

Game Adjustment Settings for this Game

Function	Setting
13	_____
14	_____
15	_____
16	_____
17	_____
18	_____
19	_____
20	_____
21	_____
22	_____
23	_____
24	_____
25	_____
26	_____
27	_____
28	_____
29	_____
30	_____
31	_____
32	_____
33	_____
34	_____
35	_____



16P-493-103
Game No. 493
September, 1979

GAME ADJUSTMENT AND DIAGNOSTIC PROCEDURES FOR LASER BALL

BOOKKEEPING AND EVALUATION TOTALS

(Functions 01-12)

1. In game over mode, set toggle switch to AUTO-UP and depress ADVANCE pushbutton. Test 04 is indicated in number of credits display, Function 00 in ball in play display, and game identification in Player 1 display.
2. Operate the ADVANCE pushbutton to display each function on the ball in play display (see Table 1) and record each total from Player 1 display. (To review a total that has been advanced past, set toggle switch to MANUAL-DOWN and operate the ADVANCE pushbutton.)
3. Calculate the following as desired:
 $\% \text{ Paid Credits} = \text{Function 04} \div \text{Function 08}$
4. Turn the game OFF and back ON to return to game over mode.
5. To change current High Score to Date to value of Function 13, momentarily depress HIGH SCORE RESET pushbutton.
6. To zero Functions 01-11, see instructions adjacent to CPU board in backbox.

GAME ADJUSTMENT PROCEDURE

(Functions 13-35)

Coin door must be open to change settings.

1. In game over mode, set toggle switch to AUTO-UP and depress ADVANCE pushbutton. Test 04 is indicated in number of credits display, Function 00 in ball in play display, and game identification in Player 1 display.
2. **To raise** Function number in ball in play display, operate ADVANCE pushbutton with switch set to AUTO-UP. **To lower** Function number operate ADVANCE with it set to MANUAL-DOWN.
3. With desired Function indicated in ball in play display, **raise** value in player 1 display by operating credit button with switch set to AUTO-UP; **lower** value by operating credit button with it set to MANUAL-DOWN. Value left of Player 1 display is new setting. For values see Table 1 and (for pricing) Table 2.
4. Repeat steps 2 and 3 until all required adjustments have been made.
5. Turn game OFF and back ON to return to game over mode.
6. To restore factory settings **and** zero audit totals, see instructions adjacent to CPU board in backbox; game must be turned OFF and ON twice to return to game over mode.

Table 1. Game Adjustments

FUNCTION	DESCRIPTION	NOTES	FACTORY SETTING
00	Game Identification	1	1493 1
01	Coins, Left Chute (Closest to coin door hinge)	1	—
02	Coins, Center Chute	1	—
03	Coins, Right Chute	1	—
04	Total Paid Credits	1	—
05	Total Specials	1	—
06	Total Replay (Extra Ball) Scores	1	—
07	Match and High Score to Date Credits	1	—
08	Total Credits	1,2	—
09	Total Extra Balls	1,3	—
10	Total Ball Time in Minutes	1	—
11	Total Number of Balls Played	1	—
12	Current High Score to Date	4	500,000
13	Backup High Score to Date	5	500,000
14	Replay 1 Score	6	270,000
15	Replay 2 Score	6	390,000
16	Replay 3 Score	6	510,000
17	Replay 4 Score	6	0
18	Maximum Credits	7	20
19	Standard and Custom Pricing Control (00-07)	8	02
20	Left Coin Slot Multiplier	8	01
21	Center Coin Slot Multiplier	8	04
22	Right Coin Slot Multiplier	8	01
23	Coin Units Required for Credit	8	01
24	Coin Units Bonus Point	8	00
25	High Score Credits	5	03
26	Match (00=ON, 01=OFF)	—	00
27	Special	—	00
	00 = Awards Credit		
	01 = Awards Extra Ball		
	02 = Awards Points		
28	Scoring Awards	—	00
	00 = Credits at Replay Score		
	01 = Extra Ball at Replay Score		
29	Maximum Plumb Bob Tilts (1-9)		03
30	Number of Balls (03 or 05)	9	03
31	Top Rollover Control	—	01
	00 = Stars Lit Separately		
	01 = Stars Lit Together		
32	Æ Control	9	02
	00 = 1st Æ Not Lit Initially		
	Æs 2 & 3 Lit Separately		
	01 = 1st Æ Lit Initially		
	Æs 2 & 3 Lit Separately		
	02 = 1st Æ Lit Initially		
	Æs 2 & 3 Lit Together		
33	LASER Lamp and Multiplier Restore	—	00
	00 = Both Features Restore		
	01 = Only LASER Lamp Restores		
	02 = Only Bonus Multiplier Restores		
	03 = Neither Feature Restores		
34	Extra Ball Control	—	00
	00 = Extra Ball Allowed		
	01 = No Extra Ball		
35	Outlane Special Control	—	00
	00 = L-A-S-E-R 10,000 Not Lit Initially		
	01 = L-A-S-E-R 10,000 Lit Initially		

