

# Instruction Manual for **BIG DEAL**



 **Williams**® ELECTRONICS, INC.  
A SUBSIDIARY OF  
THE SEEBURG CORPORATION OF DELAWARE

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(312) 267-2240

MAY  
1977

Chicago, Ill. 60618, U.S.A.  
Cable Address: Wilcoin

"BIG DEAL"

GAME OPERATES AS FOLLOWS:

MAKING 4 ACES LIGHTS "DOUBLE BONUS" AND IT ALSO LIGHTS LEFT STAND UP TARGET AND LEFT TOP ROLL UP LANE FOR 5,000 POINTS.

WHEN GAME IS SET FOR 3 BALL PLAY, "ACE OF HEARTS" AND "ACE OF DIAMONDS" ARE TIED IN PARALLEL. MAKING EITHER ACE LIGHTS THE OTHER ACE.

DROP TARGETS "B-I-G" AND "D-E-A-L" CONTROL EXTRA BALL FEATURE AND SPECIALS.

MAKING EITHER "B-I-G" OR "D-E-A-L" LIGHTS #1 RED STAR.

MAKING EITHER "B-I-G" OR "D-E-A-L" A SECOND TIME LIGHTS HORSESHOE LANE AT TOP RIGHT SIDE FOR POSSIBLE EXTRA BALL.

WHEN #1 AND #2 RED STARS ARE LIT, MAKING BOTH "B-I-G" AND "D-E-A-L" SCORES A SPECIAL.

## **I. GENERAL**

**NEVER EXPERIMENT** with any of the mechanism. Locate any trouble with the aid of Wiring Diagrams or Operating & Servicing Information supplied with the machine, then check for proper adjustment of the units involved before making any changes. Improper adjustment or make-shift repair will only cause serious damage to other parts of the machine or repeated failure of the part.

**NOTE:** Always look for a possible loose wire, bad connection at a plug and socket, broken or unhooked springs on step-up units, relays, etc., before adjustments are made or wires reconnected.

## **2. FUSES**

**IMPORTANT:** Never replace fuses with any rating other than specified on the fuse block; this block is located adjacent to the transformer.

## **3. LUBRICATION**

Over-lubrication causes far more trouble in coin operated equipment than under-lubrication. Practically all cases of poor contact on switches and wiper discs are due to oil or grease, or oil vapor, which forms a film or residue on the contacts and will not allow current to pass through. Excess lubricant may also seen into clutches causing them to slip.

**IMPORTANT:** NEVER USE VASELINE FOR LUBRICATION OF ANY PART OF THE MACHINE. Vaseline is not a true lubricant. It leaves a dirty and gummy residue and it becomes very thick when cold. A special Coin Machine Lubricant is supplied with each machine.

STEP-UP Levers, Ratchets, Cams, Shafts and other sliding or oscillating parts should be very lightly greased with special Coin Machine Lubricant (supplied with machine) not oftener than every six months. The bakelite discs (biscuits) on the Motor Units and Step-up Units will require lubrication with the special Coin Machine Lubricant only after the grease is completely evaporated (3 to 12 months, depending on climate) or when the film of grease becomes dirty. In either event, clean the parts thoroughly with a solvent, then apply an extremely thin coat of the special grease.

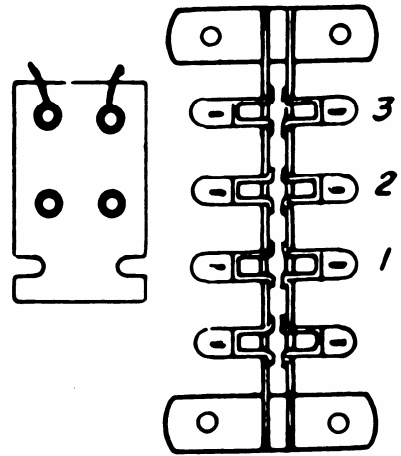
Solenoid Plungers should not have a lubricant of any kind. Should there be a sluggish tendency or if plungers are sticking, the parts should be cleaned with a solvent and flaked graohite applied on reassembly.

## **SWITCH ADJUSTMENT**

**BEFORE ADJUSTING SWITCHES, MAKE CERTAIN THE SCREWS HOLDING THE SWITCH STACKS ARE DOWN TIGHTLY. BAKELITE SPACERS IN THE SWITCH STACKS, DUE TO EXCESSIVE MOISTURE, HAVE OCCASIONALLY SHRUNK BY DRYING OUT, CAUSING POOR ADJUSTMENT.**

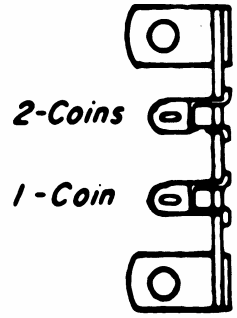
# ADJUSTMENTS ON MECHANISM PANEL

## 10¢ Adjustment



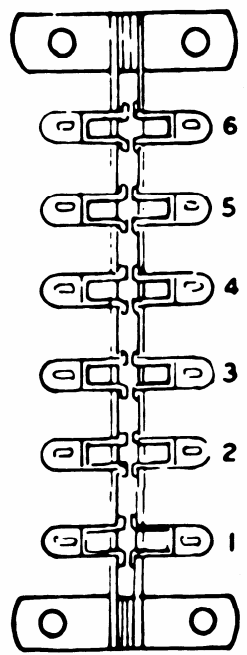
PROVIDES  
1, 2 OR  
3 PLAYS  
FOR ONE  
COIN.

## 5¢ Adjustment



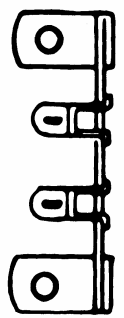
IN "2 COINS FOR  
1 PLAY", CIRCUIT  
TO COIN RELAY  
PASSES THRU SW.  
ON ALTERNATOR  
UNIT.

## 25¢ Adjustment



PROVIDES 1, 2, 3, 4, 5  
OR 6 PLAYS FOR 25¢.

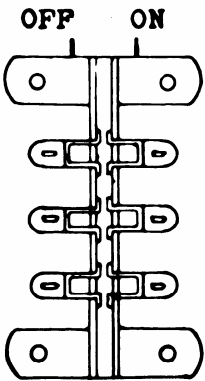
## Motor Service Jack



INSERT PHONE TIP IN  
"OFF" POSITION - CAMS  
CAN BE TURNED BY HAND  
TO CHECK ADJUSTMENT OF  
SWITCHES.

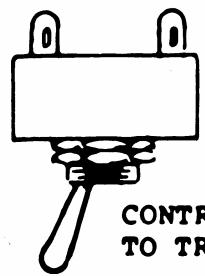
## MASTER ON-OFF SW.

(Located under front of  
Cabinet)



1 COIN- 1 PLAY  
2 COINS- 3 PLAYS

IN "ON" POSITION, 10¢  
ADJUSTMENT MUST BE IN #2 PO-  
SITION & 25¢ ADJUSTMENT MUST  
BE IN #6 POSITION. FIRST  
COIN ADVANCES CREDIT UNIT 1  
STEP. SECOND COIN WILL AD-  
VANCE CREDIT UNIT 2 STEPS.  
IN "OFF" POSITION, 25¢  
ADJUSTMENT AND/OR 10¢ AD-  
JUSTMENT SHOULD BE PUT IN  
PROPER POSITION.



CONTROLS POWER  
TO TRANSFORMER

# ADJUSTMENTS IN BACKBOX

## HI-Score Adjustment

PLUG IN RED  
WIRE FOR SCORES  
110,000 TO 200,000

10,000   60,000

PLUG IN WHITE  
WIRE FOR SCORES  
510,000 TO 600,000

PLUG IN BLUE  
WIRE FOR SCORES  
210,000 TO 300,000

20,000   70,000

PLUG IN BROWN  
WIRE FOR SCORES  
610,000 TO 700,000

PLUG IN YELLOW  
WIRE FOR SCORES  
310,000 TO 400,000

30,000   80,000

PLUG IN ORANGE  
WIRE FOR SCORES  
710,000 TO 800,000

40,000   90,000

50,000   00,000

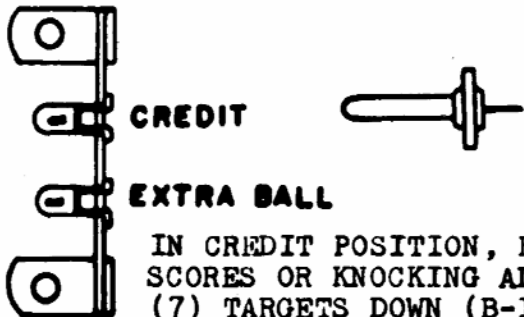
PLUG IN GREEN  
WIRE FOR SCORES  
410,000 TO 500,000

PLUG IN GRAY  
WIRE FOR SCORES  
910,000 TO 990,000

PLUG IN BLACK  
WIRE FOR SCORES  
810,000 TO 900,000

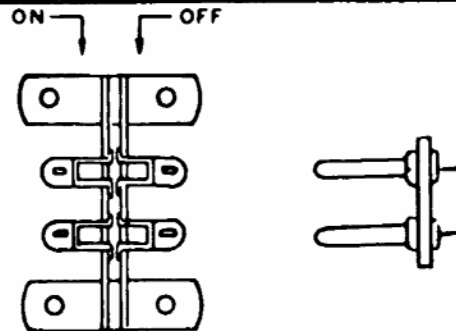
EXAMPLE: BLUE WIRE INTO 10,000 POSITION SCORES AT 210,000  
OR BLUE WIRE INTO 00,000 POSITION SCORE AT 300,000.

## PLAY ADJUSTMENT



IN CREDIT POSITION, HI-SCORES OR KNOCKING ALL (7) TARGETS DOWN (B-I-G -D-E-A-L) WILL SCORE A CREDIT. IN EXTRA BALL POSITION, THE ABOVE WILL PULSE THE EXTRA BALL RELAY.

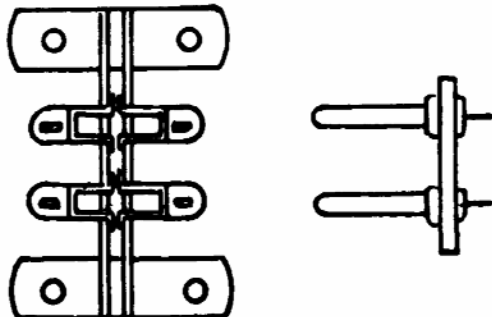
## NUMBER MATCH ADJUSTMENT



IN "ON" POSITION, A NUMBER MATCH LITE WILL APPEAR WHEN GAME IS OVER. TO AWARD CREDIT, WHEN NUMBER IS MATCHED, "PLAY" ADJUSTMENT MUST BE IN CREDIT POSITION. IN "OFF" POSITION, NUMBER MATCH IS INOPERATIVE.

## No. of Balls Adjustment

3 BALL ——— 5 BALL



THIS JACK CHANGES 3 BALL TO 5 BALL PLAY OR VICE VERSA.

## SUGGESTED SCORE CARDS

### CREDIT

5 BALL...471-11

3 BALL...471-27 or  
471-44

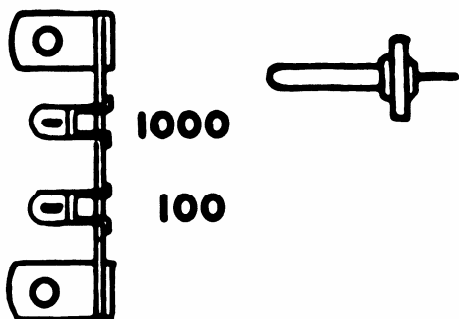
### EXTRA BALL

5 BALL...471-60

3 BALL...471-57

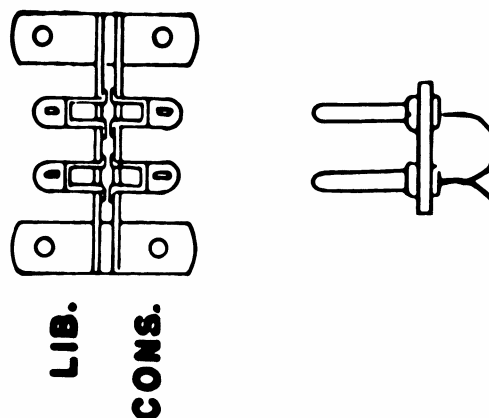
LOCATED ON PLAYFIELD

JET BUMPER ADJ.



GAME SCORES 100 OR 1,000 POINTS EACH TIME JET BUMPER IS HIT.

FEATURE ADJ.



IN LIBERAL POSITION, WHEN B-I-G TARGETS ARE KNOCKED DOWN, ONLY THE B-I-G TARGETS WILL RESET, BUT NONE OF THE D-E-A-L TARGETS WILL RESET. (AND VICE-VERSA).  
IN CONSERVATIVE POSITION, ALL (7) TARGETS WILL RESET.

SEQUENCE OF OPERATION

RESET CYCLE

CREDIT UNIT RESET COIL IS ENERGIZED BY SWITCH ON RESET RELAY, THRU SCORE MOTOR INDEX CAM SWITCH A, CREDIT BUTTON, ZERO SWITCH ON CREDIT UNIT, AND SWITCH ON GAME-OVER RELAY OR COIN UNIT LAST POSITION BREAK SWITCH.

