

APR 23 1982



# SERVICE NOTE

EFFECT: ZAXXON UPRIGHT

NUMBER: 001 4-16-82

DUE TO THE ATTRACTIVE DESIGN OF THE ZAXXON JOYSTICK HANDLE, WE HAVE RECEIVED SEVERAL REPORTS OF THEM BEING REMOVED. AS A PRECAUTIONARY MEASURE, WE SUGGEST YOU TAKE THE FOLLOWING ACTIONS IMMEDIATELY:

1. REMOVE THE THREE ALLEN SCREWS FROM THE JOYSTICK AND CLEAN THE THREADED AREAS WITH LOCQUIC PRIMER "T" OR EQUIVALENT. A SUGGESTED METHOD IS TO SATURATE A Q-TIP WITH THE PRIMER "T" AND SWAB BOTH THREADED AREAS COMPLETELY. BLOW OFF THE EXCESS AND ALLOW TO DRY 3 TO 5 MINUTES.
2. COAT THE ENTIRE THREAD WITH LOCTITE 721 ADHESIVE/SEALANT OR EQUIVALENT. REINSTALL BACK IN THE HANDLE AND TORQUE TO A VALUE OF 50 INCH POUNDS.
3. APPLY SOME TYPE OF BLACK SEALING COMPOUND. WE SUGGEST DURO MUFFLER TAILPIPE SEALER. THIS WILL HIDE THE ALLEN SCREWS FROM VIEW BUT IS EASILY REMOVED WITH AN APPROPRIATE TOOL FOR SERVICING.

THESE MATERIALS ARE AVAILABLE AT A NOMINAL COST AT MOST HARDWARE OR AUTO PARTS STORES.

THIS IS AN INTERIM FIX. WE WILL BE PROVIDING TAMPER-PROOF SCREWS ON THIS JOYSTICK ON FUTURE SHIPMENTS.

*SERVICE DEPT*



## SERVICE NOTE

**EFFECT:** ZAXXON Upright

**NUMBER:** 002      4/28/82

Effective 4/26/82, all ZAXXON upright models have been fitted with "tamper-resistant" joystick handle hardware; a large and a small wrench for use in disassembly and reassembly will be found afixed to the inside front cover of the Owner's Manual left in each game. Additionally, four of each size wrench are enclosed for shop use.

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# SERVICE NOTE

EFFECT: ZAXXON

NUMBER: 003 5/5/82

A change has been made to the ZAXXON Owner's Manual (P.N. 420-0724), page 41, Drawing No. 800-3241, Assy. Control Panel. In the interests of simplicity and economy, please change your Manual as follows:

	<u>Item No.</u>	<u>Part No.</u>	<u>Qty. Req'd.</u>	<u>Description</u>
DELETE	10	510-0023	4	WICO switch
DELETE	11	253-0031	8	Spacer WICO switch
ADD	10	510-0064	4	Switch, Panel Pushbutton

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# SERVICE NOTE

EFFECT: ZAXXON

NUMBER: 005 7/14/82

There have been some errors identified in the ZAXXON Owner's Manual (P/N 420-0724); please correct your documentation to reflect the following changes:

- On page 45, Part No.s were reversed, and should read;

<u>Item No.</u>	<u>Part No.</u>	<u>Qty. Req'd.</u>	<u>Description</u>
1	200-0022	1	Monitor 19" vertical Wells Gardner
	200-0019	1	Monitor 19" vertical Electrohome

- On pages 47 through 64, the page headings should read;  
MONITOR 19" VERTICAL - WELLS GARDNER 19K 4675 DRAWING NUMBER 200-0022
- On pages 65 through 71, the page headings should read;  
MONITOR 19" VERTICAL - ELECTROHOME G07-907 DRAWING NUMBER 200-0019



## SERVICE NOTE

EFFECT: ZAXXON

NUMBER: 006 7/15/82

In the advent that you may wish to remove the Component Shelf Assembly (P/N 800-3243) entirely, the following procedure is recommended:

1. Refer to your Owner's Manual (P/N 420-0724), pages 35 and 89. The only tools you will need are; an 11/32" nutdriver, a 7/16" nutdriver, and a pair of dikes (wirecutters).
2. Begin by fitting the 11/32" nutdriver, and with the game electronics compartment door open, remove the nut securing the multiple ground strap connection on the back end of the junction box (mounted on the left-hand side of the cabinet interior).
3. The top "eye-crimp" should be the ground strap from the Component Shelf Assy. From the shelf end, follow the strap from the shelf to the junction box, cutting the tie wraps as needed to free this particular ground strap from the rest of the harnessing.
4. Disconnect and mark for later identification the following connectors: P4 and P31 to the monitor (access may be easier from the back door); P5, P30, and in order from back to front (refer to pg. 89), connectors C, B, A, H, F, G, and E.
5. With the 7/16" nutdriver, remove the four bolts securing the Component Shelf Assy. to the cabinet (two located on the upper corners of the back vertical panel, and the remaining two located at the front of the shelf, lying horizontally).
6. The Component Shelf Assy. should now be free to slide, SLOWLY forward to a point 2-3" short of the 1 X 4 cross-brace in the upper-front of the compartment. Grasp the shelf with both hands on the vertical panel, supporting the horizontal panel with your forearms. Expect the majority of the weight on your left. Now, CAREFULLY tilt the bottom up slightly, pivoting the Assy. back, and forward. Take care to allow ample clearance of the upper cross-brace.
7. Installation is a simple reversal of the removal procedure.
8. If you have any questions, call SEGA/Gremlin Customer Service; toll-free (800) 854-1938, inside Calif., toll-free (800) 722-8576.

