

SWITCH MATRIX GRID [#1 - #64] {Switch Locations : next page}

CPU/ Sound Board	01 IC-U22A	02 IC-U22B	03 IC-U22C	04 IC-U22D	05 IC-U16A	06 IC-U16B	07 IC-U16C	08 IC-U16D	09 IC-U36A	10 IC-U36B	11 IC-U36C	12 IC-U36D	13 IC-U40A	14 IC-U40B	15 IC-U40C	16 IC-U40D
01 DRIVE GRN-BRN J1-P1	S.W. #1 BUMPER TARGET	S.W. #2 ENERGON (LEFT)	S.W. #3 EJECT	S.W. #4 L. RAMP ENTRANCE	S.W. #5 L. ORBIT (BOTTOM)	S.W. #6 L. ORBIT (TOP)	S.W. #7 RIGHT TOP LANE	S.W. #8 LEFT TOP LANE	S.W. #9 L. RETURN LANE	S.W. #10 L. RAMP EXIT	S.W. #11 CENTER LANE	S.W. #12 RIGHT ORBIT	S.W. #13 MEGATRON BACK DOOR	S.W. #14 R. RAMP EXIT	S.W. #15 TOURN START	S.W. #16 START
02 DRIVE GRN-RED J1-P3	S.W. #17 TROUGH # 4 (L)	S.W. #18 TROUGH # 3	S.W. #19 TROUGH # 2	S.W. #20 TROUGH # 1 (R)	S.W. #21 TROUGH JAM	S.W. #22 SHOOTER LANE	S.W. #23 LEFT OUTLANE	S.W. #24 L. RETURN SLINGSHOT	S.W. #25 LEFT SLINGSHOT	S.W. #26 RIGHT SLINGSHOT	S.W. #27 R. RETURN LANE	S.W. #28 OUTLANE TOP POP BUMPER	S.W. #29 RIGHT POP BUMPER	S.W. #30 BOTTOM POP BUMPER		
03 DRIVE GRN-ORG J1-P4	S.W. #33 R. ORBIT SPINNER	S.W. #34 R. RAMP ENTRANCE	S.W. #35 R. 2 BANK TARGET (BOT)	S.W. #36 MEGATRON LOCK # 4	S.W. #37 MEGATRON LOCK # 3	S.W. #38 MEGATRON LOCK # 2	S.W. #39 MEGATRON LOCK # 1	S.W. #40 MEGATRON JAM	S.W. #41 OPTIMUS PRIME (UP)	S.W. #42 OPTIMUS PRIME (DOWN)	S.W. #43 CAPTIVE BALL	S.W. #44 ENERGON (RIGHT)	S.W. #45	S.W. #46	S.W. #47	S.W. #48
04 DRIVE GRN-YEL J1-P5	S.W. #49 ENERGON TARGET (TOP)	S.W. #50 R. 2 BANK PRIME	S.W. #51 OPTIMUS	S.W. #52	S.W. #53	S.W. #54	S.W. #55	S.W. #56	S.W. #57	S.W. #58	S.W. #59	S.W. #60	S.W. #61	S.W. #62	S.W. #63	S.W. #64

* FORMORE ABOUT DIODE ON TERMINAL STRIPS AND O.S.'S SEE SECTION 5, CHAPTER 2, PAGES 104-105 *

Wire Color Abbreviations used:

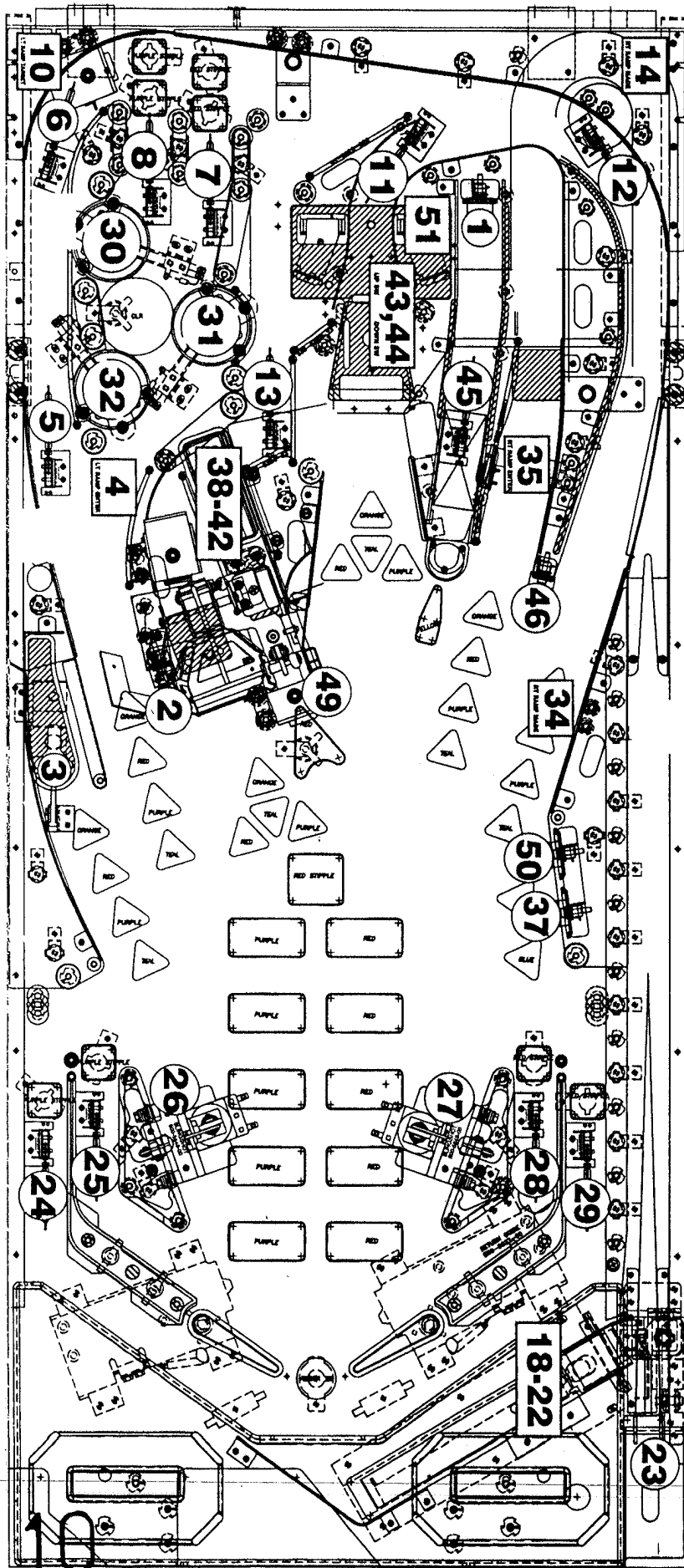
BLK Black
 BLU Blue
 BRN Brown
 GRN Gray
 GRN Green
 LGN Light Green
 ORG Orange
 PNK Pink
 RED Red
 TAN Tan
 VIO Violet
 WHT White
 YEL Yellow

Dedicated Switches [#D-1 - #D-32] {Dedicated Switch Locations : next page}

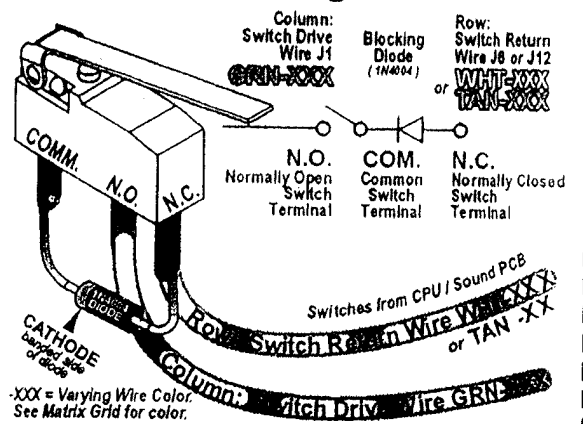
CPU/SND Board	IC-U2	IC-U2	IC-U2	IC-U2	IC-U2	IC-U2	IC-U2	IC-U4	IC-U4	IC-U4	IC-U4	IC-U4	IC-U4	IC-U4	IC-U4	IC-U4
GROUND (BLK) J2-P1/J11 & J3-P10	S.W. #D-1 LEFT COIN SLOT	S.W. #D-2 CENTER COIN SLOT	S.W. #D-3 RIGHT COIN SLOT	S.W. #D-4 FOURTH COIN SLOT	S.W. #D-5 FIFTH COIN SLOT	S.W. #D-6	S.W. #D-7	S.W. #D-8	S.W. #D-9 LEFT FLIPPER BUTTON	S.W. #D-10 LEFT FLIPPER E.O.S.	S.W. #D-11 RIGHT FLIPPER BUTTON	S.W. #D-12 RIGHT FLIPPER E.O.S.	S.W. #D-13	S.W. #D-14	S.W. #D-15	S.W. #D-16
	180-5204-00 COIN DOOR	180-5204-00 COIN DOOR	180-5204-00 COIN DOOR	180-5204-00 COIN DOOR	IF USED				500-6890-01 CABINET	180-5149-00 FLIP ASSY.	500-6899-01 CABINET	180-5149-00 FLIP ASSY.				

CPU/SND Board	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41	IC-41
GROUND (BLK) J13-P10	S.W. #D-17 TILT PENDULUM	S.W. #D-18 SLAM TILT	S.W. #D-19 TICKET NOTCH	S.W. #D-20	S.W. #D-21 BACK (GREEN)	S.W. #D-22 MINUS (RED)	S.W. #D-23 PLUS (RED)	S.W. #D-24 SELECT (BLACK)	S.W. #D-25 DIP (1)2345678	S.W. #D-26 DIP (12)345678	S.W. #D-27 DIP (123)45678	S.W. #D-28 DIP (1234)5678	S.W. #D-29 DIP (12345)678	S.W. #D-30 DIP (123456)78	S.W. #D-31 DIP (1234567)8	S.W. #D-32 DIP (12345678)9
	OPTIONAL 180-5032-00	IF USED			180-5192-04 COIN DOOR	180-5192-02 COIN DOOR	180-5192-02 COIN DOOR	180-5192-00 COIN DOOR	S.W. POS. #1 ON	S.W. POS. #2 ON	S.W. POS. #3 ON	S.W. POS. #4 ON	S.W. POS. #5 ON	S.W. POS. #6 ON	S.W. POS. #7 ON	S.W. POS. #8 ON

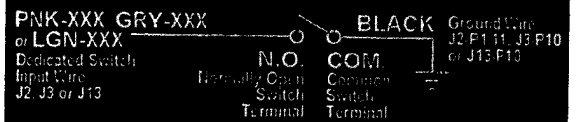
CPU/SOUND BD. SW1 DIP SWITCH (located between Connectors J3/J13)



