

JUNGLE LORD

PARTS SUPPLEMENT



Williams® 
ELECTRONICS, INC.

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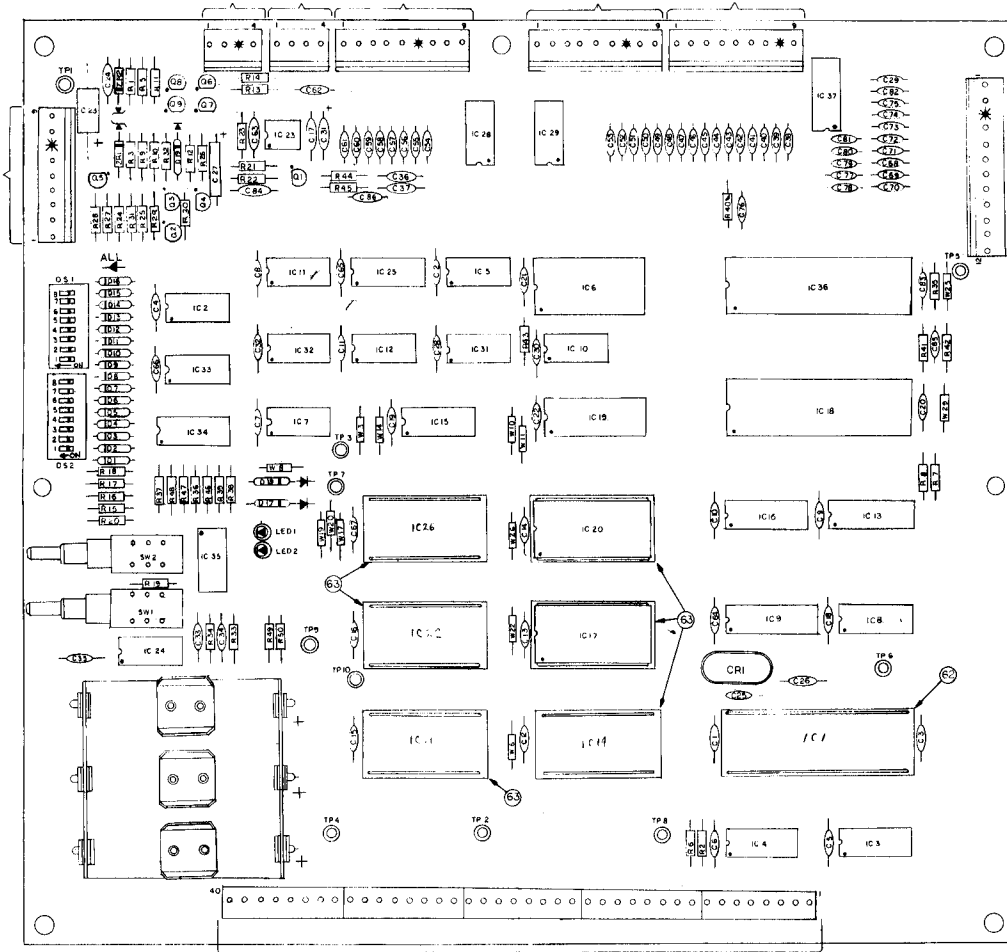


R 8552-503 Backglass

ROM Summary

ROM	PART NO.
Flipper ROM 1	5341-09553-00
Flipper ROM 2	5341-09554-00
Game ROM 0	5343-09635-00
Game ROM 1	5343-09634-00
Sound ROM 3	5T-4970
Speech ROM 1	5T-5031
Speech ROM 2	5T-5032
Speech ROM 3	5T-5033
French Speech ROM 1	5T-5034
French Speech ROM 2	5T-5035
French Speech ROM 3	5T-5036

D 8342 **CPU Board Assembly** **USED IN THE FOLLOWING GAMES** **"BLACK KNIGHT" "JUNGLE LORD"**



NOTE: THIS BOARD MAY BE USED IN ANY EARLIER SOLID STATE GAME WHEN JUMPER CHANGES ARE MADE. TO ORDER COMPLETE ASSEMBLY, SPECIFY D 8343 AND NAME OF GAME.

PARTS LIST **ARRANGED BY GROUPS OF RELATED PARTS**

DRAWING DESIGNATION	PART NUMBER	DESCRIPTION
	D-8342	CPU Sub-Assembly
	5764-09465-X0	Bare P.C. Board CPU
INTEGRATED CIRCUITS		
IC1	5400-09250-00	6808 MPU
IC2	5280-09408-X0	74125 Hex Tristate Buffer
IC3, IC4, IC8	5281-09308-X0	8T97 Hex Tristate Buffer
IC5, IC31	5281-09247-00	74LS02 Quad 2 Input NOR
IC6	5280-09010-00	74154 4 to 16 Decoder
IC7	5280-09235-00	7404 Hex Inverter
IC9	5281-09308-00	74LS245 Octal Buffer
IC10	5310-09237-00	4071 CMOS Quad 2 Input NOR
IC11	5281-09235-00	74LS10 Triple 3 Inverter
IC12	5279-09973-00	7408 Quad And
IC13, IC16	5340-09409-00	2114-45 1K X4 Static RAM
IC15	5281-09246-00	74LS 139 Dual 2 to 4 Line Decoder
IC17	5341-09534-00	ROM 4K X 8 Upper
IC18, IC36	5430-08972-00	MC6821 PIA
IC19	5340-09017-00	MC 5101 CMOS RAM
IC20	5341-09553-00	ROM 2K X8 Lower
IC23	5431-09449-00	MC 1455P1 Timer
IC24, IC32, IC33	5280-09073-00	7400 Quad 2 Input NAND
IC25	5310-09236-00	4020 CMOS 14 Bit Counter
IC28, IC29	5019-09238-00	13 DIP Res. Pack, 4.7K OHM
IC34	5280-09407-00	7447 BCD to 7 Seg LED Disp.
IC35	5671-09411-00	Man 72A 7 Seg LED Disp.
IC37	5019-09223-00	15 DIP Res Pack 10K Ohm

PARTS LIST

DRAWING
DESIGNATION

PART
NUMBER

DESCRIPTION

TRANSISTORS

Q1, Q2	5190-09016-00	2N4 403 PNP Transistor
Q3, Q9	5160-08938-00	2N4 401 NPN Transistor

DIODES

*D1-*D16, D17, D19	5070-08919-00	IN4148 Diode
D18	5070-09266-00	IN5817 Diode
ZR1	5075-09018-00	IN5996 Zener Diode 6.8V
ZR2	5075-09059-00	IN5990 Zener Diode 3.9V

RESISTORS

R1, R3	5010-09034-00	Resistor FC 10K Ohm 5% 1/4W
R2, R6- R8, R21, R28	5010-08983-00	Resistor FC 33.3K Ohm 5% 1/4W
R5, R9, R20	5010-09358-00	Resistor FC 1K Ohm 5% 1/4W
R12	5010-09039-00	Resistor FC 10 Ohm 5% 1/4W
R13, R18, R29, R33, R35, R40, R42	5010-08991-00	Resistor FC 4.7K Ohm 5% 1/4W
R19, R30	5010-09036-00	Resistor FC 100 Ohm 5% 1/4W
R23, R26	5010-09113-00	Resistor FC 33K Ohm 5% 1/4W
R24, R31	5010-08997-00	Resistor FC 2.7K Ohm 5% 1/4W
R25, R32, R10, R11	5010-09241-00	Resistor FC 22K Ohm 5% 1/4W
R27	5010-08998-00	Resistor FC 2.2K Ohm 5% 1/4W
R36- R39, R46-R50	5010-09187-00	Resistor FC 150 Ohm 5% 1/4W
R43	5010-09442-00	Resistor FC 330K Ohm 5% 1/4W
R44, R45	5010-09083-00	Resistor FC 470 Ohm 5% 1/4W

