

# TIME FANTASY

## INSTRUCTION BOOKLET

This booklet provides game operation, bookkeeping, game adjustment, diagnostic, and self-test procedures for TIME FANTASY. For installation and special maintenance information refer to the ~~XXXXXXXXXX~~ game manual.

### SPECIAL CONSIDERATIONS WHEN REPLACING CIRCUIT BOARDS

#### CPU Board

1. Revision level 7 CPU Boards (batteries located on lower left corner at board) of later boards must be used.
2. Must be equipped with blue-labeled Flipper ROMs and ~~XXXXXXXXXX~~ Game ROMs.
3. Jumpers W3, W10, W11, W14, W17, W19, W20, and W22 must be connected. Jumpers W4, W9, W12, W15, W16, W18, W21, and W23 must be removed. With the exception of W25, (Factory Setting Jumper) all other jumpers are not changed.

#### Driver Board

Must be equipped with zero-ohm resistors or wire jumpers (W9-W16) in place of switch matrix drive series resistors R204-R211.

#### Sound Board

Must be jumpered for ROM operation and be equipped with Sound ROM 13. (Jumpers W2, W5, W7, W9, W10, W12, and W15 connected; W3, W4, W6, W8, W11, and W13 removed).

#### Power Supply Board

1. Model D 8345 board required (equipped with relay).
2. Fuse F4 (10A SB) for flipper solenoids must be installed.

#### Display Boards

Model C 8363 Master Display and 7-digit Slave Displays required.

#### Game Operation

**Game Over Mode** - Turn game ON; player 1 score shows 00; all player scores alternate the high score to date, Game Over lamp lights. All playfield lamps cycle in attract mode.

**Credit Posting** - Insert coins; sound produced, number of credits displayed. If maximum credits\* exceeded by coin or high score to date, credits posted correctly and coin lockout de-energizes until remaining credits are below maximum. No credits may be won and coins are rejected while the coin lockout is de-energized.

**Game Start** - Push credit button; start-up tune played, ball served, credit display reduced by one, player 1 up flashes until first scoring switch is made, ball in play shows 1. Pushing credit button before ball 2 is displayed allows second player.

\*Indicates adjustable features.

*Lane Change* is a trademark of Williams Electronics, Inc.

**Bonus** - The Bonus can be advanced from 1 to 39 (thousand), one advance for each of the F-A-N-T-A-S-Y standups, 1-2-3-4-5 Lanes, Drain Lanes and Mushroom Jump rollovers. Two advances for Flipper Return Lanes. When Bonus is advanced to maximum, 2000 points is awarded for each Bonus advance. Completing F-A-N-T-A-S-Y advances BONUS MULTIPLIER (2X, 3X, 5X, 10X) and scores F-A-N-T-A-S-Y 20,000 points.

**1-2-3-4-5 Lanes** - Completing 1-2-3-4-5 Lanes awards highest lit value and increases lit value. If no values are lit, 10,000 is awarded. When 90,000 is awarded lites are reset after ball drains\*. Making flashing lane will spot needed T-I-M-E letter. (Lane flashes only when no other lanes are lit.)

**Time Ball Multipliers** - Time Ball Multipliers 2X, 3X, 4X, 5X are advanced by completing 1-2-3-4-5 Lanes. Time Ball Multipliers are in Memory until Time Ball starts.

**Time Ball Play** - Making Time Tube target awards flashing letter\* and 5,000 points plus 50,000 points when lit (random). Spelling T-I-M-E starts Time Ball play for 30 seconds Lane 1 adds 10 seconds, and lit flipper lane adds 5 seconds to Time Ball play. In Time Ball all scores are multiplied by Time Ball Multiplier and ball is returned if lost if time is not up. Spelling T-I-M-E in Time Ball lites Drain Lane Special. F-A-N-T-A-S-Y adds 5 seconds to Time Ball.

**Mushroom Jump** - Making Top Left Rollover builds Mushroom Jump value, 10, 20, 30, 40, 50, 100 thousand each time through. Making Mushroom Jump in direction of lit arrow scores value lit and builds to next value. Completing 100 and making Mushroom Jump in direction of lit arrow scores 100,000 and lites Special. Making Mushroom Jump in wrong direction reduces value lit.

**Special** - Kickers and 10 point Standups alternate Drain Lane Special lites. Leaving playfield through lit lane awards Special.

**Tilt** - Ball in play is tilted on third\* closure of Plumb Bob and playfield tilts. A single slam tilt returns game to Game Over mode.

**Match** - Match digits appear\* in Ball-in-Play display and Game Over lamps go off: game then enters attract mode.

**End of Game** - Match Digits\* appear in ball in play display, credit\* awarded for match. Exceeding high score to date awards three\* credits. Match, High Score to Date, and Game Over sounds made as appropriate.

