

# OPERATING INSTRUCTIONS

**CONFIDENTIAL: DO NOT LEAVE INSTRUCTIONS IN GAME**

*Bally*®

# BRIGHT LIGHTS

# BRIGHT LIGHTS

## INSTALLATION AND OPERATING INSTRUCTIONS

Fasten 4 legs to cabinet with bolts and washers furnished. Place back-box in position, fasten to cabinet with bolts furnished, plug in connector cables. Plug power line into A.C. ONLY, 60 cycles, 110-115 volts. Turn on power by turning toggle switch on in bottom of cabinet (front right).

## ACCESS TO MECHANISM

Mechanism is almost entirely in back-box. Unlock and lower back door to horizontal position. Door may be lowered to vertical position if shoulder screw that joins support-links for back door is removed.

## TO SERVICE LIGHT BULBS

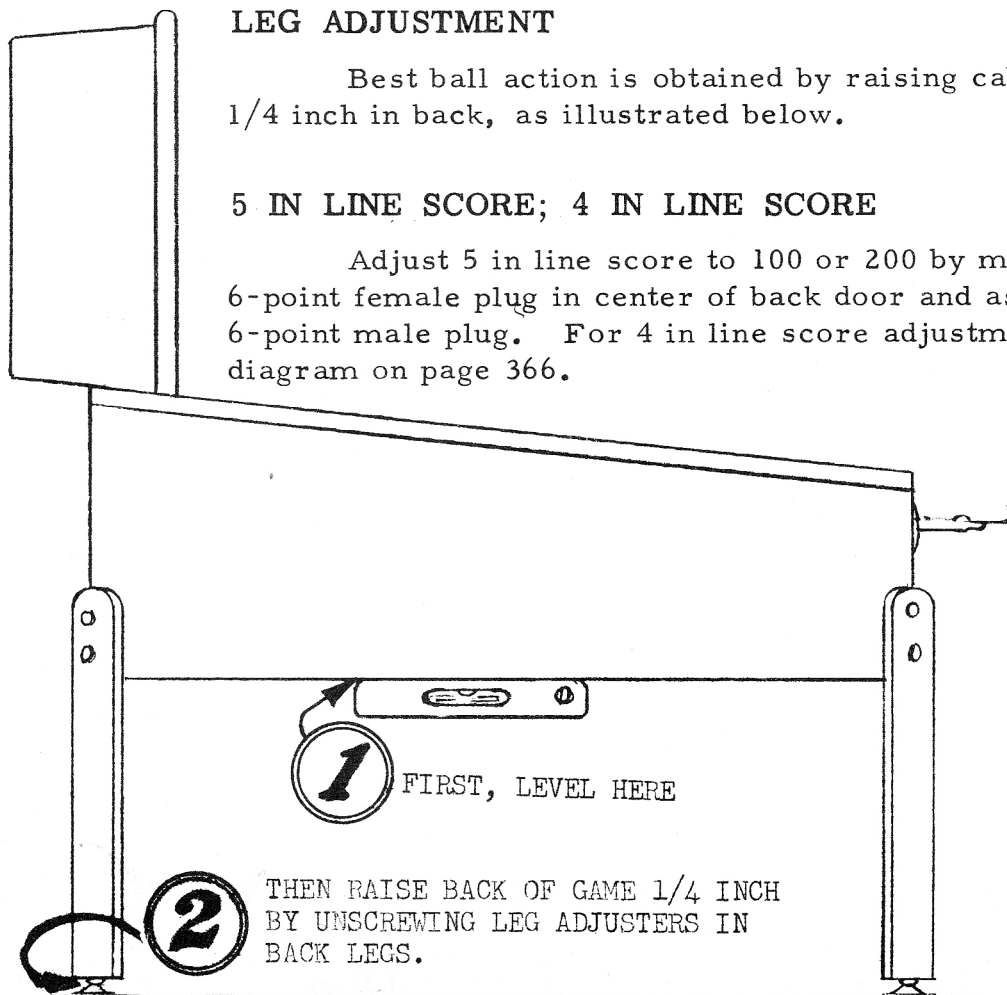
Unlock back door and unscrew slotted bolt with red tag attached. Bolt is located in top center of back box. Remove 2 screws at top of top moulding and slide out back-glass. (NOTE: 2 screws in moulding may be omitted on location.)

## LEG ADJUSTMENT

Best ball action is obtained by raising cabinet  $1/4$  inch in back, as illustrated below.

### 5 IN LINE SCORE; 4 IN LINE SCORE

Adjust 5 in line score to 100 or 200 by means of 6-point female plug in center of back door and associated 6-point male plug. For 4 in line score adjustment, diagram on page 366.



