

Model # 493

FUSE LIST

Power Supply Board D-7999			Sound Board 1C-2001-137-4 (Type-1B)		
F1	100V Display Power Input	0.25A, 250V, SB	F1	Power Input	4A, 250V, SB
F2	Solenoids	2.5A, 250V, SB	F2	Power Input	4A, 250V, SB
F3	Controlled lamps 18V	8A, 250V	Back Box		
F4	Flippers	10A, 250V SB	F1	Logic AC	4A, 250V
F5	5V Logic Power	4A, 250V	F2	Logic AC	4A, 250V
Line Filter			F3	General Illumination	20A, 250V
Foreign	(220-230V)	4A, 250V, SB	BR1	Bridge Rectifier 18V	8A, 250V, SB
Domestic	(110-120V)	8A, 250V, SB	BR2	Bridge Rectifier 34V	8A, 250V, SB

SOLENOID/FLASHER TABLE

Sol. No.	Function	Solenoid Type	Wire Color ¹	Connections		Driver Transistor	Solenoid Part Number
				Driver Board	Playfield / Cabinet		
1	Outhole	Controlled	Gry-Brn	2J11-4	8P3-1	Q15	SA1-23-850-DC
2	Left Shooter	Controlled	Gry-Red	2J11-5	8P3-2	Q17	SG-23-850-DC
3	"L-A" Drop Targets Reset	Controlled	Gry-Orn	2J11-7	8P3-3	Q19	SA3-23-850-DC
4	"S-E-R" Drop Targets Reset	Controlled	Gry-Yel	2J11-8	8P3-4	Q21	SA3-23-850-DC
5	Eject Hole	Controlled	Gry-Grn	2J11-9	8P3-5	Q23	SG-23-850-DC
6	"B-A" Drop Targets Reset	Controlled	Gry-Blu	2J11-3	8P3-6	Q25	SA3-23-850-DC
7	"L-L" Drop Targets Reset	Controlled	Gry-Vio	2J11-2	8P3-7	Q27	SA3-23-850-DC
8	Right Shooter	Controlled	Gry-Blk	2J11-1	8P3-8	Q29	SG-23-850-DC
9	Sound	Controlled	Brn-Blk	2J9-9	8P3-9	Q31	
10	Sound	Controlled	Brn-Red	2J9-7	8P3-10	Q33	
11	Sound	Controlled	Brn-Orn	2J9-1	3P7-1	Q35	
12	Sound	Controlled	Brn-Yel	2J9-2	8P3-12	Q37	
13	Sound (Wired, not used)	Controlled	Brn-Grn	2J9-3	8P3-13	Q39	
14	Credit Knocker	Controlled	Brn-Blu	2J9-4	8P3-14	Q41	SA2-23-850-DC
15	LASER Lamps (Insert Board)	Controlled	Brn-Vio	2J9-5	7P1-17	Q43	#89 Flash Lamps
16	Coin Lockout Coil	Controlled	Brn-Gry	2J9-6	7P1-18, 7P2-4	Q45	SM-35-4000-DC
17	Left Jet Bumper	Special #1	Blu-Brn	2J12-7	8P3-17	Q2	SG-23-850-DC
		Sp. Switch #1	Orn-Brn	2J13-5	8P3-24	IC6	
18	Center Jet Bumper	Special #2	Blu-Red	2J12-4	8P3-18	Q4	SG-23-850-DC
		Sp. Switch #2	Orn-Red	2J13-3	8P3-25	IC6	
19	Right Jet Bumper	Special #3	Blu-Orn	2J12-3	8P3-19	Q6	SG-23-850-DC
		Sp. Switch #3	Orn-Blk	2J13-2	8P3-26	IC6	
20	Right Slingshot	Special #4	Blu-Yel	2J12-6	8P3-20	Q8	SG-23-850-DC
		Sp. Switch #4	Orn-Yel	2J13-4	8P3-27	IC6	
21	Not Used	Special #5	Blu-Grn	2J12-8	8P3-21	Q10	
		Sp. Switch #5	Orn-Grn	2J13-8	8P3-28	IC7	
22	Left Slingshot	Special #6	Blu-Blk	2J12-9	8P3-22	Q12	SG-23-800-DC
		Sp. Switch #6	Orn-Blu	2J13-5	8P3-29	IC7	
Flipper Circuits							
	Lower Right Flipper	Flipper	Blu-Vio	7P1-8	8P3-3		SFL-20-300 / 30-800-DC
	Right Flipper switch ²	Switch	Orn-Vio	2P12-1	7P1-7		
	Upper Right Flipper	Flipper	Blk-Yel		Lower Right Flipper		SFL-20-300 / 30-800-DC
	Left Flipper	Flipper	Blu-Gry	7J1-10	8P3-4		SFL-20-300 / 30-800-DC
	Left Flipper switch ²	Switch	Orn-Gry	2P12-2	7P1-9		
Notes:							
1. Wire colors, except flipper Orn-Vio and Orn-Gry, are ground connections (to coil terminal with unbanded end of diode).							
Flipper Orn-Vio and Orn-Gry wires connect from CPU Board to flipper button switch on cabinet.							
2. Flipper connections are from flipper button switch to flipper coil.							