\*Indicates game program adjustable features.

## BOOKKEEPING AND GAME EVALUATION

(Functions 01-17)

1. Set AUTO-UP/MANUAL-DOWN switch to AUTO-UP and depress ADVANCE pushbutton. Test 04 is indicated in the credits display, Function 00 in Match display, and Game Identification in Player 1 display.
2. Operate the ADVANCE pushbutton to display Functions 01 thru 04 on the Match display (See Table 1) and record the corresponding totals (number of coins and total paid credits) from the Player 1 display. (To review a total that has been advanced past, set switch to MANUAL-DOWN and operate the ADVANCE pushbutton).
3. Operate the ADVANCE pushbutton to display Functions 05, 06, and 07 in the Match display and record the corresponding free credit totals from the Player 1 display.
4. Operate the ADVANCE pushbutton to display Function 08 in the Match display. Total credits is indicated in the Player 1 display, total free credits in the Player 2 display.
5. Operate the ADVANCE pushbutton to display Function 09 thru 12 in the Match display and record the corresponding totals from the Player 1 display.
6. Operate the ADVANCE pushbutton to display Functions 13 thru 17 in the Match display and record the corresponding totals from the Player 2 display.
7. With switch set to MANUAL-DOWN operate ADVANCE to display Function 50 in the Match Display. From Function 50 you can return to game over or zero audit totals and return to game over. Perform step 8. a. or 8. b. as desired.
8.
  - a. To return to game over, set the switch to AUTO-UP and depress ADVANCE.
  - b. To **zero audit totals** and return to game over set switch to AUTO-UP, operate the credit button to display 35 in the Player 1 display, and depress ADVANCE.

*Table 1. Audit Totals*

FUNCTION	DESCRIPTION	
	PLAYER 1	PLAYER 2
00	Game Identification (2515 1)	—
01	Coins, Left chute (closest to coin door hinge)	—
02	Coin, center chute	—
03	Coin, right chute	—
04	Total Paid Credits	—
05	Special Credits	—
06	Replay Score Credits	—
07	Match Credits	—
08	Total Credits	Free Credits
09	Total Extra Balls	—
10	Ball Time in Minutes	—
11	Total Balls Played	—
12	Current High Score to Date	—
13	Backup High Score to Date	High Score to Date
14	Extra Ball 1 Score	Credits Awarded
15	Extra Ball 2 Score	Times exceeded
16	Extra Ball 3 Score	Times exceeded
17	Extra Ball 4 Score	Times exceeded

## GAME ADJUSTMENT PROCEDURE

(Functions 13-41)

**Coin door must be open to change settings.**

1. Set AUTO-UP/MANUAL-DOWN switch to AUTO-UP and depress the ADVANCE pushbutton. Test 04 is indicated in the Credits display, Function 00 in Match display, and game identification in Player 1 display.
2. **To raise** Function number in Match display, operate ADVANCE pushbutton with switch set to AUTO-UP. **To lower** Function number, operate ADVANCE with switch set to MANUAL-DOWN.
3. With desired Function indicated in Match display, **raise** value in player 1 display by operating credit button with switch set to AUTO-UP; **lower** value by operating credit button with switch set to MANUAL-DOWN. Value left in Player 1 display is the new setting. For values see Table 2, and for pricing Table 3.
4. Repeat steps 2 and 3 until all required adjustments have been made.
5. Operate ADVANCE until Function 50 is indicated in Match display. From Function 50 you can return to game over or **restore factory settings**. Perform step 6 or 7 as desired.
6. To return to game over, depress ADVANCE with switch set to AUTO-UP.
7. To restore factory settings **and** zero audit totals:
  - a. Operate Credit button with switch set to AUTO-UP until 45 is indicated in Player 1 Display.
  - b. Depress ADVANCE. The game returns to Test 04, Function 00.
  - c. Set switch to MANUAL-DOWN and depress ADVANCE to indicate Function 50.
  - d. Set switch to AUTO-UP and depress ADVANCE.

## RESETTING HIGH SCORE TO DATE

1. Using game adjustment procedure, set Function 13 to the desired reset value.
2. Depress HIGH SCORE RESET pushbutton.

## FACTORY AUDIT TOTALS

(Functions 42-49)

The factory audit functions are not assigned.

