



# Operators Handbook

WILLIAMS ELECTRONICS GAMES, INC.  
3401 N. CALIFORNIA  
CHICAGO, IL 60618

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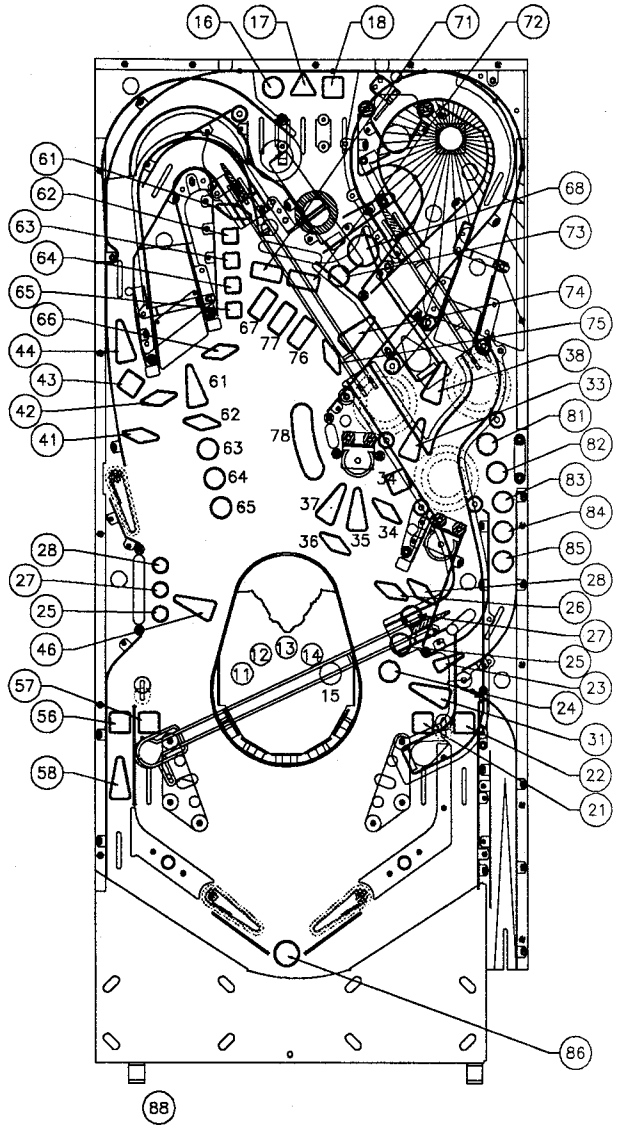
# LAMP MATRIX

Column \ Row		Yellow (B+)						Red	
		1 Yellow-Brown J121-1 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
<b>1</b> Red-Brown J125-1 Q104	(C)ONGO 11	ZI(N)J 21	"AUTOFIRE" 31	DIAMOND LEFT LOOP 41	LEFT RAMP "P" 51	DIAMOND INNER LOOP 61	"TRAVI" 71	(H)IPPO 81	
<b>2</b> Red-Black J125-2 Q108	C(O)NGO 12	ZIN(J) 22	RIGHT RAMP EXTRA BALL 32	"WE ARE" 42	LEFT RAMP "A" 52	(G)RAY 62	"COM" 72	H(I)PPO 82	
<b>3</b> Red-Orange J125-4 Q103	CO(N)GO 13	JET EXTRA COLLECT 23	RIGHT RAMP "COLLECT" 33	LEFT LOOP EXTRA BALL 43	LEFT RAMP "M" 53	G(R)AY 63	"MINE SHAFT" 73	HI(P)PO 83	
<b>4</b> Red-Yellow J125-5 Q107	CON(G)O 14	"JUNGLE JACKPOT" 24	DIAMOND RIGHT RAMP 34	LEFT LOOP "LOCK" 44	DIAMOND LEFT RAMP 54	GR(A)Y 64	UPPER LOOP "LOCK" 74	HIP(P)O 84	
<b>5</b> Red-Green J125-6 Q102	CONG(O) 15	"SKILL FIRE" 25	LEFT EJECT EYE 35	LEFT BANK BOTTOM 45	LEFT RAMP JACKPOT 55	GRA(Y) 65	DIAMOND UPPER LOOP 75	HIPP(O) 85	
<b>6</b> Red-Blue J125-7 Q106	(A)MY 16	"YOU" 26	DIAMOND LEFT EJECT 36	"SKILL SHOT" 46	(Z)INJ 56	"WATCHING" 66	SATELLITE RIGHT 76	"SHOOT AGAIN" 86	
<b>7</b> Red-Violet J125-8 Q101	A(M)Y 17	"MAP" 27	"MYSTERY" 37	LEFT BANK CENTER 47	Z(I)NJ 57	SATELLITE LEFT 67	SATELLITE CENTER 77	NOT USED 87	
<b>8</b> Red-Gray J125-9 Q105	AM(Y) 18	DIAMOND RIGHT EJECT 28	RIGHT RAMP JACKPOT 38	LEFT BANK TOP 48	"KICKBACK" 58	"SUPER SCORE" 68	"PERIMETER DEFENSE" 78	START BUTTON 88	

