HOUDINI
MASTER OF MYSTERY

PRELIMINARY

Houdini Service Manual

AMERICAN
· PINBALL ·

. . . .

Houdini Service Manual

LIMITED WARRANTY

American Pinball Inc. ("Seller") warrants only the original purchaser of its products that the items listed below are free from defects in material & workmanship under normal use and service for the specified warranty period. Warranties are non-transferrable.

COVERAGE

The Limited Warranty covers defective workmanship and materials as follows:

1   **All parts of the Pinball Machine, excluding standard plastic, bumper post, rubber rings and wear & tear parts for 90 days from the date of invoice or shipment by Distributor.**

2   **The LCD monitor for 1 Year from the date of invoice or shipment by Distributor.**

CONDITIONS

The original purchaser must register the Limited Warranty by completing the Product Registration Form on the American Pinball Website within fifteen days of receipt. In the event of a warranty for the above Coverage to apply, the Original Purchaser must open a trouble ticket on American-pinball.com or call 1-833-API-HELP (274-4357). Service related questions can also be sent via e-mail to service@american-pinball.com.

Defective parts need to be sent to American Pinball at the purchaser's expense, if the defective parts cannot be removed, the entire Pinball Machine will need to be returned to the Distributor for repair or replacement. All parts returned must be properly packaged with an RMA tag/Trouble ticket then returned freight prepaid to the Sellers facility.

EXCLUSIONS

The Limited Warranty does not cover service, labor, or shipping and handling. Damage, wear, and/or breakage not caused by defective materials or workmanship shall not be covered by the Warranty. Damage incurred during shipping and handling shall not be covered by the Warranty.

DISCLAIMER OF IMPLIED WARRANTY

Except as specifically provided in a written contract between Seller and Purchaser, there are no other warranties, express or implied, including any implied warranties of merchantability or fitness for a particular purpose.

DISCLAIMER OF DAMAGE

This Warranty does not apply to any parts damaged due to improper handling or due to improper installation, usage or alteration. In no event shall the Seller be held liable for any anticipated profits, loss of profits, loss of use, accidental or consequential damages or any other losses incurred by the customer regarding the purchase of an AMERICAN PINBALL, INC. product.

CAUTIONS, WARNINGS & NOTICES

CAUTION! FOR SAFETY AND RELIABILITY, DO NOT SUBSTITUTE PARTS, EQUIPMENT OR ADD GAME CIRCUITRY MODIFICATIONS. SUCH MODIFICATIONS MAY ADVERSELY AFFECT GAME PLAY OR CAUSE INJURIES AND MAY RESULT IN VOIDING IN THE WARRANTY. ALWAYS TRANSPORT PINBALL GAMES WITH THE HINGED BACKBOX IN THE FOLDED POSITION. CONTACT AUTHORIZED SERVICE PERSONNEL BEFORE PERFORMING ANY REPAIR. ANY SUCH REPAIRS SHOULD BE PERFORMED WITH THE LINE VOLTAGE DISCONNECTED. FOR SERVICING TIPS, REFERENCE THE USER MANUAL OR CONTACT AMERICAN PINBALL INC TECHNICAL SUPPORT. SUBSTITUTION OF PARTS AND EQUIPMENT MAY VOID FCC TYPE ACCEPTANCE.

WARNING! EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A COMPUTING DEVICE, PURSUANT TO SUBPART J OF PART 15 OF THE FCC RULES AND REGULATIONS. FCC RULES ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST RF ENERGY WHEN OPERATED IN A COMMERCIAL ENVIRONMENT. OPERATION IN A PRIVATE RESIDENTIAL AREA IS LIKELY TO CAUSE INTERFERENCE IN WHICH CAST THE USER AT ITS OWN EXPENSE WOULD BE REQUIRED TO TAKE WHATEVER MEASURES TO CORRECT SUCH INTERFERENCE.

NOTICES

Cable harness placements and ground strap routing in the game have been designed to keep RF radiation and conduction within levels accepted by the FCC rules. To maintain these levels, reposition harnesses and reconnect grounds to their original placements, if they become disc

DOCUMENT REVISION HISTORY

100-1001	January 2018	Initial Release of Document

REGIONAL CONTACTS

AMERICAN PINBALL

WHERE THE MAGIC HAPPENS!

1448 YORKSHIRE DRIVE

STREAMWOOD, IL 60107

847•893•6800

CONTENTS

LIST OF FIGURES

LIST OF TABLES

OVERVIEW

1

ABOUT THIS MANUAL

This manual details the integral aspects of the Houdini pinball machine.

The following chapters are included in this manual:

Chapter	Title
Chapter 1	Overview
Chapter 2	Unpacking Instructions
Chapter 3	Service Menu
Chapter 4	Switch Locations
Chapter 5	Coil Locations/Assemblies
Chapter 6	Code Update With USB
Chapter 7	Houdini Game Rules

Table 1.1   Commonly used terms in the Houdini Service Manual documentation:

Term	Description
ADJ	Abbreviation for the Adjustments menu, where certain settings are adjusted/configured.
AUD	Abbreviation for the Audit menu, where audits can be run for the machine.
Catapult	Mechanism that vaults pinball across the playfield into magic box for ball lock.
DIAG	Abbreviation for the Diagnostics menu, where diagnostics can be run for the machine.
Houdini	Harry Houdini was a world famous magician who pioneered the art of illusion. He is also the main character in an awesome pinball machine developed by American Pinball.
Plumb Bob Tilt	Weight on Tilt Assembly.
P3-ROC Board	Designed to control all of the real-time signaling features on a pinball machine. **Note: The documentation for P3-ROC Boards is available in an application note on the Support page on american-pinball.com.**

Term	Description
P-ROC Driver Board	The P-ROC Driver Boards are used to control the activation of connected devices by turning on or off power to the devices in response to commands from the P-ROC board. **Note: The documentation for P3-ROC Boards is available in an application note on the Support page on american-pinball.com.**
SW-16 Board	Used to deliver switch state information in a pinball machine to a master device, such as a P3-ROC board, over an RS-485 serial bus.
UTIL	Abbreviation for the Utility menu, where utilities can be run for the machine.
V.U.K	Vertical Up Kicker. Mechanism used kick out the ball from the upper playfield.

Figure 1.1   Post Locations
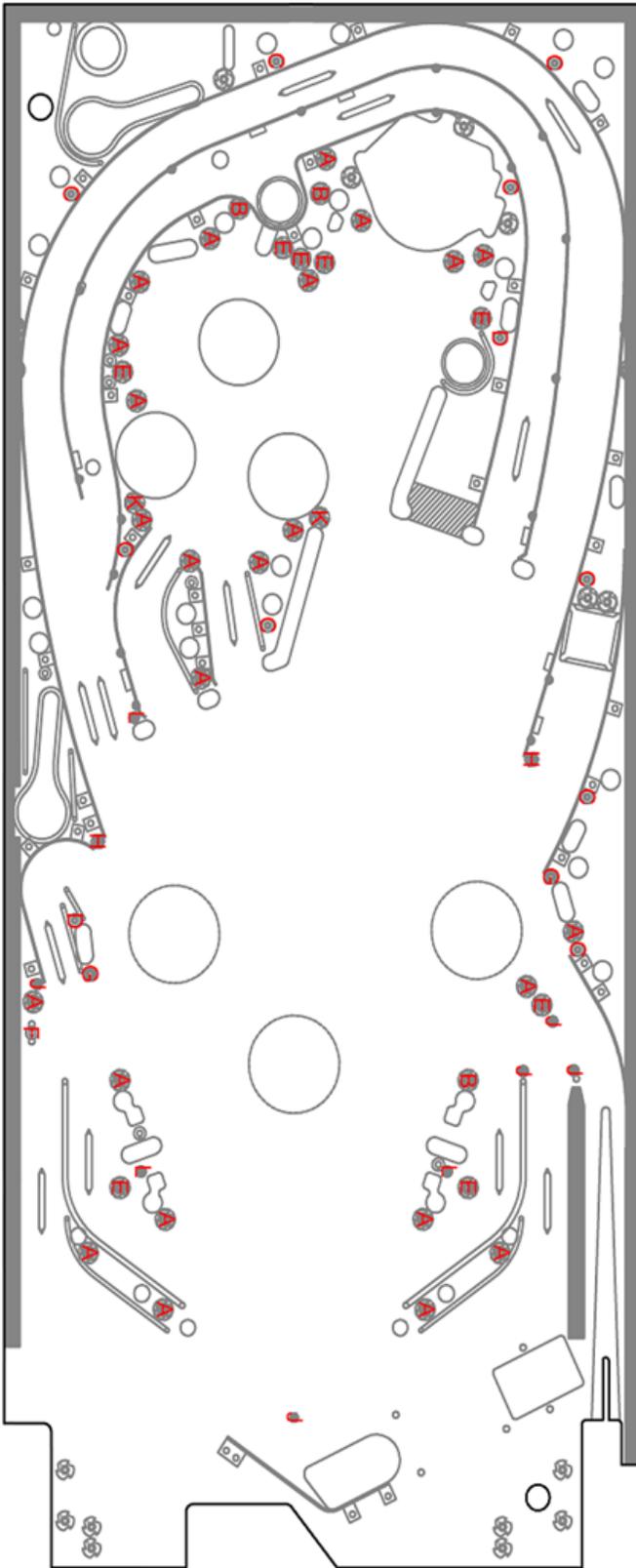
A (24X) PST0001-00 CLEAR POST
        PST0003-00 POST FASTENING SCREW (STD MTG)

