



**OPERATIONS MANUAL**

Warranty Terms

Game Adjustments

Parts Information



# **FUNHOUSE**

## **REMAKE**

**INSTALL 3 BALLS**

# **RUDY'S FUNHOUSE RULES**

## ***OBJECT***

Take control of the FUNHOUSE from Rudy, the Dummy, by putting him to sleep. Put Rudy to sleep by advancing the FUNHOUSE clock to MIDNIGHT. Shots that advance the Clock are the Jet Bumpers, the Center Ramp, and the Wind Tunnel.

## ***MULTI-BALL™***

At 11:30, on the clock, a LOCK is enabled. Lock a ball and the clock will advance to 11:45. LOCK the next ball and the clock will advance to 12:00 putting Rudy to sleep. While Rudy is sleeping, shoot a ball into his OPEN MOUTH to start Multi-ball.

## ***MILLION PLUS***

While in Multi-ball, shoot the ball into the TRAP-DOOR for 2 MILLION points. The TRAP- DOOR will close. Shoot a ball around the Center Ramp to REOPEN the TRAP-DOOR for 3 MILLION points, 4 MILLION points etc.

## ***MYSTERY MIRROR***

There are 6 AWARDS on the MYSTERY MIRROR. Hitting Rudy in the jaw lights the AWARD LAMP. Hitting the WIND TUNNEL collects the value on the mirror. The value is changed by the JET BUMPERS.

## ***LEFT BALL SHOOTER***

The FUNHOUSE STEPS are lit by entering the MANHOLE to the RIGHT of the JET BUMPERS. Making the CENTER RAMP will divert the ball to the LEFT BALL SHOOTER.

## ***SKILL SHOT***

From the right plunger, shoot the ball BEHIND Rudy's head to collect Rudy's HIDEOUT BONUS.

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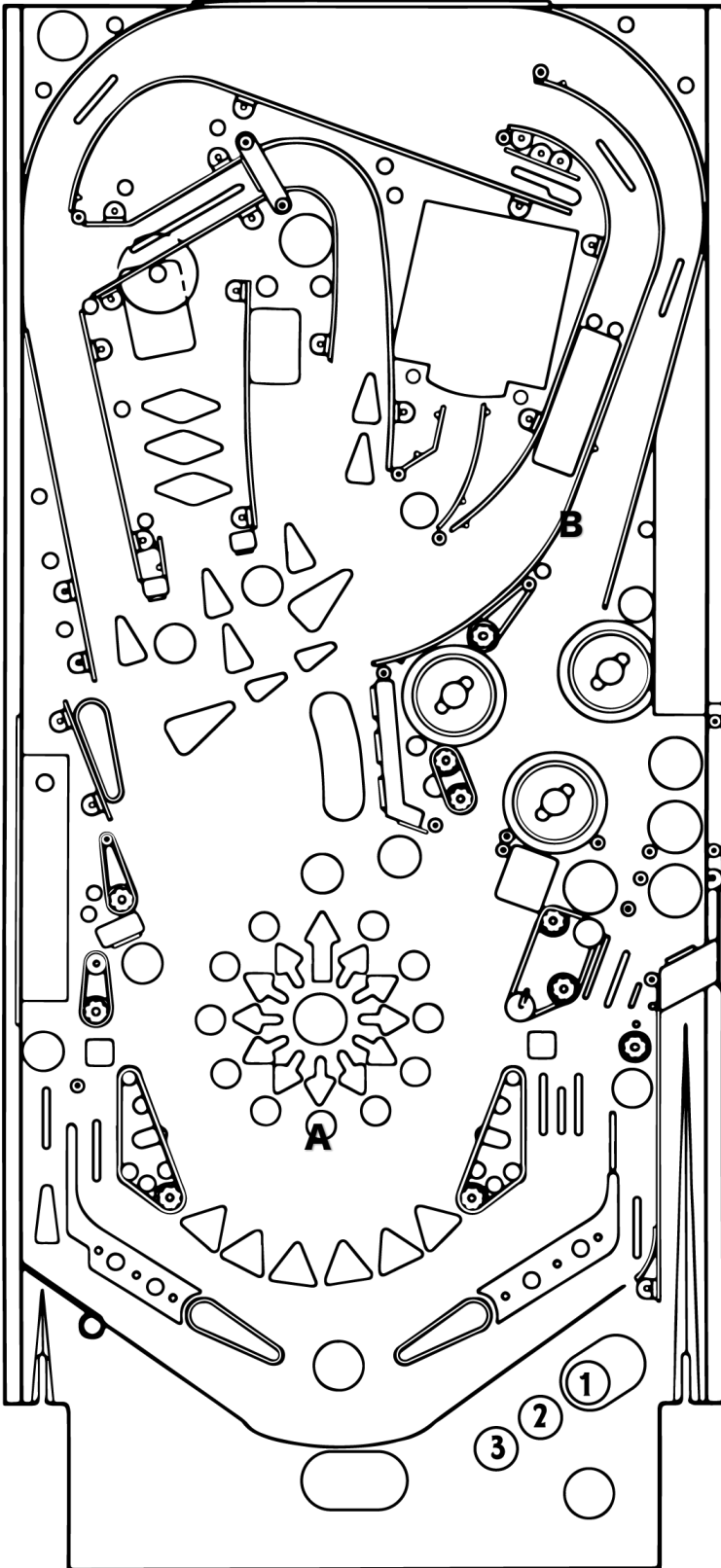
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# FUNHOUSE

## *Object of the Game*

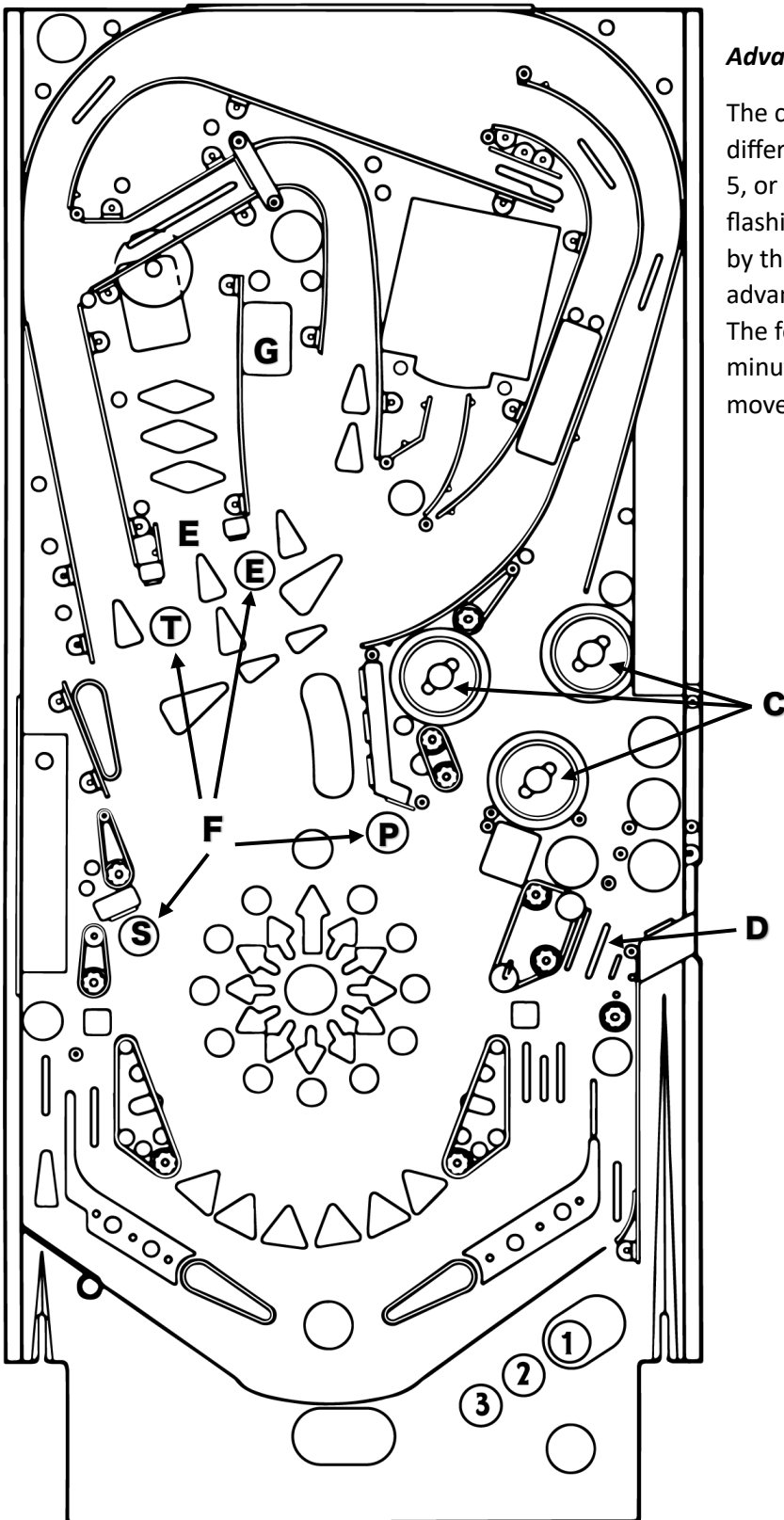
### *Object of the Game:*

The object of the game is to move the time on the clock (A) to Midnight. At Midnight Rudy, the dummy, falls asleep and the player can amass large points by shooting into the "secret" trap door (B).



# FUNHOUSE

## Advancing the Clock



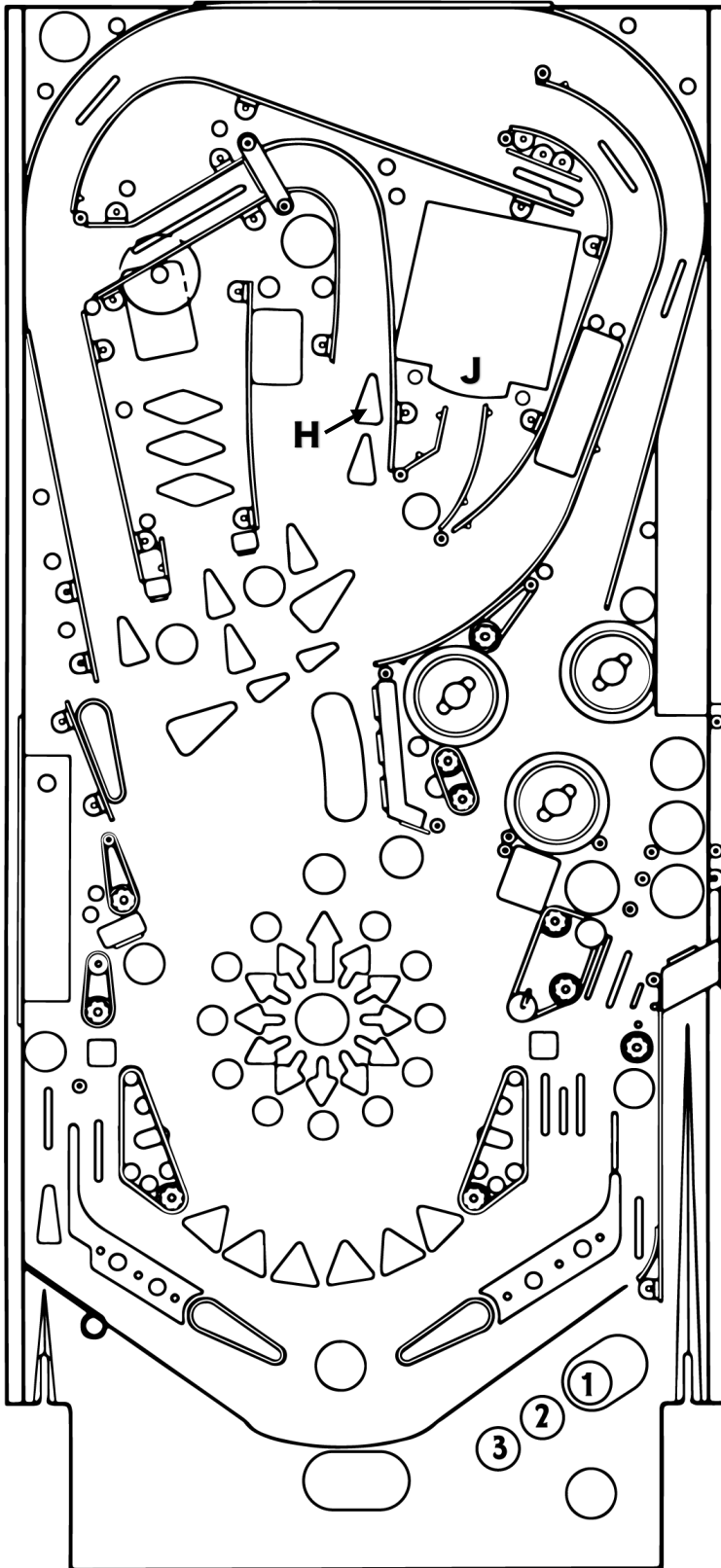
### Advancing the Clock:

The clock is advanced in differing amounts of time by different playfield shots. The jet bumpers (C) award 0, 5, or 10 minutes depending if they are off, on, or flashing. The jet bumpers are lit on a single ball basis by the jet bumper lane at (D). The center ramp (E) advances the time in an incrementing single ball basis. The four S-T-E-P targets (F) advance the clock by 5 minutes on each hit. Falling into the wind tunnel (G) moves the clock by 15 minutes.



# FUNHOUSE

## *Multi-ball™*

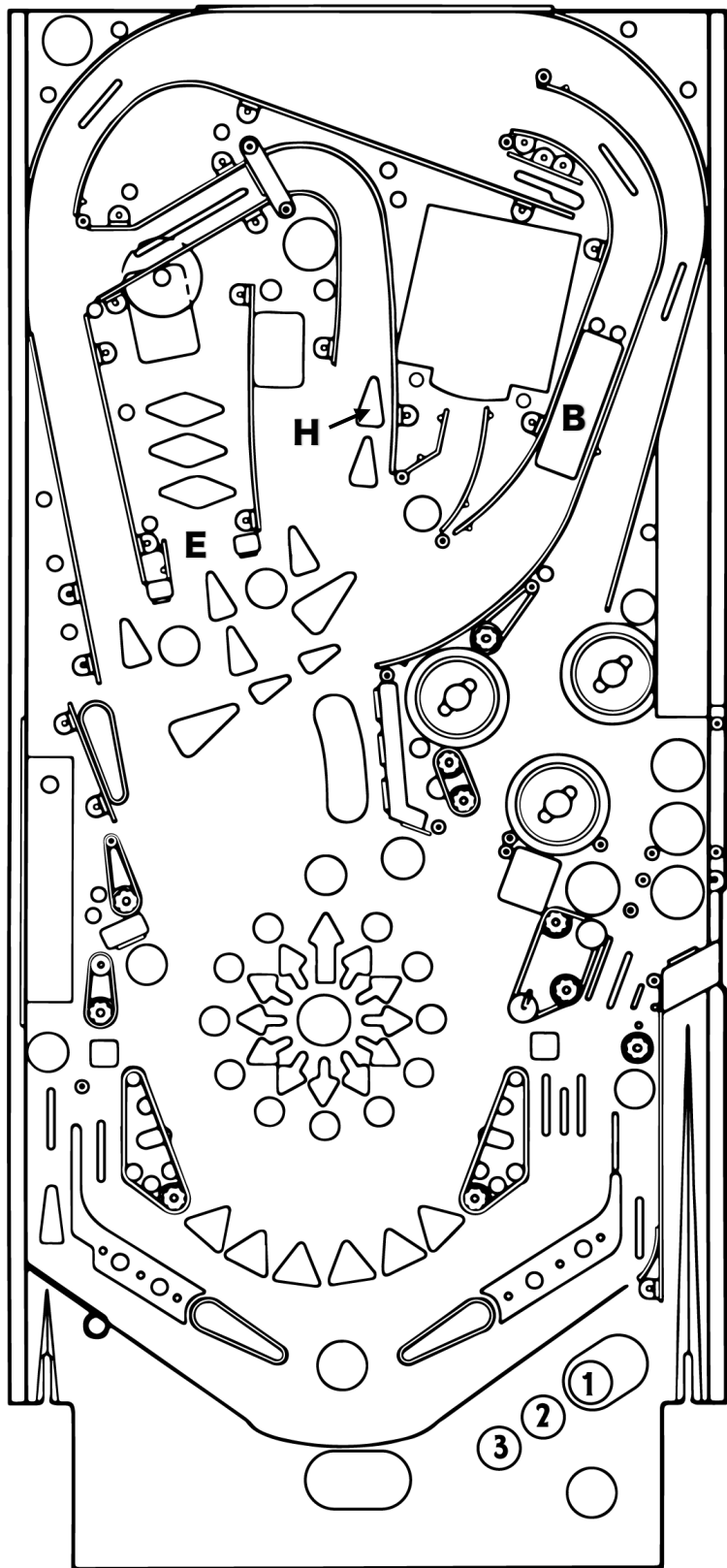


### *Multi-ball™:*

Once the clock has been advanced to 11:30 a lock will light at (H). The player then locks a ball and the clock moves to 11:45. Another ball is served. The lock lights remain lit and another ball may be locked immediately. Once the second ball is locked the clock moves to 12:00 and the dummy falls asleep. Another ball is served and the player must shoot that ball into the dummy's open mouth! (J). The dummy then wakes up and spits out the ball thus starting Multi-ball™.

# FUNHOUSE

## Million Plus™

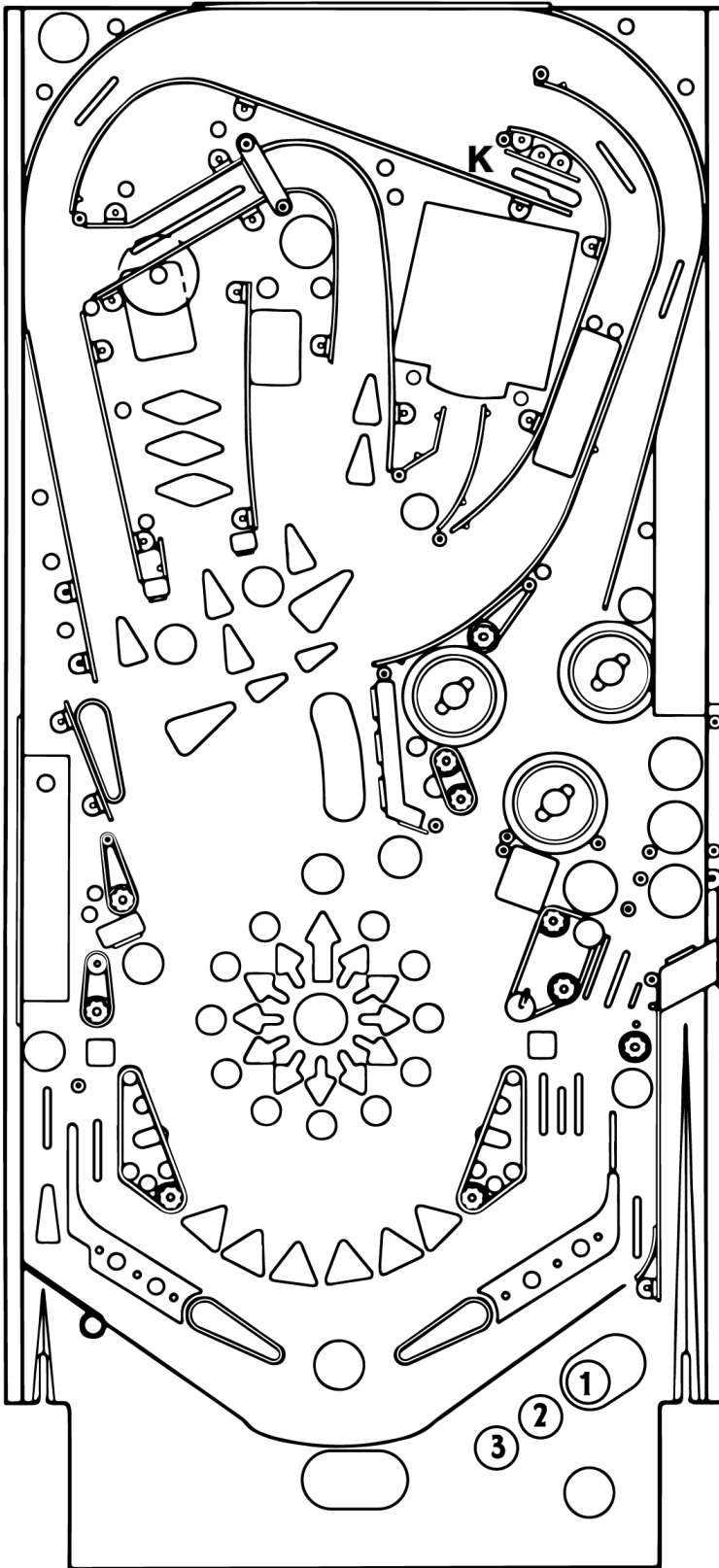


### Million Plus™:

At the start of multi-ball the secret trap door at (B) opens immediately. While in multi-ball the first shot into the trap door scores 2 million points. After the first shot into the trap the door closes. It can be re-opened by making the ramp shot at (E) . The second shot into the trap door scores 3 million points. The third shot 4 million points etc. . If the player successfully scores a Million Plus shot and then loses 2 balls the trap door closes and a new starting time is set on the clock to restart the game sequence. If the player loses 2 balls before scoring a Million Plus shot, the trap door will close, and the lock light at (H) will come on. The player can then lock the remaining ball from multi-ball for a retry at Million Plus. The lock light is on a timer. If the player cannot lock the ball in time, or loses the ball, the game sets a new starting time on the clock for a return to normal game play.

# FUNHOUSE

## *Right Side Plunger*

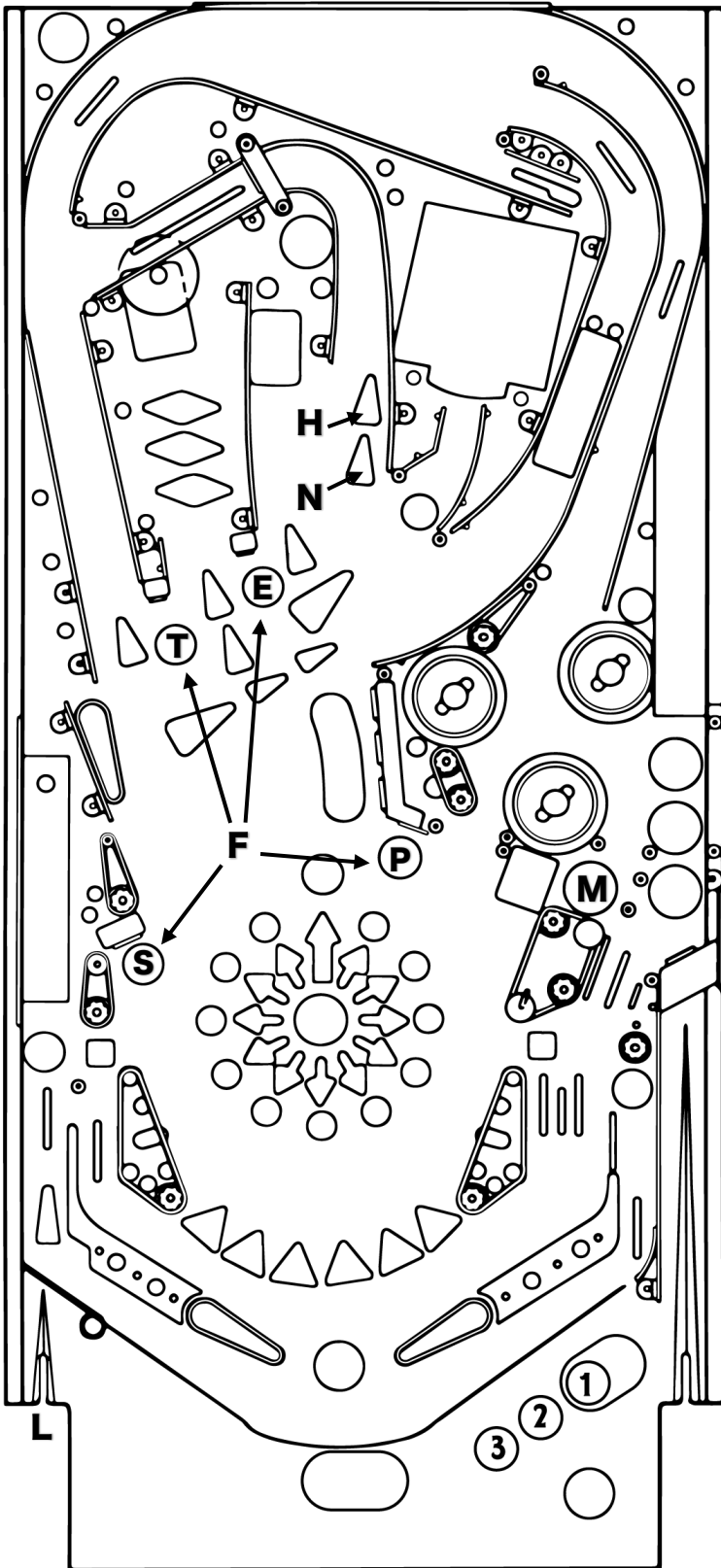


### *Right Side Plunger Skill Shot:*

The right side plunger skill shot is made by carefully shooting the ball to drop behind the dummy's head (K). This awards 250,000 points for the first successful attempt, 500,000 points for the second, 750,000 for the third etc.

# FUNHOUSE

## Left Side Plunger

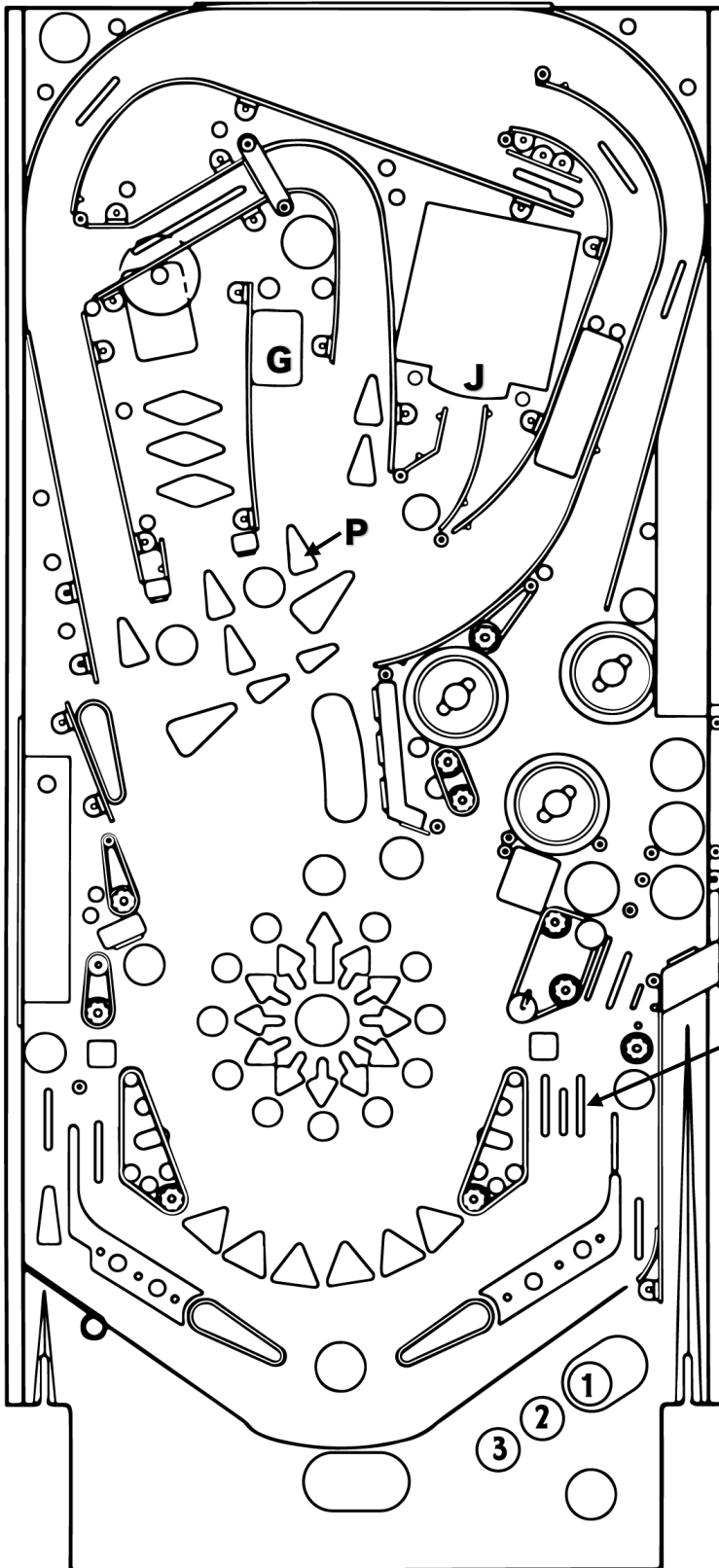


### Left Side Plunger Skill Shot:

The left side plunger shoots the ball up onto the Crazy Steps (L). The left plunger is accessed by one of two methods. The first method is dropping the ball into the Manhole at (M). Once the ball has gone into the Manhole, the diverter on the center ramp will open, so that a center ramp shot takes the ball to the left plunger for a shot on the Crazy Steps. The second method is lighting the GATE OPEN feature on the Mystery Mirror (next page). Once the gate is opened by this feature either a ramp shot OR a left side drain will send the ball to the left side plunger. The individual values on the crazy steps are lit by completing the S-T-E-P targets (F) on the main playfield. The crazy steps awards are as follows: The lowest step (yellow light), opens the trap door to begin Funhouse Frenzy (page 14). The middle step (red light) lights the Extra Ball light at (N). The top step (green light) lights the Lock light at (H) for 500,000 points. The player pulls the plunger all the way back and the ball goes down the long flight of steps then the Superdog bonus is lit (page 15). Once a feature is started in this fashion its lamp on the steps goes out. These are all one ball features such that they must be made on the same ball as the steps shot was made on (no memory).

