



STERN

ELECTRONICS, INC.

1725 Diversey Parkway, Chicago, Illinois 60614
(312) 935-4600, Telex 25-4657
Toll Free Service Assistance (800) 621-6424

This document has been downloaded from:



FLIPPERSPILL.COM

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.

II. ROUTINE MAINTENANCE ON LOCATION

Self tests, which are programmed into the design of the game, are very helpful. As with any solid state piece of equipment the three prong grounding receptacle is an important piece part of the game, that must not be tampered with and must be used properly.

MPU MODULE SELF-TEST:

During power-up, the MPU assembly tests itself, which can visibly be seen by the flashing of a LED on the board. When the game is turned on, the LED will flash, have a pause, flash again, a longer pause, then flash five more times and then will be dimly lit. Accompanying each flash is one note (total of seven), this indicates proper MPU game operation conditions.

GAME SELF-DIAGNOSTIC TESTS:

Pressing the Self-Test button inside the coin door activates the game into its self-diagnostic test.

1. **BURN IN TEST** - all outputs tested.
2. **FEATURE LAMPS** - All feature lamps will flash on and off continuously, determining any burnt lamps.
3. **DISPLAYS** - Each digit on all displays will cycle from 0 thru 9, then a number 8 will shift left to right. This test will recycle continuously.
4. **SOLENOIDS** - Each solenoid will be energized, one at a time, in a continuous sequence. (Holding both flipper buttons "in" during this test will cause the flipper coils to be energized). The number appearing on the Player Score displays is the same as the number assigned to the solenoid and also the same transistor number on the SDU board. The sound of a solenoid pulling-in as a number appears indicates proper operation providing transistor is being used, the absence of a solenoid sound shows a fault. If sound is absent, see Solenoid I.D. page in book for help in Solenoid Identification. *After the solenoids are tested, the game sounds are tested.
5. **SWITCHES** - The MPU will look at each switch assembly for stuck contacts. * (Flipper Button Switches are not included). If there are any stuck, the lowest number encountered is flashed on the Player Score displays. The number remains until the fault is corrected. See Switch I.D. page in book for help in switch identification. Other numbers may follow if more stuck contacts are present. If there are no stuck switches, the "Match/Ball in Play" display flashes '0'. **DO NOT BURNISH OR FILE GOLD PLATED SWITCH CONTACTS.**
6. **GAME LEVELS AND BOOKKEEPING FUNCTIONS:** - Pressing the Self-Test button eighteen more times causes the MPU to step thru the game levels and bookkeeping functions and finally to repeat the power-up test. To bypass these functions, turn the game off, then on. The game is now ready to play, after the MPU Self-Test.

CONTACT SWITCH ADJUSTMENTS

All contact switches should be adjusted to have a gap 1/16" in the open position, and have .010" overtravel closed. All contact switches (except for flipper buttons & flipper end of stroke switches) are gold plated to resist corrosion and, **SHOULD NOT BE FILED OR BURNISHED**. If contacts have dirt or dust on them, a clean piece of paper should be used to clean them, by closing the contacts and wiping gently.

FLIPPER BUTTON & FLIPPER SWITCHES ONLY. Tarnish or pitted contacts can be corrected with a contact file followed by a burnishing tool. Severely pitted contact must be replaced as an assembly.

PLAYFIELD

Stern playfields have a durable long life playing finish. Its life expectancy, as well as playing appeal can be greatly extended by periodic cleaning. Inspect and hand polish the ball with a clean cloth. A chipped ball must be replaced, as it will ruin the finish on the playfield. (DO NOT USE WATER IN LARGE QUANTITIES, HIGHLY CAUSTIC CLEANERS, ABRASIVE CLEANERS OR CLEANING PADS ON THE PLAYFIELD SURFACE.

