

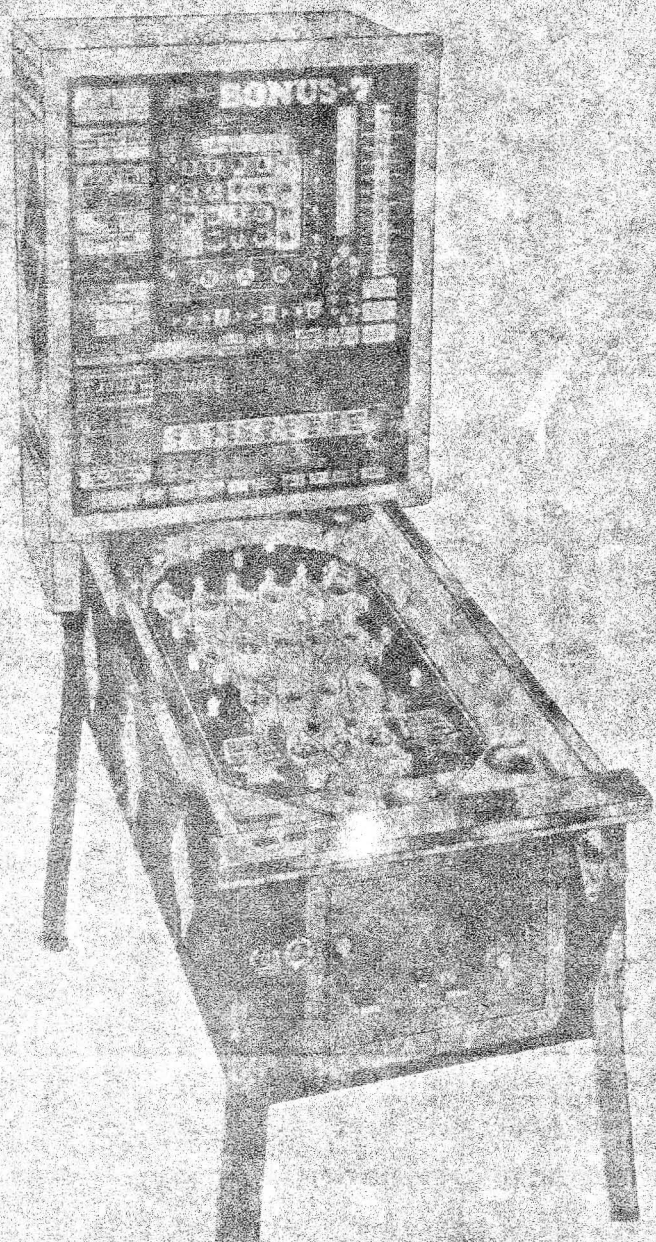
Bally

Manual No. 3400
Game No. 909
April 15, 1971

BONUS-7
BONUS-7
BONUS-7

BONUS-7

SERVICE & OPERATING INSTRUCTIONS



Bally

MANUFACTURING CORPORATION

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"BONUS 7 DIAMOND FEATURE" BINGO

INTRODUCTION & DESIGN CHANGES

The "Bonus 7 Diamond Feature" Bingo Game is a new special version of the popular "Super 7" Bingo Game. The feature that distinguishes the "Bonus 7" Game is three new "Sunny Circles" in the Mystic Lines Bingo Scoreboard. Achieving either 2 or 3 lit numbers in a "Sunny Circle" hole (when 2 or 3 "Sunny Circle Feature" is lit) gives top Diamond Feature scores guaranteed for the next game. In principle the "Sunny Circle Feature" ties the standard bingo game and the feature game together by providing an incentive for big replay action on the "Diamond 7" Feature. A player can play the standard bingo game - win or lose - and still come back and achieve the "Sunny Circle Feature" (when lit) for a big next game.

This Book has been designed as the complete Electrical Component & Circuit Function Guide for your "Bonus 7" Bingo Game. The following electrical operating instructions gives all needed information on the function of the various Switches, Relays & Stepping Unit Contact Plate Discs, their location on the Wiring Diagram & Wire Code Information.

This Special operating instruction edition for "Bonus 7" is meant to be used in conjunction with the recently released "Bingo Games Parts Catalog" (Manual 1000 Series). This new Parts Catalog gives comprehensive information on the assembly of the Game & unit function, with all parts & their part numbers indexed for your convenience.

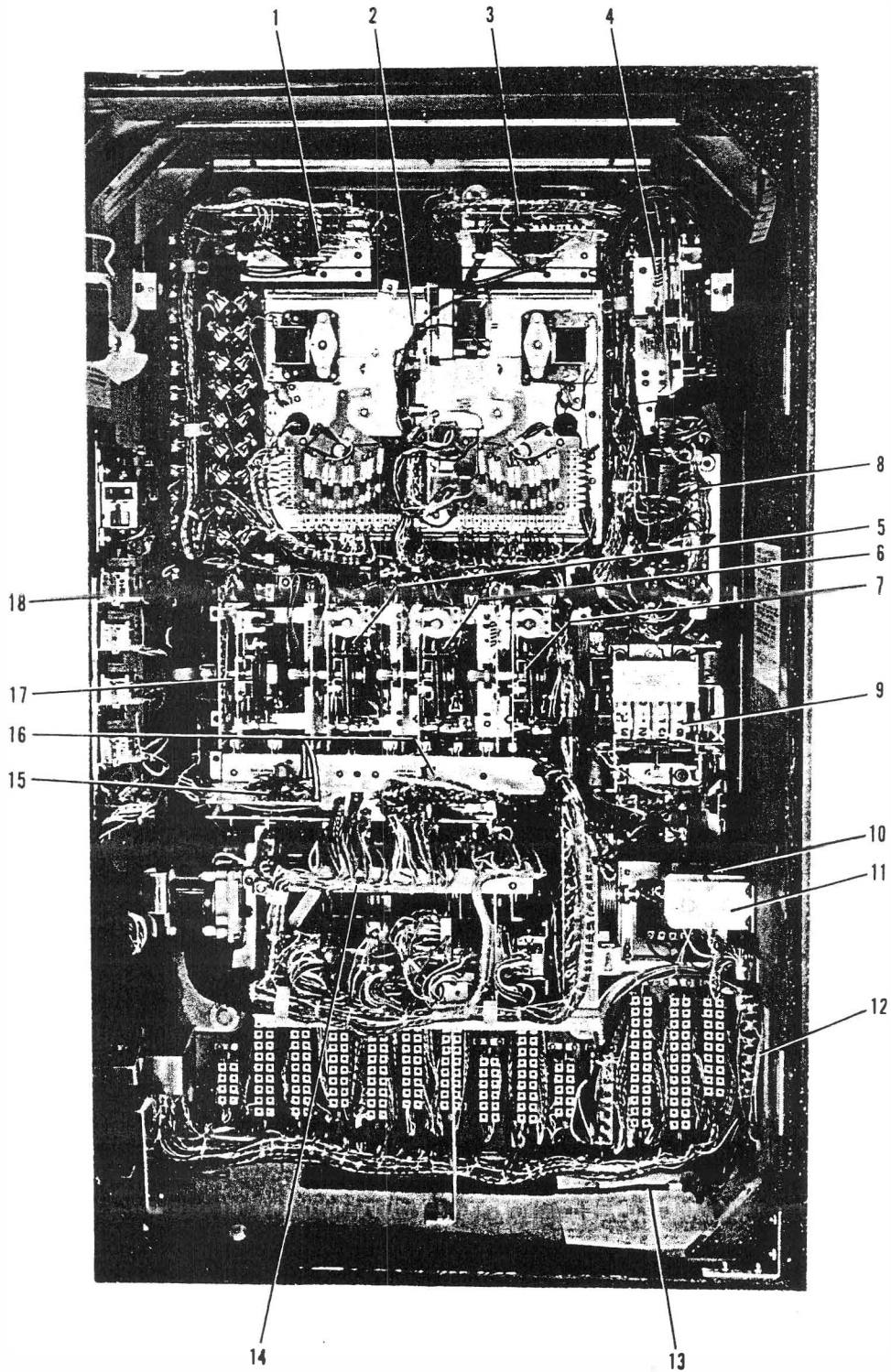
NEW COIL NUMBERS

Recently Bally Mfg. Corp. opened a new facility for manufacturing all of its own electrical components such as switches, coils etc. This led to the necessity to change the Part Numbers of these units to a new improved Bally system. All of the new

Ballyparts are interchangeable with the older units; you can still order electrical parts using the old numbers but you will receive the new Bally replacement part with the new numbering system, so do not be confused.

<u>Old Coil Numbers</u>	<u>New Bally Coil No.'s</u>	<u>old coil number</u>	<u>new coil number</u>
CO-25A-7	A-25-1050	E-184-218	F-31-1500
CO-25GG-7	B-25-925	E-184-224	F-31-2100
CO-25H-7	BC-25-925	E-184-231	CA-29-800/31-900
CO-26A-9	A-26-1100	E-184-235	AK-25-1050
CO-26GG-9	B-26-1100	E-184-236	J-28-1100
CO-27R-11	C-27-1000	E-184-237	BA-26-1040
CO-28R-15	C-28-1100	E-184-241	AF-25-600/31-1000
E-184-41	BF-27-1250	E-184-243	A-26-1200
E-184-46	EA-30-1150	E-184-248	FC-30-1300
E-184-47	EA-32-1550	E-184-249	BF-28-1500
E-184-55	B-29-1200	E-184-250	D-30-700
E-184-56	A-27-1100	E-184-252	BB-26-655/32-1245
E-184-74	CF-28-1025	E-184-254	FC-30-1400
E-184-75	E-32-1700	E-184-257	AP-25-1050
E-184-112	EA-29-950	E-184-260	B-28-1600
E-184-135	BA-25-925	E-184-261	AP-31-3000
E-184-155	D-27-425	E-184-262	A-26-1200
E-184-156	D-28-500	E-184-263	AF-27-775/31-861
E-184-160	B-25-750	E-184-264	A-28-1900
E-184-175	AP-27-1300	E-184-265	AF-25-600/31-1000
E-184-180	CE-33-4800	E-184-266	D-29-675
E-184-190	AF-25-600/31-1000	E-184-268	AF-26-750/31-900
E-184-204	AF-27-1000/32-1300	E-184-269	FC-33-2600
E-184-205	B-27-1300	E-184-270	AB-31-3000
E-184-206	CD-29-1600	E-184-271	AK-24-750
E-184-207	A-27-1400	E-184-272	A-25-1000
E-184-213	A-27-1300	E-184-274	FC-32-2100

BACK CABINET UNIT LAYOUT & PAGE INDEX



ALWAYS GIVE MODEL AND PART NO. WHEN ORDERING SERVICE PARTS

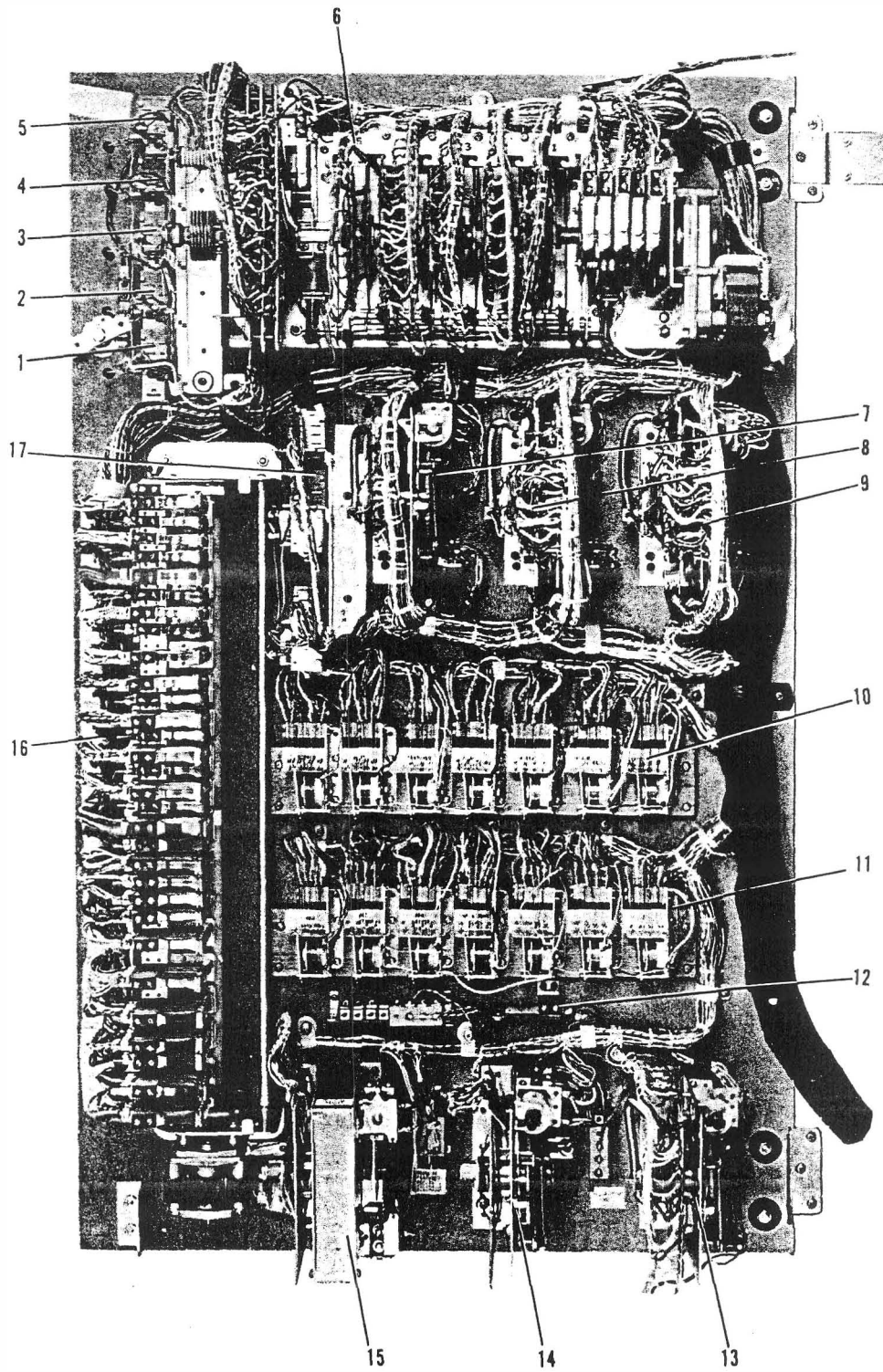
BACK CABINET UNIT LAYOUT & PAGE INDEX

Bally

Index No.	Part No.	Description	Page No.	Index No.	Part No.	Description	Page No.
		Note: This Photograph shows an interior view of the Back Cabinet & Insert Unit with the Back Door removed.		10	E-122-110B	Transformer (See Parts Book)	—
1	AS-827-236ND	Selection Features Unit . . .	16	11	AS-2513A	Rectifier Bridge Assembly (See Parts Book)	—
2	AS-1809-12ND	Mystic Lines Unit		12	E-148-9A	Fuse Block (See Parts Book)	—
		Front Number Layout	8		E-133-8A	Fuse (8Amp. - 1 Req'd.)	
		Winner Search Positions Chart	8		E-133-10A	Fuse (10 Amp. - 5 Req'd.)	
		Motor Unit Discs	9	13	E-126A	Cord Set	—
		Bonus Detector Module	34	14	AS-798-111ND	Control Unit Assembly Search Disc	11-14 10
		Relays	44	15	AS-1022-91ND	Red Letter Unit	19
3	AS-827-441ND	Mystic Lines Feature Unit . . .	15	16	AS-1148-31ND	Extra Ball Unit	20
4	AS-797-111ND	Replay Counter Unit (Blue) . . .	17	17	AS-827-425ND	Multiplier Unit	18
5	AS-797-111ND	Replay Counter Unit (Green) . . .	17	18	AS-2390-3ND	Auxiliary Board Assembly All 4 stars replay counter (See Parts Book)	
6	AS-797-111ND	Replay Counter Unit (Red) . . .	17			Relays (4)	35
7	AS-797-111ND	Replay Counter Unit (Yellow) . . .	17				
8	E-300-492A	Relay Bank (4)	34				
9	AS-473-54ND	Replay Counter Assembly (See Parts Book)	—				

ALWAYS GIVE MODEL AND PART NO. WHEN ORDERING SERVICE PARTS

BACK DOOR UNIT LAYOUT & PAGE INDEX

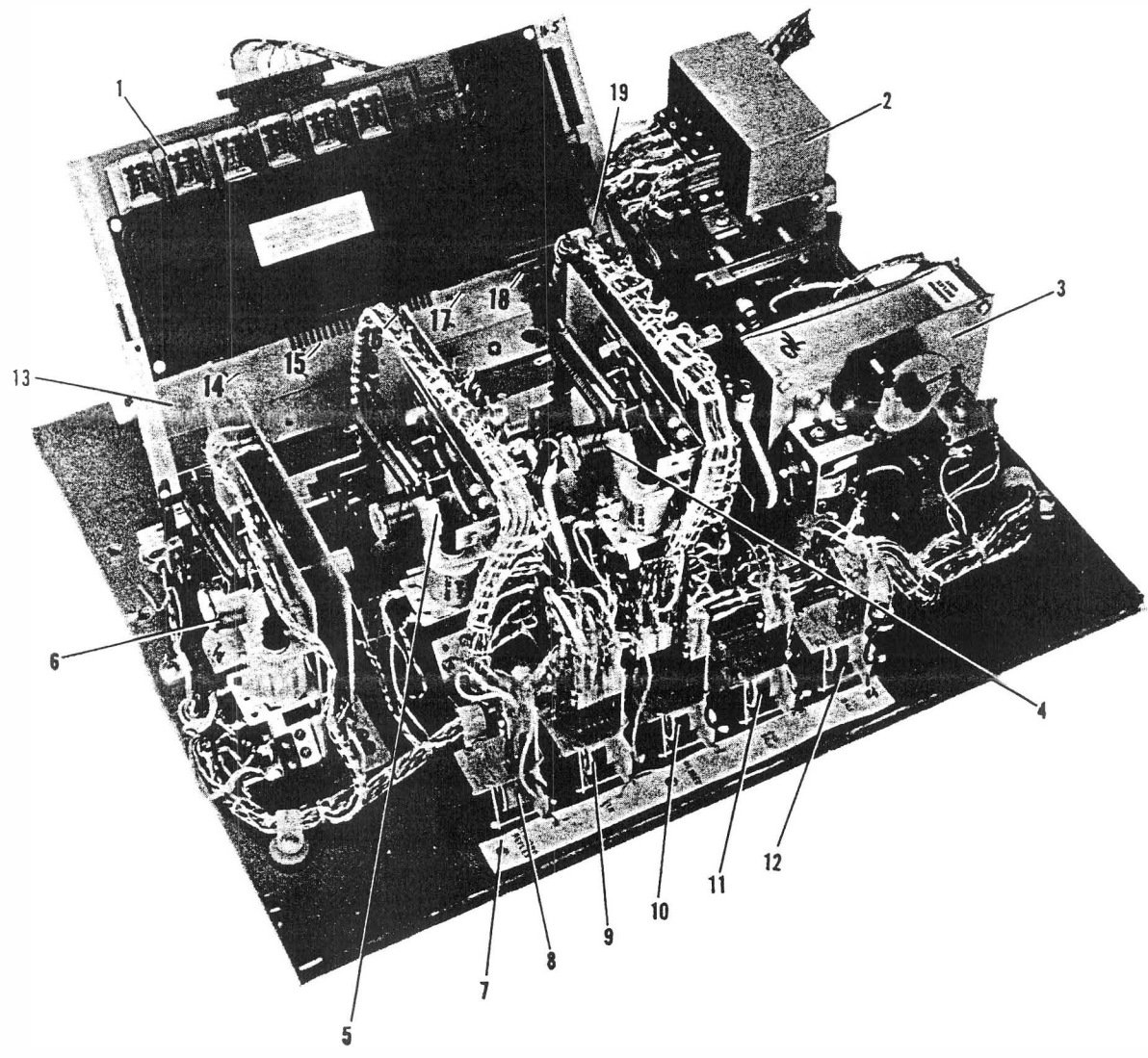


ALWAYS GIVE MODEL AND PART NO. WHEN ORDERING SERVICE PARTS

BACK DOOR UNIT LAYOUT & PAGE INDEX

Index No.	Part No.	Description	Page No.	Index No.	Part No.	Description	Page No.
<p>Note: This Photograph shows an interior view of the Back Door Assembly showing the layout of the various units & electrical systems.</p>							
<p>Note: Index No.'s 1 - 5 are component parts of the "Search Relay Bank", E-300-506A.</p>							
1		#5 Search Relay	35	11	E-300-491A	Relay Bank - Bottom (7) The Functions of the 7 Relays are (Reading L to R):	38-39
2		#4 Search Relay	35		1	Red Button	39
3		#3 Search Relay	35		2	Red Letter #2	39
4		#2 Search Relay	35		3	Red Letter #1	39
5		#1 Search Relay	35		4	Up & Down Play (Diamond Play	38
6	AS-1020-59ND	Mixer Unit	21-23		5	Steering	38
		Spotting Disc	21		6	Cam #7	38
7	AS-1022-106ND	Yellow Score Unit	24		7	Z	38
8	AS-1022-104ND	Red Score Unit	25	12	AS-982-61A	Tilt Switch Unit (See Parts Catalog)	-
9	AS-1022-105ND	Blue & Green Score Unit	26	13	AS-1022-108ND	Twin Features Unit	27
10	E-300-493A	Relay Bank - Top (7) The functions of the 7 Relays (Reading L to R):	36-37	14	AS-1110-41ND	Timer Unit	28
	1	Scores Lock	37	15	AS-823-47ND	Regular Features Reflex Unit (See Parts Cat- alog)	-
	2	Play Scores	37	16	AS-2409-12C	Trip Relay Assembly	40-43
	3	Feature Lock	36	17	E-300-555A	Relay Bank (3)	34
	4	Play Feature	36			The Function of the 3 Relays are (Reading top to bottom):	
	5	Mixer #4	36		1	Bonus Win Relay	34
	6	Mixer #2	36		2	Bonus 3 Relay	34
	7	Mixer Cam Switch #2	36		3	Bonus 2 Relay	34

CONTROL BOARD LAYOUT & PAGE INDEX



ALWAYS GIVE MODEL AND PART NO. WHEN ORDERING SERVICE PARTS

CONTROL BOARD LAYOUT & PAGE INDEX

Index No.	Part No.	Description	Page No.
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Note: This Photograph shows the "Diamond Feature" Control Board which is located in the lower, Front Cabinet & is accessible thru the keyed Side Door.

1	AS-2519-4B	Diamond Module Board Assembly	32-33
	AS-2518-7C	Module Circuit Plate Assembly	33
	W-1140-1B	Module Circuit Diagram	32
2	AS-2380-77B	Diamond Pulsing Unit	48
3	AS-873-50ND	Diamond Reflex Unit (See Parts Catalog)	
4	AS-1022-117ND	Diamond Score Unit	29
5	AS-1110-43ND	Diamond Feature Unit	30
6	AS-797-192ND	Diamond Replay Counter Unit	31
7	E-300-556A	Diamond Relay Bank (5)	47

Note: The following Relays are component parts of Index No. 7.

8		Reflex Relay	47
9		Diamond Win Relay	47
10		Missed Relay	47
11		2nd Ball Relay	47
12		1st Ball Relay	47
13	E-300-542A	Diamond Relay Bank (6)	46

Note: The following Relays are component parts of Index No. 13.

