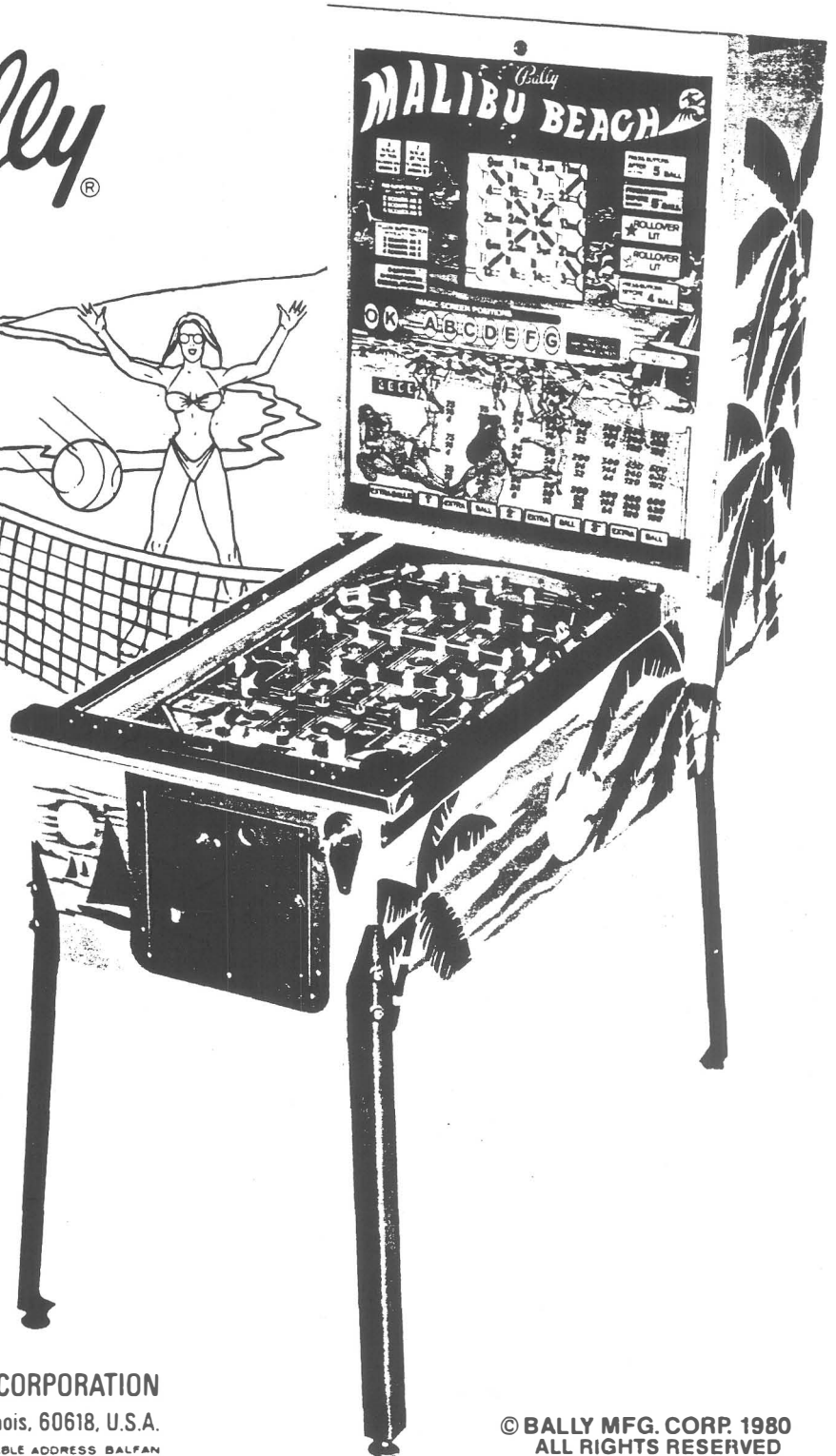
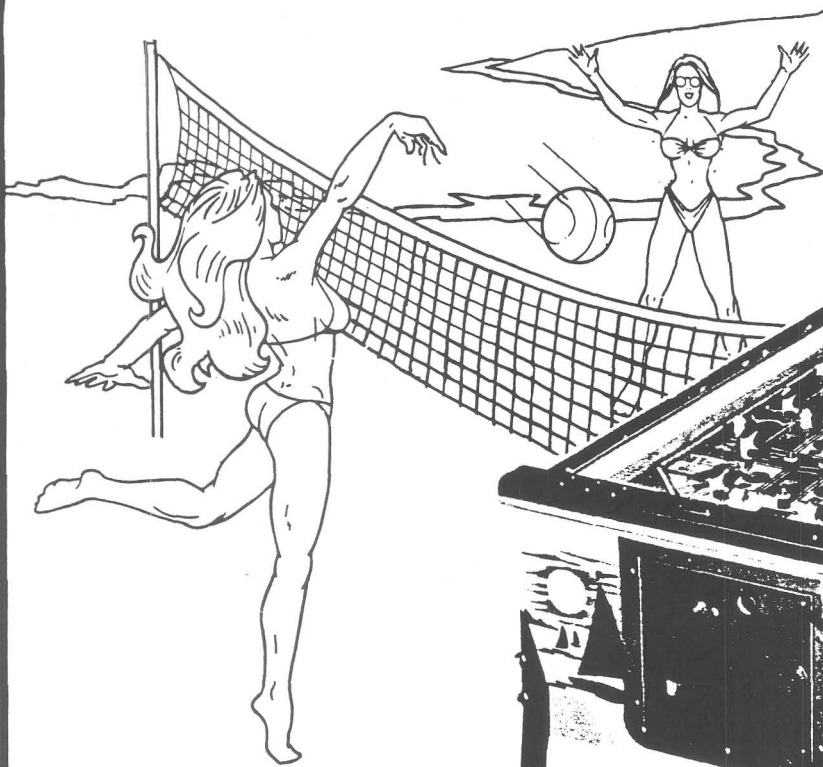


MALIBU BEACH

Bally®



**GAME 1169
SERVICE MANUAL**

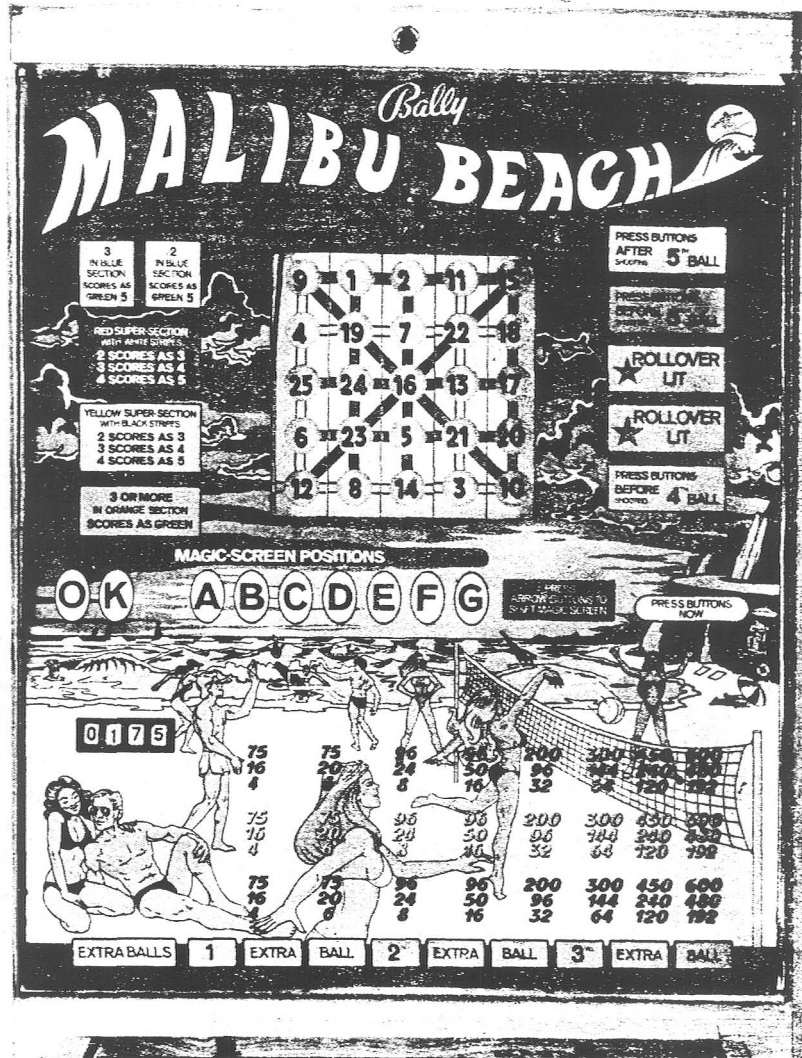
Bally MANUFACTURING CORPORATION
2640 Belmont Avenue · Chicago, Illinois, 60618, U.S.A.
TELEPHONE (312) 257-6060/TELEX NO. 253076/CABLE ADDRESS Balfan

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INTRODUCTION



The Malibu Beach is Bally's latest "Magic Screen" Bingo, similar to the Miss America and Laguna Beach games yet offering many new features.

In-line as well as color section winners are possible on an 8" X 8" screen type card. In addition, up to 3 extra balls are available by pressing the yellow button while depositing more coins or using replays.

As many coins or replays as desired may be used to obtain these features on a mystery basis: 7 position left movement (A-G) and two position right movement (OK) of the screen with a Red Letter game provision in the OK positions. The Red Letter games give guaranteed scores and features which increase directly with the regular green score. When lit, Super Red or Super Yellow sections provide higher scores (in striped sections 2 scores as 3, 3 scores as 4 and 4 scores as 5). The Blue Section, when lit, gives a 5-in-line green score for a 2 or 3 winner,

MAINTENANCE AND SERVICE HINTS

Use the schematic diagram (W-826-72) as a main source of information. Units are easy to find in the Location Chart on the right side of the diagram. All of the units in the Malibu Beach, including coils, are labeled to aid ordering replacement parts. This manual also provides information on contact plate and switch functions with cross references to the schematic diagram. Part numbers of switches, coils, motors and contact plates are incorporated into the wiring pictorials and function charts for each unit. Appearance items, cabinet parts and mechanical assemblies are listed at the rear of the manual.

To keep games working properly, regular inspection and cleaning is required. Starting with the coin chute, remove accumulated metallic dust, beverage residue and other debris. An aerosol type cleaner may be used but all parts must also be wiped off with a clean cloth to remove dirt and scum, especially electrical contacts and printed circuit discs.

All wiper assemblies (especially those with multiple fibre discs installed) are very susceptible to electrical arcing when they are even thinly coated with oil and dirt. Failure to eliminate arcing allows a build-up of carbon traces and eventually burns a hole through the fibre plate. The occurrence of arcing shorts (which are difficult to trace and seriously disrupt associated circuits) is another consequence of this condition. Regular physical inspection of wipers and discs will reveal the tell-tale carbon traces that indicate arcing. All contacts involved must be thoroughly cleaned and thinly coated with a spray-type contact cleaner. Troubleshooting is made easier when cabinets at the back and bottom of the game are regularly cleared so that any broken or loose parts subsequently found will help identify the defective units.

Accurate adjustments of switch blades, wipers and cams must be maintained to assure adequate continuity, prompt opening and closing of circuits and precise mechanical timing. Switch blades that are overly bent may break off at the base. Wiper blades under excess pressure will cut through printed circuit discs. Fibre cams must be examined for worn lobes or locking notches. Finally, a clean machine will provide longer, more dependable service and easier maintenance.

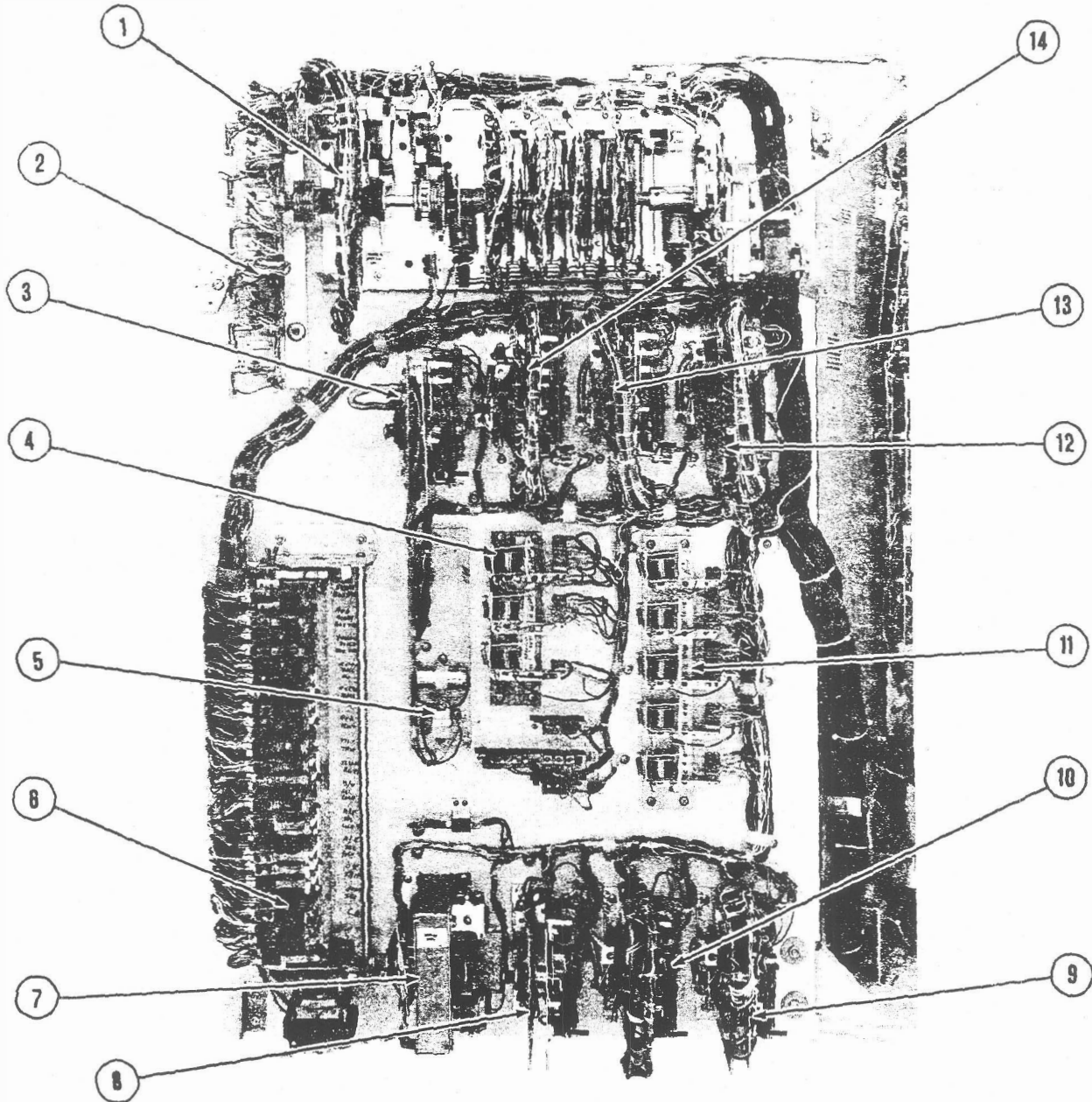
WIRE COLOR CODE	
1. Red	A. First digit is wire body color
2. Blue	
3. Yellow	
4. Green	B. Second digit is color of tracer stripe
5. White	
6. Brown	
7. Orange	C. Number after dash indicates use of same color wire in other circuits
8. Black	
9. Grey	
0. No Tracer	

EXAMPLE: 58-6 is a white wire with a black stripe used in several different circuits

SWITCH CODE	
NOTE: All switches on Bally diagrams work clockwise	
N.C.	Normally closed
N.O.	Normally open
M.B.B.	Make before break
T.	Transfer switch - single pole double throw

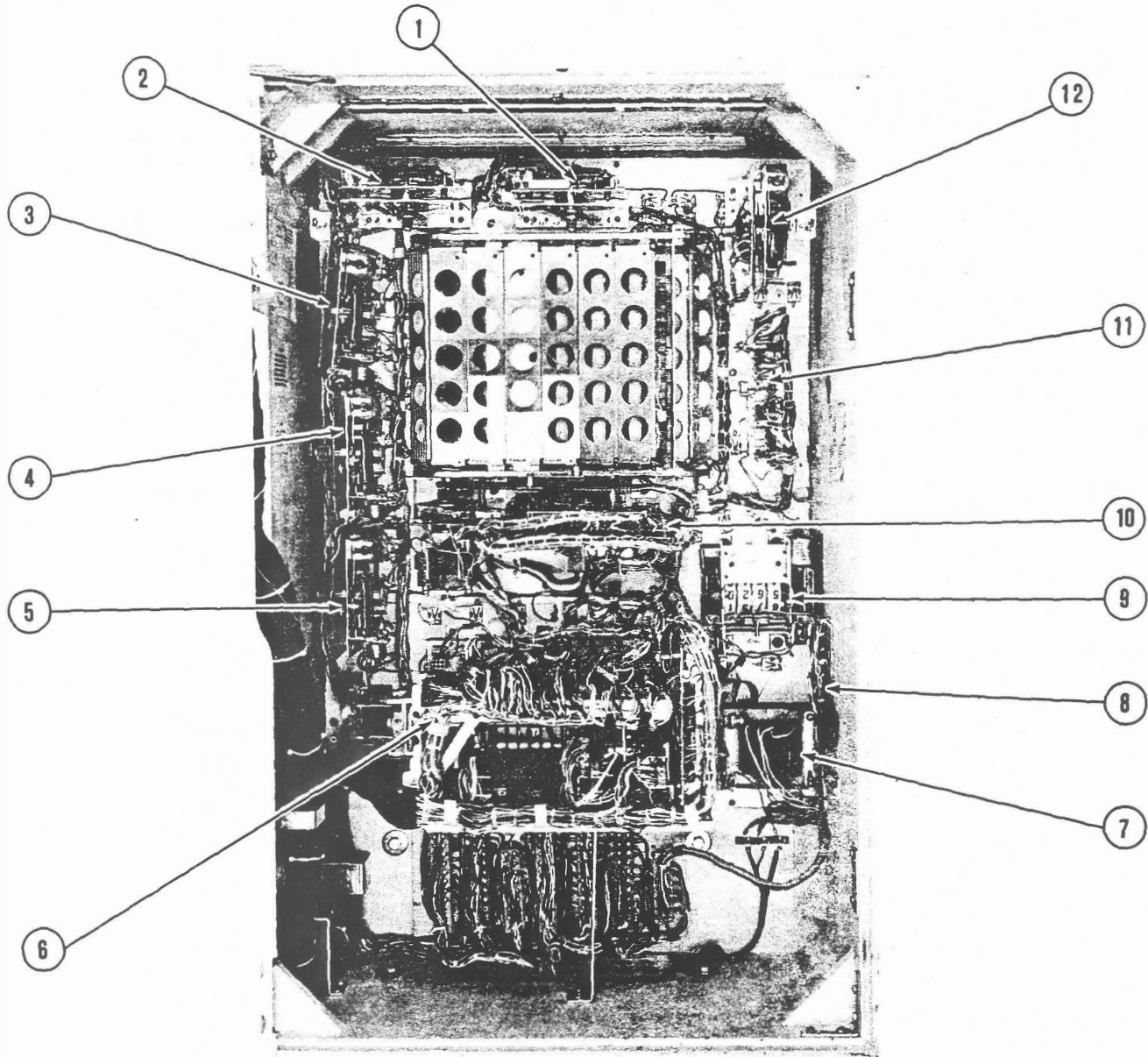
NOTE: KEY LETTER - NUMBER (B-5) ETC. INDICATES POSITION OF CIRCUIT ON SCHEMATIC DIAGRAM

BACK DOOR ASSEMBLY



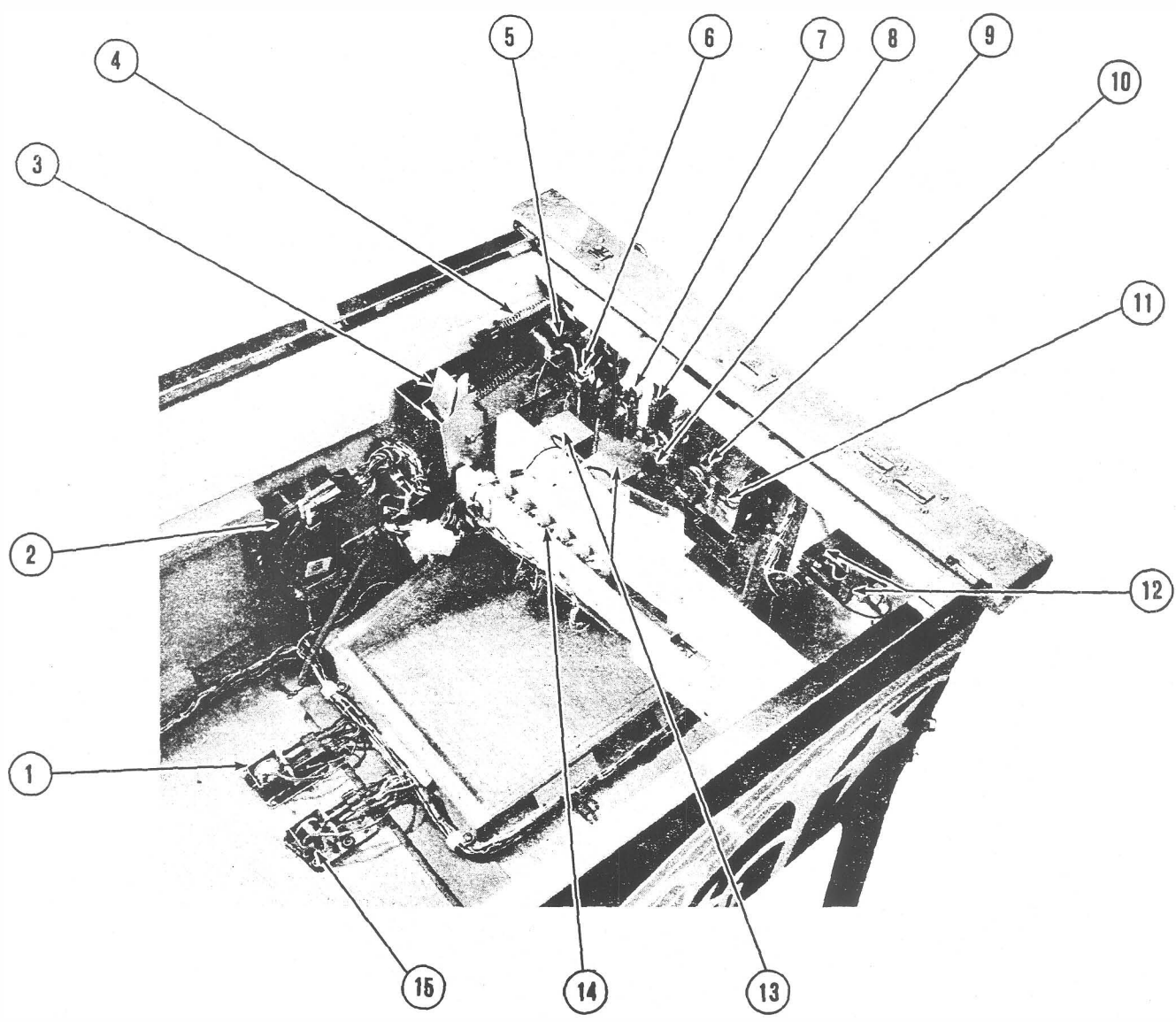
KEY NO.	PART NO.	DESCRIPTION	PAGE
1	AS-1020-70	Mixer & Spotting Unit	8
2	E-300-958	Search Relay Bank - 6	35
3	AS-1022-180	Red Letter Feature Unit	23
4	E-300-960	3 Relay Bank	41
5	E-300-971	Score safety Delay Relay	48
6	AS-2409-47	Trip Bank Unit	42
7	AS-873-60	Reflex Unit	22
8	AS-1110-62	Timer Unit	24
9	AS-827-716	Magic Screen Feature Unit	28
10	AS-827-715	Selection Feature Unit	32
11	E-300-961	5 Relay Bank	37
12	AS-1022-179	Green Score Unit	29
13	AS-1022-177	Yellow Score Unit	30
14	AS-1022-178	Red Score Unit	31