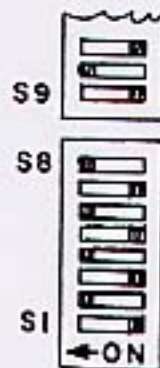
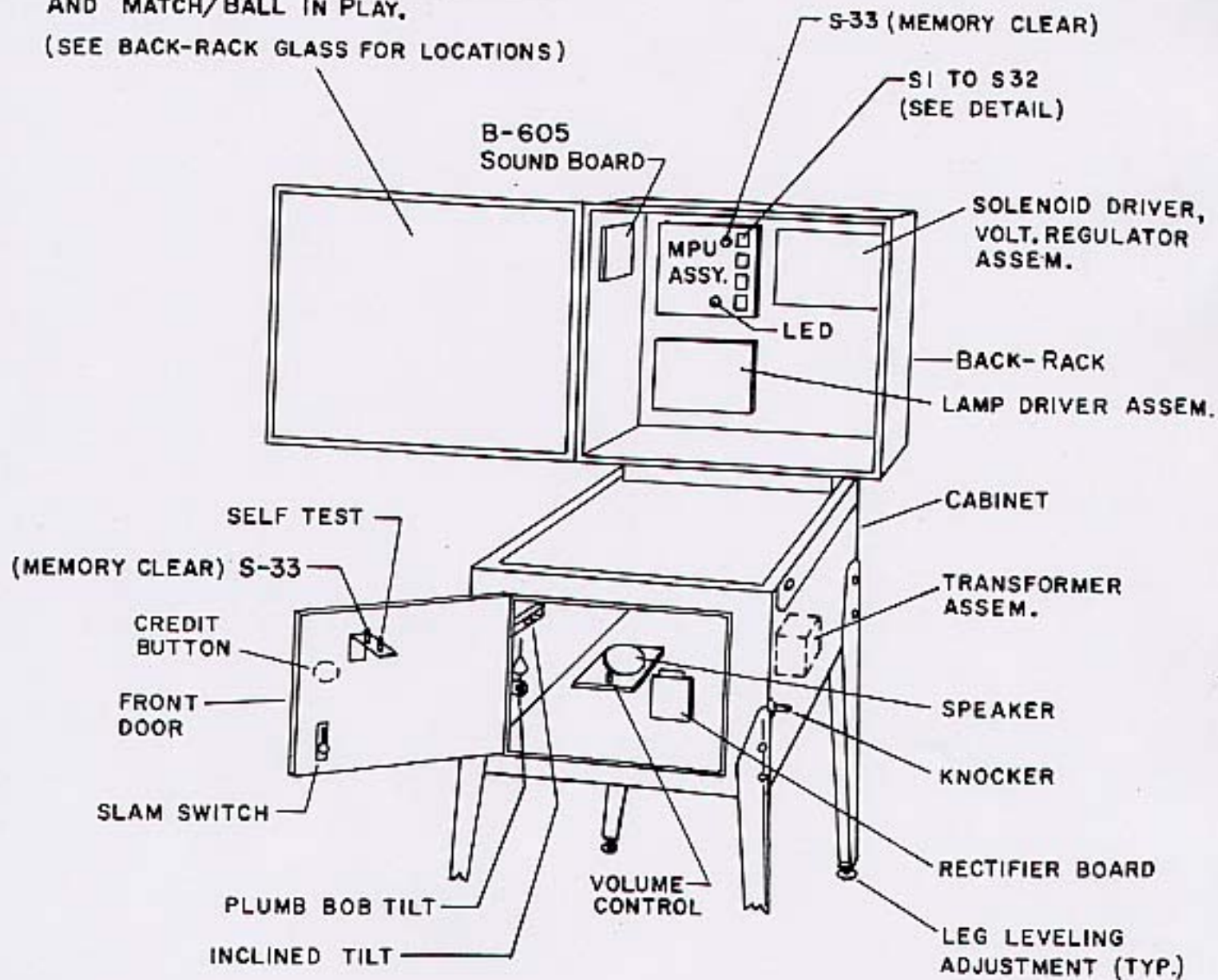
ELECTRONIC PIN BALL GAME

Figure 1

DISPLAY DRIVER ASSEM'S:-

1ST, 2ND, 3RD & 4TH PLAYERS, CREDITS
AND MATCH/BALL IN PLAY.

(SEE BACK-RACK GLASS FOR LOCATIONS)



DETAIL S1-S32
MPU ASS'Y.

III. 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. Seven singular tones will be heard to indicate game-readiness. Feature lights will flash in a programmed attract mode, "HIGH SCORE" lite is lit, player displays flash high score to date, numbers 1 to 7 will display from right to left, all 7's will flash, "HIGH SCORE" lite goes off, previous played scores are flashed, "Coin lock-out coil" is energized and game is ready for play. Coin Game. The game should accept the coin and post credits for coins accepted (*). Pressing the credit button on the door will reset drop targets and cause the outhole kicker to move the ball to the shooter lane. The first player display will flash 00.

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 players are registered). Shooting the ball initiates play. Thumper-Bumper scores 1000 points on 3 ball, 100 points on 5 ball. Top bumper scores, changes card selection (X, Y or Z) and changes ((2000 when lit" by left spinner and right 3 roll-over button lane. Slingshots score 10 points.

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 10 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 (3 or 5). 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 is not advanced for extra ball play. Bonus score is added to the player's score and the bonus is restored before the game moves the extra ball for play, (memory).

At the end of the game, a "High Game" is flashed on all players scores. If the "High Game" is beat, this feature* can award up to 3 free games.

Tilting while playing the game results in loss of the ball in play. The flippers, thumper-bumper, 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 is ready for play. 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 weighted 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.***

IV. SELF TEST AND BOOKKEEPING FUNCTIONS

The game is designed to help the operator perform certain diagnostic tests as well as accounting functions as follows:

IV.A. SELF TEST

TEST SWITCH PUSH NUMBER	BALL/MATCH DISPLAY	DESCRIPTION
1st		Burn in test - all outputs tested
2nd		Lamp test - all feature lamps on and off
3rd		Display test - all digits display 0000000 thru 9999999 then an 8 shifts from left to right
4th		Solenoid test - continuous sequence of solenoids pulsed with solenoid driver transistor, "Q" number displayed
5th	Flashing 0 if all switches open	Switch test - switch I.D. No. displays if closed

IV.B. BOOKKEEPING FUNCTIONS

TEST SWITCH PUSH NUMBER	BALL/MATCH DISPLAY	DESCRIPTION	DISPLAYS
6th	01	1st Threshold (High Score)	
7th	02	2nd Threshold (High Score)	
8th	03	3rd Threshold (High Score)	
9th	04	Current High Game Threshold	
10th	05	Current Credits	00 to 40
11th	06	Total Plays	00 to 999999
12th	07	Total Replays	00 to 999999
13th	08	Total times high score is passed	00 to 999999
14th	09	Number of coins thru Chute No. 2	00 to 999999
15th	10	Number of coins thru Chute No. 1	00 to 999999
16th	11	Number of coins thru Chute No. 3	00 to 999999
17th	12	Total balls played	
18th	13	Total Extra Balls Awarded	00 to 999999
19th	14	Total Playfield Special Awards	00 to 999999
20th	15	No. of Times Special (Sun Only) was Lit	00 to 999999
21st	16	Total level 1 passed	00 to 999999
22nd	17	Total level 2 passed	00 to 999999
23rd	18	Total level 3 passed	00 to 999999

V. 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 9,990,000 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 six 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 9,990,000 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 —	500,000	840,000
2nd Level —	750,000	980,000
3rd Level —	_____	_____
High Score To Date	850,000	990,000
Instruction Card	12B-2-121-22	12B-2-121-22A

NOTE—For Five Ball Play it is recommended outlane posts be moved to conservative position (Open).