EFFECT: ZAXXON

NUMBER: 007 8/9/82

A new Power Supply and IC Board have been added to some later model ZAXXON™s, to be outlined in Service Note ZAXXON 009. Please add the following addendum to your Owner's Manual (P/N 420-0724):

Page No. 88;

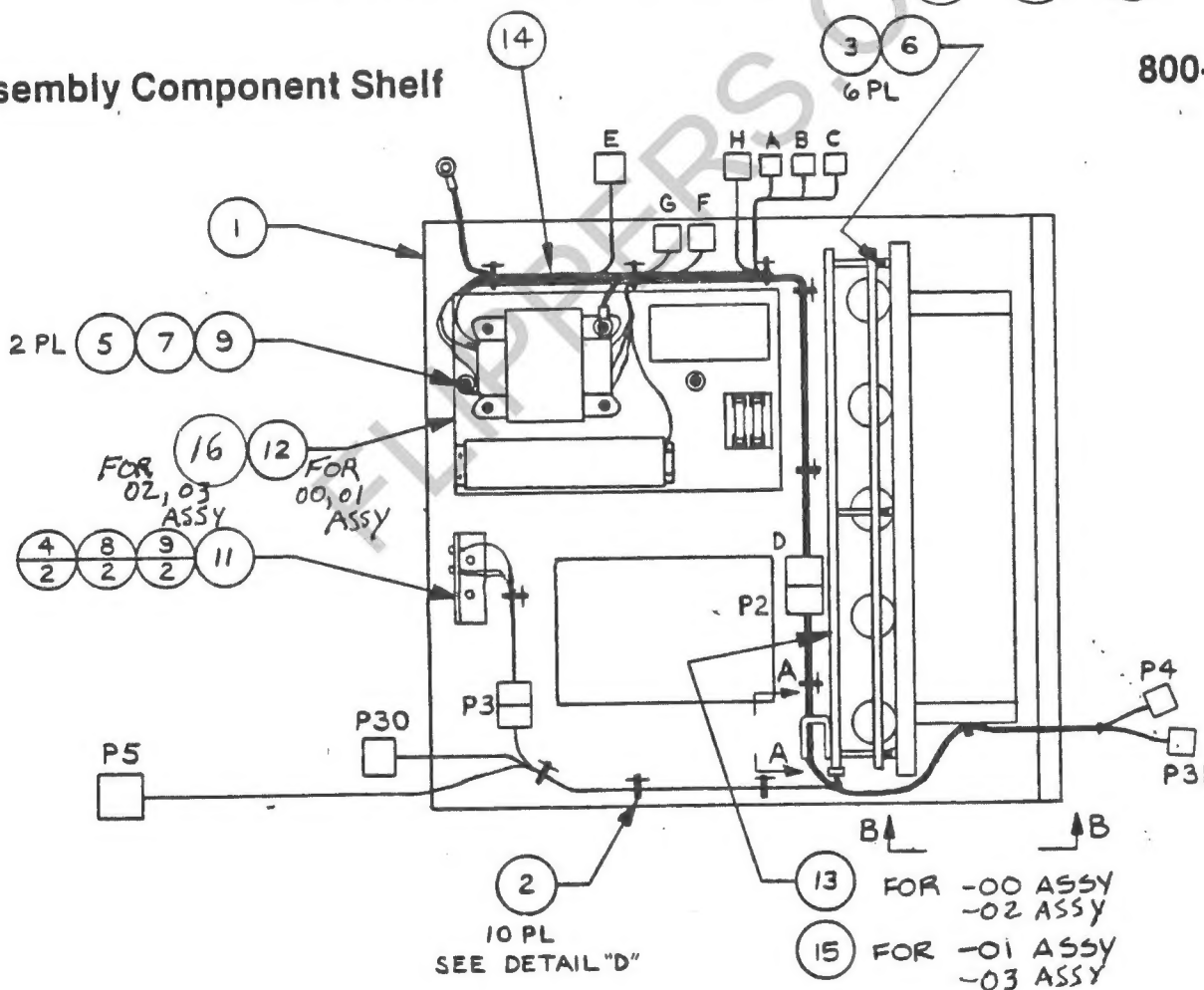
Item No.	Part No.	Qty. Req'd.	Description
		-01 -02 -00 -03	
16	834-0337	- 1 - 1	Assy Power Supply

Page No. 89;

