



SATURN 2

SATURN 2 PINBALL GAME **Feature Operations & Scoring**

A) Shooter Lane Feature:

A ball delivered to the shooter tip will start the shooter lane lights strobing downward at an increasing rate. A ball going over the shooter lane switch (once per ball) will award the lit value:

1st light = 10,000 points 2nd light = 25,000 points *3rd light = 50,000 points & opens Free Ball Gate

* If F.D.S. #14 is OFF (See "G" Below), the 3rd light will also qualify the Bonus Saucer (See "G" Below).

NOTE: F.D.S. - Denotes fixed DIP Switch on MPU Module.

B) Roll-over Button Feature:

Initially, hitting a roll-over button scores 3,000 points and lights its corresponding light. Then hitting a lit roll-over button will score 1,000 points.

The outhole scores 10,000 points for each lit roll-over button light. Lighting all nine roll-over button lights awards the lit value: 90,000 - Extra Ball - Special

Memory Control: F.D.S. #6-ON-Values are recalled each ball OFF-Values are reset each ball

Initial Setting: F.D.S. #8-ON-Value stays on Special, once reached OFF-After one Special, value reverts and stays on 90,000

NOTE: a) Hitting any of the top roll-over buttons will flash all of the General Illumination Lights.

b) Right flipper button is a roll-over button change feature. Player has control over placement of lit roll-over button lights.

C) Top Targets Feature:

Hitting a lit target scores 3,000 points and advances the light to the next target. Hitting an unlit target scores 1,000 points. Hitting three or four lit targets (see "D" - Missile Feature" F.D.S. #21 below) lights the Missile Arrow.

Completing seven lit targets: 1st time-lights 70,000 2nd time-lights 140,000 3rd & each additional time-SPECIAL
 Outhole scores 10,000 points for each lit target. Missile target must be hit when Missile Arrow is lit to advance target lights.

D) Missile Feature (in one ball):

Hitting the Missile target scores 5,000 points and advances the Top Target lights. It scores the lit Missile Bonus Value when the Missile Arrow is flashing:

Missile Arrow Control: F.D.S. #21-ON-3 lit top targets turn on the Missile Arrow OFF-4 lit top targets turn on the Missile.

Hitting the Missile Target when the Missile Arrow is lit scores:

1st time - 25,000 points and lights "Playfield Scores Doubled" 3rd time - 100,000 points and Special
 2nd time - 50,000 points and lights "Playfield Scores Tripled" 4th & each additional time - 100,000 points
 Playfield Scores are doubled when "Playfield Scores Doubled" is lit tripled when "Playfield Scores Doubled" is lit, tripled when "Playfield Scores Tripled" is lit. Missile related scores, values and features reset ball-to-ball.

E) Drop Target Feature:

Each drop target scores 500 points. Knocking down all drop targets scores and advances lit value. Outhole scores lit drop Target Value.

Note: Drop Targets also open the free ball gate if F.D.S. #14 is off-See "G" below.

F.D.S. #14-ON-D.I.'s do not open gate OFF-D.I.'s open gate.

Drop Target Special:	F.D.S. #15	#16	Special on with
	ON	ON	40,000
	OFF	ON	50,000
	ON	OFF	60,000
	OFF	OFF	70,000

Center Bonus Value: F.D.S. #22-ON-Drop Target advances the Center Bonus Value OFF-No advance

Bonus Saucer Control (this switch applicable only if F.D.S. #14-OFF, see "G" below):

F.D.S. #23-ON- Drop Targets qualify Bonus Saucer to collect Center Bonus Value (light next to Center Bonus Value lights).

OFF- Drop Targets do not qualify.

Drop Target Values Control: F.D.S. #24-ON-Values in memory OFF-No memory

F) Fire Targets Feature:

Hitting a flashing target scores 5,000 points and lights that target. Hitting a lit target scores 2,000 points. Lighting all "Fire" targets lights the spinner to score 1,000 points and the "25,000 Fire" arrow. Hitting all "Fire" targets when the "25,000 Fire" arrow is lit scores 25,000 points. Spinner and "25,000 Fire" arrow lights reset when a ball enters the Bonus Saucer. "Fire" target lights reset every ball.

G) Game Style Feature (Center Bonus Values): There are two versions of game play:

MATCH BONUS FEATURE Version A

F.D.S. || 14-ON

1 Center Bonus Values:

- Spinner advances spinner lites.
- Spinner lites must match lit Center Bonus Value
- Collect in Bonus Saucer, if matched.