END-OF-STROKE SWITCH ON CREDIT UNIT RESET COIL WILL ENERGIZE COIN RELAY.

SWITCHES ON COIN RELAY WILL RUN SCORE MOTOR, TRIP GAME-OVER RELAY, AND ENERGIZE RESET RELAY.

SWITCHES ON RESET RELAY WILL OPEN CIRCUITS TO PLAYFIELD SWITCHES AND OUTHOLE RELAY, RUN SCORE MOTOR, ENERGIZE RESET COILS ON COIN UNIT-BALL COUNT UNIT-PLAYER UNIT AND GAME-OVER RELAY, PULSE NO. 1, NO. 2 AND NO. 3 RESET RELAYS, AND ENERGIZE BONUS RELAY.

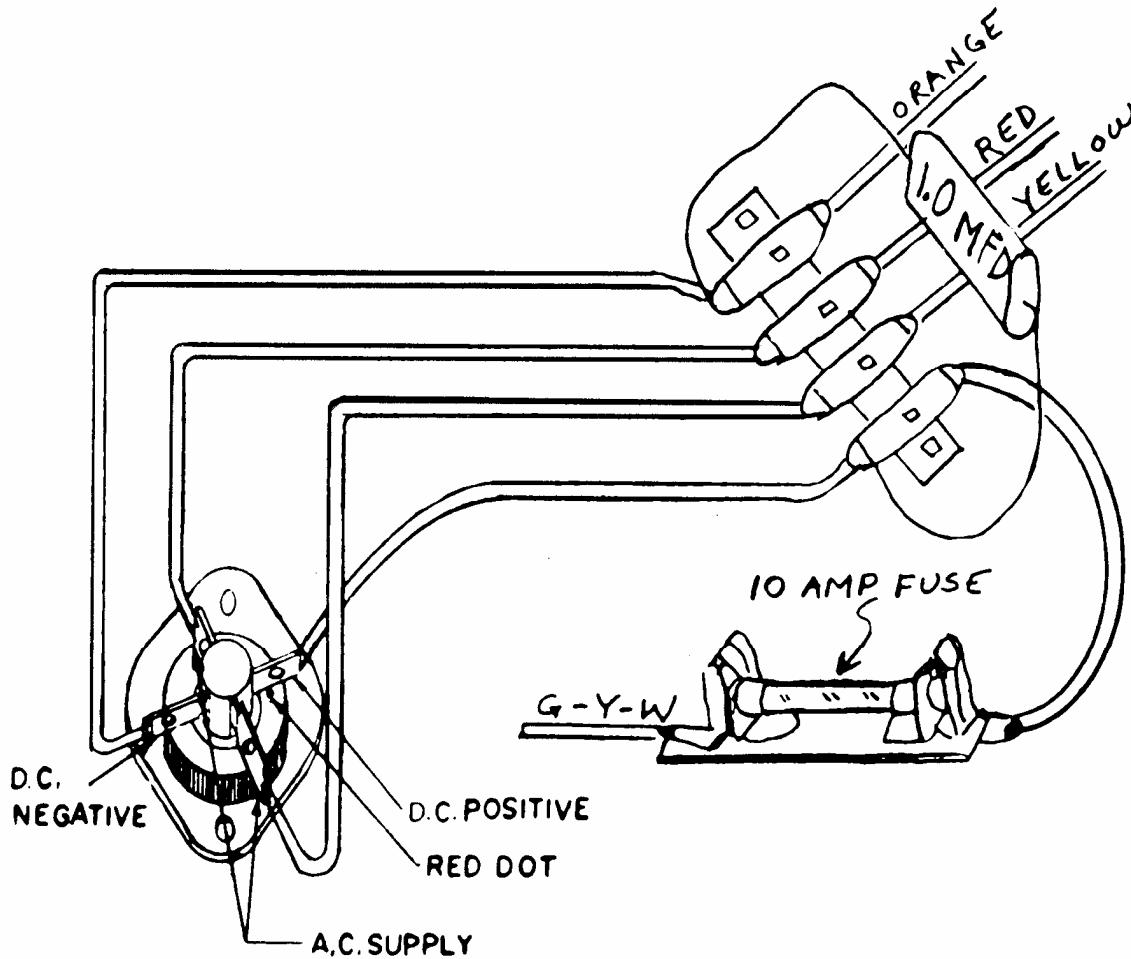
SWITCHES ON NO. 1, NO. 2 AND NO. 3 RESET RELAYS, WILL PULSE THE (20) SCORING DRUM UNITS UNTIL THEY REACH ZERO.

SWITCHES ON BONUS RELAY WILL RUN SCORE MOTOR, HOLD RESET RELAY IN AND PULSE BONUS UNIT RESET COIL, (BONUS RELAY IS HELD IN BY ZERO SWITCH ON BONUS UNIT).

WHEN BONUS RELAY DROPS OUT, OUTHOLE RELAY IS ENERGIZED THRU ZERO SWITCH ON BONUS UNIT AND INDEX CAM SWITCH D.

SWITCHES ON OUTHOLE RELAY WILL RUN SCORE MOTOR AND PULSE BALL RELEASE COIL TO PROPEL BALL TOWARD PLUNGER.

## SILICON BRIDGE RECTIFIER



THE FUNCTION OF THE RECTIFIER AND CAPACITOR IS TO CONVERT THE ALTERNATING CURRENT (A.C.) TO DIRECT CURRENT (D.C.), SUPPLYING D.C. TO THE BUMPERS, KICKERS ETC.

THE BRIDGE RECTIFIER SHOULD PRACTICALLY NEVER NEED REPLACING, AS IT IS RATED WELL OVER THE VOLTAGE AND CURRENT REQUIREMENTS OF THE COMPONENTS IT SUPPLIES.

IF, HOWEVER, THE 15 AMP 24 VOLT FUSE ON THE MECHANISM PANEL OPENS, IT COULD BE DUE TO A FAULTY RECTIFIER. DISCONNECT THE A.C. INPUT TO RECTIFIER, REPLACE FUSE, AND RECHECK.

IF THE 10 AMP FUSE LOCATED NEXT TO THE RECTIFIER OPENS, CHECK ALL D.C. COMPONENTS I.E. BUMPERS, KICKERS ETC. FOR SHORTS.

## **CAUTION!**

The playboard on this machine has an improved finish with excellent wearing properties. Do not under any circumstances clean the board with water, water soap solutions or harsh abrasives. Avoid such things as steel wool, kitchen cleansers or abrasive hand soap. Water will weaken the adhering of the paint to the board and abrasives shorten the board life by many thousand plays. A wax base cleaner with negligible abrasive qualities used lightly, but frequently, will extend the board life to its full capabilities.

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- ## **SERVICEMAN TO REMOVE BACKGLASS:**
- **WITH BACK DOOR REMOVED, PULL BACK ON BRACKETS AT INSIDE TOP OF LITE BOX.**
  - **FROM THE FRONT OF GAME, LIFT GLASS**



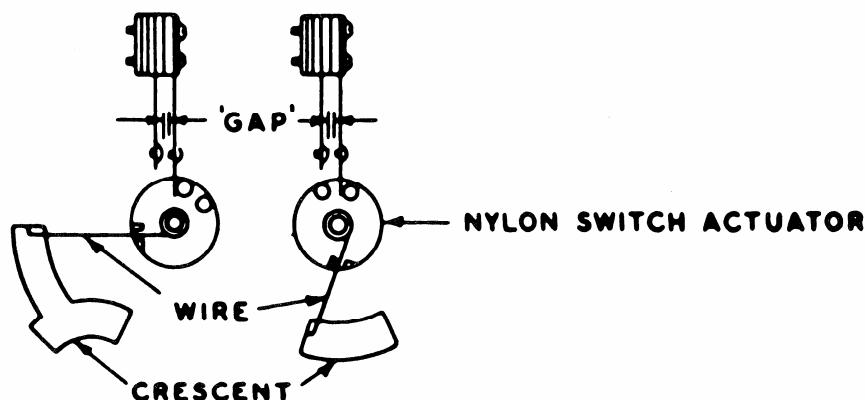
# **IMPORTANT NOTICE**

**KINDLY INFORM LOCATIONS THAT THEY  
CAN TURN DISPLAY LIGHTS ON BY FLIPPING  
MASTER SWITCH ON.**

**MASTER SWITCH (ON-OFF) IS LOCATED  
UNDERNEATH FRONT PART OF CABINET.**

# INSTRUCTIONS FOR COIN TRIP SWITCH ADJUSTMENT

WIRE SHOULD BE IN CONTACT WITH END OF CRESCENT OPENING WHEN BLADE ADJUSTMENT IS MADE.



Long blade should be in contact with nylon switch actuator and have a maximum overtravel of  $1/32$ .

or

Using a gram gauge, tension of long blade should not exceed 10 grams.

## SWITCH ADJUSTMENT

1. For small coins, such as dimes, adjust short blade so that the 'gap' between the silver contacts is .045 to .055.
2. For larger & heavier coins the 'gap' should be .045 to .060.
3. Do not adjust 'gap' closer than .040.

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### POWER TRANSFORMER:

LOCATED ON MECHANISM PANEL, IT IS EQUIPPED WITH A SECONDARY TAP. IF YOUR GAME IS ON LOCATION WITH EXTREMELY LOW LINE VOLTAGE, REMOVE LEAD FROM LUG MARKED 24 VOLTS AND SOLDER TO ALTERNATE LUG MARKED "HIGH". THIS WILL BOOST SECONDARY VOLTAGE APPROXIMATELY 2-3 VOLTS.

### LEG LEVELERS:

ARE PROVIDED FOR TWO PURPOSES - 1ST TO LEVEL GAME ON LOCATION, 2ND TO INCREASE PITCH FOR GAME PERCENTAGING. IF IT IS DESIRED TO SPEED UP PLAY AND DECREASE SCORES, RAISE REAR LEG LEVELERS TO INCREASE PITCH.

# WARRANTY

THE MOTORS IN ALL NEW WILLIAMS PRODUCTS  
ARE UN-CONDITIONALLY GUARANTEED FOR  
6 MONTHS FROM DATE OF PURCHASE.

ANY DEFECTIVE MOTORS RETURNED DURING THE  
WARRANTY PERIOD WILL BE REPLACED FREE OF  
CHARGE BY YOUR WILLIAMS DISTRIBUTOR.

# IMPORTANT NOTICE

WHEN ORDERING PARTS ALWAYS SPECIFY NAME OF  
UNIT, GAME AND SERIAL NUMBER, IN ADDITION TO A  
CLEAR DESCRIPTION OF THE PART AND PART  
NUMBER IF POSSIBLE.

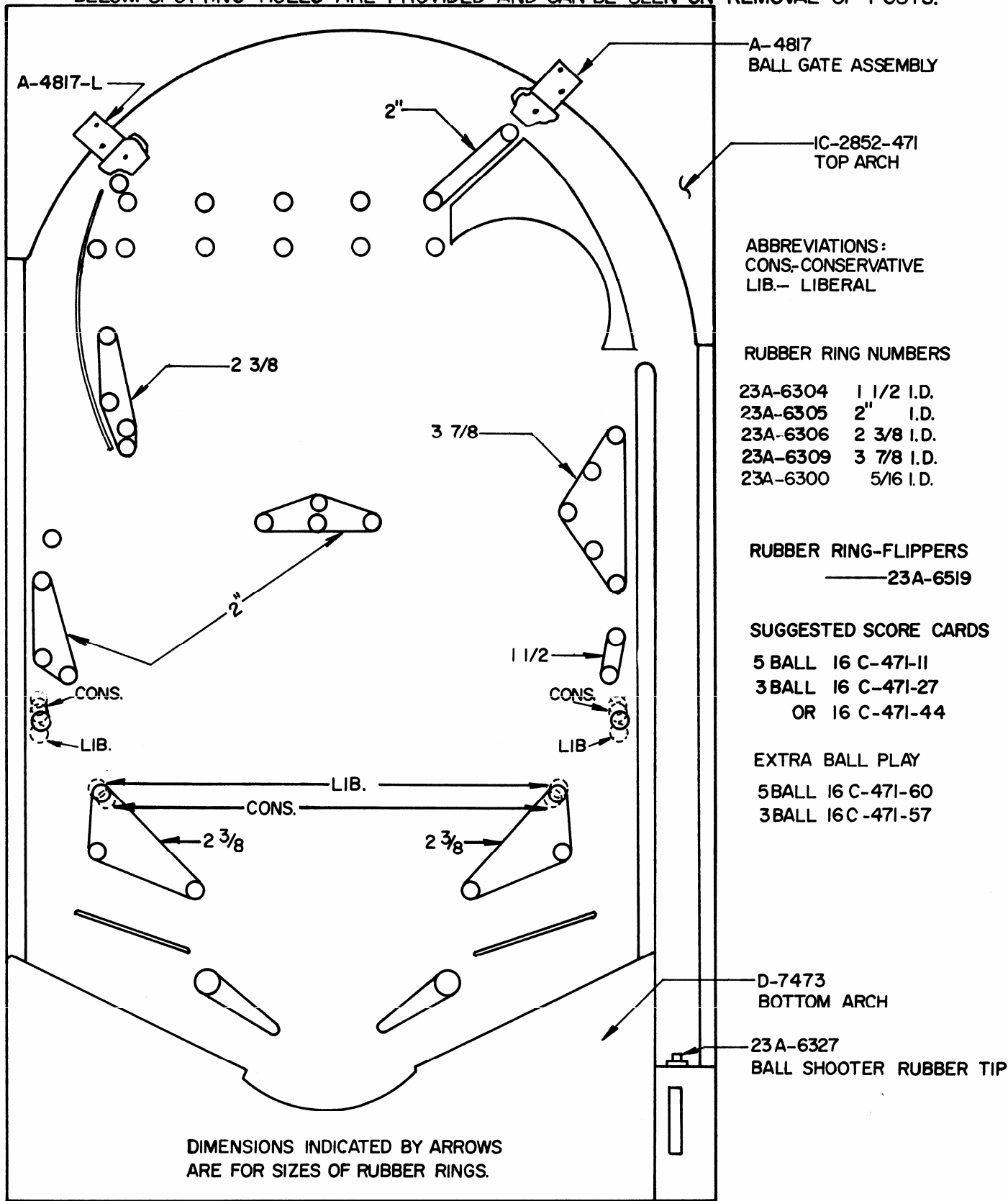
## UNIT PARTS LIST

UNIT NAME	CONTACT DISC	WIPER ASSEMBLY	RATCHET GEAR ASSEMBLY	MOTORS
REPLAY BALL COUNT	----- C-6414	----- B-7456-6	A-6400 A-6402-5	SCORE MOTOR
(RIGHT SIDE) NO. MATCH	B-7568	A-7614	A-7595	
(LEFT SIDE)	B-7569	A-7615		
PLAYER COIN	C-6417	C-6521-9	A-6404-3	14A-7883 (60 CYCLE)
BONUS	C-6414	B-7456-9	A-6402-3	14A-7884 (50 CYCLE)
10 POINT	C-6417	B-7456-64	A-6402-10	
100 POINT	B-7253	A-6294	3C-7272	
1000 POINT	-----	-----	3C-7272	
10000 POINT	-----	-----	3C-7272	
100000 POINT	B-7253	A-6294	3C-7272	
ALTERNATOR	B-7253	A-6294	3C-7272	
	-----	-----	3C-7272	