BACK CABINET ASSEMBLY



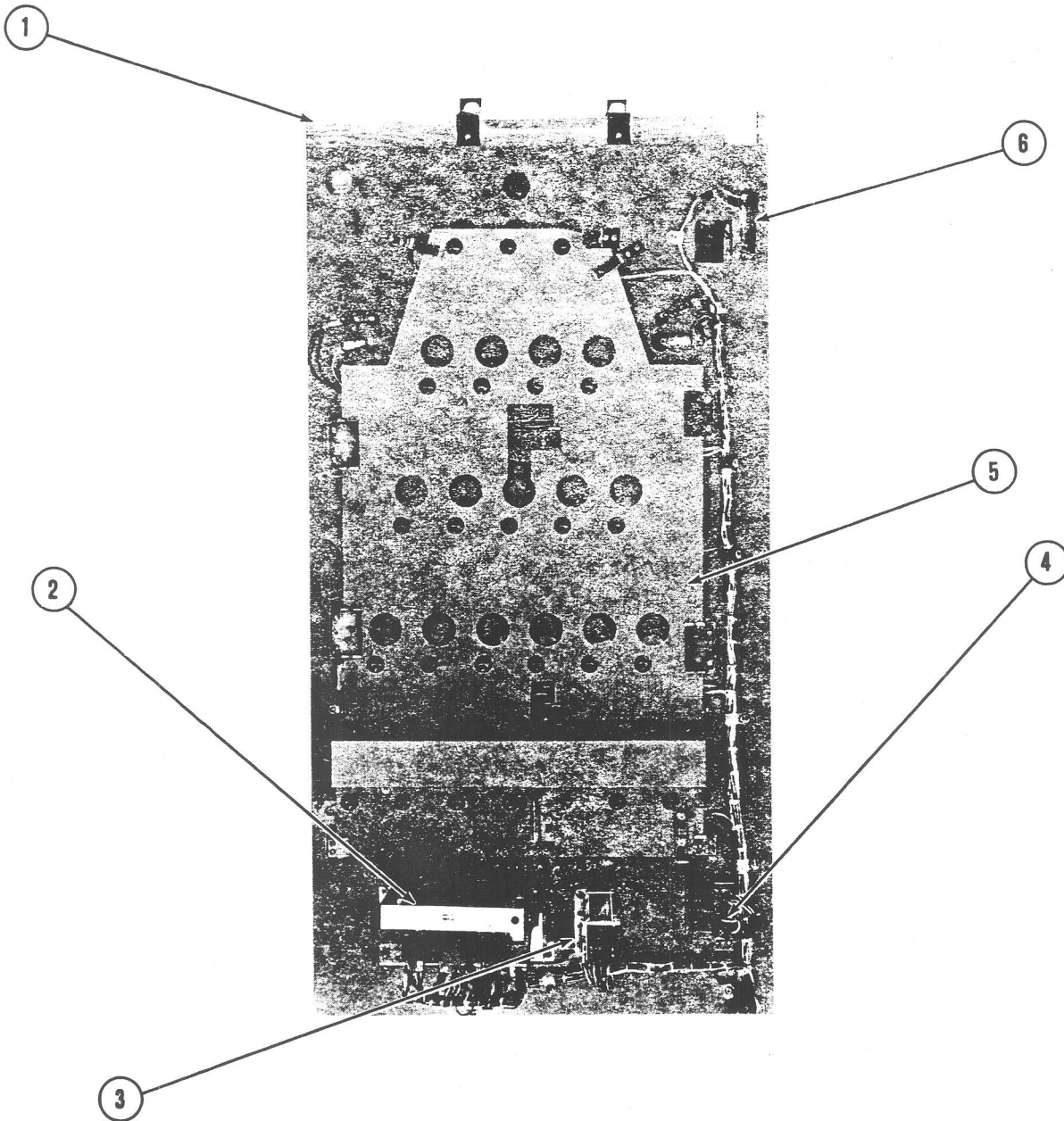
KEY NO.	PART NO.	DESCRIPTION	PAGE
1	AS-827-718	Sequence Unit	25
2	AS-827-717	Winner Unit	26
3	AS-797-529	Red Replay Counter	33
4	AS-797-529	Yellow Replay Counter	33
5	AS-797-529	Green Replay Counter	33
6	AS-798-137	Control Unit	12
7	E-122-103	Transformer	
8	E-148-9	6 Fuse Block (E-133-10 Fuse - 6A-32V)	53
9	AS-473-54	Replay Register	19
10	AS-1809-14	Magic Screen Unit	14
11	E-300-959	4 Relay Bank	39
12	AS-1148-45	Extra Ball Feature Unit	27

FRONT CABINET ASSEMBLY



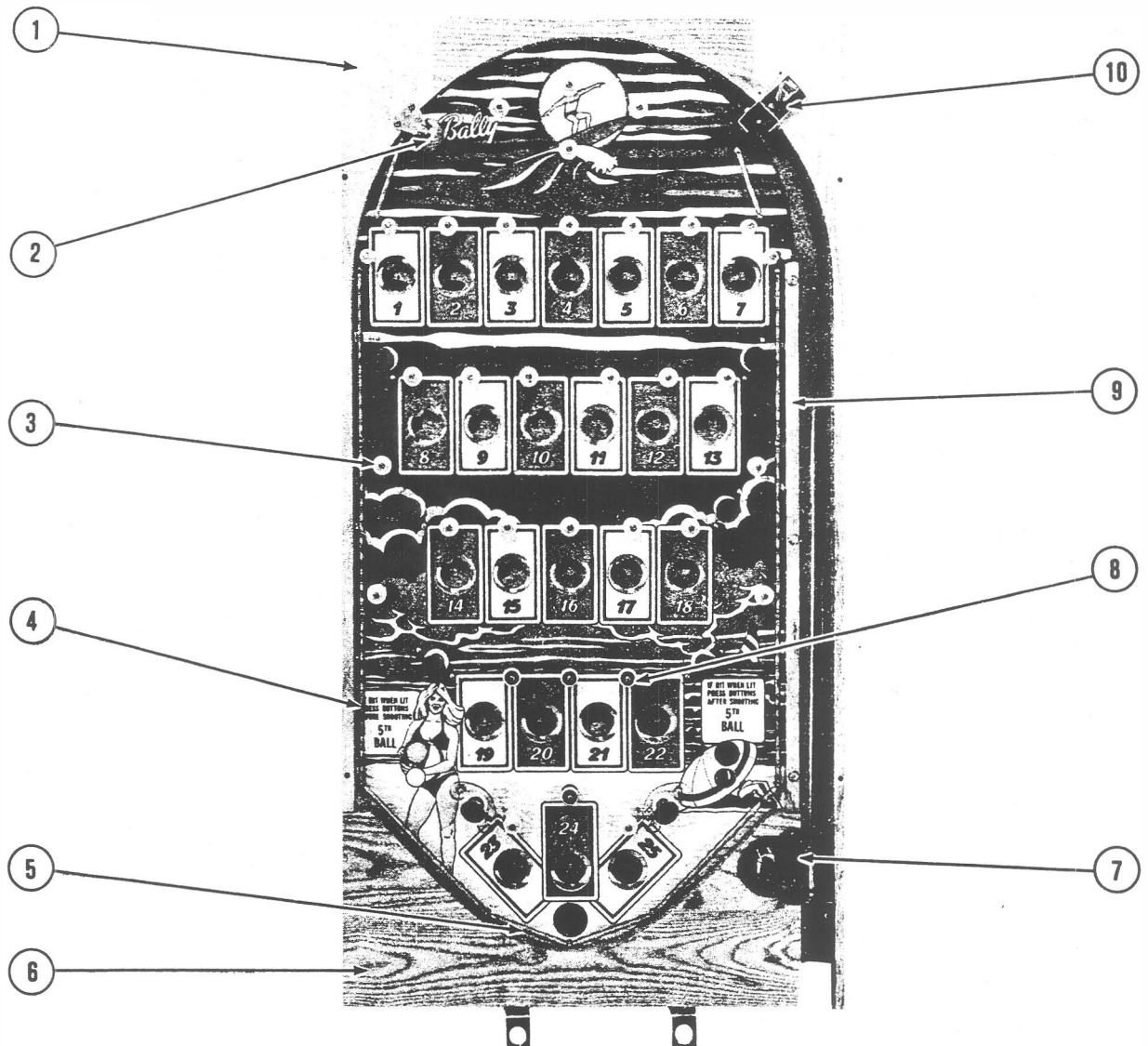
KEY NO.	PART NO.	DESCRIPTION	PAGE
1	AS-2930-4	Ball Detector Relay	48
2	AS-1139-40	Ball Lifter Motor Assy.	51
3	AS-186-11	Ball Lifter Assy.	
4	AS-187-20	Ball Shooter Assy.	
5	AS-982-1277	"R" Button Sw. & Brkt. Assy.	52
6	ASW-A2-9 & ASW-A1-26	Manual Lift Button Switches	52
7	AS-A1-27	Tilt Switch	53
8	AS-982-1280	Replay Sw. & Bracket Assy.	52
9	AS-982-944	Yellow Button Switch	52
10	M-1400-COIN	Slug rejector	
11	AS-277-105	Coin Switch	52
12	AS-982-1230	Left & Right Button Sw. Assy.	52
13	E-130-29	Coin & Key Meters	52
14	AS-1145-56	Ball Trough & Sw. Assy.	51
15	AS-2930-35	"R" Button Relay	48

PANEL ASSEMBLY - BOTTOM



KEY NO.	PART NO.	DESCRIPTION	PAGE
1	CU-638-116	Panel	
2	AS-232-104	Shutter Motor Assembly	49
3	AS-2930-38	Lifter Start Relay	49
4	AS-982-1272	Shutter Switch & Bracket Assy.	50
5	AS-1433-20	Shutter Assembly	50
6	ASW-A1-7	Ball Runway Switch	51

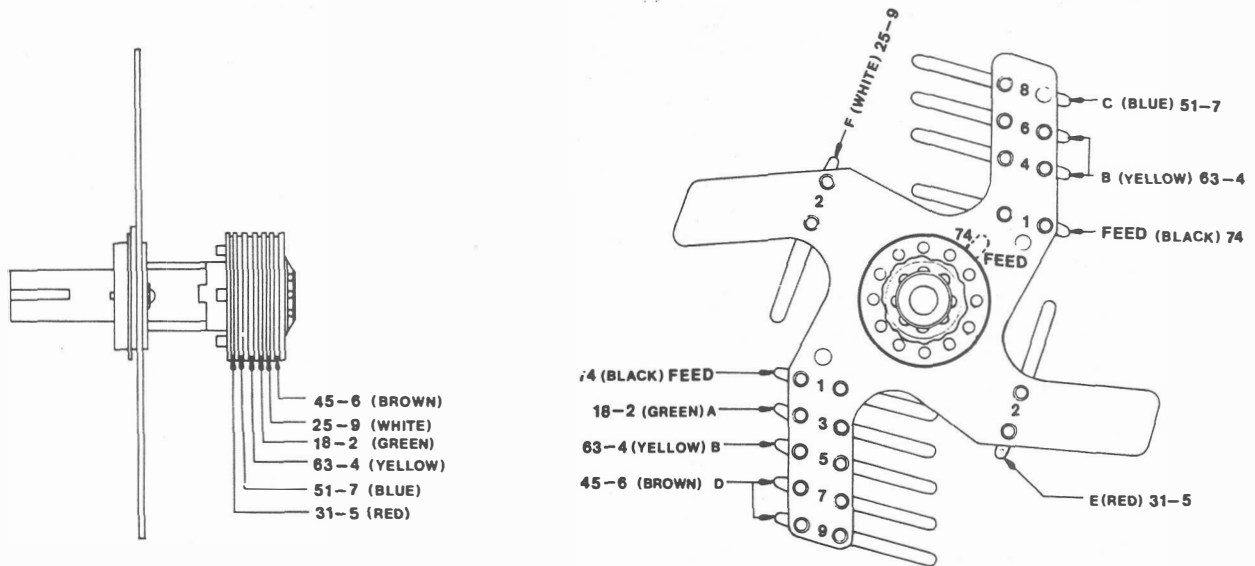
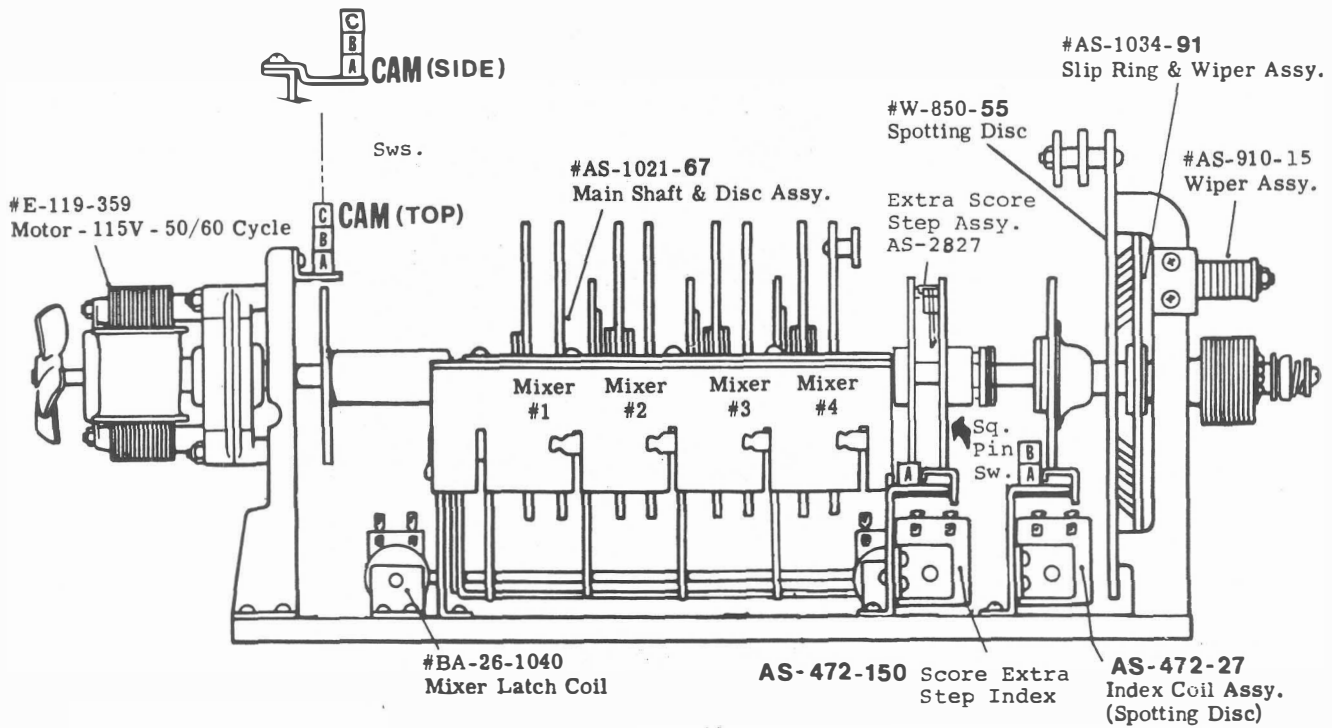
PANEL ASSEMBLY - PLAYFIELD



KEY NO.	PART NO.	DESCRIPTION	PAGE
1	CA-1104	Arch Top	
2	R-115-4	Rebound Rubber	
3	R-243	Bumper Rubber - White	
4	SP-112	Long Panel Spring	
5	SP-112-1	Short Panel Spring	
6	CA-1100-10	Arch Bottom	
7	C-153	Ball Lifter Cover	
8	R-243-2	Bumper Rubber - Grey	
9	CA-1103	Arch Guide Strip	
10	AS-1315-8	Ball Gate & Switch Assy.	51

MIXER & SPOTTING UNIT

Leather Clutch Washers on this unit require periodic lubrication. Neats Foot Oil should be used when necessary.



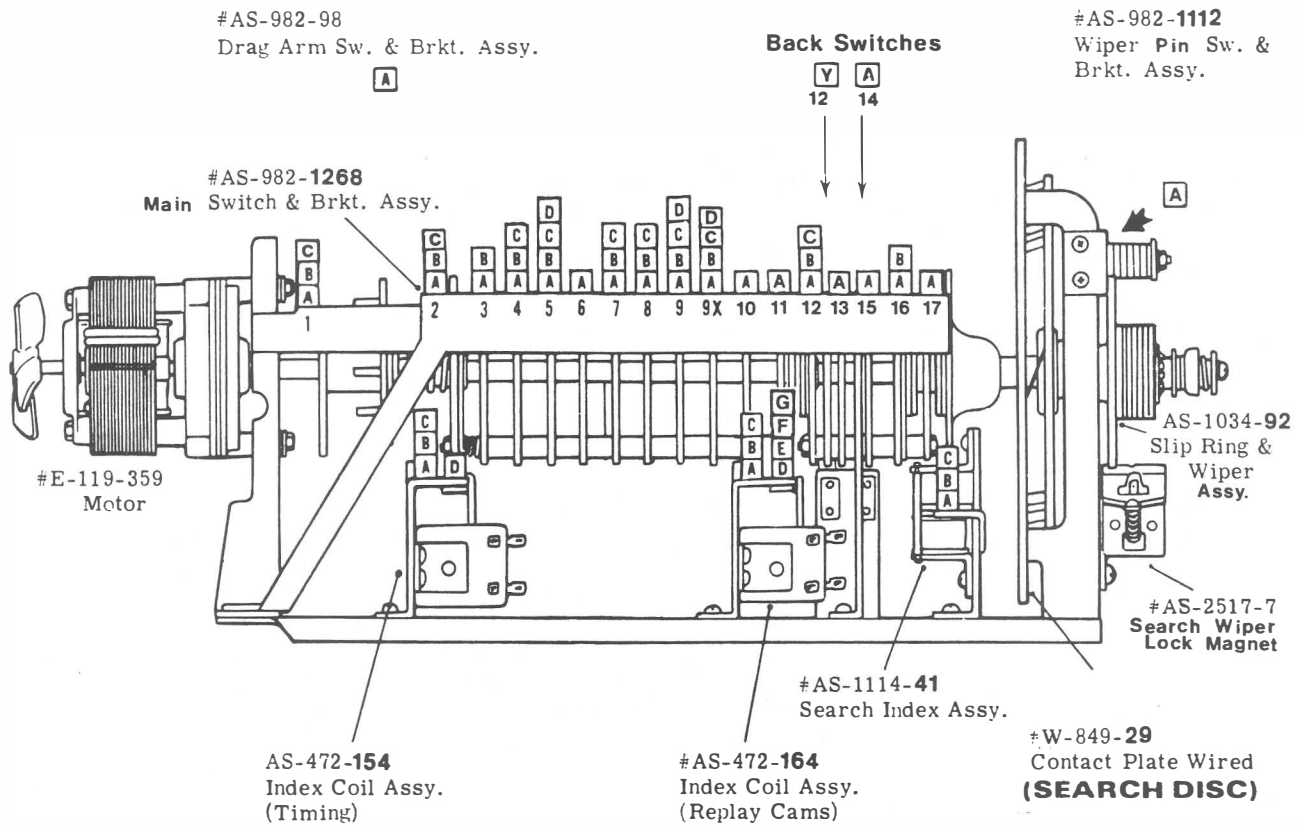
AS-1034-91 SLIP RING & WIPER ASSY

MIXER & SPOTTING UNIT FUNCTION CHART

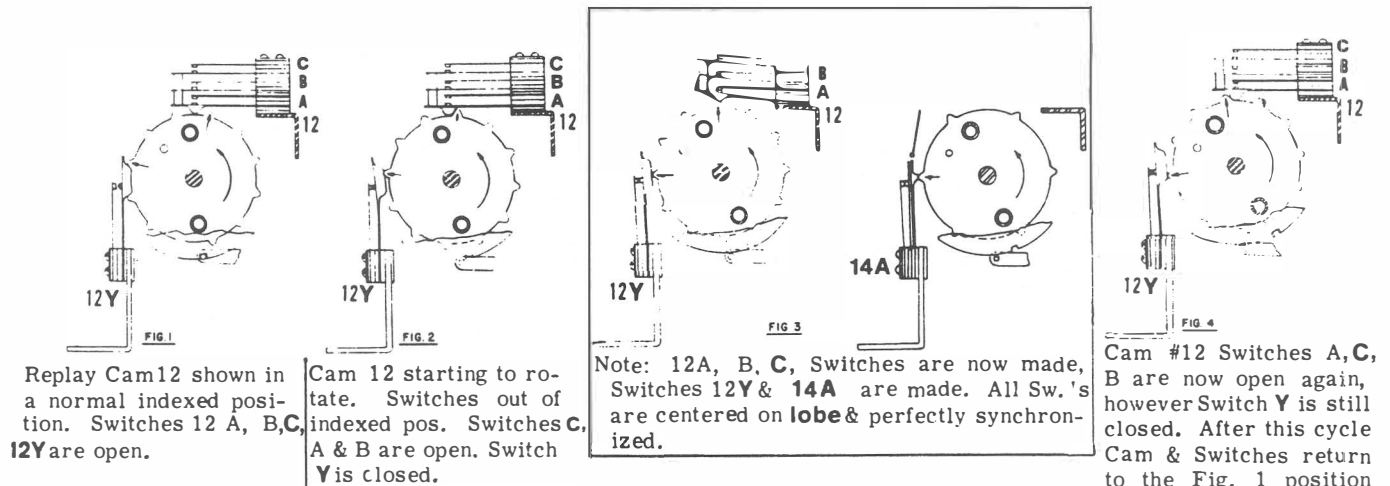
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Motor	E-119-359	D-2	98-16 95-16	Grey-Black Grey-White	Energized from Timer Cams Index Switch in 117 VAC Circuit
16 Pulse Cam (Top) A. N.O.	ASW-C1X-1	B-4	75-2 53-7	Orange-White White-Yellow	Closes Replay Register Reset Coil Circuit
B. N.O.	ASW-C1X-2	J-23	47 10-11	Green-Orange Red	Flashes "Select Now" lite
C. N.O.	ASW-C1X-2	F-39	58-5 45-6	White-Black Green-White	Pulses Magic Screen Feature, Selection Unit Step-Up coils or various trip coils including OK trip
16 Pulse Cam (Side) A. N.O.	ASW-C1X-1	C-29	78 38-4	Orange-Black Yellow-Black	Energizes Extra Ball Unit Step-Up Coil
B. N.O.	ASW-C1X-2	H-36	62-1 83-12	Brown-Blue Black-Yellow	Energizes Red Letter Unit Step-Up Coil
C. N.O.	ASW-C1X-2	G-13	52-8 72-5	White-Blue Orange-Blue	Energizes Winner Unit Step-Up Coil
Score Extra Step Pulse Sw. N.O.	AS-A1-132	E-32	43-4 50-4	Green-Yellow White	Steps any Score Unit thru Score Extra Step Circuit
Score Extra Step Square Pin Sw. N.C.	ASW-A2-75	C-10	21-3 13-5	Blue-Red Red-Yellow	Opens Score Extra Step Relay holding circuit
Score Extra Step Index	Coil BF-27-1250	A-9	70 56-12	Orange White-Brown	Energized from Control Unit #4 Cam Switch
A. N.O.	AS-A1-160	C-10	13-5 81-3	Red-Yellow Black-Red	Closes circuit to Hold In Score Extra Step Relay
Mixer Latch Coils (2)	BA-26-1040	A-7	62-2 58-4	Brown-Blue White-Black	Energized From Control Unit #1 Cam Switch
Spotting Index	Coil BF-27-1250		70 34-3	Orange Yellow-Green	Energized from Control Unit #4 Cam Switch
A. N.O.	ASW-A1-11		13-4 30 & 30J	Red-Yellow Yellow	Energizes Score or Extra Ball lites thru Spotting Disc
B. N.O.	ASW-A1-54		81-6 30J	Black-Red Yellow	Energizes various lite circuits thru Spotting Disc

Leather Clutch Washers on this unit require periodic lubrication. Neats Foot Oil should be used when necessary.

CONTROL UNIT



The correct adjustment & synchronization of the Switches controlled by Cam No. 's 11,12 & 13 is vitally important to the Replay Counter Circuit. Out of adjustment Back Switches 12Y & 14 can cause the **three** Replay Counters to become overloaded & burn out (affects the Printed Circuit Disc). Figure 3 shows these Cam Switches in a proper "Made" position. The Back Switches are adjustable. Note that the 12Y switch closes first & opens last. Cam Switch 12C is used for our testing purposes only.



Replay Cam 12 shown in a normal indexed position. Switches 12 A, B, C, 12Y are open.

Cam 12 starting to rotate. Switches out of indexed pos. Switches C, A & B are open. Switch Y is closed.

Note: 12A, B, C, Switches are now made, Switches 12Y & 14A are made. All Sw.'s are centered on lobe & perfectly synchronized.