CAPACITORS

C1, C3, C4* C5 - C22		Capacitor Ceramic 0.01 MFD 50V
C28, C30, C32-37 C63-C67 C83	5043-08980-00	Capacitor Elect. 100 MFD 10V
C23	5040-08986-00	Capacitor Ceramic 0.1 MFD 50V
C24	5043-08996-00	Capacitor Ceramic 27 PFD 1KV
C25, C26	5043-09169-00	Capacitor Tant. 10 MFD 10V
C27	5041-09243-00	Capacitor Ceramic 470 PFD
C29, C38-C62, C68-C82, C85, C86	5043-09065-00	Capacitor Tant. 1 MFD 25V
C31	5041-09031-00	Capacitor Ceramic .047 MFD 50V
C84	5043-09030-00	

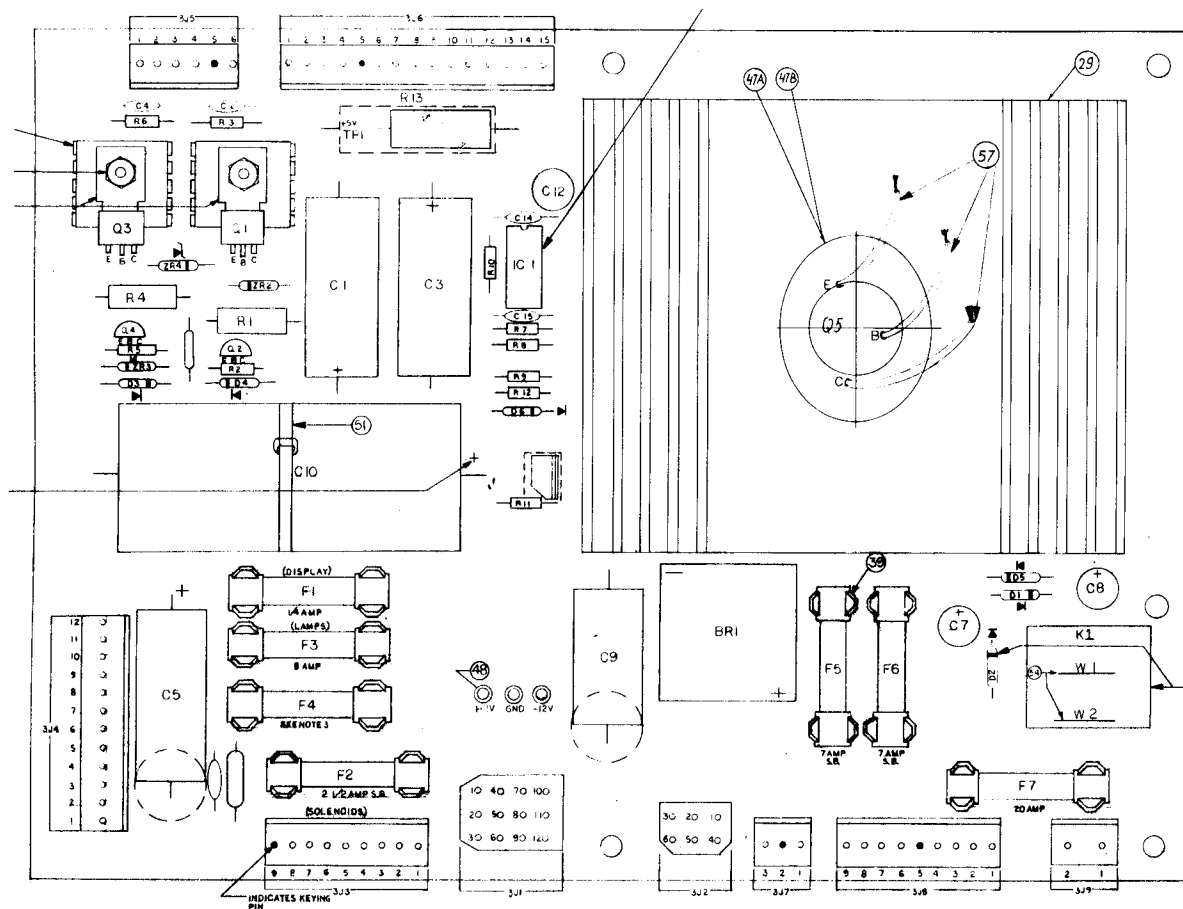
MISCELLANEOUS

	5700-08985-00	40 Pin IC Socket
	5700-09004-00	24 Pin IC Socket
IJ1	5791-09026-00	Header 09-64-1083 8 Pin
IJ2, IJ5, IJ7	5791-09027-00	Header 09-65-1091 9 Pin
IJ3, IJ4	5791-09028-00	Header 09-65-1041 4 Pin
IJ8	5791-09043-00	Header 09-65-1121 12 Pin
*DS1, *DS2	5645-09025-00	8 Std Dip Switches
*LED1, *LED2	5671-09019-00	LED-Red
SW1, *SW2	5641-09312-00 or	Switch Momentary
	5641-09024-00 or	
	5641-09371-00	
CR1	5520-09020-00	Crystal 3.58 MHZ
	5881-09021-00	Battery Holder
W3, W6, W8, W10, W11	5010-09534-00	Resistor FC, 0 Ohm 1/4W
W14, W17, W19, W20,		
W25, W26, W29, W22		
TP1 - TP10	5824-09248-00	Test Terminals #1502-1

* Indicates components not required for operation in BLACK KNIGHT, JUNGLE LORD, and later games.