STERN 16B-6 TRANSFORMER WIRING CONNECTION INSTRUCTIONS

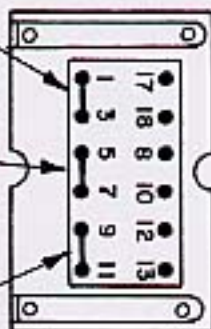
115/120V., 50/60 Cycle Input.

Varistor - Soldered to Line Filter on Left Side of Cabinet
Must Be Stern Part No. 25A-18-1.

Solder Lugs 1 & 3
Together. Solder Heavy
Red Wire To Lug 1

120V
Solder Lugs 5 & 7
Together. Solder Heavy
Yellow Wire To Lug 5

115V
Solder Lugs 9 & 11
Together. Solder Heavy
Yellow Wire To Lug 9



220/240V., 50/60 Cycle Input.

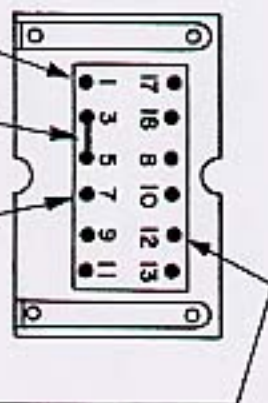
Varistor - Soldered to Line Filter on Left Side of Cabinet
Must Be Stern Part No. 25A-18-2.

Solder Heavy Red Wire
To Lug 1

Solder Lugs 3 & 5
Together

240V
Solder Heavy Yellow
Wire To Lug 7

220V
Solder Heavy Yellow
Wire To Lug 12



VI. FEATURE OPERATION & SCORING

BONUS SCORE FEATURE:

Game starts with 0 bonus. A bonus of 1,000 is awarded for each number lit in "X", "Y" & "Z" cards. When every number in each card is lit (27,000 bonus), bonus goes into "reserve Bonus" and numbers can be lit again for a maximum of 54,000 bonus (not including "Card Bonus Multiplier"). In addition, 5,000 can be added to bonus for each completed line when this feature is lit. Bonus numbers are lit by hitting numbers on drop targets. Numbers will only be posted in lit card or cards.

Change Card Selection Switches are:

Top Bumper - (SW-#9)

Center Playfield Roll-Over - (SW-#25)

Slingshots - (SW-#12 & 13)

Top Three Lanes - (SWS-#17, 18, & 19)

The "Bonus Score" is collected when the ball enters the out-hole. (SW-#33) This feature is carried over from ball to ball, (memory).

2X, 3X Card Bonus Multiplier

2X lites when one line is made on each card or when one card is completely made.

3X lites when 2 lines are made on each card or when any 2 cards are completely made.

SLINGSHOTS: (SWS-# 12 & 13)

Score 10 points and change card selection.

CENTER ROLL-OVER BUTTON: (SW-# 25)

Scores 5,000 and changes card selection.

LEFT AND RIGHT RETURN LANES: (SWS-# 28 & 29)

Both score 5,000 points. Left lane lites letter "M", right lane lites letter "E".

LEFT AND RIGHT OUTLANES: (SWS-# 35 & 36)

Right lane "Extra Ball". Lites when 4 corners, 2 vertical or 2 horizontal or 2 diagonal lines are made in any two cards or when the "Z" card is completed.

DROP TARGETS: (SWS-# 14, 15, & 16 - # 22, 23, & 24 - # 30, 31, & 32)

Targets score 500 and spot number in selected card. When all numbers from each drop target are spotted on all 3 cards every additional time all targets down an additional 25,000 points is awarded for each bank.

LEFT CENTER SIDE LANE: (SW-# 27)

Scores 5,000 points. Awards "Extra Ball" when BIG-GAME is made, awards "Special" when BIG-GAME is made second time.

STAND-UP TARGETS: (SWS-# 20 & 21)

Lites corresponding letter and scores 500 points. Scores 5,000 each when "BIG-GAME" is lit.

THUMPER-BUMPERS: (SWS-# 9, 10, & 11)

Score 1,000 on 3 ball, 100 on 5 ball. In addition to scoring "Top Bumper" (SWS-# 11) also changes card selection.

SPINNERS: (SWS-# 4 & 5)

Scores values indicated. Left side (SW-# 4) lites when "X" is lit. Right side (SW-# 5) lites when B-I-G is made.

UPPER LEFT ROLL-OVER BUTTON: (SW-# 26)

Scores 100. Scores 3,000 when "BIG" is made.

3 UPPER RIGHT ROLL-OVER BUTTONS (SWS-# 38, 39 & 40)

Each roll-over scores 100. Each scores 2,000 when "Z" is lit.