Please note the expanded call-outs for Item's 13 15 16

### Assembly Component Shelf

800-3243





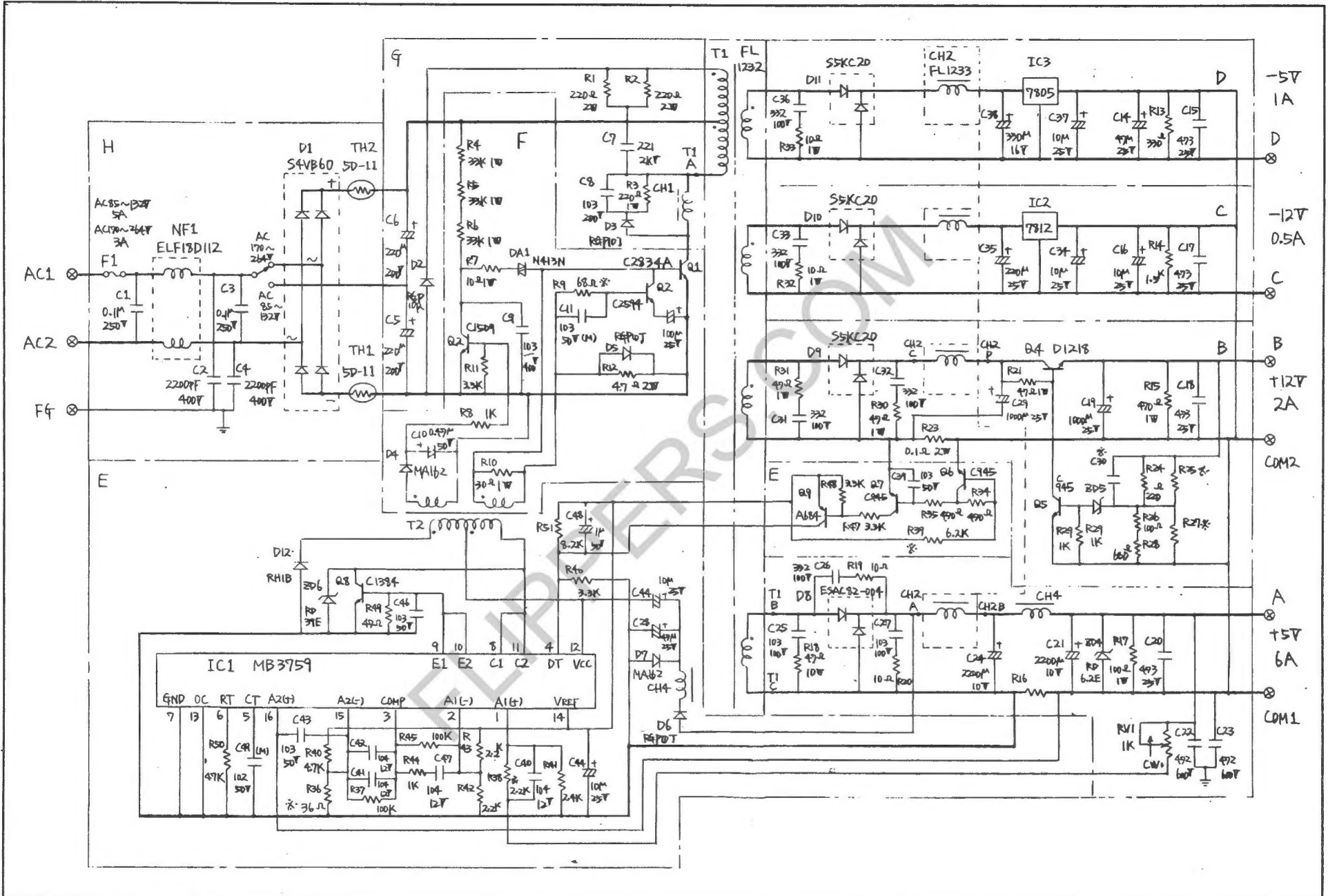
## SERVICE NOTE

**EFFECT:** ZAXXON

**NUMBER:** 008 8/9/82

Two improved 5V - 6A Switching Regulators (P/N's 601-0770 and 601-0771) make their appearance as a part of the 834-0337 Assy Power Supply (please refer to Service Notes 007 and 009). Accordingly, the following pages contain parts and schematic information that we recommend you add to your ZAXXON™ Owner's Manual (P/N 420-0724):

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材質 (MATERIAL)	訂正欄 (CHANGE)	用途 (APPLICATIONS)	尺度 (SCALE)	名称 (TITLE)
		製圖 (DRAWING)	制定日 (DATE)	<b>6A SWITCHING REGULATOR</b>
處理 (TREATMENT)		設計 (DESIGN)	承認 (RELEASED)	圖番 (DWG.NO.)
		校核 (CHECKED)	57.4.19	<b>601-0771</b>
株式会社 双葉工業所      FUTABA INDUSTRIES CO.,LTD.				