SEARCH DISC #1, #2, #3

12 Winning Combinations for Each Section

Position of wiper on disc	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50																					
1	5	8	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	96	99	102	105	108	111	114	117	120	123	126	129	132	135	138	141	144	147	150																						
2	1	4	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	55	58	61	64	67	70	73	76	79	82	85	88	91	94	97	100	103	106	109	112	115	118	121	124	127	130	133	136	139	142	145	148	151																				
3	9	16	23	30	37	44	51	58	65	72	79	86	93	100	107	114	121	128	135	142	149	156	163	170	177	184	191	198	205	212	219	226	233	240	247	254	261	268	275	282	289	296	303	310	317	324	331	338	345	352	359	366	373	380	387	394	401	408	415	422	429	436	443	450	457	464	471	478	485	492	499
4	17	24	31	38	45	52	59	66	73	80	87	94	101	108	115	122	129	136	143	150	157	164	171	178	185	192	199	206	213	220	227	234	241	248	255	262	269	276	283	290	297	304	311	318	325	332	339	346	353	360	367	374	381	388	395	402	409	416	423	430	437	444	451	458	465	472	479	486	493	500	
5	25	32	39	46	53	60	67	74	81	88	95	102	109	116	123	130	137	144	151	158	165	172	179	186	193	200	207	214	221	228	235	242	249	256	263	270	277	284	291	298	305	312	319	326	333	340	347	354	361	368	375	382	389	396	403	410	417	424	431	438	445	452	459	466	473	480	487	494	501		
6	33	40	47	54	61	68	75	82	89	96	103	110	117	124	131	138	145	152	159	166	173	180	187	194	201	208	215	222	229	236	243	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376	383	390	397	404	411	418	425	432	439	446	453	460	467	474	481	488	495	502			
7	41	48	55	62	69	76	83	90	97	104	111	118	125	132	139	146	153	160	167	174	181	188	195	202	209	216	223	230	237	244	251	258	265	272	279	286	293	300	307	314	321	328	335	342	349	356	363	370	377	384	391	398	405	412	419	426	433	440	447	454	461	468	475	482	489	496	503				
8	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147	154	161	168	175	182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357	364	371	378	385	392	399	406	413	420	427	434	441	448	455	462	469	476	483	490	497	504					
9	57	64	71	78	85	92	99	106	113	120	127	134	141	148	155	162	169	176	183	190	197	204	211	218	225	232	239	246	253	260	267	274	281	288	295	302	309	316	323	330	337	344	351	358	365	372	379	386	393	400	407	414	421	428	435	442	449	456	463	470	477	484	491	498	505						
10	65	72	79	86	93	100	107	114	121	128	135	142	149	156	163	170	177	184	191	198	205	212	219	226	233	240	247	254	261	268	275	282	289	296	303	310	317	324	331	338	345	352	359	366	373	380	387	394	401	408	415	422	429	436	443	450	457	464	471	478	485	492	499	506							
11	73	80	87	94	101	108	115	122	129	136	143	150	157	164	171	178	185	192	199	206	213	220	227	234	241	248	255	262	269	276	283	290	297	304	311	318	325	332	339	346	353	360	367	374	381	388	395	402	409	416	423	430	437	444	451	458	465	472	479	486	493	500									
12	81	88	95	102	109	116	123	130	137	144	151	158	165	172	179	186	193	200	207	214	221	228	235	242	249	256	263	270	277	284	291	298	305	312	319	326	333	340	347	354	361	368	375	382	389	396	403	410	417	424	431	438	445	452	459	466	473	480	487	494	501										
13	89	96	103	110	117	124	131	138	145	152	159	166	173	180	187	194	201	208	215	222	229	236	243	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376	383	390	397	404	411	418	425	432	439	446	453	460	467	474	481	488	495	502											
14	97	104	111	118	125	132	139	146	153	160	167	174	181	188	195	202	209	216	223	230	237	244	251	258	265	272	279	286	293	300	307	314	321	328	335	342	349	356	363	370	377	384	391	398	405	412	419	426	433	440	447	454	461	468	475	482	489	496	503												
15	105	112	119	126	133	140	147	154	161	168	175	182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357	364	371	378	385	392	399	406	413	420	427	434	441	448	455	462	469	476	483	490	497	504													
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19	137	144	151	158	165	172	179	186	193	200	207	214	221	228	235	242	249	256	263	270	277	284	291	298	305	312	319	326	333	340	347	354	361	368	375	382	389	396	403	410	417	424	431	438	445	452	459	466	473	480	487	494	501																		
20	145	152	159	166	173	180	187	194	201	208	215	222	229	236	243	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376	383	390	397	404	411	418	425	432	439	446	453	460	467	474	481	488	495	502																			
21	153	160	167	174	181	188	195	202	209	216	223	230	237	244	251	258	265	272	279	286	293	300	307	314	321	328	335	342	349	356	363	370	377	384	391	398	405	412	419	426	433	440	447	454	461	468	475	482	489	496	503																				
22	161	168	175	182	189	196	203	210	217	224	231	238	245	252	259	266	273	280	287	294	301	308	315	322	329	336	343	350	357	364	371	378	385	392																																					

SEARCH DISC #4, #5, #6

12 Winning Combinations for Each Section

Position of wiper on disc	Row 1	Row 2	Row 3	Row 4	Row 5
1	6	7	3	24	1
2	23	14	12	18	2
3	5	19	20	16	22
4	11	17	9	15	25
5	10	13	21	4	8
6	6	23	5	11	10
7	7	14	19	17	13
8	3	12	20	9	21
9	24	18	16	15	4
10	1	2	22	25	8
11	6	14	20	15	8
12	1	18	20	17	10
13					
14					
15					
16					
17					
18	8	23	10	13	4
19	2	17	16	14	24
20	20	12	22	19	5
21	25	15	9	18	11
22	1	7	21	3	6
23	8	2	20	25	1
24	23	17	12	15	7
25	10	16	22	9	21
26	13	14	19	18	3
27	4	24	5	11	6
28	8	17	22	18	6
29	4	14	22	15	1
30					
31					
32					
33					
34					
35	4	6	1	23	5
36	25	15	3	17	13
37	9	19	21	12	20
38	10	18	16	14	8
39	7	24	22	2	11
40	4	25	9	10	7
41	6	15	19	18	24
42	1	3	21	16	22
43	23	17	12	14	2
44	5	13	20	8	11
45	4	15	21	14	11
46	5	17	21	18	7
47					
48					
49					
50					