Table 2. Game Adjustments

FUNCTION	DESCRIPTION	NOTES	*FACTORY SETTING
13	Back Up High Score to Date (HSTD Credits Awarded)	1	2,500,000
14	Replay 1 Score [Times exceeded]	2	1,200,000
15	Replay 2 Score [Times exceeded]	2	2,500,000
16	Replay 3 Score [Times exceeded]	2	0
17	Replay 4 Score [Times exceeded]	2	0
18	Maximum Credits	3	30
19	Standard and Custom Pricing Control	4	01/02
20	Left Coin Slot Multiplier	4	01/09
21	Center Coin Slot Multiplier	4	04/45
22	Right Coin Slot Multiplier	4	01/18
23	Coin Units Required for Credit	4	01/05
24	Coin Units Bonus Point	4	00/45
25	Minimum Coin Units	4	00
26	Match: 00 = Match ON; 01 = Match OFF	-	00
27	Special: 00 = Awards Credit; 01 = Extra Ball; 02 = Awards Points	-	00
28	Replay Scores: 00 = Awards Credit; 01 = Awards Extra Ball	-	00
29	Maximum Plumb Bob Tilts	-	03
30	Number of Balls (03 or 05)	-	03
31	T-I-M-E Ramp Target Timing: 00 (Difficult) to 09 (Easy)	-	06
32	Time Ball Bell: 00 = ON; 01 = OFF	-	00
33	Background Sound: 00 = ON; 01 = OFF	-	00
34	Bonus Multiplier Memory: 00 = OFF; 01 = ON	-	01
35	Not Used	-	00
36	Not Used	-	00
37	Not Used	-	00
38	Not Used	-	00
39	Not Used	-	00
40	High Score Credits	1	03
41	Maximum Extra Balls at one time (00 = No Extra Ball)	-	04

**NOTES:**

\* Second Factory Setting value is with jumper W25 on CPU Board connected.

[ ] Description in brackets shown in Player 2 Display.

- Function 13 may be set to any multiple of 100,000 points. Setting Function 40 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.
- Functions 14-17 (Replay Scores) may be set to any multiple of 100,000 points. Setting a function to zero disables the replay score point.
- Setting Maximum Credits (Function 18) to zero places the game in a **free play mode**.
- With Function 19 set to 00, Functions 20-25 must be set manually. Refer to Table 2 for eight standard pricing schemes (selected by values of 01-08 for Function 19) and custom pricing values. For straight quarter play, set Function 19 to 00, Function 23 to 01 and Function 24 to 00. All other pricing functions should remain at their factory settings.

Table 3. Standard and Custom Price Settings

COIN DOOR MECHANISM	CREDITS	FUNCTION									
		19	20	21	22	23	24	25			
Twin-Quarter Quarter, Dollar, Quarter	1/25¢, 3/50¢, 7/\$1	00	03	12	03	02	12	00			
	1/25¢, 3/50¢, 7/\$1 coin only	00	03	14	03	02	00	00			
	1/25¢, 7/\$1 coin only	00	01	07	01	01	00	00			
	1/25¢, 3/50¢, 6/\$1	00	01	04	01	01	02	00			
	1/25¢, 6/\$1 coin only	00	01	06	01	01	00	00			
	1/25¢, 5/\$1	00	01	04	01	01	04	00			
	2/50¢, 5/\$1	00	01	04	01	01	04	02			
	1/25¢, 5/\$1 coin only	00	01	05	01	01	00	00			
	•1/25¢, 4/\$1	01	01	04	01	01	00	00			
	2/50¢, 4/\$1	00	01	04	01	01	00	02			
	•1/50¢, 2/75¢, 3/4 x 25¢ 4/\$1 or 5 x 25¢	05	03	15	03	04	15	00			
	1/50¢, 3/\$1, 4/\$1.25	00	03	12	03	04	15	00			
	1/50¢, 3/\$1, 7/\$2	00	12	48	12	14	96	18			
	•1/50¢, 3/\$1, 6/\$2	03	01	04	01	02	04	00			
	1/50¢	00	01	04	01	02	00	00			
1DM, 5DM, 2DM	•1/1DM, 3/2DM, 10/5DM 2/1DM, 5/2DM, 14/5DM	02	09	45	18	05	45	00			
20-Cent, 50-Cent	1/20¢, 3/50¢	00	06	00	05	05	00	00			
1 Franc, 10 Franc, 5 Franc	•1/2F, 3/5F only, 8/10F only	04	01	16	06	02	00	00			
25 Cent,	•1/25¢, 4/1G	06	01	00	04	01	00	00			
1 Guilder,	1/25¢, 5/1G	00	01	00	04	01	04	00			
Twin 100 Yen	2/100Y	00	02	00	02	01	00	00			
1 Franc or	1/1F, 3/2F	00	01	01	01	01	02	00			
Twin-1 Franc	1/1F	00	01	01	01	01	00	00			
5 Franc,	•1/5F, 2/10F	07	01	00	02	01	00	00			
10 Franc	•1/10F	08	01	00	02	02	00	00			
Twin-2 Franc	•1/2F	03	01	04	01	01	00	00			
10, 20 Franc	•1/10F, 2/20F	07	01	00	02	01	00	00			
Twin-1 Sucre	1/3S, 2/5S	00	02	00	02	05	00	00			

•Indicates standard price settings by adjusting only Function 19. For other price settings, set Function 19 to 00 and set Functions 20 through 25 to the values indicated in the chart.