# FUNHOUSE

## Mystery Mirror

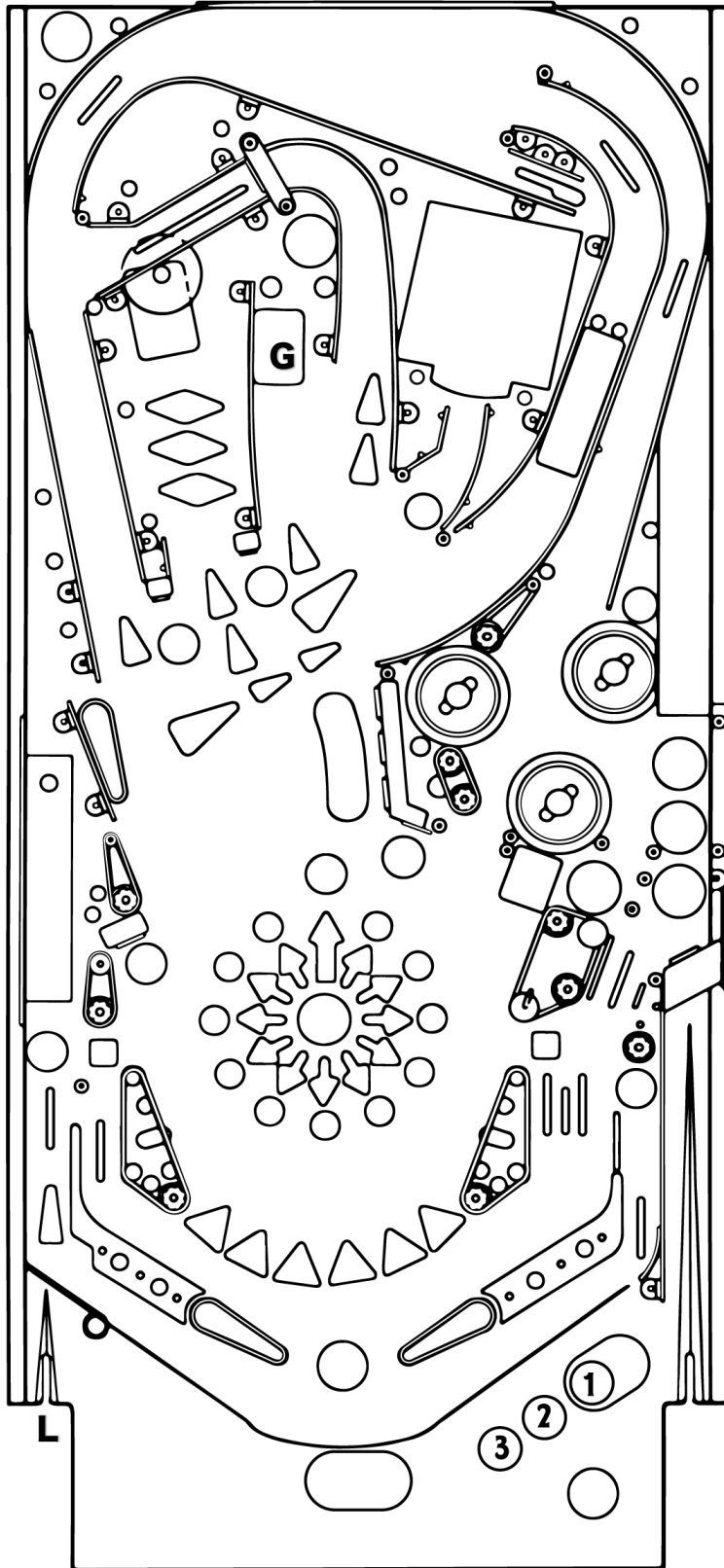


### **Mystery Mirror:**

The Mystery Mirror is located over the entrance to the Wind Tunnel at (G). There are 6 values that can be awarded on the mirror. These include: 1) Light Extra Ball Shot, 2) Light Million Shot Start, 3) Quick Multi-ball Start, 4) Superdog Bonus Timer, 5) Light Jet Bumpers for Maximum Value, and 6) Open STEPS Gate. The blinking value that can be awarded is **MOVED** by the ball contacting the jet bumpers. The value is **AWARDED** when the lamp at (P) is lit. The **LAMP** is lit at game start. It is re-lit on a timer when the ball goes through the right outermost flipper return lane (Q). It is re-lit solidly on a hit to the dummy's jaw (J). After all 6 values are awarded the lamp is lit so that on the next award the player receives 1 million points and the game starts **SUPER-FRENZY**.

# FUNHOUSE

## *Funhouse Frenzy and Super Frenzy*

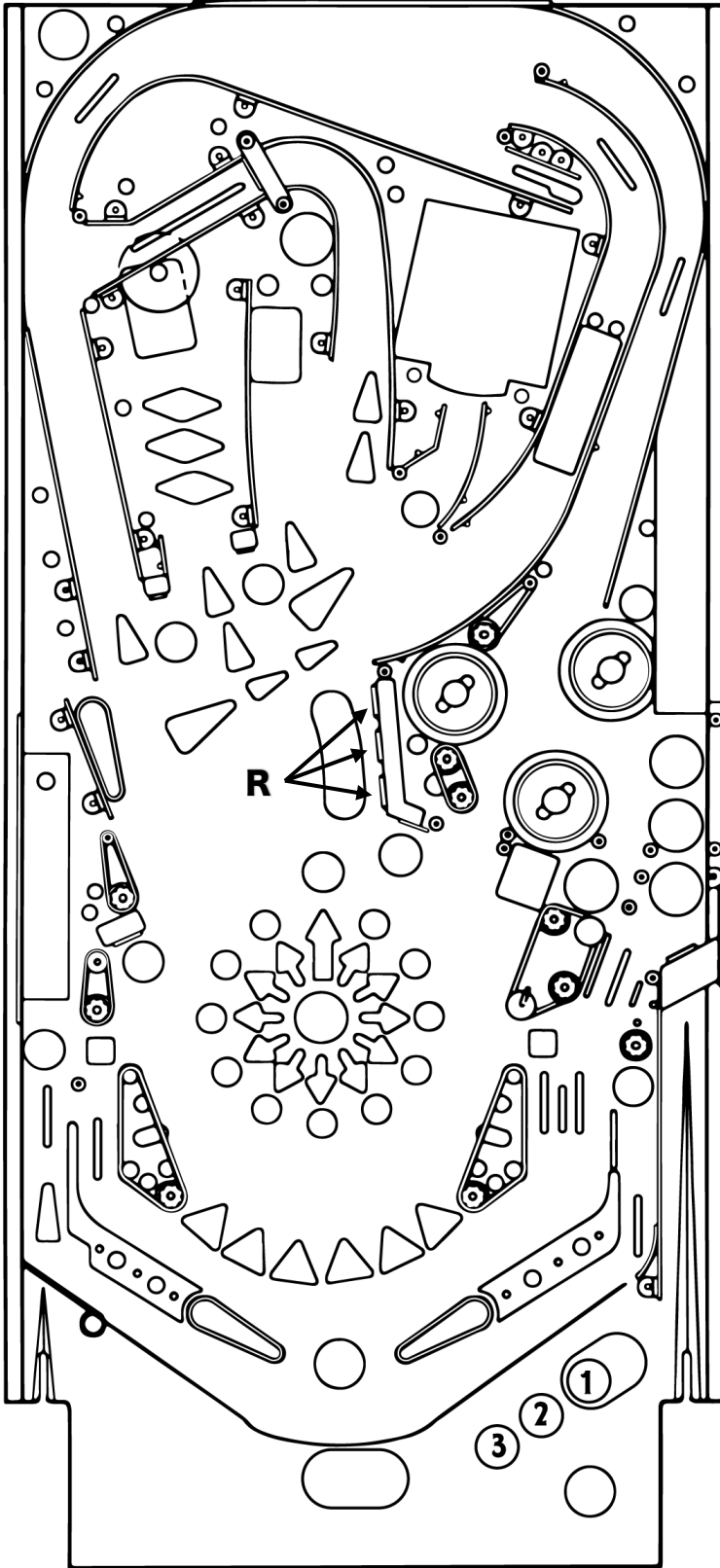


### ***Funhouse Frenzy and Super Frenzy:***

When Frenzy or Super Frenzy mode is entered from either the Crazy Steps (L), or by completing all 6 features on the Mystery Mirror (G), the player enters a timed super scoring period. During this period any scoring switch made on the playfield is worth a much larger point value than normal. This value is added into the players bonus score at the end of the ball.

# FUNHOUSE

## *Superdog Bonus Timer*

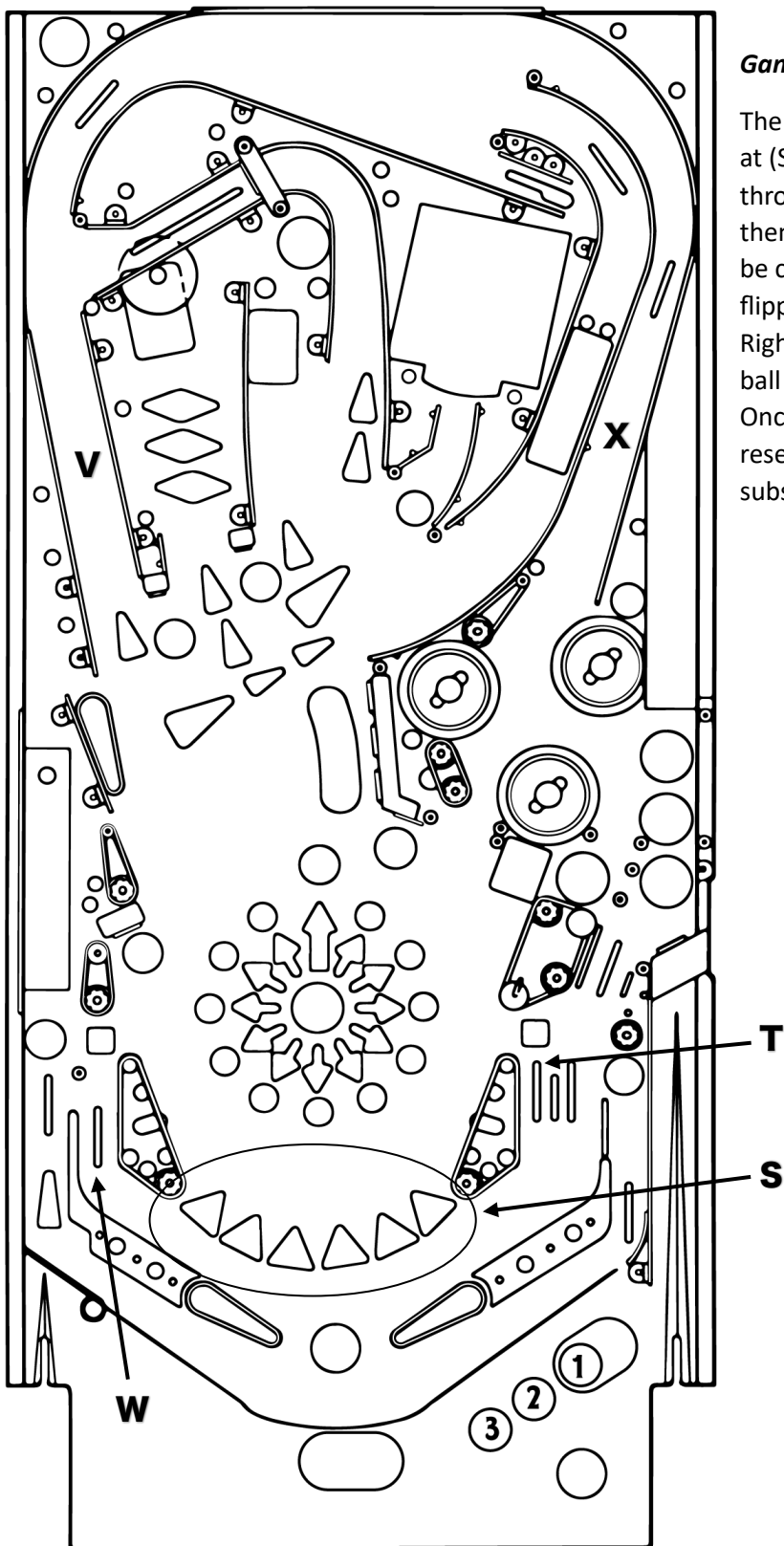


### ***Superdog Bonus Timer:***

Superdog Bonus Timer can be started from either the Crazy Steps or as a Mystery Mirror value. When in Superdog mode, the 3 Targets at (R) score 200,000 points on each subsequent hit.

# FUNHOUSE

## Gangway Bonus



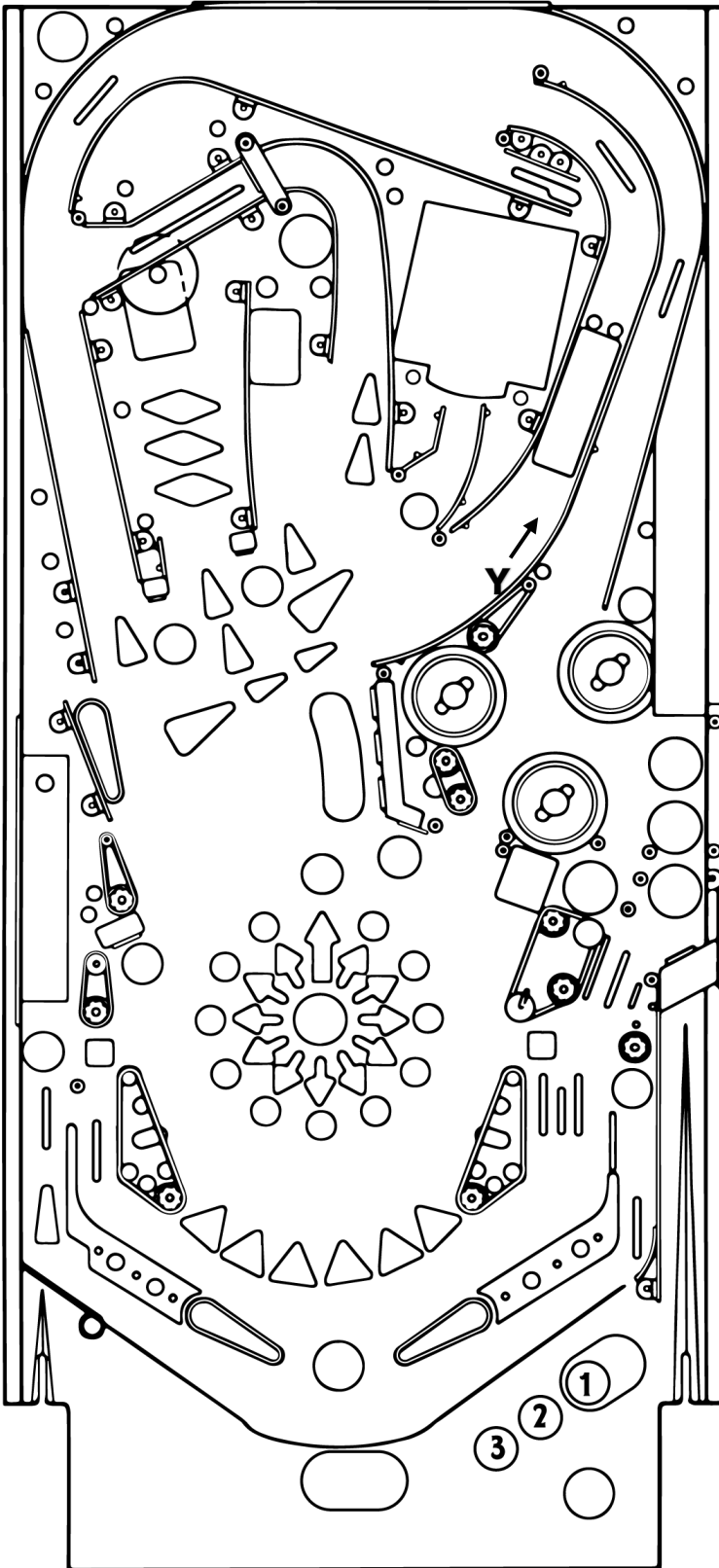
### **Gangway Bonus:**

The current Gangway value is SHOWN in the lights at (S). The value is COLLECTED by the ball passing through the right inner flipper return lane (T) and then being shot up the Left Gangway (V). It can also be collected by the ball passing through the left flipper return lane (W) and then being shot up the Right Gangway (X). Every time the value is held from ball to ball until the player collects EXTRA BALL. Once an Extra Ball has been collected the value resets to the starting value at the start of all subsequent balls.



# FUNHOUSE

## Trap Door Bonus

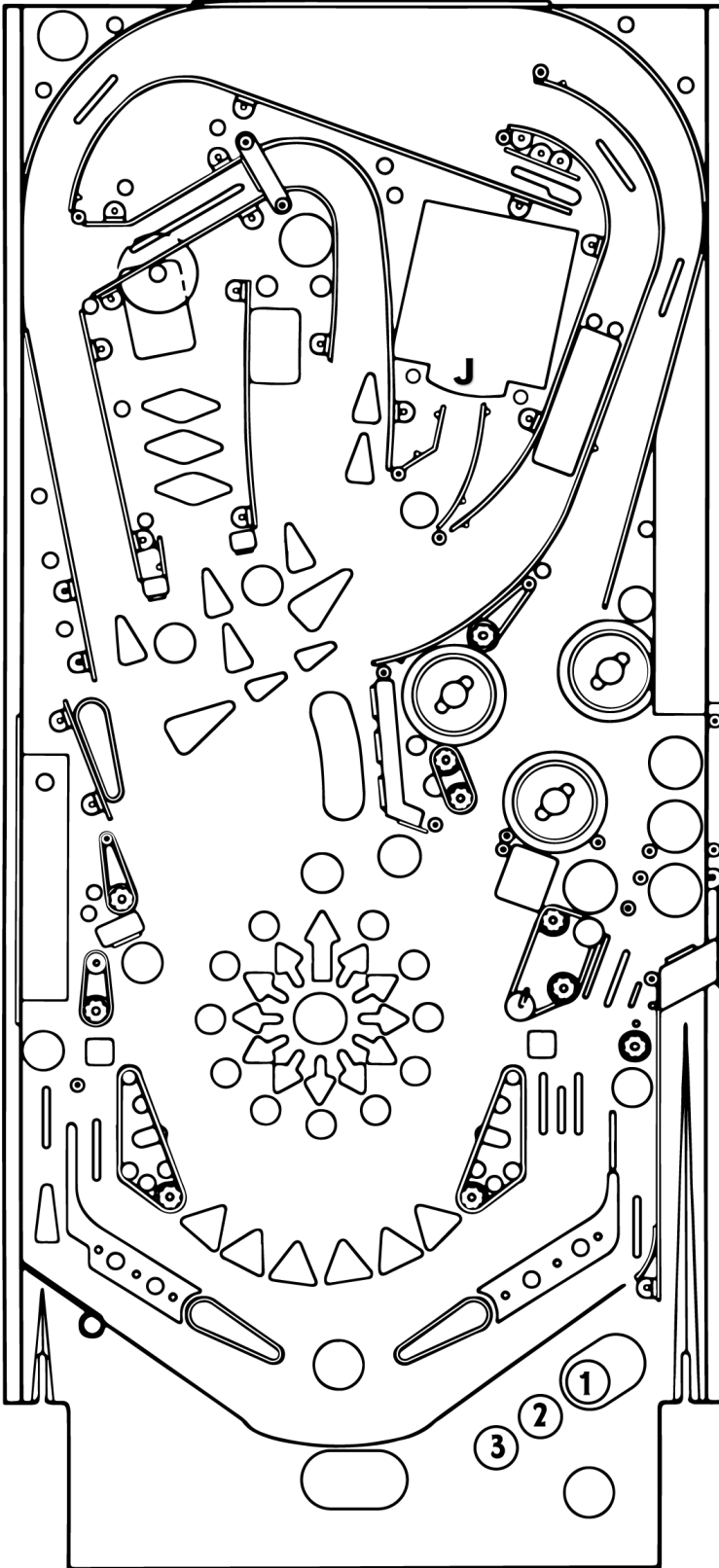


### *Trap Door Bonus:*

During normal game play, the inner loop at (Y) can open the trap Door for a points bonus. The first time a loop is completed with the left side upper flipper, the door will open and the player has a set amount of time to enter the door. The first time is worth 250,000 points. The next time the player must complete 2 loops, then 3 loops etc. The points awarded are 500,000 for 2 loops, 750,000 for 3 loops etc.

# FUNHOUSE

## Bonus



### **Bonus:**

The Bonus is based on the number of hits to the dummy's jaw (J). The Bonus is held from ball to ball and is a game long accumulation that is awarded at the end of each ball.

# GAME OPERATION & TEST INFORMATION

- *Pinball Game Assembly Instructions*
- *Game Play*
- *Menu System Operation*
  - Adjustments*
  - Audits*
  - Test/Diagnostic Procedures*
  - Utilities*
- *EXTENDED Menu*
  - Game Code version*
  - Adjustments*
  - Test*

*If you need replacement parts contact your distributor or check these partners websites:*

*- Planetary Pinball Supply for mechanical parts:*

*<https://www.planetarypinball.com>*

*- Classic Playfield Reproduction for games Playfields:*

*<https://classicplayfields.com>*

*- Fast Pinball for game circuit boards:*

*<https://fastpinball.com>*

*- Check our website for Game code updates:*

*<https://www.europinball.net>*

## CONNECTOR & COMPONENT IDENTIFICATION

- FAST Smart Power Filter Board FP-PWR-0007
- FAST Neuron PF-CPU-2000-5
- 21.5" MAIN LCD DISPLAY
- 3.5" 2-way 100w Speakers
- FAST Pinball Audio Interface FP-AUD-0100-3
- B- 10686 Knocker Assy.

Figure 1 shows the locations of these circuit boards, as well as other devices especially located to make FUNHOUSE a great game.

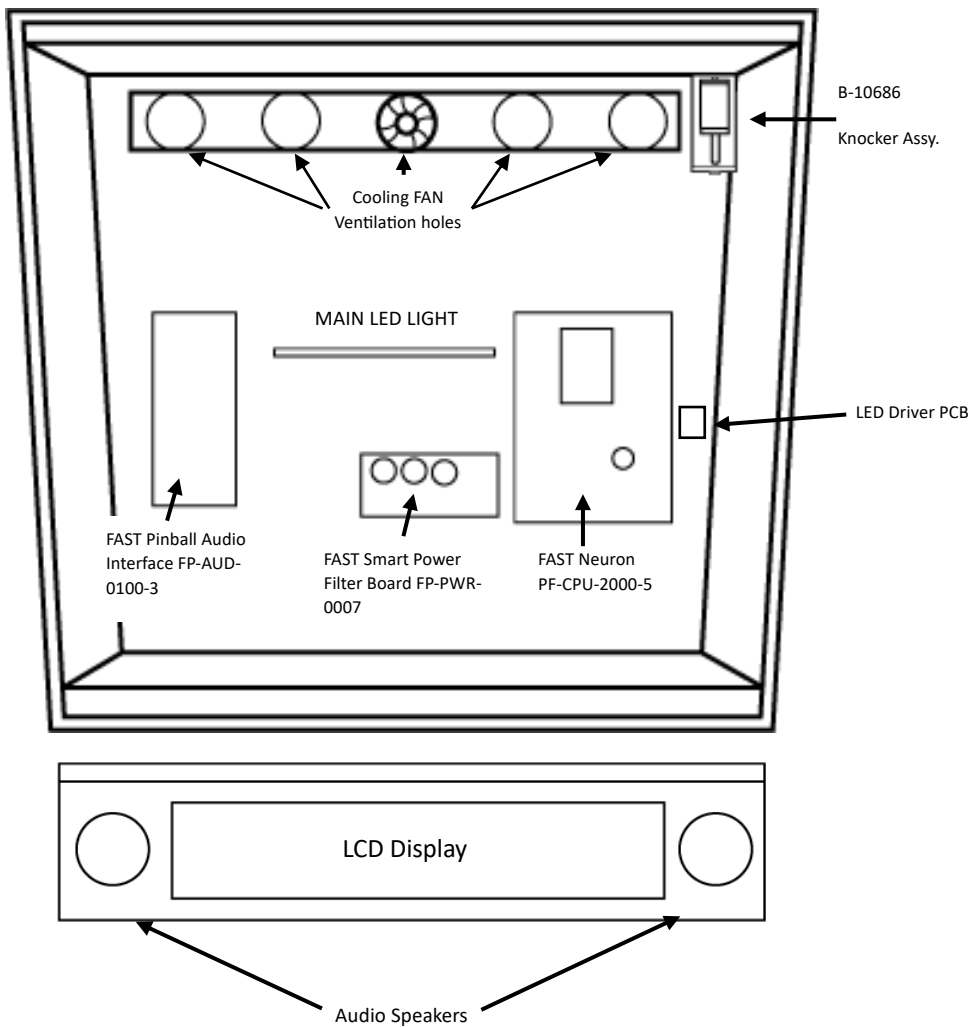
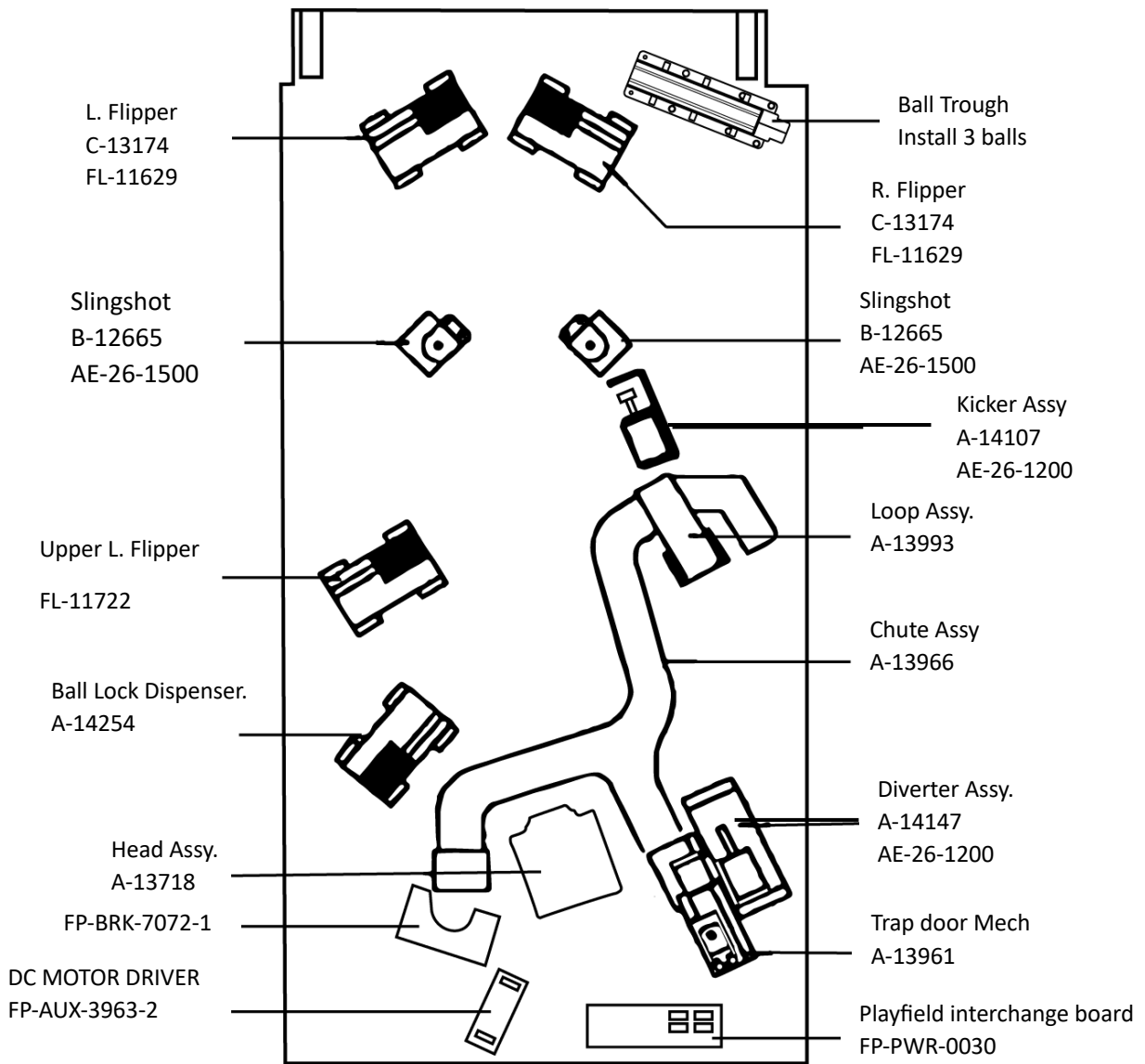


Figure 1 and 2 Locations Diagram - Game Circuit Boards and Major Mechanisms

# UNDER SIDE OF PLAYFIELD



# FUNHOUSE GAME CONTROL LOCATIONS

## Cabinet Switches

The On-Off switch is on the bottom of the cabinet near the right front leg.

The Start Button is a pushbutton to the left of the coin door on the cabinet exterior.

Press the Start button to begin a game, if you keep it pressed for 5 seconds after you entered in a game code you can go back to the selection screen ( this works only if you have 2 game code installed 1.0/1.5 and 2.0)

You can press start during the diagnostic mode, to ask for HELP.

### Normal Function

The Service Credits (ESCAPE Button) switch puts credits on the game that are not included in the game audits.

The Volume Up switch raises the sound level of the game. Press and hold the button until the desired level is reached.

The Volume Down switch lowers the sound level of the game. Press and hold the button until the desired level is reached.

The Enter Test switch starts the Menu System Operation and changes the Coin Door Switches from Normal Function to Test Function.

### Test Function

The Escape switch allows you to get out of a menu selection or to return to the Attract Mode and to ENTER into the Extended menu.

The Up switch allows you to cycle forward through the menu selections or adjustment choices.

The Down switch allows you to cycle backward through the menu selections or adjustment choices.

The Enter switch allows you to get into a menu selection or lock in an adjustment choice.

### EXTENDED MENU

You can have access to the extended service menu after ENTER in the 1.0 or 1.5 game code and press for 5 seconds ESCAPE button.

In the Extended menu you can find extended adjustments and setting.