14		No. 6 Step Relay	46
15		No. 5 Step Relay	46
16		No. 4 Step Relay	46
17		No. 3 Step Relay	46
18		No. 2 Step Relay	46
19		No. 1 Step Relay	46

FRONT CABINET UNITS

FRONT CABINET UNITS & RELAYS

A.	E-300-533A	Front Cabinet Relay Bank (3)	43
B.	E-146-768A	Lifter Start Relay (Playfield Panel)	44
C.	AS-1139-23ND	Ball Lifter Motor Unit	44
D.	AS-232-83B	Shutter Motor Assembly	45

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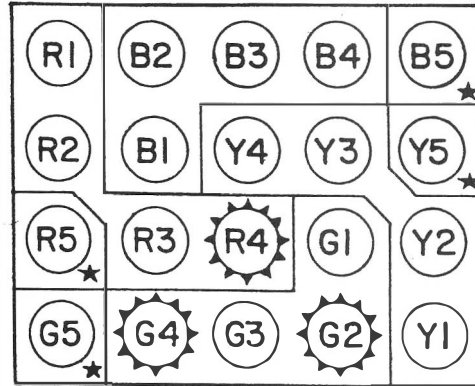
ALWAYS GIVE MODEL AND PART NO. WHEN ORDERING SERVICE PARTS

MYSTIC LINES LAYOUT

WINNER SEARCH POSITIONS CHART

Red Wiper at Position	Wiper (1) Search Relay # 1	Wiper (2) Search Relay # 2	Wiper (3) Search Relay # 3	Wiper (4) Search Relay # 4	Wiper (5) Search Relay # 5
1					
2					
3					
4	R5	G5			
5					
6	Y5	G5			
7					
8	Y5	R5	G5		
9					
10	B5	G5	Y5		
11					
12	B5	R5	G5		
13					
14	B5	Y5	R5		
15					
16	B5	Y5	R5	G5	
17					
18	G2	G3	G4		
19					
20	G1	G3	G4		
21					
22	G1	G2	G4		
23					
24	G1	G2	G3	G4	G5
25					
26	B2	B3	B4		
27					
28	B1	B3	B4		
29					
30	B1	B2	B4		
31					
32	B1	B2	B3	B4	B5
33					
34	R2	R3	R4		
35					
36	R1	R3	R4		
37					
38	R1	R2	R4		
39					
40	R1	R2	R3	R4	R5
41					
42	Y2	Y3	Y4		
43					
44	Y1	Y3	Y4		
45					
46	Y1	Y2	Y4		
47					
48	Y1	Y2	Y3	Y4	Y5
49					
50					

MYSTIC LINES CODE

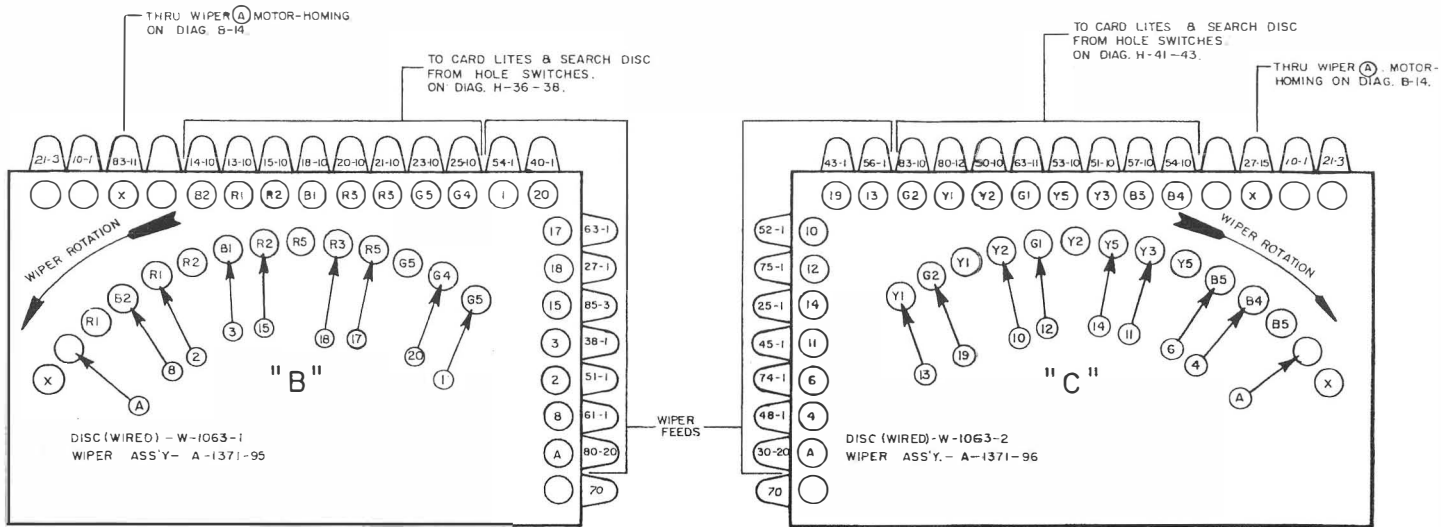


When checking out any winner, refer to winner search positions chart to find position on search disc where that winner is scored.

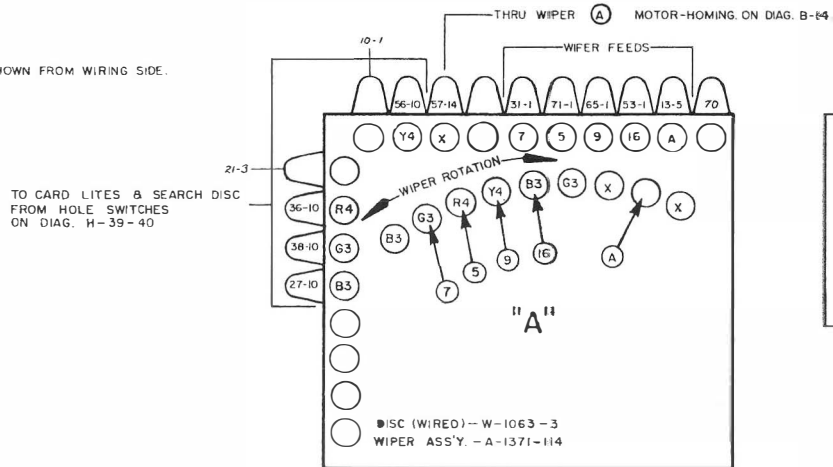
MYSTIC LINES MOTOR UNIT DISCS

VIEWED FROM WIRING SIDE

Wipers shown in zero position



NOTE:
DISC'S SHOWN FROM WIRING SIDE.



PARTS BREAKDOWN

COMPLETE UNIT.....	AS-1809-12
MOTOR-"A" LINE.....	E-119-352
MOTOR-"B" & "C" LINES.....	E-119-353
RELAY "B" & "C" CAMS.....	E-146-618
CAM & HUB ASS'Y-"A" LINE.....	A-800-130
CAM & HUB ASS'Y-"B" & "C" LINES.....	A-800-131
SWITCH & BRACKET ASS'Y-"A" CAM.....	AS-982-535
SWITCH & BRACKET ASS'Y-"B" & "C" CAM.....	AS-982-579
PLASTIC SLAT ASS'Y - ROW # 1.....	A-2988-1
PLASTIC SLAT ASS'Y - ROW # 2.....	A-2989-1
PLASTIC SLAT ASS'Y - ROW # 3.....	A-2990-1
PLASTIC SLAT ASS'Y - ROW # 4.....	A-2991-1
PLASTIC SLAT ASS'Y - ROW # 5.....	A-2992-1
PLASTIC OVERLAY.....	M-1423

SEARCH DISC (CONTROL UNIT)

VIEWED FROM WIRING SIDE

Wipers shown in zero position

THRU SEARCH RELAY WIPERS SEARCH RELAYS SOURCE FROM MYSTIC-LINES MOTOR UNIT DISC'S. ON DIAG H-44.

THRU WIPERS (C) BLUE 3-IN-ZONE WINNERS SOURCE. ON DIAG. E-33.

THRU WIPERS (B) RED 4-IN-ZONE WINNERS SOURCE. ON DIAG. E-32.

THRU WIPERS (C) GREEN 3-IN-ZONE WINNERS SOURCE. ON DIAG. E-34.

THRU WIPERS (C) YELLOW ZONE WINNERS DOUBLE, TRIPLE SCORING FEED. ON DIAG. C-31.

THRU WIPERS (A) ALL 4 STARS REPLAY COUNTER UNIT ADVANCE DURING 4 STAR WINNERS. ON DIAG. C-29.

THRU WIPERS (C) RED ZONE WINNERS DOUBLE, TRIPLE SCORING FEED. ON DIAG. C-32.

THRU WIPERS (C) RED REPLAY COUNTER UNIT ADVANCE DURING RED ZONE WINNER SCORING ON DIAG. C-32.

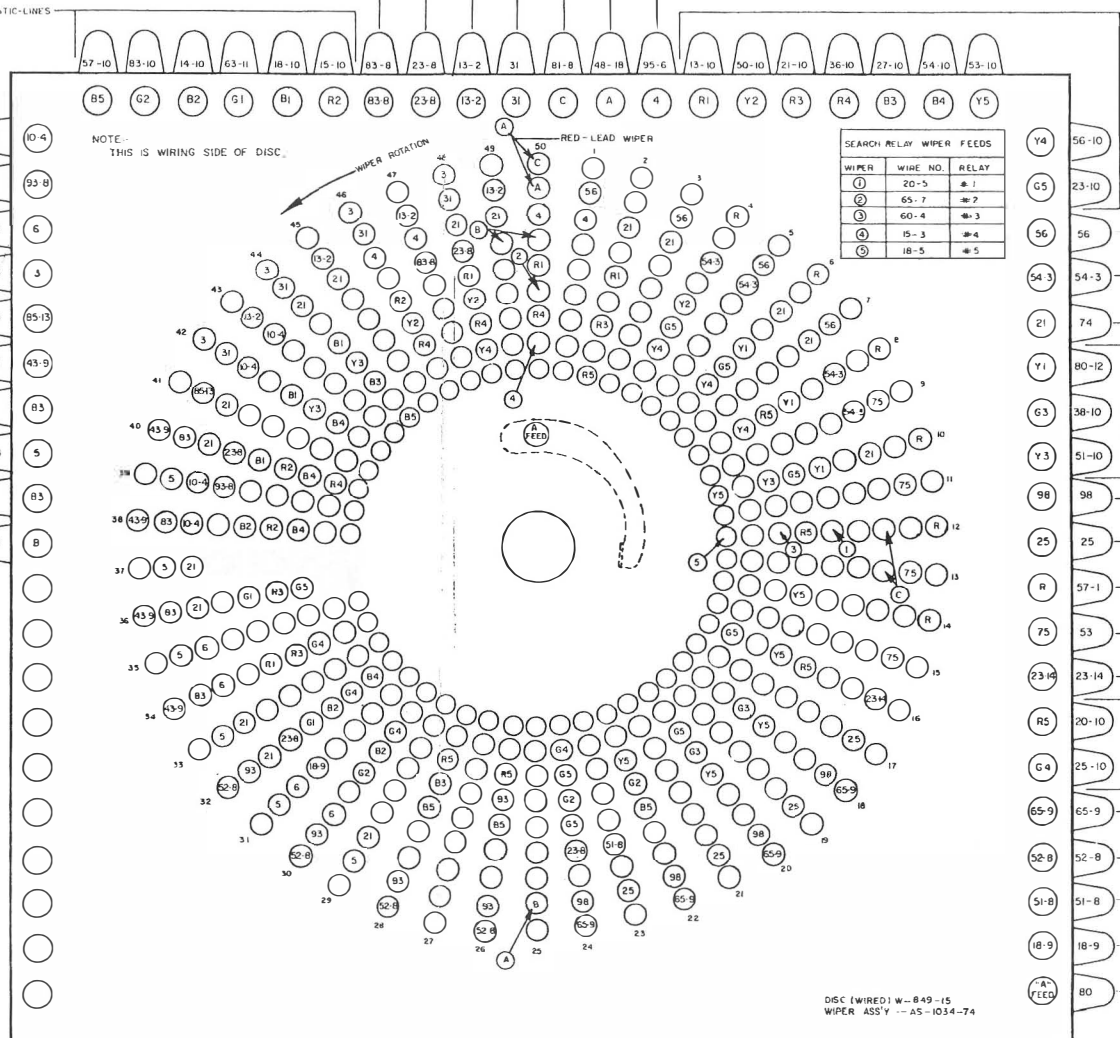
THRU WIPERS (A) RED LETTER WIN RELAYS DURING RED LETTER-GAME SCORING. ON DIAG. C-35.

THRU WIPERS (C) BLUE ZONE WINNERS SCORING FEED. ON DIAG. C-34.

THRU WIPERS (A) "Z" RELAY, DIAMOND REFLEX UNIT REPLAY ADVANCE AND DIAMOND REPLAY COUNTER ADVANCE DURING DIAMOND FEATURE WINNER SCORING. ON DIAG. D-44.

THRU WIPERS (C) YELLOW 3-IN-ZONE WINNER SOURCE. ON DIAG. E-30.
 WIPER (C) FEED.
 THRU WIPERS (C) GREEN REPLAY COUNTER UNIT ADVANCE DURING GREEN ZONE WINNER SCORING. ON DIAG. C-35.
 THRU WIPERS (C) YELLOW REPLAY COUNTER UNIT ADVANCE DURING YELLOW ZONE WINNER SCORING. ON DIAG. C-31.
 THRU WIPERS (C) DIAMOND FEATURE WINNERS SCORING FEED. ON DIAG. D-44.
 THRU WIPERS (A) MULTIPLE WIN RELAY #1 DURING 4 & 5 BALL DIAMOND FEATURE WINNERS. ON DIAG. D-44.
 THRU WIPERS (C) RED 3-IN-ZONE WINNERS SOURCE. ON DIAG. E-31.

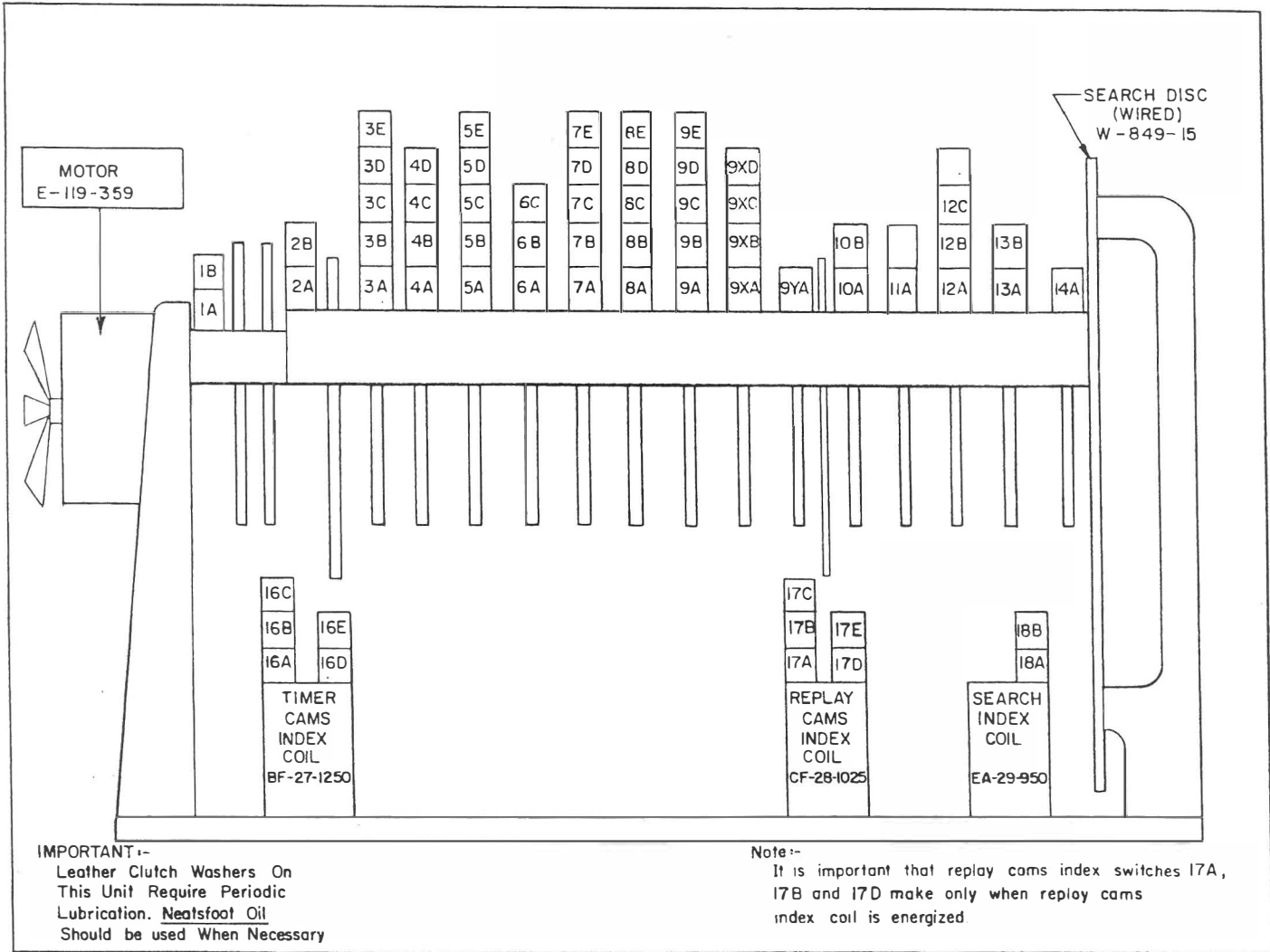
THRU SEARCH RELAY WIPERS SEARCH RELAYS SOURCE FROM MYSTIC-LINES MOTOR UNIT DISC'S. ON DIAG. H-44.



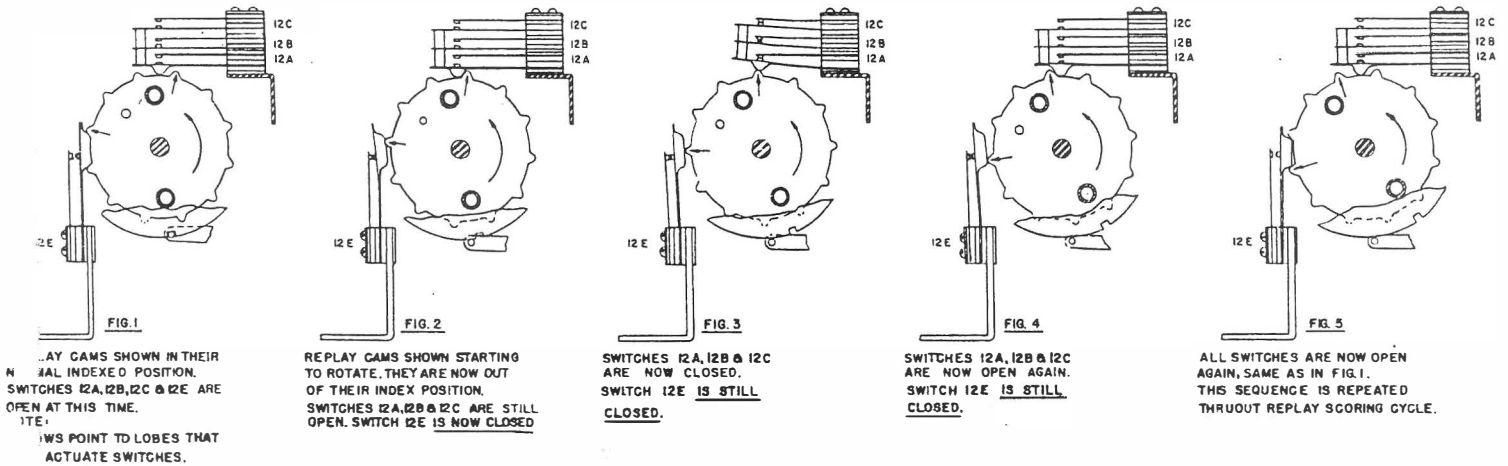
WIPER	WIRE NO.	RELAY
(1)	20-5	#1
(2)	65-7	#2
(3)	60-4	#3
(4)	15-3	#4
(5)	18-5	#5

DISC (WIRED) W-849-15
 WIPER ASS'Y -- AS-1034-74

CONTROL UNIT



CORRECT ADJUSTMENT: CONTROL UNIT SWITCHES 12A, 12B, 12C & 12E NOTICE: IMPORTANT PART OF ILLUSTRATION IS TO SHOW THAT SWITCH 12E CLOSURES FIRST AND OPENS LAST. IF AN ADJUSTMENT IS NECESSARY, SWITCH 12E CAN BE MOVED UP OR DOWN. LOOSEN SCREWS THAT HOLD SWITCH, THEN MOVE UP OR DOWN.



CONTROL UNIT

SWITCH		LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
1A	N.O.	E-8	65-2 36-9	Brown-White Yellow-Brown	Completes Timer step up circuit after 5th ball
1B	N.C.	A-6	85-1 45-18	Black-White Green-White	Opens circuit to mixer latch coil
Drag Arm	N.O.	D-8	36-9 78-6	Yellow-Brown Orange-Black	(Not shown in pictorial view) Same function as switch 1A
2A	N.O.	D-67	98-14 56-7	Gray-Black White-Brown	Completes circuit to triple feature trip relay
2B	N.C.	G-7	30 25-9	Yellow Blue-White	Opens lock in circuit to 25¢ relay
3A	N.C.	G-4	30 48-2	Yellow Green-Black	Opens entire game start circuit
3B	S.P.D.T	A-29	93-7 98-4 91-7	Gray-Yellow Gray-Black Gray-Red	Directs circuit from replay meter to total play meter
3C	S.P.D.T	D-39	60-13 57-13 21-3	Brown White-Orange Blue-Red	Directs pull in and lock in circuit to play scores relay
3D	S.P.D.T	D-38	74-16 81-13 21-3	Orange-Green Black-Red Blue-Red	Directs pull in and lock in circuit to play scores relay
3E	S.P.D.T	D-39	61-16 43-18 21-3	Brown-Red Green-Yellow Blue-Red	Directs pull in and lock in circuit to diamond play relay
4A	N.O.	E-68	30 98-1	Yellow Gray-Black	Completes circuit to spotting cams index coil
4B	N.O.	C-4	27-9 80-2	Blue-Orange Black	When single play coin meter installed, completes circuit to meter
4C	N.O.	F-9	52-3 14-5	White-Blue Red-Green	When 25¢ anti-cheat coin circuit used, completes circuit to tilt trip relay.
4D	S.P.D.T	D-4	10-5 13-9 14-5	Red-Green Red-Yellow Red-Green	Directs 5¢ coin switch circuit from start relay to tilt trip relay. (5¢ anti-cheat coin circuit)
5A	N.O.	A-19	27-20 23-7	Blue-Orange Blue-Yellow	Completes circuit for extra ball unit single steps
5B	N.O.	B-20	78-4 91-6	Orange-Black Gray-Red	Completes pull in circuit to anti cheat relay
5C	N.O.	C-21	85-4 10-7	Black-White Red	Completes circuit for mystic-lines feature unit and selection feature unit single steps
5D	N.O.	A-26	21-3 50-3	Blue-Red White	Completes circuit to cam #5 relay
5E	N.C.	D-38	21-3 40-15	Blue-Red Green	Opens lock in circuit to features lock relay and scores lock relay
6A	N.C.	D-22	40-4 18-16	Green Red-Black	Opens entire feature circuit
6B	N.C.	E-20	51-5 45-2	White-Red Green-White	Opens extra ball unit step up circuit
6C	N.C.	G-24	80-8 60-20	Black Blue	Opens circuit to Bonus 2/3 Sunny Circles Feature
7A	N.O.	C-58	54-12 10-17	White-Green Red	Completes circuit for yellow, red, blue and green score unit single steps
7B	N.O.	F-60	81-11 63-4	Black-Red Brown-Yellow	Completes circuit for yellow, red, blue, and green score unit single steps and multiple feature trip relays
7C	N.O.	C-41	45-15 31-21	Green-White Yellow-Red	Completes circuit for diamond score unit single steps
7D	N.O.	D-41	45-15 23-20	Green-White Blue-Yellow	Same function as switch 7c
7E	N.O.	E-2	30 90-5	Yellow Gray	Completes regular or diamond reflex unit play circuit, replay register unit play reset circuit, cam #7 relay circuit and total play meter circuit
7YA	N.O.	E-58	25-16 51-6	Blue-White White-Red	(Not shown in pictorial view) completes circuit for yellow, red, blue and green score unit extra steps and multiple feature trip relays
7YB	N.O.	E-58	51-6 60-18	White-Red Brown	(Not shown in pictorial view) same function as switch 7YA
8A	N.O.	A-19	27-20 25-4	Blue-Orange Blue-White	Same function as switch 5A
8B	N.O.	E-59	51-6 13-13	White-Red Red-Yellow	Completes circuit for yellow, red, blue and green blue button play score unit single steps & multiple feature trip relays
8C	N.O.	C-41	45-15 81-16	Green-White Black-Red	Same function as switch 7C
8D	N.O.	B-41	45-15 36-18	Green-White Yellow-Brown	Same function as switch 7C