D 8345 Power Supply Assembly

REQUIRED FOR SOME "BLACK KNIGHT" GAMES AND ALL "JUNGLE LORD" GAMES

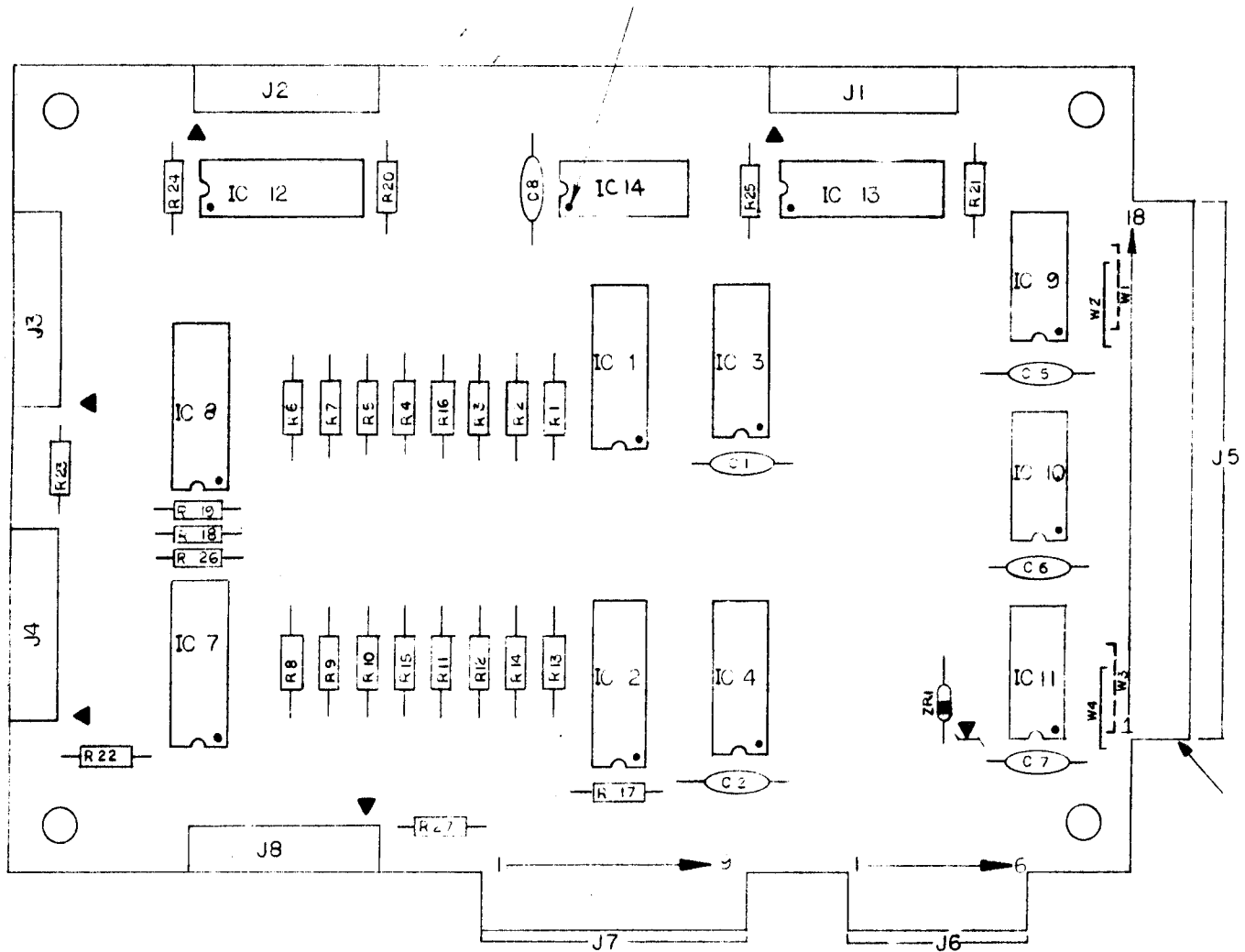


NOTE: THIS MODEL MAY BE USED ON ANY EARLIER SOLID STATE GAME. IT IS REQUIRED ON BLACK KNIGHT GAMES WITH TRANSFORMER MOUNTED IN CABINET.

PARTS LIST
ARRANGED BY GROUPS OF RELATED PARTS

DRAWING DESIGNATION	PART NUMBER	DESCRIPTION
	D-8359 5765-09466-X0	Power Supply Board Sub-Assembly Bare P.C. Board
TRANSISTORS		
Q1	5164-09057-00	Transistor SDS - 201 NPN
Q2	5194-09055-00	Transistor MPS D52 PNP
Q3	5194-09058-00	Transistor SDS 202 PNP
Q4	5164-09056-00	Transistor MPS D02 NPN
Q5	5162-09425-00	Transistor Power NPN 2N6087
DIODES		
D1 thru, D6	5070-06258-00	Diode, 1M 40001
ZR1, Z43	5075-09059-00	Diode, Zener 1N5990 3.9B, 5%
ZR2, ZR4	5075-09060-00	Diode, Zener 1N5990 1N 4764 100V, 5%
RESISTORS		
R1, R4	5010-09536-00	Resistor 39K 5% 1W
R2, R5	5010-09051-00	Resistor 680 Ohm 1/2 W
R3, R6	5010-09069-00	Resistor 330K 5% 1/2W
R7	5013-09426-00	Resistor 2.15K 1% 1/4W
R8	5013-09427-00	Resistor 4.99K 1% 1/4W
R9	5010-09541-00	Resistor 2.7K 2% 1/4W
R10	5010-09085-00	Resistor 1.5K 5% 1/4W
R11	5010-09428-00	Resistor 1.5K 2% 1/4W
R12	5010-09508-00	Resistor 270 Ohm 2% 1/4W
R13	5012-09429-00	Resistor 0.12 Ohm 5% 5W
CAPACITORS		
C1, C3	5040-4053-00	Capacitor Elect. 100 MFD 150V
C2, C4, C6	5043-09443-00	Capacitor Disc 0.1 MFD 200V
C5	5040-09070-00 or 5043-09537-00	Capacitor Elect. 100 MFD 100V, Axial Capacitor Elect. 100 MFD 100 V, Radial
C7	5040-09421-00	Capacitor Elect. 100 MFD 25V
C8	5040-09442-00	Capacitor Elect. 47 MFD 50V
C9	5040-09420-00 or 5040-08893-00	Capacitor Elect. 1000 MFD 25V, Radial Capacitor Elect. 1000 MFD 25V, Axial
C10	5040-09419-00	Capacitor Elect. 18000 MFD 20V
C12	5040-09423-00	Capacitor Elect. 330 MFD 10V
C14	5070-09446-00	Capacitor 0.1 MFD 50V
C15	5043-09065-00	Capacitor 470 PFD
CONNECTORS		
3J1,	5791-05068-00	Connector 12 Pin
3J2	5791-09038-00	Connector 6 Pin
3J3, 3J8	5791-09027-00	Connector 9 Pin
3J4	5791-09043-00	Connector 12 Pin
3J5	5791-09067-00	Connector 6 Pin
3J6	5791-09074-00	Connector 15 Pin
3J7	5791-09435-00	Connector 3 Pin
3J9	5791-09436-00	Connector 2 Pin
FUSES		
F1	5731-08761	Fuse 0.25A
F2	5731-09128	Fuse 2.5A SB
F3	5730-09071	Fuse 8A
F4	5730-05068 or 5730-06567 or 5730-09127	Fuse 10A Fuse 15A Fuse 20A
F5, F6	5731-09432	Fuse 7A SB
F7	5730-09127	Fuse 20A
MISCELLANEOUS		
IC1	5060-09421	Voltage regulator MC1723
VR1	5017-09061	Varistor
K1	5580-09555	Relay 24VDC 10A DPDT
BR1	5100-09418 5705-04431 5705-09042 5732-09178 5700-09445 5701-09538 5824-09248 3A-7520-1 400501016-07 4405-0117-00 20-9229	Rectifier Bridge 35A, 100V Heat Sink Heat Sink Fuse holder Socket Mica Insulator Terminal (Test Point) Tie Wrap 5-40x7/16" Screw Round Head 5-40 Hex Nut Thermal Compound