B (3X) PST0001-00 CLEAR POST
        PST0003-01 POST FASTENING SCREW (RAMP MTG)

C (9X) PST0001-00 CLEAR POST
        PST0003-02 POST FASTENING SCREW (WOOD)

D (2X) PST0001-00 CLEAR POST
        SMS0008-24 #8 X 1 1/2 PPH SMS

E (8X) PST0001-00 CLEAR POST
        MAS0008-24 8-32 X 1 1/2 PPH MS

F (1X) PST0001-00 CLEAR POST
        MAS0008-32 8-32 X 2 PPH MS
        WAS0008-00 #8 WASHER
        NUT0008-00 8-32 NYLON LOCK NUT - LOW PROFILE

G (2X) PST0004-01 5/16 HEX SLEEVE POST (STD)

H (2X) PST0004-00 5/16 HEX SLEEVE POST (PLAIN)

J (5X) PST0002-00 10-32 MINIPOST (FULL THREAD)

K (2X) PST0002-01 10-32 MINIPOST (HALF THREAD)

L (3X) PST0002-02 MINIPOST (WOOD)

Figure 1.2   Rubber Ring Locations
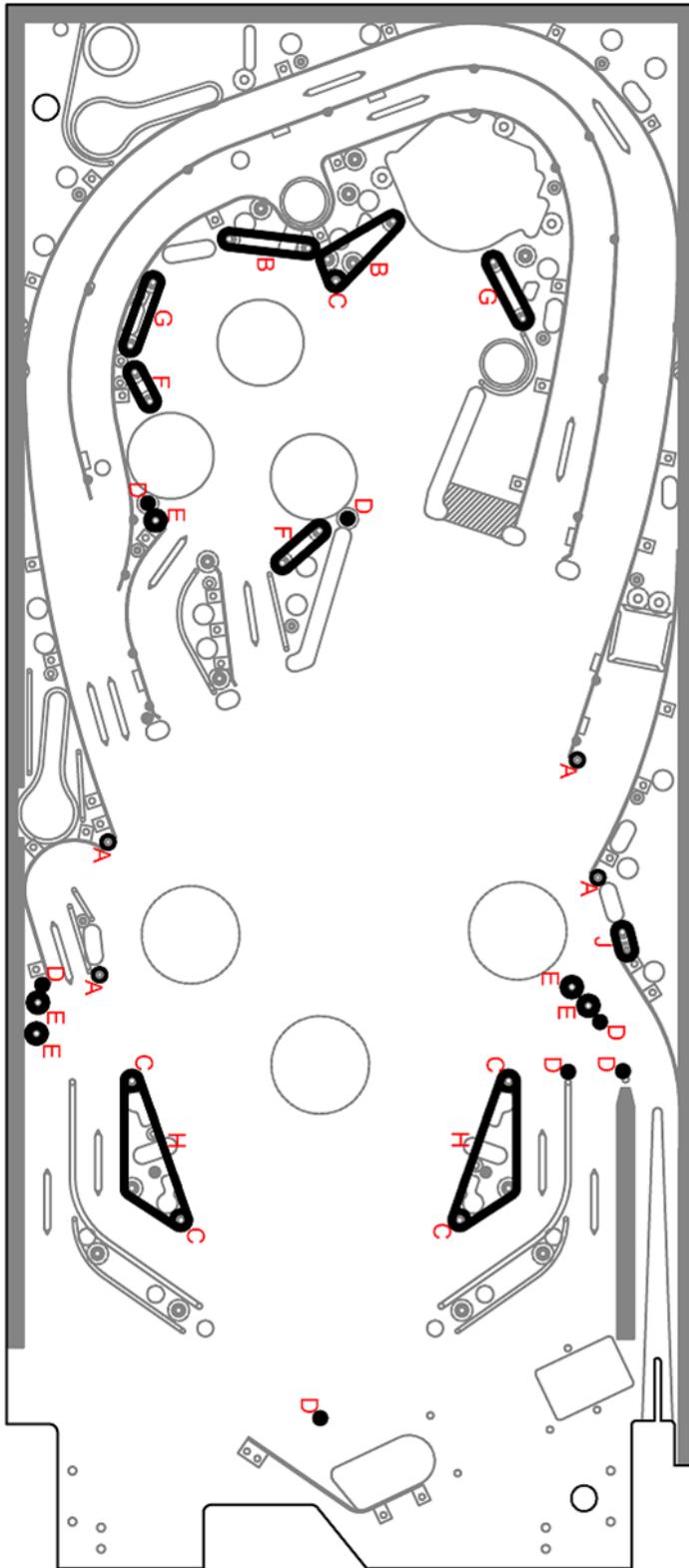
A (4X) RBR0005-07 POST SLEEVE RUBBER - PURPLE

B (2X) RBR0001-08 1 1/2 ID RUBBER RING - BLACK

C (5X) RBR0013-00 HALF POST SLEEVE RUBBER - BLACK

D (7X) RBR0003-01 7/16 OD MINI-POST RUBBER - BLACK

E (5X) RBR0001-02 3/16 ID RUBBER RING - BLACK

F (2X) RBR0001-05 3/4 ID RUBBER RING - BLACK

G (2X) RBR0001-07 1 1/4 ID RUBBER RING - BLACK

H (2X) RBR0001-12 2 1/2 ID RUBBER RING - BLACK

J (1X) RBR0001-01 7/16 ID RUBBER RING - BLACK

Unpacking Instructions

UNPACKING HOUDINI

In order to fully enjoy Houdini in the manner it is designed to be played, please adhere to the following unpacking instructions.

CAUTION!   HOUDINI WEIGHS IN EXCESS OF 250 LBS. AT LEAST TWO PEOPLE ARE REQUIRED TO UNPACK AND MANEUVER THE MACHINE.

TOOLS REQUIRED FOR UNPACKING

A pair of scissors or a utility knife is all that you need to unpack Houdini.

To unpack Houdini

1   **Your Houdini machine should appear in the following carton.**

Figure 2.1   Authorized American Pinball Carton

2   **Using a pair of scissors, carefully cut the carton seal and open the top flaps.**

Figure 2.2   Open Carton

3   **Remove the two foam pieces from the top of the machine.**

4   **Carefully lay the carton onto its side.**

Note: An alternative method, if you choose to not save the carton, is to use a utility knife to carefully cut down the carton at its seams.

Figure 2.3   Carton View After Laying On Side

5   **Using the nylon strap, pull the machine out of the carton.**

Note: To protect the cabinet, plan to use the existing carton to lay the machine on top.

Figure 2.4   Houdini Outside of Carton

6   **Slide the two corner posts, that include the game legs, out of the carton.**

7   **Unpack the four game legs and bolts that are located inside the two corner posts.**

8   **Have two people lift the machine up (on the side opposite of the plunger) so that the two front legs can be installed. Make sure to secure the bolts tightly.**

9   **Now that the front legs are secured, lift the back end of the machine up so that the rear legs can be secured.**

10   **Cut the nylon strap with a utility knife.**

11   **Lift the header up and use the supplied Allen wrench to secure the header to the playfield**

Figure 2.5   Header Secured to Playfield

12   **Remove the glass from the cardboard and put aside for future installation.**

LEVELING HOUDINI

The game, by default, sits at 6.5°. However, depending on the floor, you may have to adjust Houdini so that the game is properly leveled left/right or the appropriate pitch.