CONTROL UNIT

N.C.-----NORMALLY CLOSED

N.O.-----NORMALLY OPEN

M.B.B.-----MAKE BEFORE BREAK

S.P.D.T.-----SINGLE POLE DOUBLE THROW

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
8E N.o.	C-58	54-12 20-6	White-Green Blue	Same function as switch 7A
8XA N.o.	B-14	21-3 18-19	Blue-Red Red-Black	(Not shown in pictorial view) completes circuit to mixer cam #2 relay
8ZA N.o.	E-58	25-16 51-6	Blue-White White-Red	(Not shown in pictorial view) same function as switch 7YA
8ZB N.o.	A-41	45-15 56-11	Green-White White-Brown	(Not shown in pictorial view) same function as switch 7C
9A N.o.	D-21	18-2 36-19	Red-Black Yellow-Brown	Alternates circuit for extra ball unit steps
9B N.o.	A-25	52-11 20-11	White-Blue Blue	Alternates circuit for 4 stars 600 & 4 stars 300 feature trip relays
9C N.o.	B-24	61-10 50-11	Brown-Red White	Alternates circuit for any 2 stars feature
9D N.o.	C-22	85-12 40-4	Black-White Green	Alternates circuit for all regular game features
9E S.P.D.T.	B-16	63-9 71-10 58-2	Brown-Yellow Orange-Red White-Black	Alternates circuit to mixer #4 relay
9XA N.o.	C-60	83-4 81-9	Black-Yellow Black-Red	Alternates circuit for red score unit steps
9XB N.o.	D-43	13-15 91-5	Red-Yellow Gray-Red	Alternates circuit for Super 7 diamond feature score unit steps
9XC N.o.	B-58	27-11 23-11	Blue-Orange Blue-Yellow	Alternates circuit for yellow, red, blue and green multiple feature trip relays
9XD N.o.	A-67	15-16 45-16	Red-Black Green-White	Alternates circuit to 2 extra step relay
9YA N.o.	E-28	21-3 36-13	Blue-Red Yellow-Brown	Completes 25¢ relay circuit to step replay register unit
10A N.o.	B-32	63 90-1	Brown-Yellow Gray	Completes winner circuits to step yellow, red, blue, green and diamond replay counter units at a 1 to 12 ratio with replay register unit step up
10B N.o.	B-29	27-17 23-17	Blue-Orange Blue-Yellow	Completes 4 star 600 winner circuit to step 4 star replay counter unit at a 1 to 12 ratio with replay register unit step up
11A N.o.	B-32	57 90-1	White-Orange Gray	Same function as switch 10A at a 1 to 6 ratio
N.o.				Not used - extra switch
12A N.o.	B-31	45 90-1	Green-White Gray	Same function as switch 10A at a 1 to 1 ratio
12B N.o.	C-28	41-14 81-10	Green-Red Black-Red	Completes winner circuits to step replay register unit replay meter and regular reflex replay coil
12C N.o.	C-45	85-9 75-7	BLACK-White ORANGE-WHITE	Completes Bonus 7 diamond winner circuits to step diamond reflex unit replay coil
N.o.		27-17	Blue-Orange	Not used in circuit
12E N.o.	F-28	21-3 23-13	Blue-Red Blue-Yellow	(Not shown in pictorial view) completes all replay winner lock in circuits to search index coil
13A N.o.	B-31	52 90-1	White-Blue Gray	Same function as switch 10A at a 1 to 4 ratio
13B N.o.	C-30	10-16 27-17	Red Blue-Orange	Completes 4 star 300 winner circuit to step 4 star replay counter unit at a 1 to 4 ratio with replay register unit step up
14A N.c.	F-30	74 31-11	Orange-Green Yellow-Red	Opens initial yellow, red, blue, green and 4 star winner search circuit
Search wiper lock magnet coil (C-2794-303)	A-12	23-16 70	Blue-Yellow Orange	(Not shown in pictorial view) energized by front rail "R" button or diamond feature disc and releases search wipers for winner search
15A N.c.	D-12	14-4 57-12	Red-Green White-Orange	Opens circuit to mystic lines buttons
15B N.c.	B-4	53-15 13-16	White-Yellow Red-Yellow	Opens circuit to start relay
15C N.c.	A-12	52-9 23-16	White-Blue Blue-Yellow	Opens circuit to search wiper lock magnet coil
15D N.o.	A-29	41-14 61-14	Green-Red Brown-Red	Completes circuit to step regular reflex unit replay coil during all replay winner scoring

CONTROL UNIT

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
Timer cams index coil	A-6	45-18 70	Green-White Orange	Energized by start relay circuit and releases timer cams for play cycle
16A N.o. (L)	G-1	20p 60p	Blue Plastic Brown Plastic	Completes circuit to control unit and mixer spotting unit motors
16B N.c. (L)	F-5	27-9 71-2	Blue-Orange Orange-Red	Opens circuit to 25¢ coin lockout magnet
16C N.c. (L)	E-10	10-2 30	Red Yellow	Opens red button relay and extra ball trip relay circuit
16D N.o. (R)	C-67	21-3 57-4	Blue-Red White-Orange	Completes lock in circuit for BB step relay 1 extra step relay and 2 extra step relay
16E N.c. (R)	E-5	90-2 91-13	Gray Gray-Red	Opens circuit to 5¢ coin lockout magnet
Cam #5 Relay Coil	A-26	50-3 70	White Orange	(Not shown in pictorial view) energized by C.U. cam #5D during each play cycle
A N.o.	D-8	65-2 83-1	Brown-White Black-Yellow	Completes circuit to reset timer unit during extra ball play
B N.c.	B-14	18-7 21-3	Red-Black Blue-Red	Opens lock in circuit to mixer #4 relay
C N.c.	D-17	13-3 21-3	Red-Yellow Blue-Red	Opens lock in circuit to mixer #2 relay
D N.c.	E-40	85-4 43-10	Black-White Green-Yellow	Opens lock in circuit to diamond reflex relay
E N.o.	B-25	85-4 10-9	Black-White Red	Completes circuit for twin number feature unit single steps
F N.c.	B-67	57-4 36-16	White-Orange Yellow-Brown	Opens lock in circuit to BB step relay, 1 extra step relay and 2 extra step relay
Replay cams index coil	A-28	41-13 70	Green-Red Orange	Energized by replay winner search circuit and releases replay cams to score winners
17A N.o.	E-28	23-13 80	Blue-Yellow Black	Completes winner search index lock in circuit
17B N.o.	F-31	31-11 74	Yellow-Red Orange-Green	Completes yellow, red, blue, green and 4 star winner scoring circuits
17C N.c.	B-27	13-6 15-2	Red-Yellow Red-White	Opens initial 50 volt pull in circuit to search index coil
17D N.o.	C-28	81-10 80	Black-Red Black	Same function as C.U. cam switch 12B
17E N.c.	D-7	85-8 78-6	BLACK-WHITE ORANGE-Black	Opens circuit to reset timer unit
Search index coil	A-27	15-2 70	Red-White Orange	Energized by winner search circuit and stops search wipers to score winners
18A N.o.	C-27	60 41-13	Brown Green-Red	Completes replay winner circuit to replay cams index coil
18B N.c.	C-4	61-8 53-13	Brown-Red White-Yellow	Opens circuit to start relay

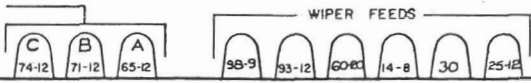
CODE	
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
M.B.B.	MAKE BEFORE BREAK
S.P.D.T.	SINGLE POLE DOUBLE THROW

MYSTIC LINES FEATURE UNIT DISC

VIEWED FROM WIRING SIDE

12 step unit. Wipers shown in zero or reset position

THRU WIPER (C). MIXER #2 RELAY.
ON DIAG. F-15.



THRU WIPERS (E) OR (B). MYSTIC-LINES
UNIT MULTIPLE STEP ADVANCE.
ON DIAG. B-21.

THRU WIPERS (E). MYSTIC-LINES UNIT
MULTIPLE STEP ADVANCE. ON DIAG. B-22

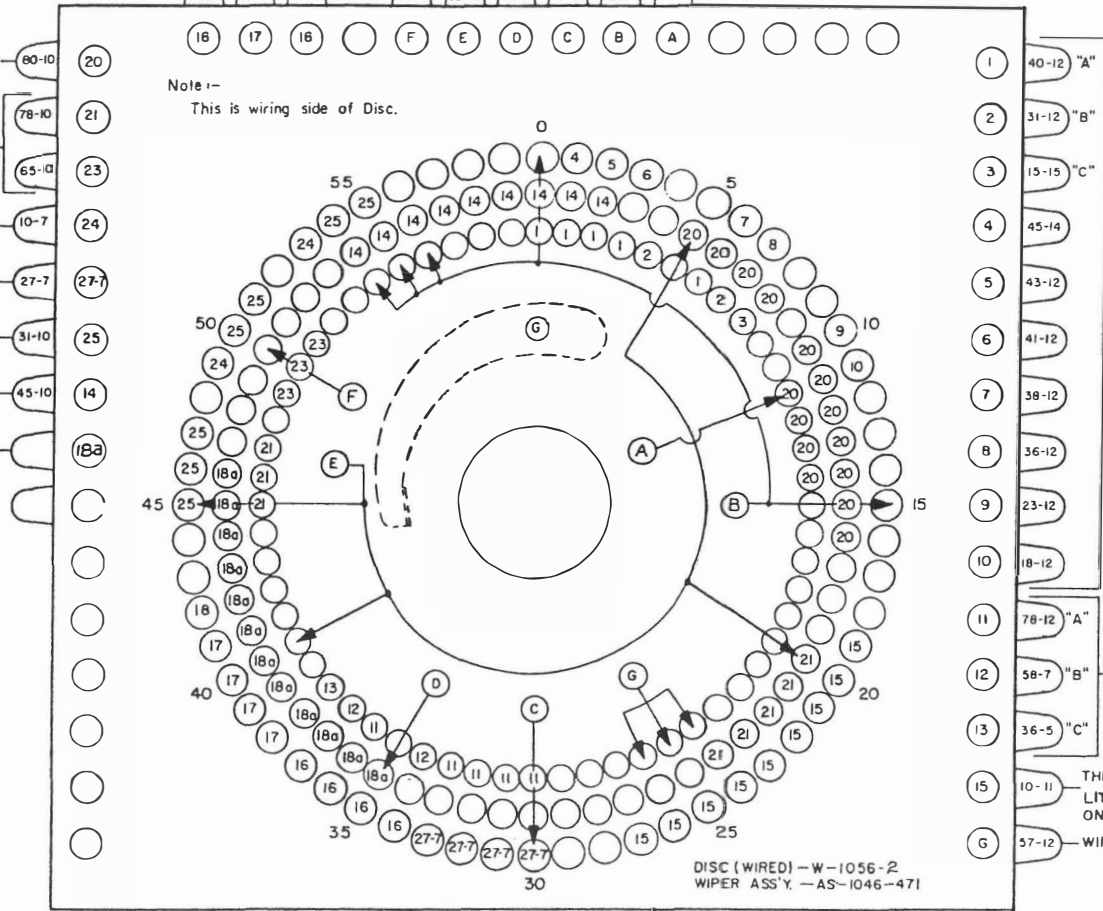
THRU WIPERS (E). MYSTIC-LINES UNIT
SINGLE STEP ADVANCE. ON DIAG. B-21.

THRU WIPER (C). MIXER #2 RELAY
ON DIAG. F-15.

THRU WIPERS (E). MYSTIC-LINES UNIT
MULTIPLE STEP ADVANCE. ON DIAG. B-21.

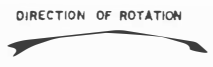
THRU WIPER (B). SELECTION FEATURE
UNIT ADVANCE CONTROL. ON DIAG. B-22.

THRU WIPER (D). ANY 2 STAR
FEATURE TRIP RELAY. ON DIAG. B-23.



Note:-
This is wiring side of Disc.

DISC (WIRED) - W-1056-2
WIPER ASS'Y. - AS-1046-471



COMPLETE UNIT	AS-827-441
RATCHET & SHAFT	C-1060-12-49
RESET COIL	C-28-1100
RESET PLUNGER	S-496-101
STEP-UP COIL	B-25-925
STEP-UP PLUNGER	S-496-162
STEP-UP ARM ASS'Y.	A-1765-13

- 1 40-12 "A"
- 2 31-12 "B"
- 3 15-15 "C"
- 4 45-14
- 5 43-12
- 6 41-12
- 7 38-12
- 8 36-12
- 9 23-12
- 10 18-12
- 11 78-12 "A"
- 12 58-7 "B"
- 13 36-5 "C"
- 15 10-11
- G 57-12 WIPER FEED

THRU WIPERS (B). MYSTIC-LINES
ARROW AND "A"- "B"- "C".
FEATURE LITES
ON DIAG. H-8-9.

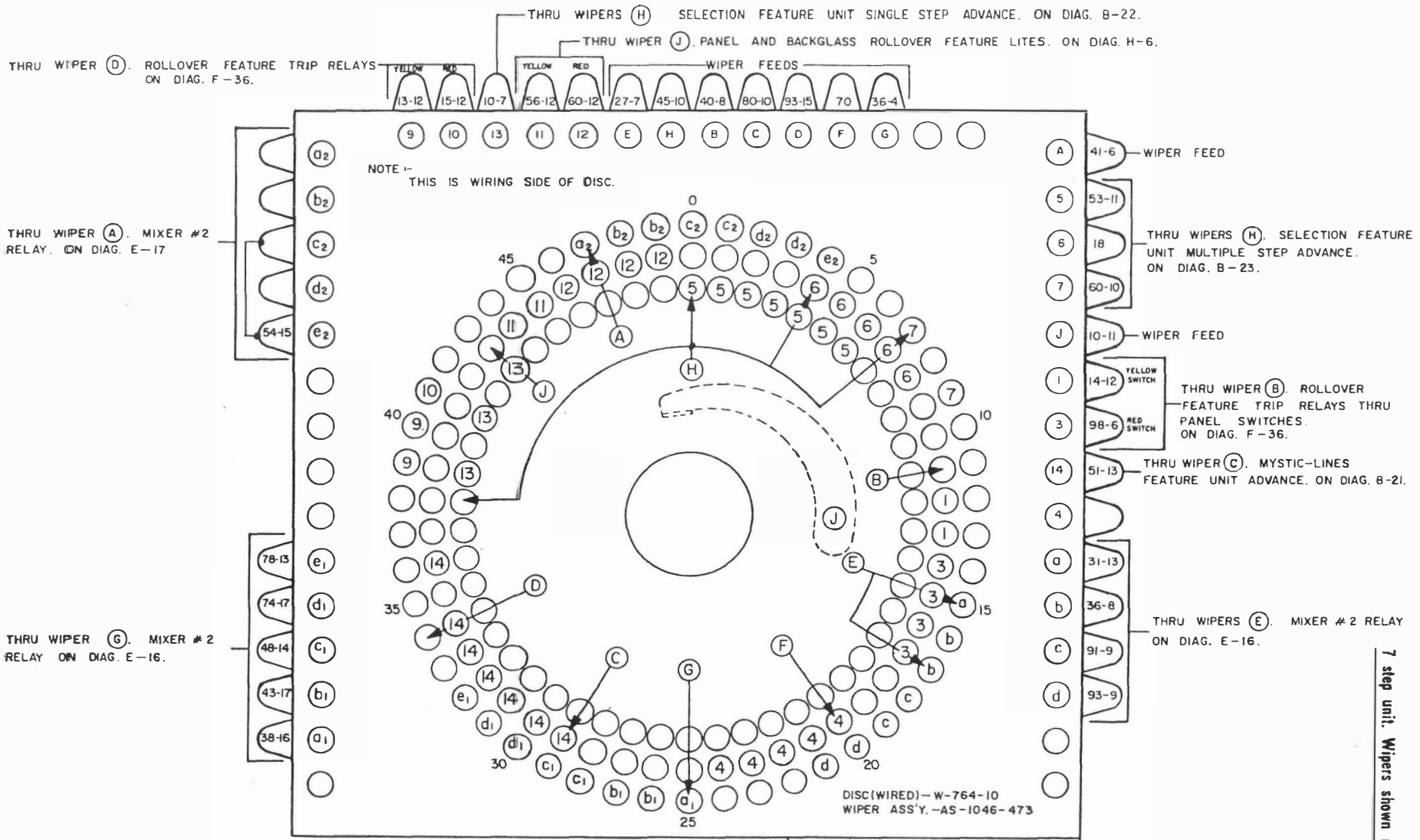
THRU WIPERS (G). MYSTIC-LINES
FEATURE BUTTONS TO MOVE LINES.
ON DIAG. D-13.

THRU WIPERS (B). "PRESS BUTTONS NOW"
LITE AND "SELECTION FEATURE" LITES.
ON DIAG. G-4.

SELECTION FEATURE DISC

VIEWED FROM WIRING SIDE

7 step unit. Wipers shown in zero or reset position



DIRECTION OF ROTATION

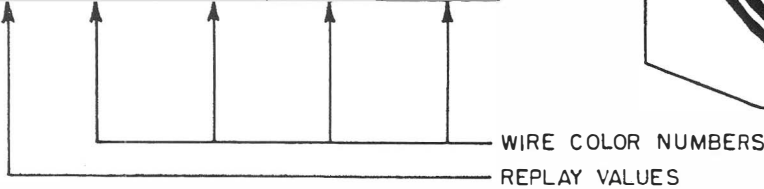
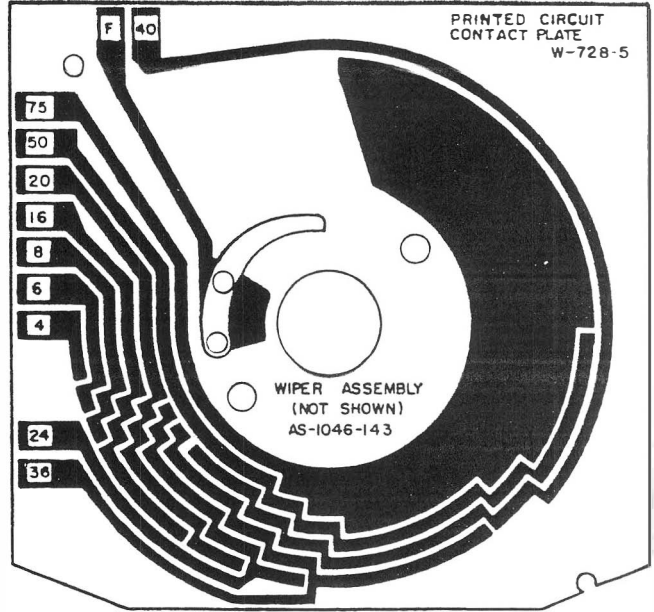
COMPLETE UNIT	AS-827-236
RATCHET & SHAFT	C-1050-7-40
RESET COIL	C-28-1100
RESET PLUNGER	S-496-101
STEP-UP COIL	B-25-925
STEP-UP PLUNGER	S-496-100
STEP-UP ARM ASS'Y.	A-1765-4

REPLAY COUNTER UNIT DISC

VIEWED FROM WIPER SIDE

4 IDENTICAL UNITS USED

LUG No.	GREEN REPLAY COUNTER	RED REPLAY COUNTER	YELLOW REPLAY COUNTER	BLUE REPLAY COUNTER
F	54	71	23	91
75	61-9	27-8	50-6	61-6
50	60-9	40-3	57-2	54-6
40	57-9	25-3	52-2	80-3
36	90-8	23-3	51-2	74-3
24	13-1	20-3	41-2	65-3
20	27-6	10-3	40-2	63-3
16	45-12	85-2	23-2	60-3
8	40-9	83-2	93-1	48-3
6	36-14	74-2	81-1	43-3
4	41-9	60-2	78-1	41-3



- | | |
|-------------------|------------|
| COMPLETE UNIT | AS-797-111 |
| RESET COIL | C-28-1100 |
| STEP-UP COIL | B-25-925 |
| STEP-UP PLUNGER | S-496-116 |
| STEP-UP ARM ASSY. | A-1765-8 |
| RATCHET & SHAFT | C-100 |
| RESET PLUNGER | S-496-101 |

Control Unit Multiplier Com Switches That Advance Green, Red, Yellow And Blue Replay Counter Units During 3-4-5 IN A COLOR Zone Winners. During Double & Triple Winners, Switches Double & Triple Their Regular Multiplier Ratio Thru Multiple Unit Disc.

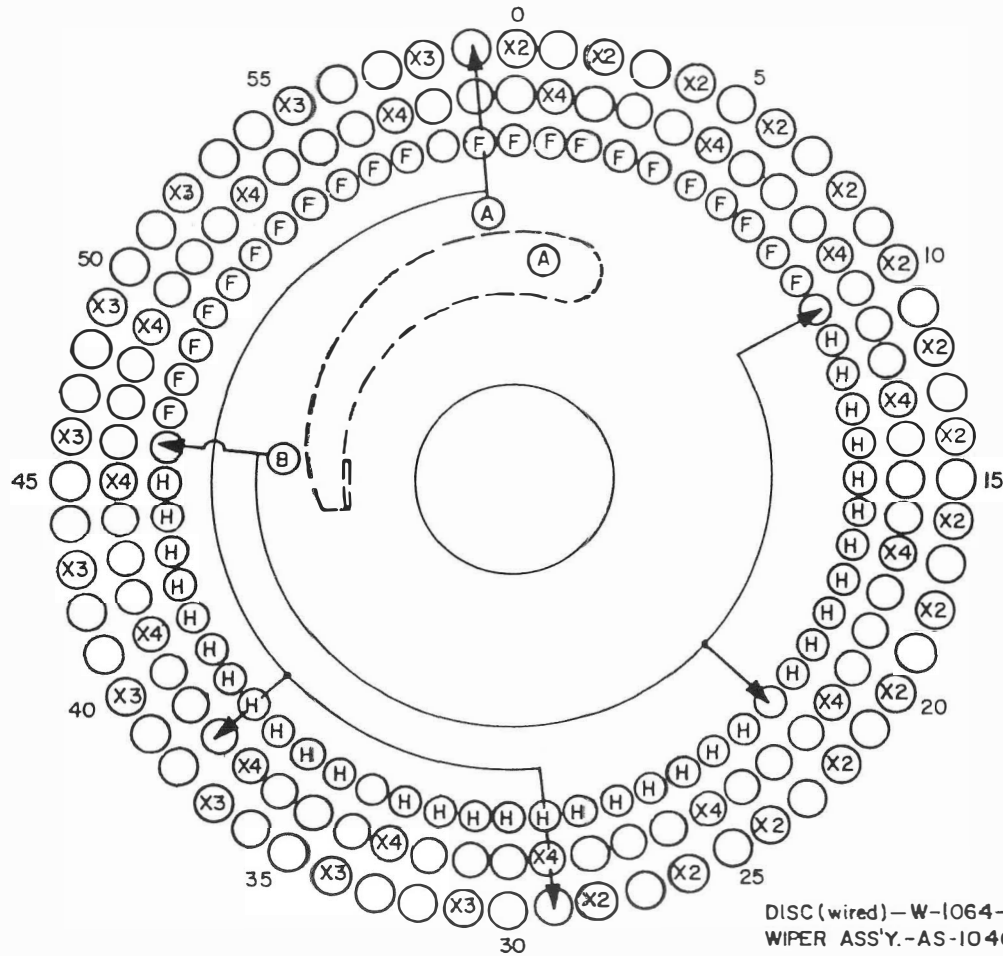
	12A-X1	12A-X1	12A-X1	11A-X6	12A-X1	13A-X4	11A-X6	13A-X4	11A-X6	10A-X12
5 In A Zone	75 (75)	75 (75)	96 (*)	96 (16)	96 (*)	144 (36)	216 (36)	300 (75)	450 (75)	600 (50)
4 In A Zone	16 (16)	20 (20)	24 (24)	36 (6)	50 (50)	64 (16)	96 (16)	144 (36)	240 (40)	480 (40)
3 In A Zone	4 (4)	6 (6)	8 (8)	12 (**)	16 (16)	24 (6)	36 (6)	64 (16)	120 (20)	192 (16)

Large numbers are Green, Red, Yellow and Blue Replay Scores shown on backglass. Numbers in circles indicate the replay counter disc value each score is effective thru during winners.

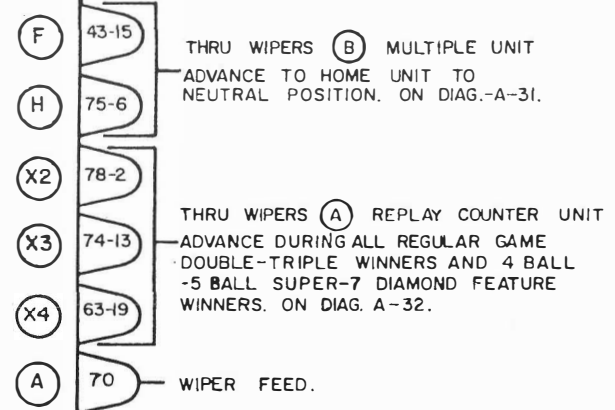
(*) Effective thru open at 96th step replay counter unit switches.

(**) Effective thru open at 2nd step replay counter unit switches.

Note-
THIS IS WIRING SIDE OF DISC.



DISC (wired)-W-1064-1
WIPER ASS'Y.-AS-1046-634



THRU WIPERS (B) MULTIPLE UNIT
ADVANCE TO HOME UNIT TO
NEUTRAL POSITION. ON DIAG.-A-31.

THRU WIPERS (A) REPLAY COUNTER UNIT
ADVANCE DURING ALL REGULAR GAME
DOUBLE-TRIPLE WINNERS AND 4 BALL
-5 BALL SUPER-7 DIAMOND FEATURE
WINNERS. ON DIAG. A-32.

WIPER FEED.