## **DIAGNOSTIC PROCEDURES**

### **Display Digits Test**

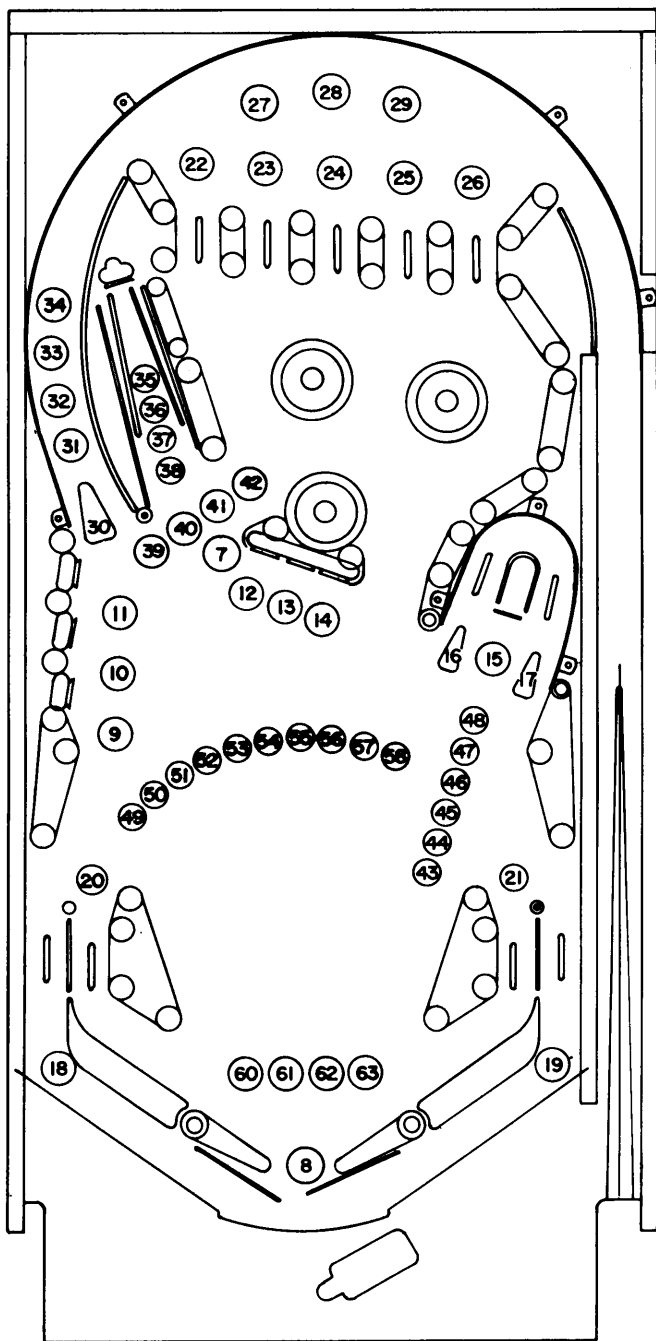
1. Set AUTO-UP/MANUAL-DOWN switch to MANUAL-DOWN and depress ADVANCE. Displays should indicate all 0's.
2. Set the switch to AUTO-UP. Displays should sequence from all 0's thru all 9's. Comma segments should come on when odd digits are displayed.
3. To stop cycling, set switch to MANUAL-DOWN. Operate ADVANCE pushbutton to step through the tests one number at a time. Set switch to AUTO-UP to resume cycling.

### **Sound Test**

1. From Display Digits Test depress ADVANCE with the switch set to AUTO-UP. Test 00 should be indicated in the Credits display and the Match display should sequence from 00 thru 06. Different sounds should be produced for 00, 01, 02, 03, and 04.
2. To continuously pulse a single sound, set the toggle switch to MANUAL-DOWN. Operate ADVANCE pushbutton to sequence through sounds one at a time. Set toggle switch to AUTO-UP to resume sequencing.

## Lamp Test

From Sound Test depress ADVANCE with the switch set to AUTO-UP. Test 01 should be indicated in the Credits display and all multiplexed lamps should flash.