## 5V-6A SWITCHING REGULATOR

DRAWING NUMBER 601-0770

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>QTY. REQ'D</u>	<u>DESCRIPTION</u>	<u>REF. DES.</u>
1	473-06R8	2	RES 6.8 OHM 5W	R1, 2
2	471-0393	3	RES 39K OHM 1/2W	R3-5
3	471-0333	1	RES 33K OHM 1/2W	R6
4	472-0R68	1	RES 0.68 OHM 2W	R7
5	471-0471	2	RES 470 OHM 1/2W	R8, 108
6	470-02R2	1	RES 2.20 OHM 1/2W	R9
7	470-0561	2	RES 560 OHM 1/2W	R13, 19
8	470-0102	1	RES 1K OHM 1/2W	R14
9	470-0151	4	RES 150 OHM 1/2W	R20, 201, 301, 401
10	470-0181	3	RES 180 OHM 1/2W	R21, 22, 25
11	471-04R7	1	RES 4.7 OHM 1/2W	R26
12	470-0682	1	RES 6.8K OHM 1/2W	R27
13	462-0024	4	RES 10 OHM 1W	R101, 202, 302, 402
14	471-0121	3	RES 120 OHM 1/2W	R103-105
15	470-0470	1	RES 47 OHM 1/2W	R106
16	470-0681	1	RES 680 OHM 1/2W	R109
17	471-0122	8	RES 1.2K OHM 1/2W	R204-207, R304-307
18	471-0331	5	RES 330 OHM 1/2W	R404-409
19	478-0010	2	THRM. 8 OHM	TH1, 2
20	478-0011	1	THRM. 75 OHM	TH3
21	475-0017	1	VARISTOR 1K OHM	VR101
22	152-0158	2	CAP 0.1MF 1KV-F	C1, 4
23	151-0120	2	CAP 2200 PF 150 VAC-C	C2, 3
24	150-0226	2	CAP 220 MF 200V-E	C5, 6
25	151-0121	1	CAP 1000 PF 2KV-C	C7