Table 4. Switches

SWITCH NO.	FUNCTION
01	Plumb Bob Tilt
02	Ball Roll Tilt
03	Credit Button
04	Right Coin Switch
05	Center Coin Switch
06	Left Coin Switch
07	Slam Tilt
08	High Score Reset
09	Outhole
10	Left Shooter
11	Left Special
12	Left Inside Rollover
13	Left Kicker
14	Middle Left Side Standup
15	Not Used
16	Left Side Target
17	Left Spinner
18	Bull's-Eye Target
19	"L" Drop Target
20	"A" Drop Target
21	"S" Drop Target
22	"E" Drop Target
23	"R" Drop Target
24	L-A-S-E-R Drop Target Series
25	Lower Top Left Standup
26	Upper Top Left Standup
27	"1" and "2" Rollover
28	"3" and "4" Rollover
29	"5" and "6" Rollover
30	"7" and "8" Rollover
31	"9" and "10" Rollover
32	Eject Hole
33	Upper Right Standup
34	"B" Drop Target
35	"A" Drop Target
36	"L" Drop Target
37	"L" Drop Target (Bottom)
38	B-A-L-L Drop Target Series
39	B-A-L-L Drop Target Standup
40	Right Spinner
41	Right Shooter
42	Right Special
43	Right Inside Rollover
44	Right Kicker
45	Left Jet Bumper
46	Right Jet Bumper
47	Center Jet Bumper
48	"S-E-R" Drop Target Standup
49	Playfield Tilt
50	Star 1 Rollover
51	Star 2 Rollover
52	Star 3 Rollover
53	Star 4 Rollover
54	Star 5 Rollover
55	Star 6 Rollover
56	Star 7 Rollover
57	Star 8 Rollover
58	Star 9 Rollover
59	Star 10 Rollover

