

#920 TWIN WIN

INSTALLATION AND GENERAL GAME OPERATION INSTRUCTIONS

INSTALLATION

On all games there are certain items that should be checked after shipment. These are visual inspections which may avoid time consuming service work later. Minor troubles caused by abusive handling in shipment are unavoidable. Cable plugs and sockets may be loosened, switches (especially tilt switches) may go out of adjustment. Plumb bob tilt switch should always be adjusted after game is set on location and leg levelers are adjusted.

Visual inspections before plugging in line cord: -

1. Check that all cable plugs are firmly seated in proper sockets.
2. Check that cables are clear of all moving parts and relays.
3. Check for any wires that may have become disconnected.
4. Check switches for loose solder or other foreign material that may have come loose in shipment and could cause shorting of contacts.
5. Check wires on relay coils for proper soldering, especially the bare (common) wire connecting a row of relay coils. Cold solder connections may not show up in factory inspection, but vibration in shipment may break contact.
6. Check that fuses are firmly seated and making good contact.
7. Check (manually) the stepping and resetting of all step-up units. The wiper action should not be sluggish.
8. Check transformer for any foreign material shorting across wiring lugs.
9. Check wiring of transformer to correspond to location voltage. (Transformer wiring card in front cabinet)

Before line cord is plugged in: -

Check all plug and sockets and dress cables:

- (A) Plugs in correct sockets.
- (B) Plugs securely seated in sockets.
- (C) Dress cables away from relays.

Check adjustment of the three (normally open) tilt switches:

- (A) Panel tilt on bottom of playfield panel.
- (B) Plumb bob tilt on left side of cabinet near front door.
- (C) Ball tilt above plumb-bob tilt.

Insert the ball (15/16" dia.) into ball tilt assembly and adjust bracket so ball will roll freely if front of cabinet

is raised.

Check adjustment of the kick-off and slam switches:

Check adjustment of the (normally open) kick-off switch at rear of cabinet mounting board, near cable plugs. Check adjustment of the (normally open) anti-slam switch, on the front door. These switches should close when front door is slammed or the bottom of the cabinet is kicked. Either switch when closed will energize the delay relay.

#### GENERAL GAME OPERATION

Place ball onto playfield by out hole.

Plug in the line cord.

Coin Game:

If the coin should be rejected, move on-off master switch at the bottom right front corner of cabinet to "on" position, then coin game. The coin lock-out device rejects all coins when power (master switch) is off.

- 1A. If the coin is inserted in the 1st (nickel) coin chute and the game is set for 1 play-5¢, it will energize the "coin relay". If game is set for 1 play-10¢, the first coin inserted will advance the "2 coin unit", then the second coin inserted will energize the "coin relay" thru the 2 coin unit switch. (See 1st coin chute adjustment plug positions on game adjustments).
- 1B. If the coin is inserted in the 2nd (dime) coin chute and the game is set for 1 play-10¢, it will energize the "coin relay". If game is set for 2 plays-10¢, it will energize the "2nd coin chute relay" and the 2nd coin chute relay will advance the "credit unit" (2 steps) thru the coin credit circuit. (See 2nd coin chute adjustment plug positions on game adjustments).
- 1C. If the coin is inserted in the 3rd (quarter) coin chute and the game is set for 2-3 4-5 or 6 plays-25¢, it will energize the "3rd coin chute relay" and the 3rd coin chute relay will advance the "credit unit" (2-3-4-5-6 steps) thru the coin credit circuit. (See 3rd coin chute adjustment plug positions on game adjustments).
- 1D. When the "credit unit" has been advanced from the 2nd or 3rd coin chute, (as described in section 1B and 1C) the front door "credit button" switch will energize the "credit relay" and then the credit relay will energize "coin relay".

