

timeshock!



**Table
Manual**

**Technical
Manual**



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**I do not know exactly what
time you presently inhabit so I
cannot tell in what dark age of
pre-science you dwell, but you probably
don't even know that time is crystalline.**

It flows from the future and crystallizes
at the door of the present. The future
is fluid and changeable. The past is
solid and cannot be altered.

But it can be shattered. And my work on the
fluid future threatens to destroy the solid past.

I have created – God help us –
a shock wave of anti-time which is
travelling back to the dawn of history.
The wave has nearly reached your
time already. We must return to
the beginning of time and bring
together the crystal fragments
from the future to create a
counter-shock wave.

My time machine is crude –
the best I could do in the
circumstances. But it needs
two to pilot and navigate.

My co-pilot has... gone and
I am stuck in this time.



My past has gone already, but, if we succeed,
we can save your past... and your future...



HOW TO PLAY *TIMESHOCK!*

An experiment in the future with a Time Crystal went wrong. The Crystal shattered, creating a Timeshock. Once the Timeshock reaches the Dawn of Time, the universe will be destroyed. You must collect the shattered crystal fragments from FOUR different time zones to rebuild the Crystal, then travel to the Dawn of Time to use the Crystal to create an Anti-Timeshock to save the universe...

Time Machine Frenzy: Shoot the spinner to light the Lock-O-Meter, then lock three balls to start Three-Ball Time Machine Frenzy. Shoot the side ramps to collect Jackpots and locate a Crystal fragment. Shoot the lit middle shot to collect a Crystal fragment.

Time Travel: Complete both side ramps to enable the Time Drive. Once enabled, lock three balls in The Time Machine and one in the middle shot to Time Travel.

Explorations: Shoot the upper ramp to search continents for Tachyonium. If lucky, you will find a continent worth exploring. Complete the exploration to collect a piece of Tachyonium. Use Tachyonium pieces to unlock other Time Zones.

Time Warp Frenzy: Complete W-A-R-P to light Time Warp at the middle shot. Shoot the middle shot to start Two-Ball Time Warp Frenzy. Complete W-A-R-P quickly to add extra balls into play. Shoot the middle shot when lit to score Time Warp Jackpots.

Progressive Awards: Complete the left bank of drop targets to light awards. Shoot the left orbit to collect awards.

Souvenir Quickshot: Complete the right bank of drop targets to light quickshots. Shoot the right orbit to start quickshot. Shoot the right orbit again to collect the quickshot value and a souvenir. Souvenirs can be combined to earn special features...

Scanner: Complete S-C-A-N to light Scanner at the middle shot. Shoot the Scanner to collect a random award.

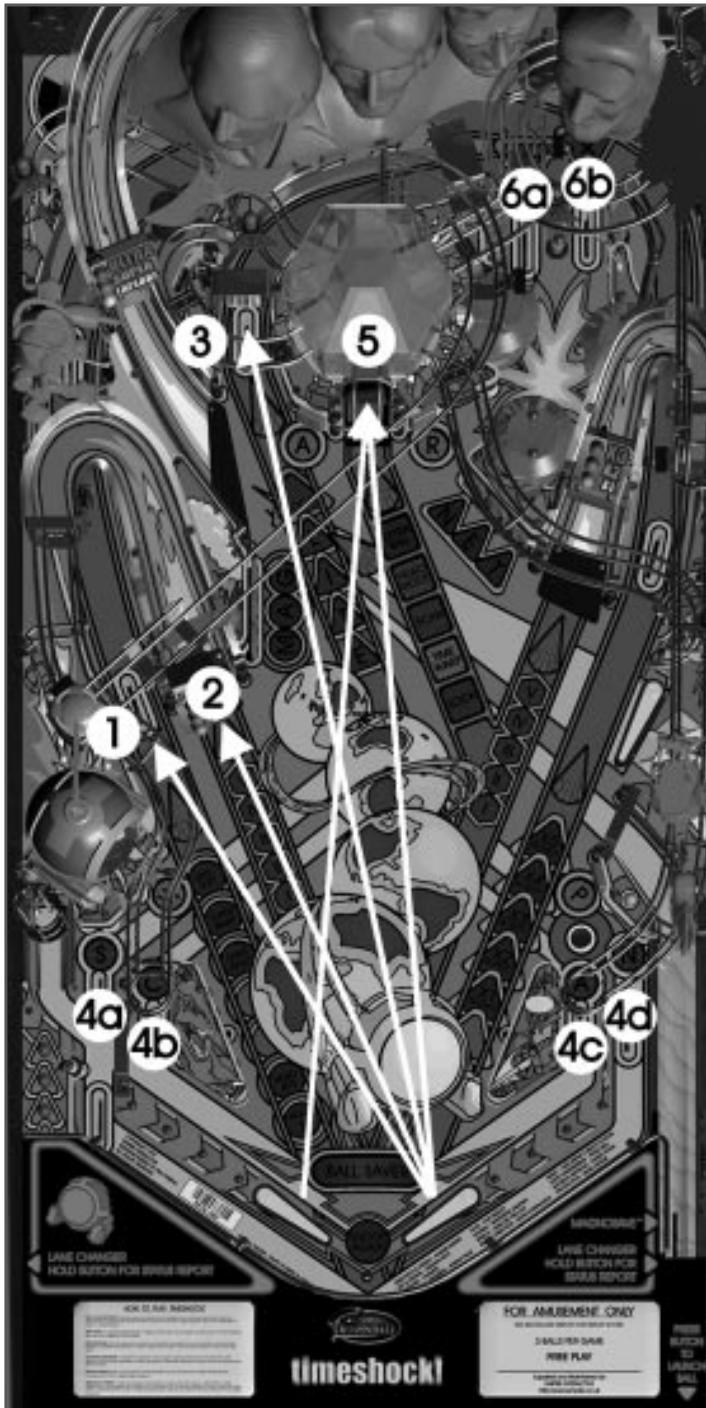
MagnoSave™: Balls can be saved from the right outlane by quickly pressing the MagnoSave™ button. Complete M-A-G-N-E-T to re-light MagnoSave™.

Timeshock! Frenzy:

1. Collect three pieces of Tachyonium to unlock all the Time Zones.
2. Collect all four crystal fragments from The Prehistoric Age, Ancient Rome, The Present, and The Future to rebuild the Crystal.
3. Travel to the Dawn of Time to start Timeshock! Frenzy.
4. Complete all flashing shots, then use the Crystal to save the Universe from the deadly Timeshock!



SKILL SHOT, SCANNER, AND BONUS MULTIPLIER



SKILL SHOT

Shoot flashing Skill Shot (1, 2 or 3) immediately after a ball launch to collect a Skill Shot award.

SCANNER

Complete S-C-A-N (4a, 4b, 4c, 4d) to enable Scanner and light Middle Scoop for Scan.

Shoot lit Middle Scoop to activate Scanner and collect a random award.

Flipper buttons cycle the lit S-C-A-N lamps.

SUPER SCANNER

Every fifth* completed S-C-A-N enables Super Scanner and lights Middle Scoop for Super Scan.

Shoot lit Middle Scoop to activate Super Scanner, then use Flipper buttons to select and collect one of two special random awards.

BONUS MULTIPLIER

Make + and X (6a, 6b) to advance Bonus Multiplier.

Flipper buttons cycle the lit + and X lamps.

*OPERATOR ADJUSTABLE FEATURE



TIME MACHINE FRENZY

Shoot Spinner (1) to advance Lock-O-Meter.

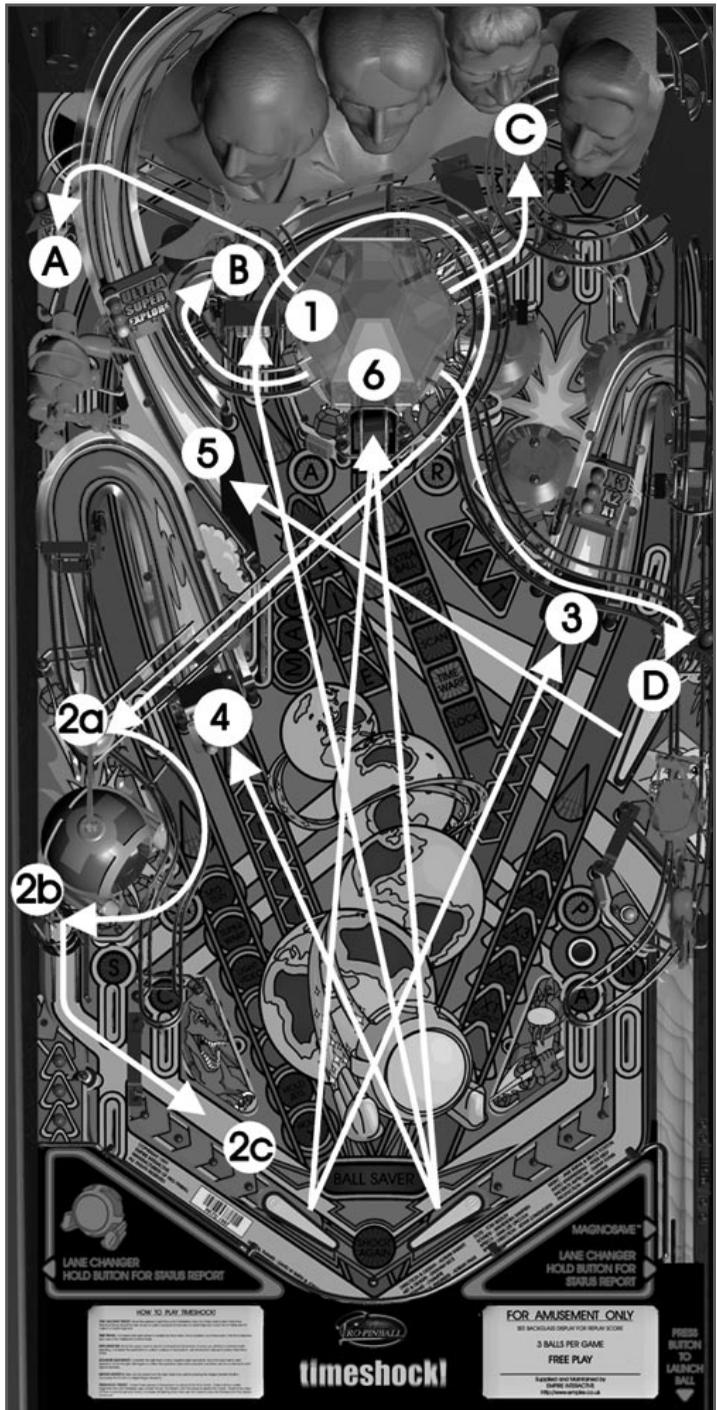
When Lock is lit, shoot Spinner Lane to activate Magno Lock (2a, 2b) and lock a ball.

Lock three balls to start a Three-Ball Time Machine Frenzy.

