

16-20009-103  
November 1990

**Bally**™

# **BUGS BUNNY'S BIRTHDAY BALL**

## **Operator's Handbook**

*presenting:*

Game Audits  
Game Adjustments  
Solenoids/Flashers & Locations  
Game Switches & Locations  
Game Lamps & Locations  
Playfield Parts & Locations

Midway Manufacturing Company  
3401 N. California Ave.  
Chicago, IL 60618



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## Bugs Bunny's Birthday Ball Audit Table

Audit Item (Lower)	Descriptive Phrase (Upper Display)	Audit Item Value (Lower Display)
AU 01	LEFT COINS (chute next to coin door hinge)	432
02	CENTER COINS	0
03	RIGHT COINS	398
04	PAID CREDITS	830
05	TOTAL PLAYS	
06	TOTAL FREE (Total Free Plays)	
07	PERCENT FREE (% Free Plays)	
08	REPLAY AWARDS	
09	PERCENT REPLAY (% Replay Awards)	
10	SPECIAL AWARDS	
11	PERCENT SPECIAL (% Special Awards)	
12	MATCH AWARDS	
13	HSTD ( High Score to Date) CREDITS	
14	PERCENT HSTD (% HSTD Credits)	
15	EXTRA BALLS	
16	PERCENT EX. BALL (% Extra Balls)	
17	AV. BALL TIME (Average Time In Seconds)	
18	MINUTES OF PLAY (Minutes of Play)	
19	BALLS PLAYED	
20	REPLAY1 AWARDS	
21	REPLAY2 AWARDS	
22	REPLAY3 AWARDS	
23	REPLAY4 AWARDS	
24	1 PLAYER GAMES	
25	2 PLAYER GAMES	
26	3 PLAYER GAMES	
27	4 PLAYER GAMES	
28	BURN IN CYCLES	
29	MADE LOONEY TUNES	
30	MADE LT MILLION	
31	MADE 50 MILLION	
32	MADE 500K SKILL SHOT	
33	MADE 500K CAPTIVE BALL SHOT	
34	MADE CAPTIVE BALL SHOT	
35	Not Used	
36	TWEETY BONUS	
37	MADE SHOPPING SPREE	
38	MADE SHOPPING SPREE EXTRA BALL	
39	H.S.RESET COUNTER	
40	0.0-0.4 MIL. SCORE (# of games <500K)	
41	0.5-0.9 MIL. SCORE (# of games ≥500K, <1M)	
42	1.0-1.4 MIL. SCORE (# of games ≥1M, <1.5M)	
43	1.5-1.9 MIL. SCORE (# of games ≥1.5M, <2.0M)	
44	2.0-2.9 MIL. SCORE (# of games ≥2.0M, <3.0M)	
45	3.0-3.9 MIL. SCORE (# of games ≥3.0M, <4.0M)	
46	4.0-4.9 MIL. SCORE (# of games ≥4.0M, <5.0M)	
47	5.0-5.9 MIL. SCORE (# of games ≥5.0M, <6.0M)	
48	6.0-6.9 MIL. SCORE (# of games ≥6.0M, <7.0M)	
49	7.0-7.9 MIL. SCORE (# of games ≥7.0M, <8.0M)	
50	8.0-99.9 MIL. SCORE (# of games ≥8.0M, <100M)	
51	AV. MIN. GAME TIME (Average Game in Minutes)	
52	LEFT DRAINS (# of drains via Left Outlane)	
53	RIGHT DRAINS (# of drains via Right Outlane)	

NOTE:1. The numbers shown in this column for items 1 through 4 are examples. Entries for all items depend on the amount of play; thus, they will vary from location to location.

