

Bally

JANUARY 1996
16-10206

ATTACK FROM MARS™



CE

Operatory Handbook

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



FLIPPERSPILL.COM

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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. Bookkeeping 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 Loop/Gate Test
	T.17 Saucer LED Test
	T.18 Drop Target Test
	T.19 Motor Bank Test
	T.20 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

LAMP MATRIX

Yellow (B+) 0 Red

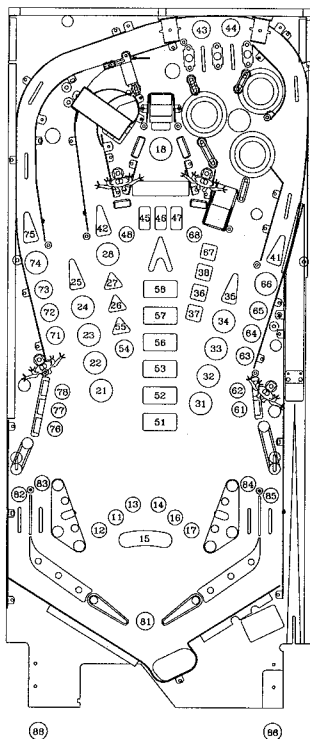
Column \ Row	1 Yellow-Brown J125-1 Q104	2 Yellow-Red J121-2 Q100	3 Yellow-Orange J121-3 Q95	4 Yellow-Black J121-4 Q99	5 Yellow-Green J121-5 Q94	6 Yellow-Blue J121-6 Q98	7 Yellow-Violet J121-7 Q93	8 Yellow-Gray J121-9 Q97
1 Red-Brown J125-1 Q104	SUPER JETS 11	BIG-O-BEAM 1 21	TRACTOR BEAM 1 31	RIGHT LOOP ARROW 41	ATTACK MARS 51	MARTIAN TARGET 61	CAPTURE 1 71	SHOOT AGAIN 81
2 Red-Black J125-2 Q108	SUPER JACKPOT 12	BIG-O-BEAM 2 22	TRACTOR BEAM 2 32	CENTER RAMP ARROW 42	D.C. U.S.A. 52	MARTIAN TARGET 62	CAPTURE 2 72	LEFT OUTLANE 82
3 Red-Orange J125-4 Q103	MARTIAN ATTACK MULTIBALL 13	BIG-O-BEAM 3 23	TRACTOR BEAM 3 33	LEFT TOP LANE 43	LONDON ENGLAND 53	ATOMIC BLASTER 1 63	CAPTURE 3 73	LEFT RETURN 83
4 Red-Yellow J125-5 Q107	ANNIHILATION 14	LEFT RAMP JACKPOT 24	RIGHT RAMP JACKPOT 34	RIGHT TOP LANE 44	LIGHT LOCK 54	ATOMIC BLASTER 2 64	LEFT LOOP JACKPOT 74	RIGHT RETURN 84
5 Red-Green J125-6 Q102	RETURN TO BATTLE 15	LEFT RAMP ARROW 25	RIGHT RAMP ARROW 35	LEFT MOTOR BANK 45	LOCK 1 55	ATOMIC BLASTER 3 65	LEFT LOOP ARROW 75	RIGHT OUTLANE 85
6 Red-Blue J125-7 Q106	CONQUER MARS 16	LOCK 2 26	MARTIAN ATTACK 36	CENTER MOTOR BANK 46	PISA ITALY 56	RIGHT LOOP JACKPOT 66	MARTIAN TARGET 76	LAUNCH BUTTON 86
7 Red-Violet J125-8 Q101	5-WAY COMBO 17	LOCK 3 27	RULE UNIVERSE 37	RIGHT MOTOR BANK 47	BERLIN GERMANY 57	EXTRA BALL 67	MARTIAN TARGET 77	NOT USED 87
8 Red-Gray J125-9 Q105	DROP TARGET 18	CENTER RAMP JACKPOT 28	STROKE OF LUCK 38	MARTIAN TARGET 48	PARIS FRANCE 58	MARTIAN TARGET 68	MARTIAN TARGET 78	START BUTTON 88

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-20622	Super Jets	35	24-8768	A-20624	Right Ramp Arrow
12	24-8768	A-20622	Super Jackpot	36	24-8768	A-20624	Martian Attack
13	24-8768	A-20622	Martian Attack Multi-ball	37	24-8768	A-20624	Rule Universe
14	24-8768	A-20622	Annihilation	38	24-8768	A-20624	Stroke Of Luck
15	24-8768	A-20622	Return To Battle (2)	41	24-6549	A-17835	Right Loop Arrow
16	24-8768	A-20622	Conquer Mars	42	24-8768	A-20624	Center Ramp Arrow
17	24-8768	A-20622	5-Way Combo	43	24-6549	A-17835	Left Top Lane
18	24-6549	A-17807	Drop Target	44	24-6549	A-17835	Right Top Lane
21	24-8768	A-20624	Big-O-Beam 1	45	24-8768	A-20624	Left Motor Bank
22	24-8768	A-20624	Big-O-Beam 2	46	24-8768	A-20624	Center Motor Bank
23	24-8768	A-20624	Big-O-Beam 3	47	24-8768	A-20624	Right Motor Bank
24	24-8768	A-20624	Left Ramp Jackpot	48	24-8768	A-20624	MARTIAN TARGET
25	24-8768	A-20624	Left Ramp Arrow	51	24-8768	A-20624	Attack Mars
26	24-8768	A-20624	Lock 2	52	24-8768	A-20624	D.C., U.S.A.
27	24-8768	A-20624	Lock 3	53	24-8768	A-20624	London, England
28	24-8768	A-20624	Center Ramp Jackpot	54	24-8768	A-20624	Light Lock
31	24-8768	A-20624	Tractor Beam 1	55	24-8768	A-20624	Lock 1
32	24-8768	A-20624	Tractor Beam 2	56	24-8768	A-20624	Pisa, Italy
33	24-8768	A-20624	Tractor Beam 3	57	24-8768	A-20624	Berlin, Germany
34	24-8768	A-20624	Right Ramp Jackpot	58	24-8768	A-20624	Paris, France