SERVICE MENU

3

HOUDINI SERVICE MENU

This chapter includes service menu settings. The service menu accesses the following settings for optimal play and maintenance:

- Tests
- Settings
- Statistics
- Utilities
- Health Meter

Before You Begin

- Have you unpacked your Houdini machine and set it up according to the instructions in this manual?
- Have you downloaded the most current supported code from American Pinball's Support site?

Note: Settings are occasionally updated. Please refer to American Pinball's Support site for the most current documentation.

API COCKPIT

Houdini's service menu contains tests for all the electrical and mechanical functions within the game.

Figure 3.1   Service Menu Navigation Buttons

Table 3.1   Service Menu Icons

Tests		**This includes tests in the following areas:** • Switches • Coils • LEDs • Display • Cabinet • Stage Mechanical
Settings		**This includes adjustments for the following settings:** • Standard Adjustment Settings • Replay Adjustment Settings • Coil Adjustment Settings • Sound Adjustment Settings • Feature Adjustment Settings • Pricing Adjustment Settings
Statistics		**This includes audits for the following statistics:** • Basic Statistics • Feature Statistics • Standard Statistics • Game Time Statistics • Earning Statistics • Score Breakdown Statistics

Utilities		**This includes information for the following utilities:** • Houdini Balls • Statistics Clear • Date and Time Set • Restoration of Default Settings • Stage Calibration
Health Meter - Green		**The Health Meter provides a quick analysis of the overall state of Houdini** Houdini is in a healthy state.
Health Meter - Yellow		Houdini may have issues that need to be addressed.
Health Meter - Red		Houdini is in an unhealthy state. Refer to the Houdini Service Manual or contact your American Pinball distributor.

TESTS

The Tests menu includes a number of diagnostic tests for assuring that your machine is performing at its optimal health. The Tests menu provides tests for the following items:

• Switches

• Coils

• LEDs

• Display

• Cabinet

• Stage Mechanical

Table 3.2   Tests Menu Icons

Switches	
Coils	
LED	
Display	
Cabinet	
Stage Mechanical	

To access Houdini's Tests menu

1   **Power on the machine.**

2   **Open the coin door.**

3   **Press the MENU SELECT button to access the service mode.**

Figure 3.2   Service Menu Navigation Buttons

4   **Press the red +/- button to select the Tests icon.**

5   **Press the MENU SELECT button to enter Tests.**

Figure 3.3   Tests Menu

6   **Use the flipper buttons to toggle through the different tests.**

SWITCH TESTING

Switch tests are a form of diagnostics that displays a grid of all the switches on the matrix. A switch test can be performed using either a finger, or ideally, a pinball.

1: The dark green color indicates a closed switch, which is an opto switch. Each column in the table represents a different board on the system.

2: The bright green color indicates that there is currently a ball or the switch is activated. A switch turns green when it is enabled.

3: The switch test displays wire colors for the respective switch, which board is active, and the last switch that was activated.

4: Additional switch information includes the last five switch hits.
For example, Left Lock 1, Left Lock 2, Left Lock 3, Inner Loop, Right Inner Loop.

Figure 3.4   Switch Testing Menu

Note: For a more extensive description of each switch within Houdini, refer to the Switch Locations chapter.

COIL TESTING

To test coils, you must close the coin door in order to provide power.
Press the start button to disable or enable Coil testing.

Note: For a more extensive description of each coil within Houdini, refer to the Coil Locations chapter.

LED TESTING

When first entering LED Test, all LEDs flash on the playfield, rotating through red, green, blue. Each LED has three LED tests, which allows you to quickly see if there are any abnormal color patterns.

You also have the ability to walk through the LEDs one-by-one. LED testing is designed to follow the playfield in a logical sequence.

DISPLAY TEST

The main display proceeds through a series of colors (red, green, and blue), and a test pattern.

CABINET TESTS

The Cabinet tests provides diagnostics for the start button and shaker motor.

STAGE MECHANISM TESTING

A test to ensure that the stage mechanism servo is functioning.

Press the start button to move the stage through each of its position to confirm it is working properly.

STANDARD ADJUSTMENT SETTINGS

Standard adjustments address global options, such as the number of balls per game, tilt settings, and replay award settings.

To access Houdini's Standard Adjustments settings

1. Power on the machine.
2. Open the coin door.
3. Press the MENU SELECT button to access the service mode.
4. Press the red +/- button to select the Settings icon.
5. Press the MENU SELECT button to enter the Settings section.
6. Use the flipper buttons to page through the different settings to the Standard setting.

7. Press the green BACK EXIT button to return to the previous menu.

Table 3.3   Standard Adjustment Settings

Type of Setting	Name	Description	Value (Range)
Standard Adjustment Settings	Attract Mode Music	Enables/disables Houdini's "Attract Mode" music. **Note: Attract Mode is a synchronized display of sounds and music that occurs when the machine is not currently being played.**	• Options: On, Off • Default: Off
	Attract Mode Sounds	Enables/disables Houdini's "Attract Mode" sounds. If set to On, Attract Mode provides Houdini quotes with voice callouts. **Note: Attract Mode is a synchronized display of sounds and music that occurs when the machine is not currently being played.**	• Options: On, Off • Default: Off
	Balls Per Game	Specifies the number of balls available to the player during a single game.	• Options: 1 to 5 • Increments: 1 • Default: 3
	Ball Saver Timer	Specifies the duration in seconds that the game provides a ball save should the ball drain.	• Options: 0 to 61 • Increments: 2 • Default: 12
	Max Number of Extra Balls	The maximum number of extra balls that can be configured for Houdini	• Options: 0 to 9 • Default: 4
	Shaker Motor	Enables/disables the use of a shaker motor. **Note: A shaker motor is not included with Houdini.**	• Options: On, Off • Default: Off
	Tilt Bob Settle Time	Determines how much time passes after a tilt warning before the system responds to another tilt bob trigger.	• Options: 0 to 5 • Increments: 1 • Default: 2
	Tilt Warnings	Specifies the number of times the player is warned due to a plumb bob switch activation.	• Options: 0 to 9 • Increments: 1 • Default: 2

REPLAY ADJUSTMENT SETTINGS

To access Houdini's Replay settings

1   **Power on the machine.**

2   **Open the coin door.**

3   **Press the MENU SELECT button to access the service mode.**

4   **Press the red +/- button to select the Settings icon.**

5   **Press the MENU SELECT button to enter the Settings section.**

6   **Use the flipper buttons to page through the different settings to the Replay setting.**

7   **Press the green BACK EXIT button to return to the previous menu.**

Table 3.4   Replay Adjustment Settings

Type of Setting	Name	Description	Value (Range)
Replay Adjustment Settings	Replay Award Level 1	Specifies the point total required to receive an award that is defined in Replay Award Type.	• Options:50000,5000000 • Increments: 10000 • Default: 500000
	Replay Award Level 2	Specifies the point total required to receive an award that is defined in Replay Award Type.	• Options:50000,5000000 • Increments: 10000 • Default: 1000000
	Replay Award Level 3	Specifies the point total required to receive an award that is defined in Replay Award Type.	• Options:50000,5000000 • Increments: 10000 • Default: 1000000
	Replay Award Level 4	Specifies the point total required to receive an award that is defined in Replay Award Type.	• Options:50000,5000000 • Increments: 10000 • Default: 1000000
	Replay Award Type	Specifies the type of reward given to the player based upon a defined accomplishment (refer to Replay Award Level settings).	• Options: Free Game, Extra Ball, Points, Off • Default: Points
	Replay Boost	Specifies the amount of points that each replay value will be increased. After each game in which a replay is earned, all replay levels are increased by the defined replay boost amount. For any game in which a replay was not won, the amount is reduced by the boost amount. For example, if three games in a row earn a replay, each replay amount is set to the original value + (3 * boost value). If on the next game the replay is not earned, it drops to original value + (2 * boost value).	• Options:10000, 1000000 • Increments: 10000 • Default: 50000
	Replay Levels	Specifies how many replay levels are active	• Options: 1, 4 • Increments: 1 • Default: 1
	Replay Percentage	Specifies the percentage of games that award the player a replay if using Replay Type.	• Options: 0 to 20 Increments: 1 • Default: 5
	Replay Type	Specifies the type of replay awarded to the player.	• Options: Fixed, Boost, Auto • Default: Fixed

COIL ADJUSTMENT SETTINGS

Coil settings allow you to control the "strength" of the various mechanisms on the playfield.