J1XX = Power Driver Board

# LAMP LOCATIONS

Item No.	Bulb No.	Lamp Assy No.	Description
11	24-8768	A-20603	(C)ongo
12	24-8768	A-20603	C(o)ngo
13	24-8768	A-20603	Co(n)go
14	24-8768	A-20603	Con(g)o
15	24-8768	A-20603	Cong(o)
16	24-8768	A-20601	(A)my
17	24-8768	A-20601	A(m)y
18	24-8768	A-20601	Am(y)
21	24-8768	A-20605	Zi(n)j
22	24-8768	A-20605	Zin(j)
23	24-8768	A-20605	Jet Extra Collect
24	24-8768	A-20605	Jungle Jackpot
25	24-8768	A-20605	Skill Fire
26	24-8768	A-20605	You
27	24-8768	A-20605	Map
28	24-8768	A-20605	Diamond Right Eject
31	24-8768	A-20605	Autofire
32	24-8768	A-20697	Right Ramp Extra Ball
33	24-8768	A-20697	Right Ramp Collect
34	24-8768	A-20697	Diamond Right Ramp
35	24-8768	A-20697	Left Eject Eye
36	24-8768	A-20697	Diamond Left Eject
37	24-8768	A-20697	Mystery
38	24-6549	A-17835	Right Ramp Jackpot
41	24-8768	A-20606	Diamond Left Loop
42	24-8768	A-20606	We Are
43	24-8768	A-20606	Left Loop Extra Ball
44	24-8768	A-20606	Left Loop Lock
45	24-8768	A-20602	Left Bank Bottom
46	24-8768	A-20602	Skill Shot
47	24-8768	A-20602	Left Bank Center
48	24-8768	A-20602	Left Bank Top
51	24-8768	A-20620	Left Ramp 1
52	24-8768	A-20620	Left Ramp 2
53	24-8768	A-20620	Left Ramp 3
54	24-8768	A-20620	Diamond Left Ramp
55	24-8768	A-20620	Left Ramp Jackpot
56	24-6549	A-17835	(Z)inj
57	24-6549	A-17835	Z(i)nj
58	24-6549	A-17835	Kickback
61	24-8768	A-20607	Diamond Inner Loop
62	24-8768	A-20607	(G)ray
63	24-8768	A-20607	G(r)ay
64	24-8768	A-20607	Gr(a)y
65	24-8768	A-20607	Gra(y)
66	24-8768	A-20607	Watching
67	24-8768	A-20607	Satellite Left
68	24-6549	A-17807	Super Score
71	24-8768	A-20607	Travi
72	24-8768	A-20607	Com
73	24-8768	A-20607	Mine Shaft
74	24-8768	A-20607	Upper Loop Lock
75	24-8768	A-20607	Diamond Upper Loop
76	24-8768	A-20607	Satellite Right
77	24-8768	A-20607	Satellite Center
78	24-6549	A-17835	Perimeter Defense
81	24-8768	A-20600	(H)ippo
82	24-8768	A-20600	H(i)ppo
83	24-8768	A-20600	Hi(p)po
84	24-8768	A-20600	Hip(p)o
85	24-8768	A-20600	Hipp(o)
86	24-6549	A-17807	Shoot Again
87	-----		Not Used
88	-----	20-9663-1	Start Button



24-6549 = #44 BULB  
 24-8768 = #555 BULB

# SWITCH MATRIX

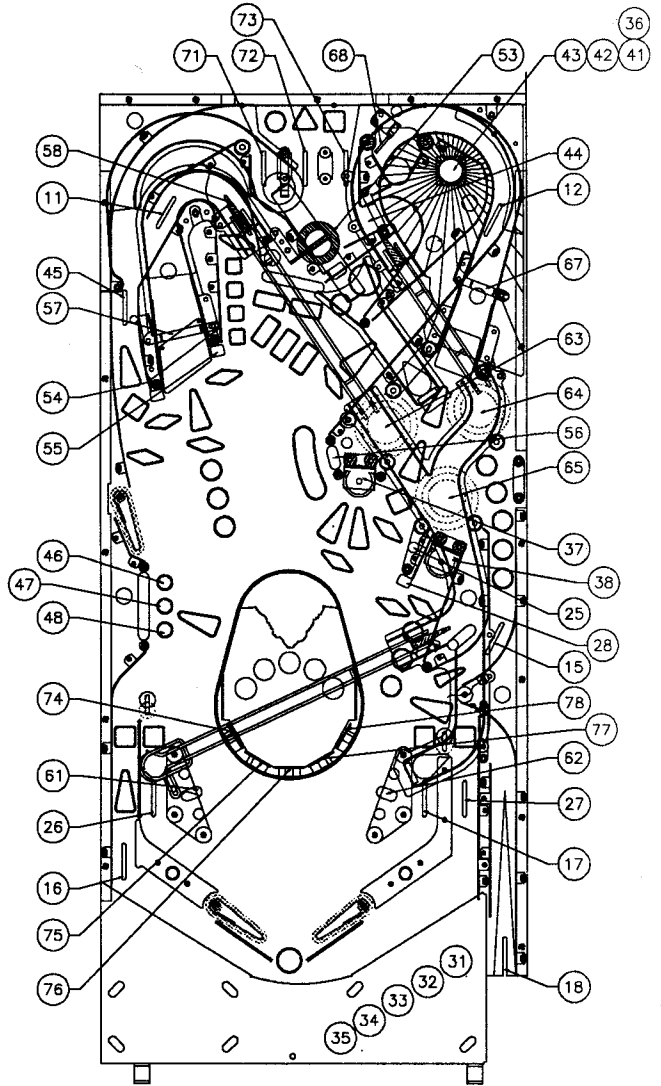
White ↔ Green

Dedicated Grounded Switches	Column	1	2	3	4	5	6	7	8	Flipper Grounded Switches
	Row	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 Left Coin Chute U17-5  D1	1 White-Brown J208-1 U18-11	INNER LEFT LOOP  11	SLAM TILT  21	TROUGH EJECT  31	LOCK BALL 1  41	"TRAVI"  51	LEFT SLINGSHOT  61	(A)MY  71	NOT USED  81	Black-Green J208-13 Lower Right Flipper E.O.S.  F1
Orange-Red J205-2 Center Coin Chute U17-7  D2	2 White-Red J208-2 U18-9	UPPER LOOP  12	COIN DOOR CLOSED  22	TROUGH BALL 1  32	LOCK BALL 2  42	"COM"  52	RIGHT SLINGSHOT  62	A(M)Y  72	NOT USED  82	Blue-Violet J212-12 Lower Right Flipper Opto  F2
Orange-Black J205-3 Right Coin Chute U17-11  D3	3 White-Orange J208-3 U18-5	START BUTTON  13	NOT USED  23	TROUGH BALL 2  33	LOCK BALL 3  43	2-WAY POPPER  53	LEFT JET BUMPER  63	AM(Y)  73	NOT USED  83	Black-Blue J208-12 Lower Left Flipper E.O.S.  F3
Orange-Yellow J205-4 4th Coin Chute U17-9  D4	4 White-Yellow J208-4 U18-7	PLUMB BOB TILT  14	ALWAYS CLOSED  24	TROUGH BALL 3  34	"MINE SHAFT"  44	"WE ARE" STANDUP TARGET  54	RIGHT JET BUMPER  64	(C)ONGO  74	NOT USED  84	Blue-Gray J212-11 Lower Left Flipper Opto  F4
Orange-Green J205-6 U16-9 Normal Test Function Srv Crdts Escape  D5	5 White-Green J208-5 U19-11	JET EXIT  15	RIGHT EJECT RUBBER  25	TROUGH BALL 4  35	LEFT LOOP  45	"WATCHING" STANDUP TARGET  55	BOTTOM JET BUMPER  65	C(O)NGO  75	NOT USED  85	Black-Violet J208-11 Upper Right Flipper E.O.S.  F5
Orange-Blue J205-7 U16-11 Normal Test Function Volume Dn Down  D6	6 White-Blue U208-7 U19-9	LEFT OUTLANE  16	LEFT RETURN LANE  26	VOLCANO STACK  36	LEFT BANK TOP  46	"PERIMETER DEFENSE"  56	NOT USED  66	CO(N)GO  76	NOT USED  86	Black-Yellow J212-10 Upper Right Flipper Opto  F6
Orange-Violet J205-8 U16-7 Normal Test Function Volume Up Up  D7	7 White-Violet J208-8 U19-5	RIGHT RETURN LANE  17	RIGHT OUTLANE  27	"MYSTERY" EJECT  37	LEFT BANK CENTER  47	LEFT RAMP ENTER  57	RIGHT RAMP ENTER  67	CON(G)O  77	NOT USED  87	Black-Gray J208-10 Upper Left Flipper E.O.S.  F7
Orange-Gray J205-9 U16-5 Normal Test Function Begin Test Enter  D8	8 White-Gray J208-9 U19-7	SHOOTER LANE  18	"YOU" STANDUP TARGET  28	RIGHT EJECT  38	LEFT BANK BOTTOM  48	LEFT RAMP EXIT  58	RIGHT RAMP EXIT  68	CONG(O)  78	NOT USED  88	Black-Blue J212-9 Upper Left Flipper Opto  F8

