



DATA
EAST



'The Pinball Incident!'



Data East Pinball, Inc.

1990 Janice Avenue
Melrose Park, IL 60160

☎ 1-708-345-7700

FAX 1-708-345-7718

Toll-Free 1-800-KICKERS

Joe Blackwell
Dir., Technical Support

Eric Winston
Technical Support Eng.

Jay Allen
Tech. Doc. Administrator

Steve Novak
Technical Support Mgr.

CPU JUMPER TABLE

| Game | CPU* Version | ROM Position | Jumpers | | Game | CPU* Version | ROM Position | Jumpers | |
|-----------------------------|-----------------|-----------------|------------|------------|--------------------------|-----------------|-----------------|-----------|---------|
| | | | Installed | Removed | | | | Installed | Removed |
| 01. Laser War | 1 | 5C | J4 J6a J7a | J5 J6 J7b | 14. Star Trek | 3 | 5C | J5 | J4 |
| | 2 | 5B, 5C | J4 J5a J6a | J5 J5b J6b | 15. Hook | 3 | 5C | J5 | J4 |
| 02. Secret Service | 2 | 5B, 5C | J4 | J5 | 16. Lethal Weapon 3 | 3 | 5C | J5 | J4 |
| 03. Torpedo Alley | 2 | 5B, 5C | J4 | J5 | 17. Star Wars | 3 | 5C | J5 | J4 |
| 04. Time Machine | 2 | 5B, 5C | J4 | J5 | 18. Rocky & Bullwinkle | 3 | 5C | J5 | J4 |
| 05. Playboy | 2 | 5B, 5C | J4 | J5 | 19. Jurassic Park | 3 | 5C | J5 | J4 |
| 06. ABC Mon. Nite Football | 2 | 5B, 5C | J4 | J5 | 20. Last Action Hero | 3 | 5C | J5 | J4 |
| 07. Robocop | 2 | 5B, 5C | J4 | J5 | 21. Tales from the Crypt | 3 | 5C | J5 | J4 |
| 08. Phantom of the Opera | 2 | 5B, 5C | J4 | J5 | 22. The Who's Tommy | 3 | 5C | J5 | J4 |
| 09. Back to the Future | 3 | 5B, 5C | J4 | J5 | 23. WWF Royal Rumble | 3 | 5C | J5 | J4 |
| 10. The Simpsons | 3 | 5B, 5C | J4 | J5 | 24. Guns N' Roses | 3 | 5C | J5 | J4 |
| 11. Checkpoint | 3 | 5B, 5C | J4 | J5 | | | | | |
| 12. Teen. Mnt. Ninja Trtls. | 3 | 5B, 5C | J4 | J5 | | | | | |
| 13. Batman | 3 | 5B, 5C | J4 | J5 | | | | | |

Board Combinations with ROM at Location 5C (Game 1, ver1) Installed J1b, J3, J4, J6a, J7a & J8 Removed J1a, J2, J5, J6 & J7b

Bd. Combinations w/ ROM at Locations 5B, 5C (Game 1, ver2) Installed J1b, J3, J4, J5a, J6a, J7b & J8 Removed J1a, J2, J5, J5b, J6b, & J7a

Bd. Combinations w/ ROM at Loc. 5B, 5C (Games 2-13, ver2/3) Installed J1b, J3, J4, J5b, J6b, J7b & J8 Removed J1a, J2, J5, J5a, J6a & J7a

Bd. Combinations with ROM at Loc. 5C (Games 14-23, ver3) Installed J1b, J3, J5, J5b, J6b, J7b & J8 Removed J1a, J2, J4, J5a, J6a & J7a

* Version 1 has a 2K RAM which is a 24-pin IC in Position 5D; Version 2/3 have a 8K RAM which is a 28-PIN IC in Position 5D.

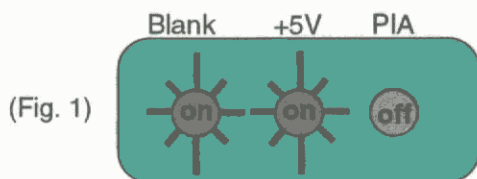
Board Compatibility (Reflexive & Non-Reflexive) of CPU Boards

Version 1 and 2—**Reflexive**—Solenoid Drive Transistor is enabled directly by a *switch closure* on the solenoid assembly. Version 3—**Non-Reflexive**—Solenoid Drive Transistor is enabled by the CPU after reading a *switch closure* in the Switch Matrix. All CPU Boards are *backwards compatible* (e.g. Jurassic Park/Ver. 3 to Time Machine/Ver. 2). Swapping a Version 2 Board to a Version 3 is not possible due to the special solenoids section (i.e. Slingshots, Turbo Bumpers, etc.) changing from **Reflexive** to **Non-Reflexive** on Version 3 Boards.

Power-Up CPU Self Tests

Upon power-up, the CPU Board performs a series of self tests of major components. Turn the game on while observing the LEDs on the CPU Board. Tests of the PIAs, RAM, and EPROMs are performed automatically and results of the tests are indicated by the PIA LED.

With all tests passed, the LEDs illuminate in the following sequence at power turn-on. The PIA and +5v LEDs illuminate immediately. Approximately 1/2-second later, the PIA LED goes out and the Blanking LED illuminates; the +5v and Blanking LEDs remain illuminated until the game is turned off. Test failures are indicated with the PIA LED:



Normal Operation

| PIA LED | SUSPECT COMPONENT |
|-----------------|-------------------------|
| Stays On | One of the 6821 PIAs |
| Flashes 1 Time | 6264 RAM at location D5 |
| Flashes 2 Times | EPROM at location C5 |

DISPLAY READS "OPEN THE DOOR" -- This indicates a faulty memory condition in RAM. Opening the Coin Door will initiate a Factory Restore, by opening the Memory Protect Switch. Check battery voltage at CMOS RAM with power off.

QUICK REFERENCE FUSE CHART

| PPB BOARD | | POWER SUPPLY BOARD | |
|-----------|---|--------------------|---|
| F1 | 5A Slo-Blo G.I. 6.3vAC | F1 | 7A Slo-Blo +5vDC Regulator Input (9vAC) |
| F2 | 5A Slo-Blo G.I. 6.3vAC | F2 | 7A Slo-Blo +5vDC Regulator Input (9vAC) |
| F3 | 5A Slo-Blo G.I. 6.3vAC | F3 | Not Used |
| F4 | 5A Slo-Blo G.I. 6.3vAC | F4 | 8A Slo-Blo Switched Illumination Buss (18vDC) |
| F5 | 5A Slo-Blo Flipper Power & 50v coils | F5 | 4A Slo-Blo Solenoid (32vDC)... Bumpers, Slingshots, etc. |
| F6 | 5A Slo-Blo Flash Lamps (32vDC) Right | F6 | 5A Slo-Blo Solenoid Buss (32vDC) |
| F7 | 3A Slo-Blo Flipper Power & 32v coils Left | F7 | 0.5A Slo-Blo Display Reg. Input (90vAC) |
| F8 | 4A Slo-Blo 50v coils | | |
| F9 | 5A Slo-Blo 50v coils | | |



GUNS N' ROSES

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GAME SPECIFICATIONS

POWER REQUIREMENTS

This game is provided with a 3-prong plug and **must be connected to a properly grounded outlet to reduce shock hazard** and insure proper game operation. Refer to AC Power Wiring Diagram for transformer connections required for normal, high, and low line conditions.

| | |
|--------------|--|
| Normal Line: | 109 to 129 -Volts AC (211 to 225 -Volts AC) |
| High Line: | (226 to 235 -Volts AC)-- European, International |
| Low Line: | 95 to 108 -Volts AC (200 to 210 -Volts AC) |

PROM SUMMARY

| | |
|---------------------------|---|
| CPU Board: | Location C5 |
| Sound Board: | Locations U17 (Voice ROM 1), U21 (Voice ROM 2), U36 (Voice ROM 3), U37 (Voice ROM 4), and U7 (Sound ROM) |
| Display Controller Board: | Location U12, ROM 0 |

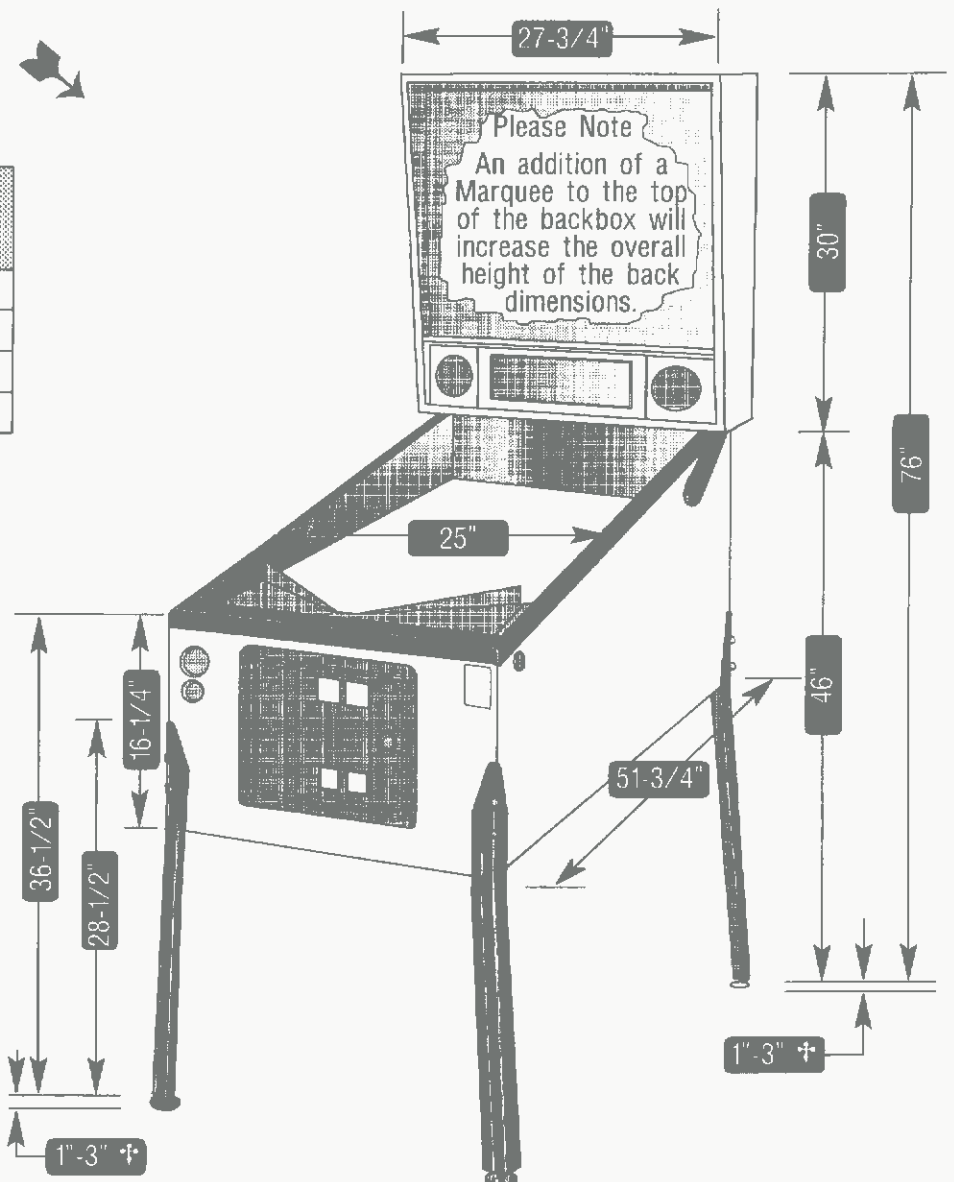
TRANSPORTATION

To reduce the possibility of damage, observe the following precautions whenever transporting the game. Lower the backbox and secure it to the cabinet. Remove the legs and secure the game within the transporting vehicle.

OVERALL DIMENSIONS

| Shipping Crate Dimensions | |
|---------------------------|----------|
| Height | 55-1/2" |
| Width | 30-1/2" |
| Length | 31" |
| Approx. Wt. | 300 lbs. |

† Note: The Leg Levellers can add up to 2 more inches to the overall height of the front & back dimensions.



Game Assembly Procedures

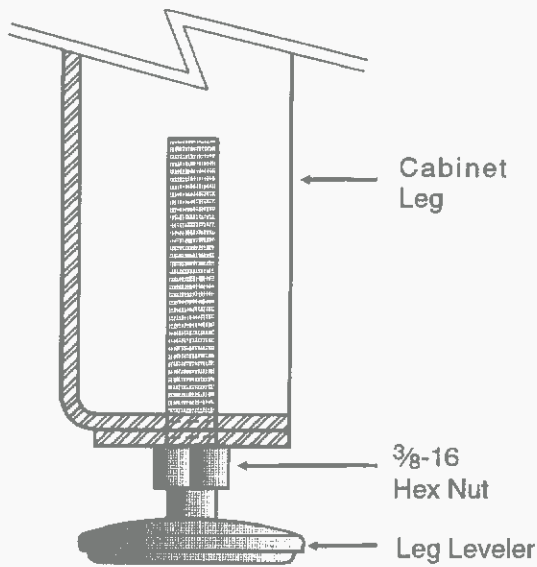
(Refer to the Illustrations on pages 3 & 4)

1. Open the top of the carton and lay it on its side with the bottom of the cabinet down. Using the plastic banding strip as a handle, slide the game out of the carton.
2. Remove all packing material. Cabinet legs are located on top of the front moulding above the coin door and the assembly parts package is in the cashbox. There should be four leg levelers, eight leg bolts, six pinballs and a large Allen Wrench, used for securing the backbox, is inserted & taped to the rear of cabinet.
3. Attach leg leveler from the parts package to each leg, make sure that each leveler is threaded through a hex nut before threading it into the leg.
4. Support rear of cabinet and attach rear legs using two leg bolts for each leg.
5. Support front of cabinet and attach front legs using two leg bolts for each leg.
6. While assuring that no cables are being pinched, carefully raise the backbox and secure it in its upright position with the Allen Wrench in the hole in the back of the cabinet and rotating the wrench 270 degrees(3/4 turn).
7. Remove the backbox keys from the playfield glass, unlock and carefully remove the backglass. Set the backglass aside.
8. Check all connectors in the backbox for loose wire terminations. Reseat any loose wire by pushing in on the terminal. Push on all connectors plugged into the CPU board, Sound Board, Power Supply Boards, and (on insert board) Display board to check that they are properly seated.
9. Check that the fuses on the Power Supply board, PPB board and fuse panel are seated properly.
10. Carefully remove the playfield glass and set it aside.
11. Raise the playfield and support it, by lifting the Stay Arm on the Right Side of the Cabinet and locking it into the slotted bracket on the playfield. (Use the instruction sheet provided in the game to see alternative methods of accessing the playfield bottom.)
12. Check all cabinet cable and playfield lamp board connector terminations.
13. Remove all shipping tie downs.
14. Remove the Plumb Bob tilt from the parts package and install on the pendulum wire on the inside left of the cabinet. (See Cabinet Parts Illustration.)
15. Lower the playfield and level the playfield side-to-side by adjusting leg levelers.
16. Using a level or slope indicator, adjust the pitch of the playfield to approximately 6.5 degrees.

THE PLAYFIELD INCLINE AFFECTS DIFFICULTY OF PLAY. USE THE RECOMMENDED INCLINE; GAME DIFFICULTY IS BEST VARIED USING GAME ADJUSTMENTS.

17. Check the plumb tilt and adjust as required.
18. If desired, perform any self tests at this time. With the insert door closed, carefully reinstall and lock the backglass.
19. Place the six pinballs on the playfield near the outhole and carefully reinstall the playfield glass.
20. If desired, make game pricing and Add-A-Ball, Novelty, or 5-Ball Play adjustments at this time.

Please Note New Leg & Leveler LEG LEVELER ADJUSTMENT



STEP 1

Assemble all (4) legs and levelers as shown in the diagram. Be sure the leveler is turned all the way in.

STEP 2

Attach leg assemblies to cabinet with leg bolts provided.

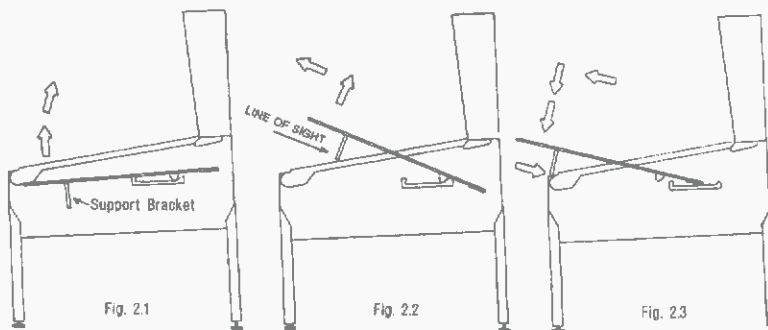
YOUR PLAYFIELD PITCH IS NOW AT 6.5° AS REQUIRED FOR PROPER GAME PLAY! See Step 3.

STEP 3

Verify 6.5° pitch. Minor adjustment(s) may be necessary depending on the location floor being level.

For custom adjustment greater than 6.5° can be achieved by turning out the leg leveler, however, it is not recommended.

EASY ACCESS SERVICE SYSTEM

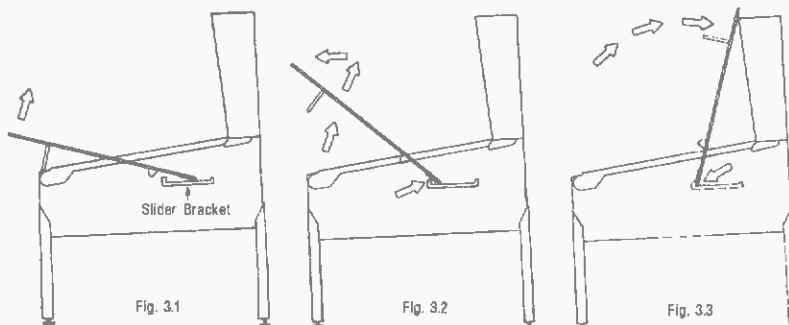


This position is useful to service:

Trough Switches, Connectors at back of cabinet, Cleaning the Playfield, etc.

SERVICE POSITION 1

Lift the playfield **using the left and right ball guides** upward (Fig. 2.1) until the playfield support brackets can be seen to clear cabinet front (Fig. 2.2). At this time, pull playfield toward the front of the cabinet, checking that the mechanical components clear the cabinet front (Fig. 2.3). Then rest the playfield on the support brackets at the front channel of cabinet. **Reverse procedure when service is complete.**



This position is useful to service:

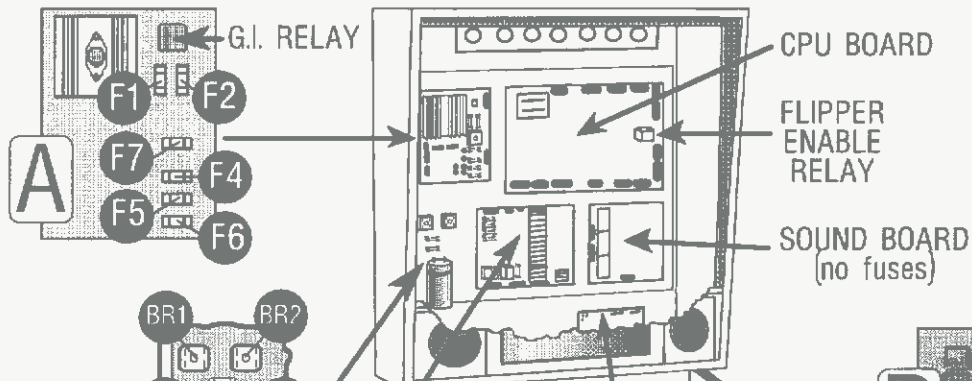
All Playfield Bottom Components, Cabinet Components, etc.

SERVICE POSITION 2

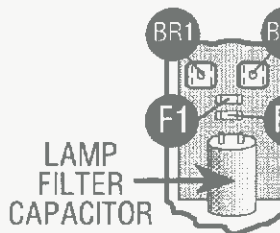
With the playfield at rest (Fig. 3.1), hold sides of playfield and pull toward the front of the cabinet (approximately 6-8"), until resistance is felt from the slider brackets located on either side of the cabinet (Fig. 3.2). At this time, swivel playfield toward the backbox, then rest on top edge of the backbox. **Reverse procedure when service is complete.**

BACKBOX LAYOUT, FUSE & RELAY LOCATIONS

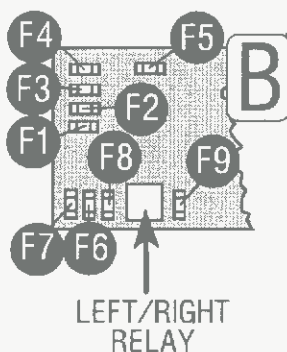
PSB →
Power Supply Board



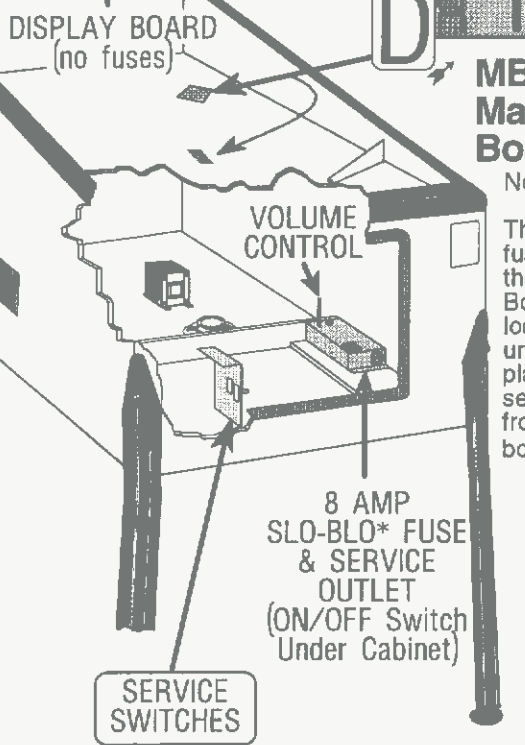
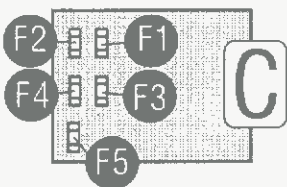
| Backbox Bridges Mounted in Backbox | |
|------------------------------------|------------------------|
| F1: | 8A Slo-Blo 32v Coils |
| F2: | 8A Slo-Blo 18vDC Lamps |



PPB →
Playfield Power Board



SSFB →
Solid State Flipper Board



MB Magnet Board †

Note:

The three fuses for the Magnet Board are located under the playfield separate from the board!

Note: Backbox Part Numbers on Page 38

| A: In the Backbox | | B: In the Backbox | | C: In the Cabinet | | D: † Under Playfield | |
|------------------------|--|---------------------------|---|--------------------------------|---|---|-----------------|
| Power Supply Board PSB | | Playfield Power Board PPB | | Solid State 3-Flipper Bd. SSFB | | Magnet Board MB | |
| F1 | 7A Slo-Blo +5vDC Regulator Input (9vAC) | F1 | G.I. 5A Slo-Blo Playfield | F1 | 3A 250v Slo-Blo 50v DC Output (All Fuses) Lower Right Flipper | F1 | 2.5 Amp Slo-Blo |
| F2 | 7A Slo-Blo +5vDC Regulator Input (9vAC) | F2 | G.I. 5A Slo-Blo Backbox Dr./Spkr. Panel | F2 | 3A 250v Slo-Blo 9v AC Holding | F2 | 2.5 Amp Slo-Blo |
| F3 | Not Used | F3 | G.I. 5A Slo-Blo Playfield & Coin Door | F3 | 3A 250v Slo-Blo 50v DC Output Left Flipper | F3 | 2.5 Amp Slo-Blo |
| F4 | 8A Slo-Blo Switched Illum'tion Buss (18vDC) | F4 | G.I. 5A Slo-Blo Backbox Door | F4 | 3A 250v Slo-Blo 9v AC Holding | † Note: The three fuses are located separate from the Magnet Board. | |
| F5 | 4A Slo-Blo Solenoid (32vDC) Bumpers, Sling-shots, etc. | F5 | 50v 5A Flippers /All 50v Coils | F5 | 3A 250v Slo-Blo 50v DC Output Upper Left Flipper | | |
| F6 | 5A Slo-Blo Solenoid Buss (34vDC) L/R Relay Coils/Flash | F6 | 32v Flash Lamps | | | | |
| F7 | 0.5A 250v Slo-Blo Display Reg. Input (90vAC) | F7 | 32v 3A Coils/Flash Right/Left | | | * Cabinet Fuses Main Fuse Line: 8Amp 250v Slo-Blo International: 2X 4Amp 250v Slo-Blo | |
| | | F8 | 50v 4A / 50v Coils | | | | |
| | | F9 | 50v 5A Laser Kick | | | | |

GAME OPERATION & FEATURES

Standard Features

Insert coin(s), the game makes a sound for the first credit and generates sounds for each subsequent coin and the display indicates the number of credit(s) posted. Depress the credit button and a start-up sound is produced, the posted credit(s) are reduced by one. The display now indicates the player or # of players selected from the total depressions of the credit button. The display indicates the ball in play, and a ball is served to the shooter lane. Additional players may be added by pressing the Credit button before the end of ball 1. At game start, an introduction is shown followed by Skill Shot Graphics. (Note: Any 1/2 credit remaining during game play after the end of ball 1, or power down, will be eliminated.)

The second closure (adjustable) or prolonged closure of the plumb bob tilt switch tilts the ball in play. Closure of the slam tilt switch on the coin door ends the current game(s).

At the end of each ball, earned bonuses are collected. If the player enabled the EB Buy-In Feature*, the player now has the option of purchasing an extra ball to continue game play (See Extra Ball (EB) Buy-In Feature below). Otherwise, the system produces a random 2-digit number (a multiple of 10; 00 to 90) for a Match feature (adjustable). Matching the last two digits of a player score with this number awards a credit. Some geographical areas do not allow the award of a free game, this can be adjusted with Adj. 4, Replay Awards. Players exceeding high score levels receive free credits (adjustable) and are able to enter their initials with the new High Score achieved. To enter your initials, use the left & right flipper buttons to choose letter or character as seen on the Visual Display. Hitting the Start Button locks the letter or character in. Proceed with the 2nd & 3rd letter. The game then proceeds into the game-over mode and then to the attract mode. A custom message (adjustable) can be displayed during the attract mode.

*Extra Ball (EB) Buy-in Feature

An option to add an extra ball(s) after the game is finished. TO ACTIVATE THE *EXTRA BALL BUY-IN FEATURE*, THE PLAYER MUST PRESS THE EB BUY-IN BUTTON DURING THE COURSE OF THE GAME. At the end of normal game play, the same player may choose to continue the game at the same score and features active by pressing the EXTRA BALL BUTTON prior to the expiration of the "countdown timer." Pressing the START BUTTON or FLIPPERS cancels this feature. If the player does not have any credits, the player will get "more time" to add credit. The number of extra balls which can be added to a game can be adjusted with Adj. 38, N° of Extra Ball (EB) Buy-In Allowed. Set at 00, will make this feature unavailable. Set at 01, will allow only 1 extra ball to be purchased per game. Set to Unlimited, after the end of the game the countdown will appear after the end of each ball for the option of purchasing another extra ball.

Manual Percentaging

This game is equipped with Manual Percentage Adjustment. As previously with our games, you can either set operator adjustments for a replay percent or you can set a fixed replay score.

If you set operator adjustments for a particular replay percent, the game will compute a recommended score to keep the game at that replay percentage. If a change is recommended and the game coin door is opened, the display will indicate a recommended replay score to beat and make a sound to alert the operator. By pressing the start button, the score to beat will be changed to the recommended level. If you close the coin door or go into Audit or Adjustment Mode, no score change will be made.

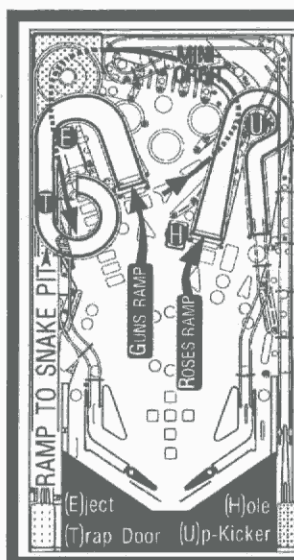
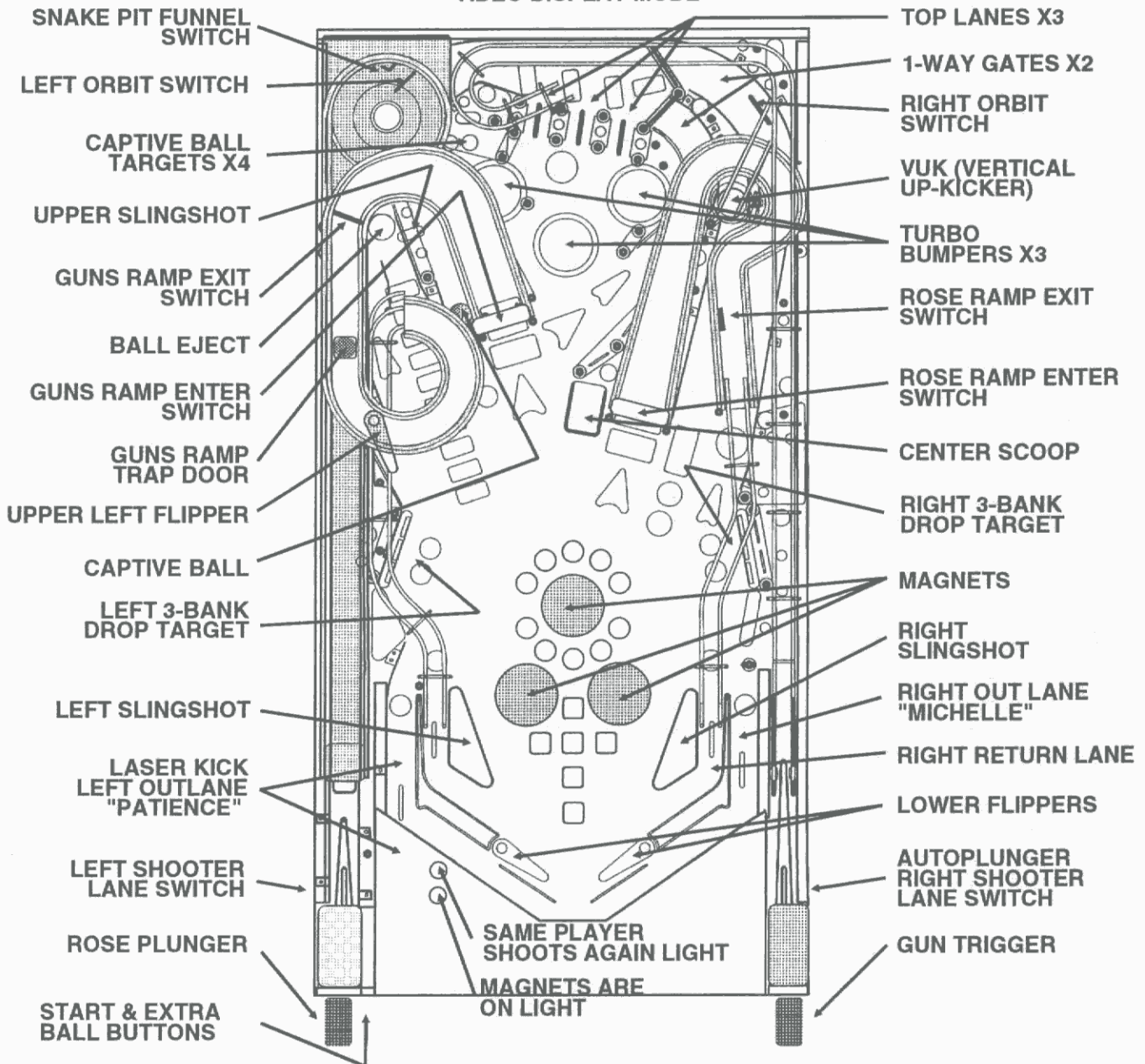
You may choose to ignore the recommended change; for example, you may not think last week's players were the usual crowd. Just close the door and the message will disappear without altering the existing level. Or you may choose to make a different score to beat adjustment; this is done by utilizing Adj. 02, Start Replay.

Playfield Overview and Game Rules (See the following pages)

The following pages describe the Game Rules. On the next page is a playfield overview to show the locations of of the featured items. Your game includes an instruction card. The instruction card on the next page may be photo-copied as a temporary replacement if required. Please note, rules and featured items may be subject to change through production.

Playfield Overview and Game Rules

VIDEO DISPLAY MODE



GUNS N' ROSES, The Pinball

SKILL SHOT Select 1 of 4 awards at the start of each ball: *Add-A-Band Member, Guitar Feature, Super Pops, or Mystery.*

MULTI-BALL Add band members by shooting the Up-Kicker, then shoot the "GUNS" Ramp or Up-Kicker to start *Multi-Ball.*

JACKPOTS Shoot ramps to collect Jackpots, then shoot the Up-Kicker for a *PARADISE CITY JACKPOT.* Repeat this sequence to light *SUPER JACKPOT* at the Mini-Orbit.

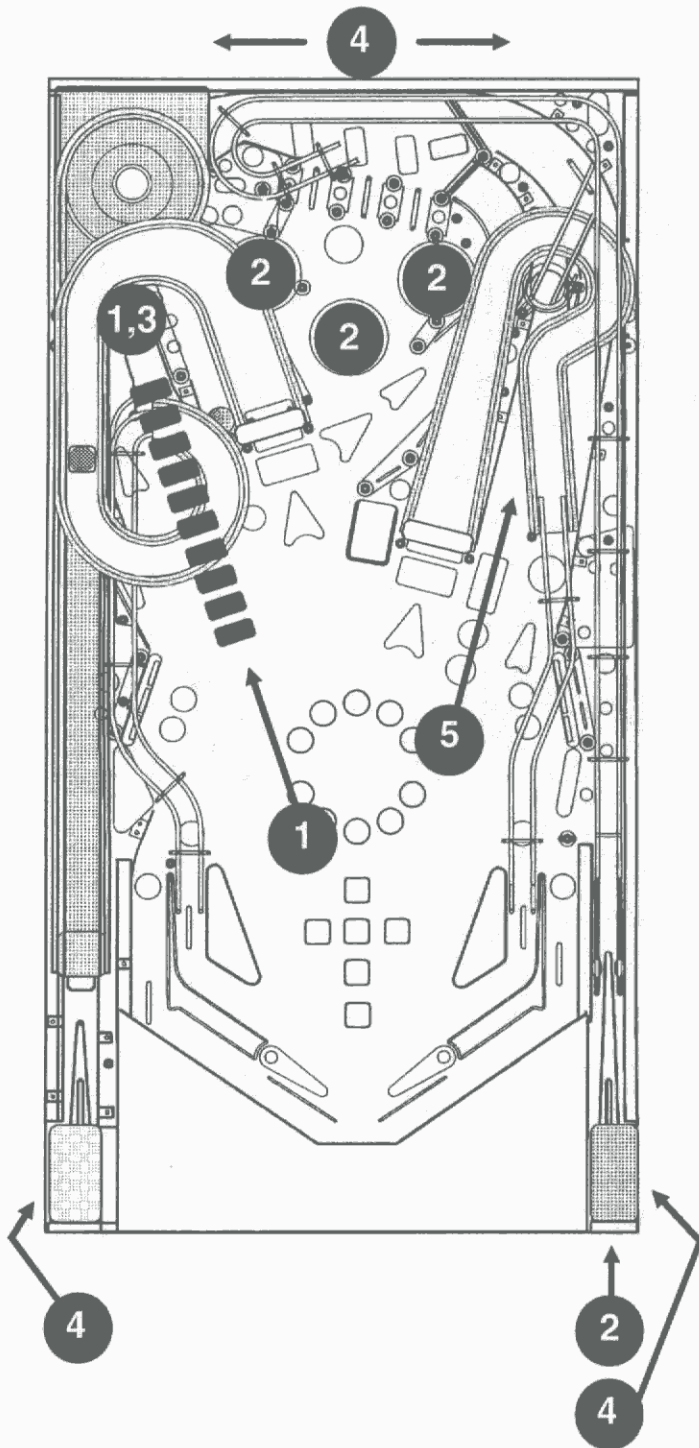
GUITAR FEATURES Shoot the "Eject" to collect various Skill Level awards. Pull Gun Trigger to lock/unlock lit feature.

