

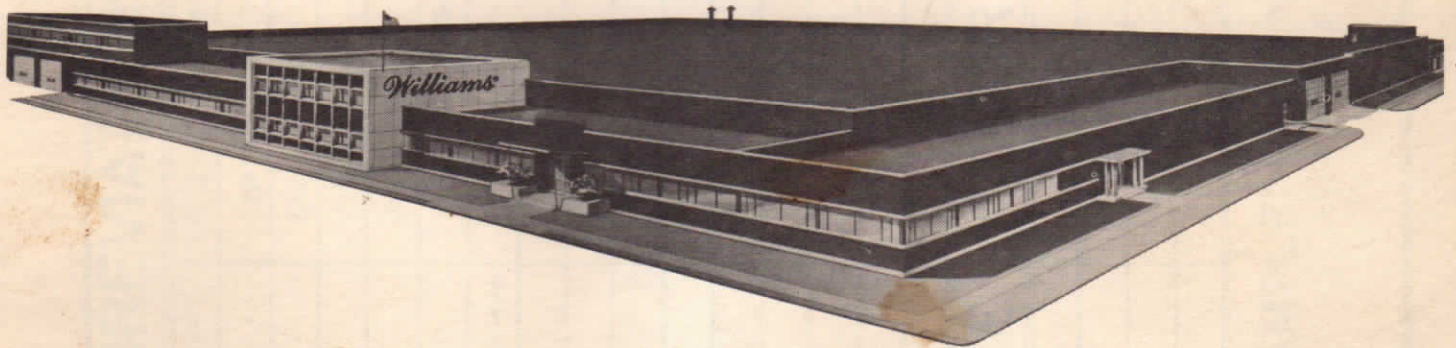
# Instruction Manual

See Page 16  
for  
Large Bell

for

## WILLIAMS




# “BEAT TIME”



**Williams**<sup>®</sup> ELECTRONICS, INC.  
SUBSIDIARY OF THE SEEBURG CORPORATION

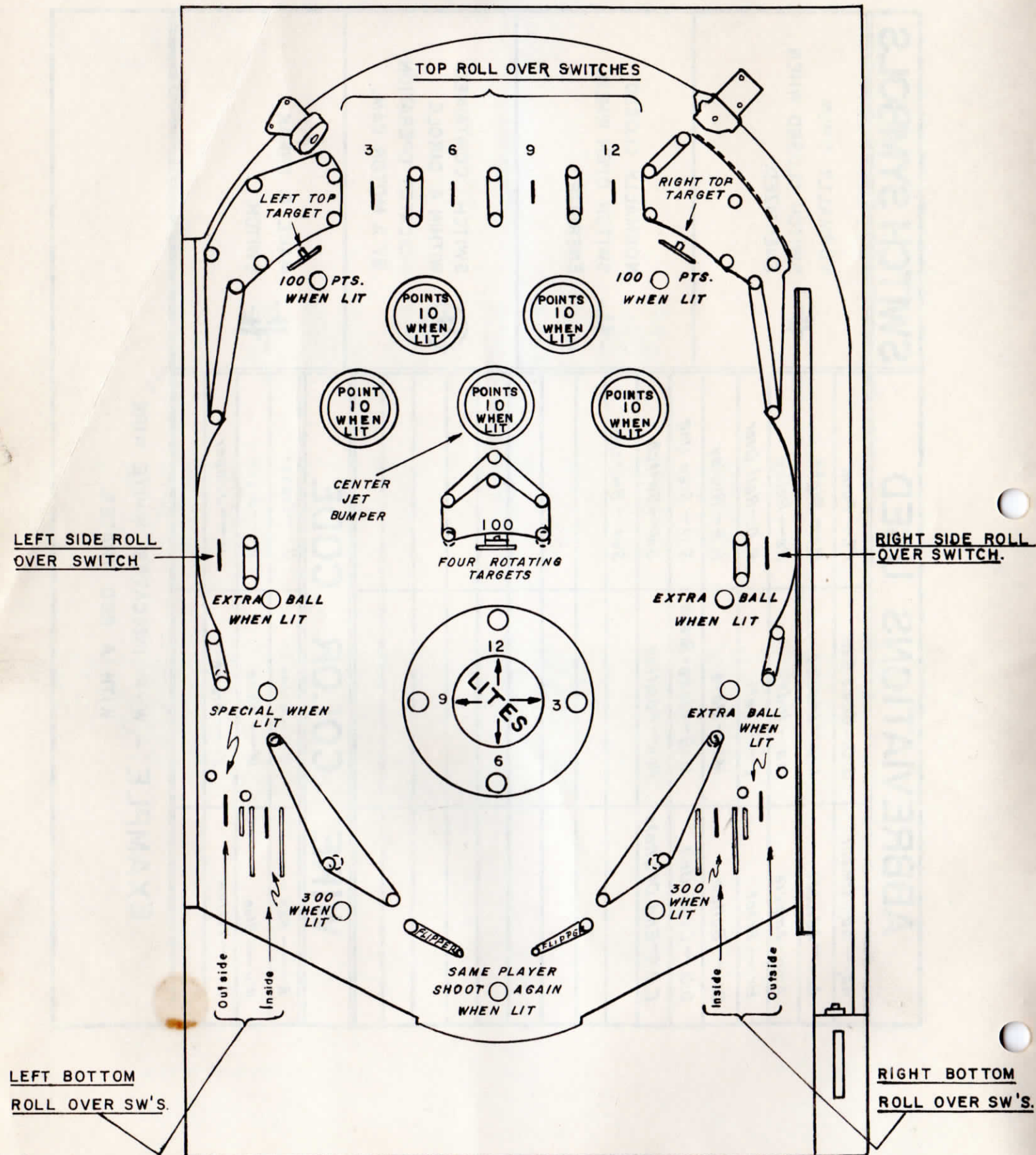
3401 N. California Ave.  
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ABBREVIATIONS USED			SWITCH SYMBOLS
<i>Adj</i> — Adjustment	<i>G. O.</i> — Game Over	<i>Pt.</i> — Point	
<i>Adv</i> — Advance	<i>Imp</i> — Impulse	<i>R</i> — Right	
<i>Amp</i> — Ampere	<i>Ind</i> — Index	<i>Re</i> — Relay	
<i>Bk</i> — Break	<i>L</i> — Left	<i>R. O.</i> — Roll Over	
<i>Bot</i> — Bottom	<i>Mk</i> — Make	<i>R. P.</i> — Replay	
<i>D. U.</i> — Drum Unit	<i>M-B</i> — Make-Break	<i>S. U.</i> — Step Unit	
<i>E. O. S.</i> — End Of Stroke	<i>Pos</i> — Position	<i>Sw</i> — Switch	
		<i>Sws</i> — Switches	 <p>NORMALLY CLOSED SWITCH OPEN WHEN ENERGIZED.</p>
			 <p>SWITCH CONTAINED WITHIN A CIRCLE INDICATES OPERATION BY A MOTOR CAM.</p>
WIRE COLOR CODE			 <p>MAKE &amp; BREAK SWITCH.</p>
<i>R</i> — Red	<i>G</i> — Green	<i>O</i> — Orange	
<i>Blu</i> — Blue	<i>W</i> — White	<i>B</i> — Black	
<i>Y</i> — Yellow	<i>Br</i> — Brown	<i>J</i> — Jumper	

