

SERVICE BULLETIN BOOK

1992

WMS GAMES

PARTS AND SERVICE INC.

WILLIAMS ELECTRONIC GAMES, INC.

MIDWAY MANUFACTURING COMPANY

MAKERS OF WILLIAMS AND BALLY AMUSEMENT GAMES

3401 N. CALIFORNIA AVE.

CHICAGO, ILLINOIS 60618

SERVICE DEPT. PHONE: (312) 509-6544 FAX: (312) 267-5054

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WILLIAMS AND BALLY GAMES BY SYSTEM

THIS IS A LISTING OF GAMES BY THE CPU SYSTEM IT USED. 11A BOARDS CAN BE USED FOR 11 AND 11A GAMES. 11B BOARDS CAN BE USED FOR SYSTEMS 11A, 11B AND 11C. SYSTEMS 9, 11, 11C AND WPC CAN ONLY BE USED FOR THEIR OWN SYSTEMS RESPECTIVELY.

GAME	SYSTEM
SPACE SHUTTLE	9
SORCERER	9
COMET	9
STRIKE ZONE	9
HIGH SPEED	11
GRAND LIZARD	11
ROAD KINGS	11
ALLEY CATS	11
PINBOT	11A
MILLIONAIRE	11A
F-14 TOMCAT	11A
FIRE!	11A
TIC TAC STRIKE	11A
BIG GUNS	11A/11B
SPACE STATION	11B
CYCLONE	11B
BANZAI RUN	11B
SWORDS OF FURY	11B
TAXI	11B
JOKERZ	11B
GOLD MINE	11B
TOP DAWG	11B
EARTHSHAKER	11B
BLACK KNIGHT 2000	11B
POLICE FORCE	11B
ELVIRA	11B
TRANSPORTER	11B
BAD CATS	11B
SHUFFLE INN	11B
MOUSIN' AROUND	11B
WHIRLWIND	11B
SHUFFLE INN DELUXE	11B
GAME SHOW	11C
POOL SHARKS	11C
ROLLER GAMES	11C
RADICAL	11C
DINER	11C

WILLIAMS AND BALLY GAMES BY SYSTEM (CONTINUED)

GAME	SYSTEM
RIVERBOAT	11C
BUGS BUNNY	11C
DR. DUDE	11C/WPC
FUNHOUSE	WPC
HARLEY DAVIDSON	WPC
THE MACHINE	WPC
SLUGFEST	WPC
GILLIGAN'S ISLAND	WPC
TERMINATOR 2	WPC
PARTY ZONE	WPC
ADDAMS FAMILY	WPC
STRIKE MASTER	WPC
HURRICANE	WPC

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SERVICE BULLETIN

DATE: AUGUST 16, 1991

SB31

SUBJECT : PLASTIC PARTS ON PLAYFIELDS

AS WE ALL KNOW, PINBALL GAMES HAVE HAD SCREENED PLASTICS FOR A VERY LONG TIME. NOW THAT PINBALLS HAVE MULTI-LAYERS (RAMPS), MANY OF THE RAMPS UTILIZED ARE MADE OF PLASTIC. INFAC, IN OUR BASEBALL GAME, "SLUGFEST", THE WHOLE PLAYFIELD IS COVERED WITH A COMPLETE SHEET OF PLEXIGLASS. PLEASE TAKE THE TIME TO INSURE THAT THE GAMES ARE KEPT OUT OF DIRECT SUNLIGHT. COVER THE PLAYFIELDS WHEN TRANSPORTING THEM IN THE BACK OF A TRUCK. BY TAKING A FEW PRECAUTIONARY STEPS YOU CAN INSURE THAT YOUR PLASTIC PARTS WILL NOT BE WARPED.

THANK YOU,

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SERVICE BULLETIN

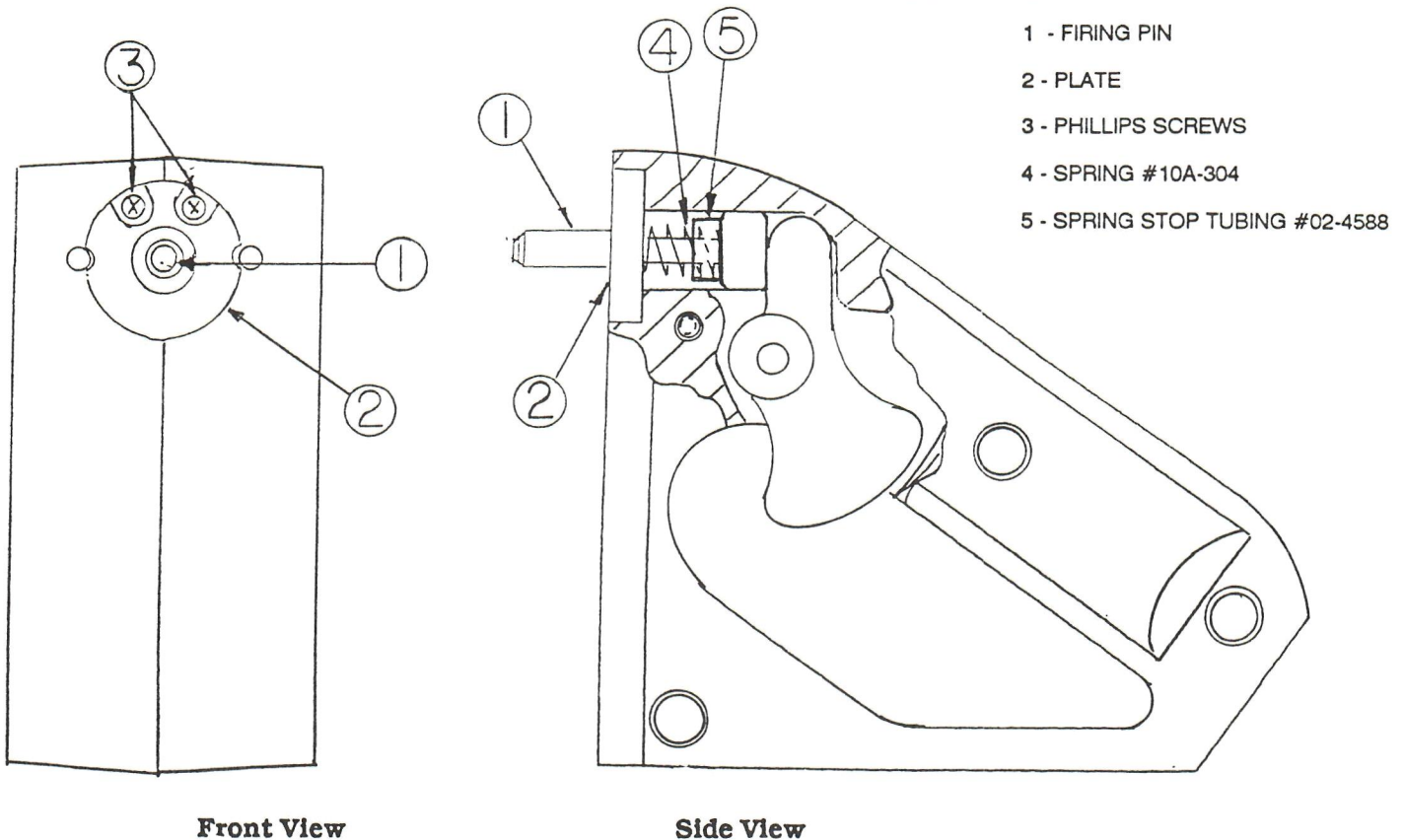
SEPTEMBER 5, 1991

SB32

SUBJECT: "TERMINATOR 2" GUN HANDLE MODIFICATION.

INFORMATION: IF YOU EXPERIENCE BINDING OF THE GUN TRIGGER, ADD A SPRING STOP TUBING (PART # 02-4588).