J2XX = CPU BOARD   = OPTO, TYPICALLY CLOSED

# SWITCH LOCATIONS

Item No.	Switch No.	Description
F1	SW-1A-194	Lower Right Flipper E.O.S.
F2	A-17316	Lower Right Flipper Cabinet.
F3	SW-1A-194	Lower Left Flipper E.O.S.
F4	A-17316	Lower Left Flipper Cabinet
F5	Not Used	Upper Right Flipper E.O.S.
F6	Not Used	Upper Right Flipper Cabinet
F7	SW-1A-194	Upper Left Flipper E.O.S.
F8	A-17316	Upper Left Flipper Cabinet
11	5647-12693-19	Inner Left Loop
12	5647-12693-19	Upper Loop
13	20-9663-1	Start Button
14	A-15361	Plumb Bob Tilt*
15	5647-12693-19	Jet Exit
16	5647-12693-19	Left Outlane
17	5647-12693-19	Right Return Lane
18	5647-12693-62	Shooter Lane
21	A-17238	Slam Tilt*
22	5643-09268-00	Coin Door Closed*
23	Not Used	
24	5643-09112-00	Always Closed*
25	A-17794	Right Eject Rubber
26	5647-12693-19	Left Return Lane
27	5647-12693-19	Right Outlane
28	A-17778-15	"You" Standup Target
31	A-18617-1 (LED)	Trough Eject
	A-18618-1 (Photo Xistor.)	
32	A-18617-1 (LED)	Trough Ball 1
	A-18618-1 (Photo Xistor.)	
33	A-18617-1 (LED)	Trough Ball 2
	A-18618-1 (Photo Xistor.)	
34	A-18617-1 (LED)	Trough Ball 3
	A-18618-1 (Photo Xistor.)	
35	A-18617-1 (LED)	Trough Ball 4
	A-18618-1 (Photo Xistor.)	
36	A-16909 (LED)	Volcano Stack
	A-16909 (Photo Xistor)	
37	5647-12693-43	Mystery Eject
38	5647-12693-43	Right Eject
41	A-16909 (LED)	Lock Ball 1
	A-16909 (Photo Xistor)	
42	A-16909 (LED)	Lock Ball 2
	A-16909 (Photo Xistor)	
43	A-16909 (LED)	Lock Ball 3
	A-16909 (Photo Xistor)	
44	5647-12693-11	Mine Shaft
45	5647-12393-19	Left Loop
46	A-18605-6	Left Bank Top
47	A-18605-6	Left Bank Center
48	A-18605-6	Left Bank Bottom
51	A-20678-6	Travi
52	A-20678-6	Com
53	5647-12693-11	2-Way Popper
54	A-17778-15	"We Are" Standup Tgt.
55	A-17778-15	"Watching" Standup Tgt.
56	A-18605-1	Perimeter Defense
57	5647-12693-11	Left Ramp Enter
58	5647-12693-21	Left Ramp Exit
61	SW-1A-204 (Kick)	Left Slingshot
	SW-1A-205 (Score)**	
62	SW-1A-204 (Kick)	Right Slingshot
	SW-1A-205 (Score)**	
63	SW-11A-37-1	Left Jet Bumper
64	SW-11A-37-1	Right Jet Bumper
65	SW-11A-37-1	Bottom Jet Bumper
66		Not Used
67	5647-12693-11	Right Ramp Enter
68	5647-12693-21	Right Ramp Exit
71	5647-12693-19	(A)my
72	5647-12693-19	A(m)y
73	5647-12693-19	Am(y)
74	SW-1A-203-6	(C)ongo
75	SW-1A-203-6	C(o)ngo
76	SW-1A-203-6	Co(n)go
77	SW-1A-203-6	Con(g)o
78	SW-1A-203-6	Cong(o)



\*NOT SHOWN. \*\*Score switches have diodes attached.