MYSTERY Shoot the Mini-Orbit to light *Mystery Award* at the center "Hole".

SNAKE PIT Shoot Orbits to lite the *Snake Pit.* Enter the *Snake Pit* via the "GUNS" Ramp.

HINT Pressing the Extra Ball Buy-in Button during the course of a game activates the *Extra Ball Buy-in Feature at the end of game play!*

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01  **Guitar Feature**

Collect flashing "Guitar" features at Left Eject when lit. "Guitar" features are not available while other "Guitar" features are running.

02  **Change Guitar Feature**

The switch closures on the Turbo Bumpers change the lit "Guitar" feature. Pulling the Gun Trigger will lock/unlock the currently lit "Guitar" feature.

10 GUITAR FEATURES:

03  **Extra Ball**

An Extra Ball is collected at the Left Eject when lit for **EXTRA BALL**.

04  **Gilby Rolls - Video Mode**

Use flippers to help Gilby maneuver his motorcycle and avoid obstacles.

05  **Lite COMA**

Lites the **COMA** lamp located at the VUK. The Add-A-Ball **COMA Mode** starts when a ball is shot into the VUK. With 2 balls in play, the player must continue to shoot balls into the **COMA VUK**, each time scoring the **COMA Award** and adding another ball into play. The **COMA Award** is increased by each Turbo Bumper switch closure. Play continues until only 1 ball is left in play.

GNR RULES

06 **Slash Solo**

Shoot the Right Orbit, Left Orbit, or Mini-Orbit to collect the **SLASH SOLO COUNT-UP** Award.

07 **Matt Scoring**

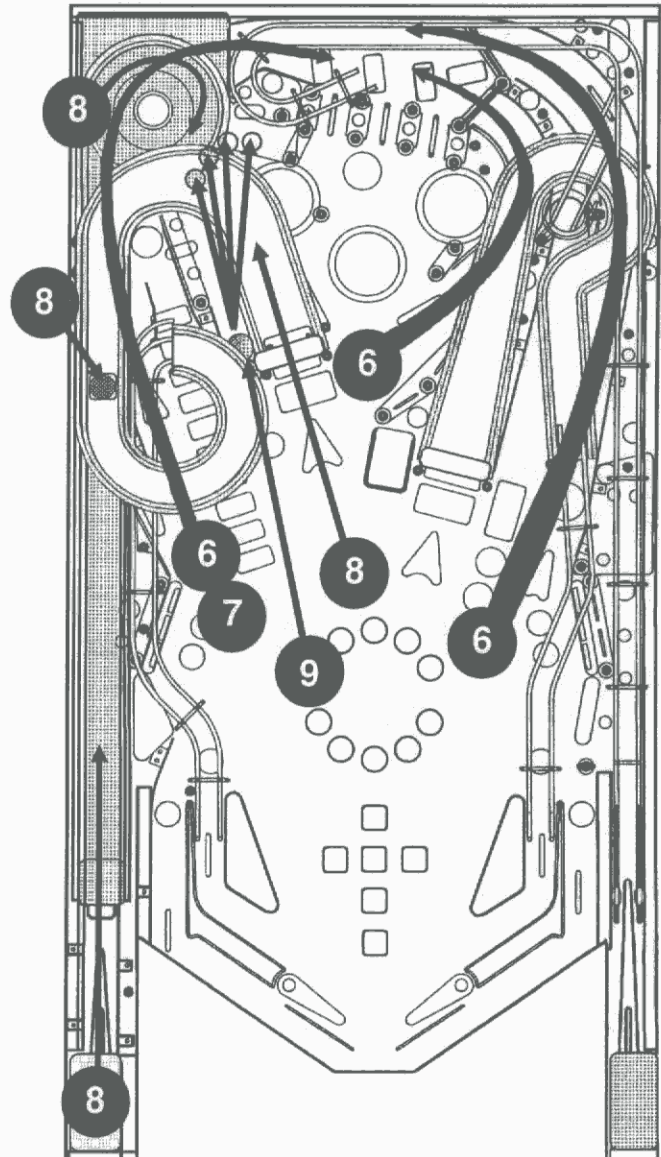
A Fast scoring mode where each switch scores 250K. Every 10 switch closures advances the award 250K. Shooting the Left Orbit collects the **MATT SCORING Escrow** Award.

08 **Super Snake Pit**

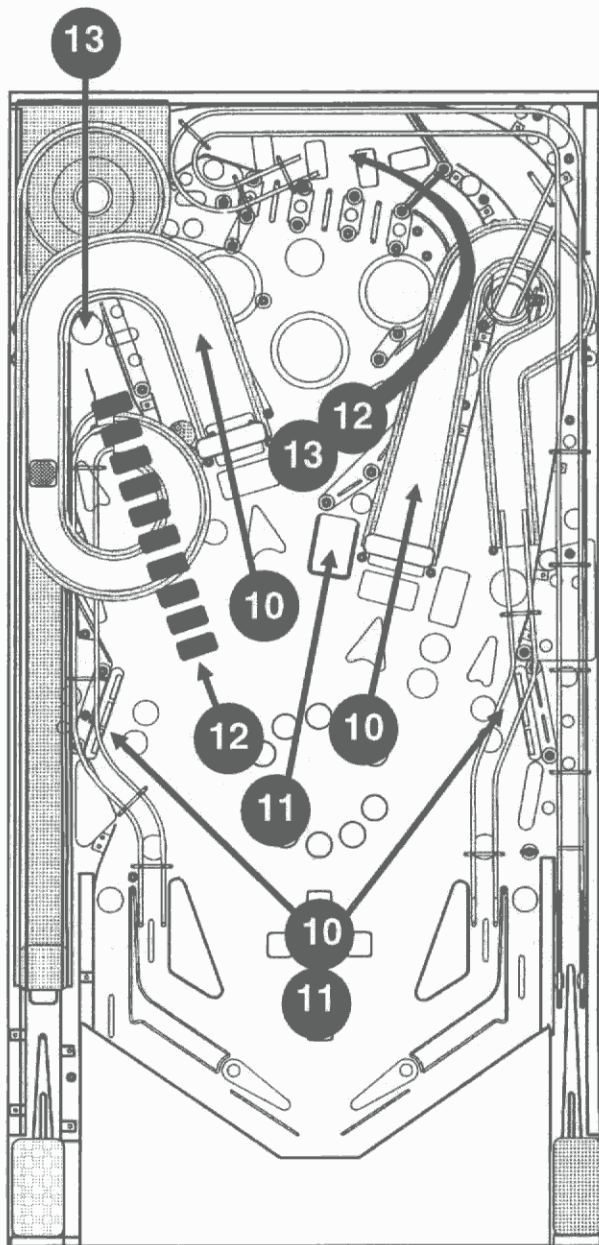
A 50M point countdown bonus starts and is collected by shooting the Left "G" Ramp. Upon collecting the countdown award the ball is diverted to the Left Plunger (*Rose*) where the player can then score an additional 1X, 2X, or 3X of the countdown value. Next, plunging the ball into the **SNAKE PIT** advances the awards from 1X, 2X, 3X, for every orbit the ball makes while in the **SNAKE PIT**.

09 **Duff Rocks**

30-Second Timed Mode. Each **DUFF** Target scores 5M; 10 **DUFF** Targets required to complete the mode. 100M Bonus for completion. The mode ends when the timer expires or 10 **DUFF** Targets are made.



GNR RULES



10 Dizzy 2-Ball

The player shoots either the Left "G" Ramp or the Right "R" Ramp for 10+ millions. Each ramp shot and/or Drop Target advances the award 1M. Play continues until 1 ball remains in Play.

11 Axl 3-Ball

Each Shot into the **AXL Scoop** scores 10M+ points. Each Drop Target advances the Scoop Award by 1M. Play continues until 1 ball remains in play.

12 Riot 6-Ball

Completing all the above **GUITAR** features lites **RIOT BALL**. All 6 balls are placed into play scoring 1M per switch closure. Every 20+ switch closures advances a letter in the word "**RIOT**" and scores an additional 20M+ point bonus. Completing "**RIOT**" lites the **RIOT JACKPOT** for 1 **BILLION** points which is collected by shooting the Mini-Orbit. Play continues until 1 ball remains in play.

13 Double

The **Guitar Scoring** features are **DOUBLED** if the player shoots the Mini-Orbit as the Guitar feature starts and the ball is kicked out of the left Eject.



MULTI-BALL RULES:

14 Multi-Ball Ready

Add Band Members (5) at the VUK to light Multi-Ball Ready at the VUK. If 1-Ball play results before a "**GUNS**" Jackpot or "**ROSES**" Jackpot is collected, then both the VUK and "G" Ramp are available for Multi-Ball Restart (2 Balls).

15 Multi-Ball Jackpots

At the start of Multi-Ball the ramps are lit for "**GUNS N' ROSES**" Jackpot. Shoot ramps to collect **JACKPOTS**, then shoot the VUK for a **PARADISE CITY JACKPOT**. Repeat this sequence to light the **SUPER JACKPOT** which is collected at the

16 Skill Shot

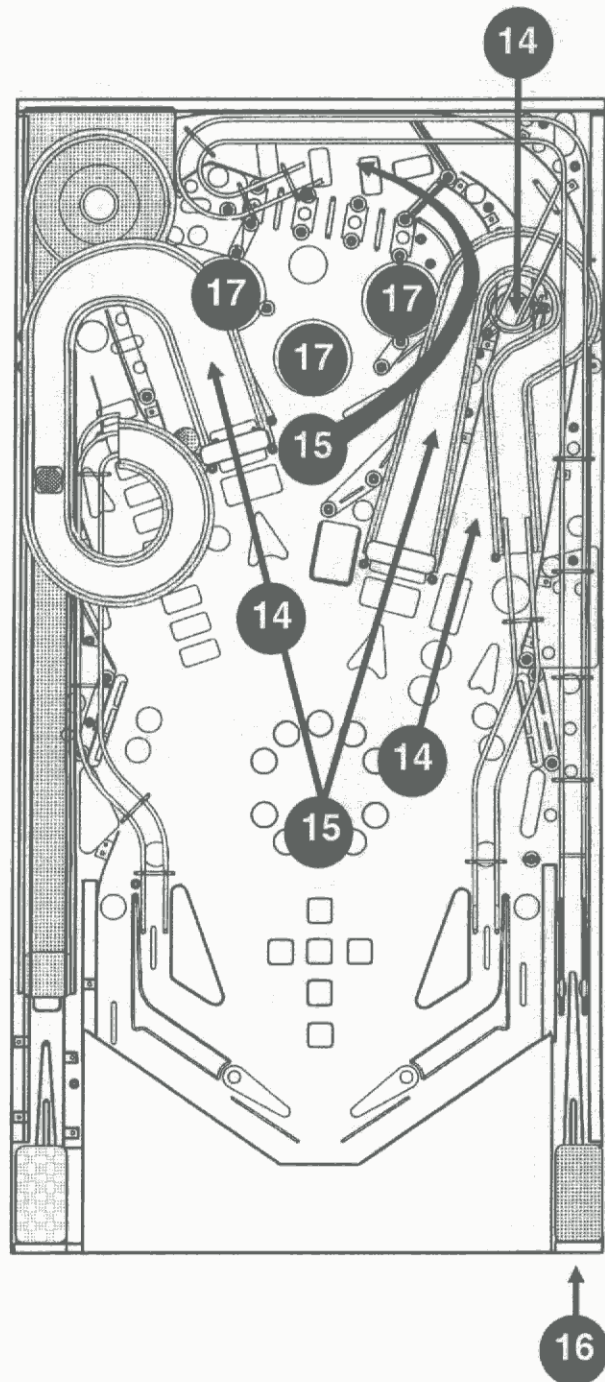
The player selects 1 of 4 awards at the beginning of each ball. The awards are:

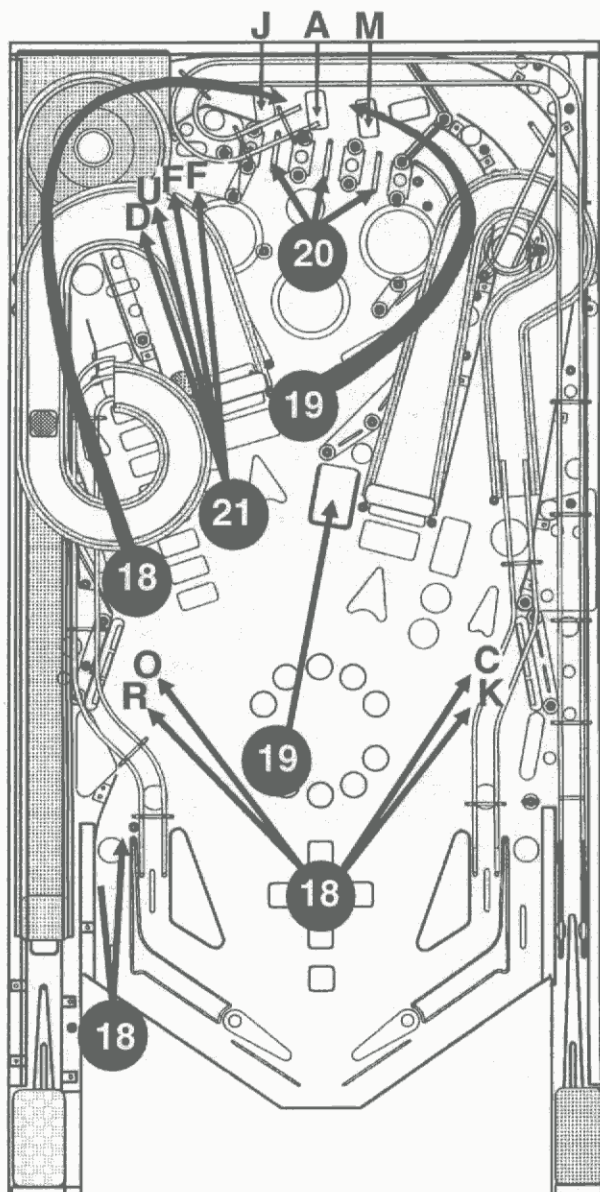
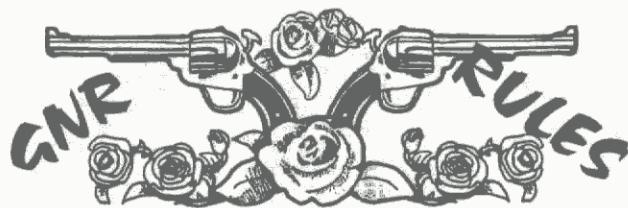
- 1) Add-A-Band Member • 2) Start a Guitar Feature
- 3) Super Pops (2M per Pop) • 4) Mystery.

The award is selected by pulling the Gun Trigger while the award is highlighted in the display.

17 Turbo Bumpers

Turbo Bumpers start at 100K per hit each ball. Each 10 hits, value increases by 100K, up to a maximum of 1M. Bumper value can also increase based on consecutive bumper hits (when the ball stays in bumpers for a long time).





18 Rock Targets

Shoot the Left and Right 3-BANK Drop Targets to spell "ROCK". When "ROCK" is spelled the "ROLL" lamp is lit at the Left Orbit for a "ROCK N ROLL" Countdown Award. The award starts at 50M and counts down to 10M. Shooting the Left Orbit during the "ROCK N ROLL" countdown, awards the countdown value and play continues. Completing the Left & Right 3-Bank Drop Targets will also re-lite the PATIENCE KICKBACK (left outline).

19 Axl Mystery Award at the Scoop

13 randomly selected awards are available for collection when Axl Mystery is lit via Mini-Orbits. Awards are given in set order during Tournament Play.

20 JAM (Top Lanes)

Completing the top lanes advances BonusX: 2X, 4X, 6X, 8X, 10X = Maximum. Subsequent hits score 20M. BonusX resets at the start of each ball.

21 Duff Targets

Each DUFF Target scores 1M, adds 1M to a progressive DUFF JACKPOT, and adds 1 uncollected letter to the the word 'DUFF'. Spelling DUFF collects the progressive DUFF JACKPOT.

GUNS N' ROSES

22 Return Lanes

The Left Return lane lites the "ROSES" Ramp for double value for a short time period. The Right return lane lights the "GUNS" Ramp for double value for a short time period.

23 Guns-N-Roses Ramp Millions Countdown

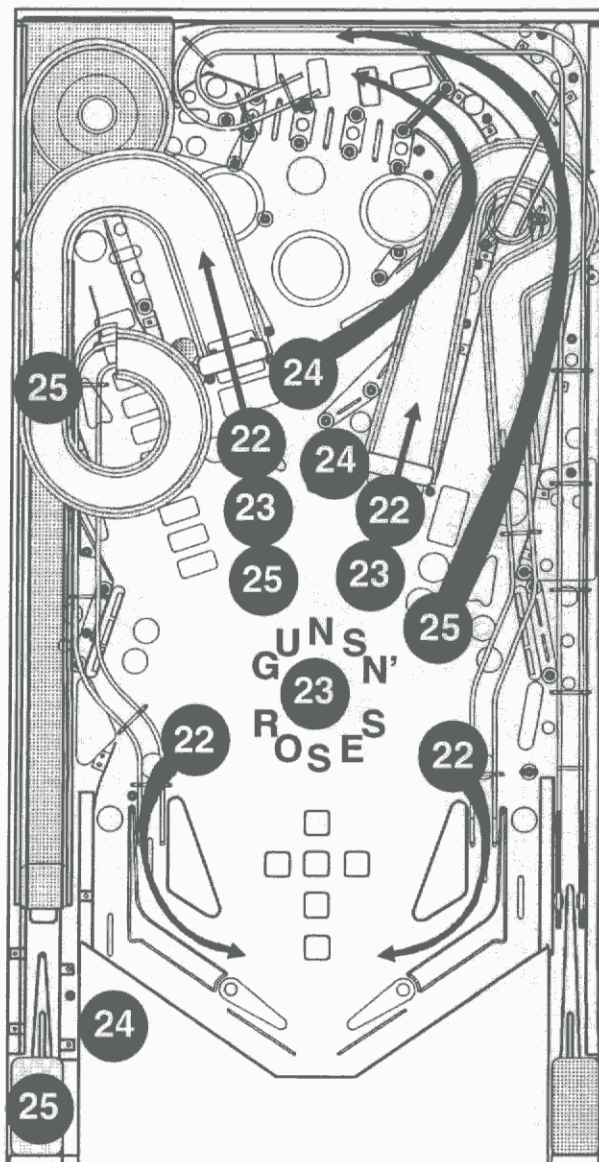
Shooting the Left "G" Ramp spells "GUNS" while shooting the Right "R" Ramp spells "ROSES". When both "GUNS" & "ROSES" have been spelled a "GUNS & ROSES" Ramp Millions Countdown feature begins. The award starts at 30M and counts down to 10M. Shooting either ramp scores the countdown award and lights the opposite ramp for an identical award for a short period of time. If the player can shoot the opposite ramp they are awarded the countdown value again and the opposite ramp is lit for an identical award. This feature continues until the player has made 10 ramp shots or the Countdown award has timed out.

24 Mini-Orbit Light Axl Mystery

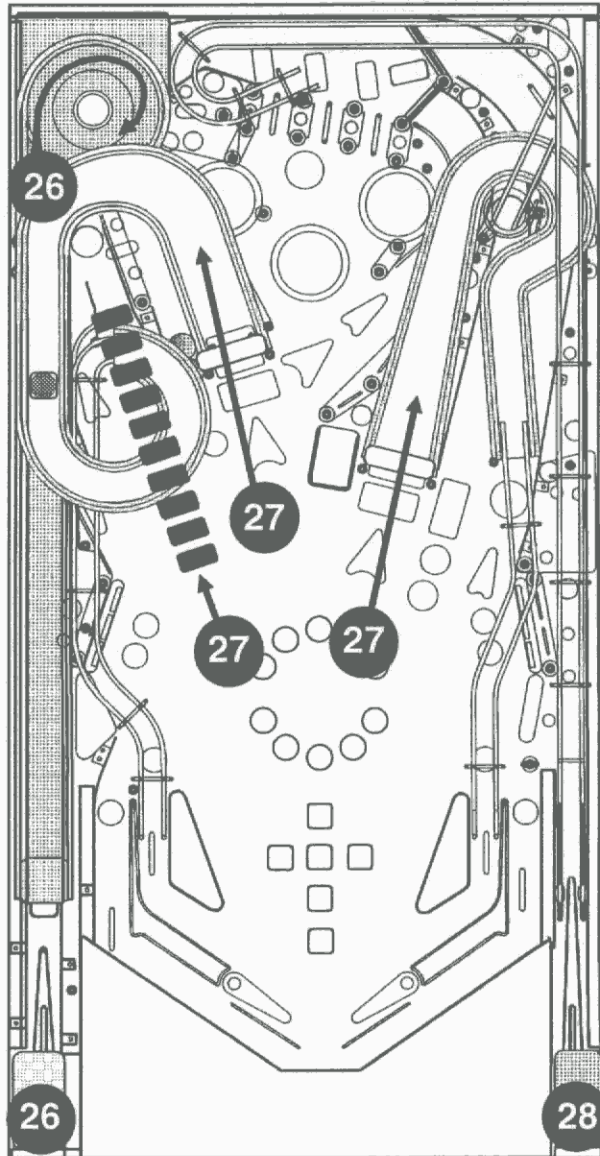
"Mystery" lights at "Scoop" after 2,5,8,11,16,22,29,37,46,....,99 Mini-Orbit shots. The Mini-Orbit also re-lites the PATIENCE KICKBACK.

25 Right Orbits to Spell: SNAKE

Spell the word "SNAKE" by shooting the Right Orbit. When "SNAKE" is spelled the Left "G" Ramp is lit for SNAKE PIT award. Shooting the Left "G" Ramp when SNAKE PIT is lit diverts the ball to the "ROSES" Plunger which in turn starts SNAKE PIT MYSTERY.



GNR RULES



29
Under
"Start"

26 Snake Pit Mystery

SNAKE PIT MYSTERY begins with the ball resting on the "ROSES" plunger. 4 Mystery Awards appear on the display with 1 being highlighted. The player plunges the ball into the **SNAKE PIT**. Each orbit of the **SNAKE PIT** highlights the next Mystery Award. When the ball stops orbiting and falls out of the **SNAKE PIT** the currently highlighted award is given to the player and play continues.

27 Bonus

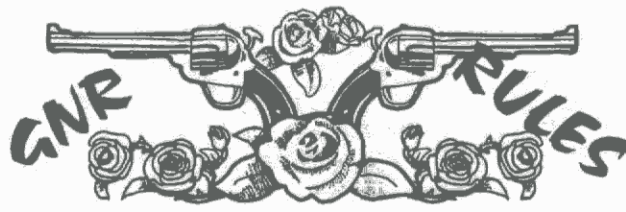
Bonus = BonusX x [200K x "GUNS" Ramp current ball + 100K x "ROSES" Ramp current ball + 1M x "Guitar" features Collected].

28 Combination Shots

The game features several "2, 3, 4" and "5" way combos. These combos involve natural sequences of orbits, ramps, and/or the Guitar/Axl Holes. Several undocumented difficult combos may also be present.

29 Extra-Ball (EB) Buy-In

Pressing the **EXTRA BALL BUY-IN BUTTON** during the course of a game activates the Extra Ball Buy-In Feature at the end of game play. After the game ends, Extra Ball(s) may be purchased to continue before the countdown timer expires. Cancel the Buy-In Feature with either the Start or Flipper Buttons.



30



Hidden Rules

Undocumented rules and special effects may be discovered by continued play.

Like any performance, rules and point values are subject to change without notice!

AUDIT FUNCTIONS

General

There are 66 audit functions provided for accounting purposes and for evaluation of game difficulty adjustments. Audit functions are split into two groups. There are 12 most-used audits (1 through 12) in a 'quick look' group and 54 less-used audits (13 through 66), in an 'Expanded' Group. The various auditing functions are summarized in the **GAME AUDIT TABLE** and, when accessed, are shown on the Dot Matrix Display. The *Audit Number* is shown in the top of the display, the *Description* is shown next and the *Audit Total* in the display. Access and control is provided from switches located on the inside of the coin door.

To access audit functions, open the coin door and make sure that the **FORWARD/REVERSE** switch is in the **FORWARD** (up) position. Depress the **STEP** switch and the display indicates **AUDITS & ADJUSTMENTS**. This indicates access to audit functions.

With the **FORWARD/REVERSE** push-button switch still in the **FORWARD** (up) position, depressing the **STEP** push-button switch advances through the audit functions one at a time. To review lower-numbered functions, set the forward/reverse push-button switch to the **REVERSE** (down) position and operate the **STEP** push-button switch.

To access expanded audits, operate the step push-button until **AUDIT 12, Expand Audits** is displayed. Set the choice to **YES** as indicated in the lower display by depressing the Game Start push-button and then depress the step push-button. The request is installed and Audit 13 is displayed. When you exit audits and adjustments, the Audit 12 setting is returned to off for the next time that a review of audits are required.

Audit totals may be reset to zero using Game Adjustment, **ADJUSTMENT 10, Reset All Audits**. Game adjustments (1 to 12 and 13 to 55) begin after the last audit function (12 or 66). Once audits functions have been recorded, and if no adjustments are required, you may return the game to the attract mode. If adjustments are required, continue pressing the **STEP** button until the game adjustments are reached. See Game Adjustments for details.

Audits - 'Quick Look' Functions

| Au. # | Audit Name | Audit Definition |
|----------------|---|--|
| Au. 1 | Total Paid Credits | The total number of paid credits is displayed. |
| Au. 2 | Free Game Percentage | The Total Free Plays (Audit 25) divided by Total Plays (Audit 26). |
| Au. 3 | Average Ball Time | (In Seconds) The Total Play Time divided by Balls Total (Audit 13) |
| Au. 4 | Average Game Time | The Average Game Time expressed in minutes and seconds. |
| Au. 5, 6, 7, 8 | Coins (Left, Right, Center, & 4th Chute) | These four audit totals are provided to show the amount of coins registered for the LT, RT, CT, & 4th Chute, respectively. |
| Au. 9 | Total Coins | The total number of coins dropped through all 4 coin chutes. |
| Au. 10 | Total Earnings | The total cash value accumulated since the last Factory Restore occurred. |
| Au. 11 | Meter Clicks | Provides the total number of money clicks accumulated, based on the country's lowest coin denomination used for the game credit. |
| Au. 12 | Expand Audits... | (On/Off) This audit permits operator to proceed into expanded audits. |



GUNS N' ROSES

Game Audit Table



| Item/Description | | Item/Description | |
|------------------|---------------------------|------------------|--------------------------------|
| 1 | Total Paid Credits | 34 | Service Credits |
| 2 | Free Game Percentage | 35 | Proprietary |
| 3 | Average Ball Time | 36 | Proprietary |
| 4 | Average Game Time | 37 | Proprietary |
| 5 | Coins Left | 38 | Total Buyin Games |
| 6 | Coins Right | 39 | Extra Ball (EB) Buyins |
| 7 | Coins Center | 40 | EB Buyin Replay Awards |
| 8 | Coins 4th Chute | 41 | EB Buyin HS Awards |
| 9 | Total Coins | 42 | Drains Left |
| 10 | Total Earnings | 43 | Drains Center |
| 11 | Meter Clicks | 44 | Drains Right |
| 12 | Expand Audits... (On/Off) | 45 | Slam Tilts |
| 13 | Balls Total | 46 | Freeze Used |
| 14 | Extra Balls Total | 47 | Left "G" Ramp Shots |
| 15 | Extra Ball Percent | 48 | Right "R" Ramp Shots |
| 16 | Replay 1 Awards | 49 | Left Drops Completed |
| 17 | Replay 2+ Awards | 50 | Right Drops Completed |
| 18 | Total Replays | 51 | Orbit Shots |
| 19 | Replay Percent | 52 | Mini-Orbit Shots |
| 20 | Total Specials | 53 | Skill Shot: Add-A-Band Member |
| 21 | Special Percent | 54 | Skill Shot: Guitar Features |
| 22 | Total Matches | 55 | Skill Shot: Pops Feature |
| 23 | High Score (HS) Wins | 56 | Skill Shot: Mystery Feature |
| 24 | High Score (HS) Percent | 57 | Guitar Feature from Eject |
| 25 | Total Free Plays | 58 | Mystery Awarded from Scoop |
| 26 | Total Plays | 59 | Multi-Ball Lit |
| 27 | 000.0 - 199.9 Million | 60 | Multi-Ball Start from "G" Ramp |
| 28 | 200.0 - 499.9 Million | 61 | Multi-Ball Start from VUK |
| 29 | 500.0 - 799.9 Million | 62 | Multi-Ball Restart Awarded |
| 30 | 800.0 - 1.09 Billion | 63 | 2nd+ Multi-Ball Start |
| 31 | 1.1 - 1.39 Billion | 64 | Jackpot |
| 32 | Over 1.4 Billion | 65 | Paradise City Jackpot |
| 33 | Average Scores | 66 | Super Jackpot |

Audits - 'Expanded' Generic Functions

| Au.# | Audit Name | Audit Definition |
|----------------|-------------------------------|--|
| Au. 13 | Balls Total | The total of regular and extra balls. |
| Au. 14 | Extra Balls Total | The total number of extra balls awarded. |
| Au. 15 | Extra Balls Percentage | The Extra Balls Total (Au.14) divided by Total Plays (Au. 26). |
| Au. 16 & 17 | Replay 1, 2+ Awards | These audits provide the total awards (credit, extra ball, or audit) for replay level 1 or 2+, respectively. |
| Au. 18 | Total Replays | The total awards (credits, extra balls, or audit only) for exceeding replay score levels. |
| Au. 19 | Replay Percent | The Replay Total awards for exceeding replay score levels, Total Replays (Au. 18) divided by Total Plays (Au. 26). |
| Au.20 | Total Specials | The total awards (credits, extra balls, or scores) for making specials. |
| Au. 21 | Special Percentage | The Total Specials (Au. 20) divided by Total Plays (Au. 26). |
| Au. 22 | Total Matches | The total credits awarded for matching the last two digits of the score with the system-generated Match Number at the end of the game. Percentage of match credits will be adjustable from 0% to 10%, by Adj. 13 if enabled. |
| Au. 23 | High Score Wins | The total credits awarded for exceeding the high-score-to-date scores. |
| Au. 24 | High Score Percent | The High Score Wins (Au. 23) divided by Total Plays (Au. 26). |
| Au. 25 | Total Free Plays | The total free credits for replays, high-score-to-date, specials, and match. |
| Au. 26 | Total Plays | The sum of Total Paid Credits (Au.1) and Total Free Plays (Au. 25). Note that free credits are not recorded in the Audit until they are actually used. |
| Au. 27 | 000.0 - 199.9 Million | Provides the total number of games the Player's final score was between 0 and 199,999,990 points. |
| Au. 28 | 200.0 - 499.9 Million | Provides the total number of games the Player's final score was between 200,000,000 and 499,999,990 points. |
| Au. 29 | 500.0 - 799.9 Million | Provides the total number of games the Player's final score was between 500,000,000 and 799,999,990 points. |
| Au. 30 | 800.0 - 1.09 Billion | Provides the total number of games the Player's final score was between 800,000,000 and 1,099,999,990 points. |
| Au. 31 | 1.1 - 1.39 Billion | Provides the total number of games the Player's final score was between 1,100,000,000 and 1,399,999,990 points. |
| Au. 32 | Over 1.4 Billion | Provides the total number of games the Player's final score was over 1,400,000,000 points. |
| Au. 33 | Average Scores | Provides the Average Score by adding the Final Score of each game to a table and dividing this sum by the Total Plays. |

Audits - 'Expanded' Generic Functions (cont.)

| Au.# | Audit Name | Audit Definition |
|----------------|-------------------------------|---|
| Au. 34 | Service Credits | Provides the total number of Service credits added to the game. <i>See Game Diagnostics on page 25 for instructions regarding entry of Service Credits.</i> |
| Au. 35, 36, 37 | Proprietary | Provides information to the game designer to aid in design development (not for consumer use). |
| Au. 38 | Total Buyin Games | Provides the number of times a player utilized the Buy-In Feature. |
| Au. 39 | Extra Ball Buyins | Provides the total number of times the Extra Ball Buyin feature was used. |
| Au. 40 | EB Buyin Replay Awards | Provides the total number of replay awards that resulted from the use of the Extra Ball Buyin (Au. 39) feature. |
| Au. 41 | EB Buyin HS Awards | Provides the total number of times in which use of the Extra Ball Buyin feature resulted in a high score. |
| Au. 42 | Drains Left | Provides the number of times the ball drained out the left drain. |
| Au. 43 | Drains Center | Provides the number of times the ball drained out the center drain. |
| Au. 44 | Drains Right | Provides the number of times the ball drained out the right drain. |
| Au. 45 | Slam Tilts | Provides the number of times the Slam Tilt switch was activated. |
| Au. 46 | Freeze Used | Provides the total number of times the Freeze feature was used. The Freeze feature is enabled at the start of each ball and is disabled as soon as the ball makes contact with 5 game switches or allocated time expired. |

Audits - 'Expanded' Game Specific Functions

| Au.# | Audit Name | Audit Definition |
|--------|---|--|
| Au. 47 | Left "G" Ramp Shots | Provides the total number of times the Left "G" Ramp was scored. |
| Au. 48 | Right "R" Ramp Shots | Provides the total number of times the Right "R" Ramp was scored. |
| Au. 49 | Left Drops Completed | Provides the total number of times that the left drop target bank was completed. |
| Au. 50 | Right Drops Completed | Provides the total number of times that the Right Drop Target Bank was completed. |
| Au. 51 | Orbit Shots | Provides the total number of times the Orbit was scored. |
| Au. 52 | Mini-Orbit Shots | Provides the total number of times the Mini-Orbit was scored. |
| Au. 53 | Skill Shot-Add-A-Band Member Feature | Provides the total number of times the Skill Shot Add-A-Band Member was selected from the Autoplunger. |
| Au. 54 | Skill Shot-Guitar Features | Provides the total number of times the Skill Shot Guitar Feature was selected from the Autoplunger. |

Audits - 'Expanded' Game Specific Functions (cont.)

| Au.# | Audit Name | Audit Definition |
|--------|---|--|
| Au. 55 | Skill Shot-Turbo-Bumper Pops Feature | Provides the total number of times the Skill Shot "Pops" Feature was selected from the Autoplunger. |
| Au. 56 | Skill Shot-Mystery Feature | Provides the total number of times the Skill Shot "Mystery" Feature was selected from the Autoplunger. |
| Au. 57 | Guitar Feature from Eject | Provides the total number of times the Guitar Feature was collected from the Eject. |
| Au. 58 | Mystery Awarded from Scoop | Provides the total number of times the Mystery Feature was collected from the Scoop. |
| Au. 59 | Multi-Ball Lit | Provides the total number of times the Multi-Ball feature was lit. |
| Au. 60 | Multi-Ball Start from "G" Ramp | Provides the total number of times Multi-Ball was started at the "G" Ramp. |
| Au. 61 | Multi-Ball Start from VUK | Provides the total number of times Multi-Ball was started at the VUK. |
| Au. 62 | Multi-Ball Restart Awarded | Provides the total number of times the Multi-Ball Restart feature was awarded. |
| Au. 63 | 2nd+ Multi-Ball | Provides the total number of times the Multi-Ball Feature was awarded two or more times. |
| Au. 64 | Jackpot | Provides the total number of times the Jackpot feature was scored. |
| Au. 65 | Paradise City Jackpot | Provides the total number of times the Paradise City Jackpot feature was scored. |
| Au. 66 | Super Jackpot | Provides the total number of times the Super Jackpot feature was collected. |

GAME ADJUSTMENTS

General

There are 55 adjustable functions provided to vary difficulty of play and to periodically reset audits and the high score levels. The various game adjustments are summarized in the **Game Adjustments Table** and, when accessed, are shown on the player score display. The *Adjustment Number* is shown in the top of the display, the *Description* is shown next, and the setting, in the bottom of the display. Access and control is provided from switches located on the inside of the coin door.