Cam #12 Switches A, C, B are now open again, however Switch Y is still closed. After this cycle Cam & Switches return to the Fig. 1 position (open).

This entire sequence is repeated throughout the scoring cycle.

CONTROL UNIT FUNCTION CHART

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Motor	E-119-359	D-1	98-16 95-16	Grey-Black Grey-White	Energized from Timer Cam Index Switch in 117VAC Circuit
Cam #1 A. N.O.	ASW-C1-25	D-10	65-2 36-9	Brown-White Yellow-Brown	Closes Timer Unit Step Up Coil Circuit
B. N.O.	ASW-C1-8	E-2	94-16 98-16	Grey-Green Grey-Black	Energizes Motors of Control and Mixer Units
C. N.C.	ASW-C2-15	B-7	72-4 58-4	Orange-Blue White-Black	Opens Mixer Latch Coil Circuit
Drag Arm Switch N.O.	ASW-A1-53	D-10	36-9 78-6	Yellow-Brown Orange-Black	Closes Timer Unit Step Up coil Circuit
Cam #2 (Pin) A. N.O.	ASW-C1-5	D-38	61-7 10-2	Brown-Red Red	Closes Red and Yellow Booster Trip Circuits
B. N.C.	ASW-C2-15	C-14 D-14	31-7 57-6	Yellow-Red White-Orange	Opens Red Button Relay Circuit
C. N.C.	ASW-C2-24	E-6	35 30	Yellow-White Yellow	Opens Multiplay Relay Holding Circuit
40 Ohm 15W Resistor	E-104-63	C-14	57-6 30	White-Orange Yellow	Drops voltage for Red Button Relay Coil
Cam #3 A. N.C.	ASW-C1-3	E-5	30 48-2	Yellow Green-Black	Opens Start Relay Timer Cams Index and Mixer Latch Coil Circuits
B. T.	ASW-C3-3	G-17	82-2 47-2 32-3	Black-Blue Green-Orange Yellow-Blue	Closes circuit to either Total Play Meter or Total Replay meter
Cam #4 A. N.O.	ASW-C1-3	B-7	27-9 80-2	Blue-Orange Black	Closes Coin Meter Circuit
B. N.O.	ASW-C1-8	B-9	21-3 56-12	Blue-Red White-Brown	Closes Circuit to Score Extra Step Index Coil
C. N.O.	ASW-C1-8	B-16	34-3 30	Yellow-Green Yellow	Closes Spotting Cams Index Coil Circuit
Cam #5 A. N.O.	ASW-C1-3	D-11	65-3 83-1	Brown-White Black-Yellow	Closes circuit to Timer Unit Reset Coil
B. N.O.	ASW-C1-8	C-30	21-1	Blue-Red	

CONTROL UNIT FUNCTION CHART

SWITCH/COIL		PART NO.	DIAGRAM LOCATION	PART NO.	PART NO.	FUNCTION
C.	N.O.	ASW-C1-8	C-31	68 78-4	Brown-Black Orange-Black	Closes circuit to Anti-Cheat Relay coil
D.	N.O.	ASW-C1-8	G-35	10-7 85-4	Red Black-White	Closes Step Up Coil circuits of Magic Screen Feature and Selection Unit
Cam #6 A.	N.C.	ASW-C1-3	H-35	51-5 75-5	White-Red Orange-White	Opens Mixer #4 Relay Coil circuit thru Mixer #4 Relay Switch and Mixer #4 Disc
Cam #7 A.	N.O.	ASW-C1-3	G-34	60-6 63-4	Brown Brown-Yellow	Closes all Score Unit Step Up Coil circuits
B.	N.O.	ASW-C1-8	F-35	85-4 12-5	Black-White Red-White	Closes circuit to all Score unit Step Up coils via Score Unit Discs or Mixer #1 Disc
C.	N.O.	ASW-C1-43	C-4	30 67-2	Yellow Brown-Orange	Energizes Reflex Play Magnet coil
Resistor 1.8K 7W		E-104-89	C-4	30 67-2	Yellow Brown-Orange	Prevents hang-up of Reflex play Magnet coil
Cam #8 A.	N.O.	AS-C1-3	C-31	25-4 38-4	Blue-White Yellow-Black	Closes circuit to Extra Ball Unit Step Up Coil
B.	N.O.	ASW-C1-8	F-40	27-13 20-6	Blue-Orange Blue	Closes OK Trip Coil circuit via Spotting Disc
C.	N.O.	ASW-C1-8	D-36	61-7 18-7	Brown-Red Red-Black	Closes Red & Yellow Booster Trip Coil circuit via Red and Yellow Score Disc
Cam #9 A.	N.O.	ASW-C1-4	H-34	15-7 54-8	Red-White White-Green	Closes Extra Ball Unit Step Up Coil circuit
B.	N.C.	ASW-C2-15	D-30	43-5 74-15	Green-Yellow Orange-Green	Opens Extra Ball Unit Step Up Coil circuit thru Extra Ball Unit Disc "X" position
C.	N.C.	ASW-C2-2	C-39	50-13 52-5	White White-Blue	Opens circuit to Magic Screen Feature Unit Step Up coil
D.	T.	ASW-C3-2	C-38	67-1 10-2 20-7	Brown-Orange Red Blue	Alternates closing Red and Yellow Booster Trip coil circuits thru Control Unit #2 Cam Switch
Cam #9X A.	N.O.	ASW-C2-18	B-41	20-6 52-3	Blue White-Blue	Closes OK trip Coil circuit
B.	N.O.	ASW-C2-2	D-42	25-12 14-13	Blue-White Red-Green	Closes circuit to Blue Booster Trip Coil

CONTROL UNIT FUNCTION CHART

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
C. N.O.	ASW-C2-2	D-43	84-1 15-5	Black-Green Red-White	Closes Selection Unit Step Up Coil circuit
D. N.O.	ASW-C2-2	G-41	48-13 61-7	Green-Black Brown-Red	Bypasses Selection Unit Disc to close Red and Yellow Booster circuits
Cam #10 A. N.O.	ASW-C1-3	I-16	30J 12-2	Yellow Orange-Blue	Closes circuit to Replay Register for Multiplay per coin or single play when 30J wire is removed
Lug Resistor	ASW-A0-3 E-104-89	H-16	30 30J	Yellow Yellow	Connects 1.8K 7W bleeder resistor to Reflex Replay Magnet coil
Cam #11 A. N.O.	ASW-C1-3	E-18	57 70	White-Orange Orange	Closes X6 Replay Multiplier circuits to All Score Unit Discs
Cam #12 A. N.O.	ASW-C1-3	G-15	80 12-2	Black Red-Blue	Closes circuits to Reflex Replay Magnet and Replay Register Step Up Coil
B. N.O.	ASW-C1-8	H-17	45 70 & 70J	Green-White Orange	Closes X1 Replay Multiplier circuits to All Score Unit Discs
C. N.O.	ASW-C1-8		70J	Orange	Registers replays for Test purposes
Cam #12Y A. N.O. (Back Switch)	ASW-C1X-34	I-15	21-3 85-13	Blue-Red Black-White	Closes circuit to Replay Counter Discs to prevent arcing
Cam #13 A. N.O.	ASW-C1-3	E-18	52 70	White-Blue Orange	Closes X4 Replay Multiplier circuits to All Score Unit Discs
Cam #14 A. N.O. (Back Switch)	ASW-C1-59	E-19	63 70	Brown-Yellow Orange	Closes X12 Replay Multiplier circuits to All Score Unit Discs
Cam #15 A. N.O.	ASW-C1-4	H-13	14 18	Red-Green Red-Black	Closes Circuit to Replay Counter Discs to prevent arcing
Cam #16 A. T.	ASW-C3-16	H-13	54 18 56	White-Green Red-Black White-Brown	Energizes either Winner Unit Step Up Coils or Replay Circuits
B. T.	ASW-C3-3	H-14	41-9 51-8 80	Green-Red White-Red Black	Completes regular Replay circuit thru either Search Index circuit or via Winner and Sequence Unit Discs
Cam #17 A. N.O.	ASW-C1-3	I-26	30 31-6	Yellow Yellow-Red	Closes Sequence and Winner Unit Disc circuits
Timer Cams Index	Coil BF-27-1250	A-8	72-4 62-2	Orange-Blue Brown-Blue	Energized from Red Button Switch

CONTROL UNIT FUNCTION CHART

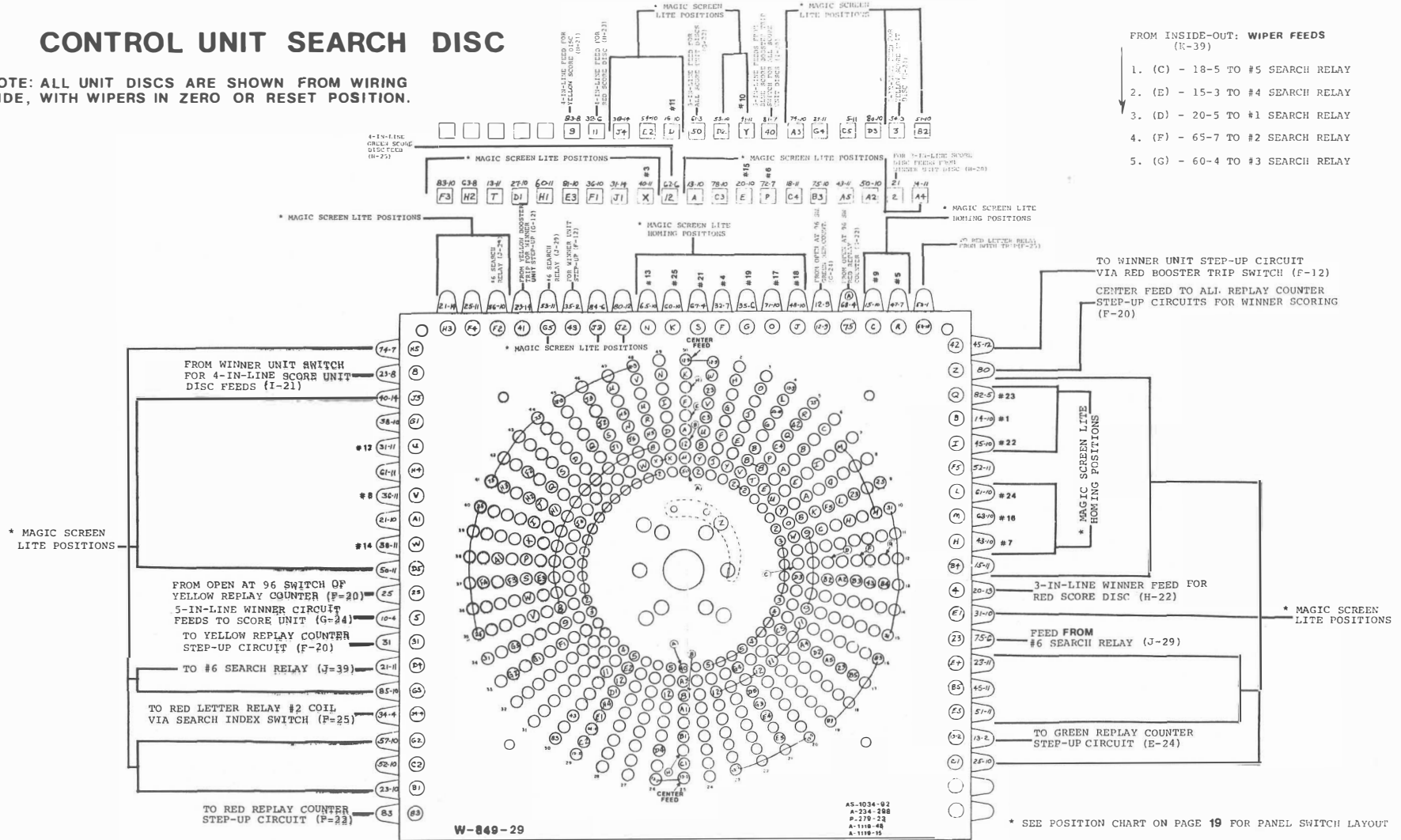
SWITCH / COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
A. N.O.	ASW-A1-43	F-1	94-16 98-16	Grey-Green Grey-Black	Energizes motors of Control Unit and Mixer
B. N.C.	ASW-A2-18	B-6	27-9 71-2	Blue-Orange Orange-Red	Opens Coin Lockout Coil Circuit
C. N.C.	ASW-A2-35	C-14	13 30	Red-Yellow Yellow	Opens Coil circuits of Red Button Relay, Extra Ball #1 Trip and #2 Trip
Resistor 8.2K 1/2 W	E-105-6	C-7	71-2 30	Orange-Red Yellow	Bleeds current from Coin Lockout Coil to prevent hang up
Replay Cams Index	Coil CF-25-1025	E-15	70 40-4	Orange Green	Energized from Search Index Switch
A. N.O.	ASW-A1-11	H-12	14 18	Red-Green Red-Black	Closes Replay, Winner and Sequence Unit Step Up Coil Circuits
B. N.O.	ASW-A1-54	B-11	21-3 32-4	Blue-Red Yellow-Blue	Closes Tilt Trip safety delay circuit
C. N.O.	ASW-A1-54	H-15	80 & 80J 36-3	Black Yellow-Brown	Closes Search Index Coil Circuit
D. N.C.	ASW-A2-27	B-10	27-2 72-3	Blue-Orange Orange-Blue	Opens Timer Unit Step Up Coil Circuit
E. N.C.	ASW-A2-51	F-14	67-3 15-2	Brown-Orange Red-White	Opens Search Index Coil Circuit, leaving resistor in series with coil
Lug Resistor	ASW-A0-3 E-104-77	F-14	23-13 15-2	Blue-Yellow Red-White	Connects 30 Ohm 10W Resistor in series with Search Index Coil
F. N.O.	ASW-A1-56	I-15	85-13 80J	Black-White Black	Closes circuit to Replay Counter discs thru Control Unit #12 Back Switch to prevent disc/wiper arcing
G. N.C.	ASW-A2-29	K-40	68-3	Brown-Black	Opens to remove resistor from Score Safety Delay Relay circuit
Lug Resistor	ASW-A0-3 E-105-118	J-40	30	Yellow	Connects 10 Ohm 1/2 W resistor to hold in Score Safety Delay Relay
Search Wiper Lock Magnet	Coil FD-30-1300	E-6	70 23-6	Orange Blue-Yellow	Energized from Search Wiper Relay Switch
Search Wiper Pin Switch N.O.	ASW-C2-32	F-6	21-3 35-5	Blue-Red Yellow-White	Energizes Search Wiper Relay Coil
Search Index	Coil EA-29-950	E-14	70 15-2	Orange Red-White	Energized from Replay Cams Switch and/or 30 Ohm 10W resistor
A. N.O.	AS-A2-28	F-15	60 40-4	Brown Green	Energizes Replay Cams Index Coil
B. N.O.	AS-A2-82	I-19	54 84-4	White-Green Black-Green	Closes to make available Replay circuits via Search and Winner Unit Discs
C. N.O.	AS-A2-82	F-25	34-4 10-9	Yellow-Green Red	Energizes Coils of Red Letter Relays #1 and #2 thru Search Disc

CONTROL UNIT SEARCH DISC

NOTE: ALL UNIT DISCS ARE SHOWN FROM WIRING SIDE, WITH WIPERS IN ZERO OR RESET POSITION.

FROM INSIDE-OUT: WIPER FEEDS (K-39)

1. (C) - 18-5 TO #5 SEARCH RELAY
2. (E) - 15-3 TO #4 SEARCH RELAY
3. (D) - 20-5 TO #1 SEARCH RELAY
4. (F) - 65-7 TO #2 SEARCH RELAY
5. (G) - 60-4 TO #3 SEARCH RELAY



NOTE: KEY LETTER - NUMBER (B-5) ETC. INDICATES POSITION OF CIRCUIT ON SCHEMATIC DIAGRAM

MIXER & SPOTTING UNIT DISC

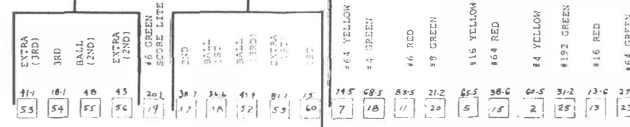
(K-12) EXTRA BALL LITE CIRCUITS

(K-9)

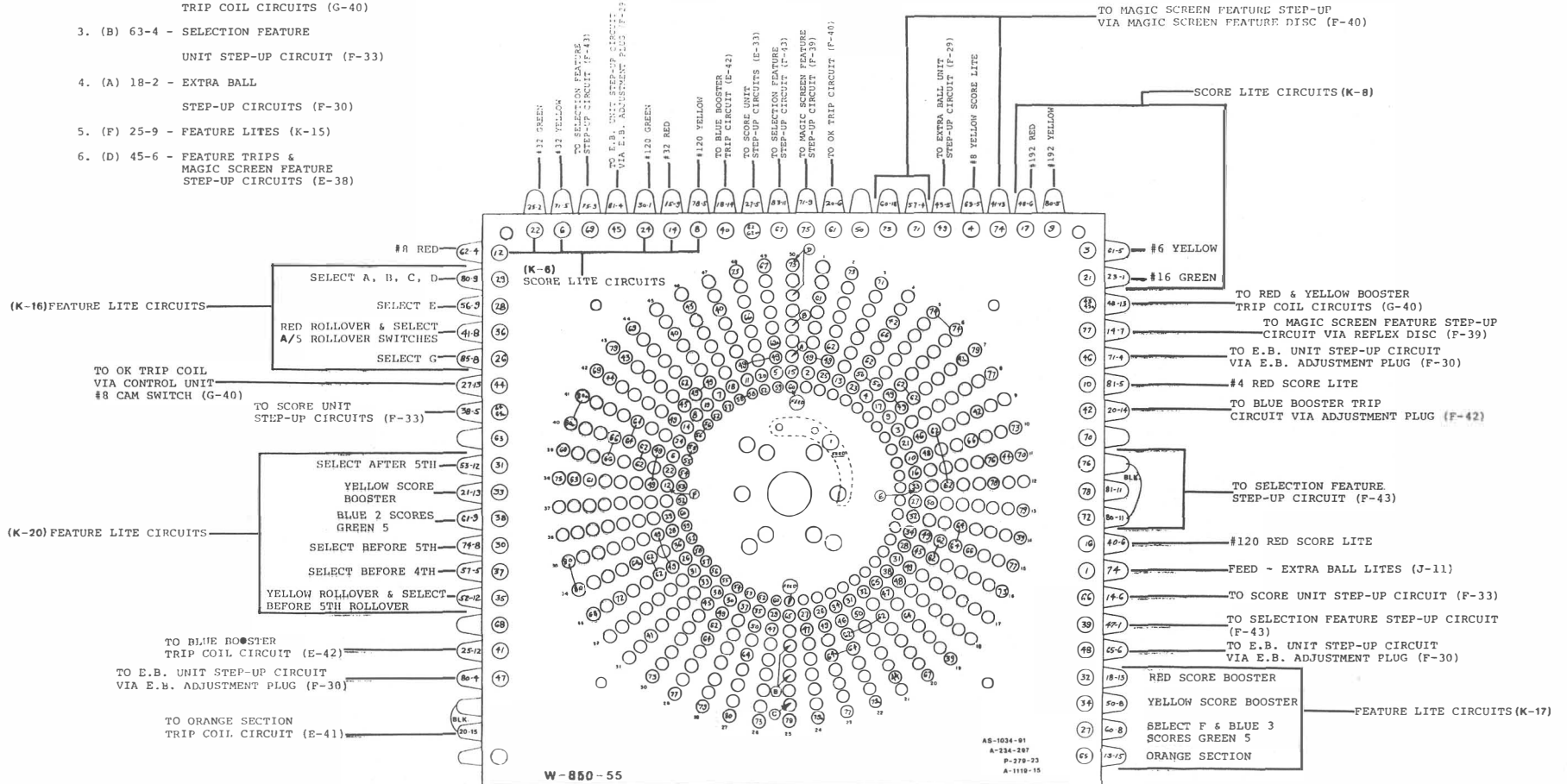
SCORE LITE CIRCUITS

WIPER FEEDS: FROM INSIDE-OUT

1. (E) 31-5 - SCORE LITES (K-11)
2. (C) 51-7 - YELLOW & RED BOOSTER
TRIP COIL CIRCUITS (G-40)
3. (B) 63-4 - SELECTION FEATURE
UNIT STEP-UP CIRCUIT (F-33)
4. (A) 18-2 - EXTRA BALL
STEP-UP CIRCUITS (F-30)
5. (F) 25-9 - FEATURE LITES (K-15)
6. (D) 45-6 - FEATURE TRIPS &
MAGIC SCREEN FEATURE
STEP-UP CIRCUITS (E-38)

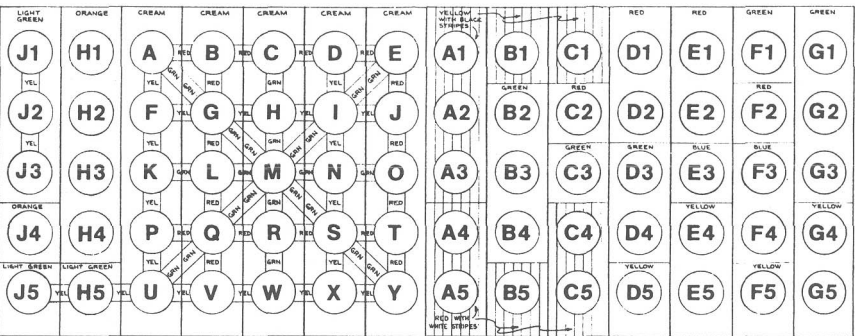


NOTE: ALL UNIT DISCS ARE SHOWN FROM WIRING SIDE, WITH WIPERS IN ZERO OR RESET POSITION.



NOTE: KEY LETTER - NUMBER (B-5) ETC. INDICATES POSITION OF CIRCUIT ON SCHEMATIC DIAGRAM

MAGIC SCREEN REFERENCE CHART



FOR EASIER CHECKING OF ANY REPLAY SCORING CIRCUITS, (IN-LINE OR SECTION), FIND THE POSITION ON THE SEARCH DISC WHERE THESE CIRCUITS ARE SEARCHED BY USING THE MAGIC SCREEN REFERENCE CHART AND THE SEARCH POSITIONS CHART ON THIS PAGE.

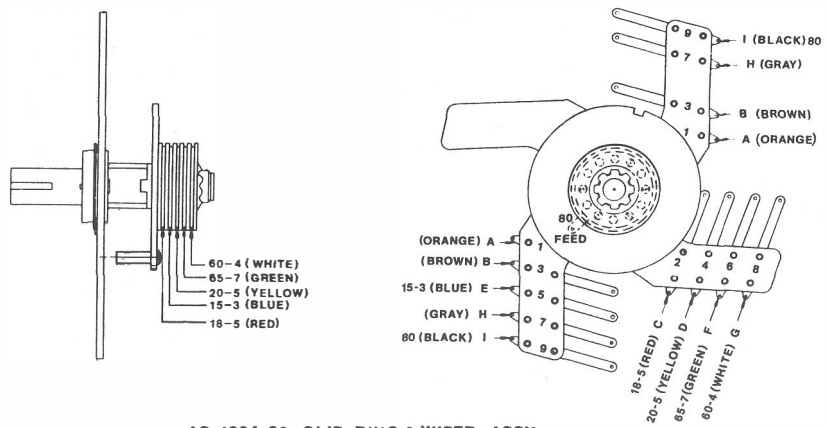
EXAMPLE:

ASSUMING BALLS ARE IN HOLES ON PLAYFIELD CORRESPONDING TO J1-J2-J3 (SEE MAGIC SCREEN REFERENCE CHART), A LOOK AT THE SEARCH POSITIONS CHART SHOWS THAT THIS COMBINATION IS A YELLOW 3-IN-LINE WINNER (VERTICAL), SEARCHED AT POSITION 34 ON SEARCH DISC THRU WIPERS D, F AND G. SEARCH RELAYS #1, #2 AND #3 SHOULD BE ENERGIZED TO SCORE REPLAYS.