SECTION #4

5 Blank Positions

SECTION #5

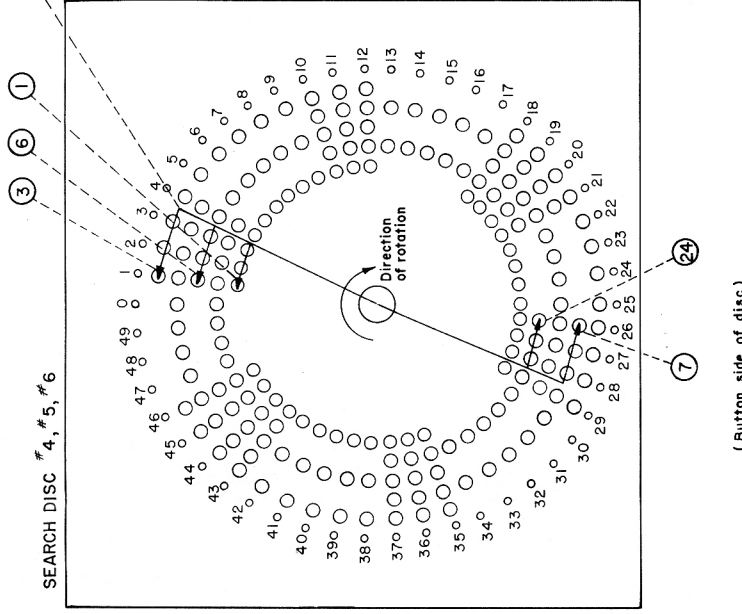
5 Blank Positions

SECTION #6

4 Blank Positions

Wiper arm shown in \*1 position contacting Nos. 6-7-3-24-1

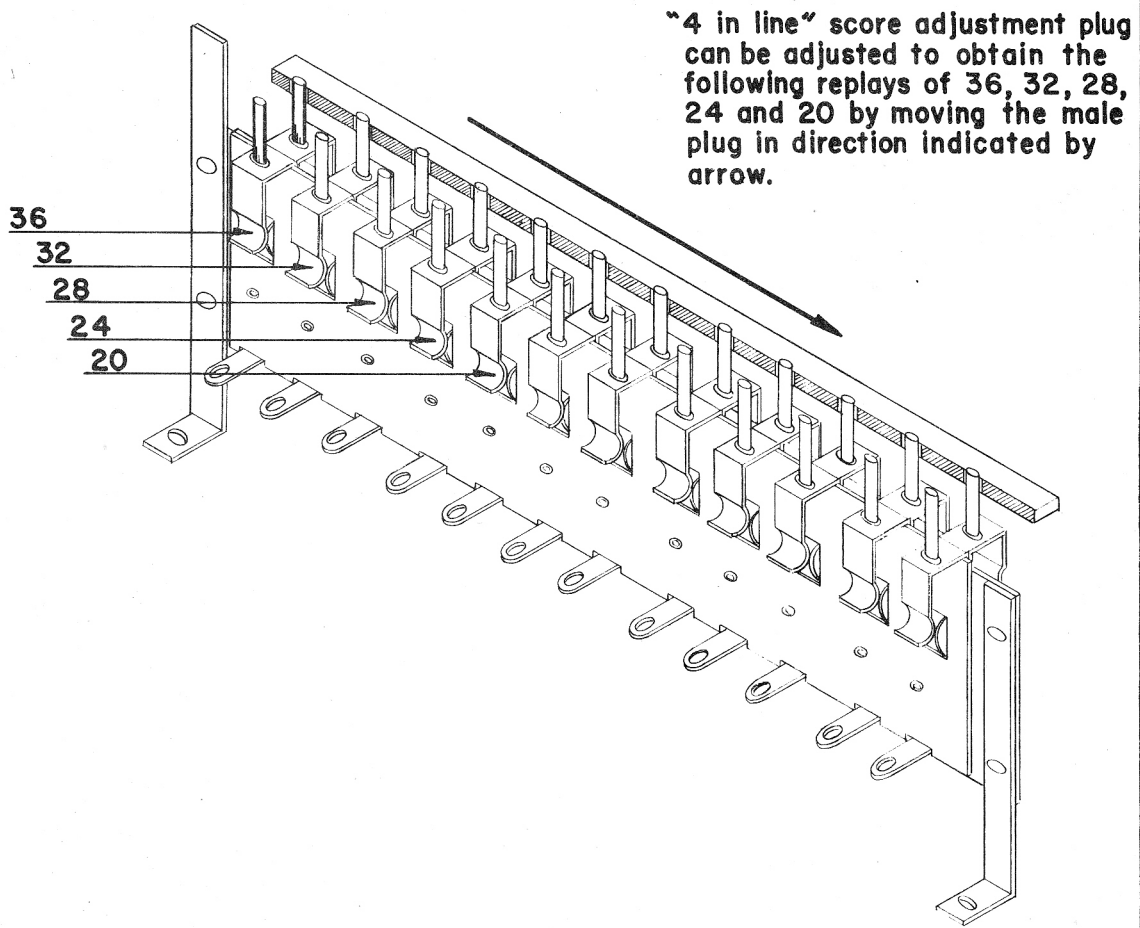
Use three finger portion of wiper arm for locating positions on disc.