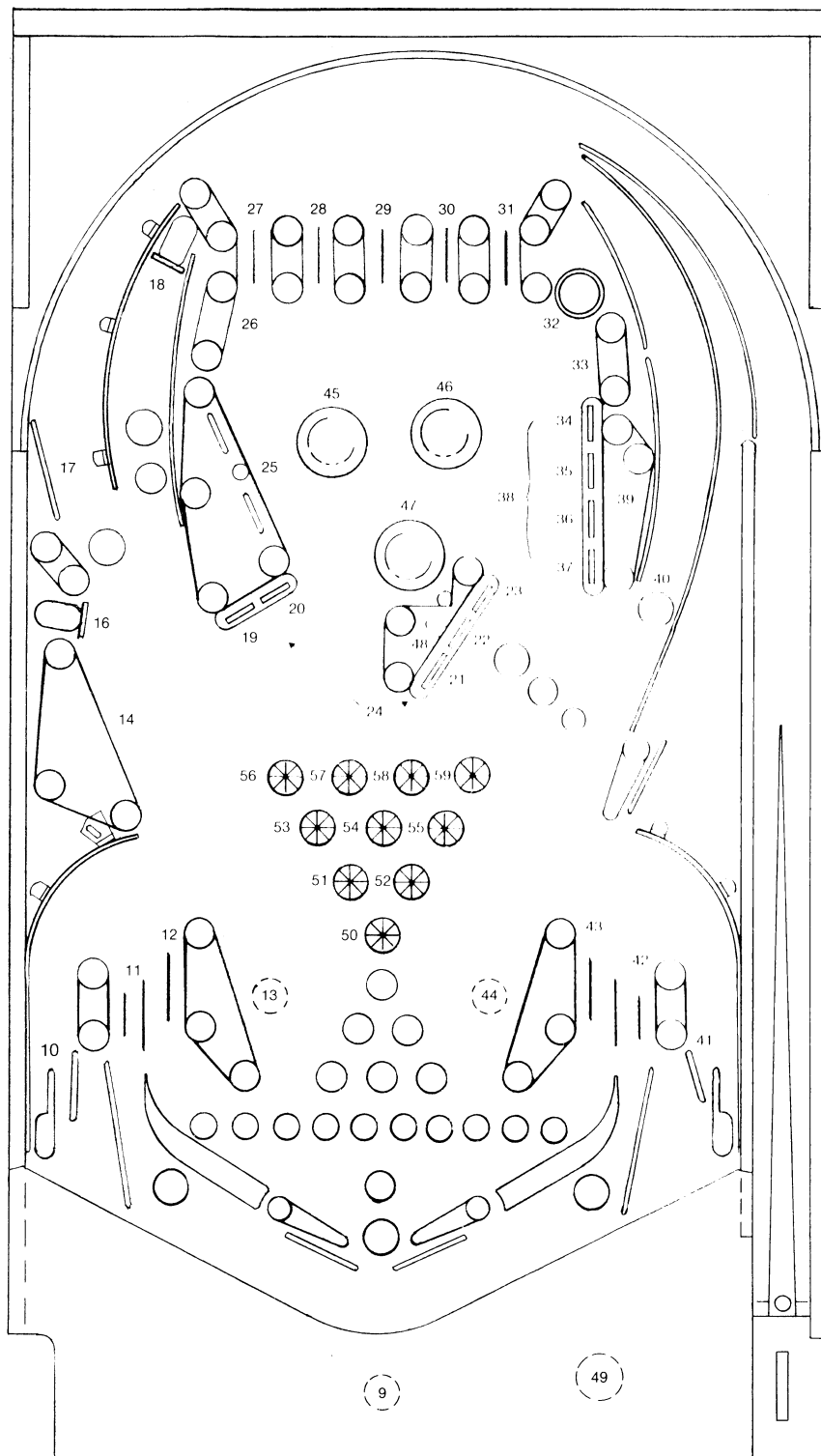


Figure A

Notes:

1. Functions 00-11 cannot be changed from the coin door; however, Functions 01-11 can be set to zero as described on label adjacent to CPU Board in backbox.
2. Total Credits (Function 08) is the sum of Function 04 and as applicable, Functions 05, 06, and 07.
3. Total Extra Balls (Function 09) is the sum of the game extra ball feature and Functions 15 and 06, as applicable.
4. Current High Score to Date (Function 12) can be changed to the value of the Backup High Score to Date (Function 13) by operating the HIGH SCORE RESET switch while in the game over mode.
5. Function 13 may be set to any multiple of 10,000 points. Setting Function 25 to zero with Function 13 set to any score but zero permits the High Score to Date feature to operate but no credits are awarded.
6. Functions 14-17 (Replay Scores) may be set to any multiple of 10,000 points. Setting a function to zero disables the replay score point. **Always disable the Replay 4 level first, the Replay 3 level second, etc. The replay levels must be set with ascending values.**
7. Setting Maximum Credits (Function 18) to zero places the game in a **free play mode**.
8. With Function 19 set to 00, Functions 20-24 must be set manually. Refer to Table 2 for seven standard pricing schemes (selected by values of 01-07 for Function 19) and custom pricing values.
9. For 5 ball play, it is recommended that Function 32 be set to 01.