LAMP LOCATIONS CONTINUED



Item No.	Bulb No.	Lamp Assy. No.	Description
61	24-8768	A-20624	MARTIAN Target
62	24-8768	A-20624	MARTIAN Target
63	24-8768	A-20624	Atomic Blaster 1
64	24-8768	A-20624	Atomic Blaster 2
65	24-8768	A-20624	Atomic Blaster 3
66	24-8768	A-20624	Right Loop Jackpot
67	24-8768	A-20624	Extra Ball
68	24-8768	A-20624	MARTIAN Target
71	24-8768	A-20623	Capture 1
72	24-8768	A-20623	Capture 2
73	24-8768	A-20623	Capture 3
74	24-8768	A-20623	Left Loop Jackpot
75	24-8768	A-20623	Left Loop Arrow
76	24-8768	A-20629	MARTIAN Target

Item No.	Bulb No.	Lamp Assy. No.	Description
77	24-8768	A-20629	MARTIAN Target
78	24-8768	A-20629	MARTIAN Target
81	24-6549	A-17807	Shoot Again
82	24-6549	A-17835	Left Outlane
83	24-6549	A-17835	Left Return
84	24-6549	A-17835	Right Return
85	24-6549	A-17835	Right Outlane
86	---	20-9663-B-4	Launch Button
87	---	---	Not Used
88	---	20-9663-2	Start Button

24-8768 = #555 Bulb

24-6549 = #44 Bulb

*Not Shown

SWITCH MATRIX

White → Green

Dedicated Grounded Switches	Column Row	1	2	3	4	5	6	7	8	Flipper Grounded Switches
		Green-Brown J206-1 U20-18	Green-Red J206-2 U20-17	Green-Orange J206-3 U20-16	Green-Yellow J206-4 U20-15	Green-Black J206-5 U20-14	Green-Blue J206-6 U20-13	Green-Violet J206-7 U20-12	Green-Gray J206-9 U20-11	
Orange-Brown J205-1 U17-5 Left Coin Chute D1	1 White J208-1 U18-11	LAUNCH BUTTON	SLAM TILT	TROUGH EJECT	MARTI'AN TARGET	LEFT SLINGSHOT	LEFT RAMP ENTER	RIGHT LOOP HIGH	NOT USED	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	NOT USED	COIN DOOR CLOSED	TROUGH BALL 1	MARTI'AN TARGET	RIGHT SLINGSHOT	CENTER RAMP ENTER	RIGHT LOOP LOW	NOT USED	Black-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	MARTI'AN TARGET	LEFT JET	RIGHT RAMP ENTER	LEFT LOOP HIGH	NOT USED	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	MARTI'AN TARGET	BOTTOM JET	LEFT RAMP EXIT	LEFT LOOP LOW	NOT USED	Blue-Gray J212-11 Lower Left Flipper Opto F4
Orange-Green J205-6 U16-9 Normal Function Ser Credits Esc D5	5 White- Green J208-5 U19-11	NOT USED	NOT USED	TROUGH BALL 4	LEFT MOTOR BANK	RIGHT JET	RIGHT RAMP EXIT	LEFT SAUCER TARGET	NOT USED	Black-Violet J208-11 Upper Right Flipper EOS F5 (NOT USED)
Orange-Blue J205-7 U16-11 Normal Function Vol Down D6	6 White- Blue J208-7 U19-9	LEFT OUTLANE	LEFT RETURN	LEFT POPPER	CENTER MOTOR BANK	MARTIAN TARGET	MOTOR BANK DOWN	RIGHT SAUCER TARGET	NOT USED	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 RETURN	RIGHT OUTLANE	RIGHT POPPER	RIGHT MOTOR BANK	MARTIAN TARGET	MOTOR BANK UP	DROP TARGET	NOT USED	Black-Gray J208-10 Upper Left Flipper EOS F7 (NOT USED)
Orange-Gray J205-9 U16-5 Normal Function Begin Test Enter D8	8 White- Gray J208-9 U19-7	SHOOTER LANE	NOT USED	LEFT TOP LANE	RIGHT TOP LANE	MARTIAN TARGET	NOT USED	CENTER TROUGH	NOT USED	Black-Blue J212-9 Upper Left Flipper Opto F8

J2XX = CPU Board;