## Coin Door Switches

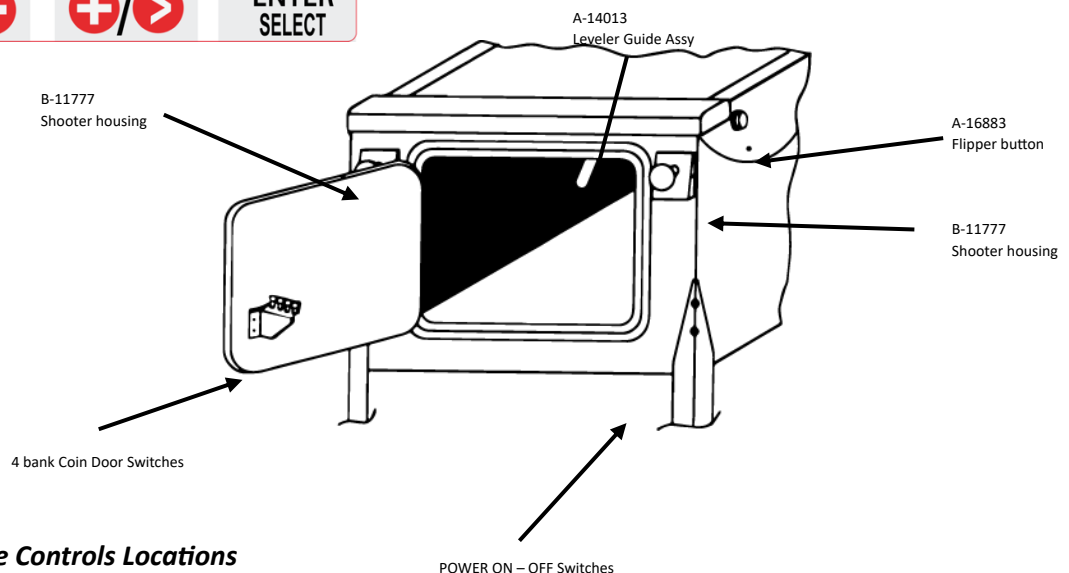
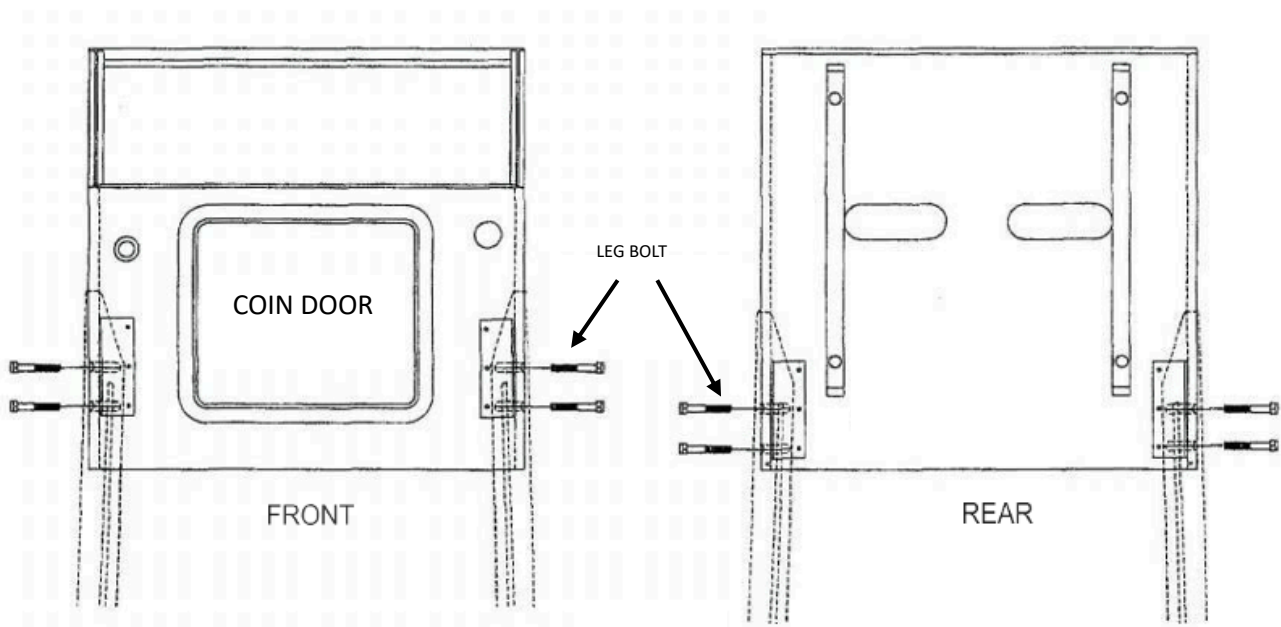
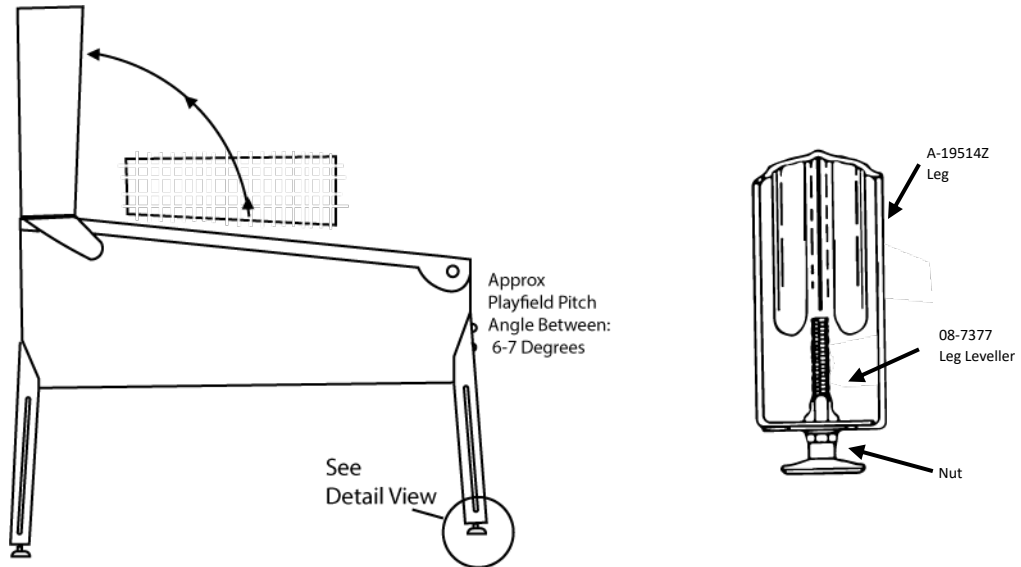


Figure 2. Pinball Game Controls Locations

## PINBALL GAME ASSEMBLY INSTRUCTIONS

1. Open the shipping container; remove all cartons, parts, and other items, and set them aside.
2. Place the cabinet on a support and attach rear legs using leg bolts. Leg levellers and leg bolts are provided among the parts in the cash box.
3. Attach the front legs (after installing leg levellers), using leg bolts. See Figure 3 for details.



**Figure 3. Pinball Assembly, Playfield Pitch Angle, and Leg Leveller Details.**

4. Reach into the cabinet and backbox and ensure that the interconnecting cables are free to move (not kinked or pinched). Be careful to avoid damaging wires at any stage of the assembly process.
5. Raise the hinged backbox upright and latch it into position. Unlock the backbox, and remove the backbox Translite, storing it carefully to avoid scratches. Remove the shipping block holding the Insert Board. Unlatch the Insert Board and open it; lift the Speaker/Display Panel and lay it on the playfield glass. This allows access to the bolt holes used for securing the backbox upright. Install the washer-head mounting bolts through the bottom holes of the backbox into the threaded fasteners in the cabinet to secure the backbox. Remount the Speaker/Display Panel; close the Insert Board and latch it in position. Reinstall the Translite, and lock the backbox.

**FAILURE TO INSTALL** the backbox mounting hardware properly can cause personal injury. **NEVER TRANSPORT** a pinball game with the hinged backbox erect. Always lower the backbox forward onto the playfield cabinet on a layer of protective material to prevent marring or damage and possible personal injury.

6. Extend each leg leveller slightly below the leg bottom, so that all four foot pads are extended about the same distance. Remove the cabinet from its support and place it on the floor.
7. Unlock and open the coin door. Locate the Molding Latch Lever (shown in Figure 2), and move the lever toward the left side of the game, to release the Front Molding. Lift the Front Molding off the playfield cover glass return the Latch Lever toward the right, and close the coin door. Carefully slide the glass downward, until it clears the grooves of the Left and Right Side Moldings. Lift the glass up and away from the game, storing it carefully to avoid breakage.
8. Place a level or an inclinometer on the playfield surface. Adjust the leg levers for proper playfield level (side-to-side) and playfield pitch angle (incline) of approximately 6-7 degrees. NOTE: It is recommended that these measurements be made ON the playfield, not the cabinet nor the playfield cover glass. Tighten the nut on each leg leveller shaft to maintain this setting, as shown in Figure 3.

#### **CAUTION**

Playfield pitch angle adjustments can affect the operation of the plumb bob tilt, inside the cabinet. The plumb bob weight is among the parts in the cash box; the operator should install the weight and adjust this tilt mechanism for proper operation, after completion of the desired playfield pitch angle setting.

9. Move the game into the desired location; recheck the level and pitch angle of the playfield.
10. Verify that the **required number** of balls are installed in the game. **FUNHOUSE** uses 3 balls.
11. Install Playfield mylar in the slingshot area if desired ( 2x Slingshot Mylar stickers are included in the goodie box).
12. Clean and reinstall the playfield cover glass, reversing the procedure of step 7. Prepare the game for player operation.



## GAME OPERATION

After assembly and installation at its site location, this game must be plugged into a properly grounded outlet to prevent shock hazard, and to assure proper game operation. DO NOT use a 'cheater' plug to defeat the ground pin on the line cord. DO NOT cut off the ground pin.

**POWERING UP.** Perform the following 'power up' routine upon completion of the assembly and installation procedure, as well as at the beginning of each period of game operation. Initially, it will confirm that the game is in proper operating condition; later, it will aid the operator via its messages (refer to later text entitled "Problem Analysis Messages").

**Procedure.** With the coin door closed, plug the game in, and switch it ON, using the On-Off switch. In normal operation, the top score display initially shows the last score. Then, the game goes into the Attract Mode (playfield and backbox lamps flashing, sounds being heard, etc., if the operator does not change the Factory Setting).

Open the coin door and press the BEGIN TEST switch to begin the game test routine. The top score display shows the game name, and the bottom score display shows the game number and game software revision. The message changes. The top score display shows the sound software revision, and the bottom score display shows the revision level of the system software and the date the game software was revised.

FUNHOUSE  
50003      Rev. L-9

Sound Rev. L-1  
SY. 0.90      11-5-90

Perform the entire test menu routine to verify that the game is operating satisfactorily (refer to later text entitled "Menu System Operation"). Successful completion of the tests shows that the game is ready to begin earning your investment return.

After the game has been on location for a period of time, the test routine may be preceded by messages concerning game problems. The text entitled 'Problem Analysis Messages' contains more details concerning messages displayed at each game turn-on.

**ATTRACT MODE\*.** Playfield and backbox lamps blink. series of messages informing the player concerning:

- A. Recent highest scores\*
- B. A "custom message" ("PLAY FUNHOUSE");
- C. The score to achieve to obtain a Replay award\*;

These (or similar) displays reappear occasionally, accompanied by sounds and music, until a player initiates game play by inserting a coin or, when credits are available, pressing the Start button.

\*. operator-adjustable feature

**CREDIT POSTING.**

Insert coin(s). A sound is heard for each coin, and the player score displays show the number of credits purchased. So long as the number of maximum allowable credits\* are NOT exceeded by coin purchase or high score, credits are posted correctly.

**STARTING A GAME.**

Press the Start button once. A startup sound plays, and the Credit amount shown in the player score display decreases by one. The upper Player Score Display flashes 00 (until the first playfield switch is actuated), and the lower Player Score Display shows ball 1, except for 4-player games where the ball # shows in the individual player's display. Additional players may enter the game by pressing the Start button once for each player, before the end of play on the first ball.

**TILTS.**

The third closure\* of the plumb bob tilt switch, the player loses the remaining play of that ball, but can complete the game.

**END OF GAME.**

All earned scores and bonuses are awarded. If a player's final score exceeds the specified value, the player receives a designated award for achieving the current highest score. A random digit set\* appears in the Match display. Credit\* may be awarded, when the last two digits of any player's score display (1 through 4) match the random digits of the Match display. Match, high score, and game over sounds are made, as appropriate.

**GAME OVER MODE.** The GAME OVER display shows in the player score displays. Then, the high scores flash on the appropriate player score displays. The game proceeds to the Attract Mode.

After game over you can go back to the selection screen pressing 5 seconds the start button.

**ENTER THE EXTENDED MENU.** To enter into the extended menu you need to be in game code 1.0 or 1.5 and press ESCAPE for 5 seconds and you enter in the extended menu where you can find new modern adjustments.

\*. operator-adjustable feature

# MENU SYSTEM OPERATION

door and FUNHOUSE operates on a Menu System. The Main Menu allows you to choose from several main categories, which in turn lead to other menus to choose from. To enter the Menu System, open the coin press the Begin Test button. The displays show the Game I.D. Mode. Press the Enter button and the Main Menu appears. To cycle through the Main Menu selections press either the Up or Down button. Activate any selection by pressing the Enter button when the desired selection appears in the displays. To return to the Attract Mode while viewing the Main Menu, or to return to a previous menu selection, press the Escape button. Press the Start button for HELP at any time.

## Main Menu

### A. Adjustments Menu

- A.1 Standard Adjustments Etc.,etc.
- A.2 Feature Adjustments Etc.,etc.
- A.3 Pricing Adjustments Etc.,etc.
- A.4 H.S.T.D Adjustments Etc.,etc.
- A.5 Printer Adjustments Etc.,etc.

### B. Bookkeeping Menu

- B.1 Main Audits Etc.,etc.
- B.2 Earnings Audits Etc.,etc.
- B.3 Standard Audits Etc.,etc.
- B.4 Feature Audits Etc.,etc.
- B.5 Histograms Etc.,etc.
- B.6 Time-Stamps Etc.,etc.

### P. Printouts Menu

- P.1 Earnings Data
- P.2 Main Audits
- P.3 Standard Audits
- P.4 Feature Audits
- P.5 Score Histograms
- P.6 Game Time Histograms
- P.7 Time-Stamps
- P.8 All Data

### T. Test Menu

- T.1 Switch Edges
- T.2 Switch Levels
- T.3 Single Switches
- T.4 Solenoid Test
- T.5 Flasher Test
- T.6 General Illumination
- T.7 Sound and Music Test
- T.8 Single Lamps
- T.9 All Lamps
- T.10 Lamp & Flasher Test
- T.11 Display Test
- T.12 Rudy Test
- T.13 Trap Door Test

ESCAPE ENTER



Up

Increases sequence; (ex. A.1, A.2, A.3, A.4....)

Down

Decreases sequence; (ex. A.4, A.3, A.2, A.1....)

Use Up or Down to cycle through the selections in menu.

Use Back and Select to move into and out of the selected menu.

**U. Utilities Menu**

**U.1 Clear Audits**

**U.2 Clear Coins**

**U.3 Reset H.S.T.D.**

**U.4 Set Time & Date**

**U.5 Custom Message**

**U.6 Set Game I.D.**

**U.7 Factory Adjustments**

**U.8 Factory resets**

**U.9 Presets**

Etc.,etc.

**U.10 Clear Credits**

**U.11 Auto Burn-in**

# MAIN MENU

**A. Adjustments**

**B. Bookkeeping**

**P. Printouts (optional board required)**

**T. Tests**

**U. Utilities**

The game Adjustments are the first category available from the Main Menu. button to activate the Adjustments Menu. Press the Enter Press the Up or Down button to cycle through the Adjustment Menu selections. Press the Enter button to activate the desired Adjustment Group when that group appears in the displays.

## A. ADJUSTMENTS MENU

**A.1 Standard Adjustments**

**A.2 Feature Adjustments**

**A.3 Pricing Adjustments**

**A.4 H.S.T.D Adjustments**

**A.5 Printer Adjustments (optional board required)**

Once you have entered the adjustment group desired, press the Up or Down button to cycle through the available adjustments in that group. When the desired adjustment appears press the Enter button to activate that adjustment. When an adjustment is activated, the setting value begins to flash. Use the Up or Down button to raise or lower the setting value. When the desired value is displayed press Enter to lock in the value. IF you realize you have made an error, press the Escape button while "Saving Adjustment Value" is displayed. The new value is ignored and the original value is retained.

### A.1 Standard Adjustments

**A.1 01 Balls Per Game**

The operator defines a "game" by specifying the number of balls to be played. The range of this setting is 1 through 10.

**A.1 02 Tilt Warnings**

The operator specifies the number of total actuations of the plumb bob mechanism that can occur before the game is "tilted", The range of this setting is 1 through 10.

**A.1 03 Maximum Extra Balls**

The operator chooses the number of Extra Balls that a player may accumulate. The range of this setting is 1 through 10, or "No Extra Ball" (extra ball disabled).

**A.1 04 Maximum Extra Balls/Ball in Play**

The operator chooses the number of Extra Balls to be awarded per ball in play. The range of this setting is:  
OFF - No maximum number of Extra Ball per ball in play.

1-10 - 1 through 10 Extra Balls per ball in play.

### **A.1 05 Replay System**

The operator chooses the replay system to be used. The choices are:

- Fixed - Replay value is set by the operator and does not change during game play.
- Auto% - Replay starting value is set by the operator and changes every 50 games to comply with the percentage of replays desired.

### **A.1 06 Replay Percent\***

The operator chooses the percentage of replays the players are able to earn when Auto Replay is used. The range of this setting is 5% to 50%.

### **A.1 07 Replay Start\***

The operator chooses the replay starting value when Auto % Replay is used. The range of this setting is 1, 000, 000 to 15, 000, 000.

### **A.1 08 Replay Levels\***

The operator chooses the number of replay levels used by the Auto% Replay mode. The range of this setting is 1 through 4, When the operator chooses two replay levels, the second replay level is automatically adjusted to twice the starting replay level value. When three or four replay levels are chosen, their values are automatically adjusted to three or four times the starting replay level value.

### **A.1 09 Replay Level 1\*\***

The operator chooses the value to be used for the first Fixed Replay. The range of this setting is 00 to 25, 000, 000.

### **A.1 10 Replay Level 2\*\***

The operator chooses the value to be used for the second Fixed Replay. The range of this setting is 00 to 25, 000, 000.

### **A.1 11 Replay Level 3\*\***

The operator chooses the value to be used for the third Fixed Replay. The range of this setting is 00 to 25, 000, 000.

### **A.1 12 Replay Level 4\*\***

The operator chooses the value to be used for the fourth Fixed Replay. The range of this setting is 00 to 25, 000, 000.

### **A.1 13 Replay Boost**

The operator chooses if the replay score can be temporarily boosted by the selected amount EACH time the player reaches or exceeds the replay score. This temporary boost is cancelled when Credits=0, when the player inserts another coin, or when Begin Test is pressed. The choices are:

- ON - Score is boosted between 500, 000 and 5, 000; 000 points.
- OFF - The replay score is not boosted.

\*For Auto % Replay. \*\* For Fixed Replay

#### **A.1 14 Replay Award**

For either Auto% Replay or Fixed Replay the operator can choose the form of the award automatically provided when the player exceeds any replay level. The choices are:

- Credit - Reaching each Replay level awards credit.
- Ticket - Reaching each Replay level awards a ticket.
- Ball - Reaching each Replay level awards an Extra Ball.
- Audit - Reaching each Replay level awards nothing to the player; it does increase the entry value of the Audit Item(s) maintaining a tally of these awards.

#### **A.1 15 Special Award**

The operator can choose the award automatically provided when the player scores a special. The choices are:

- Credit - Scoring a Special awards a Credit.
- Ticket - Scoring a Special awards a Ticket.
- Ball - Scoring a Special awards an Extra Ball.
- Points - Scoring a Special awards 1 Million points.

#### **A.1 16 Match Award**

The operator can choose the award automatically provided when the players wins a match. The choices are:

- Credit - Winning a Match awards a Credit.
- Ticket - Winning a Match awards a Ticket.

#### **A.1 17 Extra Ball Ticket**

The operator can choose whether a Ticket is awarded when the player earns an Extra Ball. The choices are:

- YES - The player is awarded a Ticket in addition to an Extra Ball.
- NO - The player is not awarded a Ticket.

#### **A.1 18 Maximum Ticket/Player**

The operator can choose the amount of Tickets each player can earn. The range of this setting is 00 to 100.

#### **A.1 19 Match Feature**

The operator can choose the desired percentage for the Match Feature occurring at the end of the game. The range of this setting is:

- OFF - Match Feature is not available.
- 1-50% - 1% is 'hard'; 50% is 'extremely easy'. During the Match Feature the game selects a random two-digit number at the end of the game and compares each players score for an identical two digits in the rightmost two positions. A matching of these two digits results in award of a Credit or a Ticket.

#### **A.1 20 Custom Message**

The operator chooses if a message is displayed during the Attract Mode. The choices are:

- YES - A message is displayed
- NO- A message is not displayed.

**A.1 21 Language**

The operator chooses what language the game uses. The choices are, English, French, or German.

**A.1 22 Clock Style**

The operator chooses what style of clock the game uses. The choices are A.M./P.M. or 24 Hours.

**A.1 23 Date Style**

The operator chooses what style of date the game uses. The choices are Month/Date/Year, or Date/Month/Year.

**A.1 24 Show Date and Time**

The operator chooses whether the date and time show in the Attract Mode. The choices are:

- YES - Show the date, time in status report or in the Attract Mode.
- NO - Do Not show date, time in status report or in the Attract Mode.

**A.1 25 Allow Dim Illumination**

The operator chooses whether to allow the game program to dim the General illumination for special effects and during the Attract Mode. The choices are:

- YES - Dim the General Illumination during the Attract Mode.
- NO - Do Not dim the General Illumination.

**A.1 26 Tournament Play**

The operator chooses whether to equalize Multi-ball and Jackpots during multi-player games, (do not carry over to next player). The choices are:

- YES - Keep Multi-ball and Jackpots equal.
- NO - Do Not Keep Multi-ball and Jackpots equal.

**A.1 27 Euro. Ser. Format**

The operator chooses whether to have commas or dots between digits when numbers are displayed. The choices are:

- YES - Dots instead of commas, (example- 1.000.000).
- NO - Commas instead of dots, (example- 1, 000, 000).

**A.1 28 Minimum Volume Control**

The operator chooses whether the volume can be turned Off. The choices are:

- YES - Volume can be turned Off.
- NO - Volume can be turned Down but not Off.

Press the Back button to return to the Adjustments Menu. Press the Up button to advance to the next desired Adjustments Group, (or press the Down button to return to a previous group). Press the Enter button to activate. Use the Up or Down button to cycle through the available adjustments.

**A.2 Feature Adjustments**

**A.2 01 1st Round Start.**



The operator selects the time put on the clock at the start of the game, for the 1st Multi-ball sequence. The range of this setting is 3 o' clock through 10 o' clock.

**A.2 02 Subsequent Start**

The operator selects the time put on the clock for each subsequent Multi-ball sequence. The range of this setting is, 3 o' clock through 10 o' clock.

**A.2 03 Hallway Timer**

The operator determines the amount of time a player has to achieve the "Hidden Hallway" after Multi-ball has ended. The choices are, Long or Short.

**A.2 04 Gangway Timer**

The operator determines the length of time the Gangway Lamps blink after the corresponding flipper lanes are hit. The choices are Long or Short.

**A.2 05 Gangway Start**

The operator chooses the Gangway Lamp that blinks (next one awarded) at the start of a game. The range of this setting is the 75, 000 through 250, 000 Lamp.

**A.2 06 Gangway Memory**

The operator chooses whether the Gangway value is carried over from ball to ball or reset at ball start. Note, once the Extra Ball is lit from the Gangway feature, the Gangway resets to 75, 000 for each subsequent ball. The choices are:

- YES - The Gangway value is carried over from ball to ball.
- NO - The Gangway value is reset at the start of each ball,

**A.2 07 Gangway Extra Ball Memory**

The operator chooses whether the Extra Ball Lamp, when lit from the Gangway feature, is carried over from ball to ball or is reset at ball start. The choices are:

- YES - The Extra Ball Lamp is carried over from ball to ball.
- NO - The Extra Ball Lamp is reset at the start of each ball.

**A.2 08 Mirror Extra Ball Memory**

The operator chooses whether the Extra Ball Lamp, when lit by the Mystery Mirror, is carried over from ball to ball or reset at the start of each ball. The choices are:

- YES - The Extra Ball Lamp is carried over from ball to ball.
- NO - The Extra Ball Lamp is reset at the start of each ball.

**A.2 09 Steps Extra Ball Memory**

The operator chooses whether the Extra Ball Lamp, when lit from the Steps Feature, is carried over from ball to ball or is reset at ball start. The choices are:

- YES - The Extra Ball Lamp is carried over from ball to ball.
- NO - The Extra Ball Lamp is reset at the start of each ball.

**A.2 18 Disable Trap Door**

The operator chooses whether to stop the opening and closing of the Trap Door. The Loop switch provides Trap Door awards when this is set to Yes.

- YES - Stop the Trap Door from opening and closing.
- NO - Do not stop the Trap Door from opening and closing.

## **A.2 19 Disable Steps Gate**

The operator chooses whether the Steps Gate is disabled, and the Steps feature not allowed. Should the gate break, balls diverted to the Steps go down the left drain, and a free ball is granted. By setting this feature to Yes, the feature is bypassed thus eliminating free balls. The choices are:

- YES - Disable the Steps Gate.
- NO - Do not disable the Steps Gate.

Press the Up button to advance to the next desired Adjustment Group, (or press the Down button to return to a previous Adjustment Group). Press the Enter button to activate that group. Press the Up or Down button to cycle through the available adjustments in that group.

## **A.3 Pricing Adjustments**

### **A.3 01 Game Pricing (if set to custom, then 02 to 09 are available)**

The operator chooses the cost for a game from a selection of Standard pricing or by installing Custom pricing.

### **A.3 02 Left Coin Units**

The operator can specify the number of coin units purchased by a coin passing through the left coin chute.

### **A.3 03 Center Coin Units**

The operator can specify the number of coin units purchased by a coin passing through the center coin chute.

### **A.3 04 Right Coin Units**

The operator can specify the number of coin units purchased by a coin passing through the right coin chute.

### **A.3 05 4th Slot Units**

The operator can specify the number of coin units purchased by a coin passing through the fourth coin chute.

### **A.3 06 Units/Credits**

The operator can define the number of coin units required to obtain 1 credit. A coin unit counter in the game program totals the number of coin units purchased through all coin chutes prior to each game. If the total number of these coin units exceeds or matches the Unit per Credit value by a multiple (or more, coin units) of the specified Units per Credit value the Credits display shows the proper number of credits. The coin unit counter retains any remaining coin units, until the start of Ball 2; then the coin unit counter is cleared (its contents are zeroed).

### **A.3 07 Units/Bonus**

The operator can specify that additional credits are to be indicated in the credits display, when a certain number of coin units are accumulated.

### **A.3 08 Bonus Credits**

The operator specifies the number of credits that are awarded when the Units/Bonus level is achieved.

### **A.3 09 Minimum Units**

The operator can specify that No credits are to be posted (indicated in the credit display), until the credits unit counter reaches a particular value, by setting this value to 02 (or more).

**A.3 10 Coin Door Type (if set to custom, then 11 to 15 are available)**

This adjustment is used to pre-set adjustments 11 to 15 based on standard coin doors (U.S.A., German, etc.).

**A.3 11 Collection Text**

The operator chooses what coin system is used to display the Earning Audits.

**A.3 12 Left Slot Value**

The operator can specify the monetary value of the left coin chute.

**A.3 13 Center Slot Value**

The operator can specify the monetary value of the center coin chute.

**A.3 14 Right Slot Value**

The operator can specify the monetary value of the right coin chute.

**A.3 15 4th Slot Value**

The operator can specify the monetary value of the 4th coin chute.

**A.3 16 Maximum Credits**

The operator can specify the maximum number of credits the game can accumulate, either through game play awards or coin purchases. The range of this setting is 5 through 10. Reaching the specified setting prevents the award of any credits.

**A.3 17 Free Play**

The operator can specify whether a player can operate the game without a coin (free play) or with a coin. The choices are:

- YES - A coin is necessary for game play.
- NO - Game play is free; no coin required.

**A.3 18 Hide Coin Audits**

The operator chooses whether or not to show the coin audits. The choices are:

- YES - The coin audits are not displayed.
- NO - The coin audits are displayed.
- HIDE NAMES - The coin audit value is shown but not the audit name.

**A.3 19 1 Coin Buy-in**

If the game pricing is set to 1 for 50¢/2 for \$1.00 the operator chooses whether the player is allowed to 'buy-in' a subsequent game for 1 coin. The number of games that may be purchased at this cost is determined by the number of players in the previous game; that is, if the previous game had three players, 3 Credits can be purchased at the rate of 1 coin per credit. The choices are:

- YES - The player has 10 seconds to buy-in at 1 coin per game.
- NO - The buy-in feature is disabled.

FUNHOUSE Pricing Table

Country	Coin Chute			Games/Coin	Display	Pricing Adjustments A.3								
	Left	Center	Right			02	03	04	05	06	07	08	09	
USA and Canada	25c	-	25c	1/25c, 4/\$1 <sup>2</sup>	U.S.A. 1	01	04	01	00	01	00	01	00	
				1/50c, 2/75c, 3/\$1 <sup>1,2</sup>	U.S.A. 2	03	12	03	00	04	00	01	00	
				1/50c, 2/\$1 <sup>2</sup>	U.S.A. 3	01	04	01	00	02	00	01	01	
				1/25c, 3/\$1 <sup>2</sup>	U.S.A. 4	01	00	01	00	02	04	01	01	
				1/25c, 3/50c, 6/\$1	CUSTOM	01	04	01	00	01	02	01	00	
				1/25c, 5/\$1	CUSTOM	01	00	01	00	01	04	01	00	
Austria	5 Sch	10 Sch	10 Sch	1/2x5 Sch, 3/2x10 Sch <sup>2</sup>	AUSTRIA	01	02	02	00	02	04	01	01	
	5 Sch	-	10 Sch	2/5 Sch, 5/10 Schilling	CUSTOM	02	00	05	00	01	00	01	00	
	1 Sch	5 Sch	10 Sch	2/5x1 Sch, 2/5 Sch, 5/10 Sch	CUSTOM	02	10	25	00	05	00	01	00	
Australia	20c	-	\$1	1/3x20c, 2/\$1 <sup>2</sup>	AUSTRAL	02	00	10	00	05	00	01	00	
United Kingdom	10 P	50 P	1c	1/2x10 P, 3/50 P, 7/1c <sup>2</sup>	U.K	03	15	30	00	05	30	01	00	
	10 P	50 P	20P	1/10 P, 5/50 P, 2/20 Pence	CUSTOM	01	05	02	00	01	00	01	00	
Switzerland	1 Fr	2 Fr	5 Fr	1/1 Fr, 3/2 Fr, 7/5 Franc <sup>2</sup>	SWISS	01	03	07	00	01	00	01	00	
	1 Fr	-	2 Fr	1/1 Fr, 3/2 Fr	CUSTOM	03	00	06	00	02	00	01	00	
Belgium	20 Fr	20 Fr	20 Fr	3/20 Franc <sup>2</sup>	BELGIUM	03	03	03	00	01	00	01	00	
	5 Fr	-	20 Fr	1/2x5 F, 2/20 Franc	CUSTOM	01	00	04	00	02	00	01	01	
	5 Fr	20Fr	20 Fr	1/2x5 F, 2/20 F, 2/20 F	CUSTOM	01	04	04	00	02	00	01	01	
	5 Fr	5Fr	20 Fr	1/2x5 F, 1/2x5 F, 2/20 F	CUSTOM	01	01	04	00	02	00	01	01	
West German	1 DM	2 DM	5 DM	1/1 DM, 2/2 DM, 7/5 DMark <sup>2,3</sup>	GERMAN 1	06	12	30	00	05	30	01	00	
				1/1 DM, 2/2 DM, 6/5 DM <sup>1,2</sup>	GERMAN 2	06	12	30	00	05	00	01	00	
				1/1 DM, 3/2 DM, 9/5 DM	CUSTOM	09	18	45	00	05	00	01	00	
				1/2x1 DM, 1/2 DM, 3/5 DM	CUSTOM	03	06	15	00	05	00	01	00	
				2/1 DM, 5/2 DM, 14/5 DM	CUSTOM	13	26	65	00	05	65	01	00	
Netherlands	1 Hfl	2.5 Hfl	2.5 Hfl	1/1 Hfl, 3/2.5 Holland Florin <sup>2</sup>	NETHERL.	06	15	15	00	05	00	01	00	
	25c	-	1G	1/25c, 5/1 Guilder	CUSTOM	01	00	05	00	01	00	01	00	
	1G	-	1G	1/1 Guilder <sup>2</sup>	HOLLAND	01	00	01	00	01	00	01	00	
Sweden	5 Kr	5 Kr	5 Kr	1/5 Krona <sup>2</sup>	SWEDEN	01	01	01	00	01	00	01	00	
	1 Kr	-	1 Kr	1/2x1 Krona	CUSTOM	01	04	01	00	02	00	01	01	
France	1 Fr	5 Fr	10 Fr	1/3x1 F, 2/5 F, 5/10 Franc <sup>1,2</sup>	FRANCE	02	10	20	20	05	20	01	00	
	1 Fr	5 Fr	10 Fr	1/2x1 F, 3/5 F, 7/10 Franc	CUSTOM	03	15	30	30	05	30	01	00	
	5 Fr	10 Fr	10 Fr	1/5 F, 3/10 F, 7/2x10 Franc	CUSTOM	03	15	30	30	10	60	01	15	
	5 Fr	10 Fr	10 Fr	2/5 F, 4/10 F, 9/2x10 Franc	CUSTOM	02	10	20	20	05	40	01	10	
	5 Fr	10 Fr	10 Fr	2/5 F, 5/10 F, 11/2x10 Franc	CUSTOM	01	05	10	10	02	20	01	05	
Italy	500L	500L	500L	1/500 Lire <sup>2</sup>	ITALY	01	01	01	00	01	00	01	00	
Spain	25 P	-	100 P	1/25 P, 5/100 Peseta <sup>2</sup>	SPAIN	05	00	20	00	04	00	01	00	
	25 P	-	100 P	1/25 P, 4/100 Peseta	CUSTOM	01	00	04	00	01	00	01	00	
	25 P	-	100 P	1/2x25 P, 2/100 Peseta	CUSTOM	01	00	04	00	02	00	01	00	
	25 P	-	100 P	1/2x25 P, 3/100 Peseta	CUSTOM	03	00	12	00	04	00	01	06	
Japan	100 Y	-	100 Y	1/100 Yen <sup>2</sup>	JAPAN	01	00	01	00	01	00	01	00	
Antilles, Nthind	25c	-	1G	1/25c, 4/1 Guilder <sup>2</sup>	ANTILLES	01	01	04	00	01	00	01	00	
Chile	Token	-	Token	1/1 Token <sup>2</sup>	CHILE	01	04	01	00	01	00	01	00	
Denmark	1 Kr	5 Kr	10 Kr	1/2x1 Kr, 3/5 Kr, 7/10 Krone <sup>2</sup>	DENMARK	03	15	30	00	05	30	01	00	
Finland	1 Mka	-	5 Mka	1/2x1 Mka, 3/5 Markka <sup>2</sup>	FINLAND	03	00	15	00	-05	00	01	00	
New Zealand	20c	-	20c	1/3x20c <sup>2</sup>	N. Z.	01	00	01	00	03	00	01	01	
Norway 1	1 Kr	-	1 Kr	1/2x1 Kr, 3/5x1 Krone <sup>2</sup>	NORWAY 1	01	00	01	00	02	05	01	00	
	15Kr	-	10 Kr	1/5 Kr, 2/10 Kr, 5/20 Krone	NORWAY 2	01	00	02	00	01	05	01	00	
Argentina	10c	10c	10c	1/1 Token <sup>2</sup>	ARG.	01	01	01	00	01	00	01	00	
Greece	10 D	20 D	50 D	1/2x10D, 1/20D, 3/50 Drachma <sup>2</sup>	GREECE	03	06	15	00	05	00	01	00	
Hungary	10 F	-	20 F	1/1x20F, 1/2x10F, 3/2x20 Forint	HUNGARY	01	00	02	00	02	04	01	00	

Notes: 1. Factory Default. 2. Standard Setting - Change by pressing Enter button. 3. Other functions are also affected.