Game adjustments are accessed from the audit mode. With the audits displaying AUDIT 1 and the **FORWARD/REVERSE** switch in the **REVERSE** (down) position, depress the **STEP** switch and ADJUSTMENT 99 is shown at the top of the display, *Factory Restore* is shown in the middle of the display, and **NO** is shown in the bottom of the display. With the audits displaying AUDIT 10 or 99) and the **FORWARD/REVERSE** switch in the **FORWARD** (up) position, depress the **STEP** switch and ADJUSTMENT 1 is shown in the top of the display, *Replay/manual* is shown in the middle of the display, and the setting is shown in the bottom of the display.

With the **FORWARD/REVERSE** switch in the **FORWARD** (up) position, depressing the **STEP** switch advances through the game adjustments one at a time. With it in the **REVERSE** (down) position, the **STEP** switch selects lower-numbered adjustments. To rapidly scroll through adjustments, hold the **STEP** switch depressed. Adjustment values are changed by operating the **GAME START** push-button. The **FORWARD/REVERSE** switch setting determines whether the values are increased or decreased. (With the **FORWARD/REVERSE** switch up, the value increases, with it down, the value decreases). When the **STEP** switch is depressed the display indicates **REQUEST INSTALLED**.

Replay And Generic Features

Replays may be adjusted either for fixed levels or for a system-adjusted manual percentage of replay awards. Four levels may be selected. Adjustments allow awarding of a credit or an extra ball as each level is exceeded. With the manual percentage feature, if the actual replay percentage is higher or lower than that desired, the game computes new recommended manual percentage score(s). When the coin door is subsequently opened the player displays indicate the recommended level and a sound is made to alert the operator of a potential change. This new level is entered into adjustments simply by pressing the game start push-button. (If the coin door is closed or you enter audits/adjustments or diagnostics, the replay level is not changed.)

Adjustments - 'Replays'

| Adj.# | Adjustment Name | Adjustment Definition |
|--------|---|--|
| Adj. 1 | Replay - Manual: Replay - Fixed: | Adjust for percentage of awards for replay levels (1% through 50%). Proceed to Adj. 2 and 3 for starting replay levels. Lower the automatic value to 0% and the display will indicate Fixed. Proceed to Adj. 2 and 3 for fixed replay levels. |
| Adj. 2 | Start Replay - Manual | Adjust the starting Replay 1 setting to between 100,000,000 and 9,999,000,000. |
| Adj. 3 | Levels Replay / Level 1, 2, 3 & 4 Replay | Adjust the number of replay levels to be active (1 to 4). Any additional starting replay levels are automatically set to values higher than Replay 1. Adjust Replay 1 level to between 100,000,000 and 9,999,000,000. (Same as Start Replay). If Adj. 3 is set for 2, 3, or 4, adjust Replay 2, 3, or 4 (respectively) level to between 100,000,000 & 9,999,000,000. |
| Adj. 4 | Replay Awards | Set for replays to award: CREDIT, EXTRA BALL, NONE |
| Adj. 5 | Limit Freegame | Adjust the max. # of free games that may be accumulated per game; 0-9 |
| Adj. 6 | Limit Extra Balls | Adjust the max. # of extra balls that may be accumulated per game; 1- 9 or OFF. |



GUNS N' ROSES



Game Adjustment Table

| Adj N° | Description | Factory Setting | Adj N° | Description | Factory Setting |
|--------|--------------------------|-----------------|-----------|-------------------------------|----------------------|
| 1 | Replay: Manual/Fixed | 10% | 33 | Flash Lamps | Normal |
| 2 | Start Replay | 900,000,000 | 34 | Coils Pulse | Normal |
| 3 | Replay Levels † | 01 | 35 | Modesty Option | Yes |
| 4 | Replay Awards | Credit | 36 | Next Game Promo Msg. | Off |
| 5 | Limit Freegame | 05 | 37 | Buyin Type | Extra Ball |
| 6 | Limit Extra Balls | 03 | 38 | N° of EB Buyin Allowed | 01 |
| 7 | Game Rules † | Moderate | 39 | Restart Game | Yes |
| 8 | Game Price † | USA 7 | 40 | Extra Ball Percentage | 25% |
| 9 | Reset Coins | No | 41 | Volume Control | 100% |
| 10 | Reset Audits | No | 42 | Bill Validator | No |
| 11 | Restore High Scores | No | 43 | Tournament Style | None |
| 12 | Expand Adjustments | No | 44 | External Replay Kicker Option | Off |
| 13 | Match Percentage | 09% | 45 | Multi-Ball Restart Criterion | Easy |
| 14 | Balls Per Game | 03 | 46 | Jackpot Criterion | No |
| 15 | Tilt Warnings | 01 | 47 | Multi-Ball Ready Style | Moderate |
| 16 | Replay Boost | Yes | 48 | Extra Ball Lit from Memory | On |
| 17 | Credits Limit | 30 | 49 | Ramp Memory | On |
| 18 | High Scores Allowed | Yes | 50 | Prototype Game | No |
| 19 | High Score N° 1 Awards | 03 | 51 | Software Meter | 00 |
| 20 | High Score N° 2 Awards | 01 | 52 | Location ID N° | 0000 |
| 21 | High Score N° 3 Awards | 01 | 53 | Game ID N° | 0000 |
| 22 | High Score N° 4 Awards | 00 | 54 | Reset Printer | N/A |
| 23 | Default High Score N° 1 | 2,400,000,000 | 55 | Printer Interface | Press Start to Print |
| 24 | Default High Score N° 2 | 2,100,000,000 | | | |
| 25 | Default High Score N° 3 | 1,950,000,000 | 99 | Factory Restore | No |
| 26 | Default High Score N° 4 | 1,800,000,000 | | | |
| 27 | Default High Score N° 5 | 1,650,000,000 | | | |
| 28 | Default High Score N° 6 | 1,500,000,000 | | | |
| 29 | Reset High Score To Date | 700 Games | | | |
| 30 | Free Play | No | | | |
| 31 | Custom Message | On | | | |
| 32 | Attract Music | On | | | |

† Some settings result in Drop-Down Tables. Review the following pages which define all of the above adjustments.

Single-function Difficulty Adjustment (7)

| Adj.# | Adjustment Name | Adjustment Definition |
|-------|-----------------|-----------------------|
|-------|-----------------|-----------------------|

Adj. 7 **Game Rules**

Any one of five INSTALL settings for this adjustment may be activated to automatically select settings for multiple adjustments affecting game difficulty. Use the Start button to choose the difficulty level you require and press the step button to activate the setting. After activation, the individual adjustments may be readjusted if desired. Refer to Install Adjustment Table for details.

Set to EXTRA EASY, EASY, FACTORY, HARD or EXTRA HARD.

(Note: Additional game features are not adjustable in by the Expanded Adjustments may also change using this setting.)

| Install Adjustments | Adj. 7 Extra Easy | Adj. 7 Easy | Adj. 7 Moderate | Adj. 7 Hard | Adj. 7 Extra Hard |
|-----------------------------------|-------------------|-------------|-----------------|-------------|-------------------|
| (45) Multi-Ball Restart Criterion | EXTRA EASY | EASY | EASY | HARD | EXTRA HARD |
| (46) Jackpot Criterion | NO | NO | NO | YES | YES |
| (47) Multi-Ball Ready Style | EXTRA EASY | EASY | MODERATE | HARD | EXTRA HARD |
| (49) Ramp Memory | YES | YES | YES | NO | NO |

NOVELTY / 5-BALL / ADD-A-BALL SETTINGS

The following three combinations are recommended for situations where local laws restrict certain game features

Novelty Play Rules - Set to establish recommended settings for no free play or extra balls:

| Adj. | Adj. Name | Setting | Adj. | Adj. Name | Setting |
|------|----------------|---------|------|------------------------|---------|
| 1 | Manual Replay | Fixed | 6 | Limit Extra Balls | 00 |
| 3 | Replay Levels | None | 13 | Match Percentage | Off |
| 4 | Replay Awards | None | 19 | High Score N° 1 Awards | 03 |
| 5 | Limit Freegame | 00 | 20 | High Score N° 2 Awards | 01 |

regarding the use of replays or the number of balls per game:

5-Ball Play Rules - Set to establish recommended settings for 5-ball play:

| Adj. | Adj. Name | Setting | Adj. | Adj. Name | Setting |
|------|----------------|---------------|------|------------------------|---------|
| 1 | Manual Replay | 07% | 6 | Limt Extra Balls | 03 |
| 2 | Start Replay | 1,500,000,000 | 13 | Match Percentage | 04 |
| 3 | Replay Levels | 01 | 14 | Balls Per Game | 05 |
| 4 | Replay Awards | Credit | 19 | High Score N° 1 Awards | 03 |
| 5 | Limit Freegame | 05 | 20 | High Score N° 2 Awards | 01 |

Add-A-Ball Settings-To disable awarding of credits and provide awards with an extra ball:

| Adj. | Adj. Name | Setting | Adj. | Adj. Name | Setting |
|------|------------------|------------|-------|---------------------|---------|
| 4 | Replay Awards | Extra Ball | 18 | High Scores Allowed | No |
| 5 | Limit Freegame | 00 | 19-22 | High Score N° 1-4 | 00 |
| 13 | Match Percentage | Off | | | |

Game Price Adjustment (8)

There are two methods available for coin switch programming; Standard and Custom. Standard pricing uses a single adjustment (Adj. 8) to select a pricing scheme shown in the **Standard /Custom Pricing Table**. Custom pricing is used to select additional pricing schemes defined by a Drop Down Menu.

With Adj. 8 set to **CUSTOM** operating the step button again initiates a drop down menu representing coin switch pulses for the left, right, center and fourth coin slots. The prescribed the number of pulses are required for one credit. For example, if *Left Coin Pulses*, was set to 02 and *Coin Switch Pulses Required for 1 Credit*, to 01 a coin in the left slot would produce two credits. Further, if *Left Coin Pulses*, was set to 01 and *Coin Switch Pulses Required for 1 Credit*, to 02, two coins in the left slot would be required for one credit.

Coin Switch Pulses Required for Bonus Credit may be set to post bonus credits when a minimum amount of coins are inserted at one time. For example, if *Left Coin Pulses* was set to 01, *Coin Switch Pulses Required for 1 Credit* to 01 and *Coin Switch Pulses Required for Bonus Credit* to 04, one credit would be posted for each of the first three coins in the left slot and two credits for the fourth coin.

Standard/Custom Pricing - Set for the desired pricing scheme from the Standard Pricing Table as indicated on the dot matrix display. For Custom Pricing, set to **CUSTOM**. When set to CUSTOM, the following adjustments are utilized to tailor each individual coin chute.

Left Coin Switch Pulses - Set the number of pulses registered for closure of the left coin switch; 00 to 99.

Right Coin Switch Pulses - Set the number of pulses registered for closure of the right coin switch; 00 to 99.

Center Coin Switch Pulses - Set the number of pulses registered for closure of the center coin switch; 00 to 99.

4th Coin Switch Pulses - Set the number of pulses registered for closure of the fourth coin switch; 00 to 99.

Coin Switch Pulses Required for 1 Credit - Set the number of coin switch pulses required to post one credit; 00 to 99.

Coin Switch Pulses Required for Bonus Credit- Set the number of coin switch pulses required to award the 1st bonus credit(s); 00 to 99.

Coin Switch Pulses Required for 2nd Bonus Credit- Set the number of coin switch pulses required to award the 2nd bonus credit; 00 to 99.

Credits awarded for 1st Bonus - Set the number of credits awarded for achieving the first Bonus level; 00 to 99.

| CUSTOM PRICING TABLE | | | | | | | | | | | | | |
|-----------------------------|--------|--------|-----|--------------------|-------------|--------------|------------|------------|----------------|---------------|-------------------|-------------------|--|
| Coin Mechs | | | | Adjustments | | | | | | | | | |
| Left | Right | Center | 4th | <i>Plays/Coins</i> | Left Pulses | Right Pulses | Mid Pulses | 4th Pulses | Pulses /Credit | Pulses /Bonus | Pulses /2nd BONUS | Credit /1st BONUS | |
| 25¢ | 25¢ | \$1.00 | N/U | 1/25¢ 3/50¢ | 01 | 01 | 04 | 00 | 01 | 02 | 00 | 01 | |
| | | | | 1/25¢ 5/\$1.00 | 01 | 01 | 04 | 00 | 01 | 04 | 00 | 01 | |
| | | | | 1/25¢ 6/\$1.00 | 05 | 05 | 20 | 00 | 04 | 20 | 00 | 01 | |
| 5SCH | 10SCH | 10SCH | N/U | 1/10 S | 01 | 02 | 02 | 00 | 02 | 00 | 00 | 00 | |
| | | | | 1/10 S 4/30 S | 04 | 08 | 08 | 00 | 06 | 00 | 00 | 00 | |
| 10p | £1 | 50p | 20p | 1/30p 2/50p | 01 | 15 | 06 | 02 | 03 | 00 | 00 | 00 | |
| | | | | 5/£1 | 01 | 15 | 05 | 02 | 05 | 00 | 00 | 00 | |
| | | | | 1/50p 3/£1 | 01 | 12 | 05 | 02 | 03 | 00 | 00 | 00 | |
| | | | | 1/30p 4/£1 | | | | | | | | | |
| 20¢ | \$1.00 | N/U | N/U | 1/60¢ 2/\$1.00 | 01 | 05 | 00 | 00 | 03 | 05 | 00 | 01 | |

Standard Pricing Table

| Adj. 8 Standard Pricing Select | Coin Mechanisms | | | | Pricing Scheme Explained Number of "Plays" for Price Amount Shown | | | |
|--------------------------------|-----------------|---------------|--------------|--------------|--|------------|--------------|--------------------------------|
| | Left 1st | Center 2nd | Right 3rd | Right 4th | | | | |
| USA 1 | 25¢ | \$1 | 25¢ | | 1/25¢ | | | |
| USA 2 | 25¢ | \$1 | 25¢ | | 1/50¢ | 2/75¢ | 3/\$1 | |
| USA 3 | 25¢ | \$1 | 25¢ | | 1/50¢ | | | |
| USA 4 | 25¢ | | 25¢ | | 1/50¢ | | | |
| USA 5 | 25¢ | \$1 | 25¢ | | 1/50¢ | 5/\$2 | | |
| USA 6 | 25¢ | \$1 | 25¢ | | 1/50¢ | 2" 4X25¢" | 3/\$1 (bill) | Used to promote Bill Validator |
| USA 7 ★ | 25¢ | \$1 | 25¢ | | 1/50¢ | 4/\$1.50 | 6/\$2 | |
| Austria | 5S | 10S | 10S | | 1/10S | 2/15S | 3/20S | |
| Australia | 20¢ | \$A 1 | \$A 2 | | 1/\$A 1 | 3/\$A 2 | | |
| Australia 2 | 20¢ | \$1 | \$2 | | 1/\$1 | 2/\$2 | | |
| Belgium | 5 BF | 20 BF | 50 BF | | 1/20 BF | 3/50 BF | | |
| Canada | 25¢ | 25¢ | Can\$ 1 | | 1/50¢ | 2/75¢ | 3/Can\$ 1 | |
| Denmark 1 | 1DKr | 5 DKr | 10 DKr | 20 DKr | 1/3 DKr | 2/5 DKr | | |
| Denmark 2 | 1DKr | 5 DKr | 10 DKr | 20 DKr | 1/2 DKr | 3/5 DKr | 7/10 DKr | |
| Finland | 1Fmk | 5Fmk | | | 1/3Fmk | 2/5Fmk | | |
| France 1 ★ | 1 Fr | 5 Fr | 10 Fr | 20 Fr | 1/3 Fr | 2/5 Fr | 5/10 Fr | 11/20 Fr |
| France 2 | 1 Fr | 5 Fr | 10 Fr | 20 Fr | 1/5 Fr | 3/10 Fr | 7/20 Fr | |
| France 3 | 1 Fr | 5 Fr | 10 Fr | 20 Fr | 1/3 Fr | 2/5 Fr | 4/10 Fr | 9/20 Fr |
| Germany 1 | 1DM | 2DM | 5DM | | 1/1DM | 5/5DM | | |
| Germany 2 | 1DM | 2DM | 5DM | | 1/1DM | 6/5DM | | |
| Germany 3 ★ | 1DM | 2DM | 5DM | | 1/2DM | 2/3DM | 3/4DM | 5/5DM |
| Greece | 50Dr | | 100Dr | | 1/50Dr | 3/100Dr | | |
| Holland (See Netherlands 2) | | | | | | | | |
| Hungary | 10 Ft | 10 Ft | 20 Ft | | 1/20 Ft | 3/40 Ft | | |
| Italy 1 | 500 Lit | | 500 Lit | | 1/500 Lit | | | |
| Italy 2 | 500 Lit | | 500 Lit | | 1/1000 Lit | 3/2000 Lit | | |
| Japan | | | 100¥ | | 1/100¥ | 3/200¥ | | |
| Korea | 100Won | | 100Won | | 1/100Won | | | |
| Netherlands 1 | 1 Fls. | 1 Fls. | 2.5 Fls. | | 1/1Fls. | 3/2.5 Fls. | | |
| Netherlands 2 ★ | 1 Fls. | 2.5 Fls. | 5 Fls. | | 1/1Fls. | 3/2.5 Fls. | 6/5 Fls. | |
| New Zealand 1 | \$NZ 1 | | \$NZ 2 | | 1/\$NZ 1 | 2/\$NZ 2 | | |
| New Zealand 2 | \$NZ 1 | | \$NZ 2 | | 1/\$NZ 1 | 3/\$NZ 2 | | |
| Norway | 5 NKr | | 10 NKr | | 1/5 NKr | 5/20 NKr | | |
| Spain | 100Pts | | 500Pts | | 1/100Pts | 6/500Pts | | |
| Sweden | 1 SKr | 5 SKr | 10 SKr | | 1/10 SKr | 2/15 SKr | 3/20 SKr | |
| Switzerland 1 ★ | 1 SwF | 2 SwF | 5 SwF | | 1/1 SwF | 6/5 SwF | | |
| Switzerland 2 | 1 SwF | 2 SwF | 5 SwF | | 1/1 SwF | 3/2 SwF | 9/5 SwF | |
| UK 1 | 10p | 50p | 1£ | 20p | 1/50p | 3/1£ | | |
| UK 2 | 10p | 50p | 1£ | 20p | 1/40p | 3/1£ | | |
| UK 3 ★ | 10p | 50p | 1£ | 20p | 1/50p | | | |
| Yugoslavia | 5 Din | | 5 Din | | 1/5 Din | | | |

★ Default Factory Setting.

Additional Generic Features

| Adj.# | Adjustment Name | Adjustment Definition |
|--|---|--|
| Adj. 9 | Reset Coins | When enabled (set to YES) all coin/paid credit totals will be reset to zero when STEP is depressed. |
| Adj. 10 | Reset Audits | When enabled (set to YES) all audit totals except for coins and paid credits will be reset to zero when STEP is depressed. |
| Adj. 11 | Restore High Scores | When enabled (set to YES) the High Score Levels and associated initials will be restored to backup settings when STEP is depressed . |
| Adj. 12 | Expand Adjustments | When set to NO , depressing the STEP push-button advances directly to Adj. 99, FACTORY RESTORE . When set to YES , depressing the STEP push-button sequences through the expanded adjustments. When exiting from expanded adjustments, this function is reset to OFF for the next time that adjustments are required. |
| Adj. 13 | Match Percentage | Set Match percent from 00% to 10% or OFF . At 00% the match display occurs at the end of the game but never awards a credit. |
| Adj. 14 | Balls Per Game | Adjust the number of balls per game; 2 to 5 . |
| Adj. 15 | Tilt Warnings | Adjust the number of plumb bob tilt switch closures before the ball in play is tilted; 1 , 2 , 3 or OFF . |
| Adj. 16 | Replay Boost | Set to YES or NO . When set to YES , exceeding a replay will set a temporary replay level for each time a replay level is surpassed. This new level will equal the previous replay level (when the replay was awarded) plus 50 Million for each following game, until the replays have all been played. At this time the previous level is resumed. |
| Adj. 17 | Credits Limit | Adjust the maximum number of credits that may be posted; 4 to 50 . |
| <p>There are four of the six high score levels with associated player initials that are displayed during the attract mode. This provides a high-score-to-date feature. When players exceed these levels, the player initials may be entered to replace the previous ones. These levels may be adjusted to award credits and to be reset to backup values after a selected number of games.</p> | | |
| Adj. 18 | High Scores Allowed | Set to enable or disable the four high score levels; 00 . |
| Adj. 19 | High Scores N^o 1 Awards | Adjust the number of credits (0 to 4) awarded for exceeding level 1 (the highest of the four levels). |
| Adj. 20 | High Scores N^o 2 Awards | Adjust the number of credits (0 to 3) awarded for exceeding level 2. |
| Adj. 21 | High Scores N^o 3 Awards | Adjust the number of credits (0 to 2) awarded for exceeding level 3. |
| Adj. 22 | High Scores N^o 4 Awards | Adjust the number of credits (0 to 1) awarded for exceeding level 4. |
| Adj. 23 | Default High Score N^o 1 | Adjust the score level to which the world record, (level 1) (the highest of the four levels) may be altered. This adjustment is not affected by Adj. 29, <i>Reset High Score To Date</i> . |
| Adj. 24 | Default High Score N^o 2 | Adjust the backup score level to which level 2 may be reset. |
| Adj. 25 | Default High Score N^o 3 | Adjust the backup score level to which level 3 may be reset. |
| Adj. 26 | Default High Score N^o 4 | Adjust the backup score level to which level 4 may be reset. |

Additional Generic Features Continued

| Adj.# | Adjustment Name | Adjustment Definition |
|---------|---------------------------------|--|
| Adj. 28 | Default High Score N° 6 | Adjust the backup score level to which level 6 may be reset. |
| Adj. 29 | Reset High Score To Date | Adjust the number of games between automatic resets of high score levels to backup settings and ball time averager adjustments; 100 to 900 or OFF (no reset or adjustment). |
| Adj. 30 | Free Play | When set to YES , no coins are required for games. |
| Adj. 31 | Custom Message | When desired, this function is used to establish a custom message periodically displayed during the attract mode. Set the feature to CHANGE using the Credit button and depress STEP . The letter A is indicated in the first position in the display. Vary the letter by operating the left and right flippers. With the desired letter indicated, depress the CREDIT button to lock in the letter and advance to the next character. Repeat this procedure until the desired message is completed in the display. Press the STEP push-button switch to advance to Adj. 32. |
| Adj. 32 | Attract Music | Set to ON or OFF . |
| Adj. 33 | Flash Lamps | Set to NORMAL , DIM or OFF . When set to NORMAL the Flash Lamps are active, when DIM the Flash Lamps impulse power is reduced by 25% and when OFF the Flash Lamps do not flash. |
| Adj. 34 | Coils Pulse | Set to NORMAL , HARD or SOFT . When HARD the coil pulse power is increased by 12.5% of the normal pulse rate. When set to SOFT the coil pulse power is reduced by 12.5% of the normal pulse rate. These adjustments are provided to compensate for Low Line or High Line voltage conditions where the solenoids appear to kicking too weak or too hard. |
| Adj. 35 | Modesty Option | Set to Yes or No . Default setting is YES . When set to NO , the woman in the Match Feature appears topless. |
| Adj. 36 | Next Game Promo Message | Set to ON or OFF . When set to ON , the game, in attract mode will randomly display a short promotion for our next game. When set to OFF , the game in attract mode will not generate any sounds or graphics referring to the next game. |
| Adj. 37 | Buy-in Type | Set to Extra-Ball Buyin . When set to EB Buyin , the game is set to Extra Ball Buy-in. When set to Feature Buyin , the game is set to Game Buy-in. Set to OFF to make Buy-in Type inoperative. |
| Adj. 38 | N° of E.B. Buyin Allowed | 00, 01 or UNLIMITED . Allows the operator to adjust the number of Extra Ball (EB) Buyins allowed after normal game play. |
| Adj. 39 | Restart Game | Set to YES or NO . When set to YES , a new game may be started during any ball after the first ball is completed. (Note-Pressing start during the first ball will add additional players.) When set to NO , the game disables the start button after the first ball until the final ball is in play. |
| Adj. 40 | Extra Ball Percentage | Set from 0 to 50 . Allows the operator to adjust how frequently the Extra Ball feature is made available to the player. |
| Adj. 41 | Volume Control | Set to 0, 25, 50, 75 or 100 percent. Allows the operator to adjust the background music volume independently from the normal game sounds. |

Game Specific Features

| Adj.# | Adjustment Name | Adjustment Definition |
|---------|--------------------------------------|--|
| Adj. 42 | Bill Validator | Set to YES or NO . When set to YES , the display, in game attract mode, will show an " <i>Insert Bill Animation</i> ". When set to NO , the display, in game attract mode will show " <i>Insert Coin Animation</i> ". |
| Adj. 43 | Tournament Style | Set to NONE , PINBALL EXPO , IFPA-PAPA or HOME . This function determines the default conditions to quickly prepare a game for tournament play. When this setting is changed all audits will be reset and all adjustments will be initiated to the particular style selected. The game will then return to game over attract mode, as if a Factory Restore had been performed. NONE - Same as a Factory Reset conditions. IFPA -Straight 50¢ play, no replay, no Extra Ball, no High Scores, 2 Tilt Warnings and No Match. PINBALL EXPO-PAPA - Same as IFPA settings except Free Play is enabled. HOME -Sets game for Free Play, extra ball play, no replay, 10% Match & Ex Ball percent 30%. |
| Adj. 44 | External Replay Kicker Option | Set to ON or OFF . When set to ON , the operator can enable the kicker in the cabinet to drive an external device without the game giving a replay. |
| Adj. 45 | Multi-Ball Restart Criterion | Set to EXEASY , EASY , MODERATE , HARD or EXHARD . Determines how Multi-Ball can restart. |
| Adj. 46 | Jackpot Criterion | Determines how the Jackpot is lit. |
| Adj. 47 | Multi-Ball Ready Style | Determines how Multi-Ball Ready is achieved. |
| Adj. 48 | Extra Ball from Memory | Set to ON or OFF . When set to ON , the lit 'Extra Ball' light will be retained in memory from ball to ball for the same player. When set to OFF , the lit 'Extra Ball' light will go out at the end of each ball. |
| Adj. 49 | Ramp Memory | Set to YES or NO . When set to YES , the 'Completed Number of Ramps' will be retained in memory from ball to ball for the same player to achieve set awards. When set to NO , the 'Completed Number of Ramps' will be reset at the end of each ball. |
| Adj. 50 | Prototype Game | Set to YES or NO . Informs operator if game is a prototype or not. DO NOT CHANGE SETTING . This will affect outcome of software updates (if any). |
| Adj. 51 | Software Meter | Provides the operator with the total number of Meter Clicks. |
| Adj. 52 | Location I.D. Number | 0 to 9999 . Allows the operator to assign a location identification number to the audit print-out sheet. (Will not be affected by Factory Restore.) |
| Adj. 53 | Game I.D. Number | 0 to 9999 . Allows the operator to assign a game identification number to the Audit print-out sheet. (Will not be affected by Factory Restore.) |
| Adj. 54 | Reset Printer | Provides the operator with the ability to reset the printer option. |
| Adj. 55 | Printer Interface | Allows the operator to print by pressing the Start Button. |
| Adj. 99 | Factory Restore | Allows the operator to reset all adjustments to the factory settings. |

GAME DIAGNOSTICS

Please note: If the Display Reads "OPEN THE DOOR," this indicates a faulty memory condition in RAM. Opening the Coin Door will initiate a Factory Restore, by opening the Memory Protect Switch. Check battery voltage at CMOS RAM with power off.

The Data East Pinball system provides tests for sounds, digital displays, lamps, switches, and solenoids. Each feature may be tested manually or automatically using the **STEP** and **FORWARD/REVERSE** push-button switches inside the coin door and the white "Clear Ticket" button located next to the Diagnostic Switches. The automatic tests may be used for a quick verification of automatic test functions and the manual tests, for troubleshooting.

During game play, activation of switches and operation of coils with associated switches are monitored. If a switch is not made for 50 games it is considered faulty. When operation of a coil should close or open a switch and does not, the coil is considered faulty. In Game Over Attract Mode, faulty switches and coils (if any) are reported (See Tech Alert Description below). Note that reporting of an unused switch does not constitute a problem and that a bad coil could mean that the associated switch requires adjustment.

Wiring to switches, solenoids and controlled lamps uses color-coded wires that basically follows a resistor color-code scheme for the eight rows and eight columns. During the switch tests and during the discrete lamp test, identification of the color of the row and column wires are indicated in the Dot Matrix Display. For example, making the right coin switch during the Switch Test results in the switch functional name (RIGHT COIN), the row (WHT-YEL) and column (GRN-BRN) wire color codes, and the switch number are shown in the display.

Color Abbreviations Used:

| | | | | | |
|---|-------------|---|--------------|---|--------------|
| 0 | BLK = BLACK | 3 | ORN = ORANGE | 6 | BLU = BLUE |
| 1 | BRN = BROWN | 4 | YEL = YELLOW | 7 | VIO = VIOLET |
| 2 | RED = RED | 5 | GRN = GREEN | 8 | GRY = GREY |
| | | | | 9 | WHT = WHITE |

Additional Abbreviations/Acronyms Used:

| | | | | | |
|-----|--------|------|----------------------|------|---------------------------|
| X | Times | P/F | Playfield | D.T. | Drop Target(s) |
| LT | Left | S-U | Stand-Up | PPB | Playfield Power Board |
| RT | Right | Au. | Audit(s) | SSFB | Solid State Flipper Board |
| BOT | Bottom | Adj. | Adjustments | PSB | Power Supply Board |
| MID | Middle | G.I. | General Illumination | SMB | Shaker Motor Board |

Entering Diagnostics

With the game in the game-over mode, open the coin door and make sure that the **FORWARD/REVERSE** push-button switch is set to **REVERSE** (down) and depress the **STEP** push-button switch. The Player displays will show the tollfree Customer Service number 1-800-KICKERS, that is 1-800-542-5377 (U.S. including Illinois) and the toll number (708) 345-7700 (Outside the United States). This indicates entry into game diagnostics.

Service Credits

With the phone number displayed depress the **STEP** push-button switch. The game now gives the technician the option of adding 1 to 5 service credits. These credits allow the technician to test-play the game without adding any counts to the coin audits (Au. 01 & Au. 05 - 08). When the message appears, press and hold the Game Start pushbutton until the desired number of credits are shown on the display. Then press the step button again to add these credits to the game and enter Tech Alert. If no Service Credits are desired, press the step button with the initial message displayed.

Tech Alert

The display will now indicate if there are any faulty switches (i.e., Switches that are normally closed but remain open or open switches that have not been closed (activated) in 50 games.

Easy Trough Clear

Pressing the step button again displays the **EASY TROUGH CLEAR** message and instructs the technician to operate either flipper button to easily remove the balls from the trough. This is provided to allow the technician a simple method of removing the balls from the trough prior to entering the Active Switch Test, thereby reducing the number of switches closed. Also, to test functionality of trough, ensure proper trough operation.

Burn-In Minutes

Pressing the step button while in Tech Alert mode will step game into Burn-in Mode (Factory use). At this stage pressing the game start button will cause the game to exercise all CPU I/O functions. This is provided to constantly exercise sounds, solenoids, etc...

To stop the test press the start button again. Cumulative Burn-In minutes will be displayed. To reset Burn-In minutes to 00, you must perform an Audit Reset (Adj. 10) or a Factory Restore (Adj. 99).

Sound Tests

The Data East Pinball sound system produces true digital stereo sound on left and right speakers and mono on a center speaker. During Sound tests, the bottom display shows the sound board circuit under test and the corresponding sounds are selected by operating the left and right flipper buttons to choose the circuit to be tested. Now press the start button to initiate the sound. Refer to the Sound Test Chart for the sound circuits displayed and the sounds produced.

The sound functions allow verification that all channels are functioning properly and that the speaker connections are correct. Speaker Phase Testing procedures follow for checking speaker connections.

SOUND TEST CHART



| Auto/Manual Tests | Sounds Produced |
|--------------------------------|------------------|
| LEFT SPEAKER | Left Sine |
| BOTH LT & RT SPEAKERS | Center Sine |
| RIGHT SPEAKER | Right Sine |
| VOICE ROM1 (Loc U17) | Speech Pattern 1 |
| VOICE ROM2 (Loc U21) | Speech Pattern 2 |
| VOICE ROM3 (Loc U36) | Speech Pattern 3 |
| VOICE ROM4 (Loc U37) | Speech Pattern 4 |
| MUSIC TEST (Sound ROM, Loc U7) | Level 1-3 Music |

Note: The cabinet speaker should be on all the time.

Speaker Phase Testing

Connections to each of the three speakers are polarized and each must be connected appropriately for the best quality sound. If one speaker has the positive and negative connections reversed with respect to the other two, bass frequencies will not be produced properly and the overall sound quality will be poor.

To test for proper speaker phasing, use the sound test to cycle through the Left, Center, and Right Sine functions. If the Center Sine produces more volume and bass than the Left and Right Sines, the speakers are connected properly. If it produces the same or less, one speaker is connected improperly. To isolate and correct reversed speaker connections, one of two methods may be used.

1. Check each speaker for polarity markings. If the speakers have polarity markings, verify that the single-color wire (BLK, YEL or RED) is connected to the negative (-) terminal.
2. Disconnect the speaker output connector from the Sound Board and connect a 1.5-volt battery across each speaker pair one at a time while observing the speakers. Make sure the positive battery terminal is connected to the positive lead (CN1- Pin 1, 3 or 6) each time. As the connection is made, check speaker cone movement; proper connections are indicated by outward movement.

Digital Display Test

The Digital display utilizes a Dot Matrix Display Control board mounted in piggyback fashion to the display driver Board. The purpose behind this board is to provide more information (128 X 32 Dots) to the operator as well as displaying graphics to the player.

The board is controlled by a 68B09E microprocessor and its personality ROMs (Unique to the Game) . It receives Data, Reset & Clock information from the CPU Board via the ribbon cable and sends back multiple Status and Busy signals to the CPU . This is to insure synchronized communication between the CPU and the Display Controller board.

The Drivers for the rows and columns are provided on 4 surface mounted integrated circuits on the Display driver board.

Dot Matrix Display Test

To enter Dot Matrix Display Test, operate the STEP push-button switch from the Sound Manual test. The display will immediately illuminate one vertical column of dots, turning it off and illuminating the next column, until each column has been individually lit, while the other columns are off. It will make one pass. The display will then illuminate the top horizontal row of dots, and test by lighting the row of the display, then turning it off and illuminating the next row, until each row has been individually lit, while the other rows are off. The test will then illuminate all the dots in the display, except for one column. It will cycle this blank column from left to right for one pass. The display will then again illuminate all the dots except for the top row, and then turning it on and blanking the next row, until each row has been individually blanked, while the other rows are on. It will cycle this blank row for one pass. The next test begins with every other dot lit, in both the rows and columns. These dots then go out, and the unlit dots light, resulting in an alternating checkerboard pattern for approximately 4 seconds. The test will repeat these cycles indefinitely until advanced to the next test or until the power is removed. (Please Note- these tests may be interrupted at any time by operating the STEP push-button switch to advance to the next test.)