		SEARCH POSITIONS CHART						
		RED WIPER AT POSITION	WIPER D ROW 4 #1 SEARCH RELAY	WIPER E ROW 6 #2 SEARCH RELAY	WIPER G ROW 8 #3 SEARCH RELAY	WIPER E ROW 9 #4 SEARCH RELAY	WIPER C ROW 2 #5 SEARCH RELAY	WIPER H ROW 7 #6 SEARCH RELAY
6 NO. GREEN SECTION	1		B2	B3	B4	C3	D3	D4
	2							
	3							
	4							
RED SUPER SECTION	5		A4	A5	B5	C4	C5	
	6							
	7							
	8							
YELLOW SECTION	9		D5	E4	E5	F5	G4	G5
	10							
	11							
YELLOW SUPER SECTION	12							
	13		A1	B1	C1	A2	A3	
	14							
	15							
RED SECTION	16							
	17		D1	E1	C2	D2	E2	F2
	18							
	19							
4 NO. GREEN SECTION	20							
	21		F1	G1	G2	G3		
	22							
	23							
BLUE SECTION	24							
	25		E3	F3	F4			
	26							
	27							
ORANGE SECTION	28							
	29		H1	H2	H3	H4	J4	
	30							
	31							
	32							
	33							
	34		J1	J2	J3			
	35		J5	H5	U	V	W	
	36		H5	U	V	W	X	
	37		D	I	N	S	X	
	38		A	F	K	P	U	
	39		U	V	W	X	Y	
	40		F	G	H	I	J	
	41		E	J	O	T	Y	
	42		B	G	L	Q	V	
	43		P	Q	R	S	T	
	44		A	B	C	D	E	
	45		E	I	M	Q	U	
	46		A	G	M	S	Y	
	47		K	L	M	N	O	
	48		C	H	M	R	W	
	49							
	50							

- YELLOW
 - VERTICAL LINE 34
 - HORIZONTAL LINE 35
 - HORIZONTAL LINE 36
 - VERTICAL LINE 37
 - VERTICAL LINE 38
 - HORIZONTAL LINE 39
 - HORIZONTAL LINE 40
- RED
 - VERTICAL LINE 41
 - VERTICAL LINE 42
 - HORIZONTAL LINE 43
 - HORIZONTAL LINE 44
- GREEN
 - DIAGONAL LINE 45
 - DIAGONAL LINE 46
 - HORIZONTAL LINE 47
 - VERTICAL LINE 48

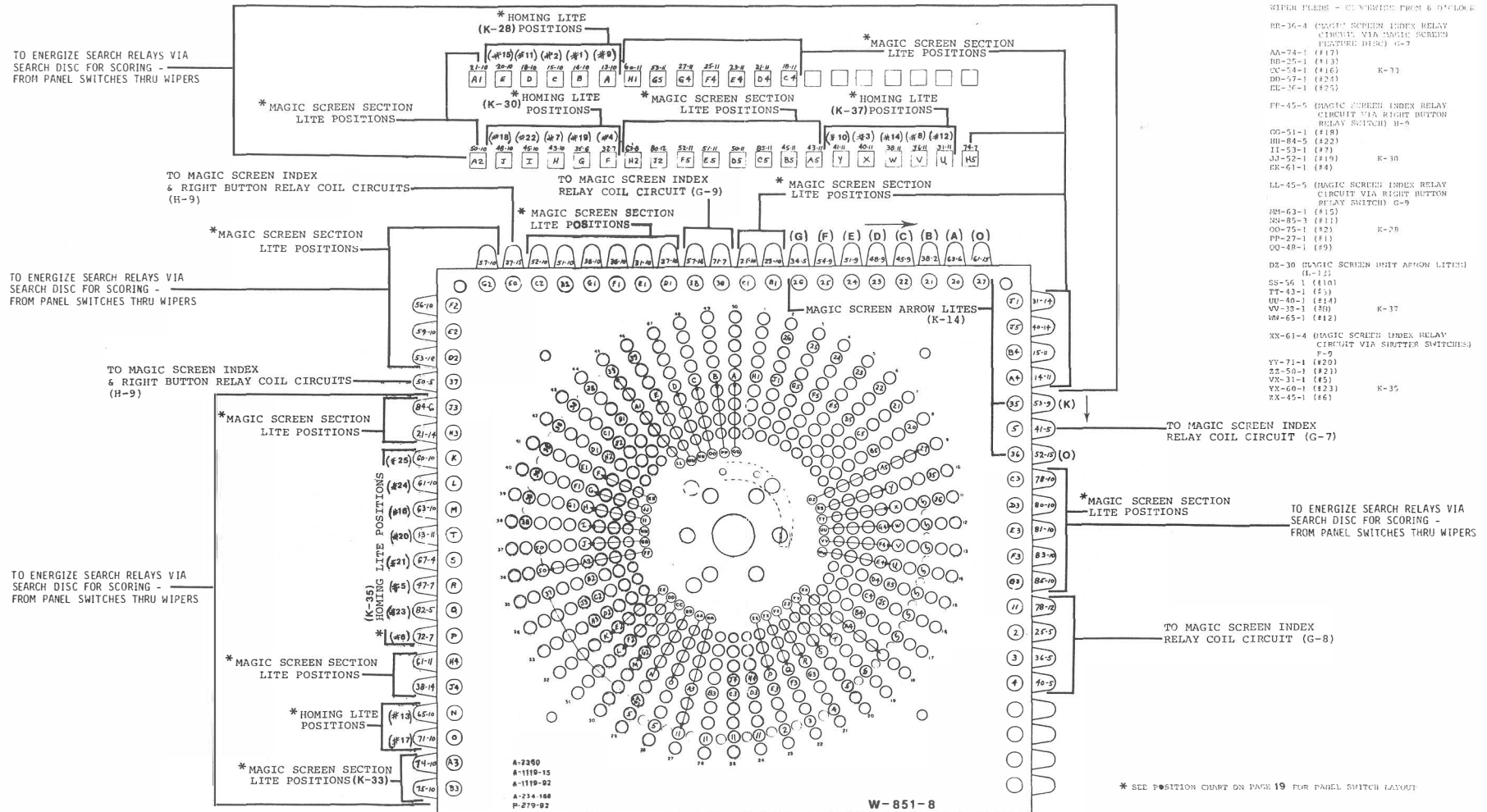
ROTATION OF SEARCH DISC WIPERS FROM 50 TO 1



AS-1034-92 SLIP RING & WIPER ASSY

MAGIC SCREEN UNIT DISC

NOTE: ALL UNIT DISCS ARE SHOWN FROM WIRING SIDE, WITH WIPERS IN ZERO OR RESET POSITION.



NOTE: KEY LETTER - NUMBER (B-5) ETC. INDICATES POSITION OF CIRCUIT ON SCHEMATIC DIAGRAM

STEPPING UNITS FUNCTION CHART

MAGIC SCREEN UNIT						
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION	
Move Right Motor	E-119-174	F-10	70 45-5	Orange Green-White	Energized from Right Button Relay Switch	
Move Left Motor	E-119-174	F-10	70 48-5	Orange Green-Black	Energized from Right Button Relay Switch	
Magic Screen Index	Coil B-26-1100	F-6	70 64-4	Orange Brown-Green	Energized from Magic Screen Index Relay Sw.	
A.	N.O.	ASW-A1-111	G-10	21-3 25-6	Blue-Red Blue-White	Energizes Move Left and Move Right Button Relay Circuit
B.	N.C.	ASW-A2-81	L-3	12-1 10	Red-Blue Red	Opens 17 VAC lite circuit
RED SCORE UNIT						
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION	
Step-Up Coil	B-25-925	A-24	70 & 70J 13J	Orange Red-Yellow	Energized from Red Letter Relay #2 Switch	
Reset Coil	C-28-1100	H-28	70J 78-3	Orange Orange-Black	Energized From Shutter Motor Cam #6 Switch	
(Open at Top) A.	N.C.	ASW-U2-5	B-34	35-3 13-3 & 13J	Yellow-White Red-Yellow	Opens Red Score Unit Step-Up Coil Circuit
End-Of-Stroke N.O.	ASW-U1-9	C-9	21-3 43-6	Blue-Red Green-Yellow	Energizes Score Extra Step Relay Coil	
YELLOW SCORE UNIT						
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION	
Step-Up Coil	B-25-925	A-33	70 & 70J 56J	Orange White-Brown	Energized from Red Letter Relay #1 Sw.	
Reset Coil	C-28-1100	G-28	70J 78-3	Orange Orange-Black	Energized from Shutter Motor Cam #6 Switch	
(Open at Zero) A.	N.C.	ASW-U2	D-8	14-8 45-8	Red-Green Green-White	Opens Shutter Motor Circuit
(Open at Top) B.	N.C.	ASW-U2-5	B-33	47-3 56-11 & 56J	Green-Orange White-Brown	Opens Yellow Score Unit Step-Up Coil Circuit
End-Of-Stroke N.O.	ASW-U1-9	C-10	21-3 43-6	Blue-Red Green-Yellow	Energizes Score Extra Step Relay Coil	

(Continued)

STEPPING UNITS FUNCTION CHART

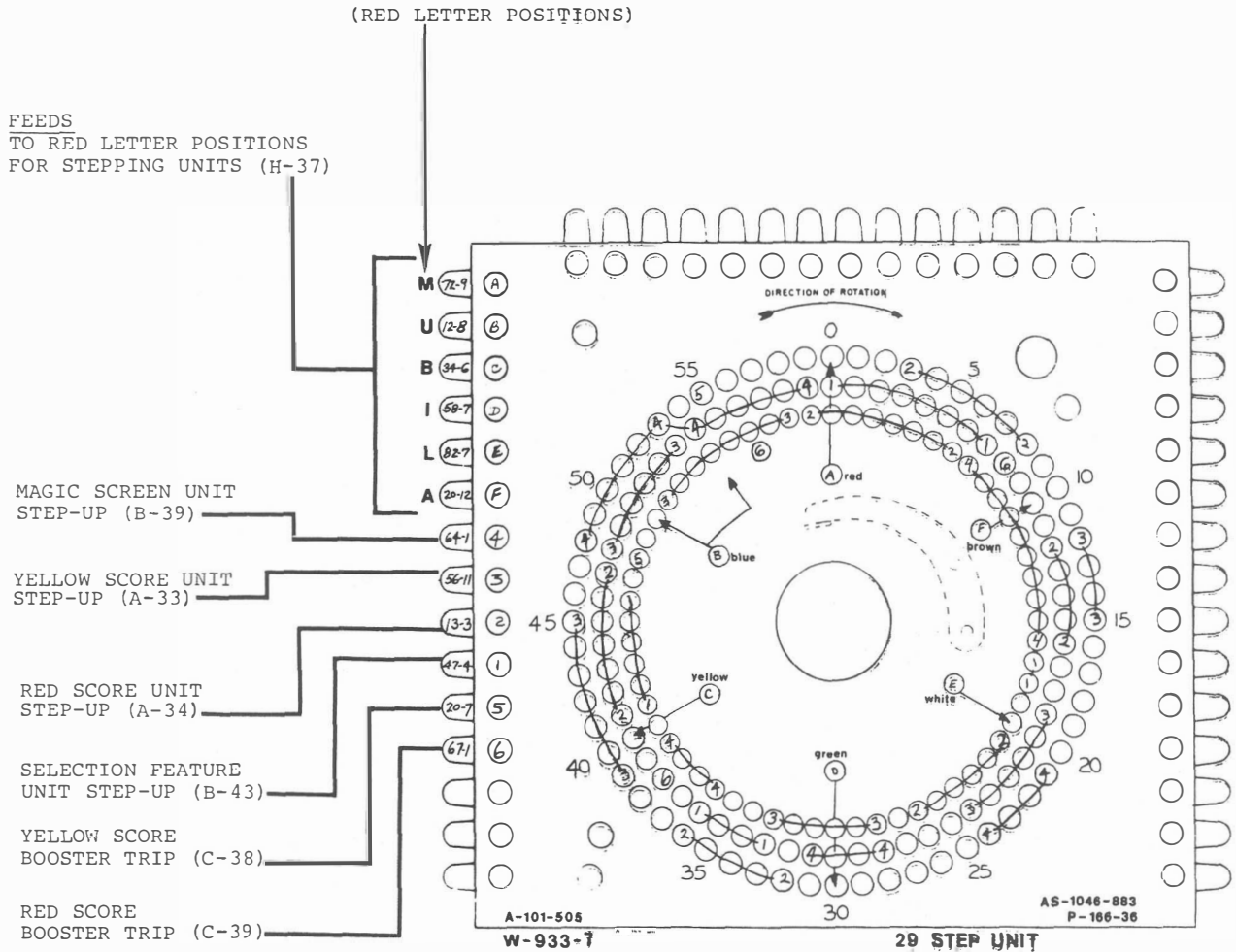
GREEN SCORE UNIT					
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Step-Up Coil	B-25-925	A-34	70 & 70J 15J	Orange Red-White	Energized from Red Letter Relay #1 Switch
Reset Coil	C-28-1100	H-28	70J 14-9	Orange Red-Green	Energized from Shutter Motor Cam #6 Switch
(Closed at Top) A. N.O.	ASW-U1-8	H-39	53-8 23-4	White-Yellow Blue-Yellow	Completes Circuit to Mixer #4 Relay from Mixer #4 Disc
End-Of-Stroke N.O.	ASW-U1-9	C-10	21-3 43-6	Blue-Red Green-Yellow	Energizes Score Extra Step Relay Coil
MISCELLANEOUS STEPPING UNITS					
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Replay Register Unit Step Up Coil	A-26-1100	E-16	70 48-4	Orange Green-Black	Energized from Multiplay Relay Switch
Reset Coil	A-27-1100	A-4	70 82-1	Orange Black-Blue	Energized from Key end-of-stroke Switch
(Zero Switch) A. N.O.	ASW-U1-6	C-5	63-2 62	Brown-Yellow Brown-Blue	Closes Start Relay circuit
(Zero Switch) B. T.	ASW-U3-6	D-5	56-2 48-2 27-9	White-Brown Green-Black Blue-Orange	Energizes either Start Relay coil or coin Switch and coin lockout coil
Reflex Play Magnet	Coil EA-32-1550	A-4	70 67-2	Orange Brown-Orange	Energized from Control Unit #2 Pin Switch
Reflex Replay Magnet	Coil EA-30-1150	E-15	70 12-2	Orange Red-Blue	Energized from Control Unit #12 (X1) Cam Switch

SELECTION FEATURE UNIT

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Step-Up Coil	B-25-925	A-43	70 & 70J 47-4	Orange Green-Orange	Energized from Red Letter #2 Switch
Reset Coil	C-28-1100	E-28	70J 85-5	Orange Black-White	Energized From Shutter Motor Cam #3 Switch
(Open at Top) A. N.C.	ASW-U2-11	D-43	81-11 84-1	Black-Red Black-Green	Opens circuit from Spotting Disc to Selection Unit Step-Up Coil
(Open at Top) B. N.C.	ASW-U2-5	C-40	20-6 52-3	Blue White-Blue	Opens OK Trip Coil Circuit

RED LETTER UNIT DISC

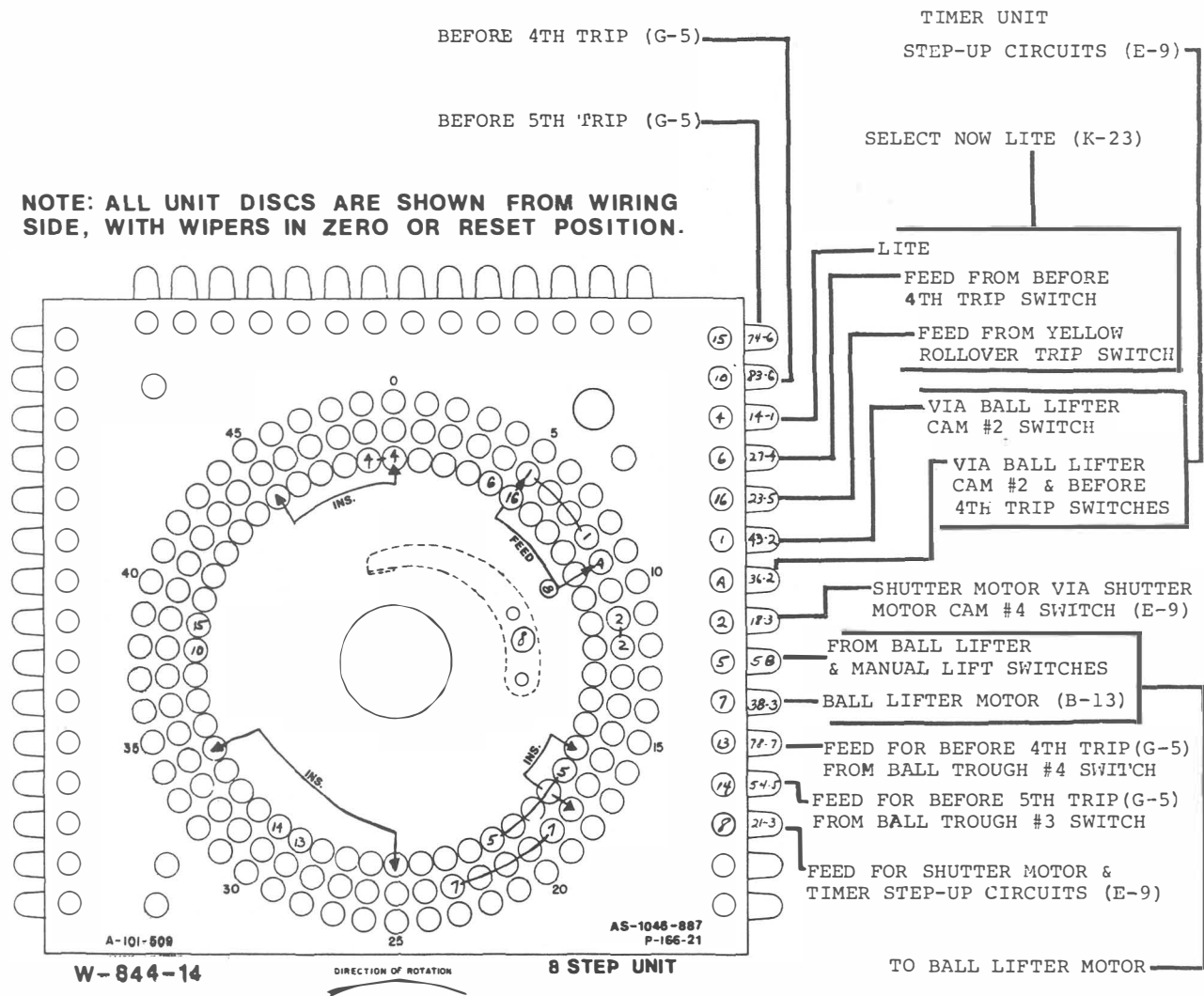
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Step Up Coil	B-25-925	A-36	70 & 70J 83J	Orange Black-Yellow	Energized from Mixer 16 Pulse Switch
Reset Coil	C-28-1100	H-28	70J 78-3	Orange Orange-Black	Energized from Red Letter Relay #1 Sw.
(Open at Top) A. N.C.	ASW-U1	B-26	83-12 83J	Black-Yellow Black-Yellow	Opens Red Letter Unit Step-Up Coil Circuit



TIMER UNIT DISC

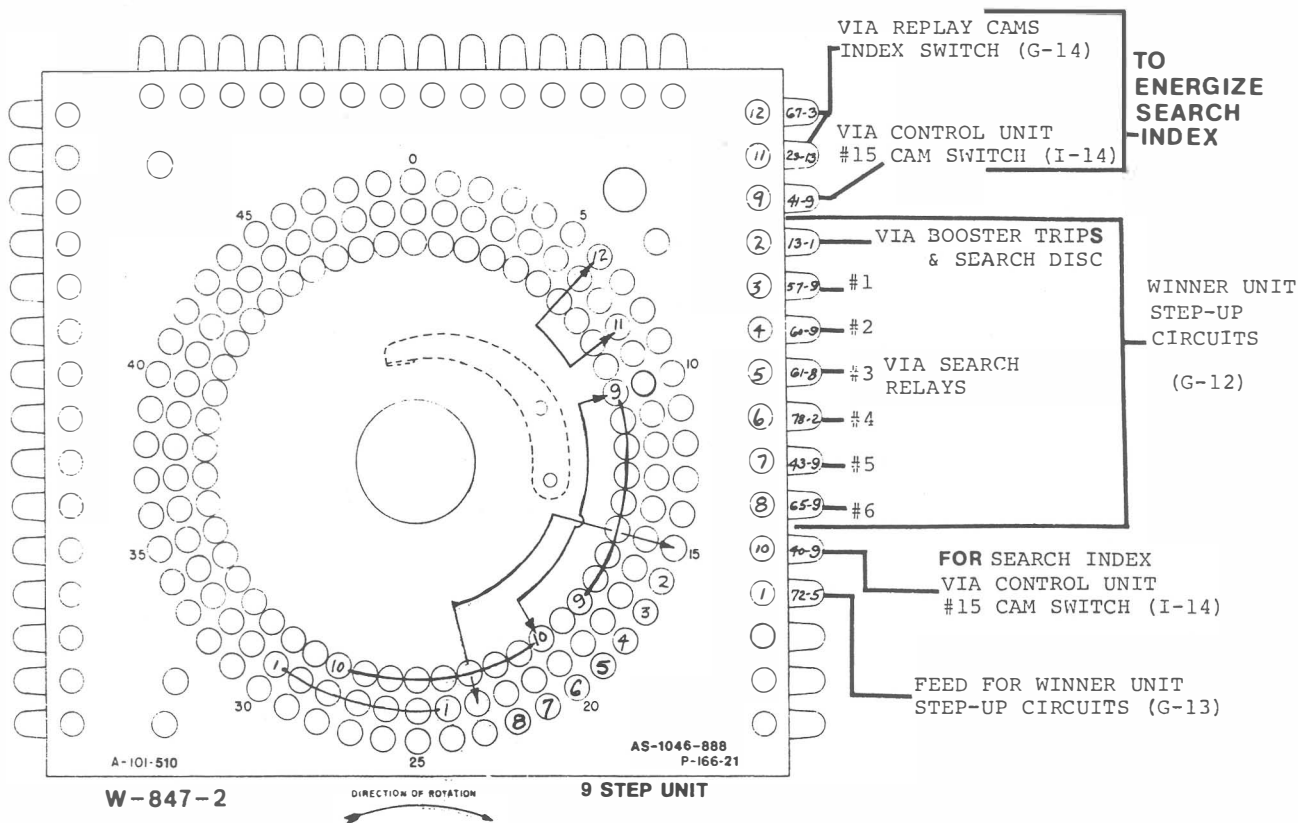
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Step-Up Coil	B-25-925	A-10	70 72-3	Orange Orange-Blue	Energized from Replay Cams Index Switch
Reset Coil	C-28-1100	A-10	70 & 70J 71J	Orange Orange-Red	Energized from B/5 Selector Lock Trip and Extra Ball #1 Trip Switches
(Open at Zero) A. N.C.	ASW-U2	E-14	30 68-2	Yellow Brown-Black	Opens Lifter Start Relay Circuit thru Shutter Motor Cam #5 Switch
(Open at Zero) B. N.C.	ASW-U2-1	B-10	71-8 71J	Orange-Red Orange-Red	Opens Timer Unit Reset Coil Circuit
(Open at Zero) C. N.C.	ASW-U2-5	E-2	94-16 96-16	Grey-Green Grey-Brown	Opens Control Unit and Mixer Unit Motor Circuits through Tilt Trip Switch