= Opto, Typically Closed

SWITCH LOCATIONS

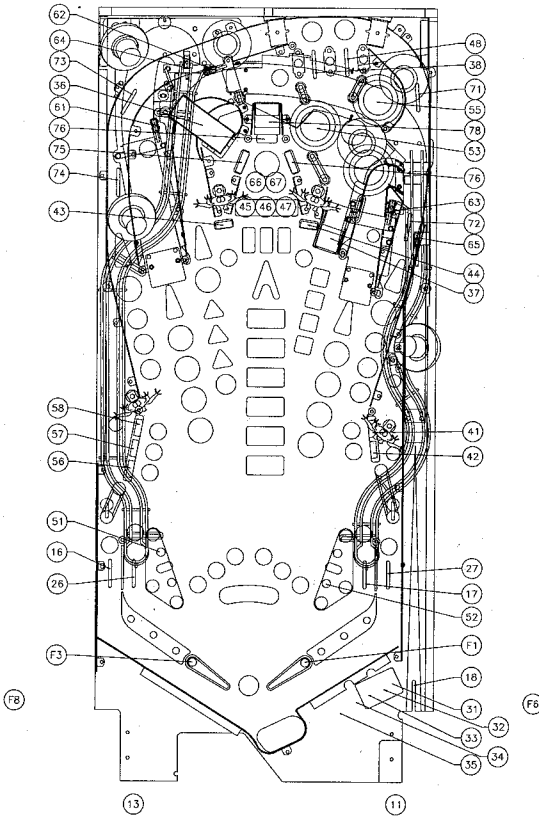
Item No.	Switch Part No.	Description
F1	SW-1A-194	Lower Right Flipper EOS
F2	A-17316	*Lower Right Flipper Cabinet
F3	SW-1A-194	Lower Left Flipper EOS
F4	A-17316	*Lower Left Flipper Cabinet
F5	---	Not Used
F6	---	Not Used
F7	---	Not Used
F8	---	Not Used
11	20-9663-B-4	Launch Button
12	---	Not Used
13	20-9663-2	Start Button
14	04-10346	*Plumb Bob Tilt
15	---	Not Used
16	5647-12693-19	Left Outlane
17	5647-12693-19	Right Return
18	5647-12693-32	Shooter Lane
21	---	*Slam Tilt
22	5643-09288-00	*Coin Door Closed
23	---	Not Used
24	5643-09112-00	*Always Closed
25	---	Not Used
26	5647-12693-19	Left Return
27	5647-12693-19	Right Outlane
28	---	Not Used

Item No.	Switch Part No.	Description
31	A-18617-1	Trough Eject (LED)
F2	A-18618-1	(Transistor)
32	A-18617-1	Trough Ball 1 (LED)
F4	A-18618-1	(Transistor)
33	A-18617-1	Trough Ball 2 (LED)
F6	A-18618-1	(Transistor)
34	A-18617-1	Trough Ball 3 (LED)
F8	A-18618-1	(Transistor)
35	A-18617-1	Trough Ball 4 (LED)
F5	A-18618-1	(Transistor)
36	A-16908	Left Popper (LED)
F7	A-16909	(Transistor)
37	A-16908	Right Popper (LED)
F3	A-16909	(Transistor)
38	5647-12693-19	Left Top Lane
41	A-18018-21	MARTI'AN Target
42	A-18018-21	MARTI'AN Target
43	A-18018-21	MARTIAN Target
44	A-18018-21	MARTI'AN Target
45	SW-1A-201-4	Left Motor Bank
46	SW-1A-200-4	Center Motor Bank
47	SW-1A-200-4	Right Motor Bank
48	5647-12693-19	Right Top Lane

*Not Shown

† Located Under Playfield

SWITCH LOCATIONS (continued)



Item No.	Switch Part No.	Description
51	SW-1A-114	Left Slingshot (Kicker)
	SW-1A-120	(Score)
52	SW-1A-114	Right Slingshot (Kicker)
	SW-1A-120	(Score)
53	SW-11A-37-1	Left Jet
54	SW-11A-37-1	Bottom Jet
55	SW-11A-37-1	Right Jet
56	A-18018-21	"M"ARTIAN Target
57	A-18018-21	"M"ARTIAN Target
58	A-18018-21	MA"RTIAN Target
61	5647-12693-11	Left Ramp Enter
62	5647-12693-11	Center Ramp Enter
63	5647-12693-11	Right Ramp Enter

*Not Shown

Item No.	Switch Part No.	Description
64	5647-12693-21	Left Ramp Exit
65	5647-12693-13	Right Ramp Exit
66	5647-12693-06	Motor Bank Down
67	5647-12693-06	Motor Bank Up
68	---	Not Used
71	5647-12693-19	Right Loop High
72	5647-12693-19	Right Loop Low
73	5647-12693-19	Left Loop High
74	5647-12693-19	Left Loop Low
75	A-20784-4	Left Saucer Target
76	A-20784-4	Right Saucer Target
77	5647-12693-31	Drop Targets
78	5647-12693-26	Center Trough
81-88	---	Not Used