# BIG DEAL

## POST ADJUSTMENT SHEET

TO MAKE GAME MORE "CONSERVATIVE" OR "LIBERAL"-MOVE POST 3/16" AS SHOWN IN SKETCH BELOW. SPOTTING HOLES ARE PROVIDED AND CAN BE SEEN ON REMOVAL OF POSTS.



A-4817  
BALL GATE ASSEMBLY

IC-2852-471  
TOP ARCH

ABBREVIATIONS:  
CONS.-CONSERVATIVE  
LIB.- LIBERAL

**RUBBER RING NUMBERS**

23A-6304	1 1/2 I.D.
23A-6305	2" I.D.
23A-6306	2 3/8 I.D.
23A-6309	3 7/8 I.D.
23A-6300	5/16 I.D.

**RUBBER RING-FLIPPERS**  
———23A-6519

**SUGGESTED SCORE CARDS**

- 5 BALL 16 C-471-11
- 3 BALL 16 C-471-27
- OR 16 C-471-44

**EXTRA BALL PLAY**

- 5BALL 16 C-471-60
- 3BALL 16 C-471-57

D-7473  
BOTTOM ARCH

23A-6327  
BALL SHOOTER RUBBER TIP

DIMENSIONS INDICATED BY ARROWS  
ARE FOR SIZES OF RUBBER RINGS.

16A-471-PA

"BIG DEAL" COIL CHART

#471

NOTICE:

THIS GAME OPERATES ON 24 VOLTS . WHEN ORDERING REPLACEMENT TRANSFORMERS , MOTORS , COILS OR METERS ... MAKE SURE TO SPECIFY CORRECT PART NUMBERS .

NUMBER	DESCRIPTION	LOCATION
<u>MOTORS &amp; TRANSFORMERS</u>		
14 A-7883	CONTROL MOTOR - 60 CYCLE	MECH. PANEL
14 A-7884	CONTROL MOTOR - 50 CYCLE	MECH. PANEL
15 A-6771	TRANSFORMER - 60 CYCLE	MECH. PANEL
15 A-6782-1	TRANSFORMER - 50 CYCLE	MECH. PANEL
5 A-8867	24 VOLT METER	MECH. PANEL
<u>SOLENOID COILS</u>		
A 22-500	PLAYER UP UNIT STEP UP	INSERT
A 22-550	COIN UNIT STEP UP BALL RELEASE COIL BONUS UNIT STEP UP	MECH. PANEL PLAYFIELD PLAYFIELD
A7 22-550	DROP TARGET RESET ... (3 req'd.)	PLAYFIELD
A 23-600	CREDIT UNIT STEP UP BALL COUNT UNIT STEP UP	INSERT MECH. PANEL
A2 23-750	KNOCKER	CABINET
A2-26-1300	TRIPLE CHIME COILS ... (3 req'd.)	CABINET
B1 26-800	SCORE DRUM UNITS ... (20 req'd.) CREDIT UNIT RESET PLAYER UP UNIT RESET BALL COUNT UNIT RESET BONUS UNIT RESET COIN UNIT RESET	INSERT INSERT INSERT MECH. PANEL PLAYFIELD MECH. PANEL
D1 24-1400	RELAY BANK RESET	PLAYFIELD
FL 20-300/28-400	FLIPPERS ... (2 req'd.)	PLAYFIELD
G 23-750 D.C.	D.C. JET BUMPER COILS ... (2 req'd.) D.C. KICKER COILS ... (2 req'd.)	PLAYFIELD PLAYFIELD
M 28-700	GAME OVER RELAY TRIP	MECH. PANEL
M 29-900	NO. 3 SCORE RESET RELAY	INSERT
M 29-1000	NO. 1 SCORE RESET RELAY NO. 2 SCORE RESET RELAY OUTHOLE RELAY	INSERT INSERT MECH. PANEL
M 29-1100	10¢ RELAY 25¢ RELAY 10 POINT RELAY 100 POINT RELAY 1000 POINT RELAY 10,000 POINT RELAY ADVANCE RELAY TARGET RESET RELAY TARGET RELAY RELAY 500 POINT RELAY 5,000 POINT RELAY BONUS RELAY ROLLOVER RELAY	MECH. PANEL MECH. PANEL INSERT INSERT INSERT INSERT PLAYFIELD PLAYFIELD PLAYFIELD PLAYFIELD PLAYFIELD PLAYFIELD PLAYFIELD
M 30-1300	COIN SET UP RELAY	MECH. PANEL
M 30-1400	BIG RELAY DEAL RELAY	PLAYFIELD PLAYFIELD
MX 31-1500	COIN LOCKOUT COIL	FRONT DOOR
S 27-500	RELAY BANK TRIP COILS ... (7 req'd.)	PLAYFIELD
XS 28-1000	ALTERNATOR UNIT NUMBER MATCH UNIT	MECH. PANEL INSERT
Z 27-1000	COIN RELAY PLAYER RESET RELAY GAME OVER LATCH RELAY RESET RELAY	MECH. PANEL MECH. PANEL MECH. PANEL MECH. PANEL
Z 28-1150	BALL INDEX RELAY TILT RELAY EXTRA BALL RELAY	MECH. PANEL MECH. PANEL MECH. PANEL
Z 29-1250	LOCK RELAY	MECH. PANEL

# JACK LAYOUT

GAME BIG DEAL

POSITION P.F. - INS. SIZE 10

CREDIT LITE GRY  
Y-3

BALL IND. RE. GRY  
B-4

HEART. RE. BR  
BR-5

DIAMOND RE. 0  
B-4

CREDIT S.U. GRY  
BR.

R/O

BR/Y

W/R

G/B

10,000 PT. RE.

1000 "

100 "

10 "

10,000 PT. RE.

1000 "

100 "

10 "

BLANK

# JACK LAYOUT

GAME BIG DEAL

POSITION PAN - INS. SIZE 12

D.U. FEED W/S  
O-5

CREDIT S.U. B  
W-1

COIN RE. R  
BR.

CREDIT S.U. GRY  
BR

G.O. RE. TRIP BLU  
BR-4

BLANK

BLU  
Y-3

GRY  
O-1

W/S  
B-5

R/O  
10,000 PT. RE.

1

2

3

4

5

6

PLAYER LITE

G-O-LITE

EX-BALL RE.

BLANK

BLANK

P.F. = PLAYFIELD

INS. = INSERT

PAN = PANEL

# JACK LAYOUT

# JACK LAYOUT

GAME BIG DEAL

GAME BIG DEAL

POSITION PAN- P.F. SIZE 24

POSITION PAN- P.F. SIZE 22

1	FEED	W-B-
2	"	R-
3	MOTOR RUN	O/G
4	RESET RE.	BLU/BR-1
5	BONUS RESET	G/O-A
6	"	O/W-1
7	FEED	-Y-
8	BONUS RE.	GRY/BLU-A
9	"	R/G-A
10	SETUP RE.	Y/BLU-A
11	1000 PT. RE.	BR/W-6
12	10,000 "	B/W-3

1	BANK RESET	B-P
2	"	" O-P
3	FEED	R/W
4	CREDIT S.U.	R/W-3
5	EX-BALL RE.	Y/B-S
6	R-FLIPPER	BR/W-S
7	10,000 PT. RE.	R-3
8	"	" B/BLU-S
9	"	" GRY/R-3
10	TARGET DELAY RE.	Y/BLU-2
11	BONUS RE.	GRY/G-4
12	(P) = PLASTIC	

1	W/BR-2	BIG TARGET RESET
2	W/G-2	BIG TARGET RESET
3	O/B-S	No.1 STAR RE.
4	W/B-2	" " "
5	BLU.	FEED
6	B/W-S	L-FLIPPER
7	O/W-2	10,000 PT. RE.
8	B/G-1	BONUS S.U.
9	B/O-3	10,000 PT. RE.
10	GRY/O-A	1000 PT. RE.
11	GRY/BLU-S	BIG RE.

# JACK LAYOUT

GAME BIG DEAL

POSITION PAN-INS. SIZE 24

1	FEED	B-
2	"	R-
3	COIN	B
4	LOCKOUT	R-A
5	CREDIT RESET	W
6	"	W
7	"	BR-1
8	KNOCKER	B
9	RESET RE.	BLU
10	BALL COUNT S.U.	BR-1
11	NO.1	W
12	BALL LITE	B-S
	FEED	BR.
	NO.3	B
	RESET RE.	BLU.

# JACK LAYOUT

GAME BIG DEAL

POSITION PAN-INS. SIZE 20

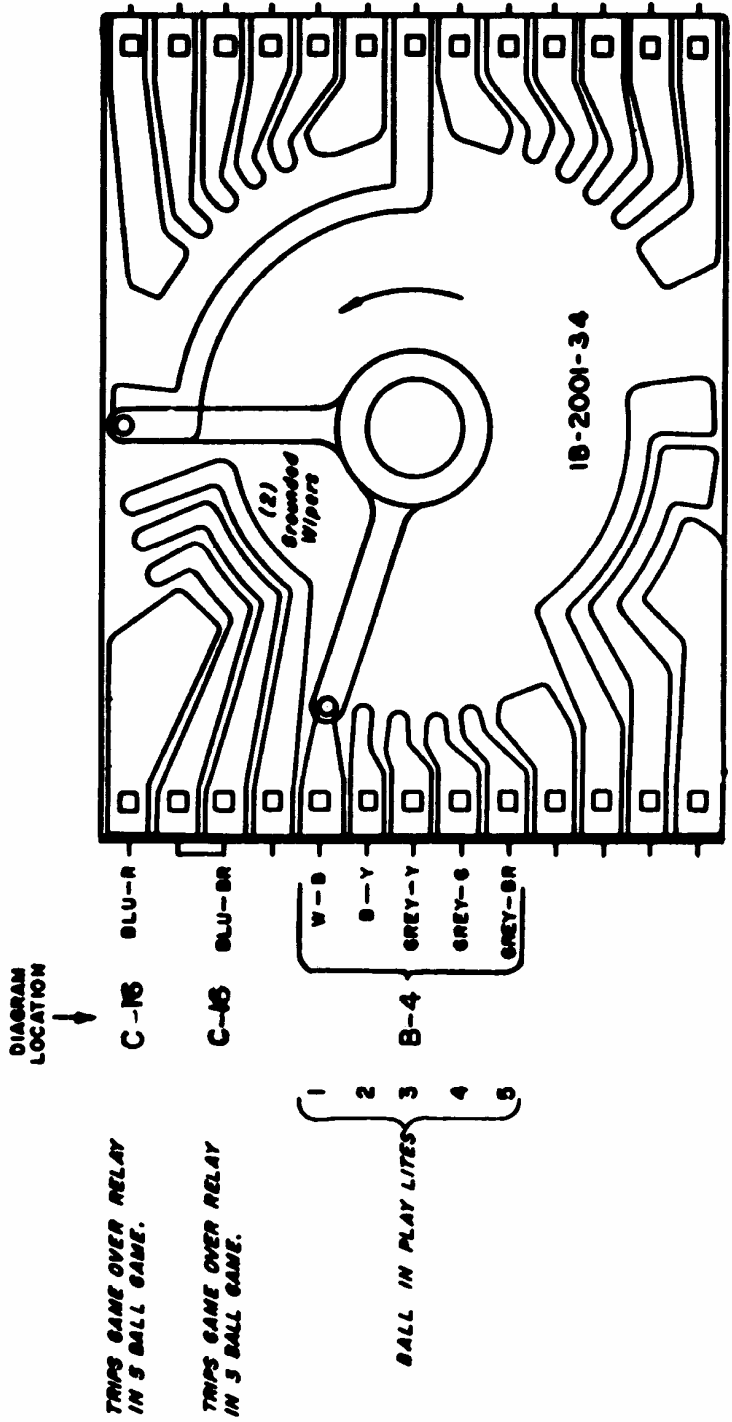
1	GRY	GRY
2	W-3	Y-1
3	1-CAN	BLU-2
4	PLAY LITE	R
5	"	BR-2
6	"	BR
7	"	O
8	"	BR
9	"	Y-5
10	"	GRY
	"	GRY
	"	G-2
	"	GRY
	"	BR-2
	"	BLANK