## 5V-6A SWITCHING REGULATOR

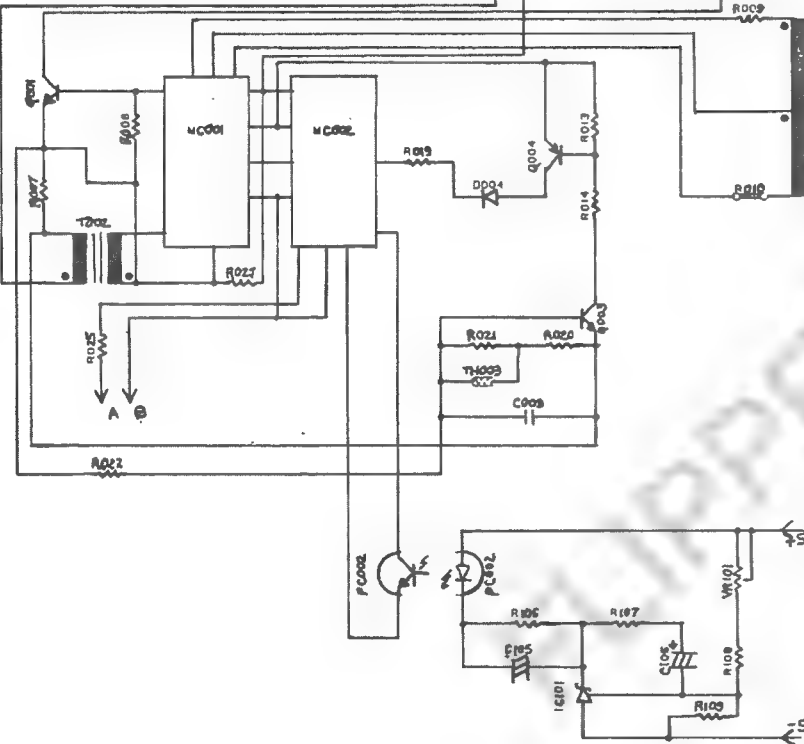
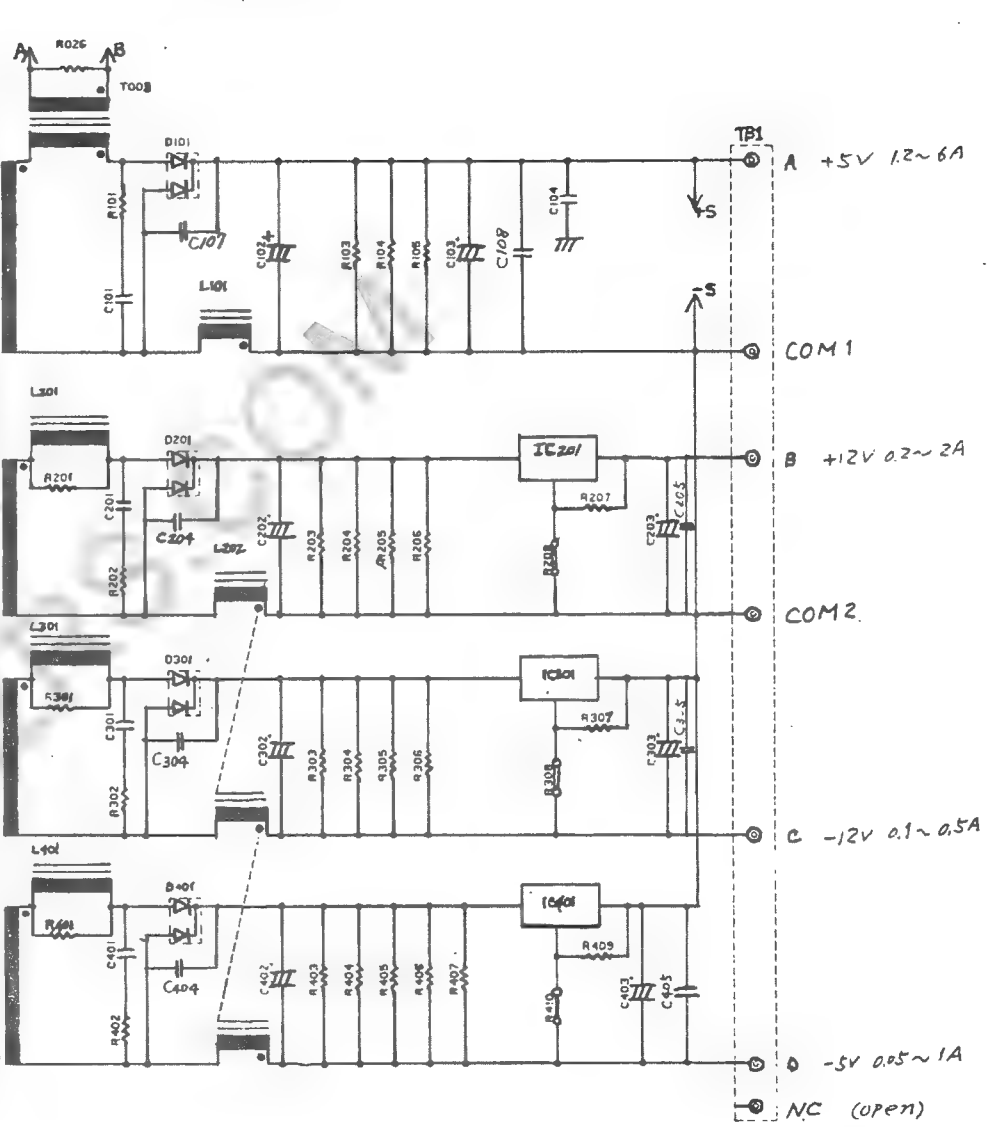
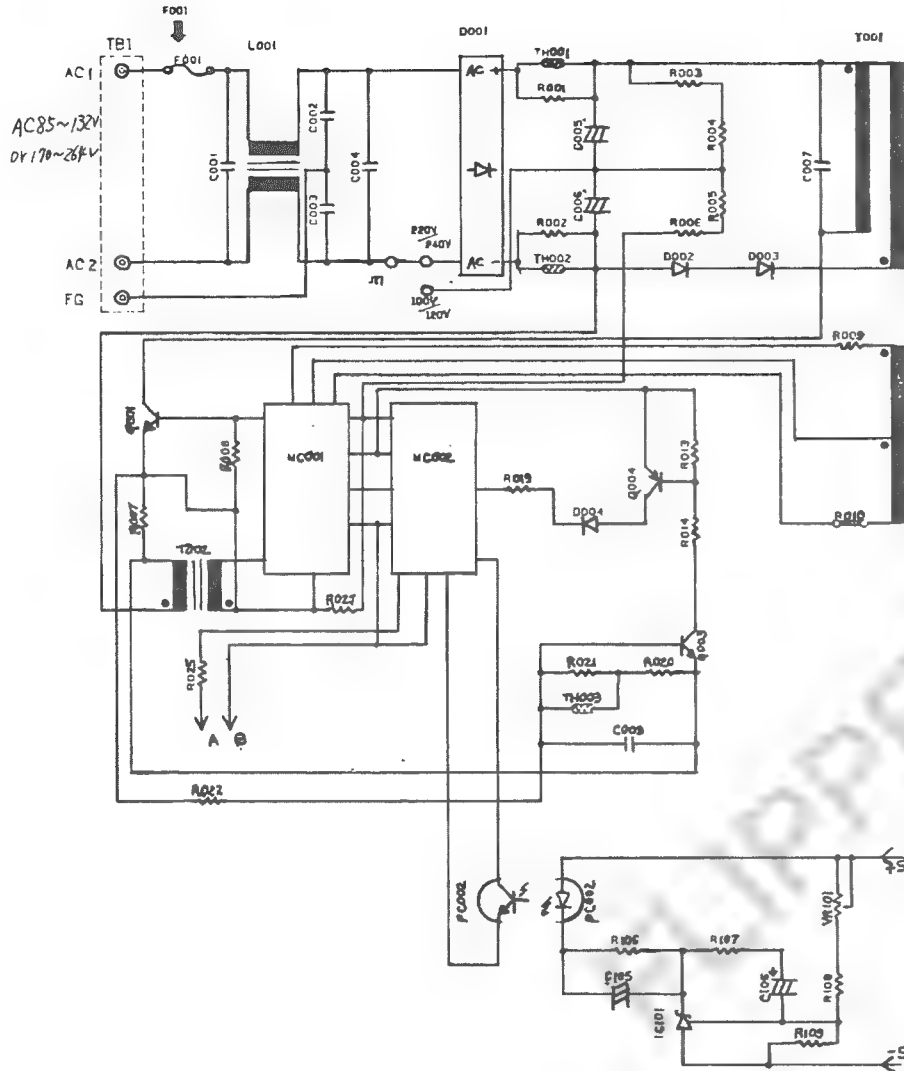
DRAWING NUMBER 601-0770