SOLENOID/FLASHER TABLE

Sol. No.	Function	Solenoid Type	Voltage Connections			Drive Xister	Drive Connections			Drive Wire Color	Solenoid Part number	
			Playfield	Backbox	Cabinet		Playfield	Backbox	Cabinet		Playfield	Flashlamp Type
01	AUTO PLUNGER	High Power	J133-2			Q72	J116-1			Vio-Brn	AE-23-800	
02	TROUGH EJECT	High Power	J133-2			Q68	J116-2			Vio-Red	AE-26-1500	
03	LEFT POPPER	High Power	J133-2			Q71	J116-4			Vio-Org	AE-26-800	
04	RIGHT POPPER	High Power	J133-2			Q67	J116-5			Vio-Yel	AE-25-1000	
05	LEFT ALIEN LOW	High Power	J133-2			Q70	J116-6			Vio-Grn	AE-26-1500	
06	LEFT ALIEN HIGH	High Power	J133-2			Q66	J116-7			Vio-Blu	AE-26-1500	
07	KNOCKER	High Power		J133-2		Q69		J116-8		Vio-Blk		AE-23-800
08	RIGHT ALIEN HIGH	High Power	J133-2			Q65	J116-9			Vio-Gry	AE-26-1500	
09	LEFT SLINGSHOT	Low Power	J133-3			Q44	J113-1			Brn-Blk	AE-26-1200	
10	RIGHT SLINGSHOT	Low Power	J133-3			Q48	J113-3			Brn-Red	AE-26-1200	
11	LEFT JET	Low Power	J133-3			Q43	J113-4			Brn-Org	AE-26-1200	
12	BOTTOM 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	RIGHT ALIEN LOW	Low Power	J133-3			Q46	J113-7			Brn-Blu	AE-26-1500	
15	SAUCER SHAKE	Low Power	J133-3			Q41	J113-8			Brn-Vio	AE-26-1500	
16	DROP TARGET	Low Power	J133-3			Q45	J133-9			Brn-Gry	AE-26-1200	
17	RIGHT RAMP HIGH (2)	Flasher	J133-6	J134-5		Q28	J111-1	J112-1		Blk-Brn	#906	#906
18	LEFT RAMP HIGH (2)	Flasher	J133-6	J134-5		Q32	J111-2	J112-2		Blk-Red	#906	#906
19	RIGHT SIDE HIGH (2)	Flasher	J133-6	J134-5		Q27	J111-3	J112-3		Blk-Org	#906	#906
20	RIGHT SIDE LOW	Flasher	J133-6			Q31	J111-4			Blk-Yel	#89	
21	CENTER ARROW	Flasher	J133-6			Q26	J111-5			Blu-Grn	#906	
22	JETS	Flasher	J133-6			Q30	J111-6			Blu-Blk	#89	
23	SAUCER DOME	Flasher	J133-6			Q25	J111-7			Blu-Vio	#906	
24	MOTOR BANK	Flasher	J140-2			Q29	J111-8			Blu-Gry	14-8023	
25	LEFT RAMP LEFT (2)	Gen. Purpose	J133-6	J134-5		Q16	J109-1	J107-1		Blu-Brn	#906	#906
26	LEFT RAMP RIGHT (2)	Gen. Purpose	J133-6	J134-5		Q15	J109-2	J107-3		Blu-Red	#906	#906
27	LEFT SIDE HIGH (2)	Gen. Purpose	J133-6	J134-5		Q14	J109-3	J107-4		Blu-Org	#906	#906
28	LEFT SIDE LOW	Gen. Purpose	J133-6			Q13	J109-4			Blu-Yel	#89	
33	RIGHT GATE	High Power	J119-8,7			Q84	J120-6			Yel-Vio	A-14406	
34	LEFT GATE	Low Power	J119-6,7			Q86	J120-4			Org-Vio	A-14406	
35	DIVERTER POWER	High Power	J119-8,9			Q81	J120-3			Yel-Gry	A-20099	
36	DIVERTER HOLD	Low Power	J119-8,9			Q83	J120-1			Org-Gry	A-20099	
37	L.E.D. CLOCK	Flasher	J140-2			J110-1				Brn-Wht	A-20670	
38	L.E.D. DATA	Flasher	J140-2			J110-3				Vio-Wht	A-20670	
39	STROBE LIGHT	Flasher	J140-2			J110-4				Org-Wht	A-20718	

General Illumination												
01	BOTTOM PLAYFIELD	G.I.	J105-1	J106-1		Q5	J105-7	J106-7		Wht-Brn	#44	#555
02	MIDDLE PLAYFIELD	G.I.	J105-2			Q4	J105-8			Wht-Org	#44, #555	
03	TOP PLAYFIELD	G.I.	J105-3			Q3	J105-9			Wht-Yel	#44, #555	
04	**TOP INSERT	G.I.		J106-5		Q2		J106-10		Wht-Grn		#555
05	**BOTTOM INSERT	G.I.		J106-6		Q1		J106-11		Wht-Vio		#555