NOTE: KEY LETTER - NUMBER (B-5) ETC. INDICATES POSITION OF CIRCUIT ON SCHEMATIC DIAGRAM



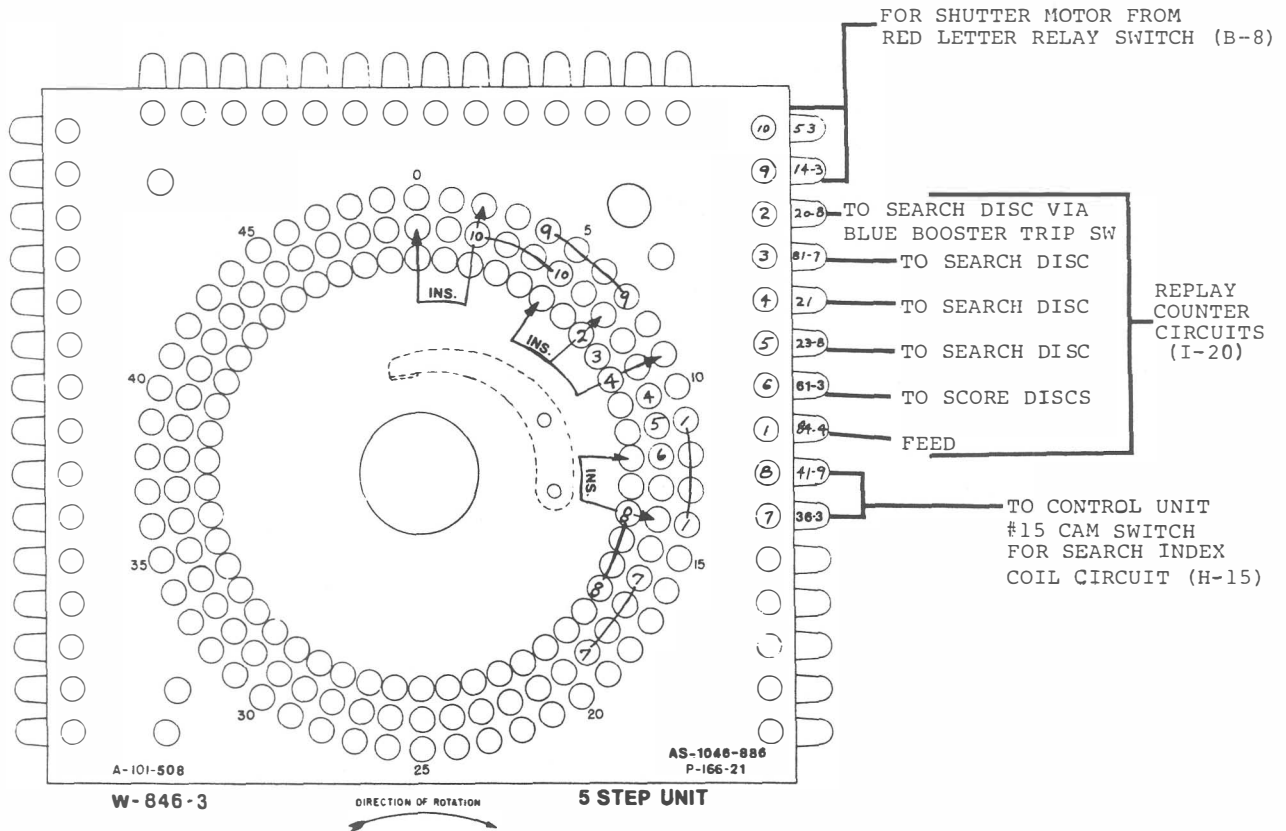
SEQUENCE UNIT DISC

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Step-Up Coil	B-25-925	E-14	70 & 70J 72J	Orange Orange-Blue	Energized from Mixer 16 Pulse switch and #1, #2, #3, #4 Search Relay Switches
Reset Coil	C-28-1100	H-28	70J 84-J	Orange Black-Green	Energized from Control Unit Ratchet Cam #17 Switch
(Open at Zero) A.	N.C. ASW-U-2	H-27	31-9 84-3 & 84J	Yellow-Red Black-Green	Opens Sequence Unit Reset Coil Circuit
(Closed at Zero) B.	N.O. ASW-U1-1	I-14	41-9 & 41J 52-8	Green-Red White-Blue	Completes Circuit to Search Index Coil, by-passing Sequence Unit disc and open at top switch
(Open at Top) C.	N.C. ASW-U2-42	H-14	40-9 41J	Green Green-Red	Completes circuit to Search Index coil by-passing sequence Unit disc
(Open at Top) D.	N.C. ASW-U2-5	F-14	72-5 72J	Orange-Blue Orange-Blue	Opens Sequence Unit Step-Up Coil circuit
Reset Plunger Switch (Open at rest)	N.C. ASW-U2-13	I-14	40-9 52-8	Green White-Blue	Energizes Search Index Coil via Sequence Unit or Open at Top Switch



WINNER UNIT DISC

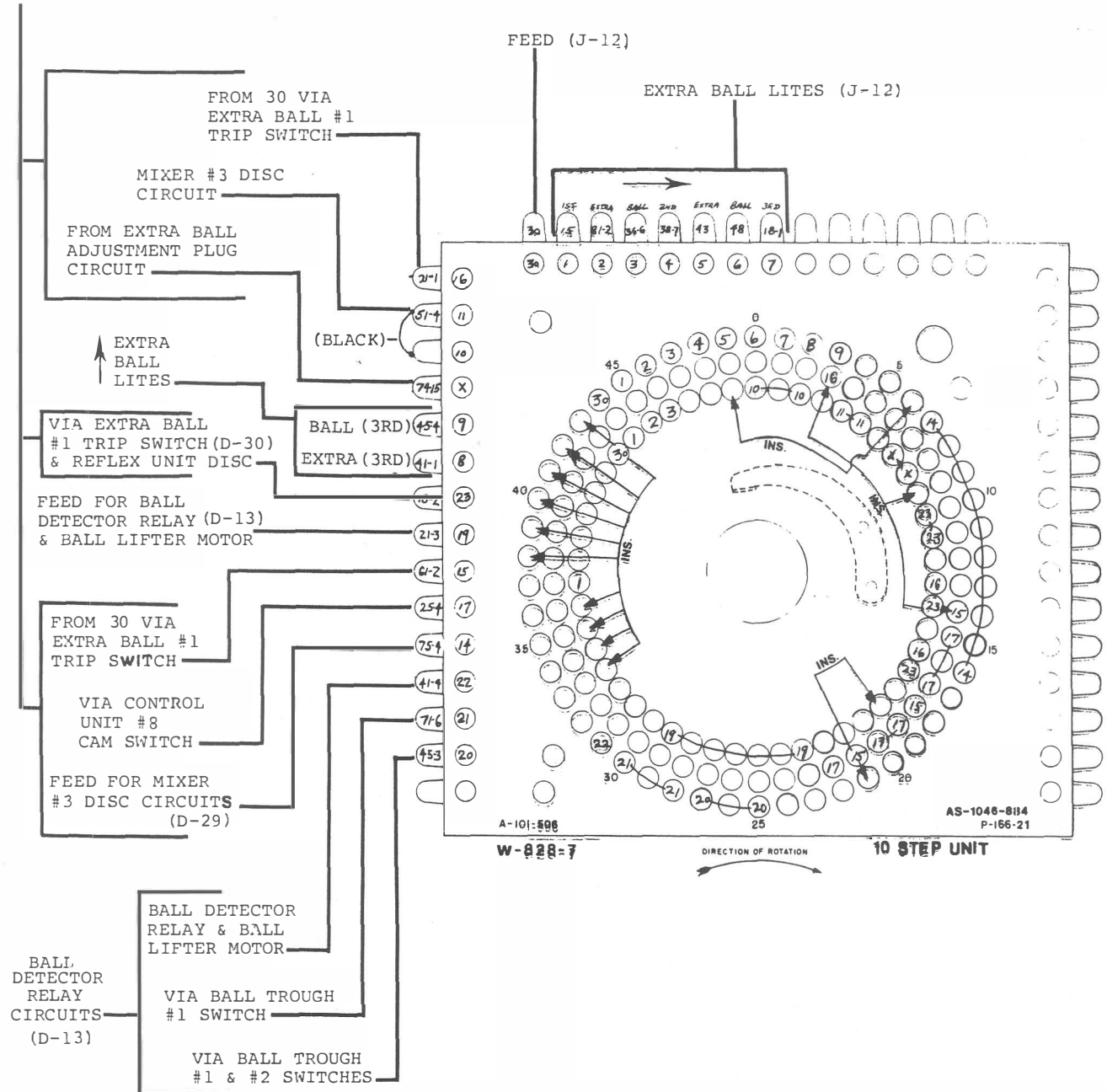
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Step-Up Coil	B-25-925	E-12	70 & 70J 35-2	Orange Yellow-White	Energized from Search Disc and All Search Relay Switches
Reset Coil	C-28-1100	I-28	70J 84J	Orange Black-Green	Energized from Control Unit Ratchet Cam #17 Switch
(Open at Zero) A. N.C.	ASW-U2	I-27	31-6 84-3 & 84J	Yellow-Red Black-Green	Opens Winner Unit Reset Coil Circuit
(Closed at Zero) B. N.O.	ASW-U1-1	I-21	71-3 23-8	Orange-Red Blue-Yellow	Closes Circuit for a 4-In-Line Replay
(Closed at Zero) C. N.O.	ASW-U1-28	I-23	65 21	Brown-White Blue-Red	Closes Circuit for a 3-In-Line Replay



EXTRA BALL UNIT DISC

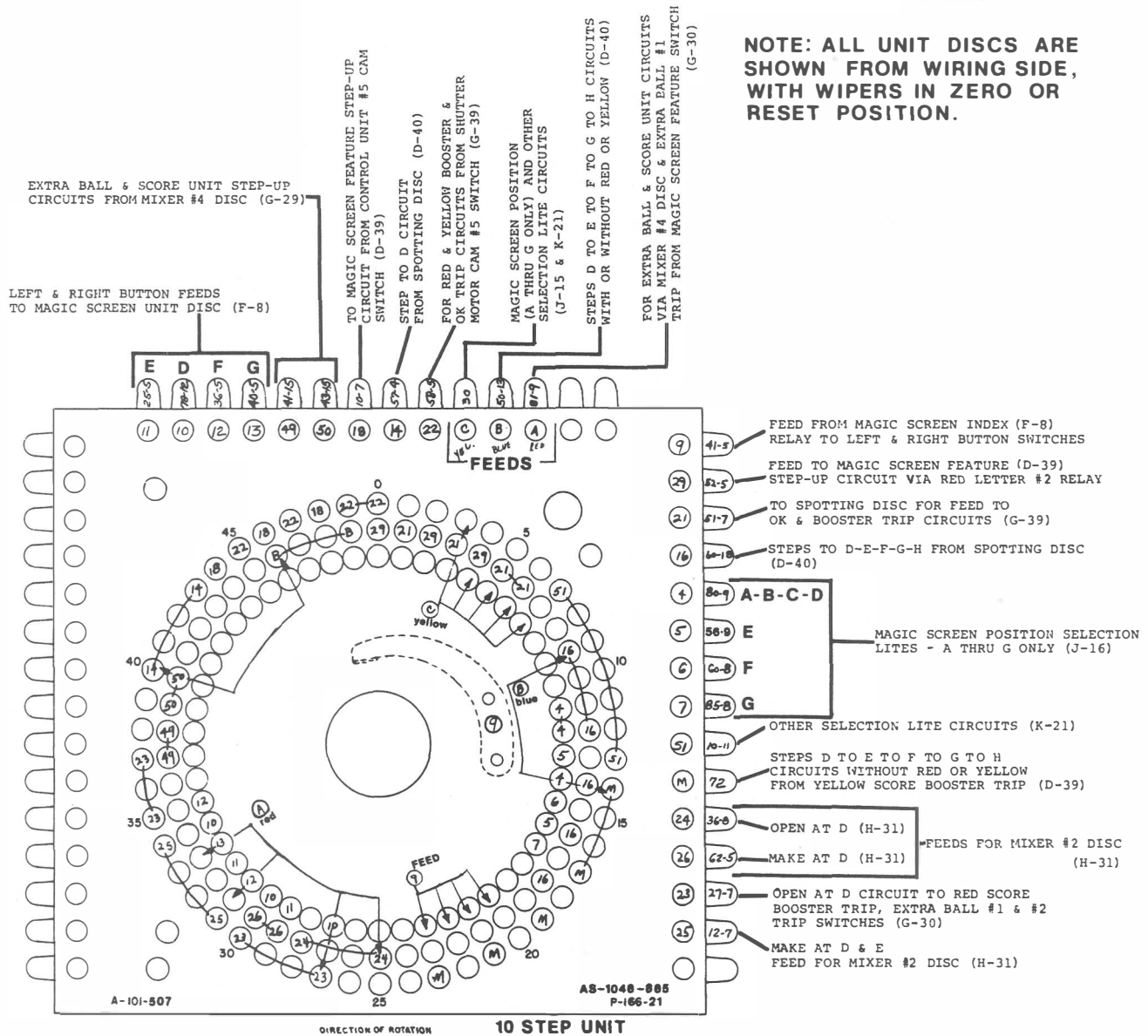
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Step-Up Coil	B-25-925	A-30	70 & 70J 64-1	Orange Brown-Green	Energized from Mixer 16 pulse, Control Unit Cam #5 and Cam #8 Switches
Reset Coil	C-28-1100	E-26	70J 85-5	Orange Black-White	Energized from Shutter Motor Cam #3 Switch

EXTRA BALL UNIT STEP-UP CIRCUITS (D-30)



MAGIC SCREEN FEATURE UNIT DISC

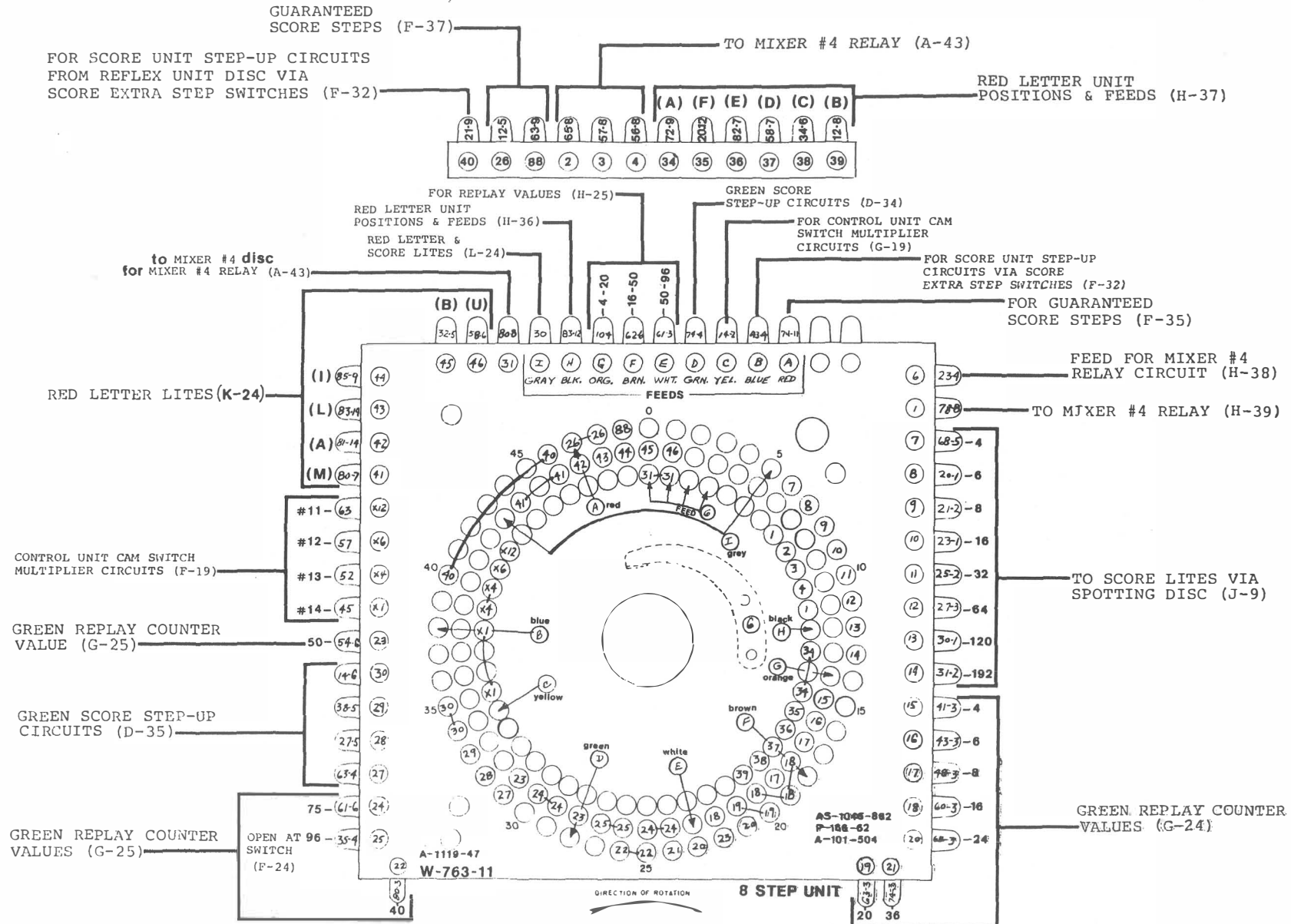
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Step-Up Coil	B-25-925	A-39	70 & 70J 64-1	Orange Brown-Green	Energized from Red Letter #2 Switch
Reset Coil	C-28-1100	G-28	70J 78-3	Orange Orange-Black	Energized from Shutter Motor Cam #6 Switch
(Open at Zero) A.	N.C.	ASW-U2	31-3 81-9	Yellow-Red Black-Red	Opens #4 Feed Circuit (to #2 Mixer Disc for Feature Circuits)
(Open at Top) B.	N.C.	ASW-U2-42	25-12 14-13	Blue-White Red-Green	Opens Blue Booster Trip Coil Circuit
(Open at Top) C.	N.C.	ASW-U2-5	71-9 50-13	Orange-Red White	Opens Magic Screen Feature Unit Step-Up Coil Circuit



NOTE: KEY LETTER - NUMBER (B-5) ETC. INDICATES POSITION OF CIRCUIT ON SCHEMATIC DIAGRAM

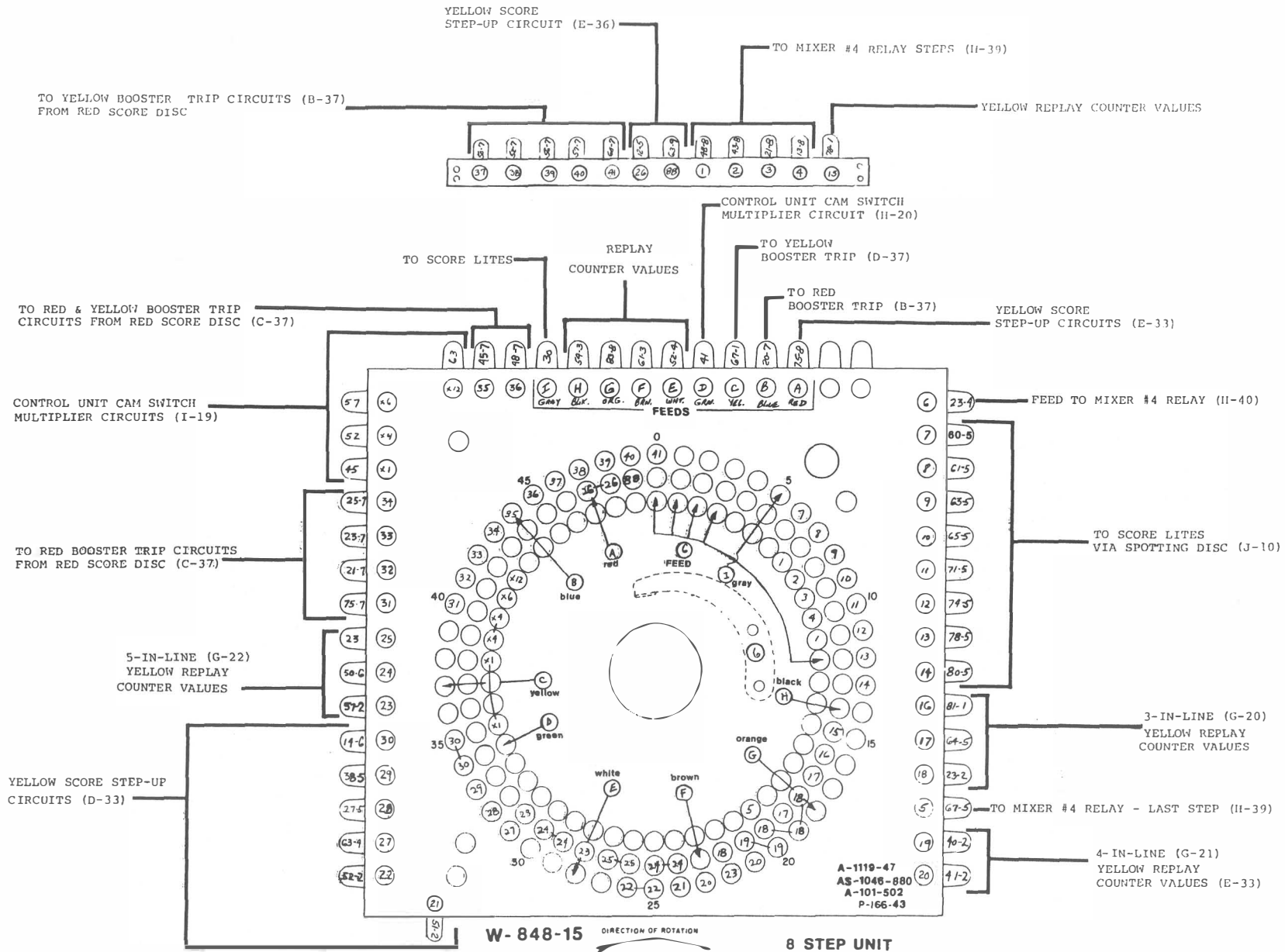
NOTE: ALL UNIT DISCS ARE SHOWN FROM WIRING SIDE, WITH WIPERS IN ZERO OR RESET POSITION.

GREEN SCORE UNIT DISC



NOTE: KEY LETTER - NUMBER (B-5) ETC. INDICATES POSITION OF CIRCUIT ON SCHEMATIC DIAGRAM

NOTE: ALL UNIT DISCS ARE SHOWN FROM WIRING SIDE, WITH WIPERS IN ZERO OR RESET POSITION.

