

*Bally*

APRIL 1996  
16-10245



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CE

# Operators Handbook

Midway Manufacturing Company, 3401 North California Avenue, Chicago, Illinois 60618

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## MENU SYSTEM OPERATION

The Main Menu allows you to choose from several categories, which in turn lead to other menus. To access the Main Menu, open the coin door and press the Begin Test button, then press the Enter button. Press the Up or Down buttons to cycle through the Main Menu. Press the Enter button to access a menu. Press the Escape button to return to the Main Menu. Press the Start button for HELP at any time.

### Main Menu

	B.1 Main Audits
	B.2 Earnings Audits
	B.3 Standard Audits
	B.4 Feature Audits
	B.5 Histograms
	B.6 Time-Stamps
P. Printouts Menu	
	P.1 Earnings Data
	P.2 Main Audits
	P.3 Standard Audits
	P.4 Feature Audits
	P.5 Score Histograms
	P.6 Game Time Histograms
	P.7 Time-Stamps
	P.8 All Data
T. Test Menu	
	T.1 Switch Edges
	T.2 Switch Levels
	T.3 Single Switches
	T.4 Solenoid Test
	T.5 Flasher Test
	T.6 General Illumination
	T.7 Sound & Music Test
	T.8 Single Lamps
	T.9 All Lamps
	T.10 Lamp & Flasher Test
	T.11 Display Test
	T.12 Flipper Test
	T.13 Ordered Lamp Test
	T.14 Lamp Row-Col Test
	T.15 Dip Switch Test
	T.16 Wheel Test
	T.17 Vari Target Test
	T.18 Token Tube Test
	T.19 Light Rope Test
	T.20 3-Bank Drop Target Test
	T.21 Top Trough Test
	T.22 Empty Balls Test
U. Utilities Menu	
	U.1 Clear Audits
	U.2 Clear Coins
	U.3 Reset H.S.T.D.
	U.4 Set Time & Date
	U.5 Custom Message
	U.6 Set Game I.D.
	U.7 Factory Adjustments
	U.8 Factory Resets
	U.9 Presets
	U.10 Clear Credits
	U.11 Auto Burn-In
A. Adjustments Menu	
	A.1 Standard Adjustments
	A.2 Feature Adjustments
	A.3 Pricing Adjustments
	A.4 H.S.T.D. Adjustments
	A.5 Printer Adjustments

### Press Escape

To move out of a menu selection.

### Press Enter

To get into a menu selection.

### Press Up

Increases sequence; Example A.1, A.2, A.3, A.4.

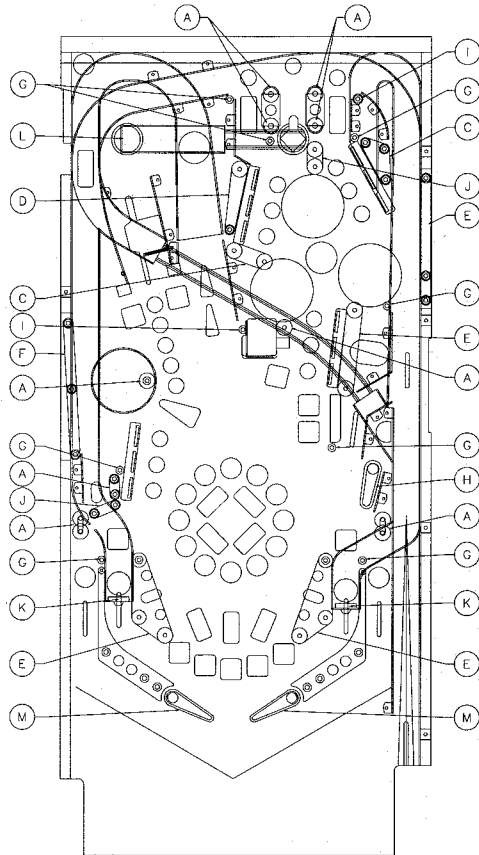
### Press Down

Decreases Sequence; Example A.4, A.3, A.2, A.1.

Use Up and Down to cycle through the selections in a menu.

Use Escape and Enter to move into and out of the selected menu

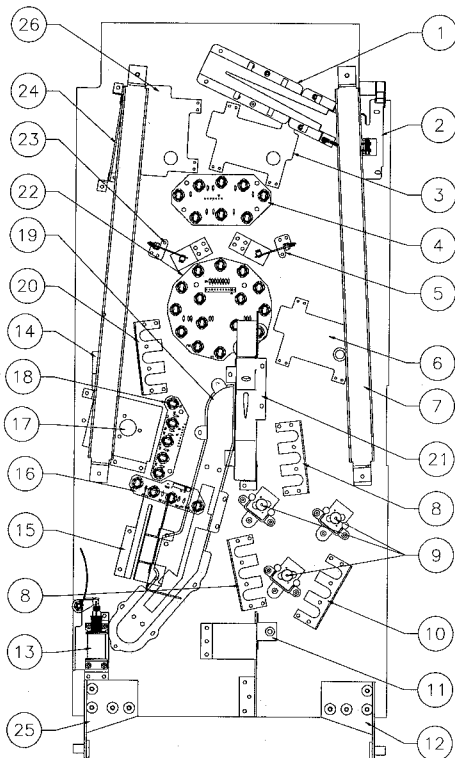
## RUBBER RINGS



Item No.	Part Number	Description.	Qty	Item No.	Part Number	Description.	Qty
A	23-6300	Rubber Ring 5/16"	14	H	23-6553-4	Small Flipper Ring, Red	1
C	23-6302	Rubber Ring 1"	4	I	23-6556	Black Rubber Sleeve	2
D	23-6303	Rubber Ring 1 1/4"	2	J	23-6599	Rubber Ring 7/16"	3
E	23-6305	Rubber Ring 2"	6	K	23-6686	Round Pad, Blue	2
F	23-6307	Rubber Ring 3"	2	L	23-6702	Bumper Plug, Blue	1
G	23-6535	Rubber Grommet	8	M	23-6773	Flipper Ring, Red	2