Lamp No.	Function
*01	Keep Shooting
*02	Ball in Play
*03	Tilt
*04	Game Over
*05	Match
*06	High Score
07	50,000 When Lit
08	Keep Shooting
09	"F"
10	"A"
11	"N"
12	"T"
13	"A"
14	"S"
15	"Y"
16	Turn Around Left
17	Turn Around Right
18	Left Drain Lane
19	Right Drain Lane
20	Left Flipper Return Lane
21	Right Flipper Return Lane
22	Lane 1
23	Lane 2
24	Lane 3
25	Lane 4
26	Lane 5
27	Lane 30,000
28	Lane 60,000
29	Lane 90,000
30	All Score Multi-Arrow
31	Time 2X
32	Time 3X
33	Time 4X
34	Time 5X
35	Ramp T
36	Ramp I
37	Ramp M
38	Ramp E
39	"T"
40	"I"
41	"M"
42	"E"
43	10,000 Turn Around
44	20,000 Turn Around
45	30,000 Turn Around
46	40,000 Turn Around
47	50,000 Turn Around
48	100,000 Turn Around
49	1 Bonus
50	2 Bonus
51	3 Bonus
52	4 Bonus
53	5 Bonus
54	6 Bonus
55	7 Bonus
56	8 Bonus
57	9 Bonus
58	10 Bonus
59	20 Bonus
60	2X Bonus Multiplier
61	3X Bonus Multiplier
62	5X Bonus Multiplier
63	10X Bonus Multiplier
64	Not Used

Figure 1. Playfield Lamp Locations

\*These Lamps are on Insert Door, all others are on Playfield.

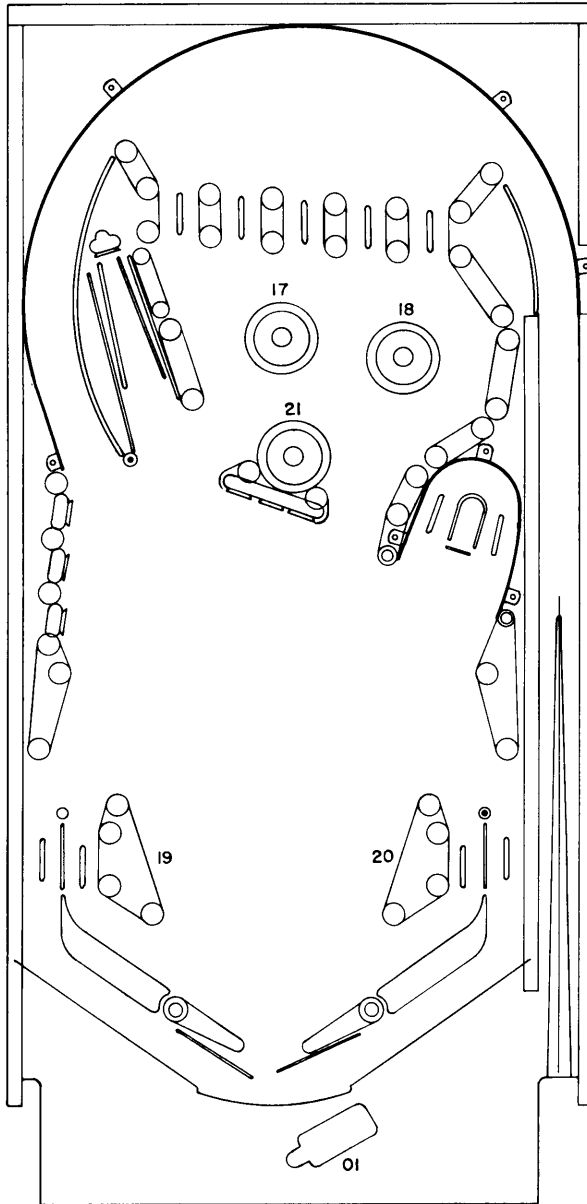


COLUMN ROW	1 YEL-BRN 2J5-8	2 YEL-RED 2J5-9	3 YEL-ORN 2J5-6	4 YEL-BLK 2J5-7	5 YEL-GRN 2J5-3	6 YEL-BLU 2J5-5	7 YEL-VIO 2J5-1	8 YEL-GRY 2J5-2
1	RED- BRN 2J7-1	Keep Shooting 1	"F" 9	Turn Around Right 17	Lane 4 25	"M" 41	1 Bonus 49	9 Bonus 57
2	RED- BLK 2J7-2	Ball in Play 2	"A" 10	Left Drain Lane 18	Time 5X 34	"E" 42	2 Bonus 50	10 Bonus 58
3	RED- ORN 2J7-3	Tilt 3	"N" 11	Right Drain Lane 19	Ramp T 35	10,000 Turn Around 43	3 Bonus 51	20 Bonus 59
4	RED- YEL 2J7-4	Game Over 4	"T" 12	Left Flipper Return Lane 20	Ramp I 36	20,000 Turn Around 44	4 Bonus 52	2X Bonus Multiplier 60
5	RED- GRN 2J7-5	Match 5	"A" 13	Right Flipper Return Lane 21	Ramp M 37	30,000 Turn Around 45	5 Bonus 53	3X Bonus Multiplier 61
6	RED- BLU 2J7-6	High Score 6	"S" 14	Lane 1 22	Ramp E 38	40,000 Turn Around 46	6 Bonus 54	5X Bonus Multiplier 62
7	RED- VIO 2J7-9	50,000 When Lit 7	"Y" 15	Lane 2 23	"T" 39	50,000 Turn Around 47	7 Bonus 55	10X Bonus Multiplier 63
8	RED- GRY 2J7-8	Keep Shooting 8	Turn Around Left 16	Lane 3 24	"I" 40	100,000 Turn Around 48	8 Bonus 56	Not Used 64