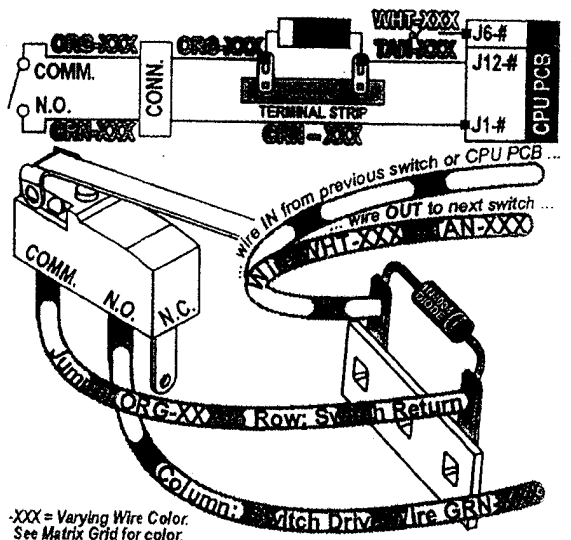
Typical Switch Wiring & Schematic



Dedicated Switch Schematic



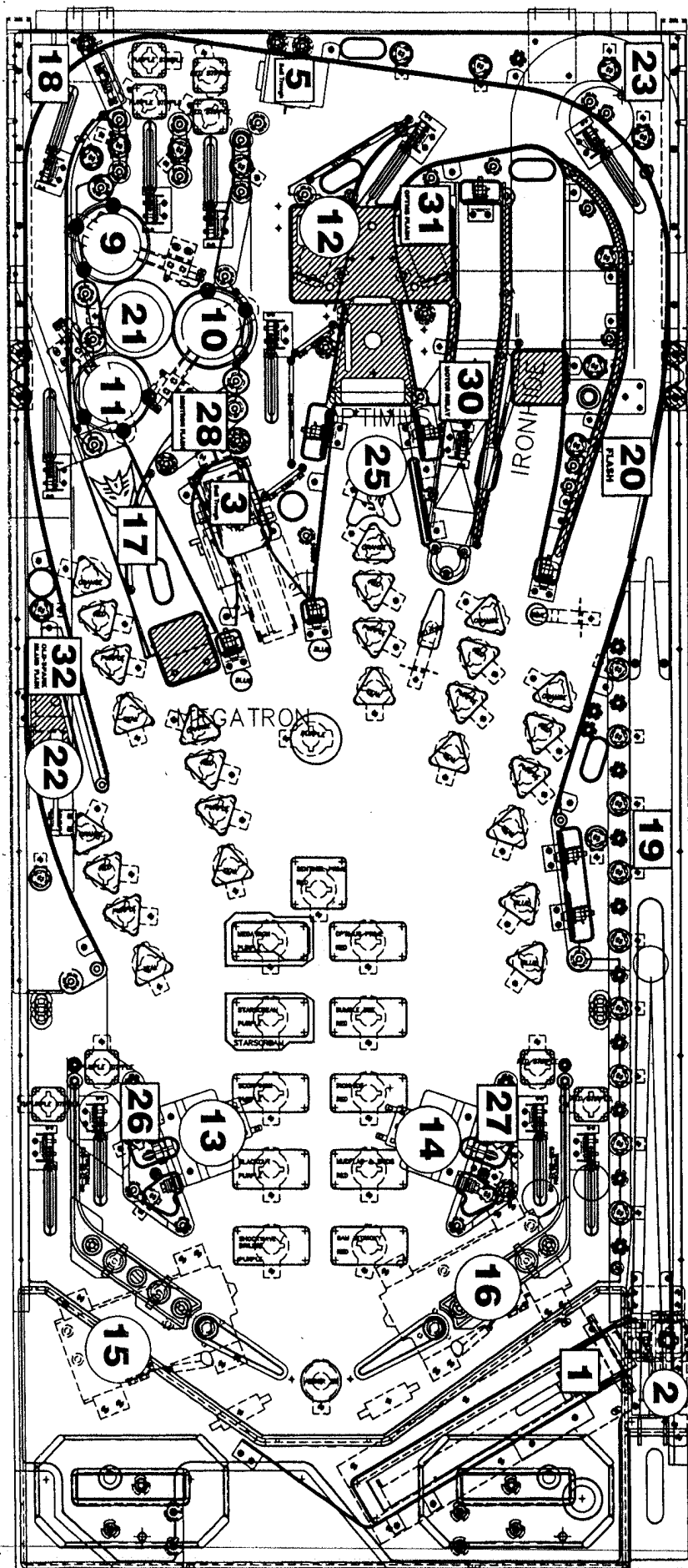
Typical Switch Wiring & Schematic ... with Switch Diode on a Terminal Strip (DOT8)



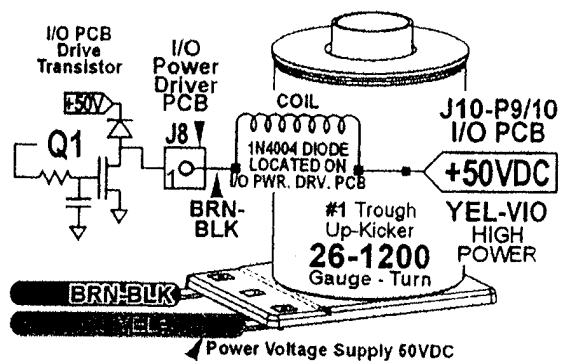
PRO

COILS DETAILED CHART TABLE

High Current Coils Group 1		Drive Transistor	Driver Output PCB	Power Line Color	Power Line Connection	Power Voltage	Drive Transistor Control Line Color	D.T. Control Line Connect	Coil GA-Turn or Bulb Type
#1	TROUGH UP-KICKER	Q1	▲ I/O Power Driver ▼	YEL-VIO	J10-P9/10	50VDC	BRN-BLK	J8-P1	28-1200 090-5044-NB
#2	AUTO LAUNCH	Q2		YEL-VIO	J10-P9/10	50VDC	BRN-RED	J8-P3	24-940 090-5036-NB
#3	MEGATRON LOCKUP	Q3		YEL-VIO	J10-P9/10	50VDC	BRN-ORG	J8-P4	23-800 090-5001-NB
#4		Q4					BRN-YEL	J8-P5	
#5	ORBIT CONTROL GATE	Q5		YEL-VIO	J10-P9/10	50VDC	BRN-GRN	J8-P6	32-1250 090-5060-01 N
#6		Q6					BRN-BLU	J8-P7	
#7		Q7					BRN-VIO	J8-P8	
#8	SHAKER MOTOR (OPTIONAL)	Q8		RED-WHT	J17-P7	16VAC	BRN-GRY	J8-P9	S-MOTOR KIT 502-5027-00
High Current Coils Group 2		Drive Transistor	Driver Output PCB	Power Line Color	Power Line Connection	Power Voltage	Drive Transistor Control Line Color	D.T. Control Line Connect	Coil GA-Turn or Bulb Type
#9	TOP POP BUMPER	Q9	▲ I/O Power Driver ▼	YEL-VIO	J10-P9/10	50VDC	BLU-BRN	J8-P1	28-1200 090-5044-NB
#10	RIGHT POP BUMPER	Q10		YEL-VIO	J10-P9/10	50VDC	BLU-RED	J8-P2	28-1200 090-5044-NB
#11	BOTTOM POP BUMPER	Q11		YEL-VIO	J10-P9/10	50VDC	BLU-ORG	J8-P4	28-1200 090-5044-NB
#12	OPTIMUS PRIME	Q12		YEL-VIO	J10-P9/10	50VDC	BLU-YEL	J8-P5	28-1200 090-5044-NB
#13	LEFT SLINGSHOT	Q13		YEL-VIO	J10-P9/10	50VDC	BLU-GRN	J8-P6	28-1200 090-5044-NB
#14	RIGHT SLINGSHOT	Q14		YEL-VIO	J10-P9/10	50VDC	BLU-BLU	J8-P7	28-1200 090-5044-NB
#15	LEFT FLIPPER (50V RED/YEL)	Q15		GRY-YEL-3A Fuse-RED-YEL	J10-P6/7	50VDC	ORG-GRY	J8-P8	22-1080 090-5032-NB
#16	RIGHT FLIPPER (50V RED/YEL)	Q16		GRY-YEL-3A Fuse-RED-YEL	J10-P6/7	50VDC	ORG-VIO	J8-P9	22-1080 090-5032-NB
Low Current Coils Group 1		Drive Transistor	Driver Output PCB	Power Line Color	Power Line Connection	Power Voltage	Drive Transistor Control Line Color	D.T. Control Line Connect	Coil GA-Turn or Bulb Type
#17	FLASH: DECEPTICON	Q17	▲ I/O Power Driver ▼	ORG	J6-P10	20VDC	VIO-BRN	J7-P2	#88 BULB 165-5000-89
#18	FLASH: LEFT RAMP	Q18		ORG	J6-P10	20VDC	VIO-RED	J7-P3	#88 BULB 165-5000-89
#19	FLASH: RIGHT SIDE	Q19		ORG	J6-P10	20VDC	VIO-ORG	J7-P4	#88 BULB 165-5000-89
#20	FLASH: BUMBLEBEE	Q20		ORG	J6-P10	20VDC	VIO-YEL	J7-P6	#88 BULB 165-5000-89
#21	FLASH: POP BUMPERS	Q21		ORG	J6-P10	20VDC	VIO-GRN	J7-P7	#88 BULB 165-5000-89
#22	LEFT EJECT	Q22		BRN	J7-P1	20VDC	VIO-BLU	J7-P8	28-1200 090-5044-NB
#23	FLASH: RIGHT RAMP	Q23		ORG	J6-P10	20VDC	VIO-BLK	J7-P9	#88 BULB 165-5000-89
#24	OPTIONAL (e.g. COIN METER)	Q24		RED	J16-P4-8	5VDC	VIO-GRY	J7-P10	OPTIONAL 5VDC
Low Current Coils Group 2		Drive Transistor	Driver Output PCB	Power Line Color	Power Line Connection	Power Voltage	Drive Transistor Control Line Color	D.T. Control Line Connect	Coil GA-Turn or Bulb Type
#25	FLASH: CENTER LANE ARROW	Q25	▲ I/O Power Driver ▼	ORG	J6-P10	20VDC	BLK-BRN	J6-P1	#88 BULB 165-5000-89
#26	FLASH: SLINGSHOT (LEFT)	Q26		ORG	J6-P10	20VDC	BLK-RED	J6-P2	#88 BULB 165-5000-89
#27	FLASH: SLINGSHOT (RIGHT)	Q27		ORG	J6-P10	20VDC	BLK-ORG	J6-P3	#88 BULB 165-5000-89
#28	FLASH: MEGATRON	Q28		ORG	J6-P10	20VDC	BLK-YEL	J6-P4	#88 BULB 165-5000-89
#29		Q29					BLK-GRN	J6-P5	
#30	OPTIMUS PRIME MOTOR RELAY	Q30		BRN	J7-P1	20VDC	BLK-BLU	J6-P6	RELAY 190-5004-00
#31	FLASH: OPTIMUS PRIME	Q31		ORG	J6-P10	20VDC	BLK-VIO	J6-P7	#88 BULB 165-5000-89
#32	FLASH: ALLSPARK	Q32		ORG	J6-P10	20VDC	BLK-GRY	J6-P8	#88 BULB 165-5000-89



Typical Coil Wiring & Schematic



Coil Q24 is Optional.
If either a Coin Meter, Token
Dispenser or Knocker (all
optional equipment) is
required, call Technical
Support for more informa-
tion, 1-800-542-5377 or
1-708-345-7700.