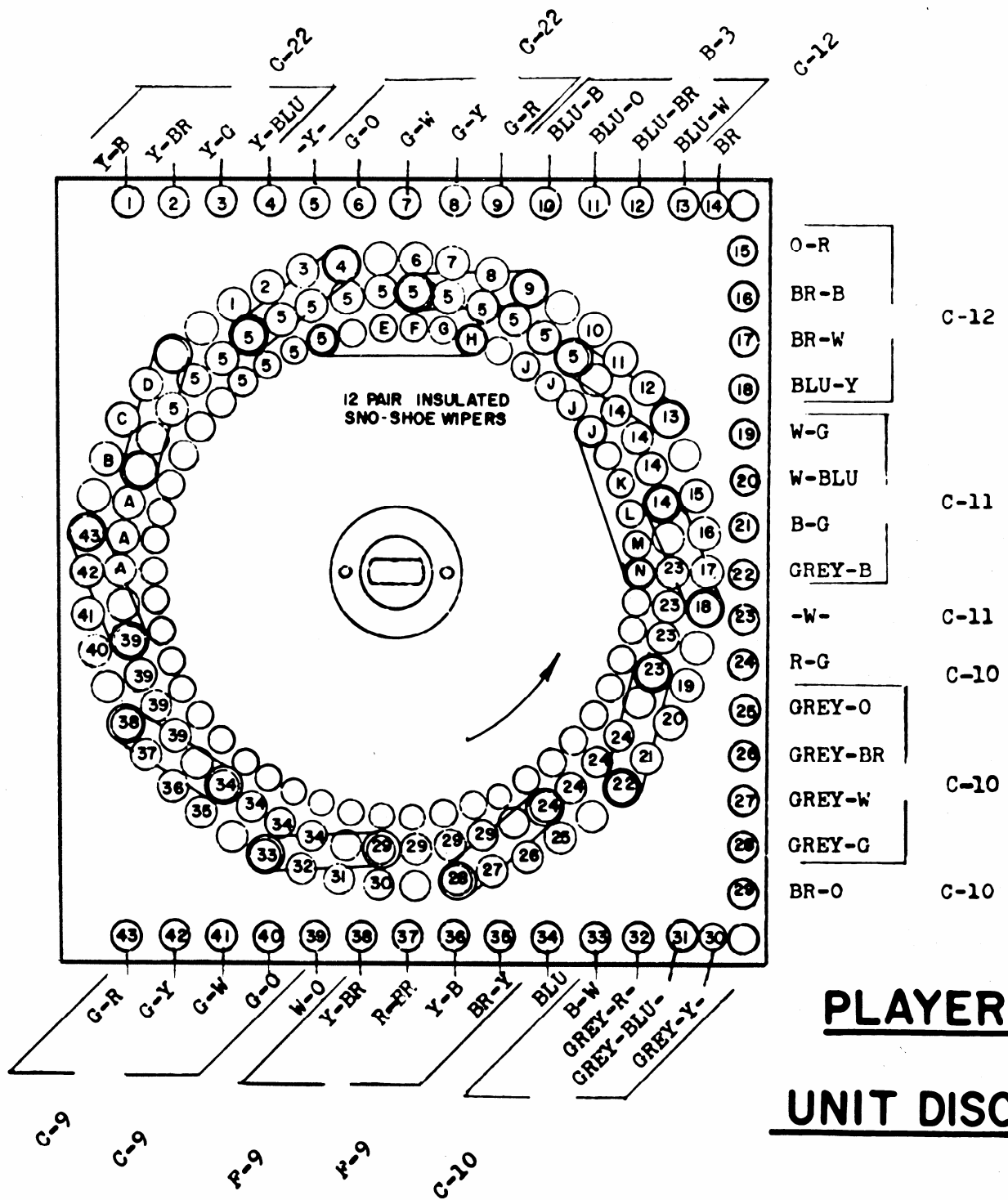
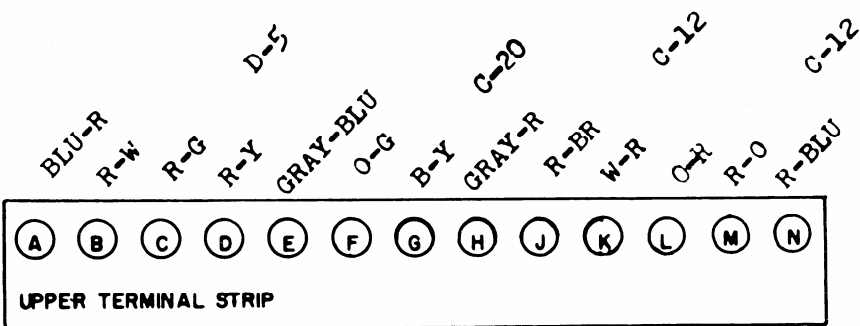


# BALL COUNT UNIT DISC

THIS UNIT RESETS AT THE START OF A NEW GAME, (DURING RESET CYCLE). IT ADVANCES ONE STEP EACH TIME THE LAST PLAYER COMPLETES HIS TURN.

View looking at WIPER FINGER also with WIPER in ZERO position.





- 15 O-R
- 16 BR-B
- 17 BR-W C-12
- 18 BLU-Y
- 19 W-G
- 20 W-BLU
- 21 B-G C-11
- 22 GREY-B
- 23 -W- C-11
- 24 R-G C-10
- 25 GREY-O
- 26 GREY-BR
- 27 GREY-W C-10
- 28 GREY-G
- 29 BR-O C-10

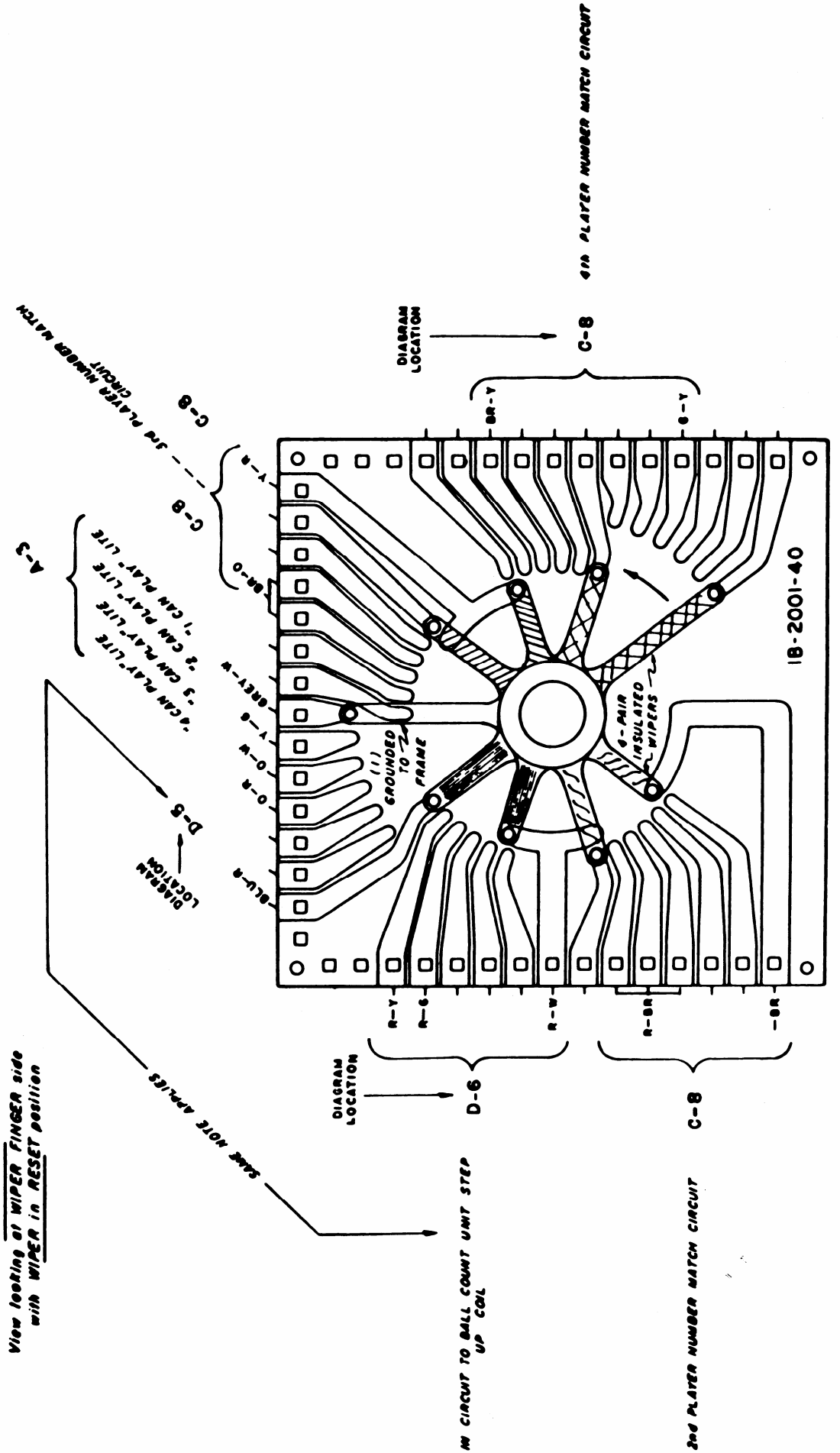
- 30 G-R C-9
- 31 G-Y C-9
- 32 G-W
- 33 G-O
- 34 W-O
- 35 Y-BR
- 36 R-BR
- 37 Y-B
- 38 BR-Y
- 39 BLU
- 40 B-W
- 41 GREY-R
- 42 GREY-BLU
- 43 GREY-Y

# PLAYER UNIT DISC

LUG		LUG	
1 2 3 4	IN CIRCUIT TO 100 POINT RELAY THRU 9TH POS. SWS. ON CORRESPONDING 10-PT. DRUM UNITS.	30 31 32 33	TO 10 POINT DRUM UNIT COILS.
5	FEED TO 6 V. A 24 V.	34	IN CIRCUIT TO CREDIT S.U. THRU SW. ON 1000 POINT RELAY.
6 7 8 9	IN CIRCUIT TO 1000 PT. RELAY, THRU 9TH POS. SWS. ON 100 POINT DRUM UNITS.	35 36 37 38	TO 100,000 POINT DRUM UNIT DISCS IN HIGH SCORE CIRCUIT.
10 11 12 13	"PLAYER UP LITES"	39	24 V. FEED FROM TILT RELAY.
14	TO SWITCH ON 10,000 PT. RELAY.	40 41 42 43	TO 10,000 PT. DRUM UNIT DISCS IN HIGH SCORE CIRCUIT.
15 16 17 18	TO 10,000 POINT DRUM UNIT COILS.	A B C D	IN CIRCUIT TO BALL COUNT S.U. COIL AFTER LAST PLAYER COMPLETES HIS TURN.
19 20 21 22	TO 1000 POINT DRUM UNIT COILS.	E F G H	IN CIRCUIT TO 10,000 POINT RELAY, THRU 9TH POSITION SWITCHES ON 1,000 POINT DRUM UNITS.
23	TO SWITCH ON 1000 POINT RELAY.	J	TO SWITCH ON 10,000 POINT RELAY.
24	TO SWITCH ON 100 POINT RELAY.	K L M N	IN CIRCUIT TO 100,000 POINT DRUM UNIT COILS, THRU 9TH POSITION SWITCHES ON 10,000 POINT DRUM UNITS.
25 26 27 28	TO 100 POINT DRUM UNIT COILS.		
29	TO SWITCH ON 10 POINT RELAY.		