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>QTY. REQ'D</u>	<u>DESCRIPTION</u>	<u>REF. DES.</u>
26	152-0159	1	CAP 4700 PF 50V-F	C9
27	152-0085	2	CAP 0.01 MF 50V-F	C101, 107
28	150-0148	2	CAP 1000 MF 10V-E	C102, 103
29	152-0154	1	CAP 0.01 MF 630V-F	C104
30	150-0009	2	CAP 1 MF 50V-E	C105, 106
31	152-0160	1	CAP 0.047 MF 50V-F	C108
32	152-0157	3	CAP 2200 PF 630V-F	C201, 301, 401
33	150-0162	1	CAP 220 MF 35V-E	C202
34	150-0106	1	CAP 47 MF 50V-E	C203
35	152-0161	3	CAP 1000 PF 200V-F	C204, 304, 404
36	152-0079	3	CAP 0.022 MF 50V-F	C205, 305, 405
37	150-0190	1	CAP 100 MF 35V-E	C302
38	150-0006	2	CAP 10 MF 50V-E	C303, 403
39	150-0228	1	CAP 330 MF 16V-E	C402
40	481-0242	1	DIODE S4VB60	D1
41	481-0238	2	DIODE ERB43-06	D2, 3
42	481-0120	1	DIODE MA161	D4
43	481-0239	1	DIODE ESAC83-004	D101
44	481-0243	3	DIODE CTU-22S	D201, 301, 401
45	313-0125	1	IC TL431CP	1C101
46	313-0197	1	IC SI-3122P	1C201
47	313-0130	1	IC AN7812	1C301
48	313-0131	1	IC AN7805	1C401
49	370-0007	1	PHOTO COUP. ON3105	PC2
50	482-0299	1	XISTOR ZSC2833A	Q1

## 5V-6A SWITCHING REGULATOR

DRAWING NUMBER 601-0770

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>QTY. REQ'D</u>	<u>DESCRIPTION</u>	<u>REF. DES.</u>
51	482-0177	1	XISTOR 2SC1685	Q3
52	482-0076	1	XISTOR 2SA564A	Q4
53	180-0036	1	CHOKE TLP6505-2P	L1
54	180-0037	1	CHOKE ETB-30KH29X	L101
55	180-0038	3	CHOKE ELQ-050D08	L201, 301, 401
56	180-0039	1	CHOKE ELQ-35KH36X	L202
57	560-0114	1	XFMR ETB-39AK6X	T1
58	560-0115	1	XFMR ETB-12KA10X	T2
59	560-0116	1	XFMR ETB-19KA2X	T3
60	280-0477	1	TERMINAL STRIP	TB1
61	514-0011	1	FUSE 3A, 125V SLOW	F1



品名	规格	数量	备注
△	△	△	△
△	△	△	△

品名	规格	数量	备注
△	△	△	△
△	△	△	△

Switching Regulator  
601-0770

EFFECT: ZAXXON

NUMBER: 009 8/9/82

Due to the configuration changes resulting from the introduction of an improved Power Supply (please refer to Service Notes 007, and 008), Top Assembly Numbers 700-0087-05 through -12 should be added to your ZAXXON™ Owner's Manual (P/N 420-0724) as follows:

On page 31, Item No. 72, delete the "2" following "Component Shelf Assy".

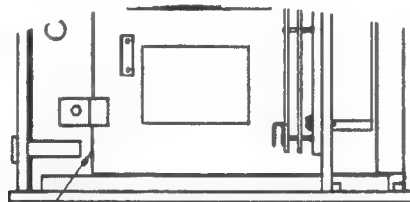
On page 32, 'cut and paste' or add by hand the following addendum;

-----  
 Top Assembly Numbers 700-0087 -05 through -12 are identical to -00 through -04, EXCEPT FOR Monitor and Component Shelf Assy type, as shown here:

TOP ASSEMBLY ITEM NO.	PART NO.	DRAWING NUMBERS 700-0087 -05 through -12											DESCRIPTION
		QTY.	REQ'D.	-05	-06	-07	-08	-09	-10	-11	-12		
75.	800-0362	1	--	1	--	1	1	--	--				Mon assy vert MT ZAXXON
76.	800-0363	--	1	--	1	--	--	1	1				Mon assy nanao ZAXXON
83.	800-3243-02	--	--	1	1	1	--	1	--				Assy Component Shelf
84.	800-3243-03	1	1	--	--	--	1	--	1				Assy Component Shelf

-----  
 On page 33, Section A - A, ITEMS 75 and 76, make a note to refer to page 32.

On page 34, correct the Section B - B drawing as follows:



SECTION B - B

- ⑦② FOR -03 & -04 ASSY. ALSO FOR -07 & -08 ASSY
- ⑦③ FOR -00, -01 & -02 ASSY. ALSO FOR -05 & -06 ASSY.
- ⑦④ FOR -09 & -10 ASSY
- ⑦⑤ FOR -11 & -12 ASSY



## SERVICE NOTE

**EFFECT:** ZAXXON

**NUMBER:** 010 8/16/82

A typographical error has been identified on page 23 of the ZAXXON<sup>TM</sup> Owner's Manual (P/N 420-0724). The Part No. for IC No. MB3761 (top of the page) SHOULD READ: 313-0110, NOT 313-0101.