**EXAMPLE:—** W-R INDICATES WHITE WIRE WITH A RED TRACER.

**PLAYFIELD LAYOUT SHOWING LOCATION OF TARGETS,  
ROLL OVERS, AND JET BUMPERS.**



**SCORING EXPLANATION**

THE OBJECT IN PLAYING "BEAT TIME" IS TO LIGHT NUMBERS 3-6-9 AND 12 AS SHOWN ON PAGE 2, BY PASSING THRU THE (4) TOP ROLLOVER LANES OR BY HITTING THE (4) ROTATING TARGETS LOCATED IN THE CENTER OF THE PLAYFIELD. THESE ALSO SCORE 100 POINTS. MAKING THE 3-6-9 AND 12 WILL THEN LIGHT THE LEFT AND RIGHT SIDE ROLLOVERS AND THE RIGHT BOTTOM (OUTSIDE) ROLLOVER LANE FOR AN EXTRA BALL. ALSO, THE LEFT BOTTOM (OUTSIDE) ROLLOVER LANE LIGHTS FOR A SPECIAL.

LIGHTING THE NO. 3 LIGHT INCREASES THE VALUE TO THE LEFT TOP TARGET FROM 10 to 100 POINTS, AND THE LEFT BOTTOM (INSIDE) ROLLOVER FROM 100 to 300 POINTS.

LIGHTING THE NO. 12 LIGHT INCREASES THE VALUE OF THE RIGHT TOP TARGET FROM 10 to 100 POINTS, AND THE RIGHT BOTTOM (INSIDE) ROLLOVER FROM 100 to 300 POINTS.

LIGHTING THE NO. 6 OR NO. 9 LIGHTS CHANGES THE VALUES OF THE JET BUMPERS FROM 1 to 10 POINTS.

**IMPORTANT NOTE:**

ALL SWITCHES ON FRONT DOOR NOW OPERATE ON SECONDARY VOLTAGE (FORMERLY LINE VOLTAGE).

A TOGGLE SWITCH, THAT CUTS OFF ALL POWER TO THE GAME, IS LOCATED UNDER THE FRONT END OF THE CABINET.

WHAT TO DO IF:

1. Lights are out, game is inoperative:
  - a. Check A.C. cord and plug for breaks, cuts or other damage.
  - b. Check fuses, located behind cash box.
  - c. Check master switch, located under front of cabinet.
  - d. Check plugs and jacks for proper installation.
2. Lights are out, game operates:
  - a. Check two switches on Lock Relay: Blue-Yellow-White to Green-Yellow-White, and Brown-Yellow-White to Green-Yellow-White.
  - b. Check 10 AMP fuse - Blue wire, and 15 AMP fuse - Brown wire.
3. Lights are on, but all coins are rejected:
  - a. If Coin Lockout Coil (located on front door) is not energized, check the Last Position Break switch on Replay Unit: Black and Black-Red. Also check switch on Index Cam; Black-Orange and Yellow.
  - b. If Coin Lockout Coil is energized, check the wire forms actuated by the armature on this coil. Then check the slug rejector (S).

WHAT TO DO IF: ON RESET

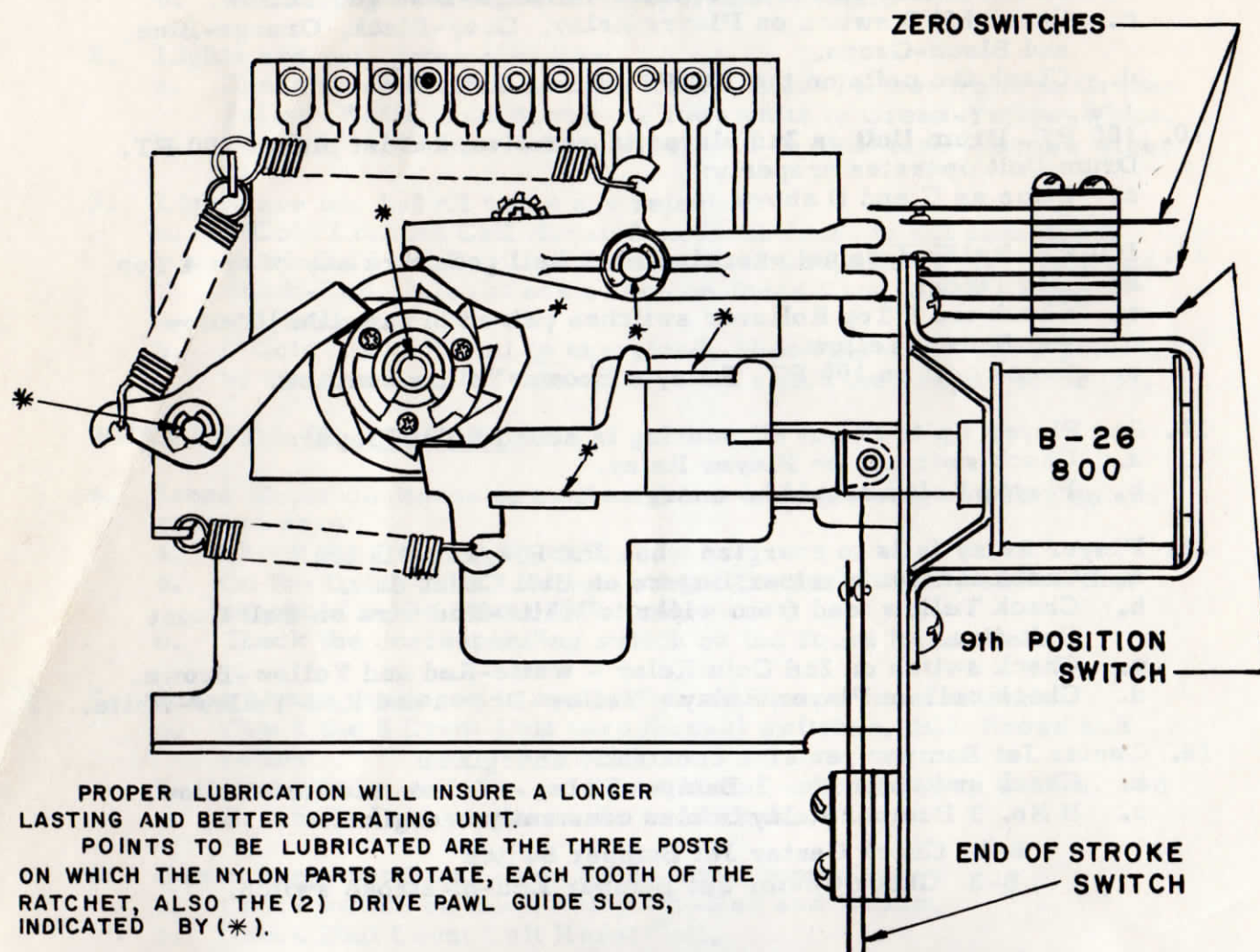
4. Score Motor continues to cycle and one or more score drums do not reset to zero:
  - a. Check the Drum S.U. coil.
  - b. On the Drum units that fail, check the zero (break) switch that connects to the Drum S.U. coil.
  - c. Check the corresponding switch on the Score Reset Relay.
5. Score Motor continues to cycle after all drums reset to zero:
  - a. Check the 8 Drum Unit zero (break) switches, Blu-Brown and yellow.
  - b. Check Index cam sw. on Score Motor - Blu-Brown, Yellow, and Green-Red for proper make and break.
6. Game resets but Game Over Relay trips immediately:
  - a. Check switch on Lock Relay Blu-Red and Yellow.
  - b. Check Ball Count Unit Reset Coil.
  - c. Check Ball Count Unit wiper fingers for proper resetting.
7. Game resets and stays on "TILT" all the time:
  - a. Check Plumb Bob, Ball Tilt, and Shake tilt switches.
8. Game is over, replays are indicated, but the Replay Button fails to start a new game:
  - a. Check Make and Break switch on Index cam (Green-Red and Yellow).
  - b. Check switch on Reset Relay (Green-Red and White-Gray).
  - c. Check Replay Button Switch.
  - d. Check Replay Unit zero switch.
  - e. Check switch on Game Over Relay - White-Brown and Green-Orange.
  - f. Check Replay Relay Coil.