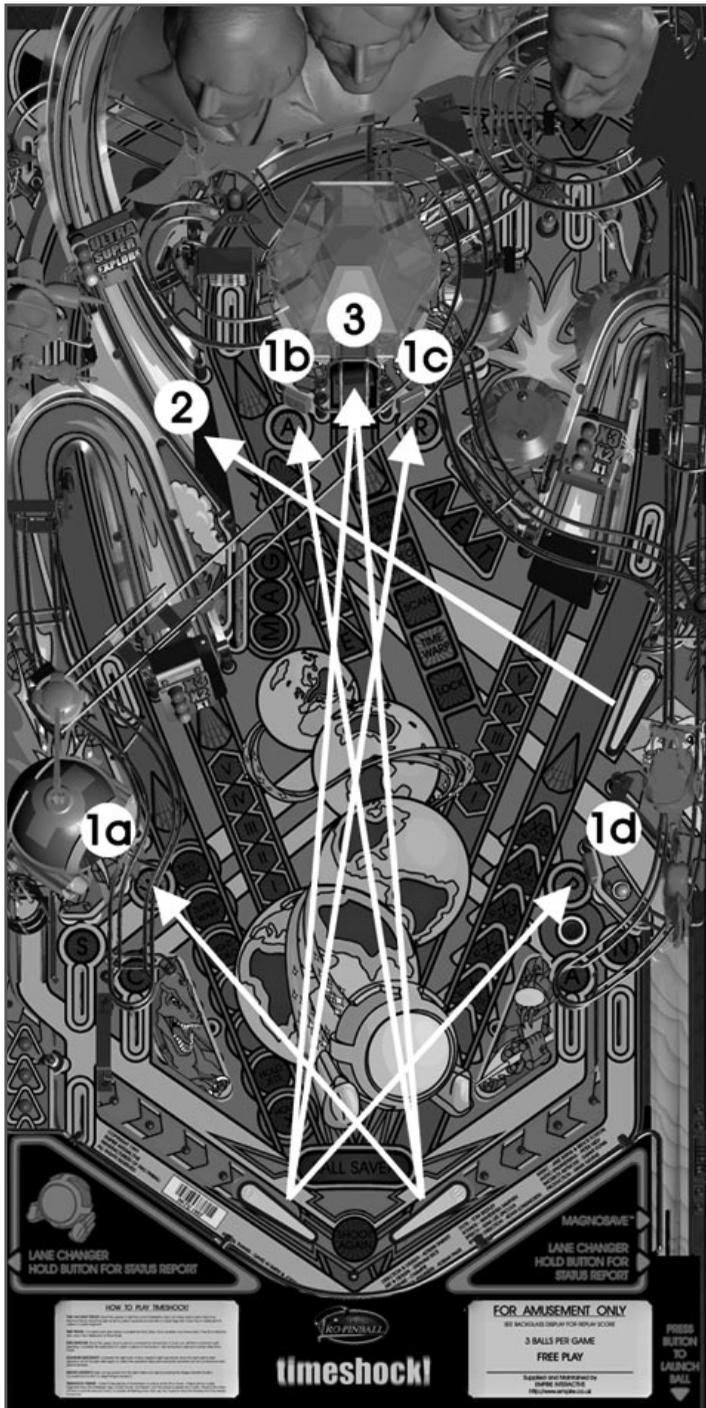
During Time Machine Frenzy, shoot Left and Right Ramps (3, 4) to score Single, Double, and Triple Jackpots and light Continents. Light all Continents to locate a Crystal Fragment and light Upper Ramp (5) for Super Jackpot.

When a Crystal Fragment is located, shoot Middle Scoop to collect the Fragment; shoot Upper Ramp to collect Super Jackpot.

When a Crystal Fragment is collected, shoot Middle Scoop after the Frenzy ends to Lock the Fragment in a Time Zone Lock Point (A-D).



TIME WARP FRENZY



Make W-A-R-P Spots (1a-1d) in sequence to light Middle Scoop (3) for Time Warp.

Shoot lit Middle Scoop to start a Two-Ball Time Warp Frenzy.

During Time Warp Frenzy, complete W-A-R-P Spots (1a-1d) or shoot Upper Ramp (2) to make W-A-R-P again and add a ball into play.

Shooting W-A-R-P Spots or Upper Ramp advances Warp Jackpot value; completing W-A-R-P Spots increases Warp Jackpot multiplier.

Shoot Middle Scoop when lit to collect Time Warp Jackpot.



EXPLORATIONS AND MAGNOSAVE™

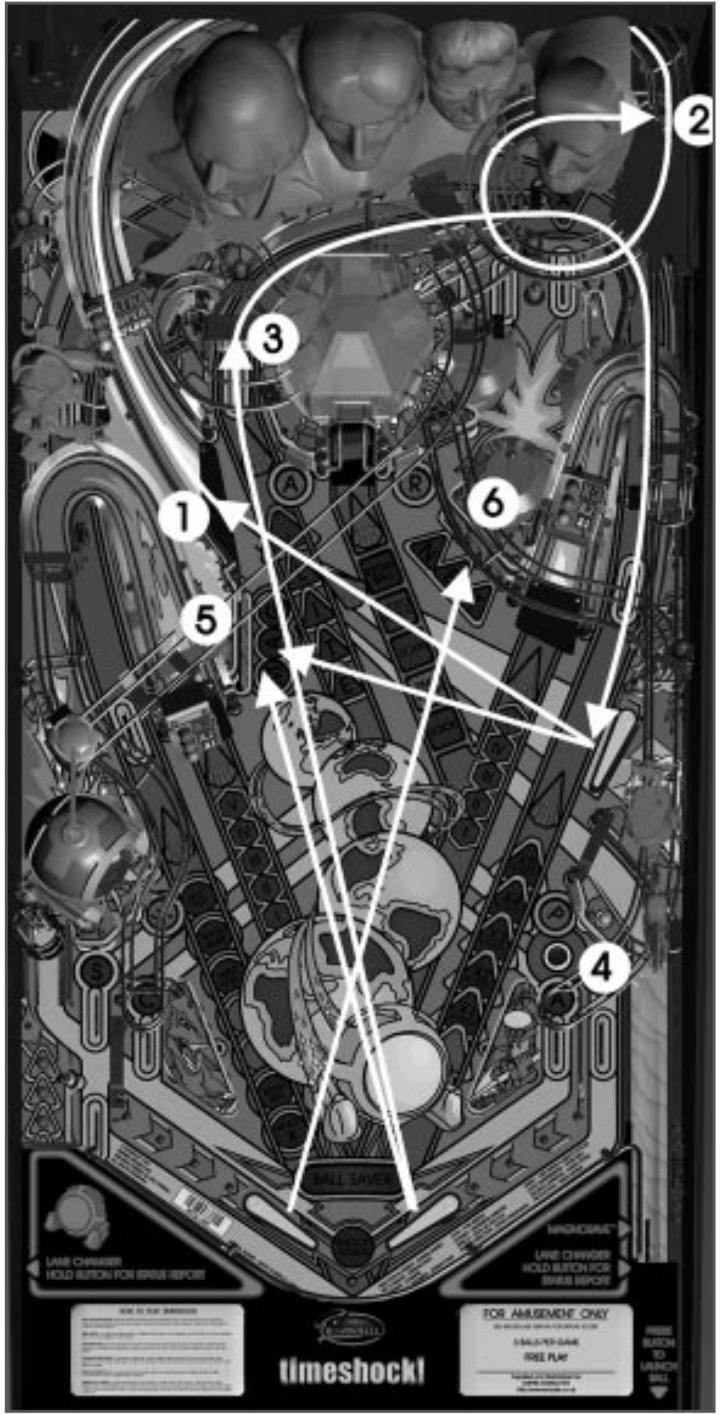
Shoot Upper Ramp (1) to explore a Continent.

If lucky, some of the rare compound Tachyonium is located, the ball is diverted to the Top Scoop (2), and an Exploration begins.

Complete an Exploration (100%) to collect Tachyonium.

Shoot Spinner (3) first to double the chance of an Exploration.

TIP: If lock is lit and you wish to go for a spinner-ramp combo (3, 1), trap the ball on the right flipper and press the left flipper button.



EXPLORATIONS

CHANNEL TUNNEL: Shoot flashing shots to increase mining power and mine out the Tachyonium, then shoot Left Orbit to leave the Chunnel with the Tachyonium.

CHARIOT RACE: Shoot Left and Right Ramps and Orbits to move up places. Win the race to collect the Tachyonium.

DINOSAUR STAMPEDE: Shoot flashing Orbits to avoid dinosaurs and reach the meteorite to collect the Tachyonium.

MOUNT RUSHMORE: Shoot lit ramps to climb Mount Rushmore and collect the Tachyonium.

POWER PLANT: Shoot Jet Bumpers to destroy Power Plant, then shoot either Orbit to collect the Tachyonium.

PYRAMID: Shoot Middle Scoop to enter Pyramid, then shoot flashing shots to locate main tomb and collect the Tachyonium.

ROBOT WAR: Shoot Drop Targets to defeat robot opponent and collect the Tachyonium. If you are skilful enough, an “uppercut” will finish him quickly.

VOLCANO: Shoot Spinner repeatedly to scoop up water. Shoot any Ramp to drop water and cool the volcano, then shoot Middle Scoop to fly inside and collect the Tachyonium.

TIP: If the ball ends up in the Jet Bumpers and you want it to exit quickly, hold down both flipper buttons to disable the Jets.

MAGNOSAVE™

When MagnoSave™ is lit (4), press MagnoSave™ button quickly to save balls from the right Outlane.

Complete M-A-G-N-E-T Drop Targets (5, 6) to relight MagnoSave™.



TIME TRAVEL

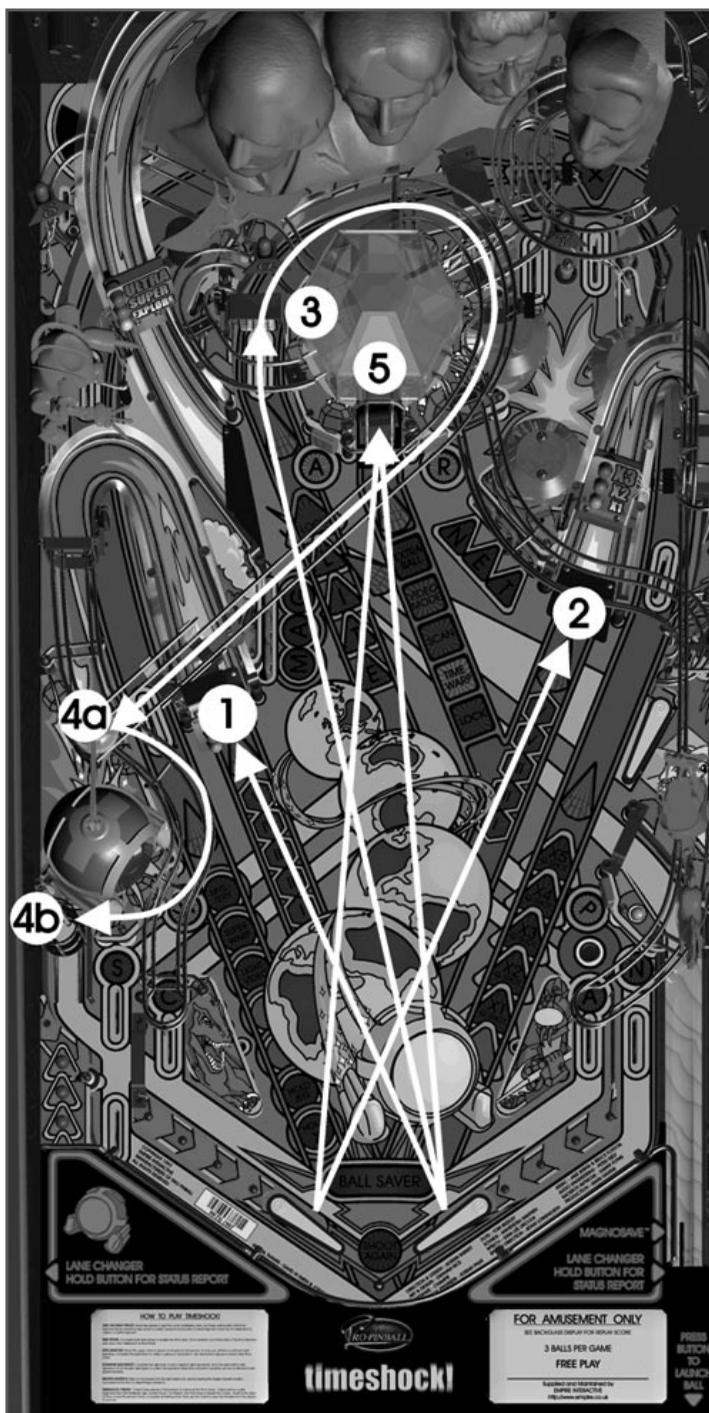
Light all I-V lamps on Left and Right Ramps (1, 2) to enable Time Drive. Shoot Ramps alternately to enable Time Drive more rapidly and collect more points.