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## SERVICE NOTE

**EFFECT:** ZAXXON™

**NUMBER:** 012

In the event that your ZAXXON Joystick Assembly (P/N 800-3272) is tending to bind or seize up, the simple procedure outlined in the following pages provides a solution; (installation of a flat washer under the Shaft Ring):

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SEGA Electronics, Inc., 16250 Technology Drive, San Diego, CA. 92127-1985

Toll-free technical assistance outside CA.: 1-800-854-1938

Toll-free technical assistance inside CA.: 1-800-722-8576

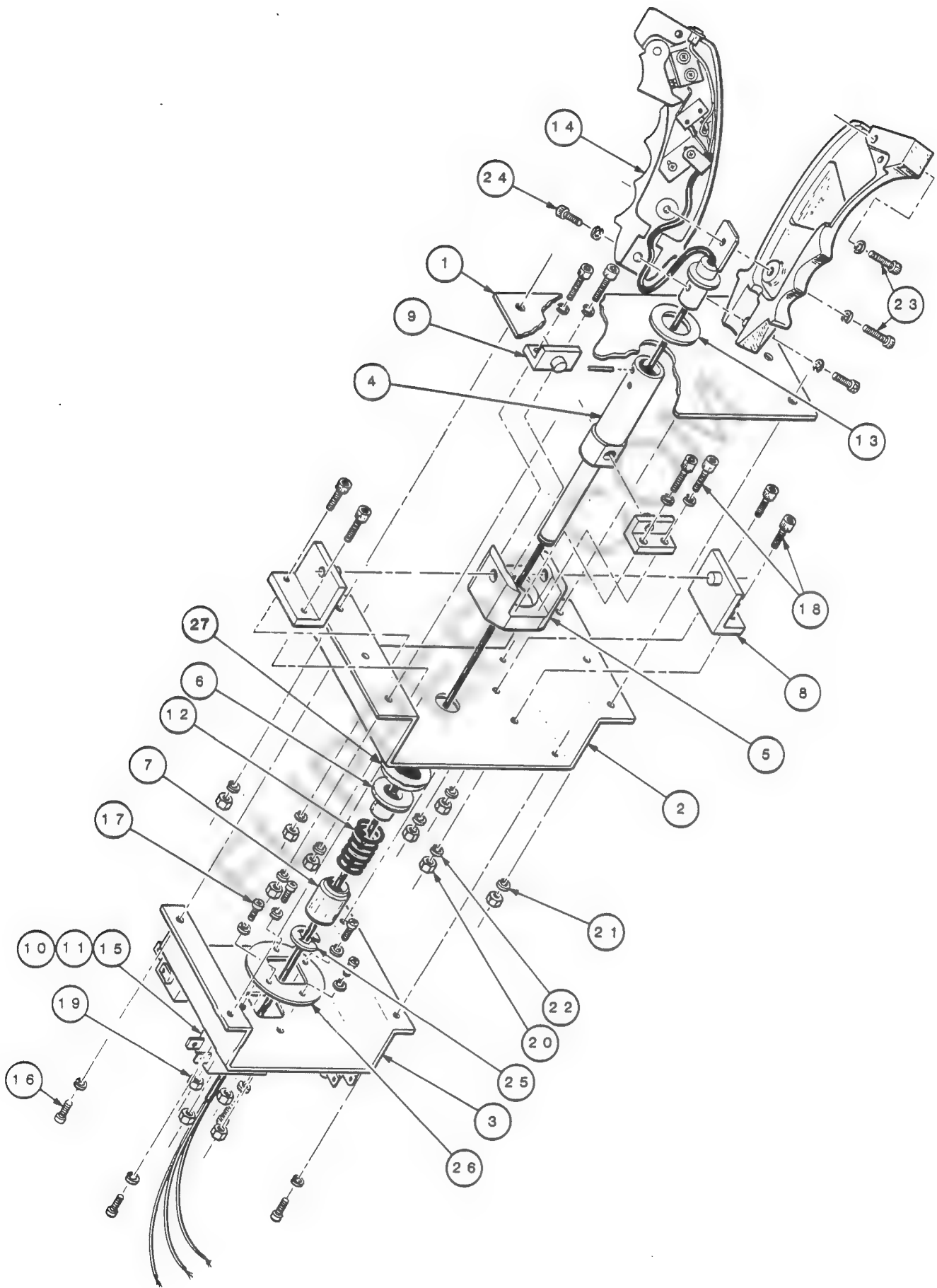
ZAXXON™ Joystick Anti-Galling  
Modification Instructions

1. Turn on the game to be retro-fitted, manipulate the joystick handle (ITEM NO. 14) to verify proper operation of the 8-way player input assembly (P/N 834-0236), or if the joystick assembly is seized completely, actuate the four micro-switches from underneath the control panel.
2. Turn the game off and proceed. The only part required is a 7/16" I.D. steel USS flat washer. The tools you will need are: a small phillips screwdriver, a small flat-head screwdriver, a pair of dikes (wire-cutters), and a pair of crimp pliers if you intend to use blind crimps in Step 8.
3. With the door to the game electronics compartment open, reach under the control panel and flip the latches on both sides. The panel will now swing out towards you. Disconnect the control panel harness connector on the right-side, slide the spring-loaded pins on both sides, remove the control panel and set on a good working surface (placed upside down on a padded armchair is ideal, allowing you to approach the underside of the panel with ample joystick clearance beneath).
4. Notice at the end of the joystick assembly the three wires exiting the shaft (ITEM NO. 4). Tag each wire TWICE (one wire with two A's or 1's, another wire with two B's or 2's, etc.) to ease later identification for re-wiring, and cut each wire BETWEEN the two tags.
5. Next, remove the four phillips screws (ITEM NO. 16) securing the micro-switch bracket (bracket B, ITEM NO. 3) and set aside for re-use. Lift the bracket (ITEM NO. 3) up off of the shaft, and carefully set it back out of the way.
6. At this point, applying pressure on the spring holder (ITEM NO. 7) with one hand, use the flat-head screwdriver with your other hand to pry (in a twisting motion) the 9mm E-washer (ITEM NO. 25) off of the main shaft (ITEM NO. 4). The Compression Spring (ITEM NO. 12) together with the Spring Holder and Shaft Ring (ITEM NO. 6) are now free to lift off of the Main Shaft. Install the 7/16" flat washer now, over the shaft, resting on the Joystick Bracket (ITEM NO. 2). Re-install the Shaft Ring, Compression Spring, Spring Holder and E-washer in the reverse order of their removal. ITEM NO. 27 is the flat-washer.
7. Re-position the micro-switch bracket B (ITEM NO. 3) over the shaft