# SOLENOID TABLE

Sol. No.	Function	Solenoid Type	Voltage Connections			Drive Xistor	Voltage Connections			Drive Wire Color	Solenoid Part Number	
			Playfield	Backbox	Cabinet		Playfield	Backbox	Cabinet		Flashlamp Type	Playfield
01	AUTO PLUNGER	High Power	J133-2			Q72	J116-1			Vio-Brn	AE-23-800	
02	KICKBACK	High Power	J133-2			Q68	J116-2			Vio-Red	AE-23-800	
03	2-WAY POPPER UP	High Power	J133-2			Q71	J116-4			Vio-Org	AE-23-800	
04	2-WAY POPPER DOWN	High Power	J133-2			Q67	J116-5			Vio-Yel	AE-23-800	
05	RAMP DIVERTER	High Power	J133-2			Q70	J116-6			Vio-Grn	AE-26-1500	
06	VOLCANO POPPER	High Power	J133-2			Q66	J116-7			Vio-Blu	AE-23-800	
07	KNOCKER	High Power		J133-2		Q69		J116-8		Vio-Blk		AE-23-800
08	TOP LOOP POST	High Power	J133-2			Q65	J116-9			Vio-Gry	AE-26-1500	
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 BUMPER	Low Power	J133-3			Q47	J113-5			Brn-Yel	AE-26-1200	
13	RIGHT JET BUMPER	Low Power	J133-3			Q42	J113-6			Brn-Grn	AE-26-1200	
14	BOTTOM JET BUMPER	Low Power	J133-3			Q46	J113-7			Brn-Blu	AE-26-1200	
15	GORILLA LEFT	Low Power	J133-3			Q41	J113-8			Brn-Vio	AE-25-1000	
16	GORILLA RIGHT	Low Power	J133-3			Q45	J113-9			Brn-Gry	AE-25-1000	
17	AMY FLASHER	Flasher	J133-6	J134-5		Q28	J111-1	J112-1		Blk-Brn	#906 (1)	#906 (1)
18	LEFT RAMP FLS	Flasher	J133-6			Q32	J111-2			Blk-Red	#89 (1)	
19	2-WAY POPPER FLS	Flasher	J133-6			Q27	J111-3			Blk-Org	#89 (1)	
20	SKILL SHOT FLS	Flasher	J133-6	J134-5		Q31	J111-4	J112-5		Blk-Yel	#89 (1)	#906 (1)
21	GRAY GORILLA FLS	Flasher	J133-6	J134-5		Q26	J111-5	J112-6		Blu-Grn	#906 (1)	#906 (1)
22	MAP EJECT	Flasher	J133-1			Q30	J111-6			Blu-Blk	AE-26-1200	
23	LEFT GATE	Flasher	J133-1			Q25	J111-7			Blu-Vio	A-14406	
24	RIGHT GATE	Flasher	J133-1			Q29	J111-8			Blu-Gry	A-14406	
25	LOWER RIGHT FLS	Gen. Purpose	J133-6			Q16	J109-1			Blu-Brn	#89 (1)	
26	RIGHT RAMP FLS	Gen. Purpose	J133-6			Q15	J109-2			Blu-Red	#89 (1)	
27	VOLCANO FLS	Gen. Purpose	J133-6	J134-5		Q14	J109-3	J107-4		Blu-Org	#89(2)#906(1)	#906 (1)
28	PRMTR DFNS FLS	Gen. Purpose	J133-6	J134-5		Q13	J109-4	J107-5		Blu-Yel	#89 (1)	#906 (1)

### General Illumination

01	PLAYFIELD GORILLA	G.I.	J105-1	J106-1		Q5	J105-7	J106-7		Wht-Brn	#555	
02	PLAYFIELD TOP	G.I.	J105-2			Q4	J105-8			Wht-Org	#44	
03	PLAYFIELD BOTTOM	G.I.	J105-3	J106-3		Q3	J105-9	J106-9		Wht-Yel	#44	
04	BACKBOX STRING 1	G.I.		J106-5		Q2		J106-10		Wht-Grn		#555
05	BACKBOX STRING 2	G.I.		J106-6	J104-3	Q1		J106-11	J104-1	Wht-Vio		#555

Flipper Circuits		Voltage Connection	Drive Transistors		Drive Connections		Drive Wire Colors		Coil Part No.	Coil Colors
			Power	Hold	Playfield	Power	Hold			
29	LWR RIGHT FLIPPER	Lwr. Rt. Power	J119-1 (Red-Grn)	Q90		J120-13	Yel-Grn		FL-11629	BLUE
31		Lwr. Rt. Hold	J119-1 (Red-Grn)	Q92		J120-11	Org-Grn			
32	LWR LEFT FLIPPER	Lwr. Lt. Hold	J119-4 (Red-Blu)	Q87		J120-9	Yel-Blu		FL-11629	BLUE
33	UPPER LEFT POST	Upr. Rt. Power	J119-6 (Red-Vio)	Q84		J120-6	Yel-Vio		AE-27-1200	
34	MYSTERY EJECT	Upr. Rt. Hold	J119-6 (Red-Vio)	Q86		J120-4	Org-Vio		AE-26-1200	
35	UPR LEFT FLIPPER	Upr. Lt. Power	J119-8 (Red-Gry)	Q81		J120-3	Yel-Gry		FL-11630	RED
36		Upr. Lt. Hold	J119-8 (Red-Gry)	Q83		J120-1	Org-Gry			

J1XX = POWER DRIVER BOARD

24-6549 = #44 BULB; 24-8704 = #89 BULB; 24-8768 = #555 BULB; 24-8802 = #906 BULB

\*THE X MOTOR AND Y MOTOR PART NUMBER IS 14-8025.

\*\* A-20532 IS THE PART NUMBER FOR THE DUAL RELAY MOTOR DRIVER BOARD.



# SOLENOID LOCATIONS

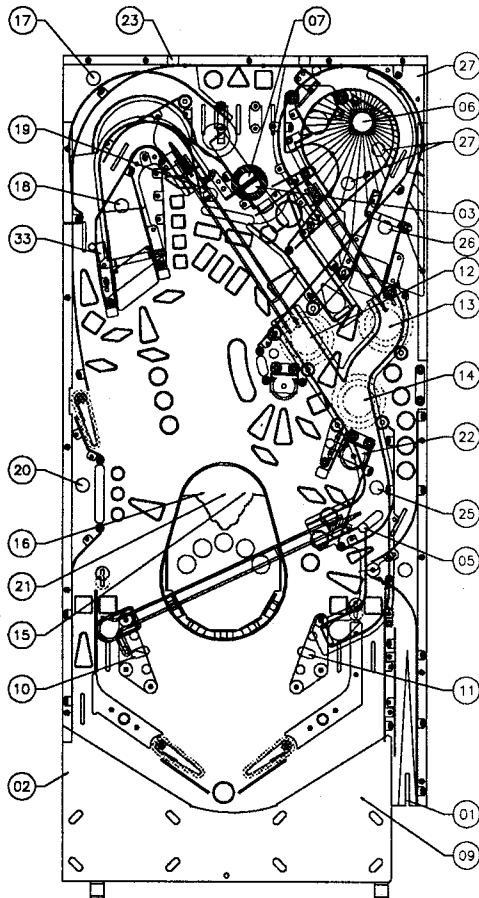
Item No.	Coil/Flasher No.	Assembly No.	Description
01	AE-23-800	A-20439	Auto Plunger
02	AE-23-800	B-11873	Kickback
03	AE-23-800	A-20625	2-Way Popper Up
04	AE-23-800	A-20625	2-Way Popper Down
05	AE-26-1500	A-20655	Ramp Diverter
06	AE-23-800	A-20680	Volcano Popper
07	AE-23-800	B-10686-1	*Knocker
08	AE-26-1500	A-20654	Top Loop Post
09	AE-26-1500	A-19963-1	Trough Eject
10	AE-26-1200	B-9362-L-2	Left Slingshot
11	AE-26-1200	B-9362-R-3	Right Slingshot
12	AE-26-1200	A-9415-2	Left Jet Bumper
13	AE-26-1200	A-9415-2	Right Jet Bumper
14	AE-26-1200	A-9415-2	Bottom Jet Bumper
15	AE-25-1000	A-20614	Gorilla Right
16	AE-25-1000	A-20614	Gorilla Left
17	24-8802	04-10321-2	Amy Flasher
	24-8802	-----	*Insert Flasher
18	24-8704	A-17983	Left Ramp Flasher
19	24-8704	A-17983	2-Way Popper Flasher
20	24-8704	A-17983	Skill Shot Flasher
	24-8802	-----	*Insert Flasher
21	24-8802	04-10094-1	Gray Gorilla Flasher
	24-8802	-----	*Insert Flasher
22	AE-26-1200	A-20453-1	Map Eject
23	A-14406	A-20665	Left Gate
24	A-14406	A-20665	Right Gate
25	24-8704	A-17983	Lower Right Flasher
26	24-8704	A-17983	Right Ramp Flasher
27	24-8704/24-8802	A-17983/04-10321-2	Volcano Flasher
	24-8802	-----	*Insert Flasher
28	24-8704	A-17803	Perimtr Defen. Fishr
	24-8802	-----	*Insert Flasher

