. EXTRA BALL:

This option can be adjusted as follows:

NO EXTRA BALL (BYPASS)
AWARD EXTRA BALL

SWITCH 22

OFF
ON

9. EXTRA BALL LITE ON:

The lite by the side kicker can be adjusted as follows:

Lites on Spade Flush
Lites on Spade Flush & Spade Suit Lite

SWITCH 23

OFF
ON

10. SPECIAL LIGHT ALTERNATION:

When the Special lite is lit it can be adjusted as follows:

NO ALTERNATION
ALTERNATION

SWITCH 24

OFF
ON

11. SPECIAL ADJUSTMENT:

The number of Flushes needed to lite the Special Lite can be adjusted as follows:

2 ROYAL FLUSHES
3 ROYAL FLUSHES

SWITCH 25

OFF
ON

12. SPECIAL SELECTION:

The number of replays made can be adjusted as follows:

OPEN ENDED
ONE SPECIAL PER GAME

SWITCH 27

OFF
ON

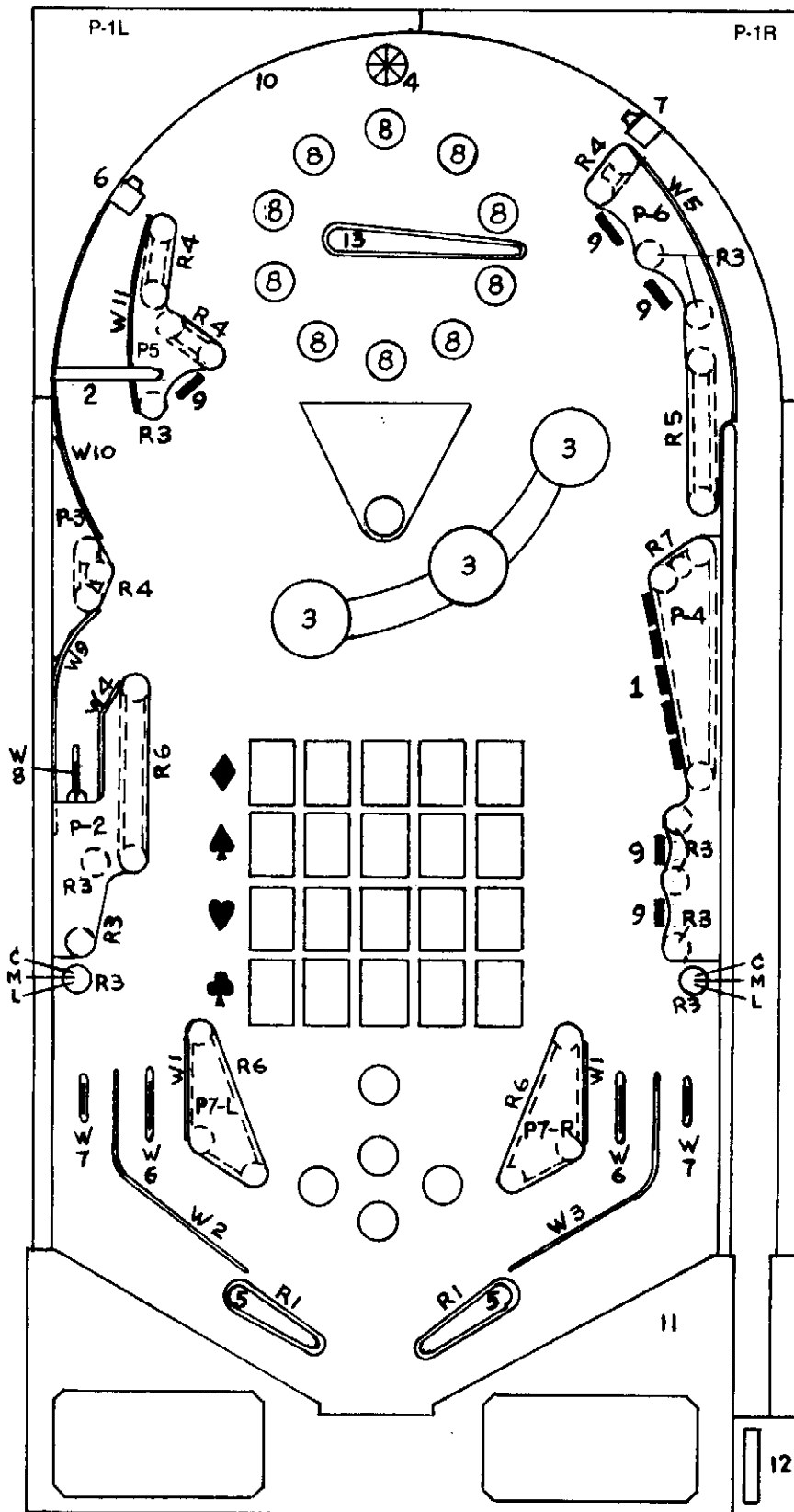
13. SPECIAL AWARD:

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

AWARD	SWITCHES	POSITION
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

HOT HAND

Playfield Parts



Post Adjustment

C - Conservative
M - Medium
L - Liberal

RUBBER RINGS

- | | |
|---------------|---------------|
| R1-7A-121 | R6-7A-120-250 |
| R2-7A-131 | R7-7A-120-400 |
| R3-7A-120-031 | |
| R4-7A-120-100 | |
| R5-7A-120-125 | |

BALL GUIDES & WIRE FORMS

- | | |
|-----------|-----------|
| W1-6A-101 | W7-A-383 |
| W2-6A-235 | W8-A-581 |
| W3-6A-236 | W9-A-589 |
| W4-6A-237 | W10-A-590 |
| W5-6A-238 | W11-A-591 |
| W6-A-149 | |

PLASTIC SHIELDS

TOP ARCH SET 13C-112-1R & 1LA
PLAYFIELD SET 13A-112-2 TO-7
(P-2 TO P-7)

MISCELLANEOUS PARTS

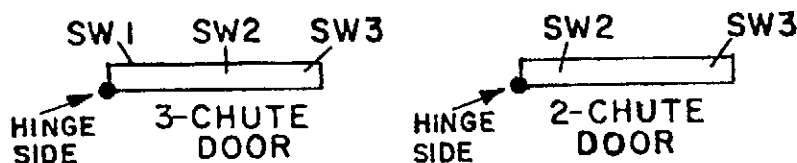
1. 5-BANK TARGET D-580-5A
2. SPIN TARGET A-563-7
3. THUMPER CAP 13A-29
4. ROLL-OVER BUTTON 4B-275
5. FLIPPER & SHAFT A-193
6. BALL GATE, LEFT A-104-L
7. BALL GATE, RIGHT A-104-R
8. ROLL-OVER BUTTON ASS'Y A-593
9. TARGET ASS'Y A-461-1
10. TOP ARCH RAIL 6B-222
11. INSTRUCTION PLATE 14B-3-1
12. SHOOTER GAUGE 14A-2-4
13. BIG FLIPPER 4B-265