- 2A. The coin relay, when energized by any of the ways described, (in sections 1A thru 1D) will stay energized thru its own hold-in switch and (normally closed) #8 score motor switch.
- 2B. The coin relay will energize the lock relay which stays energized thru its own hold-in switch and a normally closed delay relay switch.
- 2C. The coin relay will energize the reset relay thru a game over relay switch; operate the score motor and thru the (normally open) #2 score motor switch, energize the score reset relay. The reset relay will stay energized thru a normally closed #8 score motor switch, and until all score counter units are reset to zero position. The coin relay will latch the game over relay thru the (normally open) #4 score motor switch.
- 2D. The coin relay, thru the normally open #3 score motor switch will advance the total play meter, and thru the reset relay will reset ball count unit, and latch the 2nd coin relay. The coin relay will also reset the credit unit (1 step) when started by the credit relay. The coin relay will trip the 2nd coin relay when the reset relay is not energized.
- 3A. To condition the game for 2nd player, inserting coin (s) or use of the credit button (before 1st ball is played) will energize the coin relay again. This time, the coin relay will not energize the reset relay. It will operate the score motor and advance the total play meter, subtract a credit from the credit unit, (if credit button was used) and trip the 2nd coin relay thru a normally open #3 score motor switch. The game is now set for 2 players.
- 3B. To put the 1st ball in play, press the ball shooter button, located on the cabinet front next to coin chute. This will energize the ball shooter relay, which will remain energized thru its own switch and a normally closed #10 score motor cam switch. The ball shooter relay will operate the score motor and thru #7 score motor cam switch will energize the outhole kicker solenoid, kicking the ball into play.

#### SEQUENCE OF OPERATION

- 1A. When the ball is played, the ball index relay is energized by the 10 point, 100 point or 1,000 point relay, and it will stay energized thru its own hold-in switch, a normally closed outhole relay switch and a #6 score motor cam switch.

- 1B. When the ball returns to the outhole, it will energize the outhole relay if either the ball index relay or the tilt relay are energized. The outhole relay when energized will stay energized thru its own hold-in switch, bonus zero relay switches and a normally closed #10 score motor cam switch. If neither the ball index relay or the tilt relay are energized, continue with operation 1D.
- 1C. The outhole relay when energized will operate the score motor and thru cam #2 and cam #11 switches will reset the two bonus units and advance the ball count unit, two steps thru #3 and #4 score motor cam switches during a one-player game or one step thru #4 score motor cam switch during a two-player game. There is no advance if an extra ball has been earned.
- 1D. To put the ball into play, press the ball shooter button that will energize the ball shooter relay. (For detail of operation, see 3B under "General Game Operation".)
- 1E. Sequence 1A, 1B, 1C and 1D are repeated for each ball played until the last ball is played, then the game over relay trip coil will be energized thru the ball count unit disc. When the game over relay is tripped, machine is inoperative.

NOTE: Regular ball to ball operation (sequence 1C) is interrupted whenever a player scores an extra ball.

## FEATURE OPERATION AND SCORING

### CENTER BALL SHOOTER FEATURE:

Unlike most games, this game does not have a ball shooter plunger. To put the ball in play, press the ball shooter button which is located on the front of the cabinet.

### BONUS SCORE FEATURE:

Only the yellow bonus advances when the 1st player is playing and only the green bonus advances when the 2nd player is playing. The minimum score in either case is 1,000 points.

### BONUS ADVANCE

The white and red targets advance the bonus score one position or 5 position when lit. These targets also advance the car of the player one position or 5 positions when lit. They also score 100 or 300 points when lit.

A ball in either top hole, scores the bonus lite lit for that hole. The ball is kicked out of the hole after the bonus scoring is completed.

A ball rolling over either left or right out roll-over will score the bonus lite lit, yellow bonus if the 1st player is playing and green bonus if the 2nd player is playing.

A bonus unit will reset one step at a time while scoring the bonus score. Both bonus units reset at the start of a game and whenever the ball goes into the outhole. The corresponding car will advance one position for each 1,000 points of bonus score collected.

### CARS FEATURE:

Red and white targets advance the car of the player up, 1 position or 5 positions when lit.

Yellow and green targets advance their respective car 1 position or 3 positions when lit.

Yellow and green mushroom-bumpers and yellow and green thumper-bumpers advance their respective car 1 position.

When yellow bonus is collected, the yellow car advances one position for each 1,000 bonus score, likewise the green bonus collected advances the green car.