<b>Flippers</b>			
Item No.	Coil/Flasher No.	Assembly No.	Description
29-30	FL-11629	A-15849-R-2	Lower Right Flipper
31-32	FL-11629	A-15849-L-2	Lower Left Flipper
33	AE-27-1200	A-17932-1	Upper Left Post
34	AE-26-1200	A-20453-1	Mystery Eject
35-36	FL-11630	A-20738	Upper Left Flipper

<b>General Illumination</b>		
Item No.	Bulb No.	Description
01	24-8768	*Playfield Gorilla
02	24-6549	*Playfield Top
03	24-8549	*Playfield Bottom
04	24-8768	*Backbox String 1
05	24-8768	*Backbox String 2

24-6549 = #44 BULB  
 24-8704 = #89 BULB  
 24-8768 = #555 BULB  
 24-8802 = #906 BULB

\*NOT SHOWN

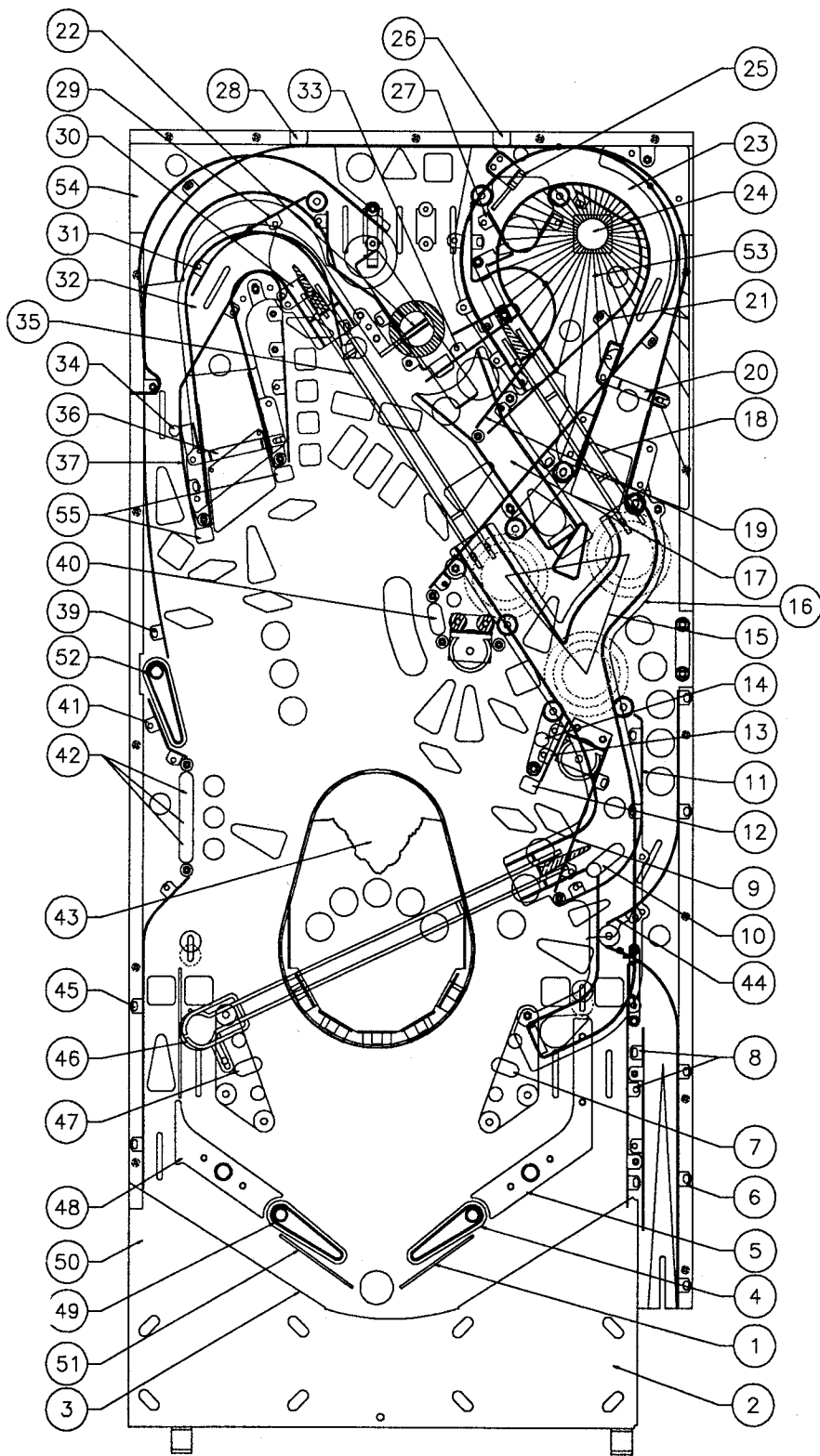


# UPPER PLAYFIELD PARTS LIST

Item No.	Part No.	Description	Not Shown: Part No.	Description
1	12-6468	Rebound Wire	03-7557	Kicker Protector Mylar
2	A-13204-50050	Bottom Arch Assembly	03-9472-1	Full Playfield Mylar*
3	01-13273.1	Arch Ball Guide	03-9472-2	"AMY" Drop Area Mylar
4	A-15849-R-2	Lower Right Flipper	03-9472-3	Lower Ball Drop Area Mylar
••	20-10110-6	Shaft and Bat Assembly	03-9472-4	Lower Ball Drop Area Mylar
5	A-20751-1	Right Flipper Ball Guide	03-9472-5	Jet Bumper Area Mylar
6	04-10284	Ball Guide #16	03-8633	Level Mount
7	A-17811	Slingshot Assembly	04-10094	Reflector and Socket
••	B-9362-R-3	Coil And Bracket Assy	12-6842	Bottom Arch Fence
••	A-20759	Leaf Switch Assembly	20-9691	Level
8	04-10285	Ball Guide #17	20-6500	Steel Balls
9	01-14139	Ball Guide #13	31-1357-50050	Backglass Translight
10	A-20655	Drop Diverter Assembly	31-2529	Screened Bottom Arch
••	04-10314	Rod Assembly	36-50050	Screened Hardcoat Playfield
11	01-14140	Ball Guide #14		
12	A-17778-15	Orange Oblong Standup Tgt		
13	01-14138	Ball Guide #12		
14	A-17794	Kicker Switch Sub Assembly		
15	A-9415-2	Jet Bumper Coil Assembly		
••	B-9414-2	Jet Bumper Assembly		
••	B-12030-2	Jet Bumper Leaf Switch		
16	A-20617	Right Ramp Assembly		
17	A-20618	Center Ramp Assembly		