## Bugs Bunny's Birthday Ball Game Adjustment Table

Adjustment Item (Lower)	Descriptive Phrase (Upper Display)	Factory Setting 6 (Lower)		
		Domestic (US/Can.)	French	W Ger/ European
Ad 01	AUTO REPLAY 1 or FIXED REPLAY 1	10 (%)		
02	REPLAY START (or REPLAY LEVEL 1) 1	SCORES 6,000,000	6,000,000	7,000,000
03	REPLAY LEVELS (or REPLAY LEVEL 2) 1	01 (or OFF)		02
04	(REPLAY LEVEL 3) 1	(see text)		
05	(REPLAY LEVEL 4) 1	(see text)		
06	REPLAY AWARD	Credit		
07	SPECIAL AWARD	Credit		
08	MATCH FEATURE	0	0	0
09	BALLS / GAME	03		
10	TILT WARNING	03	01	
11	EX. BALL / GAME	04		
12	MAXIMUM CREDITS	10	20	30
13	HIGHEST SCORES	On		
14	BACKUP HI. SCR.1	8,000,000	8,000,000	9,500,000
15	BACKUP HI. SCR. 2	7,500,000	7,500,000	8,000,000
16	BACKUP HI. SCR. 3	7,000,000	7,000,000	8,500,000
17	BACKUP HI. SCR. 4	7,500,000	6,500,000	8,000,000
18	HI. SCR.1 CREDITS	01	03	03
19	HI. SCR.2 CREDITS	01	01	00
20	HI. SCR.3 CREDITS	01	01	00
21	HI. SCR.4 CREDITS	01	01	00
22	H. S. RESET EVERY	3,000		750
23	FREE PLAY	NO		
24	U.S.A. 2 COINAGE (4 COINS 3 PLAYS) 2,3,4	USA 2	French 1	German 2
25	LEFT UNITS	03	02	06
26	CENTER UNITS	12	10	12
27	RIGHT UNITS	03	20	30
28	UNITS/ CREDIT	04	05	05
29	UNITS/ BONUS	00	20	00
30	MINIMUM UNITS	00	00	00
31 - 58	Game-specific Play / Coinage Adjustments (detailed in text, the Game-specific Adjustments Setting Table, and the Difficulty Setting Comparison Table)			
59 5	INSTALL ADDABALL	NO		
60 5	INSTALL 5-BALL	NO		
61 5	INSTALL NOVELTY	NO		
62 5	INSTALL EX. EASY	NO		
63 5	INSTALL EASY	NO		
64 5	INSTALL MEDIUM	NO		
65 5	INSTALL HARD	NO		
66 5	INSTALL EX. HARD	NO		
67	AUTO BURN-IN	NO		
68	INSTALL FACTORY	NO		
69	CLEAR AUDITS	NO		
70	CLEAR COINS	NO		