WHAT TO DO IF: DURING PLAY

9. 100 PT. Drum Units inoperative on both 1st & 2nd Player when 100 PT. Target or Rollover switch is made:
  - a. See if the 100 PT. Relay energizes.
  - b. Check switch on 100 PT. Relay; Orange-Blue and Yellow.
  - c. Check M&B switch on Player Relay; Grey-Black, Orange-Blue, and Black-Green.
  - d. Check the coils on the 100 PT. Drum Units.
10. 100 PT. Drum Unit on 2nd player inoperative, but 1st player 100 PT. Drum Unit operates properly:
  - a. Same as C and D above.
11. 100 PT. Relay does not energize when ball goes thru any of the 4 Top Rollover lanes:
  - a. Check the 4 Top Rollover switches (wired in parrallel) Yellow and Brown-Yellow.
  - b. Check coil on 100 PT. Relay - Brown-Yellow and Red.
12. 2nd Player Up is lit but all scoring is added to 1st Player:
  - a. Check switches on Player Relay.
  - b. Player Relay should be energized.
13. Player Relay fails to energize when 2nd Player up is lit:
  - a. Check tension of wiper fingers on Ball Count Unit.
  - b. Check Yellow feed from wiper to White-Red wire on Ball Count Unit disc.
  - c. Check switch on 2nd Coin Relay - White-Red and Yellow-Brown.
  - d. Check coil on Player Relay - Yellow-Brown and Red-Yellow-White.
14. Center Jet Bumper remains constantly energized:
  - a. Check switch on No. 3 Bumper Relay - Yellow and Red-Yellow.
  - b. If No. 3 Bumper Relay is also constantly energized:
    - B-1 Check Center Jet Bumper Switch
    - B-2 Check Center Jet Bumper End-of-stroke switch.

# SCORE DRUM UNIT

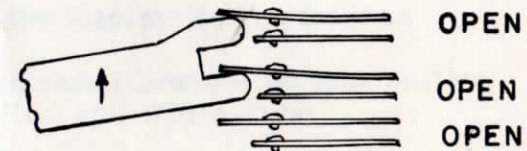
WITH PRINTED CIRCUIT AND CONTACT RING



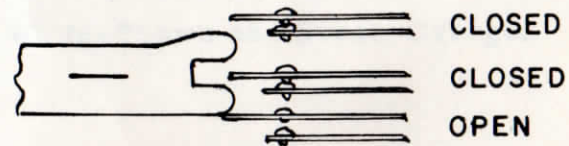
LUBRICATION: DO NOT PUT LUBRICANT ON DRIVE ARMATURE

## SWITCH ADJUSTMENT

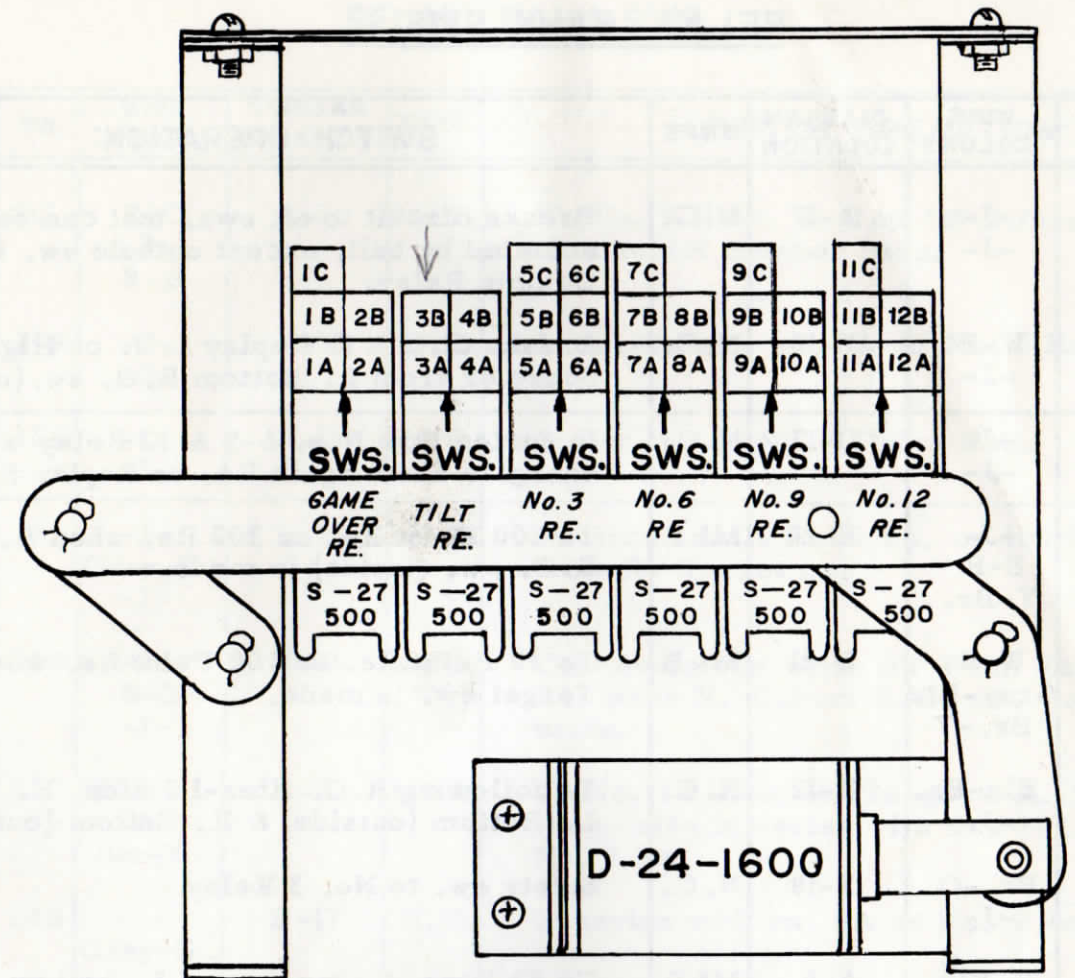
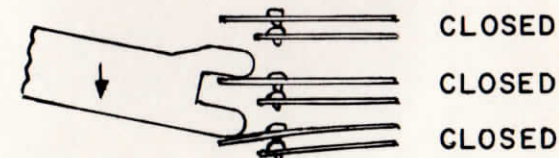
AT "0" OR INDEX POSITION ALL SWITCHES ARE OPEN AS SHOWN.