PRO

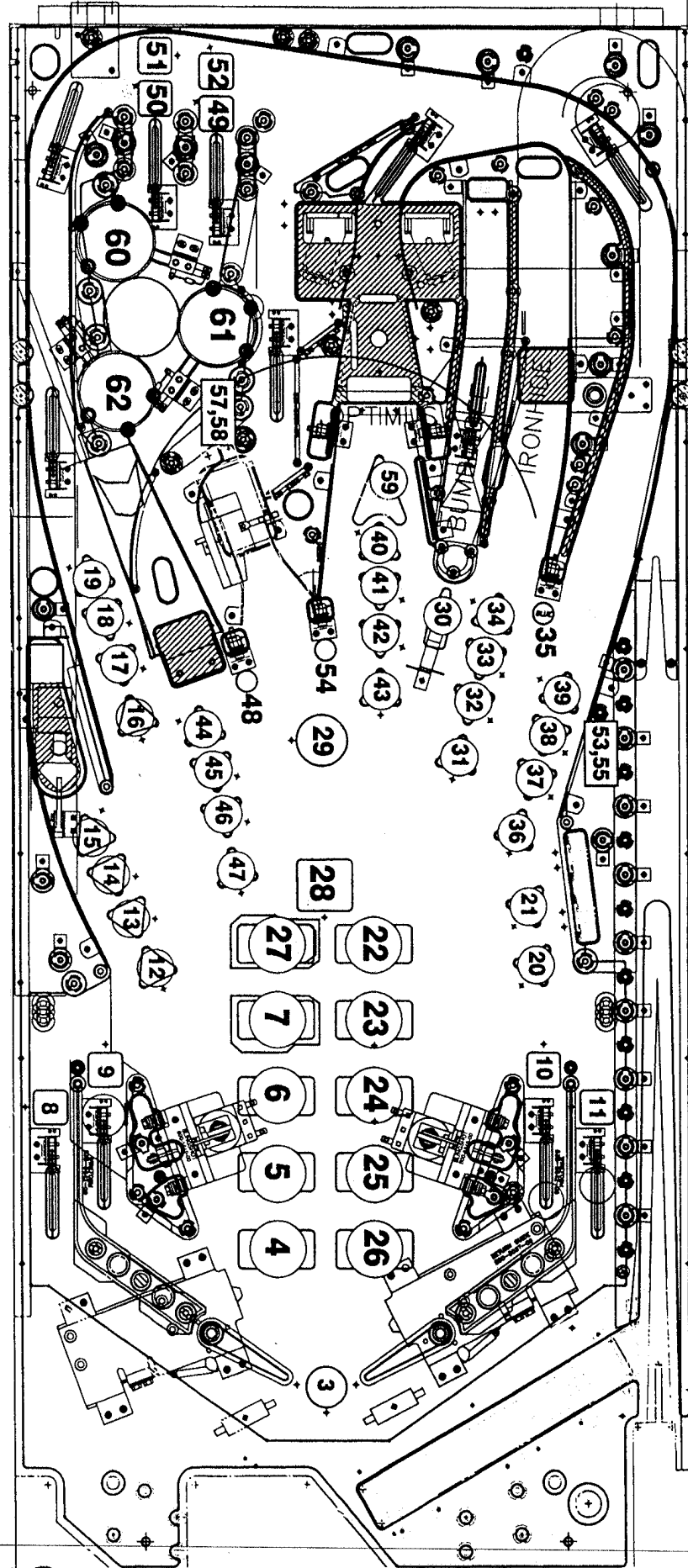
LAMP MATRIX GRID [#1 - #80] {Lamp Locations : next page}

I / O	01	02	03	04	05	06	07	08
Power Driver Board	IC-U17	IC-U16	IC-U15	IC-U14	IC-U13	IC-U12	IC-U11	IC-U10
01	18VDC YEL-BRN J13-P3	18VDC YEL-RED J13-P8	18VDC YEL-ORG J13-P7	18VDC YEL-BLK J13-P6	18VDC YEL-GRN J13-P5	18VDC YEL-BLU J13-P4	18VDC YEL-VIO J13-P3	18VDC YEL-GRY J13-P1
033	# 555 clear L.P. #1	# 555 CLEAR L.P. #2	# 555 CLEAR L.P. #3	# 555 CLEAR L.P. #4	# 555 CLEAR L.P. #5	# 555 CLEAR L.P. #6	# 555 CLEAR L.P. #7	# 555 CLEAR L.P. #8
GROUND J12-P1	START	TOURNAMENT START	ROLL OUT	DEVASTATOR	BLACKOUT	SHOCKWAVE	STARSCREAM	LEFT OUTLANE
02	# 555 CLEAR L.P. #9	# 555 CLEAR L.P. #10	# 555 CLEAR L.P. #11	# 555 CLEAR L.P. #12	# 555 CLEAR L.P. #13	# 555 CLEAR L.P. #14	# 555 CLEAR L.P. #15	# 555 CLEAR L.P. #16
GROUND J12-P2	LEFT RETURN LANE	RIGHT RETURN LANE	RIGHT OUTLANE	ALLSPARK (X)	ALLSPARK (PURPLE)	ALLSPARK (RED)	ALLSPARK (ORANGE)	LEFT ORBIT (X)
03	# 555 CLEAR L.P. #17	# 555 CLEAR L.P. #18	# 555 CLEAR L.P. #19	# 555 CLEAR L.P. #20	# 555 CLEAR L.P. #21	# 555 CLEAR L.P. #22	# 555 CLEAR L.P. #23	# 555 CLEAR L.P. #24
GROUND J12-P3	LEFT ORBIT (PURPLE)	LEFT ORBIT (RED)	LEFT ORBIT (ORANGE)	RIGHT 2 BANK TARGET (BOT)	RIGHT 2 BANK TARGET (TOP)	OPTIMUS PRIME	BUMBLEBEE	IRONHIDE
04	# 555 CLEAR L.P. #25	# 555 CLEAR L.P. #26	# 555 CLEAR L.P. #27	# 555 CLEAR L.P. #28	# 555 CLEAR L.P. #29	# 44 CLEAR L.P. #30	# 555 CLEAR L.P. #31	# 555 CLEAR L.P. #32
GROUND J12-P4	MUDFLAP SKIDS	RATCHET	MEGATRON	SENTINEL PRIME	CHALLENGE MEGATRON	BUMBLEBEE (CAPTIVE BALL)	RIGHT RAMP (X)	RIGHT RAMP (PURPLE)
05	# 555 CLEAR L.P. #33	# 555 CLEAR L.P. #34	# 44 CLEAR L.P. #35	# 555 CLEAR L.P. #36	# 555 CLEAR L.P. #37	# 555 CLEAR L.P. #38	# 555 CLEAR L.P. #39	# 555 CLEAR L.P. #40
GROUND J12-P5	RIGHT RAMP (RED)	RIGHT RAMP (ORANGE)	ENERGON (RIGHT)	RIGHT ORBIT (X)	RIGHT ORBIT (PURPLE)	RIGHT ORBIT (RED)	RIGHT ORBIT (ORANGE)	CENTER LANE (ORANGE)
06	# 555 CLEAR L.P. #41	# 555 CLEAR L.P. #42	# 555 CLEAR L.P. #43	# 555 CLEAR L.P. #44	# 555 CLEAR L.P. #45	# 555 CLEAR L.P. #46	# 555 CLEAR L.P. #47	# 44 CLEAR L.P. #48
GROUND J12-P6	CENTER LANE (RED)	CENTER LANE (PURPLE)	CENTER LANE (X)	LEFT RAMP (ORANGE)	LEFT RAMP (RED)	LEFT RAMP (PURPLE)	LEFT RAMP (X)	ENERGON (LEFT)
07	# 555 CLEAR L.P. #49	# 555 CLEAR L.P. #50	# 555 CLEAR L.P. #51	# 555 CLEAR L.P. #52	# 555 RED L.P. #53	# 44 CLEAR L.P. #54	# 555 AMBER L.P. #55	L.P. #56
GROUND J12-P8	TOP LANE (RED / BOT)	TOP LANE (PURPLE / BOT)	TOP LANE (PURPLE / TOP)	TOP LANE (RED / TOP)	SPECIAL	ENERGON (CENTER)	EXTRA BALL	
08	# 555 RED L.P. #57	LED L.P. #58	# 555 CLEAR L.P. #59	LED L.P. #60	LED L.P. #61	LED L.P. #62	L.P. #63	L.P. #64
GROUND J12-P9	MEGATRON (BOTTOM)	MEGATRON (TOP)	OPTIMUS PRIME CHALLENGE	TOP POP BUMPER	RIGHT POP BUMPER	BOTTOM POP BUMPER		
09	L.P. #65	L.P. #66	L.P. #67	L.P. #68	L.P. #69	L.P. #70	L.P. #71	L.P. #72
GROUND J12-P10								
10	L.P. #73	L.P. #74	L.P. #75	L.P. #76	L.P. #77	L.P. #78	L.P. #79	L.P. #80
GROUND J12-P11								

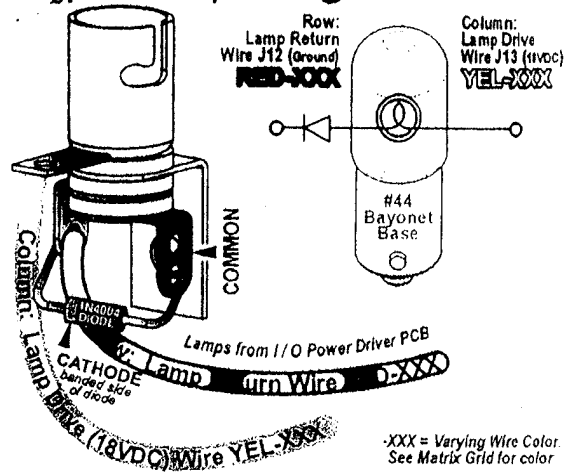
* FOR MORE ABOUT DICE CENTER-
MINI STRIPS & DOTS, SEE
SEC.5, CHIP 2, PAGES 104-105 *

Wire Color Abbreviations used:

BLK Black BLU Blue BRN Brown GRAY Gray GRN Green ORG Orange RED Red VIO Violet WHT White YEL Yellow

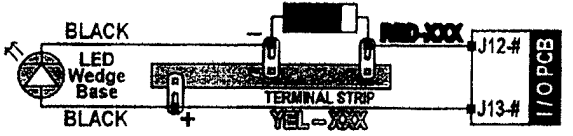


Typical Lamp Wiring & Schematic

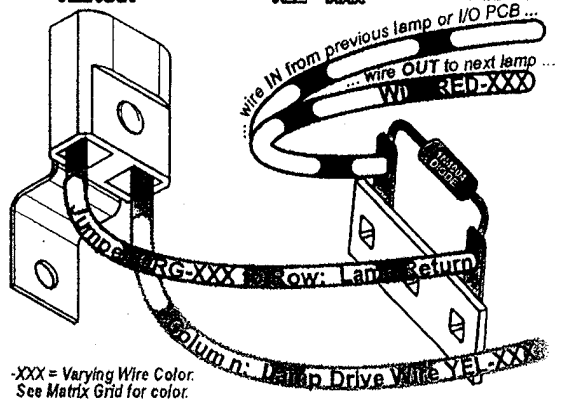


Typical Lamp Wiring & Schematic

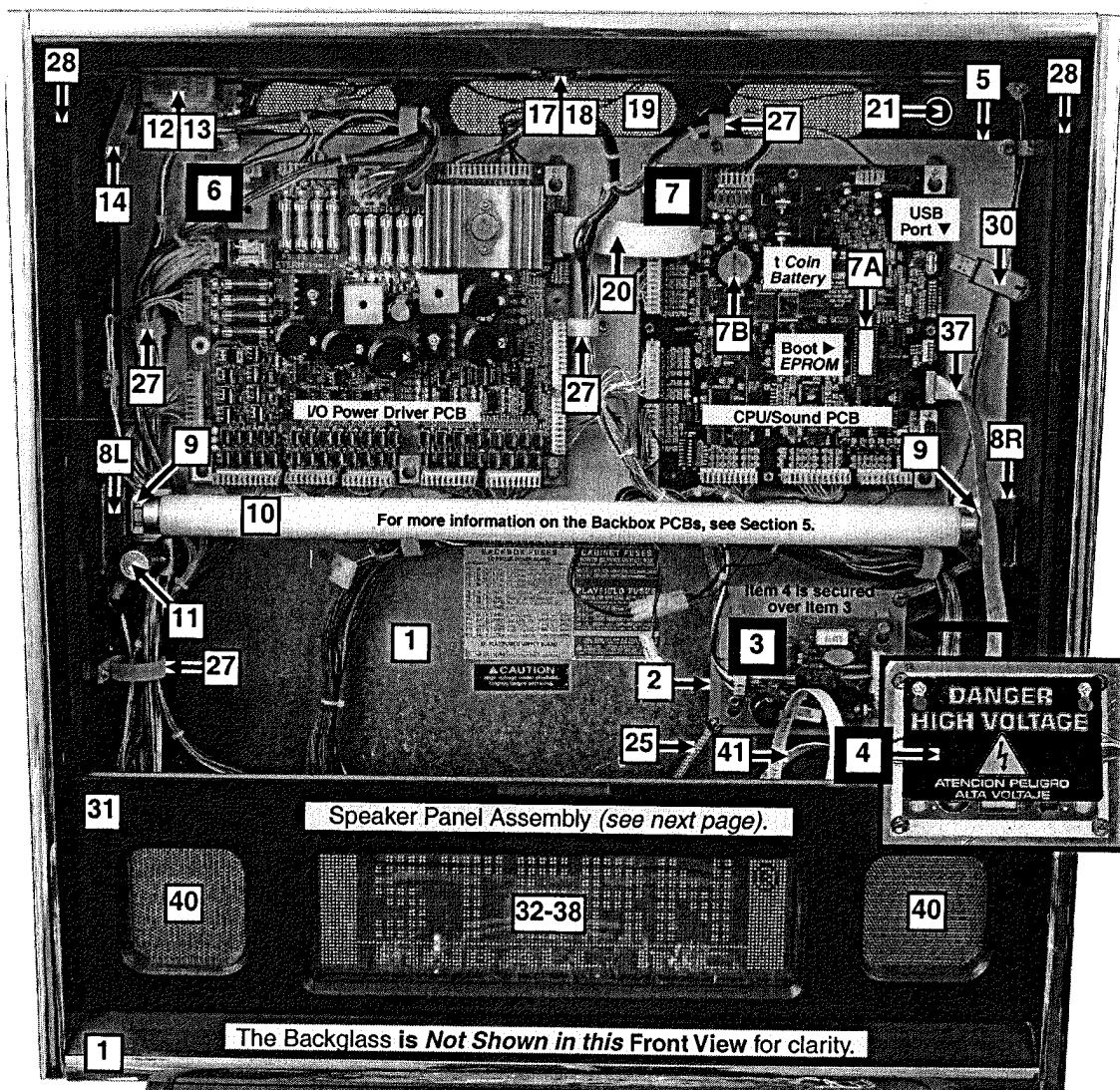
... with Lamp Diode on a Terminal Strip (DOT9)
Usually when an LED Module is used as a Controlled Lamp for a Pop Bumper.