When enabled, lock three balls in Time Machine (4a-4b) to activate Time Zone selector.

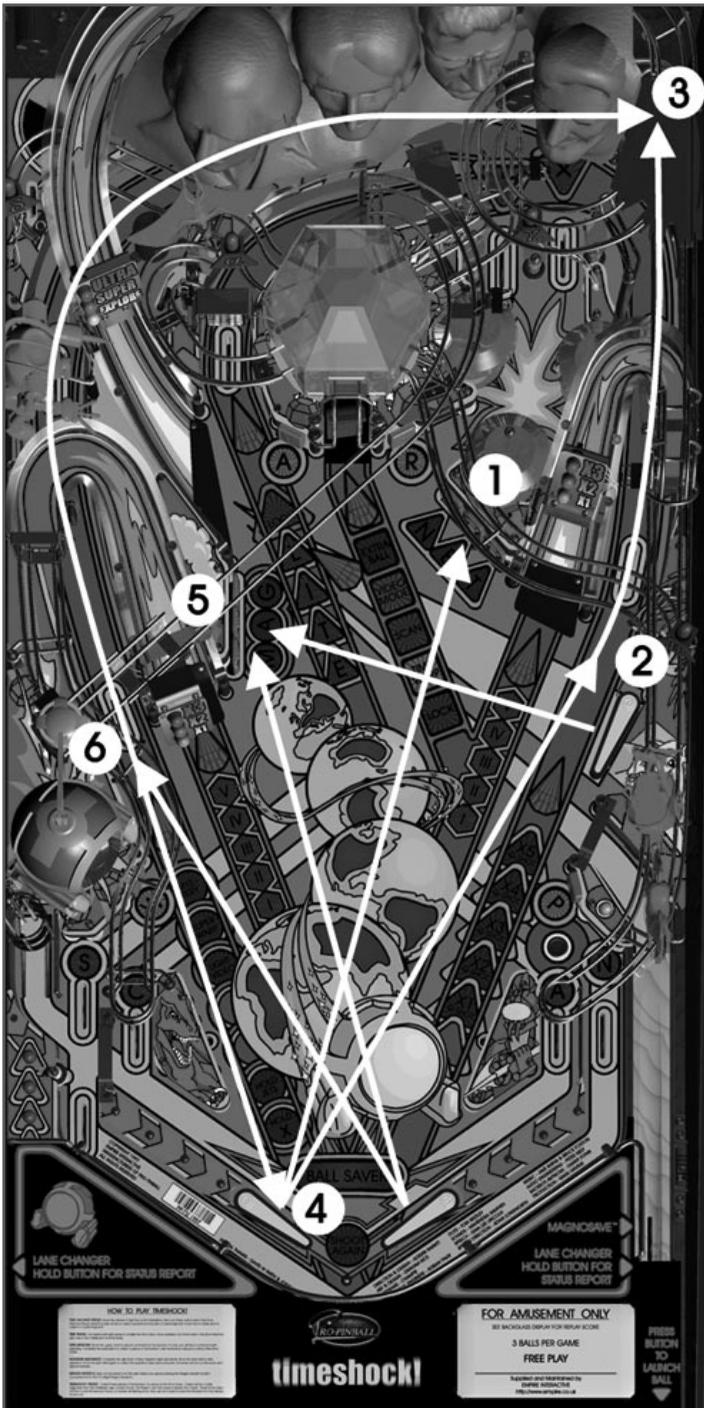
Use Flipper and Launch buttons to select a destination.

NOTE: Some destinations are not available until you collect enough Tachyonium.

When a destination is selected, shoot Middle Scoop (5) to Time Travel.



SOUVENIR QUICKSHOTS AND ORBIT AWARDS



SOUVENIR QUICKSHOTS

Make N-E-T (right Drop Target bank 1) to light Right Orbit for Quickshot.

Shoot lit Right Orbit (2) to start Quickshot. Shoot Right Orbit again quickly to collect a Souvenir and Quickshot value.

Souvenirs from different Time Zones combine to enable special features.

Collect special features by activating the Scanner.

AWARDS

Make M-A-G (left Drop Target bank 5) to light Left Orbit for Award.

Shoot lit Left Orbit (6) to collect Award.

HOLD X: Bonus Multiplier value is held over to next ball.

HOLD JETS: Jet Hits (for Super Jets) are held over to next ball.

LIGHT VIDEO: Lights Middle Scoop for Video Mode.

SUPER WARP: Starts a Four-Ball Time Warp Frenzy.

MYSTERY: Self-explanatory.



TIMESHOCK! FRENZY

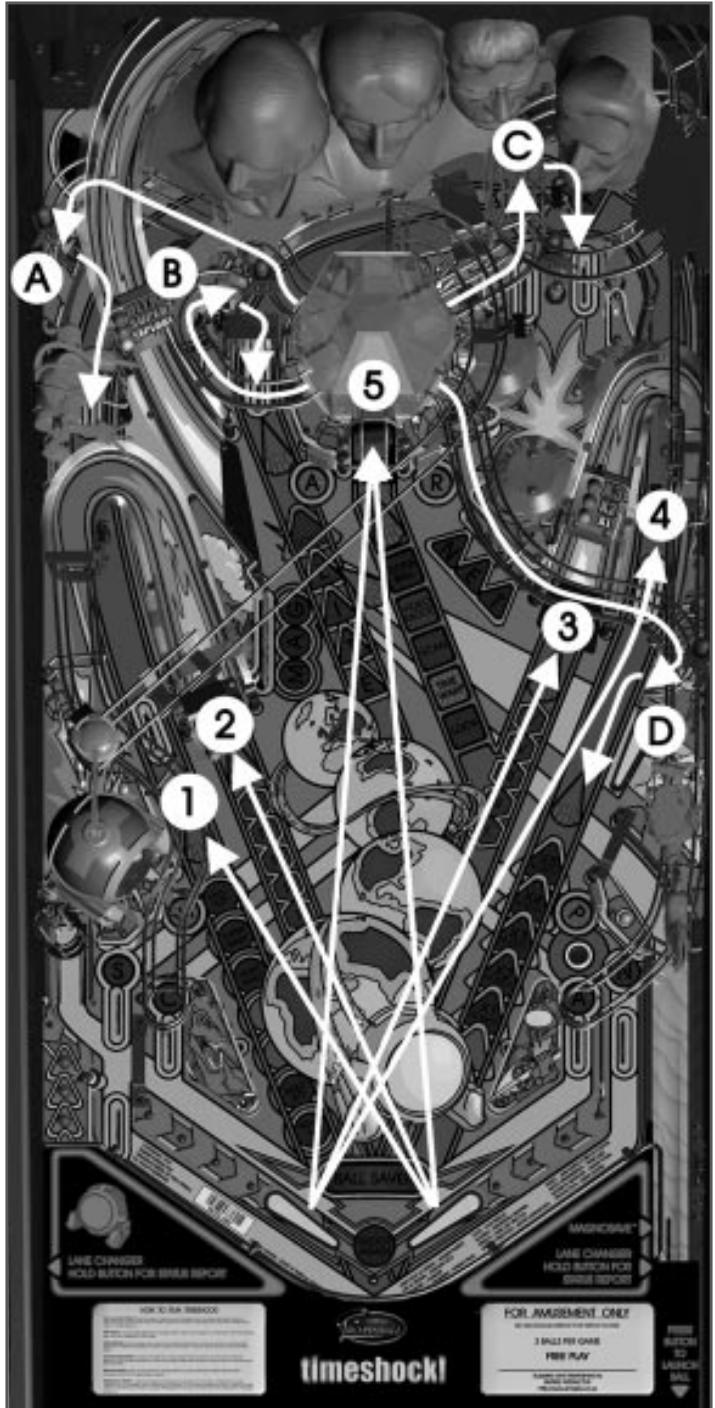
Once all four Crystal Fragments have been found and locked, and at least three pieces of Tachyonium have been collected, travel to The Dawn of Time to attempt to Save the Universe!

Travel to 'The Dawn of Time' to start a Five-Ball Timeshock! Frenzy. Re-build the Crystal within 120 seconds or the Universe will be destroyed!

Shoot any flashing shot (1-4) to enable a Crystal Lock Point (A-D), then shoot Middle Scoop (5) to lock a ball and re-build one-fourth of the Crystal.

Lock four balls into Crystal Lock Points (A-D) to re-build the crystal.

When the Crystal is re-built, shoot Middle Scoop to detonate Crystal and Save the Universe!



INTRODUCTION

Welcome to **TIMESHOCK!**, the second in the PRO PINBALL series of pinball machine simulation programs. As pinball machine owners ourselves, the aim of everyone on the PRO PINBALL team is to bring you the closest experience possible to actually owning and playing an arcade pinball machine, without the distractions of scrolling or split screens. This manual is an important part of that experience.

Because the **TIMESHOCK!** simulation program contains operator features identical to those on real machines, this manual is written in the same style as operator manuals for arcade pinball machines. So if, like us, you own an electronic pinball machine, we're sure you'll find the **TIMESHOCK!** simulation program (and this manual) genuinely faithful to the real thing.

TIMESHOCK! is a constantly challenging and sometimes frustrating game, and though the default settings have been carefully chosen to give balanced gameplay, you can fine tune the machine to suit your preferences and playing style. You can even examine the machine's audit information and adjust the difficulty of individual features exactly as you would on a real machine. The third section of this manual explains all these features in detail.

NOTE: The complete list of **TIMESHOCK!** control buttons or control keys for your system is in the separate Technical Manual.

We sincerely believe that you'll find the playfield design, mechanics, music, features, sound effects, depth of rules, animations, and gameplay in **TIMESHOCK!** are truly the equal of a typical modern pinball machine. The major differences are that you don't have to find house room for the machine, there is zero maintenance, and it only costs one per cent of the price of the real thing to own!

We hope you enjoy playing **TIMESHOCK!** and welcome your feedback. If you have an Internet connection, you can visit the **PRO PINBALL** website at <http://www.empire.co.uk/propinball>. If you prefer to use e-mail, please send this to us at the address propinball@fat.cix.co.uk.

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THANK YOU FOR BUYING ANOTHER FINE PRO PINBALL GAME!

TIMESHOCK! IS A 10 (TEN) BALL GAME.

GAME CONTROL LOCATIONS

NOTE: Switch locations may differ between production runs. The separate Technical Manual supplied with your game shows the exact locations of the switches on your machine.