SWITCH TESTS

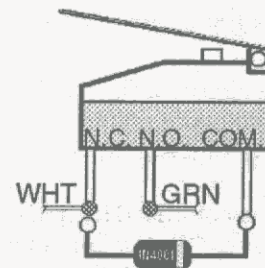
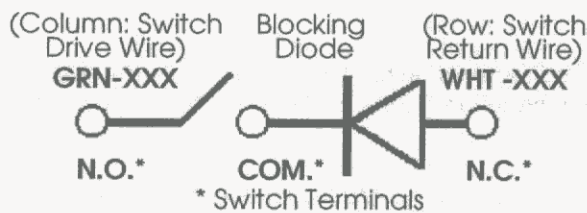
Switches are configured in an 8 x 8 matrix of columns (switch drives) and rows (switch returns) with up to 64 switches possible. The switch tests include three parts; switch test, active switches, and bad switches. Column and Row wire colors are indicated in each test using corresponding resistor color code numbers.

Switch Test

To initiate, push the STEP push-button switch, until the display indicates **SWITCH TEST**. Close each switch and observe the display. The display will indicate the switch name, column wire colors, row wire colors and the switch number. When a switch is released, the name and number disappear until another switch is closed or the test is exited.

Active Switches

Push the STEP push-button switch from the Switch Test. The display will indicate **ACTIVE SWITCHES**. If any switches are stuck closed (or made from the presence of a ball), the display sequences through switch names, and indicates the row and column wire colors, and the switch numbers are indicated in the display. This cycle continues until all switches are cleared or until the STEP push-button switch is depressed.



Diode 1N4001

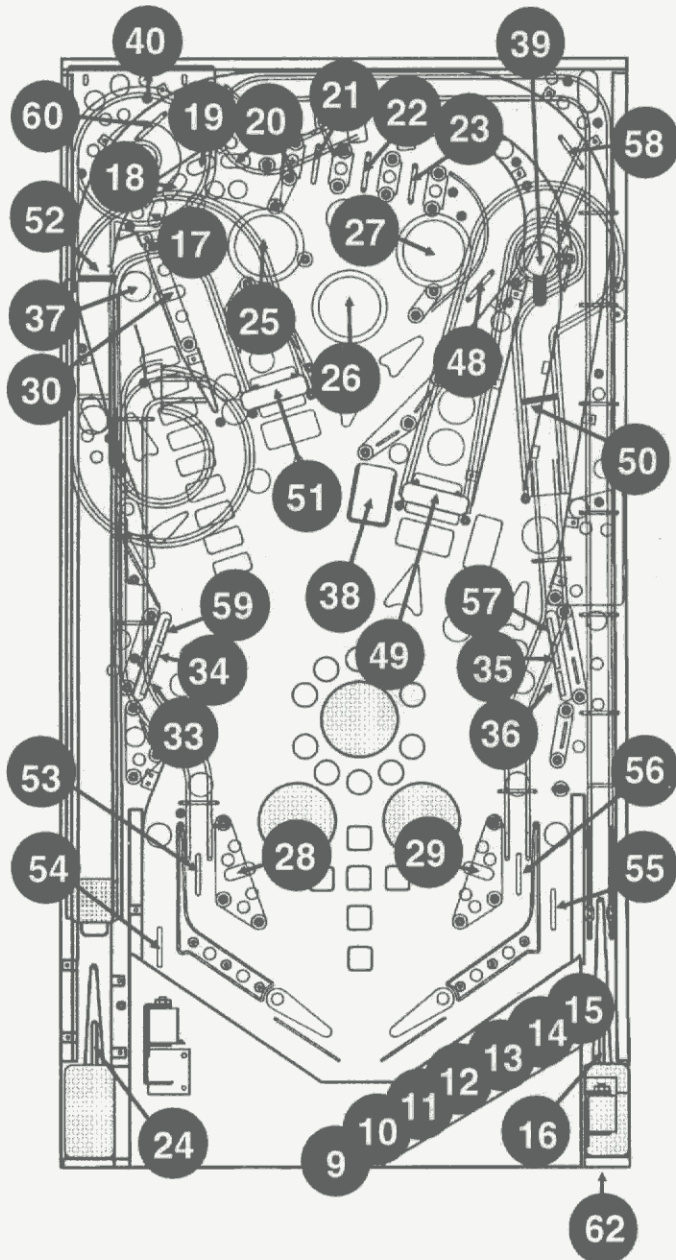
SWITCH MATRIX CHART

| Column (Drive) / Row (Return) | 1 GRN-BRN CN8-1 | 2 GRN-RED CN8-2 | 3 GRN-ORN CN8-3 | 4 GRN-YEL CN8-4 | 5 GRN-BLK CN8-5 | 6 GRN-BLU CN8-7 | 7 GRN-VIO CN8-8 | 8 GRN-GRY CN8-9 |
|-------------------------------|------------------------|------------------------------|------------------------------------|---------------------------|--------------------------------|--------------------------|-------------------------|------------------------------|
| 1 WHT-BRN CN10-9 | Plumb Tilt 1 | #1 (Left) Ball Trough 9 | Captive Stand-Up "D" of DUFF 17 | Left Turbo Bumper 25 | Left Drop Target Bottom 33 | Not Used 41 | "R" Ramp Enter 49 | Right Drop Target Top 57 |
| 2 WHT-RED CN10-8 | 4th Coin 2 | #2 Ball Trough 10 | Captive Stand-Up "U" of DUFF 18 | Bottom Turbo Bumper 26 | Left Drop Target Middle 34 | Not Used 42 | "R" Ramp Exit 50 | Right Orbit Top 58 |
| 3 WHT-ORN CN10-7 | Credit Button 3 | #3 Ball Trough 11 | Captive Stand-Up "F" of DUFF 19 | Right Turbo Bumper 27 | Right Drop Target Middle 35 | Not Used 43 | "G" Ramp Enter 51 | Left Drop Target Top 59 |
| 4 WHT-YEL CN10-6 | Right Coin 4 | #4 Ball Trough 12 | Captive Stand-Up "F" of DUFF 20 | Right Slingshot 28 | Right Drop Target Bottom 36 | Not Used 44 | "G" Ramp Exit 52 | Left Orbit Top 60 |
| 5 WHT-GRN CN10-5 | Center Coin 5 | #5 Ball Trough 13 | "J" of JAM Top Lane Left 21 | Left Slingshot 29 | Eject 37 | Not Used 45 | Left Return Lane 53 | Not Used 61 |
| 6 WHT-BLU CN10-3 | Left Coin 6 | #6 Ball Trough 14 | "A" of JAM Top Lane Middle 22 | Top Slingshot 30 | Center Scoop 38 | Not Used 46 | Left Outlane 54 | Gun Trigger 62 |
| 7 WHT-VIO CN10-2 | Slam Tilt 7 | #7 (Right) Ball Trough 15 | "M" of JAM Top Lane Right 23 | Not Used 31 | VUK 39 | Not Used 47 | Right Outlane 55 | Left Flipper Upr./Lwr. 63 |
| 8 WHT-GRY CN10-1 | Extra Ball Button 8 | Shooter Lane 16 | Left Shooter Lane 24 | Not Used 32 | Funnel Snake Pit 40 | Inner Orbit Bottom 48 | Right Return Lane 56 | Right Flipper Lower 64 |

Switch Matrix Locations, Descriptions & Switch Part Numbers†

| Switch Matrix No. & Description | Part No. |
|---------------------------------------|-------------|
| 01* Plumb Tilt | See Cabinet |
| 02* 4th Coin (On Coin Door) | --- |
| 03* Credit Button (Left of Coin Door) | 500-5097-02 |
| 04* Right Coin (On Coin Door) | 180-5024-00 |
| 05* Center Coin (On Coin Door) | 180-5024-00 |
| 06* Left Coin (On Coin Door) | 180-5024-00 |
| 07* Slam Tilt | 180-5022-00 |
| 08* Extra Ball Button (Under 03) | 180-5073-00 |
| 09 #1 (Left) Ball Trough | 180-5119-00 |
| 10 #2 Ball Trough | 180-5119-00 |
| 11 #3 Ball Trough | 180-5119-00 |
| 12 #4 Ball Trough | 180-5119-00 |

| Switch Matrix No. & Description | Part No. |
|--|-------------|
| 13 #5 Ball Trough | 180-5119-00 |
| 14 #6 Ball Trough | 180-5119-00 |
| 15 #7 (Right) Ball Trough | 180-5118-00 |
| 16 Shooter Lane | 180-5100-01 |
| 17 Captive Stand-Up "D" of DUFF | 515-5470-08 |
| 18 Captive Stand-Up "U" of DUFF | 515-5470-08 |
| 19 Captive Stand-Up "F" of DUFF | 515-5470-08 |
| 20 Captive Stand-Up "F" of DUFF | 515-5470-08 |
| 21 Top Lane Left "J" of JAM | 500-5707-00 |
| 22 Top Lane Middle "A" of JAM | 500-5707-00 |
| 23 Top Lane Right "M" of JAM | 500-5707-00 |
| 24 Left Shooter Lane | 180-5700-00 |
| 25 Left Turbo Bumper | 180-5015-01 |
| 26 Bottom Turbo Bumper | 180-5015-01 |
| 27 Right Turbo Bumper | 180-5015-01 |
| 28 Right Slingshot | 180-5054-00 |
| 29 Left Slingshot | 180-5054-00 |
| 30 Top Slingshot | 180-5054-00 |
| 31 Not Used | ----- |
| 32 Not Used | ----- |
| 33 Left Drop Target Bottom | 180-5092-01 |
| 34 Left Drop Target Middle | 180-5092-01 |
| 35 Right Drop Target Middle | 180-5092-01 |
| 36 Right Drop Target Bottom | 180-5092-01 |
| 37 Eject | 180-5027-01 |
| 38 Center Scoop | 180-5057-00 |
| 39 VUK | 180-5116-00 |
| 40 Funnel Snake Pit | 515-6073-00 |
| 41 Not Used | ----- |
| 42 Not Used | ----- |
| 43 Not Used | ----- |
| 44 Not Used | ----- |
| 45 Not Used | ----- |
| 46 Not Used | ----- |
| 47 Not Used | ----- |
| 48 Inner Orbit Bottom | 500-5706-00 |
| 49 " R " Ramp Enter | 180-5090-00 |
| 50 " R " Ramp Exit | 180-5090-00 |
| 51 " G " Ramp Enter | 180-5090-00 |
| 52 " G " Ramp Exit | 180-5090-00 |
| 53 Left Return Lane | 500-5707-00 |
| 54 Left Outlane | 500-5707-00 |
| 55 Right Outlane | 500-5707-00 |
| 56 Right Return Lane | 500-5706-00 |
| 57 Right Drop Target Top | 180-5092-01 |
| 58 Right Orbit Top | 500-5707-00 |
| 59 Left Drop Target Top | 180-5092-01 |
| 60 Left Orbit Top | 500-5706-00 |
| 61 Not Used | ----- |
| 62 Gun Trigger | 180-5093-00 |
| 63* Left Flipper Cabinet via Q7 (Transistor) on SSFB | 180-5124-00 |
| 64* Right Flipper Cabinet via Q5 (Transistor) on SSFB | 180-5124-00 |



- * Location - In Cabinet
- ** Location - Under Playfield
- † Specify Game N^o (29) & decal description if applicable.

LAMP TESTS

Controlled lamps are configured in an 8 x 8 matrix of columns (lamp drives) and rows (lamp returns) with up to 64 lamps possible. The lamp tests include four parts, all lamps, lamp return (row), lamp drive (column), and discrete (individual) lamps. Row and column wire colors are indicated in the discrete lamp test using corresponding resistor color code numbers.

All Lamps

From the Active Switch test, operate the STEP push-button switch. The dot matrix display will indicate ALL LAMPS and all controlled lamps will light.

Lamp Returns (Row)

From the ALL LAMPS test, depress the STEP push-button switch. The display indicates LAMP RETURNS, wire color and the LAMP RETURN driver transistor. All controlled lamps in row 1 should be lit. Operating the Game Start push-button switch cycles through each of the rows separately.

Lamp Drives (Column)

From the LAMP RETURNS test, depress the STEP push-button switch. The display will indicate LAMP COLUMNS, wire color and the LAMP DRIVES driver transistor. All controlled lamps in column 1 should be lit. Operating the Game Start push-button switch, cycles through each of the columns separately.

Single Lamp

From the LAMP DRIVES test, depress the STEP push-button switch. The display will indicate the lamp name. The display indicates the row and column wire colors and the lamp matrix number. Lamp 01 should light. With the FORWARD/REVERSE push-button switch in the FORWARD (up) position, operating the Game Start push-button switch selects higher-numbered lamps; with it in the REVERSE (down) position, Game Start selects lower-numbered lamps.

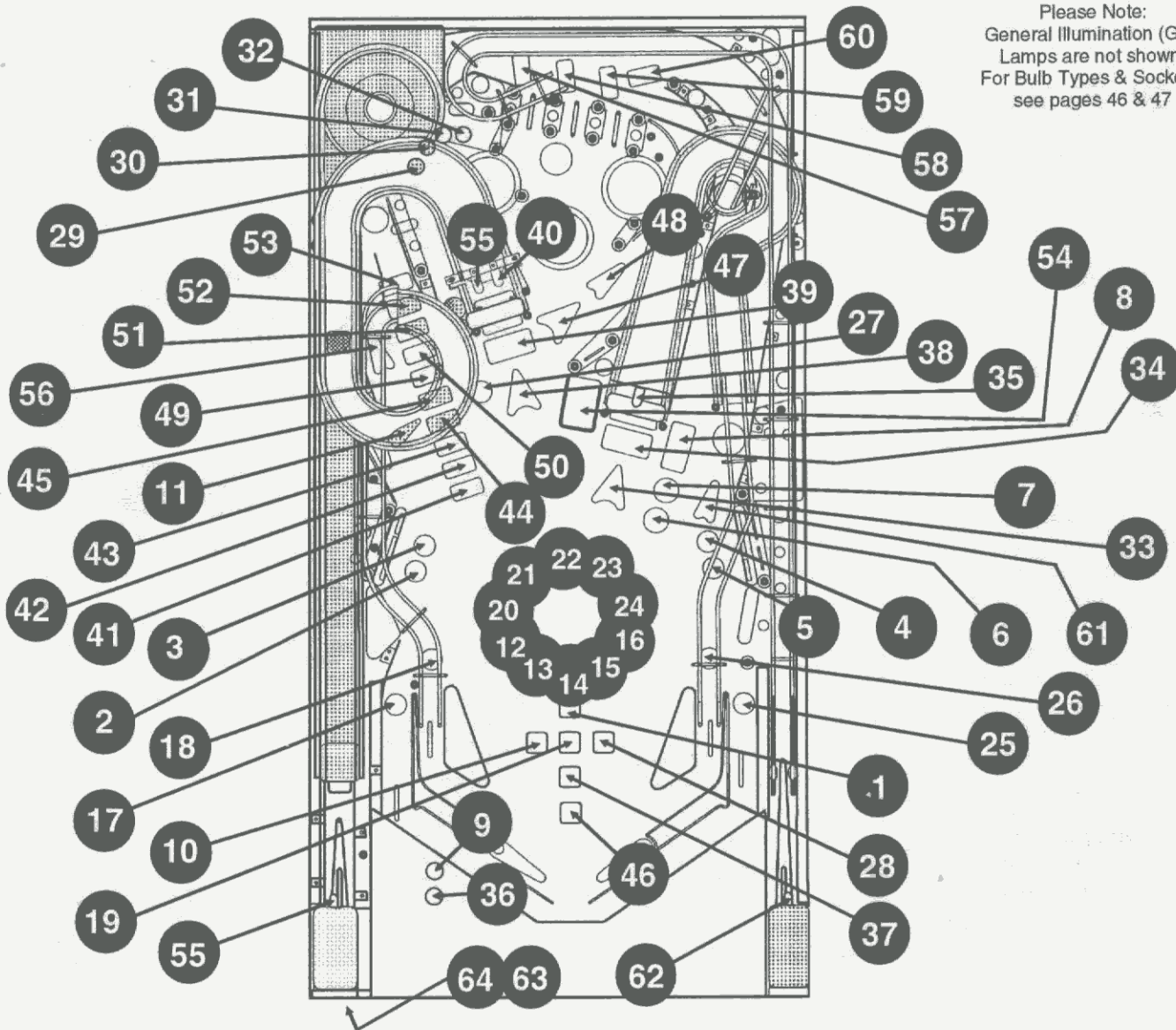
LAMP MATRIX CHART

| Column 18V Row GND | 1 Q71 YEL-BRN CN7-1 | 2 Q70 YEL-RED CN7-2 | 3 Q69 YEL-ORN CN7-3 | 4 Q68 YEL-BLK CN7-4 | 5 Q67 YEL-GRN CN7-6 | 6 Q66 YEL-BLU CN7-7 | 7 Q65 YEL-VIO CN7-8 | 8 Q64 YEL-GRY CN7-9 |
|-----------------------------|------------------------------------|--|--|--------------------------------------|--|---------------------------------------|------------------------------------|--|
| 1 Q72 RED-BRN CN6-1 | Cross Grid Top "Dizzy" 01 | Same Play- er Shoots Again 09 | Left Outlane Patience 17 | Right Outlane Michelle 25 | "R" Ramp Rose Millions 33 | Riot Ball 41 | Matt Scoring 49 | Left Top Lane "J" of JAM 57 |
| 2 Q73 RED-BLK CN6-2 | "R" of ROCK 02 | Cross Grid Left "Matt" 10 | Left Return Lite Rock 18 | Right Return Lite Guitar 26 | "R" Ramp Jackpot 34 | Axl 3-Ball 42 | Slash Solo 50 | Middle Top Lane "A" of JAM 58 |
| 3 Q74 RED-ORN CN6-3 | "O" of ROCK 03 | Double Mode 11 | Cross Grid Upr. Center "Axl" 19 | Captive Ball 27 | "R" Ramp Enter 35 | Dizzy Ball 43 | Lite COMA 51 | Right Top Lane "M" of JAM 59 |
| 4 Q75 RED-YEL CN6-5 | "C" of ROCK 04 | "R" of ROSES 12 | "G" of GUNS 20 | Cross Grid Right "Duff" 28 | Magnets ON 36 | Duff Rocks 44 | Gilby Rolls 52 | Back Stage Pass 60 |
| 5 Q76 RED-GRN CN6-6 | "K" of ROCK 05 | "O" of ROSES 13 | "U" of GUNS 21 | "D" of DUFF 29 | Cross Grid Lwr. Center "Slash" 37 | Super Snake Pit 45 | Extra Ball 53 | Slash 61 |
| 6 Q77 RED-BLU CN6-7 | COMA 06 | 1st "S" of ROSES 14 | "N" of GUNS 22 | "U" of DUFF 30 | "G" Ramp Gun Millions 38 | Cross Grid Bottom "Gilby" 46 | Mystery Scoop 54 | Right Shooter Lane 62 |
| 7 Q78 RED-VIO CN6-8 | Multi-Ball Ready 07 | "E" of ROSES 15 | "S" of GUNS 23 | 1st "F" of DUFF 31 | "G" Ramp Jackpots 39 | RIOT Jackpot 47 | Left Shooter Left Ramp 55 | Extra-Ball Button 63 |
| 8 Q79 RED-GRY CN6-9 | Add Band Members 08 | 2nd "S" of ROSES 16 | "N" of G... N' R... 24 | 2nd "F" of DUFF 32 | "G" Ramp Enter 40 | Super Jackpot 48 | Roll 56 | Credit 64 |

Lamp Matrix Location and Descriptions

| Lamp Matrix No. & Description | Lamp Matrix No. & Description | Lamp Matrix No. & Description |
|---------------------------------|----------------------------------|-------------------------------|
| 01 Cross Grid Top "Dizzy" | 22 "N" of GU—N—S | 43 Dizzy Ball |
| 02 "R" of —R—OCK | 23 "S" of GUN—S— | 44 Duff Rocks |
| 03 "O" of R—O—CK | 24 "N" of Guns —N'— Roses | 45 Super Snake Pit |
| 04 "C" of RO—C—K | 25 Right Outlane Michelle | 46 Cross Grid Bottom "Gilby" |
| 05 "K" of ROC—K— | 26 Right Return Lite Guitar | 47 RIOT Jackpot |
| 06 COMA | 27 Captive Ball | 48 Super Jackpot |
| 07 Multi-Ball Ready | 28 Cross Grid Right "Duff" | 49 Matt Scoring |
| 08 Add Band Members | 29 "D" of —D—UFF | 50 Slash Solo |
| 09 Same Player Shoots Again | 30 "U" of D—U—FF | 51 Lite COMA |
| 10 Cross Grid Left "Matt" | 31 "F" of DU—F—F | 52 Gilby Rolls |
| 11 Double Mode | 32 "F" of DUF—F— | 53 Extra Ball |
| 12 "R" of —R—OSES | 33 "R" Ramp Rose Millions | 54 Mystery Scoop |
| 13 "O" of R—O—SES | 34 "R" Ramp Jackpot | 55 Left Shooter/Left Ramp |
| 14 "S" of RO—S—ES | 35 "R" Ramp Enter | 56 Roll |
| 15 "E" of ROS—E—S | 36 Magnets ON | 57 Left Top Lane "J" of JAM |
| 16 "S" of ROSE—S— | 37 Cross Grid Lwr. Cntr. "Slash" | 58 Middle Top Lane "A" of JAM |
| 17 Left Outlane Patience | 38 "G" Ramp Gun Millions | 59 Right Top Lane "M" of JAM |
| 18 Left Return Lite Rock | 39 "G" Ramp Jackpots | 60 Back Stage Pass |
| 19 Cross Grid Upr. Center "Axl" | 40 "G" Ramp Enter | 61 Slash |
| 20 "G" of —G—UNS | 41 Riot Ball | 62 Right Shooter Lane |
| 21 "U" of G—U—NS | 42 Axl 3-Ball | 63 Extra Ball Button |
| | | 64 Credit |

Please Note:
 General Illumination (G.I.)
 Lamps are not shown.
 For Bulb Types & Sockets,
 see pages 46 & 47

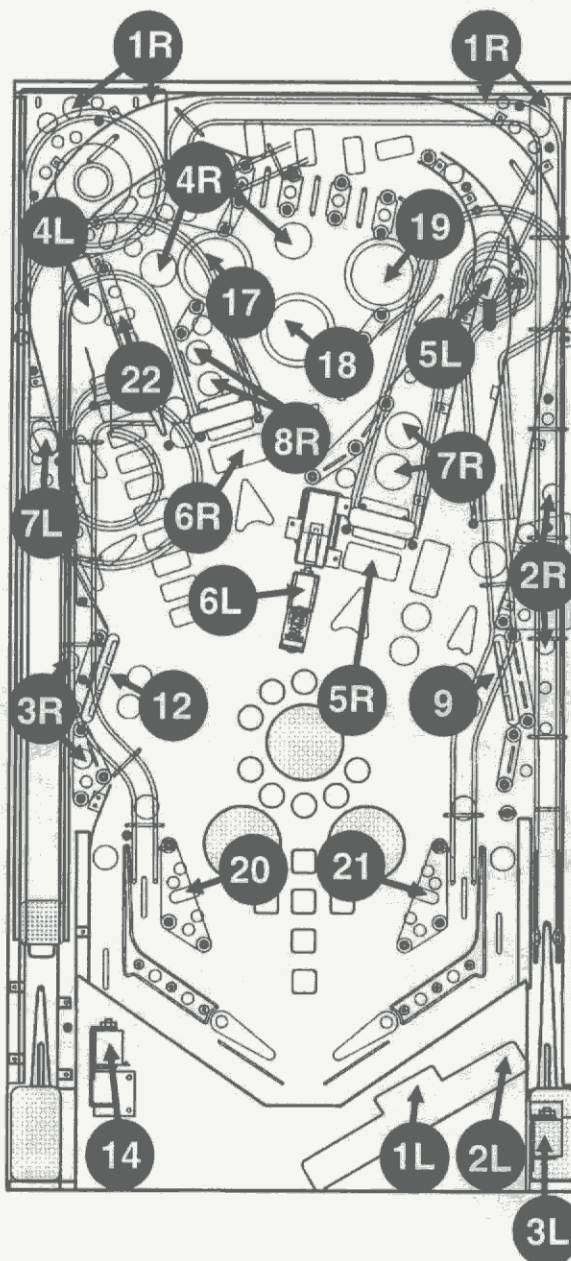
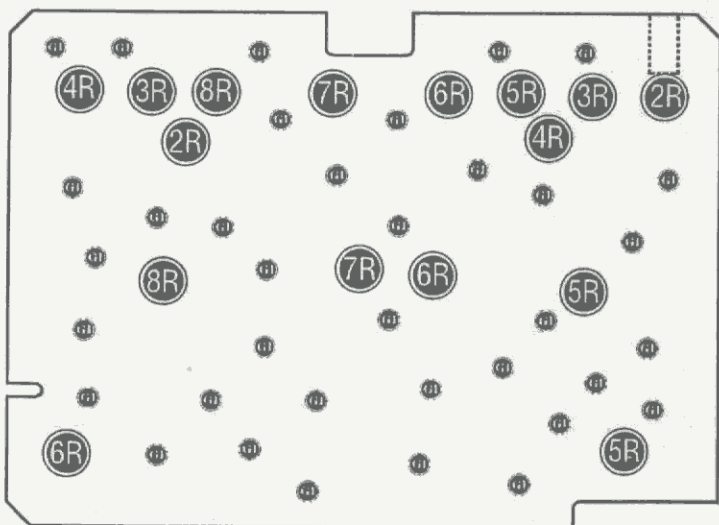


FLASH LAMP / COIL TESTS

Twenty-Two regular (pulsed under microprocessor control) coil drivers are provided to switch ground to coils. The Left/Right relay is used in conjunction with drives 1 through 8 to switch +32 volts between coils or flash lamps; these sets are termed "left" and "right". This relay is located on the PPB board which provides isolation diodes and current limiting resistors. This effectively provides 29 regular coils.

| | |
|---------------------|--|
| Flash Lamp | From the Single Lamp test, depress the STEP push-button switch. All Flash lamps will fire randomly. This allows the Technician to easily spot any burned out bulbs and replace them without stepping through the tests below. |
| Automatic Test | From the Flash Lamps test, depress the STEP push-button switch. The dot matrix display will indicate ALL COILS . The test pulses each regular solenoid or flash lamp sequentially with the coil/flash lamp names and the wire colors indicated in the display. |
| Select Coil | From the Coil Test, depress the STEP push-button switch. The display will indicate SELECT COIL and then the name of 1st drive and the wire colors. Operate either Flipper push-button switch to select the coil or flash lamp to be tested. With the desired drive number indicated in the display, depress the START push-button switch to cause it to be pulsed repeatedly. |
| Return To Game Over | From the Select Coil test, depress the STEP push-button switch once. The game returns to the game-over mode. |

Backbox Flash Lamps



| | | | |
|----|---------------------------|----|---------------------------|
| 1L | 6-Ball Ass'y Lockout | 8R | Under "G" Ramp |
| 1R | Back Panel X2 LT/RT Crnr. | 09 | Right 3-Bank Drop Targets |
| 2L | Ball Release (Eject) | 10 | Left/Right (A/B) Relay |
| 2R | Right Playfield | 11 | G.I. Relay |
| 3L | Auto Ball Launch 50v | 12 | Left 3-Bank Drop Targets |
| 3R | Left Playfield | 13 | Not Used |
| 4L | Kicker, Eject | 14 | Laser Kick 50v |
| 4R | Turbo Bumpers X2 | 15 | Not Used |
| 5L | VUK 50v | 16 | Not Used |
| 5R | "R" Ramp Enter | 17 | Left Turbo Bumper |
| 6L | Scoop/Kick Big 50v | 18 | Bottom Turbo Bumper |
| 6R | "G" Ramp | 19 | Right Turbo Bumper |
| 7L | Ramp Coll Trap Door | 20 | Left Slingshot |
| 7R | Under "R" Ramp | 21 | Right Slingshot |
| 8L | Knocker 32v | 22 | Top Slingshot |

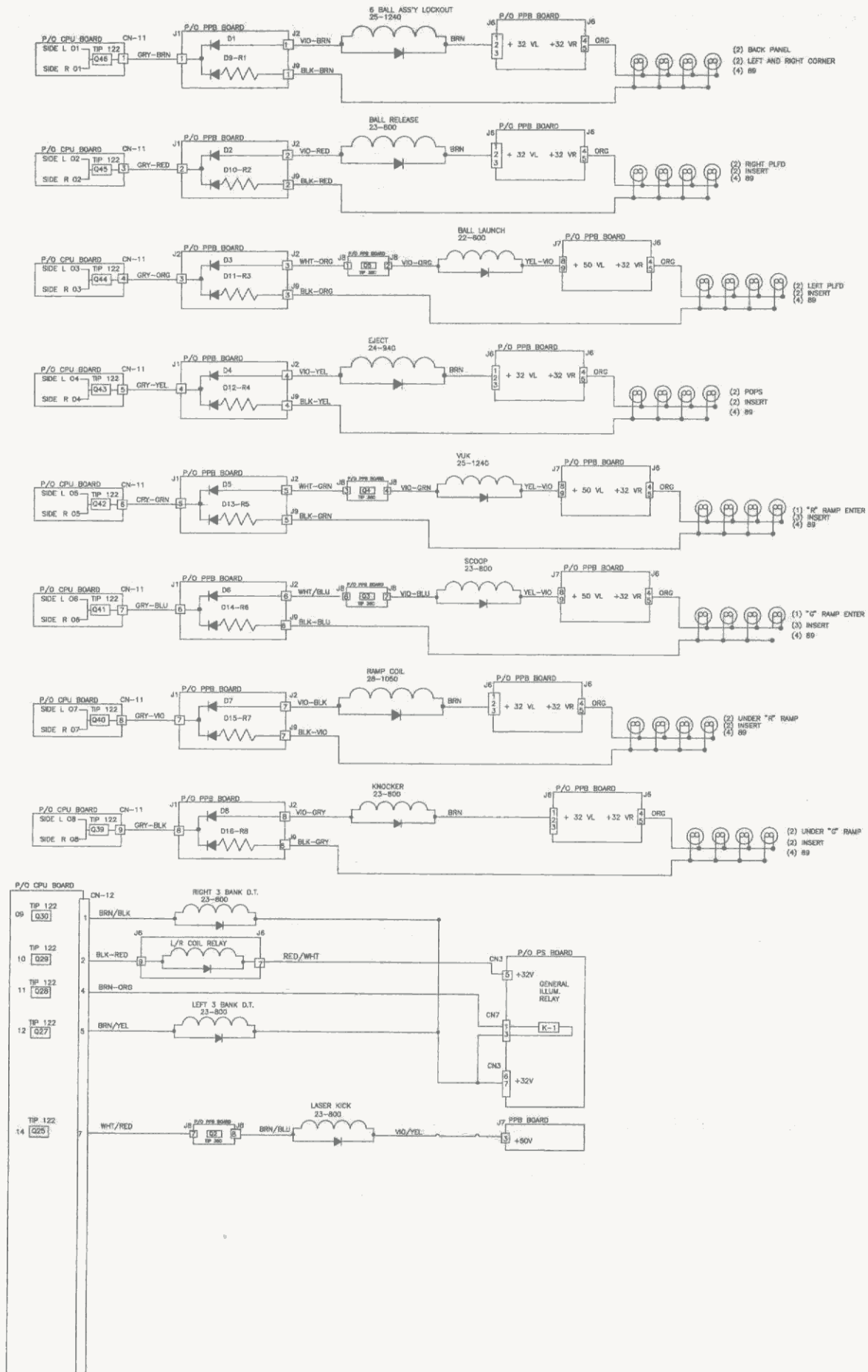
Note: Shaded areas not shown on Diagrams.
G.I. General Illumination Lamps

Switched, CPU Controlled Auxillary & Constant Power Solenoids

| Coil No. | Coil or Flashlamp Description | Drive Transistor (D.T.) | On Which Board? | D.T. Control Line | D.T. Control Line Connect | Power Line | Power Line Connection | Power Description | Coil or Flash Type |
|----------|--|-------------------------|-----------------|-------------------|---------------------------|------------|-----------------------|-------------------|--------------------|
| 1L | Coil: 6-Ball Assembly Lockout | Q46 | CPU | VIO-BRN | PPB J2-1 | BRN | PPB J6-1, 2 | 32v L | 25-1240 |
| 1R | Flashlamp: X2 Backpanel, X2 P/F Back Pnl-P/F LT/RT Corners Flash | | | BLK-BRN | PPB J9-1 | ORG | PPB J6-4, 5 | 32v R | Bulb #89 |
| 2L | Coil: Ball Release (Eject) | Q45 | CPU | VIO-RED | PPB J2-2 | BRN | PPB J6-1, 2 | 32v L | 23-800 |
| 2R | Flashlamp: X2 P/F, Insert X2 Right Playfield Flash | | | BLK-RED | PPB J9-2 | ORG | PPB J6-4, 5 | 32v R | Bulb #89 |
| 3L | Coil: Auto Ball Launch 50v | Q5 | PPB | VIO-ORG | PPB J8-2 | YEL/VIO | PPB J7-8 | 50v L | 22-600 |
| 3R | Flashlamp: X2 P/F, Insert X2 Left Playfield Flash | Q44 | CPU | BLK-ORG | PPB J9-3 | ORG | PPB J6-4, 5 | 32v R | Bulb #89 |
| 4L | Coil: Kicker, Eject | Q43 | CPU | VIO-YEL | PPB J2-4 | BRN | PPB J6-1, 2 | 32v L | 24-940 |
| 4R | Flashlamp: X2 P/F, Insert X2 "C"aptive Ball Flash | | | BLK-YEL | PPB J9-4 | ORG | PPB J6-4, 5 | 32v R | Bulb #89 |
| 5L | Coil: VUK 50v | Q4 | PPB | VIO-GRN | PPB J8-4 | YEL/VIO | PPB J7-8 | 50v L | 23-800 |
| 5R | Flashlamp: X1 P/F, Insert X3 "R" Ramp Enter Flash | Q42 | CPU | BLK-GRN | PPB J9-5 | ORG | PPB J6-4, 5 | 32v R | Bulb #89 |
| 6L | Coil: Kick Blg/Scoop 50v | Q3 | PPB | VIO-BLU | PPB J8-7 | YEL/VIO | PPB J7-8 | 50v L | 23-800 |
| 6R | Flashlamp: X1 P/F, Insert X3 "G" Ramp Enter Flash | Q41 | CPU | BLK-BLU | PPB J9-6 | ORG | PPB J6-4, 5 | 32v R | Bulb #89 |
| 7L | Coil: Ramp Trap Door | Q40 | CPU | VIO-BLK | PPB J2-8 | BRN | PPB J6-1, 2 | 32v L | 28-1050 |
| 7R | Flashlamp: X2 P/F, Insert X2 Under "R" Ramp Flash | | | BLK-VIO | PPB J9-7 | ORG | PPB J6-4, 5 | 32v R | Bulb #89 |
| 8L | Coil: Knocker (In Cabinet) | Q39 | CPU | VIO-GRY | PPB J2-8 | BRN | PPB J6-1, 2 | 32v L | 23-800 |
| 8R | Flashlamp: X2 P/F, Insert X2 Under "G" Ramp Flash | | | BLK-GRY | PPB J9-8 | ORG | PPB J6-4, 5 | 32v R | Bulb #89 |
| 09 | Coil: Right 3-Bank Drop Target | Q30 | CPU | BRN-BLK | CPU CN 12-1 | RED | PS CN 3-6,7 | 32v | 23-800 |
| 10 | Coil: Located on PPB in Backbox Left & Right Relay | Q29 | CPU | BLK-RED | CPU CN 12-5 | RED | PS CN 6-7 | 32v | 24v DC 10A DPDT |
| 11 | Coil: Located on Power Supply Bd. G.I. Relay | Q28 | CPU | BRN-ORG | CPU CN 12-4 | RED | PS CN 3-6,7 | 32v | 24v DC 10A DPDT |
| 12 | Coil: Left 3-Bank Drop Target | Q27 | CPU | BRN-YEL | CPU CN 12-5 | RED | PS CN 3-6,7 | 32v | 23-800 |
| 13 | Coil: Not Used | --- | --- | --- | --- | --- | --- | --- | --- |
| 14 | Coil: Laser Kick 50v | Q2 | PPB | BRN-BLU | PPB J8-8 | VIO-YEL | PPB J7-2 | 50v | 23-800 |
| 15 | Coil: Not Used | --- | --- | --- | --- | --- | --- | --- | --- |
| 16 | Coil: Not Used | --- | --- | --- | --- | --- | --- | --- | --- |
| 17 | Coil: Left Turbo Bumper | Q11 | CPU | BLU-BRN | CPU CN 19-7 | RED | PS CN 3-6 | 32v | 23-800 |
| 18 | Coil: Bottom Turbo Bumper | Q9 | CPU | BLU-RED | CPU CN 19-4 | RED | PS CN 3-6 | 32v | 23-800 |
| 19 | Coil: Right Turbo Bumper | Q8 | CPU | BLU-ORG | CPU CN 19-3 | RED | PS CN 3-6 | 32v | 23-800 |
| 20 | Coil: Left Slingshot | Q10 | CPU | BLU-YEL | CPU CN 19-6 | RED | PS CN 3-6 | 32v | 23-800 |
| 21 | Coil: Right Slingshot | Q12 | CPU | BLU-GRN | CPU CN 19-8 | RED | PS CN 3-6 | 32v | 23-800 |
| 22 | Coil: Top Slingshot | Q13 | CPU | BLU-BLK | CPU CN 19-9 | RED | PS CN 3-6 | 32v | 23-800 |