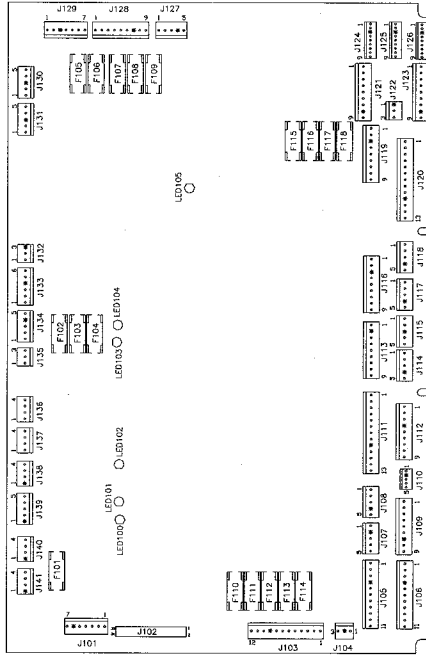
## LOWER PLAYFIELD PARTS

Item	Part Number	Description
1	A-19963-3	Outhole Ball Trough Assembly
2	A-21022	Shooter Lane Auto Kicker Assy.
3	A-14876-R-6	Flipper Assembly
4	A-20886	8-Lamp PCB Assembly
5	B-9362-R-3	Coil & Bracket Assembly
6	a-15849-R-1	Flipper Assembly
7	01-14381	Support Bracket (2)
8	A-20892	3-Bank Drop Target Assy. (2)
9	A-9415-2	Jet Bumper Coil Assembly (3)
10	A-20895	3-Bank Target Assembly
11	A-20907	Popper Mtg. Bracket Assembly
12	04-10452.1-1	Slide Bracket, Right
13	A-20882	Diverter Assembly
14	A-21034	Coil & Bracket Assembly
15	A-20851	Vari-Target Assembly
16	A-20888	4-Lamp PCB Assembly
17	A-20911	Spin Disc Assembly
18	A-20890	5-Lamp PCB Assembly
19	A-20922	Under Playfield Trough Assy.
20	A-20896	3-Bank Drop Target Assembly
21	A-20923	Center Loop Assembly
22	A-20887	16-Lamp PCB Assembly
23	B-9362-L-2	Coil & Bracket Assembly
24	A-2-246	10-Opto PCB Assembly
25	04-10452.1-2	Slide Bracket, Left
26	A-15849-L-7	Flipper Assembly



*Underside of Playfield, Viewed in Raised Position.*

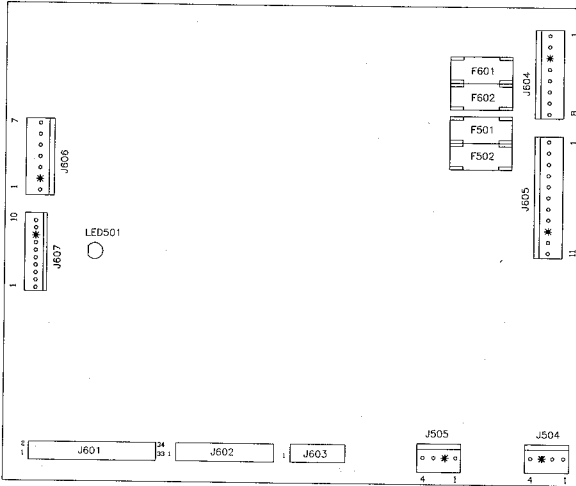
## FUSE LIST



### POWER DRIVER BOARD

Loc.	Description	Part Number	Value
F101	Regulated 12V	5731-14531-00	T0.63A, 250V
F102	Solenoids #9 to #16	5731-14530-00	T4.0A, 250V
F103	Solenoids #1-#8	5731-14530-00	T4.0A, 250V
F104	Solenoids #25 to #28	5731-14530-00	T4.0A, 250V
F105	+5V Logic	5731-14530-00	T4.0A, 250V
F106	+18V Lamp Matrix	5731-14530-00	T5.0A, 250V
F107	Flasher Secondary	5731-14530-00	T4.0A, 250V
F108	Solenoid Secondary	5731-14530-00	T6.3A, 250V
F109	Unregulated 12V	5731-14530-00	T4.0A, 250V
F110	G.I. #5 White-Violet	5731-14530-00	T4.0A, 250V
F111	G.I. #4 White-Green	5731-14530-00	T4.0A, 250V
F112	G.I. #3 White-Yellow	5731-14530-00	T4.0A, 250V
F113	G.I. #2 White-Orange	5731-14530-00	T4.0A, 250V
F114	G.I. #1 White-Brown	5731-14530-00	T4.0A, 250V
F115	+50V Flippers	5731-14530-00	T4.0A, 250V
F116	+50V Flippers	5731-14530-00	T4.0A, 250V
F117	+50V Flippers	5731-14530-00	T4.0A, 250V
F118	+50V Flippers	5731-14530-00	T4.0A, 250V

## FUSE LIST



### AUDIO VIDEO BOARD

Loc.	Description	Part Number	Value
F501	-25V	5731-14532-00	T2.5A, 250V
F502	+25V	5731-14532-00	T2.5A, 250V
F601	+62V	5731-14840-00	T0.315A, 250V
F602	-113V & -125V	5731-14840-00	T0.315A, 250V

### LINE FILTER

Loc.	Part Number	Value
Foreign	5731-14530-00	T4.0A, 250V
Domestic	5731-14046-00	T5.0A, 250V