Item No.	Coil/ Flasher No.	Assy. Number	Description	Voltage Connections		Drive Transistors		Drive Connectors		Drive Wire Colors		Coil Part No.	Coil Color
				Playfield	Cabinet	Power	Hold	Playfield	Cabinet	Power	Hold		
29													
30	Lower Right Flipper	Lwr. Rt. Power	J119-1 (Red-Gm)		Q92			J120-11		Org-Grn		FL-11629	BLUE
31		Lwr. Lt. Power	J119-4 (Red-Blu)		Q87			J120-9		Yel-Blu			
32	Lower Left Flipper	Lwr. Lt. Hold	J119-4 (Red-Blu)		Q89			J120-7		Org-Blu		FL-11629	BLUE
33		Upr. Rt. Power	J119-6 (Red-Vio)		Q84			J120-6		Yel-Vio		SEE	ABOVE
34	Upper Right Flipper	Upr. Rt. Hold	J119-6 (Red-Vio)		Q86			J120-4		Org-Vio		SEE	ABOVE
35		Upr. Lt. Power	J119-8 (Red-Gry)		Q81			J120-3		Yel-Gry		SEE	ABOVE
36	Upper Left Flipper	Upr. Lt. Hold	J119-8 (Red-Gry)		Q83			J120-1		Org-Gry		SEE	ABOVE

J1xx=Power Driver Board; 24-6549=#44 bulb; 24-8704=#89 bulb; 24-8768=#555 bulb; 24-8802=#906 bulb.

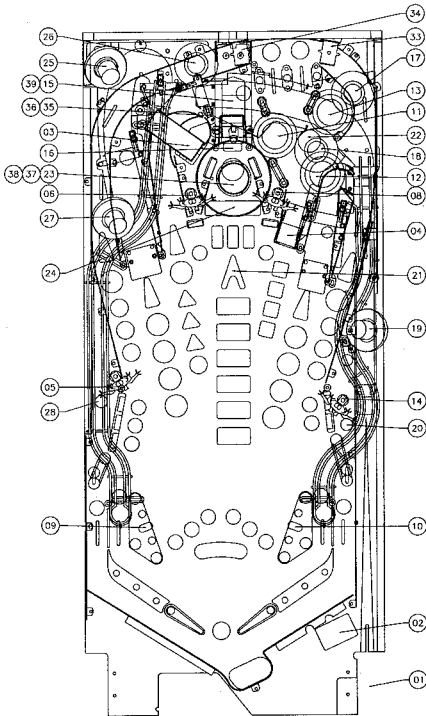
**These G.I. strings do not brighten and dim, they are always ON.

SOLENOID/FLASHER LOCATIONS

Item No.	Coil/ Flasher No.	Assy. Number	Description	Item No.	Coil/ Flasher No.	Assy. Number	Description
01	AE-23-800	A-14525	Auto Plunger	09	AE-26-1200	B-9362-L-2	Left Slingshot
02	AE-26-1500	A-19963-1	Trough Eject	10	AE-26-1200	B-9362-R-3	Right Slingshot
03	AE-26-800	A-20633	Left Popper	11	AE-26-1200	A-9415-2	Left Jet
04	AE-25-1000	A-20573	Right Popper	12	AE-26-1200	A-9415-2	Bottom Jet
05	AE-26-1500	A-20579-1	Left Alien Low	13	AE-26-1200	A-9415-2	Right Jet
06	AE-26-1500	A-20579-2	Left Alien High	14	AE-26-1500	A-20579-1	Right Alien Low
07	AE-23-800	B-10686-1	Knocker	15	AE-26-1500	A-20608	Saucer Shake
08	AE-26-1500	A-20579-1	Right Alien High	16	AE-26-1200	A-20657	Drop target

*NOT SHOWN

Solenoid/Flasher Locations (continued)



Item No.	Coil/Flasher No.	Assy. Number.	Description
17	24-8802	A-20621	Right Ramp High (2)
18	24-8802	A-20621	Right Ramp Low (2)
19	24-8802	A-20549	Right Side High (2)
20	24-8704	A-17983	Right Side Low
21	24-8802	A-20624	Center Arrow
22	24-8704	A-17803	Jets
23	24-8802	A-20670	Saucer Dome
24	14-8023	A-20572	Motor Bank
25	24-8802	A-20553	Left Ramp Left
26	24-8802	A-20553	Left Ramp Right
27	24-8802	A-20546	Left Side High
28	24-8704	A-17983	Left Side Low
33	A-14406	A-17796	Right Gate
34	A-14406	A-17796	Left Gate
35	A-20099	A-17241	Diverter Power
36	A-20099	A-17241	Diverter Hold
37	---	A-20670	L.E.D. Clock
38	---	A-20670	L.E.D. Data
39	---	A-20718	Strobe Light

General Illumination Circuits

Item No.	Description	Bulb No.	
01	Bottom Playfield	#44, #555	G.I. String 1
02	Middle Playfield	#44, #555	G.I. String 2
03	Top Playfield	#44, #555	G.I. String 3
04	Top Insert	#555	G.I. String 4
05	Bottom Insert	#555	G.I. String 5