AT 1st. TO 8th. POSITION TOP SWITCHES ARE CLOSED - BOTTOM SWITCH REMAINS OPEN.



AT 9th POSITION ALL SWITCHES ARE CLOSED AS SHOWN



## RELAY BANK SWS.

RELAY	SW.	WIRE COLORS	DIAGRAM LOCATION	TYPE	SWITCH OPERATION:
GAME OVER RE.	1A	G-O W-Br.	F-5	N.O.	To Replay Re. from Replay Button Sw.
	1B	Blu-Y-W Black	G-14	N.C.	Breaks circuit to all sws. that can be actuated by ball - also flippers circuit.
	1C	Br-Y-W Br. Gray-O	A-4	M&B	To "Ball in Play" lites & to "Game Over" lite.
	2A	O-R Blu-W	E-6	N.O.	To Reset Relay from Sw. on Coin Relay.
	2B	Gray B-Blu	F-12	N.C.	To Replay S.U. - in No. Match circuit, High Score, or L. Bottom (outside) R.O. sw.
TILT RE.	3A	Br.-G Yellow	D-16	N.O.	Energizes Ball Index Re.
	3B	White Blu G-W	A-9	M&B	To Tilt lite & to 3-6-9- & 12 lites.

**RELAY BANK SWS.**

RELAY	SW.	WIRE COLORS	DIAGRAM LOCATION	TYPE	SWITCH OPERATION:
TILT RE.	4A	-J- -J-	A-17	N.C.	Breaks circuit to all sws. that can be actuated by ball, except outhole sw. to Outhole Relay.
	4B	W-B -J-	F-13	N.C.	Breaks circuit to Replay S.U. on High Score or from L. Bottom R.O. sw. (outside).
No. 3 RE.	5A	-J- -J-	D-17	N.O.	In series thru Nos. 6-9 & 12 Relay sws. to energize Shoot again Re. or Replay S.U.
	5B	-J- B-R Y-Br.	E-20	M&B	To 100 Point Re. or 300 Re. when L. Bottom R.O. sw. (inside) is made.
	5C	W-R Gray-Blu Br.-Y	E-21	M&B	To 10 Point Re. or 100 Point Re. when L. Target sw. is made.
	6A	Blu-Br. -J-	B-12	N.O.	To following R.O. lites-L. Side, R. Side, L. Bottom (outside) & R. Bottom (outside).
	6B	Br.-O -J-	F-18	N.C.	Safety sw. to No. 3 Relay.
	6C	R-Blu -J- R-Y	A-9	M&B	To #3 lites, L. target and L. bottom (inside) lites.
No. 6 RE.	7A	-J- -J-	D-17	N.O.	In series with sw. 5A on No. 3 Re.
	7B	G-B Grey-W -J-	E-21	M&B	To 1 Point Re. or 10 Point Re. from sw. on No. 1 Bumper Re.
	7C	R-G -J- R-Br.	A-10	M&B	To No. 6 lites, L. Top Jet Bumper lite & R. Bottom Jet Bumper lite.
	8A	-J- -J-	B-12	N.O.	In series with sw. 6A on No. 3 Relay.
	8B	Br.-B -J-	F-19	N.C.	Safety sw. to No. 6 Relay Coil.
No. 9 RE.	9A	-J- -J-	E-17	N.O.	In series with sw. 7A on No. 6 Relay.
	9B	-J- Gray-O -J-	E-21	M&B	To 1 Point Re. or 10 Point Re. from sw. on No. 2 Bumper Re.