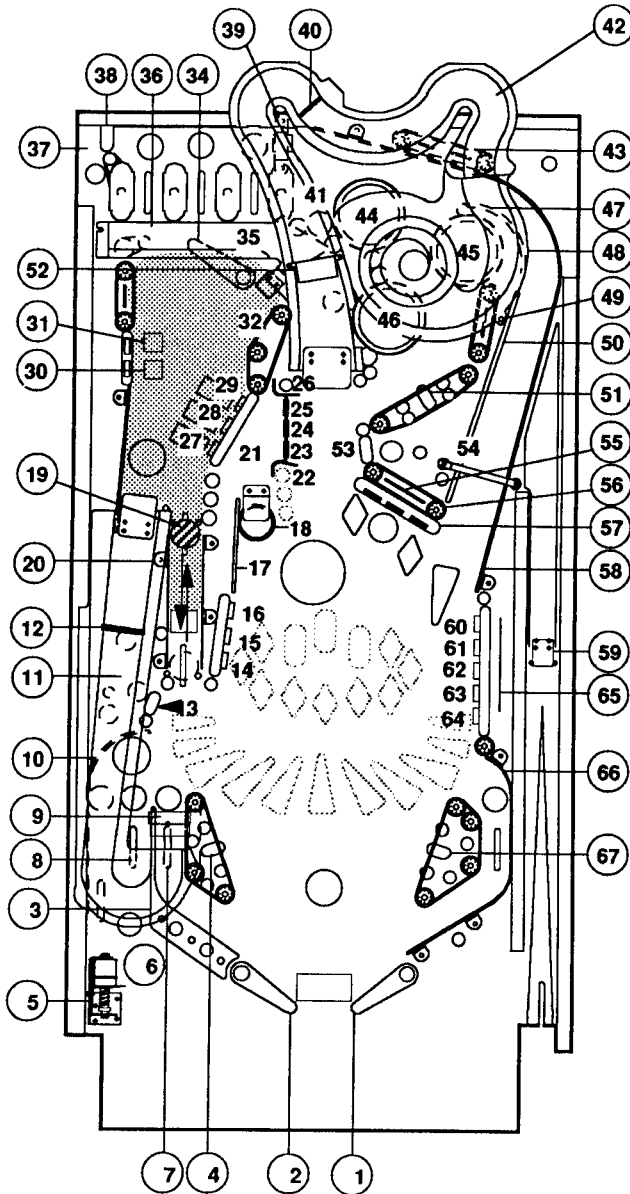
**NOTES:**

1. Automatic Replay percentage value range is adjustable from 5 to 25%, via the Credit Button. Item 02 permits changing the factory setting value for Replay Start Level (valid for next 50 games played). Item 03 permits setting up to four replay levels, with values as detailed in text describing item 03. For Fixed Replay Scores, set Auto Replay value to 1 less than 5(%) via the Credit Button. Go to items 02, 03, 04, and 05; install their replay level scores. Turn off any replay level by setting 00 as its value.
2. Phrase in parentheses is Factory Setting. Phrase appears in player displays. Press Credit Button to change setting of the game pricing of item 24.
3. To change country of coinage setting, press Credit button to obtain 24 Standard Settings, followed by a Custom Setting. The Custom Setting activates items 25 through 30. When a Standard Setting is used, items 25 through 30 are set automatically, and cannot be changed.
4. Refer to Pricing Table and text describing these items.
5. Special Preset Adjustment, whose effects are noted in the Game Adjustment text.
6. Entries in Factory Setting columns for French and W. German games show only differences from entries in first (US / Can.) column.

## Bugs Bunny's Birthday Ball Playfield Parts

Item	Part Number	Description	Item	Part Number	Description
1	C-13174-R	Right Flipper Assembly	49	02-4327-13	Standoff, 4"
2	C-13174-L	Left Flipper Assembly	50	12-6956	Wire Ball Guide
3	A-14230	Flipper Ball Guide Assy.	51	B-12665	Upper "Sling" Kicker
4	B-12665	Left Kicker	52	A-14158	Enter Main Ramp
5	B-11873	Bottom Arch Kicker	53	A-14229-13	Standup Target (Square)
6	12-6961	Wireform	54	B-12164-1	Spinner Target Assembly
7	12-6466-10	Wireform, 2-1/2"	55	12-6466-8	Wireform Assy., 2"
8	12-6466-12	Wireform, 3-1/2"	56	A-14277	Ball Snubber Assembly
9	A-14222	Ball Damper Assembly	57	C-11223-1	3-Bank Drop Target Assy.
10	01-9926	Ball Guide Assembly	58	A-14220	Ball Guide Assembly
11	03-8504	Left Ramp Assembly	59	A-14223	Shooter Ramp Assembly
12	A-13487	Ball Gate & Wire Assembly	60	A-14227-2	Standup Target (Round)
13	A-14229-13	Square Standup Target	61	A-14227-4	Standup Target (Round)
14	B-11742-5	Standup Target (Round)	62	A-14227-15	Standup Target (Round)
15	A-14227-6	Standup Target (Round)	63	A-14227-6	Standup Target (Round)
16	A-14227-15	Standup Target (Round)	64	B-11742-5	Standup Target (Round)
17	12-6955	Wireform, 4"	65	A-14171	Target Cover Assembly
18	B-9361-R-1	Ball Eject	66	A-14219	Ball Guide Assembly
19	20-6500	Captive Ball	67	B-12665	Right "Sling" Kicker (Lower)
20	01-9964	Ball Guide Assembly	68	Parts below are	located beneath Bottom Arch:
21	A-14172	Housing Cover Assy. (Standups)	a)	B-8623	Upper Trough Baffle Assembly
22	12-6955	Wire Ball Guide	b)	C-8235	Lower Trough Baffle Assembly
23	A-14228-4	Standup Target (Round)	c)	12-6542	Trough Baffle Wire
24	A-14228-2	Standup Target (Round)	d)	01-3569-1	Ball Trough (runway)
25	A-14228-1	Standup Target (Round)	e)	01-5575	Bottom Arch Mounting Bracket
26	A-14221	Ball Deflector Assembly	f)	B-8039-2	Outhole Kicker Assembly
27	B-11742-9	Standup Target (Round)	g)	C-9638	Shooter Lane Feeder
28	B-11742-9	Standup Target (Round)			
29	B-11742-9	Standup Target (Round)			
30	B-11742-2	Standup Target (Round)			
31	B-11742-2	Standup Target (Round)			
32	12-6466-2	Wireform			
33	01-9929	Bracket Ball Slide			
34	C-13174-L-2	Upper Left Flipper			
35	03-8503	Small Drop Ramp			
36	12-6466-6	Wireform			
37	02-4252-23	F-F Spacer			
38	A-14229-9	Standup Target (Square)			
39	A-9465-L	Ball Gate & Wire Assembly			
40	5647-12073-21	Main Ramp Score			
41	02-4322-12	Standoff, 3-1/2"			
42	03-8505	Up/Down Main Ramp Assy.			
	03-8509	Up/Down Main Ramp Assy.			
43	12-6466-3	Wireform, 3/4"			
44	C-12872	Jumper Bumper (Top Left)			
	03-8277-10	Cap			
	03-8276-9	Collar			
45	C-12872	Jumper Bumper (Top Right)			
	03-8277-16	Cap			
	03-8276-10	Collar			
46	C-12872	Jumper Bumper (Top Lower)			
	03-8277-9	Cap			
	03-8276-16	Collar			
47	12-6954	Wire Ball Guide Assembly			
48	A-14213	Up/Low Assembly			