TOP EJECT POCKET: (SW-# 34)

Scores 5,000 for each lited letter. Scores an additional 35,000 when "BIG-GAME" is made.

TOP 3 LANES: (SWS-# 17, 18 & 19)

Lites corresponding letter, scores 500 and changes card selection. Middle lane (#18) scores 5,000 when "BIG" is lit.

10 POINT: (SWS-# 37)

Switches score 10 points.

COLLECT BONUS (SW-# 33)

When the ball enters the outhole the bonus score and multiplier is added to the player's score and the bonus is restored (memory).

VII. CREDIT/COIN AND 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 Fig. 3).

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 Fig. 1). Credits per coin, maximum credits, credit display, balls (3 or 5) per game, match feature, high game feature, special award and melody are selectable by means of switches. The switches are contained in four sixteen lead packages numbered S1-8, S9-16, S17-24, and S25-32 for easy identification. The "On" position is marked on the assembly. TURN OFF POWER BEFORE MAKING ADJUSTMENTS. MAKE ADJUSTMENTS BEFORE TURNING POWER BACK ON.

BIG GAME SWITCH ASSIGNMENT

32	}	Special Award
31		
30	}	Coin Chute No. 1
29		
28		
27		
26	}	Extra Line 5,000 Score
25		
24		N/U
23		Card Selection
22		Special Replay Limit
21		Match Feature
20		Credit Display
19	}	Max Credits
18		
17		Extra Ball Bypass
16	}	High Game To Date Feature
15		
14		N/U
13	}	Coin Chute No. 3
9		
8		Background Sound
7		Ball Per Game (3 or 5)
6		High Score Feature
5	}	Coin Chute No. 2
1		

CREDITS/COIN ADJUSTMENTS:

The credits given per coin are selectable by means of MPU switches. Thirty-one different credit ratios are available for two coin chutes, sixteen credit ratios are available for the third coin chute. The MPU switch settings and resultant credits/coin are as follows:

CREDITS/COIN ADJUSTMENTS

SWITCH No. 2 (BRN-WHITE) or SWITCH No. 3 (RED-WHITE)	SWITCHES					CREDITS/COIN
	5	4	3	2	1	
	13	12	11	10	9	
OFF	OFF	OFF	OFF	OFF	OFF	 3/2 COINS*
OFF	OFF	OFF	OFF	OFF	ON	3/2 COINS**
OFF	OFF	OFF	OFF	ON	OFF	1/COIN
OFF	OFF	OFF	OFF	ON	ON	 1/2 COINS*
OFF	OFF	ON	OFF	OFF	OFF	2/COIN
OFF	OFF	ON	OFF	ON	ON	2/2 COINS
OFF	OFF	ON	ON	ON	OFF	... 3/COIN
OFF	OFF	ON	ON	ON	ON	3/2 COINS*
OFF	ON	OFF	OFF	OFF	OFF	4/COIN
OFF	ON	OFF	OFF	OFF	ON	 4/2 COINS*
OFF	ON	OFF	ON	ON	OFF	5/COIN
OFF	ON	OFF	ON	ON	ON	5/2 COINS*
OFF	ON	ON	OFF	OFF	OFF	... 6/COIN
OFF	ON	ON	OFF	OFF	ON	6/2 COINS*
OFF	ON	ON	ON	ON	OFF	7/COIN
OFF	ON	ON	ON	ON	ON	 7/2 COINS*
ON	OFF	OFF	OFF	OFF	OFF	8/COIN
ON	OFF	OFF	OFF	OFF	ON	8/2 COINS*
ON	OFF	OFF	ON	ON	OFF	... 9/COIN
ON	OFF	OFF	ON	ON	ON	9/2 COINS*
ON	OFF	ON	OFF	OFF	OFF	10/COIN
ON	OFF	ON	OFF	ON	ON	 10/2 COINS*
ON	OFF	ON	ON	ON	ON	11/COIN
ON	ON	OFF	OFF	OFF	OFF	... 12/COIN
ON	ON	OFF	OFF	ON	OFF	12/2 COINS*
ON	ON	OFF	ON	ON	OFF	 13/COIN
ON	ON	ON	OFF	OFF	OFF	13/2 COINS*
ON	ON	ON	OFF	ON	ON	14/COIN
ON	ON	ON	OFF	ON	ON	14/2 COINS*
ON	ON	ON	ON	ON	OFF	 15/COIN
ON	ON	ON	ON	ON	ON	15/2 COINS*

*No credits until second coin dropped

**One credit for first coin. Two credits for second coin provided that no scoring occurred between 1st and 2nd coin drops. If scoring occurred, second coin gives one credit.

SWITCH NO. 1 (WIRE COLOR BLUE)

SWITCHES				CREDITS/COIN
30	29	28	27	1/1 Coin
OFF	OFF	OFF	OFF	1/2 Coins
OFF	OFF	OFF	ON	2/1 Coin
OFF	OFF	ON	OFF	2/2 Coins
OFF	OFF	ON	ON	3/1 Coin
OFF	ON	OFF	OFF	3/2 Coins
OFF	ON	OFF	ON	4/1 Coin
OFF	ON	ON	OFF	5/1 Coin
OFF	ON	ON	ON	6/1 Coin
ON	OFF	OFF	OFF	7/1 Coin
ON	OFF	OFF	ON	8/1 Coin
ON	OFF	ON	OFF	9/1 Coin
ON	OFF	ON	ON	10/1 Coin
ON	ON	OFF	OFF	11/1 Coin
ON	ON	OFF	ON	12/1 Coin
ON	ON	ON	OFF	14/1 Coin
ON	ON	ON	ON	

GAME ADJUSTMENTS

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

Extra Ball
Replay

SWITCH 6

OFF
ON

BALL PER GAME:

No. of BALLS PER GAME

3
5

SWITCH 7

OFF
ON

BACKGROUND SOUND:

The background sound during game play can be controlled as follows:

SOUND

OFF
ON

SWITCH 8

OFF
ON

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.