Hold the right flipper up manually to see if the ball is in the flipper toward the tip (this also keeps the ball from draining making it easier to do next test).

To access Houdini's Coils settings

1   **Power on the machine.**

2   **Open the coin door.**

3   **Press the MENU SELECT button to access the service mode.**

4   **Press the red +/- button to select the Settings icon.**

5   **Press the MENU SELECT button to enter the Settings section.**

6   **Use the flipper buttons to page through the different settings to the Coils setting.**

7   **Press the green BACK EXIT button to return to the previous menu.**

HOUDINI COIL SETUP

This process needs to be performed each time Houdini is moved and or re-leveled. This process insures the correct pulse settings for the coils used in the catapult and supporting features. Failure to test and set these settings could result in poor game performance.

CAUTION!   WHEN PERFORMING THESE CALIBRATIONS, THE PLAYFIELD WILL BE ACTIVE! TAKE CAUTION WHERE YOU PLACE YOUR HANDS.

To calibrate coils after moving or re-leveling Houdini

1   **Open the coin door and remove the playfield glass**

2   **Pull out the interlock switch inside the coin door on the left side.**

3   **Put the game in test mode and select Utilities >Clear Houdini's Balls and follow the onscreen directions.**

4   **Catch the balls as they are cleared.**

5   **Press the green BACK/EXIT button once to return to the main menu.**

6   **Select Settings >Coil Adjustment Settings.**

LOWER CATAPULT

Place a ball in the lower catapult, located on the left side of the playfield, and watch where the ball lands. When adjusted correctly the ball should pass through the opened trunk centered up and down between the base and lid of the trunk.

If the ball lands before the trunk or hits the lower part of the trunk:
Increase the number of the LOWER CATAPULT by one and repeat the process.

If the ball lands beyond the trunk or hits the trunk lid:

Decrease the number of the LOWER CATAPULT by one and repeat the process.

UPPER CATAPULT

Place a ball in the upper catapult located right below the trunk. Observe how hard the ball hits the wire ramp. When adjusted correctly the ball should just barely make it into the ramp.

If the ball does not make it to the ramp:
Increase the number of the UPPER CATAPULT by one and repeat the process.

If the ball hits the ramp to hard:
Decrease the number of the UPPER CATAPULT by one and repeat the process.

UPPER VUK

Place a ball in the VUK located to the left of the mini playfield monitor. Watch how fast the ball travels down the ramp. When adjusted correctly the ball should just make it over the apex of the ramp.

If the ball does not make it over the apex of the ramp:
Increase the number of the UPPER VUK by one and repeat the process.

If the ball travels down the ramp too fast:
Decrease the number of the UPPER VUK by one and repeat the process.

SCOOP

Place a ball in the SCOOP located on the right side of the playfield just above the shooter lane, watch how fast the ball exits the SCOOP. When adjusted correctly the ball should barely make it out of the SCOOP and travel down to the right flipper.

If the ball does not make it out of the SCOOP:
Increase the number of the SCOOP by one and repeat the process.

If the ball comes out of the SCOOP too fast:
Decrease the number of the SCOOP by one and repeat the process

Table 3.5   Coil Adjustment Settings

Type of Setting	Name	Description	Value (Range)
Coil Adjustment Settings	Auto Fire	Specifies the strength of the Auto Fire feature.	• Options: 1 to 50 • Increments: 1 • Default: 15
	Left Flipper	Specifies the strength of the left flipper.	• Options: 1 to 50 • Increments: 1 • Default: 15
	Left Pop	Specifies the strength of the left pop bumper.	• Options: 1 to 50 • Increments: 1 • Default: 12
	Left Sling	Specifies the strength of the left sling.	• Options: 1 to 50 • Increments: 1 • Default: 6
	Lower Catapult	Specifies the strength of the lower catapult.	• Options: 1 to 50 • Increments: 1 • Default: 27
	Lower VUK	Specifies the strength of the lower vertical up-kicker.	• Options: 1 to 50 • Increments: 1 • Default: 11
	Right Flipper	Specifies the strength of the right flipper.	• Options: 1 to 50 • Increments: 1 • Default: 15
	Right Pop	Specifies the strength of the right pop bumper.	• Options: 1 to 50 • Increments: 1 • Default: 12
	Right Sling	Specifies the strength of the right sling.	• Options: 1 to 50 • Increments: 1 • Default: 6
	Top Pop	Specifies the strength of the top pop bumper.	• Options: 1 to 50 • Increments: 1 • Default: 12
	Upper Catapult	Specifies the strength of the upper catapult.	• Options: 1 to 50 • Increments: 1 • Default: 19
	Upper VUK	Specifies the strength of the upper vertical up-kicker.	• Options: 1 to 50 • Increments: 1 • Default: 12

SOUND ADJUSTMENT SETTINGS

Sound settings allow you to control the level of verbiage on the game. In a home setting you may want to initially have all callouts enabled. However, you may find, with time, that the game is too verbose. The Sound adjustment settings allow you to enable or disable these narrations.

To access Houdini's Sound settings

1   **Power on the machine.**

2   **Open the coin door.**

3   **Press the MENU SELECT button to access the service mode.**

4   **Press the red +/- button to select the Settings icon.**

5   **Press the MENU SELECT button to enter the Settings section.**

6   **Use the flipper buttons to page through the different settings to the Sound setting.**

7   **Press the green BACK EXIT button to return to the previous menu.**

Table 3.6 Sound Adjustment Settings

Type of Setting	Name	Description	Value (Range)
Sound Adjustment Settings	Announce Next Shot	Specifies whether the narrator describes the next shot, after the current shot is successfully made during a stage or movie mode.	• Options: On, Off • Default: On
	Halt Voice on Flip Escape	Specifies if current announcements (intro and/or rules), when both flippers are pressed is enabled. If set to Off, the mode starts and ball put in play, however the audio intros continue to play.	• Options: On, Off • Default: On
	Initial volume	Specifies Houdini's volume when powering on the machine.	• Options: 0 to 11 • Increments: 1 • Default: 5
	Movie Intros	Specifies whether the narrator describes the movie.	• Options: On, Off • Default: On
	Movie Open Announce	Specifies whether the narrator announces that the movie theatre is open.	• Options: On, Off • Default: On
	Movie Shot Rules	Specifies whether the narrator explains the shot sequence requirements before the mode begins	• Options: On, Off • Default: On
	Stage Houdini Intros	Specifies whether Houdini describes the trick he is about to perform.	• Options: On, Off • Default: On
	Stage Next Act Announce	Determines if there is an announcement of the next act when the stage opens.	• Options: On, Off • Default: On
	Stage Open Announce	Determines if there is an announcement when the stage opens.	• Options: On, Off • Default: Off
	Stage Re-announce Open	Specifies whether the narrator re-announces what illusion/escape is ready at the stage. For example, after a non-stage mode completes (e.g. multi-ball or movie mode), if the stage is open, the narrator makes the announcement.	• Options: On, Off • Default: Off
	Stage Shot Rules	Specifies whether the narrator describes the sequence of shots required to complete the illusion/escape.	• Options: On, Off • Default: On

FEATURES ADJUSTMENT SETTINGS

Features settings address conditions that are specific to that game.