(ITEM NO. 4) and re-secure the four phillips screws (ITEM NO. 16) removed in Step 5. NOTE: These are metric screws, and if one is lost or damaged, it may be replaced with a 6-32 thread forming screw.

8. Next, strip approximately 3/8" of insulation from the ends of all six wires (three wires from the shaft, and three from the control panel). Secure all three connections with blind crimps or wire nuts, according to the tags affixed in Step 4.
9. Re-position the now complete control panel assembly to the front of the game and slide the spring-loaded pins back into place. Replace the control panel harness connector, rotate the panel into its operating position and secure the side latches.
10. Close the game electronics compartment door, turn the game on and verify proper operation of your joystick assembly.
11. If you have any questions, please call SEGA Electronics Customer Service:  
1-800-854-1938 toll-free outside California  
1-800-722-8576 toll-free inside California



## JOYSTICK ASSEMBLY

DRAWING NUMBER 800-3272

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	117-0207-00	Base Plate, Joystick
2	105-0278-00	Bracket, Joystick
3	105-0279-00	Bracket B, Joystick
4	250-0556-00	Main Shaft, Joystick
5	601-0775-00	Shaft Supporter, Joystick
6	601-0776-00	Shaft Ring, Joystick
7	109-0059-00	Spring Holder, Joystick
8	250-0560-00	Bracket C w/Pin, Joystick
9	250-0555-00	Bracket D w/Pin, Joystick
10	310-0012-00	Paper Insulator
11	509-0149-00	Micro-switch
12	125-0101-00	Compression Spring
13	117-0206-00	Slider Plate, Joystick
14	800-3271-00	Handle Assembly
15	285-0002-14	SCR M3-0.5 X 14 Lg
16	285-0004-08	SCR M4-0.7 X 8 Lg
17	285-0004-10	SCR M4-0.7 X 10 Lg
18	285-0125-16	SCR M5-0.8 X 16 Lg Sckt Hd Cap
19	287-0072-04	Nut M4-0.7
20	287-0076-05	Nut M5-0.8 Hex
21	287-0061-04	Washer M4 Lock
22	287-0061-05	Washer M5 Lock
23		
24	285-0165-10	SCR M5-0.8 X 10 Lg
25	280-0469-00	E-washer 9mm
26	117-0208-00	Guide Plate, 8-way Joystick
27	283-0060-46	Washer, Flat, USS steel



9-3-82

ATTN: SERVICE MANAGERS

SUBJ: ZAXXON RETROFIT KITS

We are receiving some Retrofit Kits back directly from operators. When this happens we have no way of issuing proper credit to the distributor. Please let me offer two suggestions:

1. Have your operators return the Retrofit kit back to you for shipment.
2. Before you release the kits to the operators, identify the box with your return address label or stamp.

With your help in this matter we can make sure your company receives the proper credit.

Bob Klinefelter

Customer Service Manager

**Gremlin Industries, Inc.**

16250 Technology Drive, San Diego, California 92127 • Telephone: (714) 485-0910



## SERVICE NOTE

EFFECT: ZAXXON Cocktail

NUMBER: 001 5/5/82

We have shipped two versions of ZAXXON as it relates to the Joystick/Flying Ship interface.

In our opinion, the typical table game player would prefer to have the ship ascend by pushing the joystick forward and descend by pulling the joystick back.

The player that has played the upright version and now plays the table version, would want the ship to ascend by pulling the joystick back, and descend by pushing the joystick forward.

Both versions have been shipped to our distributors. To modify this facet of the game is quite simple and can be accomplished by following these instructions:

1. Facing the open table from the Player One position, locate the harness connector for the Player One control panel located at the left corner of the monitor, nearest you.
2. Separate the two halves of the connector.
3. On the female half of this connector, locate pin numbers 3 and 4. Numbers are stamped on the back side.
4. Reverse the wire positions of pins 3 and 4, and re-make the connector halves.
5. Locate the Player Two control panel harness connector at the far left-side of the monitor.
6. Repeat Steps 2, 3, and 4.

This completes the modification.

NOTE: Removal of connector pins may require the use of a pin extractor. This extractor is available from AMP Inc., part no. 458994-1-0.



# SERVICE NOTE

EFFECT: ZAXXON™ Cocktail

NUMBER: 002 8/9/82

An error has been found on page 25 of the ZAXXON™ Cocktail Owner's Manual (P/N 420-5058-01). The Part Number for Item 31 should read:

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
31	834-0125	Cable and Plug Assy

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