HOT HAND
VI. SWITCH IDENTIFICATION
Self Test Display Numbers

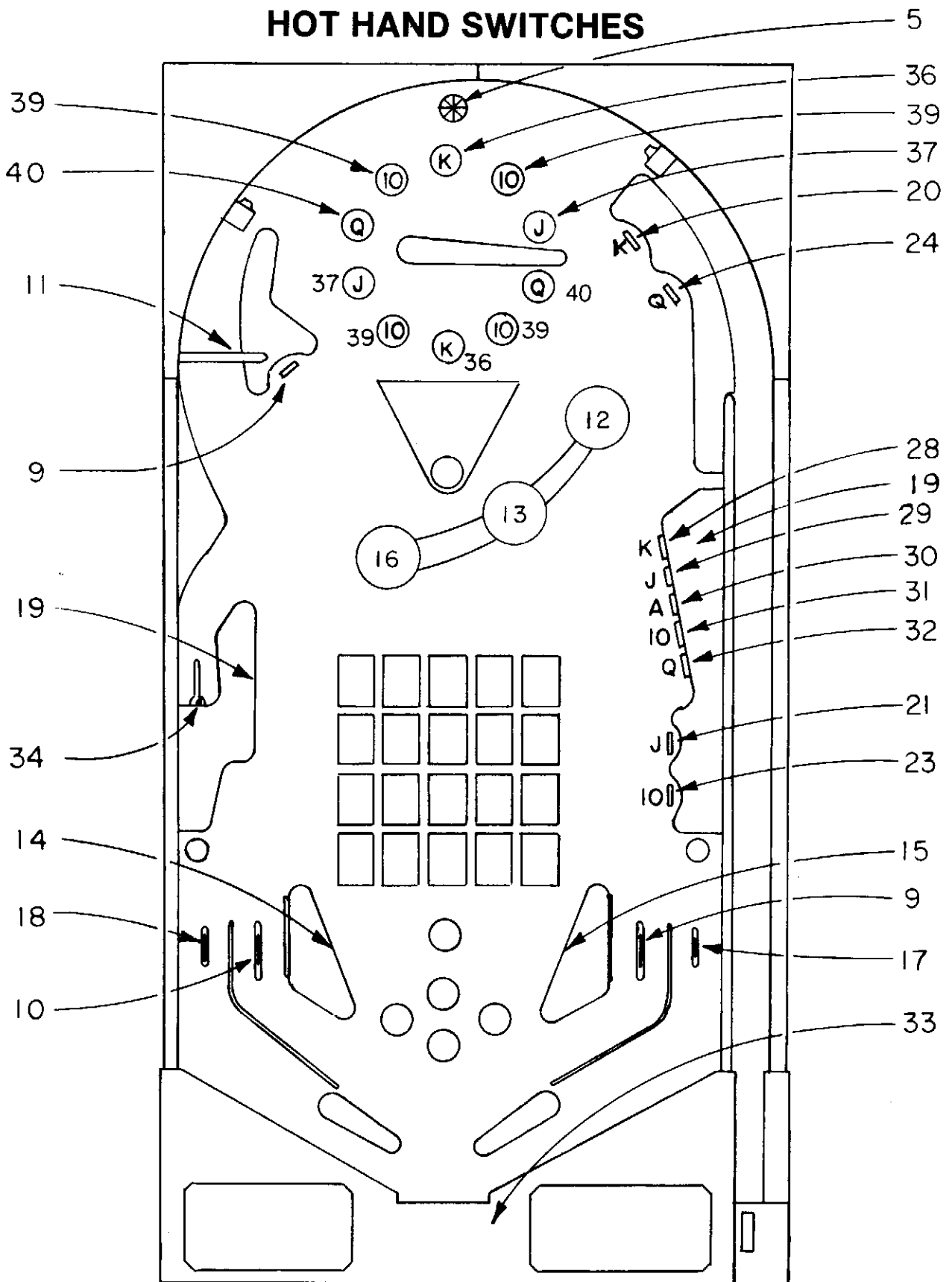
SWITCH NO.	SWITCH LOCATION	SWITCH NO.	SWITCH LOCATION
1	CHUTE	21	STAND-UP TARGET "J"
2	CHUTE	22	NOT USED
3	CHUTE	23	STAND-UP TARGET "10"
4	NOT USED	24	STAND-UP TARGET "Q"
5	ROLL-OVER BUTTON	25	NOT USED
6	CREDIT BUTTON	26	NOT USED
7	TILT SWITCHES	27	NOT USED
8	SLAM SWITCHES	28	5-BANK DROP TARGET "K"
9	(2) RIGHT RETURN LANE & TOP L. TARG.	29	5-BANK DROP TARGET "J"
10	LEFT RETURN LANE	30	5-BANK DROP TARGET "A"
11	SPIN TARGET	31	5-BANK DROP TARGET "10"
12	RIGHT THUMPER	32	5-BANK DROP TARGET "Q"
13	CENTER THUMPER	33	OUT-HOLE
14	LEFT SLING-SHOT	34	EJECT-POCKET
15	RIGHT SLING-SHOT	35	NOT USED
16	LEFT THUMPER	36	(2) BALL POCKETS "K"
17	RIGHT OUT-LANE	37	(2) BALL POCKETS "J"
18	LEFT OUT-LANE	38	NOT USED
19	(2) REBOUND SWITCHES	39	(4) BALL POCKETS "10"
20	STAND-UP TARGET "K"	40	(2) BALL POCKETS "Q"