... with Lamp Diode on a Terminal Strip (DOT9)
Usually when a #555 Bulb is used as a Controlled Lamp for a Spot Light.



TOURNAMENT PINBALL

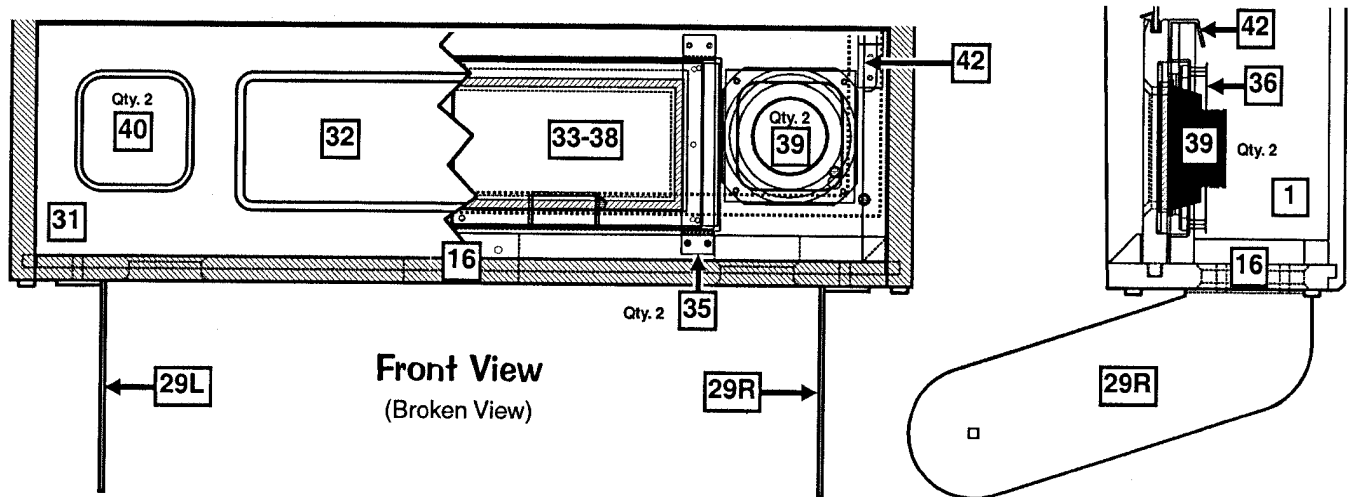


Parts Identification

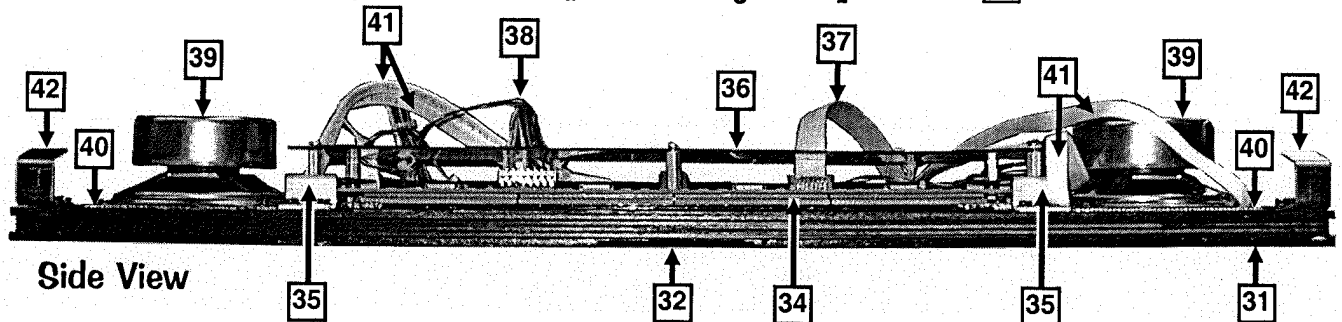
Nr.	BACKBOX PARTS	QTY.	SPI PART Nr.	Nr.	BACKBOX PARTS	QTY.	SPI PART Nr.
1	Backbox Transformers™ (No Parts)	1	525-5631-17-C3	11	Starter - Fluorescent (FS2 Light)	1	165-5011-01
Item 1 Note: Chrome T-Molding is installed and cannot be ordered separately. Fuse Description (820-6384-00) and High Voltage Caution (UL) (820-6082-01 & -02) Decals.					Starter Base (with leads) [on Item 8L]	1	077-5213-00
2	PCB Metal Mounting Plate [Display]	1	535-9769-00	Item 11 is secured to Item 8L by: #4-40 X 1/2" PPH MS (Sems) Zc. (Qty. 2) (237-5813-00)			
3	Display Power Supply PCB	1	520-5138-00	12	Ballast Mounting Plate	1	535-8657-00
Item 3 is secured to bottom by: #8-32 X 3/8" SHWH Swg. (Zinc) (Qty. 2) (237-5975-00)				13	Ballast CU452-W 1/2" Core 120v 60 Hz 13W	1	010-5015-00
4	Plastic Cover [DANGER HIGH VOLTAGE]	1	830-6053-00	Items 12 & 13 are secured to Item 1 by: #8 X 1/2" SHWH AB (Zinc) (Qty. 2) (234-5101-00) >>> CAUTION - VERY HOT" Decal (820-6266-00) EU / UK Only : Ballast, 5/8" Core 50/60 Hz (010-5015-01)			
Items 3 & 4 are secured to top by: 1-1/4" X 3/8" Plastic Spacer Gray (Qty. 2) (254-5000-05) and #8-32 X 1-3/4" SHWH Set. (Zinc) (Qty. 2) (237-5975-28)				14	Ground Strap (5")	1	600-5006-05
5	PCB Metal Mounting Plate [I/O+CPU]	1	535-9664-00	15*	Roto Lock Male (on Cabinet)	1	355-5006-01
Items 2 & 5 are secured to Item 1 by: #8 X 1/2" SHWH AB (Zinc) (Qty. 1/hole) (234-5101-00) and #10 Washer 7/32" I.D. X .5" O.D. X 1/16" Thick (Qty. 1/hole) (242-5003-00) Note: Where a Wire Clamp (Item 27) is mounted, a #10 Washer is not required.				16	Roto Lock Female (R2-0002-02)	1	355-5006-02
6	I/O Power Driver PCB [S.A.M. Sys.]	1	520-5249-00	Item 16 is secured by: #10-24 X 1-3/4" CBSN (231-5022-00), #10-24 Keps Nut (Qty. 2) (240-5207-00), #10-24 X 2" CBSN (231-5045-00) and #10 Washer 7/32" I.D. X .5" O.D. X 1/16" (Qty. 5) (242-5003-00). See opposite next page.			
7	CPU/Sound PCB [S.A.M. System]	1	520-5246-02	17	Lock Mounting Plate	1	535-0072-00
7A: 8MB EPROM #M27C801-100F1 (960-5016-00) Ordering Note: Programmed EPROM (965-B00T-SAM) 7B: Coin Cell Battery (CR2430 3V) (000-0644-01) For USB Memory Stick Information, see Item 30 on the next page.				18	Lock 5/8" Barrel, 3/4" ø, 1.5" Flat Cam	1	355-5055-00
Items 6 & 7 are secured to Item 5 by: #8-32 X 3/8" SHWH Swage (Zinc) (Qty. 10) (237-5975-00) and 1/4" Slf. Rtn. Spacer White (Qty. 5 [I/O] / Qty. 4 [CPU]) (254-5007-05)				Items 17 & 18 are secured by: #8 X 1/2" TP Torx T20 Black (Qty. 2) (237-6173-05)			
8L	Fluorescent Light Bracket (Left Style)	1	535-7739-00	19	Back Vent Grill 2-1/2" X 18"	1	545-5072-02
8R	Fluorescent Light Brckt. (Right Style)	1	535-7739-01	20	Ribbon Cable, 20-Pin (3.5")	1	036-5000-350
Items 8L & 8R are secured to Item 1 by: #10-24 X 1-1/4" Carriage Bolt Square Neck (Qty. 2/per) (231-5012-00), #10-24 Keps Nut (Qty. 2/per) (240-5207-00) and 3/4" X 3" Reinforced Strapping Tape (Qty. 1, sold in 12" length only) (626-5040-00)				Item 20 connects the I/O Pwr. Drvr. PCB to the CPU/Sound PCB; For 14-Pin see next page.			
9	Fluorescent Lamp Holder (Socket)	2	077-5214-01	21	Button Hole Plug (Blk) (Happ #52-6214-00)	1	500-6566-00
Item 9 is secured to Items 8L and 8R by: #6-32 X 5/8" PPH MS (Sems) Zinc (Qty. 1/per) (232-5203-00) Lock-In Fluor. Bulb with Yellow Socket Clip (Qty. 1/per) (545-6271-00)				Item 21 plugs the Access Hole required if using optional BETAbrite Sign or Data cables.			
10	Fluorescent Tube 24" (F18T8CW)	1	165-5061-00	22	Header Sign TOURNAMENT PINBALL	1	545-6133-00
				23	Bracket, Tournament Sign (Black)	2	535-0081-02
				Item 22 is mounted to Item 23 with #8-32 x 3/8 PPA screw (Qty. 2/per) (232-5303-01) & #8-32 Nylock Nut (Qty. 2/per) (240-5102-00). Item 23 is secured to Item 1 by: #8 X 5/8" PPH (Qty. 2/per) (232-5101-01)			

PARTS TABLE & VIEWS CONTINUED ON THE NEXT PAGE. ▶

Backbox [S.A.M. System] - Parts ☐



Speaker Panel [S.A.M. System] - Parts ☐



Nr.	BACKBOX PARTS	QTY.	SPI PART Nr.	Nr.	SPEAKER PANEL PARTS	QTY.	SPI PART Nr.
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← PARTS TABLE & VIEWS CONTINUED FROM THE PREVIOUS PAGE.

25 Braided Wire (1-1/2 Feet) 1 600-5001-00
Item 25 is secured by: Staple 5/16" (Qty. 23) (631-5000-00)

26* Zip Cable Tie (Screw Down Style) 4 040-5005-00
Item 26 is secured @ Inside bot. by: #8 X 1/2" SHWH AB (Zinc) (Qty. 1/per) (234-5101-00)

27 Clamps [Multiple Sizes] 32 040-5000-XX
Item 27 secured by: #8 X 1/2" SHWH AB (Zinc) (Qty. 1/per) (234-5101-00) For the following sizes, replace -XX with: 1/4" Double = -23 (Qty. 5); 1/2" Single = -06 (Qty. 3); 3/4" Single = -08 (Qty. 4); 1" Single = -09 (Qty. 1); 1-1/4" Double = -30 (Qty. 1)

28 Foam 3/16" Thick X 1/4" Wide X 12" 6 626-5026-00
Above Item 28 is self-adhesive. 17.5" strip on each side. Sold in 12" Lengths only.