To access Houdini's Feature settings

1 **Power on the machine.**

2 **Open the coin door.**

3 **Press the MENU SELECT button to access the service mode.**

4 **Press the red +/- button to select the Settings icon.**

5 **Press the MENU SELECT button to enter the Settings section.**

6 **Use the flipper buttons to page through the different settings to the Features setting.**

7   **Press the green BACK EXIT button to return to the previous menu.**

Table 3.7   Features Adjustment Settings

Type of Setting	Name	Description	Value (Range)
Feature Adjustment Settings	Escapes for Escape From Death	Specifies the number of escapes that need to be completed to light Escape From Death.	• Options: 1 to 6 Increments: 1 • Default: 2 • **Note: Select 6 to disable**
	FILM Lit at Start of Game	Enables the movie theater to be open and ready at the start of a game.	• Options: On, Off • Default: Off

Type of Setting	Name	Description	Value (Range)
Feature Adjustment Settings	Handcuff Escape Pops per Handcuff	The number of handcuffs multiplied by the number of pops per handcuff determines the level of difficulty. • Pops per handcuff represents how many pop bumper hits are required to move up a level. At each level, Houdini throws a pair of handcuffs/chains out from behind the display.	• Options: Off, 2, 3, 4, 5 • Default: 3
	Handcuffs in Handcuff Escape	The number of handcuffs multiplied by the number of pops per handcuff determines the level of difficulty. • Handcuffs needed represents how many 'levels' are in the mode. At each level, Houdini throws a pair of handcuffs/chains out from behind the display.	• Options: 4, 5, 6, 7, 8 • Default: 6
	Illusions for Houdini Letter	Specifies the number of illusions required to earn a Houdini letter.	• Options: 2 to 8 • Increments: 1 • Default: 4
	Illusions for Second Houdini Letter	Specifies the number of illusions required to earn a second Houdini letter. **Note:** Provided to ease game complexity	• Options: 3, 4, 5, 6, 7, 8, Off • Default: Off
	Jail Escapes for Houdini Letter	Specifies the number of Jail Escape Hurry Ups required to earn a Houdini letter.	• Options: 2, 3, 4, 5 • Default: 5
	Jail Escapes for Extra Ball	Specifies the number of Jail Escape Hurry Ups required to earn an extra ball.	• Options: Off, 2, 3, 4, 5 • Default: 3
	Jail Escapes Order	Specifies the order of Jail Escape Hurry Ups.	• Options: Easy to Hard, Random • Default: Random
	Jail Escapes Difficulty	Specifies the level of difficulty required for Jail Escape Hurry Ups. For example: When set to easy, a ramp shot only needs to enter ramp and not hit the target to complete Jail Escape Hurry Up.	• Options: Easy, Hard • Default: Easy
	King of Cards Throws Per Hand	Specifies the number of cards that the player can throw from each hand during the King of Cards mission.	• Options: 1 to 9 • Increments: 1 • Default: 5
	King of Cards Timer	Specifies the duration in seconds for the King of Cards mission.	• Options: 0 to 65 • Increments: 5 • Default: 40
	Limit High Score to 3 Characters	Specifies the number of characters displayed on the LCD screen for a high score or other awards. **Note: Recommended setting is "On", due to potential profanity entries for high score awards.**	• Options: On, Off • Default: Off
	Magic Shop Extra Ball	Enables/disables the Magic Shop extra ball.	• Options: On, Off • Default: On
	Magic Standup Magnets	Specifies the degree of magnet activity for the Magic Standup magnets.	• Options: Low, Medium, High • Default: Medium
	Magic Standup Ball Save	Provides a brief ball save, only for the outlanes, in case magnets throw the ball directly out. It does not save balls that drain between the flippers	• Options: On, Off • Default: On
	Missions Completed For Houdini Letter	Specifies the number of completed missions required to earn a Houdini letter.	• Options: 2, 3, 4, 5 • Default: 5

Type of Setting	Name	Description	Value (Range)
Feature Adjustment Settings	Movie Order*	Specifies the order that movies are played on the LCD screen	• Options: Fixed, Random • Default: Random
	Movies Started For Houdini	Determines how many movies/Jail Escape Hurry Ups must be started to earn a Houdini letter. **Note: Houdini letter is awarded at the completion of the mode.**	• Options: 2, 3, 4, 5 • Default: 5
	Movies Started For Light Extra Ball	Determines how many movies/Jail Escape Hurry Ups must be started to light the extra ball. **Note: Extra ball is lit at the completion of the mode.**	• Options: 2, 3, 4, 5 • Default: 3
	Scoop Ball Save	Provides a brief ball save when ball ejects from the scoop, when not in multi-ball.	• Options: On, Off • Default: On
	Seance Jackpots for Return from Beyond	Specifies the number of Seance Jackpot Multi-balls that must be completed to light the Return From Beyond Mode.	• Options: 1, 2, 3, 4, 5, Super • Default: 1
	Show Game Time in Last Scores	Displays the game time duration of the previous played game.	• Options: On, Off • Default: On
	Spins to Free Haldane	Specifies the number of spins required to enable Haldane movie mode.	• Options: 15 to 120 Increments: 5 • Default: 60 • **Note: Select 6 to disable**
	Stage Difficulty	Specifies the level of difficulty required to open the stage (e.g. impacts the number of shots at the stage, or key target needed, before the stage opens).	• Options: Easy, Normal, Hard • Default: Normal
	Stage Front Eject	Enables the feature to allow the ball to be ejected back out from the stage.	• Options: Enabled, Disabled • Default: Disabled
	Tournament Mode	Specifies the conditions to prepare a game for tournament play. Disables all extra balls, removes randomness of Magic Shop awards, Jail Escape Hurry Ups, and movies.	• Options: On, Off • Default: Off
	Trunk MB Lock Starts Lit	When enabled, each player starts with the lock shot lit. When disabled, each player must first light the lock shot	• Options: On, Off • Default: On
	Trunk Multiball Jackpots for Houdini Letter	Specifies the number of Trunk Multi-ball jackpots that must be completed to earn a Houdini letter.	• Options: 1, 2, 3, 4, 5, Super • Default: 3
	Visits to the Magic Shop for Houdini Letter	Specifies the number of visits to the Magic Shop required to earn a Houdini letter.	• Options: 1 to 9 • Increments: 1 • Default: 4
	Visits to the Magic Shop for Second Houdini Letter	Specifies the number of visits to the Magic Shop required to earn a second Houdini letter.	• Options: 5 to 9 • Increments: 1 • Default: 8

PRICING ADJUSTMENT SETTINGS

Pricing adjustment settings address settings related to game unit value, free play, and currency management.

Pricing establishes the game's unit of value, which should be the lowest denomination of currency based on coin door configuration.

To access Houdini's Pricing settings

1   **Power on the machine.**

2   **Open the coin door.**

3   **Press the MENU SELECT button to access the service mode.**

4   **Press the red +/- button to select the Settings icon.**

5   **Press the MENU SELECT button to enter the Settings section.**

6   **Use the flipper buttons to page through the different settings to the Pricing setting.**

7   **Press the green BACK EXIT button to return to the previous menu.**

Table 3.8   Pricing Adjustment Settings

Type of Setting	Name	Description	Value (Range)
	Free Play	Enables/disables free play.	• Options: On, Off • Default: Off
	Unit Value	Specifies the amount in U.S. currency required to play a game. **Note: This applies to the lowest denomination that Houdini accepts.**	• Options:.25 to $1 • Default:.25
	Pricing Plan	Specifies the number of units (see Unit Value) for 1 credit of play.	• Options: • 1 Unit for 1 credit • 2 Units for 1 credit • 4 units for 3 credit • 8 units for 5 credit • 4 units for 1 credit • 8 units for 3 credit • 2 units for 3 credit • 1 swipe for 1 credit • Default: 4 units for 1 credit
	Coin Slot 1 Units	Specifies how many units are credited in Coin Slot 1 when a coin is inserted.	• Options: 1 to 12 • Increments: 1 • Default: 1
	Coin Slot 2 Units	Specifies how many units are credited in Coin Slot 2 when a coin is inserted.	• Options: 1 to 12 • Increments: 1 • Default: 1
	Bill Validator	Set number of units to a single pulse from the validator is worth. Determines how many units to credit based on pulses.	• Options: 1 to 20 • Increments: 1 • Default: 4
	Credits	Specifies the number of credits currently on the machine. This can be adjusted, as needed.	• Options: 0 to 99 • Increments: 1 • Default: 0

Pricing Adjustment Settings (row label, vertical)

STATISTICS ....