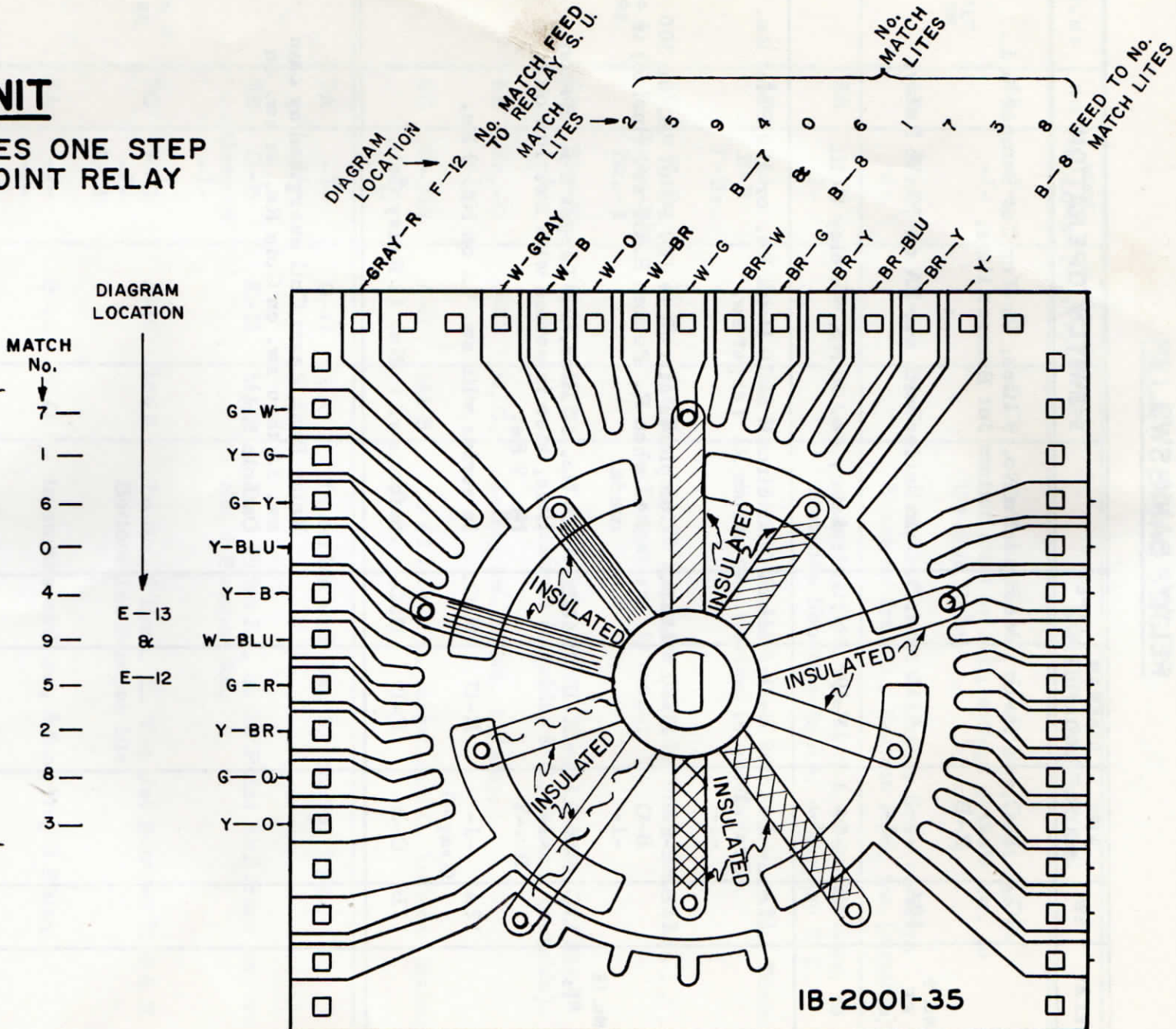
**RELAY BANK SWS.**

RELAY	SW.	WIRE COLOR	DIAGRAM LOCATION	TYPE	SWITCH OPERATION:
No. 9 RE.	9C	R-O -J- R-B	A-11	M&B.	To No. 9 lites, R. Top Jet Bumper & L. Bottom Jet Bumper lites.
	10A	-J- -J-	A-12	N.O.	In series with sw. 8A on No. 6 Relay.
	10B	-O- -J-	F-19	N.C.	Safety sw. to No. 9 Relay Coil.
No. 12 RE.	11A	-J- Gray-Y -J-	E-21	M&B.	In circuit to 10 Point Re. or 100 Point Re. from R. Target sw.
	11B	-J- B-O -J-	E-20	M&B.	Completes circuit to 100 Point Re. or 300 Re. when R. Bottom R.O. sw. (inside) is made.
	11C	Blu-R -J- Blu-Y	A-11	M&B.	To No. 12 lites, R. Target & R. Bottom lites, also in series with sw. 10A on No. 9 Re.
	12A	-J- Gray-G	E-17	N.O.	In series with sw. 9A on No. 9 Re.
	12B	O-R	F-19	N.C.	Safety sw. to No. 12 Relay Coil.
					Relay Bank Reset Coil energized by cam sw. 3A thru sw. on Coin Re. or sw. on Outhole Re.

# No. MATCH UNIT

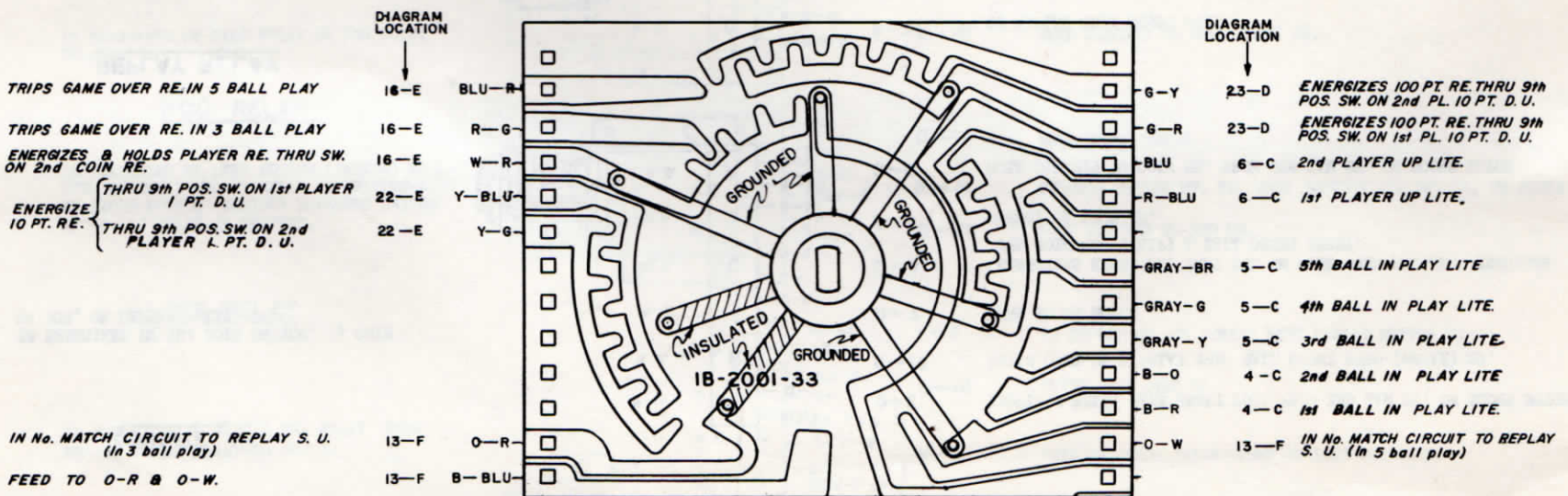
THIS UNIT ADVANCES ONE STEP EACH TIME THE ONE POINT RELAY IS PULSED.

IN No. MATCH CIRCUIT TO REPLAY S. U. THESE WIRES COME FROM THE 1st & 2nd Player 1-Pt. D. U. DISC.



# BALL COUNT UNIT

THIS UNIT RESETS AT THE START OF A NEW GAME. IT ADVANCES ONE STEP AT A TIME WHEN TWO PERSONS ARE PLAYING & TWO STEPS IF ONLY ONE IS PLAYING.

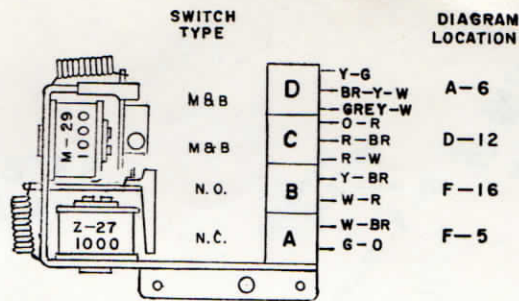


## A. C. RELAYS & SWITCHES

### 2nd COIN RELAY (INTERLOCK)

TRIP COIL-IS ENERGIZED BY COIN RELAY THRU SWITCH ON 1ST CAM OF SCORE MOTOR, AND MAKE-BREAK SWITCH ON RESET RELAY.