If Center Bonus Value & Spinner

2 Match, then

- gate opens
- bonus multiplier advanced
- Center Bonus Value collected

3 "Fire" targets lite spinner

4 Drop Targets score lit value (and adv. Center Bonus Value if F.D.S. 22-ON, see "E").

5 Skill Shot opens gate

QUALIFY BONUS FEATURE Version B

F.D.S. || 14-OFF

1. Center Bonus Values:

- Spinner does not advance spinner lites.
- Spinner lites are used as "Bonus Saucer Qualified" lites.
- Collect in Bonus Saucer if qualified.

If Bonus Saucer is

2. Qualified, then

- (see 3 below)
- (see 4 below)
- Center Bonus Value collected.

3. "Fire" targets lite spinner and qualify Bonus Saucer

4. Drop Targets score lit value and open free ball gate, and adv. Center Bonus Value if F.D.S. 22-ON (see "E"). Bonus Saucer is also qualified if F.D.S. 23-ON (see "E") and advance bonus multipliers.

5. Skill Shot opens gate and qualifies Bonus Saucer

In both versions, collecting the Center Bonus Values in the Bonus Saucer will advance to the next value.

H) Spinner Feature (only if F.D.S. || 14-ON, see "G" above):

Spinner scores 100 points if lit. Spinner is lit by hitting "Fire" targets.

F.D.S. 30 ON of Spinner Lites	Center Bonus Value at	F.D.S. 30 OFF of Spinner Lites
4	25	4
4	50	4
3	75	3
3	100	3
2	125	1
2	150	1
2	200	1
2	SPL	1

I) Free Ball Gate Feature

In addition to opening the Free Ball gate with a skill shot (see "A" above), the Free Ball gate can be opened during the play of the ball depending upon the game version selected (see "G" above).

Game Version

F.D.S. 14-ON-Free Ball Gate opens when Spinner & Center Bonus Values are matched.

OFF-Free Ball Gate opens when Drop Targets are knocked down.

Free Ball Gate closes when ball goes through either lane (scores 100 points).

- J) Miscellaneous Scoring:**
- | | |
|----------------------|------------|
| Thumper Bumper | 100 points |
| Sling Shot | 10 points |
| Rebound | 10 points |

K) SPECIAL REPLAY/X-BALL/NOVELTY MODES

Self-test positions 16 and 17 give the operator flexibility to award a replay ball or score (Novelty) when a special is scored. A combination of X-Ball/Novelty can be obtained through the following chart.

Self-test position 16	Set to "03"	Set to "02"	Set to "01"
Playfield X-Balls and Specials	AWARD	AWARD	AWARD
Saturn Special	REPLAY	X-BALL	50,000
Missile Target Special	REPLAY	X-BALL*	50,000
Spy Hunter Bonus Special	REPLAY	X-BALL*	50,000
Combat Area Special	REPLAY	11*	50,000
Drop Target Special	REPLAY	X-BALL*	50,000
Combat Area X-Ball	X-BALL	X-BALL**	25,000
Self-test position 17	Set to "03"	Set to "02"	Set to "01"
	AWARD	AWARD	AWARD
Scoring Thresholds	REPLAY	X-BALL	25,000

* 50,000 if same player shoot again is lit.

** 25,000 if same player shoot again is lit.

SECRET CODE FDS14*

When players "break the code" of this pinball playfield and become proficient at high scores and specials, you have a weapon in your ARSENAL to combat that, a flick of a switch option of changing the style of play from a random bonus feature to a skill bonus feature.

2/ styles of play-at the flick of a switch- from random to skill of from skill to random.

When players need a new challenge, you can throw a SECRET CODE; at just the flick of a switch, the random bonus feature changes to a skill bonus feature, insuring extended player interest.

* The secret "code" is Fixed Data Switch 14, which changes the style of play from a random bonus Feature to a skill bonus feature and vice versa.

V. GAME ADJUSTMENTS

A. Playfield Panel Post Adjustments:

Posts that control left and right outlane opening on panel can be removed to make access to outlanes easier or harder for ball to enter. See Figure II.

Easier entry will decrease playing time and scoring (conservative).

Harder entry will increase playing time and scoring (liberal).