- 1) TURN OFF AND UNPLUG THE GAME. OPEN THE COIN DOOR AND SLIDE THE FRONT MOLDING LEVER TO THE LEFT THEN LIFT THE FRONT MOLDING OFF OF THE PLAYFIELD GLASS. CAREFULLY, REMOVE THE PLAYFIELD GLASS. TAKE THE STEEL BALLS OUT OF THE GAME AND LIFT UP THE PLAYFIELD.
- 2) REMOVE THE GUN HANDLE ASSEMBLY FROM THE CABINET. USE THE LONG ARM KEY AND A 3/8" NUT DRIVER TO REMOVE THE FOUR TAMPER-PROOF SCREWS AND FOUR NUTS HOLDING THE ASSEMBLY.
- 3) HOLD THE ASSEMBLY SO THE FIRING PIN AND THE PLATE SURROUNDING IT FACES YOU. REMOVE THE TWO PHILLIPS SCREWS HOLDING THE PLATE. REMOVE THE PLATE.
- 4) DROP THE SPRING STOP TUBING OVER THE SPRING AND FIRING PIN. REPLACE THE PLATE AND THE TWO PHILLIPS SCREWS. SQUEEZE THE TRIGGER TO BE SURE THE FIRING PIN EXTENDS OUT OF THE ASSEMBLY.
- 5) REATTACH THE GUN HANDLE ASSEMBLY TO THE GAME CABINET. NOTE: YOU MAY HAVE TO READJUST THE GRIP TRIGGER SWITCH (#34).
- 6) LOWER THE PLAYFIELD. REPLACE THE STEEL BALLS, THE PLAYFIELD GLASS, AND THE FRONT MOLDING. LOCK THE FRONT MOLDING. CLOSE AND LOCK THE COIN DOOR. TURN THE GAME BACK ON



Front View

Side View

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SERVICE BULLETIN

SEPTEMBER 19, 1991

SB33

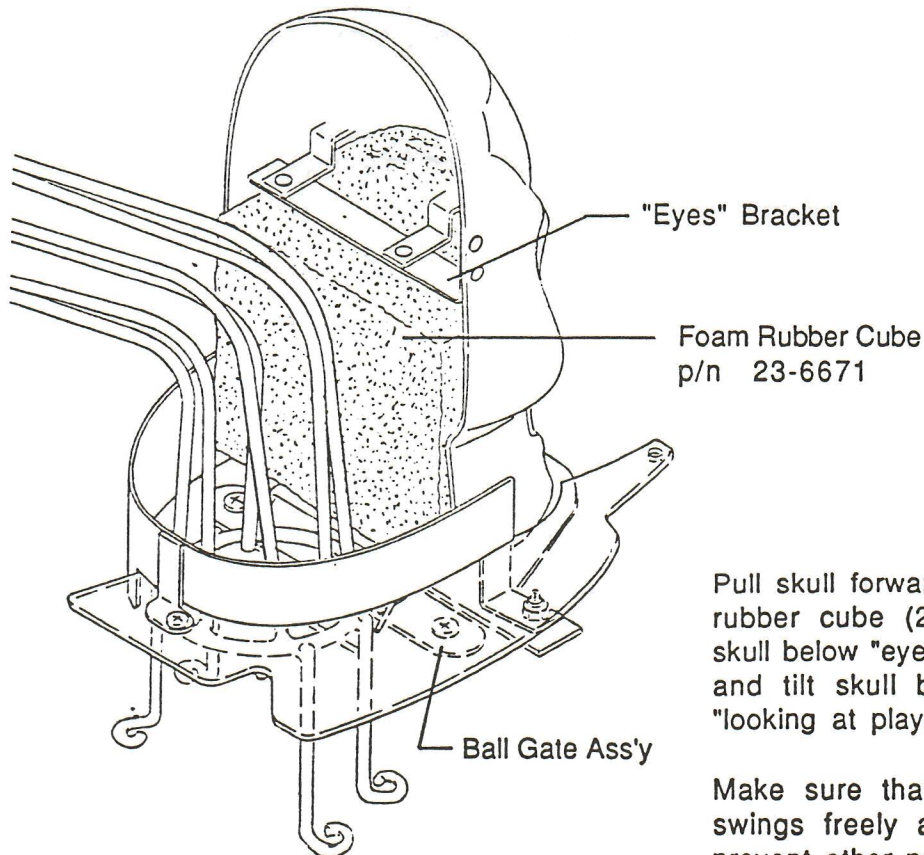
GAME: "TERMINATOR 2" PINBALL

SUBJECT: POSSIBLE BALL HANG-UP BEHIND SKULL

SYMPTOM: IF 1 BALL IS IN THE SAUCER UNDER THE SKULL AND ANOTHER BALL HITS IT WITH SOME DEGREE OF VELOCITY THE SECOND BALL MAY DEFLECT INTO THE SKULL.

SOLUTION: USING A SHARP EXACTO KNIFE, CUT A 2-1/4" SQUARE CUBE FROM A CORNER OF THE SHIPPING FOAM (NOT STYROFOAM) PACKED WITH THE GAME, SUPPORTING THE BACKBOX FOLDED DOWN ON THE CABINET.

IF THAT FOAM CANNOT BE FOUND, MOST ANY FOAM RUBBER CUT TO SPECIFICATIONS WILL DO, OR A FOAM RUBBER CUBE (PART # 23-6671) CAN BE ORDERED FROM THE *WMS GAMES* PARTS DEPARTMENT.



Pull skull forward gently, compress foam rubber cube (2-1/4" sq.) and insert in skull below "eyes" bracket. Release foam and tilt skull back to original position "looking at player".

Make sure that the ball gate wireform swings freely after foam is inserted to prevent other problems.

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SERVICE BULLETIN

DECEMBER 13, 1991

SB34

GAME: ALL WPC PINBALL MACHINES

SUBJECT: POSSIBILITY OF THE FLIPPER ENABLE RELAY NOT PULLING IN.

SOLUTION: CHANGE R208 TO A 270 OHM RESISTOR.

- IF YOU EXPERIENCE THE FLIPPER ENABLE RELAY (ON THE POWER DRIVER BOARD) NOT PULLING IN INTERMITTENTLY, CHANGE THE 560 OHM RESISTOR AT POSITION R208 TO A 270 OHM RESISTOR.
- THIS CONDITION HAS NOT BEEN OCCURRING FREQUENTLY. THERE IS NO NEED FOR A MAJOR RE-WORK. IF YOU GET ANY POWER DRIVER BOARDS IN FOR REPAIR, PLEASE CHANGE THIS RESISTOR WHILE YOU'RE WORKING ON THE BOARD.

THANK YOU,

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SERVICE BULLETIN

DATE: DECEMBER 18, 1991

SB35

SUBJECT: "FUNHOUSE" RAMP KIT.

AVAILABLE THROUGH THE *WMS GAMES* PARTS DEPARTMENT IS A RAMP KIT (PART # 53203) TO PROTECT THE ENTRANCE TO THE PLASTIC RAMP ON "FUNHOUSE". ALTHOUGH THIS KIT WAS DESIGNED FOR THE "FUNHOUSE" RAMP, IT MAY HELP ON EARLIER GAMES WITH SIMILAR TYPE RAMP ENTRANCES.

THANK YOU,

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SERVICE BULLETIN

DECEMBER 19, 1991

SB36

GAME: "TERMINATOR 2" (VIDEO)

SUBJECT: INTERMITTENT RESET DURING GAME PLAY

IF YOU ARE SEEING INTERMITTENT RESETS ON THE "TERMINATOR 2" VIDEO GAME, FOLLOW THESE STEPS:

1. CHECK VOLTAGE ON THE CPU BOARD. USING CAPACITOR C5 AS A TEST POINT, MEASURE AND ADJUST THE POWER SUPPLY (IF NECESSARY) SO THAT YOU ATTAIN A MINIMUM OF 5.1vdc TO A MAXIMUM OF 5.2vdc.
2. IF THE RESETS STILL OCCUR, CHANGE IC U35 (74ALS00) TO A **74AS00**.
3. IN THE EVENT THAT YOU DO NOT HAVE A 74AS00 READILY AVAILABLE, YOU CAN MAKE A MINOR CUT AND JUMP TO THE BOARD TO COMPENSATE. CUT PIN 11 OF U35 (COMPONENT SIDE OF THE BOARD) AND LIFT THE PIN. THEN ON THE SOLDER SIDE OF THE BOARD, JUMPER BETWEEN PIN 11 AND PIN 12 OF U35.

THANK YOU,

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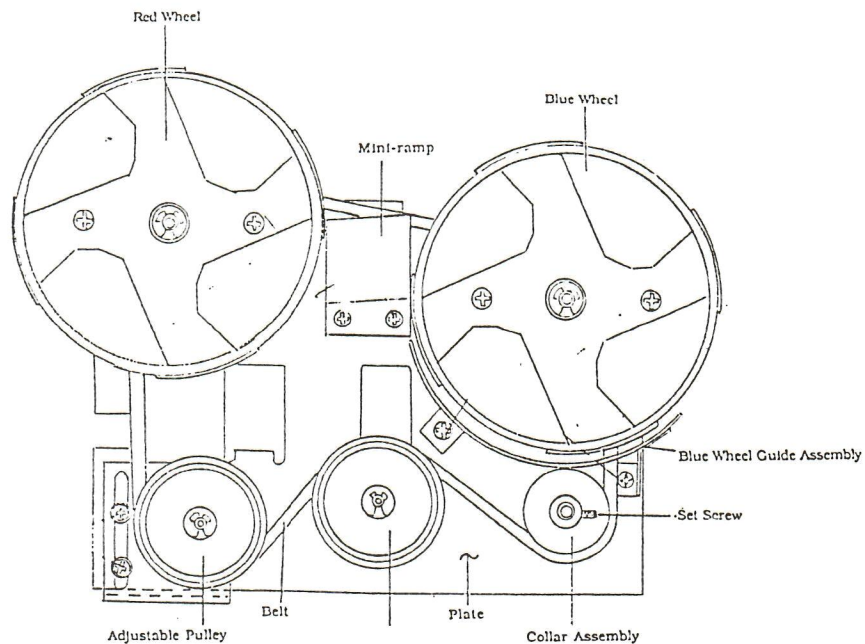
DECEMBER 20, 1991

SB37

GAME: "HURRICANE"

SUBJECT: FERRIS WHEEL DRIVE BELT

IF THE FERRIS WHEEL ON "HURRICANE" IS SLIPPING OR STOPPING, PLEASE CHECK THE DRIVE BELT. REFER TO THE DRAWING BELOW AND MAKE SURE THE DRIVE BELT IS AROUND THE WHEELS AND PULLEYS AS SHOWN.