29L Pivot Hinge (Left Style) 1 535-7999-00
29R Pivot Hinge (Right Style) 1 535-7999-01

Items 29L-29R are secured to Backbox by: 1/4"-20 X 1-1/4" C.B. Sq. Neck (Qty. 4) (231-5003-00) and 1/4"-20 Flange Nut (Qty. 4) (240-5300-00)
Items 29L-29R are secured to Cabinet by: Spacer Hex Nut 1/2" O.D. - 1/4-20 X 1/2" TD (Black) (Qty. 1/per) (254-5042-00), Nylon Spacer (Black) (Qty. 1/per) (242-5084-00), 1/4-20 X 1/2" Carriage Bolt Square Neck (Black) (Qty. 1/per) (231-5072-00) and Washer 1" O.D. X 1/2" I.D. X 1/16" (Black) (Qty. 1/per side, only if required) (242-5087-00)

30* Memory Stick USB 1.1+ [Generic] 64MB 970-0064-00
Memory Stick USB 1.1+ [Generic] 128MB 970-0128-00

Item 30 was not included with your game. Read the inside cover or go on-line for more info. To order with the latest game code copied onto it, add -A3 to the Part Nr. (970-0128-00-A3). File(s) can be downloaded from our website (Files are 25MB or larger. DSL or Fast Modem recommended). Not all manufacturers of Memory Sticks are compatible with our system. Test it out, if it doesn't work properly, return your purchase and order the memory stick through your local pinball distributor (Stem Pinball Memory Sticks guaranteed compatible).

(ASM. REF. 505-6002-A3-A3, Items 1-42 Only, [29-30 not included in assembly])

Take Note:

* An asterisk (*) indicates item(s) are not noted in the pictorials.

Nr.	BACKGLASS PARTS	QTY.	SPI PART Nr.
i*	Glass (Tempered) 25.906" X 19.187" X .125"	1	660-5038-02
ii*	Transformers™ Pro Film Art (#C3)	1	830-52C3-00
iii*	Top Plastic Channel - 26"	1	545-5018-15

Nr.	SPEAKER PANEL PARTS	QTY.	SPI PART Nr.
-----	---------------------	------	--------------

31 Speaker Panel (Black Wood) 1 525-5515-00
32 Plastic Shield (Display Front Cover) 1 545-5884-00

Item 33 is secured to inside Item 31 by: #6 X 3/8" SHWH AB (Zinc) (Qty. 8) (234-5000-00)
33* Foam 3/16" Thick X 1/4" Wide X 12" 6 626-5026-00

Above Item 33 is self-adhesive. Located between Items 32-34. Sold in 12" Lengths only.

34 128 X 32 Dot Matrix Display PCB 1 520-5052-00
// EURO ONLY RoHS // 128 X 32 DM CES PCB 520-5052-05
// EURO ONLY RoHS // Dot Matrix Bezel 545-6281-00

Item 34 is secured to Item 35 by (at corners): 3/16" X 3/8" Spacer Gray (Qty. 4) (254-5000-18) and #6-32 X 1/2" SHWH Swage (Serr) Zinc (Qty. 4) (237-5976-03)

35 Dot Matrix Display Mounting Bracket 2 535-8368-01
Item 35 is secured to Item 31 by: #8 X 1/2" SHWH AB (Zinc) (Qty. 4/per) (234-5101-00)

36 Plastic Shield (Display Back Cover) 1 830-6040-00
Item 36 is secured to Item 34 by: 1/2" X 1/4" Hex Spacer #6-32 Tap (Qty. 4) (254-5008-03), 3/4" X 1/4" Hex Spacer #6-32 Tap (Qty. 2) (254-5008-04), #6-32 X 1/4" PPH MS (Serr) Zinc (Qty. 2) (232-5200-00) and #6-32 X 3/8" PPH (Qty. 6) (232-5201-00)

37 Ribbon Cable, 14-Pin (33") 1 036-5260-33

Item 37 (14-Pin) connects the 128 X 32 Dot Matrix Display PCB to the CPU/Sound PCB.
// EURO ONLY RoHS // LED Ribbon Cable Filter PCB 520-5259-00

38 Display Cable (Wiring Harness) 1 036-5454-01
// EURO ONLY RoHS // LED Display Adapter Harness 036-5520-00

39 Speaker (Shld.) 4" 8Ω #MG ELE 4060SH 2 031-5004-02

40 Speaker Grill (Black w/Artwork) 2 535-8081-B2
Items 39-40 are secured by: #8 X 1/2" SHWH AB (Black) (Qty. 4/per) (234-5101-01)

41 Ground Strap (25") [2 per : Items 35 & 39] 4 600-5006-25
42 Speaker Panel Hook Bracket 2 535-7009-02

Item 42 is secured by: #8 X 1/2" SHWH AB (Zinc) (Qty. 2/per) (234-5101-00)

(ASM. REF. 515-6888-05, Items 31-42 Only [includes wiring])

Nr.	BACKGLASS PARTS	QTY.	SPI PART Nr.
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iv* Bottom Plastic Lift Channel - 26" 1 545-6313-01

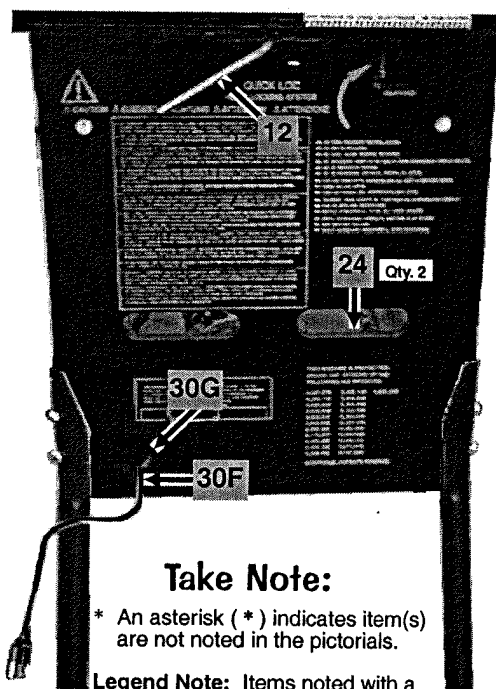
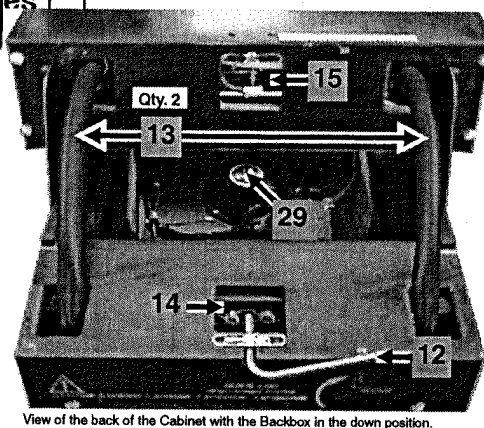
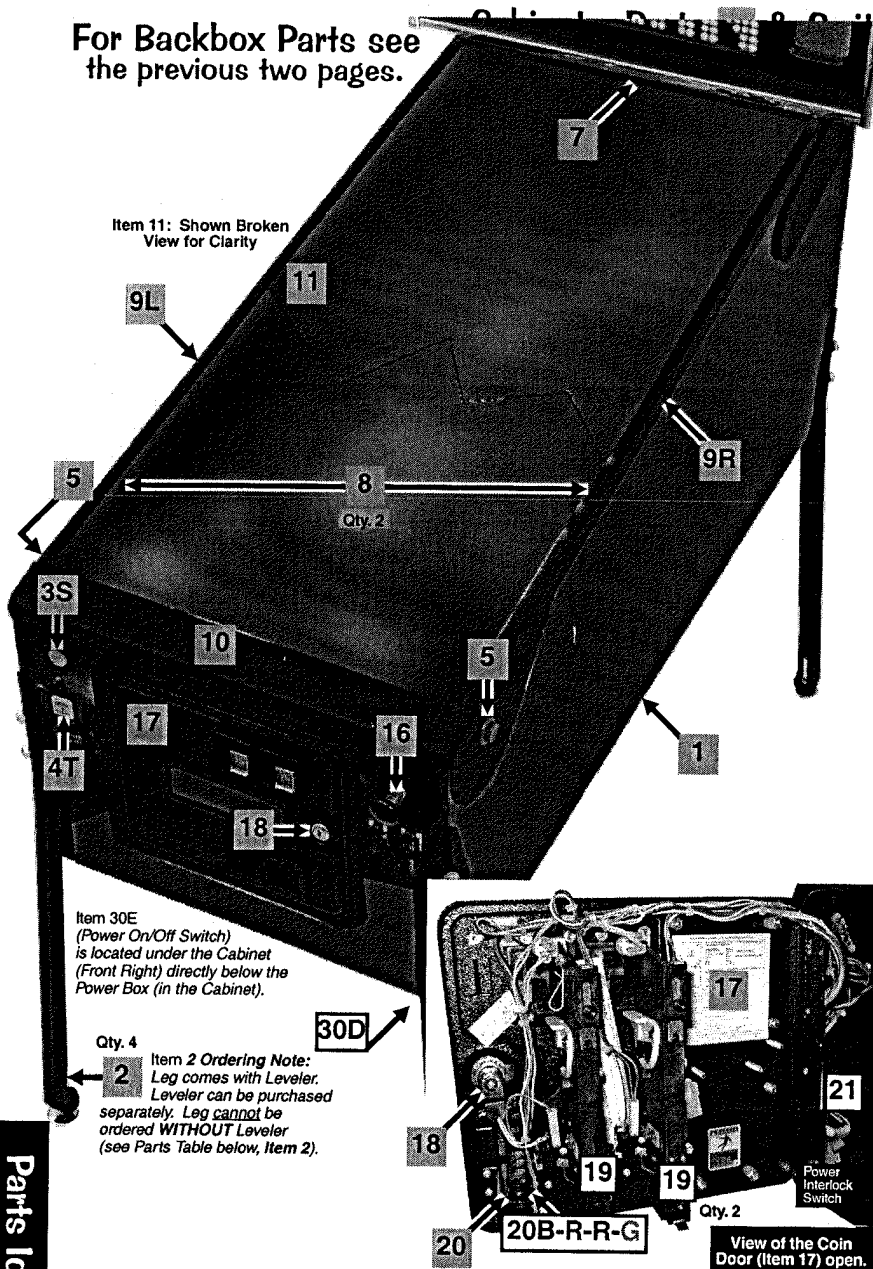
v* Plastic Edging (Left/Right) - 18-1/8" 2 545-5018-14

Items i-v are secured to Item I by: 3M Tape (Double-Sided), 12" (Qty. 1) (626-5080-00)

Note: Only 6" required, sold in 12" lengths only.

(ASM. REF. 515-5450-00-A9, Items i-v)

For Backbox Parts see the previous two pages.