18	12-7314	Medium Ramp		
19	01-14128	Ball Guide #9		
20	A-20708	Switch Gate Assembly		
••	12-7323	Wireform Switch		
••	01-14213	Switch Gate Bracket		
21	01-14131	Ball Guide #11		
22	A-20625	2-Way Popper		
23	A-20616	Volcano Ramp		
••	01-14145	Ramp Flap		
24	A-20680	3 Ball Popper Assembly		
25	A-20706	Rollunder Switch Assembly		
26	A-17797-2	Right Ball Guide		
••	12-6657-R	Wire Gate		
••	01-6935	Ball Gate Flap		
27	01-14130	Ball Guide #10		
28	A-17797-1	Left Ball Gate		
••	12-6657-L	Wire Gate		
••	01-6935	Ball Gate Flap		
29	01-14126	Ball Guide #6		
30	A-20706	Rollunder Switch Assembly		
31	01-14129	Ball Guide #5		
32	A-20619	Left Ramp Assembly		
••	01-14146	Ramp Flap		
33	01-14127	Ball Guide #8		
34	A-20654	Disappearing Post		
••	02-5240	Post		
35	12-7313	Short Ramp		
36	A-20707	Switch Gate Assembly		
••	12-7322	Wireform Switch		
••	01-14212	Switch Gate Bracket		
37	04-10287	Ball Guide #4		
38	A-20678-6	Rectang Yellow Standup Tgt		
39	04-10286	Ball Guide #3		
40	A-18605-1	Round Blue Standup Target		
41	01-14133	Ball Guide #2		
42	A-18605-6	Round Yellow Standup Tgt		
43	A-20614	Gray Gorilla Assembly		
••	31-2524	Gorilla		
44	01-14141	Ball Guide #15		
45	01-14132	Ball Guide #1		
46	12-7311	Long Ramp		
47	A-17811	Slingshot Assembly		
••	B-9362-L-2	Coil and Bracket Assembly		
••	A-20759	Leaf Switch Assembly		
48	A-20751-2	Left Flipper Ball Guide		
49	A-15849-L-2	Lower Left Flipper Assembly		
••	20-10110-6	Shaft and Bat Assembly		
50	B-11873	Bottom Arch Kicker		
51	12-6468	Rebound Wire		
52	A-20738	Upper Left Flipper Assembly		
••	20-10110-6	Shaft and Bat Assembly		
53	31-2522	Plastic Volcano Ramp		
54	31-2523	Plastic "AMY" Gorilla		
55	A-17778-15	Oblong Orange Standup Tgt		

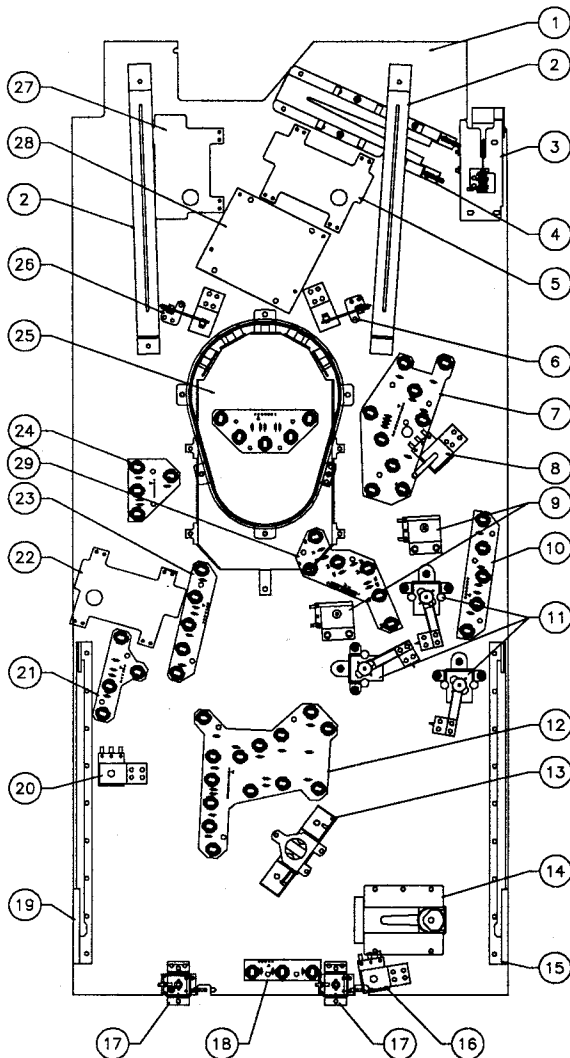
The CONGO hardcoat playfield does not require a full mylar. However, mylars can be purchased through your local Williams Distributor.