AWARD

	SWITCH	
	16	15
Novelty	OFF	OFF
1 Free Game	OFF	ON
2 Free Games	ON	OFF
3 Free Games	ON	ON

EXTRA BALL:

This option can be adjusted as follows:

AWARD

No Extra Ball (Bypass)
Award Extra Ball

SWITCH 17

OFF
ON

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 18, and 19. Four credit limits are available. Switch settings are listed below:

MAXIMUM CREDITS

	SWITCHES	
	19	18
10	OFF	OFF
15	OFF	ON
25	ON	OFF
40	ON	ON

CREDIT DISPLAY:

CREDIT DISPLAY

YES
NO

SWITCH 20

ON
OFF

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 feature creates an incentive to play.

MATCH

ON
OFF

SWITCH 21

ON
OFF

SPECIAL REPLAY LIMIT:

The number of replays made per game can be limited as follows:

REPLAYS

1 Per Ball
1 Per Game

SWITCH 22

OFF
ON

CARD SELECTION:

Will permit one or one/two cards to be lit at a time.

CARD ON ORDER

X, Y, Z, X, Y, Z, etc.

X, Y, Z, XY, Z, YZ, X, XZ, Repeat

SWITCH 23

ON

OFF

5,000 FOR EACH COMPLETED LINE:

Selects which ball feature comes on. (Vertical, diagonal or horizontal line in any card must be made for feature to come on.)

LITE ON

ON 2nd Ball

ON 3rd Ball

ON 4th Ball

ON 5th Ball

SWITCHES

25 26

OFF OFF

ON OFF

OFF ON

ON ON

SPECIAL AWARD:

Award received when "Special" lite is lit.

AWARD

No Award

Extra Ball

100,000 Points

Replay

SWITCHES

31 32

OFF OFF

OFF ON

ON OFF

ON ON

PARTS LIST **BIG GAME #121**

MISCELLANEOUS

PART NUMBER

Transformer (Domestic or Export)	16B-6
Transformer & Rectifier Board	B-438-2
Bulbs, #44	8A-101
U1	25A-P-29
U2	25A-P-30
U5	25A-P-31
U6	25A-P-32

ASSEMBLY COILS

Coin Lockout	C-36-5300
Flipper Upper L & R	J-25-500/34-5050
Flipper Lower L & R	J-25-475/34-4500
Knocker	N-26-1200
Outhole Kicker (1)	J-26-1000
Saucer Eject	J-28-2300
Thumper Bumper (3)	J-26-1200
Slingshot (2)	J-27-1500
Drop Target Reset (3)	B-27-2300