# Bugs Bunny's Birthday Ball Playfield Parts Locations



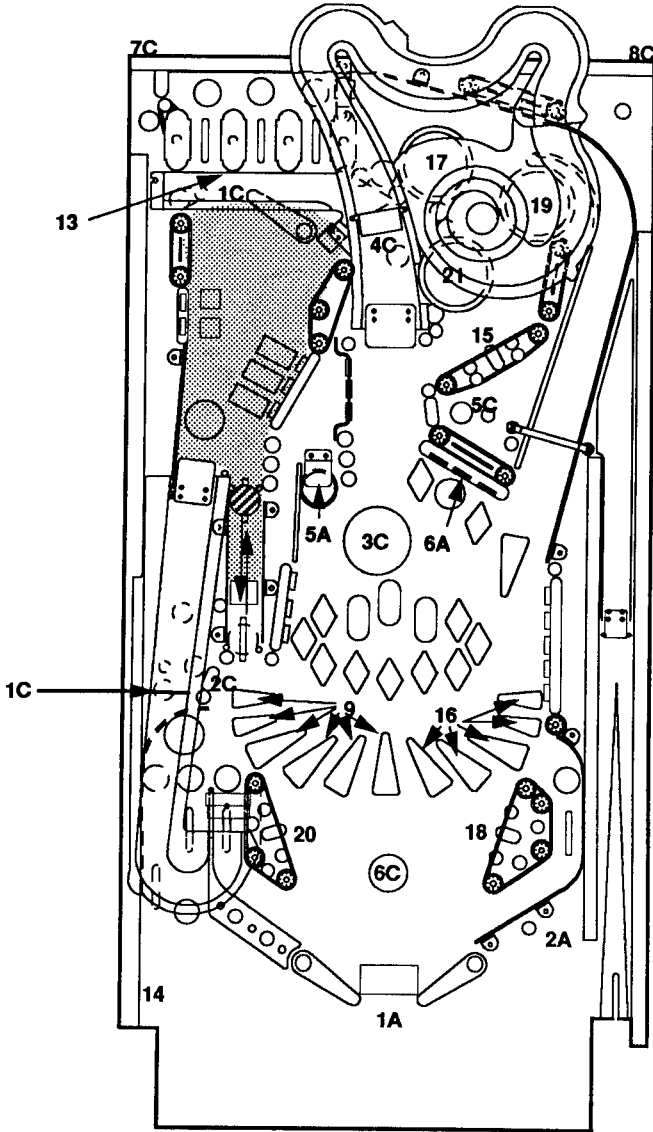
## Bugs Bunny's Birthday Ball Solenoid Matrix Table