CABINET SWITCHES

Start Button. Press the Start Button to begin a game, or to add players to a game in progress. When a game ends, press the Start Button to purchase a Buy-In Extra Ball* to continue a game in exchange for one credit. During High-Score Initials Entry, press the Start Button to advance to the next initial or complete High-Score Initials Entry.

Launch Button. Press the Launch Button to launch a ball in the plunger lane into play.

Flipper Buttons. Press a Flipper Button to fire the flipper(s) on that side of the playfield, or to perform other functions as directed on the display. During High-Score Initials Entry, press a Flipper Button to change the current character.

MagnoSave™ Button. Press the MagnoSave™ Button to save a ball draining down the right-hand outlane.

COIN DOOR SWITCHES.

The operator makes game adjustments, reads book-keeping information, and runs diagnostic tests using only four push button switches (refer to the MENU SYSTEM OPERATION section of this manual on page 21 for more details).

The **Up Button** quits to the next higher level of the Menu System, or returns to Attract Mode.

The **Next Button** cycles forward through lists of menu items or adjustment choices.

*OPERATOR ADJUSTABLE FEATURE



The **Previous Button** cycles backward through lists of menu items or adjustment choices.

The **Enter Button** enters the next lower level of the Menu System, selects a menu item, or confirms an adjustment choice.

GAME OPERATION

CAUTION! AFTER ASSEMBLY AND INSTALLATION ON SITE, THIS GAME MUST BE PLUGGED INTO A PROPERLY EARTHED POWER SOCKET TO PREVENT ELECTRICAL SHOCK AND TO ASSURE PROPER GAME OPERATION.

POWERING UP

When the machine is powered on, the display shows **TIMESHOCK! V** followed by the **version number** of the game ROMs and **TESTING...** while the machine performs Start Up Tests. If no problems are encountered, the display shows the last game score(s), then enters Attract Mode.

From Attract Mode, enter the Menu System (refer to the MENU SYSTEM OPERATION section of this manual on page 21 for more details) by pressing the keys detailed in the separate Technical Manual supplied with your game.

ATTRACT MODE

During Attract Mode, the display shows a series of messages, including recent and all-time highest scores*, and the score required to obtain a replay award. To return to Attract Mode whilst playing a game, keep both the Launch Button and Start Button depressed for two seconds.

*OPERATOR ADJUSTABLE FEATURE



STARTING A GAME

From Attract Mode, press the Start Button once to start a game. The display shows a message asking the player to select Novice* or Regular Play Mode; refer to the Novice Mode section of this manual on page 20 for more details. A start up sound plays, the machine resets all playfield switches and mechanics, and a ball is ejected into the plunger lane. The display shows **BALL 1** and **PLAYER 1**, and flashes **00** until the first playfield switch is actuated. Press the Launch Button to begin play. Additional players (up to four in total) may enter the game by pressing the Start Button once for each additional player; this must be done before the end of play on the first ball.

NOTE: TIMESHOCK! IS A 10 (TEN) BALL GAME. The machine will not start a game unless the full complement of 10 (TEN) balls is present in the ball trough.

TILTS

Actuating the Slam Tilt Switch inside the coin door ends the current game for that player; other players continue normally. With the fourth* closure of the Plumb Bob Tilt Switch, the player loses remaining play of that ball, but may complete the game.

END OF GAME

When play of the final ball ends, all the player's earned scores and bonuses are totalled up. While credits remain, the player is offered* successive Buy-In Balls. When all players' games are complete, all scores are checked and, for each best performance or final score which exceeds the specified value, the player receives one or more* replay awards and is invited to enter his or her initials on the appropriate table. The display then shows a random set of two digits*. For each player score where the last two digits match the displayed random value, one credit* is awarded. Buy-In, Game Over, High-Score, and Match sounds and displays are made as appropriate.



*OPERATOR ADJUSTABLE FEATURE

EXTRA BALL BUY-IN

At the end of the game, **TIMESHOCK!** allows each player to continue the game by 'buying in' an extra ball in exchange for one credit. The display shows **CONTINUE?** and a **countdown** starting from 9. Press the Start Button to purchase an extra ball, or press any other button to quit the countdown and continue to the Game Over sequence.

HIGH-SCORE INITIALS ENTRY

TIMESHOCK! maintains tables of High-Scores and Champion scores. When a player qualifies for a High-Score or Champion score, the display shows the **player number** and the **score description**. Press the Enter Button; the display shows **ENTER INITIALS**, and three initials, the first of which flashes. When the machine is powered on, the initials are **_ _ _**, but the machine will remember initials* as high-scores are entered. Press the Flipper Buttons to cycle through the available letters and punctuation characters; hold a Flipper Button down to cycle more rapidly. Press the Start Button to advance to the next initial. When all three initials have been entered, the display shows **>**. Press the Start Button to return to Attract Mode. Statistics for the game just played, including high-score codes, can be viewed by holding down both Flipper Buttons for two seconds.

GAME OVER MODE

The display shows **GAME OVER**. Thereafter, the display shows the current high-scores, then the game returns to Attract Mode.

*OPERATOR ADJUSTABLE FEATURE



NOVICE, TOURNAMENT, AND CHALLENGE MODES*

In addition to normal play, **TIMESHOCK!** allows three special modes of play. When **Novice Mode*** is selected, a single ball is played, but with the Ball Saver active for 120 seconds.* **Tournament Mode***, set using Standard Adjustment Menu item 2.1.12, disables random and 'bonus' game adjustments, allowing scores obtained on different machines to be compared more equally. **Challenge Mode** shares all game features and memories among all players in a multi-player game. To enable Challenge Mode, hold down the Left Flipper Button for two seconds before starting a game. Tournament Mode can also be enabled by holding down the Right Flipper Button for two seconds before starting a game.

TEMPORARILY RESTORING FACTORY SETTINGS

If you have customised the game settings, holding down the Launch Button for two seconds will temporarily restore the factory settings. To return to your custom settings, simply hold down the Launch Button again.

NOTE:

All high-scores submitted to our WWW Worldwide High-Score Table **MUST** be from games played using Factory Settings.



*OPERATOR
ADJUSTABLE FEATURE

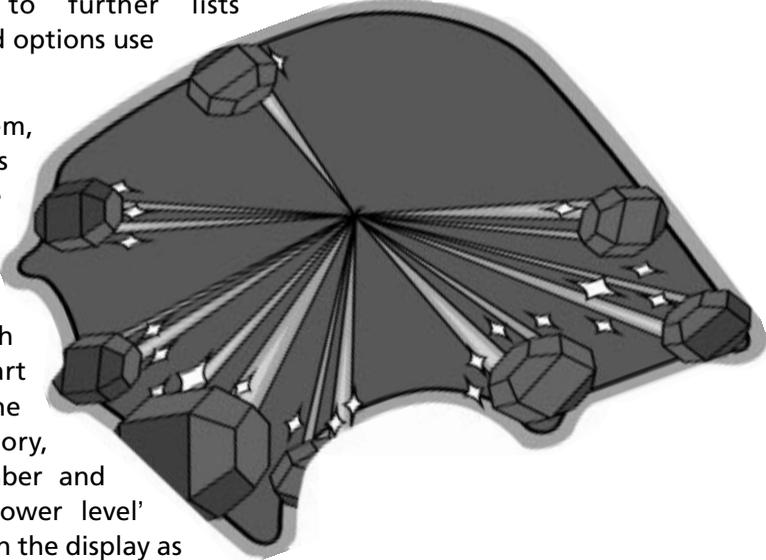


MENU SYSTEM OPERATION

MENU SYSTEM

TIMESHOCK! uses a Menu System to control all operator features. The Main Menu contains five main categories, which lead to further lists of options. All categories and options use military numbering.

To enter the Menu System, open the coin door and press the keys detailed in the separate Technical Manual supplied with your game. Alternatively, from Attract Mode, hold down the Launch Button and press the Start Button. The display shows the first Main Menu category, **1. Book Keeping**. The number and name of each successive 'lower level' category and option shows on the display as it is selected.



To cycle through the Main Menu categories, press the **Next** and **Previous** Buttons.

To select a category and proceed to the next lower list of categories or options, press the **Enter** Button.

To return to the next higher menu level, press the **Up** Button.

To select or activate any option or test, press the **Enter** Button.

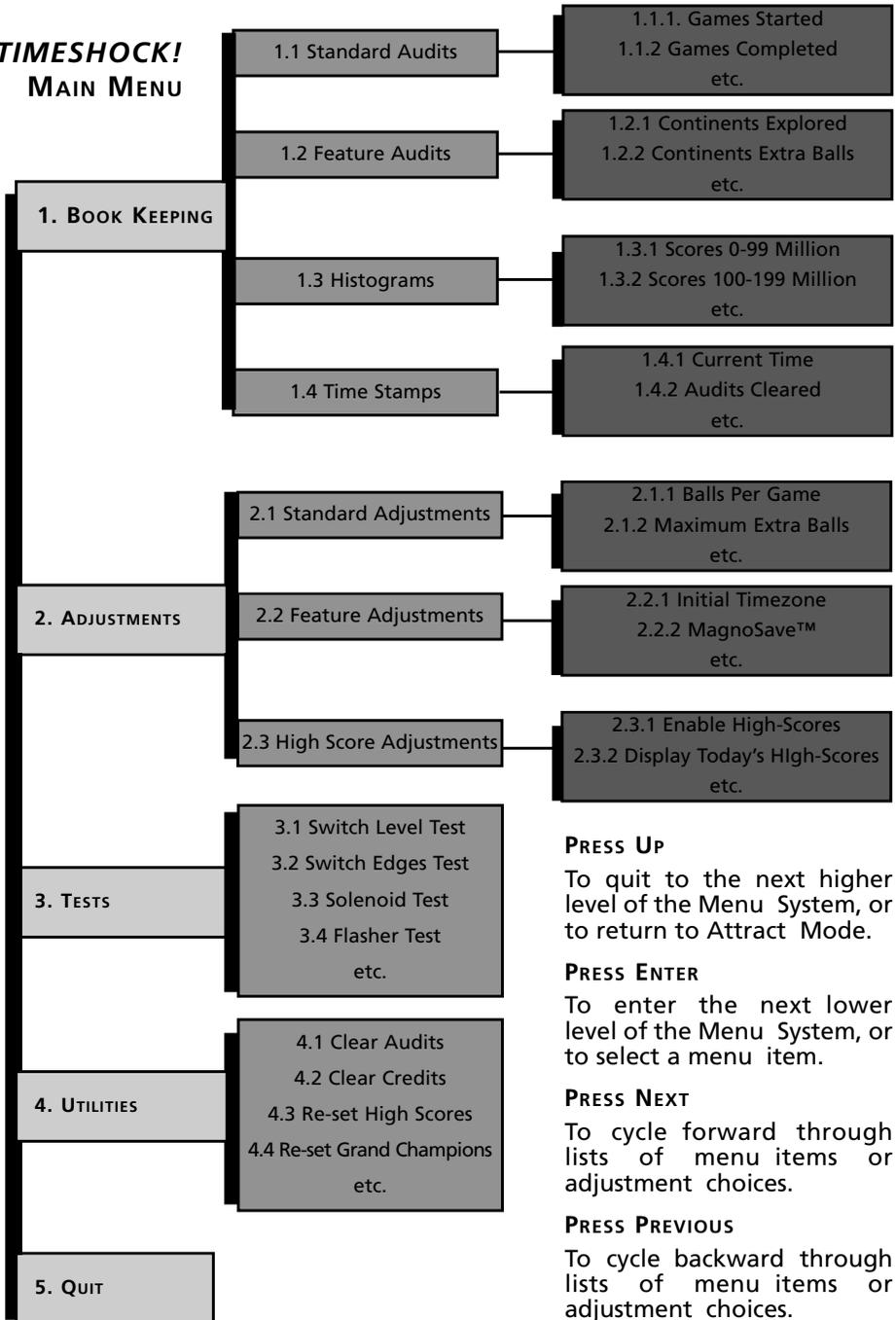
To **cycle** through the current option adjustment values or test types, press the **Next** and **Previous** Buttons.