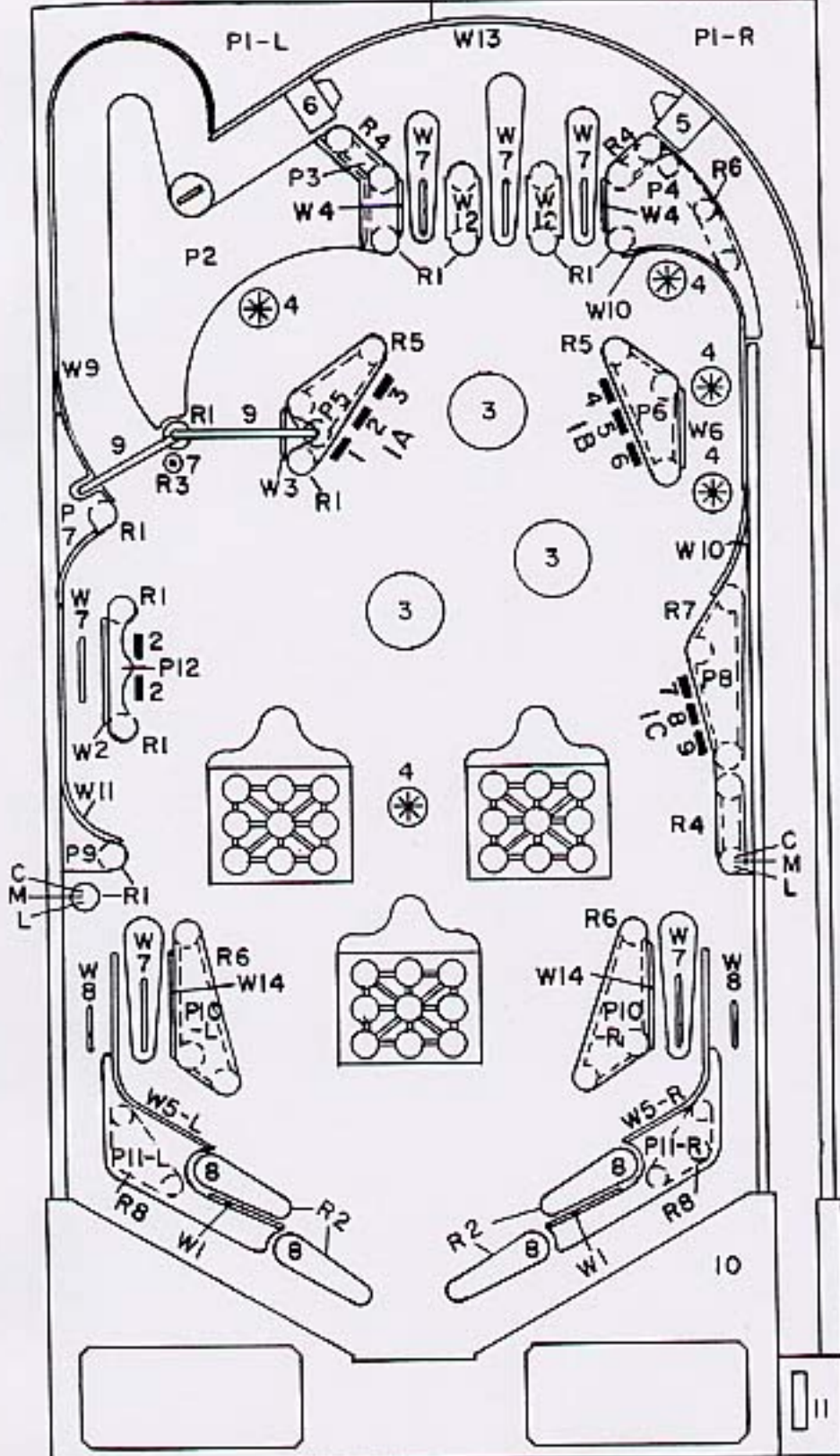
MODULES

Lamp Driver	B-431
Display Driver (4 Used)	C-645
Match/Coin Display Driver (1)	A-434
Solenoid Driver/Voltage Regulator	B-432
MPU (FOR ROMS SEE MISCELLANEOUS ABOVE)	C-602
Rectifier Board	A-430
Sound Module	C-605

PLAYFIELD PARTS

SEE PLAYFIELD DIAGRAM

PLAYFIELD PARTS



RUBBER RINGS

R1-7A-120-031	R5-7A-120-225
R2-7A-121-W	R6-7A-120-250
R3-7A-125	R7-7A-120-275
R4-7A-120-125	R8-7A-120-150

BALL GUIDES & ROLL-OVERS

W1-A-655	W8-A-383
W2-6A-258	W9-B-613
W3-6A-260	W10-B 614
W4-6A-258-1	W11-A-615
W5-A-654-R&-L	W12-4A-224-Y
W6-6A-258-2	W13-6B-249
W7-A-149	W14-6A-259

PLASTIC SHIELDS

TOP ARCH SET 13C-121-1R&-1L
BIG GAME SET 13C-121-2 TO-12
(P1 TO P12)

MISC. PARTS & ASSEMBLIES

1A-3-BANK DR. TARG. ASS'Y. D-580-3D-1
1B-3-BANK DR. TARG. ASS'Y. D-580-3D-2
1C-3-BANK DR. TARG. ASS'Y. D-580-3D-3
INDIVIDUAL TARGETS:—
19A-35-1 THRU 9

2. TARGET ASS'Y. A-461-1
3. THUMPER CAP 13A-34-1
4. ROLL OVER BUTTON 4B-275
5. BALL GATE ASS'Y. A-104-R2
6. LEFT GATE ASS'Y. A-104-L
7. BALL GUIDE POST 2A-200
8. FLIPPER & SHAFT ASS'Y. A-193
9. SPIN TARGET ASS'Y. A-563-11
(TARGET & WIRE ONLY) 14A-7-10
10. INSTRUCTION PLATE 14B-5-1
11. SHOOTER GAUGE 14A-2-5

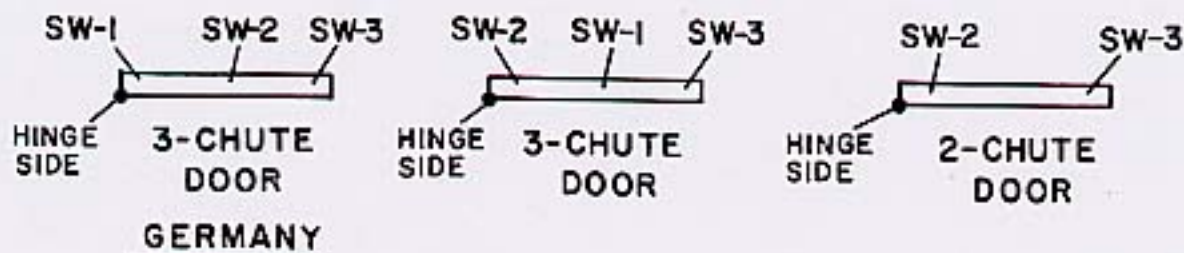
POST ADJUSTMENT:

C-CONSERVATIVE
M-MEDIUM
L-LIBERAL

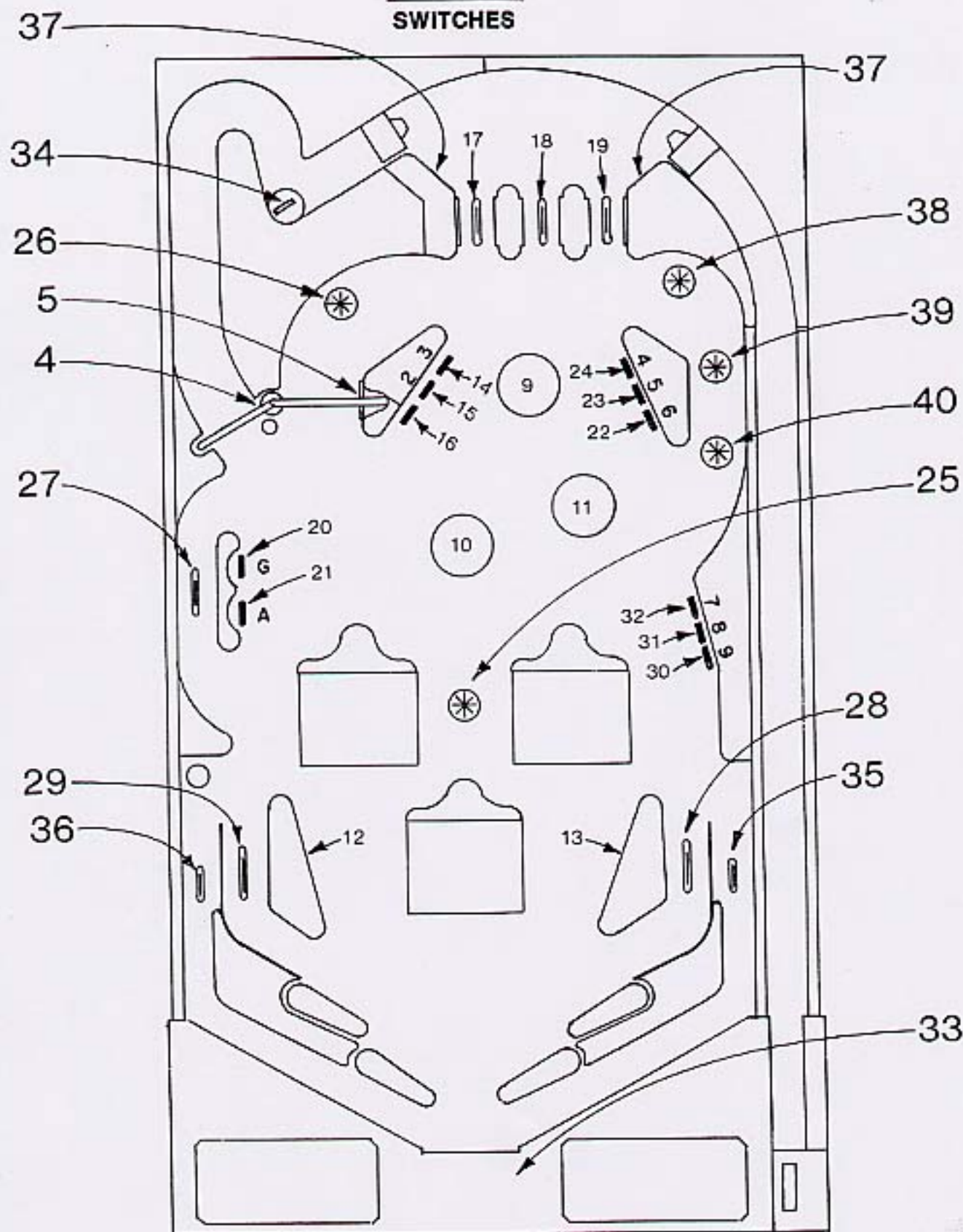
BIG GAME **SWITCH IDENTIFICATION** **SELF TEST DISPLAY NUMBERS**

<u>SWITCH NO.</u>	<u>SWITCH LOCATION</u>	<u>SWITCH NO.</u>	<u>SWITCH LOCATION</u>
1	CHUTE	21	STAND-UP TARGET "A"
2	CHUTE	22	TOP RIGHT DROP TARGET (6)
3	CHUTE	23	TOP RIGHT DROP TARGET (5)
4	SPIN-TARGET (LEFT)	24	TOP RIGHT DROP TARGET (4)
5	SPIN-TARGET (RIGHT)	25	MIDDLE ROLL-OVER BUTTON
6	CREDIT BUTTON	26	TOP LEFT ROLL-OVER BUTTON
7	TILTS	27	MIDDLE LEFT ROLL-OVER BUTTON
8	SLAM & VIB. TILTS	28	RIGHT RETURN LANE
9	TOP THUMPER	29	LEFT RETURN LANE
10	LOWER LEFT THUMPER	30	LOWER RIGHT DROP TARGET (9)
11	LOWER RIGHT THUMPER	31	LOWER RIGHT DROP TARGET (8)
12	LEFT SLING-SHOT	32	LOWER RIGHT DROP TARGET (7)
13	RIGHT SLING-SHOT	33	OUT-HOLE
14	TOP LEFT DROP TARGET (3)	34	SAUCER, EJECT.
15	TOP LEFT DROP TARGET (2)	35	RIGHT OUT-LANE
16	TOP LEFT DROP TARGET (1)	36	LEFT OUT-LANE
17	TOP LEFT ROLL-OVER WIRE	37	TOP TWO 10-PTS.
18	TOP MID. ROLL-OVER WIRE	38	TOP RIGHT R.O. BUTTON
19	TOP RIGHT ROLL-OVER WIRE	39	TOP RIGHT MID. R.O. BUTTON
20	STAND-UP TARGET "G"	40	TOP RIGHT LOWER R.O. BUTTON