B. Back Box Game Adjustments:

Each game has thirty-two switches located on A4, the MPU module, located in the back box, that allow play to be customized to the location. See Figure III. Credits per coin, maximum credits, credit display, balls per game, match feature, high game feature, special award and melody are selectable by means of the switches. The switches are contained in four sixteen lead packages numbered S1-8, S9-16, S17-24, and S25-32 for easy identification. The "ON" toggle position is marked on the assembly. **Turn off power before making adjustments.**

Credits/Coin Adjustments:

The credits per coin are selectable by means of S17-S20 for coin chute #2 (Center). The switch settings and resultant credits/coin are as follows:

S20	S19	S18	S17	Credits/Coin	S20	S19	S18	S17	Credits/Coin
OFF	OFF	OFF	OFF	Same as Coin Chute #1 Settings	ON	OFF	OFF	OFF	8/1 Coin
OFF	OFF	OFF	ON	1/1 Coin	ON	OFF	OFF	ON	9/1 Coin
OFF	OFF	ON	OFF	2/1 Coin	ON	OFF	ON	OFF	10/1 Coin
OFF	OFF	ON	ON	3/1 Coin	ON	OFF	ON	ON	11/1 Coin
OFF	ON	OFF	OFF	4/1 Coin	ON	ON	OFF	OFF	12/1 Coin
OFF	ON	OFF	ON	5/1 Coin	ON	ON	OFF	ON	13/1 Coin
OFF	ON	ON	OFF	6/1 Coin	ON	ON	ON	OFF	14/1 Coin
OFF	ON	ON	ON	7/1 Coin	ON	ON	ON	ON	15/1 Coin

The credits given are selectable by means of switches 1-5 incl., for coin chute #1 and switches 9-13 incl., for coin chute #3. Thirty-one different credit ratios are available for each coin chute. The switch settings and resultant credits/coin are listed below.

CREDITS/COIN ADJUSTMENTS

COIN CHUTE	SWITCHES					CREDITS	CREDITS	CREDITS	CREDITS	CREDITS	TOTAL
#1 (HINGE SIDE)	5	4	3	2	1						CREDITS/COINS
OR #3	13	12	11	10	9						
(RIGHT SIDE)	OFF	OFF	OFF	OFF	OFF	1/1 Coin					
	OFF	OFF	OFF	OFF	ON	2/1 Coin					
	OFF	OFF	OFF	ON	OFF	3/1 Coin					
	OFF	OFF	OFF	ON	ON	4/1 Coin					
	OFF	OFF	ON	OFF	OFF	5/1 Coin					
	OFF	OFF	ON	OFF	ON	6/1 Coin					
	OFF	OFF	ON	ON	OFF	7/1 Coin					
	OFF	OFF	ON	ON	ON	8/1 Coin					
	OFF	ON	OFF	OFF	OFF	9/1 Coin					
	OFF	ON	OFF	OFF	ON	12/1 Coin					
	OFF	ON	OFF	ON	OFF	14/1 Coin					
	OFF	ON	OFF	ON	ON	1/2 Coins*					
	OFF	ON	ON	OFF	OFF	2/2 Coins*					
	OFF	ON	ON	OFF	ON	3/2 Coins*					
	OFF	ON	ON	ON	OFF	4/2 Coins*					
	OFF	ON	ON	ON	ON	5/2 Coins*					
	ON	OFF	OFF	OFF	OFF	6/2 Coins*					
	ON	OFF	OFF	OFF	ON	7/2 Coins*					
	ON	OFF	OFF	ON	OFF	8/2 Coins*					
	ON	OFF	OFF	ON	ON	9/2 Coins*					
	ON	OFF	ON	OFF	OFF	12/2 Coins*					
	ON	OFF	ON	OFF	ON	14/2 Coins*					
	ON	OFF	ON	ON	OFF	1/1st Coin	2/2nd Coin				3/2
	ON	OFF	ON	ON	ON	0/1st Coin*	1/2nd Coin	1/3rd Coin	1/4th Coin		3/4
	ON	ON	OFF	OFF	OFF	0/1st Coin*	1/2nd Coin	0/3rd Coin**	2/4th Coin		3/4
	ON	ON	OFF	OFF	ON	1/1st Coin	1/2nd Coin	1/3rd Coin	2/4th Coin		5/4
	ON	ON	OFF	ON	OFF	1/1st Coin	2/2nd Coin	1/3rd Coin	3/4th Coin		7/4
	ON	ON	OFF	ON	ON	1/1st Coin	2/2nd Coin	2/3rd Coin	2/4th Coin		7/4
	ON	ON	ON	OFF	OFF	0/1st Coin***	0/2nd Coin***	1/3rd Coin			1/3
	ON	ON	ON	OFF	ON	0/1st Coin**	0/2nd Coin**	0/3rd Coin**	1/4th Coin		1/4
	ON	ON	ON	ON	OFF	0/1st Coin****	0/2nd Coin****	0/3rd Coin****	0/4th Coin****	1/5th Coin	1/5
	ON	ON	ON	ON	ON	0/1st Coin***	0/2nd Coin***	1/3rd Coin	0/4th Coin****	1/5th Coin	2/5

*No Credits until 2nd coin is dropped.