To return to Attract Mode, navigate to the Main Menu categories, then press the **Up** Button.

NOTE: Some menu options are initially locked out at the factory. These options display (LOCKED) when selected. These menu options will unlock and become available for operator adjustment over time as the number of games played increases.



**TABLE 1. *TIMESHOCK!*
MAIN MENU**



PRESS UP

To quit to the next higher level of the Menu System, or to return to Attract Mode.

PRESS ENTER

To enter the next lower level of the Menu System, or to select a menu item.

PRESS NEXT

To cycle forward through lists of menu items or adjustment choices.

PRESS PREVIOUS

To cycle backward through lists of menu items or adjustment choices.



The **TIMESHOCK!** menu structure is shown in diagram form on the previous page. Familiarity with this diagram, and with the menu option numbering system, will help you to quickly navigate to the desired item.

The following pages describe the audit items, feature adjustments, tests, and utilities in detail.

MAIN MENU

The Main Menu categories are:

1. **BOOK KEEPING**
2. **ADJUSTMENTS**
3. **TESTS**
4. **UTILITIES**
5. **QUIT**

BOOK KEEPING

From the Main Menu, cycle to category 1 then press the Enter Button to display the Book Keeping Menu. The Book Keeping Menu categories are:

- 1.1 **STANDARD AUDITS**
- 1.2 **FEATURE AUDITS**
- 1.3 **HISTOGRAMS**

The **Standard**, **Feature**, and **Histograms** audit items list the number of times each feature has occurred. Many audit items also show a percentage; this is usually the percentage of total games or balls played, depending on the item.

1.4 TIME STAMPS

The **Time Stamps** audit items list the times and dates when events last occurred.

Audit items can be cleared (zeroed out) by using Utility item 4.1.

Use the Up, Next, Previous, and Enter Buttons to view the desired Book Keeping audit items. The available audit items are listed in Tables 2 to 5 following.

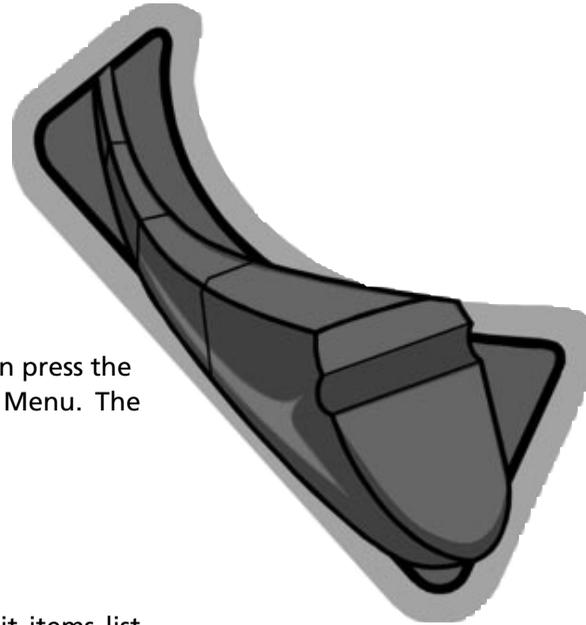


TABLE 2. STANDARD AUDITS

1.1.1	Games Started	1.1.15	Tilts
1.1.2	Games Completed	1.1.16	One Player Games
1.1.3	Replay Awards	1.1.17	Two Player Games
1.1.4	Match Awards	1.1.18	Three Player Games
1.1.5	Left Drains	1.1.19	Four Player Games
1.1.6	Center Drains	1.1.20	Replay Level
1.1.7	Right Drains	1.1.21	Left Flipper
1.1.8	Balls Played	1.1.22	Right Flipper
1.1.9	Extra Balls	1.1.23	Total Regular Plays
1.1.10	Ball Saves	1.1.24	Total Novice Plays
1.1.11	Time On	1.1.25	Total Tournament Plays
1.1.12	Total Play Time	1.1.26	Total Challenge Plays
1.1.13	Average Ball Time	1.1.27	High-Score Reset Count
1.1.14	Average Game Time		



**REMEMBER: A FULLY FUNCTIONING
GAME ALWAYS EARNS MORE THAN
ONE WITH UNRESOLVED FAULTS.**



TABLE 3. FEATURE AUDITS

1.2.1 Continents Explored	1.2.37 Warp Jackpots	1.2.73 Video Modes Completed
1.2.2 Continent Extra Balls	1.2.38 Scanners Lit	1.2.74 Video Mode Extra Balls
1.2.3 Explorations Started	1.2.39 Scanners Collected	1.2.75 Ramp Rampages
1.2.4 Explorations Completed	1.2.40 Scanner Extra Balls	1.2.76 Ramp Rampages Completed
1.2.5 Rushmore Started	1.2.41 Super Scanners Lit	1.2.77 Timeshock! Frenzies
1.2.6 Rushmore Completed	1.2.42 Super Scans Collected	1.2.78 Timeshock! Frenzies Comp.
1.2.7 Chunnel Started	1.2.43 Left Drops Completed	1.2.79 Wizard Frenzies
1.2.8 Chunnel Completed	1.2.44 Right Drops Completed	1.2.80 Total Souvenirs
1.2.9 Powerplant Started	1.2.45 Magnet Completed	1.2.81 Ultra Bonus Boosts
1.2.10 Powerplant Completed	1.2.46 MagnoSaves™ Used	1.2.82 Ultra Spinners
1.2.11 Robot Started	1.2.47 Successful MagnoSaves™	1.2.83 Cows
1.2.12 Robot Completed	1.2.48 Lucky Escapes	1.2.84 Secret Video Modes
1.2.13 Chariot Started	1.2.49 Multipliers Advanced	1.2.85 Ultra Jets
1.2.14 Chariot Completed	1.2.50 Multiplier Extra Balls	1.2.86 Ultra MagnoSaves™
1.2.15 Pyramid Started	1.2.51 Hold Multipliers	1.2.87 Ultra Ballsavers
1.2.16 Pyramid Completed	1.2.52 Hold Jets	1.2.88 Specials
1.2.17 Dinosaur Started	1.2.53 Light Video Mode	1.2.89 Extraball Quickshots
1.2.18 Dinosaur Completed	1.2.54 Instant Time Warps	1.2.90 Very Big Points
1.2.19 Volcano Started	1.2.55 Mysteries	1.2.91 2-Ways
1.2.20 Volcano Completed	1.2.56 Reverse Frenzies	1.2.92 3-Ways
1.2.21 Global Dominations	1.2.57 Reverse Extra Balls	1.2.93 4-Ways
1.2.22 Global Dominations Comp.	1.2.58 Super Spinners	1.2.94 5-Ways
1.2.23 Locks Lit	1.2.59 Super Jets Advanced	1.2.95 6-Ways
1.2.24 Balls Locked	1.2.60 1× Quickshots Started	1.2.96 7-Ways
1.2.25 Time Machine Frenzies	1.2.61 1× Quickshots Scored	1.2.97 8-Ways
1.2.26 Time-Drive Enabled	1.2.62 2× Quickshots Started	1.2.98 9-Ways
1.2.27 Time Travels	1.2.63 2× Quickshots Scored	1.2.99 10-Ways+
1.2.28 Fragments Found	1.2.64 3× Quickshots Started	1.2.100 Combos
1.2.29 Fragments Locked	1.2.65 3× Quickshots Scored	1.2.101 Double Combos
1.2.30 Jackpots	1.2.66 4× Quickshots Started	1.2.102 Triple Combos
1.2.31 Double Jackpots	1.2.67 4× Quickshots Scored	1.2.103 Super Combos
1.2.32 Triple Jackpots	1.2.68 5× Quickshots Started	1.2.104 Ultra Combos
1.2.33 Super Jackpots	1.2.69 5× Quickshots Scored	1.2.105 Reverse Combos
1.2.34 Ultra Jackpots	1.2.70 Quickshot Manias	1.2.106 Spinner Shots
1.2.35 Time Warps Lit	1.2.71 Quickshot Manias Comp.	1.2.107 Spinner Ramp Combos
1.2.36 Time Warps Started	1.2.72 Video Modes	



TABLE 4. HISTOGRAMS

1.3.1 Scores 0-99 Million	1.3.10 Game Time 1-2 Mins
1.3.2 Scores 100-199 Million	1.3.11 Game Time 2-3 Mins
1.3.3 Scores 200-499 Million	1.3.12 Game Time 3-4 Mins
1.3.4 Scores 500-999 Million	1.3.13 Game Time 4-5 Mins
1.3.5 Scores 1-1.9 Billion	1.3.14 Game Time 5-10 Mins
1.3.6 Scores 2-4.9 Billion	1.3.15 Game Time 10-15 Mins
1.3.7 Scores 5-9.9 Billion	1.3.16 Game Time 15-20 Mins
1.3.8 Scores 10+ Billion	1.3.17 Game Time 20-30 Mins
1.3.9 Game Time 0-1 Min	1.3.18 Game Time 30+ Mins

**NOTE:**

ALL HISTOGRAM ITEMS DISPLAY AS #(%), THE % BEING PERCENT OF ALL GAMES

TABLE 5. TIME STAMPS

1.4.1 Current Time	1.4.6 Last Game Start
1.4.2 Audits Cleared	1.4.7 Last Replay
1.4.3 Credits Cleared	1.4.8 Last Grand Champ
1.4.4 Factory Adjust	1.4.9 Last High Score
1.4.5 Factory Reset	

**NOTE:**

ALL TIME STAMP ITEMS DISPLAY AS hh:mm dd/mmm/yyyy



TABLE 6. STANDARD ADJUSTMENTS

Menu Item	Factory	Adjustment Range
2.1.1 Balls Per Game	3	1 to 10
2.1.2 Maximum Extra Balls	10	NO, 1 to 10, unlimited
2.1.3 Ball Saver Time	20 sec.	NO, 5 sec. to 30 sec. (5 sec. steps)
2.1.4 Max Saves Per Ball	2	1 to 5
2.1.5 Maximum Credits	10	NO, 1 to 30
2.1.6 Allow Extra Ball Buy-In	YES	YES, NO
2.1.7 Maximum E.B. Buy-Ins	3	1 to 9
2.1.8 Replay Percent	10%	5% to 25% (1% steps)
2.1.9 Replay Base	100 Million	50 Million to 1,000 Million (50M steps)
2.1.10 Match Feature	10%	OFF, 1% to 25% (1% steps)
2.1.11 Show Date And Time	YES	YES, NO
2.1.12 Tournament Mode	NO	NO, YES
2.1.13 Allow Novice Mode	YES	YES, NO
2.1.14 Novice Mode Time	120 sec.	30 sec. to 240 sec. (30 sec. steps)
2.1.15 Tilt Warnings	3	NO, 1 to 10
2.1.16 European Score Format	NO	NO, YES
2.1.17 Bonus Flips	YES	YES, NO
2.1.18 Game Restart	SLOW	SLOW, INSTANT, NEVER

ADJUSTMENTS

2.1 STANDARD ADJUSTMENTS

2.2 FEATURE ADJUSTMENTS

2.3 HIGH-SCORE ADJUSTMENTS

Use the Up, Next, Previous, and Enter Buttons to view and adjust the desired items. The available adjustment items are listed in Tables 6 to 8 following, and are described in more detail below.