Each time the car completes a lap, the lap unit advances one position, the yellow car advances the 1st player lap units and the green car advances the 2nd player lap units.

The cars units reset only at the start of a game.

### LAPS FEATURE:

Laps units advance is described above under "Cars feature". Whenever the 1-9 lap unit of the player up shows a score of 4, 6 or 8 laps, the extra ball lite lites making the extra ball mushroom-bumpers eligible to award an extra ball.

In a 3-BALL GAME WITH ONE PLAYER PLAYING, if the player scores 9 laps, the "special" lite will lite making the extra ball mushroom-bumper eligible to award a "special" which is adjustable for a credit or an extra ball. Only one special is possible during the play of a ball; otherwise once the special lite is lit, it will remain lit for the duration of the game.

In a 3-BALL GAME WITH TWO PLAYERS PLAYING, if a player scores 12 laps, the "special" lite will lite whenever he is playing, otherwise the game will operate as described above.

In a 5-BALL GAME WITH ONE PLAYER PLAYING, if the player scores 13 laps, the "special" lite will lite. The game operates as described under 3-balls game, one player.

In a 5-BALL GAME WITH TWO PLAYERS PLAYING, if the player scores 19 laps, the "special" lite will lite whenever he is playing, otherwise the game will operate as described under "3-ball, one player".

#### FOUR FLIPPER FEATURE:

There are 4 flippers in this game.

The top flippers to make it easier to keep the ball active in the top area of the playfield, allowing for higher bonus scores.

The left two flippers are operated by the left flipper button and the right two flippers by the right flipper button.

#### SPINNING MOTOR FEATURE:

The spinning motor spins the rubber disc in the upper area of the playfield to deflect the ball. This is an added feature to create more play appeal and to deflect the ball so that the ball will not go straight up and come straight down into the outhole.

The spinning motor operates continually during the play of the game except when the game is tilted.

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GAME ADJUSTMENTS

## PLAYFIELD PANEL POST ADJUSTMENTS:

The game has (2) posts that can be moved to make game playing time and scoring more conservative. Spotting holds are provided for the movement of the posts, and "liberal" and "conservative" positions are shown on panel sketch FO-397.

## HI-SCORE ADJUSTMENT PLUG:

The plug is located on the back box lite insert. This plug provides a full range of coverage at which hi-score credits or extra balls can be scored. (See score adjustment card in back box for plug positions).

## BALLS PER GAME ADJUSTMENT PLUG:

The plug is located on the back box lite insert. This plug provides positions to operate game on "5 ball" or "3 ball" play.

## MATCH FEATURE ADJUSTMENT PLUG:

The plug is located on the back box lite insert. This plug provides positions to turn the match feature on or off.

## 1ST COIN CHUTE ADJUSTMENT PLUG:

The plug is located on the 2 coin unit, on the front part of the cabinet mounting board. This plug provides positions to give 1 play for 1 coin or 1 play for 2 coins, thru the 1st (nickel) coin chutes.