## UPPER PLAYFIELD PARTS

Item No.	Part Number	Description	Item No.	Part Number	Description
2	01-12624	Lower Arch Mounting Bracket (2)	42	A-9415-2	Jet Bumper Coil Assembly
3	A-20246	** 10 Opto P.C.B. w/Brackets	A-12030-3		Jet Bumper Leaf Switch Assy.
4	A-15849-L-7	Flipper Assembly Complete	A-12753-2		Lug & Diode Assembly
	20-10290-6	Flipper w/Shaft, Yellow	B-9414-3		Jet Bumper Wafer Assy., Red
5	A-20981-2	Flipper Ball Guide Assy, Left	03-8254-9		Jet Bumper Car, Red
6	A-17811	Slingshot Kicker Assembly	23-6710-1		Clear Tubing 1"
	B-9362-L-2	Coil & Bracket Assembly	43	A-9415-2	Jet Bumper Coil Assembly
	10-128	Spring	A-12030-3		Jet Bumper Leaf Switch Assy.
7	A-17801	Kicker Count Switch	A-12753-2		Lug & Diode Assembly
8	02-4796-26	Standoff 8/32 x 1 5/8"	B-9414-3		Jet Bumper Wafer Assy., Red
9	A-20958	Left Ramp Assembly	03-8254-13		Jet Bumper Cap, Clear
10	A-16713	V Pad Kicker Assembly	23-6710-1		Clear Tubing 1"
	A-20989	Single Opto Assembly	44	12-7344.2	Center Wire Ramp
	A-21034	Coil & Bracket Assembly	45	A-20961	* Bank Light Assembly
	10-128	Spring	46	01-14307	Ball Guide
11	A-20965	Ball Guide & Opto Assembly	47	A-20892	3 Bank Drop Target Assembly
12	A-20896	3 Bank Drop Target Assembly	48	A-14196	* Shooter Gate Assembly
13	A-20911	Spin Disk Assembly	50	04-10417	Ball Guide
14	A-20923	Center Loop Assembly	51	A-15849-R-1	Flipper Assembly Complete
15	04-10445.1	Ball Guide	20-9264-6		Small Flipper w/Shaft, Yellow
17	A-20851	Vari-Target Assembly	52	04-10418	Ball Guide
18	04-10434	Ball Guide	53	A-17801	Kicker Count Switch
19	04-10441.1	Ball Guide	54	A-17811	Slingshot Kicker Assembly
20	A-20922	Under Playfield Trough Assy.	B-9362-R-3		Coil & Bracket Assembly
21	A-20988	* Left Sign Assembly	10-128		Spring
22	A-20912	Trough Assembly	55	A-15802-P	* Level & Holder Assembly
23	03-9504	Ball Popper Tube	56	A-20981-1	Flipper Ball Guide Assy, Right
24	A-20882	Diverter Assembly	57	A-14876-R-6	Flipper Assembly Complete
25	12-7330.2	Wire Popper Ramp	20-10290-6		Flipper w/Shaft, Yellow
26	01-14308*	Ball Guide	58	04-10415.1	Ball Guide
27	04-10407	Ball Guide	59	04-10423	Ball Guide
28	A-20116	Flap Gate Assembly	60	A-21022	Shooter Lane Auto Kicker Assy.
29	03-8379-9	Lite Hood	61	A-19963-3	Outhole Opto Ball Trough Assy.
30	4700-00070-00	Flat Washer (12)			
31	A-20935	Multi-Ball Assembly			
32	A-20116-1	Flap Gate Assembly			
33	A-20982	* Bracket & Light Assembly			
34	01-14313	Ball Guide			
35	A-20907	Popper Mtg. Bracket Assembly			
	A-21005	Switch & Bracket Assembly			
36	A-17838-1	* Stud Plate			
	02-4796-42	* Standoff 8/32 x 2 5/8"			
37	01-14306	Ball Guide			
38	A-9415-2	Jet Bumper Coil Assembly			
	A-12030-3	Jet Bumper Leaf Switch Assy.			
	A-12753-2	Lug & Diode Assembly			
	B-9414-3	Jet Bumper Wafer Assy., Red			
	03-8254-16	Jet Bumper Car, Yellow			
	23-6710-1	Clear Tubing 1"			
39	A-20895	3 Bank Drop Target Assembly			
40	A-20892	3 Bank Drop Target Assembly			
41	A-20944	Right Ramp Assembly			

**NOT SHOWN:**

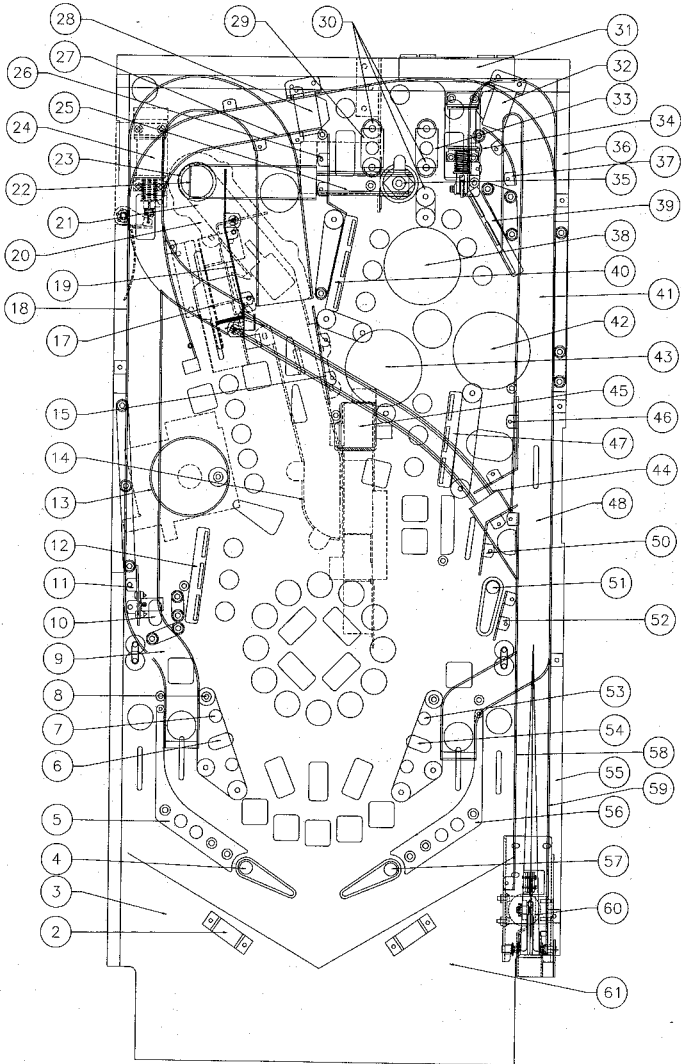
A-13204-90003	Bottom Arch Assembly
A-17812-4	Cable Mtg. Brkt. Assy. 1"
A-21040	Playfield Plastic Assembly
20-6500	1-1/16 Steel Ball (4)
36-90003	Screened Playfield