STANDARD ADJUSTMENTS

2.1.1 BALLS PER GAME

Self-explanatory.

2.1.2 MAXIMUM EXTRA BALLS

The maximum number of extra balls (excluding Buy-In extra balls) allowed in a single game.

2.1.3 BALL SAVER TIME

The time the Ball Saver remains active before switching off.





2.1.4 MAX SAVES PER BALL

The maximum number of saves (by the Ball Saver) allowed per player in one ball.

2.1.5 MAXIMUM CREDITS

The maximum number of credits the machine will store. Credits beyond this number are lost.

2.1.6 ALLOW EXTRA BALL BUY-IN

Self-explanatory.

2.1.7 MAXIMUM E.B. BUY-INS

Maximum number of Buy-In Extra Balls allowed per player in one game. Because each Buy-In Extra Ball costs one credit, the actual number of Buy-In Extra Balls available to the player may be less than this number, or zero.

2.1.8 REPLAY PERCENT

The desired percentage of games which award a High-Score Replay. The machine continuously adjusts the High-Score Replay Award score to maintain this percentage.

2.1.9 REPLAY BASE

The initial value of the High-Score Replay Award score.

2.1.10 MATCH FEATURE

The desired percentage of games which award a Match Feature Replay at the end of the game, or **OFF** to disable the Match Feature.

2.1.11 SHOW DATE AND TIME

When selected, includes a display of the current date and time of day during Attract Mode.

2.1.12 TOURNAMENT MODE

When selected, alters game adjustments so that Ball Saver, Extra Balls, Buy-In Extra Balls, and all random features are disabled. The machine remains in Tournament Mode until it is switched off again using this menu item.

2.1.13 ALLOW NOVICE MODE

When selected, allows Novice Mode as an option at the start of each new game. Novice Mode is a single ball game with the Ball Saver active for an extended period (see item 2.1.14 below).



2.1.14 NOVICE MODE TIME

During Novice Mode, the time the Ball Saver remains active before switching off.

2.1.15 TILT WARNINGS

The number of Plumb Bob Tilt Switch closures allowed before the player forfeits play of the current ball, or NO to forfeit the current ball the first time the Plumb Bob Tilt Switch closes.

2.1.16 EUROPEAN SCORE FORMAT

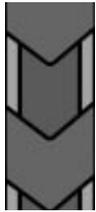
When selected, displays scores in 999.999.999.999 format.

2.1.17 BONUS FLIPS

When selected, supplies power to the flippers during bonus counts.

2.1.18 GAME RESTART

Adjust the way the game restarts when the Start Button is pressed during the second or later ball of a game in progress.



SLOW Start Button must be depressed for two seconds to restart.

INSTANT Restarts the game immediately the Start Button is pressed.

NEVER Disables the Start Button after play of ball one is completed (until Game Over).



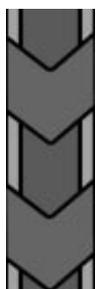
FEATURE ADJUSTMENTS

2.2.1 INITIAL TIMEZONE

Self-explanatory.

2.2.2 MAGNOSAVE™ LIT

Adjusts the difficulty of the MagnoSave™ feature.



START OF BALL Lights MagnoSave™ at the start of each ball.

START OF GAME Lights MagnoSave™ at the start of each game.

NEVER WITH NO MEMORY Switches MagnoSave™ off at the start of each ball.

NEVER WITH MEMORY Switches MagnoSave™ off at the start of each game.



TABLE 7. FEATURE ADJUSTMENTS

Menu Item	Factory	Adjustment Range
2.2.1 Initial Timezone	THE PRESENT	PREHISTORIC AGE, ANCIENT ROME, THE PRESENT, THE FUTURE, RANDOM
2.2.2 MagnoSave™ Lit	START OF GAME	NEVER WITH NO MEMORY, NEVER WITH MEMORY, START OF GAME, START OF BALL
2.2.3 Scan Memory	PARTIAL	YES, PARTIAL, NO
2.2.4 Time Warp Memory	PARTIAL	YES, PARTIAL, NO
2.2.5 Time Warp Time	30 sec.	10 sec. to 60 sec. (5 sec. steps)
2.2.6 Time Warp Boost	15 sec.	0 sec. to 30 sec. (5 sec. steps)
2.2.7 Super Spinner Time	30 sec.	10 sec. to 60 sec. (5 sec. steps)
2.2.8 Lock Style	INDIVIDUAL	SHARED, INDIVIDUAL
2.2.9 Save Locked Balls	NEVER	NEVER, SOMETIMES, ALWAYS
2.2.10 Lock Difficulty	MEDIUM	EASY, MEDIUM, HARD
2.2.11 Drop Difficulty	MEDIUM	EASY, MEDIUM, HARD
2.2.12 Time Drive Difficulty	MEDIUM	EASY, MEDIUM, HARD
2.2.13 Super Scanner Every	5 S-C-A-Ns	2 to 10
2.2.14 Scanner Extra Ball At	20 S-C-A-Ns	5 to 50
2.2.15 Multiplier Extra Ball At	x25	x5 to x100 (5 steps)
2.2.16 Continent Extra Ball At	12 Continents	5 to 20
2.2.17 Advance Super Jets Every	100 Jet Hits	50 to 250 (25 steps)
2.2.18 Lane Cycle Style	BI-DIRECTIONAL	BI-DIRECTIONAL, UNI-DIRECTIONAL, NO LANE CYCLE
2.2.19 Frenzy Ball Saver Time	30 sec.	10 sec. to 60 sec. (5 sec. steps)

2.2.3 SCAN MEMORY

Adjusts whether lit Scanner lamps are held over to the next ball.



YES S-C-A-N lanes and SCAN scoop lamp are both held over.

PARTIAL SCAN scoop lamp is held over; S-C-A-N lanes are not.

NO S-C-A-N lanes and SCAN scoop lamp are not held over.



2.2.4 TIME WARP MEMORY

Adjusts whether lit Time Warp lamps are held over to the next ball.



YES W-A-R-P spots and TIME WARP scoop lamp are both held over.

PARTIAL TIME WARP scoop lamp is held over; W-A-R-P spots are not.

NO W-A-R-P spots and TIME WARP scoop lamp are not held over.

2.2.5 TIME WARP TIME

During Time Warp Frenzy, the time allowed to add an extra ball by completing W-A-R-P.

2.2.6 TIME WARP BOOST

During Time Warp Frenzy, the time added to the timer each time W-A-R-P is completed.

2.2.7 SUPER SPINNER TIME

Self-explanatory.

2.2.8 LOCK STYLE

Adjusts whether locked balls in the Magno Lock are shared by all players.

2.2.9 SAVE LOCKED BALLS

Adjusts whether locked balls are cleared out of the Magno Lock at the end of a game.



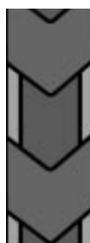
NEVER Balls are never cleared.

SOMETIMES Balls are cleared if a Time Machine Frenzy was started during the game.

ALWAYS Balls are always cleared.

2.2.10 LOCK DIFFICULTY

Adjusts the difficulty of the Lock-O-Meter spinner and the Magno Lock.



EASY Lock-O-Meter always lights all Magno Lock lamps.

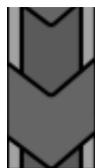
MEDIUM Lock-O-Meter lights all Magno Lock lamps until a Time Machine Frenzy starts, but lights one Magno Lock lamp from then on.

HARD Lock-O-Meter always lights one Magno Lock lamp.



2.2.11 DROP DIFFICULTY

Adjusts the difficulty of the Magnet drop target banks.



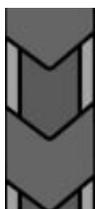
EASY Incomplete banks never time out.

MEDIUM Incomplete banks time out after Quickshot Mania starts.

HARD Incomplete banks always time out.

2.2.12 TIME DRIVE DIFFICULTY

Adjusts the difficulty of Time Drive fuelling and refuelling.



EASY Time Drive always requires five Ramp shots to fuel and refuel.

MEDIUM Time Drive requires five Ramp shots to fuel first time, but ten Ramp shots to refuel from then on.

HARD Time Drive always requires ten Ramp shots to refuel.

2.2.13 SUPER SCANNER EVERY

The number of S-C-A-Ns needed to light Super Scanner.

2.2.14 SCANNER EXTRA BALL AT

The number of S-C-A-Ns needed to award an Extra Ball.

2.2.15 MULTIPLIER EXTRA BALL AT

The Multiplier value needed to award an Extra Ball.

2.2.16 CONTINENT EXTRA BALL AT

The number of Continents needed to award an Extra Ball.

2.2.17 ADVANCE SUPER JETS EVERY

The number of Jet Hits needed for each Super Jets advance.

2.2.18 LANE CYCLE STYLE

Adjusts cycling of lit S-C-A-N and Bonus Multiplier lane lamps when Flipper Buttons are pressed.



BI DIRECTIONAL Cycles in the direction of the Flipper Button pressed.

UNIDIRECTIONAL Always cycles from left to right.

NO LANE CYCLE Disables all lane cycling.

2.2.19 FRENZY BALL SAVER TIME

The time the Ball Saver remains active before switching off during a Frenzy.



TABLE 8. HIGH-SCORE ADJUSTMENTS

Menu Item	Factory	Adjustment Range
2.3.1 Enable High-Scores	YES	YES, NO
2.3.2 Display Today's Scores	NO	NO, YES
2.3.3 Remember Initials	ONE PLAYER ONLY	NEVER, ONE PLAYER ONLY, ALWAYS
2.3.4 Grand Champion Credits	3	0 to 10
2.3.5 High-Score 1 Credits	2	0 to 5
2.3.6 High-Score 2 Credits	1	0 to 3
2.3.7 High-Score 3 Credits	1	0 to 3
2.3.8 High-Score 4 Credits	1	0 to 3
2.3.9 Ramp Champion Credits	1	0 to 3
2.3.10 Master Of Time Credits	2	0 to 5
2.3.11 Backup Grand Champion	1,000 Million	400 to 5,000 Million (100 Million steps)
2.3.12 Backup High-Score 1	500 Million	400 to 1,000 Million (100 Million steps)
2.3.13 Backup High-Score 2	400 Million	300 to 500 Million (100 Million steps)
2.3.14 Backup High-Score 3	300 Million	200 to 400 Million (100 Million steps)
2.3.15 Backup High-Score 4	200 Million	100 to 300 Million (100 Million steps)
2.3.16 Backup Ramp Champion	3 Ramps	3 to 10
2.3.17 Backup Master Of Time	120 sec.	60 sec. to 120 sec. (5 sec. steps)
2.3.18 High-Score Reset Every	DISABLED	DISABLED, 100 to 5,000 (100 steps)

HIGH-SCORE ADJUSTMENTS

High-Score Adjustments are self-explanatory with the exception of item 2.3.3, which is described below.