THANK YOU,
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JANUARY 30, 1992

WILLIAMS ELECTRONIC GAMES, MAKERS OF WILLIAMS AND BALLY PINBALLS, HAS BEEN USING A NEW AND IMPROVED PLAYFIELD COATING CALLED "DIAMOND PLATE". DO NOT USE YOUR NORMAL PLAYFIELD POLISHES ON THIS SURFACE. WE AT WILLIAMS ELECTRONIC GAMES RECOMMEND THE USE OF "NOVUS" PLASTIC POLISH #1 FOLLOWED BY "NOVUS" PLASTIC POLISH #2 ON A WEEKLY BASIS (RECOMMENDED NORMAL MAINTENANCE ANYWAY). "NOVUS " PLASTIC POLISH IS THE PERFECT CLEANER AND POLISH TO USE ON PLASTIC RAMPS TOO.

AMENDMENTS

Party Zone

Manual Amendment

Electronic Flipper Theory

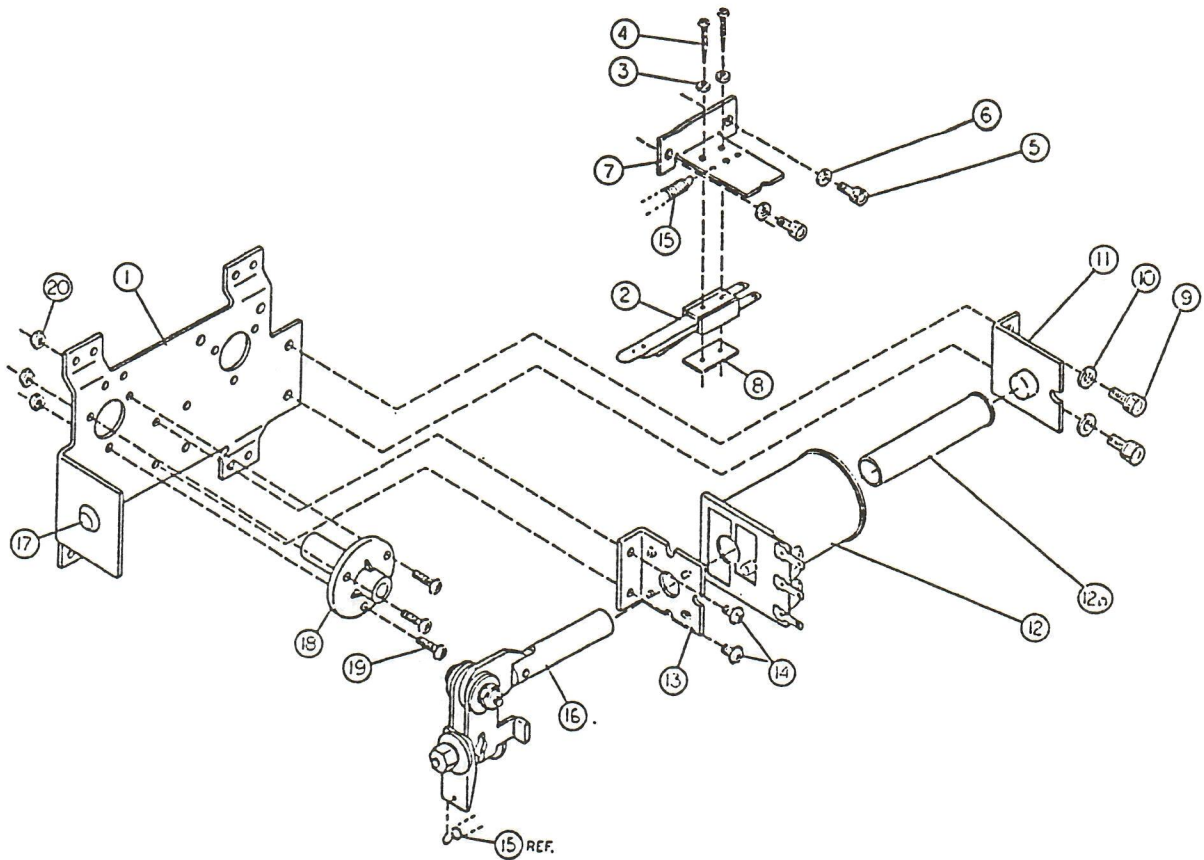
When the cabinet switch is closed, the +12V on the + input of the LM339 Comparator drops below the +5 reference voltage. This sends a signal to the microprocessor. The microprocessor in turn toggles the output of the 74LS374, (on the Flipper Controller Board), low. Once the output is low, the high and low power solenoid circuits, for the appropriate flipper are engaged, and the flipper coil pulls in.

The flippers high and low power coils are activated at the same time. The power coil is engaged for only a small amount of time, then the microprocessor turns it off. The holding coil is engaged the entire time the cabinet button is pressed. If the microprocessor sees the breakaway detect switch close, it turns on the power coil for a short time, (less than turn-on time), then releases it. Even if the breakaway detect switch is not functioning the flipper reacts normally when the cabinet button is pressed.

Electronic Flipper Part Number Changes

Page Number	Original Part Number	Description	Replacement Part Number
2.41	A-9990-1	Flipper Switch	A-15058
2.16	C-13174-R	Right Flipper Assembly	A-15205-R
2.16	C-13174-L	Left Flipper Assembly	A-15205-L
2.33	H-14900	Cabinet Cable	H-14900-1
2.8	A-5343-20004	Game Rom U6	A-5343-23104-1
2.8	A-12742-20004	WPC CPU Board	A-12742-23104
Electronic Flipper (New Parts)			
	A-15028 H-15094 H-15095 5795-13018-00	Flipper Controller Board Flipper Ground Cable Logic Power Cable Ribbon Cable-34 Pin	

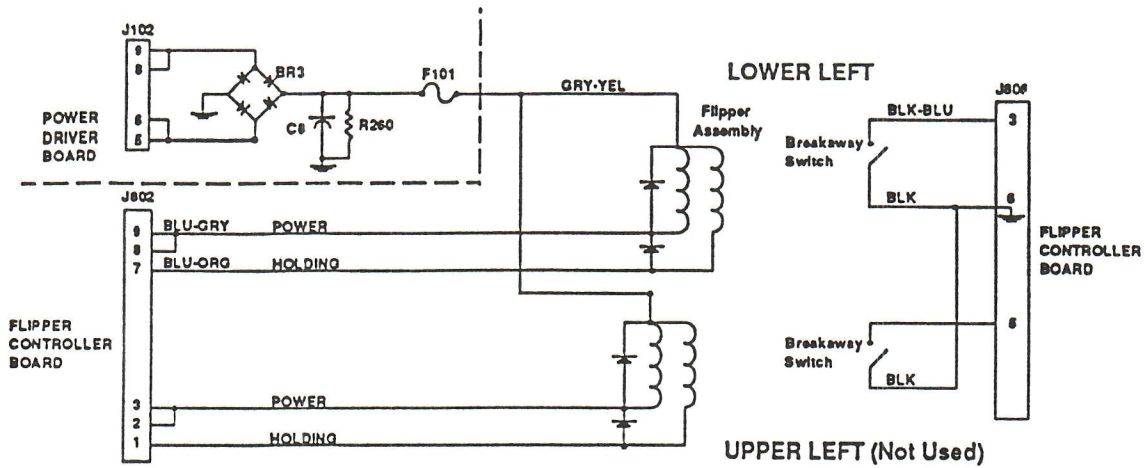
Electronic Flipper Assembly A-15205-R And A-15205-L