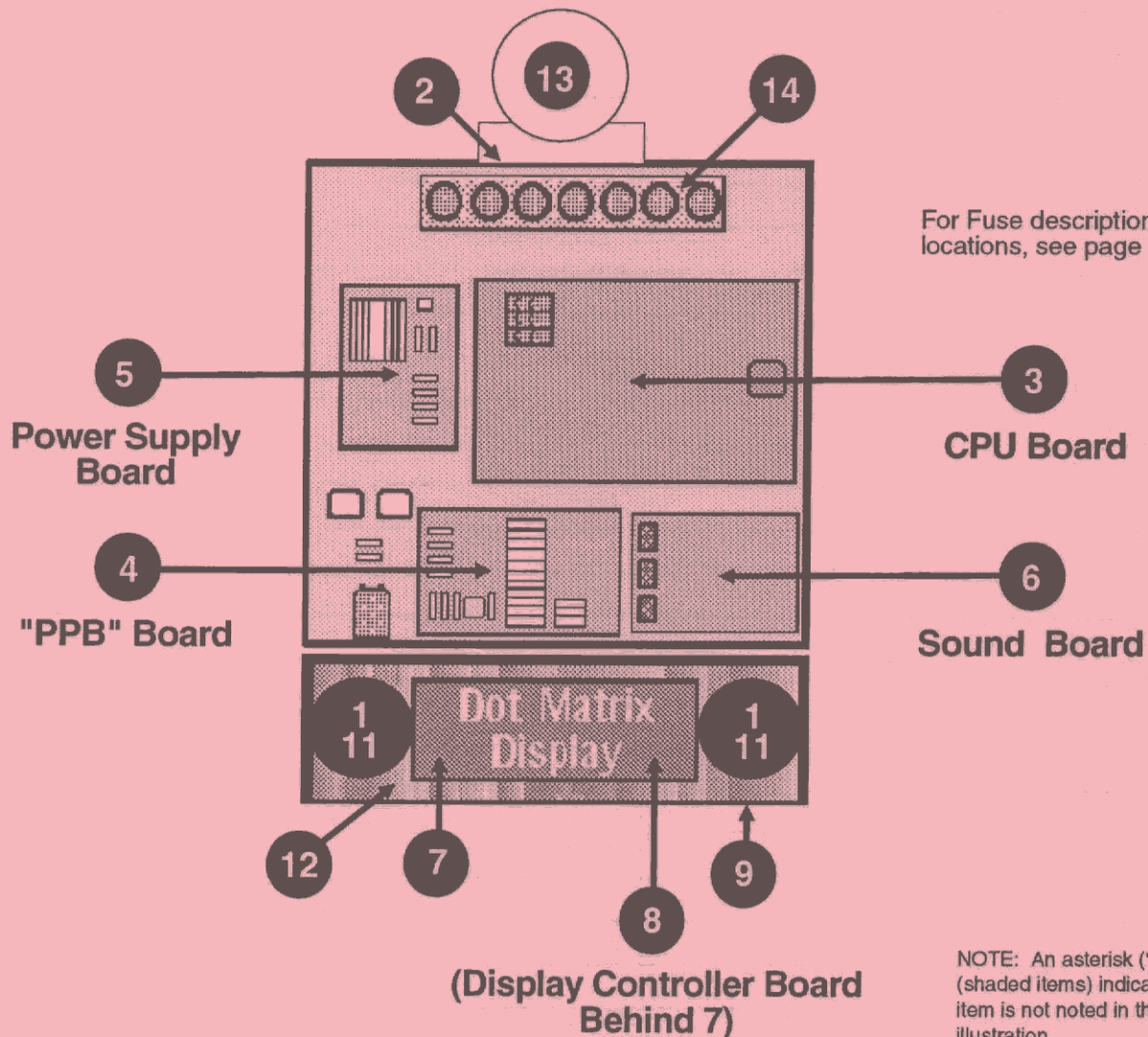
Flipper Solenoids

| SSFB No. | Flipper Coil | Cabinet Switch | Switch Drive | Switch Return | E.O.S. | GND | Flipper 50vDC Power | Flipper 8vAC Hold | Flipper Coil Output |
|----------|---|---------------------|---------------------------------|-----------------------------------|------------------------------|----------------------|--|--|-------------------------------------|
| SSFB 1 | Lwr. Rt. Flipper 22-1080 BLU/YEL ORG/VIO | BLU-VIO SSFB CN1-7 | GRN-GRY CPU CN8-9 TO SSFB CN1-4 | WHT-GRY CPU CN10-1 TO SSFB CN1-3 | BRN-VIO RT. EOS SW. TO CN1-1 | BLK CPU CN5 TO CN1-6 | BLK-WHT PPB J7-1, -5 to SSFB CN2-8, -9 | GRY-GRN-GRY P/S CN1-10, -11, to SSFB CN2-7, -8 | 50v I 8vAC Q2, Q3, I SR1 CN2-7, 8 |
| SSFB 1 | Lwr. Lt. Flipper 22-1080 GRY/YEL ORG/GRY | BLU-GRY SSFB CN1-11 | GRN-GRY CPU CN8-9 TO SSFB CN1-4 | WHT-VIO CPU CN10-2 TO SSFB CN1-5 | BRN-GRY LT. EOS SW. TO CN1-9 | BLK CPU CN5 TO CN1-6 | BLK-WHT PPB J7-1, -5 to SSFB CN2-8, -9 | GRY-GRN-GRY P/S CN1-10, -11, to SSFB CN2-7, -8 | 50v I 8vAC Q10, Q9, I SR2 CN2-4, 5 |
| SSFB 1 | Upr. Lt. Flipper 25-1100 BLU/YEL ORG/GRY | GRY-VIO SSFB CN1-12 | GRN-GRY CPU CN8-9 TO SSFB CN1-4 | WHT-GRY CPU CN10-2 TO SSFB CN1-10 | Not Used | BLK CPU CN5 TO CN1-6 | BLK-WHT PPB J7-1, -5 to SSFB CN2-8, -9 | GRY-GRN-GRY P/S CN1-10, -11, to SSFB CN2-7, -8 | 50v I 8vAC Q16, Q15, I SR3 CN2-1, 2 |



PARTS IDENTIFICATION

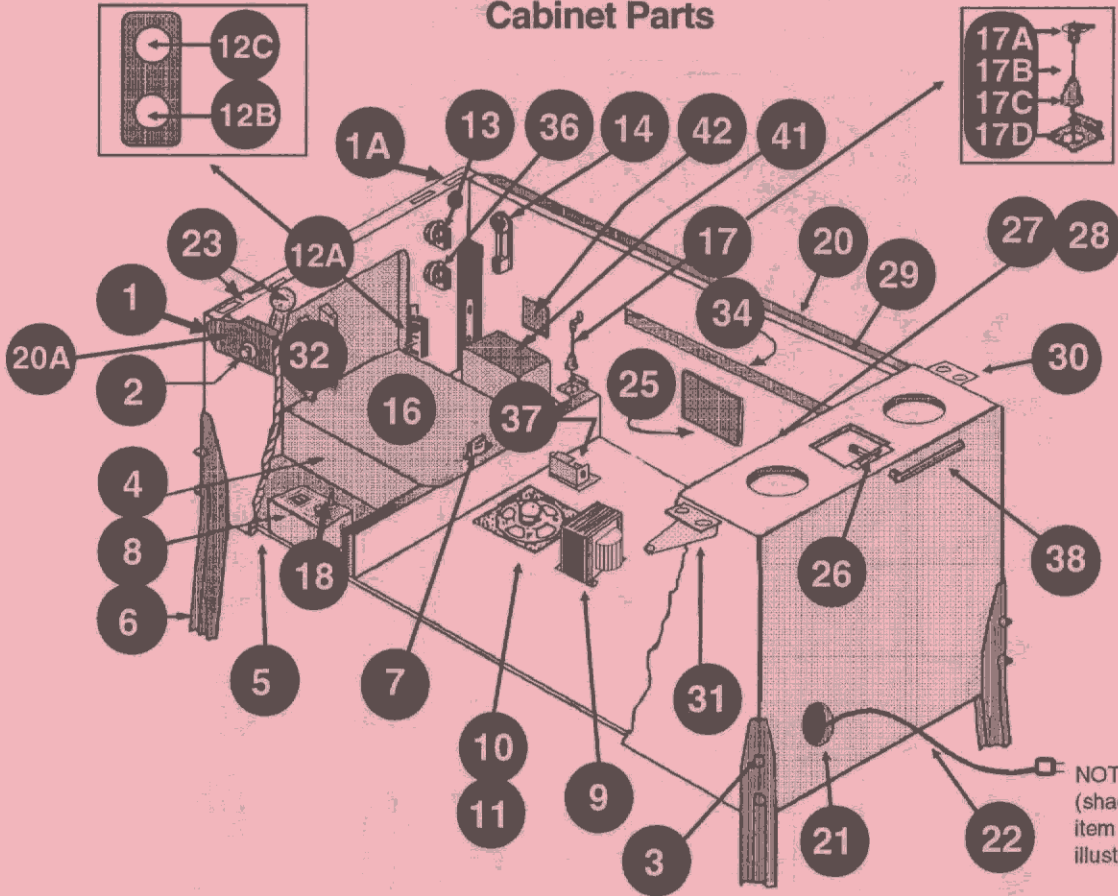
Backbox Parts



| Item | Description | Part No. | Item | Description | Part No. |
|------|---|-------------|---|--|-------------|
| 1 | Speakers | 031-5004-00 | 15 * | Static Shield * | 535-6437-00 |
| 2 | Back Box Lock | 355-5008-00 | 16 * | Backglass Clear 26" X 20 ³ / ₈ " * | 660-5017-00 |
| 3 | CPU Bd. Non-Reflexive † | 520-5003-04 | 17 * | 26" Plastic Extrusion * | 545-5018-04 |
| 4 | PPB Board Ass'y Rev. C | 520-5021-05 | 18 * | 21 ³ / ₈ " Plastic Extr. (2) * | 545-5018-07 |
| 5 | Power Supply | 520-5047-02 | 19 * | Glass Channel 26-1/16" * | 545-5021-01 |
| 6 | Sound Board 4MB † | 520-5077-00 | 20 * | GNR Lights Insert * | 525-5145-00 |
| 7 | Dot Matrix Display Board 128 X 32 †† | 520-5052-00 | 21 * | Ribbon Cable, 14-Pin * Display to Display | 602-5005-14 |
| 8 | Display Controller Bd. † | 520-5055-01 | 22 * | Ribbon Cable, 20-Pin * CPU to Sound Board | 602-5005-20 |
| 9 | Speaker Panel Assembly | 500-5833-00 | 23 * | Ribbon Cable, 26-Pin * CPU to Display | 602-5005-26 |
| 10 * | GNR Backglass Artwork * | 830-5229-00 | † When ordering PC Boards with ROMS, please specify the Game Name. †† Indicate Manufacturer. | | |
| 11 | GNR Speaker Grills | 830-5628-00 | | | |
| 12 | GNR Speaker Plexi w/ Artwork | 830-5627-00 | | | |
| 13 | GNR Header Assembly | 515-6072-00 | | | |
| 13B | GNR Header Bracket (2) | 535-7023-00 | | | |
| 14 | 7 Vent Hole Grill 2 ¹ / ₂ " X 18" | 545-5072-02 | | | |

PARTS IDENTIFICATION

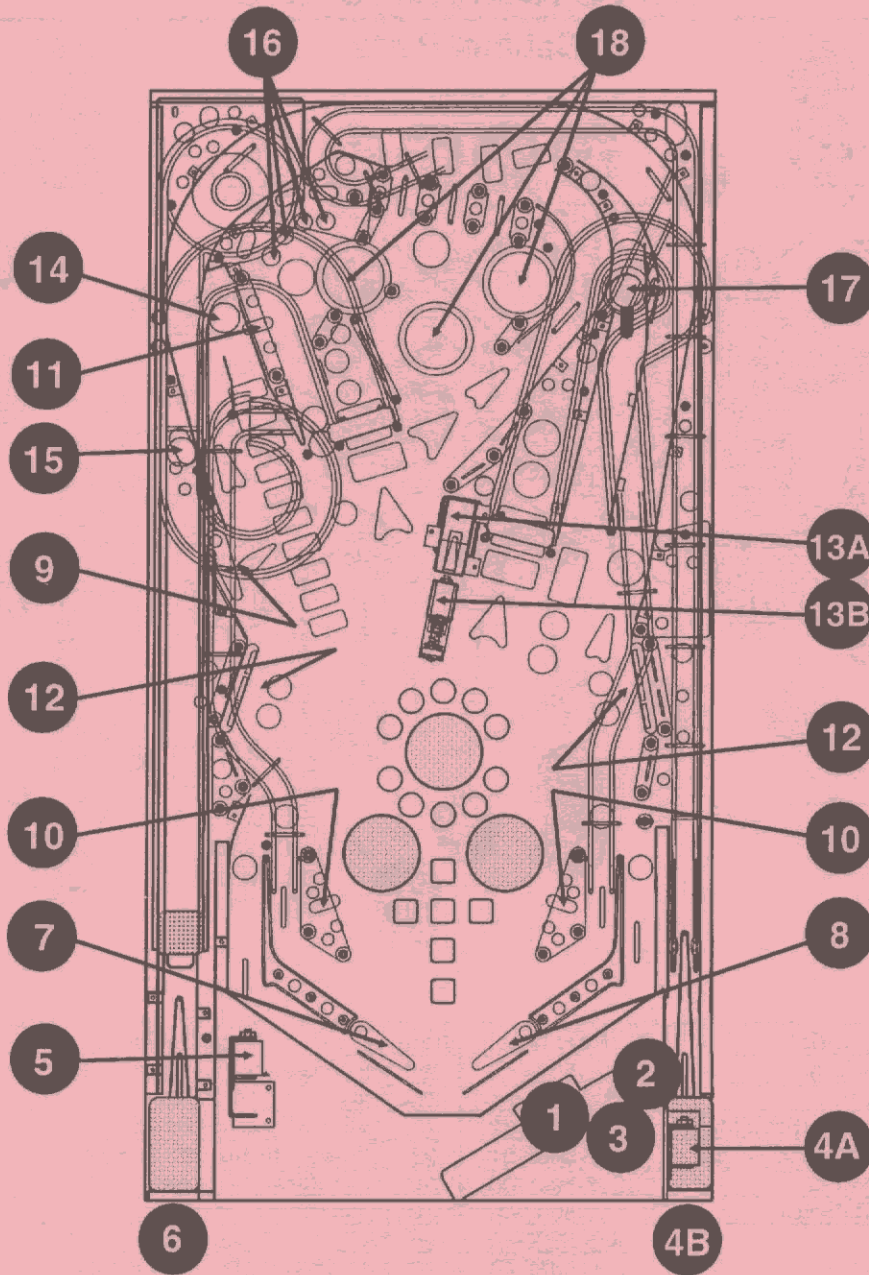
Cabinet Parts



NOTE: An asterisk (*) (shaded items) indicates item is not noted in this illustration.

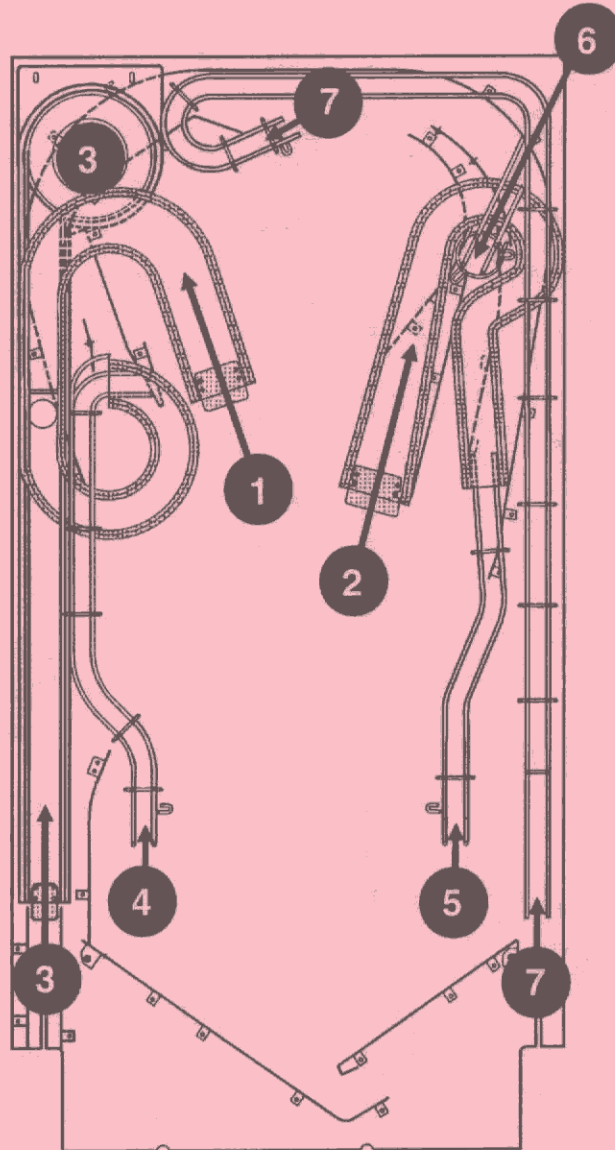
| Item | Description | Part No. | Item | Description | Part No. |
|-------|---|----------------|------|--|-------------|
| 1 | 6-Shooter Gun Assembly | 500-5834-00 | 19 * | Playfield Glass (T.P.) 22-3/4" x 43" * | 660-5014-00 |
| 1A | Rose Shooter Assembly | 500-5876-01-02 | 20/A | Side Armor - Left & Right | 535-6831-00 |
| 2 | Flipper Button Red Assy (Solid) (X2) | 500-5026-32 | 21 | Recessed Cup for Line Cord | 545-5122-00 |
| 3 | Leg Bolt (Black) 3/8-16 x 2-3/8 Hex Hd. | 231-5000-01 | 22 | Line Cord 10' ROJ 3" Maximum | 034-5000-10 |
| 4 | Cash Box Plastic Bottom | 545-5090-00 | 23* | Front Molding Lockdown Assy* | 500-5020-01 |
| 5 | Power Switch DPST Toggle | 180-5001-00 | 24* | Front Molding - Black * | 500-5757-00 |
| 6 | Leg (Black) X4 | 535-5020-50 | 25 | Solid State 3-Flipper Bds. (SSFB) | 520-5076-00 |
| | Leg Leveler 3/8-16x3" X4 | 500-5017-00 | 26 | #1 Roto Lock Male, (Female -02)* | 355-5006-01 |
| 7 | Cash Box Lock Bracket | 535-5215-00 | 27 | Rear Plastic Ext. P/F Glass | 545-5038-02 |
| 8 | Service Outlet | 180-5008-01 | 28 | Mounting Fm. Rubber for Ext. | 626-5004-00 |
| 9 | Transformer | 010-5003-00 | 29 | Plastic Channel Left & Right | 545-5017-00 |
| 10 | Speaker-Round - 8" | 031-5005-00 | 30 | Backbox Hinge Left | 515-5987-00 |
| 11 | Speaker Grill 7 X 7 | 535-6830-00 | 31 | Backbox Hinge Right | 515-5987-01 |
| 12A | Dual Switch Assembly | 500-5808-00 | 32 | Coin Door (w/Validator) USA | 500-5018-17 |
| 12B | Memory Protect Switch | 180-5000-00 | 33 * | Slide & Pivot Support Bracket Right* | 535-5989-00 |
| 12C | Interlock Switch | 180-5136-00 | 34* | Slide & Pivot Support Bracket Left | 535-5990-00 |
| 12D * | Service Switch Set on Coin Door * | 180-5012-00 | | Edge Slide Bracket * | 535-5988-00 |
| 13 | Start Button Switch Assy (GNR) | 500-5728-04 | | Playfield Support Slide Rev. A * | 535-6862-00 |
| 14 | Flipper Switch, Left, Top/Bottom | 180-5122-00 | 35 * | Playfield Support Bar * (Stay Arm) | 535-5019-00 |
| 15* | Flipper Switch, Right * | 180-5048-01 | 36 | Extra Ball Switch Ass'y (Orange) | 500-5779-07 |
| 16 | Cash Box Cover (Validator) | 535-5013-03 | 37 | Knocker Assembly | 500-5081-00 |
| 17 | Plumb Bob Tilt Assembly | 500-5023-00 | 38 | 5/16" Hex Key Allen Wrench | 777-0001-00 |
| 17A | Hanger Bracket (tilt) | 535-5221-00 | 39 * | Backbox/Cabinet Matrix/Fuse Info * | 820-6104-02 |
| 17B | Hanger Wire (tilt) (Attach to *17A*) | 535-5319-00 | 40 * | 3-Flipper Board Cover * | 545-5165-02 |
| 17C | Plumb Bob (tilt) (Attach to *17B*) | 535-5029-00 | 41 * | Shaker Motor (Not Used This Game) | 515-5893-00 |
| 17D | Contact Bracket (tilt) | 535-5220-00 | 42 * | Shaker Motor P.C. Board (Not Used) | 520-5065-00 |
| 18 | Volume Control Single 10K Pot | 123-5000-02 | | | |

PLAYFIELD - MAJOR ASSEMBLIES



| Item | Description | Part No. | Item | Description | Part No. |
|------|---|----------------|------|--------------------------------|-------------|
| 1 | 6-Ball Switch Assembly (Under Playfield) | 500-5683-01 | 9 | Flipper Assembly, Upper Left | 500-5694-02 |
| 2 | Lock Ball Assembly (Under Arch, Above Playfield) | 500-5684-01 | 10 | Slingshots, Lower | 500-5226-00 |
| 3 | Deflector for 6-Ball Assembly (Under Arch) | 535-6606-01 | 11 | Slingshot, Upper | 500-5226-01 |
| 4A | Ball Kicker (Auto Launch) Ass'y | 500-5477-03 | 12 | 3-Bank Drop Targets Left/Right | 500-5621-03 |
| 4B | 6-Shooter Gun Assembly | 500-5834-00 | 13A | Power Scoop Assembly, | 500-5809-00 |
| 5 | Laser Kick Assembly | 500-5838-00 | 13B | with Kick Big Assembly | 500-5740-00 |
| 6 | Rose Shooter Assembly | 500-5836-01-02 | 14 | Ball Eject Assembly | 500-5664-01 |
| 7 | Flipper Assembly, Left | 500-5755-02 | 15 | "G" Ramp Trap Door Assembly | 500-5830-00 |
| 8 | Flipper Assembly, Right | 500-5755-01 | 16 | 1" Stand-Up Targets (4) | 500-5835-08 |
| | | | 17 | Vertical Up-Kicker (VUK) | 500-5839-00 |
| | | | 18 | Turbo Pop-Bumpers (3) | 500-5227-00 |
| | | | 19 | Knocker Assembly (In Cabinet) | 500-5081-00 |

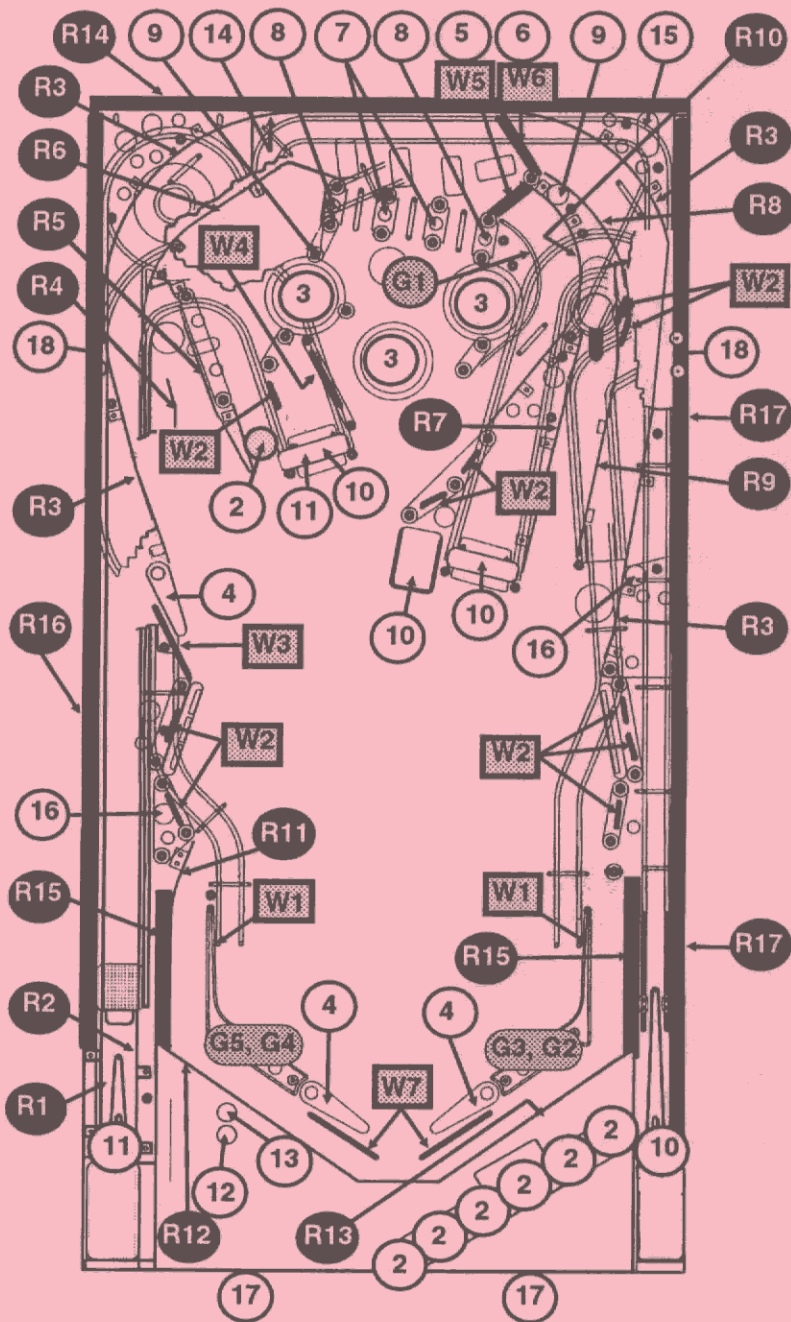
PLAYFIELD - MAJOR RAMP ASSEMBLIES & WIRE RAMPS



| Item | Description | Part No. | Item | Description | Part No. |
|--|-------------------------|-------------|------|------------------------------|-------------|
| 1 | "G" Gun Ramp Assembly | 500-5828-00 | 4 | "G" Ramp Wire Ramp | 535-6910-00 |
| 2 | "R" Rose Ramp Assembly | 500-5829-00 | 5 | "R" Ramp Wire Ramp | 535-6927-00 |
| 3 | Snake Pit Ramp Assembly | 500-5837-00 | 6 | VUK Wire Ramp | 535-6843-00 |
| See Unique Parts for Ramp Assembly Breakdowns. | | | 7 | Shooter Lane Right Wire Ramp | 515-6007-00 |

PLAYFIELD - TOP PARTS (LOCATIONS)

(See Tables on next page for descriptions/part numbers)



Some items on the playfield were omitted or "broken away" to show clarity.

Key (The item numbers are from the table on the next page)

| | |
|----|-----------------------------------|
| # | General Parts |
| B# | Butyrate Pieces |
| R# | All Rails (Flat, Wood, & Steel) |
| G# | All Ball Guides (Plastic & Metal) |
| W# | All Wire Forms (Metal) |

Butyrate Notes:

Item **B3** (830-5467-XX)

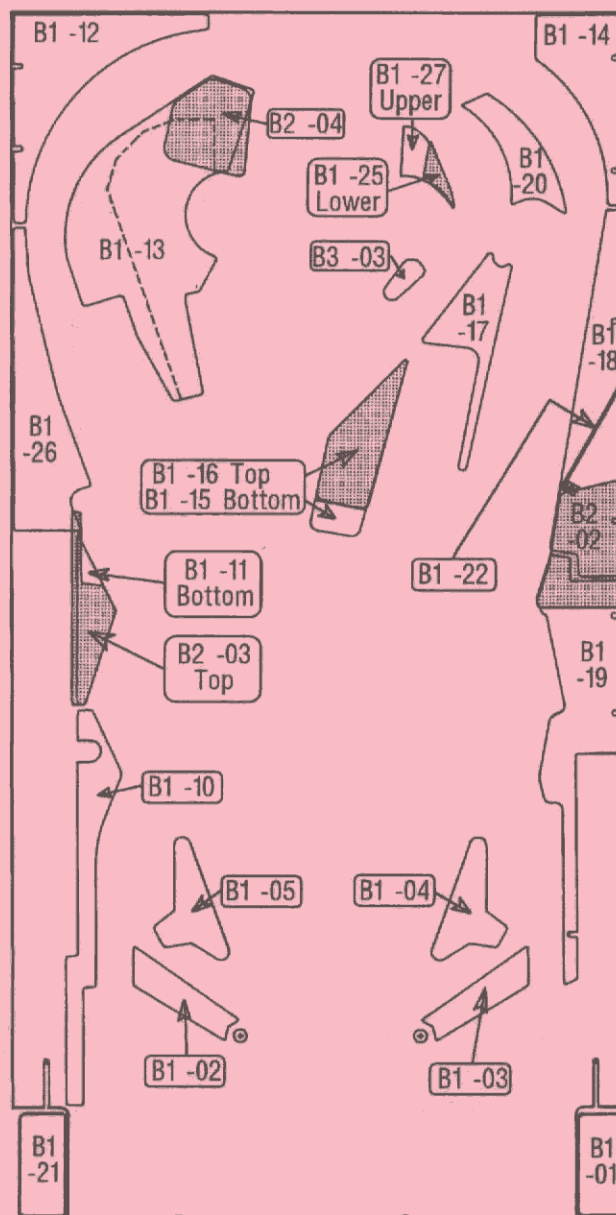
Item -01 is on the Snake Pit (Not Shown)

Item -02 is on the "R" Ramp (Not Shown)

See Unique Parts for location.

Item **B2** (830-5463-XX) There is no item "-01"

Item **B1** (830-5459-XX) There is no item "-06", "-07", "-08", "-09", "-23" & "-24".