- | | |
|--------------------|------------|
| COMPLETE UNIT | AS-827-425 |
| RATCHET & SHAFT | C-1060 |
| STEP-UP COIL | B-25-925 |
| STEP-UP PLUNGER | S-496-162 |
| STEP-UP ARM ASS'Y. | A-1765-19 |

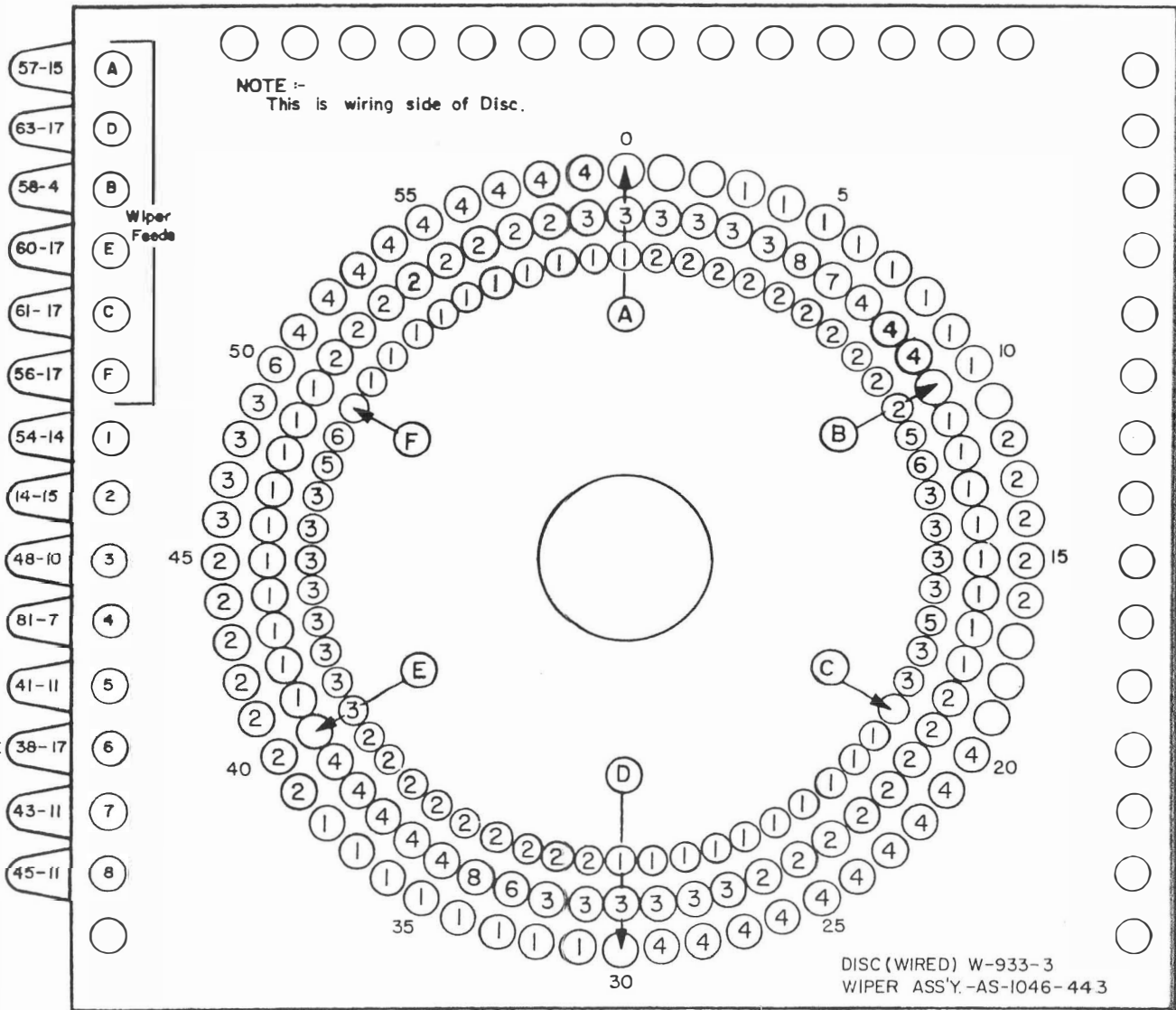
Continuous step unit.

MULTIPLIER UNIT DISC
VIEWED FROM WIRING SIDE

RED LETTER UNIT DISC

VIEWED FROM WIRING SIDE

29 step unit. Wipers shown in zero or reset position

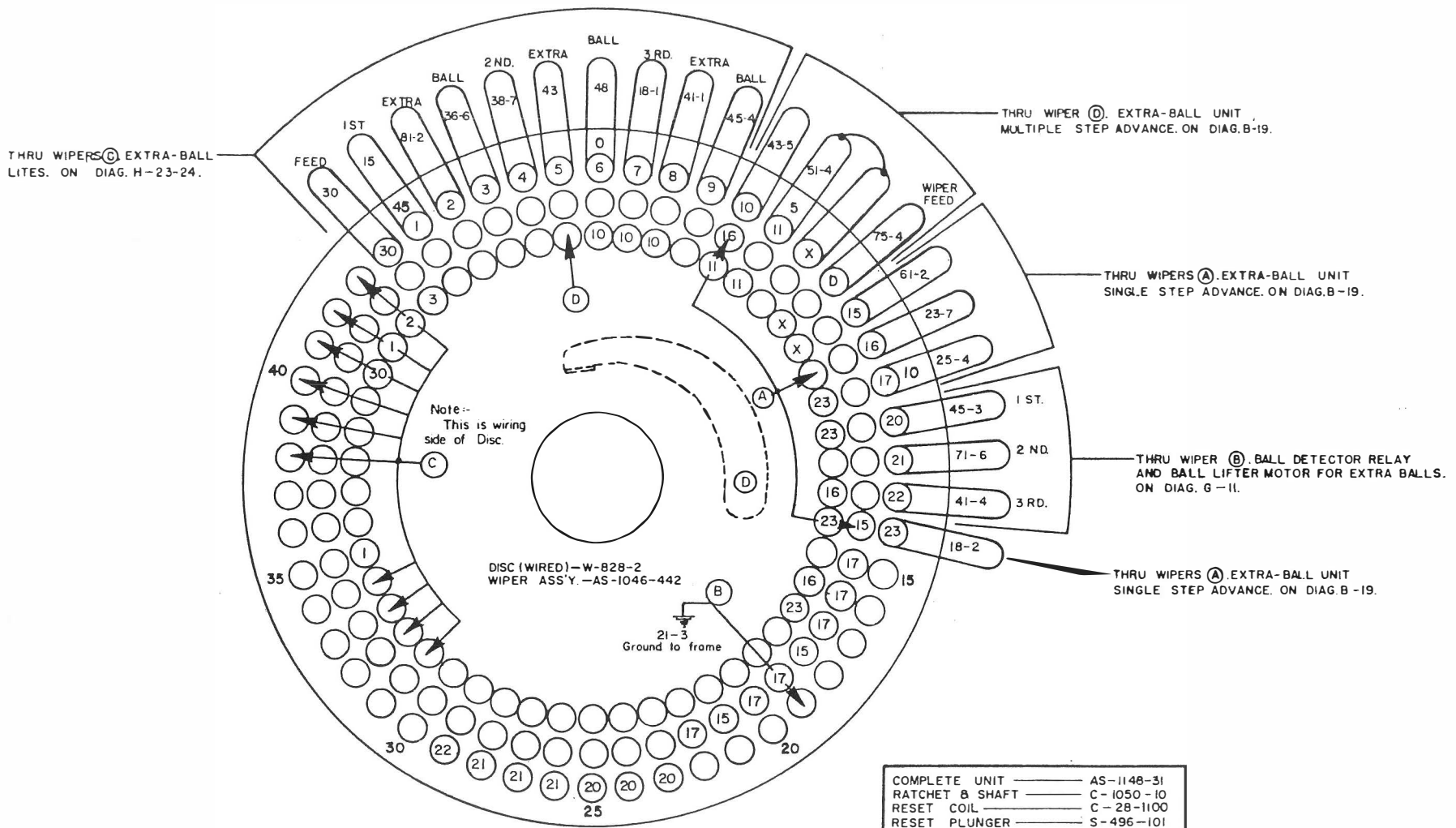


COMPLETE UNIT	AS-1022-91
RATCHET & SHAFT	C-1060-29-7
RESET COIL	C-28-1100
RESET PLUNGER	S-496-101
STEP-UP COIL	B-25-925
STEP-UP PLUNGER	S-496-162
STEP-UP ARM ASS'Y.	A-1765-13

SCORE & FEATURE UNIT
ADVANCE AND MULTIPLE
FEATURE TRIP RELAYS
FOR RED LETTER GAME
SCORING ON DIAG. F-18.

EXTRA BALL UNIT DISC VIEWED FROM WIRING SIDE

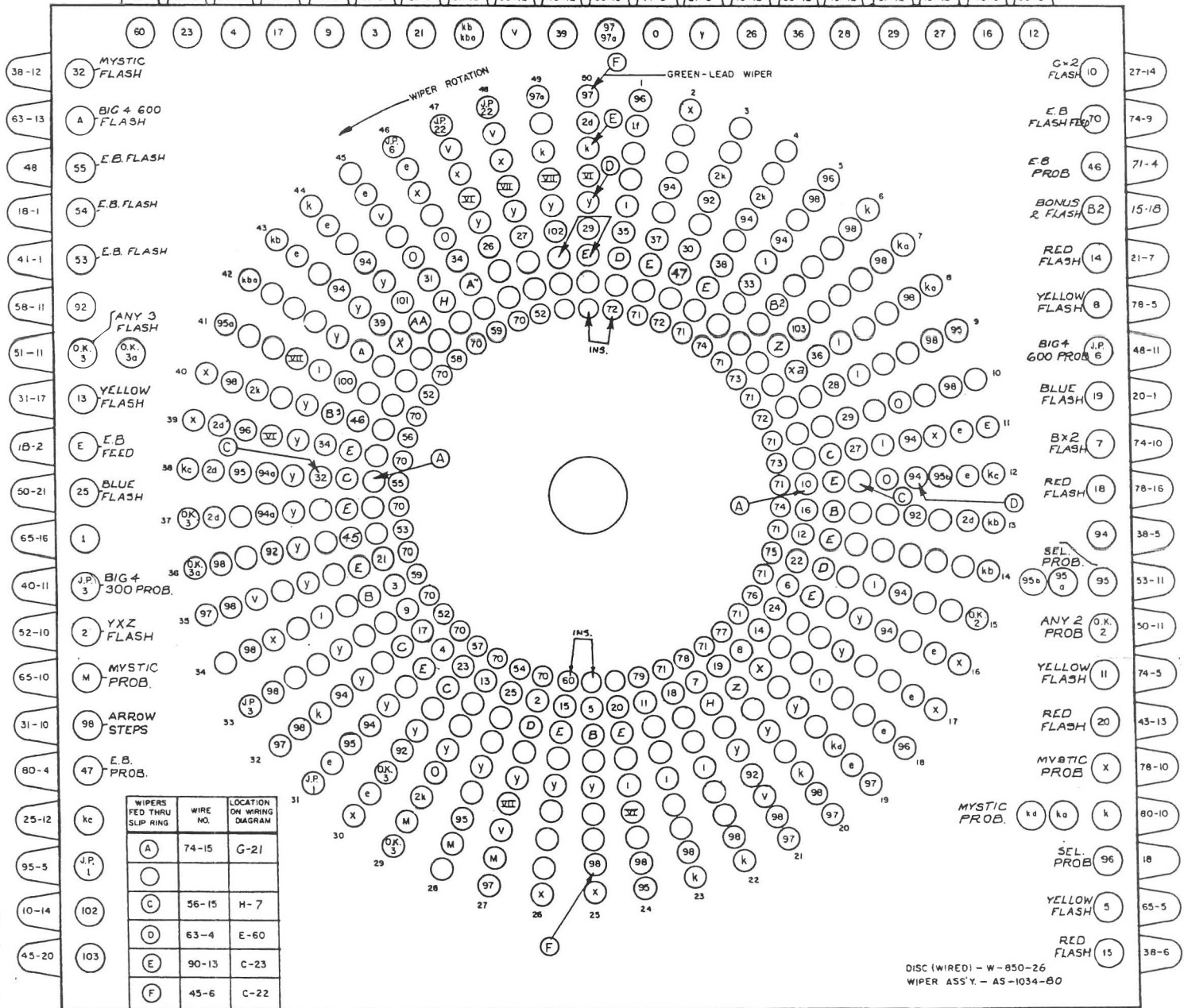
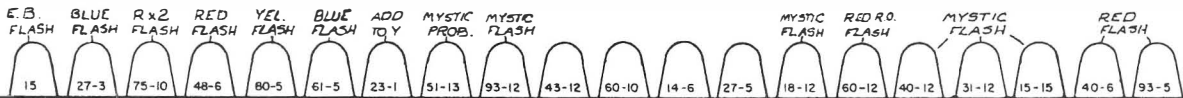
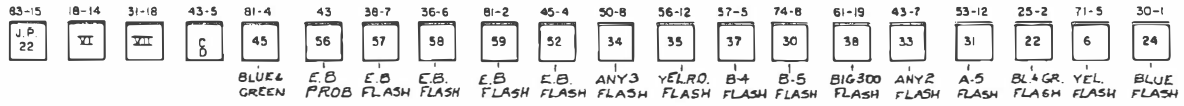
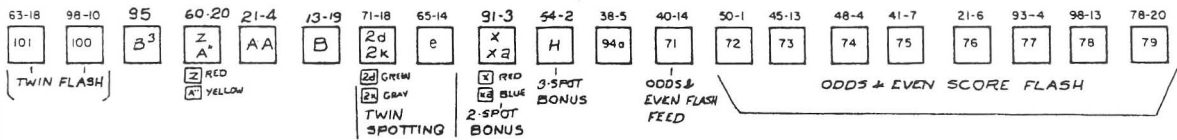
10 step unit. Wipers shown in zero or reset position



SPOTTING DISC

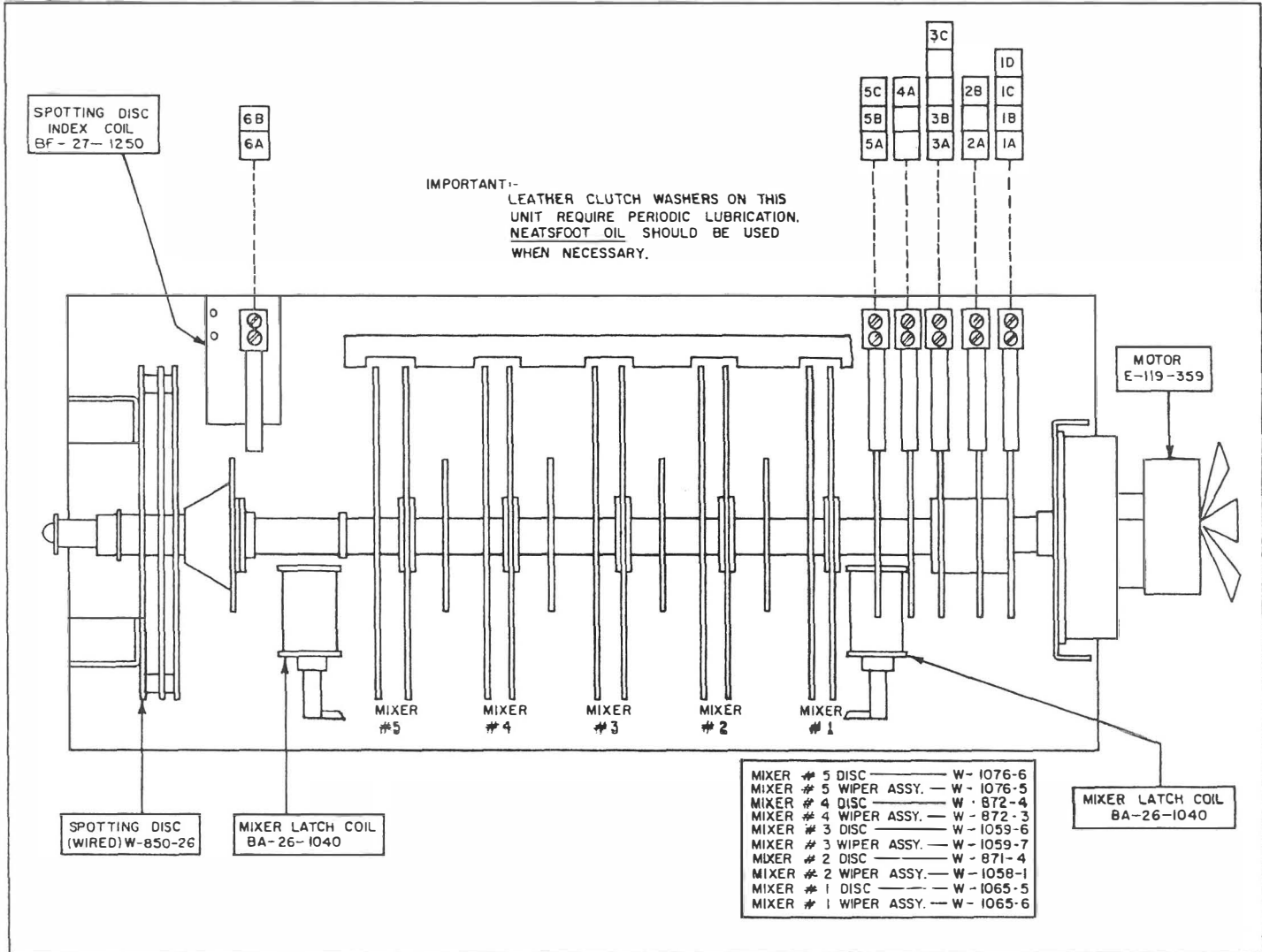
VIEWED FROM WIRING SIDE

Wipers shown in zero position



DISC (WIRED) - W-850-26
WIPER ASS'Y. - AS-1034-80

MIXER UNIT (SPOTTING DISC)



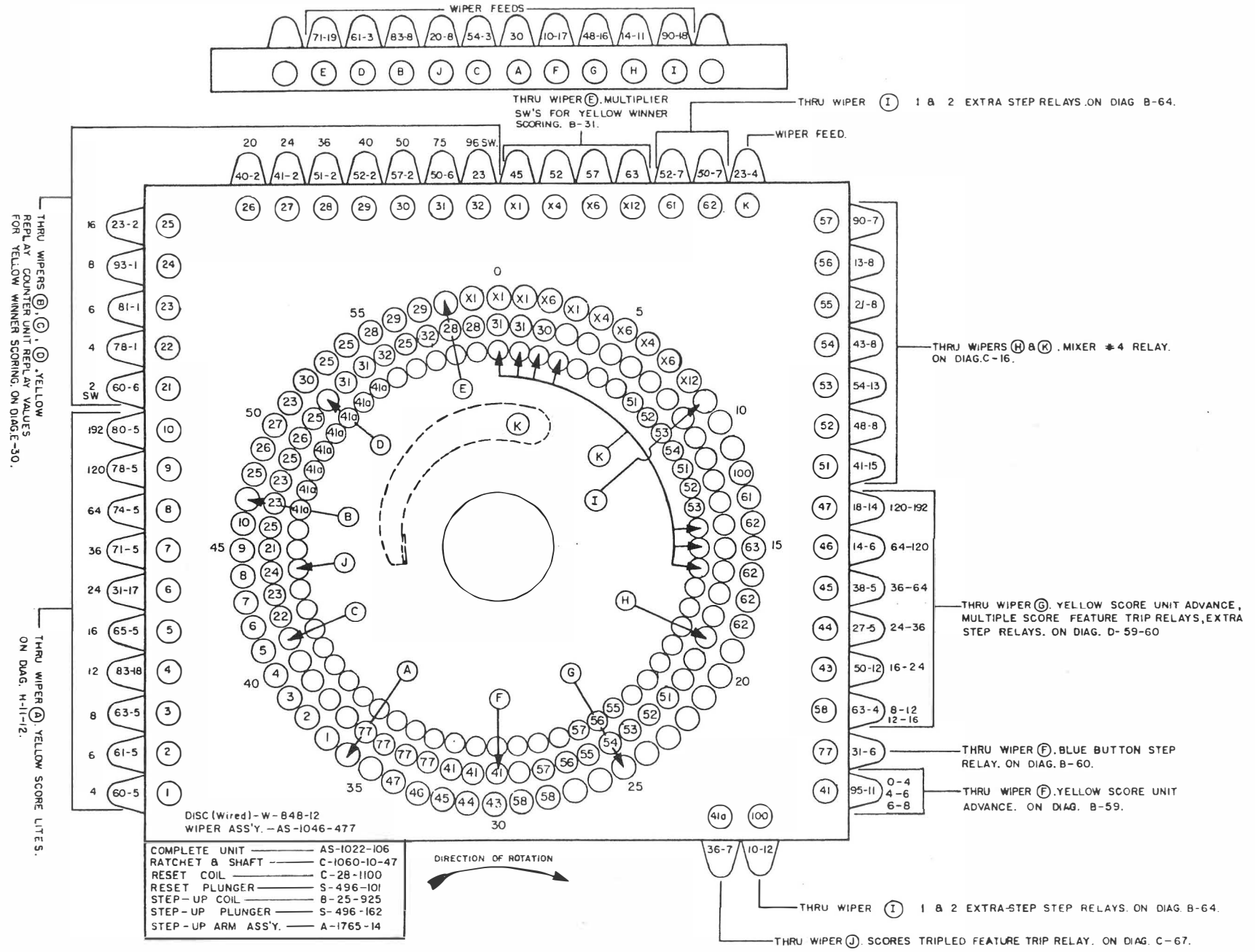
MIXER UNIT (SPOTTING DISC)

				CODE
				N.C.-----NORMALLY CLOSED
				N.O.-----NORMALLY OPEN
				M.B.B.-----MAKE BEFORE BREAK
				S.P.D.T.-----SINGLE POLE DOUBLE THROW
SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
16 pulse cam 1A N.o.	D-22	95-9 80-8	Gray-White BLACK	Completes regular game feature units multiple step and feature trip relay circuits
16 pulse cam 1B N.o.	H-5	90 10-11	Gray Red	Completes mystic lines feature circuit to "Press buttons now" lite
16 pulse cam 1C N.o.	E-17	20-16 52-5	Blue White-Blue	Completes red letter winner circuit to step red letter feature unit regular game feature units and energize feature trip relays
16 pulse cam 1D N.o.	H-32	13-18 63-7	Red-Yellow Brown-Yellow	Completes Super 7 diamond feature win circuit to "collect or double", "shoot red", "shoot yellow", "shoot red" lites
Mixer cam 2A N.o.	A-14	18-19 93-11	Red-Black Gray-Yellow	Completes pull in circuit to mixer cam #2 relay
Mixer roving cam 2B S.P.D.T.	D-40	71-16 85-4	Orange-Red Black-White	(Only normally open portion of switch used) completes circuit to diamond reflex relay
Mixer cam 3A N.o.	E-59	63-4 50-12	Brown-Yellow White	Completes circuit for yellow, red, blue, green score unit steps and multiple feature trip relays
Mixer pulse 3B N.o.	F-59	60-16 90-11	Brown Gray	Same function as switch 3A
Mixer roving cam 3C S.P.D.T.	E-41	38-9 85-4	Yellow-Black Black-White	(Only normally open portion of switch used) same function as switch 2B
Mixer roving cam 4A S.P.D.T.	D-40	36-20 85-4	Yellow-Brown Black-White	(Only normally open portion of switch used) same function as switch 2B
16 pulse cam 5A N.o.	C-3	75-2 53-7	Orange-White White-Yellow	Completes replay register unit reset circuit (total reset)
16 pulse cam 5B N.O.	A-19	78 27-20	Orange-Black Blue-Orange	Completes circuit for extra ball unit multiple steps
16 pulse cam 5C N.o.	B-30	30 41-5	Yellow Green-Red	Completes homing circuit for 4 star replay counter and multiple units
BB step Relay coil	A-63	71-13 83-17	Orange-Red Black-Yellow	(Relay and switches not shown on pictorial view) energized thru yellow, red, blue, green score step circuits
A N.o.	A-63	36-16 83-17	Yellow-Brown Black-Yellow	Completes lock-in circuit to this relay
B N.o.	E-58	53-15 13-13	White-Yellow Red-Yellow	Completes circuit for yellow, red, blue, green score steps multiple feature trip relays
Spotting disc index coil	E-68	98-1 70	Gray-Black Orange	Energized by C.U. cam switch 4A during play cycle and releases spotting wipers
6A N.o.	G-22	30 13-4	Yellow Red-Yellow	Completes spotting disc circuits to flash yellow, red, blue green and diamond feature score lites or extra ball feature lites
6B N.o.	G-6	81-6 30	Black-Red Yellow	Completes spotting disc circuits to flash selection feature stars feature and mystic-lines feature lites
Mixer latch coils (2)	A-6	85-1 70	Black-White Orange	Energized by start relay circuit during play cycle and releases mixer wipers
Bonus Played Relay Coil	A-50	70 20-7	Orange Blue	(Relay & Sw. not shown on pictorial view) Energizes for next game feature after winning bonus
A N.o.	B-50	52-6 20-7	White-Blue Blue	Completes Bonus Played circuit
B S.P.D.T.	C-45	95-1 75-7 61-14	Gray-White Orange-White Brown-Red	Transfers from Diamond Reflex to Reg. Reflex