Press the Escape button to return to the Adjustment Menu. Press the Up button to advance to the next desired Adjustment Group, (or press the Down button to return to a previous Adjustment Group). Press the Enter button to activate that group. Press the Up or Down button to cycle through the available adjustments in that group.

#### **A.4 H.S.T.D. Adjustments**

##### **A.4 01 Highest Scores**

The operator specifies whether the game is to maintain a record of the four highest scores achieved to date. The choices are:

OFF - No high scores are recorded, or displayed.

ON - The four highest scores are stored in memory and displayed in the Attract Mode.

##### **A.4 02 H.S.T.D. Award**

The operator chooses the award given for achieving the High Score To Date, or the Champion H.S.T.D.. The choices are a Credit or a Ticket.

##### **A.4 03 Champion H.S.T.D.**

The operator chooses whether the "Highest" High Score is displayed in the Attract Mode. This score is not cleared when "High Score Reset Every" occurs. The choices are:

ON - The "Highest" High Score is retained in memory and displayed.

OFF - The "Highest" High Score is not retained.

##### **A.4 04 Champion Credits**

The operator chooses the number of credits or tickets awarded for a Grand Champion Score. The range of this setting is 00 through 10.

##### **A.4 05 H.S.T.D. 1 Credits**

The operator selects the number of credits or tickets to be awarded whenever a player exceeds the previous Highest Score. The range of this setting is 00 to 10.

##### **A.4 06 H.LS.T.D. 2 Credits**

The operator selects the number of credits or tickets to be awarded whenever a player exceeds the second highest score. The range of this setting is 00 to 10.

##### **A.4 07 H.S.T.D. 3 Credits**

The operator selects the number of credits or tickets to be awarded whenever a player exceeds the third highest score. The range of this setting is 00 to 10.

##### **A.4 08 H.S.T.D. 4 Credits**

The operator selects the number of credits or tickets to be awarded whenever a player exceeds the fourth highest score. The range of this setting is 00 to 10.

##### **A.4 09 High Score Reset Every**

The operator can specify that the game will provide an automatic reset of the displayed "Highest scores", and the number of games to be played before the reset occurs. The values provided upon reset are those selected by the operator in the Back-up High Scores. The range of this setting is OFF (disabled) and 250 to 20,000.

##### **A.4 10 Backup Champion**

The operator sets the Back-up Grand Champion Score. The range of this setting is 00 through 99,900,000.

##### **A.4 11 Backup H.S.T.D. 1**

The operator can set the Back-up High Score value. The game automatically restores this value when the High Score Reset Every value is reached. The range of this setting is 00 to 99,900,000.

**A.4 12 Backup H.S.T.D. 2**

The operator can set the second Back-up High Score value. The game automatically restores this value when the High Score Reset Every value is reached. The range of this setting is 00 to 99, 900, 000.

**A.4 13 Backup H.S.T.D.3**

The operator can set the third Back-up High Score value. The game automatically restores this value when the High Score Reset Every value is reached. The range of this setting is 00 to 99, 900, 000.

**A.4 14 Backup H.S.T.D. 4**

The operator can set the fourth Back-up High Score value. The game automatically restores this value when the High Score Reset Every value is reached. The range of this setting is 00 to 99, 900, 000.

Press the Escape button to return to the Adjustments Menu. Then, press the Escape button again to return to the Main Menu. Once in the Main Menu press the Up button to advance to the next menu selection, the Bookkeeping Menu. Press the Enter button to activate the Bookkeeping Menu, then use the Up or Down button to cycle through the Bookkeeping Menu selections. Press the Enter button to activate the desired Bookkeeping Group when that group appears in the displays.

**B. BOOKKEEPING MENU**

**B.1 Main Audits**

**B.2 Earning Audits**

**B.3 Standard Audits**

**B.4 Feature Audits**

**B.5 Histograms**

**B.6 Time-Stamps**

Once you have entered the desired bookkeeping group, press the Up or Down button to cycle through the available audits in that group. Audits cannot be set, they can only be cleared by using U1 and U2 from the Utilities Menu.

**One-Button Audit System**

Information from the Bookkeeping Menu is obtainable directly from the Attract Mode. Continually pressing the Enter button, while in the Attract Mode, will cycle through all of the game audits.

**B.1 Main Audits** These audits (which also appear in other groups) are the most important , and are grouped here for easier access.

- B.1 01 Total Earnings
- B.1 02 Recent Earnings
- B.1 03 Free Play Percent
- B.1 04 Average Ball Time
- B.1 05 Average Game Time
- B.1 06 Games Completed
- B.1 07 Replay Awards
- B.1 08 Percent Replays
- B.1 09 Extra Balls
- B.1 10 Percent Extra Ball

Press the Escape button to return to the Bookkeeping Menu. Press the Up button to advance to the next desired Bookkeeping Group, (or press the Down button to return to a previous group). Press the Enter button to activate that group. Press the Up or Down button to cycle through the available audits in that group.

## B.2 Earning Audits

B.2	01	Recent Earnings	
B.2	02	Recent Left Slot	
B.2	03	Recent Center Slot	
B.2	04	Recent Right Slot	
B.2	05	Recent 4th Slot	
B.2	06	Recent Paid Credits	
B.2	07	Recent Service Credits	
B.2	08	Total Earnings*	
B.2	09	Total Left Slot*	
B.2	10	Total Center Slot*	
B.2	11	Total Right Slot*	
B.2	12	Total 4th Slot*	
B.2	13	Total Paid Credits*	00
B.2	14	Total Service Credits*	00

\* Note: These Audits are NOT Resettable. They are a record of the earnings of the game since the "CLOCK 1ST SET" Time - Stamp.

Press the Escape button to return to the Bookkeeping Menu. Press the Up button to advance to the next desired Bookkeeping Group, (or the Down button to return to a previous Bookkeeping Group). Press the Enter button to activate that group. Press the Up or Down button to cycle through the available audits in that group.

## B.3 Standard Audits

B.3	01	Games Started	00
B.3	02	Games Completed*	00
B.3	03	Total Free Play	00
B.3	04	Free Play Percent	00
B.3	05	Replay Awards	00
B.3	06	Percent Replays	00
B.3	07	Special Awards	00
B.3	08	Percent Special	00
B.3	09	Match Awards	00
B.3	10	Percent Match	00
B.3	11	H.S.T.D. Credits	00
B.3	12	Percent H.S.T.D	00
B.3	13	Extra Ball	00
B.3	14	Percent Extra Ball	00
B.3	15	Tickets Awarded	00
B.3	16	Percent Tickets	00
B.3	17	Left Drains	00
B.3	18	Right Drains	00
B.3	19	Average Ball Time	00
B.3	20	Average Game Time	00
B.3	21	Minutes of Play	00
B.3	22	Minutes On	00
B.3	23	Balls Played	00
B.3	24	Tilts	00
B.3	25	Replay 1 Awards	00
B.3	26	Replay 2 Awards	00
B.3	27	Replay 3 Awards	00
B.3	28	Replay 4 Awards	00
B.3	29	1 Player Games	00
B.3	30	2 Player Games	00
B.3	31	3 Player Games	00

\*Games Completed is a new feature in WPC. A game is considered completed when the final ball begins. Audit information from an incomplete game is ignored. Therefore operation for test and service do not affect the Audits.

B.3	32	4 Player Games	00
B.3	33	H.S.T.D. Reset Count	00
B.3	34	Burn-in Cycles	00

Press the Escape button to return to the Bookkeeping Menu. Press the Up button to advance to the next desired Bookkeeping Group, (or press the Down button to return to a previous group). Press the Enter button to activate that group. Press the Up or Down button to cycle through the available audits in that group.

**B.4 Feature Audits**

B.4	01	11:30 Games
B.4	02	11:45 Games
B.4	03	Midnight Games
B.4	04	Multi-ball
B.4	05	Million Plus
B.4	06	Hidden Hallway
B.4	07	Quick Multi-ball
B.4	08	Million Shots
B.4	09	Rudy Jaw Hits
B.4	10	Ramp Shots
B.4	11	Skill Shots
B.4	12	Mystery Mirror
B.4	13	Mirror Completed
B.4	14	Mirror E.B. Lit
B.4	15	Mirror Superdog
B.4	16	Gangway
B.4	17	Gangway E.B. Lit
B.4	18	Frenzy Lit
B.4	19	Frenzy Collected
B.4	20	S-T-E-P Completed
B.4	21	Steps Ballshooter
B.4	22	Superdog Lane
B.4	23	Extra Ball Lit by Steps
B.4	24	Superdog Hits
B.4	25	Jet Bumper Lane
B.4	26	Trap Door Open
B.4	27	Trap Door Made
B.4	28	Manhole Hits
B.4	29	3-way Combo
B.4	30	4-way Combo
B.4	31	Hallway Shots
B.4	32	Special Lit

Press the Escape button to return to the Bookkeeping Menu. Press the Up button to the advance to the next desired Bookkeeping Group, (or press the Down button to return to a previous Bookkeeping Group). Press the Enter button to activate that group. Press the Up or Down button to cycle through the available audits in that group.



## **B. 5 Histograms**

- B.5 01 0.0-0.5 Million Scores
- B.5 02 0.5-1.0 Million Scores
- B.5 03 1.0-1.5 Million Scores
- B.5 04 1.5-2.0 Million Scores
- B.5 05 2.0-3.0 Million Scores
- B.5 06 3.0-4.0 Million Scores
- B.5 07 4.0-5.0 Million Scores
- B.5 08 5.0-6.0 Million Scores
- B.5 09 6.0-8.0 Million Scores
- B.5 10 8.0-10 Million Scores
- B.5 11 10-15 Million Scores
- B.5 12 15-20 Million Scores
- B.5 13 Over 20 Million
- B.5 14 Game Time 0.0-1.0 Mins
- B.5 15 Game Time 1.0-1.5 Mins
- B.5 16 Game Time 1.5-2.0 Mins
- B.5 17 Game Time 2.0-2.5 Mins
- B.5 18 Game Time 2.5-3.0 Mins
- B.5 19 Game Time 3.0-3.5 Mins
- B.5 20 Game Time 3.5-4.0 Mins
- B.5 21 Game Time 4-5 Mins
- B.5 22 Game Time 5-6 Mins
- B.5 23 Game Time 6-8 Mins
- B.5 24 Game Time 8-10 Mins
- B.5 25 Game Time 10-15 Mins
- B.5 26 Game Time Over 15 Mins

Press the Escape button to return to the Bookkeeping Menu. Press the Up button to advance to the next desired Bookkeeping Group, (or press the Down button to return to a previous Bookkeeping Group). Press the Enter button to activate that group. Press the Up or Down button to cycle through the available audits in that group.

## **B.6 Time-Stamps**

The Time-Stamps Menu allows you to view dates and times that are important to game software.

- B.6 01 Current Time
- B.6 02 Clock 1st Set
- B.6 03 Clock Last Set
- B.6 04 Audits Cleared
- B.6 05 Coins Cleared
- B.6 06 Factory Setting
- B.6 07 Last Game Start
- B.6 08 Last Replay
- B.6 09 Last H.S.T.D. Reset
- B.6 10 Champion Reset
- B.6 11 Last Printout

Press the Escape button to return to the Bookkeeping Menu. Then, press the Escape button again to return to the Main Menu. Once in the Main Menu press the Up button to advance to the next menu selection, the Printouts Menu.

**P. PRINTOUTS MENU  
(NOT SUPPORTED IN OUR SYSTEM)**

## **T. TEST MENU**

- T.1 Switch Edges**
- T.2 Switch Levels**
- T.3 Single Switch**
- T.4 Solenoid Test**
- T.5 Flasher Test**
- T.6 General Illumination**
- T.7 Sound & Music Test**
- T.8 Single Lamps**
- T.9 All Lamps**
- T.10 Lamp & Flasher Tests**
- T.11 Display Test**
- T.12 Rudy Test**
- T.13 Trap Door Test**

### **T.1 Switch Edges**

For all switches, the number on the left indicates the column, the number on the right indicates the row. Example-Switch 23 means 2nd column, 3rd row.

To test the Left and Right Flippers, press the Left or Right Flipper buttons during switch test. The flipper name and switch number should show in the displays. Any other results indicate the system has detected a problem with the flipper circuit.

To activate the Switch Edges Test, from the Test Menu, press the Enter button. The name and number of each switch that is pressed is shown in the displays. If any other switch, or no switch at all is indicated, the system has detected a problem with the switch circuit.

Press Escape to return to the Test Menu. Press the Up button to display the next test, the Switch Levels Test.

### **T.2 Switch Levels**

Once the test name is shown under the Test Menu, press the Enter button. The name and number of each switch that is activated is shown in the displays. This test automatically cycles through all switches that are detected closed.

Press the Escape button to return to the Test Menu. Press the Up button to display the next test, the Single Switch Test.

### **T.3 Single Switches**

Once the test name is shown under the Test Menu, press the Enter button. The Single Switch Test isolates a particular switch by blocking signals from all other switches. Use the Up or Down buttons to select the switch to be tested. Either Open or Closed appears in the displays to indicate the state of the switch at the present time. When the switch is activated, an "A" appears during the active state. Press the Start button to obtain wire color, connector, and fuse information.

Press the Escape button to return to the Test Menu. Press the Up button to display the next test, the Solenoid Test.

# FUNHOUSE Switch Matrix

Left Coin Chute (D1)		Right Flipper 11	Slam Tilt 21	S-T-E-P "P" (Lower Right) 31	Left Slingshot (Kicker) 41	Dummy Jaw (Opto) 51	Rt Inside Flipper Return Lane 61	Rt Outside Flipper Return Lane 71
Center Coin Chute (D2)		Left Flipper 12	Front Door 22	Top Superdog Standup Target 32	Left Flipper Return Lane 42	Right Outlane 52	Right Ball-shooter 62	Left Trough 72
Right Coin Chute (D3)		Start Button 13	Not Used 23	Upper Left Gangway Rollunder 33	Left Outlane 43	Right Slingshot (Kicker) 53	Right Trough 63	Outhole 73
4th Coin Chute (D4)		Plumb Bob Tilt 14	Test Position, Always Closed 24	Bottom Superdog Standup Target 34	Wind Tunnel Hole 44	S-T-E-P "T" (Upper Left) 54	S-T-E-P "E" (Upper Center) 64	Center Trough 74
Normal Function Service Credits	Test Function Escape (D5)	Steps Lights Frenzy 15	Lock Mech Right 25	Steps Track Lower 35	Trap Door 45	Steps Superdog (opto) 55	Dummy Eject Hole 65	Upper Right Loop Switch 75
Normal Function Volume Down	Test Function Down (D6)	Upper Ramp Switch 16	Steps Lights Extra Ball 26	Steps 500,000 36	Rudys Hideout Kickbig 46	Ramp Entrance 56	Upper Right Gangway Lane 66	Trap Door Closed 76
Normal Function Volume Up	Test Function Up (D7)	S-T-E-P "P" (Lower Left) 17	Lock Mech Center 27	Center Superdog Standup Target 37	Left Ball-shooter 47	Jet Bumper Lane 57	Lower Right Drop Hole 67	Upper Right Jet Bumper 77
Normal Function Begin Test	Test Function Enter (D8)	Upper Left Jet Bumper 18	Lock Mech Left 28	Steps Track Upper 38	Ramp Exit Track 48	Tunnel Kickout 58	Lower Jet Bumper 68	 78

## T.4 Solenoid Test

Once the test name is shown under the Test Menu, press the Enter button. The Solenoid Test has three modes, Repeat, Stop, and Running. Only one solenoid should turn on at a time. The system has detected a problem if, more than one solenoid turns on, a solenoid comes on and stays on, or no solenoid turn on during the Repeat or Running Tests. Press the Start button to see the wire color, driver number, connector and, fuse information of any coil, when that coil is displayed.

**Repeat** - This test allows you to stop and pulse a single coil or flashlamp. Once you have entered the Solenoid Test, coil 1 shows in the displays and the corresponding solenoid activates. Press the Up or Down button to cycle through the solenoids, one at a time, manually. The same solenoid pulses until you press the Up or Down button to move to the next one. Either press the Escape button to return to the Test Menu, or press the Enter button to move to the next test mode.

**Stopped** - This test allows you to stop the Solenoid Test at any point. Press Enter during the Repeat Test. The Solenoid Test stops. There should not be any solenoids activated while the test is stopped. Either press the Escape button to return to the Test Menu, or the Enter button to move to the next test mode.

**Running** - This test allows you to cycle through the solenoids automatically. Press the Enter button during the Stopped Test mode. The displays show you the name and number of the solenoid currently being pulsed.

Either press the Enter button to return to the Repeat Test, or press the Escape button to return to the Test Menu. Once in the Test Menu press, the Up button to display the next test, the Flasher Test.

## T.5 Flasher Test

Once the test name is shown under the Test Menu, press the Enter button. This test allows you to test the atime. If, flashlamp part of the solenoid circuit exclusively. This test, like the Solenoid Test, has three test modes Repeat, Stop, and Running. During this test, only one flashlamp circuit should turn on at more than one flashlamp circuit turns on, or stays on, or no flashlamp circuit turns on at all the system has detected a problem. Press the Start button to see the wire color, driver number, connector, and fuse information of any flashlamp circuit when that circuit appears in the displays.

**Repeat** - Press the Enter button to activate this test. The name and number of the first flashlamp circuit shows in the displays and the corresponding bulb(s) flashes. Press the Up or Down button to cycle through all of the flashlamps circuits one at a time, manually. The same flashlamp circuit pulses until you press the Up or Down button to move to the next one. Either, press the Escape button to return to the Test Menu, or press the Enter button to advance to the next test mode.

**Stopped** - This test allow you to stop the Flasher Test at any time without losing your place. Press the Enter button during the Repeat Test. The Flasher Test stops. There should not be any flashlamp circuit turned on during this test mode. Either press the Escape button to return to the Test Menu, or press the Enter button to advance to the next test mode.

**Running** - This test allows you to cycle through the flashlamps automatically. Press the Enter button during the Stopped Test mode. The displays show you the name and number of the flashlamp currently being pulsed, and the corresponding bulb(s) flashes.

Either press the Enter button to return to the Repeat Test or, press the Escape button to return to the Test Menu. Once in the Test Menu, press the Up button to display the next test, the General Illumination Test.

**FUNHOUSE** Solenoid Table

<b>Sol. No.</b>	<b>Function</b>	<b>Solenoyd Type</b>	<b>Part number</b>
1	OUTHOLE	HIGH POWER	AE-26-1200
2	RAMP DIVERTER	HIGH POWER	AE-26-1200
3	RUDY'S HIDEOUT	HIGH POWER	AE-26-1500
4	TUNNEL KICKOUT	HIGH POWER	AE-26-1200
5	TRAP DOOR OPEN	HIGH POWER	AE-26-1500
6	TRAP DOOR CLOSED	HIGH POWER	SZ-34-3500
7	KNOCKER	HIGH POWER	AE-23-800
8	MULTI-BALL RELEASE	HIGH POWER	A-14189
9	UPPER LEFT JET BUMPER	LOW POWER	AE-26-1200
10	UPPER RIGHT JET BUMPER	LOW POWER	AE-26-1200
11	LOWER JET BUMPER	LOW POWER	AE-26-1200
12	LEFT SLINGSHOT	LOW POWER	AE-26-1500
13	RIGHT SLINGSHOT	LOW POWER	AE-26-1500
14	STEPS GATE	LOW POWER	SM1-26-600
15	BALL RELEASE	LOW POWER	AE-26-1200
16	DUMMY EJECT HOLE	LOW POWER	AE-26-1500
25	EYES RIGHT	SPECIAL COIL	SM-30-1100
26	EYELIDS OPEN	SPECIAL COIL	SM-30-900
27	EYELIDS CLOSED	SPECIAL COIL	SM-30-1100
28	EYES LEFT	SPECIAL COIL	SM-30-1100
	LOWER RIGHT FLIPPER		FL-11629 50V
	LOWER LEFT FLIPPER		FL-11629 50V
	UPPER LEFT FLIPPER		FL-11722

## T.6 General Illumination

Once the test name is shown under the Test Menu, press the Enter button. This test allows you to check all of the General Illumination circuits. There are two modes of operation, Stop and Run. To obtain wire color, driver number, connector, and fuse information, press the Start button when the desired General Illumination circuit appears in the displays.

**Stop** - Press the Up or Down buttons to cycle through the General Illumination Test manually. All illumination is tested first, followed by an individual circuit test. The circuit name and number shows in the displays while the corresponding lamps light. If any other results occur the system has detected an error.

**Run** - Press the Enter button any time during manual testing and the General Illumination Test cycles through automatically. For each circuit shown in the displays the corresponding bulb should light. If any other results occurs the system has detected a problem.

Either press the Enter button to return to Stop Test, or the Escape button to return to the Test Menu. Once in the Test Menu press the Up button to advance to the next test, the Sound and Music Test.

## T.7 Sound and Music Test

Once the test name is shown under the Test Menu, press the Enter button. The Sound and Music Test allows you to check the audio circuits. This test has three modes for testing the sound and music circuits, Running, Repeat and Stop.

**Running** - Press the Enter button when Sound and Music Test is displayed. This test steps through a sequence of sounds and music. Pressing the Up or Down button during this portion of the Sound and Music test allows you to advance to a particular sound or tune without having to wait for the program to play all the sounds available in the test. For each name and number that appears in the displays a sound or tune should be heard. Any other results indicates the system has detected a problem.

**Repeat** - Pressing the Enter button at any time during the Running portion of the Sound and Music Test causes the program to stop and repeat a particular sound or tune. The same sound should repeat continuously until the Up or Down button is pressed. Any other results indicates the system has detected a problem.

**Stop** - Press the Enter button at any time during the Repeat test to stop this test altogether. Nothing should be heard. Any other results indicates the system has detected a problem.

Use the Enter button to return to the Run test, or the Escape button to return to the Test Menu. Once in the Test Menu press the Up button to display the next test, the Single Lamp Test.

## T.8 Single Lamp Test

For all lamps, the number on the left indicates the column, the number on the right indicates the row. Example- Lamp 23 means 2nd column, 3rd row.

Once the test name is shown under the Test Menu, press the Enter button. This test allows you to test each lamp circuit individually. Press the Up or Down button to cycle through this test. For each name and number that is shown in the displays the corresponding lamp should light. Any other results indicates the system has detected a problem. Press the Start button to obtain wire color, connector, and fuse information when the desired lamp is lit.

Press the Escape button to return to the Test Menu. Press the Up button to display the next test, the All Lamp Test.

### **T.9 All Lamps Test**

Once the test name is shown under the Test Menu, press the Enter button. This test causes all the controlled lamps to flash at the same time. Every controlled lamp should flash. Any other results indicates the system has detected a problem.

Press the Escape button to return to the Test Menu. Press the Up button to display the next test, the Lamp and Flasher Test.

### **T.10 Lamp and Flasher Test**

Once the test name is shown under the Test Menu, press the Enter button. This test causes all the flashlamps and the controlled lamps to flash at the same time. The controlled lamps blink, while the flashlamps cycle from highest to lowest. Any other results indicates the system has detected a problem.

Press the Escape button to return to the Test Menu. Press the Up button to display the next test, the Display Test.

## FUNHOUSE Lamp Matrix

(1) Gangway 75,000 (Left)	(6) Clock 45 Minutes	(12) Clock 40 Minutes	(20) Clock 9 o'clock	(31) Lower Left Jet Bumper	(41) Left & Inside Rt Flipper Lanes (x 2)	(49) Magic Mirror Lights Extra Ball	(57) Million Plus
11	21	31	41	51	61	71	81
(2) Gangway 100,000	(10) Clock 8 o'clock	(18) Clock 35 Minutes	(26) Clock 7 o'clock	(34) Upper Left Jet Bumper	(42) S-T-E-P "S"	(50) Upper Right Jet Bumper	(58) Special Outlanes (x 2)
12	22	32	42	52	62	72	82
(3) Gangway 150,000	(11) Clock 6 o'clock	(19) Clock 30 Minutes	(27) Clock 5 o'clock	(35) Superdog Lamp (x 2)	(43) Trap Door Bonus	(51) S-T-E-P "P"	(59) Trap Door Frenzy
13	23	33	43	53	63	73	83
(4) Gangway 200,000	(12) Clock 25 Minutes	(20) Clock 20 Minutes	(28) Clock 4 o'clock	(36) Steps Lights Frenzy	(44) Ramp Scores 250,000	(52) Magic Mirror Lights Million	(60) Ramp "Steps" Lamp
14	24	34	44	54	64	74	84
(5) Gangway 250,000	(13) Clock 15 Minutes	(21) Clock 3 o'clock	(29) Clock 2 o'clock	(37) Steps Lights Extra Ball	(45) S-T-E-P "T"	(53) Magic Mirror Lights Jet Bumpers	(61) Magic Mirror Arrow
15	25	35	45	55	65	75	85
(6) Gangway Lights Extra Hall	(14) Clock 10 Minutes	(22) Clock 1 o'clock	(30) Clock 5 Minutes	(38) Steps 500,000	(46) Upper Left Gangway Lane	(54) Magic Mirror Lights Superdog	(62) S-T-E-P "B"
16	26	36	46	56	66	76	86
(7) Shoot Again	(15) Clock 12 Minutes	(23) Clock 11 o'clock	(31) Clock 55 Minutes	(39) Ramp Overhead Lamp	(47) Extra Ball Lamp	(55) Magic Mirror Opens Gate	(63) Million
17	27	37	47	57	67	77	87
(8) Steps Open (Gate)	(16) Clock 0 Minutes	(24) Clock 30 Minutes	(32) Clock 10 o'clock	(40) Right Gangway Overhead Lamp	(48) Lock	(56) Magic Mirror Lights Quick Multi-ball	(64) Start Button (Cabinet)
18	28	38	48	58	68	78	88

### T.11 Display Test

Once the test name is shown under the Test Menu, press the Enter button. This test allows you to cycle through all of the display circuits. Each segment and digit should light in its turn. a segment or digit never lights, or stays lit all the time, the system has detected a problem. There are two modes for testing the displays, Run and Stop.

**Run** - Press the Enter button when the Display Test is shown. The test cycles through several phases automatically. Each phase is designed to test either an entire digit or a specific segment.

**Stop** - Press the Enter button at any time during the Run portion of the Display Test and the test stops. Once the test stops use the Up or Down buttons to cycle through the test manually. Press the Enter button again to resume the running test automatically.

Press the Escape button to return to the Test Menu. Press the Up button to advance to the next test, the Rudy Test.



## T.12 Rudy Test

Once the test name is shown under the Test Menu, press the Enter button. This test has three modes of operation and allows you to test all of the solenoids that operate Rudy. Each solenoid should operate in its turn. If more than one turns On at a time, or stays On, or if nothing turns On during the Run or Repeat test the system has detected a problem. Press the Up or Down button to select the solenoid to be tested.

**Repeat -** This test allows you to pulse a single solenoid. Press the Up or Down button to cycle through the solenoids one at a time. The same solenoid pulses until you press the Up or Down button to move to the next one. Either press the Escape button to return to the Test Menu, or press the Enter button to move to the next test mode.

**Stop -** Press the Enter button during the Repeat test and the Rudy Test stops. There should not be any solenoids activated at this point. Either press the Escape button to return to the Test Menu, or press the Enter button to move to the next test mode.

**Run -** This test allow you to automatically cycle through the solenoids that operate Rudy. Press the Enter button during the Stop test mode. The displays show you the name of the solenoid being activated.

The last item in the Rudy Test is the Run Mouth Test. This test opens and closes the mouth. Press the Enter button to activate.

Press the Escape button to return to the Test Menu. Press the Up button to advance to the next test, the Trap Door Test.

## T.13 Trap Door Test

Once the test name is shown under the Test Menu, press the Enter button. This test has three modes of operation. The last character of the top display shows an 'X' when the door is closed.

**Repeat -** The repeat test pulses a single coil. either the up or down coil, until the Up or Down button is pressed to move to the next coil.

**Stop -** Press the Enter button during the Repeat test and the Trap Door stops activating.

**Run -** Press the Enter button during the Stop test and the Trap Door cycles Up and Down automatically.

Either press the Enter button to return to the Repeat test mode, or press the Escape button to return to the Test Menu. Then, press the Escape button again to return to the Main Menu. Once in the Main Menu press the Up button to advance to the next menu selection, the Utilities Menu.

Press the Enter button to activate the Utilities Menu, then use the Up or Down button to cycle through the Utilities Menu selections. Press the Enter button to activate the desired individual Utility or Utilities Group when it appears in the displays. If you change a utility setting and realize you have made a mistake, press the Escape button while "Saving New Value" is still in the displays. original setting is retained and the new setting is ignored.

## **U. UTILITIES MENU**

### **U.1 Clear Audits**

### **U.2 Clear Coins**

### **U.3 Reset H.S.T.D.**

### **U.4 Set Time & Date**

### **U.5 Custom Message**

### **U.6 Set Game LD.**

### **U.7 Factory Adjustments**

### **U.8 Factory Resets**

### **U.9 Presets**

### **U.10 Clear Credits**

### **U.11 Auto Burn-in**

#### **U.1 Clear Audits**

Press the Enter button to clear the Standard Audits, Feature Audits, and Histograms. Press the Up button to display the next utility.

#### **U.2 Clear Coins**

Press the Enter button to clear the Earnings Audits. Press the Up button to display the next utility.