\* Not Shown

\*\* Located Under Playfield



## UPPER PLAYFIELD PARTS



## SOLENOID/FLASHER TABLE

Sol. No.	Function	Solenoid Type	Voltage Connections			Drive Xlster	Drive Connections			Drive Wire Color	Solenoid Part number Flashlamp Type	
			Playfield	Backbox	Cabinet		Playfield	Backbox	Cabinet		Playfield	Backbox
01	BIG KICK	High Power	J133-2			Q72	J116-1			Vio-Brn	AE-24-900	
02	RIGHT TOKEN TUBE	High Power		J135-2		Q68		J118-2		Vio-Red		04-10424
03	VARI TARGET RESET	High Power	J133-2			Q71	J116-4			Vio-Org	SM1-26-600	
04	LEFT TOKEN TUBE	High Power		J135-2		Q67		J118-5		Vio-Yel		04-10424
05	BANK KICK	High Power	J133-2			Q70	J116-6			Vio-Grn	AE-23-800	
06	TOP POPPER UP	High Power	J133-2			Q66	J116-7			Vio-Blu	AE-24-900	
07	RAMP DIVERTER	High Power	J133-2			Q69	J116-8			Vio-Blk	AE-26-1500	
08	KICKBACK (RAMP)	High Power	J133-2			Q65	J116-9			Vio-Gry	AE-23-800	
09	TROUGH EJECT	Low Power	J133-3			Q44	J113-1			Brn-Blk	AE-26-1500	
10	LEFT SLINGSHOT	Low Power	J133-3			Q48	J113-3			Brn-Red	AE-26-1200	
11	RIGHT SLINGSHOT	Low Power	J133-3			Q43	J113-4			Brn-Org	AE-26-1200	
12	LEFT JET	Low Power	J133-3			Q47	J113-5			Brn-Yel	AE-26-1200	
13	RIGHT JET	Low Power	J133-3			Q42	J113-6			Brn-Grn	AE-26-1200	
14	TOP JET	Low Power	J133-3			Q46	J113-7			Brn-Blu	AE-26-1200	
15	TOP LEFT 3-BANK	Low Power	J133-3			Q41	J113-8			Brn-Vio	AE-26-1200	
16	TOP RIGHT 3-BANK	Low Power	J133-3			Q45	J113-9			Brn-Gry	AE-26-1200	
17	BACK LEFT	Flasher	J133-6			Q28	J111-1			Blk-Brn	#906	
18	JETS & BACK RIGHT (2)	Flasher	J133-6			Q32	J111-2			Blk-Red	#89, #906	
19	RIGHT MIDDLE	Flasher	J133-6			Q27	J111-3			Blk-Org	#906	
20	RIGHT BOTTOM	Flasher	J133-6			Q31	J111-4			Blk-Yel	#906	
21	LEFT MIDDLE	Flasher	J133-6			Q26	J111-5			Blu-Brn	#906	
22	LEFT BOTTOM	Flasher	J133-6			Q30	J111-6			Blu-Red	#906	
23	LIGHT ROPE 1	Flasher		J134-5		Q25		J112-8		Blu-Org		04-10440
24	LIGHT ROPE 2	Flasher		J134-5		Q29		J112-9		Blu-Yel		04-10440
25	TOP POPPER EJECT	Gen. Purpose	J133-1			Q16	J109-1			Blu-Grn	AE-27-1200	
26	TOP LIGHT & MOTOR	Gen. Purpose		J140-2		Q15		J109-2		Blu-Blk		20-10307
27	BOTTOM LEFT 3-BANK	Gen. Purpose	J133-1			Q14	J109-3			Blu-Vio	AE-26-1200	
28	BOTTOM RIGHT 3-BANK	Gen. Purpose	J133-1			Q13	J109-4			Blu-Gry	AE-26-1200	
35	AUTO PLUNGER	High Power	J119-8-9			Q81	J120-3			Yel-Gry	AE-23-800	
36	LOCK UP RELEASE	Low Power	J119-8-9			Q83	J120-1			Org-Gry	AE-26-1200	
37	AUX. LAMP ENABLE	oL.P.D.C.		J138-2				J110-1		Brn-Wht		A-20909
38	AUX. LAMP CLOCK	oL.P.D.C.		J138-2				J110-3		Org-Wht		A-20909
39	AUX. LAMP DATA 1	oL.P.D.C.		J138-2				J110-4		Yel-Wht		A-20909
40	AUX. LAMP DATA 2	oL.P.D.C.		J138-2				J110-5		Gnn-Wht		A-20909

### General Illumination

01	ILLUMINATION STRING 1	G.I.	J105-1	J106-1		Q5	J105-7	J106-7		Wht-Brn	#44	#555
02	**AUX. LAMP 1 POWER	G.I.				Q4		J106-8		Wht-Org		#555
03	ILLUMINATION STRING 3	G.I.	J105-3	J106-3		Q3	J105-9	J106-9		Wht-Yel	#44	#555
04	**AUX. LAMP 2 POWER	G.I.				Q2		J106-10		Wht-Grn		#555
05	**AUX. LAMP 3 POWER	G.I.				Q1		J106-11		Wht-Vio		#555

### Flipper Circuits

Item No.	Coil/Flasher No.	Assy. Number	Description	Voltage Connections		Drive Transistors		Drive Connectors		Drive Wire Colors		Coil Part No.	Coil Color
				Playfield	Backbox	Power	Hold	Playfield	Power	Hold	Power		
29				J119-1 (Red-Grn)	Q90			J120-13		Yel-Grn			
30	Lower Right Flipper			J119-1 (Red-Grn)	Q92			J120-11		Org-Grn		FL-20867	WHITE
31				J119-4 (Red-Blu)	Q87			J120-9		Yel-Blu			
32	Lower Left Flipper			J119-4 (Red-Blu)	Q89			J120-7		Org-Blu		FL-20867	WHITE
33				J119-6 (Red-Vio)	Q84			J120-6		Yel-Vio			
34	Upper Right Flipper			J119-6 (Red-Vio)	Q86			J120-4		Org-Vio		FL-11753	YELLOW
35				J119-8 (Red-Gry)	Q81			J120-3		Yel-Gry		SEE	ABOVE
36	Upper Left Flipper			J119-8 (Red-Gry)	Q83			J120-1		Org-Gry		SEE	ABOVE

J1xx = Power Driver Board; 24-6549-#44 bulb; 24-8704-#89 bulb; 24-8766-#555 bulb; 24-8802-#906 bulb

\*\*These G.I. strings do not brighten and dim, they are always ON.