## 2ND COIN CHUTE ADJUSTMENT PLUG:

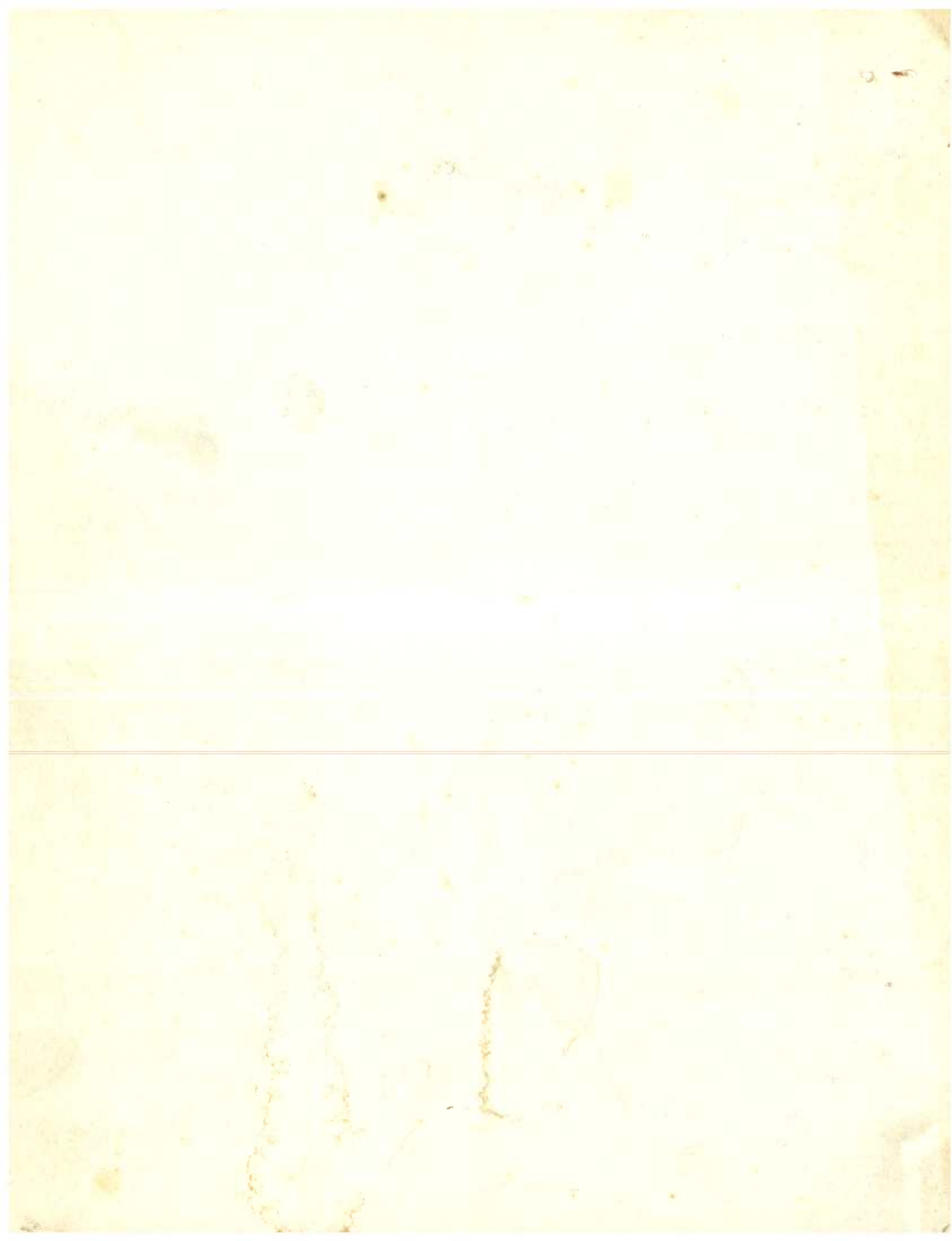
The plug is located on the front of the cabinet mounting board. This plug provides positions to give 1 play for 1 coin or 2 plays for 1 coin thru the 2nd (dime) coin chute. NOTE: When this plug is set for 2 plays - 1 coin, brown-white (male plug) wire on 3rd coin chute adjustment must be in position 2.

## 3RD COIN CHUTE ADJUSTMENT PLUG:

The plug is located on the front of the cabinet mounting board. This plug provides positions to give 2 to 6 plays for 1 coin, thru the 3rd (quarter) coin chute, orange-white (male plug) wire. See 2nd coin chute not above for use of brown-white (male plug) wire.

## HI-SCORE FEATURE ADJUSTMENT PLUG:

The plug is located on the front of the cabinet mounting board. This plug provides positions to award credits or extra balls for present hi-scores.