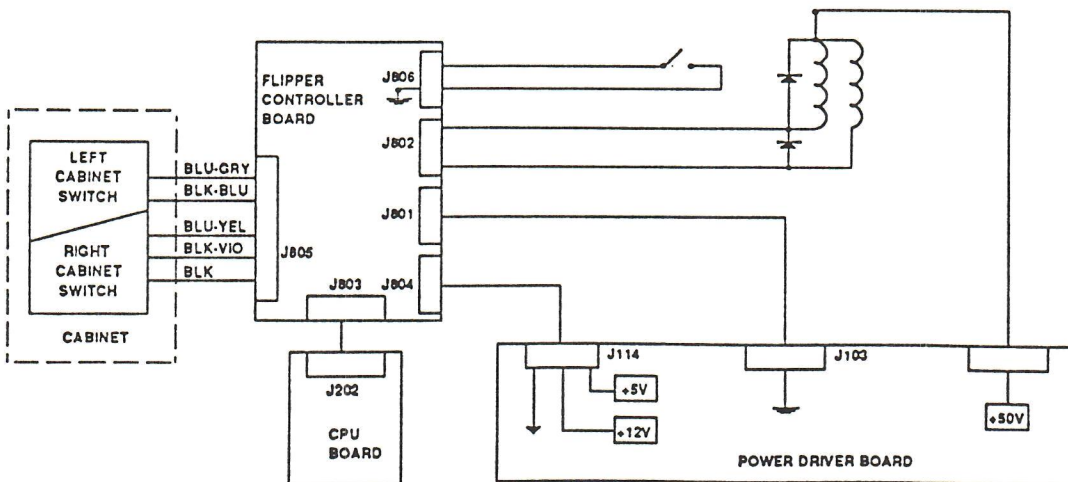
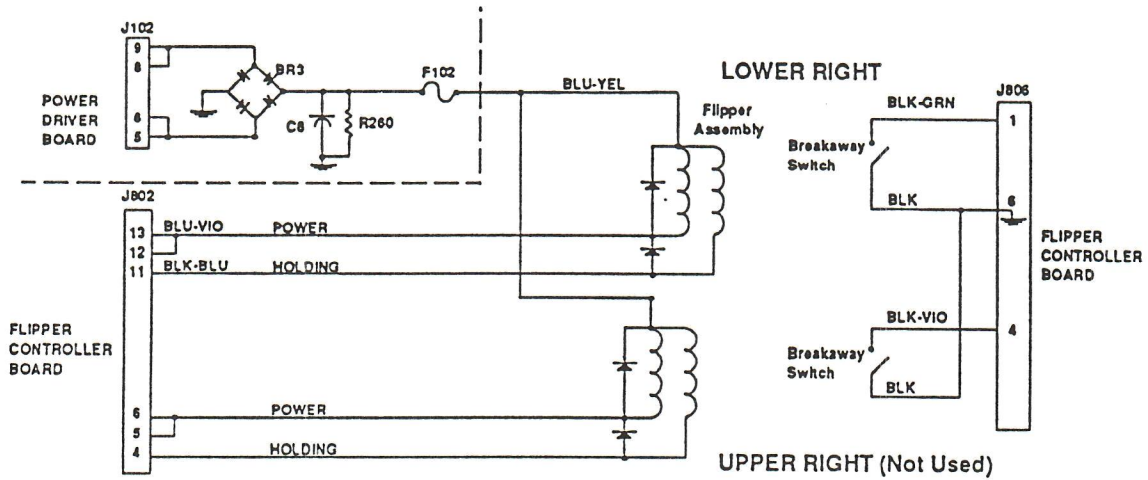
ITEM	PART NUMBER	DESCRIPTION
1	B-13104-R B-13104-L	Flipper Base Assembly, Right Flipper Base Assembly, Left
2	SW-1A-193	Flipper Switch
3	4701-00002-00	Lockwasher, #6 Split
4	4104-01019-10	Sh. Metal Screw, #5 x 5/8
5	4008-01079-05	Cap Screw, 8-32 x 5/16
6	4701-00003-00	Lockwasher, #8 Split
7	01-9375	Switch Mounting Bracket
8	20-6516	Tinnerman Speednut
9	4010-01066-06	Cap Screw, 10-32 x 3/8, SH
10	4701-00004-00	Lockwasher, #10 Split
11	A-12111	Flipper Stop Assembly
12	FL-11630	Flipper Coil
a)	*	Coil Tubing
13	01-7695	Solenoid Bracket
14	4006-01017-04	Mach. Screw, 6-32 x 1/4
15	10-364	Spring
16	B-13882-R B-13882-L	Crank Link Assembly, Right Crank Link Assembly, Left
17	23-6577	Bumper Plug
18	03-7568	Flipper Bushing
19	4006-1005-06	Mach. Screw, 6-32 x 3/8
20	4406-01117-00	Nut, 6-32 Hex Head

*Not sold separately.