YELLOW SCORE UNIT DISC

VIEWED FROM WIRING SIDE

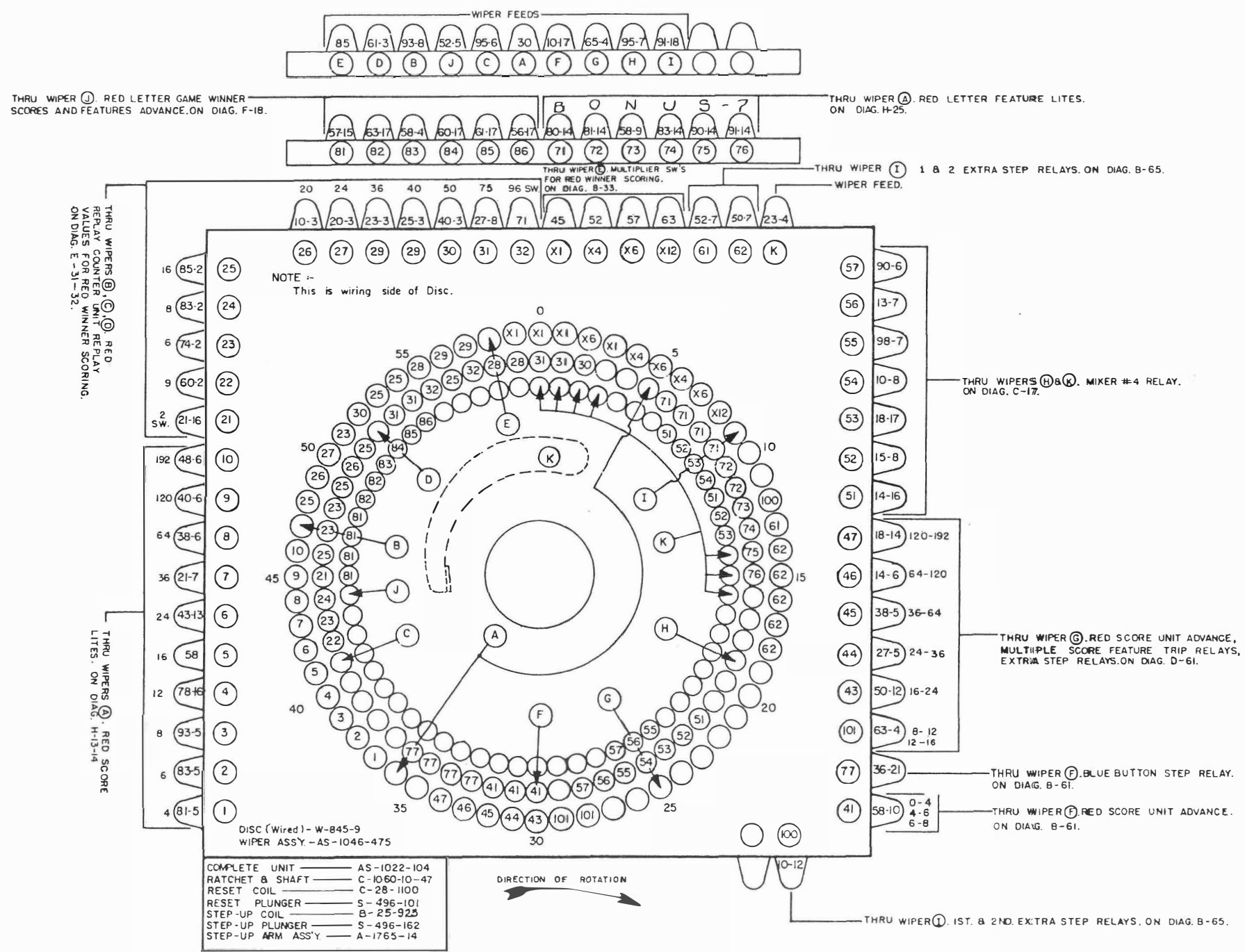
10 step unit. Wipers shown in zero or reset position



RED SCORE UNIT DISC

VIEWED FROM WIRING SIDE

10 step unit. Wipers shown in zero or reset position



BLUE & GREEN SCORE UNIT DISC

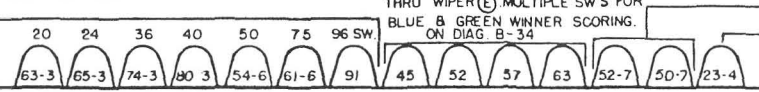
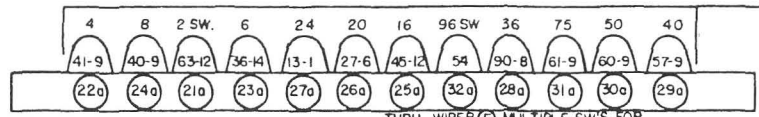
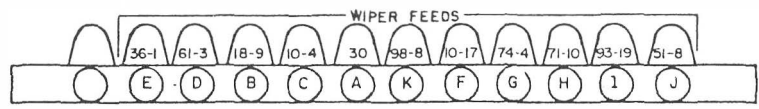
VIEWED FROM WIRING SIDE

10 step unit. Wipers shown in zero or reset position

22

THRU WIPER (B), (C), (D) BLUE
REPLAY COUNTER UNIT REPLAY
VALUES FOR BLUE WINNER SCORING
ON DIAG E-33

THRU WIPER (A) BLUE &
GREEN SCORE LITES. H-15-19.

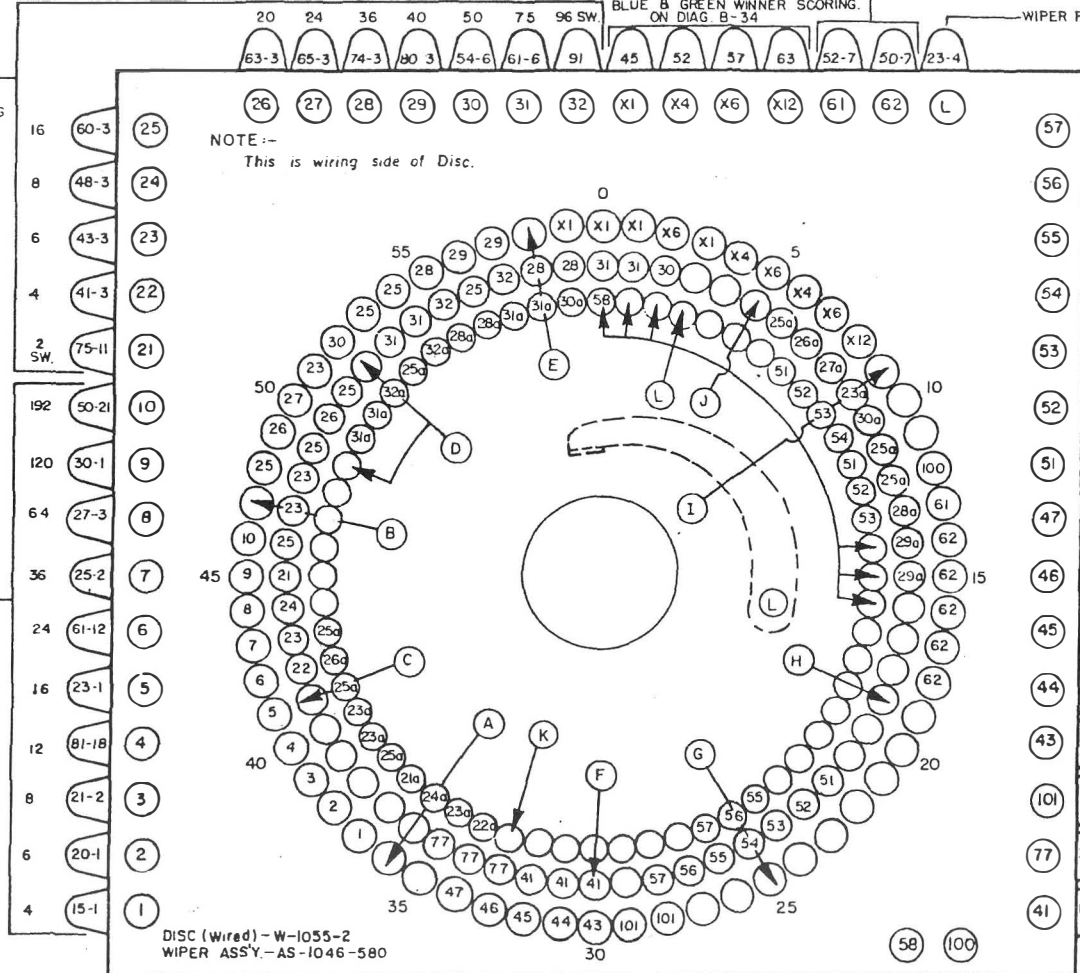


THRU WIPERS (J), (K) GREEN REPLAY COUNTER UNIT REPLAY
VALUES FOR GREEN WINNER SCORING ON DIAG. E-34.

THRU WIPER (I) 1 & 2. EXTRA STEP RELAYS.
ON DIAG. B-66.

THRU WIPER (E) MULTIPLE SW'S FOR
BLUE & GREEN WINNER SCORING.
ON DIAG. B-34

WIPER FEED



DISC (Wired) - W-1055-2
WIPER ASS'Y. - AS-1046-580

- | | |
|--------------------|--------------|
| COMPLETE UNIT | AS-1022-105 |
| RATCHET & SHAFT | C-1060-10-47 |
| RESET COIL | C-28-1100 |
| RESET PLUNGER | S-496-101 |
| STEP-UP COIL | B-25-925 |
| STEP-UP PLUNGER | S-496-162 |
| STEP-UP ARM ASS'Y. | A-1765-14 |

THRU WIPERS (H) & (L) MIXER #4 RELAY.
ON DIAG. C-15.

THRU WIPER (G) BLUE & GREEN SCORE UNIT
ADVANCE, MULTIPLE SCORE FEATURE TRIP
RELAYS, EXTRA STEP RELAYS. ON DIAG. D-62-63.

THRU WIPER (F) BLUE BUTTON STEP RELAY
ON DIAG. B-63

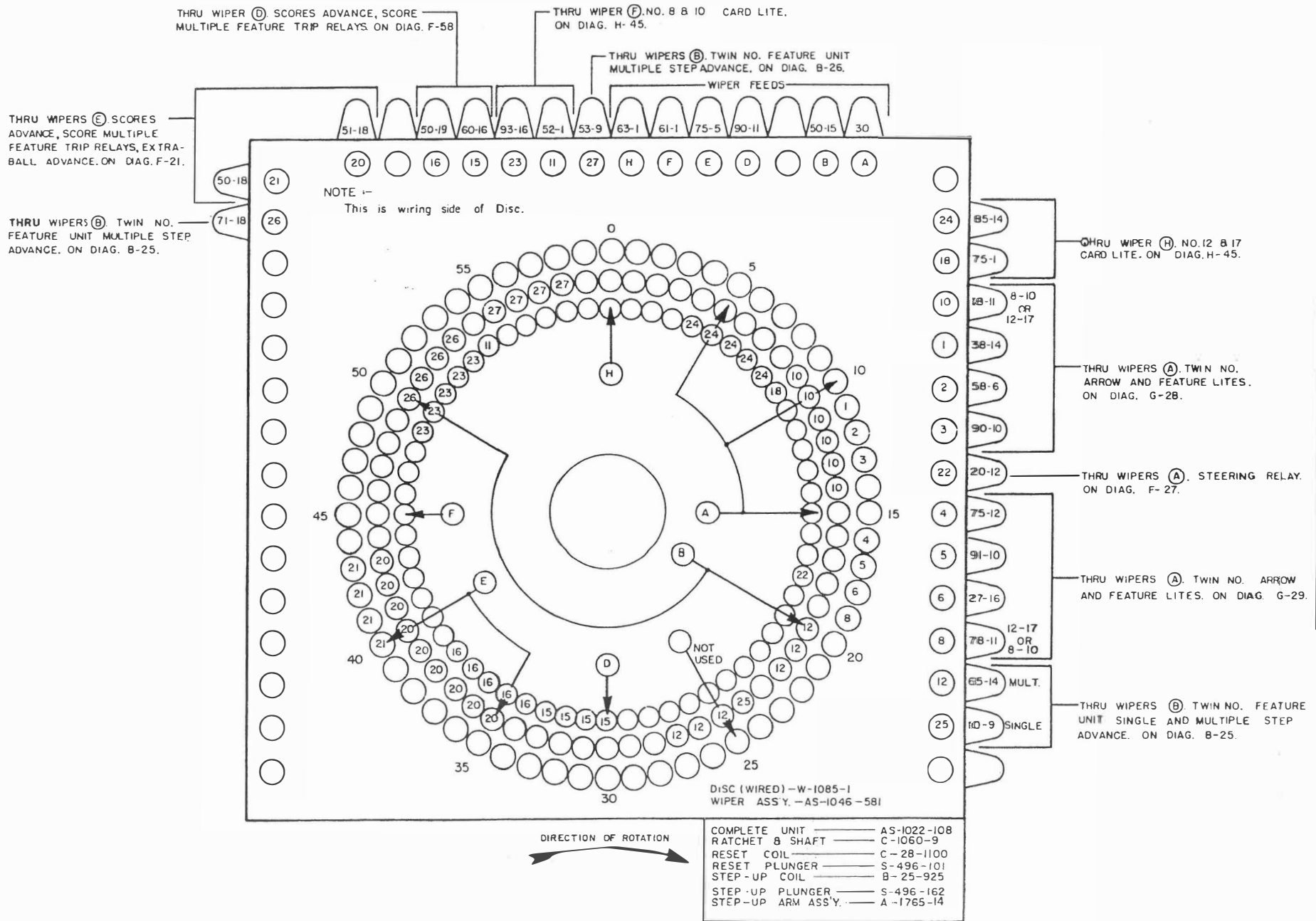
THRU WIPER (E) BLUE & GREEN SCORE UNIT
ADVANCE. ON DIAG. B-62.

THRU WIPER (I) 1 & 2. EXTRA STEP RELAYS. ON DIAG. B-66.

THRU WIPERS (L) MIXER #4 RELAY. ON DIAG. C-15.

TWIN FEATURE UNIT DISC

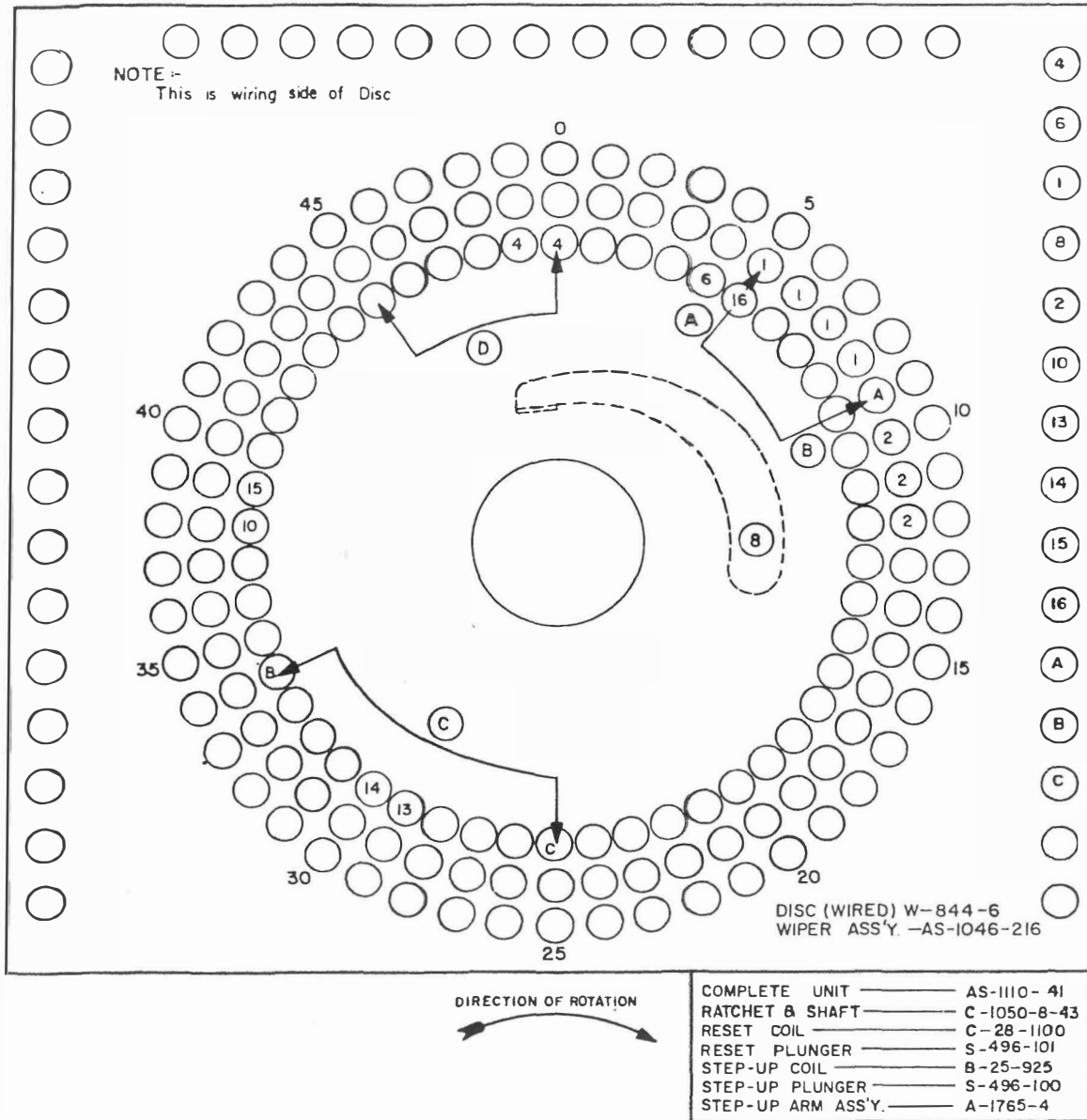
VIEWED FROM WIRING SIDE



9 step unit. Wipers shown in zero or reset position

TIMER UNIT DISC VIEWED FROM WIRING SIDE

8 step unit. Wipers shown in zero or reset position



- 4 14-18 WIPERS (D) FEED.
- 6 27-4 THRU WIPERS (D). "PRESS BUTTONS NOW LITE" BEFORE 4th BALL. ON DIAG. H-4.
- 1 43-2 THRU WIPER (A). TIMER UNIT ADVANCE-0 THRU 4th STEPS. ON DIAG. F-7.
- 8 21-3 WIPER (A) AND (B) FEED.
- 2 56-9 THRU WIPER (B). SHUTTER MOTOR-CLOSE SHUTTER. ON DIAG. F-8.
- 10 83-6 THRU WIPERS (C). BEFORE 4th BALL LOCKOUT TRIP RELAY. ON DIAG. B-12.
- 13 78-7
- 14 54-5 THRU WIPERS (C). BEFORE 5th BALL LOCKOUT TRIP RELAY ON DIAG. B-12
- 15 74-6
- 16 23-5 THRU WIPERS (D) "PRESS BUTTONS NOW LITE" BEFORE 5th BALL. ON DIAG. H-5.
- A 36-2 THRU WIPER (A). TIMER UNIT ADVANCE-4th TO 5th STEP ON DIAG. F-8
- B 80-15 THRU WIPERS (C). BALL LIFTER MOTOR START WHEN UNIT RESETS. ON DIAG. D-11.
- C 58-13

DIAMOND SCORE UNIT DISC VIEWED FROM WIRING SIDE

THRU WIPER (N) DIAMOND SCORE LITE. ON DIAG. H-22

THRU WIPER (O) DIAMOND SCORE ADVANCE ON DIAG. D-42.

DIAMOND SCORE ADVANCE, 9-16 THRU WIPER (R) ON DIAG. D-41, 16-24 THRU WIPER (P) ON DIAG. C-41.

DIAMOND SCORE ADVANCE, 4-6 & 6-9 WIPER (Q) ON DIAG. B-41, 2-4 & 4-6 THRU WIPER (S) ON DIAG. B-41.

DIAMOND SCORE ADVANCE, 24-36 THRU WIPER (P) ON DIAG. C-42, 16-24 THRU WIPER (R) ON DIAG. D-41.

6-9 THRU WIPER (S) ON DIAG. B-41.

WIPERS

THRU WIPER (O) DIAMOND SCORE ADVANCE ON DIAG. D-41.

THRU WIPER (N) DIAMOND SCORE LITES ON DIAG. H-21.

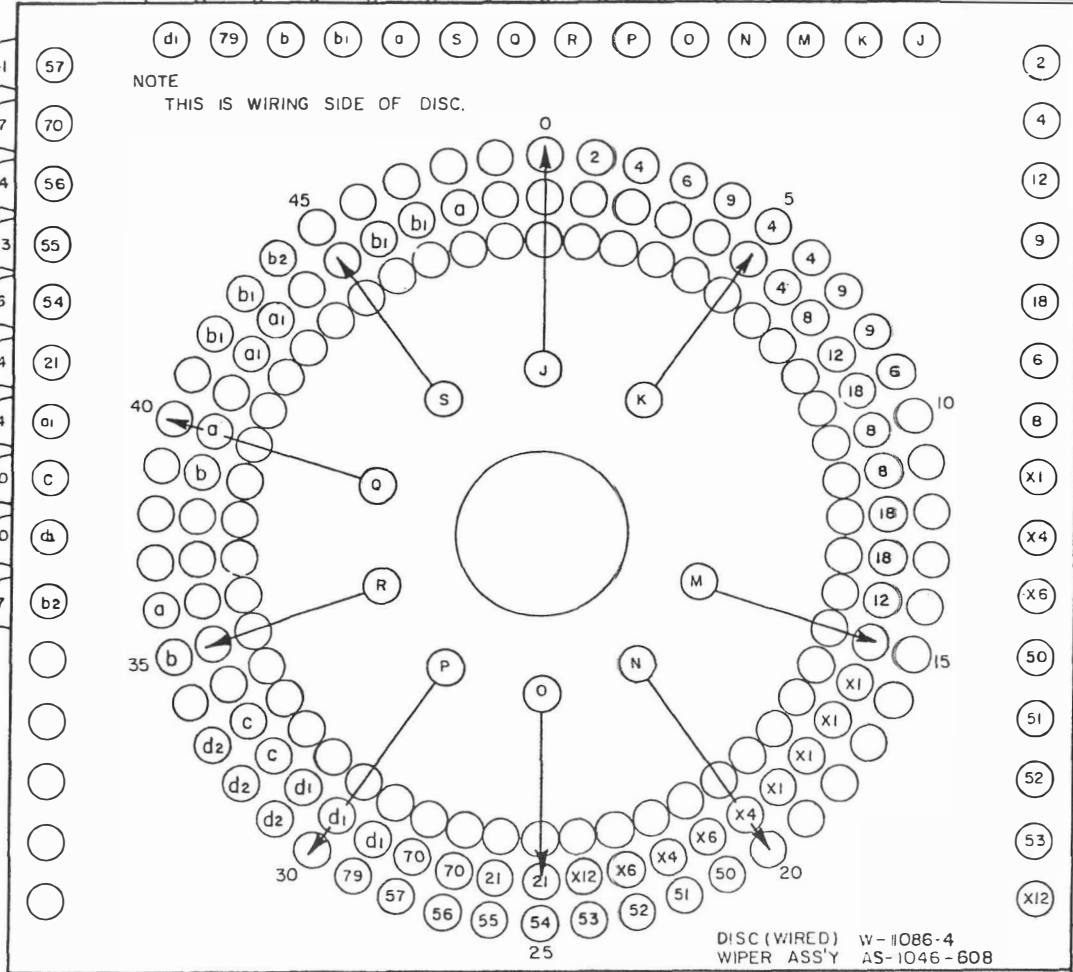
THRU WIPER (O) DIAMOND SCORE ADVANCE ON DIAG. D-41.

THRU WIPER (R) DIAMOND SCORE ADVANCE ON DIAG. D-42.

THRU WIPER (O) DIAMOND SCORE ADVANCE ON DIAG. D-42.

THRU WIPER (P) DIAMOND SCORE ADVANCE ON DIAG. C-41.

THRU WIPER (Q) DIAMOND SCORE ADVANCE 9-16. ON DIAG. B-41.



THRU WIPERS (J) & (K) DIAMOND REPLAY COUNTER UNIT REPLAY VALUES FOR DIAMOND WINNER SCORING. ON DIAG. E-44-45.

THRU WIPER (M) MULTIPLIER SWITCHES FOR DIAMOND WINNER SCORING. ON DIAG. A-44.

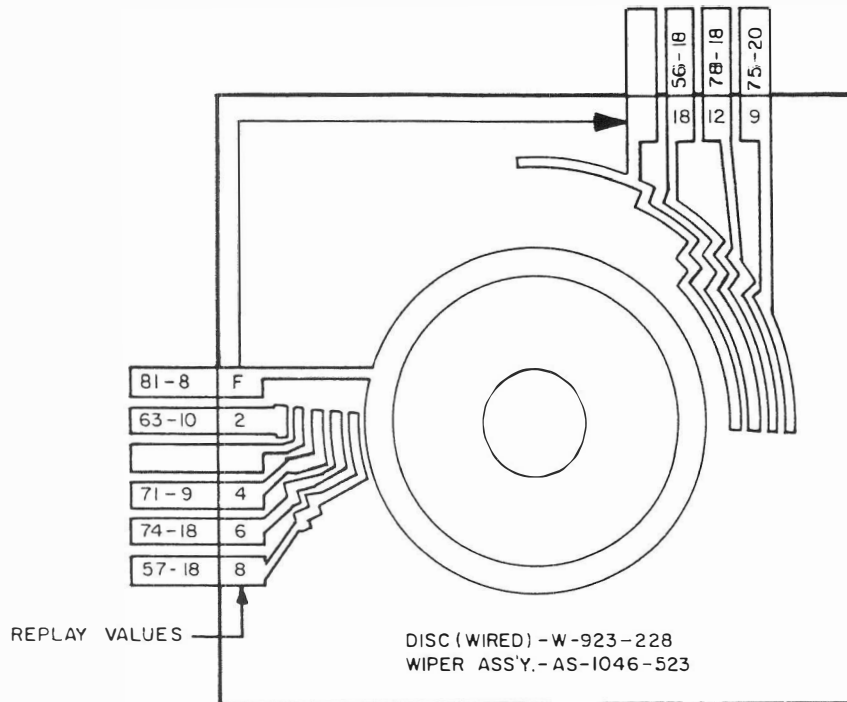
THRU WIPER (N) DIAMOND SCORE LITES. ON DIAG. H-20.