**No Credits until 4th coin is dropped.

***No Credits until 3rd coin is dropped.

****No Credits until 5th coin is dropped.

MAXIMUM CREDITS:

The maximum credits accepted by the machine limits the number of games that can be accumulated by coining, by winning replays or both. The maximum number of credits is selectable by means of switches 25 and 26. Four credit limits are available. Switch settings are listed below.

MAXIMUM CREDITS	SWITCHES	
	26	25
10	OFF	OFF
15	OFF	ON
25	ON	OFF
40	ON	ON

BALLS PER GAME:	# BALLS /GAME	SWITCHES		32	31
	5			OFF	ON
	4			ON	OFF
	3			OFF	OFF
	2			ON	ON

MATCH FEATURE:

When the Match Feature is ON, a random number appears on the Match/Ball in Play window and the word Match is illuminated. If the number matches the tens digit in a player's score, a free game is awarded. The Match Feature creates an incentive to play.

	MATCH	SWITCH 28
	ON OFF	ON OFF
CREDIT DISPLAY:	CREDITS DISPLAYED	SWITCH 27
	YES NO	ON OFF

HIGH SCORE FEATURE:

The game is designed to award an Extra Ball or Free Game at each of the two or three score levels. See Front Door Game Adjustments.

AWARD	SELF TEST POSITION 16	SELF TEST POSITION 17
	SET TO "03"	SET TO "03"
REPLAY	SET TO "02"	SET TO "02"
EXTRA BALL	SET TO "01"	SET TO "01"
NOVELTY	SET TO "00"	SET TO "00"
NO AWARD		

For combinations of replay/X-ball/Novelty Modes see page 4A "K. Special Replay/X-ball/Novelty Modes"

HIGH SCORE TO DATE OR OVER 10,000,000 SCORE FEATURE:

The game is designed to award free games as an option if high score to date is beat or player exceeds 10,000,000 points. Each time this happens, the winning score becomes the new high score to beat. This score is displayed on all 4 player score displays at the end of each game as an incentive to play. Recommended setting is underlined.

HIGH SCORE TO DATE FEATURE	SELF TEST POSITION 19
No Award	SET TO "00"
One Credit	SET TO "01"
Two Credits	SET TO "02"
<u>Three Credits</u>	SET TO "03"

State and local laws may regulate the use of the above features, and they have been designed to allow for appropriate adjustment in order to conform to such requirements.

SOUND OPTION

The game is designed to make several tones and noises to announce power-up, game-up, etc. The tones are intended to attract attention to the game and increase game usage. The tones are controlled by pressing Self-Test button until the // 18 shows on the match/ball in display. Now pulse relay button to desired sound setting.

Setting "00"

Most switches associated chimes without feature background.

Setting "01"

Playfield switches associated chimes with background.

Setting "02"

Most scoring will have a noise effect without background.

Setting "03"

Most scoring all will have a noise effect with background.

GAME FEATURE OPTIONS:

Combact area Values Adjustment:

Liberal SW 6 ON

Conservative SW 6 OFF

Combact area Values are Recalled.

Combact area Values are Reset.

Game Start combact area Values adjustment:

Liberal SW 7 ON

Conservative SW 7 OFF

Completing combact area first time scores Extra Ball

Completing combact area first time lights 90,000 light.

Combact area Values Special Adjustment:

Liberal SW 8 ON

Conservative SW 8 OFF

More than 1 special can be collected.

Only 1 special can be collected.

Game Style Adjustment:

Random Bonus SW 14 ON

Qualified Bonus SW 14 OFF

Spinner lights must match Saturn 2 bonus to collect

Saturn 2 bonus must be qualified to collect

Drop Target Special Adjustment:

Liberal SW 15 ON SW 16 ON

Medium SW 15 OFF SW 16 ON

Semi-Medium SW 15 ON SW 16 OFF

Conservative SW 15 OFF SW 16 OFF

Special comes on with 40,000

Special comes on with 50,000

Special comes on with 60,000

Special comes on with 70,000

Double/Triple Playfield Values Adjustment:

Liberal SW 21 ON

Conservative SW 22 OFF

"Missile" arrow comes on every 4th target of SATURN 2

"Missile" arrow comes on every 5th target of SATURN 2

SATURN 2 Bonus Advance Adjustment:

Liberal SW 22 ON

Conservative SW 22 OFF

Drop Targets Advance SATURN 2 Bonus Value

No Advance

Bonus Saucer Qualified Adjustment:

(NOTE: Only if qualified bonus feature is selected-SW 14 OFF)

Liberal SW 23

Conservative SW 23

Drop targets qualify bonus saucer to collect SATURN 2 bonus

Drop targets do not qualify bonus saucer.