Figure 2. Lamp Matrix

## Solenoid Test

1. From Lamp Test depress ADVANCE with the switch set to AUTO-UP. Test 02 should be indicated in the Credits display. The Match display sequences from 01 thru 25. Corresponding solenoids 01 thru 24 are pulsed. Flipper relay is de-energized with subtest 25.
2. To continuously pulse a single solenoid set switch to MANUAL-DOWN. Operate ADVANCE pushbutton sequence through the solenoids one at a time. Set switch to AUTO-UP to resume sequencing.



Sol. No.	Function
01	Outhole
02	Not Used
03	Not Used
04	Not Used
05	Not Used
06	Not Used
07	Not Used
08	Not Used
09	Not Used
10	Not Used
11	General Illumination Relay
12	Not Used
13	Not Used
14	Not Used
15	Bell
16	Coin Lockout
*17	Top Left Jet Bumper
*18	Right Jet Bumper
*19	Left Kicker
*20	Right Kicker
*21	Bottom Jet Bumper
22	Not Used

Figure 3. Playfield Solenoid Locations and Solenoid Chart

Table 4. Solenoid Connections

SOL. NO.	FUNCTION	WIRE COLOR	CONNECTIONS	DRIVER TRANS.	SOLENOID PART NO.	
01	Outhole	GRY-BRN	2P11-4, 8P3-1	Q15	SA3-23-850-DC	
02	Not Used	GRY-RED	2P11-5, 8P3-2	Q17		
03	Not Used	GRY-ORN	2P11-7, 8P3-3	Q19		
04	Not Used	GRY-YEL	2P11-8, 8P3-4	Q21		
05	Not Used	GRY-GRN	2P11-9, 8P3-5	Q23		
06	Not Used	GRY-BLU	2P11-3, 8P3-6	Q25		
07	Not Used	GRY-VIO	2P11-2, 8P3-7	Q27		
08	Not Used	GRY-BLK	2P11-1, 8P3-8	Q29		
09	Not Used	BRN-BLK	2P9-9, 8P3-9	Q31		
10	Not Used	BRN-RED	2P9-7, 8P3-10	Q33		
11	General Illumination Relay	BRN-ORN	2P9-1, 3P7-1	Q35		5580-09555
12	Not Used	BRN-YEL	2P9-2, 8P3-12	Q37		
13	Not Used	BRN-GRN	2P9-3, 8P3-13	Q39		
14	Not Used	BRN-BLU	2P9-4, 8P3-14	Q41		
15	Bell	BRN-VIO	2P9-5, 7P1-17	Q43		
16	Coin Lockout	BRN-GRY	2P9-6, 7P1-18, 7P2-4	Q45	904218-696*	
*17	Top Left Jet Bumper	BLU-BRN	2P12-7, 8P3-17	Q2		
*18	Right Jet Bumper	BLU-RED	2P12-4, 8P3-18	Q4		
*19	Left Kicker	BLU-ORN	2P12-3, 8P3-19	Q6		
*20	Right Kicker	BLU-YEL	2P12-6, 8P3-20	Q8		
*21	Bottom Jet Bumper	BLU-GRN	2P12-8, 8P3-12	Q10		
22	Not Used	BLU-BLK	2P12-9, 8P3-22	Q12		SG1-23-850-DC
	Right Flipper	BLU-VIO	2P12-1, 7P1-7	—		
	Left Flipper	BLU-GRY	2P12-2, 7P1-9	—	SFL-19-400/ 30-750-DC	

**\*NOTES:**

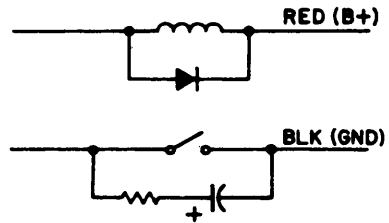
1. Special switch connections for solenoids 17 through 21 are as follows:

- 17—ORN-BRN—2P13-5, 8P3-24
- 18—ORN-RED—2P13-3, 8P3-25
- 19—ORN-BLK—2P13-2, 8P3-26
- 20—ORN-YEL—2P13-4, 8P3-27
- 21—ORN-GRY—2P13-8, 8P3-28

2. Flipper button connections are as follows:

- Right—ORN-VIO—2P12-1, 7P1-7
- Left—ORN-GRY—2P12-2, 7P1-9

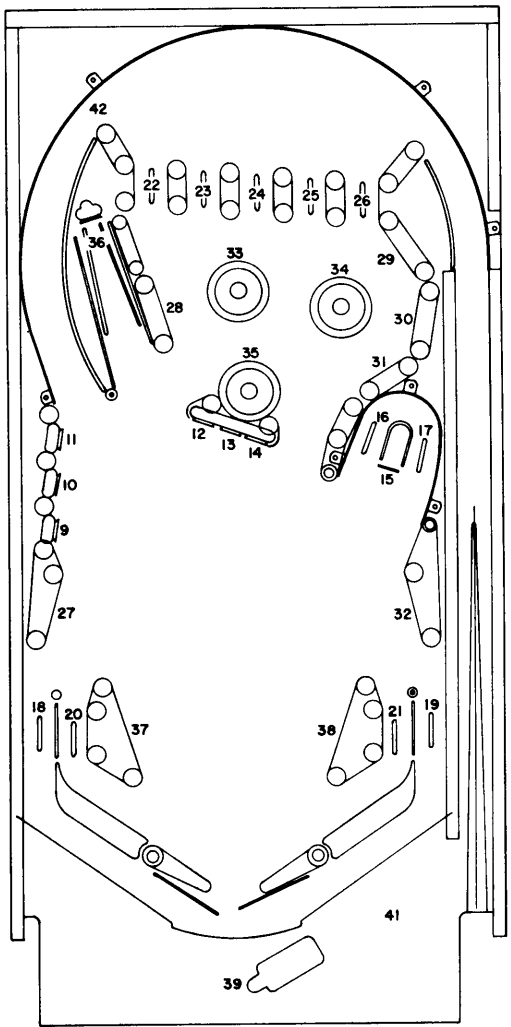
3. Typical wiring for solenoids and special switches follows.



**Switch Test**

- From Solenoid Test depress ADVANCE with the switch set to AUTO-UP. Test 03 should be indicated in the Credits display and any stuck switches in the Master display. As stuck switch(es) is displayed a sound is produced. The display continuously cycles through the stuck switches and as they are opened, the number is removed from the sequence. When all switches are open, the Match display is blank and the sounds stop.
- If all switches in a row are displayed, first verify that all are open and then check for a short to ground on the row wire.
- Operate switches; a sound is produced and switch number is momentarily indicated in the ball in play display. If two switches in a row are indicated with one switch closed, check for a short between the column wires; for multiple indication check column wire for short to ground. If two switches in a column are indicated with one switch closed, check for short between row wires.

4. If proper indications are obtained in Test 03 but matrix problem is suspected in game play, disconnect lamp connectors 2P5 and 2P7. Recheck in game play. Perform CPU Self-Test if problem remains. If problem is cleared, check for short between lamp matrix and jet bumper mounting brackets.



**Switch**

No.	Function* (Score)
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	"F" 1000*
10	"A" 1000*
11	"N" 1000*
12	"T" 1000*
13	"A" 1000*
14	"S" 1000*
15	"Y" 1000*
16	Left Turnaround*‡
17	Right Turnaround*‡
18	Left Drain Lane 5000 + 1 Bonus Advance
19	Right Drain Lane 5000 + 1 Bonus Advance
20	Left Flipper Return Lane 1000 (10,000 When Lit)
21	Right Flipper Return Lane 1000 (10,000 When Lit)
22	Lane 1 1000*
23	Lane 2 1000*
24	Lane 3 1000*
25	Lane 4 1000*
26	Lane 5 1000*
27	Lower Left Standup Target 10
28	Upper Left Standup Target 10
29	Upper Top Right Standup Target 10
30	Upper Center Right Standup Target 10
31	Upper Bottom Right Standup Target 10
32	Lower Right Standup Target
33	Top Left Jet Bumper 1000
34	Right Jet Bumper 1000
35	Bottom Left Jet Bumper 1000
36	Ramp Standup Target Timetube 5000 **
37	Left Kicker 10
38	Right Kicker 10
39	Outhole
40	Flipper Lane Change
41	Playfield Tilt
42	Left Lane Switch 5000‡‡
43-64	Not Used

\* 2000 with full bonus.  
 ‡ Score lit value when both switches are made in direction of lit arrow and advances mushroom jump value to 10K, 20K, 30K, 40K, 50K, 100K. Making with 100K lit lights special. Making in wrong direction reduces value.  
 \*\* Lights flashing letter in T-I-M-E.  
 ‡‡ Advances mushroom jump value to 10K, 20K, 30K, 40K, 50K, 100K.