Flipper Coils

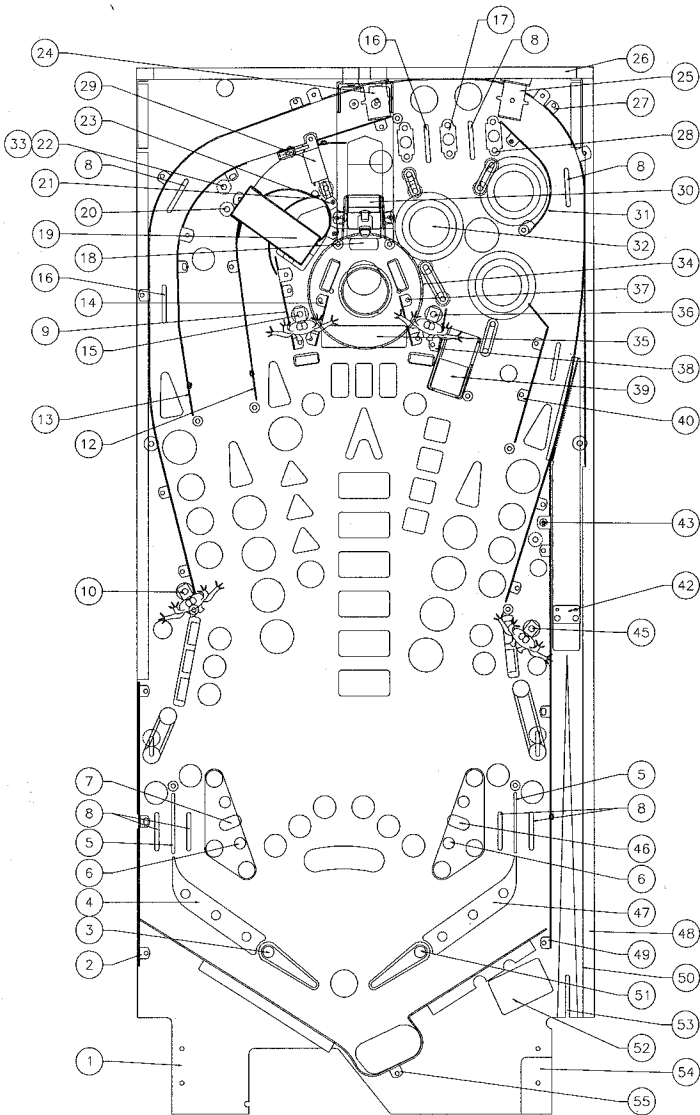
Item No.	Coil No.	Color	Assy. No.	Description
29 & 30	FL-11629	Blue	A-15849-R-2	Lwr R Flipper
31 & 32	FL-11629	Blue	A-15849-L-2	Lwr L Flipper

UPPER PLAYFIELD PARTS

Item No.	Part Number	Description	Item No.	Part Number	Description
1	01-9211	Playfield Hanger Bracket (2)	35	A-20572	3-Bank Motor Assembly
2	01-12915	Ball Guide		A-20683	Moving Target Assembly
3	A-15849-L-2	Flipper Assembly Complete		02-4259	Roller
4	20-10110-5	Flipper Bat & Shaft Assembly	36	A-20579-1	Alien Mech. Assembly
5	A-20570-2	Left Flipper Ball Guide		01-14173.1	Figurine Support Bracket
6	12-6466-10	Ball Guide Wire 2 1/2"		23-6768	Alien Figurine
7	A-17801	Kicker Count Switch Assembly	37	01-14269	Ball Guide
	A-17811	Kicker Assembly	38	01-14111	Ball Guide
	B-9362-L-2	Coil & Bracket assembly	39	A-20573	Right Ball Popper Assembly
	10-128	Spring	40	01-14192	Ball Guide
8	A-17813	Rollover Switch Assembly	42	A-20480	Ball Guide Ramp Assembly
9	04-10274.2	Ball Guide	43	02-5239-1	Standoff 1.82"
10	A-20579-1	Alien Mech. Assembly	45	A-20579-1	Alien Mech. Assembly
	01-14169.2	Figurine Support Bracket		01-14171.2	Figurine Support Bracket
	23-6768	Alien Figurine		23-6768	Alien Figurine
12	04-10272	Ball Guide	46	A-17811	Kicker Assembly
13	04-10271	Ball Guide		B-9362-R-3	Coil & Bracket Assembly
14	01-14269	Ball Guide		10-128	Spring
15	A-20479-2	Alien Mech. Assembly	47	A-20570-1	Right Flipper Ball Guide
	01-14170.1	Figurine Support Bracket	48	A-15802-P	Level
	23-6768	Alien Figurine	49	04-10275	Ball Guide
16	A-17813-1	Rollover Switch Assembly	50	01-10621	Strike Plate
17	03-8318-9	Double Sided Lite Hood, Red (3)	51	A-15849-R-2	Flipper Assembly Complete
18	A-20657	1-Bank Drop Target Assembly	52	20-10110-5	Flipper Bat & Shaft Assembly
19	A-20633	Left Popper Assembly	53	A-19963-1	Ball Trough w/Cable
	04-10296	Left Popper Scoop	53	A-18973	Shooter Lane Switch
20	02-4436-2	Spacer 2.31"	54	A-14525	Kicker Bracket Assembly
	02-5238-1	Standoff 2.09"	55	01-13593	Bottom Arch Ball Guide
21	A-17241	Ramp Diverter Assembly	NOT SHOWN:		
	A-20556	Shaft & Blade Assembly	A-13204-50041		Bottom Arch Assembly
	20-10283	Bearing	A-17812-2		Cable Mounting Bracket 1/2"
	4700-00030-00	Fiat Washer	A-17812-4		Cable Mounting Bracket 1"
22	01-14242.1	Angle Bracket	A-20546		Left Wire Ramp Assembly
	02-5238-2	* Standoff 3.05"	A-20547		Right Plastic Ramp Assembly
23	01-14193	Ball Guide	A-20549		Right Wire Ramp Assembly
24	A-17796	Ball Gate Actuator Coil Assy.	A-20553		Left Plastic Ramp Assembly
	A-17797-2	Right Ball Gate Assembly	A-20621		Middle Plastic Ramp Assembly
	03-7796-2	Target Shaft Washer	A-20771-1		Playfield Plastic Assembly
25	A-17796	Ball Gate Actuator Coil Assy.	A-20771-2		Playfield Plastic Assembly
	A-17797-1	Left Ball Gate Assembly	A-20771-3		Playfield Plastic Assembly
	03-7796-2	Target Shaft Washer	A-20771-4		Playfield Plastic Assembly
26	A-20578	Back Panel Assembly	A-20771-5		Playfield Plastic Assembly
27	04-10270.1	Ball Guide	H-20705		Strobe Cable Assembly
28	02-5239-2	Standoff 1.88"	01-11791		Service Switch Actuator
29	A-20755	Ball Gate Assembly	03-9486-1		Full Playfield Mylar
30	A-20658	Trough Assembly	03-9486-2		Ramp Drop Area Mylar
	01-14110	Ball Guide	03-9486-3		Ramp Drop Area Mylar
31	01-14112	Ball Guide	03-9486-4		Jet Bumper Area Mylar
32	A-9415-2	Jet Bumper Coil Assembly	36-50041		†Screened Playfield
	A-12030-3	Jet Bumper Switch Assembly			
	B-9414-3	Jet Bumper Wafer Assy., Red			
	03-9007-9	Jet Bumper Cap, Red			
	23-6710-1	Clear Tubing #10 1"			
33	01-14284	Scoop Hang-up Bracket			
34	A-20608	Saucer Assembly			