To access Houdini's Statistics menu

1   **Power on the machine.**

2   **Open the coin door.**

3   **Press the MENU SELECT button to access the service mode.**

4   **Press the red +/- button to select the Statistics icon.**

5   **Press the MENU SELECT button to enter the Statistics section.**

6   **Use the flipper buttons to page through the different settings to the Pricing setting.**

7   **Press the green BACK EXIT button to return to the previous menu.**

Table 3.9   Game Statistics

Screen	Audit Name	Description
Earnings Statistics	**Average Ball Time**	The average time a ball is in play.
	Total Balls Played	The total number of balls played.
Basic Statistics	**Average Game Time**	The average game time.
Earnings Statistics	**Total Extra Balls**	The total number or earned extra balls.
Basic Statistics	**Total Extra Balls**	The total number of earned extra balls.
	Total Games Played	The total number of games played.
	1 Player Games	The total number of 1 player games.
	2 Player Games	The total number of 2 player games.
	3 Player Games	The total number of 3 player games.
	4 Player Games	The total number of 4 player games.
Features Statistics	**Escapes Completed**	The total number of Jail Escape Hurry Ups completed.
	Escapes Started	The total number of Jail Escape Hurry Ups started.
	Seance Multiballs	The total number of Seance multiballs.
Standard Statistics	**Left Drains**	The total number of left drains.
	Right Drains	The total number of right drains.
	Total Drains	The total number of drains.
	Total Extra Balls	The total number of extra balls earned.
	Tilts	The total number of tilts.

Screen	Audit Name	Description
Feature Statistics	**Catapult Success**	
	Catapult Failures	
	FILM Modes Started	The total number of times a Film mode has started.
Game Time Statistics	**Game Time 0 to 1**	The total number of game times that last between 0 and 1 minute.
	Game Time 1 to 2	The total number of game times that last between 1 and 2 minutes.
	Game Time 2 to 3	The total number of game times that last between 2 and 3 minutes.
	Game Time 3 to 4	The total number of game times that last between 3 and 4minutes.
	Game Time 4 to 5	The total number of game times that last between 4 and 5 minutes.
	Game Time 5 to 6	The total number of game times that last between 5 and 6 minutes.
	Game Time 6 to 8	The total number of game times that last between 6 and 8 minutes.
	Game Time 8 to 10	The total number of game times that last between 8 and 10 minutes.
	Game Time 10 to 15	The total number of game times that last between 10 and 15 minutes.
	Game Time Over 15	The total number of game times that lasts over 15 minutes.
Score Breakdown Statistics	**Score 0 to 10K**	Total number of games with scores between 0 and 10k.
	Score 10K to 25K	Total number of games with scores between 10k and 25k.
	Score 25K to 50K	Total number of games with scores between 25k and 50k.
	Score 50K to 100K	Total number of games with scores between 50k and 100k.
	Score 100K to 250K	Total number of games with scores between 100k and 250k.
	Score 250K to 500K	Total number of games with scores between 250k and 500k.
	Score 500K to 1M	Total number of games with scores between 500k and 1 million.
	Score 1M to 5M	Total number of games with scores between 1 million and 5 million.
	Score over 5M	Total number of games with scores over 5 million.
Features Statistics	**Catapult Accuracy**	
	Missions Completed	The total number of missions completed.
	Average Missions Completed	The average number of missions completed.

UTILITIES

•••

To access Houdini's Utilities menu

1   **Power on the machine.**

2   **Open the coin door.**

3   **Press the MENU SELECT button to access the service mode.**

4   **Press the red +/- button to select the Utilities icon.**

5   **Press the MENU SELECT button to enter the Utilities section.**

6   **Use the flipper buttons to page through the different settings to the Pricing setting.**

7   **Press the green BACK EXIT button to return to the previous menu.**

Table 3.10   Utilities

Screen	Utility Name	Description
Utilities	**Clear Houdini's Balls**	Ejects the ball from subway and trough.
	Clear Statistics	The current statistics will be moved to 'previous period' and all values will be set back to 0. **Note:** This does not impact all time statistics.
	Set Date and Time	Set the date and time to be stored on the machine.
	Restore Default Settings	Restore settings to factory default.
	Stage Calibration	insures the state is properly configured. Follow on screen instructions, which indicates to put a ball on the stage, and then hit the start button. Calibration takes approximately 15 seconds. **Note:** The stage is calibrated before it leaves the factory. However, it may need to be re-calibrated if restored to default settings.

SWITCH LOCATIONS

DEDICATED SWITCH LOCATIONS

Table 4.1 Dedicated Switch Table

DEDICATED SWITCH LOCATIONS								
Board 0 Bank A	Return 1	Return 2	Return 3	Return 4	Return 5	Return 6	Return 7	Return 8
Ground	BLK S/U / GRY 0	BLK S/U / BRN 1	BLK S/U / RED 2	BLK S/U / ORG 3	BLK S/U / YEL 4	BLK S/U / GRN 5	BLK Micro / BLU 6	BLK / VIO 7
BLK	(E)scape	e(S)cape	es(C)ape	esc(A)pe	esca(P)e	escap(E)	Left Orbit	Right Orbit
Board 0 Bank B	Return 1	Return 2	Return 3	Return 4	Return 5	Return 6	Return 7	Return 8
Ground	BRN Micro / BLK 8	BRN Micro / GRY 9	BRN S/U / RED 10	BRN Leaf / ORG 11	BRN Micro / YEL 12	BRN Micro / GRN 13	BRN / BLU 14	BRN Micro / VIO 15
BLK	Lower Catapult	Milk can	Left Magic Standup	Left Slingshot	Left Inlane	Left Outlane	Not Used	Upper Catapult
Board 1 Bank A	Return 1	Return 2	Return 3	Return 4	Return 5	Return 6	Return 7	Return 8
Ground	RED Opto / BLK 16	RED Opto / BRN 17	RED Opto / GRY 18	RED Opto / ORG 19	RED Micro / YEL 20	RED Micro / GRN 21	RED Micro / BLU 22	RED Micro / VIO 23
BLK	Plastic Ramp Entrance	Wire Ramp Exit	Stage Back	Stage Entrance	Upper 3 Ball Release #1	Upper 3 Ball Release #2	Upper 3 Ball Release #3	Upper Outer Orbit
Board 1 Bank B	Return 1	Return 2	Return 3	Return 4	Return 5	Return 6	Return 7	Return 8
Ground	ORG / BLK 24	ORG Micro / BRN 25	ORG S/U / RED 26	ORG Leaf / GRY 27	ORG Leaf / YEL 28	ORG Leaf / GRN 29	ORG Micro / BLU 30	ORG Micro / VIO 31
BLK	Not Used	Upper VUK	Key Standup	Top Pop Bumper	Right Pop Bumper	Left Pop Bumper	Stage Alley	Key Lane
DEDICATED SWITCH LOCATIONS								
CONTINUED ON NEXT PAGE								

DEDICATED SWITCH LOCATIONS

Board 2 Bank A	Return 1		Return 2		Return 3		Return 4		Return 5		Return 6		Return 7		Return 8	
	YEL Opto	BLK 32	YEL Opto	BRN 33	YEL Opto	RED 34	YEL Opto	ORG 35	YEL Opto	GRY 36	YEL Opto	GRN 37	YEL Opto	BLU 38	YEL Opto	VIO 39
BLK	Right Lock #1		Right Lock #2		Right Lock #3		Magic Shop		Front of Stage		State Exit		Trunk		Trunk Lid	

Board 2 Bank B	Return 1		Return 2		Return 3		Return 4		Return 5		Return 6		Return 7		Return 8	
Ground	GRN S/U	BLK 40	GRN S/U	BRN 41	GRN S/U	RED 42	GRN S/U	ORG 43	GRN S/U	YEL 44	GRN S/U	GRY 45	GRN Micro	BLU 46	GRN Micro	VIO 47
BLK	(S)eance		s(E)ance		se(A)nce		sea(N)ce		sean(C)e		seanc(E)		Right Inner Loop		Upper Inner Loop	

Board 3 Bank A	Return 1		Return 2		Return 3		Return 4		Return 5		Return 6		Return 7		Return 8	
Ground	BLU Micro	BLK 48	BLU Micro	BRN 49	BLU Micro	RED 50	BLU Micro	ORG 51	BLU Micro	YEL 52	BLU Micro	GRN 53	BLU Micro	GRY 54	BLU Micro	VIO 55
BLK	Ball Trough #1		Ball Trough #2		Ball Trough #3		Ball Trough #4		Ball Trough #5		Ball Trough #6		Ball Trough Stack		Not Used	