# COIN S. U. DISC

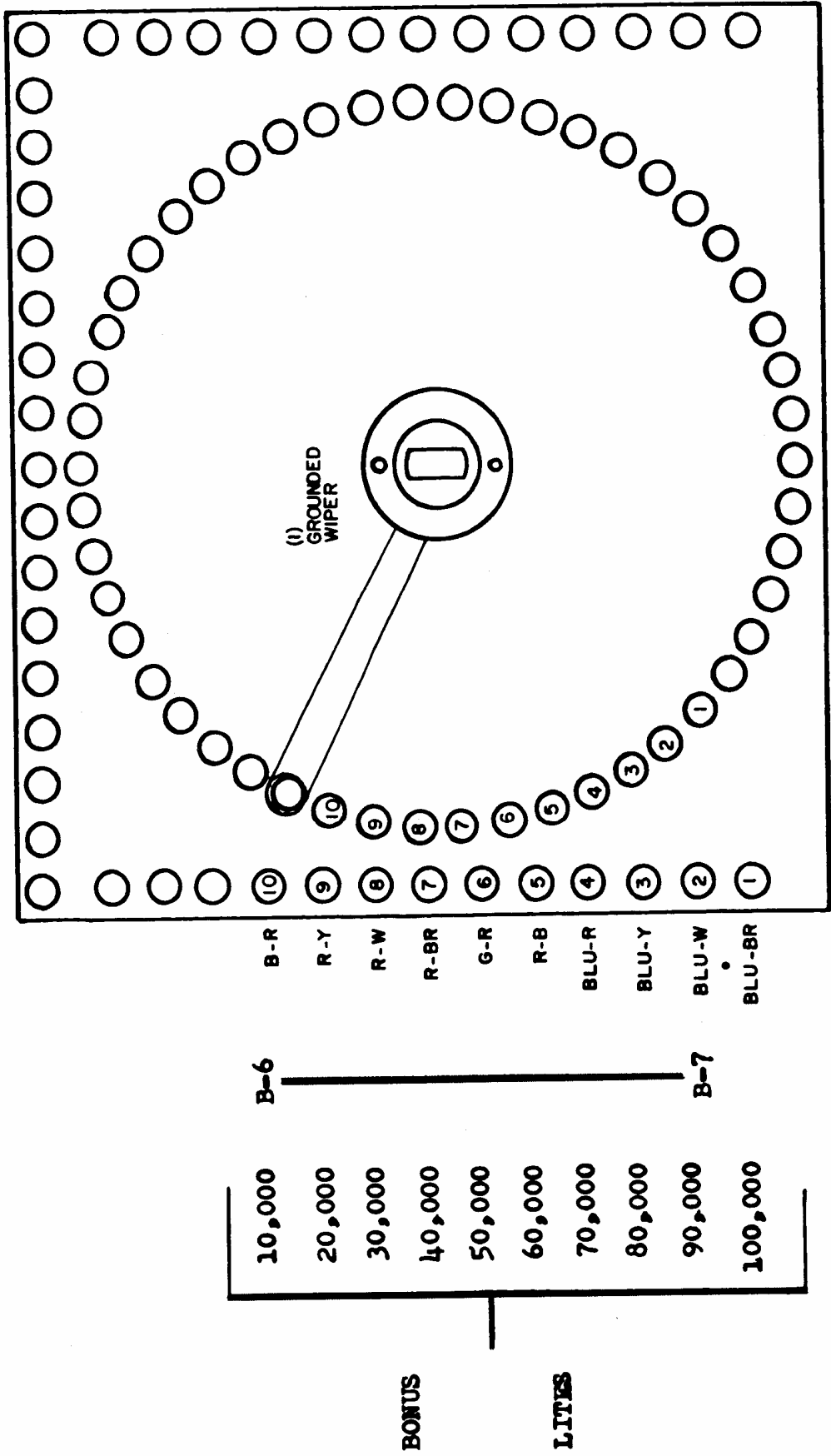
THIS UNIT RESETS AT START OF A GAME (DURING RESET CYCLE). IT THEN ADVANCES ONE STEP EACH TIME THE COIN RELAY IS PULSED.



# BONUS UNIT

THIS UNIT STEPS UP EACH TIME THE ADVANCE RELAY, 500 RELAY OR 5,000 RELAY IS PULSED

THE RESET COIL IS ENERGIZED BY BONUS RELAY, THRU DOUBLE BONUS RELAY AND SCORE MOTOR SWITCHES.



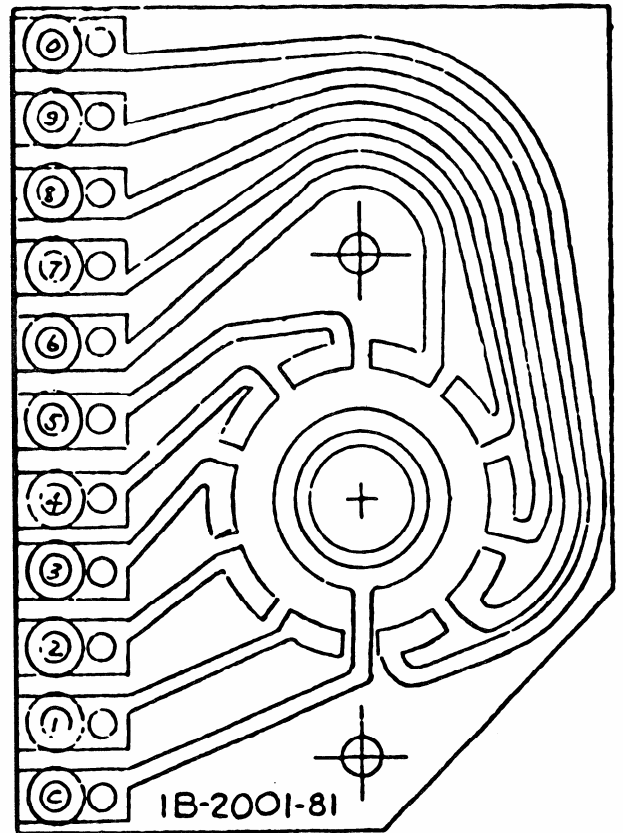
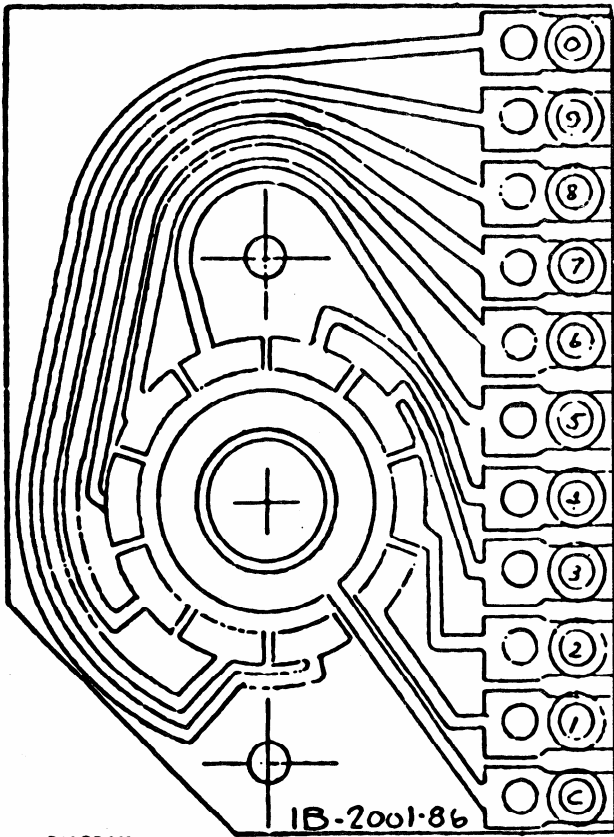


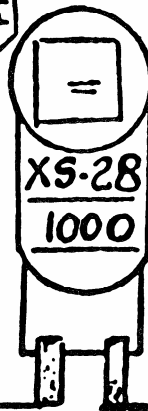
DIAGRAM  
LOCATION  
↓

**No. MATCH UNIT**

**B-5**

00 LITE W/G	⑩
60 " BR/W	⑨
10 " BR/G	⑧
70 " BR/Y	⑦
30 " BR/BU	⑥
80 " BR/R	⑤
20 " W/GRY	④
50 " W/B	③
90 " W/O	②
40 " W/BR	①
FEED -Y-	②

PRINTED CIRCUIT- IB-2001-86



PRINTED CIRCUIT- IB-2001-81

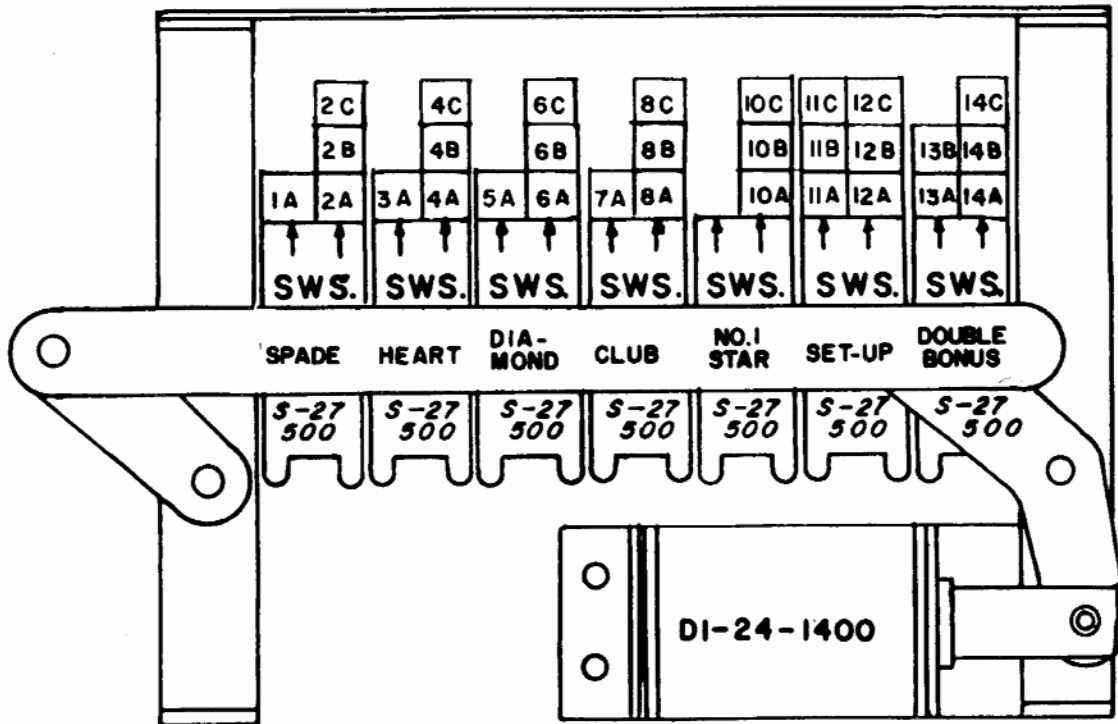
Y/BLU	00-MATCH
G/Y	60 "
Y/G	10 "
G/W	70 "
Y/R	30 "
G/O	80 "
Y/BR	20 "
G/R	50 "
W/BLU	90 "
Y/B	40 "
GRY/R	FEED

**E-8**

-R- [Component] R-O

DRIVE SPRING 10A-324-1

# RELAY BANK SWS.

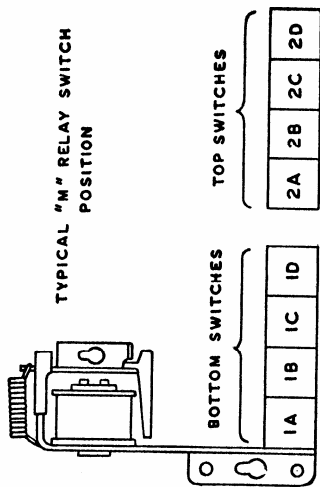


N.O. — NORMALLY OPEN SWITCH  
 N.C. — NORMALLY CLOSED SWITCH  
 M&B — MAKE AND BREAK SWITCH

RELAY	SW.	WIRE COLORS	DIAG. LOC.	TYPE	SWITCH OPERATION
SPADE RELAY	1A	R-W GRAY=R	D-20	N.O.	IN SERIES WITH SWITCH 'D' ON ROLLOVER RELAY.
	2C	G-R -Y- G-Y	B-7	M&B	OPENS TO TOP AND BOTTOM SPADE LITES, AND CLOSES TO ONE HORSESHOE LITE.
	2B	-J- BLU-BR G-0	D-19	M&B	OPENS IN CIRCUIT TO THIS RELAY COIL, AND CLOSES TO ADVANCE RELAY.
	2A	-J- -Y-	C-18	N.O.	IN SERIES WITH SWITCH '4A' ON HEART RELAY.
HEART RELAY	3A	R-W B-0	D-20	N.O.	IN SERIES WITH SWITCH 'D' ON ROLLOVER RELAY.
	4C	GRAY-B -Y- W-0	B-8	M&B	OPENS TO TOP AND BOTTOM HEART LITES, AND CLOSES TO ONE HORSESHOE LITE.
	4B	BR-BLU BLU-B BR-R	D-19	M&B	OPENS IN CIRCUIT TO THIS RELAY COIL AND CLOSES TO 500 RELAY.
	4A	-J- -J-	C-18	N.O.	IN SERIES WITH SWITCH '6A' ON DIAMOND RELAY.
DIAMOND RELAY	5A	R-W B-W	D-20	N.O.	IN SERIES WITH SWITCH 'D' ON ROLLOVER RELAY.
	6C	W-B -Y- GRAY-0	B-8	M&B	OPENS TO TOP AND BOTTOM DIAMOND LITES, AND CLOSES TO ONE HORSESHOE LITE.
	6B	0-B Y-BLU BR-R	D-19	M&B	OPENS IN CIRCUIT TO THIS RELAY COIL, AND CLOSES TO 500 RELAY.
	6A	-J- -J-	D-18	N.O.	IN SERIES WITH SWITCH '8A' ON CLUB RELAY.
CLUB RELAY	7A	R-W B-BLU	D-20	N.O.	IN SERIES WITH SWITCH 'D' ON ROLLOVER RELAY.
	8C	BR-0 -Y- BR-B	B-8	M&B	OPENS TO TOP AND BOTTOM CLUB LITES, AND CLOSES TO ONE HORSESHOE LITE.