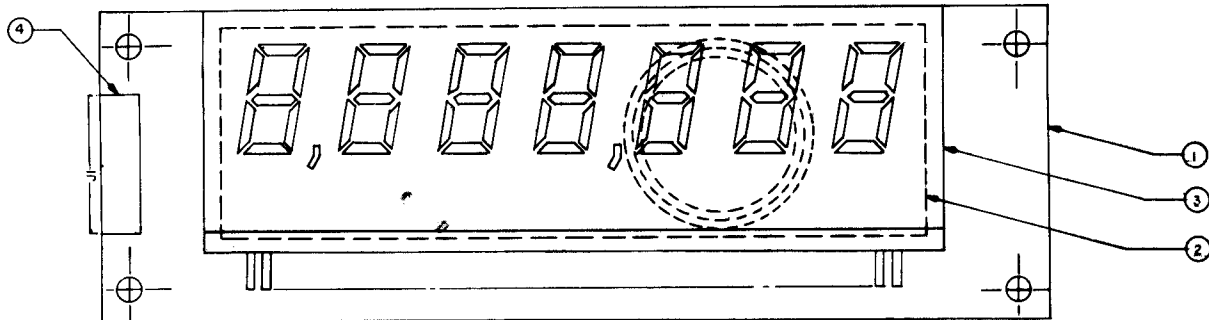
C 8363
MASTER DISPLAY ASSEMBLY
 USED ON GAMES WITH 7-DIGIT SCORING
 "ALIEN POKER" "BLACK KNIGHT" "JUNGLE LORD"



PARTS LIST

<u>DRAWING DESIGNATION</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
	IC-2001-152-B	BARE P.C. BOARD
IC9, IC10, IC11	5310-08971-00	MC 14069 HEX. INVERTER
IC3, IC4	5310-08970-00	MC 14543 BCD TO SEVEN SEGMENT LATCH/DECODER/DRIVER
IC1, IC2	5680-08969-00	UDN 7180 GAS DISCHARGE
IC7, IC8	5680-08968-00	UDN-6184A OR UDN-6118A GAS DISCHARGE DISPLAY SEGMENT DR.
IC14	5310-09450-00	MC 14081 QUAD 2-INPUT AND GATE
ZR1	5075-09135-00	1N4740A ZENER DIODE 10V, 5% 1W
C1, C2	5043-08980-00	CAPACITOR CERAMIC, .01 MFD, 50V
C5 THRU C8		
R1-R14	5010-08981-00	RESISTOR, FC, 10K OHM, 10% 1/2 WATT
R15, R16	5010-09149-00	RESISTOR, 15K OHM, 10% 1/2 WATT
R17	5010-09086-00	RESISTOR, FC, 6.8K OHM 10%, 1/4 WATT
R18 THRU R27	5010-08982-00	RESISTOR, FC, 3 MEG OHM, 10% 1/4 WATT
W1, W3	5010-09534-00	RESISTOR, FC, 0 OHM, 1/4W
J1 THRU J4, J8	5791-09347-00	20 PIN RIBBON HEADER

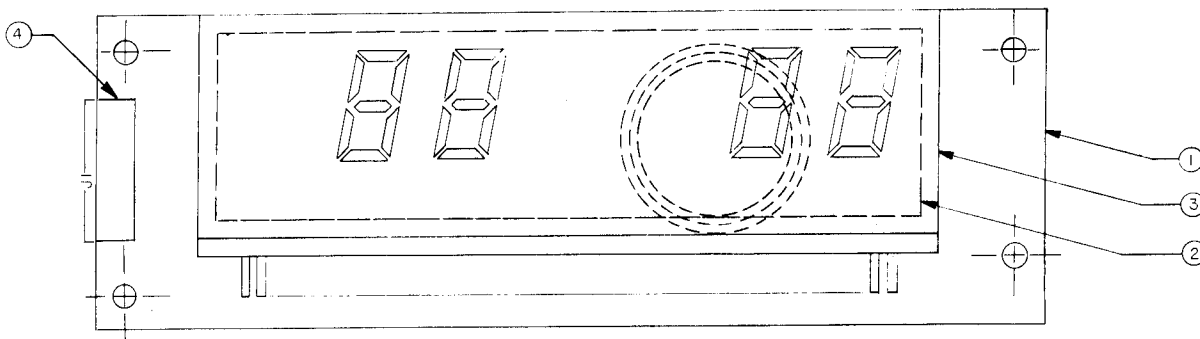
C 8364
PLAYER SLAVE DISPLAY ASSEMBLY
 USED ON GAMES WITH 7-DIGIT SCORING
 "ALIEN POKER" "BLACK KNIGHT" "JUNGLE LORD"



PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	5762-009463-00	Bare PC Board
2	23-6545	Adhesive Foam, Display Mounting
3	5670-09439-00	7 Digit Display
4	5791-09438-00	20 Pin Ribbon Header

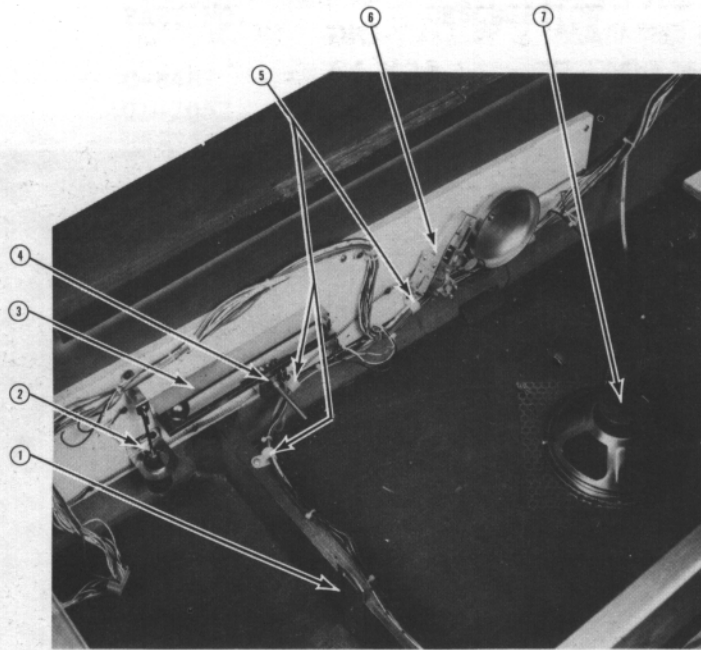
C 8365
CREDIT/MATCH SLAVE DISPLAY
 USED ON GAMES WITH 7-DIGIT SCORING
 "ALIEN POKER" "BLACK KNIGHT" "JUNGLE LORD"



PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	5762-009468-00	Bare PC Board
2	23-6545	Adhesive Foam, Display Mounting
3	5670-09448-00	4 Digit Display
4	5791-09438-00	20 Pin Ribbon Header
5	23-6546	Adhesive Foam, Front