#### **U.3 Reset H.S.T.D.**

Press the Enter button to clear the High Score to Date Table and the Grand Champion. Press the Up button to display the next utility.

#### **U.4 Set Time and Date**

Press the Enter button to activate the time and date. Use the Up or Down button to change the value, then press the Enter button to lock in that value. If you make a mistake press the Escape button while "Saving New Value" is displayed. Press the Up button to move to the next utility.

#### **U.5 Custom Message**

This utility allows the operator to install a message that appears in the displays during the Attract Mode. Press the Enter button to activate the Custom Message. Use the Up or Down button to rotate letters. Use the Start button to rotate punctuation marks, (if desired). Press the Enter button to lock in the desired letter and punctuation.

#### **U.6 Set Game LD.**

This utility allows the operator to install a message, such as game location, that only appears on printouts. Press the Enter button to activate Set Gamie I.D., Use the Up or Down button to rotate letters. Use the Start button to rotate punctuation marks, (if desired). Press the Enter button to lock in the desired letter and punctuation.

#### **U.7 Factory Adjustment**

Press the Enter button to restore the adjustments to factory settings, then press the Up button to display the next utility.

#### **U.8 Factory Reset**

Press the Enter button to restore the adjustments to their factory setting, clear the Audits, H.S.T.D Table, and Custom Message/Game I.D. Press the Up button to display the next utility.

#### **U.9 Presets**

Press the Enter button to activate the Presets Group. Use the Up or Down buttons to cycle through the available Presets. When the desired preset is displayed, press the Enter button to lock in that Preset. If you realize you have made a mistake, press the Escape button while "Saving New Value" is displayed. The new value is ignored and the original value is retained.

**U.9 01 Install Extra Easy**

The operator can change the game play difficulty adjustments to a combination that is MUCH LESS difficult than the Factory Settings. The Game Difficulty Setting Table lists the adjustments and the settings that comprise the 'Extra Easy Group.

**U.9 02 Install Easy**

The operator can change the game play difficulty adjustments to a combination that is somewhat LESS difficult than the Factory Settings. The Game Difficulty Setting Table lists the adjustments and the settings that comprise the 'Easy Group.

**U.9 03 Install Medium**

The operator can change the game play difficulty adjustments to a combination that is about the SAME difficulty as the Factory Settings. The Game Difficulty Setting Table lists the adjustments and settings that comprise the 'Medium' Group.

**U.9 04 Install Hard**

The operator can change the game play difficulty adjustments to a combination that is somewhat MORE difficult than Factory Settings. The Game Difficulty Setting Table lists the adjustments and settings that comprise the 'Hard' Group.

**U.9 05 Install Extra Hard**

The operator can change the game play difficulty adjustments to a combination that is MUCH MORE difficult than Factory Settings. The Game Difficulty Setting Table lists the adjustments and settings that comprise the 'Extra Hard' Group.

## FUNHOUSE

### Game Difficulty Setting Table for U.S. / Canadian / French Games

Adj #	Adj Description	Extra Easy U.9 01	Easy U.9 02	Medium U.9 03 (factory)	Hard U.9 04	Extra Hard U.9 05
A.2 01	1st Round Start	10 o' Clock	9 o' Clock	8 o' Clock	7 o' Clock	6 o' Clock
A.2 02	Subsequent Start	5 o' Clock	5 o' Clock	5 o' Clock	4 o' Clock	3 o' Clock
A.2 03	Hallway Timer	Long	Long	Long	Long	Short
A.2 04	Gangway Timer	Long	Long	Short	Short	Short
A.2 05	Gangway Start	200,000	200,000	150,000	150,000	150,000
A.2 06	Gangway Memory	Yes	Yes	Yes	Yes	Yes
A.2 07	Gangway E.B. Mem	Yes	Yes	Yes	Yes	Yes
A.2 08	Mirror E.B. Memory	Yes	Yes	Yes	No	No
A.2 09	Steps E.B. Memory	Yes	No	No	No	No
A.2 10	Maximum Steps E.B.	02	02	01	01	01
A.2 11	Special Memory	No	No	No	No	No
A.2 12	Special Lights In	Round 2	Round 2	Round 2	Round 2	Round 3
A.2 13	Relight Mirror	Yes	Yes	Yes	Yes	No
A.2 14	Mirror Memory	Easy	Easy	Easy	Medium	Easy
A.2 15	Free Frenzy Lamp	Yes	Yes	Yes	Yes	No
A.2 16	Frenzy Memory	Yes	Yes	Yes	Yes	No

## FUNHOUSE

### Game Difficulty Setting Table for German/European Games

Adj #	Adj Description	Extra Easy U.9 01	Easy U.9 02	Medium U.9 03 (factory)	Hard U.9 04	Extra Hard U.9 05
A.2 01	1st Round Start	9 o' Clock	8 o' Clock	7 o' Clock	6 o' Clock	5 o' Clock
A.2 02	Subsequent Start	5 o' Clock	5 o' Clock	5 o' Clock	4 o' Clock	3 o' Clock
A.2 03	Hallway Timer	Long	Long	Long	Long	Short
A.2 04	Gangway Timer	Long	Long	Short	Short	Short
A.2 05	Gangway Start	200,000	200,000	150,000	150,000	150,000
A.2 06	Gangway Memory	Yes	Yes	Yes	Yes	Yes
A.2 07	Gangway E.B. Mem	Yes	Yes	Yes	Yes	Yes
A.2 08	Mirror E.B. Memory	Yes	Yes	Yes	No	No
A.2 09	Steps E.B. Memory	Yes	No	No	No	No
A.2 10	Maximum Steps E.B.	02	02	01	01	01
A.2 11	Special Memory	No	No	No	No	No
A.2 12	Special Lights In	Round 2	Round 2	Round 2	Round 2	Round 3
A.2 13	Relight Mirror	Yes	Yes	Yes	Yes	No
A.2 14	Mirror Memory	Easy	Easy	Easy	Medium	Easy
A.2 15	Free Frenzy Lamp	Yes	Yes	Yes	Yes	No
A.2 16	Frenzy Memory	Yes	Yes	Yes	Yes	No

**U.9 06 Install 5 Ball**

**U.9 07 Install 3 Ball**

The operator can change the game to 3 ball play, including the changing of certain features to the recommended 3-ball level. The Preset Game Adjustments Table for U.S./Canadian Games lists the adjustments and settings that comprise the 'Install 3 Ball' Group.

<b>FUNHOUSE</b>			
<b>Preset Game Adjustments Table for U.S./ Canadian Games</b>			
Adj #	Adj Description	Install 5-ball U.9 06	Install 3-ball U.9 07
A.1 01	Balls / Game	5	3
A.1 07	Replay Start	9,100,000	7,200,000
A.2 01	1st Round Start	5 o' clock	8 o' clock
A.2 02	Subsequent Start	5 o' clock	5 o' clock
A.2 05	Gangway Start	100,000	150,000
A.2 08	Mirror E.B. Memory	No	Yes
A.2 12	Special Lights In	Round 3	Round 2
A.2 13	Re-light Mirror	Yes	Yes
A.2 14	Mirror Memory	Medium	Easy
A.2 15	Free Frenzy Lamp	No	Yes

**U.9 08 Install Add -A -Ball**

The operator utilizes this option to delete all Free Play awards and replace them with Extra Ball awards. Individual adjustments are affected, as follows:

<u>Ad.</u>	<u>Name</u>	<u>New settings</u>
A.1 13	Replay Boost	Off
A.1 14	Replay Award	Ex. ball
A.1 15	Special Award	Ex. ball
A.1 17	Extra Ball Ticket	No
A.1 19	Match Feature	Off
A.4 04	Champion Credits	00
A.4 05	High Score 1 Credits	00
A.4 06	High Score 2 Credits	00
A.4 08	High Score 3 Credits	00
A.4 07	High Score 4 Credits	00

### U.9 09 Install Ticket

The operator utilizes this option to delete Credit awards and replace them with Ticket awards. Individual adjustments are affected as follows.

<u>Ad.</u>	<u>Name</u>	<u>New Settings</u>
A.1 14	Replay Award	Ticket
A.1 15	Special Award	Ticket
A.1 16	Match Award	Ticket
A.1 17	Ex. Ball Ticket	Yes
A.4 02	H.S.T.D. Award	Ticket

### U.9 10 Install Novelty

The operator utilizes this option to removes all Free Play and Extra Ball awards. Individual adjustments are affected as follows:

<u>Ad.</u>	<u>Name</u>	<u>New Setting</u>
A.1 04	Max. Ex. Ball	Off
A.1 05	Replay System	Fixed
A.1 09	Replay Level 1	Off
A.1 10	Replay Level 2	Off
A.1 11	Replay Level 3	Off
A.1 12	Replay Level 4	Off
A.1 15	Special Award	Points
A.1 19	Match Feature	Off
A.4 01	Highest Score	On
A.4 04	Champion Credits	00
A.4 05	High Score 1 Credits	00
A.4 06	High Score 2 Credits	00
A.4 07	High Score 3 Credits	00
A.4 08	High Score 4 Credits	00

### U.9 11 Install Buy-in

The operator uses this option to automatically set game pricing to 1 for 50¢/2 for \$1.00 and 1 Coin Buy-in (A.3 19) to YES.

### U.9 17 NOT SUPPORTED

### U.9 18 Install German 2 –

The operator uses this adjustment to modify the game pricing and the type of game play. The Preset Game Adjustment Table for German/ European Games lists the adjustments and settings that comprise the 'Install German 2 Group.

### U.9 19 Install German 3 –

The operator uses this adjustment to modify the game pricing and the type of game play. The Preset Game Adjustments Table for German/European Games lists the adjustments and settings that comprise the 'Install German 3' Group.

**U.9 20 Install German 4 –**

The operator uses this adjustment to modify the game pricing and the type of game play. The Preset Game Adjustments Table for German/European Games lists the adjustments and settings that comprise the ‘Install German 4’ Group.

**U.9 21 Install German 5 –**

The operator uses this adjustment to modify the game pricing and the type of game play. The Preset Game Adjustments Table for German/European Games lists the adjustments and settings that comprise the ‘Install German 5’ Group.

**U.9 22 Install German 6 –**

The operator uses this adjustment to modify the game pricing and the type of game play. The Preset Game Adjustments Table for German/European Games lists the adjustments and settings that comprise the ‘Install German 6’ Group.

<b>FUNHOUSE</b>							
<b>Preset Game Adjustments Table for German/European Games</b>							
Adj #	Adj Description	German 1 U.9 17	German 2 U.9 18	German 3 U.9 19	German 4 U.9 20	German 5 U.9 21	German 6 U.9 22
A.1 14	Replay Award	Credit	Ticket	Audit	Credit	Ticket	Audit
A.1 15	Special Award	Credit	Ex. Ball	Points	Credit	Ex. Ball	Points
A.1 16	Match Award	Credit	Ticket	Credit	Credit	Ticket	Credit
A.1 19	Match Feature	7%	7%	Off	7%	7%	Off
A.3 01	Game Pricing	6 spiele/5 DM	6 spiele/5 DM	6 spiele/5 DM	7 spiele/5 DM	7 spiele/5 DM	7 spiele/5 DM
A.4 02	H.S.T.D. Award	Credit	Ticket	Credit	Credit	Ticket	Credit
A.4 04	Champion Credits	03	03	00	03	03	00
A.4 05	High Score 1 Credits	01	01	00	01	01	00
A.4 06	High Score 2 Credits	00	00	00	00	00	00
A.4 07	High Score 3 Credits	00	00	00	00	00	00
A.4 08	High Score 4 Credits	00	00	00	00	00	00
A.4 10	Backup Champion	15.000.000	15.000.000	00	15.000.000	15.000.000	00
A.4 11	Backup High Score 1	12.000.000	12.000.000	00	12.000.000	12.000.000	00
A.4 12	Backup High Score 2	11.000.000	11.000.000	00	11.000.000	11.000.000	00
A.4 13	Backup High Score 3	10.000.000	10.000.000	00	10.000.000	10.000.000	00
A.4 14	Backup High Score 4	9.000.000	9.000.000	00	9.000.000	9.000.000	00

**U.9 23 NOT SUPPORTED**

**U.9 24 Install French 2 –**

The operator uses this adjustment to modify the game pricing and the type of game play. The Preset Game Adjustments Table for French Games list the adjustments and settings that comprise the ‘Install French 2’ Group.

**U.9 25 Install French 3 -**

The operator uses this adjustment to modify the game pricing and the type of game play. The Preset Game Adjustments Table for French Games list the adjustments and settings that comprise the ‘Install French 3’ Group.

**U.9 26 Install French 4 –**

The operator uses this adjustment to modify the game pricing and the type of game play. The Preset Game Adjustments Table for French Games lists the adjustments and setting that comprise the ‘Install French 4’ Group.

**U.9 27 Install French 5 –**

The operator uses this adjustment to modify the game pricing and the type of game play. The Preset Game Adjustments Table for French Games lists the adjustments and settings that comprise the ‘Install French 5’ Group.

**U.9 28 Install French 6 –**

The operator uses this adjustment to modify the game pricing and the type of game play. The Preset Game Adjustments Table for French Games lists the adjustments and settings that comprise the ‘Install French 6’ Group.

FUNHOUSE							
Preset Game Adjustments Table for French Games							
Adj #	Adj Description	French 1 U.9 23	French 2 U.9 24	French 3 U.9 25	French 4 U.9 26	French 5 U.9 27	French 6 U.9 28
A.2 05	Gangway Start	200,000	150,000	250,000	200,000	200,000	N/A
U.9 06	Install 5 Ball	N/A	N/A	N/A	N/A	N/A	Yes

Press the Escape button to return to the Presets menu. Then press the Up button to display the next utility.

**U.10 Clear Credits**

Press nthe Enter button to clear the game Credits. Press the Up button to display the next utility.

**U.11 Auto Burn-in**

Press the Enter button to activate Auto Burn-in. This utility allows you to automatically cycle through several tests. This helps in finding intermittent problems. The tests that Auto Burn-in cycles through are the Display Test, the Sound and Music Test, the All Lamps Test, the Solenoid Test, the Flashers Test, and the General Illumination Test.

Press the Escape button to return to the Utilities Menu. Then, either press the Up or Down button to return to a previous Utilities Menu Group, or Press the Escape button again to return to the Main Menu. Once in the Main Menu either use the Up or Down buttons to return to a previous menu selection, or press the Escape button again to return to the Attract Mode.



- **E. EXTENDED MENU**

Enter in the extended menu

Game Code version

Test Function

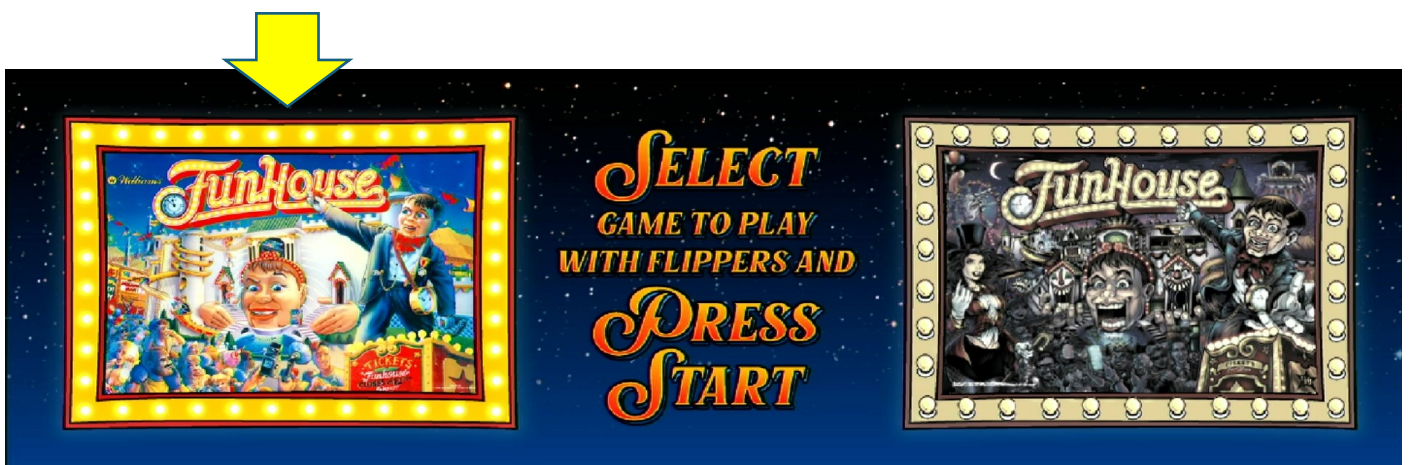
Extended menu adjustments

Extended menu Test

### **ENTER THE IN EXTENDED MENU.**

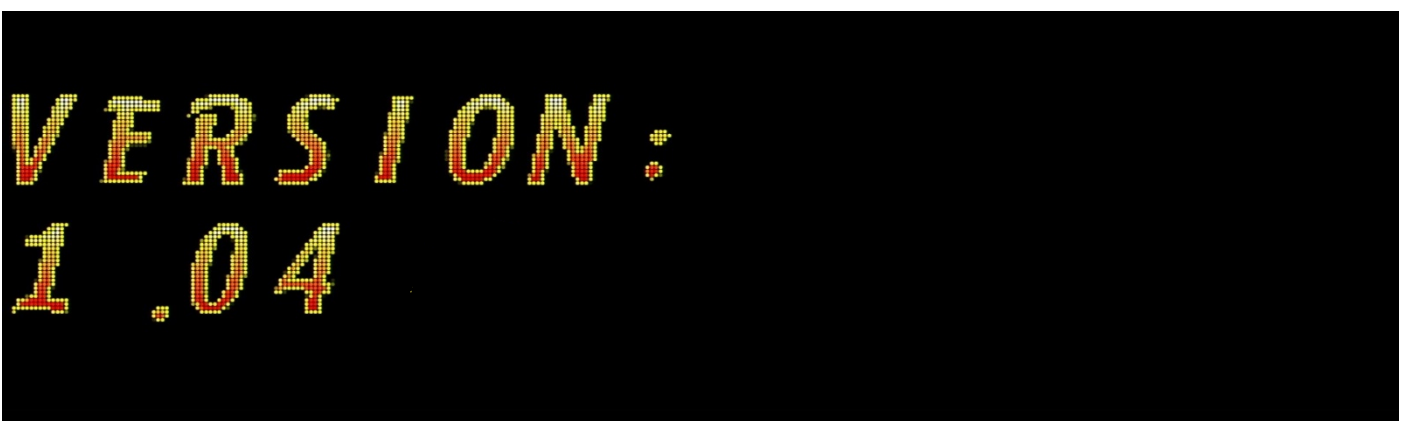
- First step is to enter in the Original or 1.5 game code.

Press start on the original translite image in the game selection page.



### **GAME CODE VERSION**

After you enter in the Extended service menu you can see in the first page the game code version installed in your game.



Please check our latest game code update release on our social media and website:

- Website: <https://www.europinball.net/download/>

- Social Media: <https://www.facebook.com/PedrettiGaming>

**TEST FUNCTION.**

*You can find the service buttons installed inside your coindoor.*

The Escape switch allows you to get out of a menu selection or to return to the Attract Mode.

The Up switch allows you to cycle forward through the menu selections or adjustment choices.

The Down switch allows you to cycle backward through the menu selections or adjustment choices.

The Enter switch allows you to get into a menu selection or lock in an adjustment choice.



**EXTENDED MENU ADJUSTMENTS.**

**ROM VERSION**

This setting allows you to choose ROM between L9\_ COMMERCIAL and L9\_05\_HOME



- L9\_COMMERCIAL is selected by default, if you want to change it you have to press enter, scroll to Home and press ENTER.



## RGB GI

This setting allows you to turn OFF the GI LED colors, with NO it will only be white.

- RGB\_GI: YES is set by default, it means the general illumination are colorized and integrated color wise with game play.



E : RGB\_GI  
YES

- Select RGB\_GI: NO and General illumination are not going to be colorizes, GI Color is going to be WHITE



E : RGB\_GI  
NO

## RGB RUDY EYES ( ONLY WITH RUDY EYES PCB INSTALLED)

This setting allows you to turn ON or OFF the Rudy eyes RGB Lights.



E : RGB\_RUDY\_EYE  
YES

- Select RGB\_RUDY\_EYES: NO to turn OFF the lighted Rudy eyes.



E : RGB\_RUDY\_EYE  
NO

### Strip1

- This setting allows you to lower or higher LED strip Brightness, From 0 to 170.



E : STRIP1  
170

### Strip2

- This setting allows you to lower or higher LED strip Brightness, From 0 to 170.



E : STRIP2  
170

### Strip3

- This setting allows you to lower or higher LED strip Brightness, From 0 to 170.



E: STRIP3  
170

### 1.5 GAME CODE

- This setting allows you to activate or not the 1.5 game code, Default is YES



E: 1.5  
YES

- IF you change it to NO, you are going to have the 1.0 display with segments and game code.



E: 1.5  
NO

## AUTOPLUNGER

- This setting allows you to turn ON / OFF autoplunger during game play. Default is YES



E : AUTO\_PLUNGER  
YES

-If you change it to NO, you are going to disable Autoplunger during gameplay.



E : AUTO\_PLUNGER  
NO

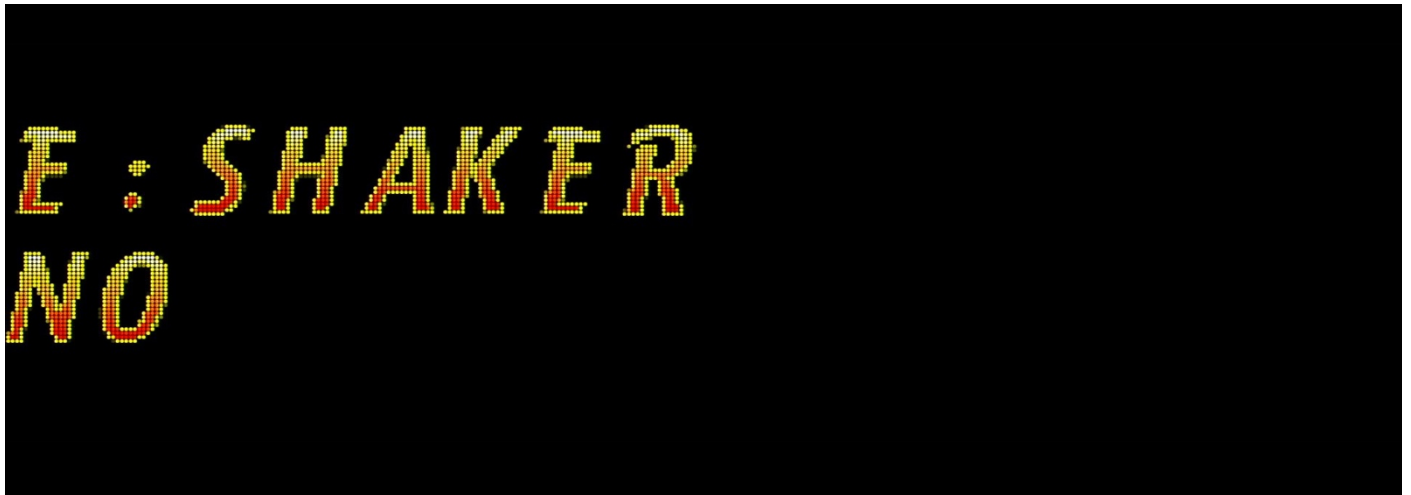
## SHAKER

- This settings allows you to turn ON / OFF SHAKER Motor during gameplay. Default is YES  
(You need to have a shaker motor installed and FAST Shaker motor driver PCB installed to have it working)



E : SHAKER  
YES

- If you change it to NO, you are going to disable Shaker Motor during gameplay

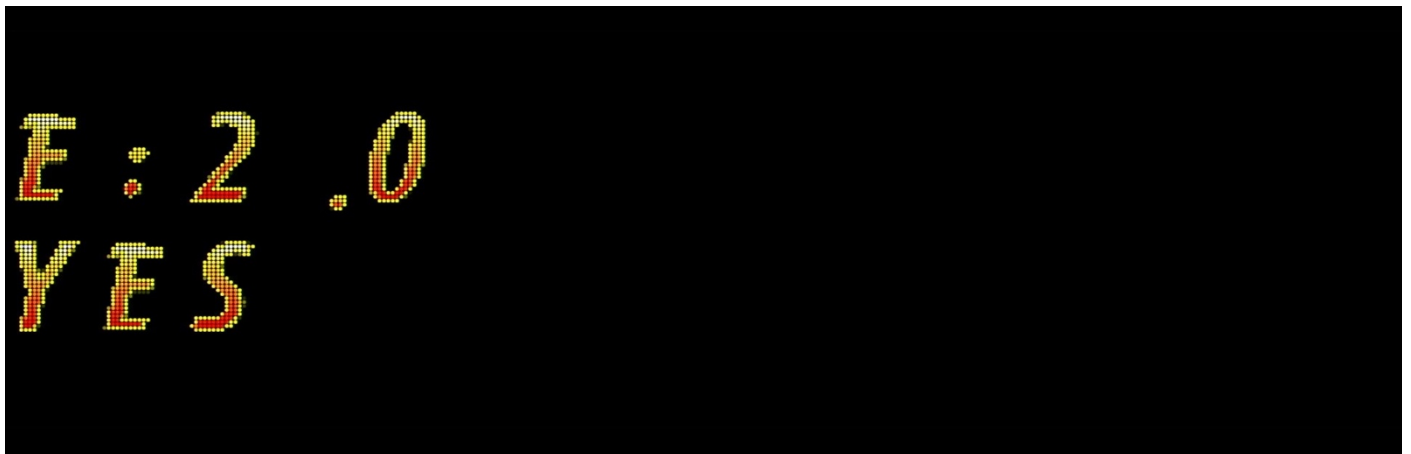


## 2.0 GAME CODE

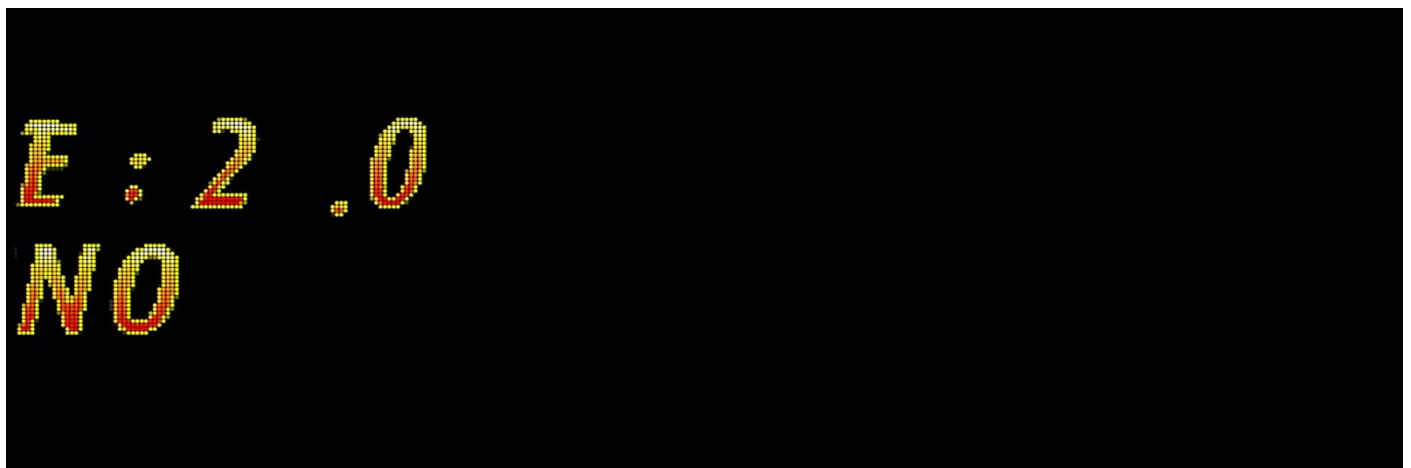
- This setting allows you to Show or Hide the 2.0 game code at power on in the selection screen, Default is YES

\*\* Limited Edition games have the 2.0 game code installed from factory \*\*

\*\*\* 2.0 game code for Classic Edition owners is sold separately \*\*\*



- IF you change it to NO, you are going to have the 1.0 display with segments and game code.



## TOPPER

- This settings allows you to turn ON / OFF TOPPER during gameplay and Attractive mode. Default is YES  
(You need to have a TOPPER installed and FAST TOpper PCB installed to have it working)



E : TOPPER  
YES

- If you change it to NO, you are going to disable TOPPER during Gameplay and Attractive mode.



E : TOPPER  
NO



## EXTENDED MENU COIL ADJUSTMENTS

### LEFT FLIPPER - RIGHT FLIPPER - UPPER FLIPPER

- This setting allows you to change the Flipper power strength, you can change between 5 different strength options.



E : LEFT FLIPPER  
LOWEST



E : LEFT FLIPPER  
LOW



E : LEFT FLIPPER  
NORMAL



E : LEFT FLIPPER  
HIGH



E : LEFT FLIPPER  
HIGHEST

## LEFT SLING - RIGHT SLING

- This settings allows you to change the Slingshot power strength, you can change between 5 different strength options.

**E : RIGHT SLING  
LOWEST**

**E : RIGHT SLING  
LOW**

**E : RIGHT SLING  
NORMAL**

**E : RIGHT SLING  
HIGH**

**E : RIGHT SLING  
HIGHEST**

## TUNNEL

-This setting allows you to change the Tunnel Eject power strength, you can change between 5 different strength options.



E : TUNNEL  
LOWEST



E : TUNNEL  
LOW



E : TUNNEL  
NORMAL



E : TUNNEL  
HIGH



E : TUNNEL  
HIGHEST

## TROUGH

-This settings allows you to change the Trough Eject power strength, you can change between 5 different strength options.

**E : TROUGH**  
**LOWEST**

**E : TROUGH**  
**LOW**

**E : TROUGH**  
**NORMAL**

**E : TROUGH**  
**HIGH**

**E : TROUGH**  
**HIGHEST**

## LOCK

-This settings allows you to change the LOCK Release Coil power strength, you can change between 5 different strength options.



E : LOCK  
LOWEST



E : LOCK  
LOW



E : LOCK  
NORMAL



E : LOCK  
HIGH



E : LOCK  
HIGHEST

## AUTO PLUNGER COIL SETTING

-This settings allows you to change the Autoplunger Coil power strength, you can change between 5 different strength options.

**E : AUTO PLUNGER  
LOWEST**

**E : AUTO PLUNGER  
LOW**

**E : AUTO PLUNGER  
NORMAL**

**E : AUTO PLUNGER  
HIGH**

**E : AUTO PLUNGER  
HIGHEST**

## LOCK CLEAR OUT

-This setting allows you to able or disable to clear balls locked at every game end. DEFAULT is YES



E : LOCK CLEAR OUT  
YES



E : LOCK CLEAR OUT  
NO

## FACTORY RESET

- This setting allows you to restore the adjustments to their factory default setting.



E : FACTORY RESET  
YES



E : FACTORY RESET  
NO

## SEGMENT COLOR (1.0 GAME CODE)

- This setting allows you to change colors at the 1.0 display segments. Changing this colors you are going to change colors to the 1.0 game code display. DEFAULT is AMBER



E : SEGMENT COLOR  
AMBER



E : SEGMENT COLOR  
ORANGE



E : SEGMENT COLOR  
RAINBOW

## BALL SAVER

- This setting allows you to able or disable BALL SAVER Time. DEFAULT is YES



E : BALL SAVER  
NO



E : BALL SAVER  
YES



## PROBLEM ANALYSIS MESSAGES

Fast electronic system has a great capability to aid the operator and service personnel: Game Turn-on (and after pressing the Begin Test switch) once the game has been operating for extended period, the player score displays may signal with a message, "Press ENTER for Test Report", that the game program has detected a possible problem with the game.