NOTE: FLIPPER BUTTON CABINET SWITCHES DO NOT APPEAR ON TEST



BIG GAME
SWITCHES



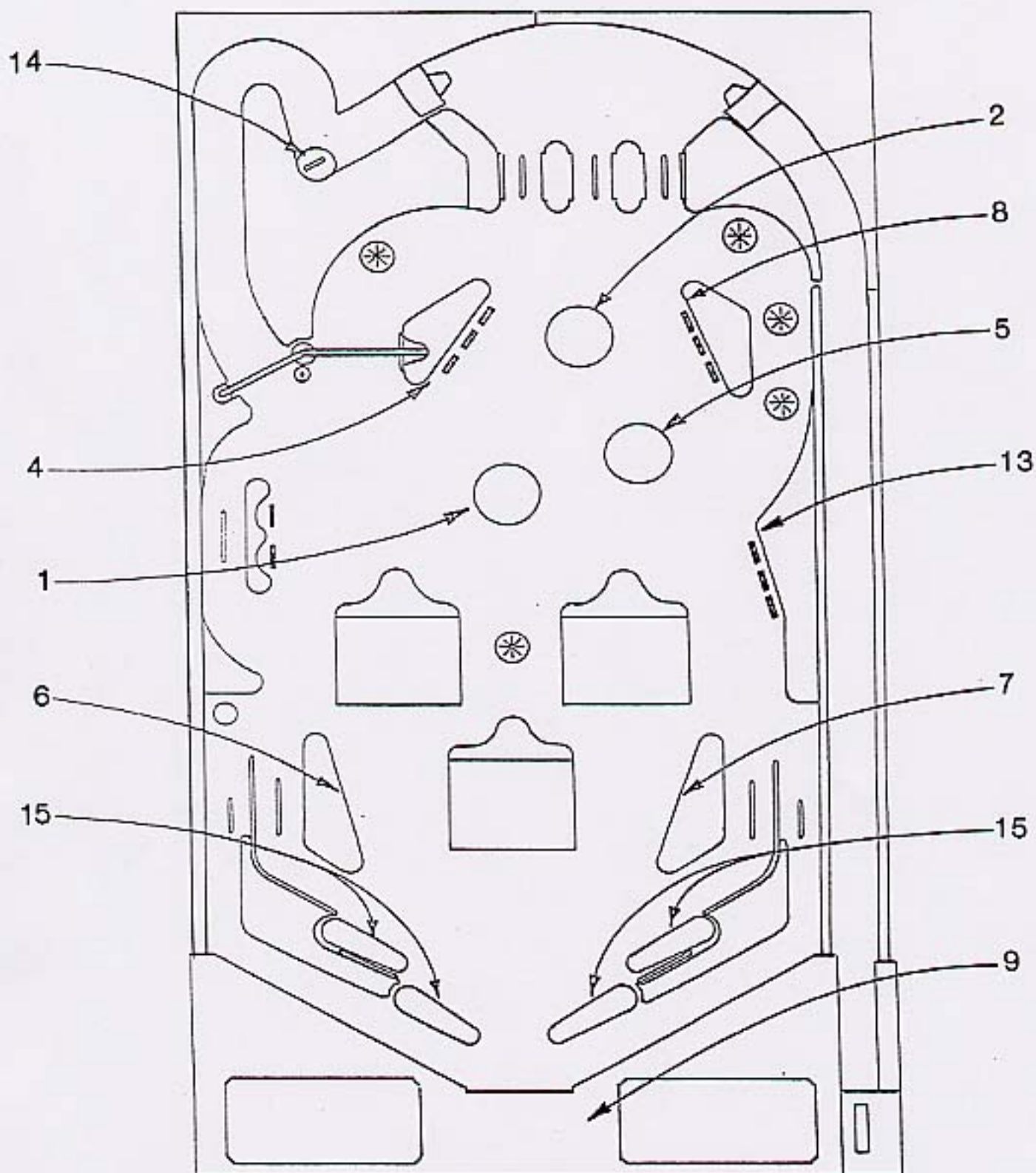
SWITCHES NOT ON PLAYFIELD:

- | | |
|------------------|-------------------------|
| 1 * LEFT CHUTE | 7 ROLL-TILT |
| 2 * CENTER CHUTE | 7 PENDULUM |
| 3 * RIGHT CHUTE | 8 TILT BOARD |
| 6 CREDIT BUTTON | 8 DOOR & PLAYFIELD VIB. |
- * SEE DRWG. ON SWITCH IDENTIFICATION PAGE

**BIG GAME
SOLENOID IDENTIFICATION
SELF TEST DISPLAY NUMBERS**

<u>SOLENOID NO.</u>	<u>SOLENOID LOCATION</u>
1	LOWER LEFT THUMPER
2	TOP THUMPER
3	KNOCKER
4	LEFT DROP TARGET
5	LOWER RIGHT THUMPER
6	LEFT SLING-SHOT
7	RIGHT SLING-SHOT
8	UPPER RIGHT DROP TARGET
9	OUT-HOLE
10	OPEN
11	OPEN
12	OPEN
13	LOWER RIGHT DROP TARGET
14	SAUCER-EJECT
15	FLIPPERS (RIGHT & LEFT)
16	OPEN
17	OPEN
18	OPEN
19	COIN LOCK-OUT
20 THRU 29	SOUND

BIG GAME
SOLENOIDS



SOLENOIDS NOT ON PLAYFIELD:
3- KNOCKER 19- LOCKOUT

BIG GAME SWITCHES