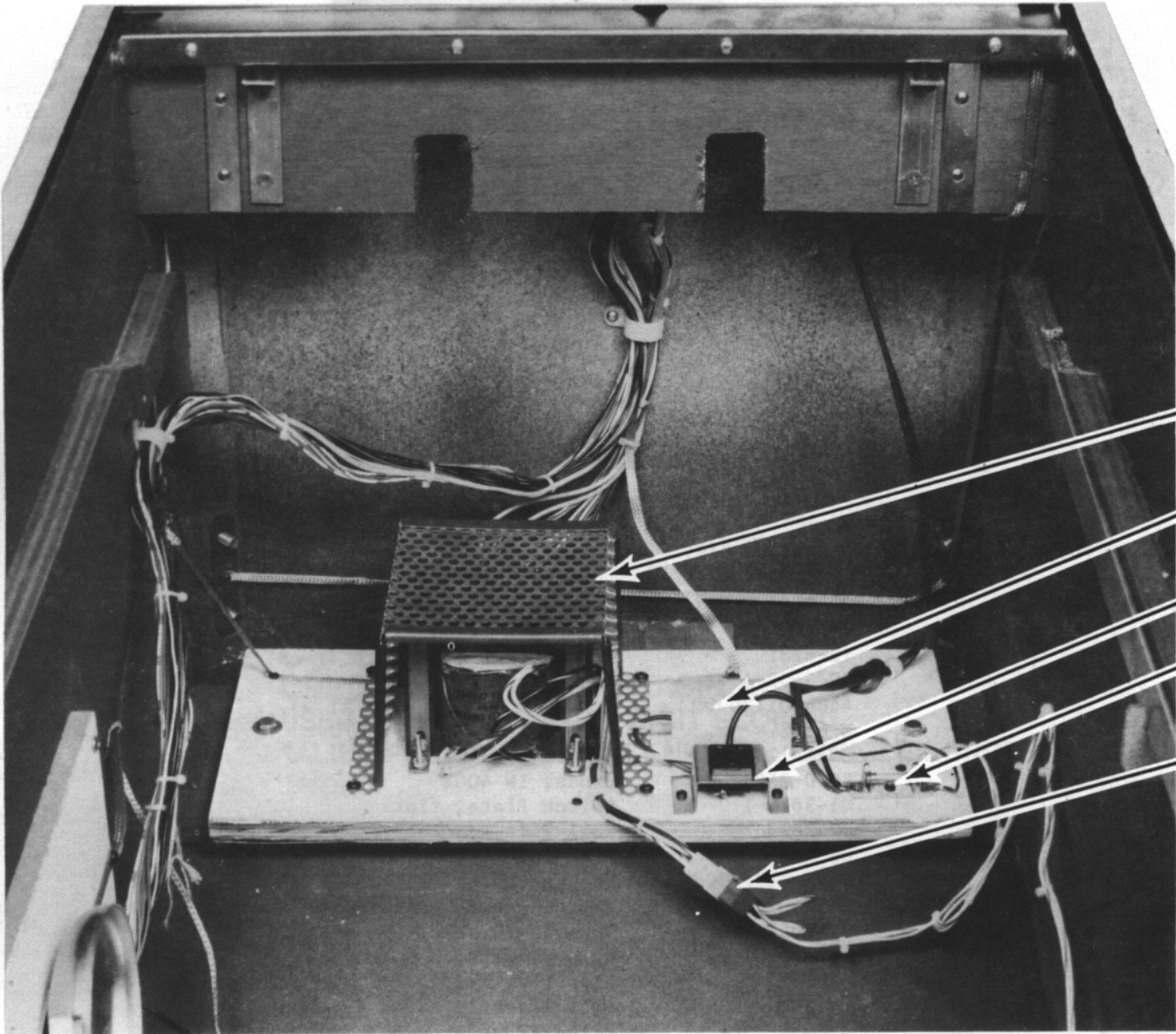
CABINET PARTS



PARTS LIST

ITEM	PART NO.	DESCRIPTION
1	01-3493-1	Cashbox Lock Bracket
2	A-8476	Plumb Bob Assembly, C/O:
	12-6231	Wire, Plumb Bob
	20-6502-A	Plumb Bob
	4406-01120-00	Wing Nut, 6X 32 (Qty 2)
3	B 6572	Roll Tilt Assembly, C/O:
	SW-1A119	Switch, Roll Tilt
	5070-06258-00	Diode, IN 4001
	01-3670-1	Switch Plate, flat
	01-3893	Roll Tilt Bracket
	06-17	Side Lug
	4104-01020-00	Machine Screw 4X1/2"
4	A-8550	Potentiometer and Bracket Assembly, C/O:
	01-6058	Mounting Bracket
	5104-09170-00	Potentiometer, 5K 10%, 1W
5	03-7520-2	Tie Wrap, Nylon
6	C-8461	Bell Assembly, C/O:
	B-8459	Relay Frame Assembly
	B-8460	Bell and Mounting Plate Assembly
	B-8462	Armature Assembly, Incl:
	01-6376	Residual Plate
	01-7044	Bell Sticker
	4006-01003-03	Machine Screw, 6-32X3/16" (Qty 2)
	SM-29-100-DC	Coil Assembly
	SW-10A-52	Bell Switch
	10-363	Spring, Extension
	20-6516	Tinnerman Speed nut
	5043-09072-00	Capacitor, 0.1 MFD, 500V
	4006-01003-04	Machine Screw 6-32 X 1/4" (Qty 3)
	4008-01021-00	Machine Screw 8-32 X 1/2"
	4105-01001-144	Machine Screw 5-40 X 7/10" (Qty 2)
7	5555-09382-01	Speaker, 4-Ohm, 6"

CABINET PARTS



1 2

3 4

5

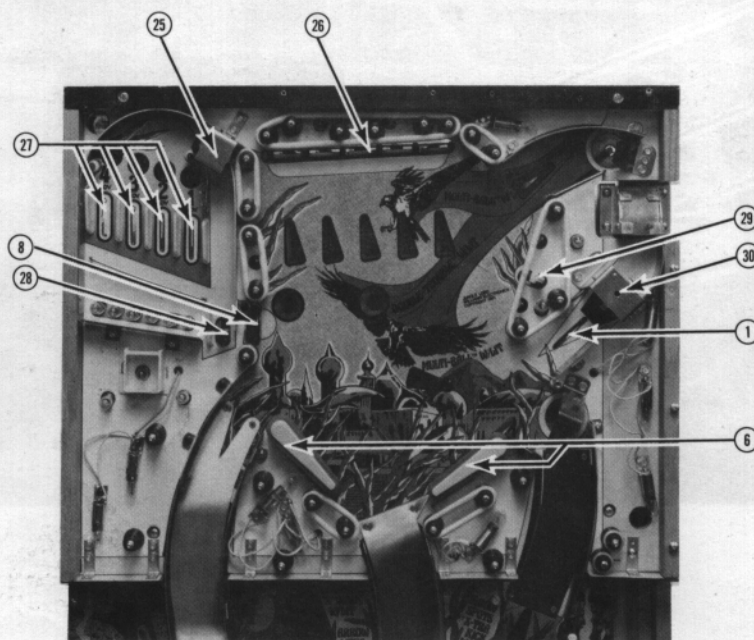
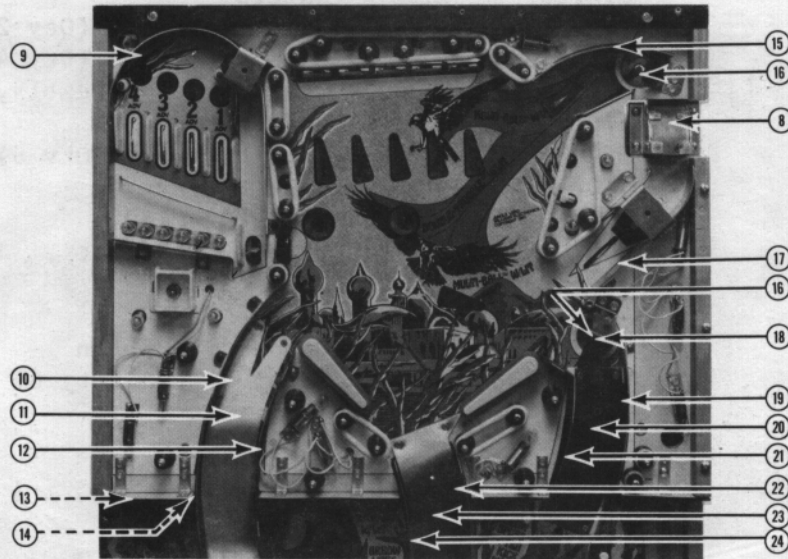
6 7