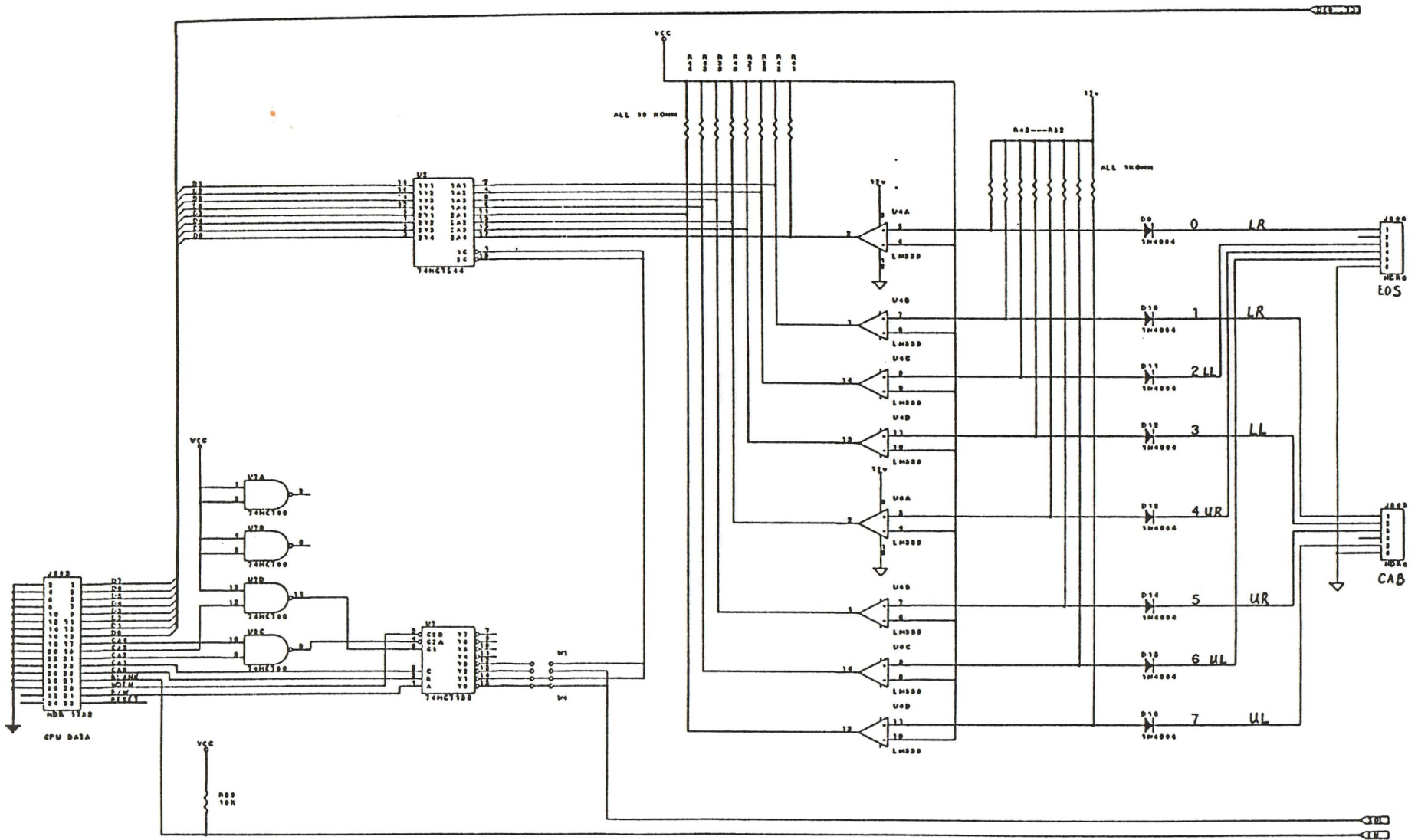
LEFT FLIPPER CIRCUIT



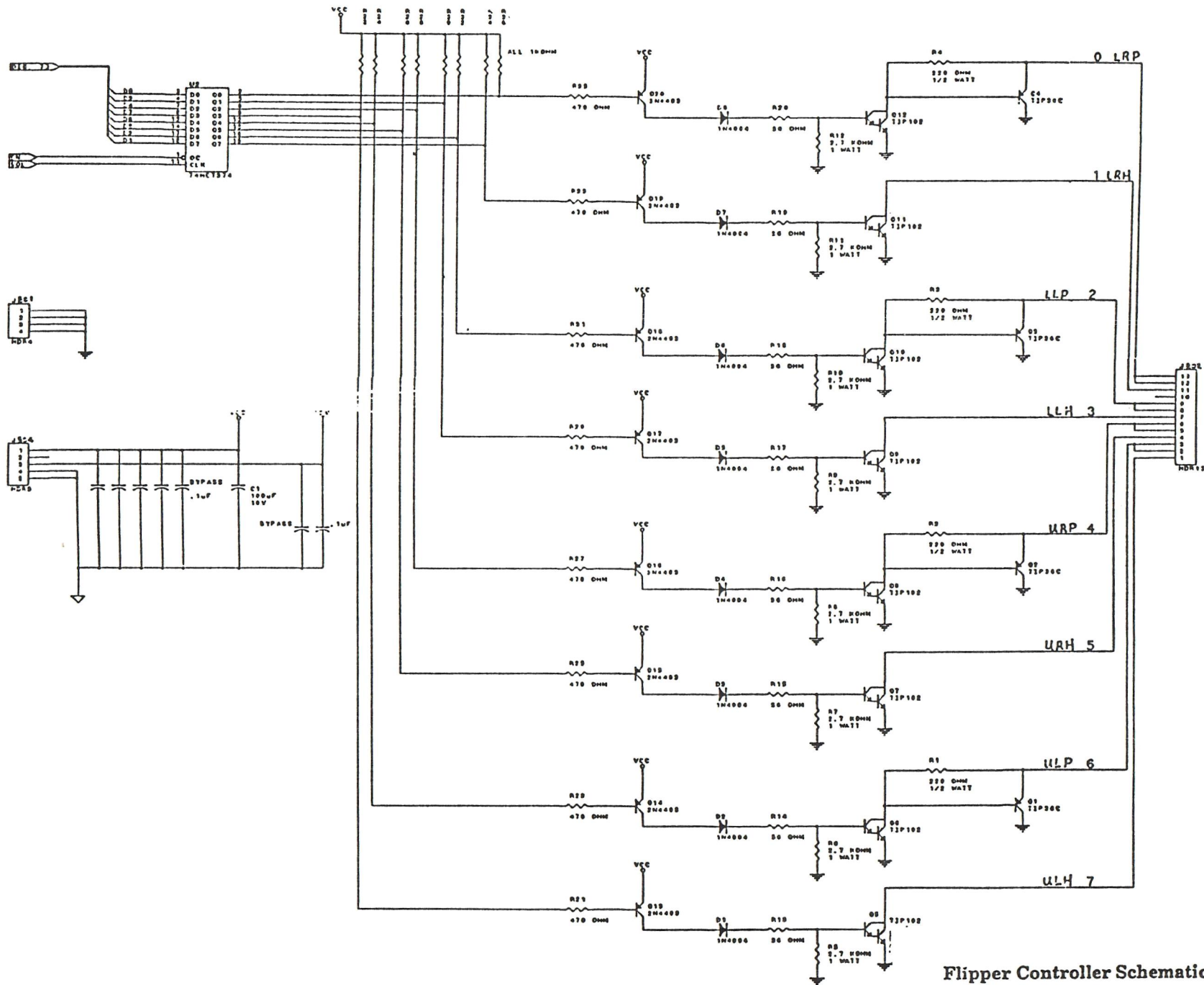
RIGHT FLIPPER CIRCUIT



BLOCK DIAGRAM OF FLIPPER CIRCUIT

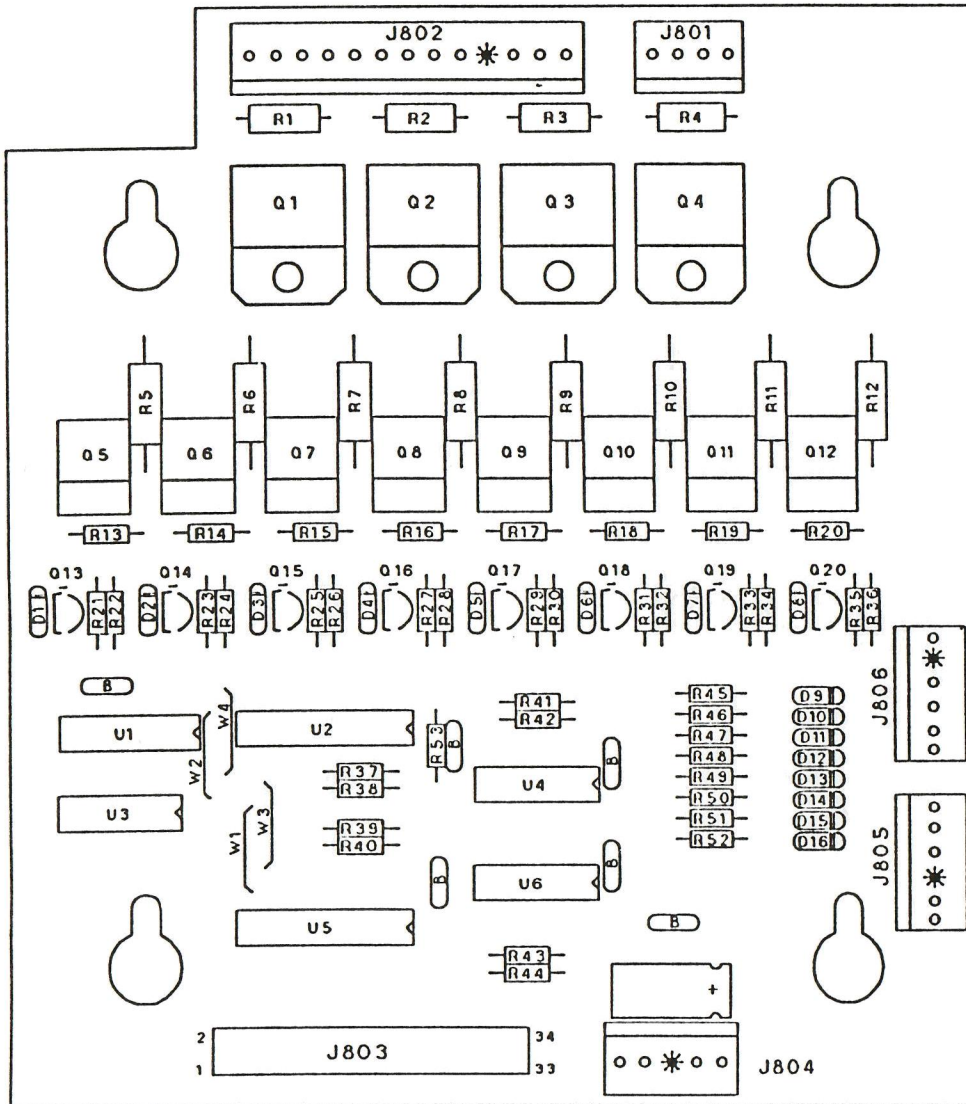


Flipper Controller Schematic (sheet 1 of 2)



Flipper Controller Schematic (sheet 2 of 2)

A-15028 Flipper Controller Assembly



Part Number	Designator	Description
01-10572	Q1-Q4	Heatsink
20-9702-1	Q5-Q12	Fastener Snap
4006-01003-08	Q1-Q4	Mach. Screw, 6-32
4406-01128-00	Q1-Q4	Nut 6-32 KEPS
5010-09034-00	R37 - R44, R53	Resistor, 10K Ω , 1/4w, 5%
5010-09358-00	R22, R24, R26, R28, R30, R32, R34, R36, R45 - R52	Resistor, 1K Ω , 1/4w, 5%
5010-09361-00	R1 - R4	Resistor, 220 Ω , 1/2w, 5%
5010-09416-00	R21, R23, R25, R27, R29, R31, R33, R35	Resistor, 470 Ω , 1/4w, 5%
5010-09534-00	W3, W4	Resistor, 0 Ω
5010-10171-00	R13 - R20	Resistor, 56 Ω , 1/4w, 5%
5011-12956-00	R5 - R12	Resistor, 2.7K Ω , 1w, 5%
5040-08986-00	C1	Capacitor, 100M, 10v
5043-08980-00	B	Capacitor, .01 μ F, 50v
5070-09054-00	D1 - D16	Diode 1N4004
5162-12635-00	Q5-Q12	Transistor TIP102 NPN
5190-09016-00	Q13 - Q20	Transistor 2N4403 PNP
5191-12179-00	Q1-Q4	Transistor TIP36C PNP
5315-12009-00	U2	IC 74HCT374
5315-12031-00	U5	IC 74HCT244
5315-12812-00	U1	IC 74HCT138
5315-12951-00	U3	IC 74HCT00
5370-12272-00	U4, U6	IC LM339 QUAD COMP
*		Bare PC Board
5791-10862-04	J801	Connector, 4-pin Header Sq. Pin
5791-10862-05	J804	Connector, 5-pin Header Sq. Pin
5791-10862-13	J802	Connector, 13-pin Header Sq. Pin
5791-12461-06	J805, J806	Connector, Str Sq. Pin Header .100
5791-12516-00	J803	34 HEN 2x17 STR