To obtain details of the problem, open the coin door and press the Begin Test switch. Press Enter button to begin displaying the message(s). FUNHOUSE game. The following messages apply to your

**Check Switch ##.** This message indicates that at least one switch was stuck 'On' at game turn-on or has NOT been actuated during ball play (for 90 balls or =30 games) by displaying the message "Adjust Switch ##", listing each problem switch by number. (The game program compensates the game play requirements affected by each disabled switch to allow 'nearly normal' play. This helps keep FUNHOUSE earning, until the service technician can repair the problem, bringing the game back to its normal good profits!)

To verify the problem, refer to the Test Menu text describing Switch Testing, and check each reported switch using applicable switch tests. Always check switch operation using a ball, to simulate game conditions. (Switch problems may often be resolved by adjusting the wire switch actuators, fixing switch circuitry problems, securing loose connectors, etc. Mechanisms using 'opto switches' (drop targets, etc.) need to be checked for proper power connections (+12V dc and ground).

**Pinball Missing. FUNHOUSE** normally uses three balls; however, it will operate with one or two balls. This message announces that a ball is missing or stuck somewhere. When the ball is located, return it to the game via the Outhole. Other possibilities for this problem could be malfunctions of the Ball Trough switches or the Ball Shooter switch.

**xxxx Sw. is Stuck On.** This message indicates that a switch, which is not usually On, remains in the On position after the game is switched on. The stuck switch is essential for game play (for example, a coin chute switch, the slam tilt switch, the plumb bob tilt switch), and should be cleared to permit proper game operation.

**Ground Short Row-N, Wht-xxx.** Frequent appearance of this message requires activation of the Switch Levels Test to locate the switch causing the "WHT-xxx 2) A ROW x SHORT" message. Possible 'row short' causes are: 1) Slam Tilt (or other coin door) switch touching the grounded coin door; leaf-type, playfield switch touching a grounded part; 3) Players poking metallic objects (wires, coat hangers, etc.) into the game; 4) Switch cable insulation pierced or damaged allowing bare wire contact with a grounded part; 5) All switches in a row closing at the same time (Note: This instance is NOT a switch problem; however, for most games this is a very rare possibility).

**Factory Settings Restored.** Repeated appearance of this message indicates that the CMOS RAM no longer retains any custom Pricing or Game Adjustment settings and has reverted to factory default settings. Generally, the following CPU checks will isolate the cause of the CMOS RAM memory failure. The voltage at pin 28 of U8 should be +5V (game turned on) and at least +3.8V (game turned off). When the voltage drops below +3.8V, memory reset occurs. Check the batteries and battery holder. Be sure that the batteries are good and that there is no contamination on the battery holder terminals. Turn the game OFF, and use an ohmmeter to check diodes D1 and D2 on the CPU Board. reverse-biased. D2 D1 should read 0 ohms when forward-biased and infinite ohms when should read 15 ohms when forward-biased and infinite ohms when reverse- biased.

**Time and Date Not Set.** The real time clock is not running. If this occurs go to U.4 of the Utilities Menu and set the time and date.

# MAINTENANCE INFORMATION

Regular maintenance is essential to a game's continuing contribution to the operator's earnings.

## **LUBRICATION**

The two main lubrication points of the Ball Shooter Lane Feeder mechanism are the pivots for the arm. A Note that the mechanism of other playfield devices are somewhat similar to the Ball Shooter Lane Feeder Device; and have the same lubrication requirements as the Ball Shooter Lane Feeder Device. medium viscosity oil (20W or 30W) is satisfactory for these devices.

Because of the functional design (arm-actuated via solenoid plunger operation), the pivot points of the Left and Right Kickers ("Slingshots") all require lubrication as a regular servicing procedure.

Lubrication to ensure proper operation also applies to the target blades of the Drop Targets. MBI Instrument Grease, also known as Drop Target Switch Lubricant, with a Williams' part number of 20-8886, is a recommended lubricant.

## **SWITCH CONTACTS**

For proper game operation, switch contacts should be free of dust, dirt, contamination, and corrosion. Blade switch contacts are plated to resist corrosion. Cleaning blade switch contacts requires gentle closing of the contacts on a clean business card or piece of paper, and then pulling the paper about 2 inches, which should restore the clean contact surface. Adjust the switch contacts to a 1/16-inch gap.

## **Flipper Switches**

This game uses the new Fliptronic II Electronic Flipper System. The End-of-Stroke switches are NORMALLY OPEN. The switch should close when the flipper is energized. All E.O.S. switches are gold flashed computer grade leaf switches. Only low computer current is carried through these switches. DO NOT FILE or abrasively clean these switches! DO NOT REPLACE these switches with the tungsten high current switches, as intermittent operation could occur.

## **CLEANING**

Good game action and extended playfield life are the results of regular playfield cleaning. During each collection stop, the playfield glass should be removed and thoroughly cleaned and the playfield should be wiped off with a clean, lint-free cloth. The game balls should be cleaned and inspected for any chips, nicks, or pits. Replace any damaged balls to prevent playfield damage.

Regular, more extensive, playfield cleaning is recommended. water the and caustic or playfield surface. However, avoid excessive use of abrasive cleaners because they tend to damage the playfield surface. Playfield wax (or any carnauba based wax), or polish may be used sparingly, to prevent a buildup on Do not use cleaners containing petroleum distillates on any playfield plastics because they may dissolve the plastic material or damage the artwork.

**FAST PINBALL ELECTORNICS:**

- PINBALL NEURON**
- AUDIO INTERFACE**
- SMART POWER FILTER**
- PLAYFIELD INTERCHANGE BOARD**
- CABINET I/O BOARD**
- PLAYFIELD I/O BOARD**
- PINBALL EXPANSION BOARD**

**ALL MAJOR MECHANISM ASSEMBLIES OF FUNHOUSE**

**METAL & PLASTIC POSTS**

**PLAYFIELD PARTS**

**LAMPS**

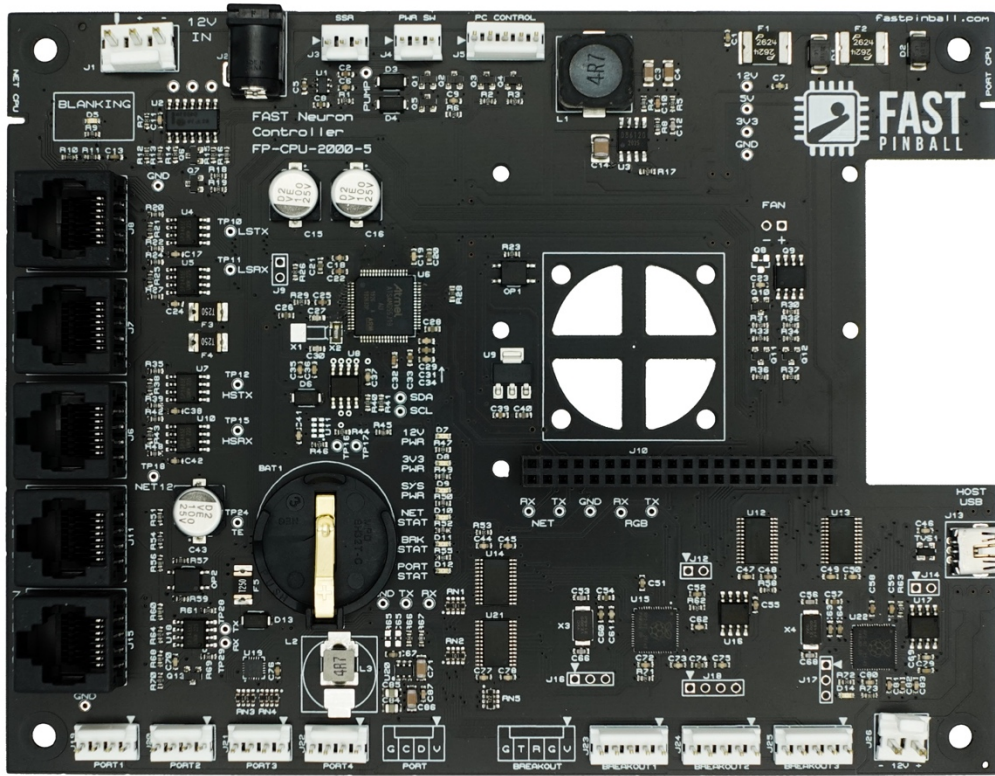
**SWITCHES**

**SOLENOIDS**

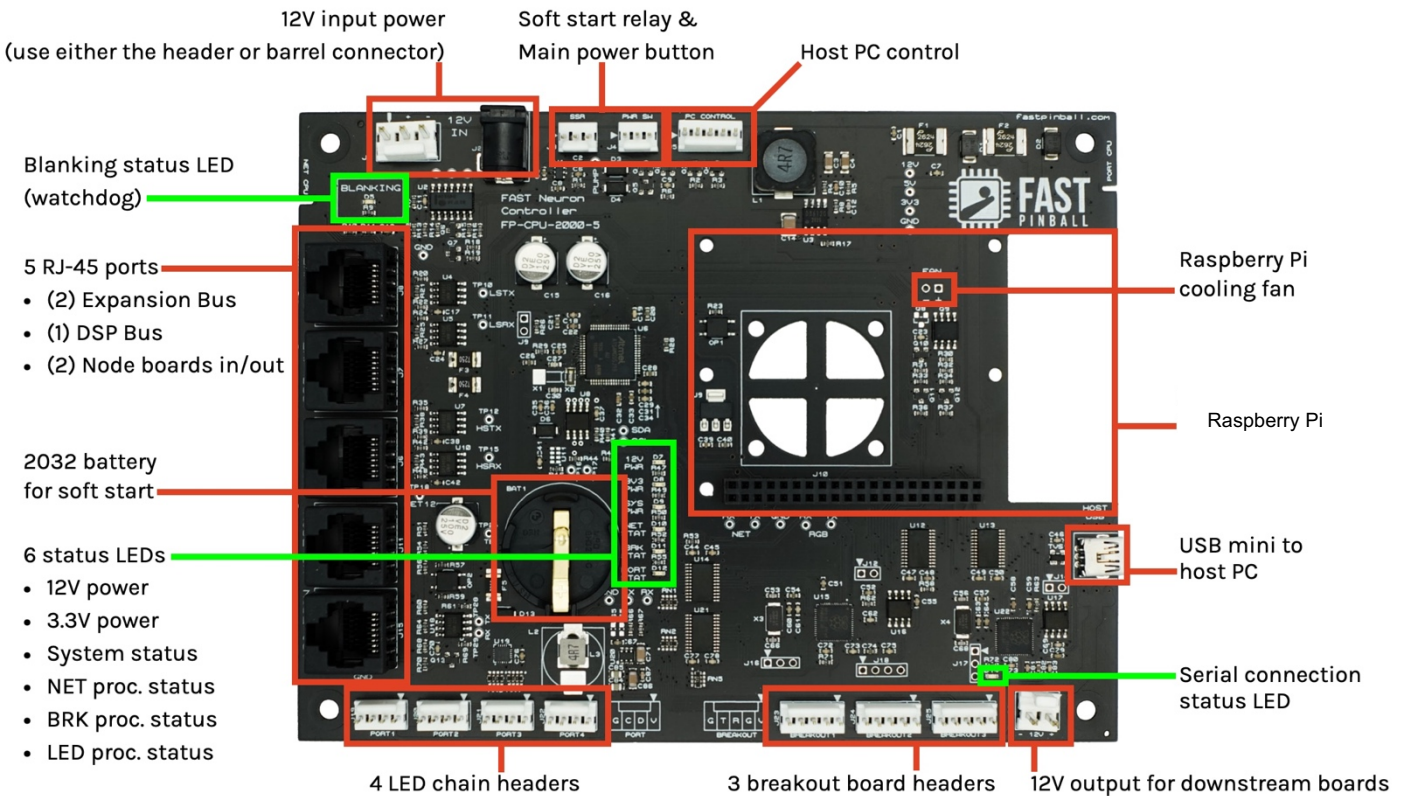
**RUBBER RINGS**

# FAST PINBALL ELECTRONICS

## FAST Pinball Neuron FP-CPU-2000-5

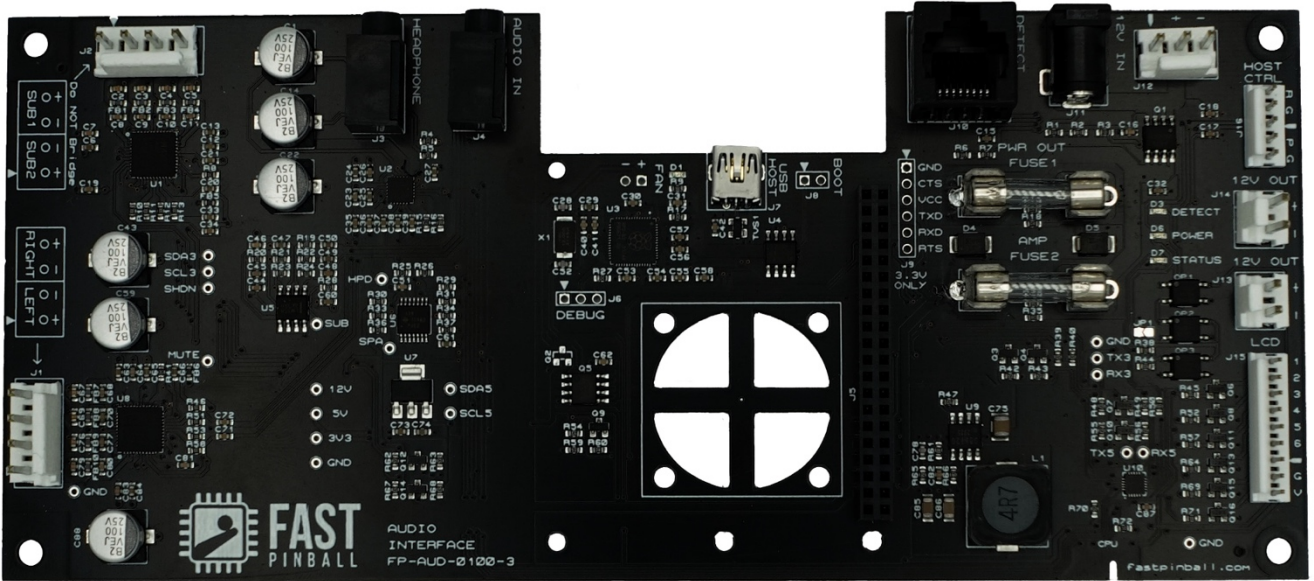


### Connection Labels

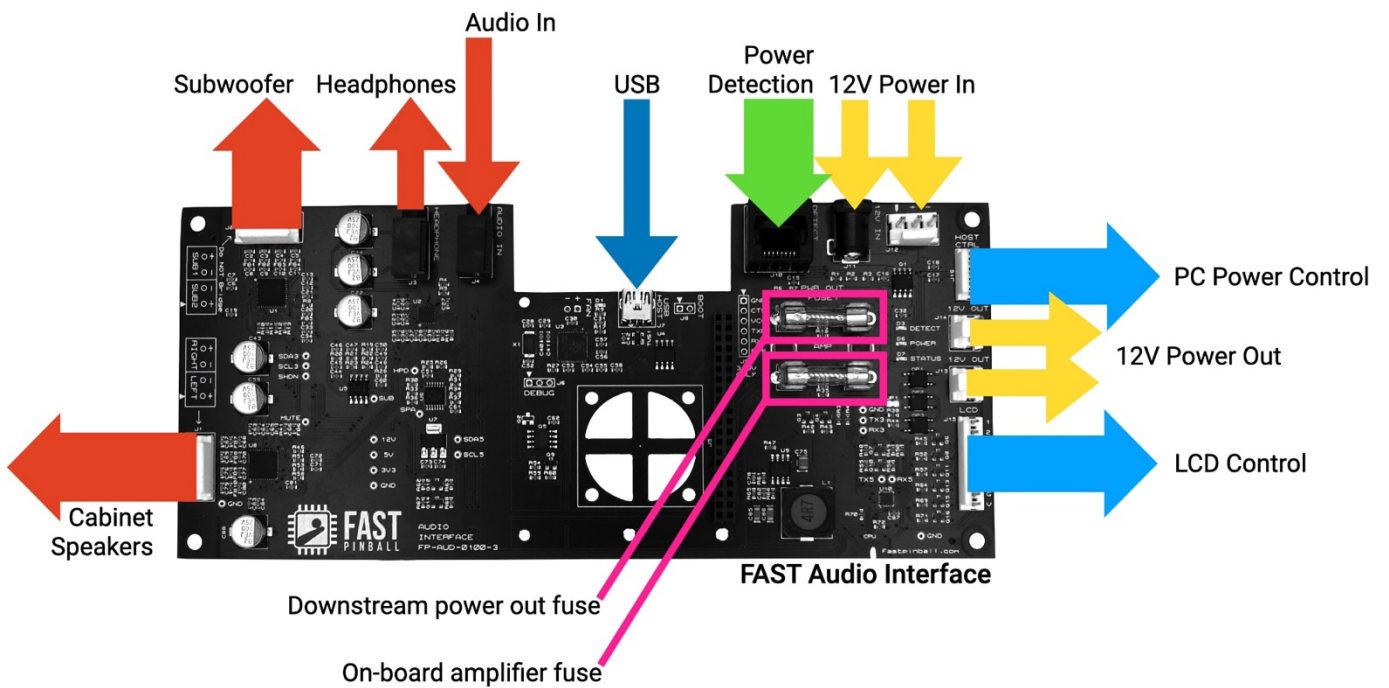


FAST Pinball product webpage: <https://fastpinball.com/products/controllers/neuron/>

**FAST Pinball Audio Interface FP-AUD-0100-3**



**Connection Labels**



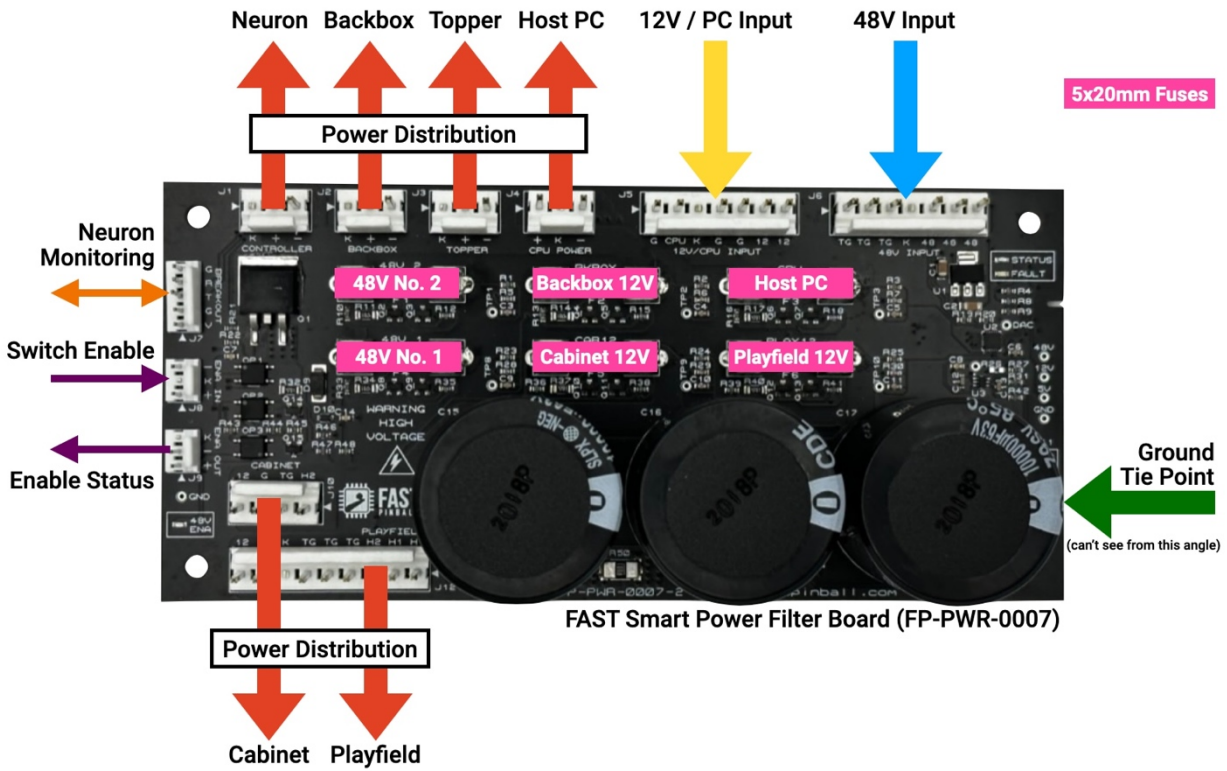
**FUSES**

Amplifier fuse (Fuse 2, 5x20mm)

- FUSE 1: 3 AMP
- FUSE 2: 3 AMP

FAST Pinball product webpage: <https://fastpinball.com/products/audio/audio-interface/>

**FAST Smart Power Filter Board FP-PWR-0007**

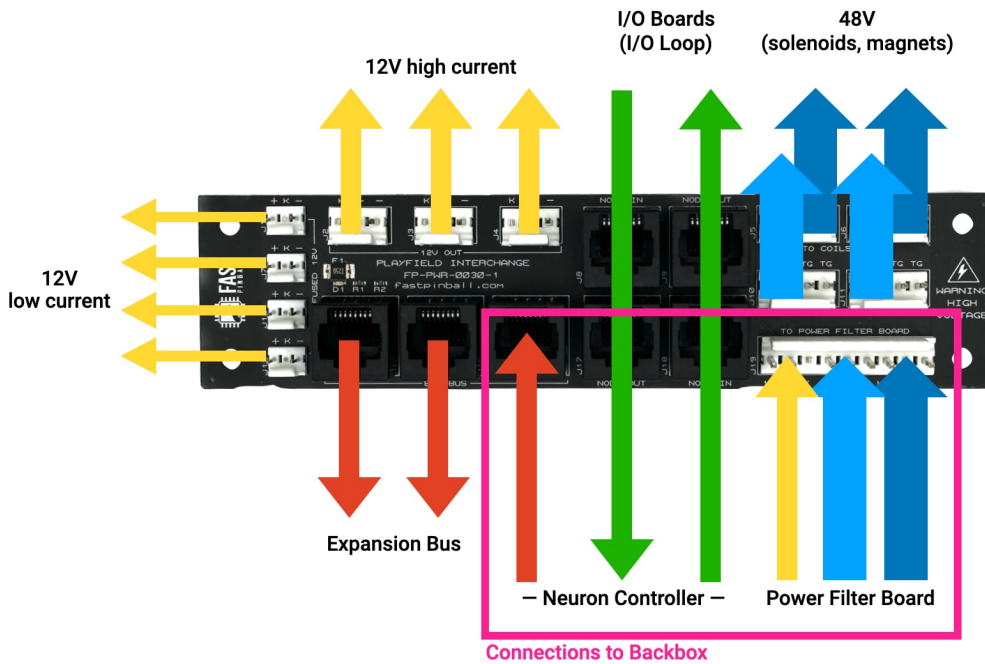


**FUSES**

- FAST Smart Power Filter Board FP-PWR-0007:
- FUSES size is 5x20mm
- F1 48V - 5amp 250V Slo-Blo
- F2 BKBOX-3, 15amp 250V Slo-Blo
- F3 CPU - 3amp 250V Fast-Blo
- F4 48V- 5amp 250V Slo-Blo
- F5 CAB12- 2.5amp 250V Slo-Blo
- F6 PLAY12- 2.5amp 250V Slo-Blo

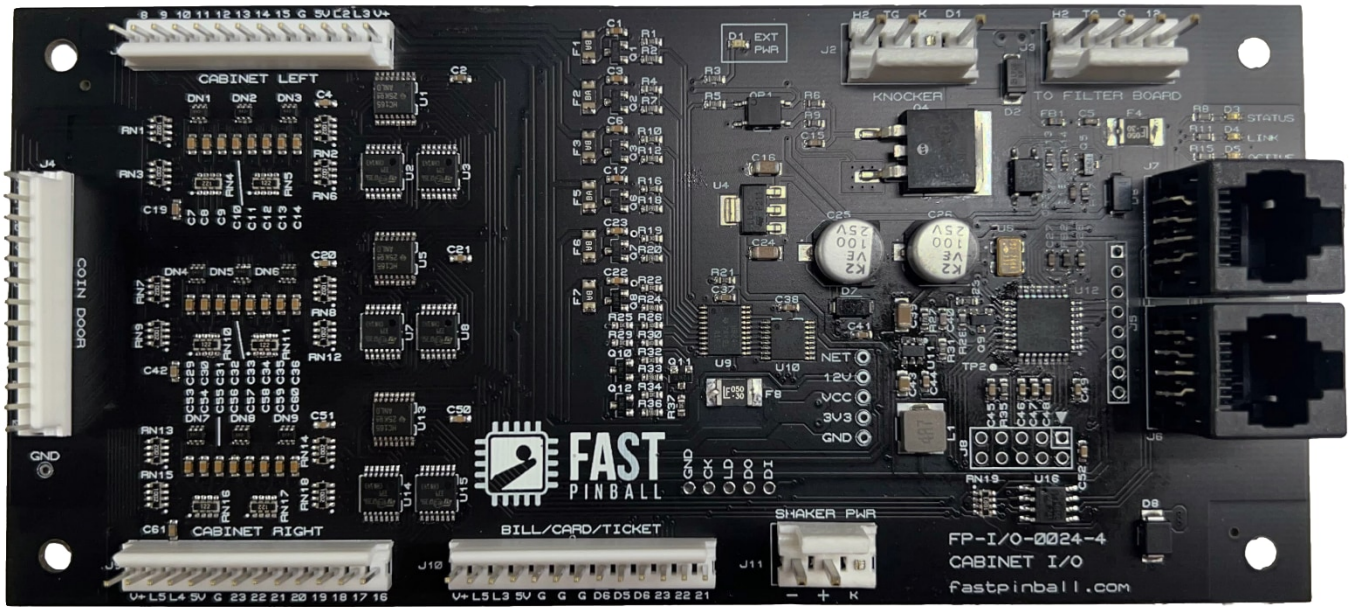
FAST Pinball product webpage: <https://fastpinball.com/products/power/smart-power-filter-board/>

**FAST Playfield Interchange Board FP-PWR-0030**

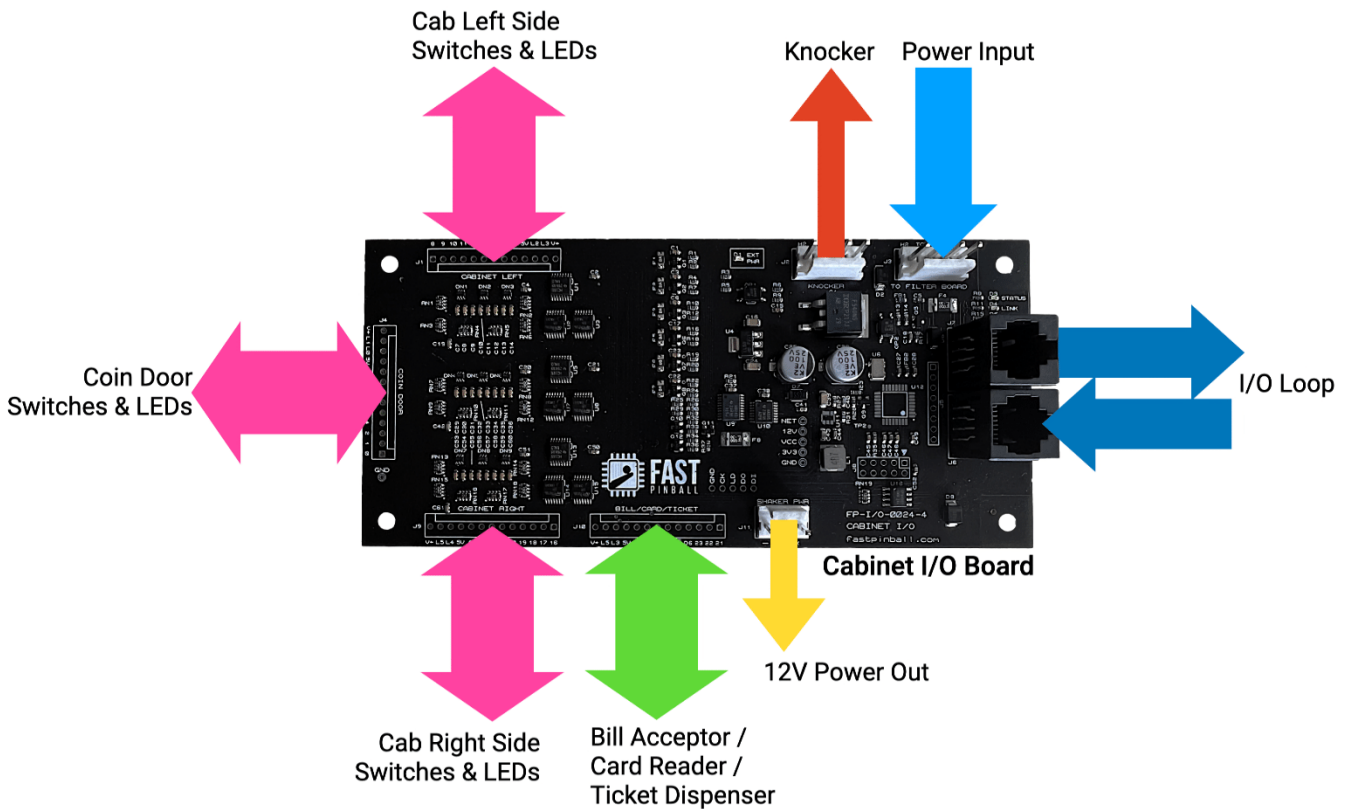


FAST Pinball product webpage: <https://fastpinball.com/fast-playfield-interchange-board>