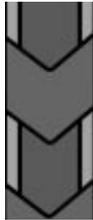
Backup Adjustments adjust the values to be stored in the system's memory when a High-Score Reset is performed, including all automatic High-Score Resets performed as a result of adjusting item 2.3.18, and manual Resets (items 4.3-4.6).

REMEMBER: A CLEAN, WAXED PLAYFIELD MEANS LESS WEAR, LESS MAINTENANCE, MORE PLAYERS, MORE EARNINGS!



2.3.3 REMEMBER INITIALS

Adjusts whether the game remembers and pre-enters player initials entered previously when a high-score or other award is achieved.



NEVER No initials are remembered. High-score initials start as _ _ _.

ONE PLAYER ONLY Initials are remembered and pre-entered for one-player games.

ALWAYS Initials of all four players are remembered and pre-entered.

TESTS

From the Main Menu, cycle to category 3 then press the **Enter** Button to display the Tests Menu. The Tests Menu categories are:



3.1 Switch Levels Test

3.2 Switch Edges Test

3.3 Solenoid Test

3.4 Flasher Test

3.5 Single Lamp Test

3.6 All Lamps Test

3.7 All Lamps and Flashers Test

3.8 Sound and Music Test

3.9 Display Test

3.10 Flipper Test

3.11 Crystal Test

3.12 Arm Test

Use the **Up**, **Next**, **Previous**, and **Enter** Buttons to view and run the desired tests. The tests are described in more detail below.

3.1 SWITCH LEVELS TEST

This test displays all switches which the system detects as currently closed. Use the **Next**, **Previous**, and **Enter** Buttons to select switches (refer to Table 9 opposite). All detected closed switches display an **[X]**. Use this test to establish whether any switches are stuck closed. Working switches may be detected as closed if there is a short elsewhere in their circuits.

3.2 SWITCH EDGES TEST

This test displays the **last** switch closed. Use the **Next**, **Previous**, and **Enter** Buttons to select switches (refer to Table 9 opposite).



TABLE 9. SWITCHES

1 Plunger Lane	25 MA'G'NET	49 Trough 2
2 Lower Left Outlane	26 MAG'N'ET	50 Trough 3
3 Higher Left Outlane	27 MAGN'E'T	51 Trough 4
4 Left Inlane	28 MAGNE'T'	52 Trough 5
5 Right Inlane	29 Top Ramp Entry	53 Trough 6
6 Right Outlane	30 Top Ramp Exit	54 Trough 7
7 Magno Lock	31 Middle Ramp Entry	55 Trough 8
8 Lock 1	32 Middle Ramp Exit	56 Trough 9
9 Lock 2	33 Middle Orbit Exit	57 Trough 10
10 Lock 3	34 Spinner	58 Plumb Bob
11 'W'ARP	35 Middle Scoop	59 Slam Tilt
12 W'A'RP	36 Top Scoop	60 Crystal Home
13 WA'R'P	37 Left Rollover	61 Crystal Locked
14 WAR'P'	38 Right Rollover	62 Arm High
15 Left Orbit Low	39 Left Sling	63 Arm Low
16 Left Orbit High	40 Right Sling	64 LL Flipper EOS
17 Left Ramp Entry	41 Bottom Jet Bumper	65 LR Flipper EOS
18 Left Ramp Exit	42 Left Jet Bumper	66 UL Flipper EOS
19 Right Orbit Low	43 Right Jet Bumper	67 UR Flipper EOS
20 Right Orbit High	44 Time Zone Lock Alpha	68 Start
21 Right Ramp Entry	45 Time Zone Lock Beta	69 Fire
22 Right Ramp Exit	46 Time Zone Lock Gamma	70 Left Flipper
23 'M'AGNET	47 Time Zone Lock Delta	71 Right Flipper
24 M'A'GNET	48 Trough 1	72 MagnoSave™

The last detected closed switch displays an [X]. Use this test to check individual switches for proper operation and detection by the system.

CAUTION: For best test results, operate only one switch at a time: if more than one switch is actuated, only the last closed switch's name and number is displayed. If other switches remain closed when the displayed switch is cleared, the name and number of the **last** switch closed is displayed until it is cleared, and so on until no switches remain closed.



TABLE 10. SOLENOIDS

1 Plunger	14 Lock Release Alpha
2 Trough Eject	15 Lock Release Beta
3 Knocker	16 Lock Release Gamma
4 Left Slingshot	17 Lock Release Delta
5 Right Slingshot	18 Middle Eject
6 Left Jet Bumper	19 Top Eject Strong
7 Right Jet Bumper	20 Top Eject Weak
8 Bottom Jet Bumper	21 Middle Ramp Down
9 Left Drops Up	22 High Diverter
10 Right Drops Up	23 Low Diverter
11 Lock Release 1	24 Middle Scoop Retract
12 Lock Release 2	25 MagnoSave™
13 Lock Release 3	26 Magno Lock

3.3 SOLENOID TEST

This test fires the game solenoids in number sequence (refer to Table 10 above). The Solenoid Test has three modes: **Repeat**, **Stopped**, and **Running**. These modes are explained in detail below. Use the Next, Previous, and Enter Buttons to select modes.

Only **one** solenoid should fire at a time, regardless of the Solenoid Test mode. If no solenoids fire during the Repeat or Running modes, or if a solenoid fires and stays on, or if more than one solenoid fires, the system has detected a problem.



Repeat mode Pulses a single solenoid. The same solenoid pulses until another is selected. Only the solenoid whose name and number is shown in the display should pulse during this mode.

Stopped mode Stops the Test. No solenoids should pulse during this mode.

Running mode Pulses all solenoids in number sequence (refer to Table 10 above). Only the solenoid whose name and number is shown in the display should pulse during this mode.



TABLE 11. FLASHLAMPS

1 Left Return Lane	5 Time Zone Lock Beta
2 Right Return Lane	6 Time Zone Lock Gamma
3 Time Machine	7 Time Zone Lock Delta
4 Time Zone Lock Alpha	8 Crystal

TABLE 12. CONTROLLED LAMPS

1 'S'CAN	30 Top Ramp: Ultra Jackpot	59 Rt Ramp: 1
2 S'C'AN	31 Top Ramp: Super Jackpot	60 Right Orbit: Arrow
3 SC'A'N	32 Top Ramp: Explore Cont.	61 Rt Orbit: Quick Shot x5
4 SCA'N'	33 Top Ramp: Arrow	62 Rt Orbit: Quick Shot x4
5 'W'ARP	34 Middle Ramp: Arrow	63 Rt Orbit: Quick Shot x3
6 W'ARP	35 Middle Ramp: Lock	64 Rt Orbit: Quick Shot x2
7 WA'R'P	36 Middle Ramp: 4	65 Rt Orbit: Quick Shot x1
8 WAR'P'	37 Middle Ramp: 3	66 MagnoSave™
9 Left Orbit: Arrow	38 Middle Ramp: 2	67 Atlantis
10 Left Orbit: Mystery	39 Middle Ramp: 1	68 Europe
11 Left Orbit: Timewarp	40 Centre: Arrow	69 Australasia
12 Left Orbit: Light Video	41 Centre: Extra Ball	70 Antarctica
13 Left Orbit: Hold Jets	42 Centre: Video Mode	71 North America
14 Left Orbit: Hold Bonus	43 Centre: Scanner	72 South America
15 Lt Ramp: Triple Jackpot	44 Centre: Timewarp	73 Asia
16 Lt Ramp: Double Jackpot	45 Centre: Lock	74 Africa
17 Lt Ramp: Jackpot	46 Left Rollover	75 Ball Saver
18 Lt Ramp: Arrow	47 Right Rollover	76 Shoot Again
19 Lt Ramp: 5	48 Left Jet Bumper	77 Lock Three
20 Lt Ramp: 4	49 Right Jet Bumper	78 Lock Two
21 Lt Ramp: 3	50 Bottom Jet Bumper	79 Lock One
22 Lt Ramp: 2	51 Rt Ramp: Triple Jackpot	80 Not Used
23 Lt Ramp: 1	52 Rt Ramp: Double Jackpot	81 Time Zone: Alpha
24 'M'AGNET	53 Rt Ramp: Jackpot	82 Time Zone: Beta
25 M'A'GNET	54 Rt Ramp: Arrow	83 Time Zone: Gamma
26 MA'G'NET	55 Rt Ramp: 5	84 Time Zone: Delta
27 MAG'N'ET	56 Rt Ramp: 4	
28 MAGN'E'T	57 Rt Ramp: 3	
29 MAGNE'T'	58 Rt Ramp: 2	



3.4 FLASHER TEST

This test pulses the game flashlamps in number sequence (refer to Table 11). The Flashlamp Test has three modes: **Repeat**, **Stopped**, and **Running**. These modes are explained in detail below. Use the Next, Previous, and Enter Buttons to select modes.

Only **one** flashlamp should pulse at a time, regardless of the Flasher Test mode. If no flashlamps pulse during the Repeat or Running modes, or if a flashlamp pulses and stays on, or if more than one flashlamp pulses, the system has detected a problem.



Repeat mode Pulses a single flashlamp. The same flashlamp pulses until another is selected. Only the flashlamp whose name and number is shown in the display should pulse during this mode.

Stopped mode Stops the Test. No flashlamps should pulse during this mode.

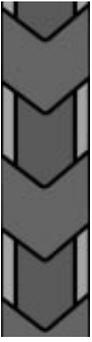
Running mode Pulses all flashlamps in number sequence (refer to Table 11). Only the flashlamp whose name and number is shown in the display should pulse during this mode.

3.5 SINGLE LAMP TEST

This test pulses the controlled game lamps in number sequence (refer to Table 12 below). The Single Lamp Test has three modes: **Repeat**, **Stopped**, and **Running**. These modes are explained in detail below. Use the Next, Previous, and Enter Buttons to select modes.

Only **one** lamp should pulse at a time, regardless of the Single Lamp Test mode. If no lamps pulse during the Repeat or Running modes, or if a lamp pulses and stays on, or if more than one lamp pulses, the system has detected a problem.





Repeat mode Pulses a single lamp. The same lamp pulses until another is selected. Only the lamp whose name and number is shown in the display should pulse during this mode.

Stopped mode Stops the Test. No lamps should pulse during this mode.

Running mode Pulses all lamps in number sequence (refer to Table 12). Only the lamp whose name and number is shown in the display should pulse during this mode.

3.6 ALL LAMPS TEST

This test pulses all controlled game lamps simultaneously. If any controlled lamp does not pulse, or if any other result is obtained, the system has detected a problem.

3.7 ALL LAMPS AND FLASHERS TEST

This test pulses all controlled game lamps and flashlamps simultaneously. If any controlled lamp or flashlamp does not pulse, or if any other result is obtained, the system has detected a problem.

3.8 SOUND AND MUSIC TEST

This test exercises the sound and music systems. If music or speech is not heard, or if any other result is obtained, the system has detected a problem.

NOTE: In case of problems, first check the game's volume control settings.

REMEMBER: REMOVE PINBALLS BEFORE STORING YOUR GAME. RUSTED PINBALLS DAMAGE PLAYFIELDS!



3.9 DISPLAY TEST

This test exercises every dot in the Dot Matrix Display by simultaneously cycling the brightness of all dots from off to maximum and back. Any other result indicates that the system has detected a problem.

3.10 FLIPPER TEST

This test fires the game flipper coils in number sequence (refer to Table 13 below). The Flipper Test has three modes: **Repeat**, **Stopped**, and **Running**. These modes are explained in detail below. Use the Next, Previous, and Enter Buttons to select modes.