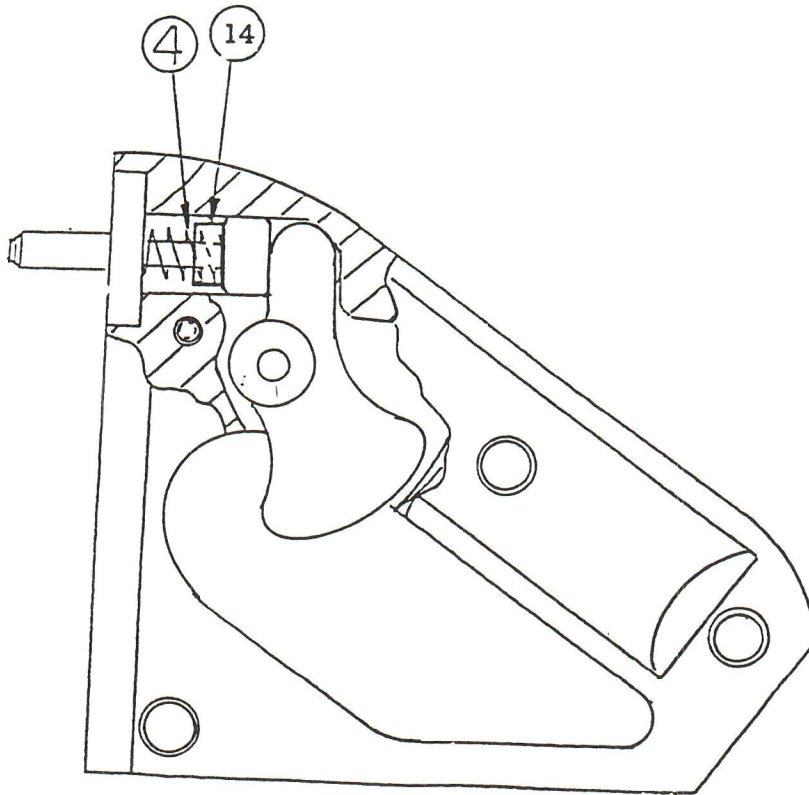
* = Not available for individual sale.

Terminator 2

Manual Amendment

The Gun Handle Assembly on page 2-26 of the Operations Manual has changed. Item #14 (see below), has been added to the assembly to prevent Item #4 (see below) from breaking.

The new part number for the Gun Handle Assembly is A-14747.



Item	Part Number	Description
4	10-304	Spring
14	02-4588	Tubing (spring Stop)

Terminator 2

Manual Amendment No. 2

Page 1-14
A2. 15

Timed Plunger (setting changed)

The operator chooses whether the plunger kicks automatically for the player. The choices are:

- 1 sec. to 120 secs. - After 1 second to 120 seconds of inactive play, the plunger kicks automatically.
- Off - The plunger does not kick automatically.

Page 1-15
A2. 20

Drop Target Broke (adjustment added)

The operator chooses whether the Drop Target resets if it is not working properly. The choices are:

- On - The Drop Target never resets and is eliminated from game play.
- Off - The Drop Target resets and remains part of the game.

Page 1-15
A2. 21

Drop Target Down for Multi-ball (adjustment added)

The operator chooses whether the Drop Target resets during Multi-ball. The purpose for not resetting the Drop Target is to prevent the ball from getting stuck behind it during Multi-ball play. The choices are:

- On - During Multi-ball the Drop Target does not reset.
- Off - During Multi-ball the Drop Target does reset.

Page 1-17
Country

Pricing Table (settings changed)

Country	Coin Chutes	Games-Coins	Display	Pricing Adjustments
Spain	100P - 500P	1/100P, 6/500P	Spain	01 00 04 00 01 04 01 00
	25P - 100P	1/25P, 5/100P	Custom	
New Zealand	\$1.00 - \$2.00	1/\$1.00, 3/\$2.00	New Zealand	01 00 01 00 03 00 00 01
	20¢ - 20¢	1/3 x 20¢	Custom	

Page 1-37
A2. 11

Hurry-up Timer (setting changed)

U.S./Canadian/French Table, Medium = 15 seconds
German/European Table, Easy = 15 seconds

Page 1-28
Page 2-14
Page 2-38

Solenoid Table

Flipper Parts Assembly

Solenoid Table

Inside Front Cover Solenoid Table

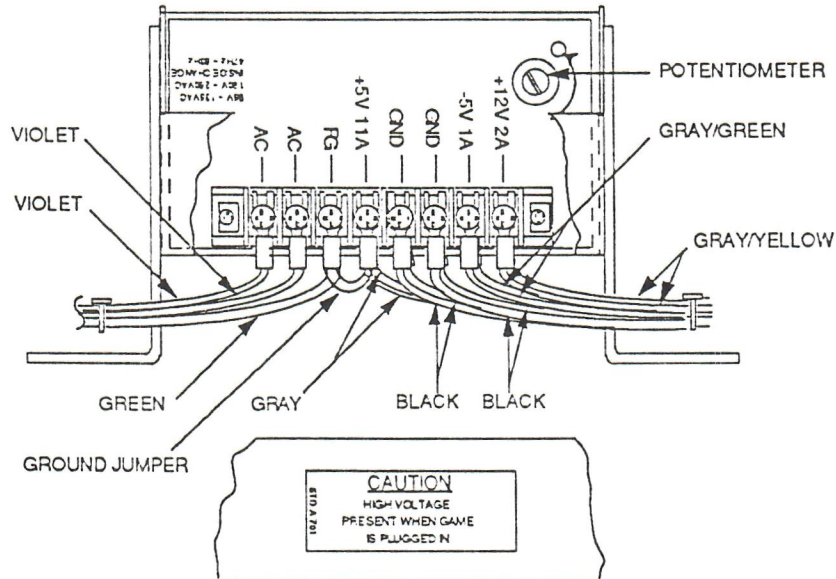
Flipper Assembly Coil has changed to FL-11629

TERMINATOR 2 VIDEO Supplement

The purpose of this supplement is to provide additional information for the Terminator 2 Video Game that was not available at the time the manual was printed. Please keep this supplement with your Terminator 2 Game Manual.

Adjusting +5V

Measure the +5V at C5 on the CPU Board. C5 is located near the JAMMA Connector. If the voltage is less than +5.1V, adjust the potentiometer located on the front of the power supply.



DIP Switch Settings

The following DIP Switch Settings have been added to DIP Switch Bank #1. These settings enable the operator to adjust the Credits to Start and the Credits to Continue.

<u>Switch 6</u>	<u>Switch 7</u>	<u>Switch 8</u>	<u>To Start</u>	<u>To Continue</u>
Off	Off	Off	2	1
On	Off	Off	1	1
Off	On	Off	2	2
On	On	Off	3	1
Off	Off	On	4	1
On	Off	On	3	2
Off	On	On	4	2
On	On	On	3	3

A-14415 Gun Parts

Item	Part Number	Description
(1)	23-6657	Rubber Stop Bushing
(2)	03-8528	Gear Drive
(3)	03-8529	Gear Pinion
(4)	5014-12909-00	Potentiometer, 5K Ω Long Life*
(5)	AE-23-800-08	Coil Assembly
(6)	03-8537	Right Molded Housing
(7)	03-8538	Left Molded Housing
(8)	03-8539	Molded Trigger
(9)	10-429	Trigger Return Spring
(10)	5647-12693-06	Snap Action Trigger Switch
(11)	5641-12864-00	Pushbutton Rocket Switch

* 10K Ω Potentiometer is acceptable

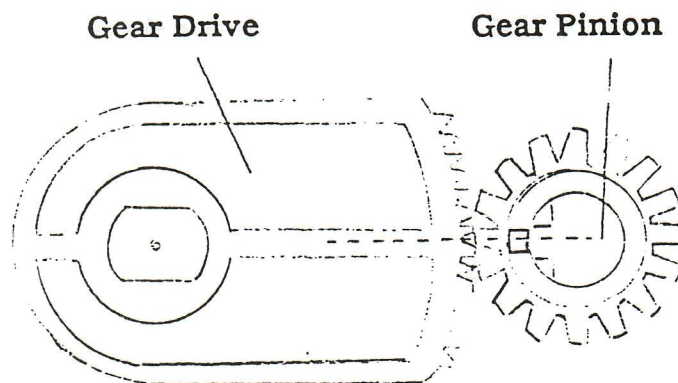
- Note: 1) Rubber and Fiber Washers are acceptable
2) Nut, #10-24 x 1-1/4, part number 4410-01153-00, shown in the manual as part of the Gun Assembly (pg.2-13) is not used.