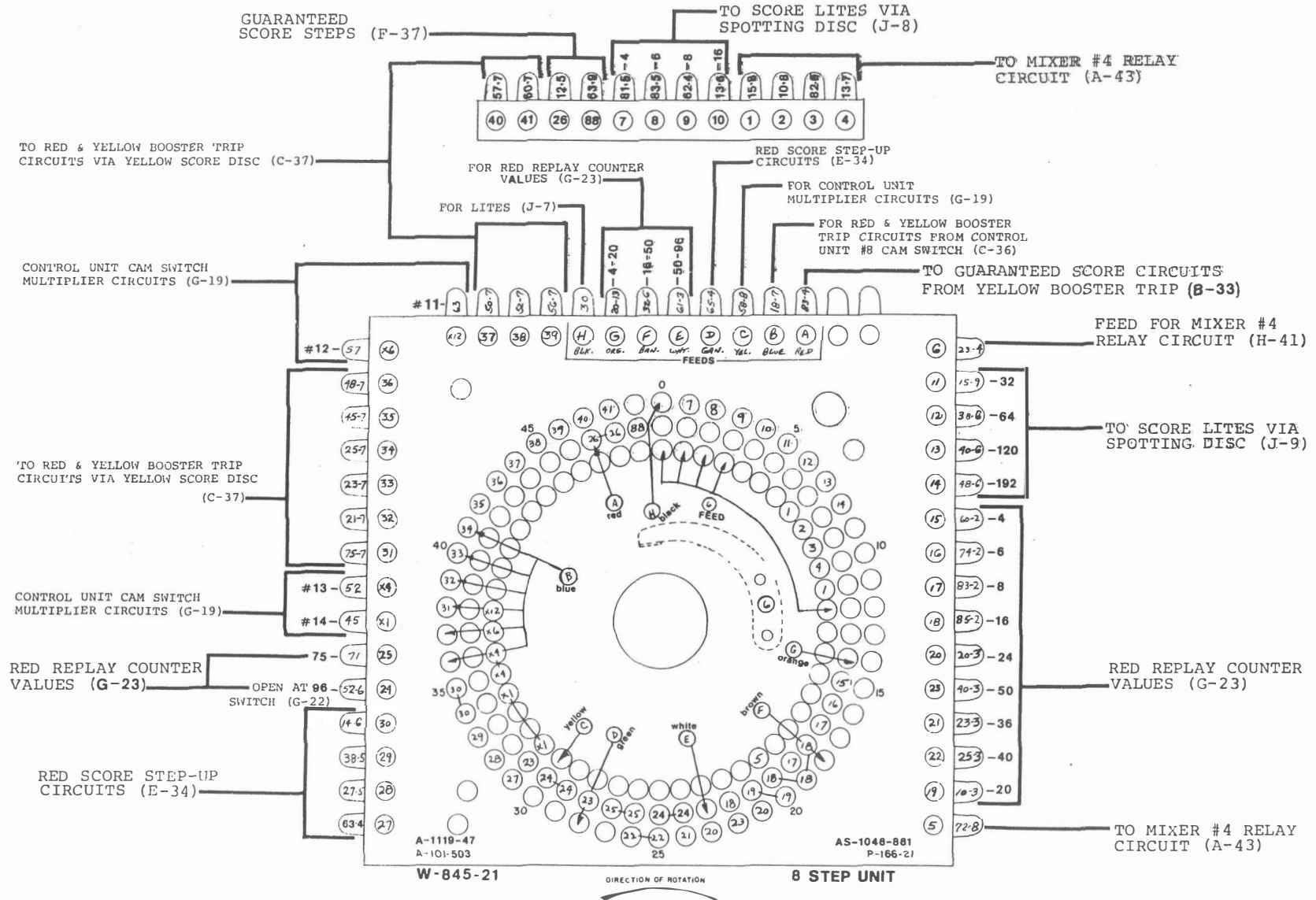


YELLOW SCORE UNIT DISC

NOTE: KEY LETTER - NUMBER (B-5) ETC. INDICATES POSITION OF CIRCUIT ON SCHEMATIC DIAGRAM

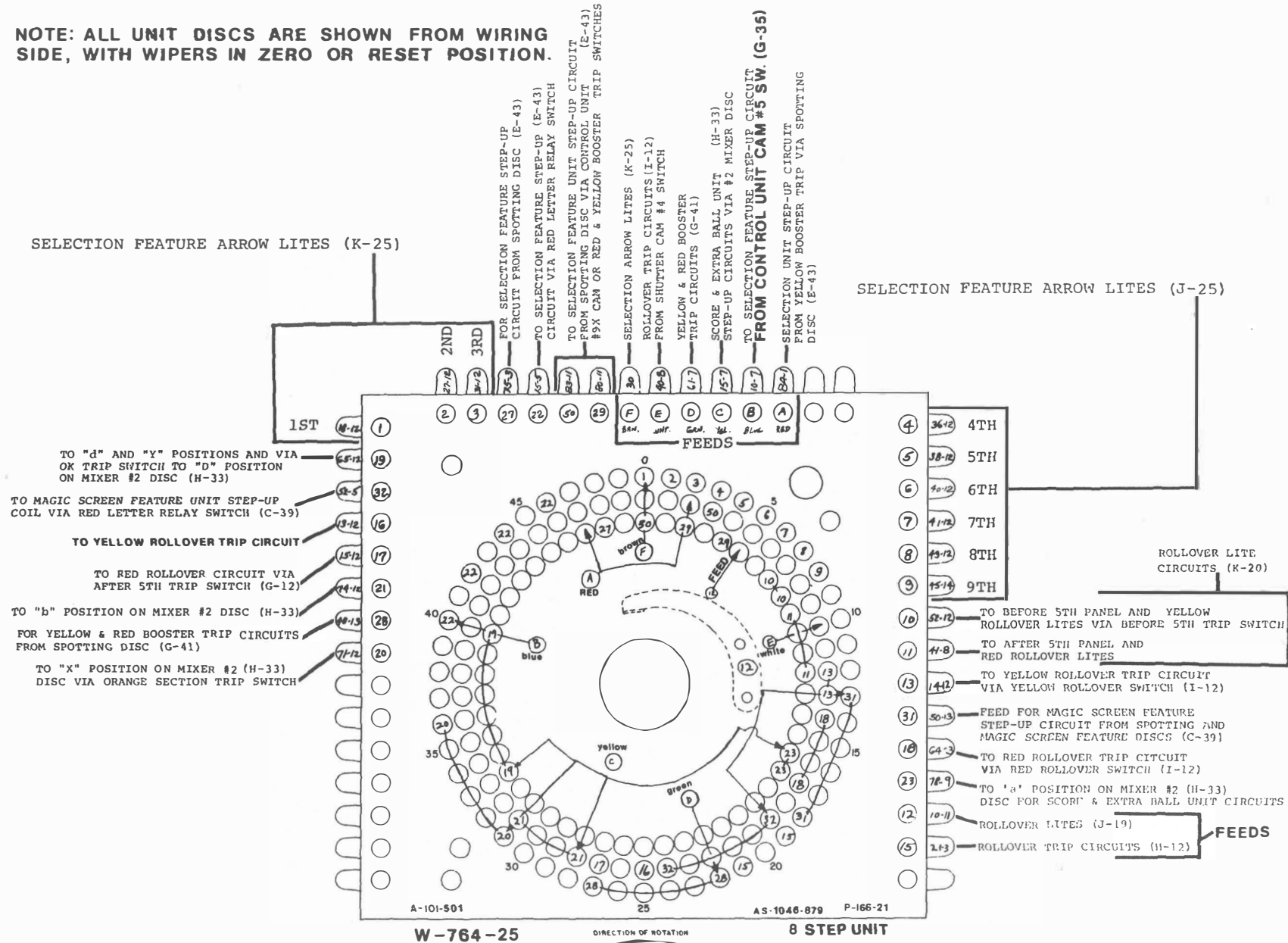
NOTE: ALL UNIT DISCS ARE SHOWN FROM WIRING SIDE, WITH WIPERS IN ZERO OR RESET POSITION.

RED SCORE UNIT DISC



NOTE: KEY LETTER - NUMBER (B-5) ETC. INDICATES POSITION OF CIRCUIT ON SCHEMATIC DIAGRAM

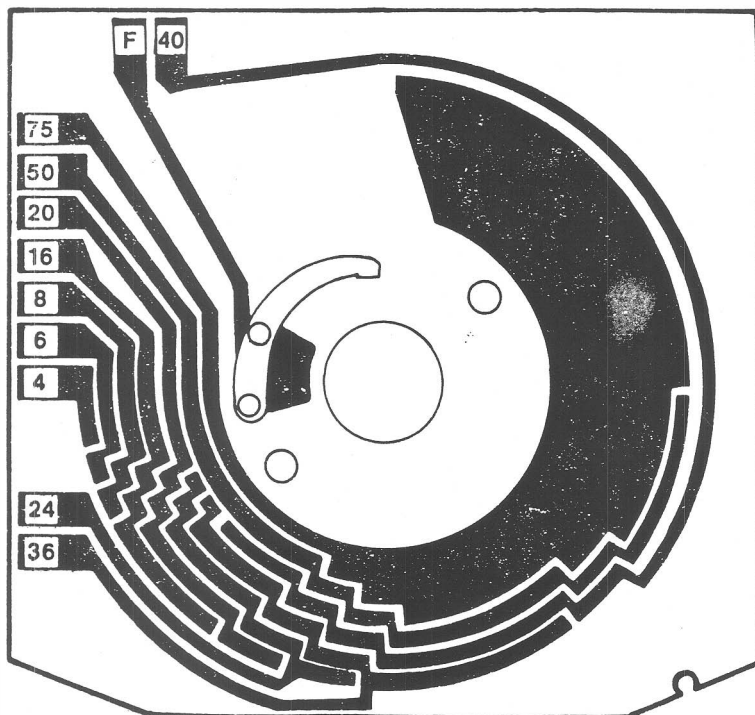
NOTE: ALL UNIT DISCS ARE SHOWN FROM WIRING SIDE, WITH WIPERS IN ZERO OR RESET POSITION.



SELECTION FEATURE UNIT DISC

NOTE: KEY LETTER - NUMBER (B-5) ETC. INDICATES POSITION OF CIRCUIT ON SCHEMATIC DIAGRAM

REPLAY COUNTERS RED, YELLOW, GREEN



W-728

LUG	RED	YELLOW	GREEN
50	40-3	57-2	54-6
75	52-6	50-6	61-6
F	71	23	35-4
36	23-3	51-2	74-3
24	20-3	41-2	65-3
20	10-3	40-2	63-3
16	85-2	23-2	60-3
8	83-2	64-5	48-3
6	74-2	81-1	43-3
4	60-2	78-1	41-3
40	25-3	52-2	80-3

CAM SWITCHES THAT PULSE RED, YELLOW AND GREEN STEP-UP COUNTER COILS								
	CAM 12	CAM 12	CAM 12	CAM 12	CAM 13	CAM 13	CAM 11	CAM 14
	B. (x1)	B. (x1)	B. (x1)	B. (x1)	A. (x4)	A. (x4)	A. (x6)	A. (x12)
5 IN LINE	75 (75)	75 (75)	96 (*)	96 (*)	200 (50)	300 (75)	450 (75)	600 (50)
4 IN LINE	16 (16)	20 (20)	24 (24)	50 (50)	96 (24)	144 (36)	240 (40)	480 (40)
3 IN LINE	4 (4)	6 (6)	8 (8)	16 (16)	32 (8)	64 (16)	120 (20)	192 (16)

REPLAY VALUES ON BACK GLASS

CIRCLED NUMBERS INDICATE PORTION OF REPLAY COUNTER CIRCUIT BOARD BEING USED FOR A SPECIFIC REPLAY SCORE.

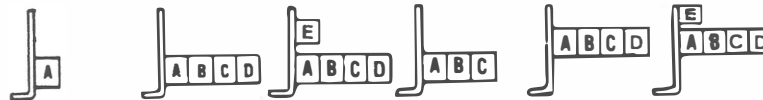
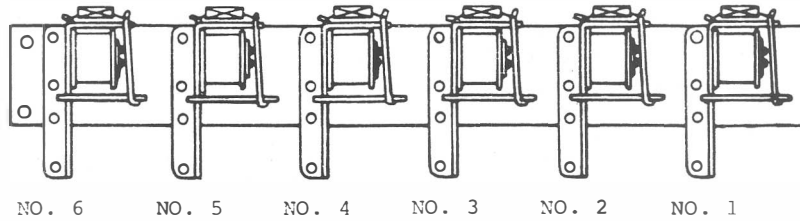
EXAMPLE: ON A 3-IN-LINE SCORE OF **120** REPLAYS.
 THE CIRCUIT IS ACTIVATED THRU THE **20** REPLAY COUNTER STRIP.

* THESE REPLAY SCORES ARE ACTIVATED THRU THE "OPEN AT 96 SWITCH"

REPLAY COUNTER FUNCTION CHART

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Yellow Counter Step-Up Coil	B-25-925	F-20	31 41	Yellow-Red Green-Red	Energized From Search Disc and Yellow Score Unit Disc
Reset Coil	C-28-1100	E-27	70 85-5	Orange Black-White	Energized from Shutter Motor Cam #3 Switch
(Open at 96) A. N.C.	ASW-U1	G-20	23 25	Blue-Yellow Blue-White	Opens Yellow Replay Counter Step-Up Coil Circuit
End-Of-Stroke N.O.	ASW-U10	J-41	68-3 30	Brown-Black Yellow	Energizes Score Safety Delay Relay
Red Counter Step-Up Coil	B-25-925 B-25-925	F-22	83 58-5	Black-Yellow White-Black	Energized from Search Disc and Red Score Unit Disc
Reset Coil	C-28-1100	E-27	70 85-5	Orange Black-White	Energized from Shutter Motor Cam #3 Switch
(Open at 96) A. N.O.	ASW-U1	G-22	71 68-4	Orange-Red Brown-Black	Opens Red Replay Counter Step-Up Coil Circuit
End-Of-Stroke N.O.	ASW-U10	J-41	68-3 30	Brown-Black Yellow	Energizes Score Safety Delay Relay
Green Counter Step-Up Coil	B-25-425	F-24	13-2 14-2	Red-Yellow Red-Green	Energized from Search Disc and Green Score Unit Disc
Reset Coil	C-28-1100	E-27	70 85-5	Orange Black-White	Energized from Shutter Motor Cam #3 Switch
(Open at 96) A. N.C.	ASW-U1	G-24	12-9 35-4	Red-Blue Yellow-White	Opens Green Replay Counter Step-Up Coil Circuit
End-Of-Stroke N.O.	ASW-U10	J-42	68-3 30	Brown-Black Yellow	Energizes Score Safety Delay Relay

SEARCH RELAY BANK - 6



NOTE: One 100 Ohm 5 Watt resistor (E-104-93) is wired in parallel with each coil to bleed residual current and prevent hang-up after circuit opens

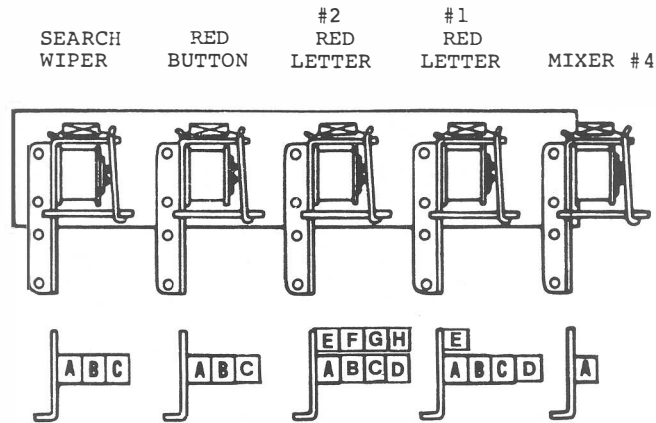
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
#1 Relay	Coil G028-750N	L-39	10J 20-5	Red Blue	Energized thru Search Disc from Magic Screen Unit Disc and Panel Switches
A. N.O.	ASW-R1-8	G-12	57-9 35-2	White-Orange Yellow-White	Closes circuit to Winner Unit Step Up coil
B. N.O.	ASW-R1-8	H-22	53-2 71-8	White-Yellow Orange-Red	Closes 4-in-line replay circuit via Winner Unit switch
C. N.O.	ASW-R1-8	H-23	34-2 65	Yellow-Green Brown-White	Closes circuit for 3-in-line replays via Winner Unit Switch
D. N.O.	ASW-R1-8	H-22	12-3 61-3	Red-Blue Brown-Red	Closes direct circuit to Yellow Score Disc for 5-in-line Replays
E. N.O.	ASW-R1-8	G-12	54 52-8	White-Green White-Blue	Closes Winner Unit and Sequence Unit Step Up Coil circuits
#2 Relay	Coil G-28-750N	L-39	10J 65-7	Red Brown-White	Energized thru Search Disc from Magic Screen Unit Disc and Panel Switches
A. N.O.	ASW-R1-8	F-12	60-9 35-2	Brown Yellow-White	Closes circuit to Winner Unit Step Up Coil
B. N.O.	ASW-R1-8	I-22	50-3 & 50J 51-3	White White-Red	Completes 4 and 5-in-line replay circuits
C. N.O.	ASW-R1-8	I-23	34-2 50J	Yellow-Green White	Closes 3-in-line replay circuit via Winner Unit Switch
D. N.O.	ASW-R1-8	G-12	54 52-8	White-Green White-Blue	Closes Winner Unit and Sequence Unit Step Up coil circuits

(Continued)

SEARCH RELAY BANK — 6

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
#3 Relay	Coil G-28-750N	K-39	10J 60-4	Red Brown	Energized thru Search Disc from Magic Screen Unit Disc and Panel Switches
A. N.O.	ASW-R1-8	F-12	61-8 35-2	Brown-Red Yellow-White	Completes Circuit to Winner Unit Step Up Coil
B. N.O.	ASW-R1-8	I-23	56 50-3	White-Brown White	Completes 3, 4 and 5-in-line Replay circuits
C. N.O.	ASW-R1-8	G-13	54 52-8	White-Green White-Blue	Closes Winner Unit and Sequence Unit Step Up coil circuits
#4 Relay	Coil G028-750N	K-39	10J 15-3	Red Red-White	Energized thru Search Disc from Magic Screen Unit Disc and Panel switches
A. N.O.	ASW-R1-8	F-12	78-2 35-2	Orange-Black Yellow-White	Completes circuit to Winner Unit Step Up coil
B. N.O.	ASW-R1-8	I-22	51-3 53-3	White-Red White-Yellow	Completes 4 and 5-in-line replay circuits
C. N.O.	ASW-R1-8	I-23	34-2 65	Yellow-Green Brown-White	Completes 3-in-line replay circuit
D. N.O.	ASW-R1-8	I-24	50-3 56-3	White White-Brown	Completes 3-in-line replay Circuit with #5 Search Relay Switch
E. N.O.	ASW-R1-8	G-13	54 52-8	White-Green White-Blue	Closes Winner Unit and Sequence Unit Step Up Coil circuits
#5 Relay	Coil G-28-750N	K-39	10J 18-5	Red Red-Black	Energized thru Search Disc from Magic Screen Unit Disc and Panel Switch
A. N.O.	ASW-R1-8	F-12	43-9 35-2	Green-Yellow Yellow-White	Completes circuit to Winner Unit Step Up Coil
B. N.O.	ASW-R1-8	I-22	53-3 & 53J 71-3	White-Yellow Orange-Red	Completes 4-in-line replay circuit
C. N.O.	ASW-R1-8	I-22	12-3 53J	Red-Blue White-Yellow	Completes 5-in-line replay circuit
D. N.O.	ASW-R1-8	I-24	56-3 65	White-Brown Brown-White	Completes 3-in-line replay circuit
#6 Relay	Coil G-28-750N	I-39	10 & 10J 75-6	Red Orange-White	Energized thru Search Disc from Magic Screen Unit Disc and Panel Switches
A. N.O.	ASW-R1-8	F-12	65-9 35-2	Brown-White Yellow-White	Completes circuit to Winner Unit Step Up coil

5 RELAY BANK



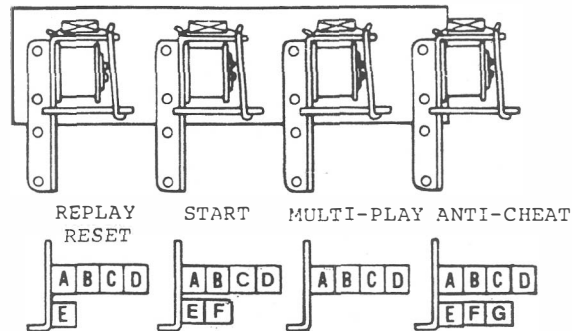
SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Mixer #4 Relay	Coil G032-2500N	A-43	70 & 70J 23-4	Orange Blue-Yellow	Energized from all Score Unit Discs
A. N.C.	ASW-R2-5	H-35	45-2 51-5	Green-White White-Red	Opens Mixer #4 Disc circuit via Control Unit #6 cam switch
Lug	ASW-RO	B-43	21-3 23-4	Blue-Red Blue-Yellow	Connects 4.7K 1W Resistor to bleed residual current from # Mixer Relay Coil
#1 Red Letter Relay	Coil G032-2500N	E-25	70J 27J	Orange Blue-Orange	Energized from Search Disc via Search Index switch
A. N.O.	ASW-R1-8	F-25	67-7 27-6 27J	Brown-Orange Blue-Orange	Closes circuit to hold in #1 Red Letter Relay
B. N.O.	ASW-R1-3	H-36	62-1 58-3	Brown-Blue White-Black	Completes Red Letter Unit Step Up coil circuit
C. N.C.	ASW-R2-5	B-33	75-8 47-3	Orange-White Green-Orange	Opens circuit to Yellow Score Unit Step Up coil
D. N.C.	ASW-R2-5	C-34	74-11 15-4	Orange-Green Red-White	Opens circuit to Green Score Unit Step Up coil
E. N.C.	ASW-R2-5	H-27	78-3 14-9	Orange-Black Red-Green	Opens reset coil circuits of Red Letter Unit and Green Score Unit

(Continued)

5 RELAY BANK

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
#2 Red Letter Relay	Coil G031-2000N	E-25	70J 10J	Orange Red	Energized from Search Disc via Search Index switch
A. N.O.	ASW-R1-8	F-26	38-15 10-9 10J	Yellow-Black Red	Closes circuit to hole in #2 Red Letter Relay
B. N.O.	ASW-R1-3	F-25	27-6 67-7	Blue-Orange Brown-Orange	Energizes #1 Red Letter Relay Coil
C. N.O.	ASW-R1-3	B-8	50-16 53	White White-Yellow	Closes Circuit to Shutter Motor via Winner Unit Disc
D. N.C.	ASW-R2-5	B-39	52-5 64-1	White-Blue Brown-Green	Opens Magic Screen Feature Unit Step Up Coil circuit
E. N.C.	ASW-R2-5	B-43	15-5 47-4	Red-White Green-Orange	Opens Selection Unit Step Up Coil circuit
F. N.C.	ASW-R2-5	G-15	80 60	Black Brown	Opens Replay cams Index coil circuit
G. N.C.	ASW-R2-5	H-34	84-2 18-16	Black-Green Red-Black	Opens circuit to Magic Screen Feature Unit Step Up coil and other Feature Trip coils
H. N.C.	ASW-R2-5	B-34	83-4 35-3	Black-Yellow Yellow-White	Opens Red Score unit Step Up coil circuits
Red Button Relay	Coil G032-2500N	A-14	70J 85-7	Orange Black-White	Energized from Red Button #1 Switch
A. N.O.	ASW-R1-8	B-14	31-7 23-15	Yellow-Red Blue-Yellow	Closes circuit to hold in Red Button relay
B. N.C.	ASW-R2-5	J-5	50-7 21-4	White Blue-Red	Opens Extra Balls lite circuit
C. T.	ASW-R3-6	B-8	72-4 12 14-3	Orange-Blue Red-Blue Red-Green	Closes circuit to either Timer Cams Index & Mixer Latch Coils or Shutter Motor & Winner Unit Disc
Search Wiper Relay	Coil G032-2500N	E-6	70J 35-5	Orange Yellow-White	Energized from Search Wiper pin switch
A. N.C.	ASW-R2-5	F-6	52-9 23-6	White-Blue Blue-Yellow	Opens Search Index Lock Magnet coil circuit
B. N.C.	ASW-R2-5	H-7	14-4 20-2	Red-Green Blue	Opens Magic Screen Index Relay coil circuit
C. N.C.	ASW-R2-5	B-5	83-3 13-16	Black-Yellow Red-Yellow	Opens Start Relay coil circuit

4 RELAY BANK



SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Anti-Cheat Relay	Coil GN-32- 1250- 1250	A-31	78-4 70J	Orange-Black Orange	Energized from Control Unit Cam #5 Switch
A. N.O.	ASW-R1-8	C-31	78-4 & 78J 30 & 30J	Orange-Black Yellow	Closes circuit to hold in Anti-Cheat relay
B. N.O.	ASW-R1-3	J-3	80-1 20-4	Black Blue	Energizes 17 VAC circuit
C. N.C.	ASW-R1-5	A-31	70J 50J	Orange White	Bypasses 1/2 of Anti-Cheat Relay coil
D. N.C.	ASW-R2-5	C-14	57-6 85-7	White-Orange Black-White	Opens Red Button relay circuit
E. N.C.	ASW-R2-5	D-8	30J 14-8	Yellow White-Green	Opens Shutter Motor Circuit
F. T.	ASW-R3-6	D-5	75-2 56-2 50-2	Orange-White White-Brown White	Closes Start Relay Circuit
G. T.	ASW-R3-6	K-5	67 38 40	Brown-Orange Yellow-Black Green	Energizes Tilt light
Multiplay Relay	Coil G032- 2500N	A-5	70J 15J	Orange Red-White	Energized from coin switch
A. N.O.	ASW-R1-8	D-6	15-13 & 15J 35	Red-White Yellow-White	Closes circuit to hold in Multiplay relay
B. N.O.	ASW-R1-3	C-6	58-1 62	White-Black Brown-Blue	Closes Start Relay circuit

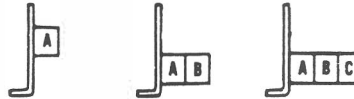
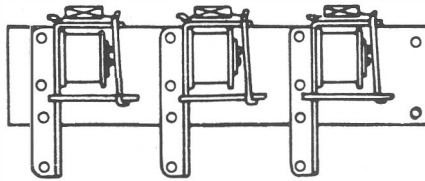
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4 RELAY BANK

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
C. N.C.	ASW-R2-5	A-4	41-6 82-1	Green-Red Black-Blue	Opens Replay Register Reset Coil circuit
D. T.	ASW-R3-6	G-16	12-2 67-6 72-2	Red-Blue Brown-Orange Orange-Blue	Closes circuit to Replay Register Step Up coil
Start Relay	Coil G031- 2000N	A-5	70J 35-1	Orange Yellow-White.	Energized from Key Switch
A. N.O.	ASW-R1-8	D-7	48-2 13-16 & 13J	Green-Black Red-Yellow	Closes circuit to hold in Start relay
B. N.O.	ASW-R1-3	D-7	13J 57-3	Red-Yellow White-Orange	Closes circuit to Mixer Latch Coils, Timer Cams Index Coil and Shutter Motor
C. N.C.	ASW-R2-5	G-34	18-16 85-12	Red-Black Black-White	Opens all score booster Trip circuits
D. N.C.	ASW-R2-5	H-26	38-15 62-3	Yellow-Black Brown-Blue	Opens Red Letter #2 Relay Holding circuit
E. N.C.	ASW-R2-5	C-29	75-4 78	Orange-White Orange-Black	Opens Extra Ball Unit Step Up coil circuit
F. N.C.	ASW-R2-5	F-25	21-3 67-7	Blue-Red Brown-Orange	Opens Red Letter #1 Relay Coil circuit
Replay Reset Relay	Coil G031- 2000N	A-4	70 & 70J 35-1	Orange Yellow-White	Energized from Anti-Cheat relay switch
A. N.O.	ASW-R1-8	D-4	56-2 75-2 & 70J	White-Brown Orange-White	Closes circuit to hold in Replay reset relay
B. N.O.	ASW-R1-3	F-3	94-16 98-16	Grey-Green Grey-Black	Energizes motors of mixer and control unit
C. N.C.	ASW-R2-5	B-5	62 83-3	Brown-Blue Black-Yellow	Opens Start relay circuit
D. N.C.	ASW-R2-5	G-16	30 23-12	Yellow Blue-Yellow	Opens Replay register Step Up Coil circuit
E. T.	ASW-R3-6	B-4	67-2 41-6 53-7	Brown-Orange Green-Red White-Yellow	Closes circuit to replay Register step Up coil