RELAY	SW.	WIRE COLORS	DIAG. LOC.	TYPE	SWITCH OPERATION
CLUB RELAY	8B	-J- G-W G-O	D-18	M&B	OPENS IN CIRCUIT TO THIS RELAY COIL, AND CLOSSES TO ADVANCE RELAY.
	8A	-J- -J-	D-18	N.O.	IN SERIES WITH SWITCH ON DOUBLE BONUS RELAY.
NO. 1 STAR RELAY	10C	O-B -J-	E-17	N.C.	IN CIRCUIT TO COIL ON THIS RELAY.
	10B	-Y- O-R	B-9	N.O.	TO NO. 1 STAR LITE.
	10A	B-O -J-	D-17	N.O.	IN SERIES WITH SWITCH '12B' ON SET-UP RELAY.
SET-UP RELAY	11C	G-R B-R R-BLU	E-17	M&B	IN CIRCUIT TO TARGET RESET RELAY.
	11B	Y-B O-BLU	D-18	N.O.	ENERGIZES EXTRA BALL RELAY, THRU SWITCH ON ROLLOVER RELAY.
	11A	R-W GRAY-BR	D-18	N.O.	IN CIRCUIT TO "CREDIT-EXTRA BALL" ADJUSTMENT JACK.
	12C	R-Y -Y-	C-17	N.C.	OPENS CIRCUIT TO TARGET DELAY RELAY.
	12B	-J- -J-	E-17	N.C.	IN CIRCUIT TO COIL ON THIS RELAY.
	12A	-Y- O-G	B-9	N.O.	TO NO. 2 STAR LITE AND HORSESHOE LANE LITE.
DOUBLE BONUS RELAY	13B	R-O O-B B-R	D-20	M&B	IN CIRCUIT TO 10,000 POINT RELAY. (WHEN COLLECTING BONUS).
	13A	G-O Y-BR O-W	D-13	M&B	IN SERIES WITH SWITCH '1A' ON BONUS RELAY.
DOUBLE BONUS RELAY	14C	W-R GRAY-W BR-Y	E-22	M&B	OPENS IN CIRCUIT TO 100 POINT RELAY AND CLOSSES TO 1,000 POINT RELAY.
	14B	-J- -J-	E-18	N.C.	IN CIRCUIT TO COIL ON THIS RELAY.
	14A	-Y- BLU-BR	B-10	N.O.	TO DOUBLE BONUS LITE AND LEFT SIDE ROLL-UP LITE.

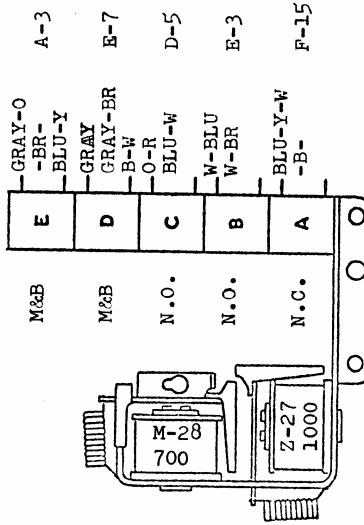


# RELAYS & SWITCHES LOCATED ON MECHANISM PANEL

## GAME-OVER

LATCH COIL IS ENERGIZED BY SCORE MOTOR CAM SWITCH '1C', THRU SWITCH ON COIN RE-LAY. TRIP COIL IS ENERGIZED BY COIN RE-LAY, THRU A ZERO SWITCH ON PLAYER UNIT OR BALL COUNT UNIT---ALSO BY LOCK RELAY OR WIPER FINGER ON BALL COUNT UNIT DISC.

SWITCH TYPE | DIAGRAM LOCATION



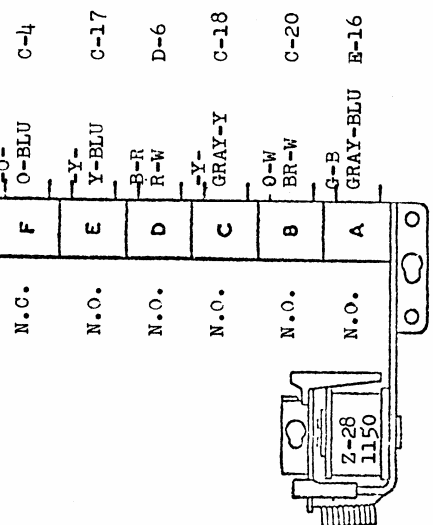
OPENS TO "PLAYER UP" AND "BALL IN PLAY" LITES, & CLOSSES TO NO. MATCH AND GAME-OVER LITES.

OPENS IN HI-SCORE CIRCUITS AND CLOSSES IN NUMBER MATCH CIRCUITS TO "CREDIT-EXTRA BALL" ADJUSTMENT.

IN CIRCUIT TO RESET RELAY, THRU SWITCH ON COIN RELAY.

IN CIRCUIT TO CREDIT UNIT RESET COIL.

OPENS CIRCUITS TO MOST PLAYFIELD SWITCHES.



## BALL INDEX

IS ENERGIZED BY 100 OR 1,000 POINT RE-LAY, THRU SWITCH ON EXTRA BALL RELAY---ALSO BY TILT RELAY.

IN SERIES WITH SWITCH 'A' ON COIN SET-UP RELAY.

IN SERIES WITH SWITCH '1B' ON TARGET RESET RELAY.

IN CIRCUIT TO BALL COUNT S.U. COIL---ALSO IN SERIES WITH SWITCH 'C' ON PLAYER RESET RELAY.

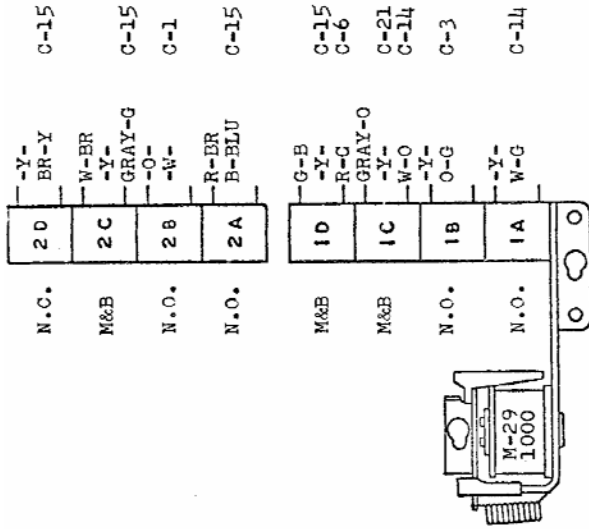
IN HOLD CIRCUIT TO EXTRA BALL RELAY.

IN SERIES WITH SWITCH '1B' ON BONUS RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

## OUTHOLE

IS ENERGIZED BY OUTHOLE SWITCH, THRU ZERO SWITCH ON BONUS UNIT AND NORMALLY CLOSED SWITCH ON BONUS RELAY.



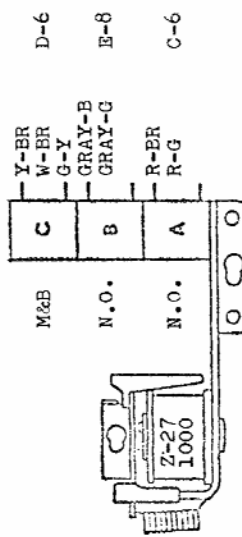
IN HOLD CIRCUIT TO TILT RELAY.  
OPENS IN CIRCUIT TO TILT RELAY & BALL INDEX RELAY, AND CLOSES TO PULSE BALL RELEASE COIL.  
ENERGIZES 110V. RELAY BANK RESET COIL, THRU SCORE MOTOR CAM SWITCH 4C.  
IN HOLD CIRCUIT TO THIS RELAY.

OPENS IN HOLD CIRCUIT TO BALL INDEX RELAY AND CLOSES IN SERIES WITH SWITCH 'D' ON EXTRA BALL RELAY.  
OPENS IN CIRCUIT TO 1,000 POINT RELAY, AND CLOSES TO ENERGIZE D-E AND A-L TARGET RESET COILS.  
RUNS SCORE MOTOR.

IN CIRCUIT TO B-I-G TARGET RESET COIL.

## PLAYER RESET

IS ENERGIZED BY BALL COUNT UNIT END-OF-STROKE SWITCH. IT THEN HOLDS IN THRU SCORE MOTOR INDEX CAM SWITCH 'C'.

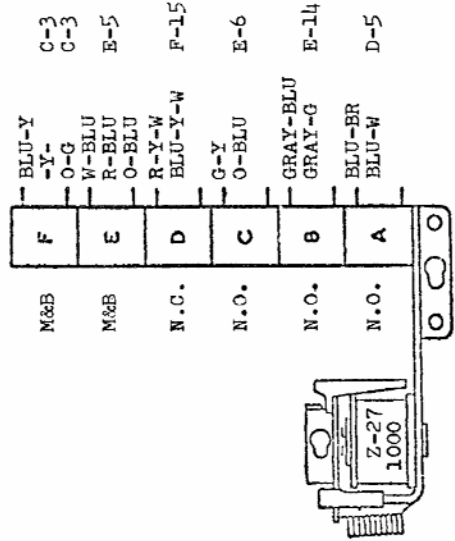


OPENS IN CIRCUIT TO PLAYER UNIT S.U. COIL AND CLOSES TO PLAYER UNIT RESET COIL.  
IN NUMBER MATCH CIRCUIT TO CREDIT UNIT S.U. COIL.

HOLD CIRCUIT TO THIS RELAY, THRU SCORE MOTOR INDEX CAM SWITCH 'C'.

## RESET

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



OPENS CIRCUIT TO CREDIT UNIT RESET COIL AND CLOSES TO RUN SCORE MOTOR.

OPENS IN CIRCUIT TO COIN UNIT S.U. COIL AND CLOSES TO RESET COILS ON COIN, BALL COUNT AND GAME-OVER.

OPENS CIRCUITS TO MOST PLAYFIELD SWITCHES.

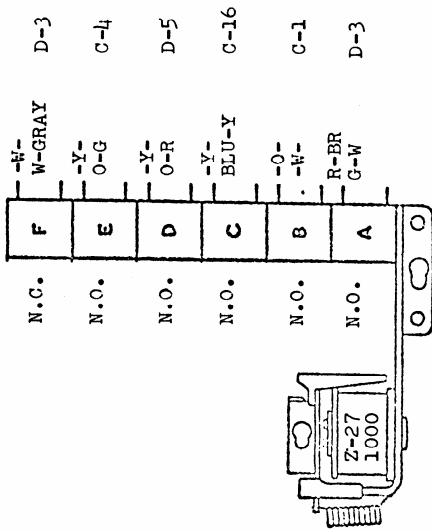
IN CIRCUIT TO PLAYER UNIT RESET COIL.

IN CIRCUIT TO BONUS RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

## COIN

IS ENERGIZED BY COIN SWITCH OR BY CREDIT UNIT RESET COIL END-OF-STROKE SWITCH.



D-3 OPENS CIRCUIT TO COIN LOCKOUT COIL.

C-4 RUNS SCORE MOTOR.

D-5 ENERGIZES RESET RELAY, THRU SWITCH ON GAME-OVER RELAY.

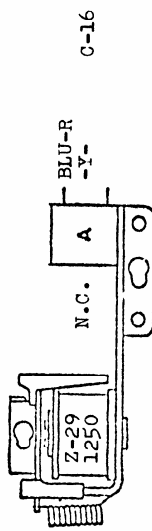
C-16 ENERGIZES GAME-OVER RELAY TRIP COIL, THRU BALL COUNT UNIT OR PLAYER UNIT ZERO SWITCHES.

C-1 ENERGIZES 110V. RELAY BANK RESET COIL, THRU SCORE MOTOR CAM SWITCH 4C.

D-3 IN HOLD CIRCUIT TO THIS RELAY.

## LOCK

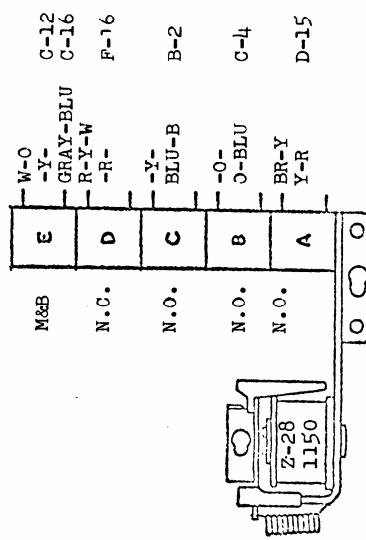
IS ENERGIZED WHEN POWER IS SUPPLIED TO TRANSFORMER.



C-16 ENERGIZES GAME-OVER RELAY TRIP COIL.

## TILT

IS ENERGIZED BY PLUMB BOB TILT, BALL ROLL-DOWN TILT OR PLAYFIELD VIBRATION TILT SWITCH.



C-12 OPENS IN HI-SCORE CIRCUITS AND ALL (20) SCORE DRUM COILS, AND CLOSSES TO ENERGIZE BALL INDEX RELAY.

C-16 OPENS CIRCUITS TO MOST PLAYFIELD SWITCHES.