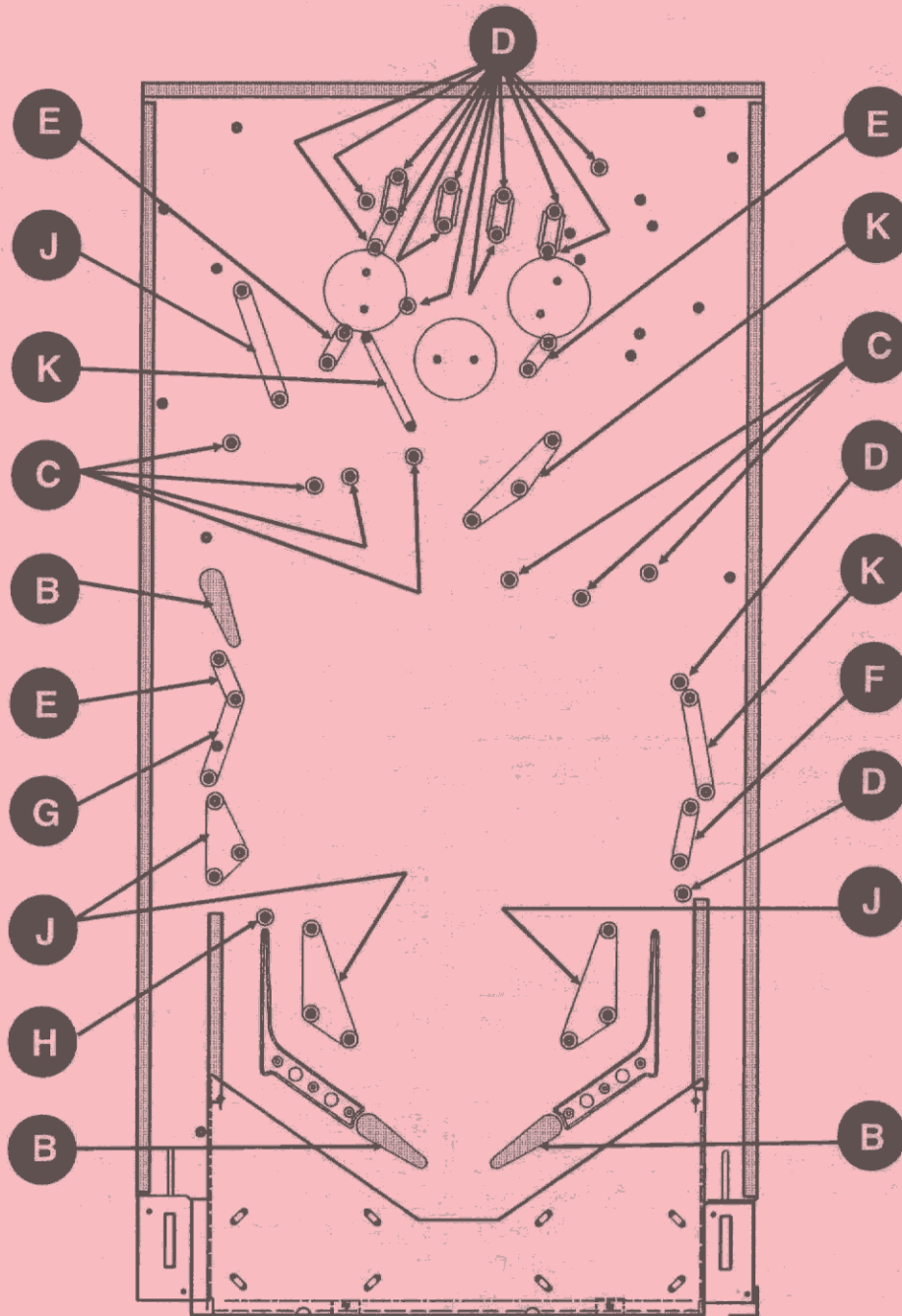
PLAYFIELD - TOP PARTS (TABLES)

(See diagrams on previous page for locations, except for items noted with an asterisk*)

| Item | Description | Part No. | Item | Description | Part No. |
|------|--|----------------------------|--|--|---|
| 1 | Bottom Arch Assembly (Metal) | 500-5813-00 | 14 | Light Cap Hat Yellow X1 | 550-5032-06 |
| 2 | 1-1/16" Steel Balls, 1-Captive, 6-Play (7 Total) | 260-5000-00 | 15 | Mini-Mars Light Cover Red X1 | 550-5055-02 |
| 3 | Pop Bumper Cap (Red) X3 | 550-5057-02 | 16 | Mini-Mars Light Cover Clear X2 | 550-5055-01 |
| 4 | Long Flippers & Shaft Ass'y Yellow, with "DE" Stamp X3 | 515-5133-02-00 | 17 | Playfield Hanging Bracket X2 | 535-5216-00 |
| 5 | 1-Way Gate Sm. (Mini-Orbit) Hanging Wire Form | 535-5269-01 535-5307-01 | 18 | Pivot Pin Bracket Ass'y X2, with Pivot Bracket Screws X4, and T-Nut X4 | 500-5329-00 237-5907-00 240-5101-00 |
| 6 | 1-Way Gate Lg. (Large-Orbit) Hanging Wire Form | 535-5210-00 535-5307-02 | 19* | Stay Arm Holder | 535-5747-00 |
| 7 | Lite Hood Top Lanes Red X2 | 550-5036-02 | Item Desc.: Butyrate Part No. | | |
| 8 | Lite Hood Top Lanes Left/Right Blue X2 | 550-5035-05 | B1 | P/F Butyrate Pieces (01-27)† | 830-5459-XX |
| 9 | Spot Lite & Bracket Ass'y X2 | 500-5818-00 | B2 | Extra Butyrate Pieces (02-04)† | 830-5463-XX |
| 10 | Lite Cover Condoms Red X4 | 545-5014-02 | B3 | Ramp Butyrate Pieces (01-03)† | 830-5467-XX |
| 11 | Lite Cover Condoms Yellow X2 | 545-5014-06 | † To order replacement Butyrate, fill in the last 2 #'s with the corresponding # printed on each piece. For Clear Butyrate, describe location. Please view the location diagram for butyrate on the previous page. | | |
| 12 | Lite Cover Condoms White X1 | 545-5014-08 | | | |
| 13 | Lite Cover Condoms Orange X1 | 545-5014-07 | | | |

| Item | Desc.: Mylar | Part No. | Item | Desc.: Ball Guides (G) | Part No. |
|---|---|-------------|------|---|-------------|
| □ * | Mylar Pieces (Clear Pre-Scored) | 820-5839-00 | G1 | Ball Guide (Mini-Orbit Left) | 535-6907-00 |
| □ * | Mylar Pad (Clear approx. 1"sq.) Entrance to Return Lanes X2 | 820-5815-00 | G2 | Ball Guide Upper Lt. Return | 550-5038-01 |
| □ * | Front of Slingshot Clear Mylar | 820-5821-00 | G3 | Ball Guide Upper Rt. Return | 550-5037-01 |
| | | | G4 | Ball Guide Lower Lt. Return | 550-5064-01 |
| | | | G5 | Ball Guide Lower Rt. Return | 550-5065-01 |
| Item | Desc.: Decals | Part No. | Item | Desc.: Wire Forms (W) | Part No. |
| □ * | Complete Decal Sheet †† | 820-6105-XX | W1 | Wire Form on Ball Guides X2 | 535-5642-00 |
| †† To order individual decals, describe decal and location. Note the last 2-digit number given. | | | W2 | Wire Form 1" X10 | 535-5300-05 |
| | | | W3 | Wire Form 3" Upper Flipper | 535-5300-02 |
| Item | Desc.: Rails (R) | Part No. | W4 | Wire Form 2.25" G-Ramp Left | 535-5300-12 |
| R1 | Flat Rail Left, Left Shooter Lane | 535-6865-00 | W5 | Wire Form on Sm. 1-Way Gate | 535-5307-01 |
| R2 | Flat Rail Right, Lt. Shooter Lane | 535-6866-00 | W6 | Wire Form on Lg. 1-Way Gate | 535-5307-02 |
| R3 | Flat Rail Large Outside Orbit | 535-6867-00 | W7 | Snubber Wires | 535-5373-01 |
| R4 | Flat Rail to Eject Left Side | 515-5975-00 | | | |
| R5 | Flat Rail to Eject Right Side | 515-5976-00 | | | |
| R6 | Flat Rail Behind Captive Targets | 515-5977-00 | | | |
| R7 | Flat Rail to VUK Left Side | 535-6869-00 | | | |
| R8 | Flat Rail Behind VUK | 535-6870-00 | | | |
| R9 | Flat Rail to VUK Right Side | 515-5978-00 | | | |
| R10 | Flat Rail Mini-Orbit Left Side | 535-6909-00 | | | |
| R11 | Flat Rail Left Outlane | 535-6868-00 | | | |
| R12 | Flat Rail Arch Left Side | 515-6042-00 | | | |
| R13 | Flat Rail Arch Right Side | 515-6043-00 | | | |
| R14 | Wood Rail 23" | 525-5007-01 | | | |
| R15 | Wood Rail 7" | 525-5007-10 | | | |
| R16 | Steel Rail Arch Left Side | 535-7002-00 | | | |
| R17 | Steel Rail Arch Right Side | 535-7001-00 | | | |
| | | | Page | Desc.: Other Part Numbers | |
| | | | 33 | Switches | |
| | | | 40 | Back Box Parts | |
| | | | 41 | Cabinet Parts | |
| | | | 42 | Major Assemblies (Breakdowns on Pgs. 51-66) | |
| | | | 43 | Major Ramp Assemblies & Wire Ramps | |
| | | | 46 | Rubber Parts | |
| | | | 47 | Posts | |
| | | | 48 | Lamps with Sockets | |
| | | | 49 | More Lamps with Sockets & Lamp Boards | |

PLAYFIELD - RUBBER PARTS

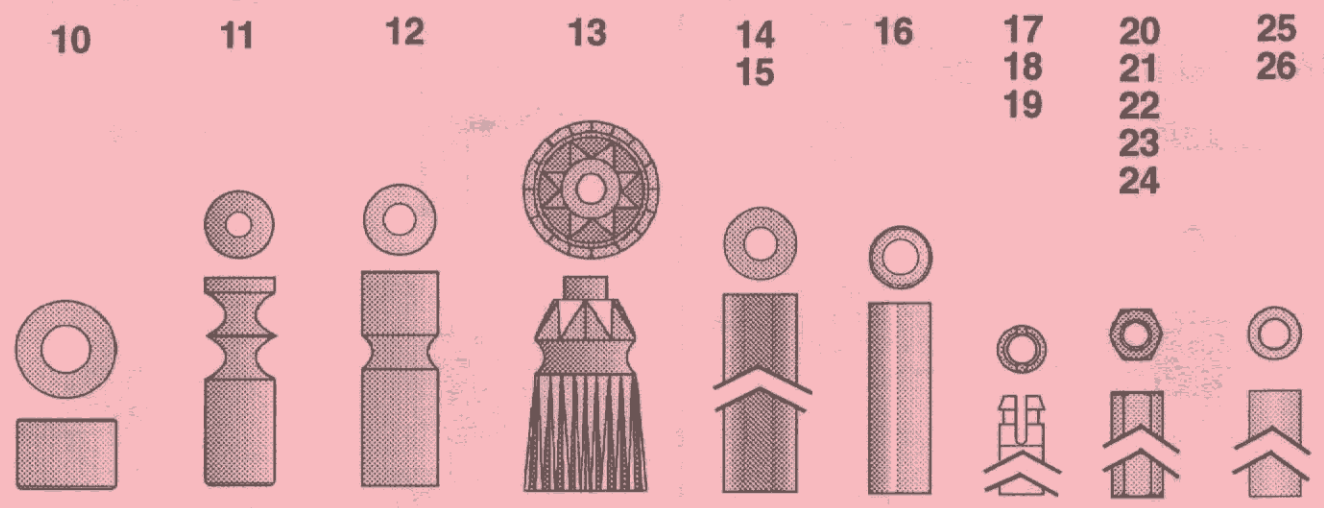
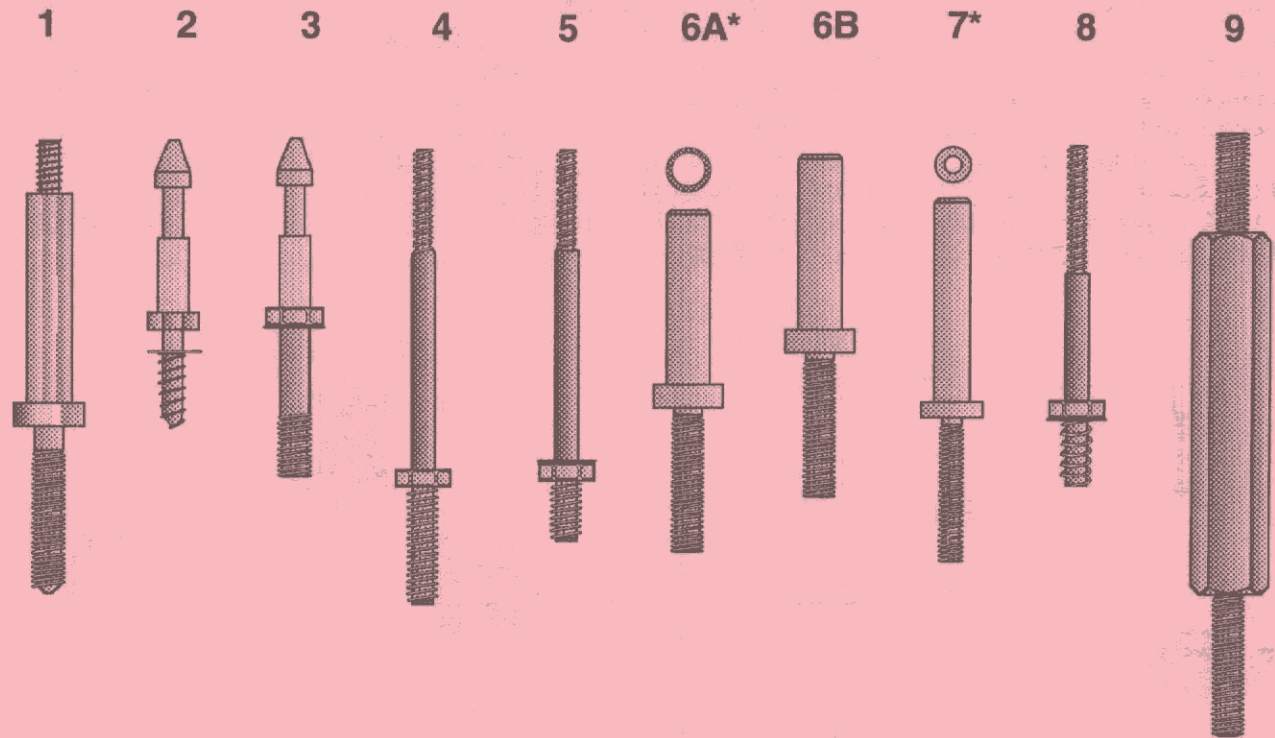


| Item | Description | Qty. | Part No. | Item | Description | Qty. | Part No. |
|------|------------------------------|------|-------------|------|-------------------------------|------|-------------|
| A | Rubber Bumper | 5 | 545-5105-00 | F | 1-1/4" I.D. Black Rubber Ring | 1 | 545-5348-06 |
| † | Post Rubber (Sleeve Short) | 0 | 545-5151-00 | G | 1-1/2" I.D. Black Rubber Ring | 1 | 545-5348-07 |
| † | Flipper Bushing (Small) | 0 | 545-5192-00 | † | 2" I.D. Black Rubber Ring | 0 | 545-5348-08 |
| B | Flipper Rubber Rings | 3 | 545-5277-00 | † | 2-1/2" I.D. Black Rubber Ring | 0 | 545-5348-09 |
| C | Post Rubber (Sleeve Tall) | 6 | 545-5308-00 | H | 3/8" O.D. Black Rubber Ring | 1 | 545-5348-19 |
| D | 3/16" I.D. Black Rubber Ring | 14 | 545-5348-01 | I | Bumper Post Rubber | 1 | 545-5009-00 |
| † | 5/16" I.D. Black Rubber Ring | 0 | 545-5348-02 | J | 2-3/4" I.D. Black Rubber Ring | 4 | 545-5348-20 |
| E | 1" I.D. Black Rubber Ring | 3 | 545-5348-05 | K | 1-3/4" I.D. Black Rubber Ring | 3 | 545-5348-21 |

† Shaded Items Not Used This Game.

Please note, the size and/or quantities may change as production continues.

PLAYFIELD - POSTS



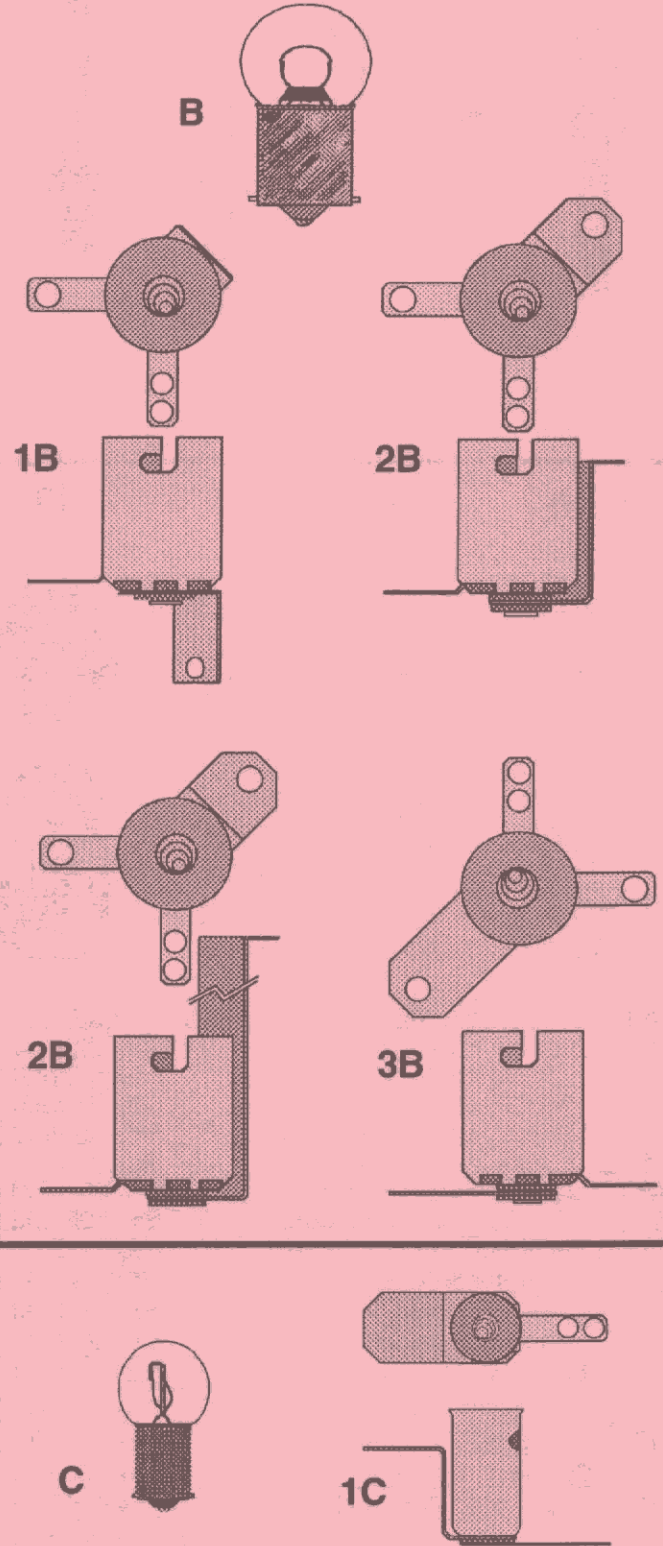
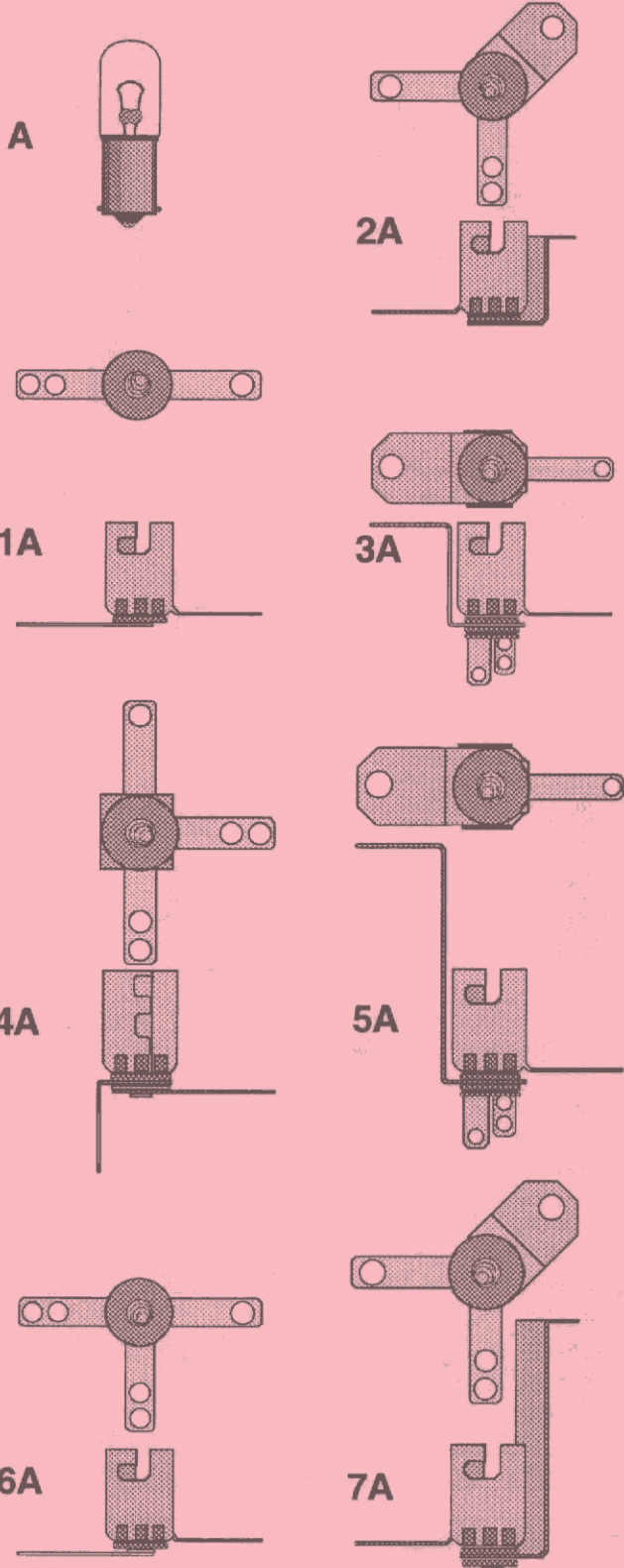
| Item | Description | Qty. | Part No. | Item | Description | Qty. | Part No. |
|------|---------------------------------|------|-------------|------|--|------|-------------|
| 1 | Bumper Post - Machine | 0 | 530-5007-00 | 16 | Spacer 1" Long Metal 5/16" X .144ID | 0 | 254-5001-00 |
| 2 | Mini-Post-Wood THD | 1 | 530-5004-00 | 17 | Spacer 3/8" Slf. Rtn. SRS6- 6-01 Plastic (White) | 33 | 254-5007-01 |
| 3 | Mini-Post-Machine THD | 3 | 530-5005-00 | 18 | Spacer 1/4" Slf. Rtn. SRS6- 4-01 Plastic (White) | 4 | 254-5007-02 |
| 4 | Machine Post Screw Large | 3 | 530-5008-00 | 19 | Spacer 3/4" Slf. Rtn. SRS6- 12-01 Plastic (White) | 3 | 254-5007-03 |
| 5 | Post Machine Screw | 31 | 530-5012-00 | 20 | Spacer 1/4" Hex Tapped 6-32 | 1 | 254-5008-00 |
| 6A* | Bumper Post 8-32 Tapped | 0 | 530-5075-00 | 21 | Spacer 1/2" Hex Tapped 6-32 | 7 | 254-5008-03 |
| 6B | Bumper Post Untapped | 0 | 530-5057-02 | 22 | Spacer 5/8" Hex Tapped 6-32 | 0 | 254-5008-02 |
| 7 | Bumper Post 6-32 Tapped | 7 | 530-5127-00 | 23 | Spacer 3/4" Hex Tapped 6-32 | 2 | 254-5008-04 |
| 8 | Post Machine Screw | 0 | 530-5263-01 | 24 | Spacer 2 3/4" Hex Tap. 6-32 | 2 | 254-5008-12 |
| 9 | Mini-Playfield Support | 0 | 530-5285-00 | 25 | Spcr. 1/2" Lg.X5/16"X.144ID | 8 | 254-5014-00 |
| 10 | Spacer Backbox Hinge | 2 | 530-5099-00 | 26 | Spcr. 3/4" Lg.X5/16"X.144ID | 7 | 254-5014-01 |
| 11 | Stand-Off 2 Grooves 1-1/16" | 0 | 530-5102-01 | | | | |
| 12 | Plastic Post (Grey) | 57 | 550-5059-00 | | | | |
| 13 | Small Post Plastic | 0 | 550-5034-XX | | | | |
| 14 | Spacer 1" Plastic (Grey) 3/8" | 2 | 254-5000-04 | | | | |
| 15 | Spacer 1 1/4" Plstc. (GRY) 3/8" | 2 | 254-5000-05 | | | | |

† Shaded Items Not Used This Game.

Please note, the size and/or quantities may change as production continues.

PLAYFIELD - LAMPS WITH SOCKETS

| Item | Description (1 bulb per socket) | Qty. | Part No. | Item | Description (1bulb per socket) | Qty. | Part No. |
|------|---------------------------------|------|-------------|------|--------------------------------|------|-------------|
| A | #44 Bulb | 91 | 165-5000-44 | B | #89 Bulb | 34 | 165-5000-89 |
| 1A | 2-Lug Staple Down Socket | 68 | 077-5000-00 | 1B | Laydown Standard Socket | 1 | 077-5100-00 |
| 2A | 2-Lug Stand-Up Short Socket | 0 | 077-5002-00 | 2B | Stand-Up, Short Socket | 24 | 077-5101-00 |
| 3A | 3-Lug Stand-Up Short Socket | 2 | 077-5008-00 | 3B | Stand-Up, Long Socket | 7 | 077-5102-00 |
| 4A | 3-Lug Laydown Socket | 3 | 077-5006-00 | 4B | Straight Leg Socket | 2 | 077-5107-00 |
| 5A | 3-Lug Stand-Up Long Socket | 19 | 077-5009-00 | C | #455 Bulb (Twinkle) | 0 | 165-5003-00 |
| 6A | 3-Lug Staple Down Socket | 0 | 077-5001-00 | 1C | 1-Lug Stand-Up Long Socket | 0 | 077-5012-00 |
| 7A | 2-Lug Stand-Up Long Socket | 1 | 077-5005-00 | | | | |



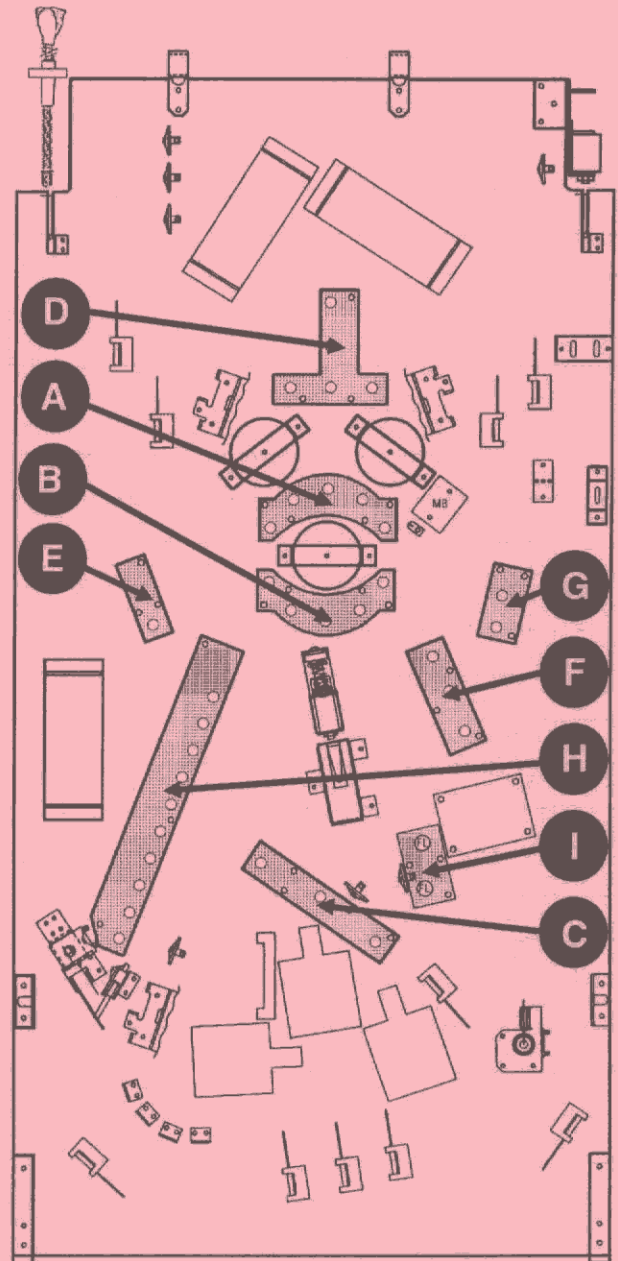
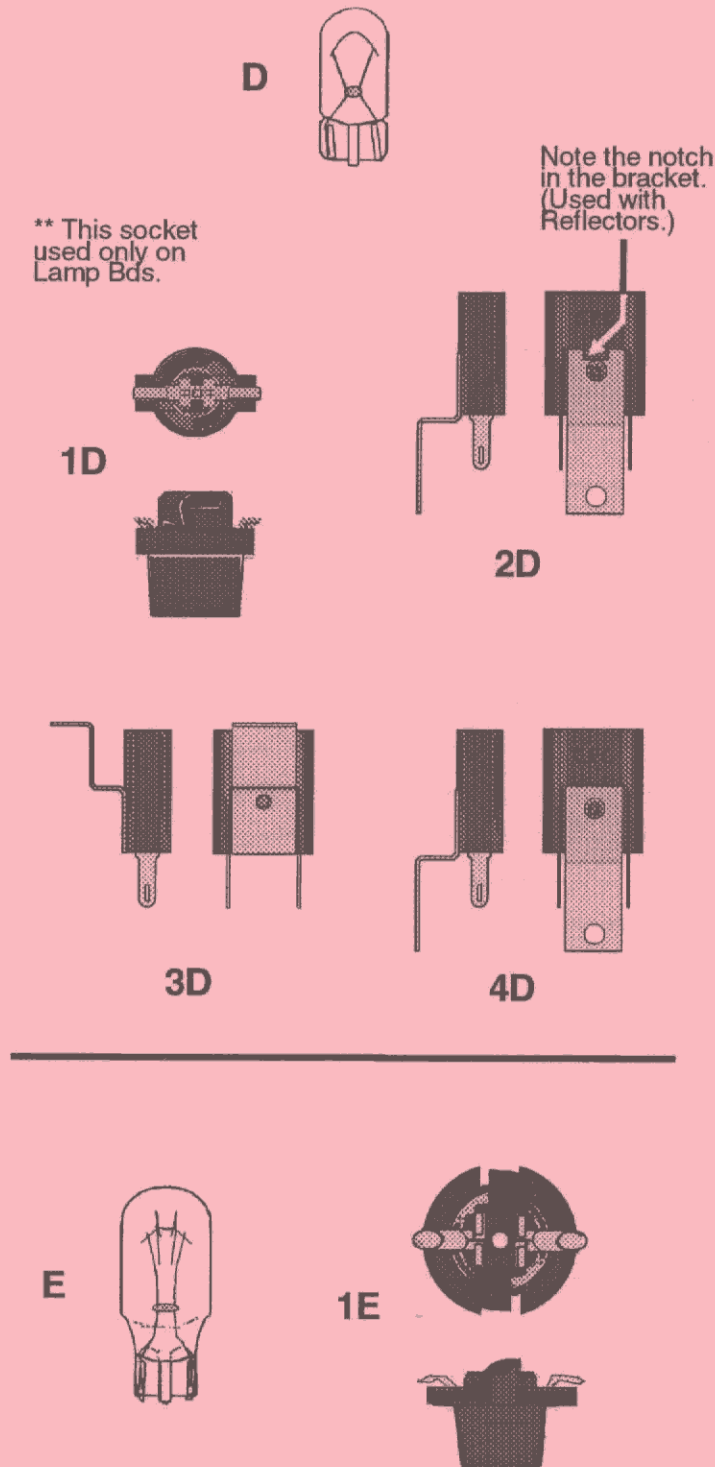
PLAYFIELD - LAMPS WITH SOCKETS

| Item | Description (1 bulb per socket) | Qty. | Part No. |
|------|---------------------------------|------|-------------|
| D | #555 Wedge Base Bulb * | 48 | 165-5002-00 |
| 1D | 555 Wedge Base Socket ** | 37 | 077-5007-00 |
| 2D | Laydown Wedge Base L/R BLK | 6 | 077-5026-01 |
| 3D | Wedge Offset Bracket Socket | 0 | 077-5029-00 |
| 4D | Laydown Wedge Base Black | 0 | 077-5026-00 |
| E | #906 Wedge Base Bulb | 2 | 165-5004-00 |
| 1E | 906 Wedge Base Socket | 2 | 077-5016-00 |

* - 3 extra #555 Bulb located 1 per Pop Bumper.

| Item | Lamp Board P.N. | Item | Lamp Board P.N. |
|------|-----------------|------|-----------------|
| A | 520-5079-01 | E | 520-5079-06 |
| B | 520-5079-02 | F | 520-5079-07 |
| C | 520-5079-04 | G | 520-5079-08 |
| D | 520-5079-05 | H | 520-5079-09 |
| | | I | 520-5079-11 |

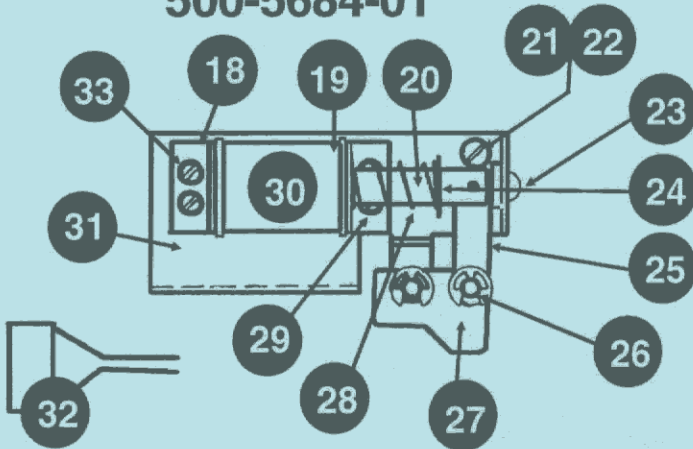
(Please Note: Boards -03, -10, Not Used.)