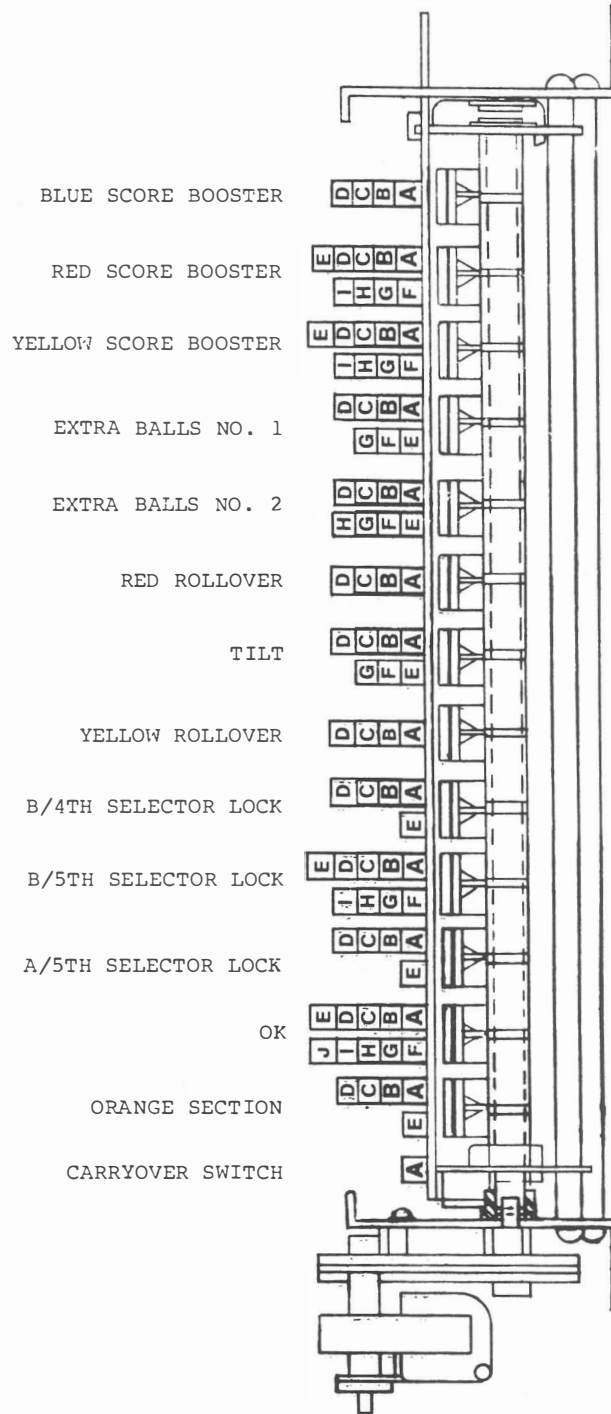
3 RELAY BANK

MAGIC SCREEN INDEX RIGHT BUTTON SCORE EXTRA STEP



SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Score Extra Step Relay	Coil G032-2500N	A-9	70 & 70J 43J	Orange Green-Yellow	Energized from all Score Unit End-of-Stroke switches
A. N.O.	ASW-R1-8	B-10	81-3 43-6 & 43J	Black-Red Green-Yellow	Closes circuit to hold in Score Extra Step relay
B. N.O.	ASW-R1-3	E-32	50-4 51-6	White White-Red	Closes all Score Unit Step Up coil circuits via Mixer #3 Disc
C. N.C.	ASW-R2-5	A-7	70J 62-2	Orange Brown-Blue	Opens circuits to Timer Cams Index Coil and Mixer Latch coil
Lug	ASW-R0	B-9	21-3 43J	Blue-Red Green-Yellow	Connects 4.7K 1W resistor to bleed current from Score Extra Relay coil
Right Button Relay	Coil G032-2500N	E-10	70J 45J	Orange Green-White	Energized from Shutter switch via Magic Screen Unit Disc
A. N.C.	ASW-R2-5	G-7	31-15	Yellow-Red	Opens circuit to Magic Screen Index relay coil
B. T.	ASW-R3-6	F11	48-5 25-6 45-5 45J	Green-Black Blue-White Green-White	Energizes either move Right or move Left motor to change position of Magic Screen
Lug	ASW-R0	H-10	21-3 45J	Blue-Red Green-White	Connects 4.7K 1W resistor to bleed current from Right Button Relay coil
Magic Screen Index Relay	Coil G032-2500N	E-7	70J 41-5	Orange Green-Red	Energized from Magic Screen Unit Disc
A. N.O.	ASW-R1-7	F-7	30 64-4	Yellow Brown-Green	Closes Magic Screen Index Coil circuit
Lug	ASW-R0	G-7	21-3 41-5	Blue-Red Green-Red	Connects 4.7K 1W resistor to bleed current from M.S. Index Relay coil

TRIP RELAY BANK - 13



TRIP RELAY BANK - 13

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Blue Score Booster Trip	Coil D-27-425	A-42	70-70J 14J	Orange Red-Green	Energized from Spotting Disc via C.U. #9X & Magic Screen Feature Unit Switches
A. N.C.	ASW-B-2	B-42	14-13 14J	Red-Green Red-Green	Opens Blue Score Booster Trip Circuit
B. N.O.	ASW-B-1	I-20	20-8 81-7	Blue Black-Red	Closes circuit to Extra Winner Unit Disc positions for 5-in-line replays
C. N.O.	ASW-B-1	J-15	85-1 30	Black-White Yellow	Closes Circuit to Blue Indicator Lite
D. T.	ASW-B-3	K-15	18-4 60-8 61-9	Red-Black Brown Brown-Red	Energizes either Blue 3 Scores Green 5 or Blue 2 Scores Green 5 lites from Magic Screen Feature Circuit via Spotting Disc
Red Score Booster Trip	Coil D-27-425	B-38	10-5J 67-1	Red Brown-Orange	Energized from Red Letter and Red Score Unit Disc circuits
A. N.C.	ASW-B-2	A-38	53-6 10-5 & 10-5J	White-Yellow Red	Opens Red & Yellow Score Booster Trip Circuits
B. N.C.	ASW-B-2	G-29	78-11 27-7	Orange-Black Blue-Orange	Opens all Score or Extra Ball Coil circuits
C. N.C.	ASW-B-2	C-43	36-7 15-5	Yellow-Brown Red-White	Opens Selection Unit Coil circuit via Selection Unit Disc
D. N.C.	ASW-B-2	K-17	43-7 21-3	Green-Yellow Blue-Red	Opens Yellow Score Booster lite circuit
E. N.O.	ASW-B-1	G-12	45-2 13-1	Green-White Red-Yellow	Steps Winner Unit via Search Disc
F. N.C.	ASW-B-2	E-39	82 41-13	Black-Blue Green-Red	Opens Magic Screen Feature Unit Coil circuit via Spotting Disc
G. N.O.	ASW-B-1	K-19	80-9 54-7	Black White-Green	Energizes Red Score Booster Lite
H. T.	ASW-B-3	C-34	65-4 63-7 52-4	Brown-White Brown-Yellow White-Blue	Directs circuit to step either Red or Yellow Score Units
I. T.	ASW-B-3	B-34	83-4 25-14 75-8	Black-Yellow Blue-White Orange-White	Directs Circuit to step either Red or Yellow Score Units
Yellow Score Booster Trip	Coil D-27-425	B-38	10-5J 20-7	Red Blue	Energized from Red letter and Red Score Unit Disc circuits
A. N.C.	ASW-B-2	D-39	72 82	Orange-Blue Black-Blue	Opens Magic Screen Feature Unit Coil Circuit
B. N.C.	ASW-B-2	A-38	70 53-6	Orange White-Yellow	Opens Red and Yellow Score Booster Trip Circuits
C. N.C.	ASW-B-2	D-43	84-1 36-7	Black-Green Yellow-Brown	Opens Selection Unit Coil Circuit

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TRIP RELAY BANK - 13

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
D. N.C.	ASW-B-2	G-29	81-9 78-11	Black-Red Orange-Black	Opens all Score or Extra Ball Unit Coil circuits
E. N.O.	ASW-B-1	K-18	80-9 43-7	Black Green-Yellow	Energizes Yellow Score Booster Lite
F. N.C.	ASW-E-2	K-18	54-7 18-13	White-Green Red-Black	Opens Red Score Booster Lite Circuit
H.	ASW-B-1	G-12	23-14 13-1	Blue-Yellow Red-Yellow	Steps Winner Unit via Search Disc
I. T.	ASW-B-3	C-33	52-4 31-9 65-4	White-Blue Yellow-Red Brown-White	Directs circuit to Step either Red or Yellow Score Units
J. T.	ASW-B-3	B-33	75-8 38-9 83-4	Orange-White Yellow-Black Black-Yellow	Directs circuit to step either Red or Yellow Score Units
Extra Balls No. 1 Trip	Coil D-27-425	A-14	70J 10J	Orange Red	Energized via Timer Cams Index, Yellow Button & B/5 Lock Trip Switches
A. N.C.	ASW-B-2	B-14	10-6 10JA	Red Red	Opens #1 Extra Ball Unit Step Up Coil circuit
B. N.C.	ASW-B-2	D-31	68 85J & 85-4	Brown-Black Black-White	Opens Anti-Cheat Relay Coil Circuit
C. T.	ASW-B-3	F-31	85J 30 61-2	Black-White Yellow Brown-Red	Energizes either Extra Ball Step Up Coil circuit or Score Unit Step Up and Anti-Cheat Relay C oil circuits
D. T.	ASW-B-3	G-34	60-6 27-7 18-2	Brown Blue-Orange Red-Black	Energizes wither Extra Ball Unit or Score Unit Step Up Coil Circuits
E. N.C.	ASW-B-2	K-15	81-6 25-9	Black-Red Blue-White	Opens Blue Score Lite Circuits
F. N.O.	ASW-B-1	C-11	83-1 71-8	Black-Yellow Orange-Red	Closes Circuit to Timer Reset Coil
G. T.	ASW-B-3	I-34	75-5 15-7 45-2	Orange-White Red-White Green-White	Selects either Mixer #4 or Reflex Unit circuit to activate Extra Ball Step Up Coil
Extra Balls No. 2 Trip	Coil D-27-425	A-15	70J 10JB	Orange Red	Energized via Timer Cams Index Yellow Button and B/5 Lock Trip Switches
A. N.C.	ASW-B-2	B-15	10-6J 10JB	Red Red	Opens #2 Extra Ball Unit Step Up Coil circuit
B. N.O.	ASW-B-1	B-13	58 38-3	White-Black Yellow-Black	Energizes Ball Lifter Motor
C. T.	ASW-B-3	C-8	14-3 61 12	Red-Green Brown-Red Red-Blue	Activates either Shutter Motor or Timer Cams Index and Mixer Latch Coil circuits

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TRIP RELAY BANK - 13

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
D. T.	ASW-B-3	J-11	31-5 13-4 74	Yellow-Red Red-Yellow Orange-Green	Energizes either Score or Extra Ball lites via Spotting Disc
E. N.C.	ASW-B-2	I-35	84-2 45-2	Black-Green Green-White	Opens all Score booster Trip circuits
F. N.O.	ASW-B-1	J-5	30 21-4	Yellow Blue-Red	Energizes Extra Balls lite
G. N.C.	ASW-B-1	H-34	54-8 27-7	White-Green Blue-Orange	Closes circuit to Extra Ball Unit Step Up Coil
H. N.O.	ASW-B-1	C-5	50-2 18-6	White Red-Black	Closes circuit to Start Relay Coil
Red Rollover Trip	Coil D-27-425	E-11	70J 25J	Orange Blue-White	Energized from Selection Unit Disc via A/5 Trip and Red Rollover Switch
A. N.C.	ASW-B-2	F-11	25-13 25J	Blue-White Blue-White	Opens Red Rollover Trip Circuit
B. N.O.	ASW-B-1	I-6	34 21-12	Yellow-Green Blue-Red	Closes circuit to Magic Screen Index Relay
C. T.	ASW-B-3	J-23	51-12 47 52-13	White-Red Green-Orange White-Blue	Energizes Select Now Lite
D. T.	ASW-B-3	J-21	31-8 10-11 53-12	Yellow-Red Red White-Yellow	Energizes Select B/4, B/5 and A/5 Lites
Tilt Trip	Coil D-27-425	A-12	70J 14-5	Orange Red-Green	Energized by Ball Detector Relay, Key and all Tilt Switches
A. N.C.	ASW-B-2	I-6	34 40-8	Yellow-Green Green	Opens Search Lock Magnet and Magic Screen Relay Coil circuits
B. N.C.	ASW-B-2	K-3	20-4 12-1	Blue Red-Blue	Opens 17 VAC circuit
C. T.	ASW-B-3	E-8	21-3 30 45-8	Blue-Red Yellow Green-White	Energizes Shutter Motor and opens several different Unit Step Up coils and relay circuits
D. T.	ASW-B-3	K-4	38 54-2 67	Yellow-Black White-Green Brown-Orange	Energizes Tilt Lite
E. N.C.	ASW-B-2	D-2	96-16 98-16	Grey-Brown Grey-Black	Opens Control Unit and Mixer Motor circuits via Timer Unit Switch
F. N.O.	ASW-B-1	C-14	85-7 57-6	Black-White White-Orange	Closes Red Button Relay Coil circuit
G. N.O.	ASW-B-1	B-5	83-3 13-6	Black-Yellow Red-Yellow	Closes Start Relay Coil circuit

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TRIP RELAY BANK - 13

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Yellow Rollover Trip	Coil D-27-425	E-11	70J 84J	Orange Black-Green	Energized from Selection Unit Disc via A/5 Trip Switch
A. N.C.	ASW-B-2	F-11	84 84J	Black-Green Black-Green	Opens Yellow Rollover Trip Coil circuit
B. N.O.	ASW-B-1	I-6	34 64	Yellow-Green Brown-Green	Closes circuit to Magic Screen Relay Coil
C. T.	ASW-B-3	I-23	50-12 51-12 23-5	White White-Red Blue-Yellow	Energizes Select Now Lite
D. T.	ASW-B-3	J-21	57-5 31-8 74-8	White-Orange	Energizes Select B/4, B/5 and A/5 Lites
B/4 Selector Lock Trip	Coil D-27-425	E-5	70J 83J	Orange Black-Yellow	Energized from Timer Unit Disc
A. N.C.	ASW-B-2	F-5	83-6 83J	Black-Yellow Black-Yellow	Opens B/4 Selector Trip Coil circuit
B. N.C.	ASW-B-2	K-23	50-12 27-4	White Blue-Orange	Opens Select Now Lite Circuit
C. N.O.	ASW-B-1	D-9	43-2 36-2	Green-Yellow Yellow-Brown	Closes Timer Unit Step Up Coil circuit
D. N.O.	ASW-B-1	G-14	51-8 23-13	White-Red Blue-Yellow	Closes Search Index Coil Circuit
E. T.	ASW-B-3	H-6	64 34 53-18	Brown-Green Yellow-Green White-Yellow	Energizes Search Index Lock Magnet Coil
B/5 Selector Lock Trip	Coil D-27-425	E-5 E-5	70J 74J	Orange Orange-Green	Energized from Timer Unit Disc
A. N.C.	ASW-B-2	F-5	74-6 74J	Orange-Green Orange-Green	Opens B/5 Trip Coil Circuits
B. N.C.	ASW-B-2	K-19	56-6 52-12	White-Brown White-Blue	Opens Yellow Rollover Lite Circuits
C. N.C.	ASW-B-2	G-11	84 13-12	Black-Green Red-Yellow	Opens Yellow Rollover Trip Coil Circuit
D. N.O.	ASW-B-1	B-15	25-8 10-6	Blue-White Red	Closes #1 Extra Ball and #2 Extra Ball Trip Coil circuits
E. T.	ASW-B-3	K-23	14-1 48-12 53-2	Red-Green Green-Black White-Yellow	Closes Select Now lite circuit
F. N.C.	ASW-B-2	H-7	64 21-12	Brown-Green Blue-Red	Opens Magic Screen Relay Coil Circuit
G. N.O.	ASW-B-1	B-12	58 38-3	White-Black Yellow-Black	Closes Ball Lifter Motor Circuit
H. N.O.	ASW-B-1		78-6 28-2	Orange-Black Yellow-Black	Closes circuit to Timer Unit Step Up Coil

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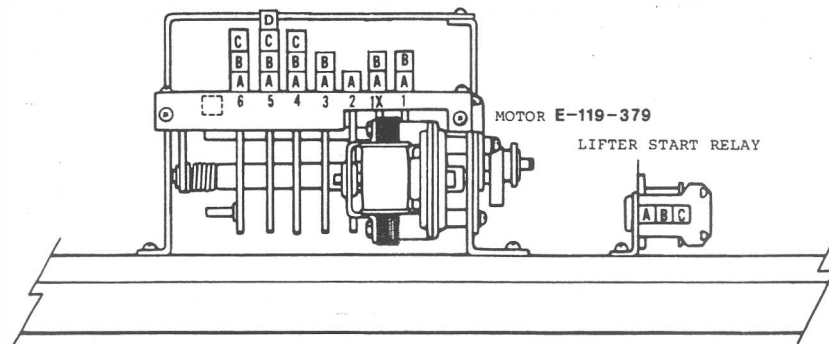
TRIP RELAY BANK - 13

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
I. N.O.	ASW-B-1	A-11	71-8 32-1	Orange-Red Yellow-Blue	Closes circuit to Timer Unit Reset Coil
A/5 Selector Lock Trip	Coil D-27-425	E-4	70J 72J	Orange Orange-Blue	Energized from #2 Ball Trough Switch
A. N.C.	ASW-B-2	F-4	72-1 72J	Orange-Blue Orange-Blue	Opens A/5 Trip Coil circuit
B. N.C.	ASW-B-2	H-7	21-12 14-4	Blue-Red Red-Green	Opens Magic Screen Index Relay Coil Circuit
C. N.C.	ASW-B-2	F-11	25-13 15-12	Blue-Orange Red-White	Opens Red Rollover Trip Coil Circuit
D. N.C.	ASW-B-2	K-22	53-2 52-13	White-Yellow White-Blue	Opens Select Now light circuit via B/5 Trip Switch
E. N.C.	ASW-B-2	K-20	60-12 41-8	Brown Green-Red	Opens Red rollover lite circuit
OK Trip	Coil D-27-425	A-40	70J 52J	Orange White-Blue	Energized from #2 Ball Trough Switch
A. N.C.	ASW-B-2	B-40	52-3 52J	White-Blue White-Blue	Opens A/5 Trip Coil Circuit
B. N.C.	ASW-B-2	G-33	74-12 53-5	Orange-Green White-Yellow	Opens Mixer #2 Disc "B" Circuit
C. N.C.	ASW-B-2	H-32	65-12 54-13	Brown-White White-Green	Opens Mixer #2 Disc "D" Circuit
D. N.C.	ASW-B-2	F-33	56-5 15-7	White-Brown Red-White	Opens Mixer #2 Disc "E" Circuit
E. N.O.	ASW-B-1	F-9	71-7 57-14	Orange-Red White-Orange	Closes Magic Screen Index Relay Circuit via Right Button Switch
F. N.C.	ASW-B-2	E-43	47-1 83-11	Green-Orange Black-Yellow	Opens Spotting Disc Circuit From Selection Unit
G. N.C.	ASW-B-1	H-9	32 27-15	Yellow-Blue Blue-Orange	Opens Magic Screen Index Relay Circuit
H. N.O.	ASW-B-1	D-41	21-6 20-15	Blue-Red Blue	Closes Orange Section Trip Circuits
I. N.O.	ASW-B-1	K-19	30 & 30J 50-8	Yellow White	Energizes OK lite
J. N.O.	ASW-B-1	J-20	10-11 30J	Red Yellow	Closes Red and Yellow Rollover Lite circuits via Selection Unit Disc
Orange Section Trip	Coil D-27-425	A-41	70J 21J	Orange Blue-Red	Energized from Spotting Disc via OK Trip Switch
A. N.C.	ASW-B-2	B-41	21-6 21J	Blue-Red Blue-Red	Opens circuit to Orange Section Trip
B. N.C.	ASW-B-2	H-32	45-13 65-12	Green-White Orange-Red	Opens in feed to 'D' and 'Y' circuits of Mixer #2
C. N.O.	ASW-B-1	K-19	30 13-15	Yellow Red-Yellow	Energizes Orange Section Lite
D. N.O.	ASW-B-1	G-15	80 60	Black Brown	Closes Replay Cams Index Coil Circuit
E. N.C.	ASW-B-2	H-33	45-13 71-12	Green-White Orange-Red	Opens in feed to "X" Circuit of Mixer #2
Trip Bank Carryover Sw.	N.O. ASW-B-20-1	D-15	30 68-1	Yellow Brown-Black	Energizes Trip Bank Motor
Trip Bank Motor	E-119-464	A-16	70 68-1	Orange Brown-Black	Energized from Shutter Motor #3 and #6 Cam Switches and Carry over Switch

FUNCTION CHART – SEPARATE RELAYS

SWITCH / COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Ball Detector Relay	Coil G-32-2500N		70 41J	Orange Green-Red	Energized from Extra Ball Unit Disc and #1 Ball trough Switch
A. N.O.	ASW-R1-8	C-13	81-8 41-4 & 41J	Black-Red Green-Red	Closes circuit to Hold In Ball Detector Relay
B. N.O.	ASW-R1-3	B-13	12-4 64-2	Red-Blue Brown-Green	Closes Ball Lifter Motor Circuit
C. N.C.	ASW-R2-5	E-12	21-3 32-3	Blue-Red Yellow-Blue	Opens Tilt Trip Coil Circuit thru Ball Lifter Cam #2 Switch
"R" Button Relay	Coil G031-1800N	A-16	70 84-7	Orange Black-Green	Energized From "R" Button Switch
A. N.O.	ASW-R1-3	G-6	53-18 52-9	White-Yellow White-Blue	Closes Search Lock magnet Coil Circuit
B. N.O.	ASW-R1-3	C-8	21-3 & 21J 50-16	Blue-Red White	Closes Shutter Motor Circuit
C. N.O.	ASW-R1-3	B-11	32-1 21J	Yellow-Blue Blue-Red	Closes Timer Unit Reset Coil Circuit
Score Safety Delay Relay	E-300-971	K-40	10 68-3	Red Brown-Black	Energized from Replay Cams Index Switch thru Delay Circuit
A. N.C.	Part of E-300-971	C-12	32-4 14-5	Yellow-Blue Red-Green	Closes Circuit to Tilt Trip Coil

PANEL SHUTTER UNIT & LIFTER START RELAY



SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Motor	E-119-379	A-8	70 14-3	Orange Red-Green	Energized from Shutter Motor #4 Cam Switch and other Circuits
Cam #1 A.	N.O. ASW-C1-27	C-8	30 14-3	Yellow Red-Green	Closes circuit to Carry-over Shutter Motor to next position
B.	N.C. ASW-C2-15	I-36	21-3 82-3	Yellow-Red Black-Blue	Opens Red Letter Unit Step Up Coil Circuit
Cam #1X A.	N.C. ASW-C2-6	E-10	21-3 & 21J 47-6	Blue-Red Green-Orange	Opens Timer Unit Step-Up and Reset Coil Circuit (Open when Shutter is Open)
B.	T, ASW-C12-2	I-13	21J 14 62-3	Blue-Red Red-Green Brown-Blue	Opens Replay Circuits, Winner and Sequence Unit Step Up Coils while energizing Red Letter #1 and #2 Relay Coil Circuits
Cam #2 A.	N.C. ASW-C1-27	C-12	31-3 12-4	Yellow-Red Red-Blue	Opens Ball Lifter Motor Circuit (Open when Shutter is Open)
Cam #3 A.	N.O. ASW=C1-27	E-15	30 & 30J 68-1	Yellow Brown-Black	Pulses Trip Bank Motor
B.	N.O. ASW-C1-28	F-27	30J 85-5	Yellow Black-White	Pulses Extra Ball, Selection and All Replay. Unit Reset Coils
Cam #4 A.	N.C. ASW-C1-27	I-5	21-3 40-8	Blue-Red Green	Opens B/4, B/5, A/5 Trip and other Circuits (Open when Shutter is Open)
B.	N.O. ASW=C2-15	D-8	45-8 18-3 & 18J	Green-White Red-Black	Closes Circuit from Tilt Trip Switch to Shutter Motor (Closed when Shutter is open)
C.	N.O. ASW=C2-2	C-8	18J 14-3	Red-Black Red-Green	Closes Shutter Motor Circuit (Closed when Shutter is open)
Cam #5 A.	N.C. ASW=C1-27	D-10	47-6 65-2	Green-Orange Brown-White	Opens Timer Unit Step Up and Reset Coil Circuits (Open when Shutter is open)
B.	N.O. ASW=C2-3	D-14	68-2 31-4	Brown-Black Yellow-Red	Closes Lifter Start Relay Coil Circuit (Closed when Shutter is open)