## #920 "TWIN WIN"

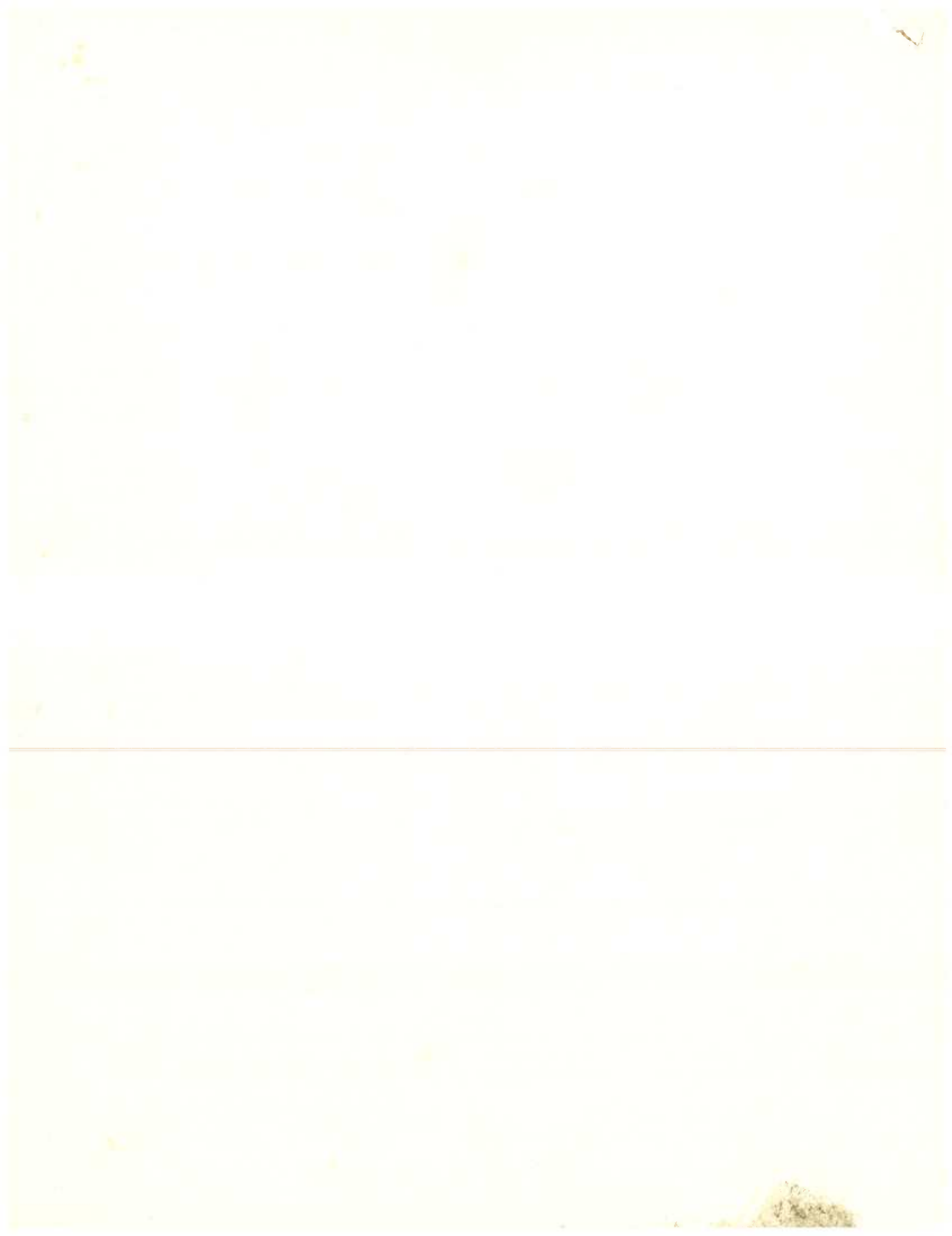
## Parts List

MISCELLANEOUS	PART NO.	RELAY COILS	PART NO.
Transformer	E-122-95	3 car advance	G-31-2000
Score Motor (Dom)	E-119-354	Yellow car advance	G-31-2000
Score Motor (Export)	E-119-411	Green car advance	G-31-2000
Spinning motor	E-199-425	Alternator	G-32-2500
Meter (Total play)	E-32-1700	Yellow thumper-bumper	G 31-2000
		Green thumper-bumper	G-31-2000
RELAY COILS		1,000 point	G 31-2000
Delay	G-31-1600	100 point	G-31-2000
Coin	G-31-2000	10 point	G-31-2000
2nd coin chute	G-31-2000	Left extra ball	
3rd coin chute	G-31-2000	mushroom-bumper	G-31-2000
Credit	G-31-2000	Right extra ball	
Lock	G-33-2800	mushroom-bumper	G-31-2000
2nd coin (Latch)	G-31-2000	ASSEMBLY COILS	
2nd coin (trip)	G 31-2000	Coin lock out	FC-33-2600
Yellow laps adv.	G-31-2000	outhole kicker	A-25-1000
Green laps advance	G-31-2000	Yellow hole eject	A-27-1100
Yellow hole	G-31-2000	Green hole eject	A 27-1100
Green hole	G-31-2000	Knocker	C-27-1000
Reset	G-31-2000	Chimes (3)	CC-31-2000