LATCH COIL-SAME AS ABOVE-WHEN RESET RELAY IS ENERGIZED.

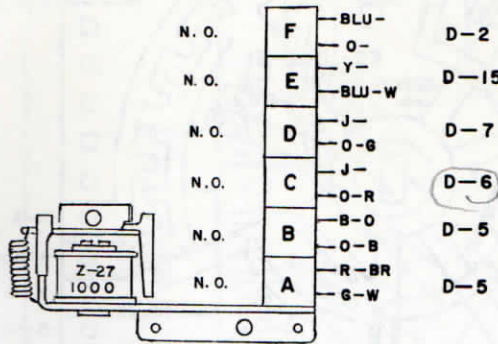


### OPERATION:

- A-6 BREAKS '1 CAN PLAY' LITE & MAKES '2 CAN PLAY' & '2ND PLAYER UP' LITES
- D-12 TO BALL COUNT S.U.-ALSO IN NO. MATCH CIRCUIT TO REPLAY S.U.
- F-16 TO PLAYER RELAY FROM BALL COUNT UNIT
- F-5 TO REPLAY RELAY FROM REPLAY BUTTON SW.

### COIN RELAY

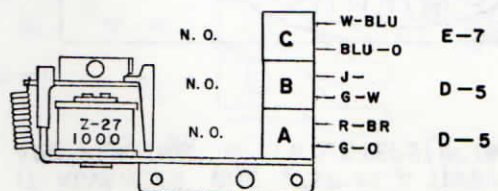
IS ENERGIZED BY 10¢ COIN SWITCH, 5¢ COIN SWITCH, OR REPLAY RELAY.



- D-2 IMPULSES RELAY BANK RESET COIL FROM 3RD CAM SW. ON SCORE MOTOR
- D-15 TRIPS GAME OVER RELAY THRU BALL COUNT ZERO (BREAK) SW.
- D-7 RUNS SCORE MOTOR
- D-6 ENERGIZES RESET RE. THRU SW. ON GAME OVER RE.-ALSO IMPULSES 2ND COIN RE. (TRIP) & BALL COUNT RESET.
- D-5 ENERGIZES LOCK RE.
- D-5 HOLD CIRCUIT TO COIN RE. FROM 5TH CAM SW. ON SCORE MOTOR

### REPLAY RELAY

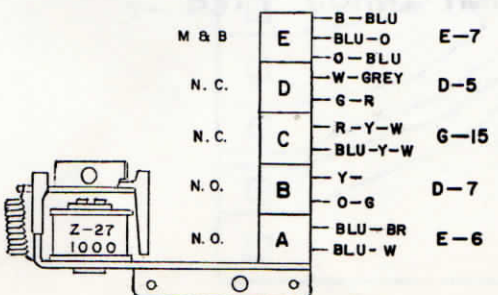
IS ENERGIZED BY REPLAY BUTTON SWITCH THRU REPLAY UNIT ZERO (BREAK) SWITCH



- E-7 TO REPLAY UNIT RESET COIL
- D-5 ENERGIZES COIN RE.
- D-5 HOLD CIRCUIT FOR REPLAY RE. FROM 5TH CAM SW. ON SCORE MOTOR

### RESET RELAY

IS ENERGIZED BY COIN RELAY THRU SWITCH ON GAME OVER RELAY.

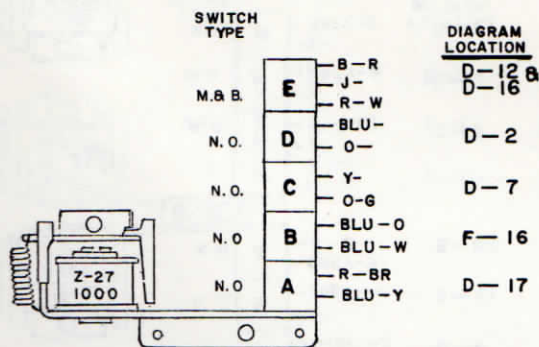


- E-7 IN SERIES WITH SW. 'C' ON COIN RE.
- D-5 IN SERIES WITH SW. 1A ON GAME OVER RE.
- G-15 IN SERIES WITH SW. 1B ON GAME OVER RE.
- D-7 RUNS SCORE MOTOR
- E-6 HOLD CIRCUIT FOR RESET RE.

## A. C. RELAYS & SWITCHES

### OUTHOLE RELAY

IS ENERGIZED BY OUTHOLE SWITCH AND SWITCH ON INDEX CAM OF SCORE MOTOR.

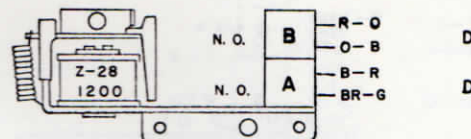


### OPERATION:

- D-12<sup>a</sup> IN HOLD CIRCUIT TO BALL INDEX RE.-IN CIRCUIT TO BALL COUNT S.U. AND REPLAY S.U.
- D-16 IN PARALLEL WITH SW. F. ON COIN RE.
- D-2 RUNS SCORE MOTOR
- D-7 RUNS SCORE MOTOR
- F-16 IMPULSES BALL RELEASE COIL FROM 3RD CAM SW. ON SCORE MOTOR
- D-17 HOLD CIRCUIT FOR OUTHOLE RE. FROM 5TH CAM SW. ON SCORE MOTOR

### BALL INDEX RELAY

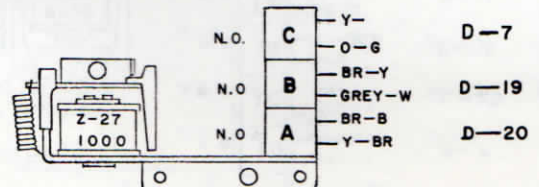
IS ENERGIZED BY TILT RELAY OR 100 POINT RELAY.



- D-12 IN SERIES WITH SW. C ON SHOOT AGAIN RELAY
- D-16 HOLD CIRCUIT TO BALL INDEX RE.

### 300 RELAY

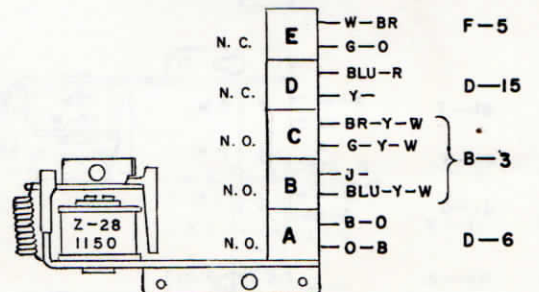
IS ENERGIZED BY LEFT BOTTOM (INSIDE) ROLL-OVER SWITCH IF NO. 3 RELAY IS TRIPPED-ALSO BY RIGHT BOTTOM (INSIDE) ROLLOVER SWITCH IF NO. 12 RELAY IS TRIPPED.