LAMP MATRIX

Column Row	Red ← Yellow (B+) →							
	1 Yel-Brn 2J5-8 Q63	2 Yel-Red 2J5-9 Q65	3 Yel-Orn 2J5-6 Q67	4 Yel-Blk 2J5-7 Q69	5 Yel-Grn 2J5-3 Q71	6 Yel-Blu 2J5-5 Q73	7 Yel-Vio 2J5-1 Q75	8 Yel-Gry 2J5-2 Q77
1 Red-Brn 2J7-1 Q47	Shoot Again (Playfield) 1	Outlane Specials 9	4,000 Bonus 17	20,000 Bonus 25	Top 5 33	Star 3 41	Eject Hole Extra Ball When Lit 48	#1 Player Up 57
2 Red-Blk 2J7-2 Q49	Bull's-Eye Extra Ball 2	10,000 Bonus 10	5,000 Bonus 18	LASER 10,000 26	Top 6 34	Star 4 42	1 Can Play 50	#2 Player Up 58
3 Red-Orn 2J7-3 Q51	(Top) Æ 1 3	2X 11	6,000 Bonus 19	LASER 15,000 27	Top 7 35	Star 5 43	2 Can Play 51	#3 Player Up 59
4 Red-Yel 2J7-4 Q53	Æ 2 4	3X 12	7,000 Bonus 20	LASER 20,000 28	Top 8 36	Star 6 44	3 Can Play 52	#4 Player Up 60
5 Red-Grn 2J7-5 Q55	Æ 3 5	5X 13	8,000 Bonus 21	Top 1 29	Top 9 37	Star 7 45	4 Can Play 53	Tilt 61
6 Red-Blu 2J7-6 Q57	Æ 4 6	1,000 Bonus 14	9,000 Bonus 22	Top 2 30	Top 10 38	Star 8 46	Match 54	Game Over 62
7 Red-Vio 2J7-9 Q61	Æ 5 7	2,000 Bonus 15	Bull's-Eye Special 23	Top 3 31	Star 1 39	Star 9 47	Ball in Play 55	Shoot Again (Backbox) 63
8 Red-Gry 2J7-8 Q59	(Bottom) Æ 6 8	3,000 Bonus 16	Spinner 1,000 24	Top 4 32	Star 2 40	Star 10 48	Credits (Playfield) 56	High Score 64

SWITCH MATRIX

Column Row	White → Green ←							
	1 Grn-Brn 2J2-9 IC17	2 Grn-Red 2J2-8 IC17	3 Grn-Orn 2J2-7 IC17	4 Grn-Yel 2J2-6 IC17	5 Grn-Blk 2J2-5 IC18	6 Grn-Blu 2J2-3 IC18	7 Grn-Vio 2J2-2 IC18	8 Grn-Gry 2J2-1 IC18
1 Wht-Brn 2J3-9 IC15	Plumb Bob Tilt 1	Outhole 9	Left Spinner 17	Lower Top Left Rebound 25	Upper Right Rebound 33	Right Shooter 41	Playfield Tilt 49	Star 8 Rollover 57
2 Wht-Red 2J3-8 IC15	Ball Roll Tilt 2	Left Shooter 10	Bull's-Eye Target 18	Upper Top Left Rebound 26	B Drop Target 34	Right Outlane Special 42	Star 1 Rollover 50	Star 9 Rollover 58
3 Wht-Orn 2J3-7 IC15	Credit Button 3	Left Outlane Special 11	L Drop Target 19	"1" and "2" Rollover 27	A Drop Target 35	Right Flipper Return Lane 43	Star 2 Rollover 51	Star 10 Rollover 59
4 Wht-Yel 2J3-6 IC15	Right Coin Chute 4	Left Flipper Return Lane 12	A Drop Target 20	"3" and "4" Rollover 28	L Drop Target 36	Right Slingshot 44	Star 3 Rollover 52	Not Used 60
5 Wht-Grn 2J3-5 IC16	Center Coin Chute 5	Left Slingshot 13	S Drop Target 21	"5" and "6" Rollover 29	L Drop Target 37	Left Jet Bumper 45	Star 4 Rollover 53	Not Used 61
6 Wht-Blu 2J3-4 IC16	Left Coin Chute 6	Upper Middle Rebound 14	E Drop Target 22	"7" and "8" Rollover 30	B-A-L-L Drop Targets Series 38	Right Jet Bumper 46	Star 5 Rollover 54	Not Used 62
7 Wht-Vio 2J3-3 IC16	Slam Tilt 7	Not Used 15	R Drop Target 23	"9" and "10" Rollover 31	B-A-L-L Drop Targets Rebound 39	Center Jet Bumper 47	Star 6 Rollover 55	Not Used 63
8 Wht-Gry 2J3-1 IC16	High Score Reset 8	Left Side Target 16	L-A-S-E-R Drop Targets Series 24	Eject Hole 32	Right Spinner 40	S-E-R Drop Targets Rebound 48	Star 7 Rollover 56	Not Used 64