Protect Gun Harness

To prevent the bolt that holds the main shaft to the gear drive shaft from rubbing on the gun harness and breaking the insulation, wrap heat shrink around the bolt. The bolt is visible from the front of the Gun Assembly after the lower left and right housing assemblies have been removed.

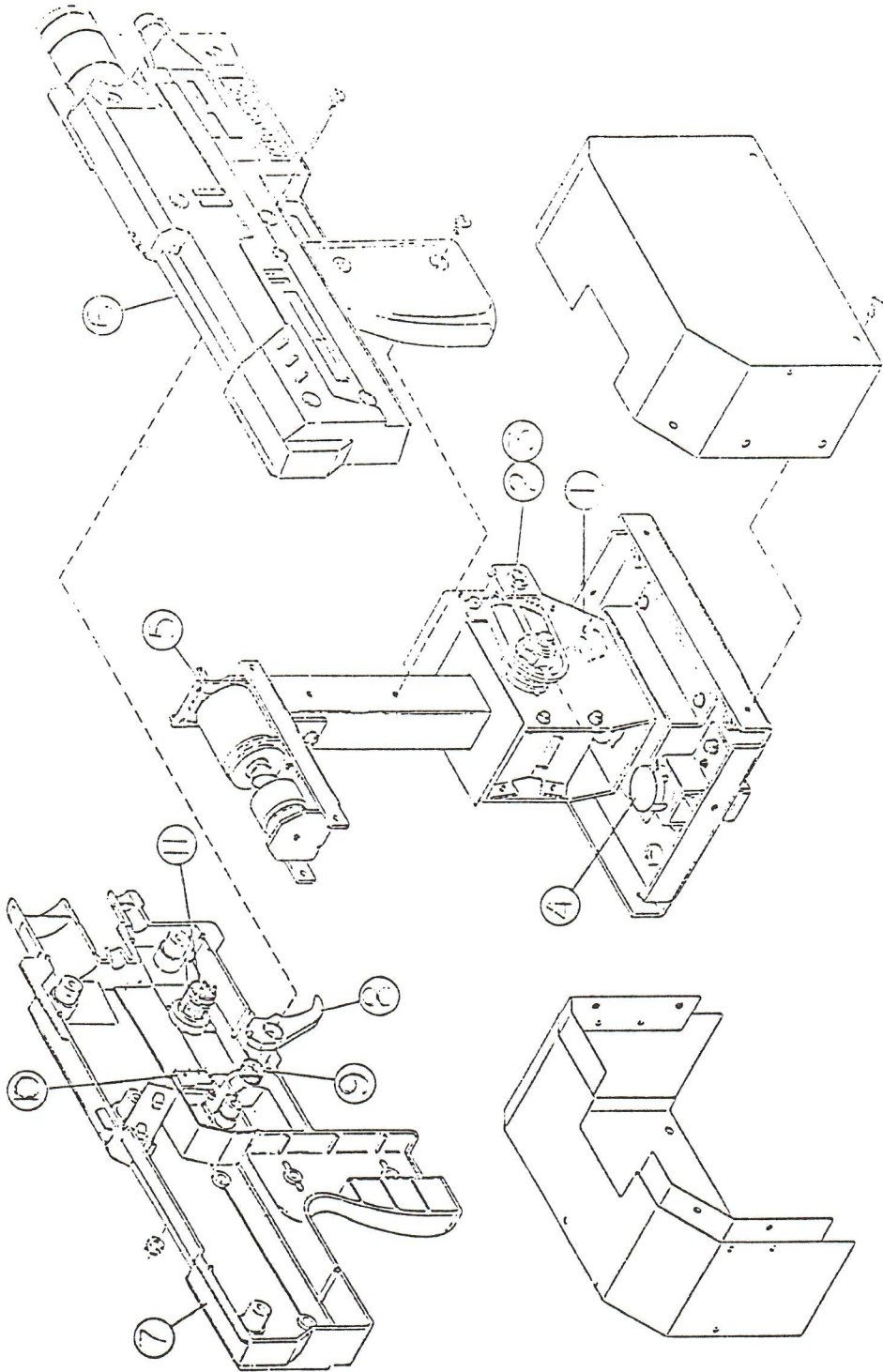
Mechanical Gun Alignment

Loosen the nut at the rear of the gear drive. Find the notch on the gear pinion. Align the notch on the pinion with the center divider on the gear drive. Tighten the nut on the gear drive. Align the side and bottom gear drive and pinion this way.



Supplement pg. 2

**A-14415
Gun Assembly**



Supplement pg. 3

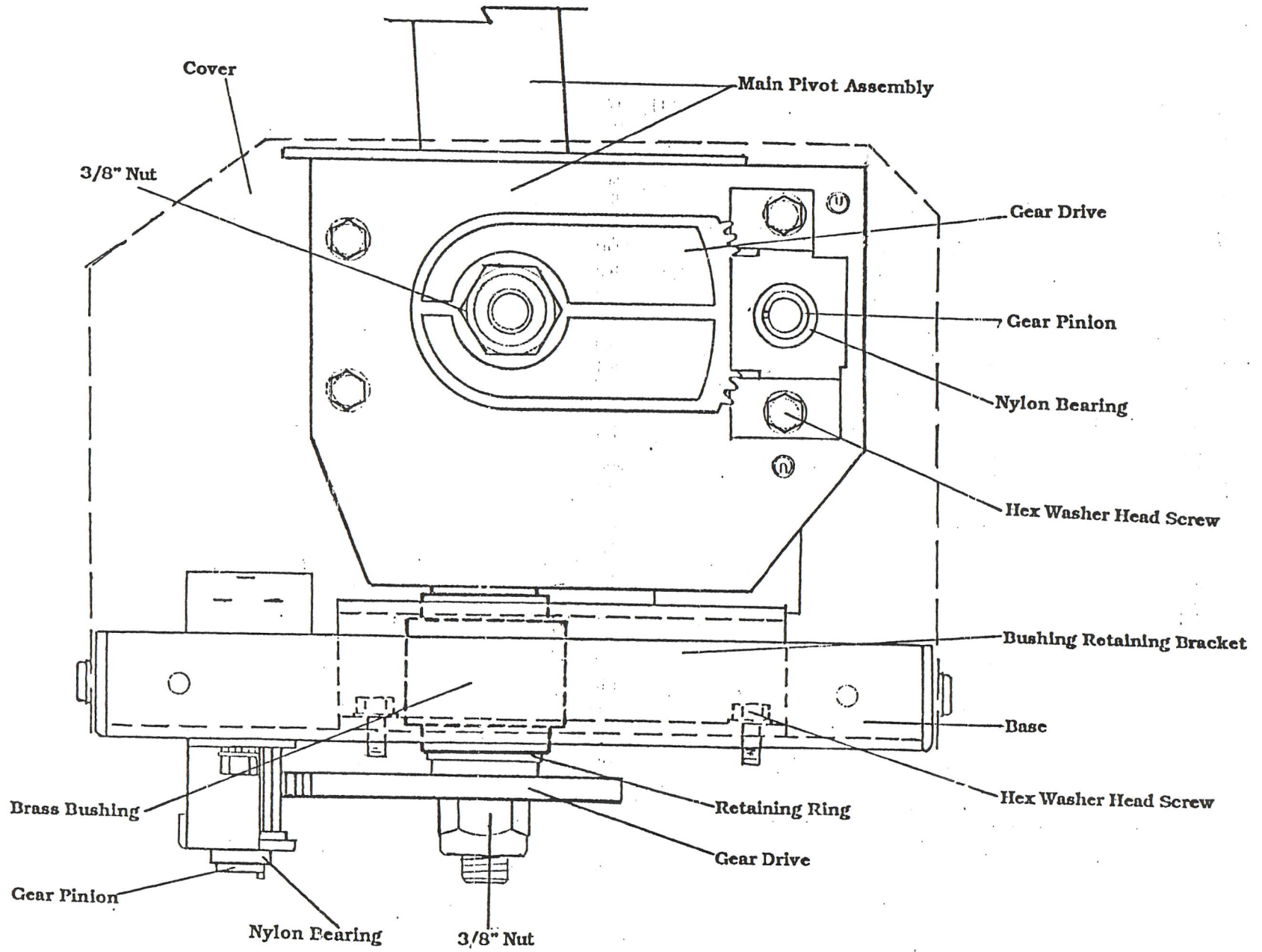
TERMINATOR 2 Judgment Day

Gun Assembly Parts Change Notice

The gear pinions , gear drives, and the bushing located on the bottom of the main pivot assembly, have changed. This notice is to inform you of the new parts being used and how to install those parts.