- D-7 RUNS SCORE MOTOR
- D-19 CIRCUIT TO 100 PT. RE. FROM IMPULSE CAM SW. 5A, ON SCORE MOTOR
- D-20 HOLD CIRCUIT TO 300 RE.

### LOCK RELAY

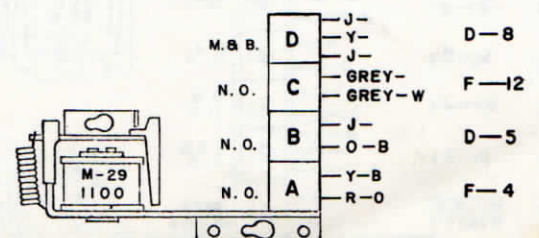
IS ENERGIZED BY 10¢ OR 25¢ RELAY, COIN RELAY, OR LEFT FLIPPER SWITCH.



- F-5 TO REPLAY RE.-IN SERIES WITH REPLAY BUTTON SW.
- D-15 TRIPS GAME OVER RE.
- B-3 FEED 6V. FROM TRANSFORMER TO LITE CIRCUITS
- D-6 HOLD CIRCUIT TO LOCK RE.

### 25¢ RELAY

IS ENERGIZED BY 25¢ COIN SWITCH.



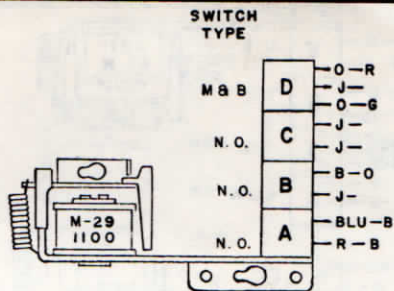
- D-8 RUNS SCORE MOTOR-ALSO TO KNOCKER COIL
- F-12 TO REPLAY S.U. FROM IMPULSE CAM SW. ON SCORE MOTOR
- D-5 ENERGIZES LOCK RE.
- F-4 HOLD CIRCUIT TO 25¢ RELAY



# A. C. RELAYS & SWITCHES

## 10¢ RELAY

IS ENERGIZED BY 10¢ COIN SWITCH THRU 10¢ ADJUSTMENT JACK.



### DIAGRAM LOCATION

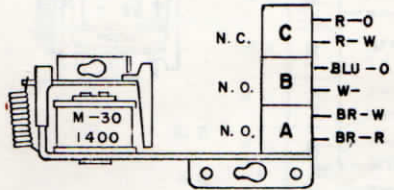
- E-8
- F-12
- D-5
- F-3

### OPERATION:

- RUNS SCORE MOTOR-ALSO TO KNOCKER COIL
- IN PARALLEL WITH SW. 'C' ON 25¢ RE.
- ENERGIZES LOCK RE.
- HOLD CIRCUIT TO 10¢ RELAY

## SHOOT AGAIN RELAY

IS ENERGIZED BY EITHER THE LEFT SIDE ROLL-OVER, RIGHT SIDE ROLLOVER, OR RIGHT BOTTOM (OUTSIDE) ROLLOVER SWITCH IF NOS. 3-6-9 & 12 RELAYS ARE TRIPPED.

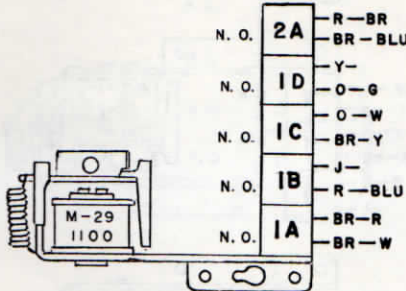


- D-12
- A-13
- F-18

- IN SERIES WITH SW. E ON OUTHOLE RE.
- TO 'SHOOT AGAIN' LITES
- HOLD CIRCUIT TO SHOOT AGAIN RE.

## TARGET RELAY

IS ENERGIZED BY CENTER TARGET SWITCH.

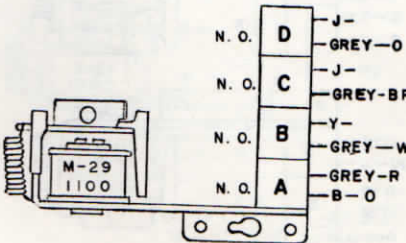


- E-17
- D-7
- E-20
- E-18
- E-19

- HOLD CIRCUIT TO TARGET RE.
- RUNS SCORE MOTOR
- PULSES 100 PT. RE. THRU SW. ON #1 CAM SCORE MOTOR
- TRIPS #3-6-9 OR 12 RE. THIS SW. IS ALSO IN SERIES WITH SW. 1A TARGET RE.
- ENERGIZES TARGET ADVANCE COIL THRU SW. ON #2 CAM SCORE MOTOR

## NO. 1 BUMPER RELAY

IS ENERGIZED BY LEFT TOP OR RIGHT BOTTOM JET BUMPER SWITCHES.

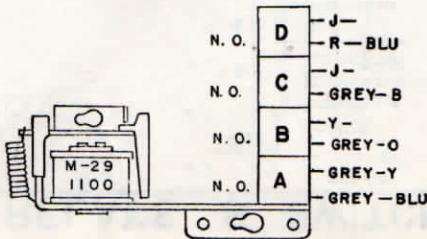


- D-8
- D-8
- D-21
- E-24

- ENERGIZES RIGHT BOTTOM JET BUMPER
- ENERGIZES LEFT TOP JET BUMPER
- IMPULSES 1 PT. RE. OR 10 PT. RE. THRU SW. ON #6 RE.
- HOLD CIRCUIT TO #1 BUMPER RE.

## NO. 2 BUMPER RELAY

IS ENERGIZED BY RIGHT TOP OR LEFT BOTTOM JET BUMPER SWITCHES.



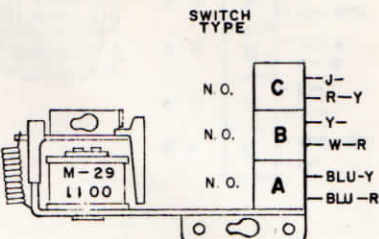
- D-9
- D-9
- D-21
- E-24

- ENERGIZES LEFT BOTTOM JET BUMPER
- ENERGIZES RIGHT TOP JET BUMPER
- IMPULSES 1 PT. RE. OR 10 PT. RE. THRU SW. ON #9 RELAY
- HOLD CIRCUIT TO #2 BUMPER RE.

# A. C. RELAYS & SWITCHES

## NO 3 BUMPER RELAY

IS ENERGIZED BY CENTER JET BUMPER SWITCH.