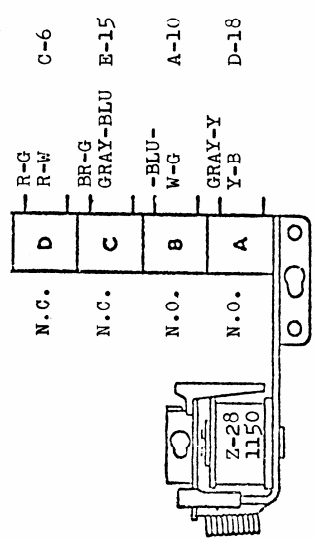
F-16 TO "TILT" LITE.

B-2 IN SERIES WITH SWITCH 'A' ON COIN SET-UP RELAY.

C-4 HOLD CIRCUIT TO THIS RELAY, THRU SWITCH ON OUTHOLE RELAY.

## EXTRA BALL

IS ENERGIZED BY ROLLOVER RELAY, THRU SWITCH ON SET-UP RELAY---ALSO, IF "CREDIT-EXTRA BALL" ADJUSTMENT IS IN "EXTRA BALL" POSITION, BY HI-SCORES, OR TARGET RESET RELAY THRU SWITCH ON SET-UP RELAY.



C-6 IN SERIES WITH SWITCH 'D' ON BALL INDEX RELAY.

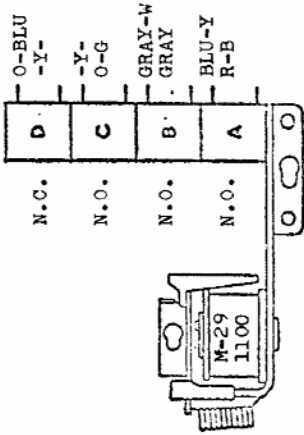
E-15 IN CIRCUIT TO BALL INDEX RELAY.

A-10 TO "SHOOT AGAIN" LITES.

D-18 IN HOLD CIRCUIT TO THIS RELAY.

10¢

IS ENERGIZED BY 10¢ COIN SWITCH, IF 10¢ ADJUSTMENT JACK IS IN "2 PLAYS" OR "3 PLAYS" POSITION---ALSO BY 25¢ COIN SWITCH ON COIN SET-UP RELAY IF "2 COINS FOR 3 PLAYS" ADJUSTMENT IS IN "ON" POSITION.



C-4 IN HOLD CIRCUIT TO COIN SET-UP RELAY.

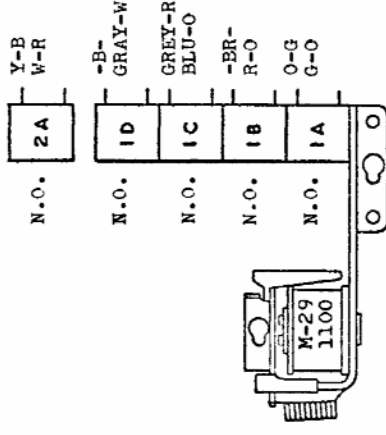
C-4 RUNS SCORE MOTOR.

D-7 PULSES CREDIT UNIT S.U. COIL, THRU IMPULSE CAM SWITCH 'B'.

E-2 IN HOLD CIRCUIT TO THIS RELAY.

25¢

IS ENERGIZED BY 25¢ COIN SWITCH.



E-2 IN HOLD CIRCUIT TO THIS RELAY.

D-7 PULSES CREDIT UNIT S.U. COIL, THRU "2 COINS FOR 3 PLAYS" ADJUSTMENT JACK.

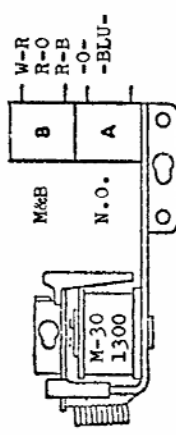
D-7 PULSES CREDIT UNIT S.U. COIL OR COIN RELAY, THRU "2 COINS FOR 3 PLAYS" ADJUSTMENT JACK.

C-4 ENERGIZES COIN SET-UP RELAY, THRU "2 COINS FOR 3 PLAYS" ADJUSTMENT JACK.

C-3 RUNS CORE MOTOR, THRU 25¢ COIN SWITCH.

COIN SET-UP

IS ENERGIZED BY 25¢ RELAY, ONLY IF "2 COINS FOR 3 PLAYS" ADJUSTMENT IS IN "ON" POSITION.

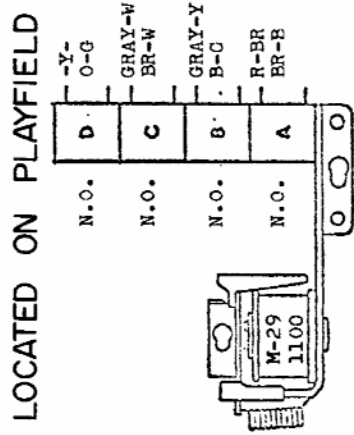


E-2 OPENS IN CIRCUIT TO 25¢ RELAY AND CLOSES TO 10¢ RELAY.

E-4 IN HOLD CIRCUIT TO THIS RELAY.

5000

IS ENERGIZED BY LEFT ROLL-UP SWITCH OR BY LEFT SIDE TARGET SWITCH.



C-4 RUNS SCORE MOTOR.

D-22 IN SERIES WITH SWITCH 14C ON DOUBLE BONUS RELAY.

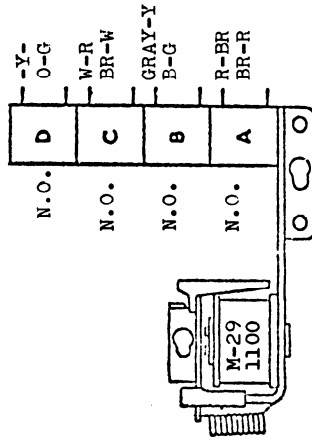
E-15 PULSES BONUS UNIT S.U. COIL AT SCORE MOTOR CAM SWITCH 2A.

E-19 IN HOLD CIRCUIT TO THIS RELAY.

LOCATED ON PLAYFIELD

## 500

IS ENERGIZED BY LEFT TOP TARGET---ALSO BY RIGHT BOTTOM ROLLOVER (INSIDE) OR TOP ROLLOVER (DIAMOND), THRU SWITCH ON DIAMOND RELAY.



C-4 RUNS SCORE MOTOR.

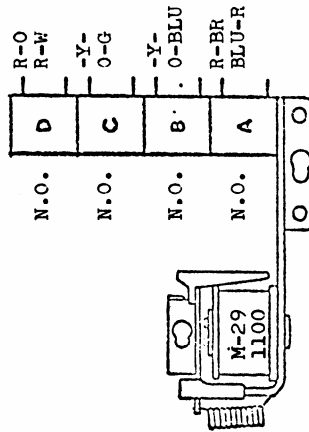
D-22 PULSES 100 POINT RELAY.

E-15 PULSES BONUS UNIT S.U. COIL AT SCORE MOTOR CAM SWITCH 2A.

E-19 IN HOLD CIRCUIT TO THIS RELAY.

## ROLL-OVER

IS ENERGIZED BY HORSESHOE ROLLOVER BUTTON SWITCH.



E-20 IN CIRCUIT TO 10,000 POINT RELAY.

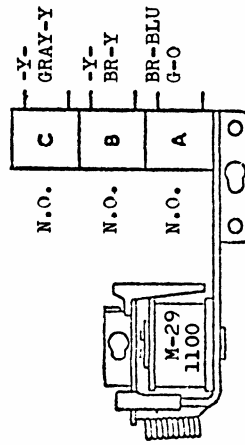
C-3 RUNS SCORE MOTOR.

C-18 IN SERIES WITH SWITCH '11B' ON SET-UP RELAY.

E-18 IN HOLD CIRCUIT TO THIS RELAY.

## ADVANCE

IS ENERGIZED BY RIGHT TOP TARGET SWITCH ---ALSO BY RIGHT BOTTOM ROLLOVER (OUTSIDE) OR TOP ROLLOVER (CLUB) THRU SWITCH ON CLUB RELAY---AND BY LEFT BOTTOM ROLLOVER (OUTSIDE) OR TOP ROLLOVER (SPADE) THRU SWITCH ON SPADE RELAY.



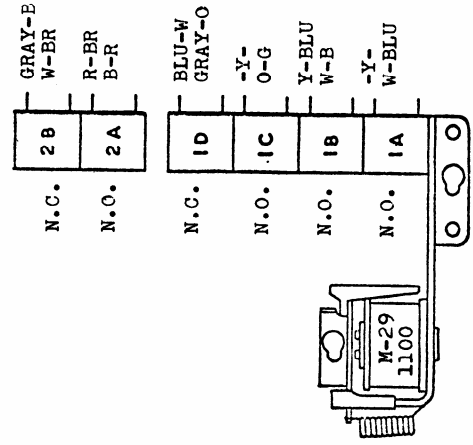
C-15 PULSES BONUS UNIT S.U. COIL.

E-21 PULSES 1,000 POINT RELAY.

D-18 HOLD CIRCUIT TO THIS RELAY, THRU BONUS UNIT END-OF-STROKE SWITCH.

## TARGET RESET

IS ENERGIZED BY B-I-G RELAY OR D-E-A-L RELAY WHEN SET-UP RELAY IS NOT IN---ALSO BY B-I-G RELAY IN SERIES WITH D-E-A-L RELAY IF SET-UP RELAY IS IN.



C-15 IN CIRCUIT TO BALL INDEX RELAY.

E-17 IN HOLD CIRCUIT TO THIS RELAY.

D-21 IN CIRCUIT TO 1,000 POINT RELAY.

C-4 RUNS SCORE MOTOR.

C-17 IN CIRCUIT TO NO. 1 STAR RELAY, SET-UP RELAY, AND 'SPECIAL' WHEN BALL GOES THRU HORSESHOE AT TOP RIGHT.

C-14 IN CIRCUIT TO B-I-G TARGET RESET COIL AND D-E & A-L TARGET RESET COILS.

## TARGET DELAY

IS ENERGIZED BY B-I-G RELAY IN SERIES WITH D-E-A-L RELAY AND NORMALLY CLOSED SWITCH ON SET-UP RELAY.

## D-E-A-L

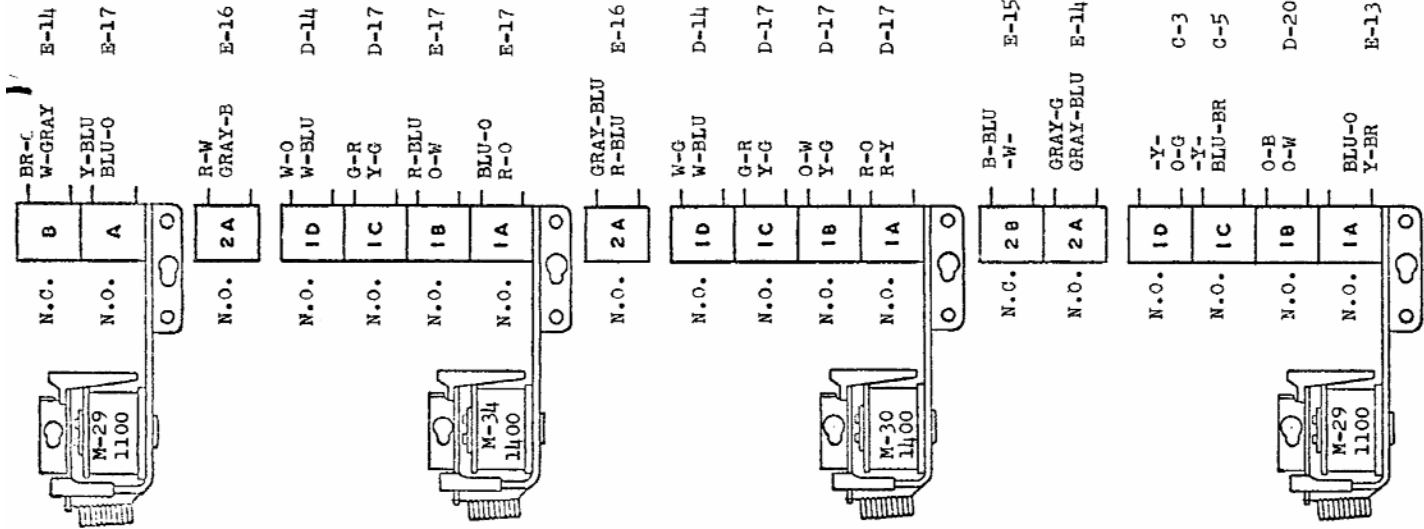
IS ENERGIZED BY D, E, A & L TARGET SWITCHES IN SERIES.

## B-I-G

IS ENERGIZED BY B, I & G TARGET SWITCHES IN SERIES.

## BONUS

DURING RESET CYCLE, IT IS ENERGIZED BY RESET RELAY. DURING PLAY, IT IS ENERGIZED BY OUTHOLE SWITCH, THRU ZERO SWITCH ON BONUS UNIT.



OPENS CIRCUIT TO D-E AND A-L TARGET RESET COILS.

IN HOLD CIRCUIT TO THIS RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

IN CIRCUIT TO D-E AND A-L TARGET RESET COILS.

ENERGIZES TARGET RESET RELAY, THRU SWITCH ON SET-UP RELAY.

IN CIRCUIT TO TARGET RESET RELAY.

IN CIRCUIT TO TARGET DELAY RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

IN CIRCUIT TO B-I-G TARGET RESET COIL.

ENERGIZES TARGET RESET RELAY, THRU SWITCH ON SET-UP RELAY.