THRU WIPER (M) MULTIPLIER SWITCH FOR DIAMOND WINNER SCORING. ON DIAG. A-45.

9 step unit. Wipers shown in zero or reset position

DIAMOND REPLAY COUNTER DISC

VIEWED FROM WIPER SIDE

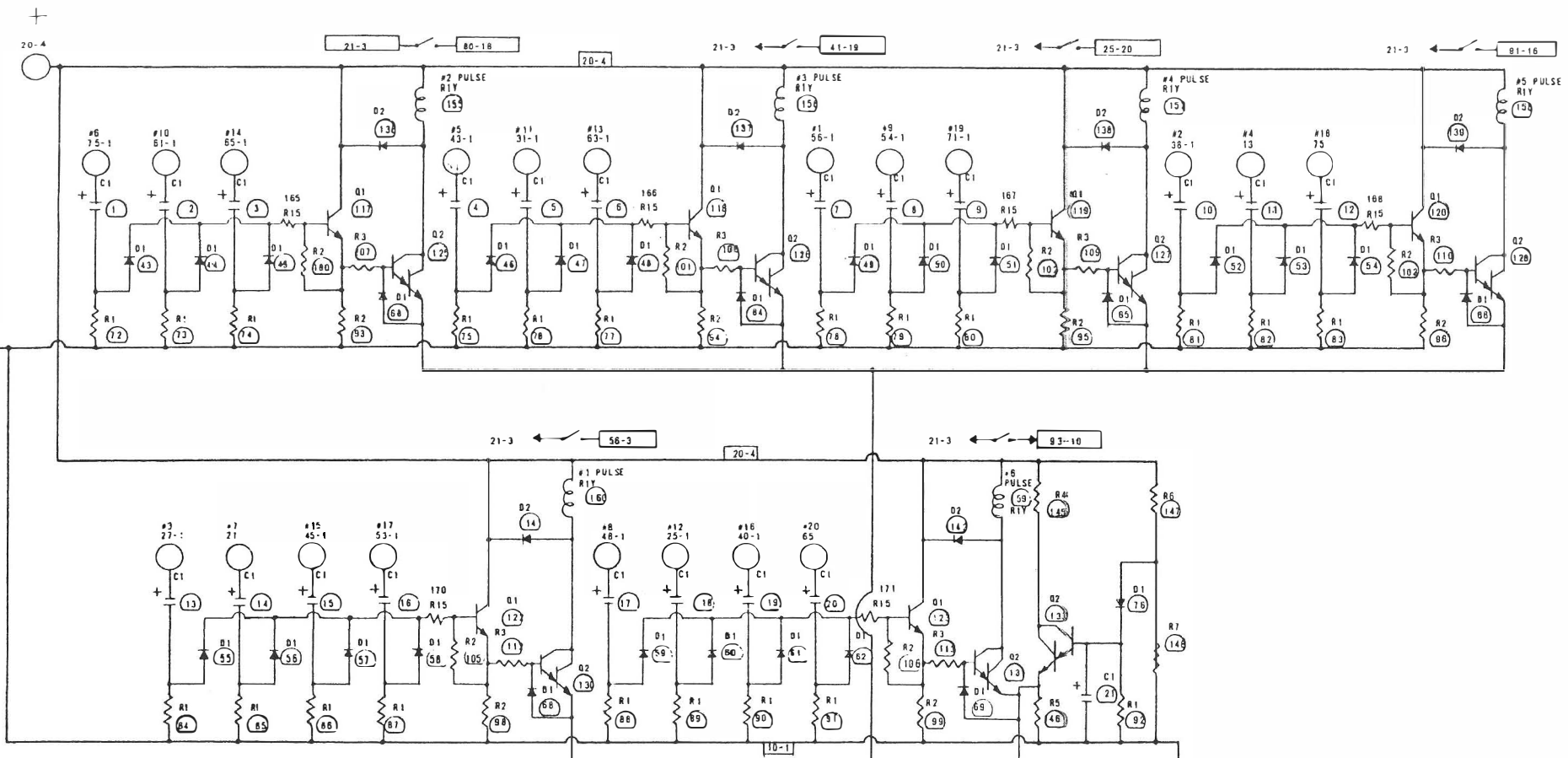


- | | |
|--------------------|------------|
| COMPLETE UNIT | AS-797-192 |
| RATCHET & SHAFT | C-100 |
| RESET COIL | C-28-1100 |
| RESET PLUNGER | S-496-101 |
| STEP-UP COIL | B-25-925 |
| STEP-UP PLUNGER | S-496-116 |
| STEP-UP ARM ASS'Y. | A-1765-8 |

CONTROL UNIT MULTIPLIER CAM SWITCHES THAT ADVANCE DIAMOND REPLAY COUNTER UNIT DURING 2-3-4-5 BALL BONUS-7 DIAMOND FEATURE WINNERS. DURING 4 8 5 BALL WINNERS, SWITCHES DOUBLE 8 QUADRUPLE THEIR REGULAR MULTIPLIER RATIO THRU MULTIPLE UNIT DISC.

10A X12	72 (6)	144 (12)	288 (12)	576 (12)
11A X6	54 (9)	108 (18)	216 (18)	432 (18)
13A X4	36 (9)	72 (18)	144 (18)	288 (18)
11A X6	24 (4)	48 (8)	96 (8)	192 (8)
13A X4	16 (4)	32 (8)	64 (8)	128 (8)
12A X1	9 (9)	18 (18)	36 (18)	72 (18)
12A X1	6 (6)	12 (12)	24 (12)	48 (12)
12A X1	4 (4)	8 (8)	16 (8)	32 (8)
12A X1	2 (2)	4 (4)	8 (4)	16 (4)
	2	3	4	5
	BALL	BALL	BALL	BALL

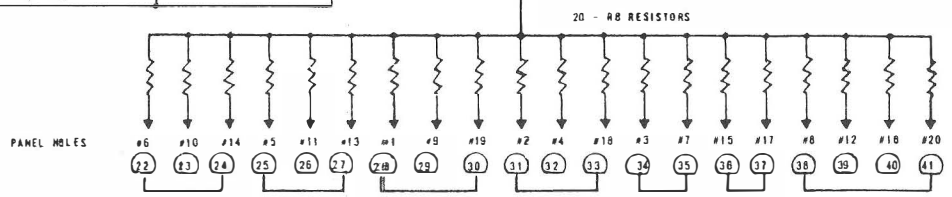
LARGE NUMBERS ARE BONUS-7 DIAMOND FEATURE REPLAY SCORES. SHOWN ON BACK GLASS. NUMBERS IN CIRCLES INDICATE THE REPLAY COUNTER DISC VALUE EACH SCORE IS EFFECTIVE THRU DURING WINNERS.



- R1 - .47M 1/4 W. 10%
- R2 - 1 K 1/4 W. 10%
- R3 - 10 K 1/4 W. 10%
- R4 - 56 12 W. 5%
- R5 - 30 8 W. 5%
- R6 - 680 1/2 W. 2%
- R7 - 470 1/2 W. 2%
- R8 - 100 K 1/4 W. 10%
- R15 - 4.7 K. 1/4 W. 5%

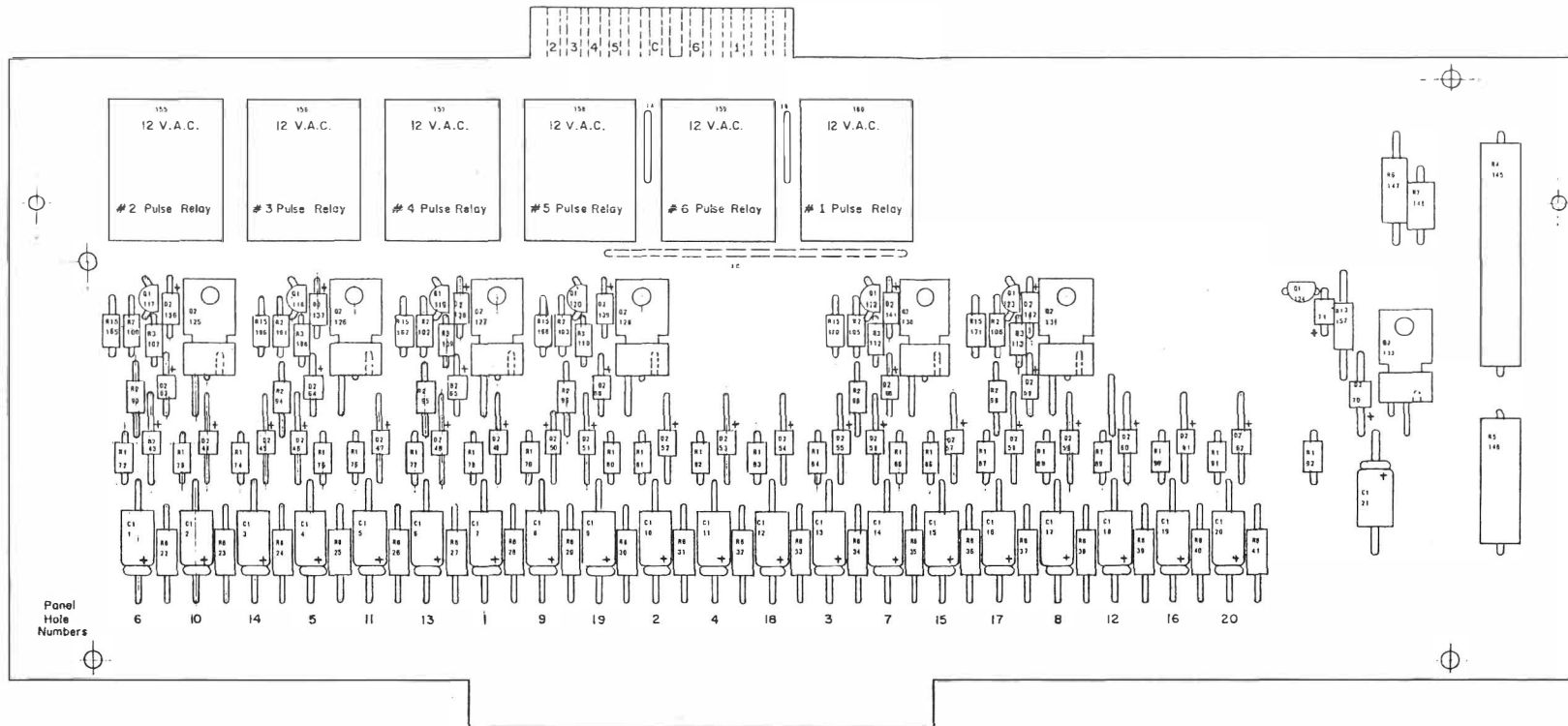
- C1 - 2 MFD. 50 V.
- D1 - IN914A
- D2 - EM502
- Q1 - MPS-6566
- Q2 - D404C4

FOR LOCATION OF COMPONENTS (I)
CHECK AS-2518-7c



PANEL HOLES

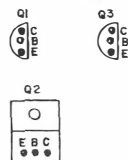
DIAMOND MODULE BOARD ASSEMBLY AS-2518-7C



NOTE :-

Jumper JD must have sleeving.
Use with schematic W-1140-1b

TOP VIEW

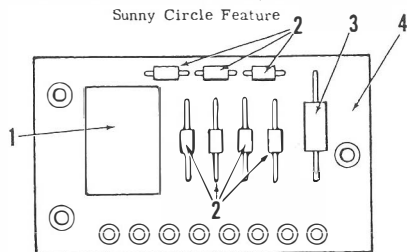


Letter	Part No.	Name	Description	Req.
C-1	E-586-8	Electrolytic	2 MFD 50 V.	21
D-2	E-587-6	Diode	EM502	33
Q-1	E-585-2a	Transistor	MP S 6566	6
Q-2	E-585-11a	Transistor	D40C-4	7
R-1	E-105-168b	Resistor	470 K 10% ½ watt	21
R-2	E-105-164b	Resistor	1 K. 10% ½ watt	12
R-3	E-105-148b	Resistor	10 K. 10% ½ watt	6
R-4	E-104-72b	Resistor	56 OHM. 5% 1/2 watt	1

Letter	Part No.	Name	Description	Req.
R-5	E-104-73b	Resistor	30 OHM. 5% 8 watt	1
R-6	E-108-168b	Resistor	680 K. 2% ½ watt	1
R-7	E-105-167b	Resistor	470 K. 2% ½ watt	1
R-8	E-105-153b	Resistor	100 K. 10% ½ watt	21
R-15	E-105-159b	Resistor	4.7 K. 5% ½ watt	6
JA		Jumper	½" Long	1
JB		Jumper	½" Long	1
JC		Jumper	2-9/32" Long	1

"SUNNY CIRCLE" FEATURE CIRCUIT & RELAYS

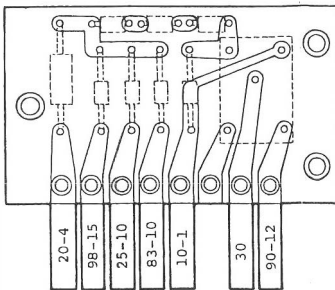
BONUS DETECTOR MODULE, #AS-2518-8A



Index No.	Part No.	Description	No. Req.
1	E-146-774A	Relay (Bonus Hole Detector)	1
2	E-587-6ND	Diode	7
3	E-105-14B	Resistor - Carbon	1
4	A-3381-3A	Circuit Plate Assembly	1
Sub	W-1128-1A	Circuit Plate Wiring	1

CIRCUIT PLATE WIRING, #W-1128-1A

viewed from WIRING side



Also see Bonus Played Relay-Page 23

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
Bonus Hole Det. Relay Coil	H-49	10-1 J	Red	Detects "Sunny Circle" Win
A N.O.	G-26	30 90-12	Yellow Gray	Completes circuit to Bonus Win
Bonus Win Re.	E-26	31-15 14-2	Gray-Red Red-Green	Energized when qualified for Bonus Feature
A N.O.	F-25	14-2 30	Red-Green Yellow	Completes lock-in circuit to relay
B N.O.	A-51	74-22 20-7	Orange-Green Blue	Completes circuit to bonus played relay
C N.O.	G-52	27-18 51-16	Blue-Orange White-Red	Completes circuit to Bonus Guaranteed Lite
D S.P.D.T.	A-41	83-3 56-16 78-14	Black-Yellow White-Brown Orange-Black	Completes circuit to Diamond Scores to Top Scores
Bonus 3 Sel. Re. Trip Pos. Coil	D-24	70 J	Orange	Trips when qualified for Bonus 3 feature
A N.O.	E-24	54-2 J	White-Green	Opens circuit to this Coil
B N.C.	F-26	14-2 90-12	Red-Green Gray	Completes circuit to Bonus Win Relay
C N.C.	G-51	25-19 95	Blue-White Gray-White	Completes circuit to Bonus 3 & Bonus 2 Feature
Bonus 3 Sel. Re. Reset Coil	A-9	70 90-20	Orange Gray	Energized at the start of a new game
Bonus 2 Sel. Re. Trip Pos. Coil	D-24	70 J	Orange	Trips when qualified for Bonus 2 feature
R1 N.O.	H-47	98-15 36-10	Gray-Black Yellow-Brown	Cancels out White Sunny Circle (Red Lite)
R2 N.C.	B-17	23-4 10-8	Blue-Yellow Red	Completes circuit to Mixer 4 Relay
R3 N.C.	B-15	23-4 63-16	Blue-Yellow Brown-Yellow	Completes circuit to Mixer 4 Relay
R4 N.C.	C-18	13-19 43-5	Red-Yellow Green-Yellow	Completes circuit to Extra Ball Unit Step-up
L1 S.P.D.T.	E-24	31-2 34-2 J	Gray-Red White-Green	Opens circuit to this Coil & then completes circuit to Bonus 3 Coil
L2 S.P.D.T.	G-51	15-38 25-19	White Blue-White	Transfers from Bonus 3 to Bonus 2 feature Lites
Bonus 2 Sel. Re. Reset Coil	A-9	70 90-20	Orange Gray	Energizes at the start of a new game

BACK CABINET RELAY BANK (4)

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
Replay reset relay coil	A-3	75-2 70	Orange-White Orange	Energized by anti cheat relay circuit thru replay register unit zero switch
L1 N.o.	F-3	75-2 56-2	Orange-White White-Brown	Completes lock-in circuit to this relay and multiple reset circuit to replay register unit
L2 N.o.	G-1	28 (P) 50 (P)	Blue (Plastic) Brown (Plastic)	Completes a circuit to control unit and mixer spotting unit motors
L3 S.P.D.T.	B-3	30-5 48-5 53-7	Gray Gray-White White-Yellow	Directs single (Play) reset circuit or multiple (Cancel) reset circuit to replay register unit
L4 N.c.	D-4	10-5 61-8	Red Brown-Red	Opens start relay circuit
R1 N.o.				Extra switch - not used in circuit
R2 N.c.	B-28	30 93-20	Yellow Gray-Yellow	Opens key plays circuit to step replay register unit and key plays meter
Start relay coil	A-4	98-20 70	Gray-Black Orange	Energized thru 5¢ or 25¢ coin switch circuit, also thru red, green, blue, white or yellow play button circuits, when replays are registered
L1 N.c.	D-36	56-4 18-15	White-Brown Yellow-Black	Opens lock-in circuit to red letter win relays
L2 N.c.	B-14	21-3 14-9	Blue-Red Red-Green	Opens lock-in circuit to mixer #2 relay
R1 N.c.	A-18	75-4 78-4	Orange-White Orange-Black	Opens extra ball unit multiple step circuit
R2 N.c.	D-22	18-16 95-9	Red-Black Gray-White	Opens regular game features circuit
R3 N.o.	D-5	13-16 28-2	Red-Yellow Green-Black	Completes lock-in circuit to this relay, also completes shutter motor circuit, timer cams index and mixer latch coil circuits
R4 N.o.	C-5	13-16 10-10	Red-Yellow Red	In series with switch R3 circuit to shutter motor, timer cams index and mixer latch coils
25¢ relay coil	A-7	15-13 70	Red-White Orange	Energized thru 25¢ coin switch circuit
L1 N.c.	A-4	83-16 80-2	Black-Yellow Black	Opens circuit to single coin meter terminal when used
R1 N.o.	E-7	15-13 25-9	Red-White Blue-White	Completes lock-in circuit to this relay
R2 N.o.	E-5	10-5 90-2	Red Gray	Completes a circuit to start relay
R3 S.P.D.T.	B-28	43-14 75-9 36-13	Green-Red Orange-White Yellow-Brown	Directs winner or 25¢ credit circuit to step replay register unit
R4 N.c.	B-3	45-9 98-5	Green-White Gray-Black	Opens replay register unit reset circuit
Anti cheat relay coil	A-20	78-4 70	Orange-Black Orange	Energized by C.U. cam switch #5B during play cycle and remains energized unless power to game is interrupted. Also energized by key play switch circuit
L1 N.c.	G-6	14-14 30	Red-Green Yellow	Completes a shutter motor circuit to close shutter when relay drops out
L2 S.P.D.T.	J-33	91-2 36-17 40	Gray-Red Yellow-Brown Green	Opens 6 volt game lites circuit and completes circuit to tilt lite when relay drops out
R1 N.o.	B-20	30 78-4	Yellow Orange-Black	Completes lock-in circuit to this relay
R2 N.o.	H-35	51-19 80-3	White-Red Black	Opens 21 volt game circuit when relay drops out
R3 S.P.D.T.	F-4	75-2 56-2 50-2	Orange-White White-Brown White	Opens replay play button circuit to start relay and completes circuit to replay reset relay when relay dropout
R4 N.c.	E-10	57-6 85-7	White-Orange Black-White	Completes a circuit to red button relay when relay drops out

CODE
 N.C. ----- NORMALLY CLOSED
 N.O. ----- NORMALLY OPEN
 M.B.B. ----- MAKE BEFORE BREAK
 S.P.D.T. ----- SINGLE POLE DOUBLE THROW

BACK CABINET AUXILIARY BOARD RELAYS (4)

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
1 extra step relay coil	A-64	31-5 71-13	Yellow-Red Orange-Red	Energized thru yellow, red, blue & green score unit step control circuits
1 N.o.	A-64	36-16 31-5	Yellow-Brown Yellow-Red	Completes lock in circuit to this relay
2 N.o.	E-58	81-11 60-18	Black-Red Brown	Completes circuit for yellow, red, blue & green score unit extra step and multiple score feature relays
2 Extra step relay coil	A-67	45-16 71-13	Green-White Orange-Red	Energized thru yellow, red, blue & green score unit step control circuits
1 N.o.	A-67	36-16 45-16	Yellow-Brown Green-White	Completes lock in circuit to this relay
2 N.o.	F-58	81-11 25-16	Black-Red Blue-White	Completes circuit for yellow, red, blue & green score unit extra steps and multiple score feature relays
Multiple win #1 relay coil	A-30	78-9 70	Orange-Black Orange	Energized thru yellow, red, blue & green score winner circuits, thru multiple feature relays. Also thru 4 & 5 ball diamond winner circuit
1 N.c.	A-30	80-16 43-15	Black Green-Yellow	Opens multiple unit homing circuit
2 N.c.	A-34	90-1 70	Gray Orange	Opens normal multiplier circuit to step replay counter units during winner scoring, circuit then effective thru multiple unit disc.
3 N.c.	A-34	90-1 70	Gray Orange	Parallel circuit to switch 2
Multiple win #2 relay coil	A-34	90-1 70	Gray Orange	Energized thru yellow, red, blue & green score winner circuits and Super 7 diamond feature score winner circuits
1 N.o.	C-31	75-6 78-9	Orange-White Orange-Black	Completes a circuit to step multiple unit

BACK DOOR SEARCH RELAY BANK (5)

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
#5 search Relay coil	J-45	50-14 18-5	White Red-Black	Energized thru search disc circuits from 20 panel-hole switches and mystic lines motor unit disc's.
1 N.O.	E-31	61-3 23-8	Brown-Red Blue-Yellow	In series with 5-in-zone yellow, red, blue, green winner search & scoring circuits.
#4 search relay coil	J-45	50-14 15-3	White Red-White	Same as #5 search relay coil.
1 N.O.	E-31	74 23-8	Orange-Green Blue-Yellow	In series with 4 & 5-in-zone yellow, red, blue, green, and all 4 star zones feature, winner search and scoring circuit
#3 search relay coil	J-44	50-14 60-4	White Brown	Same as #5 search relay coil.
1 N.O.	F-31	31-11 36-11	Yellow-Red Yellow-Brown	In series with 3,4, and 5-in-zone yellow, red, blue, green all 4 star zones feature, and any 3 star zones feature winner search and scoring circuits.
#2 search relay coil	J-44	50-14 65-7	White Brown-White	Same as #5 search relay coil.
1 N.O.	F-31	38-11 36-11	Yellow-Black Yellow-Brown	In series with 3,4, 5-in-zone yellow, red, blue, green all 4 star zones feature, any 3 star zones feature, and any 2 star zones feature, winner search and scoring circuits.
#1 search relay coil	J-43	50-14 20-5	White Blue	Same as #5 search relay coil.
1 N.O.	F-31	40-5 38-11	Green Yellow-Black	Same function as #2 search relay switch.