### DIAGRAM LOCATION

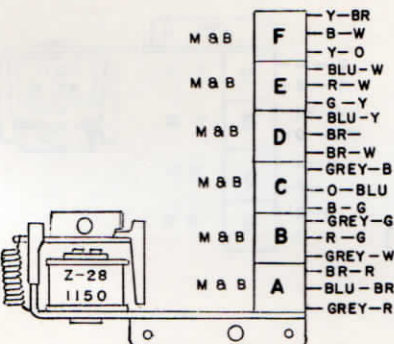
- D-9
- D-21
- E-24

### OPERATION:

- ENERGIZES CENTER JET BUMPER
- IMPULSES 10 PT. RE.
- HOLD CIRCUIT TO #3 BUMPER RE.

## PLAYER RELAY

IS ENERGIZED BY 2ND COIN RELAY AND BALL COUNT UNIT DISC.



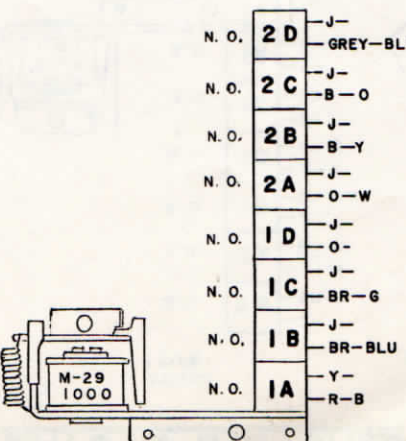
- F-14
- D-14
- D-11
- D-10
- D-10
- D-9

- TO 1ST & 2ND PLAYER 1000 PT. D.U. }
- TO 1ST & 2ND PLAYER 100 PT. D.U. }
- TO 1ST OR 2ND PLAYER 1000 PT. D.U. THRU RESPECTIVE 100 PT. D.U. 9TH POS. SW.
- CIRCUIT TO 1ST OR 2ND PLAYER 100 PT. D.U. THRU SW. ON 100 PT. RE.
- CIRCUIT TO 1ST OR 2ND PLAYER 10 PT. D.U. THRU SW. ON 10 PT. RE.
- CIRCUIT TO 1ST OR 2ND PLAYER 1 PT. D.U. THRU SW. ON 1 PT. RE.

IN 'HIGH SCORE' CIRCUIT TO REPLAY S.U. COIL OR SHOOT AGAIN RELAY

## SCORE RESET RELAY

IS PULSED BY IMPULSE CAM SWITCH THRU SWITCH ON RESET RELAY.



- E-10
- E-11
- E-10
- E-10
- E-9
- E-11
- E-11
- E-10

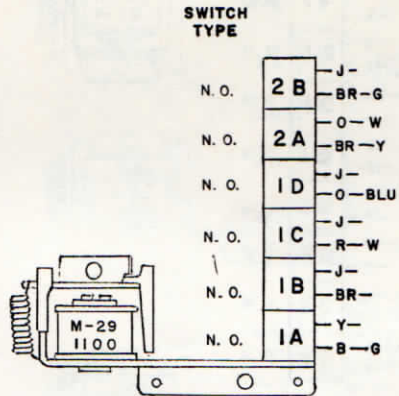
- TO 2ND PL. 1 PT. D.U.
- TO 2ND PL. 100 PT. D.U.
- TO 1ST PL. 100 PT. D.U.
- TO 1ST PL. 10 PT. D.U.
- TO 1ST PL. 1 PT. D.U.
- TO 2ND PL. 1000 PT. D.U.
- TO 1ST PL. 1000 PT. D.U.
- TO 2ND PL. 10 PT. D.U.

THRU THE ZERO SWS. OF CORRESPONDING DRUM UNITS. (DURING RESET CYCLE)

# A. C. RELAYS & SWITCHES

## 100 POINT RELAY

IS ENERGIZED BY LEFT AND RIGHT BOTTOM (OUTSIDE) ROLLOVERS, 4 TOP ROLLOVERS, LEFT AND RIGHT SIDE ROLLOVERS, TARGET RELAY AND 300 RELAY. ALSO THE LEFT TARGET IF NO. 3 RELAY IS TRIPPED, OR THE RIGHT TARGET IF NO. 12 RELAY IS TRIPPED.



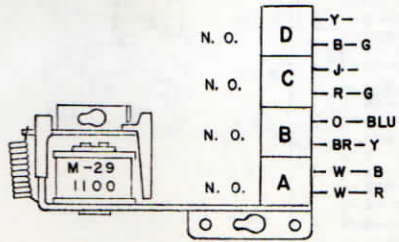
### DIAGRAM LOCATION

### OPERATION:

- D-17 IMPULSES BALL INDEX RE.
- F-23 HOLD CIRCUIT TO 100 PT. RE. THRU E.O.S. SWS. ON 1ST & 2ND PL. 100 PT. DRUM UNITS
- D-10 IN SERIES WITH SW. C ON PLAYER RE.
- D-14 IN SERIES WITH SWS E & F ON PLAYER RE.
- D-11 IN SERIES WITH SW. D ON PLAYER RE.
- D-25 ENERGIZES LARGE BELL COIL**

## 10 POINT RELAY

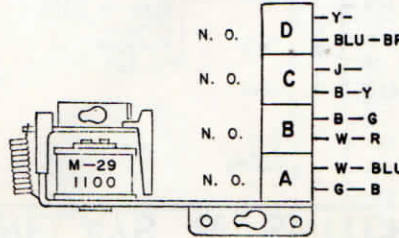
IS ENERGIZED BY LEFT TARGET AND RIGHT TARGET SWITCHES, NO. 3 BUMPER RELAY, NO. 1 BUMPER RELAY IF NO. 6 RELAY IS TRIPPED, AND NO. 2 BUMPER RELAY IF NO. 9 RELAY IS TRIPPED.



- D-25 ENERGIZES LARGE BELL COIL**
- D-10 IN SERIES WITH SW. B ON PLAYER RE.
- F-23 IMPULSES 100 PT. RE. THRU 1ST OR 2ND PL. 10 PT.D.U. 9TH POS. SW.
- F-23 HOLD CIRCUIT TO 10 PT. RE. THRU E.O.S. SWS. ON 1ST & 2ND PL. 10 PT. DRUM UNITS

## 1 POINT RELAY

IS ENERGIZED BY NO. 1 OR NO. 2 BUMPER RELAYS, KICK-OFF SWITCHES, OR STAND UP SWITCHES.



- D-9 IN SERIES WITH SW. A ON PLAYER RE.
- D-25 ENERGIZES NO. MATCH S.U.
- F-22 IMPULSES 10 PT. RE. THRU 9TH POS. SW. ON 1ST OR 2ND PL. 1 PT. D.U.
- F-23 HOLD CIRCUIT TO 1 PT. RE. THRU E.O.S. SWS. ON 1ST & 2ND PL. 1 PT. DRUM UNITS

**NOTES**

3 CHECK-NAME OVER RELAY

1 COIN RELAY

2 RESET RELAY