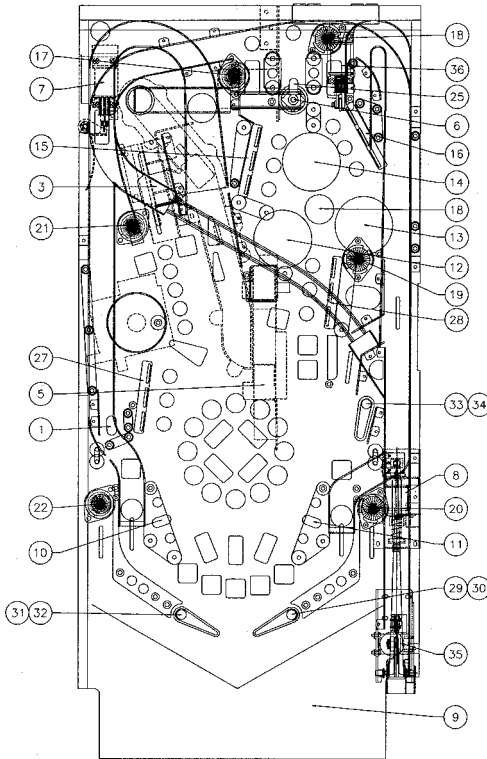
oL.P.D.C. = Low Power Device Controls

## SOLENOID/FLASHER LOCATIONS

Item No.	Coil/Flasher No.	Assy. Number	Description	Item No.	Coil/Flasher No.	Assy. Number	Description
01	AE-24-900	A-21034	BIG KICK	09	AE-26-1500	A-19953-3	TROUGH EJECT
02	04-10424	A-20925	* RIGHT TOKEN TUBE	10	AE-26-1200	B-9362-L-2	LEFT SLINGSHOT
03	SM1-26-600	A-20916	VARI TARGET RESET	11	AE-26-1200	B-9362-R-3	RIGHT SLINGSHOT
04	04-10424	A-20925	* LEFT TOKEN TUBE	12	AE-26-1200	A-9415-2	LEFT JET
05	AE-23-800	A-20923	BANK KICK	13	AE-26-1200	A-9415-2	RIGHT JET
06	AE-24-900	A-20919	TOP POPPER UP	14	AE-26-1200	A-9415-2	TOP JET
07	AE-26-1500	A-20882	RAMP DIVERTER	15	AE-26-1200	A-20892	TOP LEFT 3-BANK
08	AE-23-800	A-20959	KICKBACK (RAMP)	16	AE-26-1200	A-20895	TOP RIGHT 3-BANK

\*Located in Backbox

## SOLENOID/FLASHER LOCATIONS



Item No.	Coil/Flasher No.	Assy. Number.	Description
17	24-8802	A-20958	BACK LEFT
18	24-8802	A-20944	JETS & BACK RIGHT (2)
19	24-8704	A-17984	RIGHT MIDDLE
20	24-8802	A-20944	RIGHT BOTTOM
21	24-8802	A-20958	LEFT MIDDLE
22	24-8802	A-20958	LEFT BOTTOM
23	04-10440	90003-BB	* LIGHT ROPE 1
24	04-10440	90003-BB	* LIGHT ROPE 2
25	AE-27-1200	A-20920	TOP POPPER EJECT
26	20-10307	90003-BB	* TOP LIGHT & MOTOR
27	AE-26-1200	A-20896	BOTTOM LEFT 3-BANK
28	AE-26-1200	A-20892	BOTTOM RIGHT 3-BANK
35	AE-23-800	A-21022	AUTO PLUNGER
36	AE-26-1200	A-20935	LOCK UP RELEASE
37	---	A-20909	* AUX. LAMP ENABLE
38	---	A-20909	* AUX. LAMP CLOCK
39	---	A-20909	* AUX. LAMP DATA 1
40	---	A-20909	* AUX. LAMP DATA 2

### General Illumination Circuits

Item No.	Description	Bulb No.	
01	ILLUMINATION STRING 1	#44, #555	G.I. STRING 1
02	AUX. LAMP 1 POWER	#555	G.I. STRING 2
03	ILLUMINATION STRING 3	#44, #555	G.I. STRING 3
04	AUX. LAMP 2 POWER	#555	G.I. STRING 4
05	AUX. LAMP 3 POWER	#555	G.I. STRING 5

### Flipper Coils

Item No.	Coil No.	Color	Assy. No.	Description
29 & 30	FL-20867	WHITE	A-14876-R-6	LOWER R FLIPPER
31 & 32	FL-20867	WHITE	A-15849-L-7	LOWER L FLIPPER
33 & 34	FL-11753	YELLOW	A-15849-R-1	UPPER R. FLIPPER

\* Located in Backbox

# SWITCH MATRIX

Dedicated Grounded Switches	Column Row	White  Green								Flipper Grounded Switches	
		1 Green-Brown J206-1 U20-18	2 Green-Red J206-2 U20-17	3 Green-Orange J206-3 U20-16	4 Green-Yellow J206-4 U20-15	5 Green-Black J206-5 U20-14	6 Green-Blue J206-6 U20-13	7 Green-Violet J206-7 U20-12	8 Green-Gray J206-9 U20-11		
Orange-Brown J205-1 U17-5 Left Coin Chute D1	1	White-Brown J208-1 U18-11	TP TROUGH (ROOF)	SLAM TILT	TROUGH EJECT	KICKBACK	(A) LARM STANDUP	TOP LEFT 3-BANK TOP	BOTTOM LEFT 3-BANK TOP	LEFT TOKEN LEVEL	Black-Green J208-13 Lower Right Flipper EOS F1
Orange-Red J205-2 U17-7 Center Coin Chute D2	2	White-Red J208-2 U18-9	TP TROUGH (VARI)	COIN DOOR CLOSED	TROUGH BALL 1	LEFT BIG KICK	(A) LARM STANDUP	TOP LEFT 3-BANK MIDDLE	BOTTOM LEFT 3-BANK MIDDLE	RIGHT TOKEN LEVEL	Blue-Violet J212-12 Lower Right Flipper Opto F2
Orange-Black J205-3 U17-11 Right Coin Chute D3	3	White-Orange J208-3 U18-5	START BUTTON	NOT USED	TROUGH BALL 2	TOKEN CHUTE JAM	(A) LARM STANDUP	TOP LEFT 3-BANK BOTTOM	BOTTOM LEFT 3-BANK BOTTOM	RAMP ENTRANCE	Black-Blue J208-12 Lower Left Flipper EOS F3
Orange-Yellow J205-4 U17-9 4th Coin Chute D4	4	White-Yellow J208-4 U18-7	PLUMB BOB TILT	ALWAYS CLOSED	TROUGH BALL 3	LEFT JET	(A) LARM STANDUP	TOP RIGHT 3-BANK MIDDLE	BOTTOM RIGHT 3-BANK MIDDLE	RAMP MADE	Blue-Gray J212-11 Lower Left Flipper Opto F4
Orange-Green J205-5 U16-9 Normal Function Ssr Credits Esc D5	5	White-Green J208-5 U19-11	RIGHT ORBIT	UPPER RIGHT FLIP ROLLER	TROUGH BALL 4	RIGHT JET	ALAR(M) STANDUP	TOP RIGHT 3-BANK MIDDLE	BOTTOM RIGHT 3-BANK MIDDLE	WHEEL CHANNEL A	Black-Violet J208-11 Upper Right Flipper EOS F5
Orange-Blue J205-7 U16-11 Normal Function Vol Down D6	6	White-Blue J208-7 U19-9	LEFT OUTLANE	LEFT RETURN	LOCKUP 1 FRONT	TOP JET	VARI TARGET C	TOP RIGHT 3-BANK TOP	BOTTOM RIGHT 3-BANK TOP	WHEEL CHANNEL B	Black-Yellow J212-10 Upper Right Flipper Opto F6
Orange-Violet J205-8 U16-7 Normal Function Vol Up D7	7	White-Violet J208-8 U19-5	RIGHT OUTLANE	RIGHT RETURN	LOCKUP 2 REAR	LEFT SLINGSHOT	VARI TARGET B	TOP LEFT LANE	BANK KICKOUT	NOT USED	Black-Gray J208-10 Upper Left Flipper EOS F7
Orange-Gray J205-9 U16-5 Normal Function Begin Test Enter D8	8	White-Gray J208-9 U19-7	BALL SHOOTER	LEFT ORBIT	NOT USED	RIGHT SLINGSHOT	VARI TARGET A	TOP POPPER	TOP RIGHT LANE	NOT USED	Black-Blue J212-9 Upper Left Flipper Opto F8