**FAST Cabinet I/O Board FP-IO-0024-4.**

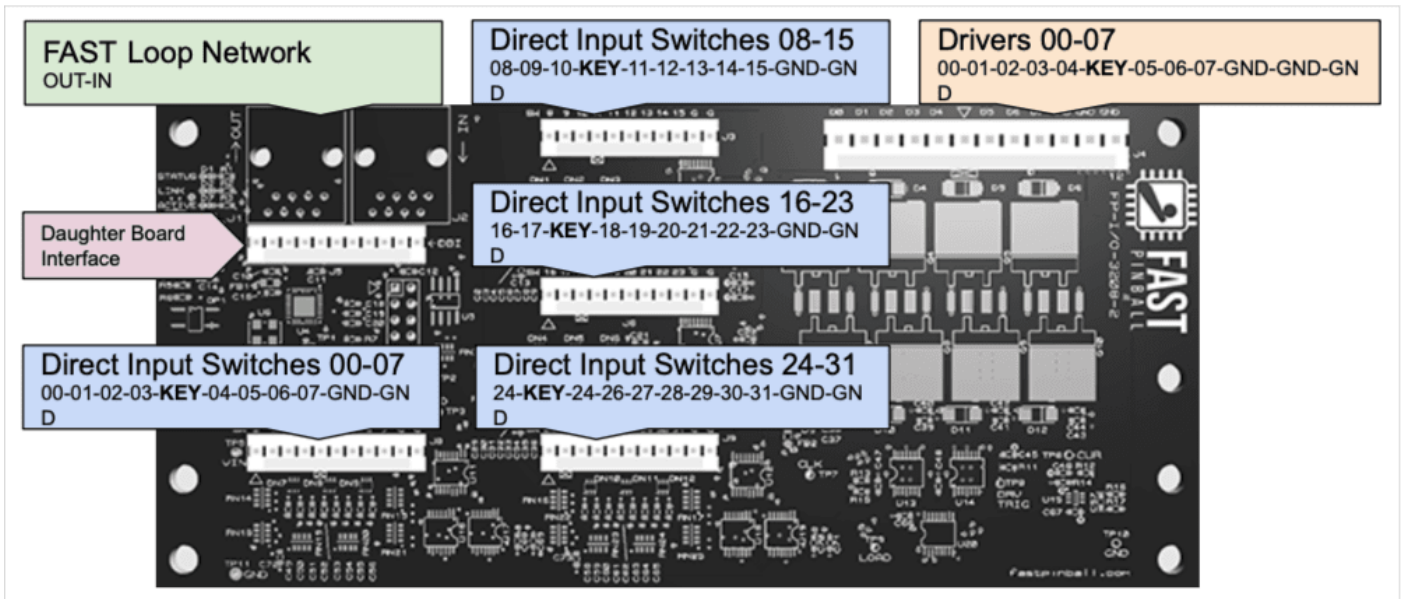


**Connection Labels**



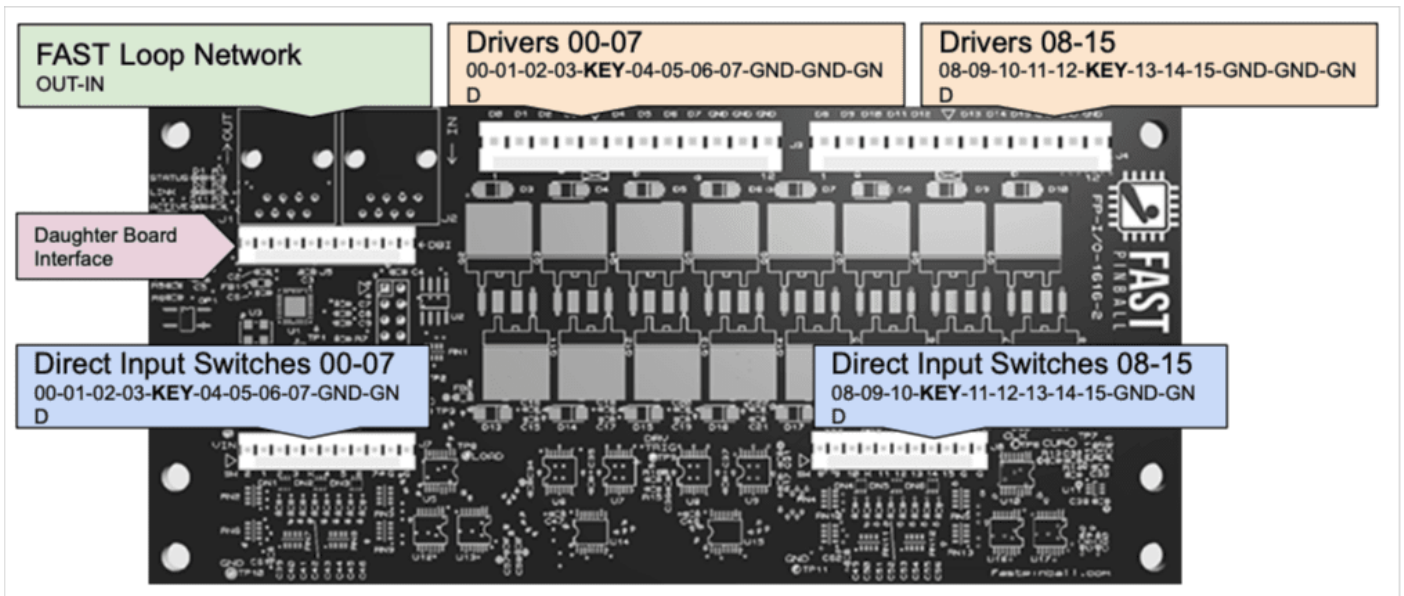
FAST Pinball product webpage: <https://fastpinball.com/products/ioboards/cabinet/>

**FAST Playfield I/O Board 3208**



FAST Pinball product webpage: <https://fastpinball.com/products/ioboards/3208/>

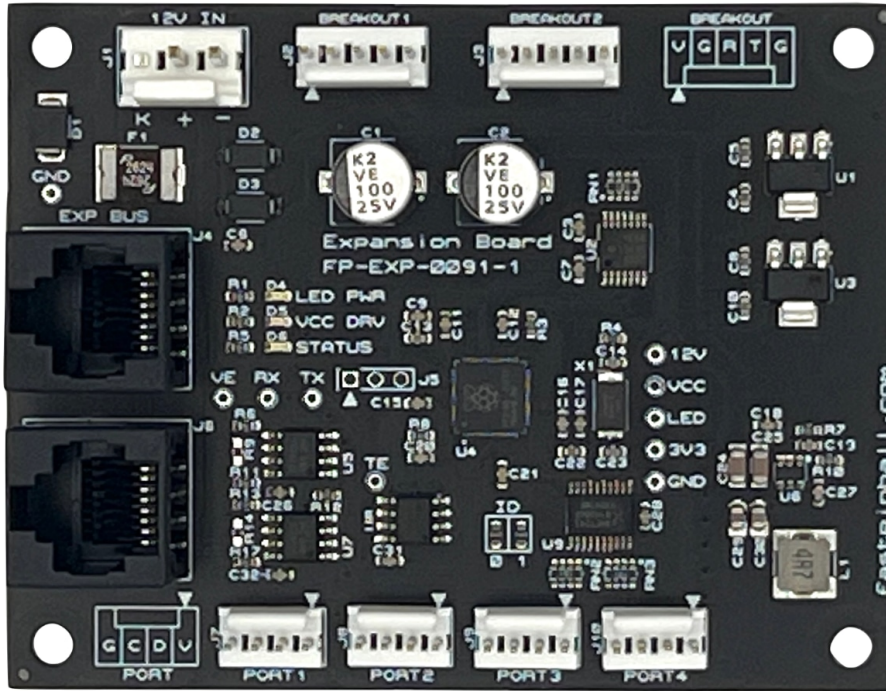
**FAST Playfield I/O Board 1616**



FAST Pinball product webpage: <https://fastpinball.com/products/ioboards/1616/>

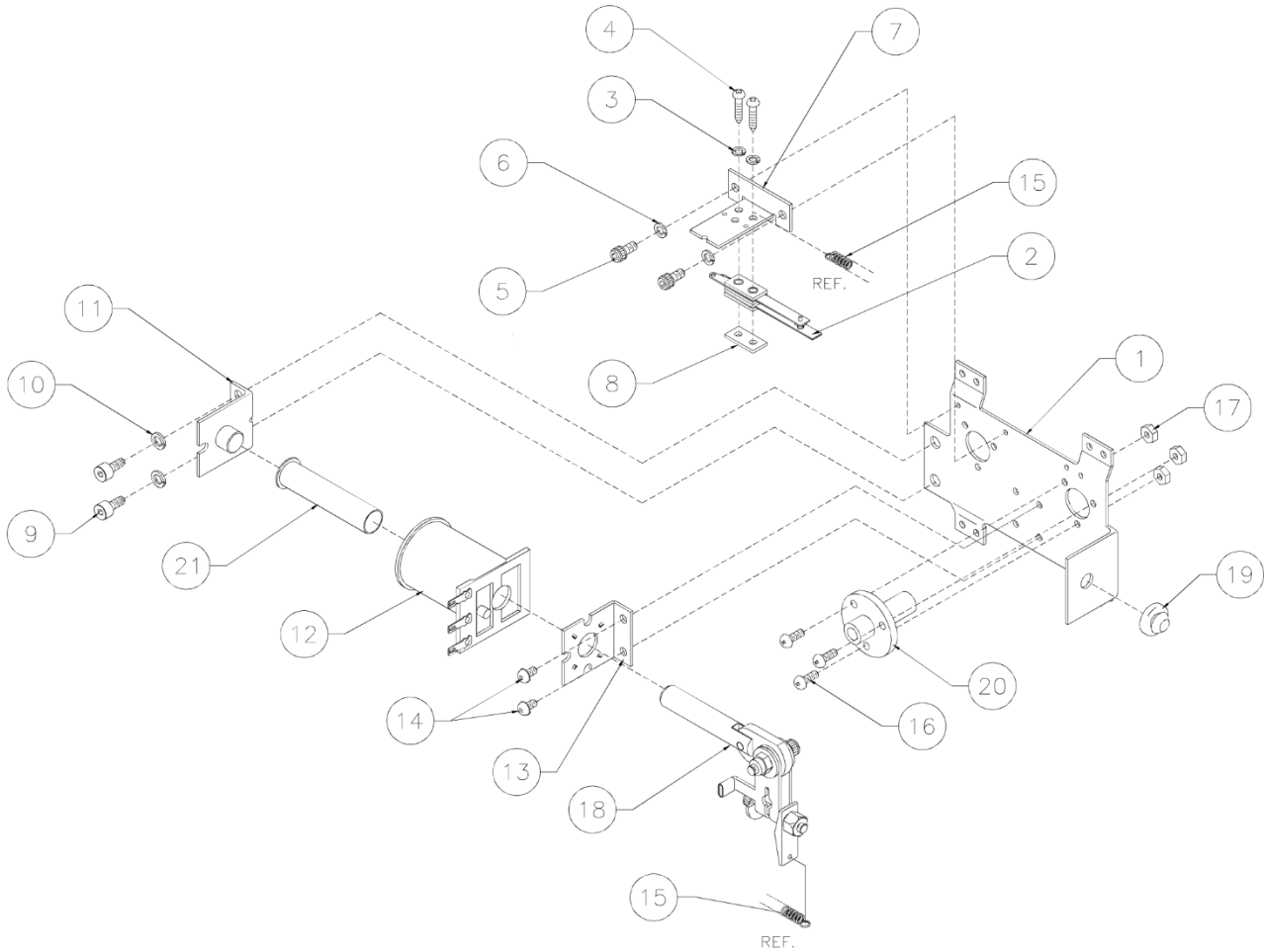


**FAST Pinball Expansion Board FP-EXP-0091**



FAST Pinball product webpage: <https://fastpinball.com/products/expansion/91/>

# Left Flipper Assembly



Item	Part Number	Description	Item	Part Number	Description
1	<b>B-13104-L</b>	Flipper Base Assembly, Left	16		Mach. Screw, 6-32 x 3/8"
2	<b>SW-1A-194</b>	Switch Assembly	17		Nut 6-32 Hex.
3		Lock Washer #6 Split	18	<b>A-15848-L</b>	Crank Link Assembly, Left
4		Sh. Metal Screw, #5 x 5/8"	a)	<b>A-17050-L</b>	Flipper Crank Assembly, Left
5		Mach. Screw, 8-32 x 5/16"	b)	<b>A-15847</b>	Flipper Link Assembly
6		Lock Washer #8 Split	c)	<b>02-4676</b>	Link Spacer Bushing
7	<b>01-9375</b>	Switch Mounting Bracket	d)		Cap Screw, 10-32 x 7/8"
8	<b>20-6516</b>	Speednut, Tinnerman	e)		Flat Washer, 5/8 x 13/64 x 16ga.
9		Cap Screw, 10-32 x 3/8"	f)		Lock Washer #10 Split
10		Lock Washer #10 Split	g)		Nut 10-32 ESN
11	<b>A-12390</b>	Flipper Stop Assembly	19	<b>23-6577</b>	Bumper Plug, 5/8"
12	<b>FL-11629</b>	Flipper Coil	20	<b>03-7568</b>	Flipper Bushing
13	<b>01-7695-1</b>	Solenoid Bracket	21	<b>03-7066-5</b>	Coil Tubing
14		Mach. Screw, 6-32 x 1/4"			
15	<b>10-364</b>	Spring			

## Upper left flipper assembly

12 FL-11722 Flipper Coil

### Associated Parts:

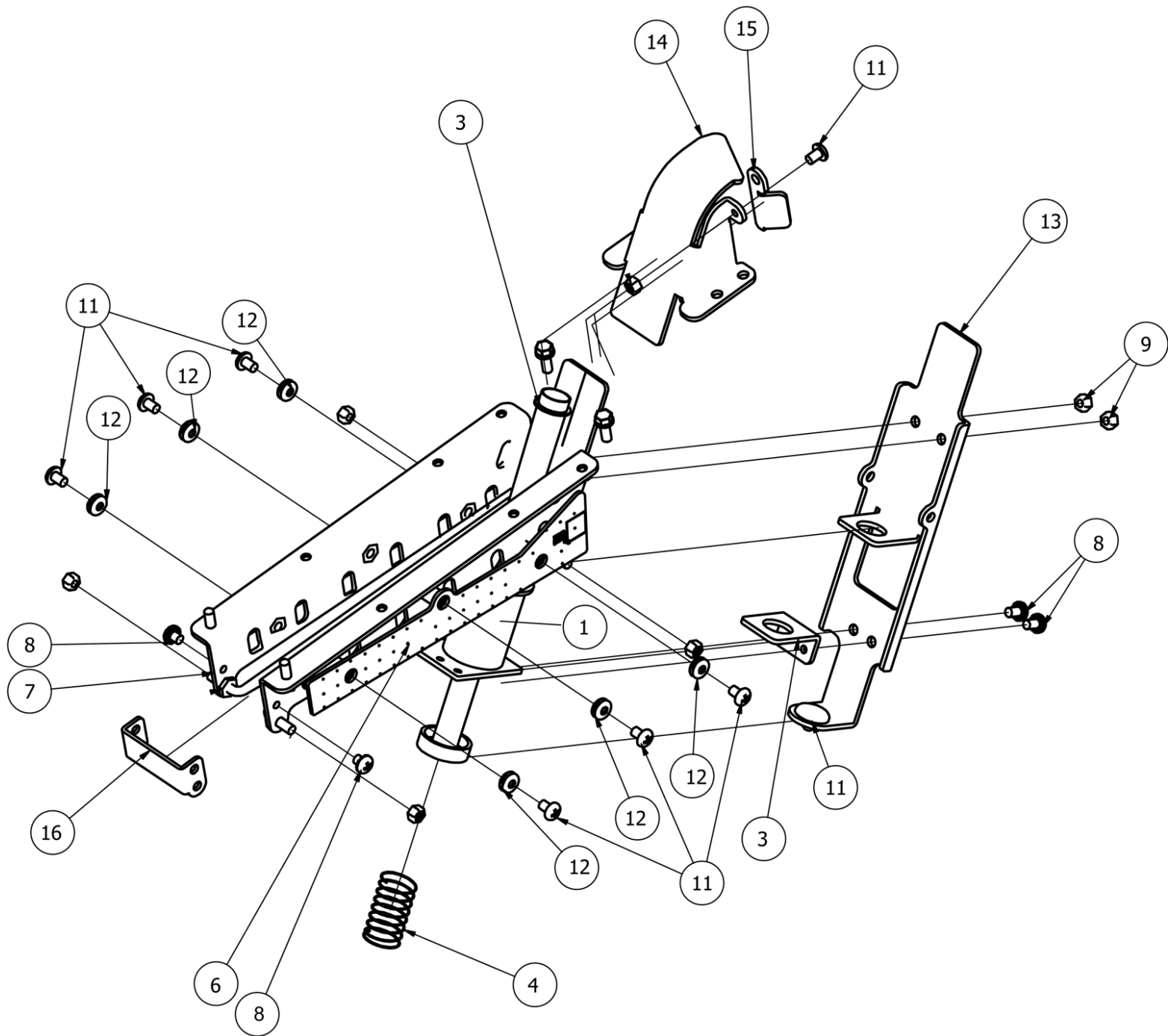
20 9250-6 Flipper Arm on Shaft (Yellow)

23-6519-4 Red Rubber Ring (Red)

### ***Flipper Assembly Notes...***

1. Each Flipper Assembly on the Lower Playfield is mounted beneath the playfield, in conjunction with the plastic Flipper Paddle and Shaft (20-9250-6) and Flipper Rubber (23-6519-4) on the upper side of the playfield.
2. The tip of the EOS Switch must travel 0.150 (+ .010, - .000) inch, before the contacts fully open, with the flipper in the actuated position. The EOS Switch contacts must have a gap of 0.062 ( $\pm$ .015) inch. Adjustment of the EOS Switch \*must be made at a minimum distance of 0.25 inch from the switch body.
3. All moving elements of the assembly must operate freely, with no evidence of binding.
4. The large end of the Coil returning Spring (item 15) need to move freely and need to operate
5. For coil replacement, remove the Solenoid Bracket (item 13) to prevent screw damage.
6. Use Loctite™ 242 when reattaching screws to the Flipper Stop Assembly, the Solenoid Bracket, and the Flipper Bushing.
7. When replacing their Bumper Plug (item 19) to restore proper flipper operation, readjust the flipper paddle and shaft position.
8. Replace Flipper coils ONLY with Flipper coils from our partners, pay attention to the diode position.

# Ball Trough Assembly

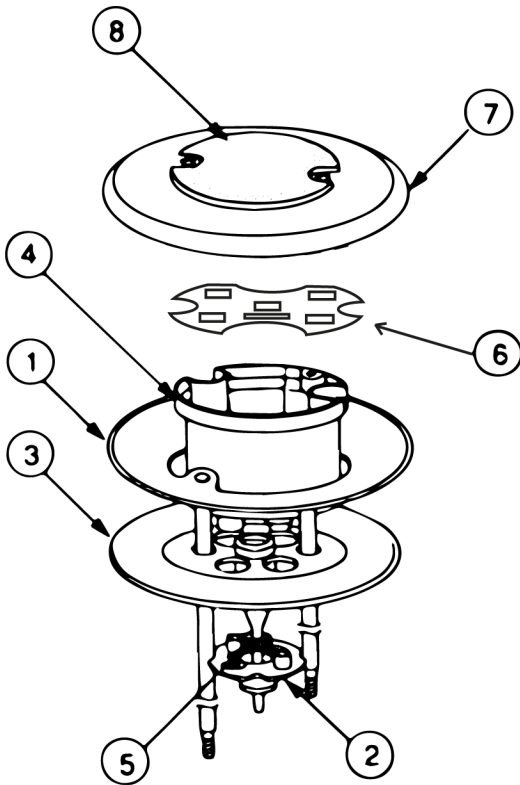


Item	Part Number	Description	Item	Part Number	Description
1	AE-26-1500	Coil Assembly	11	Mach. Screw, 6-32 x 5/8" SEMS	
2	01-8-508-T	Solenoid Assembly	12	Rubber Grommet	
3	03-7067-5	Coil Tubing	13	Trough Front Plate	
4	10-135	Spring	14	Trough TOP Plate	
5	23-6420	Rubber Grommet	15	Swing Ball LOCK	
6	Trough EMI	Trough PCB	16	Back Platea	
7	Trough Reciever	Trough PCB			
8	Mach. Screw, 8-32 x 5/16"				
9	Nut 8-32 ESN				
10	Mach. Screw, 8-32 x 3/8"				

# Jet Bumper Assemblies

## B-9414

### White Jet Bumper Assembly

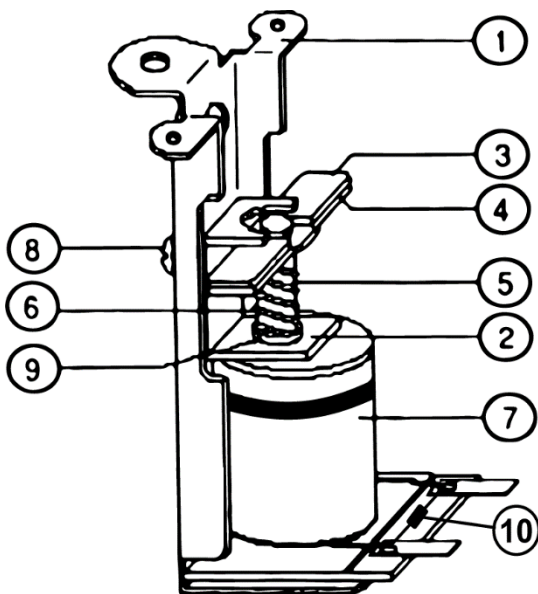


Item	Part Number	Description
1	A-4754	Bumper Ring Assembly
2	03-6009-A5	Bumper Base – White
3	03-6035-5	Bumper Wafer – White
4	03-7443-5	Bumper Body – White
5	10-7	Spring – Jet Bumper
6	201-03-01-05	Bumper Led pcb

#### Associated Parts:

7	03-8254-13	Jet Bumper Cap – Clear
8	31-2-50003-1	Jet Cap Decal
9	03-8254-10	Jet Bumper Cap – Blue
10	03-8254-9	Jet Bumper Cap – Red

## A-9415-2 Jet Bumper Coil Assembly



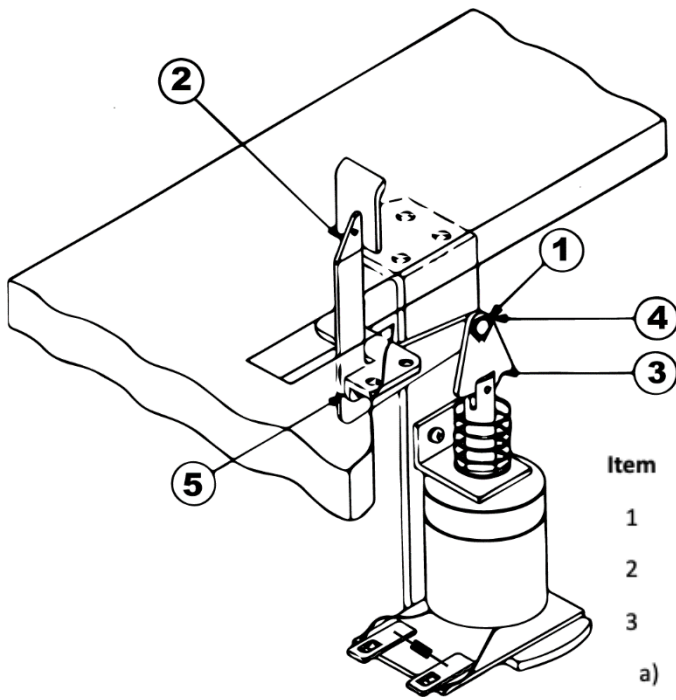
Item	Part Number	Description
1	B-7417	Bracket & Stop Assembly
2	01-1747	Coil Retaining Bracket
3	01-5492	Armature Link, Steel
4	01-5493	Armature Link, Bakelite
5	02-3406-1	Coil Plunger
6	10-326	Armature Spring
7	AE-26-1200	Coil Assembly
8	4006-01017-04	Mach. Screw, 6-32 x ¼
9	03-7066	Coil Tubing

Associated Parts		
	B-12030-2	Jet Bumper Sw & Diode Assy
	B-12029-2	Jet Bumper Sw & Brkt. Assy
	SW-11A-37	Jet Bumper Switch Assy
10	5070-06258-00	Diode, 1N4001, 1.0A

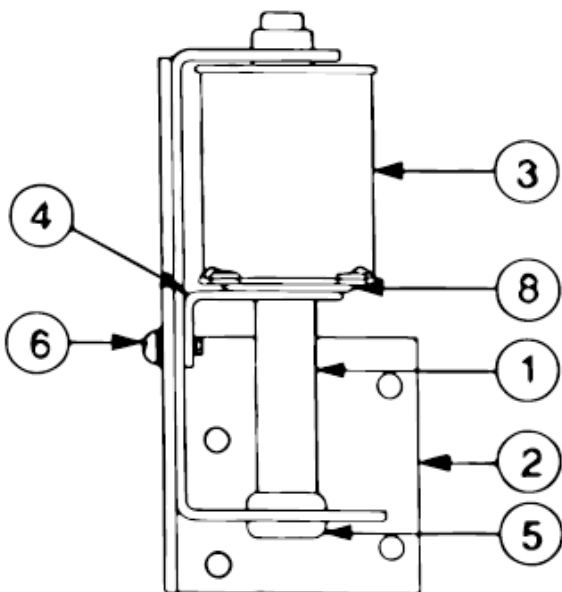
## B-12665 Kicker Arm ( Slingshot) Assembly

Left & Right Kickers



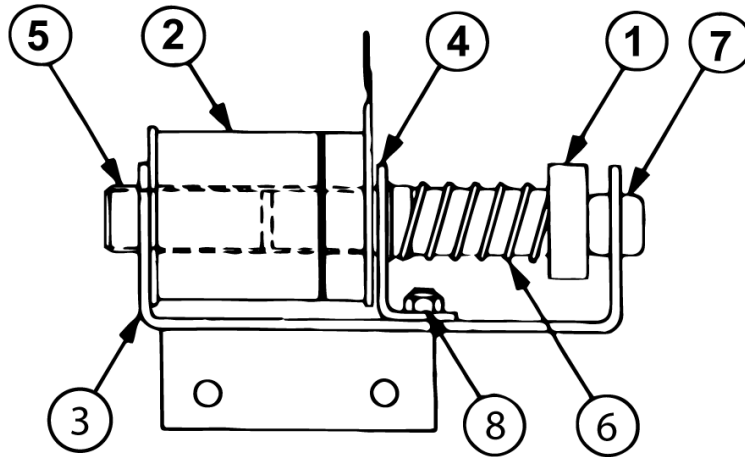
Item	Part Number	Description
1	12-6227	Clip, Hairpin
2	A-12664	Kicker Crank Assembly
3	A-5103	Coil Plunger Assembly
a)	02-2364	Coil Plunger
b)	20-8716-5	Roll Pin, 1/8 x 7/16
c)	03-8085	Armature Link
4	4700-00030-00	Flatwasher, 17/64 x 1/2 x15ga.
5	A-5653	Mounting Bracket Assembly

## B-10686-1 Knocker Assembly



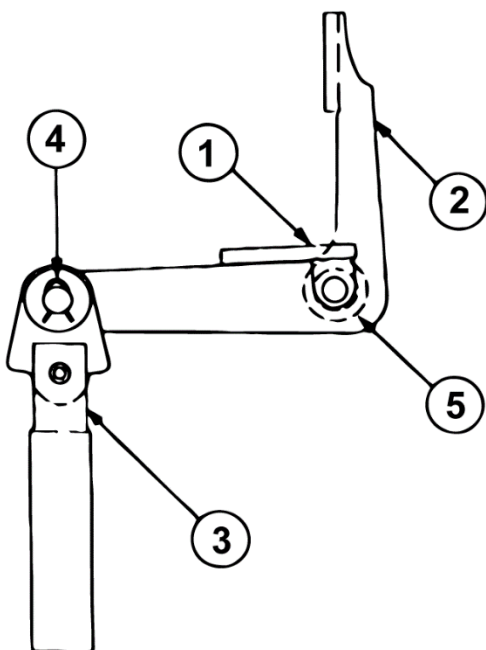
1	A-5387	Coil Plunger Assembly
a)	02-2653	Coil Plunger
b)	03-6013	Bell Arm Ext.
2	B-7409-2	Mtg. Bracket Assembly
3	AE-23-800	Coil Sub-Assembly
4	01-8-508-T	Coil Retaining Bracket
5	23-6420	Rubber Grommet
6	4008-01017-06	Mach. Screw, 8/32 x 3/8
7	FH_CABLE_6005	Knocker Cable
8	03-7067-5	Coil Tubing

## B-14107 Kicker Assembly



Item	Part Number	Description
1	A-13270	Bell Armature Assembly
2	AE-26-1200	Coil Sub-Assembly
3	A-14106	Bracket Assembly
4	01-9423	Coil Bracket
5	03-7067	Coil Tubing
6	10-135	Coil Spring Plunger
7	23-6420	Rubber Grommet
8	4408-01119-00	Nut, 8-32 ESN

## B-14143 Kickbig Assembly

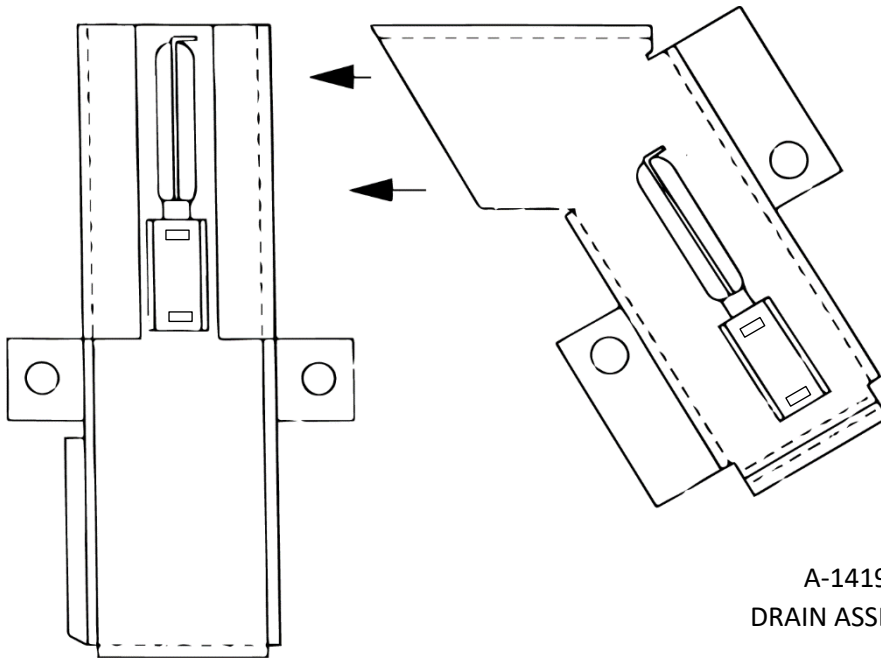


Item	Part No.	Description
1	A-11396	Kicker Mtg. Bracket Assy
2	A-5652-1	Kicker Crank Assembly – Right
a)	A-8769	Kicker Crank Sub-Assembly
b)	02-2089	Pin Cam
3	A-8050-1	Plunger Assembly, 2-1/8"
a)	002-3407-2	Plunger Coil, 2-1/8"
b)	03-8085	Armature Link
c)	20-8716-5	Roll Pin, 1/8 x 7/16
4	12-6227	Hairpin Clip
5	4700-00030-00	Flatwasher, 17/64 x 1/2

### Associated Parts

B-13953	Coil & Bracket Assembly
B-7572-1	Bracket & Stop Assembly
01-8-508-S	Coil Retaining Bracket
4006-01017-06	Mach. Screw, 6-32 x 3/8
4406-01119-00	Nut, 6-32 ESN
AE-26-1500	Coil Assembly