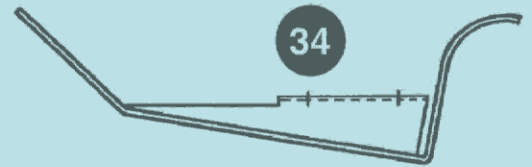
UNDER PLAYFIELD: BOTTOM VIEW

UNIQUE PARTS

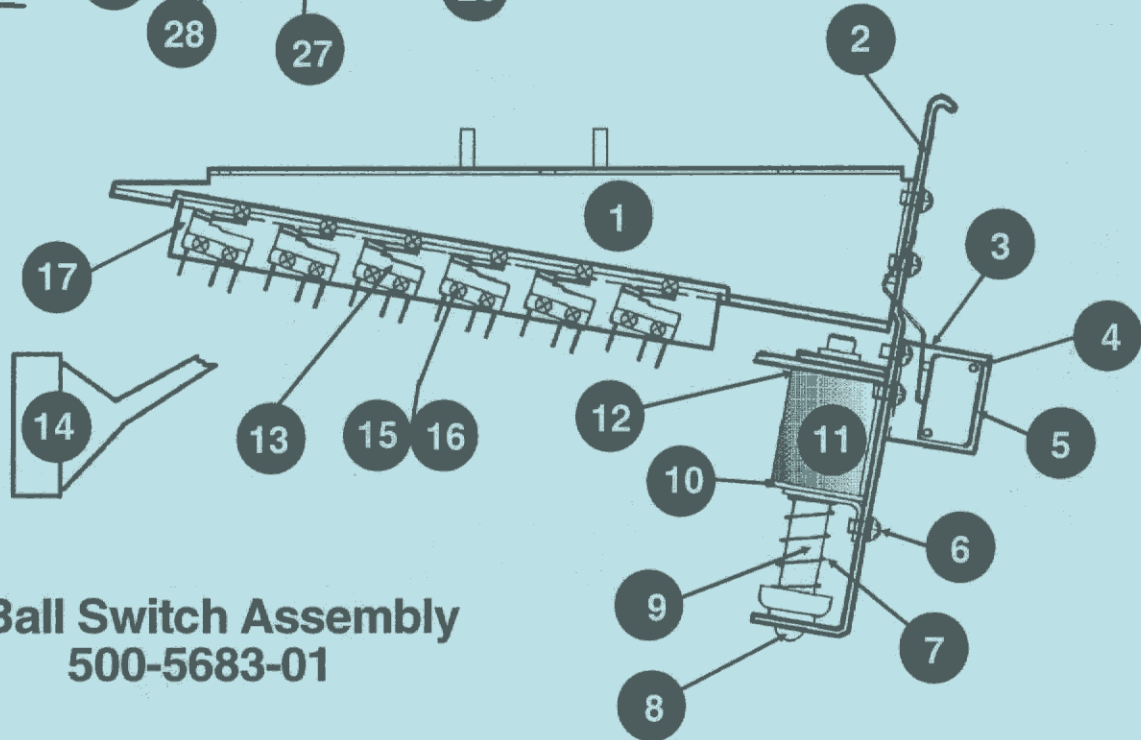
Lock Ball Assembly 500-5684-01



Deflector 535-6606-01

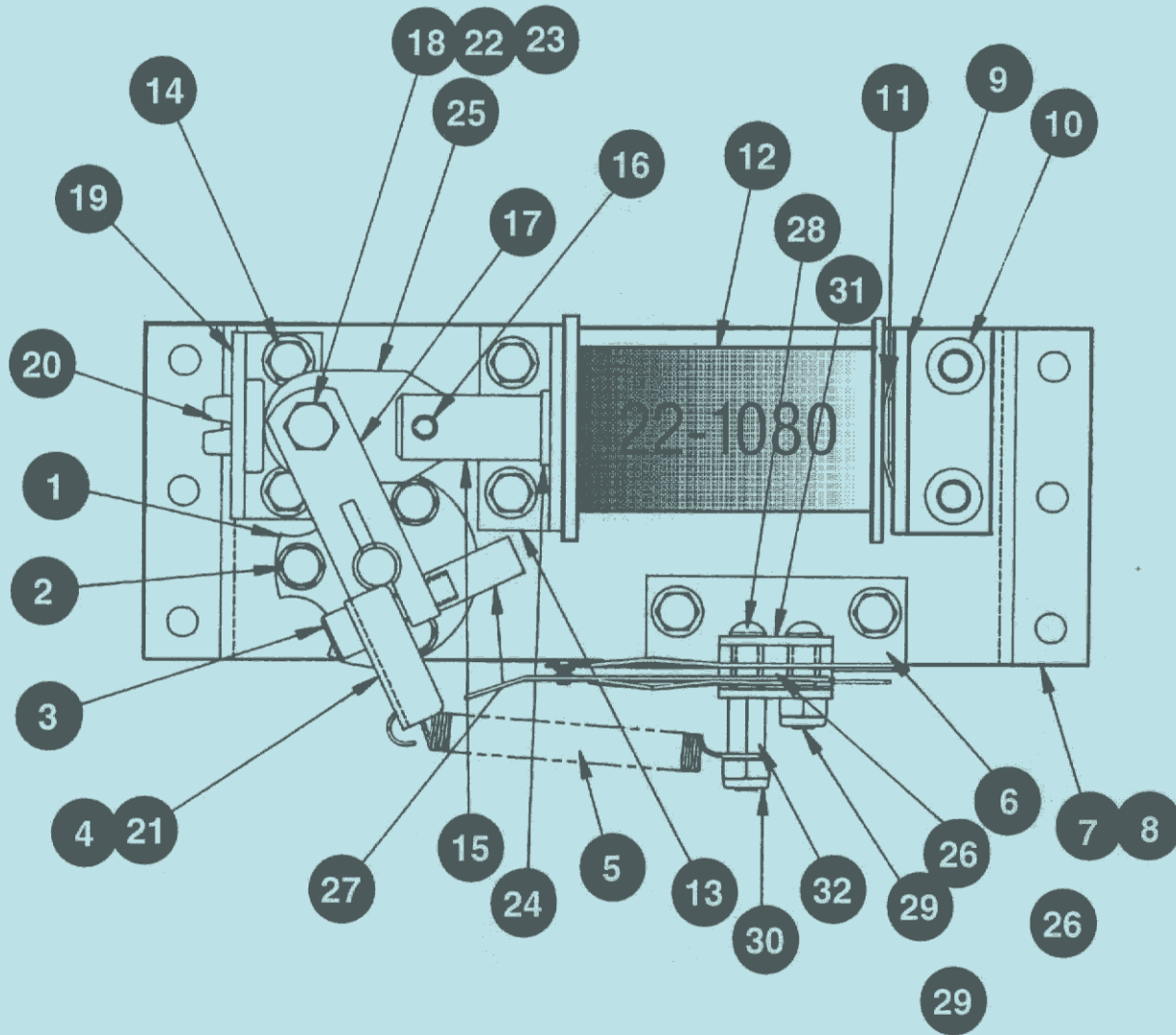


6-Ball Switch Assembly 500-5683-01



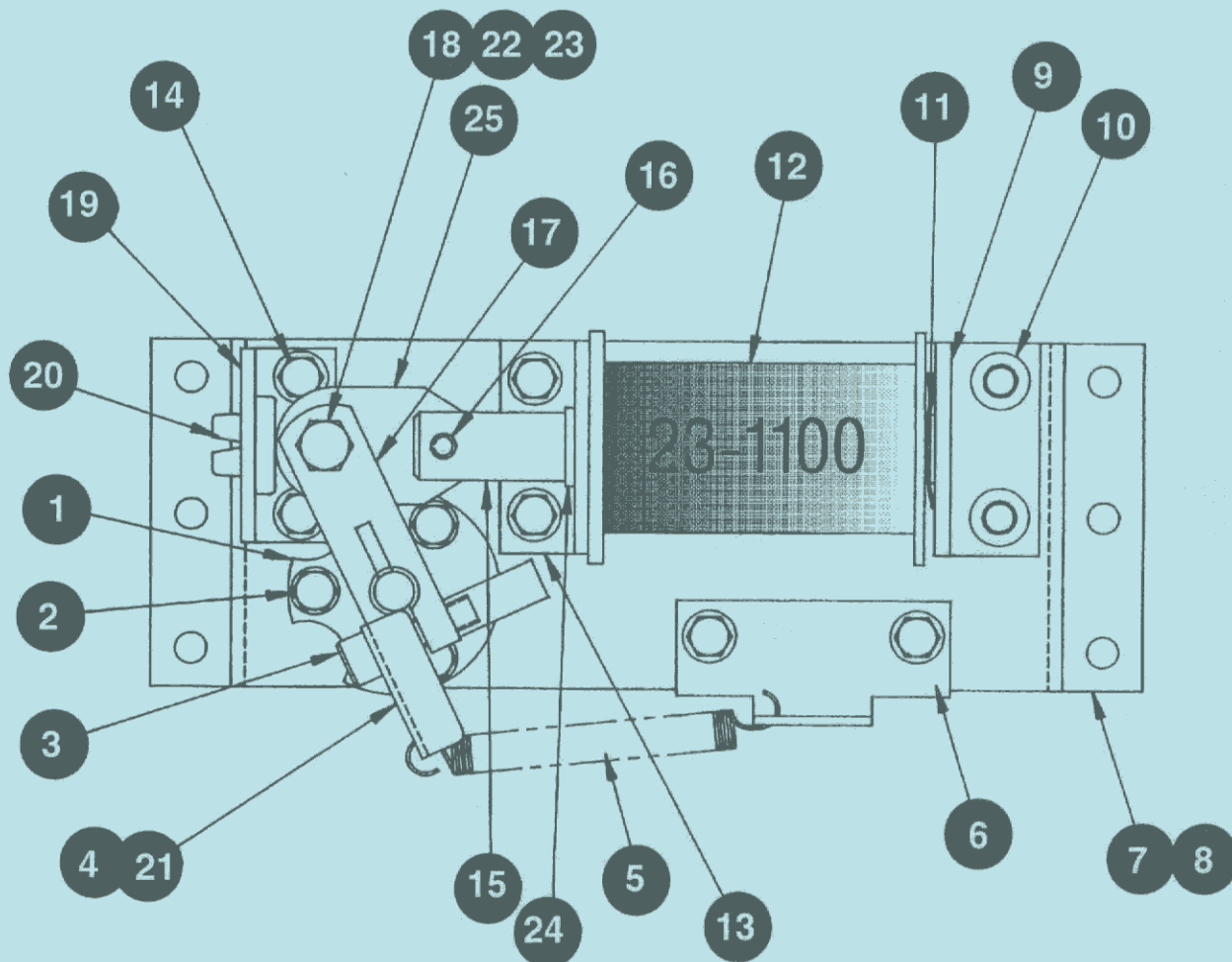
| Item | Description | Part No. | Item | Description | Part No. |
|------|------------------------------|-------------|------|---------------------------------------|-------------|
| 1 | Outhole Mounting Bracket | 535-6621-01 | 18 | Core Stop Assembly | 515-5088-00 |
| 2 | Coil Mounting Bracket | 535-6622-01 | 19 | Coil Sleeve | 545-5411-00 |
| 3 | Switch Mounting Bracket | 535-6623-00 | 20 | Plunger $\varnothing 7/16$ X 2-1/4 LG | 530-5250-01 |
| 4 | #4-40 PPH X .62 LG (2) | 237-5832-00 | 21 | Spacer | 545-5400-00 |
| 5 | Switch, Miniature | 180-5118-00 | 22 | #8-32 PPH X 1" LG | 232-1104-16 |
| 6 | #8-32 PPH w/SEM X .25 LG (8) | 232-5300-00 | 23 | Rubber Bumper | 545-5105-00 |
| 7 | Spring | 266-5020-00 | 24 | E-Ring $\varnothing .44$ Shaft | 270-5005-00 |
| 8 | Rubber Bumper | 545-5105-00 | 25 | Link, Lock Ball | 535-6649-00 |
| 9 | Plunger Assembly | 515-5000-02 | 26 | E-Ring, .25 Shaft (2) | 250-0008-00 |
| 10 | Coil Retaining Bracket | 535-5203-01 | 27 | Lock Ball Cam Assembly | 515-5815-01 |
| 11 | Coil, 23-800 | 090-5001-00 | 28 | Spring | 266-5000-00 |
| 12 | Coil Sleeve | 545-5076-00 | 29 | Coil Retaining Bracket | 535-6658-00 |
| 13 | Switch, Subminiature (6) | 180-5119-00 | 30 | Coil, 25-1240 | 090-5034-00 |
| 14 | Wire Harness | 036-5301-00 | 31 | Lock Ball Bracket Assembly | 515-5817-01 |
| 15 | #2-56 PPH X .5 LG (12) | 237-5806-00 | 32 | Wire Harness | 036-5301-01 |
| 16 | #2 Split LW (12) | 244-5001-00 | 33 | #6-32 HWH TC X .38 LG (4) | 237-5898-00 |
| 17 | Switch Protector (6) | 535-6539-00 | 34 | Deflector (Trough Entry Scoop) | 535-6606-01 |

Flipper Assembly, Lower 500-5755-01 (Right), 500-5755-02 (Left)



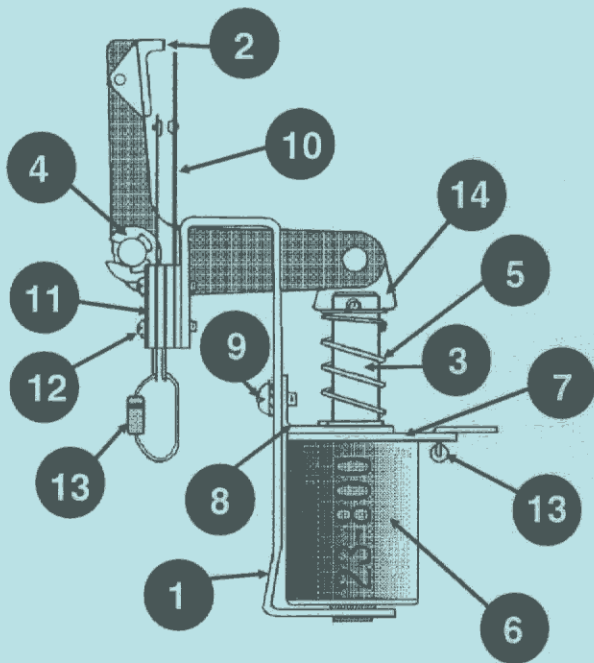
| Item | Description | Part No. | Item | Description | Part No. |
|------|----------------------------|-------------|------|-------------------------------|-------------|
| 1 | Flipper Bushing | 545-5070-00 | 17 | Pawl | 530-5070-00 |
| 2 | #6-32 X .38 LG HWH (3) | 237-5910-00 | 18 | #10-32 X .75 LG Shoulder Bolt | 231-5019-00 |
| 3 | #10-32 SOC HD X .75 LG | 237-5864-00 | 19 | Plunger Stop Bracket | 535-5279-01 |
| 4 | Spring Bracket (Left) | 535-6663-02 | 20 | Nylon Stop | 545-5445-01 |
| 5 | Flipper Return Spring | 265-5029-02 | 21 | Spring Bracket (Right) | 535-6663-01 |
| 6 | Switch Mounting Bracket | 535-6664-00 | 22 | Bushing | 530-5139-00 |
| 7 | Flipper Base (Left) | 515-5077-02 | 23 | #10-32 Elastic Stop Nut | 240-5203-00 |
| 8 | Flipper Base (Right) | 515-5077-01 | 24 | Coil Sleeve | 545-5388-00 |
| 9 | Coil Stop Bracket | 515-5346-00 | 25 | Flipper Link | 545-5401-00 |
| 10 | 1/4-20 SOC HD X .38 LG (2) | 237-5861-00 | 26 | Power Switch | 180-5124-01 |
| 11 | Spring Washer | 269-5002-00 | 27 | Plastic Cap | 545-5084-00 |
| 12 | Coil 22-1080 | 090-5032-00 | 28 | #6-32 X 1" LG PPH | 237-5506-00 |
| 13 | Front Bracket | 535-6453-00 | 29 | #6-32 X .63 LG PPH | 237-5899-00 |
| 14 | #8-32 X .38 LG HWH (6) | 237-5903-00 | 30 | #6-32 Elastic Stop Nut | 240-5005-00 |
| 15 | Plunger and Link Assembly | 515-5822-00 | 31 | Switch Plate | 535-5045-00 |
| 16 | Roll Pin | 251-5000-00 | 32 | 1/4 Hex Spacer (3/8" Long) | 254-5008-12 |

Flipper Assembly, Upper 500-5694-02 (Left)



| Item | Description | Part No. | Item | Description | Part No. |
|------|----------------------------|-------------|------|-------------------------------|-------------|
| 1 | Flipper Bushing | 545-5070-00 | 13 | Front Bracket | 535-6453-00 |
| 2 | #6-32 X .38 LG HWH (3) | 234-5000-00 | 14 | #8-32 X .38 LG HWH (6) | 234-5100-00 |
| 3 | #10-32 SOC HD X .75 LG | 237-5864-00 | 15 | Plunger and Link Assembly | 515-5822-00 |
| 4 | Spring Bracket (Left) | 535-6663-02 | 16 | Roll Pin | 251-5000-00 |
| 5 | Flipper Return Spring | 265-5029-02 | 17 | Pawl | 530-5070-00 |
| 6 | Switch Mounting Bracket | 535-6664-00 | 18 | #10-32 X .75 LG Shoulder Bolt | 231-5019-00 |
| 7 | Flipper Base (Left) | 515-5077-02 | 19 | Plunger Stop Bracket | 535-5279-01 |
| 8 | Flipper Base (Right) | 515-5077-01 | 20 | Nylon Stop | 545-5445-01 |
| 9 | Coil Stop Bracket | 515-5346-00 | 21 | Spring Bracket (Right) | 535-6663-01 |
| 10 | 1/4-20 SOC HD X .38 LG (2) | 237-5861-00 | 22 | Bushing | 530-5139-00 |
| 11 | Spring Washer | 269-5002-00 | 23 | #10-32 Elastic Stop Nut | 240-5206-00 |
| 12 | Coil 23-1100 | 090-5030-00 | 24 | Coil Sleeve | 545-5388-00 |
| | | | 25 | Flipper Link | 545-5401-00 |

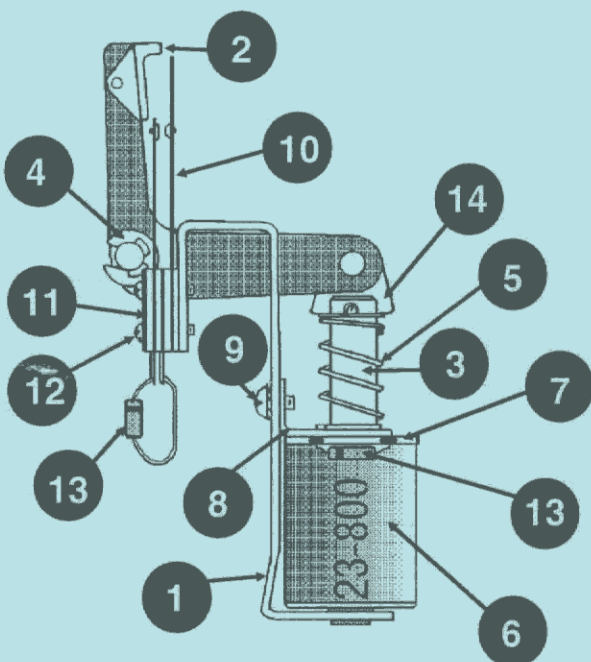
Lower Slingshot Assemblies 500-5226-00



| Item | Description | Part No. |
|------|--------------------------|-------------|
| 1 | Slingshot Bracket | 515-5339-00 |
| 2 | S. S. Arm & Tip Assembly | 515-5340-00 |
| 3 | Plunger & Link Assembly | 515-5338-00 |
| 4 | 1/4 Retaining Ring (2) | 270-5002-00 |
| 5 | Spring | 266-5020-00 |
| 6 | Coil 23-800 | 090-5001-00 |
| 7 | Coil Sleeve | 260-0004-00 |
| 8 | Coil Retainer | 535-5203-03 |
| 9 | #8-32 X 1/4" Screw (2) | 232-5300-00 |
| 10 | Slingshot Switch (2) | 180-5054-00 |
| 11 | Tension Plate (2) | 535-5846-00 |
| 12 | #4-40 X 1/2" Screw (4) | 237-5837-00 |
| 13 | Diode 1N4004 (2) | 112-5003-00 |
| 14 | Link | 545-5062-00 |

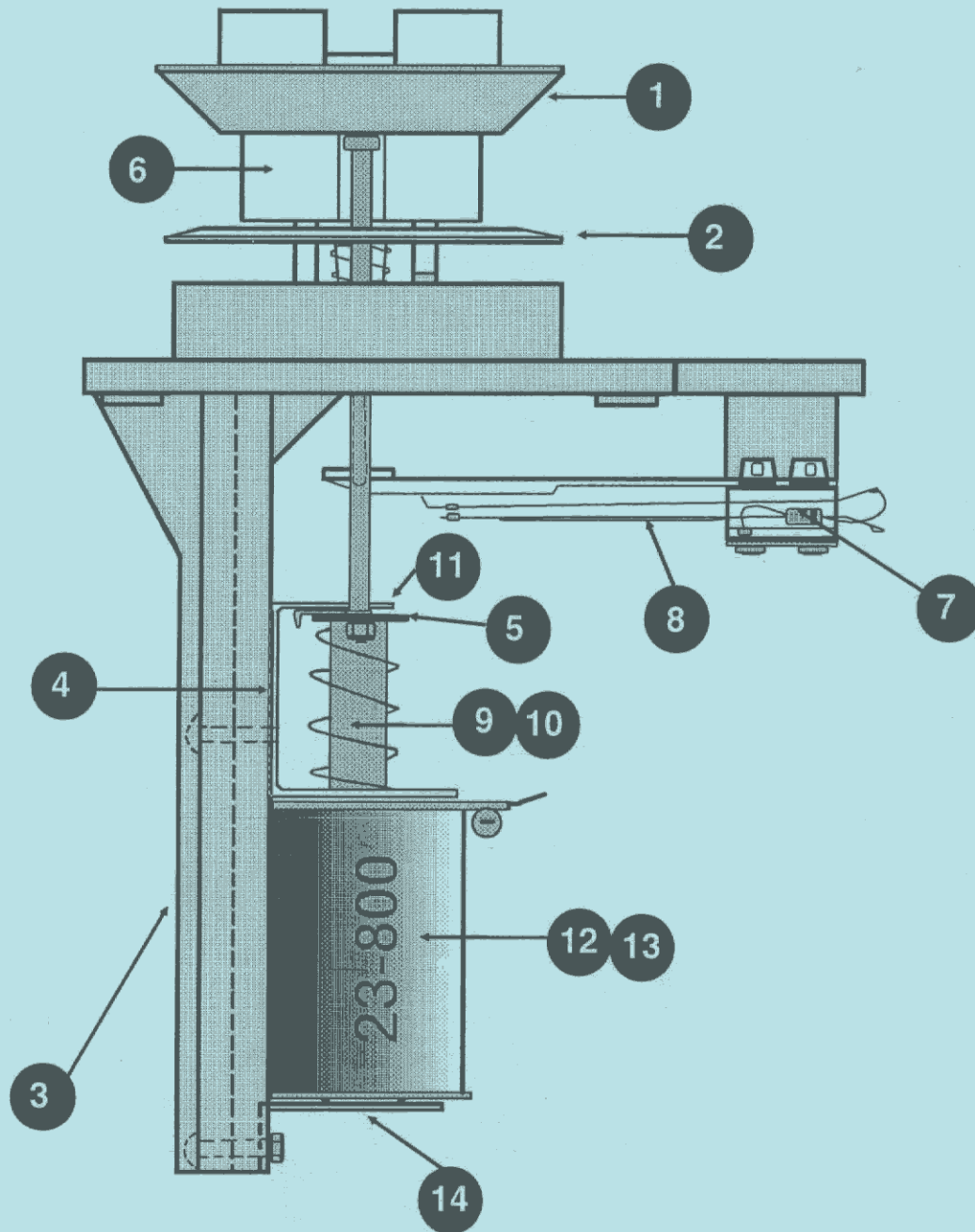
Upper Slingshot Assembly 500-5226-01

(Note coil is rotated 90°)



| Item | Description | Part No. |
|------|--------------------------|-------------|
| 1 | Slingshot Bracket | 515-5339-00 |
| 2 | S. S. Arm & Tip Assembly | 515-5340-00 |
| 3 | Plunger & Link Assembly | 515-5338-00 |
| 4 | 1/4 Retaining Ring (2) | 270-5002-00 |
| 5 | Spring | 266-5020-00 |
| 6 | Coil 23-800 | 090-5001-00 |
| 7 | Coil Sleeve | 260-0004-00 |
| 8 | Coil Retainer | 535-5203-03 |
| 9 | #8-32 X 1/4" Screw (2) | 232-5300-00 |
| 10 | Slingshot Switch (2) | 180-5054-00 |
| 11 | Tension Plate (2) | 535-5846-00 |
| 12 | #4-40 X 1/2" Screw (4) | 237-5837-00 |
| 13 | Diode 1N4004 (2) | 112-5003-00 |
| 14 | Link | 545-5062-00 |

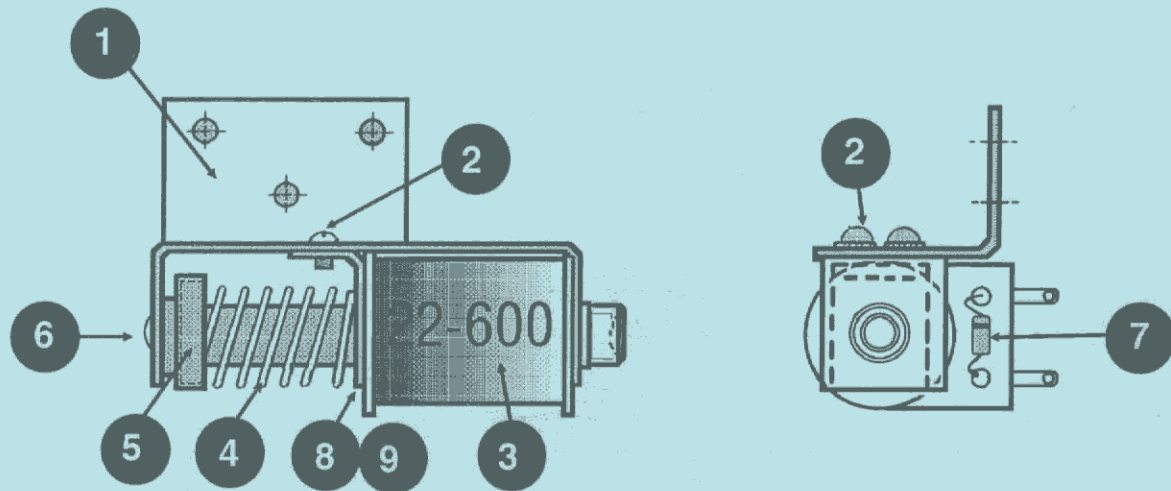
Turbo Bumper Assembly 500-5227-00†



| Item | Description | Part No. | Item | Description | Part No. |
|------|---------------------|-------------|------|--------------------|-------------|
| 1 | Rod & Ring Assembly | 515-5085-00 | 8 | Switch | 180-5015-01 |
| 2 | Bumper Skirt | 545-5098-00 | 9 | Plunger | 530-5062-00 |
| 3 | Bumper Housing | 545-5100-00 | 10 | Spring | 266-5009-00 |
| 4 | Plunger Bracket | 535-5277-00 | 11 | Metal Yoke | 535-5877-00 |
| 5 | Fiber Yoke | 545-5120-00 | 12 | Coil 23-800 | 090-5001-00 |
| 6 | Bumper Body | 545-5197-00 | 13 | Coil Sleeve | 260-0004-00 |
| 7 | Diode 1N4004 | 112-5003-00 | 14 | Coil Stop Assembly | 515-5088-00 |

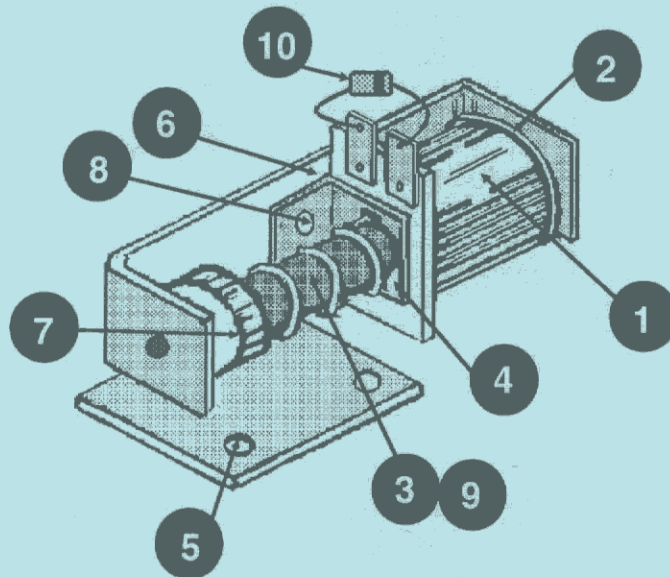
† Bumper Cover (not shown) is not included with above assembly. Bumper Cover (Red), 550-5057-02, Qty. 3, must be ordered separately.

Ball Kicker (Auto Launch) Assembly 500-5477-03



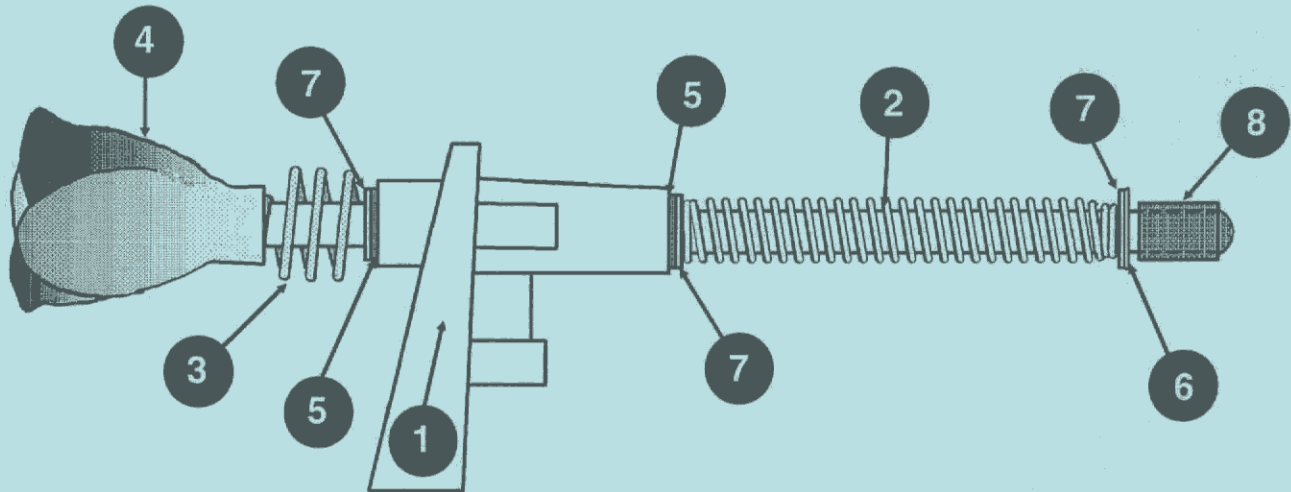
| Item | Description | Part No. | Item | Description | Part No. |
|------|-----------------------|-------------|------|------------------------|-------------|
| 1 | Coil Mounting Bracket | 535-6385-00 | 5 | Plunger Assembly | 515-5000-02 |
| 2 | 8-32 X 1/4 SEMS (2) | 232-5300-00 | 6 | Grommet (Bumper Pad) | 545-5105-00 |
| 3 | Coil 22-600 | 090-5023-01 | 7 | Diode 1N4004 | 112-5003-00 |
| 4 | Spring | 266-5020-00 | 8 | Coil Retaining Bracket | 535-5203-03 |
| | | | 9 | Spring Washer | 269-5002-00 |

Knocker Assembly 500-5081-00



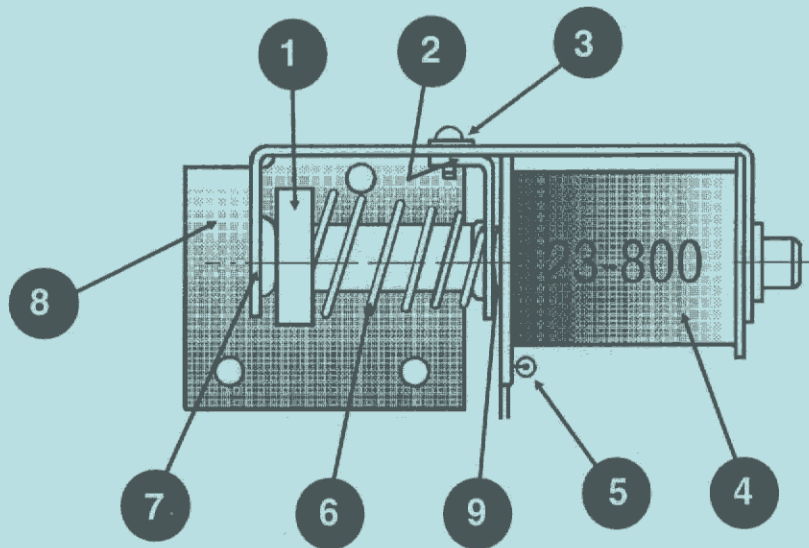
| Item | Description | Part No. | Item | Description | Part No. |
|------|--------------------------|-------------|------|----------------------------|-------------|
| 1 | Coil 23-800 | 090-5001-01 | 6 | Coil Retainer Bracket | 535-5203-01 |
| 2 | Coil Sleeve | 545-5076-00 | 7 | Bumper Pad | 545-5105-00 |
| 3 | Spring | 266-5020-00 | 8 | Screw #8-32 X 1/4 SEMS (2) | 232-5300-00 |
| 4 | Spring Washer | 269-5002-00 | 9 | Plunger Assembly | 515-5000-02 |
| 5 | Kickback/Knocker Bracket | 535-5265-00 | 10 | Diode 1N4004 | 112-5003-00 |

Rose Handle Shooter Assembly (Long Shaft) 500-5836-01-02



| Item | Description | Part No. | Item | Description | Part No. |
|------|-----------------------|-------------|------|----------------|-------------|
| 1 | Housing | 535-5067-00 | 5 | Bushing (2) | 280-5010-00 |
| 2 | Spring Large Red | 266-5001-02 | 6 | Retaining Ring | 270-5012-00 |
| 3 | Spring Small Red | 266-5010-02 | 7 | Washer (3) | 242-5014-00 |
| 4 | Red Rose Rod Assembly | 515-6067-01 | 8 | Plunger Tip | 545-5276-00 |

Laser Kick Assembly 500-5838-00

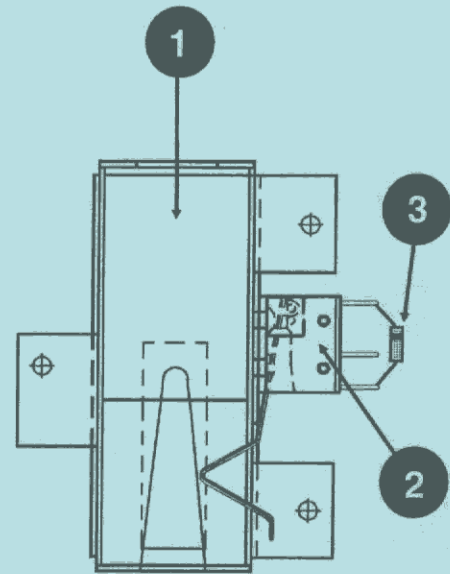


| Item | Description | Part No. | Item | Description | Part No. |
|------|---------------------------------|-------------|------|---------------------------|-------------|
| 1 | Plunger Assembly | 515-5000-02 | 6 | Spring | 266-5020-00 |
| 2 | Coil Retainer Bracket | 535-5203-03 | 7 | Grommet (Bumper Pad) | 545-5105-00 |
| 3 | #8-32 X 5/16" LG Phil. Pan. (2) | 232-5300-00 | 8 | Kick Back/Knocker Bracket | 535-5265-00 |
| 4 | Coil 23-800 | 090-5001-01 | 9 | Crescent Spring Washer | 269-5002-00 |
| 5 | 1N4004 Diode | 112-5003-00 | | | |

Power Scoop Assembly 500-5809-00

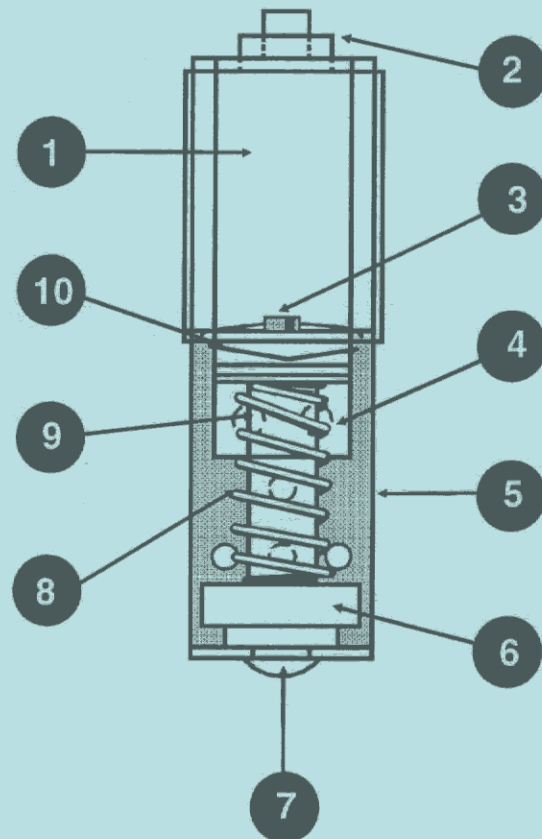
Please Note:
These two assemblies work in conjunction with each other but are separate assemblies.

| Item | Description | Part No. |
|------|---------------------------|-------------|
| 1 | Power Scoop Weld Assembly | 515-6022-00 |
| 2 | Micro Switch | 180-5057-00 |
| | Switch Protect Plate | 535-6539-00 |
| | #2 Lockwasher (2) | 244-5001-00 |
| | 2-56 Hex Nut (2) | 240-5301-00 |
| | Micro Bracket | 535-6163-00 |
| | 2-56 PHMS (2) | 237-5806-00 |
| | 6-32 PHMS (2) | 232-5200-00 |
| 3 | Diode 1N4004 | 112-5003-00 |

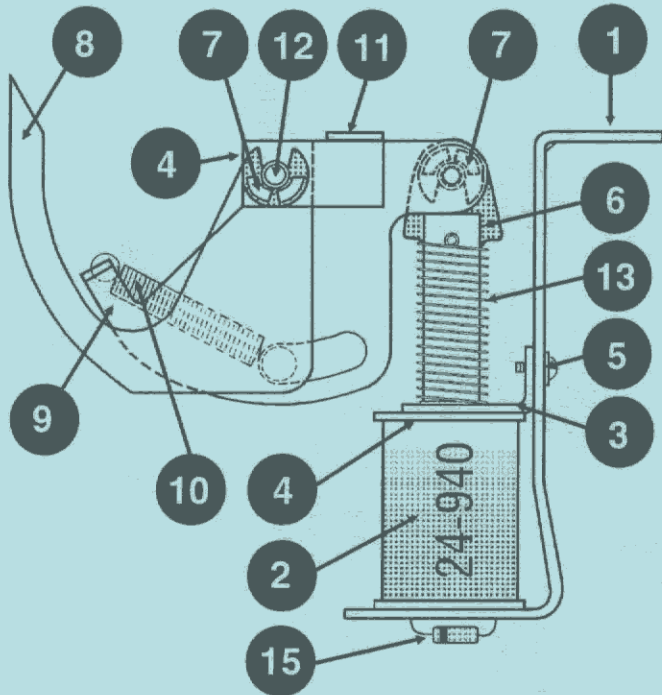


Kick Big Assembly 500-5740-00

| Item | Description | Part No. |
|------|---------------------|-------------|
| 1 | Coil 23-800 | 090-5001-01 |
| 2 | Coil Sleeve | 545-5076-00 |
| 3 | Diode 1N4004 | 112-5003-00 |
| 4 | Bracket | 535-5203-01 |
| 5 | Frame | 535-6730-00 |
| 6 | Plunger Assembly | 515-5000-02 |
| 7 | Rubber Grommet | 545-5105-00 |
| 8 | Spring | 266-5020-00 |
| 9 | 8-32 X 1/4 SEMS (2) | 232-5300-04 |
| 10 | Spring Washer | 269-5002-00 |