# "4 IN LINE" SCORE ADJUSTMENT PLUG

(Located on back door, next to tilt switch)



# BRIGHT LIGHTS

## CONTROL UNIT CAM SWITCH CHART

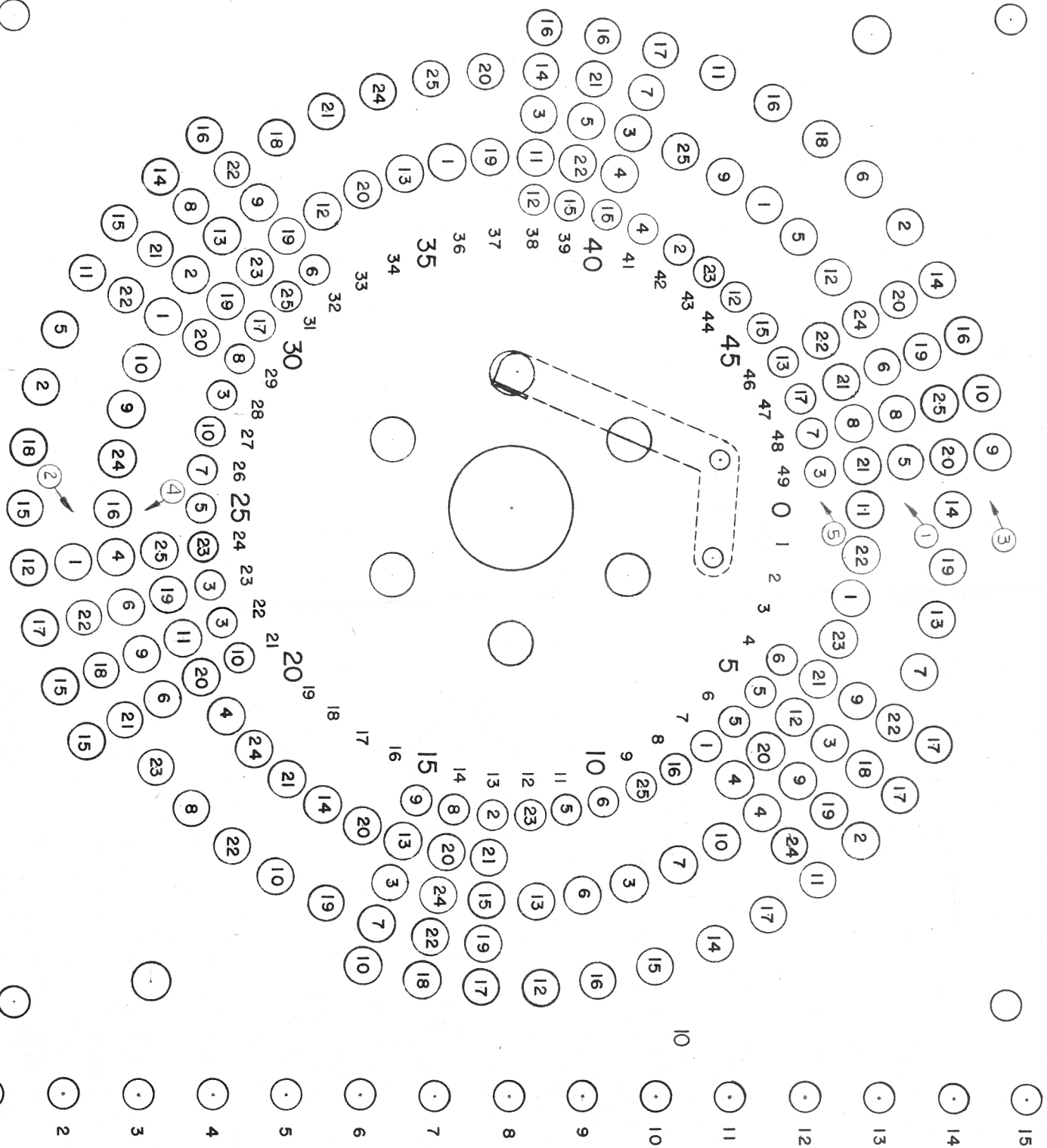
SWITCHES ARE NUMBERED FROM MOTOR END AND LETTERED FROM TOP DOWN

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

RELAY SWITCH OR CAM SWITCH	SWITCH CODE	WIRE NO.	WIRE COLORS	FUNCTION OF SWITCHES
CAM SWITCH #1A	N.O.	27-2 30-2	Blue-Orange Yellow	Steps replay sequence stepper #1. In series with search index #1 switch.
CAM SWITCH #1B	N.O.	83 75	Black-Yellow Orange-White	Pulses replay register reset coil when replay reset relay is energized.
CAM SWITCH #2A	N.O.	50 93-2	White Gray-Yellow	Steps timer stepper in series with cam switch #8.
CAM SWITCH #2B	N.O.	10 20	Red Blue	Runs control unit motor.
CAM SWITCH #3A	N.O.	75 83	Orange-White Black-Yellow	Pulses replay register reset coil when replay reset relay is energized. Counts replays into replay meter also.
CAM SWITCH #3B	N.O.	85-1 93-1	Black-White Gray-Yellow	Steps replay sequence stepper #2. In series with search index #2 switch.
CAM SWITCH #4	N.C.	50 65	White Brown-White	Opens circuit to start relay, selection reset, timer reset. Completes circuit to coin chute magnet and replay reset relay.
CAM SWITCH #5A	N.O.	50 51	White White-Red	Pulls in A.C. relay.
CAM SWITCH #5B	N.O.	50 85	White Black-White	Resets replay counters and replay register reset coil. Steps selection stepper also.
CAM SWITCH #6	N.O.	23-2 21-2	Blue-Yellow Blue-Red	Pulses replay register step-up coil when either replay relay is energized.
CAM SWITCH #7	N.O.	50 13-2	White Red-Yellow	Steps replay counter steppers #1 to #6.
CAM SWITCH #8	N.O.	93-2 53	Gray-Yellow White-Yellow	Steps timer stepper. In series with cam switch #2A.
CAM SWITCH #9A	N.O.	60-2 61-2	Brown Brown-Red	In series with 200 replay circuit of section #1.
CAM SWITCH #9B	N.O.	81-3 40-2	Black-Red Green	Completes circuit to replay relay for section #1 in series with selection circuit #1.