8 9

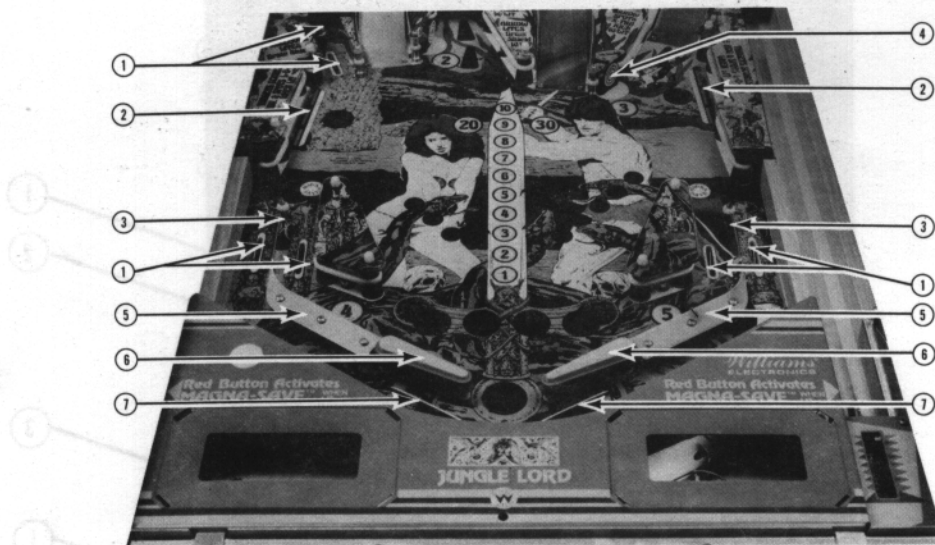
PARTS LIST

ITEM	PART NO.	DESCRIPTION
1	C-8487	Transformer Shield Assembly, c/o:
	01-7057	Shield
	03-7363-16	Edge Protector (Qty 2)
	03-7365-17	Edge Protector (Qty 4)
2	C8500	Transformer Assembly, Incl:
	5791-09316-00	6-Pin Connector
	5820-09080-00	Terminal Pins (Qty 6)
3	5102-08895-00	Line Filter, 5A
4	5017-09044-00	Varistor, 130V
5	5851-09184-00	Outlet AC Utility, 3W
6	B-6448-1	Fuse Clip
7	5730-09252-00	Fuse 8A, 125V
8	5792-09318-00	Connector 6-Pin
9	5821-09081-00	Terminal Pin (Qty 6)