BACK DOOR RELAY BANK-TOP (7)

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
Mixer cam #2 relay coil	A-14	93-11 70	Gray-Yellow Orange	Energized during play cycles thru mixer cam #2A and C.U. cam 8XA circuit
L1 N.c.	A-24	20-11 70	Blue Orange	Opens a control circuit for all 4 stars 600 and all 4 stars 300 feature
L2 N.c.	B-26	53-9 71-18	White-Yellow Orange-Red	Opens a control circuit for twin number feature unit steps
L3 S.P.D.T.	D-58	25-11 18-8 27-11	Blue-White Red-Black Blue-Orange	Directs circuits for yellow, red, blue, & green score unit steps and multiple feature relays
L4 N.o.	A-63	31-5 15-9	Yellow-Red Red-White	Completes a score control circuit to extra step relays
R1 N.o.	A-14	14-9 93-11	Red-Green Gray-Yellow	Completes lock in circuit to this relay
R2 N.o.	C-60	81-9 58-10	Black-Red White-Black	Completes a control circuit for red score unit steps
R3 N.o.	E-27	21-17 10-18	Blue-Red Red	Completes twin number feature control circuit to steering relay
R4 N.o.	E-67	83-12 98-14	Black-Yellow Gray-Black	Completes score control circuit for triple scores feature
Mixer #2 relay coil	A-18	27-7 70	Blue-Orange Orange	Energized during play cycles thru score control circuit
1 N.o.	D-17	13-3 27-7	Red-Yellow Blue-Orange	Completes lock in circuit to this relay
2 N.o.	C-58	85-4 54-12	Black-White White-Green	Completes circuit for yellow, red, blue, green score unit steps
3 N.o.	E-21	56-6 75-5	White-Brown Orange-White	Completes control circuit for yellow, red, blue & green score unit steps, multiple and triple feature, or extra ball feature unit steps
Mixer #4 relay coil	A-16	23-4 70	Blue-Yellow Orange	Energized during play cycles thru feature control circuit
1 N.o.	A-14	18-7 23-4	Red-Black Blue-Yellow	Completes lock in circuit to this relay
2 N.c.	D-20	36-19 51-5	Yellow-Brown White-Red	Opens a control circuit for extra ball feature unit steps
3 N.c.	C-67	20-8 56-7	Blue White-Brown	Opens control circuit for triple scores feature
4 N.c.	E-22	80-8 45-6	BLACK GREEN-WHITE	Opens control circuit for mystic lines, selection and twin number feature unit steps, and <i>SUNNY CIRCLE</i> feature relays
Play features relay coil	A-38	61-13 31-15	Brown-Red Yellow-Red	Energized thru green button circuit during play for regular game features only, also energized thru diamond play relay circuit
L1 S.P.D.T.	H-27	95-2 14-21 23-15	Gray-White Red-Green Blue-Yellow	Directs circuit to red, blue, or green button play lite
R1 N.o.	B-37	43-14 53-14	Green-Yellow White-Yellow	Completes circuit to features lock relay
R2 N.o.	C-38	81-13 61-13	Black-Red Brown-Red	Completes lock in circuit to this relay
R3 N.c.	G-21	74-15 15-17	Orange-Green Red-White	Opens spotting disc circuit to flash yellow, red, blue & green score lites and scores multiple feature lites
R4 N.c.	A-58	71-13 70	Orange-Red Orange	Opens circuit for yellow, red, blue and green score unit steps and scores multiple feature relays
Features lock relay coil	A-37	53-14 31-15	WHITE-YELLOW Yellow-Red	Energized thru play features relay circuit
1 N.o.	B-37	40-15 53-14	Green White-Yellow	Completes lock in circuit to this relay
2 N.o.	C-23	45-6 90-13	Green-White Gray	Completes spotting disc control circuit for mystic lines selection, twin number feature unit steps, and star zone feature relays
3 N.c.	E-15	52-17 41-17	White-Blue Green-Red	Opens a control circuit to mixer #4 relay

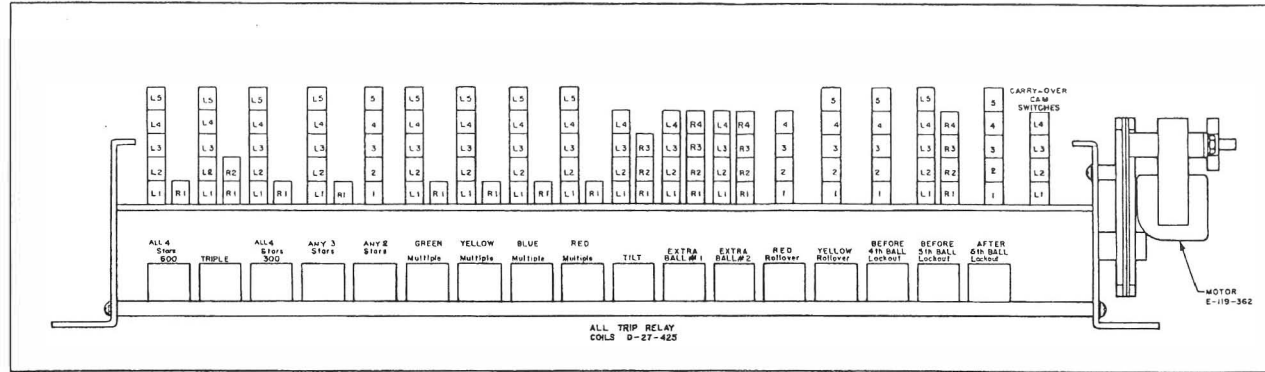
BACK DOOR RELAY BANK-BOTTOM (7)

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
Z relay coil	A-45	83-21 70	Black-Yellow Orange	Energized thru super 7 diamond feature winner search circuit
1 N.o.	D-45	53-16 83-21	White-Yellow Black-Yellow	Completes replay counter step-up circuit for diamond scoring
2 N.o.	C-45	33-21 85-9	Black-Yellow Black-White	Completes circuit to Diamond/Req. Reflex Coil thru Bonus Played Relay
3 S.P.D.T.	A-32	50-16 90-1 63-19	White Gray Brown-Yellow	Directs C.U, multiplier switches thru multiple unit disc during regular game double and triple scoring or 4 & 5 ball diamond winner scoring
4 N.c.	B-27	71-3 13-6	Orange-Red Red-Yellow	Opens winner search circuit to search index coil
Cam #7 relay coil	A-28	90-5 70	Gray Orange	Energized during play cycles by C.U. cam switch #7E
L1 N.o.	B-66	13-11 65-17	Red-Yellow Brown-White	Completes control circuits for blue and green score extra steps.
L2 N.o.	B-64	58-10 48-17	White-Black Green-Black	Completes control circuits for red score extra steps
L3 N.o.	B-63	95-11 20-18	Gray-White Blue	Completes control circuits for yellow score extra steps
R1 N.o.	F-15	21-3 25-5	Blue-Red Blue-White	Completes control circuit to mixer #4 relay
R2 N.o.	E-37	21-3 43-14	Blue-Red Green-Yellow	Completes circuit to features lock relay or scores lock relay during green or blue button play
R3 N.o.	G-15	21-3 14-8	Blue-Red Red-Green	Completes control circuit to mixer #2 relay
R4 N.o.	B-40	38-9 41-10	Yellow-Black Green-Red	Completes control circuit to diamond reflex relay
Steering relay coil	A-27	95-15 70	Gray-White Orange	Energized thru twin number feature control circuit
L1 S.P.D.T.	H-28	98-10 18-11 10-14	Gray-Black Red-Black Red	Directs twin number feature lite circuits 8-10 or 12-17
L2 S.P.D.T.	H-29	63-18 78-11 45-20	Brown-Yellow Orange-Black Green-White	Directs twin number feature lite circuits 12-17 or 8-10
L3 N.c.	G-45	93-16 52-1	Gray-Yellow White-Blue	Opens 8-10 twin number circuit from hole switches
R1 N.o.	E-27	41-20 95-15	Green-Red Gray-White	Completes lock-in circuit to this relay
R2 N.o.	G-59	50-19 60-16	White Brown	Completes a control circuit for yellow, red, blue & green score unit steps, multiple and triple feature trip relays
R3 N.o.	H-45	85-14 75-1	Black-White Orange-White	Completes 12-17 twin number circuit from hole switches
R4 N.c.	A-24	20-11 70	Blue Orange	Opens a control circuit to all 4 star 300 and 600 feature trip relays
Diamond play relay coil	A-39	31-15 60-14	Yellow-Red Brown	Energized thru white button diamond feature play circuit
L1 S.P.D.T.	A-2	13-14 90-5 81-15	Red-Yellow Gray Black-Red	Directs regular or diamond reflex unit play circuit
L2 S.P.D.T.	H-26	14-21 36-15 38-19	Red-Green Yellow-Brown Yellow-Black	Directs red, blue, green or white button play lite circuit
L3 N.o.	A-38	75-13 85-15	Orange-White Black-White	Completes a circuit to play scores relay
R1 N.o.	C-39	43-18 60-14	Green-Yellow Brown	Completes lock in circuit to this relay
R2 N.o.	A-41	45-15 56-16	Green-White White-Brown	Completes circuit for diamond score unit steps
R3 N.o.	H-22	40-14 15-17	Green Red-White	Completes spotting disc circuit to flash diamond feature score lites
R4 N.o.	A-38	61-13 75-13	Brown-Red Orange-White	Completes a circuit to play features relay

BACK DOOR TRIP RELAY ASSEMBLY

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
All 4 stars 600 Relay Coil	B-24	48-11J 52-11	Green-Black White-Blue	Energized thru control and spotting disc circuit during red or green button play
L1 N.c.	B-24	48-11 48-11J	Green-Black Green-Black	Opens circuit to this relay coil
L2 S.P.D.T.	G-7	71-15 30 63-13	Orange-Red Yellow Brown-Yellow	Directs circuits to all 4 star 300 or 600 feature lite
L3 S.P.D.T.	C-29	10-16 85-13 23-17	Red Black-White Blue-Yellow	Directs all 4 star replay counter unit step-up circuit during 300 or 600 winner scoring
L4 N.O.	C-24	80-9 40-11	Black Green	Completes a circuit to all 4 stars 300 feature trip relay
L5 N.O.	A-24	52-11 70	White-Blue Orange	Same function as switch L4
R1 S.P.D.T.	E-29	98-18 81-20 83-13	Gray-Black Black-Red Black-Yellow	Directs all 4 stars 300 or 600 winner search and scoring circuit
Triple relay coil	A-67	36-7J 71-13	Yellow-Brown Orange-Red	Energized thru control circuit during red or blue button play
L1 N.c.	A-67	36-7 36-7J	Yellow-Brown Yellow-Brown	Opens circuit to this relay coil
L2 N.c.	C-58	27-11 23-11	Blue-Orange Blue-Yellow	Opens a mixer #3 disc control circuit to the multiple feature trip relays
L3 S.P.D.T.	A-32	78-2 50-16 74-13	Orange-Black White Orange-Green	Directs replay counter multiplier step-up circuit thru multiple unit disc
L4 S.P.D.T.	G-10	57-11 70 80-7	White-Orange Yellow Black	Directs lit color scores doubled or tripled lite circuit
L5 S.P.D.T.	C-59	95-11 25-17 75-8	Gray-White Blue-White Orange-White	Directs control circuits for yellow score unit single and extra steps
R1 N.c.	C-61	81-9 58-10	Black-Red White-Black	Opens control circuit for red score unit single and extra steps
R2 S.P.D.T.	C-62	13-11 15-19 90-4	Red-Yellow Red-White Gray	Directs control circuit for blue and green score unit single and extra steps
All 4 stars 300 relay coil	B-24	40-11J 52-11	Green White-Blue	Energized thru control and spotting disc circuit during red or green button play also energized thru all 4 stars 600 trip relay circuit
L1 N.c.	B-24	40-11 40-11J	Green Green	Opens circuit to this relay coil
L2 N.c.	D-20	18-2 36-19	Red-Black Yellow-Brown	Opens control circuit for extra ball unit steps
L3 N.c.	D-24	80-9 30	Black Yellow	Opens all 4 stars 600 relay circuit to this relay
L4 N.O.	G-7	61-19 71-15	Brown-Red Orange-Red	Completes circuit to all 4 stars 300 feature lite
L5 N.O.	E-29	81-20 23-8	Black-Red Blue-Yellow	Completes all 4 stars 300 and 600 winner search and scoring circuits
R1 N.c.	B-19	74-7 51-4	Orange-Green White-Red	Same function as switch L2
Any 3 stars relay coil	A-24	51-11J 70	White-Red Orange	Energized thru control and spotting disc circuit during red or green button play also energized thru any 2 stars trip relay circuits
L1 N.c.	A-24	51-11 51-11J	White-Red White-Red	Opens circuit to this relay coil
L2 N.c.	C-61	85-10 91-17	Black-White Gray-Red	Opens control circuit for red score unit single and extra steps
L3 N.c.	D-24	38-2 30	Yellow-Black Yellow	Opens any 2 stars trip relay circuit to this relay
L4 N.O.	G-7	50-8 58-3	White White-Black	Completes circuit to any 3 stars feature lite
L5 N.O.	E-35	74-11 98-16	Orange-Green Gray-Black	Completes any 3 and any 2 star winner search and scoring circuits
R1 N.c.	D-27	10-18 95-15	Red Gray-White	Opens control circuit to steering relay

BACK DOOR TRIP RELAY ASSEMBLY



CODE
 N.C. ----- NORMALLY CLOSED
 N.O. ----- NORMALLY OPEN
 M.B.B. ----- MAKE BEFORE BREAK
 S.P.D.T. ----- SINGLE POLE DOUBLE THROW

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
Any 2 stars relay coil	A-23	61-10, 70	Brown-Red Orange	Energized thru control and spotting disc circuit during red or green button play
1 N.c.	A-23	61-10 61-10	Brown-Red Brown-Red	Opens circuit to this relay coil
2 N.c.	C-61	83-4 85-10	Black-Yellow Black-White	Opens a control circuit for red score unit single and extra steps
3 S.P.D.T.	G-7	58-3 30 43-7	White-Black Yellow Green-Yellow	Directs circuit to any 3 stars or any 2 stars feature lite
4 S.P.D.T.	F-35	31-11 29-11 36-11	Yellow-Red Orange-Green Yellow-Brown	Directs any 3 stars or any 2 stars winner search and scoring circuits
5 N.o.	C-23	38-2 51-11	Yellow-Black White-Red	Completes a circuit to any 3 stars feature trip relay
Green Multiple relay coil	A-58	45-11, 71-13	Green-White Orange-Red	Energized thru control circuit during red or blue button play, also energized thru red letter game winner circuit
L1 N.c.	A-58	45-11 45-11	Green-White Green-White	Opens circuit to this relay coil
L2 N.c.	C-63	31-7 13-11	Yellow-Red Red-Yellow	Opens a control circuit for blue and green score unit single and extra steps
L3 N.o.	A-16	23-4 63-9	Blue-Yellow Brown-Yellow	Completes a control circuit to mixer #4 relay
L4 N.o.	G-20	27-14 30	Blue-Orange Yellow	Completes circuit to green multiple feature lite
L5 N.o.	C-35	78-9 65-9	Orange-Black Brown-White	Completes green double and triple winner circuit to step replay counter unit
R1 N.c.	F-60	15-11 81-11	Red-White Black-Red	Opens a control circuit for yellow, red, blue and green score unit steps and yellow, red, blue multiple features

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
Yellow multiple relay coil	A-58	38-17, 71-13	Yellow-Black Orange-Red	Energized thru control circuit during red or blue button play, also energized thru red letter game winner circuit
11 N.c.	A-58	38-17 37-17	Yellow-Black Yellow-Black	Opens circuit to this relay coil
12 N.c.	C-60	95-11 75-8	Gray-White Orange-White	Opens a control circuit for yellow score unit single & extra steps
13 N.o.	B-17	23-4 14-11	Blue-Yellow Red-Green	Completes a control circuit to mixer #4 relay
L4 N.o.	G-12	57-10 30	White-Blue Yellow	Completes circuit to yellow multiple feature lite
15 N.o.	C-31	78-9 80-6	Orange-Black Black	Completes yellow double and triple winner circuit to step replay counter unit
R1 N.c.	F-59	60-16 30-35	Brown Red	Opens a control circuit for yellow, red, blue and green score unit steps and blue green multiple features
Blue multiple relay coil	A-58	43-11, 71-13	Green-Yellow Orange-Red	Energized thru control circuit during red or blue button play also energized thru red letter game winner circuit
11 N.c.	A-58	43-11 43-11	Green-Yellow Green-Yellow	Opens circuit to this relay coil
L2 N.c.	C-63	90-4 31-7	Gray Yellow-Red	Opens a control circuit for blue & d green score unit single and extra steps
L3 N.o.	B-15	23-4 58-2	Blue-Yellow White-Black	Completes a control circuit to mixer #4 relay
L4 N.o.	G-19	74-10 30	Orange-Green Yellow	Completes circuit to blue multiple feature lite
L5 N.o.	D-33	78-9 52-8	Orange-Black White-Blue	Completes blue double and triple winner circuit to step replay counter unit
R1 N.c.	F-60	14-7 15-11	Red-Green Red-White	Opens a control circuit for yellow, red, blue and green score unit steps and red, yellow, green multiple features

BACK DOOR TRIP RELAY ASSEMBLY

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
Red multiple relay coil	A-5B	41-114 71-13	Green-Red Orange-Red	Energized thru control circuit during red or blue button play, also energized thru red letter game winner circuit
L1 N.c.	A-5B	41-11 41-113	Green-Red Green-Red	Opens circuit to this relay coil
L2 N.c.	C-60	83-4 58-10	Black-Yellow White-Black	Opens a control circuit for red score unit single and extra steps
L3 N.o.	B-18	23-4 95-7	Blue-Yellow Gray-White	Completes a control circuit to mixer #4 relay
L4 N.o.	G-15	75-10 30	Orange-White Yellow	Completes circuit to red multiple feature lite
L5 N.o.	C-32	78-9 43-9	Orange-Black Green-Yellow	Completes red double and triple winner circuit to step replay counter unit
R1 N.c.	F-59	10-15 14-7	Red Red-Green	Opens a control circuit for yellow, red, blue and green score unit steps and yellow, blue, green score multiple features
Tilt relay coil	A-9	14-5 78	Red-Green Orange	Energized thru any tilt switch circuit, also by coin anti cheat circuit, ball lift anti cheat circuit and key switch circuit
L1 N.c.	G-12	40-8 20-13	Green Blue	Opens circuit to search wiper lock magnet, A-button relay and mystic lines unit motors
L2 N.c.	H-35	71-20 51-19	Orange-Red White-Red	Opens 21 volt game circuits
L3 S.P.D.T.	G-7	21-3 45-8	Blue-Red Yellow Green-White	Opens 50 volt game operating, feature, winner circuits and circuit to this relay coil, completes shutter motor tilt circuit
L4 S.P.D.T.	J-34	36-17 18-15 91-2	Yellow-Brown Red-Black Gray-Red	Opens 6 volt game circuits and completes circuit to tilt lite
R1 N.c.	F-1	60P. 30P.	Brown Plastic Yellow Plastic	Opens 115 volt circuit to control unit and mixer - spotting unit motors
R2 N.o.	E-10	57-6 85-7	White-Orange Black-White	Completes a circuit to red button relay
R3 N.o.	B-3	61-8 13-16	Brown-Red Red-Yellow	Completes safety circuit to energize start relay
Extra ball #1 relay coil	A-10	58-123 70	White-Black Orange	Energized by extra ball #2 trip relay switch circuit
L1 N.c.	C-20	91-6 85-4	Gray-Red Black-White	Opens control unit cam switch #5B circuit to anti cheat relay
L2 S.P.D.T.	F-20	85-4 30 95-20	Black-White Yellow Gray-White	In series with switch L1 circuit, also opens feature units, score units step up circuit, completes extra ball unit step up circuit
L3 S.P.D.T.	E-21	40-11 36-6 45-2	Gray Brown Green-White	Opens score units step up circuit and multiple feature relay circuit, completes extra ball unit step up circuit
L4 N.o.	C-8	83-1 71-8	Black-Yellow Orange-Red	Completes a timer unit reset circuit
R1 N.c.	A-10	58-12 58-123	White-Black White-Black	Opens circuit to this relay coil
R2 N.c.	E-15	25-5 41-17	Blue-White Green-Red	Opens a control circuit to mixer #4 relay
R3 N.o.	H-33	51-14 23-6	White-Red Blue-Yellow	Completes circuit to extra balls play feature lite
R4 N.o.	F-4	50-2 80-11	White Black	Completes extra ball replay play circuit to start relay
Extra ball #2 relay coil	A-10	10-6J 70	Red Orange	Energized thru yellow play button circuit after 5th ball is shot
L1 N.c.	A-10	10-6 10-6J	Red Red	Opens circuit to this relay coil
L2 N.c.	C-9	20-2 85-7	Blue Black-Orange	Opens safety lock in circuit to red button relay
L3 S.P.D.T.	B-6	53-5 61 98-2	White-Yellow Brown-Red Gray-Black	Directs shutter motor or mixer latch and timer cams index coil circuits
L4 N.o.	B-10	91-1 38-3	Gray-Red Yellow-Black	Completes a circuit to ball lifter motor
R1 N.c.	H-7	31-16 81-6	Yellow-Red Black-Red	Opens spotting disc circuit to flash other game feature lites

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
R2 N.c.	E-22	83-9 50-5	Black-Yellow White	Opens control and spotting disc circuit for other game features
R3 S.P.D.T.	G-22	15-17 11-4 78-19	Red-White Red-Yellow Orange-Black	Directs spotting disc circuits to flash score lites or extra ball lites
R4 N.o.	A-10	21-3 58-12	Blue-Red White-Black	Completes circuit to extra ball #1 trip relay coil
Red rollover relay coil	A-37	25-13 70	Blue-White Orange	Energized by circuits from selection feature disc, direct or thru red panel rollover button
1 N.c.	A-37	25-13 25-13	Blue-White Blue-White	Opens circuit to this relay coil
2 S.P.D.T.	H-4	51-12 90 52-13	White-Red GRAY White-Blue	Directs circuit to flash mystic lines press buttons now lite before 4th, 5th, or after 5th balls
3 S.P.D.T.	G-5	31-8 10-12 58-12	Yellow-Red Red White-Yellow	Directs circuit to lite select before 4th, 5th, or after 5th ball selection feature lites
4 N.o.	F-13	93-3 21-12	Gray-Yellow Blue-Red	Completes circuit to mystic lines feature buttons to move lines until 1st extra ball is shot.
Yellow rollover relay coil	A-36	38-13 78	Yellow-Black Orange	Energized by circuits from selection feature disc, direct or thru yellow panel rollover button
1 N.c.	A-36	38-13 38-13	Yellow-Black Yellow-Black	Opens circuit to this relay coil
2 N.c.	F-59	60-16 90-11	Brown Gray	Opens a control circuit for yellow, red, blue and green score unit steps, multiple feature relays and triple feature relay
3 S.P.D.T.	H-4	75-18 51-12 23-5	Orange-White White-Red Blue-Yellow	Directs circuit to flash mystic lines press buttons now lite before 4th or 5th ball
4 S.P.D.T.	H-5	57-5 31-8 74-8	White-Orange Yellow-Red Orange-Green	Directs circuit to lite select before 4th or 5th ball selection feature lites
5 N.o.	F-12	93-3 98-3	Gray-Yellow Gray-Black	Completes circuit to mystic lines feature buttons to move lines until 5th ball is shot
Before 4th ball lockout relay coil	A-12	83-6J 70	Black-Yellow Orange	Energized thru timer disc ball count when 5th ball is shot
1 N.c.	A-12	83-6 83-6J	Black-Yellow Black-Yellow	Opens circuit to this relay coil
2 N.c.	H-4	27-4 75-18	Blue-Orange Orange-White	Opens before 4th ball mystic lines flash circuit to press buttons now lite
3 S.P.D.T.	E-12	98-3 93-3 53-18	Gray-Black Gray-Yellow White-Yellow	Opens a circuit to move mystic lines and completes "R" button circuit to search for winners
4 N.o.	F-8	36-2 43-2	Yellow-Brown Green-Yellow	Completes 4th to 5th step timer unit step up circuit
5 N.o.	F-30	15-5 40-5	Red-White Green	Completes winner search and scoring circuit for all regular game winners
Before 5th ball lockout relay coil	A-12	74-6J 70	Orange-Green Orange	Energized thru timer disc ball count circuit when 5th ball is shot
L1 N.c.	H-6	52-12 56-12	White-Blue White-Brown	Opens circuit to yellow panel rollover lite
L2 N.c.	C-36	13-12 38-13	Red-Yellow Yellow-Black	Opens circuit to yellow rollover trip relay
L3 N.c.	E-12	98-3 21-12	Gray-Black Blue-Red	Opens a circuit to move mystic lines
L4 N.o.	E-9	54-11 71-8	White-Green Orange-Red	Completes "R" button relay circuit to reset timer unit
L5 N.o.	C-7	78-6 27-2	Orange-Black Blue-Orange	Completes 5th thru 8th step timer unit step up circuit
R1 N.c.	A-12	74-6 74-6J	Orange-Green Orange-Green	Opens circuit to this relay coil
R2 S.P.D.T.	J-4	14-18 48-12 53-2	Red-Green Green-Black White-Yellow	Directs circuit to flash mystic lines press buttons now lite before 4th and before 5th ball or after 5th ball
R3 N.o.	B-10	23-18 25-8	Blue-Yellow Blue-White	Completes yellow button play circuit to extra ball #2 trip relay
R4 N.o.	E-4	80-11 18-6	Black Red-Black	Completes extra ball replay play circuit to start relay

