

Model # 489

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	SA-23-850-DC
2	Top Eject Hole	Controlled	Gry-Red	2J11-5	8P3-2	Q17	SA3-23-850-DC
3	Right Eject Hole	Controlled	Gry-Orn	2J11-7	8P3-3	Q19	SA3-23-850-DC
4	3-Bank Drop Targets Reset	Controlled	Gry-Yel	2J11-8	8P3-4	Q21	SA3-23-850-DC
5	5-Bank, Top Drop Targets Reset	Controlled	Gry-Grn	2J11-9	8P3-5	Q23	SA3-23-850-DC
6	5-Bank, Bottom Drop Targets Reset	Controlled	Gry-Blu	2J11-3	8P3-6	Q25	SA3-23-850-DC
7	Right Slingshot	Controlled	Gry-Vio	2J11-2	8P3-7	Q27	SA3-23-850-DC
8	Left Slingshot	Controlled	Gry-Blk	2J11-1	8P3-8	Q29	SA3-23-850-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	Controlled	Brn-Grn	2J9-3	8P3-13	Q39	
14	Credit Knocker	Controlled	Brn-Blu	2J9-4	8P3-14	Q41	SA2-23-850-DC
15	Not Used	Controlled	Brn-Vio	2J9-5	7P1-17	Q43	
16	Coin Lockout Coil	Controlled	Brn-Gry	2J9-6	7P1-18, 7P2-4	Q45	SM-35-4000-DC
17	Left Top 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	Left 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	Left Bottom 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 Center Jet Bumper	Special #4	Blu-Yel	2J12-6	8P3-20	Q8	SG-23-850-DC
		Sp. Switch #4	Orn-Yel	2J13-4	8P3-27	IC6	
21	Right Jet Bumper	Special #5	Blu-Grn	2J12-8	8P3-21	Q10	SG-23-850-DC
		Sp. Switch #5	Orn-Grn	2J13-8	8P3-28	IC7	
22	Not Used	Special #6	Blu-Blk	2J12-9	8P3-22	Q12	
		Sp. Switch #6	Orn-Blu	2J13-5	8P3-29	IC7	
Flipper Circuits							
	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		
	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	Not Used 1	8 Bonus 9	Eject Hole 5000 17	A-B-C Lites Bull's-Eye Special 25	3-Bank 1 33	Left Bottom Jet Bumper 41	Flipper Return Lanes 48	#1 Player Up 57
2 Red-Blk 2J7-2 Q49	1 Bonus 2	9 Bonus 10	Eject Hole Bull's-Eye 18	Bull's-Eye #1 26	3-Bank 2 34	Right Center Jet Bumper 42	1 Can Play 50	#2 Player Up 58
3 Red-Orn 2J7-3 Q51	2 Bonus 3	10 Bonus 11	Eject Hole Advance "X" 19	Bull's-Eye #2 27	3-Bank 3 35	Right Jet Bumper 43	2 Can Play 51	#3 Player Up 59
4 Red-Yel 2J7-4 Q53	3 Bonus 4	11 Bonus 12	Eject Hole Lites Inside Rollovers 20	Bull's-Eye #3 28	3-Bank 4 36	Extra Ball When Lit #1 (Bottom) 44	3 Can Play 52	#4 Player Up 60
5 Red-Grn 2J7-5 Q55	4 Bonus 5	12 Bonus 13	2X 21	Bull's-Eye #4 29	3-Bank 5 37	Extra Ball When Lit #2 45	4 Can Play 53	Tilt 61
6 Red-Blu 2J7-6 Q57	5 Bonus 6	A 14	3X 22	Bull's-Eye Special 30	Shoot Again (Playfield) 38	Extra Ball When Lit #3 46	Match 54	Game Over 62
7 Red-Vio 2J7-9 Q61	6 Bonus 7	B 15	5X 23	Left 30,000 31	Left Top Jet Bumper 39	Extra Ball When Lit #4 (Top) 47	Ball in Play 55	Shoot Again (Backbox) 63
8 Red-Gry 2J7-8 Q59	7 Bonus 8	C 16	10X 24	Right 30,000 32	Left Center Jet Bumper 40	5-Bank Special 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 Target 17	5-Bank Drop Target #1 (Top) 25	3-Bank Drop Target Left 33	Right Slingshot 41	Not Used 49	Not Used 57
2 Wht-Red 2J3-8 IC15	Ball Roll Tilt 2	Upper Right Rebounce 10	Right Flipper Return Lane 18	5-Bank Drop Target #2 26	3-Bank Drop Target Center 34	Left Slingshot 42	Not Used 50	Not Used 58
3 Wht-Orn 2J3-7 IC15	Credit Button 3	Upper Left Rebounce 11	Left Top Jet Bumper 19	5-Bank Drop Target #3 27	3-Bank Drop Target Right 35	Playfield Tilt 43	Not Used 51	Not Used 59
4 Wht-Yel 2J3-6 IC15	Right Coin Chute 4	A Rollover 12	Left Center Jet Bumper 20	5-Bank Drop Target #4 28	3-Bank Drop Target Series 36	Left Flipper Return Lane 44	Not Used 52	Not Used 60
5 Wht-Grn 2J3-5 IC16	Center Coin Chute 5	B Rollover 13	Left Bottom Jet Bumper 21	5-Bank Drop Target #5 (Bottom) 29	3-Bank Rebounce 37	Not Used 45	Not Used 53	Not Used 61
6 Wht-Blu 2J3-4 IC16	Left Coin Chute 6	C Rollover 14	Right Center Jet Bumper 22	5-Bank Drop Target Series 30	Lower Left Rebounce 38	Not Used 46	Not Used 54	Not Used 62
7 Wht-Vio 2J3-3 IC16	Slam Tilt 7	Top Eject Hole 15	Right Jet Bumper 23	5-Bank Rebounce 31	Right Outlane 39	Not Used 47	Not Used 55	Not Used 63
8 Wht-Gry 2J3-1 IC16	High Score Reset 8	Bull's-Eye Target 16	Right Eject 24	Lower Right Rebounce 32	Left Outlane 40	Not Used 48	Not Used 56	Not Used 64