UPPER PLAYFIELD

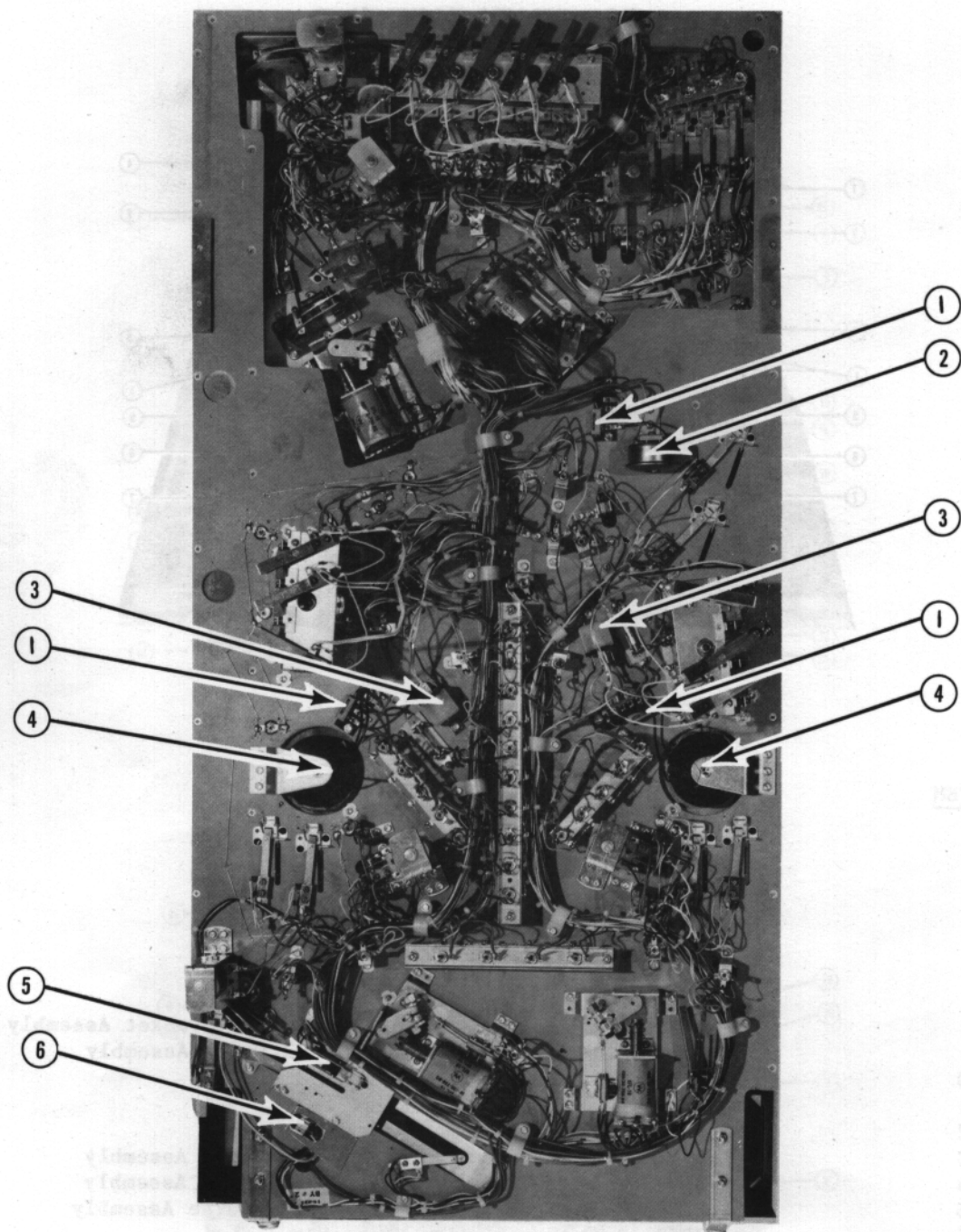


LOWER PLAYFIELD



PARTS LIST

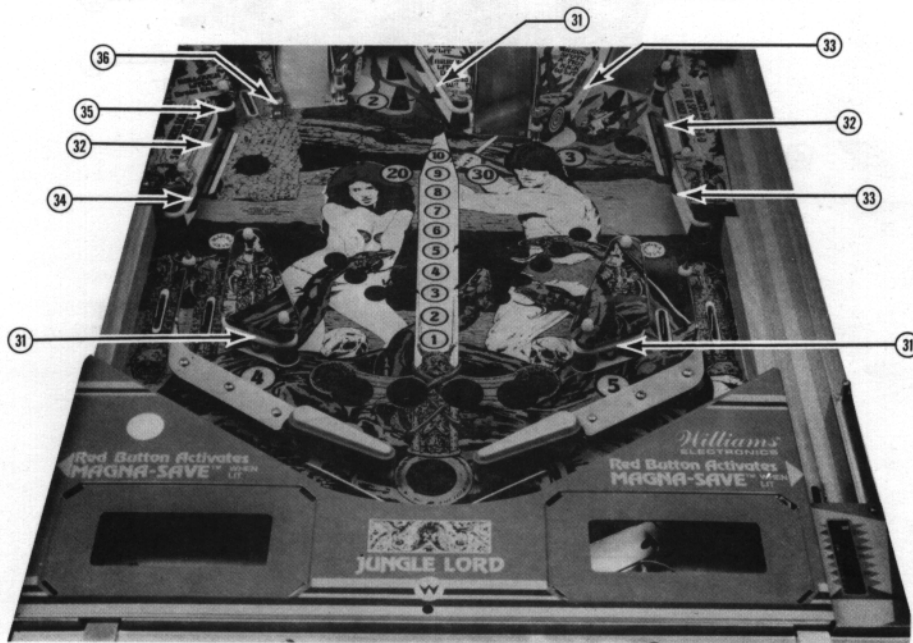
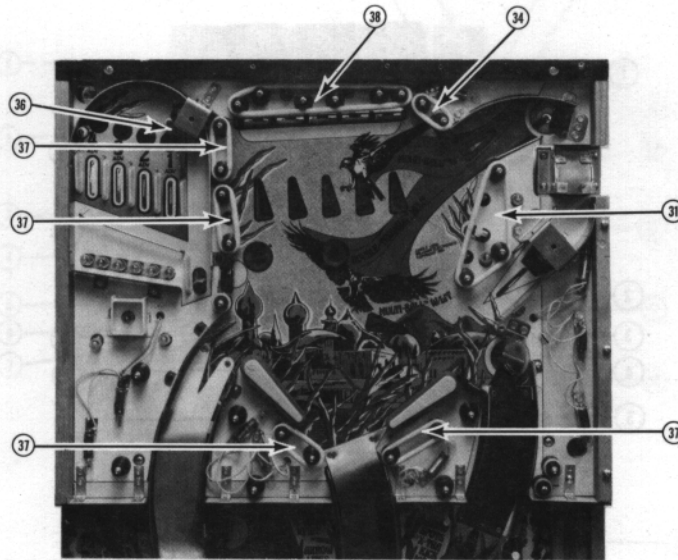
ITEM	PART NO.	DESCRIPTION
1	A-5844-35	Rollover Wire Assembly
2	D-8442	3-Bank Drop Target
3	12-6466-9	Ball Guide Wire Form
4	A-8286-1	Standup Target
5	A-8108-L-R	Flipper Return Frame
6	A-8230-L-R	Flipper Assembly
7	12-6466-12	Wire Form
8	B-8448	Ball Turnaround and Bracket Assembly
9	C-8543	Upper Left Ball Guide Assembly
10	01-7069	Left Ramp Ball Guide
11	01-7075	Left Ramp
12	01-7070	Left Ramp Ball Guide
13	C-8542	Lower Left Ball Guide Assembly
14	C-8544	Lower Left Ball Guide Assembly
15	B-8546	Upper Right Ball Guide Assembly
16	B-7572-5R	Eject Assembly
17	01-7025	Ball Guide
18	01-6903	Eject Deflector
19	01-7072	Upper Right Ball Guide
20	01-7079	Right Ramp
21	01-7071	Right Ramp Ball Guide
22	B-8417	Center Ramp Ball Guide Assembly, Left
23	01-7015	Ramp Center
24	B-8418	Center Ramp Ball Guide Assembly, Right
25	B-8593-R	Ball Gate Assembly
26	D-8574	5-Bank Drop Target
27	A-8578	Rollover Wire Assembly
28	B-7573	Kicker Assembly
29	B-8085	Kicker Assembly
30	B-8594	Ball Gate Switch Bracket Assembly



PARTS LIST

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	5012-09084-00	Resistor, FC 100 Ohm 5%, 3W
2	5101-09126-00	Buzzer
3	5580-09613-00	Relay, 12 VDC
4	20-9297	Magnet Coil
5	5647-09632-00	Microswitch
6	5647-09633-00	Microswitch

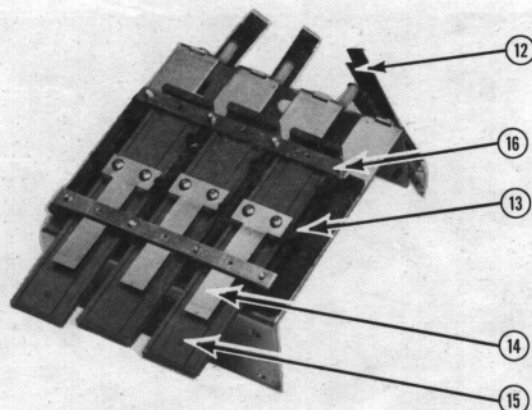
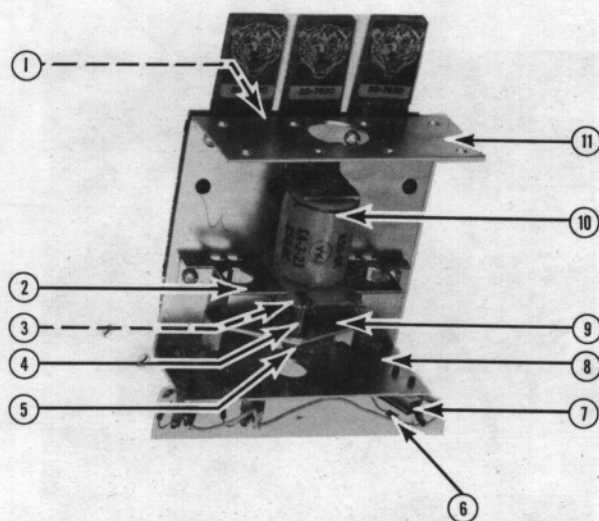
PLAYFIELD RUBBERS