RECCOMENDED

Instructions, Score CARds and High Score Feature Settings to be used on

*RANDOM

VERSION "A"-SW 14-ON

REPLAYS

Instruction Card

Score Card

1 Replay at 1,700,000

1 Replay at 3,500,000

REPLAYS

Instruction Card

Score Card

1 Replay at 2,800,000

1 Replay at 4,900,000

EXTRA BALL

Instruction Card

Score Card

1 Extra Ball at 3,500,000

1 Extra Ball at 5,000,000

** SKILL

Version "B"-SW 14-OFF

REPLAYS

Instruction Card

Score Card

1 Replay at 1,700,000

1 Replay at 3,500,000

REPLAYS

Instruction Card

Score Card

1 Replay at 2,800,000

1 Replay at 4,900,000

EXTRA BALL

Instruction Card

Score Card

HIGH GAME TO DATE (reset periodically)

3-BALL

* Version A-RANDOM 5,000,000

** Version B-SKILL 5,500,000

5-BALL

6,000,000

6,500,000

RECOMMENDED SWITCH SETTINGS

*RANDOM-VERSION "A"

**SKILL-VERSION "B"

		3 Ball	5 Ball	3 Ball	5 Ball
Recall	# 6	ON	ON	ON	ON
Combact area					
Combact area	# 7	ON	OFF	ON	OFF
Start Values					
Combact area	# 8	ON	ON	OFF	OFF
End Values					
Game	# 14	ON	ON	OFF	OFF
Version					
D.T.	# 15	OFF	ON	OFF	ON
Special	# 16	ON	OFF	ON	OFF
Missile	# 21	ON	ON	ON	ON
Hits					
D.T.	# 22	ON	OFF	OFF	OFF
Adv. Values					
D.T.	# 23	OFF	OFF	ON	OFF
Qualify Saucer					
D.T.	# 24	ON	ON	ON	ON
Recall					
# Spin	# 30	ON	ON	OFF	OFF
Lights					

*RANDOM VERSION "A" - SW 14-ON

SKILL VERSION "B" SW 14-OFF

	REPLAYS	3-BALL	5-BALL
Score Cards		Self test position 16,17	Self-test Position 16,17
Major Mode		Set to "03"	Set to "03"
Match		SW 28 ON	SW 28 ON
High Score to Date		Self-test Position 19	Self-test Position 19
		Set to "03"	Set to "03"
X-BALL			Self-test Position 16,17
Score Cards			Set to "02"
Major Mode		5 BALL ONLY	SW 28 OFF
Match			Self-test Position 19
Hig Score to Date			Set to "00"
NOVELTY			
Score Cards		Self-test Position 16,17	Selt-test Position 16,17
Major Mode		Set to "01"	Set to "01"
Match		SW 28 OFF	SW 28 OFF
High Score to Date		Self-test Position 19	Self-test Position 19
		Set to "00"	Set to "00"

Drop Target Values Adjustment:

Liberal SW 24 ON
Conservative SW 24 OFF

Drop target values in memory
Drop target values reset.

Spinner Lights adjustment

(NOTE: Only Random Bonus Feature is selected-SW 14 ON)

Liberal SW 24 ON 4,3,2 Spinner Lights
Conservative SW 30 OFF 4,3,1 Spinner Lights
(SEE BELOW:)

SATURN 2 Bonus Value	# of Spinner Lights	
	SW 30-ON	SW 30-OFF
25	4	4
50	4	4
75	3	3
100	3	3
125	2	1
150	2	1
200	2	1
SPL	2	1

○ INDICATES SWITCH ASSEMBLY
IDENTIFICATION NUMBERS

NOTE: CABINET: 15, 16, 12

DOOR: 06, 09
10, 11, 16

□ INDICATES SOLENOID
IDENTIFICATION NUMBERS:

NOTE: DOOR: 8

BACKBOX: 9

CABINET: 6

VECTOR SHOWING FOR EJECT SAUCER
BALL SHOULD EXIT TO RIGHT FLIPPER
AS SHOWN