1. Turn Off the power to the game.
2. Remove the two covers on the base of the gun. Remove the four hex washer head screws in the corners of the base. Pull the gun straight up and lay it forward. Grasp the cable connectors and pull them apart. Tape the cabinet end of the cable to the control panel to prevent it from falling back into the cabinet.
3. Remove the 3/8" nut, gear drive and retaining ring from the bottom of the main pivot assembly. These parts are located underneath the base. You will need pliers to spread the prongs on the retaining ring. Lift the main pivot assembly off of the base. Remove the two nylon bearings and discard them.
4. Remove the four hex washer head screws, located on the top of the base, that hold the bushing retaining bracket. Remove the bracket and replace the original bushing with the new brass bushing. Replace the bracket and secure with the four screws.
5. Remove the two hex washer head screws that hold the gear pinion bracket to the bottom of the base. Remove the original gear pinion from the bracket, install the new gear pinion. Re-attach the bracket to the bottom of the base. When you replace the pinion, be sure to replace the nylon bushings; slide the narrow end of the bushing through the bracket and the larger end over the pinion.
6. After the new pinion is installed, install the new gear drive. Place the main pivot assembly over the bushing retaining bracket and through the bushing. Replace the retaining ring and attach the new gear driver. Be sure the tab on the gear pinion lines up with the center line on the gear. Last, replace the 3/8" nut.
7. Next, replace the gear driver and gear pinion on the side of the main pivot assembly. Remove the 3/8" nut holding the gear driver. Remove the gear drive and replace in with the new version. Remove the two hex washer head screws from the bracket holding the gear pinion. Remove the original gear pinion and replace it with the new gear pinion, then place the bracket. Be sure to replace the nylon bushings; slide the narrow end through the bracket and the larger end over the pinion.
8. Once the new bushing, gear drive and gear pinion are installed, plug the cable connectors back together, lower the gun back to its original position on the control panel, and secure into place. Replace the two base covers.
Note: Be sure to check the alignment of the gear drive and pinion. The pinion tab should line up with the center line on the gear drive. If it does not loosen the 3/8" nut and align the gear drive and pinion.

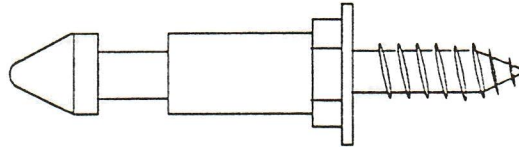
	Omit Original	Replaced With
Gear Pinion (2)	03-8529	03-8529-1
Gear Drive (2)	03-8528	03-8528-1
Bushing (1)	02-4517	02-4637
Nylon Bearing (2)	03-8526	No Replacement



Hurricane Manual Amendment

The following corrections/changes have been made to the Hurricane Operations Manual. Please keep this amendment with your manual.

- Page 2-3** **Item 11**
Speaker/Display Assembly part number should be A-15259.
- Page 2-15** Left Flipper Assembly part number should be A-15318-L.
- Page 2-26** #8 WS Bumper Post, part number 02-3905, should be pictured as follows:



- Page 2-30** **Item 4**
Right Flipper part number should be A-15318-R.
- Item 30**
Left Flipper part number should be A-15318-L.
- Page 2-35** **Item E**
Flipper Rubber Rings have been changed. The new part number is 23-6678-7.
- Page 3-4 and Back Cover** Lamps #65-Left Jet Bumper, #66-Right Jet Bumper and #67-Bottom Jet Bumper are not used.

Hurricane Manual Amendment

The following corrections/changes have been made to the Hurricane Operations Manual. Please keep this amendment with your manual.

Page 2-13 Jet Bumper Assembly
The Jet Bumper Assembly has changed. The new part number is **A-15545-1** and contains the following:

Item	Part Number	Description
1	A-4754	Bumper Ring Assembly
2	03-6009-A5	Bumper Base
3	03-6035-1	Bumper Wafer-Blue
4	03-7443-5	Bumper Body
5	10-7	Bumper Spring

Page 2-16 Ball Shooter Lane Feeder-Associated Parts.
The coil and bracket assembly associated with the Ball Shooter Lane Feeder has changed. The new part number is **A-14375-1** and contains the following:

Part Number	Description
B-11493	Bracket & Stop Assembly
AE-26-1200	Coil Assembly Complete
01-8-508-S	Coil Retainer Bracket
4006-01017-06	MS 6-32 x 3/8 P-RH
4406-01119-00	Nut 6-32 ESN

Page 2-29 Standup Targets
The Standup Targets has changed. The new part number is **B-12039-4** and contains the following:

Part Number	Description
SW-1A-170-4	Standup Target Switch
5070-09054-00	Diode, 1N4004, 1.0A

Page 2-30 Item 10 and 11
The Standup Targets have changed. The new part number is **B-12039-4** (see above).

Item 25
This should be listed as a wireform, part number 12-6466-6.

Item 26
This should be listed as Lower Ramp, part number 12-6981.

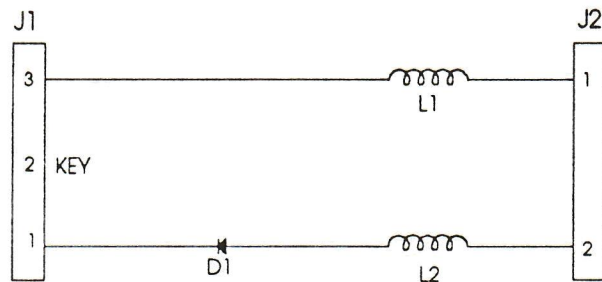
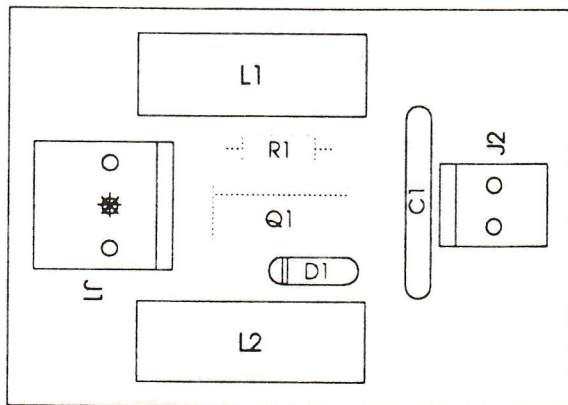
Item 29
The Flipper Return Guide should be listed as part number **B-12363-L**.

The ADDAMS FAMILY

AMENDMENT

The Motor EMI Board, part number A-15340, has been changed to A-15542. Below is the updated drawing of the board, schematic, and parts list. Please make the necessary corrections on pages 2-13, 2-33, 2-38 and 3-13, of The Addams Family operations manual.

A-15542 Motor EMI Board & Schematic



Part Number	Designator	Description
*	-	Bare PC Board
5551-09822-00	L1, L2	Ind. 4.7MH3AMP
5791-12273-03	J1	Connector, 3-pin Header Sq.
5791-12273-02	J2	Connector, 2-pin Header Sq.
†	R1	Resistor, 2.2KΩ, 1/4w, 5%
5070-09054-00	D1	Diode 1N4004, 1.0A.
†	Q1	Transistor TIP 102

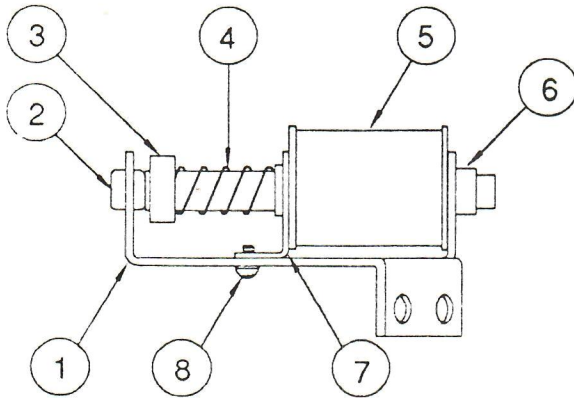
Notes: * Not available for individual sale.
† Not Used.

The ADDAMS FAMILY

Manual Amendment

The coil on Eject Assembly (A-15368) in the The Addams Family Operations Manual has been changed to AE-28-1500. Please make the necessary corrections to the pages listed below.

<u>Page Number</u>	<u>Item Number</u>
2-22	5
2-41	26
3-6	26
Inside Front Cover	26



A-15368 Eject Assembly

Item	Part Number	Description
1.	01-10652	Bracket Assembly
2.	23-6420	Rubber Grommet
3.	A-15371	Plunger Assembly
4.	10-135	Solenoid Spring
5.	AE-28-1500	Coil Assembly
6.	03-7067-5	Coil Tubing
7.	01-8-508-T	Solenoid Bracket
8.	4008-01017-04	Mach. Screw, #8-32 x 1/4"

Correction

Page 1-44 of the operations manual, the Pinball Missing error message should read...
THE ADDAMS FAMILY normally uses three balls; however, it will operate with one ball.