PARTS LIST

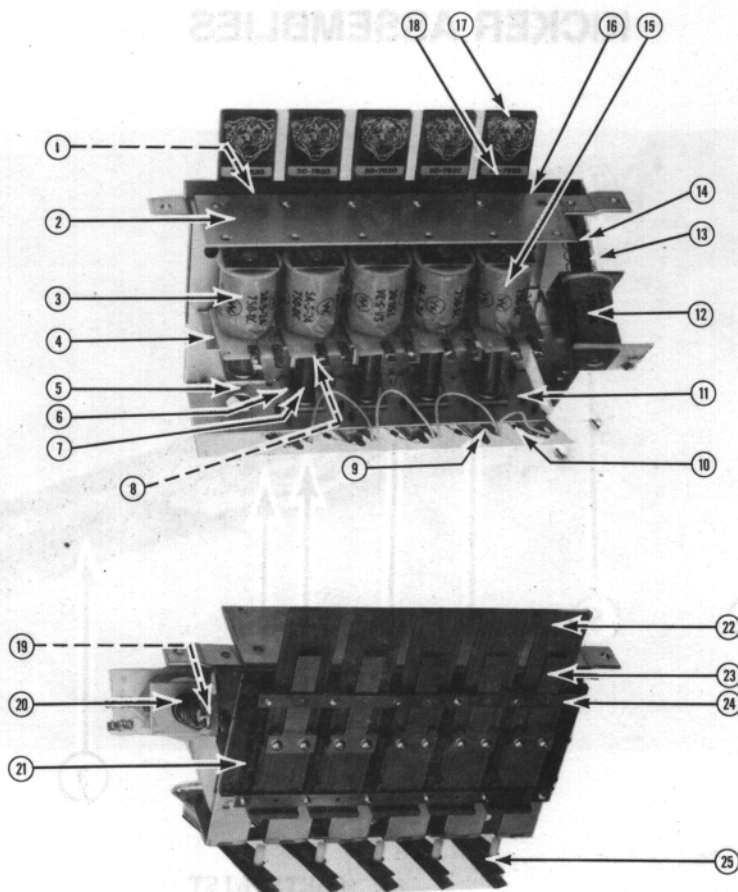
ITEM	PART NO.	DESCRIPTION
31	23-6306	2-3/8"
32	23-6305	2"
33	23-6304	1-1/2"
34	23-6301	3/4"
35	23-6300	5/16"
36	23-6535	Mini-Post Rubber
37	23-6302	1"
38	23-6307	2-7/8"

DROP TARGET ASSEMBLIES



PARTS LIST

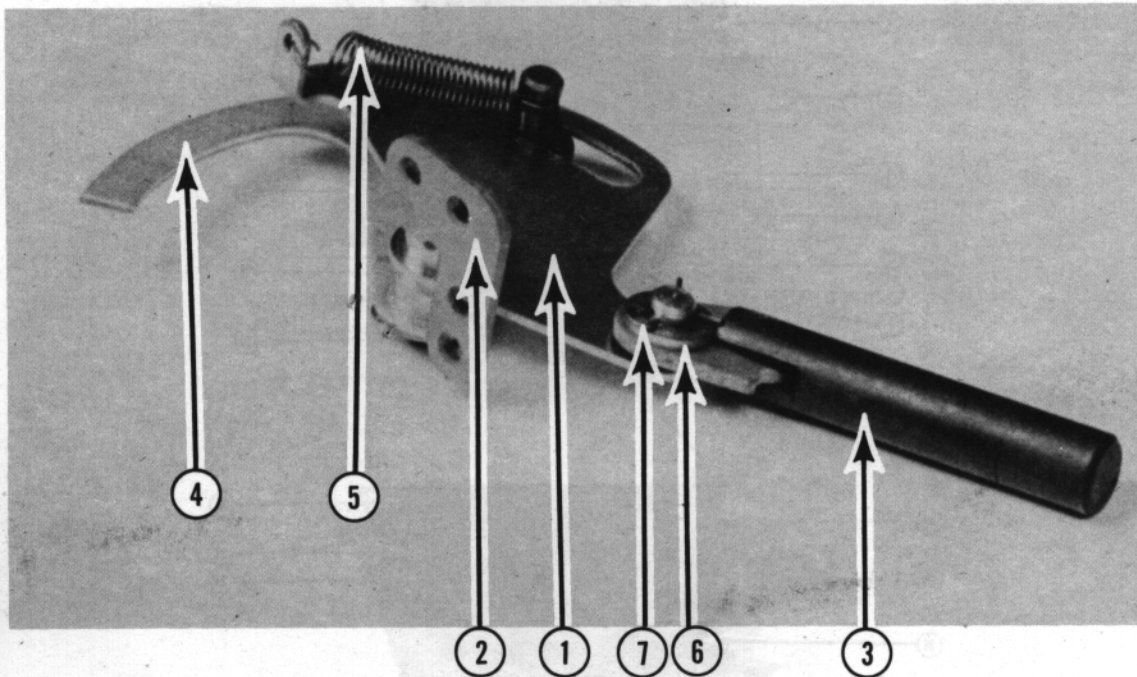
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	10-364	Target Retractor Spring
2	01-6451-3A	Coil Support Bracket
3	03-7066-4	Coil Tubing
4	02-3972	Coil Plunger
5	4410-01119-00	Nut, 10-32
6	5070-06258-00	Diode 1N4001
7	SW-1A-141	Cam Switch
8	01-7035	Switch Mountng Bracket
9	01-7036	Reset Plate
10	SA3-23-850-DC	Coil Assembly
11	01-7038	Drop Target Frame
12	01-3670	Switch Plate Curved
13	01-7479	Guide, Drop Target
14	01-7037	Target Back-Up Blade
15	03-7478	Drop Target
16	01-6450-3	Target Retaining Bar



PARTS LIST

ITEM	PART NO.	DESCRIPTION
1	10-364	Target Retractor Spring
2	C-8541	Drop Target Frame Assembly
3	SA5-24-750-DC	Coil Assembly
4	01-6451-5	Coil Support Angle
5	4410-01119-00	Nut, 10-32
6	01-708	Reset Finger
7	02-3972	Coil Plunger
8	03-7066-4	Coil Tubing
9	SW-1A-141	Cam Switch
10	5070-06258-00	Diode 1N4001
11	01-7050	Common Switch Mounting Bracket
12	SA6-24-750-DC	Coil Assembly
13	10-135	Spring
14	02-2364	Coil Plunger
15	A-8037	Coil Stop Assembly
16	B-8361	Drop Lever Assembly
17	B-8451	Drop Target Assembly
18	30-7620	Label
19	20-8712-21	E-Retaining Ring
20	03-7066	Coil Tubing
21	03-7479	Guide, Drop Target
22	03-7478	Drop Target
23	01-7037	Target Back-up Blade
24	01-6450-5	Retaining Bar
25	01-3670	Switch Plate - Curved

KICKER ASSEMBLIES



PARTS LIST

ITEM	PART NO.	DESCRIPTION
	C8492	Ball Release Assembly
1	A-6949-L	Spring Plate Assembly
2	A-8268	Mounting Bracket Assembly
3	A-5103	Coil Plunger Assembly
4	C-8492	Eject Cam Assembly
5	10-362	Spring
6	4700-00030-00	Washer, 17/64 X 1/2, 15G
7	12-6227	Hairpin Clip
	B 7472- R	P/O Ball Eject Assembly
	Same as C-8492 except for items:	
1	A-6949-R	Spring Plat Assembly
2	A-6950-R	Mounting Bracket Assembly
3	A-8050	Coil Plunger Assembly
4	A-7471-R	Eject Cam Assembly
5	10-320	Spring
	B-7573	Mini-Ball Kicker Includes:
	A-5103	Coil Plunger Assembly
	A-5652	Kicker Crank Assembly
	A-5653	Kicker Mounting Bracket
	10-128	Spring
	12-6227	Hairpin Clip