**Bugs Bunny's Birthday Ball Solenoid Table**

Sol. No.	Function	Solenoid Type	Wire Color	Connections		Driver Trnset	Solenoid Part Number
				CPU Bd	Playmate Cabinet		
01A <sup>3</sup>	Outhole Kicker	Switched	Vio-Brn	1P11-1	5J1-9; 5J4-9 (A)	Q33	AE-23-800
01C <sup>3</sup>	Left Ramp Flash	Switched	Blk-Brn	(Gry-Brn)	5J5-9 (C)	Q33	#89/906 flashlamps 2p
02A <sup>3</sup>	Shooter Lane Feeder	Switched	Vio-Red	1P11-3	5J1-7; 5J4-8 (A)	Q25	SM-26-600-DC
02C <sup>3</sup>	Standup by "L" Flash	Switched	Blk-Red	(Gry-Red)	5J5-8 (C)	Q25	#89/906 flashlamps 1p,1g
03A <sup>3</sup>	Not Used	Switched	Vio-Orn	1P11-4	5J1-6; 5J4-7 (A)	Q32	AE-26-120 <sup>n</sup>
03C <sup>3</sup>	50 Million Flash	Switched	Blk-Orn	(Gry-Orn)	5J5-7 (C)	Q32	#89/906 flashlamps 1p,1g
04A <sup>3</sup>	Not Used	Switched	Vio-Yel	1P11-5	5J1-5; 5J4-6 (A)	Q24	AE-23-800
04C <sup>3</sup>	Tazz Ramp Flash	Switched	Blk-Yel	(Gry-Yel)	5J5-5 (C)	Q24	#89/906 flashlamps 1p,1g
05A <sup>3</sup>	Eject Hole	Switched	Vio-Grn	1P11-6	5J1-4; 5J4-5 (A)	Q31	AE-23-800
05C <sup>3</sup>	Standup by R Dr Tgt Flash	Switched	Blk-Grn	(Gry-Grn)	5J5-4 (C)	Q31	#89/906 flashlamps 1p,1g
06A <sup>3</sup>	R Dr Tgt Bank Reset	Switched	Vio-Blu	1P11-7	5J1-3; 5J4-4 (A)	Q23	AE-23-800
06C <sup>3</sup>	Bug's Face Flash	Switched	Blk-Blu	(Gry-Blu)	5J5-3 (C)	Q23	#89/906 flashlamps 1p,1g
07A <sup>3</sup>	Knocker (in Backbox)	Switched	Vio-Blk	1P11-8	5J1-2; 5J4-2 (A)	Q30	AE-23-800
07C <sup>3</sup>	Top Left Flash	Switched	Blk-Vio	(Gry-Vio)	5J5-2 (C)	Q30	#89/906 flashlamps 1p,1g
08A <sup>3</sup>	Not Used	Switched	Vio-Gry	1P11-9	5J1-1; 5J4-1 (A)	Q22	
08C <sup>3</sup>	Right Back Panel Flash	Switched	Blk-Gry	(Gry-Blk)	5J5-1 (C)	Q22	#89/906 flashlamps 1p,1g
09	LOONEY Relay	Controlled	Brn-Blk	1P12-1	5J2-9; 5J6-9; 2J4-11	O17	5560-09555-01 4a
10	PI'rd Illum Relay	Controlled	Brn-Red	1P12-2	5J2-8; 5J6-8; 2J4-11	O9	5560-09555-01 4a
11	Insert Illum Relay	Controlled	Brn-Orn	1P12-4	5J2-6; 5J6-7; 2J4-11	O16	5560-09555-01 5
12	A/C Select Relay	Controlled	Brn-Yel	1P12-5	5J2-5	O8	5560-09555-01
13	Ball Launcher	Controlled	Brn-Grn	1P12-6	5J2-4; 5J6-5; 2J4-13	O15	AE-23-800
14	L. Outlane Kickback	Controlled	Brn-Blu	1P12-7	5J2-3; 5J6-3; 2J4-14	O7	AE-23-800
15	Top Sling	Controlled	Brn-Vio	1P12-8	2J4-15; 2J11-2	O14	AE-26-1200
16	TUNES Relay	Controlled	Brn-Gry	1P12-9	2J4-16; 2J11-1	O6	5560-09555-01 4a
17	Left Jet Bumper	Special #1	Blu-Brn	1P19-7	5J3-7; 5J7-7	O75	AE-23-800
18	Left Kicker ("sling")	Special #2	Blu-Red	1P19-4	5J3-6; 5J7-6	O71	AE-26-1200
19	Right Jet Bumper	Special #3	Blu-Orn	1P19-3	5J3-3; 5J7-3	O73	AE-23-800
20	Right Kicker ("sling")	Special #4	Blu-Yel	1P19-6	5J3-4; 5J7-4	O69	AE-26-1200
21	Lower Jet Bumper	Special #5	Blu-Grn	1P19-8	5J3-2; 5J7-2	O77	AE-23-800
22	Not Used	Special #6	Blu-Blk	1P19-9	5J3-1; 5J7-1	O79	AE-23-800
-	Right Flipper	Orn-Vio	1P19-1	2J5-5; 2J10-7			
-	Lower Right Flipper	[Blu-Vio] <sup>2</sup>		[2J10-1; 2J8-19]			FL11630/50VDC
-	Upper Right Flipper	[Blk-Yel] <sup>2</sup>		[2J10-3; 2J8-13]			FL11630/50VD
-	Left Flipper	Orn-Gr <sup>2</sup>	1P19-2	2J5-4; 2J10-6			C
-	Lower Left Flipper	[Blu-Grn] <sup>2</sup>		[2J10-2; 2J8-14]			FL11630/50VD