# UPPER PLAYFIELD PARTS LOCATION



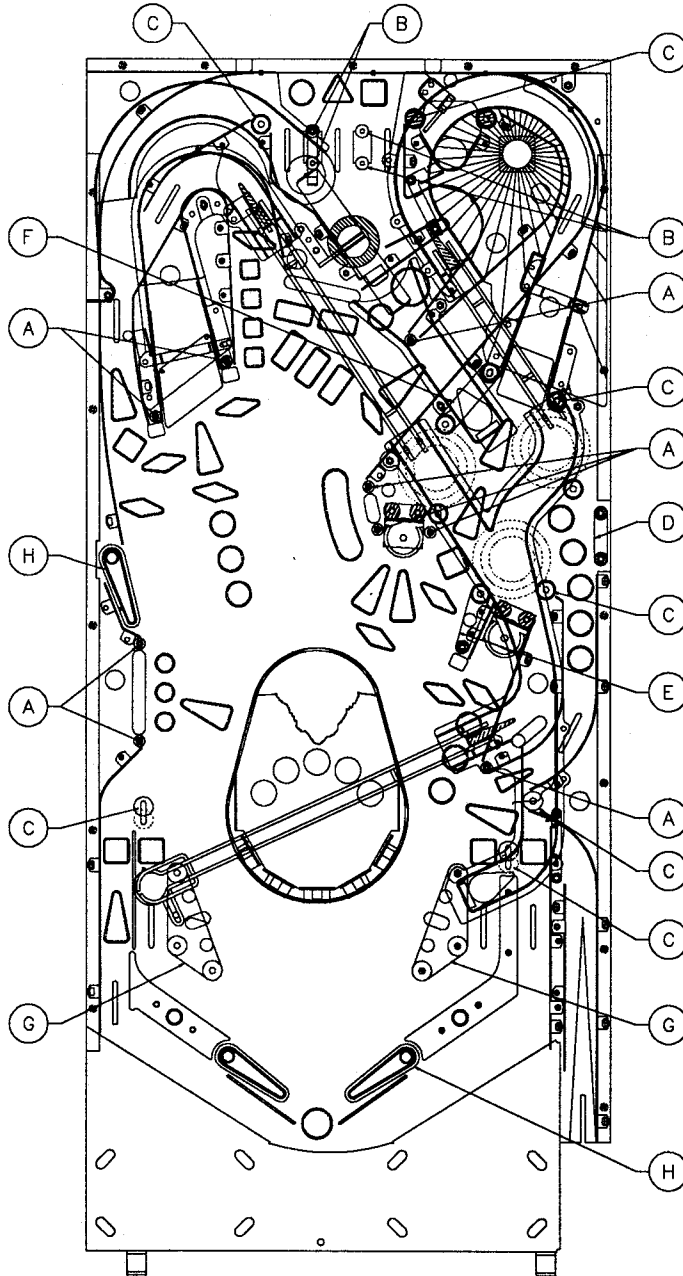
# LOWER PLAYFIELD PARTS & LOCATIONS

Item	Part Number	Description
1	01-9211	Plfd. Hanger Bracket Assy. (2)
2	01-11781	Leg Support (2)
3	A-20439	Shooter Lane Auto Kicker Assy.
4	A-19963-1	Ball Trough Assembly Complete
5	A-15849-R-2	Flipper Assembly, Lwr. Right
6	A-17811	Kicker Arm (Slingshot) Assy.
	B-9362-R-3	Coil & Bracket Assembly
7	A-20605	9-Lamp PCB Assembly
8	A-20655	Drop Diverter Assembly
9	A-20453-1	Eject Assembly (2)
10	A-20600	5-Lamp Board Assembly
11	A-9415-2	Jet Bumper Coil Assembly
12	A-20607	14-Lamp Board Assembly
13	A-20625	2-Way Popper Assembly
14	A-20680	3-Ball Popper Assembly
15	A-17949.1-2	Plfd. Slide Mech. Assy. R.
16	A-20654	Disappearing Post Assy.
17	A-20665	Ball Gate Actuator Assy. (2)
18	A-20601	3-Lamp Board Assembly
19	A-17949.1-1	Plfd. Slide Mech. Assy. L.
20	A-17932-1	Disappearing Post Assy.
21	A-20606	4-Lamp Board Assembly
22	A-20738	Flipper Assembly, Left
23	A-20620	5-Lamp PCB Assembly
24	A-20602	4-Lamp PCB Assembly
25	A-20614	Gorilla Assembly
26	A-17811	Kicker Arm (Slingshot) Assy.
	B-9362-L-2	Coil & Bracket Assembly
27	A-15849-L-2	Flipper Assembly, Lwr. Left
28	A-18159	10-Opto PCB Assembly
29	A-20697	6-Lamp Board Assembly