J2XX = CPU Board;

= Opto, Typically Closed

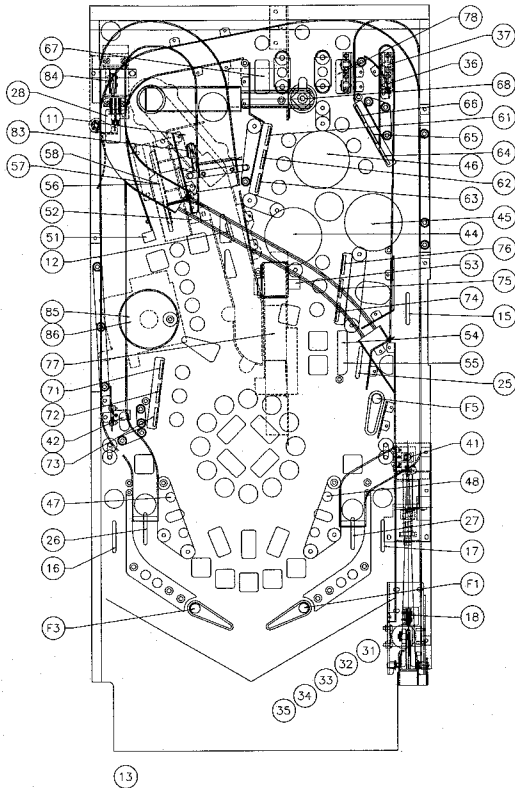
## SWITCH LOCATIONS

Item No.	Switch Part No.	Description	Item No.	Switch Part No.	Description
F1	SW-1A-194	Lower Right Flipper EOS	31	A-18617-1	Trough Eject (LED)
F2	A-17316	*Lower Right Flipper Cabinet		A-18618-1	(Trans.)
F3	SW-1A-194	Lower Left Flipper EOS	32	A-18617-1	Trough Ball 1 (LED)
F4	A-17316	*Lower Left Flipper Cabinet		A-18618-1	(Trans.)
F5	SW-1A-194	Upper Right Flipper EOS	33	A-18617-1	Trough Ball 2 (LED)
F6	A-17316	*Upper Right Flipper Cabinet		A-18618-1	(Trans.)
F7	---	Not Used	34	A-18617-1	Trough Ball 3 (LED)
F8	---	Not Used		A-18618-1	(Trans.)
11	5647-12693-26	Tp Trough (Roof)	35	A-18617-1	Trough Ball 4 (LED)
12	5647-12693-26	Tp Trough (Vari)		A-18618-1	(Trans.)
13	20-9663-16	Start Button	36	A-16908	Lockup 1 Front (LED)
14	04-10346	*Plumb Bob Tilt		A-16909	(Trans.)
15	5647-12693-19	Right Orbit	37	A-16908	Lockup 2 Rear (LED)
16	5647-12693-19	Left Outlane		A-16909	(Trans.)
17	5647-12693-19	Right Outlane	38	---	Not Used
18	5647-12693-65	Ball Shooter	41	A-16908	Kick Back (LED)
21	A-17195-1	*Slam Tilt		A-16909	(Trans.)
22	5643-09288-00	*Coin Door Closed	42	A-16908	Left Big Kick (LED)
23	---	Not Used		A-16909	(Trans.)
24	5643-09112-00	*Always Closed	43	A-16908	*Token Chute Jam (LED)
25	5647-12693-19	Upper Right Flip Rollover		A-16909	(Trans.)
26	5647-12693-19	Left Return	44	SW-11A-37-1	Left Jet
27	5647-12693-19	Right Return	45	SW-11A-37-1	Right Jet
28	20-10293	Left Orbit	46	SW-11A-37-1	Top Jet

\*Not Shown

† Located Under Playfield

## SWITCH LOCATIONS CONTINUED



Item No.	Switch Part No.
47	SW-1A-114
48	SW-1A-114
51	SW-1A-114
52	SW-1A-120
53	SW-1A-114
54	SW-1A-120
55	SW-1A-120
56	A-18530-6
57	A-18530-6
58	A-20976-6
61	A-17799-6
62	A-20906
63	A-20906
64	A-20906
65	A-13609
66	A-13609
67	A-13609
68	A-13609
71	A-13609
72	A-13609
73	A-13609
74	A-13609
75	A-13609
76	A-13609
77	A-13609
81	A-13609
82	A-13609
83	A-13609
84	A-13609
85	A-13609
86	A-13609

Description
Left Slingshot (kicker) (score)
Right Slingshot (kicker) (score)
(A)LAR(M) Standup
AL(A)RM Standup
AL(A)RM Standup
AL(A)R(M) Standup
ALAR(M) Standup
Vari Target C
Vari Target B
Vari Target A
Top Left 3-Bank Top
Top Left 3-Bank Middle
Top Left 3-Bank Bottom
Top Right 3-Bank Bottom
Top Right 3-Bank Middle
Top Right 3-Bank Top