NOTES: 1. Wire colors, except flipper ORN-VIO and ORN-GRY, are ground connections (to coil terminal with unbranded and at Grade). Flipper ORN-VIO and ORN-GRY wires connect from CPU Board to flipper switch on cabinet. 2. Flipper connections shown in braces are from flipper switch to flipper coil. 3. "A" circuits are pulsed, when Sol. 12 is de-energized; "C" circuits are pulsed, with Sol. 12 energized. Wire colors in brackets are those from respective A and C terminals corresponding to the J1-terminal connection listed for the Aux Power Driver Board, which controls the device pulsing by Sol. 12. 4. Relay is mounted on Relay Board: (4a) pin C-11896-1; (4b) pin C-11892-1. 5. Relay is mounted on Aux Power Driver Bd, D-12247, in the backbox.

# Bugs Bunny's Birthday Ball Playfield Solenoid Locations

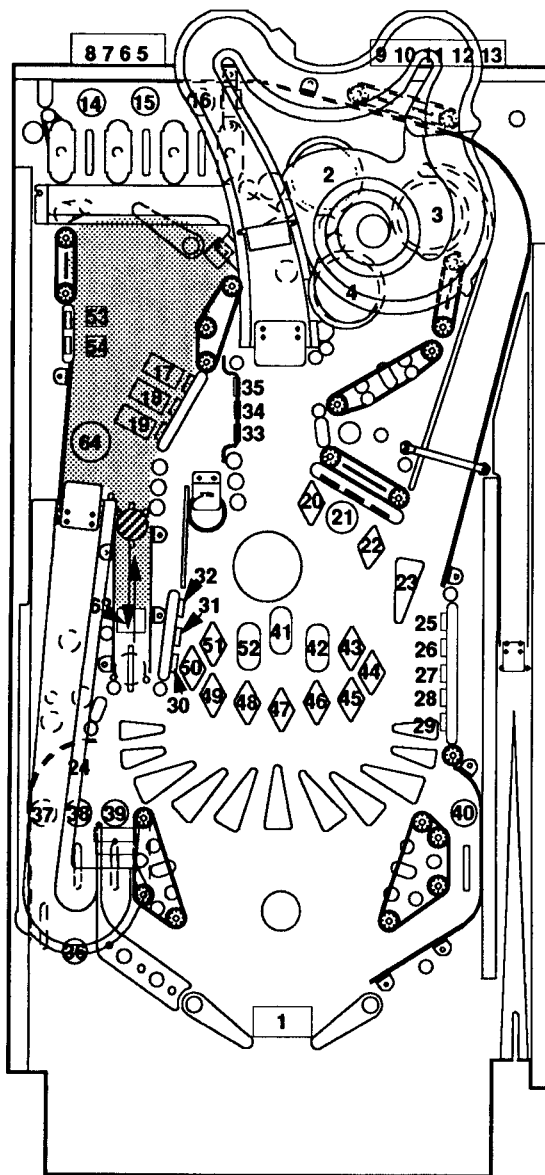


## Bugs Bunny's Birthday Ball Lamp Matrix Table

ROW	COLUMN	1 Q66 YEL-BRN 1J7-1	2 Q64 YEL-RED 1J7-2	3 Q62 YEL-ORN 1J7-3	4 Q60 YEL-BLK 1J7-4	5 Q58 YEL-GRN 1J7-6	6 Q56 YEL-BLU 1J7-7	7 Q54 YEL-VIO 1J7-8	8 Q52 YEL-GRY 1J7-9
Q80 1	RED- BRN 1J6-1	Shoot Again 1	Shapping Spree (50K) 9	Left (L-Dr Tgt) 17	T (in TUNES) 25	N (in TUNES) 33	Candle 1 41	Candle 9 49	Backglass CAN.3 57
Q81 2	RED- BLK 1J6-2	Left Jet Bumper 2	Shapping Spree (100K) 10	Middle (L-Dr Tgt) 18	U (in TUNES) 26	E (in TUNES) 34	Candle 2 42	Candle 10 50	Backglass CAN.4 59
Q82 3	RED- ORN 1J6-3	Right Jet Bumper 3	Shapping Spree (200K) 11	Right (L-Dr Tgt) 19	N (in LOONEY) 27	Y (in LOONEY) 35	Candle 3 43	Candle 11 51	Backglass PLAYER1 59
Q83 4	RED- VEL 1J6-5	Bottom Jet Bumper 4	Shapping Spree (500K) 12	Left (R-Dr Tgt) 20	E (in LOONEY) 28	PORKY PIG 36	Candle 4 44	Candle 12 52	Backglass PLAYER2 60
Q84 5	RED- GRN 1J6-6	10K Skill Shot 5	Shapping Spree (Ex. Ball) 13	Middle (R-Dr Tgt) 21	S (in TUNES) 29	Left Outlane 37	Candle 5 45	Left Top 53	Backglass PLAYER3 61