} SEE DIAGRAM
BELOW

NOTE: FLIPPER BUTTON CABINET SWITCHES DO NOT APPEAR ON TEST



HOT HAND SWITCHES



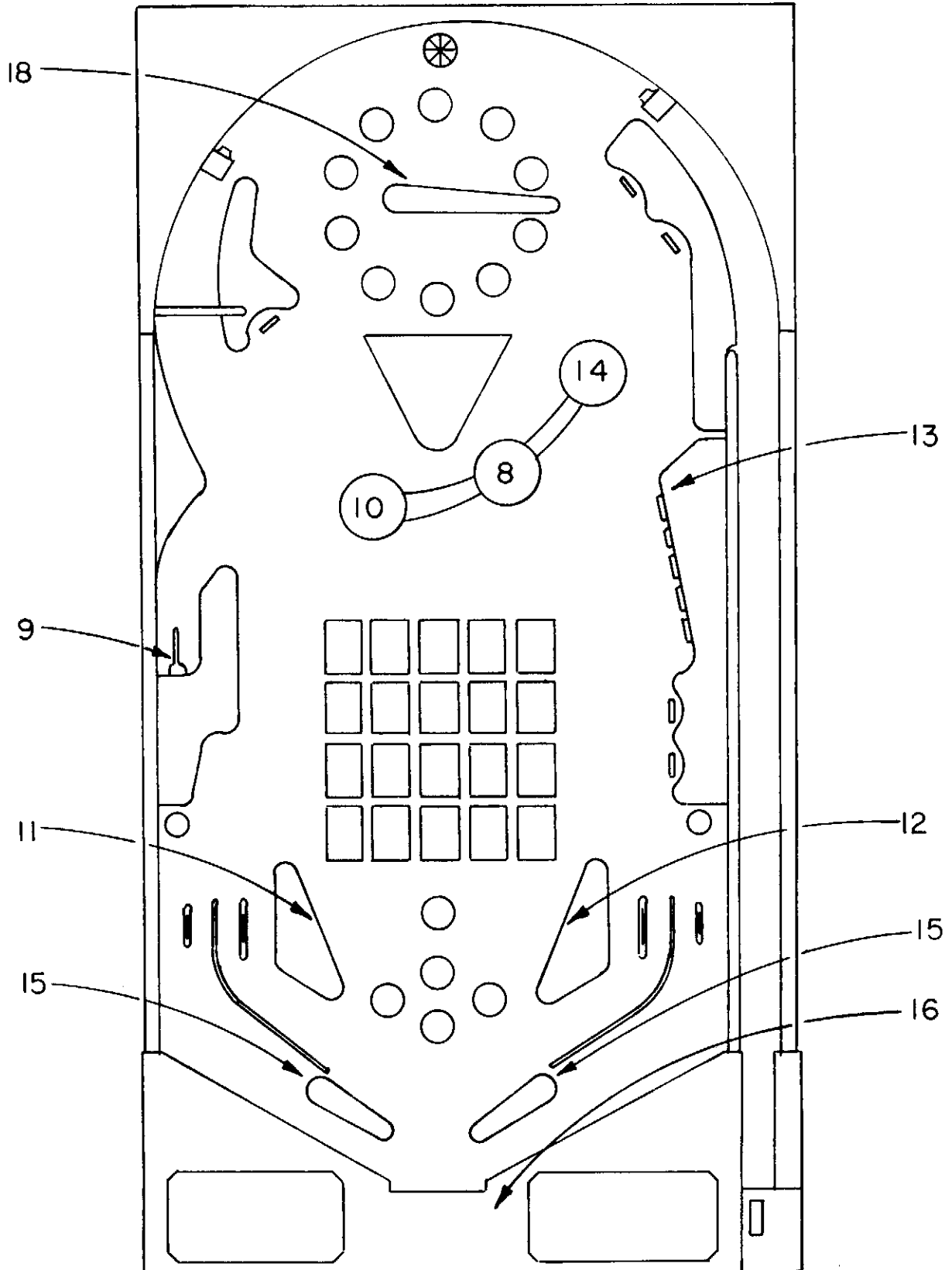
SWITCHES NOT ON PLAYFIELD

- | | |
|-----------------|-------------------------|
| 6 CREDIT BUTTON | 3 LEFT CHUTE |
| 7 ROLL TILT | 2 CENTER CHUTE |
| 7 PENDULUM | 8 TILT-BOARD VIB. |
| 1 RIGHT CHUTE | 8 DOOR & PLAYFIELD VIB. |

HOT HAND
VII. SOLENOID IDENTIFICATION
Self Test Display Numbers

SOLENOID NO.	SOLENOID LOCATION
3	KNOCKER
8	CENTER THUMPER
9	EJECT POCKET
10	LEFT THUMPER
11	LEFT SLING-SHOT
12	RIGHT SLING-SHOT
13	5-BANK DROP TARGET
14	RIGHT THUMPER
15	FLIPPERS (R & L)
16	BALL-EJECT
18	ROTATING FLIPPER
19	COIN LOCK-OUT
20 To 25	ELECTRONIC SOUNDS

HOT HAND SOLENOIDS



SOLENOIDS NOT ON PLAYFIELD :

*3 KNOCKER

*19 LOCK-OUT

VIII. PARTS LIST GAME #112 HOT HAND

MISCELLANEOUS	PART NUMBER
Transformer (Domestic or Export)	16B-3
Transformer & Rectifier Board	C-464
Bulbs, #44	8A-101
Motor	10B-3
Relay	25A-7-1
ASSEMBLY COILS	
Coin Lockout (1)	C-36-5600
Flipper Left & Right (2)	J-25-500/34-5050
Knocker (1)	N-26-1200
Outhole Kicker (1)	J-26-1100
Thumper-Bumper (3)	J-26-1200
Sling-Shot (2)	J-26-1200
Drop Target Reset (1)	B-24-1600
Side Kicker (1)	J-28-2300
MODULES	
Lamp Driver	B-431
Display Driver (5 Used)	A-434
Solenoid Driver/Voltage Regulator	B-432
MPU	C-433-112
Rectifier Board	A-430
Sound Module	B-521
PLAYFIELD PARTS	SEE PLAYFIELD DIAGRAM