Figure 4. Playfield Switch Locations and Switch Chart

COLUMN ROW	1 GRN-BRN 2J2-9	2 GRN-RED 2J2-8	3 GRN-ORN 2J2-7	4 GRN-YEL 2J2-6	5 GRN-BLK 2J2-5	6 GRN-BLU 2J2-3	7 GRN-VIO 2J2-2	8 GRN-GRY 2J2-1
1 WHT- BRN 2J3-9	1 Plumb Bob Tilt	9 "F" 1000*	17 Right Turnaround**	25 Lane 4 1000*	33 Top Left Jet Bumper 1000	41 Playfield Tilt	49 Not Used	57 Not Used
2 WHT- RED 2J3-8	2 Ball Roll Tilt	10 "A" 1000*	18 Left Drain Lane 5000	26 Lane 5 1000*	34 Right Jet Bumper 1000	42 Left Lane Switch 5000***	50 Not Used	58 Not Used
3 WHT- ORN 2J3-7	3 Credit Button	11 "N" 1000*	19 Right Drain Lane 5000	27 Lower Left Standup Target 10	35 Bottom Left Jet Bumper 1000	43 Not Used	51 Not Used	59 Not Used
4 WHT- YEL 2J3-6	4 Right Coin Switch	12 "T" 1000*	20 Left Flipper Return Lane 1000	28 Upper Left Standup Target 10	36 Ramp Standup Target Timetube 5000**	44 Not Used	52 Not Used	60 Not Used
5 WHT- GRN 2J3-5	5 Center Coin Switch	13 "A" 1000*	21 Right Flipper Return Lane 1000	29 Upper Top Right Standup Target 10	37 Left Kicker 10	45 Not Used	53 Not Used	61 Not Used
6 WHT- BLU 2J3-4	6 Left Coin Switch	14 "S" 1000*	22 Lane 1 1000*	30 Upper Center Right Standup Target 10	38 Right Kicker 10	46 Not Used	54 Not Used	62 Not Used
7 WHT- VIO 2J3-3	7 Slam Tilt	15 "Y" 1000*	23 Lane 2 1000*	31 Upper Bottom Right Standup Target 10	39 Outhole	47 Not Used	55 Not Used	63 Not Used
8 WHT- GRY 2J3-1	8 High Score Reset	16 Left Turnaround**	24 Lane 3 1000*	32 Lower Right Standup Target	40 Flipper Lane Change	48 Not Used	56 Not Used	64 Not Used

Figure 5. Switch Matrix

## **INITIATING AUTO-CYCLE MODE**

1. Set AUTO-UP/MANUAL-DOWN switch to AUTO-UP and depress ADVANCE pushbutton. Test 04 is indicated in Credit display and Function 00 in Match Display.
2. Set switch to MANUAL-DOWN and depress ADVANCE to indicate Function 50 in the Match Display.
3. Set switch to AUTO-UP and operate Credit button to indicate 15 in Player 1 Display.
4. Depress ADVANCE pushbutton to start Auto-Cycle mode. Each cycle of this mode sequences thru the Display Digits Test, Sound Test (00), Lamp Test (01), and Solenoid test (02).
5. To terminate the test and return to game over, turn the game OFF and back ON.

## **CPU BOARD SELF-TEST**

Depress the DIAGNOSTIC pushbutton on the left side of the CPU Board. The following indications are provided. With 0 indication the game returns to the game over mode.

0 - Test Passed

1 - IC13 RAM Faulty

2 - IC16 RAM Faulty

3 - IC17 ROM 2 Faulty

4 - IC17 ROM 2 Faulty

5 - IC20 ROM 1 Faulty

6 - IC14 Game ROM 1 Faulty

7 - IC26 Game ROM 0 Faulty

8 - IC19 CMOS RAM or Memory Protect Circuit Faulty

9 - Coin-door closed, Memory Protect Circuit Faulty, or IC19 CMOS RAM Faulty.

Note that "0" remaining after power turn-on indicates CPU Board lockup.

## **SOUND BOARD SELF-TEST**

Depress DIAGNOSTIC pushbutton on the top of the Sound Board. Several electronic sounds should be produced. This sequence of sounds is repeated until the game is turned OFF and back ON.

### **NOTE**

Cable harness placements and ground strap routing on this game have been designed to keep RF radiation and conduction within levels acceptable to FCC regulations. To maintain these levels, reposition harnesses and reconnect ground straps to their original placements if they should be disconnected during maintenance.

**Warning**—This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to correct the interference.