CAM SWITCH #9C	N.O.	78-2 14-2	Orange-Black Red-Green	Completes circuit to replay counter stepper #1.
CAM SWITCH #10A	N.O.	60-2 63-2	Brown Brown-Yellow	In series with 200 replay circuit of section #2.
CAM SWITCH #10B	N.O.	81-3 41-2	Black-Red Green-Red	Completes circuit to replay relay for section #2. In series with selection circuit #2.
CAM SWITCH #10C	N.O.	78-2 15-2	Orange-Black Red-White	Completes circuit to replay counter stepper #2.
CAM SWITCH #11A	N.O.	60-2 65-2	Brown Brown-White	In series with 200 replay circuit of section #3.
CAM SWITCH #11B	N.O.	81-3 43-2	Black-Red Green-Yellow	Completes circuit to replay relay for section #3. In series with selection circuit #3.
CAM SWITCH #11C	N.O.	78-2 18-2	Orange-Black Red-Black	Completes circuit to replay counter stepper #3.
CAM SWITCH #12A	N.O.	48-3 51-3	Green-Black White-Red	In series with 200 replay circuit of section #4.
CAM SWITCH #12B	N.O.	65-3 60-3	Brown-White Brown	Completes circuit to replay relay for section #4. In series with selection circuit #4.
CAM SWITCH #12C	N.O.	93-3 74-1	Gray-Yellow Orange-Green	Completes circuit to replay counter stepper #4.
CAM SWITCH #13A	N.O.	48-3 52-3	Green-Black White-Blue	In series with 200 replay circuit of section #5.
CAM SWITCH #13B	N.O.	65-3 61-3	Brown-White Brown-Red	Completes circuit to replay relay for section #5. In series with selection circuit #5.
CAM SWITCH #13C	N.O.	93-3 75-1	Gray-Yellow Orange-White	Completes circuit to replay counter stepper #5.
CAM SWITCH #14A	N.O.	48-3 53-3	Green-Black White-Yellow	In series with 200 replay circuit of section #6.
CAM SWITCH #14B	N.O.	65-3 63-3	Brown-White Brown-Yellow	Completes circuit to replay relay for section #6. In series with selection circuit #6.
CAM SWITCH #14C	N.O.	93-3 78-1	Gray-Yellow Orange-Black	Completes circuit to replay counter stepper #6.

A-234-52

P-279-36



ION MANUFACTURING CORP.

2640 BELMONT AVÉ.  
CHICAGO, ILL.

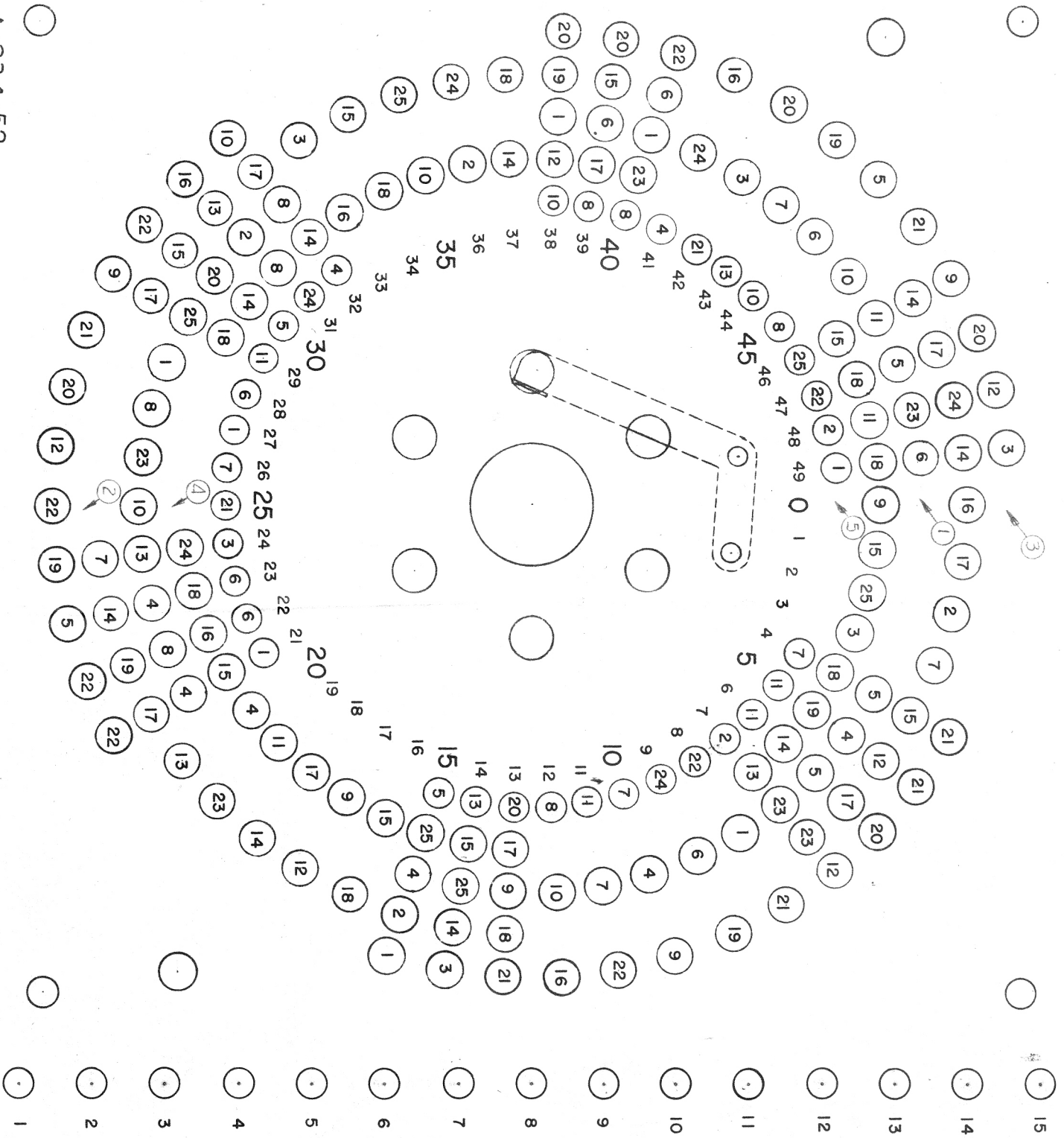
CONTACT PLATE WIRING

ED ON SENSING UNIT (\*1,\*2,\*3,)