#1 score reset	G-30-1500	Yellow thumper-bumper	A-25-1000
#2 score reset	G-30-1500	Green thumper bumper	A-25-1000
Game over latch	G-31-2000	Sling-shots (2)	A-26-1200
Game over trip	G-31-2000	Upper flippers (2)	AF26-650/28-800
2nd player (A,B,C) 3	G-32-2500	Lower flippers (2)	AF25-600/28-800
Yellow bonus zero	G-32-2500	UNIT COILS	
Green bonus zero	G-32-2500	2-coin (step-up)	CD 29-1600
Outhole	G-31-2000	Credit (step-up)	B-26-1100
Ball Shooter	G-31-2000	Credit (reset)	C-28-1100
Ball index	G 32-2500	Ball count (step-up)	B-26-1100
Tilt	G-32-2500	Ball count (reset)	C-28-1100
Extra ball	G-32-2500	Score drum(step-up)8	CD 29-1600
Special	G-31-2000	Yellow car (step-up)	CD-29-1600
Special control	G-32-2500	Green car (step up)	CD-29-1600
Yellow bonus	G-31-2000	Laps unit(step-up)4	CD 29-1600
Green bonus	G-31-2000	Yellow bonus(step-up)	B-26-1100
Extra ball lite	G-32-2500	Yellow bonus (reset)	C-28-1100
Yellow special lite	G-32-2500	Green bonus (step-up)	B-26-1100
Green special lite	G-32-2500	Green Bonus (Reset)	C-28-1100
5 car advance	G-31-2000		
Car advance	G-31-2000		