(Continued)

PANEL SHUTTER UNIT & LIFTER START RELAY

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
C. N.O.	ASW-C2-2	G-34	85-12 58-5	Black-White White-Black	Closes various feature Unit Trip circuits and Step Up coils (closed when shutter is open)
D. T.	ASW-C3-2	C-7	61 57-3 72-4	Brown-Red White-Orange Orange-Blue	Re-directs circuit from Mixer Latch coils and Timer Cams Index Coil to Shutter Motor
Cam #6 A. N.O.	ASW-C10-5	A-11	30 & 30J 71-8	Yellow Orange-Red	Closes Timer Unit Reset Coil Circuit
B. N.O.	ASW-C10-1	G-26	78-3 30J	Orange-Black Yellow	Pulses Reset Coils of Magic Screen Feature, Red Letter and all score units
C. N.O.	ASW-C10-1	D-14	30J 68-1	Yellow Brown-Black	Pulses Trip Bank Motor
Shutter Switches A. N.C.	ASW-C1-29	H-9	50J 32	White Yellow-Blue	Opens Magic Screen Index Relay Coil Circuit thru shutter switch (Open when Shutter is open)
B. N.C.	ASW-C1-29	H-8	45-16 50-5 & 50J	Green-White White	As above thru multiple shutter switch circuit (Open when shutter is open)
C. N.C.	ASW-C1-29	F-9	80-6 41-5	Black Green-Red	As above thru shutter Switch (Open when shutter is open)
D. N.O.	ASW-C2-11	I-36	58-3 82-3	White-Black Black-Blue	Closes Red Letter Step Up coil circuit (Closed when shutter is open)
E. T.	ASW-C111-4	I-8	21-3 50J 61-4	Yellow-Red White Brown-Red	Energizes either Magic Screen Index Coil or right button relay coil and move right motor circuits (closed when shutter is open)
Lifter Start Relay	Coil G032- 02500N	A-12	70 38J	Orange Yellow-Black	Energized from Ball Runway Switch
A. N.O.	ASW-R1-8	C-13	36 38-8 & 38J	Yellow-Brown Yellow-Black	Closes circuit to Hold In Lifter Start Relay
B. N.C.	ASW-R2-5	B-13	40-8 15-6	Green Red-White	Opens B/5 and A/5 Selector Lock Trip coil Circuits
C. N.C.	ASW-R2-5	E-12	41-4 31-3	Green-Red Yellow-Red	Opens Ball Lifter Motor Circuit

FRONT CABINET-SWITCH & COIL FUNCTION CHART

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Ball Lifter Motor	E-119-339	A-13	70	Orange	Energized by Extra Ball #2 Trip, B/5 Trip, #8 Ball Trough Switches or Timer Unit Disc
Cam #1 A. N.O.	ASW-C1-54	C-13	30 58	Yellow White-Black	Closes Ball Lifter Motor circuit Thru #8 Ball Trough Switch
B. N.O.	ASW-C1-8	D-13	21-3 81-8	Yellow-Red Black-Red	Closes circuit to hold in Ball Detector Relay
C. N.O.	ASW-C2-15	H-5	15-6 85-6	Red-White Black-White	Opens B/5 Selector Lock Trip Coil Circuit
Cam #2 A. N.O.	ASW-C1-54	D-9	43-2 27-2	Green-Yellow Blue-Orange	Closes Timer Unit Step-Up Coil Circuit
B. N.O.	ASW-C1-8	D-12	32-3 14-5	Yellow-Blue Red-Green	Part of Tilt Trip Circuit in series with Ball Detector Relay Switch
C. N.O.	ASW-C1-8	H-5	21-3 83-7	Blue-Red Black-Yellow	Closes B/5 and A/5 Selector Lock Trip Coil Circuits
Ball Trough Sws. #1-A N.O.	ASW-A1-95	C-12	71-6 & 71J 41-4	Orange-Red Green-Red	Closes Ball Detector Relay Coil Circuit
#2-A N.C.	ASW-A2-61	G-4	85-6 & 85J 72-1	Black-White Orange-Blue	Opens A/5 Selector Lock Trip Coil Circuit
#2-B N.O.	ASW-A1-96	C-12	45-3 45J 71J	Green-White Orange-Red	Opens Tilt Trip Coil Circuit thru Ball Lifter Cam #2 Switch
#3-A N.C.	ASW-A2-61	H-5	85J 54-5	Black-White White-Green	Opens B/5 Selector Lock Trip Coil Circuit
#3-B N.O.	ASW-A1-96	D-12	21-3 45J	Blue-Red Green-White	Closes Ball Detector Relay Coil Circuit
#4-A N.C.	ASW-A2-65	H-5	83-7 78-7	Black-Yellow Orange-Black	Opens B/4 Selector Lock Trip Coil Circuit
#8-A N.O.	ASW-A1-95	B-13	58 38-3	White-Black Yellow-Black	Bypasses Ball Lifter Motor circuit
Ball N.C. Gate Switch	ASW-A2-71	C-15	31-4 36	Yellow-Red Yellow-Brown	Opens Lifter Start Relay Coil circuits
Ball N.O. Runway Switch	ASW-A1-30	C-15	30 38-8	Yellow Yellow-Black	Closes Lifter Start Relay Coil Circuit
Resistor 4.7K Ohm 1W	E-105-15	C-15	30 38-8	Yellow Yellow-Black	Across Ball Runway Switch
Red N.O. Rollover Switch	ASW-A1-16	H-11	64-3 15-12	Brown-Green Red-White	Closes Red Rollover Trip Coil circuit

FRONT CABINET-SWITCH & COIL FUNCTION CHART

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
Yellow N.O. Rollover Switch	ASW-A1-16	I-11	14-12 13-12	Red-Green Red-Yellow	Closes Yellow Rollover Trip Coil circuits
Right Button N.O. Switch A	ASW-A11-11	H-8	45-16 45J	Green-White Green-White	Closes circuit to right button Relay Coil
Switch B N.O.	(Dual Switch)	F-9	57-14 80-6	White-Orange Black	Closes circuit to Magic Screen Relay Coil
Left Button T. Switch	ASW-A21-1	H-7	30-15 20-2 45J	Yellow Blue Green-White	Closes circuit to Magic Screen Relay Coil while Opening Right Button Relay Coil Circuit
"R" Button Switch	ASW-A1-22	C-16	84-7 53-18	Black-Green White-Yellow	Energizes "R" Button Relay Coil
Red Button N.O. Switch A	ASW-A1-57	B-14	13 85-7	Red-Yellow Black-White	Closes Red Button Relay Coil Circuit
Switch B N.O.	ASW-A1-58	C-4	50-2 63-2	White Brown-Yellow	Closes Start Relay Coil Circuit
Yellow N.O. Button Sw. A	ASW-A1-57	C-15	13 25-8	Red-Yellow Blue-White	Closes Extra Ball #1 & #2 Trip Coil Circuits
Switch B N.O.	ASW-A1-58	C-5	18-6 63-2	Red-Black Brown-Yellow	Closes Start Relay Coil Circuit
Switch C N.C.	ASW-A2-30	B-14	23-15 85-7	Blue-Yellow Black-White	Opens Red Button Relay Coil Circuit
Manual Lift N.O. Switch A	ASW-A1-26	B-13	64-2 58	Brown-Green White-Black	Closes Ball Lifter Motor Circuit
Switch B N.C.	ASW-A2-9	C-15	30 31-4	Yellow Yellow-Red	Opens Trip Bank Motor Circuit
Ball Lifter N.O. Switch	ASW-A1-7	B-13	64-2 58	Brown-Green White-Black	Closes Ball Lifter Motor Circuit
Coin Switch T.	E-108-86	D-5	27-9 15-13 58-1	Blue-Orange Red-White White-Black	Energizes Multiplay Relay Coil and then Start Relay Coil
Coin Lockout Coil	M-37-2700	A-6	70 71-2	Orange Orange-Red	Energized from Timer Cams Index Switch
Coin Meter	E-130-29	A-7	70 80-2	Orange Black	Energized from Control Unit #4 Cam Switch
Key Switches A. N.C.	ASW-B-1	A-5	13-6 35-1	Red-Yellow Yellow-White	Opens Start Relay Coil Circuit
B. N.O.	ASW-B-2	E-11	21-3 14-5	Blue-Red Red-Green	Closes Tilt Trip Circuit
C. N.O.	ASW-B-2	C-32	30 78-4	Yellow Orange-Black	Closes Anti-Cheat Relay Coil Circuit

FRONT CABINET-SWITCH & COIL FUNCTION CHART

SWITCH/COIL	PART NO.	DIAGRAM LOCATION	WIRE NO.	WIRE COLOR	FUNCTION
D. N.O.	ASW-B-2	F-16	48-4 58-2	Green-Black White-Black	Energizes Key Meter
E. N.O.	ASW-B-2	G-16	23-12 34-1	Blue-Yellow Yellow-Green	Closes Replay Register Step-Up Coil Circuit
End-Of-Stroke T.	ASW-C3-6	G-16	34-1 48-4 67-5	Yellow-Green Green-Black Brown-Orange	Energizes Replay Register Step-Up Coil
Front Cabinet Meter Lite Switch N.O.	ASW-M2-6	J-4	12-6 30	Blue-Red Yellow	Energizes Meter Lite
Toggle Sw. N.O.	E-108-57	D-1	93-16 90-16	Grey-Yellow Grey	Main On-Off Switch for 117 VAC Power Circuit
Tilt Switches Front Cabinet N.O.	E-138-3 P-7750 & P-7783	E-12	21-3 14-5	Blue-Red Red-Green	All Close Circuit to Tilt Trip Coil
Front Door N.O.	ASW-A1-27				
Back Door N.O.	ASW-A1-25				
*Front Door Meter Switch N.C.	ASW-A1-15	F-16	70 40-7	Orange Green	Opens Total Play and Total Replay Meter Circuits
*Back Door Meter Switch N.C.	ASW-A1-16	F-16	40-16 47-2	Green Green-Orange	Opens Total Play and Total Replay Meter Circuits
*Total Play Meter	E-130-29	G-17	67-2 82-2	Brown-Orange Black-Blue	Energized from Control Unit #3 Cam Switch
*Total Replay Meter	E-130-29	G-17	80 32-2	Black Yellow-Blue	Energized from Control Unit #3 Cam Switch
FUSE WIRING CHART (FROM TOP DOWN)					
A.	E-133-10	F-1	94-16 93-16	Grey-Green Grey-Yellow	117V Circuit to Toggle Switch
B.	E-133-10	B-3	70 21-5	Orange Blue-Red	50V Circuit to #8 Lug on Transformer
C.	E-133-10	H-3	80-1 50	Black White	17V circuit to #2 Lug on Transformer
D.	E-133-10	K-4	51 & 51J 81	White-Red Black-Red	6V circuits to #4 Lug on Transformer
E.	E-133-10	L-4	51J 54-2	White-Red White-Green	
F.	E-133-10	L-4	51J 20	White-Red Blue	
Key Meter	E-130-29	E-16	70 58-2	Orange White-Black	Energized from Key Switch
* These items are optional accessories and must be ordered separately.					

MALIBU BEACH PARTS LIST

FRONT CABINET

PART NO.	DESCRIPTION
AS-2040-224	Front Cabinet Assy. (Complete)
CA-1119-67	Front Cabinet
CA-439-27	Ball Return Panel
G-424	Top Glass
P-5940-18	Front Door Trim (Left)
P-5940-46	Front Door Trim (Right)
P-5940-40	Front Door Trim (Top)
P-5940-41	Front Door Trim (Bottom)
P-921-39	Left Side Molding
P-921-40	Right Side Molding
A-187-20	Ball Shooter Assy.
A-100-7	Knob & Shooter Assy.
SP-262	Front Compression Spring
SP-200-24	Rear Compression Spring
AS-1835-1	Shooter Guide Assy.
P-2879	Spring Cup
P-2891-8	Retaining Ring
R-108-3	Shooter Tip
A-1533	Coin Slide Assy.
A-2790-59	Cash Box Assy.
P-3089-55	Cash Box Cover
M-168-15	Ball
E-108-57	Game On-Off Switch
A-2618	Leg Assy.
M-106-1	Leg Bolt (8)
M-163-4	Leg Adjuster (4)
N-37516-2112	Nut (4)
AS-1305-71	Front Molding Assy. (Complete)
A-1272-77	Button & Pin Assy. (Left)
A-1272-76	Button & Pin Assy. (Right)
A-1272-59	Button & Pin Assy. (R)
AS-982-948	Left & Right Sw. & Bracket Assy.
AS-982-1277	(R) Switch & Bracket Assy.
AS-982-671	Key E.O.S. Sw. & Bracket Assy.
AS-982-673	Large Key Switch & Bracket Assy.
P-2210-8	Coin Drop Plate (5¢, unmarked)
P-2210-9	Coin Drop Plate (10¢, unmarked)
P-2210-12	Coin Drop Plate (Blank, no slot)
P-2210-150	Coin Drop Plate (5¢)
P-2210-151	Coin Drop Plate (10¢)
P-2210-152	Coin Drop Plate (25¢)
P-2210-187	Coin Drop Plate (1 Fr.)
P-2210-188	Coin Drop Plate (1 Kr.)

FRONT DOOR

PART NO.	DESCRIPTION
AS-2041-83	Front Door Assy. (Complete)
M-281-54	Lock
A-254-117	Hinge Assy.
M-1400-Series	Slug Rejector (Specify Coin)
P-6694-Series	Coin Guide (Specify Coin)
P-6431-Series	Coin Guide Spacer (Specify Coin)
A-2958-11	Coin Lockout Assy.
AS-2517-14	Coin Magnet Assy.
E-108-57	Coin Switch
AS-A1-25	Tilt Switch
A-1729-16	Push Button Assy. (Red)
A-1729-15	Push Button Assy. (Yellow)

PANEL (PLAYFIELD)

PART NO.	DESCRIPTION
AS-2042-218	Panel Assy. (Complete)
CA-638-116	Panel
CA-1100-10	Arch Bottom
CA-1103	Arch Guide Strip
CA-1104	Arch Top
C-326-10	Light Shield Post - White (8)
E-125-2	#47 Lamp (8)
E-125-5	#55 Lamp (2)
M-170	Rebound Spring (8)
SP-112	Long Panel Spring (8)
SP-112-1	Short Panel Spring (4)
S-196	Playfield Pin (15)
S-1071-84	Panel Pin (29)
C-119-21	Red Bumper Post (4)
C-119-23	Yellow Bumper Post (30)
R-243	Bumper Rubber - White (28)
R-243-2	Bumper Rubber - Grey (2)
R-521-1	Bumper Rubber - Double Post (2)
C-153	Ball Lift Cover
AS-1315-8	Ball Gate & Switch Assy.

BACK CABINET

PART NO.	DESCRIPTION
G-292-53	Back Glass
CA-1120-80	Back Cabinet
M-281-74	Lock
E-126-63	Cord Set, Power - 14 Ft. (Domestic)
A-1511-33	Back Door Hinge (Bottom)
A-1511-34	Back Door Hinge (Top)
A-3841	Glass Retainer & Plate Assy.
P-6242-90	Glass Retainer - Bottom
P-6242-92	Glass Retainer - Sides (2)
P-3473-16	Lock Retainer
E-125-2	#47 Lamp
E-125-5	#55 Lamp
A-3400-276	Wood Insert & Lamp Socket Assy.
E-133-10	Fuse 10A32V
AS-2043-203	Back Cabinet Assy. (Complete)

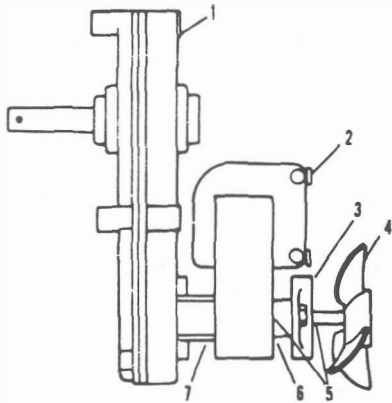
BACK DOOR

PART NO.	DESCRIPTION
P-2335-48	Hinge (2)
M-281-24	2 Lock Set
P-758-31	Lock Cam (2)
R-206-1	Rubber Bumper (2)
CA-1120-81	Back Door

MOTOR PARTS GUIDE

ALL MOTORS: A-1010-04 Gear Pin - 1/8" dia. (1st Gear)
 A-1010-05 Gear Pin - 3/16" dia. (Other gears)

Mixer & Control Unit Motor E-119-359

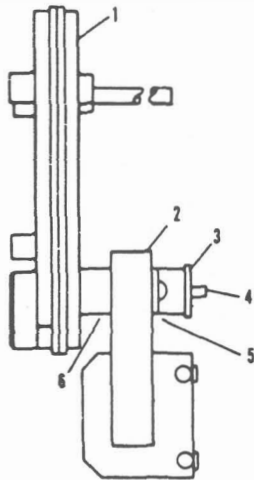


Index No.	Part No.	Description	No. Required
1	GC3-4020-1	Transmission	1
2	AS3-4020-1	Stator Unit	1
3	ABB-1010-00	Bearing & Brkt. Assy.	1
Note: Order No.s 4-5-6-7 as a unit			
4	AR3-4020-1	Gear, Rotor & Shaft Assy.	1
5	(Included in Assy)	Rotor & Shaft Washer	1
6	(Included in Assy)	Rotor & Shaft Washer	1
7	(Included in Assy)	Rotor & Shaft Washer	3

TRIP BANK RELAY MOTOR E-119-464

Index No.	Part No.	Description	No. Req.
1	GC2-2543-1	Transmission Unit	1
2	AS2-2543-1	Stator Unit	1
3	ABB-1010-01	Bearing & Brkt. Assy.	1
Note: Order Index No.'s 4 - 6 as a unit			
4	AR2-2543-1	Rotor & Shaft Unit	1
5	W-1015-03	Rotor Shaft Washer	1
6	W-1014-03	Rotor Shaft Washer	1
	W-1014-09	Rotor Shaft Washer	3

PANEL SHUTTER MOTOR E-119-379

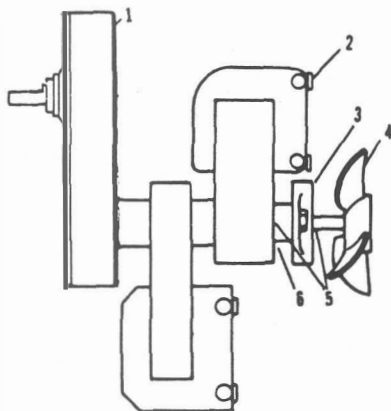


Index No.	Part No.	Description	No. Req.
1	GC2-1725-1	Transmission Unit	1
2	AS2-1725-1	Stator Unit	1
3	ABB-2010-01	Bearing & Brkt. Assy.	1
Note: Order Index No.'s 4 - 6 as a unit			
4	AR2-1725-1	Rotor & Shaft Unit	1
5	W-1015-03	Rotor Shaft Washer	1
6	J-1011-60	Shaft Shim Spring	1

BALL LIFTER MOTOR E-119-339

Index No.	Part No.	Description	No. Req.
1	GC2-1743-1	Transmission Unit	1
2	AS2-1743-1	Stator Unit	1
3	ABB-1010-1	Bearing & Brkt. Assy.	1
Note: Order Index No.'s 4 - 6 as a unit			
4	AR2-1743-1	Rotor & Shaft Unit	1
5	W-1015-03	Rotor Shaft Washer	1
6	J-1011-60	Shaft Shim Spring	1

Magic Screen Motor E-119-174



Index No.	Part No.	Description	No. Required
1	GC2-2540-2	Transmission Unit	1
2	AS2-2540-2	Stator Unit	2
3	ABB-1010-2	Bearing & Brkt. Assy.	1
Note: Order 4-5-6 as a unit			
4	AR2-2540-2	Rotor & Shaft Assy.	1
5	(Included in Assy)	Rotor & Shaft Washer	1
6	(Included in Assy)	Rotor & Shaft Washer	1

REPLACEMENT SCORE CARDS

Shoot to light ADJOINING numbers, connected by red, yellow or green line,
or ANY numbers in a color section

RED, YELLOW AND GREEN SCORE SEPARATELY

5-IN-LINE OR 5 IN A SECTION 75 75 96 96 200 300 450 600
4-IN-LINE OR 4 IN A SECTION 16 20 24 50 96 144 240 480
3-IN-LINE OR 3 IN A SECTION 4 6 8 16 32 64 120 192

Scores are indicated at bottom of backglass and match colors of lines or sections in which scoring numbers are lit

Only highest score and only one 3-in-line per color registers

**ANY 2 IN ORANGE SECTION
STARTS NEW FREE RED LETTER GAME
WITH GUARANTEED FEATURES
INDICATED BY RED LETTER IN MALIBU**

SCORE VOID IF GAME IS TILTED
PRESS R-BUTTON TO REGISTER REPLAYS
PRESS BUTTON AFTER SHOOTING 4TH BALL

MB-2

FIRST PRESS RED BUTTON
AND DEPOSIT COIN
TO START GAME

TO LIGHT ADDED FEATURES
AND ADVANCE SCORES
DEPOSIT ADDITIONAL COINS

TO PLAY FOR EXTRA BALLS
PRESS YELLOW BUTTON
AND DEPOSIT ADDITIONAL COINS

TO PLAY REPLAYS
SIMPLY PRESS BUTTONS
WITHOUT DEPOSITING COINS

WHEN GAME IS COMPLETED

PRESS R BUTTON

**To Start Red-Letter Game
Hold R-Button Down
Until All Balls Drop**

**FOR AMUSEMENT ONLY
NO PRIZES OR GAMBLING PERMITTED**

MB-3

<p>SCORES ADVANCE TO</p> <p>RED 300 YELLOW 96 GREEN 75 OR 96 OR 144 50 16, 20 OR 24 64 16 4, 6 OR 8</p> <p>MAGIC SCREEN ADVANCES TO D</p>	<p>SCORES ADVANCE TO</p> <p>RED 200 YELLOW 300 GREEN 96 OR 144 50 16 32 64</p> <p>RED SUPER-SECTION LIGHTS MAGIC SCREEN ADVANCES TO D RED ROLL-OVER LIGHTS</p>	<p>SCORES ADVANCE TO</p> <p>RED 300 YELLOW 300 GREEN 200 OR 144 144 96 64 64 32</p> <p>YELLOW SUPER-SECTION LIGHTS MAGIC SCREEN ADVANCES TO D BEFORE 5TH BALL LIGHTS</p>	<p>SCORES ADVANCE TO</p> <p>RED 200 YELLOW 450 GREEN 300 OR 96 240 32 120 64</p> <p>YELLOW SUPER-SECTION LIGHTS MAGIC SCREEN ADVANCES TO E</p>	<p>SCORES ADVANCE TO</p> <p>RED 450 YELLOW 300 GREEN 450 OR 240 144 120 64 120</p> <p>RED SUPER-SECTION LIGHTS MAGIC SCREEN ADVANCES TO E AFTER 5TH BALL LIGHTS</p>	<p>SCORES ADVANCE TO</p> <p>RED 600 YELLOW 600 GREEN 600 OR 480 480 192 192 192</p> <p>RED SUPER-SECTION LIGHTS MAGIC SCREEN ADVANCES TO G YELLOW ROLL-OVER LIGHTS</p>
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GUARANTEED features of Red-Letter Games. BE SURE to register replays scored in Red, Yellow, Green, Orange or Blue Sections BEFORE holding R-Button to obtain Red-Letter Game

MB-1