BY	AP'D. BY	DATE
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A-234-52

P-279-36



ON MANUFACTURING CORP.

2640 BELMONT AVE  
CHICAGO, ILL.

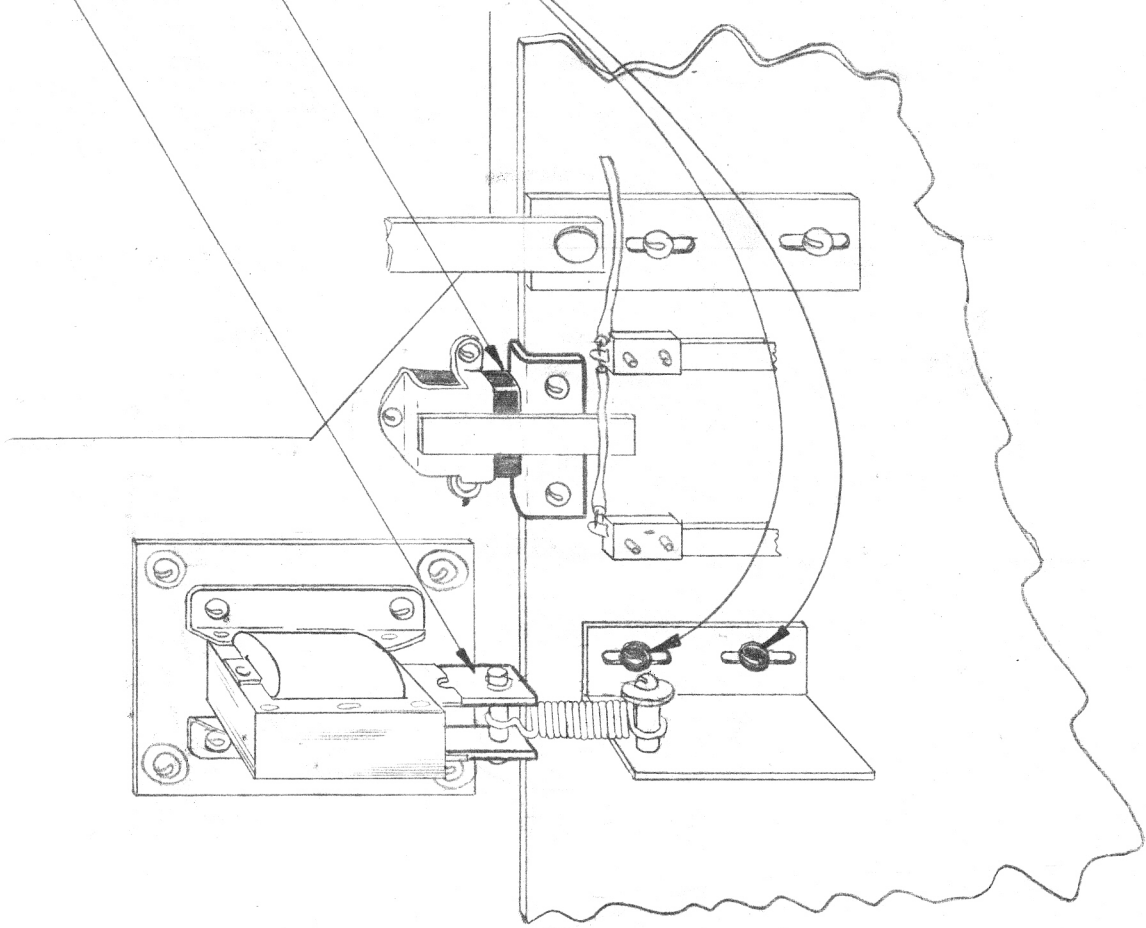
CONTACT PLATE WIRING

ON SENSING UNIT (4,5,6)

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# CORRECT ADJUSTMENT OF SHUTTER MAGNET BRACKET ON BRIGHT LIGHTS

- ③ PUSH SOLENOID PLUNGER ALL THE WAY IN.
- ① PUSH SHUTTER AGAINST RUBBER STOP.
- ② LOOSEN SCREWS IN SHUTTER BRACKET.
- ④ TIGHTEN SCREWS.