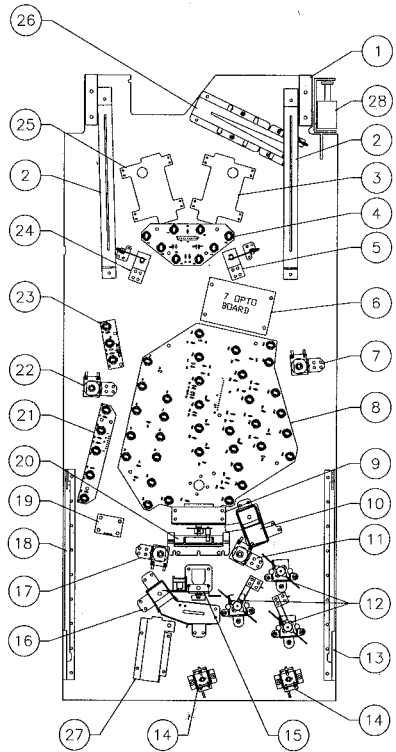
†The ATTACK FROM MARS hardcoat playfield does not require a full mylar. However, mylars can be purchased through your local Bally Distributor.

UPPER PLAYFIELD PARTS



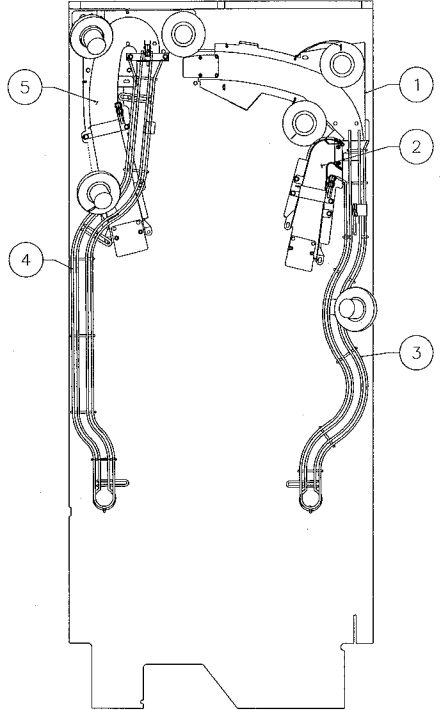
LOWER PLAYFIELD PARTS

Item	Part Number	Description
1	01-9211	Bracket Playfield Hanger (2)
2	01-11781	Leg Support (2)
3	A-15849-R	Flipper Assembly
4	A-20622	8-Lamp Board Assembly
5	A-17811	Kicker Arm (Slingshot) Assy.
6	B-9362-R-3	Coil & Bracket Assembly
7	A-15576	7-Switch Opto PCB Assembly
8	A-20579-1	Alien Mech. Assembly
9	01-14171.2	Figurine Support Bracket
10	A-20624	37-Lamp PCB Assembly
11	A-20572	3-Bank Motor Assembly
12	A-20573	Right Ball Popper Assembly
13	A-20579-1	Alien Mech. Assembly
14	01-14173.1	Figurine Support Bracket
15	A-9415-2	Jet Bumper Coil Assembly
16	A-17749-1-2	Playfield Slide Mechanism, R.
17	A-17796	Ball Gate Actuator Assy. (2)
18	A-20657	1-Bank Drop Target Assembly
19	A-20633	Left Popper Assembly
20	04-10296	Left Popper Scoop
21	A-20479-2	Alien Mech. Assembly
22	01-14170.1	Figurine Support Bracket
23	A-17749-1-1	Playfield Slide Mechanism, L.
24	A-15340	Motor EMI w/Brake PCB Assy.
25	A-20683	3-Bank Moving Target Assy.
26	A-20623	5-Lamp PCB Assembly
27	A-20579-1	Alien Mech. Assembly
28	01-14169.2	Figurine Support Bracket
29	A-20629	3-Lamp PCB Assembly
30	A-17811	Kicker Arm (Slingshot) Assy.
31	B-9362-L-2	Coil & Bracket Assembly
32	A-15849-L-2	Flipper Assembly
33	A-19963-1	Ball Trough Assembly
34	A-17241	Ramp Diverter Assembly
35	A-14525	Kicker Bracket Assembly