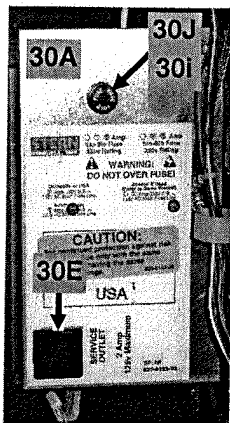
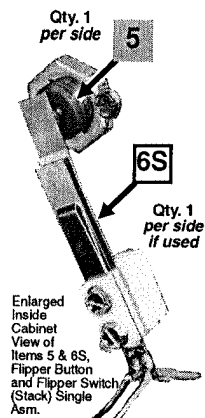


Parts Identification

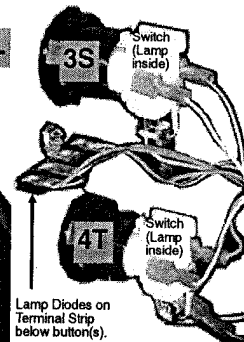
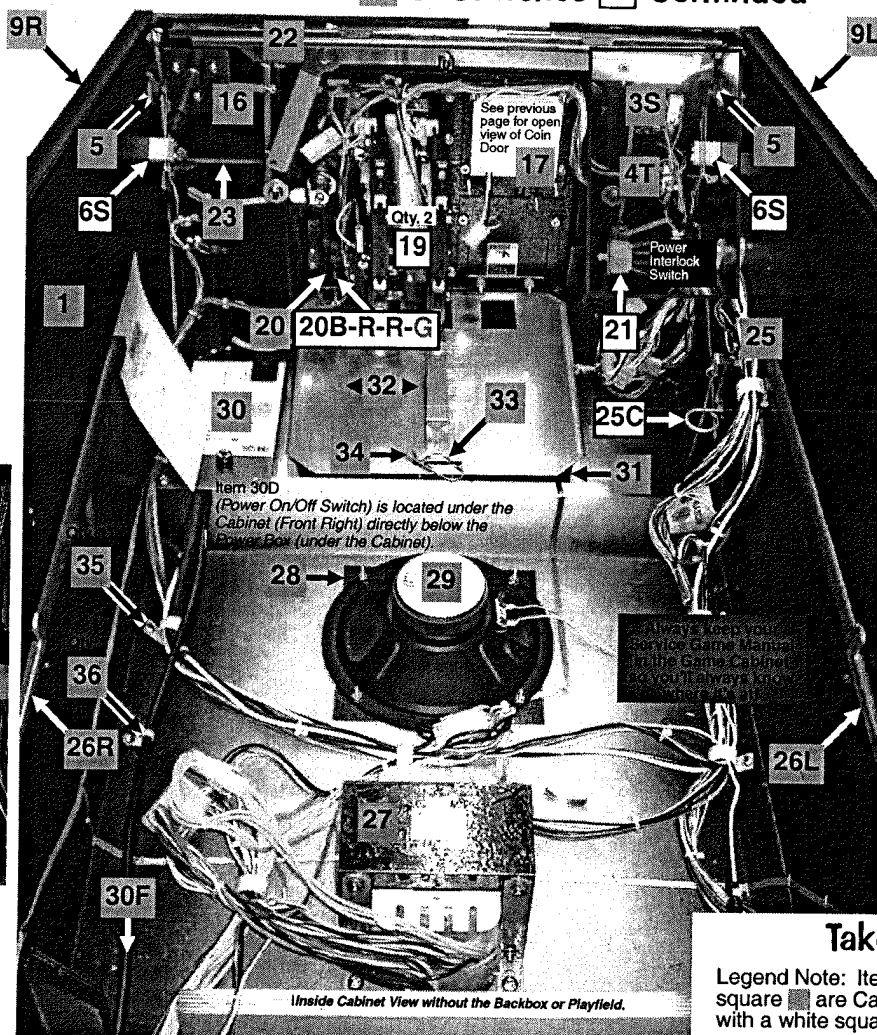
Nr.	CAB. PARTS & SWITCHES	QTY.	SPI PART Nr.
1	Cabinet Transformers™ (No Parts)		525-5395-15P-C3
2	Black Leg with Leveler Asm.	4	500-5921-50
Item 2 is secured by: Leg Bolt Back Plate (535-5703-00) and Leg Bolt 3/8" X 16 X 2-1/2" Hex 5/8" Hd. (2/per) (231-5001-01) Leg Leveler ONLY (3/8"-16 X 3") (500-5017-00).			
3S	Start Button (Green Round) with Sw. + Lamp	1	500-6388-44-TL
4T	Tournament Button (Yel. Sq.), w/Sw. + Lamp	1	500-6587-06-TL
Item 3S & 4T includes the Switch & Lamp (No Wiring; desolder old wiring where required). Switch or Bulb replacement: TWIST LOCK (-TL) >> not snap-in << Assembly Parts Included: Microswitch (180-5174-00); #555 Wedge Base Clear Bulb (165-5002-00); If 4T is not desired, use optional Button Plug Black (500-6566-00). Requires 3-Lug Terminal Strip (055-5204-03) and Diodes, 1N4004 (Qty. 2) (112-5003-00) inside cabinet under button(s) for Lamp Operation (Diode for Switch, located on Switch.)			
5	Flipper Button One Blue # 500-5026-32 and One Red	1	500-5026-35
Item 5 is secured by: Pal Nut for Flipper Button (Metal) (Qty. 2/per) (240-5003-01) Pal Nut inside cabinet secured by: #8 X 1/2" SHWH AB (Zinc) (Qty. 1/per) (234-5101-00) and Washer (Zinc), .187" ID X .875" OD X .048" Thick (Qty. 1/per) (242-5059-00)			
6S	Flipper Switch Single Assembly	2	500-6889-01
Assembly Parts Included: Flipper Switch Stack Single (Paliney Contact) (180-5160-01) and Capacitor - Ceramic .05 Mfd 25 volt (130-5001-00) Item 6S/6D are secured to Cab. by: #6 X 1-1/4 SHWH AB (Zinc) (Qty. 2/per) (237-5959-00)			
6D	Flipper Switch Double Assembly	0	500-6890-01
Assembly Parts Included: Flipper Switch Stack Double (Paliney Contact) (180-5164-01) and Capacitor - Ceramic .05 Mfd 25 volt (130-5001-00) Item 6S/6D are secured to Cab. by: #6 X 1-1/4 SHWH AB (Zinc) (Qty. 2/per) (237-5959-00)			

Nr.	CAB. PARTS & SWITCHES	QTY.	SPI PART Nr.
7	Rear Glass Channel 20-3/8" Length	1	545-5038-00
8	Plastic Channel 42-5/8" Lg. (Left/Rt.)	2	545-5017-00
9L	Side Armor (Left) Black W/Hole	1	535-7297-02
9R	Side Armor (Right) Black W/Hole	1	535-7297-02
Items 9L & 9R are secured @ front & side by: Perm Stud 1/4 X 1" Flange Head Black (Qty. 1/per) (237-6116-01); 1/4-20 Flange Nut (Qty. 1/per) (240-5300-00) and #8 X 1/2" T20 Tamper Proof Black (Qty. 5/per) (237-6173-05); @ rear (backbox) by: #10-24 X 1" Sq. Neck Carriage Bolt Black (Qty. 1/per) (231-5021-00) and #10-24 Hex Nut (Qty. 1/per) (240-5202-00)			
10	Front Molding (Black) < NO BUTTON HOLE >	1	515-7495-00
Item 10 includes: Self-Adhesive Foam Rubber 3/8" X 3/16" X 20-3/8" (3") (626-5001-00) Items 10 works with Item 22 (next page) ONLY.			
11	Playfield Glass (Tempered) 21" X 43" X 3/16"	1	660-5001-00
12	Hex Key Allen Wrench 5/16"	1	777-0001-00
13	Corrugated Tubing Black 1" X 2.6' Lg.	1	605-5008-03
Above Item 13 covers the Cable Wiring Harnesses going into the Backbox from the Cabinet.			
14	Roto Lock Male (R2-0055-02)	1	355-5006-01
Item 14 is secured by: #10-24 X 1-3/4" Carriage Bolt Square Neck (Qty. 2) (231-5022-00), #10-24 Nylon Stop Nut (Qty. 2) (240-5206-00) and #10 Washer, 7/32" ID X 1/2" OD X 1/16" Thick (Qty. 2) (242-5003-00)			
15	Roto Lock Female (on Backbox)	1	355-5006-02
16	Ball Shooter (Plunger) Assembly	1	500-6146-00-04

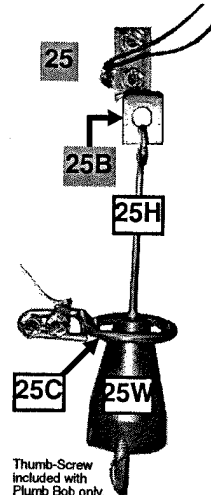
Cabinet - Parts & Switches Continued



Enlarged Inside Cabinet View of Items 30, Power Box (30A), Service Outlet (30E), Fuse (30I) and Fuse Holder (30J).



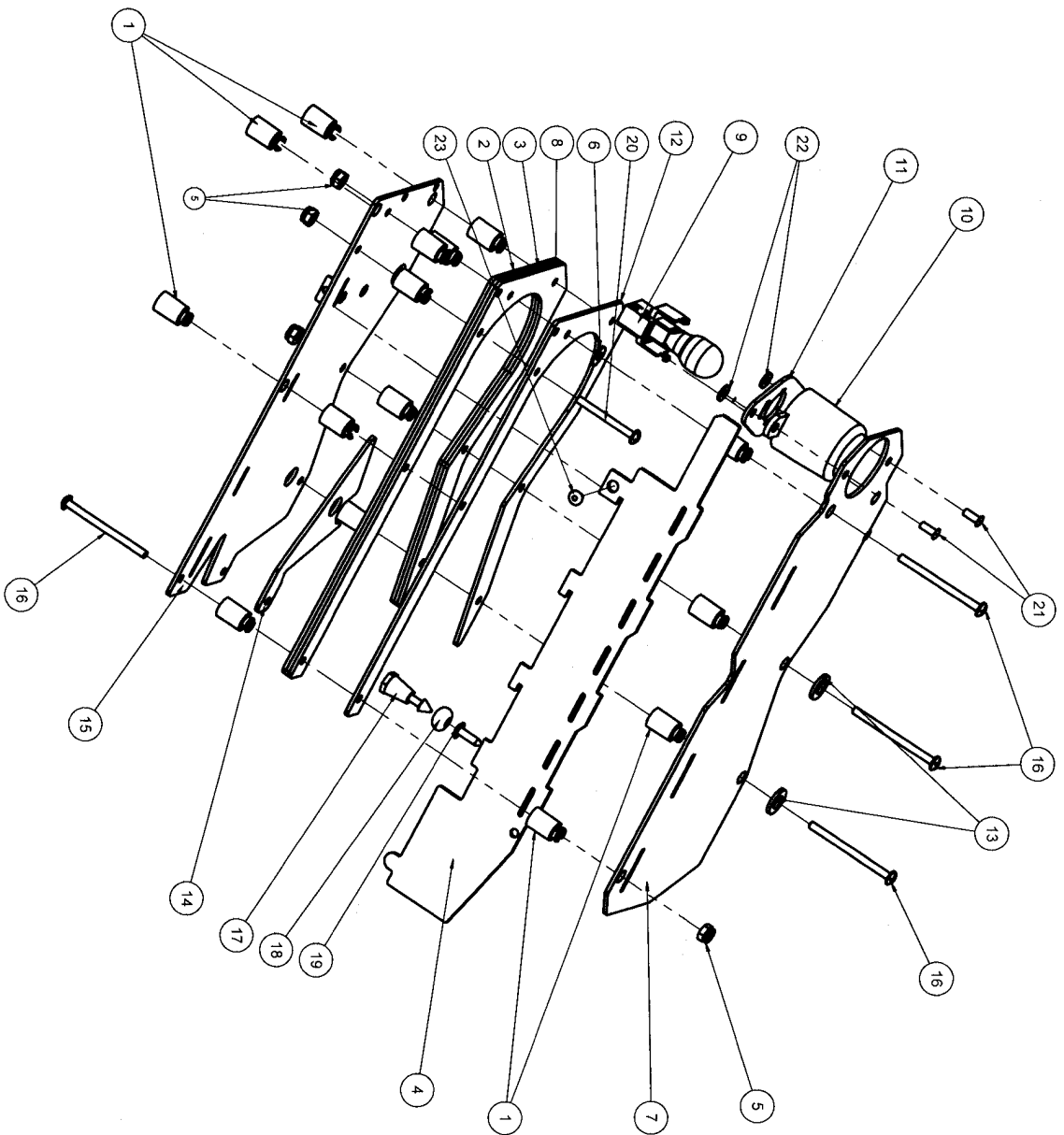
Enlarged Inside Cabinet View of Items 3S, 4T and 25 (25B, 25C, 25H & 25W), Plumb Bob Tilt Switch.