Board 3 Bank B	Return 1		Return 2		Return 3		Return 4		Return 5		Return 6		Return 7		Return 8	
Ground	VIO Micro	BLK 56	VIO Micro	BRN 57	VIO Leaf	RED 58	VIO Micro	ORG 59	VIO Leaf	YEL 60	VIO S/U	GRN 61	VIO Micro	BLU 62	VIO Micro	GRY 63
BLK	Shooter Lane		Right Outlane		Not Used		Right Inlane		Right Slingshot		Lower Right Magic Standup		Super VUK		Spinner	

Board 4 Bank A	Return 1		Return 2		Return 3		Return 4		Return 5		Return 6		Return 7		Return 8	
Ground	WHT Leaf	BLK 64	WHT Leaf	BRN 65	WHT Micro	RED 66	WHT Push	ORG 67	WHT Push	YEL 68	WHT Push	GRN 69	WHT Push	BLU 70	WHT N/A	VIO 71
BLK	Left Flipper Button		Right Flipper Button		Start Button		Enter		Exit		Down		Up		Tilt	

Board 4 Bank B	Return 1		Return 2		Return 3		Return 4		Return 5		Return 6		Return 7		Return 5	
Ground	GRY N/A	BLK 72	GRY Push	BRN 73	GRY Micro	RED 74	GRY Micro	ORG 75	GRY Opto	YEL 76	GRY Opto	GRN 77	GRY Leaf	BLU 78	GRY Open	WHT 79
BLK	Not Used		Not Used		Coin #1		Coin #2		DBA		Not Used		Not Used		Not Used	

Figure 4.1   Dipswitch Settings Drawing

COIL LOCATIONS

5
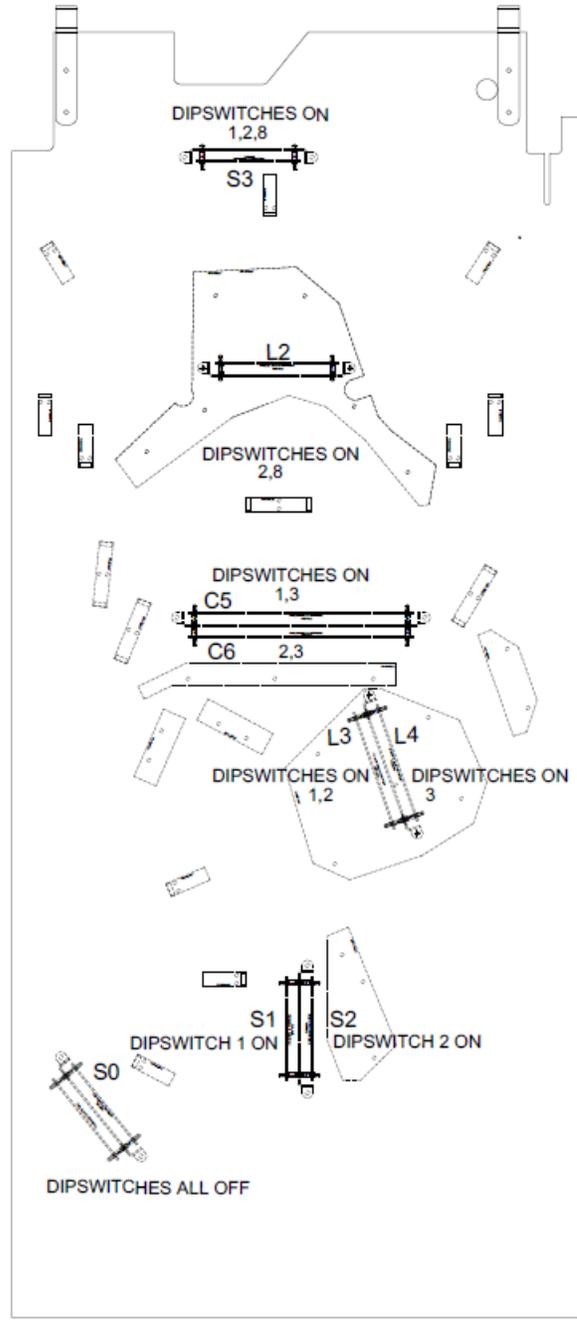
COIL LOCATIONS

Table 5.1 Coil Locations Table

COIL LOCATIONS								
	Drive 1	**Drive 2**	**Drive 3**	**Drive 4**	**Drive 5**	**Drive 6**	**Drive 7**	**Drive 8**
	BRN BLK	BRN GRY	BRN RED	BRN ORG	BRN YEL	BRN GRN	BRN BLU	BRN VIO
48V Power	Pin #1	Pin #3	Pin #4	Pin #5	Pin #6	Pin #7	Pin #8	Pin #9
BRN	Auto Launch	Trough up Kicker	Lower Catapult	Right Flipper Power	Right Flipper Hold	Left Flipper Power	Left Flipper Hold	Left Slingshot
	Drive 9	**Drive 10**	**Drive 11**	**Drive 12**	**Drive 13**	**Drive 14**	**Drive 15**	**Drive 16**
	RED BLK	RED BRN	RED GRY	RED ORG	RED YEL	RED GRN	RED BLU	RED VIO
48v Power	Pin #1	Pin #3	Pin #4	Pin #5	Pin #6	Pin #7	Pin #8	Pin #9
RED	Upper 3 Ball Lock Downpost	Left Bumper	Right Bumper	Center Bumper	Up Post Diverter	Upper Catapult	Steamer run k Release	
	Drive 17	**Drive 18**	**Drive 19**	**Drive 20**	**Drive 21**	**Drive 22**	**Drive 23**	**Drive 24**
	BLU BLK	BLU BRN	BLU RED	BLU ORG	BLU YEL	BLU GRN	BLU GRY	BLU VIO
48V Power	Pin #1	Pin #3	Pin #4	Pin #5	Pin #6	Pin #7	Pin #8	Pin #9
BLU	Trunk Diverter	Upper VUK	3 Ball Release Undertrough	SuperVuk	Left Magnet	Right Magnet	Center Magnet	Right Slingshot
	Drive 25	**Drive 26**	**Drive 27**	**Drive 28**	**Drive 29**	**Drive 30**	**Drive 31**	**Drive 32**
	BLK GRY	BLK BRN	BLK RED	BLK ORG	BLK YEL	BLK GRN	BLK BLU	BLK VIO
12V Power	Pin #1	Pin #3	Pin #4	Pin #5	Pin #6	Pin #7	Pin #8	Pin #9
YEL	General Illumination	Spolight Lower Left	Not Used	Backpanel LED Strip	Not Used	Spotlight Lower Right	Spotlight Upper Right	Spotlight Upper Left

HOUDINI CODE UPDATE

6

CODE UPDATE PROCEDURE

There are two types of updates: code updates and full system updates.

Note: Full system updates are not currently necessary. If in the future a full system update is required, an American Pinball support member will provide detailed instructions.

Please have the following items available before performing a code update:

• A USB stick/key/thumb drive

• Latest version of Houdini code, which can be downloaded from www.american-pinball.com to your PC.

WARNING! **DO NOT START-UP YOUR HOME COMPUTER WITH THE USB STICK THAT HAS THE FULL SYSTEM UPDATE ON IT. DOING SO MAY AFFECT THE DATA ON YOUR COMPUTER.**

To update Houdini code

1 **Copy the Houdini update package code file (houdini-game.pkg) to the USB device.**

2 **Open the coin door and locate the provided USB extension cable.**

3 **Insert the USB device with the code update package into the supplied USB extension cable that is located inside the coin door.**

4 **If Houdini's power is turned off, turn it on.**

5 **Houdini will recognize the code update and automatically begin the update.**

Times may vary, but expect the code update to take approximately 5 minutes.

6 **When the code update process completes, remove the USB drive from the USB extension cable.**

7 **Turn Houdini's power off and then turn it on.**

8 **Enjoy your next game!**

Note: After upgrading Houdini code, the USB device will contain audits and settings information. In the case of a full system update, these files are used to restore settings and audit history.

HOUDINI LOG COPY

To assist in game development and troubleshooting, American Pinball may ask for a copy of the game logs.