RECOMMENDED SCORE LEVELS

Levels	Score Card
CREDIT GAMES	
3-Ball: *270,000; 390,000; 510,000 or 260,000; 390,000	493-13 493-28
5-Ball: (See Note 9) 390,000; 540,000	493-44
EXTRA BALL	
3-Ball: 160,000; 290,000	493-64
5-Ball: 200,000; 330,000	493-66
*Factory setting	

Table 2. Standard and Custom Price Settings

COIN DOOR MECHANISM	CREDITS	FUNCTION						
		19	20	21	22	23	24	
Twin-Quarter	•1/25¢, 3/50¢	01	01	01	01	01	02	
	•1/25¢	02	01	04	01	01	00	
	2/25¢, 5/50¢	00	02	02	02	01	04	
	2/25¢	00	02	02	02	01	00	
	1/25¢, 5/\$1	00	01	01	01	04	00	
	1/50¢	00	01	01	01	02	00	
*Quarter, Dollar, Quarter	1/50¢, 3/\$1	00	01	01	01	02	04	
	•1/25¢, 5/\$1	05	01	04	01	01	04	
	•1/25¢, 4/\$1	02	01	04	01	01	00	
	•2/1DM, 5/2DM, 14/5DM	03	13	65	26	05	65	
	1/20¢, 3/50¢	00	06	00	15	05	00	
	•1/1F, 6/5F	04	01	00	05	01	05	
1 Franc, 5 Franc	1/1F, 7/5F	00	06	00	30	05	30	
	•1/25¢, 4/1G	06	01	00	04	01	00	
	1/25¢, 5/1G	00	01	00	04	01	04	
	•1/5¢, 2/100Y	07	01	00	02	01	00	
	•1/1F, 3/2F	01	01	01	01	01	02	
	•1/1F	02	01	01	01	01	00	
5 Franc, 10 Franc	•1/5F, 2/10F	07	01	00	02	01	00	
	1/10F	00	01	00	02	02	00	
	•1/2F	02	01	01	01	01	00	
	•1/10F, 2/20F	07	01	00	02	01	00	
	1/3S, 2/5S	00	02	00	02	05	00	
	Twin-1 Sucre							
•Indicates standard price settings by adjusting only Function 19. For other price settings, set Function 19 to 00 and set Functions 20 through 24 to the values indicated in the chart.								
*or Quarter, Dollar. —								

DIAGNOSTIC PROCEDURES

(Display Digits, Lamp, Solenoid, and Switch Tests)

1. In game over mode, set toggle switch to MANUAL-DOWN and depress ADVANCE. All displays should go blank.
2. Momentarily depress ADVANCE and set toggle switch to AUTO-UP. Display Digits test is performed.
3. Momentarily depress ADVANCE. Test 01 is indicated on number of credits display and Lamp Test is performed.
4. Set toggle switch to MANUAL-DOWN and momentarily depress ADVANCE. Test 02 is indicated on number of credits display and solenoid 01 on the ball in play display; solenoid 01 is pulsed by driver board.
5. Operate ADVANCE to pulse each solenoid (see Table 3).
6. Set toggle switch to AUTO-UP and momentarily depress ADVANCE. Test 03 is indicated on number of credits display and stuck switches on ball in play display.
7. See Table 4 and Figure A. Operate switches; switch number is indicated on ball in play display.
8. Turn game OFF and back ON to return to game over mode.
9. To set up Auto-Cycle Mode (Display Digits, Lamp, and Solenoid Tests) see instructions adjacent to CPU Board in backbox.

Table 3. Solenoids

SOL. NO.	DESCRIPTION
01	Ball Release
02	Left Shooter
03	"L-A" Drop Targets Reset
04	"S-E-R" Drop Targets Reset
05	Eject Hole
06	"B-A" Drop Targets Reset
07	"L-L" Drop Targets Reset
08	Right Shooter
09	Sound
10	Sound
11	Sound
12	Sound
13	Sound
14	Credit Knocker
15	LASER Lamps (Insert Board)
16	Coin Lockout
17	Left Jet Bumper
18	Center Jet Bumper
19	Right Jet Bumper
20	Right Kicker
21	Not Used
22	Left Kicker