Take Note:

Legend Note: Items noted with a cyan square ■ are Cabinet Parts. Items noted with a white square □ are Switches.

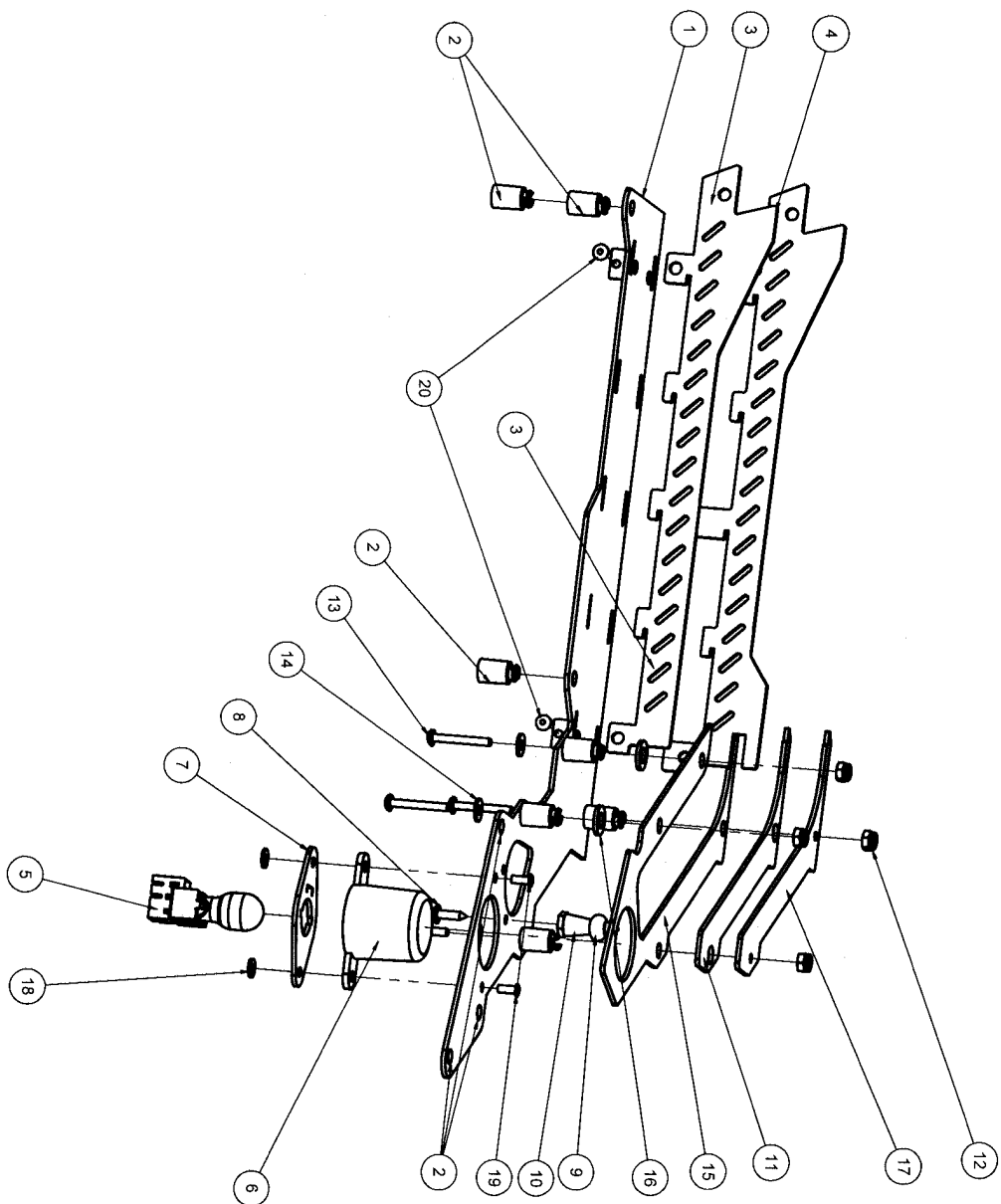
Nr.	CAB. PARTS & SWITCHES	QTY.	SPI PART Nr.	Nr.	CAB. PARTS & SWITCHES	QTY.	SPI PART Nr.
PARTS TABLE & VIEWS CONTINUED FROM THE PREVIOUS PAGE.				27	Transformer 5.7VAC (with Ballast Winding)	1	010-5012-01
17	Coin Door 2-Cht \$V Up-Stk. 4-Button Bracket	1	501-5018-172	Item 27 is secured by: 1/4" 20 X 1-1/4" PPH MS (Zinc) (Qty. 4) (237-5854-00) and 1/4" Split Lock Washer (Qty. 4) (244-5000-00)			
Item 17 is secured by: 1/4" 20 X 1-1/4" Carriage Bolt Square Neck (Qty. 4) (231-5003-00) 1/4" 20 Flange Nut (Qty. 4) (240-5300-00) and Fend Washer 1/4" I.D. X 1" O.D. (Qty. 3) (242-5009-00) Note: For Coin Door other than USA call Technical Support for SPI Part Nr.				28	Woofers (Speaker) Grill 7" X 7"	1	545-5072-03
18	Lock 5/8" Barrel, 3/4, Flt. Cam	1	355-5055-00	29	Woofers 8" ø Round 8010 4Ω	1	031-5007-01
Coin Door Switch (USA) (Happ)				Items 28 & 29 are secured by: #6-32 X 1-1/4" Fin Shank Screw (Qty. 4) (237-5883-00) and #6-32 Keps Nut (Qty. 4) (240-5008-00)			
19	ALT. SW.: 19C: Coin Door Switch (USA) (Coin Control) (180-5024-00) ALT. SW.: 19J: Coin Door Switch (Y Japan) (180-5091-00)	2	180-5024-01	Power Input Box Asm. + Univ. Cable			
4-Button Bracket (for Service Menu Buttons)				30A:	Power Box (No Parts) Mounting Frame (535-5932-00)	1	515-5360-08
20	SWITCH: 20B: Push-Button Service Switch (Black) (180-5192-00) SW. 20R: Push-Button Service Switch (Red) (Qty. 2) (180-5192-02) SW. 20G: Push-Button Service Switch (Green) (180-5192-04)	1	535-6860-04	30B*:	Line Filter (150-5000-00)		
Ordering Note: Securing hardware for switches included. Decal in kit sold separately.				30C*:	Varistor TNR159211KM (Domestic) (150-5001-00) or Varistor TRM15G431KM (Euro) (150-5002-00)		
21	Power Interlock-Memory Protect Switch Asm.	1	500-5808-05	SWITCH:	30D: On/Off Rocker Switch + Bracket Assembly (515-7085-00)		
Assembly Parts Included: Mounting Bracket (535-9794-00), Power Interlock (Playfield) Switch (180-5136-00) and secured by: #8 X 1/2" SHWH AB (Zinc) (Qty. 2) (234-5101-00)				30D Incl.:	Switch, APEM R2101C5NBB (180-5001-03) + Bracket (535-8318-00)		
22	Front Molding Lockdown Asm.	1	500-6881-00	30E:	Service Outlet (3-Prong / US) (180-5008-01) / International N/A		
Item 22 is secured by: #10-24 X 1-1/4" Carr. Bolt (Qty. 2) (231-5012-00) and #10-24 Keps Nut (Qty. 2) (240-5207-00)				30F:	Line Cord 10' RCJ 3" + Ring Terminal Asm. (515-6566-00)		
23	Lockdown Spring (connected to handle)	1	265-5008-00	30G:	Recessed (Black) Cup (rear of Cabinet) (545-5122-00)		
Item 23 is secured by: #8 X 1/2" SHWH AB (Zinc) (Qty. 1) (234-5101-00) and #10 Washer, 7/32" ID X 1/2" OD X 1/16" Thick (Qty. 1) (242-5003-00)				30H*:	Recessed (Black) Cup (rear of Cabinet) (545-5122-00)		
24	Grills 2-1/2" X 18" (on Back & Bottom)	3	545-5072-02	30I:	Snap Bushing 9/16" (White) (280-5001-01)		
Plumb Bob Tilt Switch Individual Parts Only Ind. Parts Only				30J:	Snap 8 Amp 250V Slo-Blo (Domestic) (200-5000-05) or Fuse 5 Amp 250V Slo-Blo (International) (Qty. 2) (200-5003-00)		
25	SWITCH: 25B: Bracket for Hanger Wire (535-5221-00) 25C: Contact Wire Form (535-7563-01) 25H: Hanger Wire (535-5319-02) 25W: Plumb Bob Weight (535-5029-00) (includes Thumb-Screw)			30J:	Fuse Holder (205-5001-00)		
Item 25B is secured to Cabinet by: #6 X 5/8" SHWH AB (Zinc) (Qty. 4) (234-5002-00)				Universal Cable & Jumper Caps (all voltage variations): See the Yellow Pages, Page y 10.			
26L	Slide & Pivot Support Bracket (Left)	1	535-5989-00	31	Cash Box Plastic Bottom	1	545-5090-00
26R	Slide & Pivot Support Bracket (Right)	1	535-5990-00	32	Cash Box Cover (Validator)	1	535-5013-03
Items 26L & 26R are secured by: #10-24 X 1-1/4" Carriage Bolt Square Neck Black (3/per) (231-5012-00) and #10-24 Keps Nut (3/per) (240-5207-00)				33	Cash Box Lock Bracket (U-Wire)	1	535-7562-00
				Item 33 is secured by: #8 X 5/8" HWH AB (Green) (Qty. 2) (234-5102-04)			
				34	Large Hair-Pin Clip	1	535-7772-00
				35	Clamps [Multiple Sizes]	36	040-5000-XX
				Item 35 is secured to Item 1 by: #8 X 1/2" SHWH AB (Zinc) (Qty. 1/per) (234-5101-00) For following sizes, replace -XX with: 3/4" Single = -08 (Qty. 9); 1-1/2" Single = -10 (Qty. 3)			
				36	Zip Cable Tie (Screw Down Style)	4	040-5005-00
				Item 36 is secured by: #8 X 1/2" SHWH AB (Zinc) (Qty. 1/per) (234-5101-00)			
				37†	Meter +12VDC with Bracket Optional	opt.	G-0053-013-102
				† Meters (Diode included) are optional and were not included in this Pinball Machine. Order without the bracket use G-0053-013-102A. More information or Qs? Call Technical Support.			