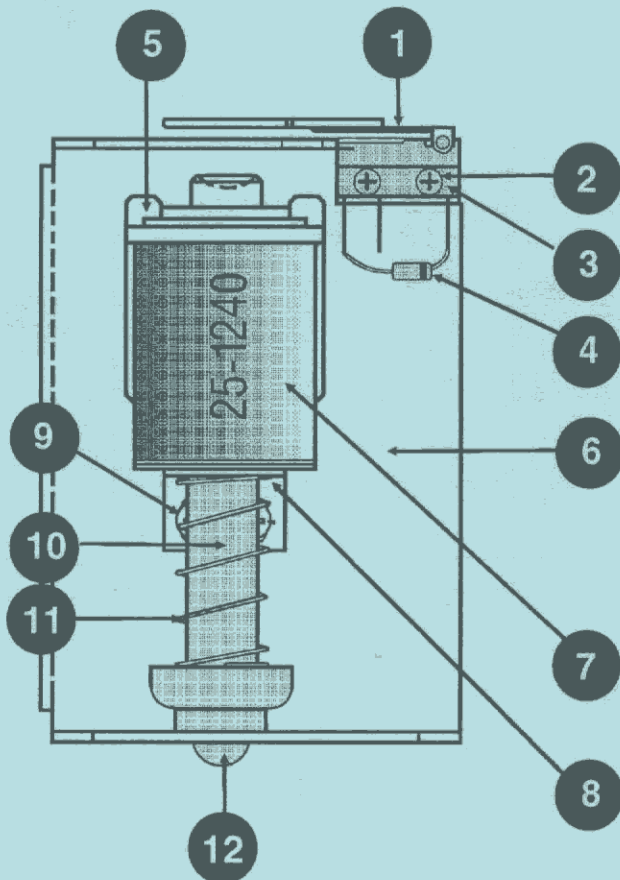


Ball Eject Assembly 500-5664-01



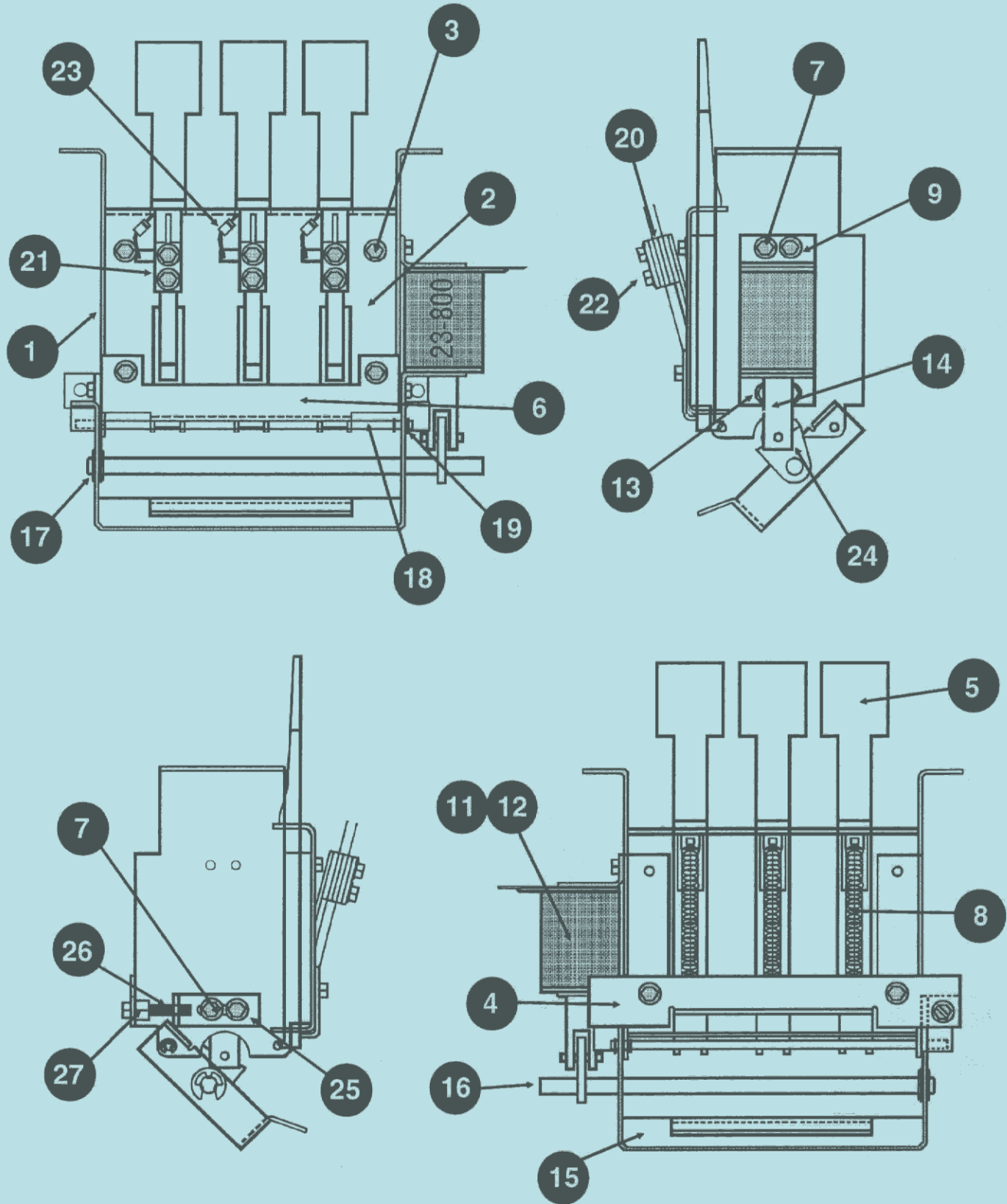
| Item | Description | Part No. |
|------|-------------------------------|-------------|
| 1 | Bracket & Stop Assembly | 515-5011-00 |
| 2 | Coil 24-940 | 090-5036-01 |
| 3 | Coil Retainer Bracket | 535-5203-01 |
| 4 | Coil Sleeve | 545-5031-00 |
| 5 | 8-32 X 1/4 SEMS (2) | 232-5300-04 |
| 6 | Plunger & Link Assembly | 515-5338-00 |
| 7 | "E" Ring (2) | 270-5002-00 |
| 8 | Eject Cam Assembly | 515-5042-00 |
| 9 | Spring Plate Assembly | 515-5009-00 |
| 10 | Ext. Spring | 265-5017-00 |
| 11 | Fulcrum Bracket | 535-6446-01 |
| 12 | Fulcrum Pin | 530-5207-00 |
| 13 | Plunger Spring | 266-5000-00 |
| 14 | Shim Washer (If Required) (2) | 242-5013-00 |
| 15 | Diode 1N4004 | 112-5003-00 |

Vertical Up-Kicker (VUK) 500-5839-00



| Item | Description | Part No. |
|------|--------------|-------------|
| 1 | Switch | 180-5116-00 |
| 2 | Screw (2) | 237-5806-00 |
| | Washer (2) | 244-5001-00 |
| 3 | Protector | 535-6539-00 |
| 4 | Diode 1N4001 | 112-5001-00 |
| 5 | Insulation | 545-5431-00 |
| 6 | Bracket | 535-6607-01 |
| 7 | Coil 25-1240 | 090-5034-01 |
| 8 | Bracket | 535-5203-01 |
| 9 | Screw (2) | 232-5300-00 |
| 10 | Plunger | 515-5941-01 |
| 11 | Spring | 266-5020-00 |
| 12 | Bumper Pad | 545-5105-00 |

Drop Target 3-Bank Assembly 500-5621-03 (Left & Right)



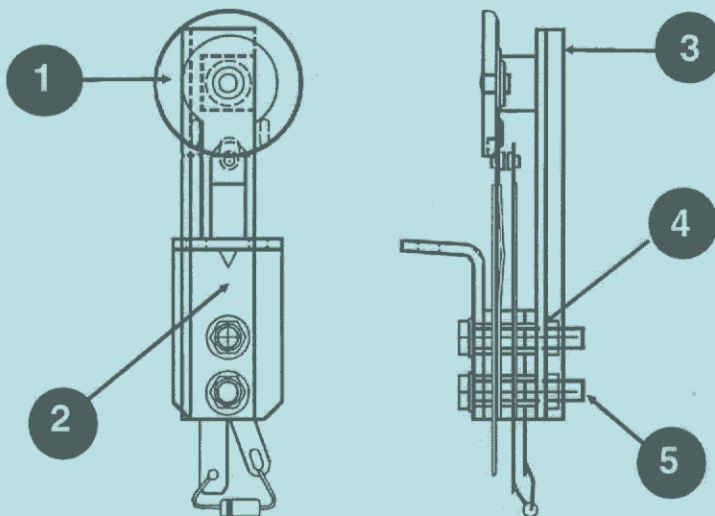
(See Next Page for Table & Notes)

Drop Target (D.T.) 3-Bank Assembly 500-5799-03 †

| Item | Description | Part No. | Item | Description | Part No. |
|------|----------------------------------|-------------|------|--------------------------------|-------------|
| 1 | Target End Plate (2) | 535-6162-00 | 13 | Plunger Stop Bracket | 515-5008-00 |
| 2 | Target Frame for 4-Bank | 535-6159-04 | 14 | Plunger/Link Assembly | 515-5338-00 |
| 2 | Target Frame for 3-Bank | 535-6159-03 | 15 | Target Lift Bracket for 4-Bank | 535-6509-04 |
| 2 | Target Frame for 2-Bank | 535-6159-02 | 15 | Target Lift Bracket for 3-Bank | 535-6509-03 |
| 3 | 8-32 X 3/8 (6) | 237-5879-00 | 15 | Target Lift Bracket for 2-Bank | 535-6509-02 |
| 4 | Spring Mount. Plate for 4-Bank | 535-6510-04 | 16 | Target Shaft for 4-Bank | 530-5179-04 |
| 4 | Spring Mount. Plate for 3-Bank | 535-6510-03 | 16 | Target Shaft for 3-Bank | 530-5179-03 |
| 4 | Spring Mount. Plate for 2-Bank | 535-6510-02 | 16 | Target Shaft for 2-Bank | 530-5179-02 |
| 5 | Target (Specify Game) | 545-5048-01 | 17 | E-Ring (1/4") | 270-5002-00 |
| 6 | Trgt. Retaining Brkt. for 4-Bank | 535-5042-04 | 18 | Pivot Shaft for 4-Bank | 530-5180-04 |
| 6 | Trgt. Retaining Brkt. for 3-Bank | 535-5042-03 | 18 | Pivot Shaft for 3-Bank | 530-5180-03 |
| 6 | Trgt. Retaining Brkt. for 2-Bank | 535-5042-02 | 18 | Pivot Shaft for 2-Bank | 530-5180-02 |
| 7 | 6-32 X 3/8 SHWHTCS Type 23 (6) | 237-5891-00 | 19 | E-Ring (1/8") | 270-5000-00 |
| 8 | Target Reset Spring | 265-5003-00 | 20 | Switch Assembly | 180-5092-01 |
| 9 | Coil Support Bracket | 535-6154-00 | 21 | Switch Plate | 535-5045-00 |
| 10 | ----- | ----- | 22 | 6-32 X 1/2 | 237-5878-00 |
| 11 | 23-700 Coil for 4-Bank | 090-5022-00 | 23 | Diode 1N4004 | 112-5003-00 |
| 11 | 23-800 Coil for 3-Bank | 090-5001-02 | 24 | Plunger Link | 545-5293-00 |
| 11 | 23-800 Coil for 2-Bank | 090-5001-02 | 25 | Adjustment Bracket | 535-6508-00 |
| 12 | Coil Sleeve | 545-5031-00 | 26 | 8-32 X 7/8 (1) | 237-5890-00 |
| | | | 27 | 8-32 Nyloc | 240-5102-00 |

† - Note: Table above shows common parts and unique parts for the 2, 3 & 4 Bank Drop Target Assemblies. The shaded areas (X-Bank D.T.) are not used in this game. Quantity is designated by bank size (see Dwg.) (e.g. 1 diode per target, thus if a 4-Bank is ordered, diode qty. is 4.) When ordering any part always reference game number (see inside cover) for proper decals.

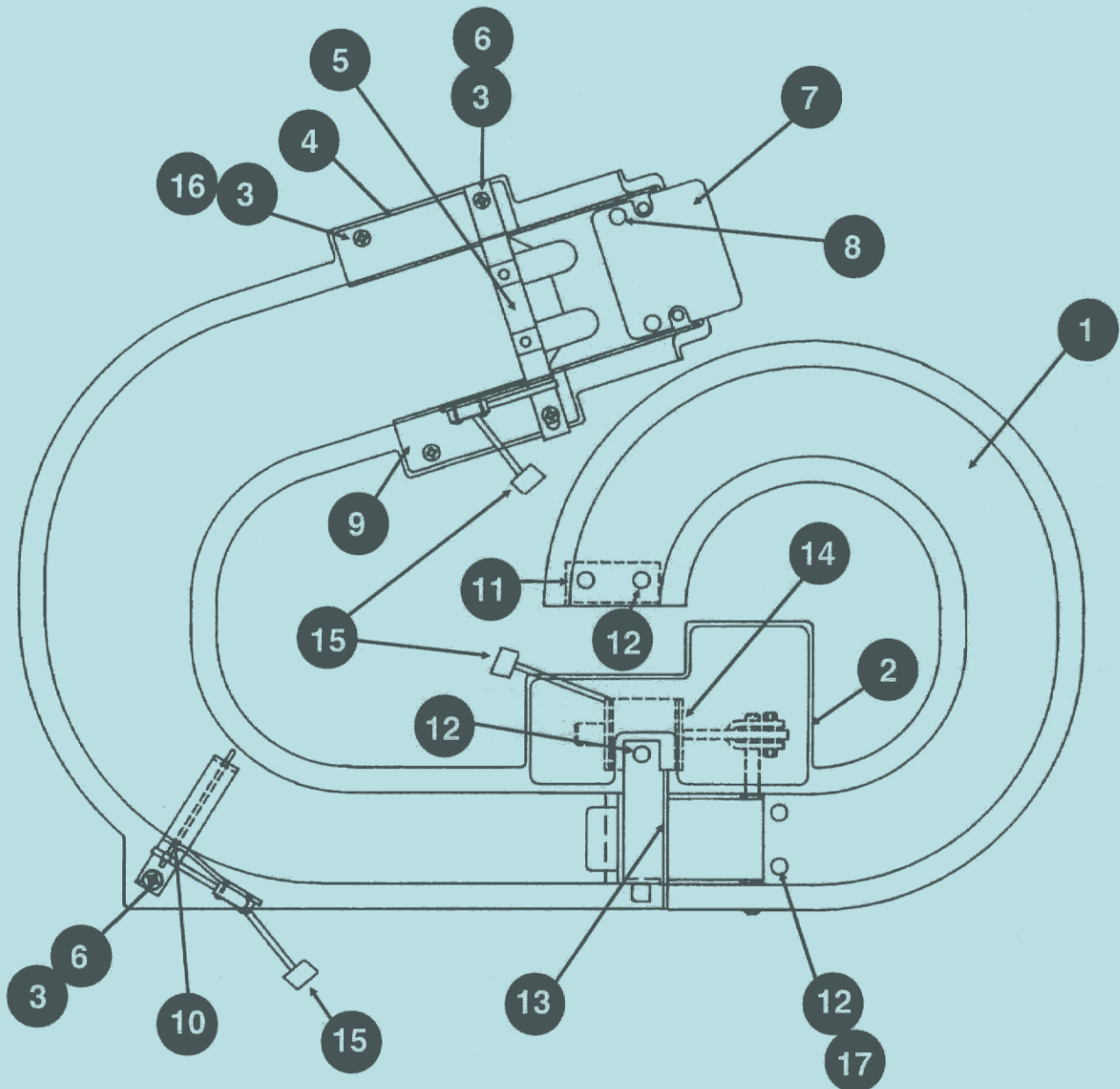
Stand-Up Target Assembly (1" Circle) 500-5835-08 (White)



| Target Color 500-5835-XX | |
|-----------------------------|-----|
| Clear | -01 |
| Red | -02 |
| Amber | -03 |
| Green | -04 |
| Blue | -05 |
| Yellow | -06 |
| Orange | -07 |
| White | -08 |
| Purple | -09 |

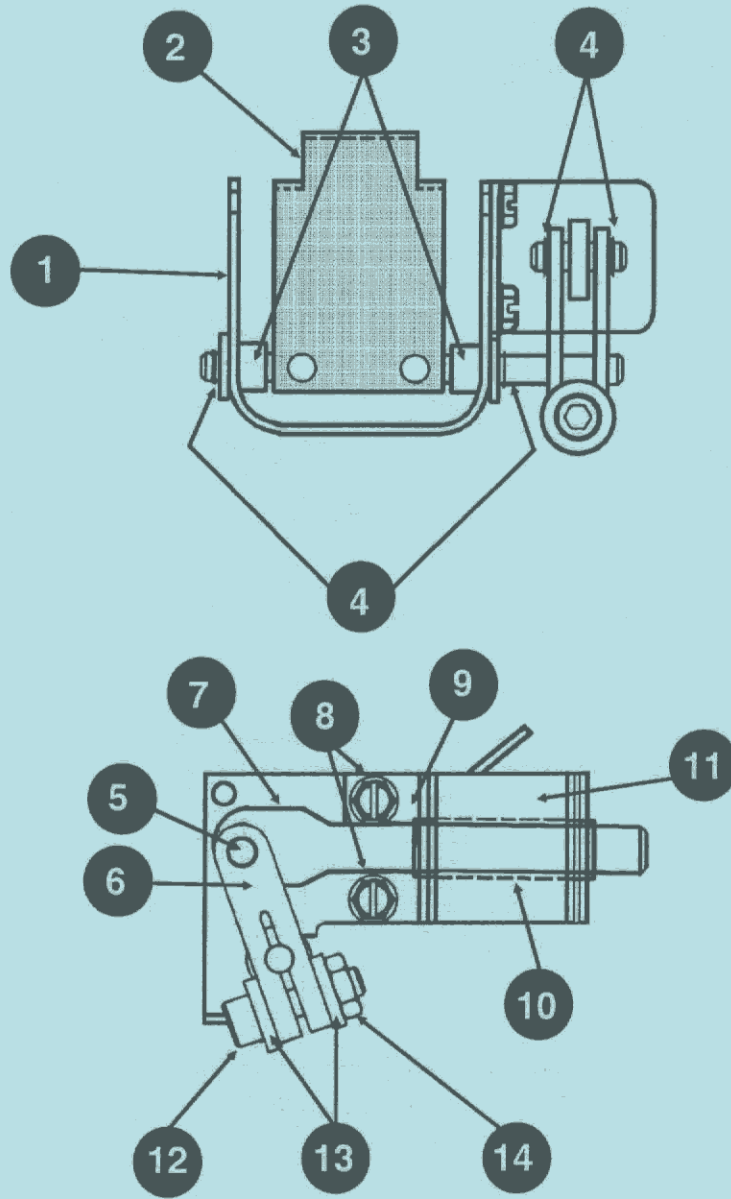
| Item | Description | Part No. | Item | Description | Part No. |
|------|-----------------------|-------------|------|-----------------------|-------------|
| 1 | Switch & Target Ass'y | 515-5966-08 | 4 | 6-32 Nyloc (2) | 240-5010-00 |
| 2 | Mounting Bracket | 535-6896-00 | 5 | 6-32 X 3/4 HWH MS (2) | 237-5893-00 |
| 3 | Back Plate | 535-5116-00 | | | |

"G" Ramp Assembly 500-5828-00



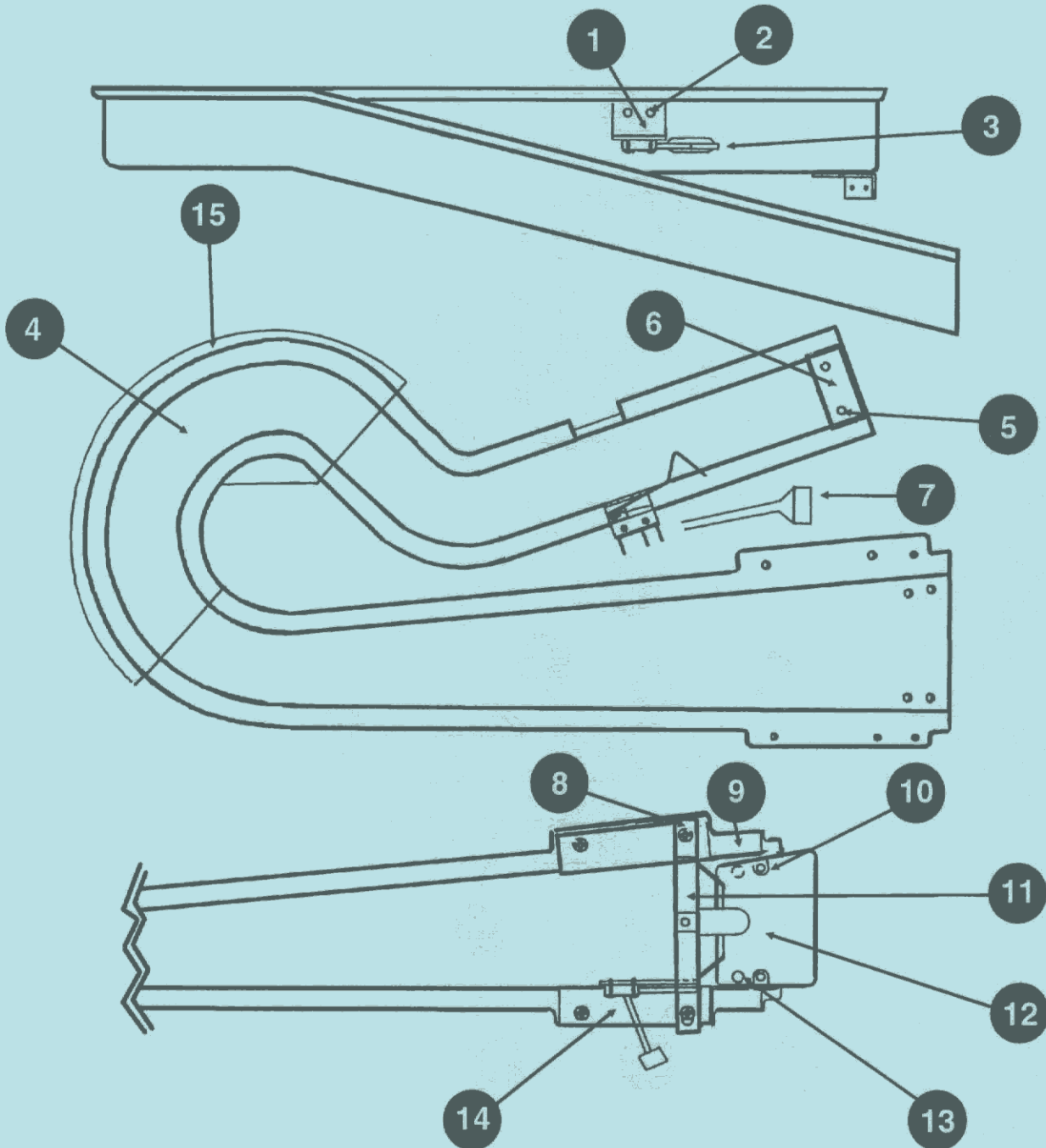
| Item | Description | Part No. | Item | Description | Part No. |
|------|---------------------------|-------------|------|--------------------------|-------------|
| 1 | G-Ramp | 545-5464-00 | 9 | Ramp Protector | 535-7011-01 |
| 2 | G-Ramp Decal (Coil Cover) | 820-5090-00 | 10 | Ramp Exit Gate Assembly | 515-6075-00 |
| 3 | #6 Nyloc (5) | 240-5005-00 | 11 | Wire Ramp Bracket | 535-5291-00 |
| 4 | Ramp Protector | 535-7011-00 | 12 | 1/2 DX 9/32 Rivet | 249-5009-00 |
| 5 | Gate Assembly | 515-6064-00 | 13 | Trap Door Stop | 535-7012-00 |
| 6 | 6-32 X 1/2 SEMS PH (2) | 232-5202-00 | 14 | Ramp Trap Door Assembly | 500-5830-00 |
| 7 | Ramp Flap | 535-7013-00 | 15 | Wire Harness | 036-5350-00 |
| 8 | 1/8 X 1/4 Rivet (2) | 249-5003-00 | 16 | 6-32 X 3/8 SEMS PH (2) | 232-5201-00 |
| | | | 17 | Trap Door Bracket Spacer | 535-6241-00 |

"G" Ramp Trap Door Assembly 500-5830-00



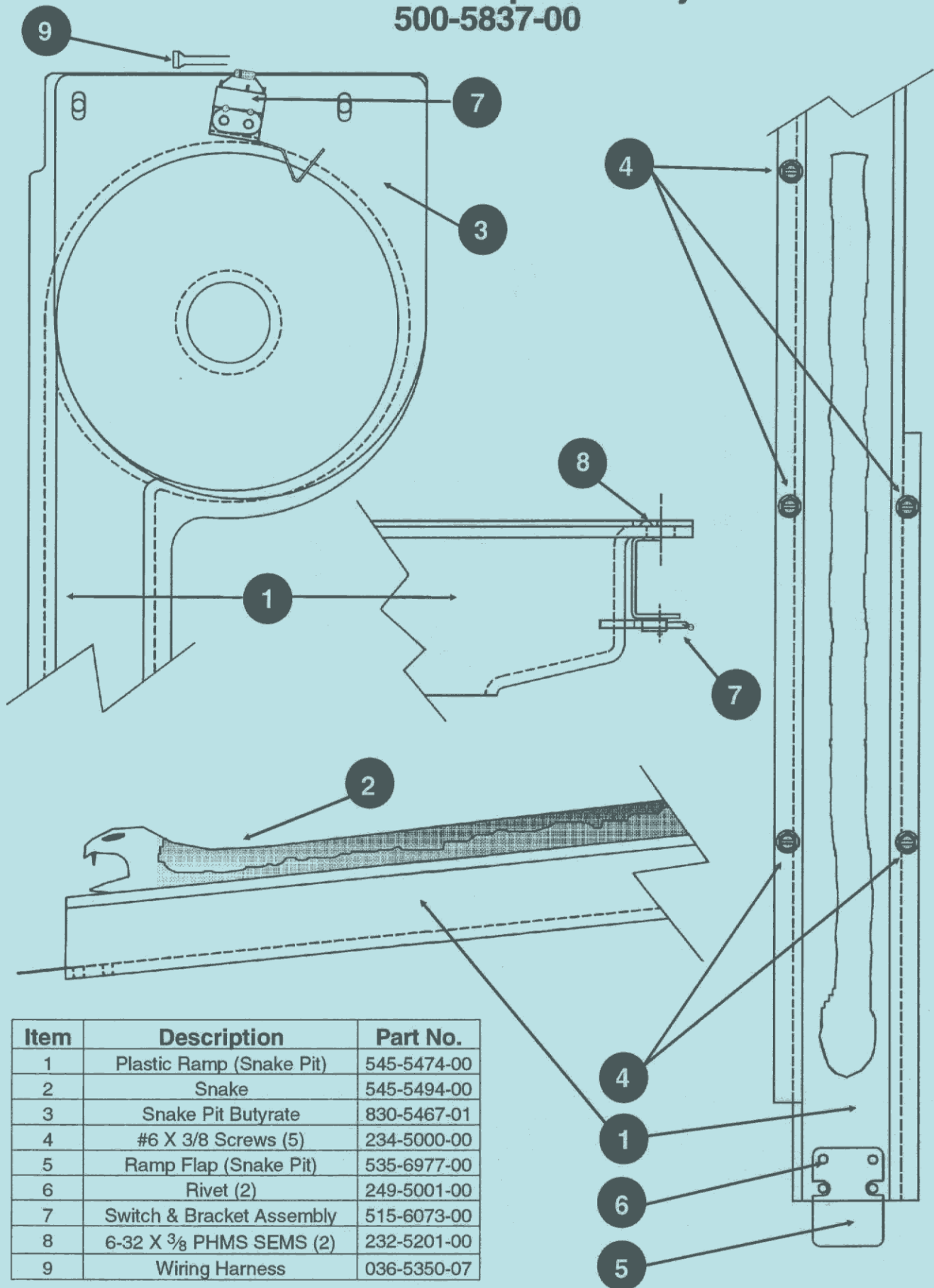
| Item | Description | Part No. | Item | Description | Part No. |
|------|--------------------------|-------------|------|---------------------------|-------------|
| 1 | Bracket | 535-6998-00 | 8 | #6-32 X 3/16 PHS (2) | 232-5209-00 |
| 2 | Trap Door Flap Assembly | 515-6056-00 | 9 | Coil Bracket | 535-6784-00 |
| 3 | Nylon Flange Bearing (2) | 545-5492-00 | 10 | Coil Sleeve | 545-5500-00 |
| 4 | Retaining Ring 3/16 (4) | 270-5001-00 | 11 | Coil 28-1050 | 090-5046-00 |
| 5 | Trap Door Linkage Clip | 535-6999-00 | 12 | #10-32 X 3/4 SHCS | 232-2206-12 |
| 6 | Trap Door Linkage Pin | 530-5300-00 | 13 | #10 Washer (.090 THK) (2) | 242-5023-00 |
| 7 | Plunger Assembly | 515-6057-00 | 14 | #10-32 Nyloc Nut | 240-5203-00 |

"R" Ramp Assembly 500-5829-00



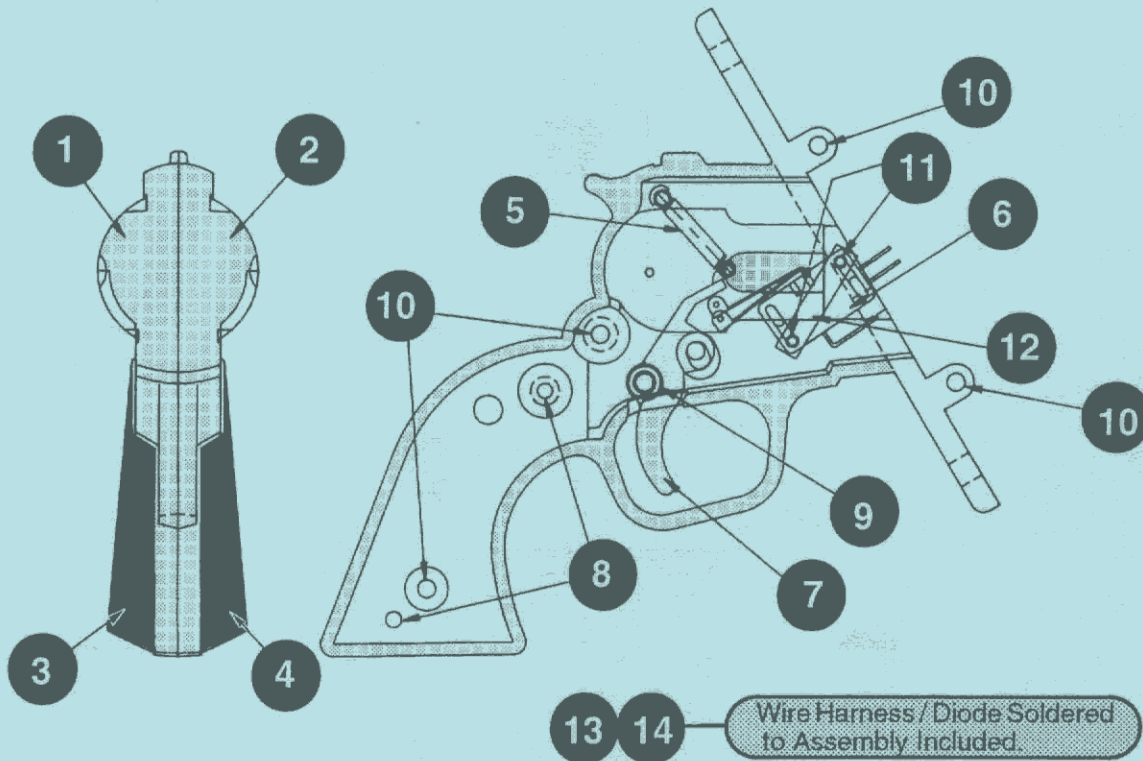
| Item | Description | Part No. | Item | Description | Part No. |
|------|---------------------------|-------------|------|-----------------------------|-------------|
| 1 | Ramp Bracket | 535-5794-00 | 7 | Wiring Harness | 036-5350-03 |
| 2 | 1/8 X 9/32 Rivet (2) | 249-5009-00 | 8 | 6-32 Lock Nut Typ. (4) | 240-5005-00 |
| 3 | Switch | 180-5093-00 | | 6-32 X 3/8 SEMS PH (2) | 232-5201-00 |
| | 2-56 PHMS | 237-5872-00 | 9 | Ramp Protector | 535-6938-00 |
| | Switch Protect Plate | 535-6539-00 | 10 | 6-32 X 1/2 SEMS PH Typ. (2) | 232-5202-00 |
| | #2 Lockwasher | 244-5001-00 | 11 | Right Gate Assembly | 515-6065-00 |
| 4 | "R" Ramp | 545-5465-00 | 12 | Ramp Flap | 535-6941-01 |
| 5 | 1/8 X 9/32 Rivet Typ. (2) | 249-5009-00 | 13 | 1/8 X 1/4 Rivet Typ. (2) | 249-5003-00 |
| 6 | Wire Ramp Bracket | 535-5291-00 | 14 | Ramp Protector | 535-6938-01 |
| | | | 15 | Butyrate | 830-5467-02 |

Snake Pit Ramp Assembly 500-5837-00



| Item | Description | Part No. |
|------|---------------------------|-------------|
| 1 | Plastic Ramp (Snake Pit) | 545-5474-00 |
| 2 | Snake | 545-5494-00 |
| 3 | Snake Pit Butyrate | 830-5467-01 |
| 4 | #6 X 3/8 Screws (5) | 234-5000-00 |
| 5 | Ramp Flap (Snake Pit) | 535-6977-00 |
| 6 | Rivet (2) | 249-5001-00 |
| 7 | Switch & Bracket Assembly | 515-6073-00 |
| 8 | 6-32 X 3/8 PHMS SEMS (2) | 232-5201-00 |
| 9 | Wiring Harness | 036-5350-07 |

6-Shooter Gun Assembly 500-5834-00



| Item | Description | Part No. | Item | Description | Part No. |
|------|------------------------|-------------|------|------------------------------|-------------|
| 1 | Gun Body (Left) | 535-6280-00 | 8 | Grip Mtg. Screw #4 X .42-.39 | 237-5929-00 |
| 2 | Gun Body (Right) | 535-6280-01 | 9 | Nyliner (3L2-FF) (Bushing) | 545-5532-00 |
| 3 | Gun Grip (Left) Black | 545-5531-00 | 10 | 8-32 X 5/8 Scw. Type F PPHMS | 237-5930-00 |
| 4 | Gun Grip (Right) Black | 545-5531-01 | 11 | Microswitch Mounting Screw | 237-5931-00 |
| 5 | Trigger Spring | 265-5037-00 | 12 | Switch Protect Plate | 535-6281-00 |
| 6 | Microswitch | 180-5143-00 | 13 | Wire Harness Assembly | 036-5350-06 |
| 7 | Trigger | 535-6282-00 | 14 | Diode 1N4004 | 535-5203-03 |