To copy game logs

1   **Open the coin door and locate the provided USB extension cable.**

2   **Insert the USB device into the supplied USB extension cable that is located inside the coin door.**

3   **If Houdini's power is turned off, turn it on.**

4   **Wait for the completion screen on the main display screen and remove the USB device.**

5   **Power cycle the game.**

HOUDINI GAME RULES

7

HOUDINI GAME RULES OVERVIEW

SKILL SHOT

Shoot the moving red target to earn the skill shot award. Shoot the moving green target to earn the super skill shot.

STAGE MODES

The stage opens in one of the following ways:

- "Bashing" the stage ten times.
- Shooting the stage through Stage Alley.
- Hitting the red stand-up target directly via a shot straight up Key Lane.
- Hitting the red stand-up target ten times from the pops.
- Also, starting any Stage Mode by shooting the stage through Stage Alley doubles the mode's value.

ADDITIONAL NOTES

- There are ten modes at the stage; seven are "Basic Stage Modes", meaning a series of shots are required to complete.
- There are three "Special Stage Modes". Complete all ten modes to earn a HOUDINI letter.
- Typically, making the required shot advances the player through the illusion/escape, which is demonstrated on the display.

BASIC STAGE MODES

Table 7.1 Basic Stage Modes

Vanishing Elephant	Three ramp shots move the elephant into the crate, then hit the stage to show that the crate is empty.
Chinese Water Torture	Hit the key lane to lower Houdini into the tank. Hit either orbit to close the curtain stage and to open the curtain and set Houdini free.
Indian Needle Trick	All switches score X, magic and red stand-up targets increase value. Houdini pulls needles out of his mouth as shots are made.

Walk Through Walls	To move Houdini through the wall, shoot one of the left shots, then one of center shots, then one of the right shots.
Handcuff King	Shoot the pops. Every ten hits results in a handcuff or chain being thrown out. Hit it enough times to "free" Houdini.
Milkcan Escape	Three shots through the lower left loop lowers Houdini into milkman, rolls out the screen, and shows that he is free.
Metamorphosis	Shoot the trunk to lower Houdini into the trunk, then orbit to close the curtain, then hit the stage or trunk to open the curtain to set Houdini free.

SPECIAL STAGE MODES

Figure 7.1   Bullet Catch Mode

Table 7.2   Special Stage Modes

Card King	This is a video mode. The player throws cards (known as scaling) through moving hoops. The longer the player holds the flipper button before throwing, the greater the arc of the released card. As you make shots, the hoops move faster. Making three of the smaller hoops lights the smaller hoop for an extra ball award. It is possible to make both hoops with a single throw, which doubles their value.
Straight Jacket Multiball	The option of "reversed flippers" (left flipper button controls right flipper, right controls left) or "reversed and inverted flippers", where flippers are reversed as described, but are inverted, which means they are the in up position and then drop when the flipper button is pressed, so they flip upon release. Jackpots are doubled when inverted.
Bullet Catch	Shoot the trunk to lock a ball in the upper catapult, then shoot moving the target to lock in the site (and jackpot value, which is decreasing while trying to hit the moving shot). Locking the site fires the gun, to get into a two ball multiball. Then continue to hit the trunk shot (right inner loop) to lock and fire the gun again to score jackpots.

MOVIE MODES

There are five modes based on Houdini's movies. These modes are presented in black and white, with an old-time film look and a piano accompaniment. Failing to complete a Movie mode results in the film "burning" on the display screen. Complete all five Movie modes to earn a HOUDINI letter.

Table 7.3   Movie Modes

Terror Island	Scoop, ramp, scoop, ramp — Free the woman from the safe that was thrown in the ocean, then go back for the treasure.
Haldane of Secret Service	All about the spinner — Escape the waterwheel. Each shot makes it spin faster until it breaks free.
Mastery Mystery	Features "Q The Automaton", the first ever movie robot. Stop him from getting the woman or getting to the weapon — left orbit, right orbit, left orbit, right orbit. The player only has seconds to complete the next shot in the sequence. Making this shot resets the clock (but less time than the previous shot).
Grim Game	Move Houdini from plane-to-plane to rescue the woman (orbit, ramp, orbit).
Man From Beyond	This is an add-a-ball mode. First, bash the stage to free Houdini from the ice, where he has been frozen for 100 years.This puts a second ball in play. Then shoot orbits X times to free him from his restraints in the insane asylum. Another ball is put into play, then all the GI and inserts turn off, except for three shots (and a moving spotlight that runs through the inserts. Only one of the three lit shots pays off. The player must figure out which is the correct shot by sneaking a peek at the display and spotting Houdini when the spotlight is on him. Shooting the correct shot scores a jackpot, and then Houdini randomly moves between the three shots.

MAGIC SHOP

Note: Magic Shot opens when the player hits a spinner shot and earns a "Mystery" award. Collect eight items to earn a HOUDINI letter. The player can earn an extra ball if enabled in Feature Adjustment Settings\Magic Shop Extra Ball.

Note: Refer to the Feature Adjustments Settings table in the Service Menu chapter for a description of this setting.

JAIL ESCAPE HURRY-UPS

Spell ESCAPE from stand-up target hits. Complete all five Jail Escape Hurry-Ups to earn a Houdini letter, complete X to earn Return From Beyond. It is also possible to earn an extra ball if enabled in Feature Adjustment Settings.Complete all five Jail Escape Hurry-Ups for Mini-Magician Mode.

Figure 7.2   Jail Escape Hurry-Up

SECRET MISSIONS

There are five different combos and only one is active at a time. Complete the active combo to start the next one. Complete all five to enter a Mini-Magician Mode and earn a Houdini letter. The next shot in the sequence is identified by a flashing purple arrow. If the sequence is broken, it returns to the first shot of the sequence.
The missions increase in difficulty.

TRUNK MULTIBALL

Lock three balls in the trunk to start Trunk Multiball. Three shots are lit for jackpots. Complete those shots then shoot the trunk (via the inner loop) to achieve Super Jackpot and re-light jackpots. Super Jackpot earns a Houdini letter.

SEANCE MULTIBALL

Spell SEANCE to light at the scoop and score jackpots. Spell in order to earn Super Jackpot. Lighting SEANCE Multiball increases in difficulty each time. X jackpots earns a HOUDINI letter.

Figure 7.3   SEANCE Multiball

OUTLANE DRAIN MODES

Complete the modes and play continues. Fail either of the modes and the ball ends. The modes are:

Table 7.4   Outlane Drain Modes

Return From Beyond	The player gets 30 flips to spell SEANCE (via mini stand-up targets). Earned by scoring X jackpots during SEANCE Multiball.
Escape Death	The player gets 30 seconds to spell ESCAPE (via stand-up targets). Earned by completing X Jail Escape Hurry-ups.

Figure 7.4   Outlane Drain Modes

The player can also earn/light the Outlane Drain Modes at Magic Shop. If earned there, the ability to select the mode moves from side-to-side with the flippers. If earned via SEANCE or ESCAPE, the option is static. If the player has earned multiple Magic Shops, then both outlanes are lit. The player can earn one of each Outlane Modes per game.

MILKCAN MULTIPLIERS

Shooting the milkman loop (lower left loop), immediately followed by the ramp, increases the playfield multiplier (2x,3x,4x) for X seconds.

Figure 7.5   Milkcan Multiplier

MASTER MAGICIAN (WIZARD) MODE

You must collect all HOUDINI letters

- Complete all ten Stage modes
- Complete all five Movie modes
- Collect eight items from the Magic Shop
- Complete all five Jail Escape Hurry-ups
- Complete all five Secret Missions
- Earn a super jackpot during Trunk Multiball
- Earn a certain number of jackpots during Seance Multiball

Note: Settings can be adjusted to increase or decrease the difficulty by which HOUDINI letters are earned. Refer to the Feature Adjustments Settings table in the Service Menu chapter for a description of this setting.

STACKING

The player can stack multiballs on both Stage and Movie Modes as well as other multiballs. Stage Modes and movie Modes cannot be stacked with each other. Once a multiball is running, the player cannot start a Movie or Stage Mode. Jail Escape Hurry-ups, starting Secret Missions and Magic Shop visits can occur if a mode is running, but not if multiball is running.

DOCUMENT FEEDBACK

To submit feedback, comments, changes, or additional information related to this document, please contact your American Pinball distributor.

American Pinball