Only **one** coil should fire at a time, regardless of the Flipper Test mode. If no coils fire during the Repeat or Running modes, or if a coil fires and stays on, or if more than one coil fires, the system has detected a problem.



Repeat mode Pulses a single coil. The same coil pulses until another is selected. Only the coil whose name and number is shown in the display should pulse during this mode.

Stopped mode Stops the Test. No coils should pulse during this mode.

Running mode Pulses all coils in number sequence (refer to Table 13 below). Only the coil whose name and number is shown in the display should pulse during this mode.

TABLE 13. FLIPPER COILS

1 Lower Left Holding	4 Lower Right Power
2 Lower Left Power	5 Upper Right Holding
3 Lower Right Holding	6 Upper Right Power



3.11 CRYSTAL TEST

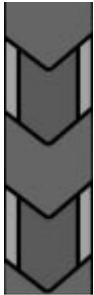
This test exercises the Crystal servo motors. Use the Next, Previous, and Enter Buttons to select the Move Left and Move Right Tests.

3.12 ARM TEST

This test exercises the Magno Lock Arm servo motors. During this test, the arm should cycle repeatedly between its High and Low end positions. Any other result indicates that the system has detected a problem.

UTILITIES

From the Main Menu, cycle to category 4 then press the Enter Button to display the Utilities Menu. The Utilities Menu categories are:



- 4.1 CLEAR AUDITS
- 4.2 CLEAR CREDITS
- 4.3 RESET HIGH-SCORES
- 4.4 RESET GRAND CHAMPION
- 4.5 FACTORY ADJUST
- 4.6 FACTORY RESET
- 4.7 BURN IN

Use the **Next**, **Previous**, and **Enter** Buttons to perform the selected Utility function. The available functions are described in more detail below.

4.1 CLEAR AUDITS

Resets all audit items in all Book Keeping Menus to zero.

4.2 CLEAR CREDITS

Resets the game credits to zero.

4.3 RESET HIGH-SCORES

Resets all high-score table and Champion scores to the values of their corresponding Backup score items in the High-Score Adjustments Menu.



4.4 RESET GRAND CHAMPION

Resets the Grand Champion Score to the value of its corresponding Backup score item in the High-Score Adjustments Menu (2.3.11).

4.5 FACTORY ADJUST

Resets all game adjustment items to their factory default settings.

4.6 FACTORY RESET

Resets the game to its ex-factory state by performing the **Clear Audits, Clear Credits, Reset** and **Factory Adjust** Utility functions in sequence.

4.7 BURN IN

Endlessly exercises all game mechanics, lamps and flashlamps. Burn in is useful when diagnosing intermittent problems.

QUIT

From the Main Menu, cycle to category 5 then press the Enter Button to quit the entire operator Menu System.



JONAS MARTINSSON'S GUIDE TO MASTERING PINBALL.

Mastering the game of pinball isn't easy. These techniques will help you in your quest for pinball wizardry!

GENERAL TECHNIQUES

NUDGING

Nudges are an important method of keeping control of the ball when it is not near the flippers. It can, for example, be used to keep a ball in the bumpers for a longer time, but it can also magnify the bounce from some playfield object if you anticipate that there is going to be a dangerous deflection.



It is important to know the limit of how much you can nudge the game before it tilts. Different games have different tilt sensitivity, so finding the limits for a new game can take time. It is also important to know how the tilt mechanism works. It is a weight attached to a pendulum, which when it rocks too far in any direction, triggers a tilt warning. With that in mind it is best to keep nudging and pushing in one direction only. When, for example, the ball is in the inlane/outlane entry area, you might want to shake the table for a longer time until the ball is clear of danger. This can be done, even quite hard shaking is possible. What you have to remember though is for the nudges to be timed properly, so that each shake doesn't increase the pendulum's swing (I won't try to delve into the physics behind this; please consult a physics book if you are interested.) You won't know the proper timing for the nudges in the beginning, but after some experimenting it will become clear.





TRAP

Purpose: There are several reasons for wanting to trap a ball. It is often easier to take shots after the ball has been trapped because you will have more control over the speed and spin of it. It is useful if you want to slow down the game and relax for a few seconds but is also a fundamental technique during multiball and as a set up for a slingshot pass.

Description: A trapped ball is a ball that is lying motionless on the base of a raised flipper. This is a fundamental pinball technique. It can be accomplished in many different ways. The most common methods are explained in detail in the following sections.

SLINGSHOTS

It is usually best to try to prevent balls from hitting the slingshots. Deflections from them can be fatal. A good example is that when a slow ball exits a loop it often drops down to hit the slingshot. This can be avoided by nudging the game sideways before the ball exits the loop. This nudge (hopefully) sends the ball a little more to the middle of the playfield, avoiding the slingshot, and down to the flipper where it can be trapped.

Try to find a spot on the slingshot from where the ball usually gets bumped straight into the opposite outlane. When the ball hits this spot, push the table sharply forward so that the ball will be pushed over the outlane. When balls hit the slingshots below this spot you would try to push the machine towards you. Since it isn't possible to nudge in this direction, nudge forward a bit ahead of time so that the machine will rock back at the same time as the ball hits the sling. Hopefully the ball will not make it to the opposite slingshot but instead drop down to the flipper opposite the slingshot. Balls hitting above this spot on the slingshot may be helped further up the playfield with a forward nudge.

CATCHES

DEAD CATCH (DROP CATCH)

Purpose: To trap a ball or to reduce ball speed.

Description: A dead catch (also known as a “drop catch”) can look very impressive. To master it you need to get your timing right. The secret is to release the flipper at exactly the same time as the ball hits it, creating a damping effect and thereby eliminating all ball speed. If



you do a perfect dead catch it will look as though the ball glued itself to the flipper. You have to be especially careful when you try to catch a ball with a lot of spin. If you misjudge the spin, the ball could bounce unexpectedly down between the flippers.

LIVE CATCH

Purpose: To trap a ball, reduce ball speed, or to set up a backhand.

Description: This is the opposite manoeuvre to the dead catch and may sound strange if you have never seen it done. This technique is much harder to master than the dead catch because it's more difficult to get the timing right. It is achieved by using the flipper so that it reaches its highest position a fraction of a second before the ball hits it. During that fraction of a second, the flipper has less power than normal, which means that the ball “dies” on the flipper during this time. The closer to the tip of the flipper that the ball hits, the easier this manoeuvre is to perform. The reason that the flipper is less powerful just when it's reached its highest position is because different energy levels are used to power the flipper. One for flip strength and one for holding strength. The live catch uses the small gap between the two levels when the energy level drops.

PASSES

BOUNCE PASS

Purpose: To redirect a ball which would normally head for one flipper to the other, and at the same time reduce ball speed.

Description: The technique for doing a bounce pass is very easy – you don't have to do anything, just keep the flippers deactivated! It is a bit more tricky to know when to do bounce passes, though. The trick is to let the ball bounce off a flipper at rest and onto the opposite one. You have to make sure that the ball has the right speed and spin, and that it hits the flipper at the correct angle. If the ball is too slow, it will not have enough energy to bounce over to the other flipper, but will instead drain between them. Pushing the table forward to increase the bounce can sometimes be enough to help a slow ball. If, on the other hand, the speed is too great, it will bounce up to the slingshots and you will lose control of the ball. It is also of importance to note where on the



flipper the ball bounces. The closer to the tip, the more speed will be lost in the pass. The greatest danger with the bounce pass is usually when the ball bounces close to the base of the flipper. If it touches some part of the inlane here, it will make the bounce disappear and instead deflect parallel to the flipper and quickly drain in the middle.

HOLD PASS

Purpose: To redirect a ball which would normally head for one flipper to the other, and at the same time reduce ball speed.

Description: If a ball is coming down the inlane, a hold pass can be useful. Simply hold up the flipper closest to the ball and make the ball jump over it, using it as a ramp. Slower balls can be helped along by a timely nudge, or by “tapping” the ball with the flipper when it is on the tip of it (“top of the ramp”) to get it over to the other flipper.

SLINGSHOT PASS

Purpose: To redirect a trapped ball from one flipper to the other.

Description: This technique is quite dependent on which game you are playing, but is feasible on most machines, although it can be more or less easy. By quickly releasing and activating a flipper which holds a trapped ball, you can hit the lower part of the slingshot and make the ball bounce or roll over to the opposite flipper.

SAVES

Save techniques are more fundamental than the catching and passing techniques. If you can't save a drain, you don't have much use for knowing how to catch and pass.

SAVE FROM THE OUTLANES

Only experience will tell you if the ball is heading straight for the outlane, or if it is in fact going to be a few millimetres off. If the ball is heading for a straight outlane drain, the only thing which is going to help is if you give the game a sharp and timely push forward so that the ball will miss the outlane. If the ball is bouncing around near the entrance to the inlane and outlane, some good general advice is to nudge the machine if you're not sure which lane the ball is going to head for. The nudges will, if done right, give the ball enough



speed to bounce back to the centre of the playfield again, away from the dangerous area.

SAVE MIDDLE DRAINS - SLAP SAVE

To save a ball going straight down the middle, you need to use both flippers (but not at the same time.) Flip with the flipper closest to the ball in order to tap the ball towards the other flipper from which you can shoot it up the playfield. The second flip should be done only a split second after the first. To reach the ball with the first flipper, a sideways nudge is often required. This can be done by slapping the side of the table, producing both a nudge and a flip, therefore known by the name “slap save.” It is almost impossible to aim a slap save to a specific target.

BANG BACK

It is possible to save balls that have drained down the outlane by bumping them up between the flippers. Needless to say, this requires a heavy shove of the table. Hold up the flipper that is directly above the ball before giving the machine a very strong push forward. If the bang back is successful, the ball will move back into play without tilting the game.

DEATH SAVE

A death save is slightly easier to do than a bang back. It doesn't require quite as much brute force. Death saves can only be performed after the ball has drained in the right outlane, due to the design of the drain area. Hold up the left flipper, let the ball roll under the right flipper, over the trough and just when it hits the metal under the left flipper leading to the drain, give the machine a sharp push forward. If the push is hard enough and timed correctly (and you avoid tilt) the ball will hit the back of the left flipper and bounce onto the right flipper and back into play.



CHILL SAVE

This save is only relevant to games like *TIMESHOCK!* with a centre post between the flippers. It refers to being cool (and wise) enough to let the post save the ball without using the flippers. Naturally, it is easier to drain the ball when it bounces off the centre post if the flippers are raised, so it's better to keep them down.

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KEY

1. Left Outlane
 2. Left Inlane
 3. Left Slingshot
 4. Drain
 5. Right Slingshot
 6. Right Inlane
 7. Right Outlane
 8. Plunger Lane
 9. 'P' Target
 10. Right Orbit
 11. Top Scoop
 12. Right Ramp
 13. Right Drop Targets
 14. Jet Bumpers
 15. Right Bonus Rollover
 16. Left Bonus Rollover
 17. 'R' Target
 18. Middle Scoop
 19. 'A' Target
 20. Middle Orbit/
Middle Ramp
 21. Upper Ramp
 22. Left Drop Targets
 23. Left Ramp
 24. Left Orbit
 25. 'W' Target
- A. The Time Machine,
featuring Magno Lock
- B. MagnoSave™
- C. Ancient Rome
Lock Point
- D. The Present Day
Lock Point
- E. The Time Crystal
- F. The Prehistoric
Age Lock
Point
- G. The Distant
Future Lock
Point