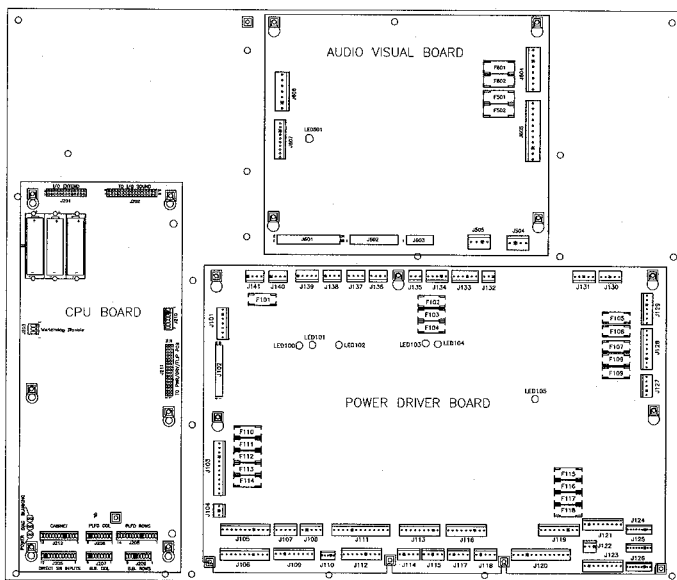


RAMPS

Item	Part Number	Description
1	A-20621	Middle Ramp Assembly
2	A-20547	Right Plastic Ramp Assembly
3	A-20549	Right Wire Ramp Assembly
4	A-20546	Left Wire Ramp Assembly
5	A-20553	Left Plastic Ramp Assembly



FUSE LIST



AUDIO VIDEO BOARD

F501	-25V	T2.5A, 250V
F502	+25V	T2.5A, 250V
F601	+62V	T0.25A, 250V
F602	-113V & -125V	T0.25A, 250V

CPU BOARD

There are no fuses on the CPU board.

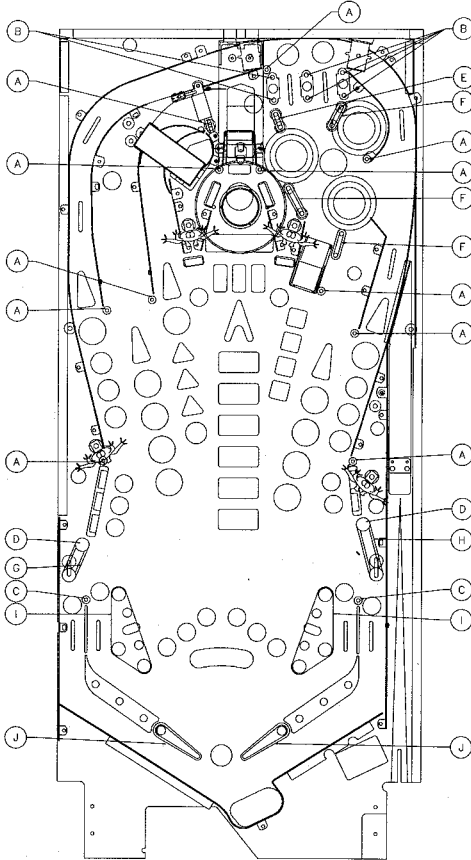
POWER DRIVER BOARD

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

LINE FILTER

Foreign	T4.0A, 250V
Domestic	T5.0A, 250V

RUBBER RINGS



Item No.	Part Number	Description.	Qty	Item No.	Part Number	Description.	Qty
A	23-6556	Black Sleeve	11	F	23-6694-5	Ring 3/4", Black	3
B	23-6641	Bumper Rubber, Black	6	G	23-6694-6	Ring 1", Black	1
C	23-6694-1	Grommet 3/32", Black	2	H	23-6694-7	Ring 1 1/4", Black	1
D	23-6694-3	Ring 5/16", Black	2	I	23-6694-10	Ring 2 1/2", Black	2
E	23-6694-4	Ring 7/16", Black	1	J	23-6695	Flipper Ring, Black	2

WARNINGS & NOTICES

WARNING

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RF Interference Notice

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TO MAINTAIN THESE LEVELS, reposition harnesses and reconnect ground straps to their original placements, if they become disconnected during maintenance.

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FOR SERVICE...
CALL your authorized
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**CAUTION: Transport this game ONLY
with hinged backbox DOWN!**