Item No.	Switch Part No.
67	20-10293
68	5647-12693-15
71	A-13609
72	A-13609
73	A-13609
74	A-13609
75	A-13609
76	A-13609
77	5647-12693-26
78	20-10293
81	20-10301
82	20-10301
83	5647-12693-21
84	5647-12693-11
85	A-20952
86	A-20952

Description
Top Left Lane
Top Popper
Bottom Left 3-Bank Top
Bottom Left 3-Bank Middle
Bottom Left 3-Bank Bottom
Bottom Right 3-Bank Bottom
Bottom Right 3-Bank Middle
Bottom Right 3-Bank Top
Bank Kickout
Top Right Lane
*Left Token Level
*Right Token Level
Ramp Entrance
Ramp Made
Wheel Channel A
Wheel Channel B

\*Not Shown

## LAMP MATRIX

Yellow (B+) → Red

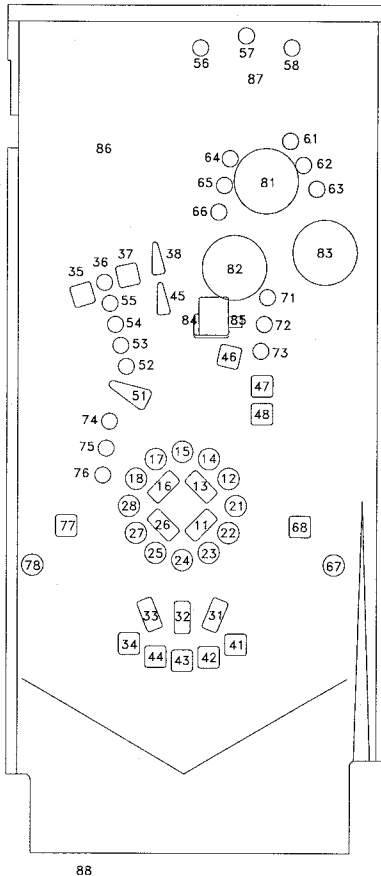
Column	1 Yellow-Brown J125-1 Q104 Q96	2 Yellow-Red J121-2 Q100	3 Yellow-Orange J121-3 Q95	4 Yellow-Black J121-4 Q99	5 Yellow-Green J121-5 Q94	6 Yellow-Blue J121-6 Q98	7 Yellow-Violet J121-7 Q93	8 Yellow-Gray J121-9 Q97
1 Red-Brown J125-1 Q104	LITE DEPOSIT	CENTER TIMER "15"	ARMOR CAR CELLAR	BONUS 5X + OUTLANE	WHEEL ARROW	TOP RIGHT 3-BANK TOP	BOTTOM R. 3-BANK TOP	TOP JET (YELLOW)
2 Red-Black J125-2 Q108	CENTER TIMER "10"	CENTER TIMER "20"	ARMOR CAR ROOF	BONUS 5X	LITE OUTLANES	TOP RIGHT 3-BANK MIDDLE	BOTTOM R. 3-BANK MIDDLE	LEFT JET (CLEAR)
3 Red-Orange J125-4 Q103	DISABLE COMPUTER	CENTER TIMER "25"	ARMOR CAR MAIN	BONUS 4X	INVISIBLE CODE	TOP RIGHT 3-BANK BOTTOM	BOTTOM R. 3-BANK BOTTOM	RIGHT JET (RED)
4 Red-Yellow J125-5 Q107	CENTER TIMER "5"	CENTER TIMER "30"	BONUS 2X	BONUS 3X	EXPLOSIVES	TOP LEFT 3-BANK TOP	BOTTOM L. 3-BANK TOP	BANK LEFT
5 Red-Green J125-6 Q102	CENTER TIMER "0"	CENTER TIMER "35"	(A)LARM STANDUP	RAMP LOCK	NOTE TO TELLER	TOP LEFT 3-BANK MIDDLE	BOTTOM R. 3-BANK MIDDLE	BANK RIGHT
6 Red-Blue J125-7 Q106	LITE LOCK	CALL GUARD	ATM CARD	AL(A)RM STANDUP	TOP LEFT LANE	TOP LEFT 3-BANK BOTTOM	BOTTOM R. 3-BANK BOTTOM	VARI BREAK IN
7 Red-Violet J125-8 Q101	CENTER TIMER "55"	CENTER TIMER "45"	A(L)ARM STANDUP	ALA(R)M STANDUP	TOP MIDDLE LANE	RIGHT "EXTRA TIME"	LEFT RETURN	ROOF BREAK IN
8 Red-Gray J125-9 Q105	CENTER TIMER "50"	CENTER TIMER "40"	RAMP JACKPOT	ALAR(M) STANDUP	TOP RIGHT LANE	RIGHT RETURN	LEFT "EXTRA TIME"	START BUTTON

J1XX = Power Driver Board

## LAMP LOCATIONS

Item No.	Bulb No.	Lamp Assy. No.	Description	Item No.	Bulb No.	Lamp Assy. No.	Description
11	24-8768	A-20887	Lite Deposit	41	24-8768	A-20886	Bonus 5X + Outlane
12	24-8768	A-20887	Center Timer "10"	42	24-8768	A-20886	Bonus 5X
13	24-8768	A-20887	Disable Computer	43	24-8768	A-20886	Bonus 4X
14	24-8768	A-20887	Center Timer "5"	44	24-8768	A-20886	Bonus 3X
15	24-8768	A-20887	Center Timer "0"	45	24-6549	A-17807	Ramp Lock
16	24-8768	A-20887	Lite Lock	46	24-6549	A-17835	AL(A)RM Standup
17	24-8768	A-20887	Center Timer "55"	47	24-6549	A-17835	ALA(R)M Standup
18	24-8768	A-20887	Center Timer "50"	48	24-6549	A-17835	ALAR(M) Standup
21	24-8768	A-20887	Center Timer "15"	51	24-8768	A-20888	Wheel Arrow
22	24-8768	A-20887	Center Timer "20"	52	24-8768	A-20888	Lite Outlans
23	24-8768	A-20887	Center Timer "25"	53	24-8768	A-20888	Invisible Code
24	24-8768	A-20887	Center Timer "30"	54	24-8768	A-20888	Explosives
25	24-8768	A-20887	Center Timer "35"	55	24-8768	A-20888	Note to Teller
26	24-8768	A-20887	Call Guard	56	24-6549	A-17835	Top Left Lane
27	24-8768	A-20887	Center Timer "45"	57	24-6549	A-17807	Top Middle Lane
28	24-8768	A-20887	Center Timer "40"	58	24-6549	A-17835	Top Right Lane
31	24-8768	A-20886	Armor Car-Cellar	61	24-6549	A-17835	Top Right 3-Bank Top
32	24-8768	A-20886	Armor Car-Roof	62	24-6549	A-17807	Top Right 3-Bank Middle
33	24-8768	A-20886	Armor Car-Main	63	24-6549	A-17835	Top Right 3-Bank Bottom
34	24-8768	A-20886	Bonus 2X	64	24-6549	A-17835	Top Left 3-Bank Top
35	24-8768	A-20888	(A)LARM Standup	65	24-6549	A-17807	Top Left 3-Bank Middle
36	24-8768	A-20888	ATM Card	66	24-6549	A-17835	Top Left 3-Bank Bottom
37	24-8768	A-20888	A(L)ARM Standup	67	24-6549	A-17835	Right "Extra Time"
38	24-8768	A-20888	Ramp Jackpot	68	24-6549	A-17835	Right Return

