

GAME ADJUSTMENT AND DIAGNOSTIC PROCEDURES FOR TIME WARP

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 PROM ID 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 ADVANCE pushbutton.)
3. Calculate the following as desired:
$$\% \text{ Paid Credits} = \text{Function } 04 \div \text{Function } 08$$
$$\text{Average Ball Time (Seconds)} = 60 \times \text{Function } 10 \div \text{Function } 11$$
4. Turn 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 PROM ID 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 on 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 the game over mode.
6. To restore factory settings, see instructions adjacent to CPU Board in backbox; game must be turned OFF and ON twice to return to game over.

Table 1. Game Adjustments

Function	Description	Notes	Factory Setting
00	Game Identification	1	1489 2
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	450,000
13	Backup High Score to Date	5	450,000
14	Replay 1 Score	6	290,000
15	Replay 2 Score	6	490,000
16	Replay 3 Score	6	600,000
17	Replay 4 Score	6	0
18	Maximum Credits	7	20
19	Standard and Custom Pricing Control (00-07)	8	05
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	04
25	High Score Credits	5	03
26	Match (00=ON, 01=OFF)	—	00
27	Bull's-Eye Target Special 00 = Awards Credit 01 = Awards Extra Ball 02 = Awards 50,000 Points	—	00
28	Scoring Awards 00 = Credits at Replay Score 01 = Extra Ball at Replay Score	—	03
29	Maximum Plumb Bob Tilts (1-9)	—	03
30	Number of balls (03 or 05)	—	02
31	Play 01 = Liberal, Stars 1 & 2 and Stars 3 & 4 lit together 02 = Moderate, Stars 1 & 2 lit together 03 = Conservative, All Stars lit separately	—	00
32	5-Bank Target Awards 00 = Moderate, Right Outlane 30,000 and 5-Bank Target Special lit separately 01 = Liberal, Right Outlane 30,000 and 5-Bank Target Special lit together	—	00
33	Extra Ball Control 00 = Extra Ball Allowed 01 = No Extra Ball	—	00
34	5-Bank Target Special Awards, "1"- "5" Restore 00 = Awards Credit, lamps restored 01 = Awards Extra Balls, lamps restored 02 = Awards 50,000 points, lamps restored 10 = Awards Credit, lamps not restored 11 = Awards Extra Ball, lamps not restored 12 = Awards 50,000 points, lamps not restored	—	00
35	Background Sound Option (00-31)	9	18

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 05 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. Setting Function 35 to 00 turns the background sound off. Alternate settings of 12, 14, or 16 are also suggested.

RECOMMENDED SCORE LEVELS

Levels	Score Card
CREDIT GAMES	
3-Ball:	
*290,000; 490,000; 600,000	489-16
or 280,000; 430,000	489-30
5-Ball:	
490,000; 670,000	489-46
EXTRA BALL	
3-Ball:	
160,000	489-57
5-Ball:	
220,000	489-59

*Factory setting

Table 2. Standard and Custom Price Settings

COIN DOOR MECHANISM	CREDITS	FUNCTION						
		19	20	21	22	23	24	
Quarter, 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	
	1/50¢, 3/\$1	00	01	01	01	02	04	
	*Quarter,	•1/25¢, 5/\$1	05	01	04	01	01	04
	Dollar, Quarter	•1/25¢, 4/\$1	02	01	04	01	01	00
	IDM, 5DM, 2 DM	•2/1DM, 5/2DM, 14/5DM	03	13	65	26	05	65
20-Cent, 50-Cent	1/20¢, 3/50¢	00	06	00	15	05	00	
1 Franc, 5 Frank	•1/1F, 6/5F	04	01	00	05	01	05	
	1/1F, 7/5F	00	06	00	30	05	30	
25 Cent,	•1/25¢, 4/1G	06	01	00	04	01	00	
1 Guilder,	1/25¢, 5/1G	00	01	00	04	01	04	
50 Yen, 100 Yen	•1/50Y, 2/100Y	07	01	00	02	01	00	
1 Franc or	•1/1F, 3/2F	01	01	01	01	01	02	
Twin-1 Franc	•1/1F	02	01	01	01	01	00	
5 Franc,	•1/5F, 2/10F	07	01	00	02	01	00	
10 Franc	1/10F	00	01	00	02	02	00	
Twin-2 Franc	•1/2F	02	01	01	01	01	00	
10, 20 Franc	•1/10F, 2/20F	07	01	00	02	01	00	
Twin-1 Sucre	1/3S, 2/5S	00	02	00	02	05	00	

•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 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

SOLENOID NO.