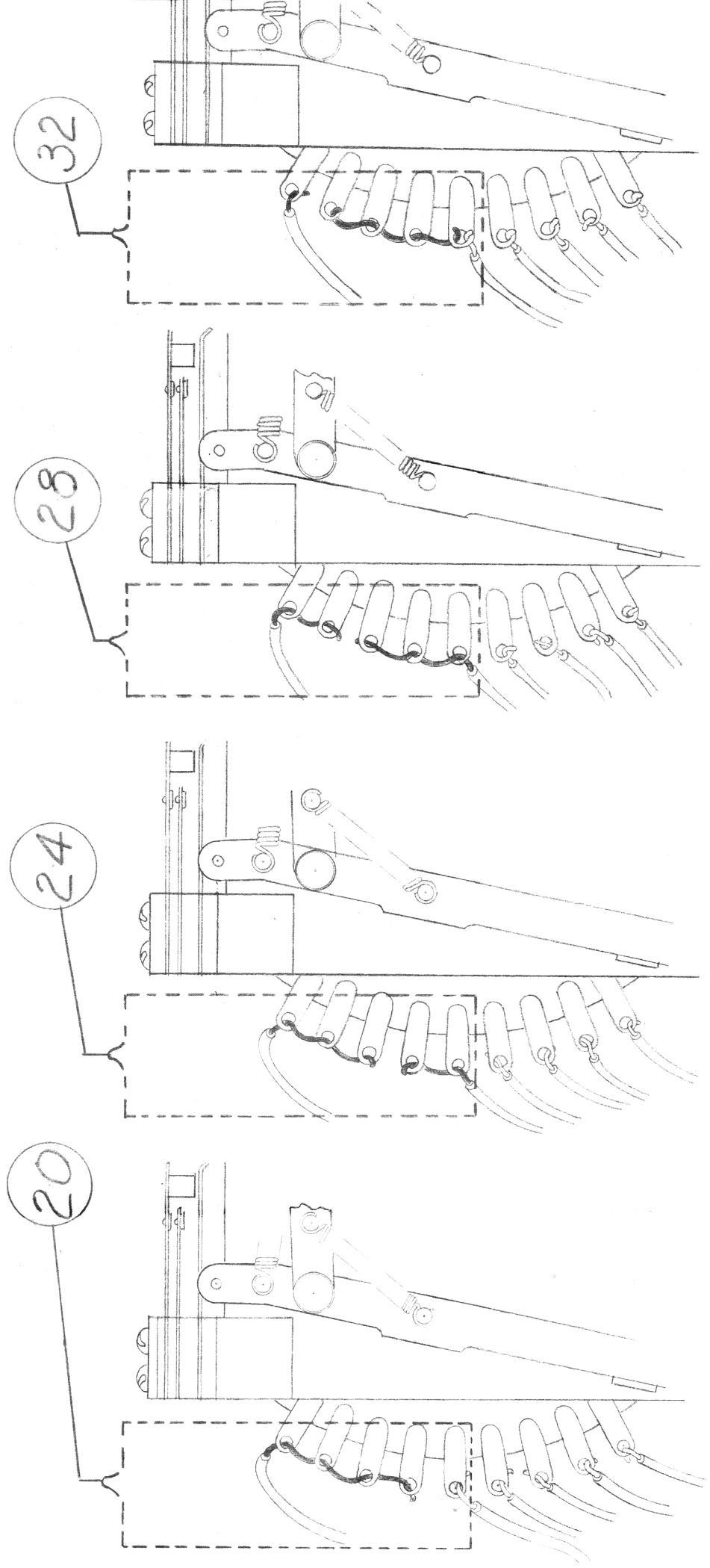


# BRITE LITES

## "4 IN LINE" SCORE ADJUSTMENT

GAME CAN BE OPERATED WITH A 4 IN LINE SCORE OF 20-24-28 OR 32 BY WIRING TOP FIVE TERMINAL LUGS ON EACH OF THE SIX REPLAY COUNTER DISCS AS SHOWN BELOW.

NOTE: THIS INFORMATION APPLYS TO FIRST 175 GAMES ONLY  
ADJUSTMENT PLUG IS SUPPLIED WITH GAME THEREAFTER



REPLAY COUNTER DISC # 1 IS SHOWN ABOVE.  
WIRE OTHER 5 REPLAY COUNTER DISCS IN SAME MANNER

BRIGHT LIGHTS

PARTS CATALOG

SECTION 1: FRONT CABINET

AS-187-6.....Ball Shooter Assembly.....

PARTS:

A-100.....Knob and Shooter-rod.....  
A-110.....Push Rod (Ball Lifter-rod).....  
R-108.....Shooter Tip.....  
A-292-3.....Shooter Casting.....  
SP-200-20.....Spring, Shooter.....  
SP-218.....Spring, Outside Barrel Spring.....

AS-186-5.....Ball Lifter Assembly.....

PARTS:

A-270-2.....Lifter Assembly.....  
P-448-1.....Snap Washer.....  
SP-117.....Spring, Extension.....  
SP-200-10.....Spring, Compression.....

MISCELLANEOUS PARTS IN FRONT CABINET

M-168-2.....Ball.....  
P-1900-7.....Cash-box.....  
CA-536-3.....Cash-box Cover.....  
CA-350.....Leg.....  
M-163.....Leg Adjuster.....  
M-106.....Leg Bolt.....  
E-108-25.....Toggle Switch.....  
G-173.....Top Glass (21x41").....  
E-122-15.....Transformer.....  
CA-533-4.....Front Molding (Specify Serial Number of Game).....  
CA-536-4.....Front Molding ( " " " " " ).....

SECTION 2: FRONT DOOR ASSEMBLY

AS-1077.....Front Door Complete (Old Style).....

PARTS:

M-112-3.....Coin Chute 5¢.....  
E-130.....Counter 48 Volt.....  
CA-533-2.....Front Door only.....  
M-281.....Lock and Keys.....  
E-101-38.....Magnet.....  
SW-802.....Switch.....

BRIGHT LIGHTS

PARTS CATALOG

SECTION 2: FRONT DOOR ASSEMBLY (Continued)

AS-1077-1.....Front Door Complete (New Style).....

PARTS:

E-130.....Counter 48 Volt.....  
E-271-2.....Drop Chute 5 $\phi$ .....  
CA-536-2.....Front Door only.....  
M-281.....Lock and Keys.....  
C-178-1.....Push Button for replays.....  
SW-709.....Switch.....