ITEM #	QTY	PART #	DESCRIPTION
1	16	254-5054-00	PLASTICS MTG SPACER, 500
2	1	830-6141-71	HORSESHOE
3	1	830-6141-72	HORSESHOE REINFORCE
4	1	830-6141-65	UPPER WALL
5	5	240-5005-00	6-32 NYLON STOP NUT
6	1	242-5001-00	#6 WASHER
7	1	830-6141-74	ROOF
8	1	830-6141-73	RAMP ALTERNATE
9	1	511-3241-10	IDC ASSEMBLY
10	1	550-5031-09	MINI MARS W/ EARS - PURPLE SB
11	1	830-6141-52	FLASHER MOUNTING
12	1	830-6142-32	RAMP ALTERNATE-2
13	2	242-5008-00	WASHER, 1/4" ID X 1/2" OD X 1/16" THICK
14	1	830-6142-08	UPPER BALL TRAP PLATE
15	1	510-5149-66	BUTY ASSEMBLY (#66)
16	4	237-5511-00	SCREW, 6-32 X 1-3/4" PPH
17	1	550-5052-01	MINI POST - CLEAR
18	1	545-5348-17	7/16 O.D. RUBBER RING - BLACK
19	1	237-5809-00	SCREW, #6 X 1/2" PTHA
20	1	237-5508-00	SCREW, 6-32 X 1-1/4 PPH MS
21	2	249-5011-00	RIVET - 1/8 X 5/16
22	2	242-5002-00	#4 FLAT WASHER - 5/16" O.D.
23	1	249-5025-00	POP RIVET - 1/8D X 1/8-3/16 GRIP

RAMP ASSEMBLY #3
511-6949-03

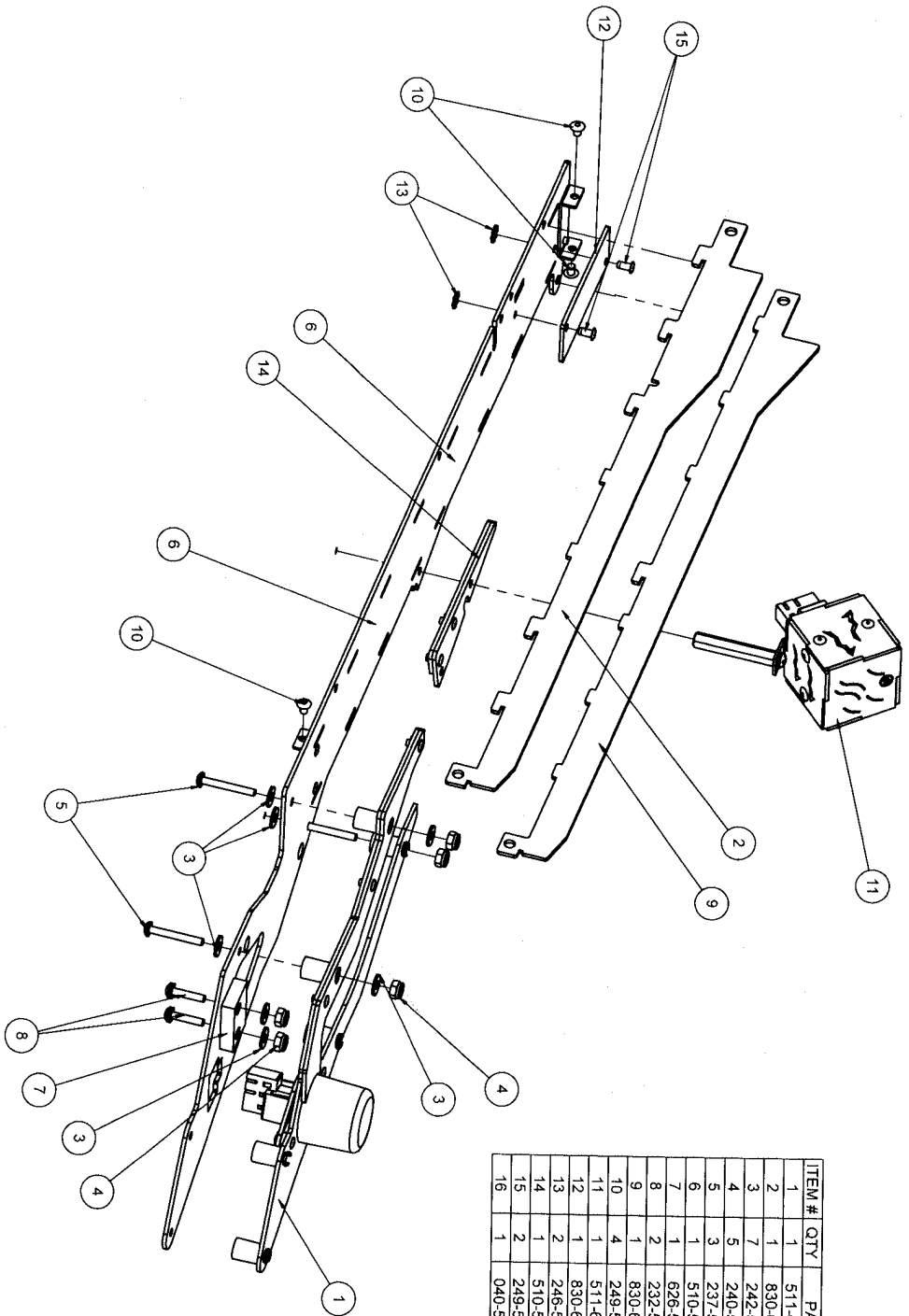
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ITEM #	QTY	PART #	DESCRIPTION
1	1	510-5149-33	BUTY ASSEMBLY (#33)
2	10	254-5054-00	PLASTICS MTG SPACER .500
3	1	830-6142-36	PLASTIC 36
4	1	830-6142-35	PLASTIC 35
5	1	511-5241-10	IDC ASSEMBLY
6	1	550-5031-02	MINI MARS W/ EARS - RED SB
7	1	830-6142-52	PLASTIC 52
8	1	237-5809-00	SCREW, #6 X 1/2" PTH A
9	1	545-5348-17	7/16 O.D. RUBBER RING - BLACK
10	1	550-5052-01	MINI POST - CLEAR
11	1	830-6142-56	PLASTIC 56
12	4	240-5005-00	6-32 NYLON STOP NUT
13	4	237-5506-00	SCREW, 6-32 X 1" PPHMS
14	4	242-5001-00	#6 WASHER
15	1	830-6142-34	RAMP GUARD PLATE
16	2	242-5008-00	WASHER, 1/4" ID X 1/2" OD X 1/16" THICK
17	1	830-6142-06	PLASTIC 6
18	2	242-5002-00	#4 FLAT WASHER - 5/16" O.D.
19	2	249-5011-00	RIVET - 1/8 X 5/16
20	4	249-5025-00	POP RIVET - 1/8D X 1/8-3/16 GRIP

RAMP ASSEMBLY (#5)
511-6949-07

PRC

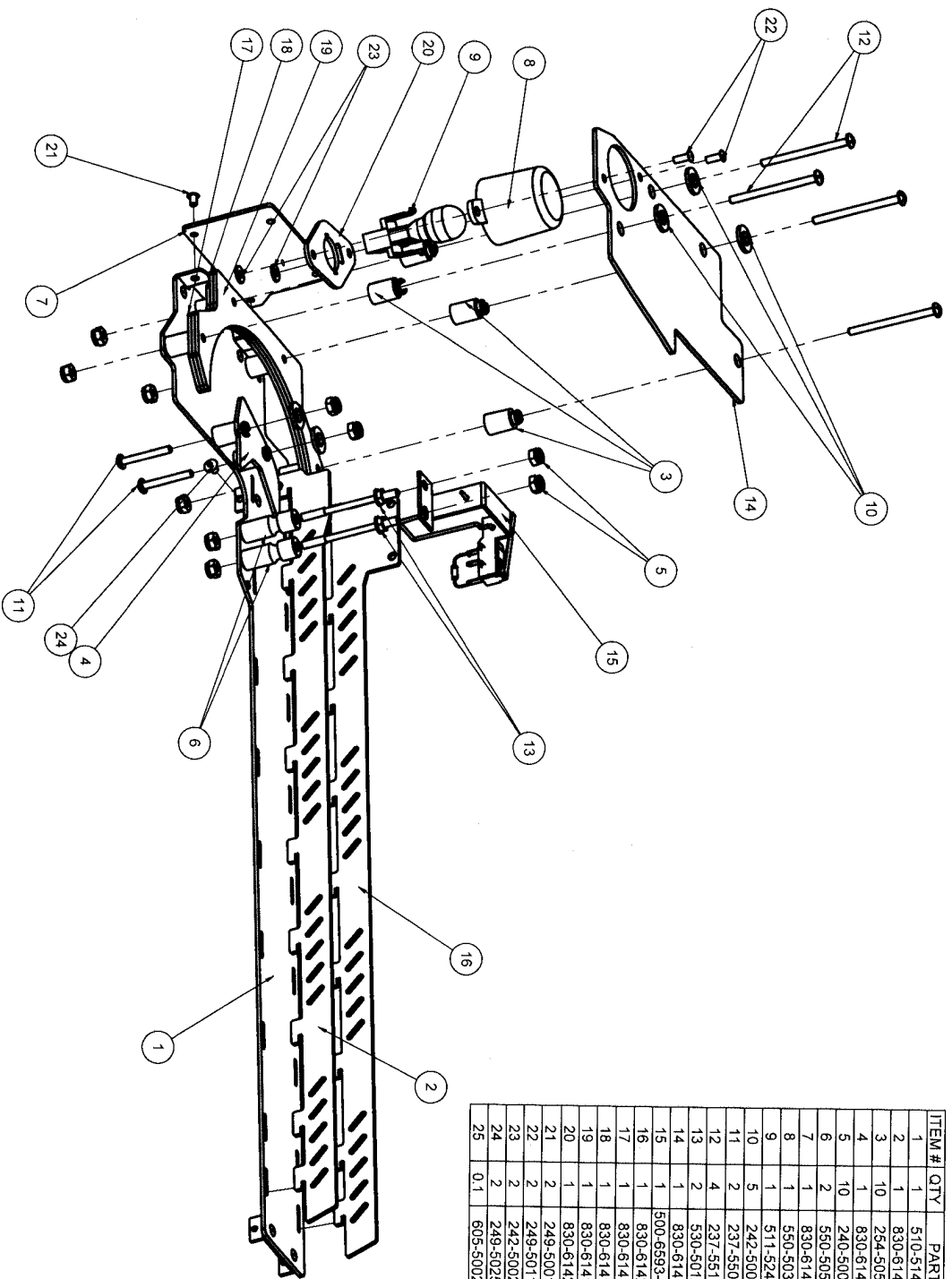


ITEM #	QTY	PART #	DESCRIPTION
1	1	511-6949-01	RAMP ASSEMBLY (#1)
2	1	830-6142-23	WALL, OUTSIDE
3	7	242-5001-00	#6 WASHER
4	5	240-5005-00	6-32 NYLON STOP NUT
5	3	237-6506-00	SCREW, 6-32 X 1" PPH MS
6	1	510-5149-02	RAMP BUTY ASSEMBLY (#2)
7	1	626-5057-01	RUBBER BUMPER - BLUE
8	2	232-6203-00	SCREW, 6-32 X 5/8 PPH SEMS ZINC
9	1	830-6142-24	WALL, INSIDE
10	4	249-5025-00	POP RIVET - 1/8D X 1/8-3/16 GRIP
11	1	511-6941-39	ASSEMBLY CUBE, PLASTIC
12	1	830-6144-32	BUTY #32
13	2	246-5000-00	#6 LOCK WASHER, EXT TOOTH
14	1	510-5143-34	BUTY ASSEMBLY #34
15	2	249-5003-00	RIVET - 1/8 X 1/4
16	1	040-5001-00	CABLE TIE 4"

RAMP ASSEMBLY (#2)
511-6949-02

IPRO

12101



ITEM #	QTY	PART #	DESCRIPTION
1	1	510-5149-28	BUTY ASSEMBLY (#28)
2	1	830-6142-30	PLASTIC 30
3	10	264-5054-00	PLASTICS MTG SPACER, .500
4	1	830-6141-69	PLASTIC 69
5	10	240-5005-00	6-32 NYLON STOP NUT
6	2	550-5059-01	PLASTIC POST - CLEAR
7	1	830-6141-68	PLASTIC 68
8	1	550-5031-02	MINI MARS W/ EARS - RED SB
9	1	511-5241-10	IDC ASSEMBLY
10	5	242-5008-00	WASHER, 1/4" ID X 1/2" OD X 1/16" THICK
11	2	237-5506-00	SCREW, 6-32 X 1" PPH MS
12	4	237-5511-00	SCREW, 6-32 X 1.3/4" PPH
13	2	530-5012-02	6-32 POST SCREW
14	1	830-6141-57	PLASTIC 57
15	1	500-6593-01-C3	ASSEMBLY GATE SWING CABLE
16	1	830-6142-29	PLASTIC 29
17	1	830-6141-83	PLASTIC 83
18	1	830-6141-75	PLASTIC 75
19	1	830-6141-78	PLASTIC 78
20	1	830-6142-52	PLASTIC 52
21	2	249-5001-00	RIVET - 1/8 X 3/16
22	2	249-5011-00	RIVET - 1/8 X 5/16
23	2	242-5002-00	#4 FLAT WASHER - 5/16" O.D.
24	2	249-5025-00	POP RIVET - 1/80 X 1/8-3/16 GRIP
25	0.1	605-5002-00	SHRINK TUBING - 1/8

RAMP ASSEMBLY (#6)
511-6949-08