1. Ball Release
2. Top Eject Hole
3. Right Eject Hole
4. 3-Bank Drop Targets Reset
5. 5-Bank, Top Drop Targets Reset
6. 5-Bank, Bottom Drop Targets Reset
7. Right Kicker
8. Left Kicker
9. Solenoid 9 Sound
10. Solenoid 10 Sound
11. Solenoid 11 Sound
12. Solenoid 12 Sound
13. Solenoid 13 Sound
14. Credit Knocker
15. Not Used
16. Coin Lockout
17. Left Top Jet Bumper
18. Left Center Jet Bumper
19. Left Bottom Jet Bumper
20. Right Center Jet Bumper
21. Right Jet Bumper
22. Not Used

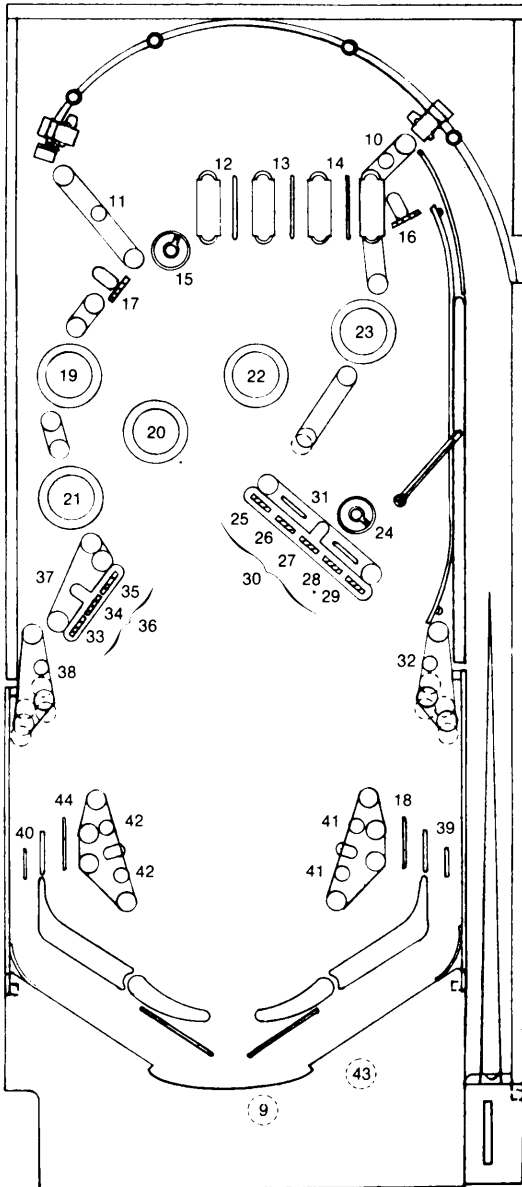


Figure A. Playfield Switch Locations

Table 4. Switches

**SWITCH
NO.**

- 1 Plumb Bob Tilt
- 2 Ball Roll Tilt
- 3 Credit Button
- 4 Right Open Switch
- 5 Center Coin Switch
- 6 Left Coin Switch
- 7 Slam Tilt
- 8 High Score Reset
- 9 Outhole
- 10 Upper Right Standup
- 11 Upper Left Standup
- 12 "A" Rollover
- 13 "B" Rollover
- 14 "C" Rollover
- 15 Top Eject Hole
- 16 Bulls'-Eye Target
- 17 Left Target
- 18 Right Inside Rollover
- 19 Left Top Jet Bumper
- 20 Left Center Jet Bumper
- 21 Left Bottom Jet Bumper
- 22 Right Center Jet Bumper
- 23 Right Jet Bumper
- 24 Right Eject
- 25 5-Bank Drop Target #1 (Top)
- 26 5-Bank Drop Target #2
- 27 5-Bank Drop Target #3
- 28 5-Bank Drop Target #4
- 29 5-Bank Drop Target #5 (Bottom)
- 30 5-Bank Drop Target Series
- 31 5-Bank Standup
- 32 Right Standup
- 33 3-Bank Drop Target Left
- 34 3-Bank Drop Target Center
- 35 3-Bank Drop Target Right
- 36 3-Bank Drop Target Series
- 37 3-Bank Standup
- 38 Left Standup
- 39 Right Outside Rollover
- 40 Left Outside Rollover
- 41 Right Kicker
- 42 Left Kicker
- 43 Playfield Tilt
- 44 Left Inside Rollover

Game Adjustment Settings for this Game

Function

Setting

13

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