SECTION 3: TOP PANEL ASSEMBLY

PARTS:

AS-985.....Ball-gate.....  
C-153.....Ball-lift Cover.....  
E-125-10.....Lamp for C-258-5.....  
E-120-32.....Lamp-socket for E-125-10.....  
C-258-5.....Light-shield.....  
AS-493-2.....Rebound Assembly.....  
R-203.....Rebound Rubber for AS-493-2.....  
M-170.....Rebound Spring.....  
SW-800.....Switch (Panel runway).....

SECTION 4: BOTTOM PANEL ASSEMBLY

AS-1112.....Latch Assembly Complete.....

PARTS:

A-1428-1.....Arm.....  
CO-25-H-7.....Coil.....  
A-613-17.....Core Plug.....  
S-496.....Plunger for Coil.....  
SP-100-9.....Spring.....  
SW-801.....Switch.....

AS-435-13.....Relay Assembly Complete.....

PARTS:

A-635.....Arm.....  
P-344-1.....Armature Plate.....  
E-184-52.....Coil.....  
SW-547.....Switch.....

MISCELLANEOUS PARTS ON BOTTOM PANEL

E-184-60.....Solenoid for resetting Shutter.....  
SP-156.....Spring for E-184-60.....  
SP-100-70.....Spring (Shutter return).....



BRIGHT LIGHTS

PARTS CATALOG

SECTION 5: LIGHT BOX ASSEMBLY

AS-473-8.....Replay Register Assembly Complete.....

PARTS:

E-184-56.....Coil (2 used).....  
A-613-2.....Core-plug for both Coils.....  
S-739.....Pin for S-496-69 Plunger.....  
S-496-69.....Plunger for both Coils.....  
A-1168-10.....Wheel Assembly (right).....  
A-1168-11.....Wheel Assembly (center).....  
A-1168-12.....Wheel Assembly (left).....

AS-1109.....Sensing Unit Assembly Complete.....

PARTS:

A-1435.....Armature Plate for AS-1060-2.....  
E-184-55.....Coil for Index Coil Assembly.....  
W-362.....Contact Plate #1 with yellow dot.....  
W-363.....Contact Plate #2 with red dot.....  
A-613-17.....Core-plug for E-184-55 Coil.....  
A-1138-6.....Index Arm for Index Coil Assembly.....  
AS-472-22.....Index Coil Assembly Complete.....  
AS-1060-2.....Magnet Assembly Complete.....  
S-1289-9.....Main Shaft.....  
E-119-60.....Motor.....  
S-496-62.....Plunger for E-184-44 Coil.....  
SP-100-23.....Spring for AS-572-22.....  
SP-100-82.....Spring for AS-1060-2.....  
E-184-46.....Solenoid for Magnet Assembly.....  
AS-1034-2.....Wiper and Slip Ring for both Contact Plates.....  
AS-910-9.....Wire Wiper for both Slip Rings.....  
M-412-1.....Wire for AS-910-9.....

AS-828-5.....Selector Unit Complete.....

PARTS:

E-184-51.....Coil (reset).....  
CO-25-H-7.....Coil (step-up).....  
W-360.....Contact Plate.....  
A-613-17.....Core-plug for both Coils.....  
S-496.....Plunger for 25-H-7 Coil.....  
A-316.....Plunger and Washer for E-184-51 Coil.....  
A-463-57.....Ratchet and Shaft Assembly.....  
P-138-3.....Reset Arm.....  
A-344-9.....Step-up Arm.....  
SW-138.....Switch.....  
AS-1046-13.....Wiper Assembly.....

BRIGHT LIGHTS

PARTS CATALOG

SECTION 5: LIGHT BOX ASSEMBLY (Continued)

AS-731-1.....Sounder Assembly Complete.....

PARTS:

E-184-59.....Coil.....  
A-613-11.....Core-plug.....  
A-316-25.....Plunger Assembly.....  
SP-200-7.....Spring in Plunger.....

AS-1111.....Three Step Unit Complete.....

PARTS:

E-184-51.....Coil (reset).....  
E-184-53.....Coil (step-up).....  
A-613-17.....Core-plug for both Coils.....  
S-496.....Plunger for E-184-53 Coil.....  
A-316.....Plunger and Washer for E-184-51 Coil.....  
A-463-59.....Ratchet and Shaft Assembly.....  
P-138-3.....Reset Arm.....  
A-344-9.....Step-up Arm.....  
SW-805.....Switch.....

AS-1110.....Timer Unit Complete.....

PARTS:

E-184-51.....Coil (reset).....  
E-184-53.....Coil (step-up).....  
A-613-17.....Core-plug for both Coils.....  
A-316-8.....Plunger for E-184-53 Coil.....  
A-316.....Plunger and Washer for E-184-51 Coil.....  
A-463-55.....Ratchet and Shaft Assembly.....  
P-138-3.....Reset Arm.....  
A-344-9.....Step-up Arm.....  
SW-811.....Switch.....

SECTION 6: BACK DOOR ASSEMBLY

AS-797-6.....Replay Counter Complete.....

PARTS:

E-184-51.....Coil (reset).....  
CO-26-H-10.....Coil (step-up).....  
W-361.....Contact Plate.....  
A-613-17.....Core-plug for both Coils.....  
A-316-37.....Plunger for 26-H-10 Coil.....  
A-316.....Plunger and Washer for E-184-51 Coil.....  
A-463-60.....Ratchet and Shaft Assembly.....  
P-138-3.....Reset Arm.....  
A-344-9.....Step-up Arm.....  
SW-807.....Switch.....  
A-1400-9.....Wiper Assembly.....