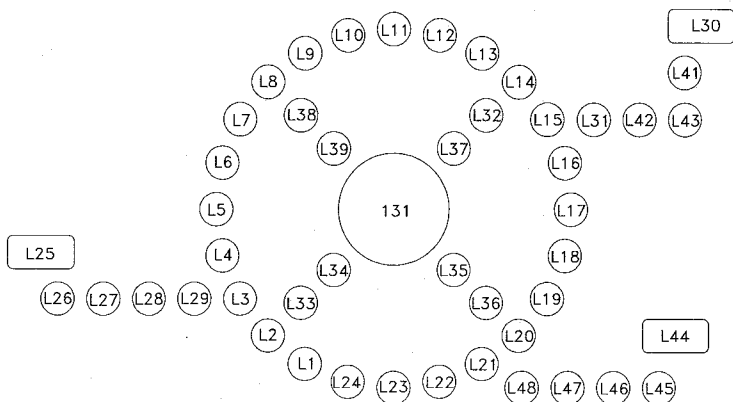
## LAMP LOCATIONS CONTINUED



Item No.	Bulb No.	Lamp Assy. No.	Description
71	24-6549	A-17835	Bottom Right 3-Bank Top
72	24-6549	A-17807	Bottom Right 3-Bank Middle
73	24-6549	A-17835	Bottom Right 3-Bank Bottom
74	24-6549	A-17835	Bottom Left 3-Bank Top
75	24-6549	A-17807	Bottom Left 3-Bank Middle
76	24-6549	A-17835	Bottom Left 3-Bank Bottom
77	24-6549	A-17835	Left Return
78	24-6549	A-17835	Left "Extra Time"
81	24-8768	B-9414-3	Top Jet (Yellow)
82	24-8768	B-9414-3	Left Jet (Clear)

Item No.	Bulb No.	Lamp Assy. No.	Description
83	24-8768	B-9414-3	Right Jet (Red)
84	24-6549	04-10083	Bank Left
85	24-6549	04-10083	Bank Right
86	24-6549	A-16041	Vari Break In
87	24-6549	A-16041	Roof Break In
88	---	20-9663-16	Start Button
			24-8768 = #555 Bulb
			24-6549 = #44 Bulb

## LAMP LOCATIONS CONTINUED



Backbox Lamps

Item No.	Bulb No.	Lamp Assy. No.	Description	Item No.	Bulb No.	Lamp Assy. No.	Description
L1	24-8768	A-20909	Backbox Lamp	L24	24-8768	A-20909	Backbox Lamp
L2	24-8768	A-20909	Backbox Lamp	L25	24-8768	A-20909	Backbox Lamp
L3	24-8768	A-20909	Backbox Lamp	L26	24-8768	A-20909	Backbox Lamp
L4	24-8768	A-20909	Backbox Lamp	L27	24-8768	A-20909	Backbox Lamp
L5	24-8768	A-20909	Backbox Lamp	L28	24-8768	A-20909	Backbox Lamp
L6	24-8768	A-20909	Backbox Lamp	L29	24-8768	A-20909	Backbox Lamp
L7	24-8768	A-20909	Backbox Lamp	L30	24-8768	A-20909	Backbox Lamp
L8	24-8768	A-20909	Backbox Lamp	L31	24-8768	A-20909	Backbox Lamp
L9	24-8768	A-20909	Backbox Lamp	L32	24-8768	A-20909	Backbox Lamp
L10	24-8768	A-20909	Backbox Lamp	L33	24-8768	A-20909	Backbox Lamp
L11	24-8768	A-20909	Backbox Lamp	L34	24-8768	A-20909	Backbox Lamp
L12	24-8768	A-20909	Backbox Lamp	L35	24-8768	A-20909	Backbox Lamp
L13	24-8768	A-20909	Backbox Lamp	L36	24-8768	A-20909	Backbox Lamp
L14	24-8768	A-20909	Backbox Lamp	L37	24-8768	A-20909	Backbox Lamp
L15	24-8768	A-20909	Backbox Lamp	L38	24-8768	A-20909	Backbox Lamp
L16	24-8768	A-20909	Backbox Lamp	L39	24-8768	A-20909	Backbox Lamp
L17	24-8768	A-20909	Backbox Lamp	L40	24-8768	A-20909	Backbox Lamp
L18	24-8768	A-20909	Backbox Lamp	L41	24-8768	A-20909	Backbox Lamp
L19	24-8768	A-20909	Backbox Lamp	L42	24-8768	A-20909	Backbox Lamp
L20	24-8768	A-20909	Backbox Lamp	L43	24-8768	A-20909	Backbox Lamp
L21	24-8768	A-20909	Backbox Lamp	L44	24-8768	A-20909	Backbox Lamp
L22	24-8768	A-20909	Backbox Lamp	L45	24-8768	A-20909	Backbox Lamp
L23	24-8768	A-20909	Backbox Lamp	L46	24-8768	A-20909	Backbox Lamp
				L47	24-8768	A-20909	Backbox Lamp
				L48	24-8768	A-20909	Backbox Lamp

24-8768 = #555 Bulb  
 Associated parts for lamps L1 thru L48:  
 03-8063-4 Lite Sleeve, Red (4)  
 03-8063-5 Lite Sleeve, White (40)  
 03-8063-6 Lite Sleeve, Yellow (4)



## NOTES

A series of 25 horizontal dotted lines for writing notes.

## WARNINGS & NOTICES

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