Q85 6	RED- BLU 1J6-7	50K Skill Shot 6	Top Lane Left 14	Right (R-Dr Tgt) 22	L (in LOONEY) 30	Middle Outlane 38	Candle 6 46	Left Bottom 54	Backglass PLAYER4 62
Q86 7	RED- VIO 1J6-8	100K Skill Shot 7	Top Lane Middle 15	Spinner 23	O (in LOONEY) 31	L Return Lane 39	Candle 7 47	Backglass CAN.1 55	Captive Ball 63
Q87 8	RED- GRY 1J6-9	500K Skill Shot 8	Top Lane Right 16	Kick Back 24	O (in LOONEY) 32	R Return Lane 40	Candle 8 48	Backglass CAN.2 56	Cake 64



# Bugs Bunny's Birthday Ball Playfield Lamp Locations



## Bugs Bunny's Birthday Ball Switch Matrix Table

COLUMN ROW	1 Q45 GRN-BRN 1J8-1	2 Q49 GRN-RED 1J8-2	3 Q44 GRN-ORN 1J8-3	4 Q48 GRN-YEL 1J8-4	5 Q43 GRN-BLK 1J8-5	6 Q47 GRN-BLU 1J8-7	7 Q42 GRN-VIO 1J8-8	8 Q46 GRN-GRY 1J8-9
1	Plumb Bob Tilt 1	9	Standup (Skill) 17	L (in LOONEY) 25	N (in TUNES) 33	Tazz Ramp Entry 41	Top Sling 49	Lane Change (R Flipper) 57
2	2	Outhole 10	Top Launch 18	O (in LOONEY) 26	E (in TUNES) 34	Tazz Ramp Score 42	Top Right 10 pt 50	Lane Change (L Flipper) 58
3	Game Start 3	Ball Trough #1 (right) 11	Standup (by Dr Tgt) 19	O (in LOONEY) 27	S (in TUNES) 35	43	Left Outlane 51	59
4	Right Coin Chute 4	Ball Trough #2 (left) 12	Right (R 3-Bk Dr Tgt) 20	N (in LOONEY) 28	Top Lane Left 36	Top (Mini Left) 44	Left Jet Bumper 52	Right (L 3-Bk Dr Tgt) 60
5	Center Coin Chute 5	13	Middle (R 3-Bk Dr Tgt) 21	E (in LOONEY) 29	Top Lane Middle 37	Bottom (Mini Left) 45	Right Jet Bumper 53	Middle (L 3-Bk Dr Tgt) 61
6	Left Coin Chute 6	Shooter Lane 14	Left (R 3-Bk Dr Tgt) 22	Y (in LOONEY) 30	Top Lane Right 38	Right Outlane 46	Lower Jet Bumper 54	Left (L 3-Bk Dr Tgt) 62
7	Slam Tilt 7	L Ramp 15	Spinner 23	T (in TUNES) 31	Cptv Ball Top 39	L Return Lane 47	BL Kicker ("sling") 55	63
8	High Score Reset 8	Eject Hole 16	Standup (by "L") 24	U (in TUNES) 32	Cptv Ball Bottom 40	R Return Lane 48	BR Kicker ("sling") 56	64

# Bugs Bunny's Birthday Ball Playfield Switch Locations