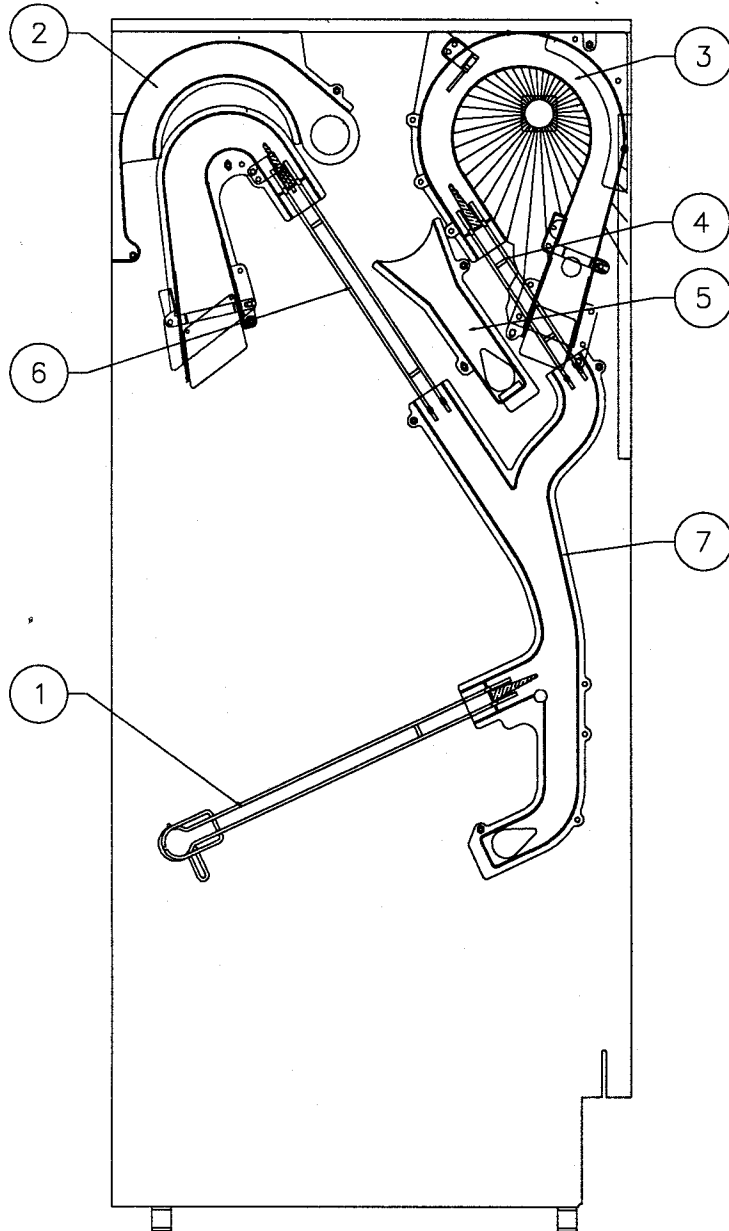
# RUBBER PARTS

Item No.	Part No.	Description	Quantity
A	23-6556	Black Bumper Sleeve	9
B	23-6641	Black Rubber Bumper	4
C	23-6694-3	Black Rubber Ring 5/16"	15
D	23-6694-6	Black Rubber Ring 1"	2
E	23-6694-7	Black Rubber Ring 1-1/4"	1
F	23-6694-8	Black Rubber Ring 1-1/2"	2
G	23-6694-10	Black Rubber Ring 2-1/2"	2
H	23-6695	Black Flipper Ring 1-1/2"	3

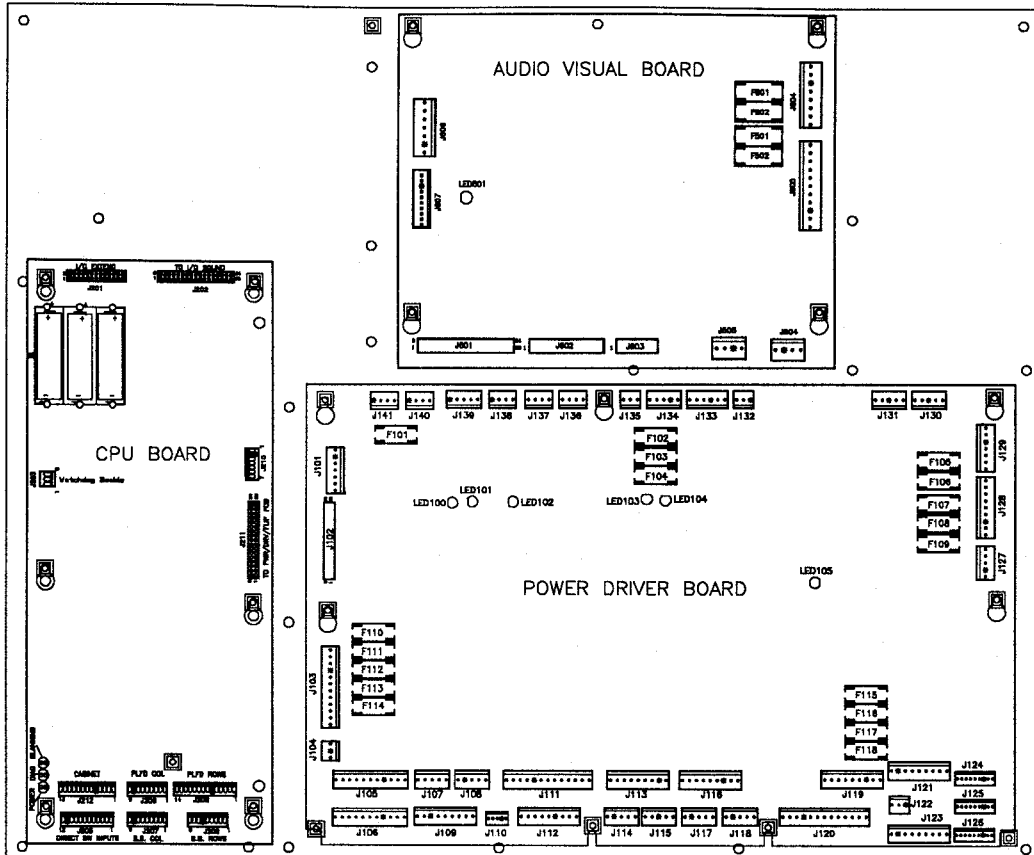


# RAMPS

Item	Part Number	Description
1	12-7311	Long Ramp
2	A-20619	Left Ramp
3	A-20616	Assembly
4	12-7314	Volcano Ramp
5	A-20618	Medium Ramp
6	12-7313	Center Ramp
7	A-20617	Assembly Short Ramp Right 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 #25 to #28	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 #9 to #16	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, 250	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

## WARNINGS & NOTICES

### **WARNING**

**FOR SAFETY AND RELIABILITY**, substitute parts and equipment modifications are not recommended. Use of Non-WILLIAMS parts or modifications of game circuitry, may adversely affect game play, or may cause injuries.

**SUBSTITUTE PART OR EQUIPMENT MODIFICATIONS** may void FCC Type Acceptance.

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**THIS 'CONVERSION' PRINCIPLE ALSO APPLIES** to unauthorized facsimiles of WILLIAMS equipment, logos, designs, publications, assemblies, and games (or game features not deemed to be public domain), whether manufactured with WILLIAMS components or not.

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### **WARNING**

**NOTE:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generated, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### **RF Interference Notice**

CABLE HARNESS PLACEMENTS and ground strap routing on this game have been designed to keep RF radiation and conduction within levels accepted by the FCC Rules.

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

**FCC STICKER.** Check the back of your game to verify that an FCC-certification sticker was attached to your game at the factory. All games that leave the WILLIAMS plant have been tested and found to comply with FCC Rules. Because the sticker is proof of this fact, legal repercussions to the owner and distributor may result, if the sticker is missing. If you receive a game, manufactured after December 1982, that has no FCC sticker, call WILLIAMS for advice or write us a note on your Game Registration Card. Be sure that the card bears your game's serial number.

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Call your authorized Williams Distributor

**Williams Electronics Games, Inc.**  
3401 N. California Avenue  
Chicago, IL 60618

**CAUTION: Transport this game ONLY with the hinged backbox DOWN!**