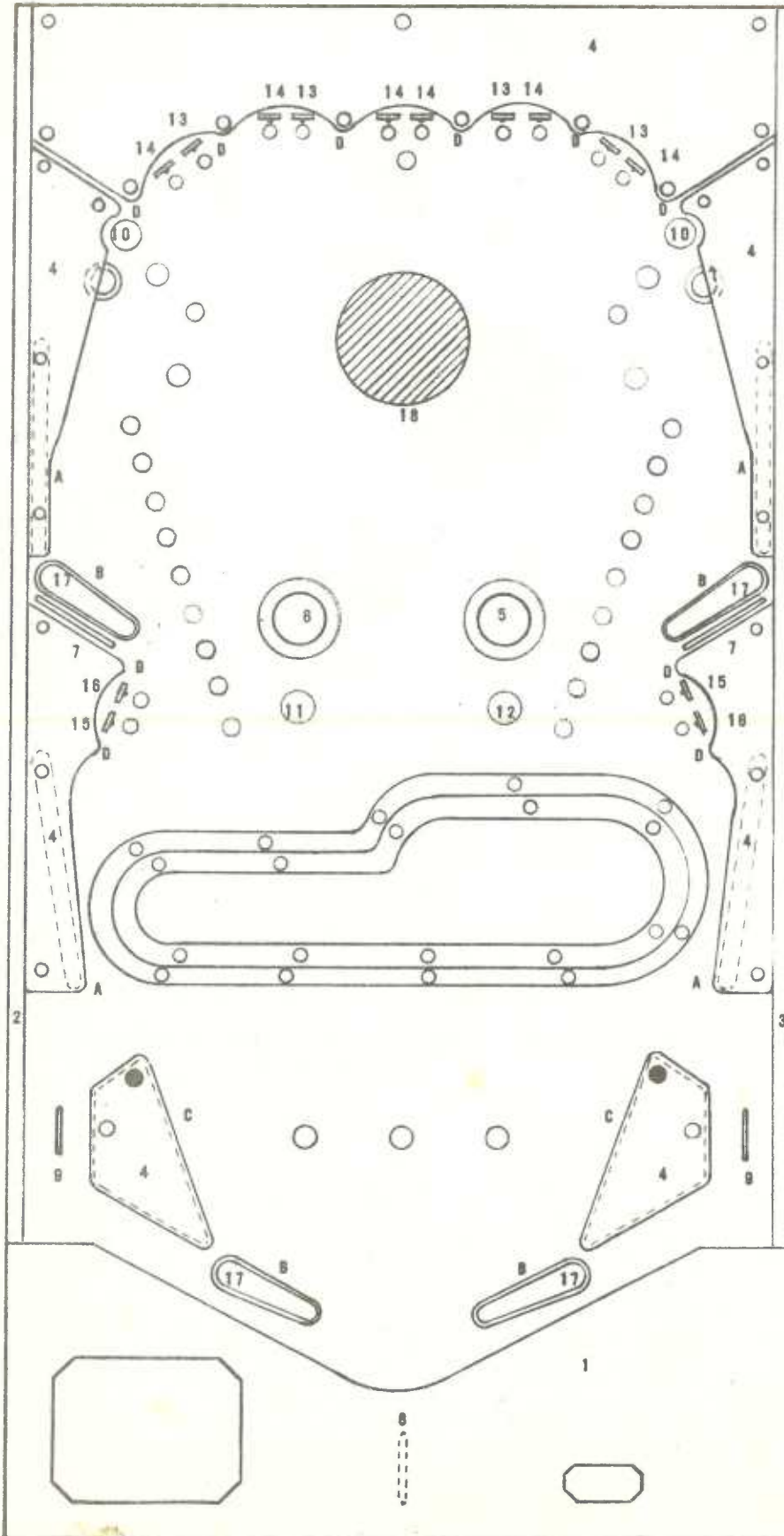
UNIT COILS	PART NO.
00-90 (Step-up)	B-27-1300

UNIT CONTACT DISC	
Ball count	W 1043-13
Yellow bonus	W 1072 32
Green bonus	W-1072 32
00-90	W 1034-19

UNITS WIPER ASSEMBLY	
Ball count	AS-1046-618
Yellow bonus	AS 1046-704
Green bonus	AS 1046-704
00-90	AS-1046-627



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- A R-521-4 2-1/2" (4)
- B R-408-3 FLIPPER (4)
- C R-521-8 3-1/2" (2)
- D R-243 5/16 (12)

PANEL TOP PARTS

- 1 BOTTOM ARCH P-5871-48
- 2 SIDE RAIL (L) CA-1208-11
- 3 SIDE RAIL (R) CA-1208-11
- 4 LITE SHIELDS A-2890-86
- 5 BUMPER CAP (GREEN) A-3713-8
- 6 BUMPER CAP (YELLOW) A-3713-12
- 7 BALL GUIDE WIRE M-121-28
- 8 ROLLOVER WIRE M-1336-18
- 9 ROLLOVER WIRE M-1336-3
- 10 MUSHROOM ASSEM. (RED) AS-2291-1
- 11 MUSHROOM ASSEM. (GREEN) AS-2281-4
- 12 MUSHROOM ASSEM. (YELLOW) AS-2291
- 13 TARGET ASSEM. (RED) AS-982-899
- 14. TARGET ASSEM. (WHITE) AS-982-792
- 15 TARGET ASSEM. (YELLOW) AS-982-812
- 16 TARGET ASSEM. (GREEN) AS-982-1003
- 17 FLIPPER (WHITE) (4) AS-2214-19
- 18 RUBBER DISC ASSEM. AS-2888-1

● INDICATES MOVABLE POST FOR SCORING ADJUSTMENT