# Loop & Drain Assembly



A-13993  
LOOP ASSEMBLY

A-14190  
DRAIN ASSEMBLY

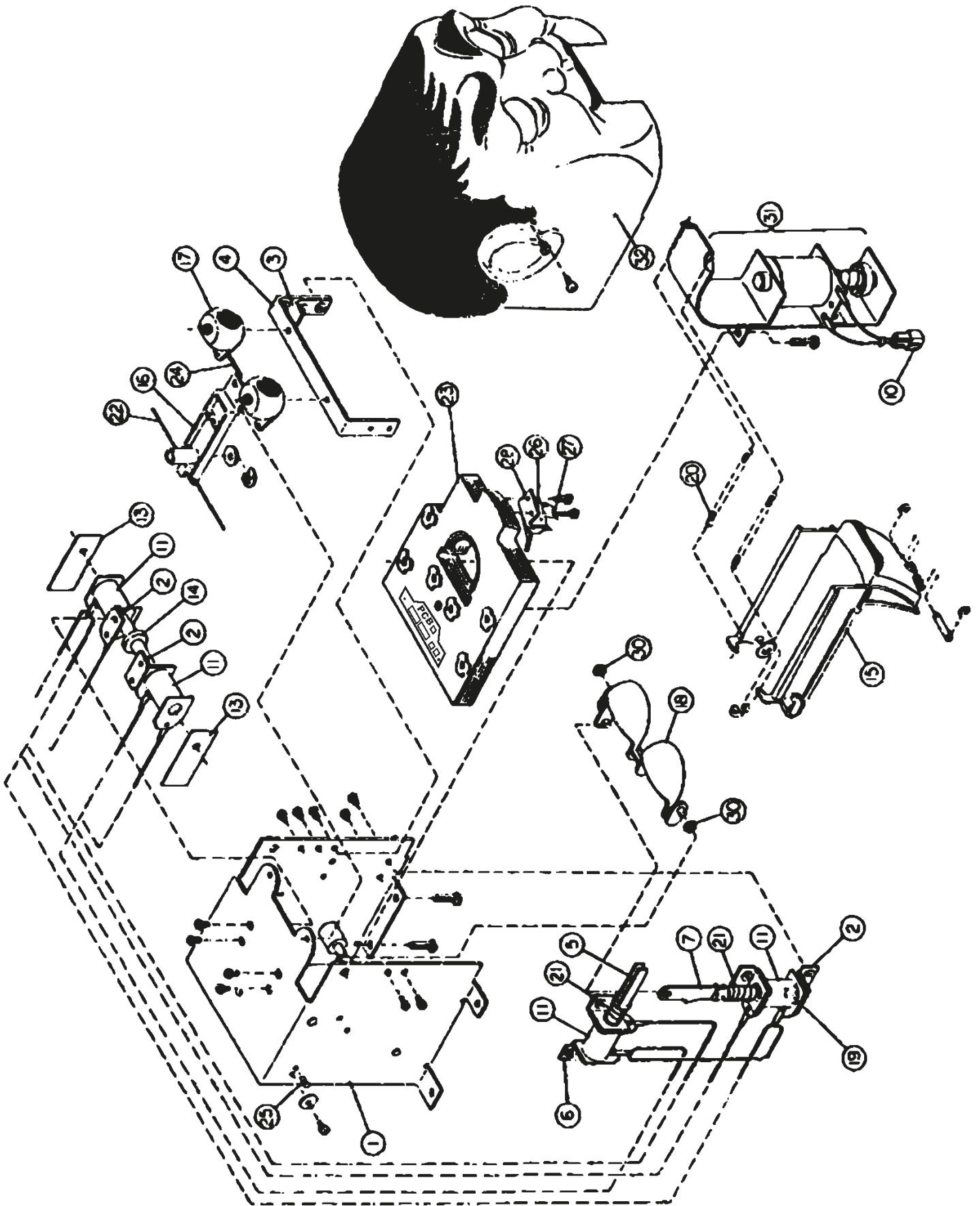
## A-13993 Loop Assembly

## A-14190 Drain Assembly

Item Part No.	Description	Item Part No.	Description
1	A-13994	1	A-13995
a)	01-9490	a)	01-9490
b)	01-9816	b)	01-9821
c)	01-9817	2	01-8240
d)	01-9818	3	4002-01005-08
2	01-8240	4	4701-00024-00
3	4002-01005-08	5	5070-06258-00
4	4701-00024-00	6	5647-12073-25
5	5070-06258-00		
6	5647-12073-25		



# A-13718 Head Assembly

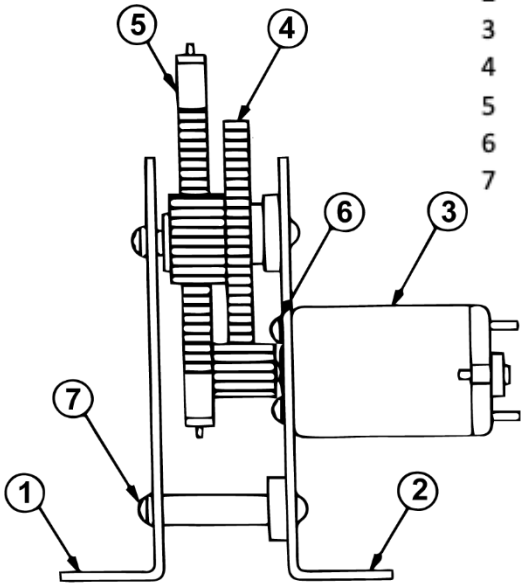


## A-13718 Head Assembly

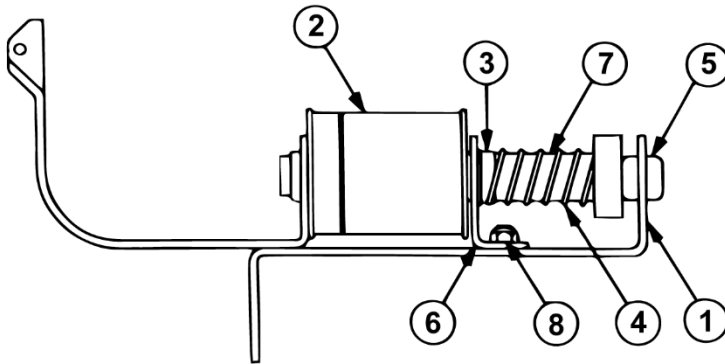
Item	Part Number	Description	Item	Part Number	Description	Related Assemblies:		
1	A-13734	Bracket, Head Sub Assembly	8	H-14252-2	Ramp Switch Cable	31	A-13941	Ball Eject Assembly
	01-9674	Bracket	9	H-14252-3	Rudy Eye Cable		A-13270	Bell Armature Assembly
	02-4454	Plunger Stop (2)	10	H-14252-4	Rudy Kicker Cable		A-11334	Ball Popper Arm Sub-Assy.
	02-4457	Shading Ring (2)	11	SM-30-1100-DC	Coil Assembly (4)		02-2963	Bell Arm Stop
	02-4459	Jaw Pivot (2)	12	01-9676	Eye Bracket		02-4279	Armature
	02-4460	Crank Pivot	13	01-9959	Insulator (2)		03-8362	Armature Extension
	20-9670	Standoff 6/32 x 3/16 (4)	14	02-4455	Plunger		20-8716-20	Roll Pin 1/8 x 3/8
2	A-13735	Coil Bracket Assembly (3)	15	03-8424	Mandible		A-13942	Bracket Assembly
	01-9677	Coil Mounting Bracket	16	03-8428	Crank		AE-26-1500	Coil Assembly
	20-9496	Pem Nut 6-32 (2 each)	17	03-8468	Eye (2)		01-9784	Coil Mounting Bracket
3	A-14026	Centering Bracket Assembly	18	03-8469	Eye Lids		03-7067	Coil Tubing
	01-9838	Centering Bracket	19	03-8486	Centering Flange		10-135	Coil Plunger Spring
	20-9496	Pem Nut 6-32 (2)	20	10-423	Extension Spring (2)		23-6420	Rubber Grommet
4	A-14027	Eye Bracket Assembly	21	10-424	Compression Spring (2)		4408-01119-00	Nut 8-32 ESN
	01-9676	Eye Bracket	22	10-425	Spring Bar		31-1588-50003	Plastic Face
	20-9496	Pem Nut 6-32 (3)	23	11-975	Wood Head Base			
5	A-14028	Plunger Assembly	24	12-6928	Wire Eye Link (2)			
	02-4492	Lid Latch Plunger	25	20-9668	Eyelet 1/8 x 1/4 (2)			
	03-8480	Plunger Extension	26	5647-12073-43	Mini Micro Switch			
	20-8716-16	Roll pin 1/16 x 5/16	27	5070-06258-00	Diode, 1N4001 1.0A			
6	A-14029	Stop Bracket Assembly	28	01-9785	Switch Mounting Bracket			
	01-9839	Stop Bracket	29	02-7520-2	Tie Wrap			
	02-4454	Plunger Stop	30	20-8790-1	Nyloniner (2)			
	02-4457	Shading Ring						
	20-9496	Pem Nut 6-32 (2)						
7	A-14030	Main Lid Plunger Assembly						
	02-4491	Main Lid Plunger						
	02-4500	Extension Plunger						
	03-8479	Eye Lid Link						
	20-8716-1	Roll Pin 3/32 x 1/2						

## A-13752 Jaw Drive Assembly

Item	Part No.	Description
1	01-9686-L	Bracket Jaw Drive Assy.
2	A-13751	Bracket Assembly
3	A-13997	Jaw Motor Assembly
4	03-8471	Gear
5	03-8470	Sector
6	4004-01003-03	Mach. Screw, #4-40 x 3/16
7	4008-01017-06	Mach. Screw, #8-32 x 3/8

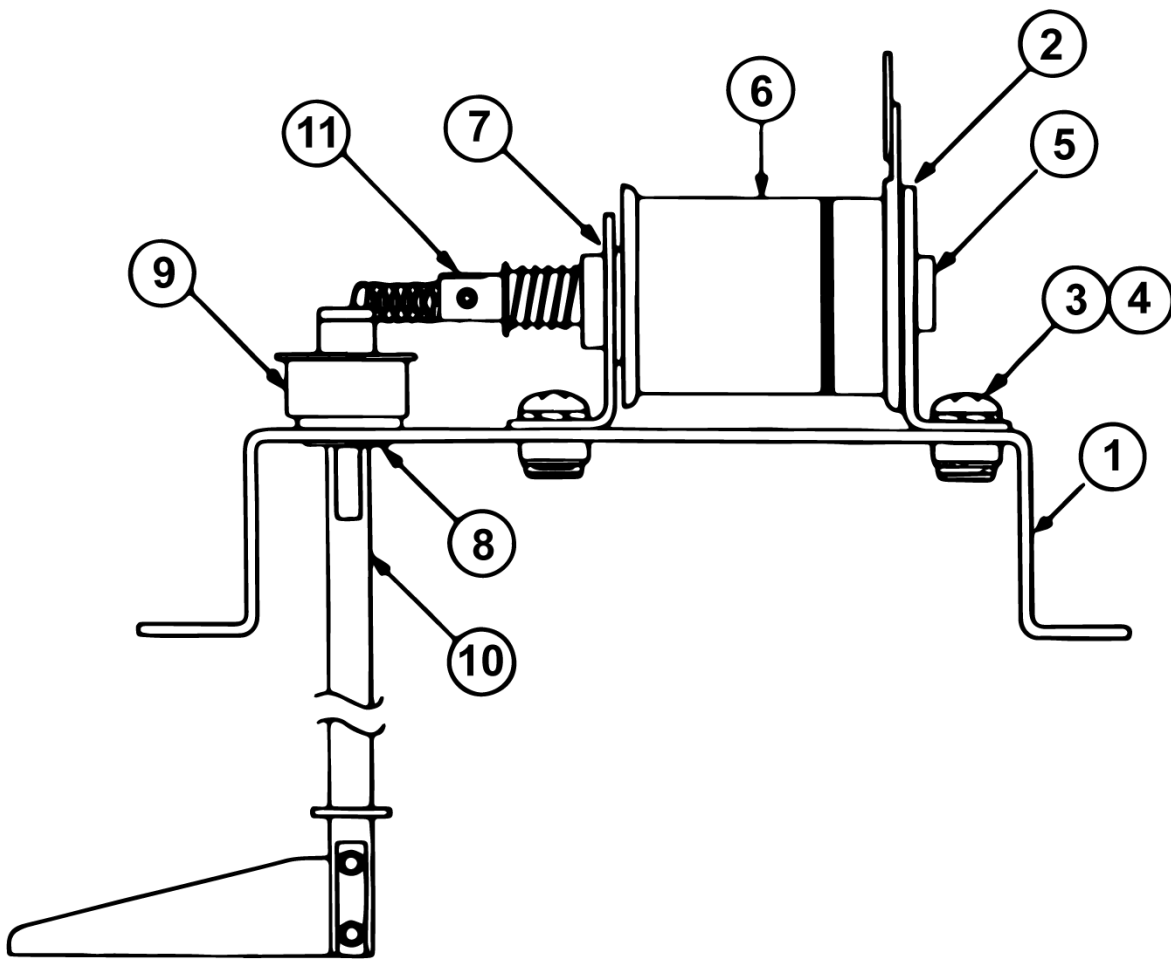


## A-13941 Eject Assembly



Item	Part No.	Description
1	A-13942	Bracket Assembly
2	AE-26_1500	Coil Assembly
3	03-7067	Coil Tubing
4	10-135	Solenoid Spring
5	23-6420	Rubber Grommet
6	01-9784	Coil Bracket
7	A-13270	Bell Armature Assy.
8	4408-01119-00	Nut, #8-32 ESN

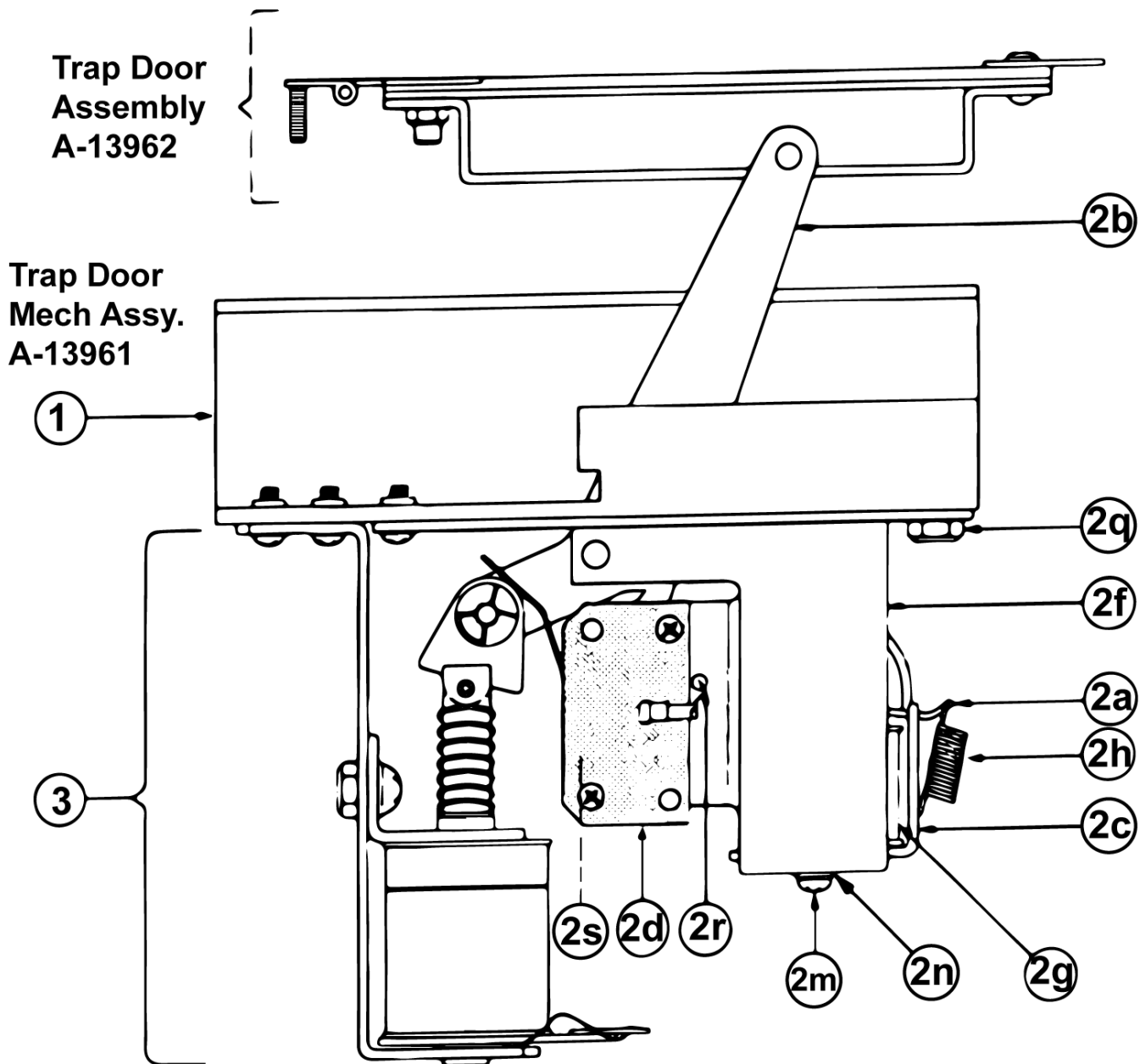
## A-14147 Diverter Assembly



Item	Part No.	Description
1	A-14146	Diverter Bracket Assy.
2	01-8413	Coil Mounting Bracket
3	4701-00004-00	Lockwasher, #10 Split
4	4010-01008-06	Mach. Screw, 10-32 x 3/8
5	03-7066	Coil Tubing
6	AE-26-1200	Coil Assembly
7	A-10821	Flipper Stop Bracket Assy.
8	20-8790	Nylined Bearing

# A-13961

## Trap Door Mechanism Assembly



## A-13961

### Trap Door Mechanism Assembly

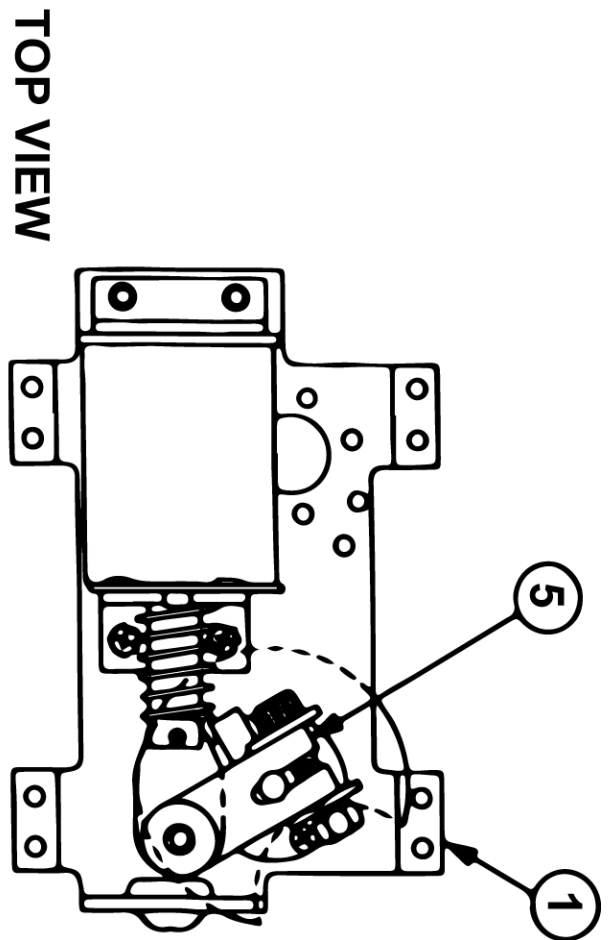
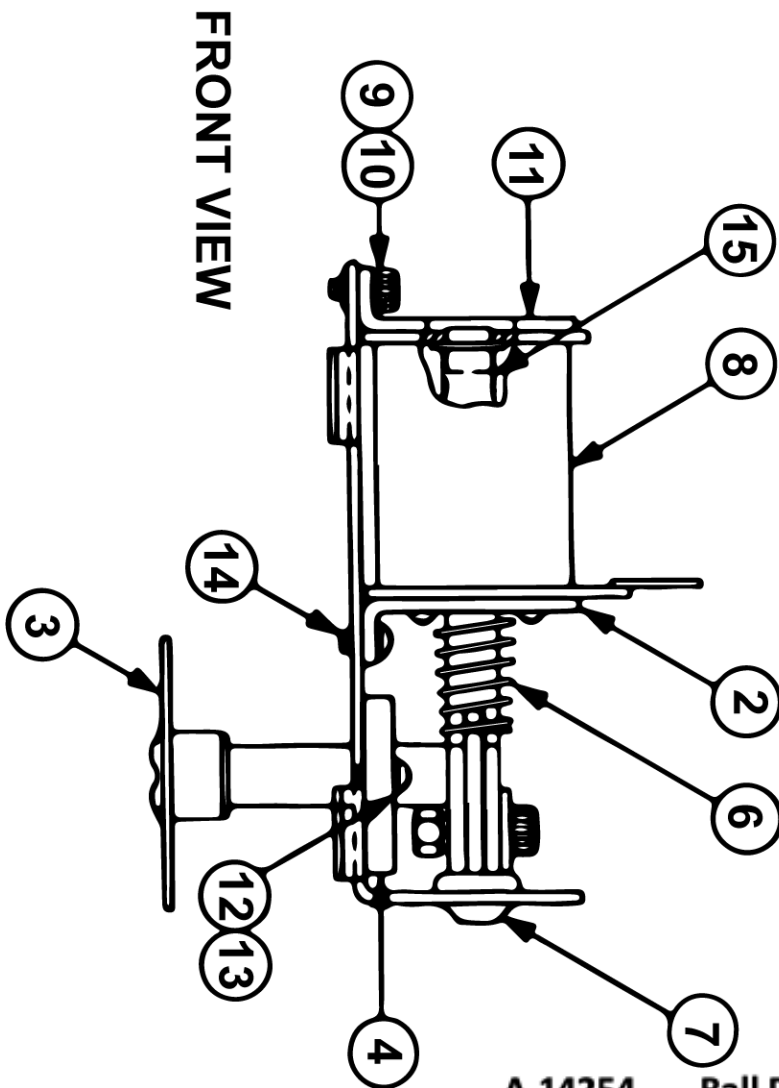
1	A-14140	Extension Bracket & Pem/Nut Assy.
2	A-14161	Lift Assembly
a)	A-11139	Armature Assembly
b)	A-14160	Lift Crank Assembly
c)	A-6892	Frame & Eyelet Assembly
d)	A-7438-1	Terminal Strip Assembly
e)	A-8050	Plunger Assembly, 2-1/4"
f)	B-11302	Lift Mech Bracket Assembly
g)	SM1-26-600	Coil Assembly
h)	10-363	Extension Spring
i)	12-6227	Hairpin Clip
j)	4004-01003-10	Mach. Screw, 4-40 x 5/8
k)	4008-01021-07	Mach. Screw, 8-32 x 7/16
l)	4700-00073-00	Flatwasher, 9/32 x 1/2
m)	4700-00089-00	Flatwasher, 11/64 x 7/16
n)	4701-00003-00	Lockwasher, #8 Split
o)	5070-06258-00	Diode, 1N4001, 1.0A
p)	5647-12001-00	Microswitch
3	B-13935	Coil & Bracket Assembly
a)	B-7572-1	Bracket & Stop Assembly
b)	01-8-508-S	Coil Retaining Bracket
c)	4006-01-017-06	Mach. Screw, 6-32 x 3/8
d)	4406-01119-00	Nut, 6-32 ESN
e)	AE-26-1500	Coil Assembly
4	10-399	Compression Spring

## A-13962

### Trap Door Assembly

1	A-14155	Trap Door Hinge Assembly
2	01-9899	Flap (Stainless Steel)
3	01-9902	Plate Protector
4	03-8500	Trap Door
5	07-668820	Rivet, 1/4 x 7/32
6	4404-01119-00	Nut, 4-40 ESN
7	4700-00003-00	Flatwasher, 1/8 x 7/32
8	31-3-50003-1	Trapdoor Decal
9	01-9901	Lifter Guide Pin

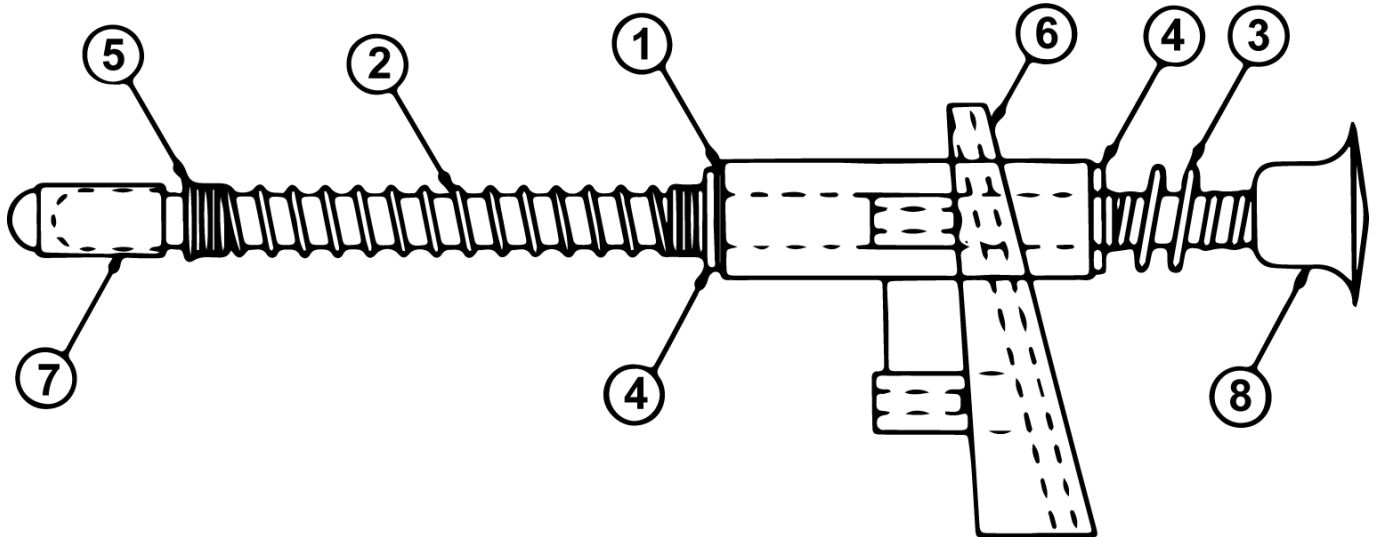
# A-14254 Ball Dispenser Assembly



**A-14254 Ball Dispenser Assembly**

1	01-7695	Flipper Armature Stop Assembly
2	A-14151	Disc Assembly
a)	01-9898	Disc
3	A-14189	Coil Assembly
4	B-10655-L	Crank Link Assy, Left
a)	A-10656	Flipper Link Assy
b)	B-10657-L	Flipper Crank Assembly, Left
5	B-13104-L	Flipper Bracket Sub-Assembly
6	01-7695	Solenoid Bracket
7	03-7066-5	Coil Tubing
8	03-7568	Flipper Bushing
9	10-422	Spring
10	23-6577	Rubber Plug Bumper, 5/8
11	4006-01005-06	Mach. Screw, 6-32 x 3/8
12	4006-01017-04	Mach. Screw, 6-32 x 1/4
13	4010-01066-06	Cap Screw, 10-32 x 3/8
14	4406-01117-00	Nut, 6-32 Hex.
15	4701-00004-00	Lockwasher, #10 Split

## Ball Shooter Assemblies



### B-7592-2

#### Ball Shooter Assembly

1	03-7357	Shooter Sleeve
2	266-5001-10	Shooter Spring – Purple
3	10-149	Rod Spring
4	4700-00051-00	Flatwasher. 26/54 x 5/8 x 16ga.
5	20-8718-1	“C”-Retaining Ring
6	21-6645	Ball Shooter Housing – P Logo
7	23-6327	Rubber Shooter Tip
8	20-9253-7	Rod Assembly

### B-11777

#### Ball Shooter Assembly

1	03-7357	Shooter Sleeve
2	266-5001-07	Shooter Spring – Orange
3	10-149	Rod Spring
4	4700-00051-00	Flatwasher. 26/54 x 5/8 x 16ga.
5	20-8718-1	“C”-Retaining Ring
6	21-6645	Ball Shooter Housing – P Logo
7	23-6327	Rubber Shooter Tip
8	20-9253-7	Rod Assembly



# Switches

11	RIGHT FLIPPER	FP-I/O-0024	J9-16	52	RIGHT OUTLANE	FH-LT-03	J7
12	LEFT FLIPPER	FP-I/O-0024	J1-11	53	RIGHT SLINGSHOT (KICKER)	FH-LT-03	J4
	LEFT UPPER FLIPPER	FP-I/O-0024	J1-12	54	STEP "T" (UPPER LEFT)	FH-LT-05	J3
13	START BUTTON	FP-I/O-0024	J1-9	55	STEPS SUPERDOG (OPTO)	FP-BRK-7072	J8
14	PLUMB BOB TILT	FP-I/O-0024	J1-10	56	RAMP ENTRANCE	FP-BRK-7072	J5
15	STEPS LIGHTS FRENZY	FH-LT-17	J6	57	JET BUMPER LANE	FH-LT-13	J8
16	UPPER RAMP SWITCH	FP-BRK-7073	J7	58	TUNNEL KICKOUT	FH-LT-13	J10
17	STEPS "S"	FT-LT-05	J10	61	RT. INSIDE RETURN LANE	FH-LT-03	J6
18	UPPER LEFT HET BUMPER	FT-LT-05	J5	62	RIGHT BALLSHOOTER	FP-AUX-0002	J1
21	SLAM TILT	FP-I/O-0024	J4-5	63	RIGHT TROUGH		
22	FRONT DOOR	FP-I/O-0024	J1-8	64	STEP "E"	FT-LT-05	J4
23	NOT USED			65	DUMMY EJECT HOLE	FT-LT-20	J8
24	TEST, ALWAYS CLOSE			66	RUGHT GANGWAY LANE	FT-LT-20	J2
25	LOCK MECH RIGHT	FH-LT-06	J4	67	LOWER RIGHT DROP HOLE	FH-LT-13	J9
26	STEPS LIGHTS EXTRA BALL	FH-LT-17	J5	68	LOWER JET BUMPER	FH-LT-13	J7
27	LOCK MECH CENTER	FH-LT-06	J5	71	RT. OUTSIDE RETURN LANE	FH-LT-03	J5
28	LOCH MECH LEFT	FH-LT-06	J6	72	LEFT TROUGH		
31	STEP "P"	FH-LT-05	J9	73	OUTHOLE		
32	TOP SUPERDOG STANDUP TARGET	FH-LT-05	J6	74	CENTER TROUGH		
33	UPPER LEFT GANGWAY ROLLUNDER	FH-LT-06	J3	75	UPPER RIGHT LOOP	FT-LT-20	J3
34	BOTTOM SUPERDOG STANDUP TARGET	FH-LT-05	J8	76	TRAP DOOR CLOSED	FT-LT-20	J7
35	STEPS TRACK LOWER	FH-LT-09	J3	77	UPPER RIGHT JET BUMPER	FH-LT-13	J3
36	STEPS 500	FH-LT-17	J3				
37	CENTER DUPRTDOG TGT	FH-LT-05	J7		LEFT FLIPPER EOS	FH-LT-03	J10
38	STEPS TRACK UPPER	FH-LT-13	J5		RIGHT FLIPPER EOS	FH-LT-03	J3
41	LEFT SLIGHSHOT (KICKER)	FH-LT-03	J9		UPPER LEFT FLIPPER EOS	FH-LT-09	J6
42	LEFT FLIPPER RETURN LANE	FH-LT-09	J4		LEFT COIN CHITE	FP-I/O-0024	J4-6
43	LEFT OUTLANE	FH-LT-09	J5		CENTER COIN CHUTE	FP-I/O-0024	J4-7
44	WIND TUNNEL HOLE	FH-LT-20	J5		RIGHT COIN CHUTE	FP-I/O-0024	J4-0
45	TRAP DOOR	FT-LT-20	J6		4TH COIN CHUTE		
46	RUDY HIDEOUT KICKBIG	FT-LT-20	J4		SERVICE CREDIT / ESCAPE	FP-I/O-0024	J4-0
47	LEFT BALLSHOOTER	FH-LT-03	J8		VOLUME DOWN /DOWN	FP-I/O-0024	J4-1
48	RAMP EXIT TRACK	FH-LT-13	J4		VOLUME UP /UP	FP-I/O-0024	J4-2
51	DUMMY JAW (OPTO)	FP-BRK-7072	J11		BEGIN TEST / ENTER	FP-I/O-0024	J4-4