IN SERIES WITH SWITCH '1B' ON D-E-A-L RELAY.

IN SERIES WITH SWITCH '1A' ON D-E-A-L RELAY.

OPENS CIRCUIT TO OUTHOLE RELAY.

IN HOLD CIRCUIT TO THIS RELAY.

RUNS SCORE MOTOR.

IN HOLD CIRCUIT TO RESET RELAY.

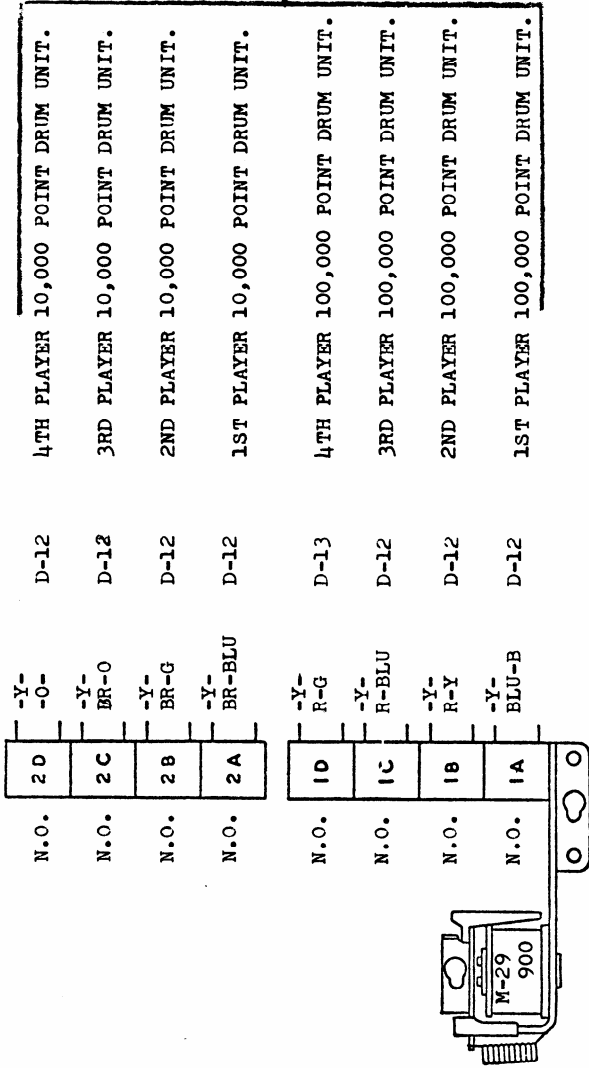
IN CIRCUIT TO 10,000 POINT RELAY. (WHEN COLLECTING BONUS).

IN CIRCUIT TO BONUS UNIT RESET COIL.

LOCATED IN BACK-BOX

NO. 3 RESET

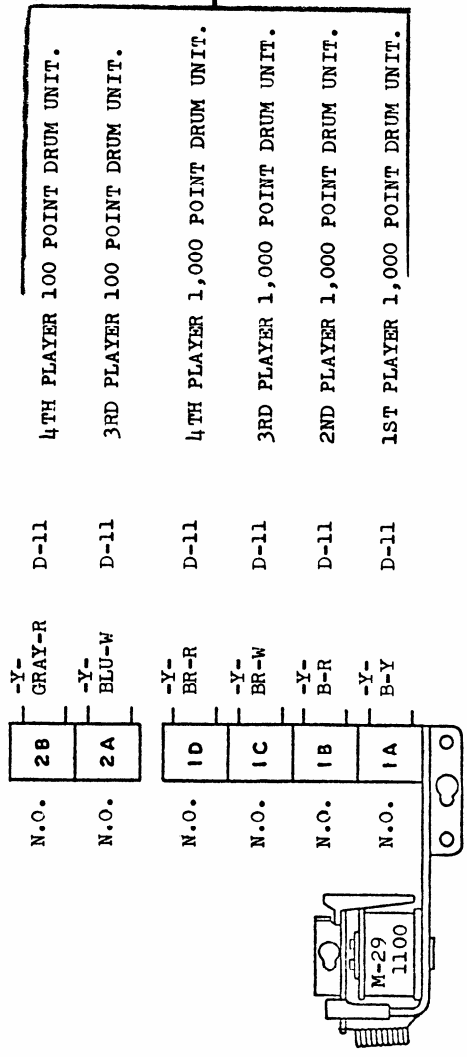
IS PULSED BY IMPULSE CAM SWITCH 'A', THRU SWITCH ON RESET RELAY.



THESE SWITCHES PULSE THE INDICATED DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.

NO. 2 RESET

IS PULSED BY IMPULSE CAM SWITCH 'E' (FORWARD), THRU SWITCH ON RESET RELAY.

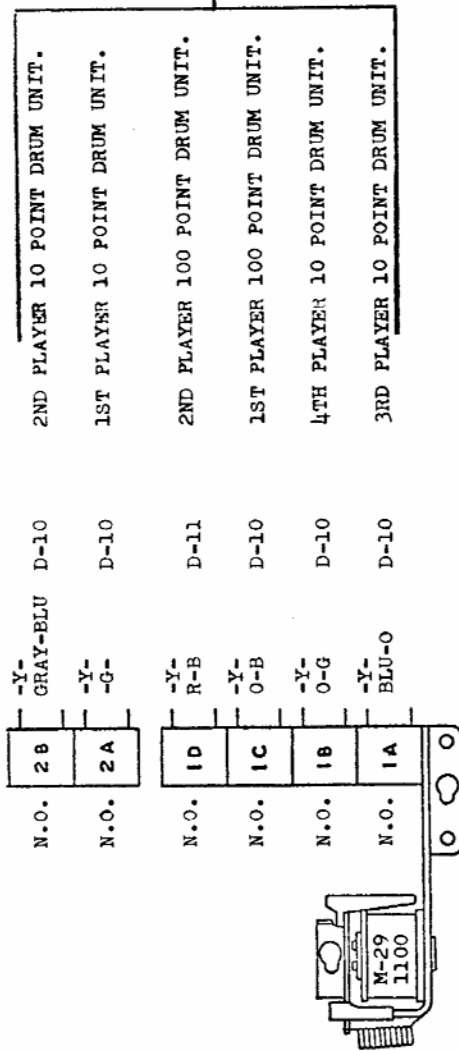


THESE SWITCHES PULSE THE INDICATED DRUM UNIT, THRU ZERO SWITCH ON THAT UNIT.



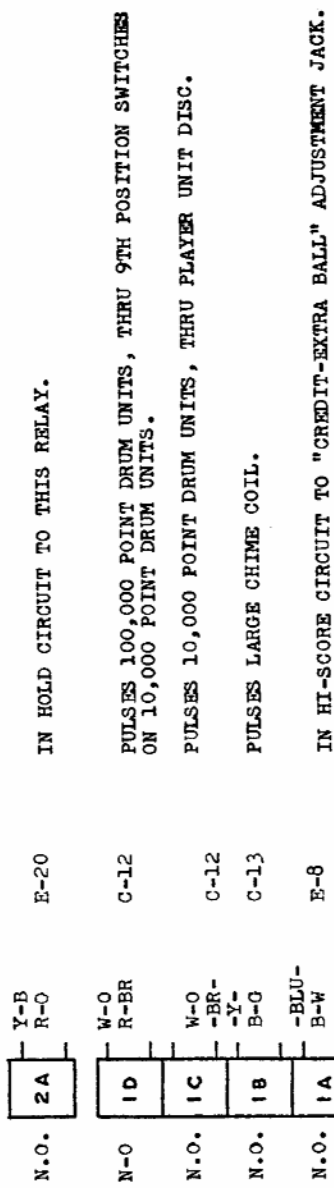
## NO.1 RESET

IS PULSED BY IMPULSE CAM SWITCH 'E' (FORWARD), THRU SWITCH ON RESET RELAY.



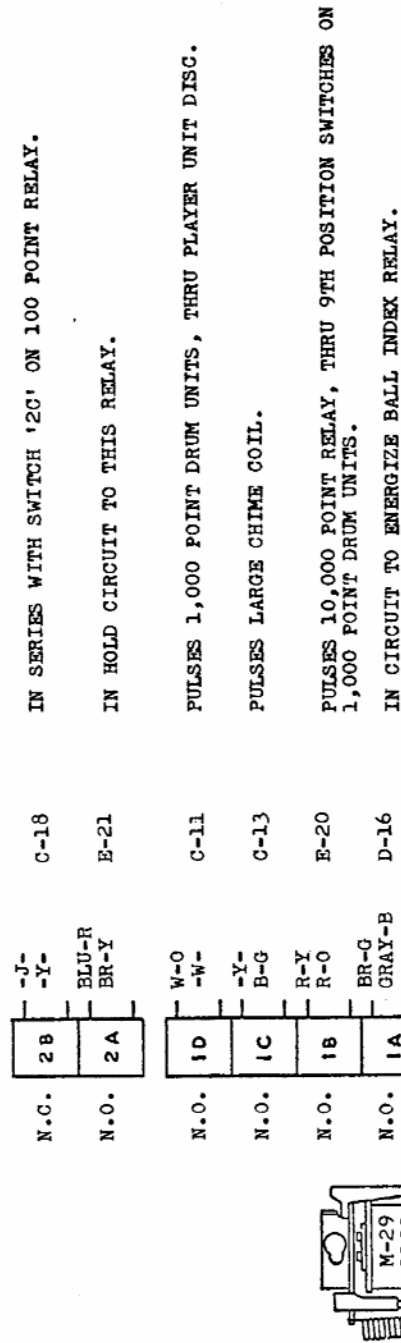
## 10,000 POINT

WILL PULSE ONE TIME FOR EACH OF THE FOUR RELAYS WHICH ARE TRIPPED ON RELAY BANK (HEART RELAY, SPADE RE., DIAMOND RE & CLUB RE.) WHEN BALL MAKES HORSESHOE ROLL-OVER TO PULL IN ROLLOVER RELAY---ALSO WHEN BALL LEAVES PLAYFIELD AND BONUS RELAY PULS IN (TO COLLECT BONUS).



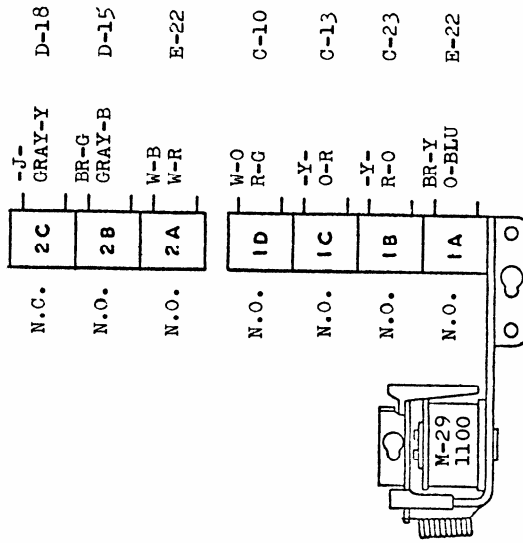
## 1,000 POINT

IS PULSED BY:  
 1. ADVANCE RELAY.  
 2. 5,000 RELAY, THRU SWITCH ON DOUBLE BONUS RELAY.  
 3. LEFT OR RIGHT JET BUMPER SWITCH IF "JET BUMPER ADJUSTMENT" JACK IS IN "LIBERAL" POSITION.  
 4. STAND-UP SWITCHES.  
 5. B, I, G, D, E, A OR L TARGET SWITCHES.



### 100 POINT

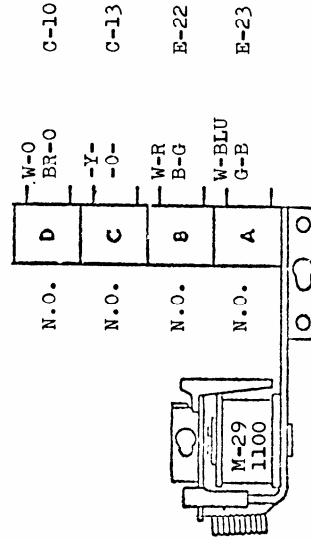
- IS PULSED BY:
- 500 RELAY.
  - 5,000 RELAY, THRU SWITCH ON DOUBLE BONUS RELAY.
  - LEFT OR RIGHT JET BUMPER SWITCH IF "JET BUMPER ADJUSTMENT" JACK IS IN "CONSERVATIVE" POSITION.



IN SERIES WITH SWITCH 'A' ON EXTRA BALL RELAY.  
 IN CIRCUIT TO ENERGIZE BALL INDEX RELAY.  
 IN HOLD CIRCUIT TO THIS RELAY.  
 PULSES 100 POINT DRUM UNITS, THRU PLAYER UNIT DISC.  
 PULSES SMALL CHIME COIL.  
 PULSES NUMBER MATCH UNIT COIL.  
 PULSES 1,000 POINT RELAY, THRU 9TH POSITION SWITCHES ON 100 POINT DRUM UNITS.

### 10 POINT

IS PULSED BY (2) KICKER SWITCHES.



PULSES 10 POINT DRUM UNITS, THRU PLAYER UNIT DISC.  
 PULSES MEDIUM CHIME COIL.  
 PULSES 100 POINT RELAY, THRU 9TH POSITION SWITCHES ON 10 POINT DRUM UNITS.  
 IN HOLD CIRCUIT TO THIS RELAY.