BACK DOOR TRIP RELAY ASSEMBLY

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
After 5th ball lockout relay coil	A-12	98-11J 70	Gray-Black Orange	Energized thru ball count circuit when 1st extra ball is shot
1 N.c.	A-12	98-11 98-11J	Gray-Black Gray-Black	Opens circuit to this relay coil
2 N.c.	E-12	21-12 14-4	Blue-Red Red-Green	Opens circuit to move mystic-lines
3 N.c.	B-37	15-12 25-13	Red-White Blue-White	Opens circuit to red rollover trip relay
4 N.c.	H-5	53-2 52-13	White-Yellow White-Blue	Opens mystic lines circuit to flash press buttons now lite
5 N.c.	H-6	41-8 60-12	Green-Red Brown	Opens circuit to red panel rollover lite
Carry-over cam 1 N.o.	B-9	30 90-20	Yellow Gray	Completes trip bank motor carry over circuit
Carry-over cam 2 N.c.	E-35	98-16 60-1	Gray-Black Brown	Opens red letter game search-winner circuit
Carry-over cam 3 N.c.	H-23	74-9 78-19	Orange-Green Orange-Black	Opens spotting disc extra ball lite flash circuit
Carry-over cam 4 N.c.	C-19	95-20 61-2	Gray-White Brown-Red	Opens extra ball guaranteed step circuit

CODE
N.C.-----NORMALLY CLOSED
N.O.-----NORMALLY OPEN
M.B.B.-----MAKE BEFORE BREAK
S.P.D.T.-----SINGLE POLE DOUBLE THROW

FRONT CABINET RELAY BANK (3)

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
Ball lift relay coil	A-57	51-17 70	White-Red Orange	Energized by circuits thru diamond feature components, also by ball return hole circuit, and controls the lifting of all balls to shooter
1 N.o.	C-57	52-4 51-17	White-Blue White-Red	Completes lock-in circuit to this relay
2 N.o.	D-11	80-15 58-13	Black White-Black	Completes ball count circuit to ball lifter motor
3 N.o.	F-12	93-3 20-13	Gray-Yellow Blue	Completes a circuit to mystic lines buttons and "R" button
4 N.o.	B-10	23-18 10-6	Blue-Yellow Red	Completes extra ball play circuit to extra ball trip relays
Ball detector relay coil	A-11	41-4 70	Green-Red Orange	Energized thru ball count circuit, then de-energized following ball lift cycle
1 N.o.	E-11	41-4 80-15	Green-Red Black	Completes all circuits to ball lifter motor
2 N.o.	F-11	51-3 41-4	White-Red Green-Red	Completes lock-in circuit to this relay
3 N.c.	F-10	21-3 93-17	Blue-Red Gray-Yellow	Completes a circuit to tilt relay when ball lifter motor cycles while this relay not energized
"R" button relay coil	A-12	52-9 70	White-Blue Orange	Energized thru before 4th ball lockout relay circuit by "R" button switch, or thru 5 ball diamond feature win circuit
1 N.o.	F-9	21-3 54-11	Blue-Red White-Green	Completes a circuit to reset timer unit thru before 5th ball lockout relay
2 N.o.	D-35	60-1 57-1	Brown White-Orange	Completes any 3 and any 2 star zone feature winner search and scoring circuit

MISCELLANEOUS RELAYS

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
"B" cam relay coil	A-13	80-20 70	Black Orange	Energized thru mystic lines feature disc circuit by "B" button switch
1 N.c.	C-14	25-6 30-20	Blue-White Yellow	Opens mystic lines feature disc "C" button circuit
2 N.c.	C-13	40-13 45-5	Green Green-White	Opens mystic lines feature disc "A" button circuit.
3 N.c.	J-40	18-4 54-7	Red-Black White-Green	Opens circuit to search relays
"C" cam relay coil	A-14	30-20 70	Yellow Orange	Energized thru mystic lines feature disc circuit by "C" button switch
1 N.c.	B-13	13-5 40-13	Red-Yellow Green	Opens mystic lines feature disc "A" button circuit
2 N.c.	J-41	54-7 50-14	White-Green White	Opens circuit to search relays
3 N.c.	C-13	80-20 48-5	Black Green-Black	Opens mystic lines feature disc "B" button circuit.
Lifter start relay coil	A-37	38-8 70	Yellow-Black Orange	Energized thru ball runway switch circuit when each ball is lifted to shooter, de-energized when each ball enters playfield
L1 N.o.	F-12	20-13 93-3	Blue Gray-Yellow	Completes mystic lines feature button circuits to move lines and "R" button circuit for regular game winner search
L2 S.P.D.T.	D-12	14-17 61-7 53-18	Red-Green Brown-Red White-Yellow	Directs 5 ball diamond winner search circuit or 2,3,4, ball diamond winner search circuit, thru "R" button.
R1 N.o.	D-37	36 38-8	Yellow-Brown Yellow-Black	Completes lock in circuit to this relay
R2 N.c.	E-11	10-13 15-6	Red Red-White	Opens ball count circuit to the lockout relays while relay is energized
R3 N.c.	D-11	58-13 31-3	White-Black Yellow-Red	Opens ball count circuit to ball lifter motor while relay is energized
R4 N.c.	E-8	56-9 18-3	White-Brown Red-Black	Opens timer disc circuit to shutter motor while relay is energized

BALL LIFTER MOTOR UNIT

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
1A N.c.	D-12	15-6 85-6	Red-White Black-White	Opens ball count circuit to the selection lockout trip relays
1B N.o.	C-11	91-1 30	Gray-Red Yellow	Completes carry over circuit to motor
1C N.c.	D-6	57-7 53-5	White-Orange White-Yellow	In series with shutter motor circuits from timer unit, anti-cheat and tilt relays
1D N.o.	F-11	21-3 51-3	Blue-Red White-Red	Completes lock in circuit to ball detector relay
2A N.o.	E-7	43-2 27-2	Green-Yellow Blue-Orange	Completes 0 thru 5th step timer unit step up circuit
2B N.o.	E-9	93-17 14-5	Gray-Yellow Red-Green	Completes ball detector relay circuit to tilt trip relay
2C N.c.	D-57	21-3 52-4	Blue-Red White-Blue	Opens lock in circuit to ball lift relay
Pin Sw. 3A N.c.	G-4	48-2 95-3	Green-Black Gray-White	In series with start relay circuits

SHUTTER MOTOR UNIT

1A	N.c.	G-17	90-3 21-3	Gray Blue-Red	In series with red letter game winner circuit to advance scores and features
1B	N.o.	E-6	53-5 30	White-Yellow Yellow	Completes shutter motor carry over circuit
1C	N.c.	G-3	95-3 98-19	Gray-White Gray-Black	In series with start relay circuits
1D	S.P.O.T.	G-30	21-3 93-15 63-8	Blue-Red Gray-Yellow Brown-Yellow	Starts lock in circuit to red letter win relays and opens winner search and scoring circuit
1xa	N.o.	B-51	74-22 30	Orange-Green Yellow	Completes circuit to Bonus Played Relay when Shuttle is open
1xb	N.c.	F-8	21-3 65-2	Blue-Red Brown-White	In series with circuits to step timer unit after 5th ball, energize ball lift relay and reset timer unit during extra ball play
1xc	N.c.	H-35	20-4 54-17	Blue White-Green	In series with 21 volt circuit
1xd	N.c.	F-57	21-3 83-19	Blue-Red Black-Yellow	Opens Ball Lift Circuit while Shutter is open
2a	N.c.	D-11	31-3 36-3	Yellow-Red Yellow-Brown	In series with ball lifter motor circuit
2b	N.c.	F-27	41-20 30	Green-Red Yellow	In series with steering relay lock in circuit
2c	N.O.	B-40	80-16 78-14	Black Orange-Black	Complete circuit to Diamond Score Step-up
3a	N.o.	B-68	85-5 30	Black-White Yellow	Completes reset circuit for diamond replay counter, selector feature, red, blue, green, yellow replay counter and red score units.
3b	N.o.	B-8	90-20 30	Gray Yellow	Completes circuit to trip bank reset motor
3c	N.c.	C-50	52-6 30	White-Blue Yellow	Drops off Bonus Played Relay
4a	N.c.	G-51	51-16 30	White-Red Yellow	Completes circuit to Bonus Guaranteed Lite
4b	N.o.	D-6	57-7 18-3	White-Orange Red-Black	In series with tilt and A.C. drop out circuits to shutter motor
4c	N.o.	F-6	45-8 18-3	Green-White Red-Black	Same function as switch 4A
4d	N.o.	G-36	63-8 21-3	Brown-Yellow Blue-Red	Completes red letter win relays lock in circuit
5A	S.P.D.T.	C-6	61 10-10 51-15	Brown-Red Red White-Red	Directs start relay circuit to shutter motor or mixer latch and timer cams index coils
5B	N.O.	F-37	31-4 90-9	Yellow-Red Gray	In series with lifter start relay lock in circuit
5C	N.O.	D-22	85-12 50-5	Black-White White	In series with feature unit advance and feature trip relay circuits
5D	N.o.	B-30	41-5 80-16	Green-Red Black	In series with 4 star replay counter and multiple unit homing circuits
5XA	N.c.	G-12	40-8 21-3	Green Blue-Red	In series with ball count circuit to selection lockout relays, mystic lines movement circuit and rollover feature circuit
5XB	N.c.	E-11	40-8 10-13	Green Red	In series with ball count circuit to selection lockout relays
6A	N.o.	D-8	71-8 30	Orange-Red Yellow	Completes timer unit reset circuit
6B	N.o.	D-68	78-3 30	Orange-Black Yellow	Completes reset circuit for twin no. feature, diamond feature, diamond score, extra ball feature, red letter feature, mystic lines feature, blue & green score & yellow score units
6C	N.o.	B-8	90-20 30	Gray Yellow	Same function as switch 3B
6XA	N.c.	A-10	91-15 70	Gray-Red Orange	(Under cam #6) In series with red button relay circuit
Panel shutter switches					Note: switches listed below are mounted on bottom of panel and are operated when panel shutter opens and closes
A	C.W.O.	E-14	47-3 81-11 57-14	Blue-Red Blue-Orange Black-Yellow White-Orange	In series with A-B-C mystic lines motor unit homing circuit
B	N.c.	B-7	91-11 53-5	Gray-Red White-Yellow	In series with red letter win relay circuit to shutter motor
C	N.c.	C-36	56-4 71-14	White-Brown Orange-Red	In series with winner circuit to red letter win relays
D	N.C.	G-38	21-3 75-13	Blue-Red Orange-White	In series with green, blue, white button circuits for feature play, score play, and diamond feature score play
E	N.C.	F-17	90-3 25-18	Gray Blue-White	In series with red letter game winner circuit to advance scores and features
F	N.O.	B-6	45-18 51-15	Green-White White-Red	In series with start relay circuit to mixer latch and timer cams index coils
G	N.C.	F-29	93-15 15-5	Gray-Yellow Red-White	In series with all winner search and scoring circuits

Note: Normal position of shutter is closed

DIAMOND FEATURE RELAY BANK (6)

SWITCH	LOCATION ON DIAGRAM	WIRE No.	WIRE COLORS	FUNCTION OF SWITCHES
1 step relay coil	A-47	56-3 70	White-Brown Orange	Energized by 1 pulse module relay switch, thru missed relay circuit
1 N.o.	B-47	53-3 56-3	White-Yellow White-Brown	Completes lock in circuit to this relay
2 N.o.	F-50	83-7 31-20	Black-Yellow Yellow-Red	Completes a circuit to diamond pulse unit motor
3 N.o.	E-51	60-19 14-1	Brown Red-Green	Completes 1 step diamond feature unit advance circuit
4 N.o.	E-54	48-9 27-12	Green-Black Blue-Orange	Completes yellow holes diamond feature "miss" or "hit" circuits on 3rd, 4th, 5th balls
2 step relay coil	A-48	80-18 70	Black Orange	Energized by 2 pulse module relay switch, thru missed relay circuit
1 N.o.	B-47	53-3 80-18	White-Yellow Black	Completes lock in circuit to this relay
2 N.o.	E-50	83-7 31-20	Black-Yellow Yellow-Red	Completes a circuit to diamond pulse motor
3 N.o.	D-52	60-19 18-13	Brown Red-Black	Completes 2 step diamond feature unit advance circuit
4 N.o.	F-54	48-9 40-10	Green-Black Green	Completes red holes diamond feature "hit" or "miss" circuits on 3rd, 4th, 5th balls
3 step relay coil	A-48	41-19 70	Green-Red Orange	Energized by 3 pulse module relay switch, thru missed relay circuit
1 N.o.	B-48	53-3 41-19	White-Yellow Green-Red	Completes lock in circuit to this relay
2 N.o.	F-50	83-7 31-20	Black-Yellow Yellow-Red	Completes a circuit to diamond pulse unit motor
3 N.o.	E-52	60-19 23-19	Brown Blue-Yellow	Completes 3 step diamond feature unit advance circuit
4 N.o.	F-55	48-19 27-12	Green-Black Blue-Orange	Completes yellow holes diamond feature "miss" or "hit" circuits on 3rd, 4th, 5th balls
4 step relay coil	A-49	25-20 70	Blue-White Orange	Energized by 4 pulse module relay switch, thru missed relay circuit
1 N.o.	B-48	53-3 25-20	White-Yellow Blue-White	Completes lock in circuit to this relay
2 N.o.	E-50	83-7 31-20	Black-Yellow Yellow-Red	Completes a circuit to diamond pulse unit motor
3 N.o.	D-52	60-19 74-20	Brown Orange-Green	Completes 4 step diamond feature unit advance circuit
4 N.o.	E-55	48-9 27-12	Green-Black Blue-orange	Completes yellow holes diamond feature "miss" or "hit" circuits on 3rd, 4th, 5th balls
5 step relay coil	A-49	91-16 70	Gray-Red Orange	Energized by 5 pulse module relay switch, thru missed relay circuit
1 N.o.	B-48	53-3 91-16	White-Yellow Gray-Red	Completes lock in circuit to this relay
2 N.o.	F-51	83-7 31-20	Black-Yellow Yellow-Red	Completes a circuit to diamond pulse unit motor
3 N.o.	E-53	60-19 57-3	Brown White-Orange	Completes 5 step diamond feature unit advance circuit
4 N.o.	E-54	48-9 40-10	Green-Black Green	Completes red holes diamond feature "hit" or "miss" circuits on 3rd, 4th, 5th, balls
6 step relay coil	A-49	93-10 70	Gray-Yellow Orange	Energized by 6 pulse module relay switch, thru missed relay circuit
1 N.o.	B-49	53-3 93-10	White-Yellow Gray-Yellow	Completes lock in circuit to this relay
2 N.o.	E-51	83-7 31-20	Black-Yellow Yellow-Red	Completes a circuit to diamond pulse unit motor
3 N.o.	D-53	60-19 10-19	Brown Red	Completes 6 step diamond feature unit advance circuit
4 N.o.	F-54	48-9 40-10	Green-Black Green	Completes red holes diamond feature "hit" or "miss" circuits on 3rd, 4th, 5th balls

MISCELLANEOUS PARTS

Part No.	Description	Part No.	Description
<u>Back Cabinet Assembly:</u>		<u>P-2210-Series</u> Coin Entry Plate *	
G-292-35	Backglass	<u>Panel Assembly:</u>	
M-1424-15	Backglass (Plexiglass)	AS-1315	Ball Gate & Switch Assembly
M-281-31	Lock & Keys (2 Keyed alike)	AS-493-2	Ball Rebound Assembly
E-122-110	Transformer	R-115-4	Ball Rebound Rubber (Only)
<u>Back Door Assembly:</u>		C-119-23	Bumper Post (Yellow)
M-281-25	Lock & Keys (3 keyed alike)	C-119-21	Bumper Post (Red)
ASW-A1-16	Lock Switch	R-135	Rubber Ring (2 Yellow Posts)
E-105-6	Resistor (8200 ohm 1/2 watt)	R-243	Rubber Ring (Yellow Post)
E-105-64	Resistor (100 ohm 2 watt)	R-243-2	Rubber Ring (Red Post)
<u>Front Cabinet Assembly:</u>		M-170	Rebound Spring
M-168-15A	Ball 1-1/8" (8 balls)	C-326-9	Light Shield Post
AS-187-17	Ball Shooter Assembly	C-387-1	Rollover Button (Red)
AS-1835	Ball Shooter Housing	C-387-2	Rollover Button (Yellow)
A-100-7	Ball Shooter Rod	<u>Relay Coils:</u>	
SP-200-24	Ball Shooter Spring (long)	C-7800-334	"Z"
SP-243	Ball Shooter Spring (short)	C-7800-334	Cam #7
R-108-3	Ball Shooter Tip	C-7800-331	Steering
A-2790-19	Coin Box	C-7800-334	Diamond Play
P-3089-30	Coin Box Cover	C-7800-334	Red Letter #1
E-130-10	Counter (total play-replay-key play)	C-7800-334	Red Letter #2
A-2618	Leg	C-7800-3310	Red Button
M-106-1	Leg Bolt	C-7800-331	Mixer Cam #2
M-163-4	Leg Adjuster	C-7800-332	Mixer #2
M-281-58	Lock & Keys (key play)	C-7800-332	Mixer #4
AS-2183-11	Push Button (Blue)	C-7800-331	Play Features
AS-2183-10	Push Button (Green)	C-7800-331	Features Lock
E-138-3	Plumb Bot Tilt	C-7800-331	Play Scores
G-213	Top Glass	C-7800-331	Scores Lock
E-108-57	Toggle Switch	C-7800-301	#5 Search
<u>Front Door Assembly:</u>		C-7800-301	#4 Search
A-1388-36	Coin Switch & Rejector Mount Assembly*	C-7800-301	#3 Search
E-101-58	Coin Lockout Magnet Coil	C-7800-301	#2 Search
E-108-92	Coin Switch (5¢ & 25¢)	C-7800-301	#1 Search
E-108-98	Coin Switch (10¢)	C-7800-331	Replay Reset
	Coin Slide Assembly*	C-7800-334	Start
	Coin Guide Assembly*	C-7800-334	25¢
AS-2041-47	Front Door Assembly (Single Coin)	C-7800-331	Anti Cheat
AS-2041-48	Front Door Assembly (Double Coin)	C-7800-331	1 Extra Step
CA-567-165	Front Door Only	C-7800-331	2 Extra Step
A-254-84	Hinge & Bracket Assembly	C-7800-331	Multiple Win #1
M-281-54	Lock & Keys	C-7800-334	Multiple Win #2
S-490-18	Push Button (Reject)	C-7800-331	Ball Lift
A-1729-15	Push Button (Yellow)	C-7800-3312	Ball Detector
A-1729-16	Push Button (Red)	C-7800-3312	"R" Button
A-1729-18	Push Button (White)	C-7800-331	"B" Cam
M-1400-60B	Slug Rejector (5¢) *	C-7800-331	"C" Cam
M-1400-61B	Slug Rejector (10¢)	C-7800-332	Lifter Start
M-1400-62B	Slug Rejector (25¢)	C-7800-331	Cam #5
<u>Front Molding Assembly:</u>		C-7800-332	BB Step
AS-1305-54	Front Moulding Assembly	C-7800-331	1st Ball
CA-1119-25	Front Moulding Only	C-7800-331	2nd Ball
A-1272-17	Button (A)	C-7800-331	Missed
A-1272-18	Button (B)	C-7800-331	Win
A-1272-19	Button (C)	C-7800-3312	Diamond Reflex
A-1272-29	Button (R)	C-7800-334	1 Step
		C-7800-334	2 Step
		C-7800-334	3 Step
		C-7800-334	4 Step
		C-7800-334	5 Step
		C-7800-334	6 Step
		C-7800-334	#2 Bonus Selection (Both)
		C-7800-334	#3 Bonus Selection (Both)
		C-7800-3312	Bonus Win

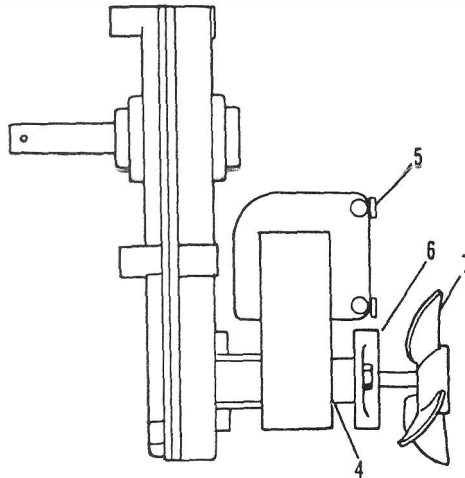
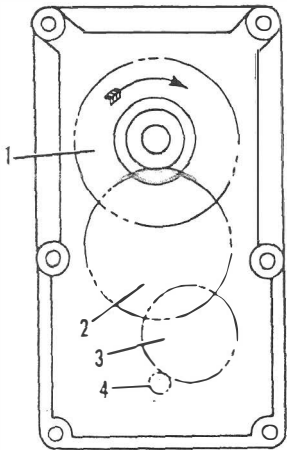
* When ordering part, specify type of coin (s) used.

MOTOR PARTS GUIDE

MOTOR PARTS CODE

1	Gear & Power Shaft Assembly	4	Rotor & Geared Shaft Assembly
2	Intermediate Gear	5	Stator & Coil Assembly
3	1st Gear	6	Front Rotor Bearing & Bracket Assembly

CONTROL UNIT & MIXER UNIT MOTOR, #E-119-359

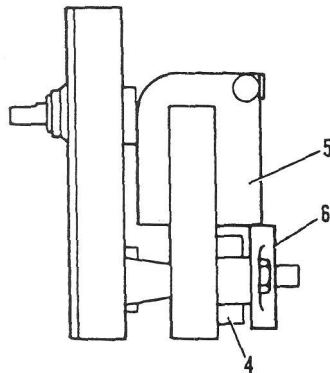
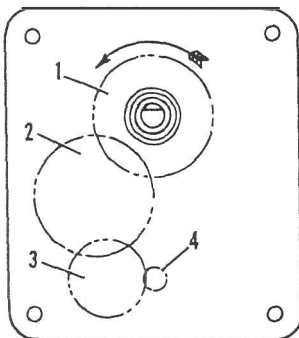


Code No.	Part No.
1.	ZEG-4020-1
2.	G-6712-32
3.	GL-6312-21
4.	ZRS-4000-0003
5.	ZS-4018-26109
6.	ZBB-7553-20
7.	P-1036-1 (Plastic Fan)

TRIP RELAY MOTOR, #E-119-362

Code No.	Part No.
1.	ZGS-2535-10
2.	G-5818-40
3.	G-4114-10
4.	ZRST-1700-0030
5.	ZS-2507-2418
6.	ZBB-2535-10

MYSTIC LINE "A" MOTOR, #E-119-352

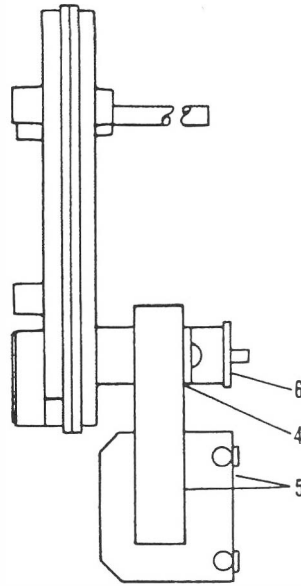
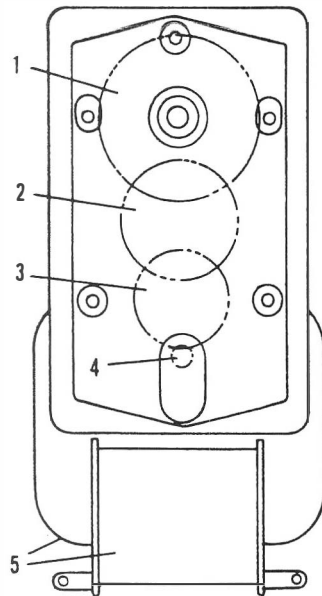


Code No.	Part No.
1.	HGS-1726-1
2.	G-5818-1
3.	G-4109-1
4.	ZRST-1400-0007
5.	ZS-1704-2521
6.	ZBB-7596-10

MYSTIC LINES "B" & "C" MOTOR, #E-119-353

Code No.	Part No.
1.	HGS-1744-1
2.	G-5318-10
3.	G-4114-10
4.	ZRST-1400-0008
5.	ZS-1703-2522
6.	ZBB-7596-10

MOTOR PARTS GUIDE



PANEL SHUTTER MOTOR, #E-119-379

Code No.	Part No.
1.	S-1725-15 (Shaft)
.	G-7300-1031 (Gear)
.	B-1093-0050 (Pin)
2.	G-5818-10
3.	G-4111-10
4.	ZRST-1700-0006
5.	ZS-1708-2519
6.	ZBB-3527

FEATURE SCORE MOTOR, #E-119-393

Code No.	Part No.
1.	S-1726-10 (Shaft)
.	G-7300-1025 (Gear)
.	B-1093-0050 (Pin-Gear)
.	B-1093-0037 (Engagement Pin)
2.	G-5813-10
3.	G-4111-10
4.	ZRST-1400-0000
5.	ZS-1707-2537
6.	ZBB-7553-35

BALL LIFTER MOTOR, #E-119-339

Code No.	Part No.
1.	ZGS-1745-12
2.	G-5818-10
3.	G-4119-10
4.	ZRST-1700-0006
5.	ZS-1708-2519
6.	ZBB-3527