



# SPACE ACE™

Operators Manual

Supplement  
to  
Dragon's Lair  
Manual

(TM-256)





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THE FOLLOWING PAGES REPLACE THE EXISTING PAGES IN THE DRAGONS LAIR MANUAL, (TM-256).

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GAME PLAY: "Space Ace" features a cast of loveable and laughable characters which make promotion easy, exciting and fun.

One gallant earthling stands between the inter-planetary invasion forces of the blue-skinned alien Commander Borf and their intended target, Earth: an earthling named Dexter. On Dexter's narrow shoulders ride the fate of Earth and the well-being of his lovely sidekick, Kimberly, who Borf has carried off into the cosmos.

Dexter sets off in hot pursuit of Lord Borf, battling monsters, machines and mechanisms as he fights his way across the galaxy. During his daring quest, Dexter relies on his wits, agility and quick reflexes to overcome the deadly predicaments and bizarre opponents Borf throws in his path; but when the peril grows too great for even cunning and courage to prevail, Dexter has a secret strength in reserve.

Exposure to mysterious cosmic rays has given Dexter a remarkable ability. Just when our hero seems doomed and all appears lost, he undergoes a startling transformation into his super-mighty, super-bold, super-self: SPACE ACE! - a broad-shouldered, good-natured alter ego who evens out the odds as Dexter struggles to rescue Kimberly.

Pursued to his home planet by this resourceful and relentless adversary, Borf turns and faces Dexter in a final and climactic confrontation. Determined to prevail at all costs, Borf resorts to the ultimate weapon, a weapon capable of reducing even the mighty Space Ace into a helpless infant: the dreaded INFANTO-RAY! Only Space Ace can survive such a crisis, and Space Ace alone can save the Earth, save the girl, and save the day!

b. ACTION BUTTON: The action button functions in a variety of ways in a variety of situations. Most frequently the Action button fires weapons and energizes Dexter into Space Ace.

c. JOYSTICK: The joystick controls the direction of movement of the Dexter and Space Ace characters.

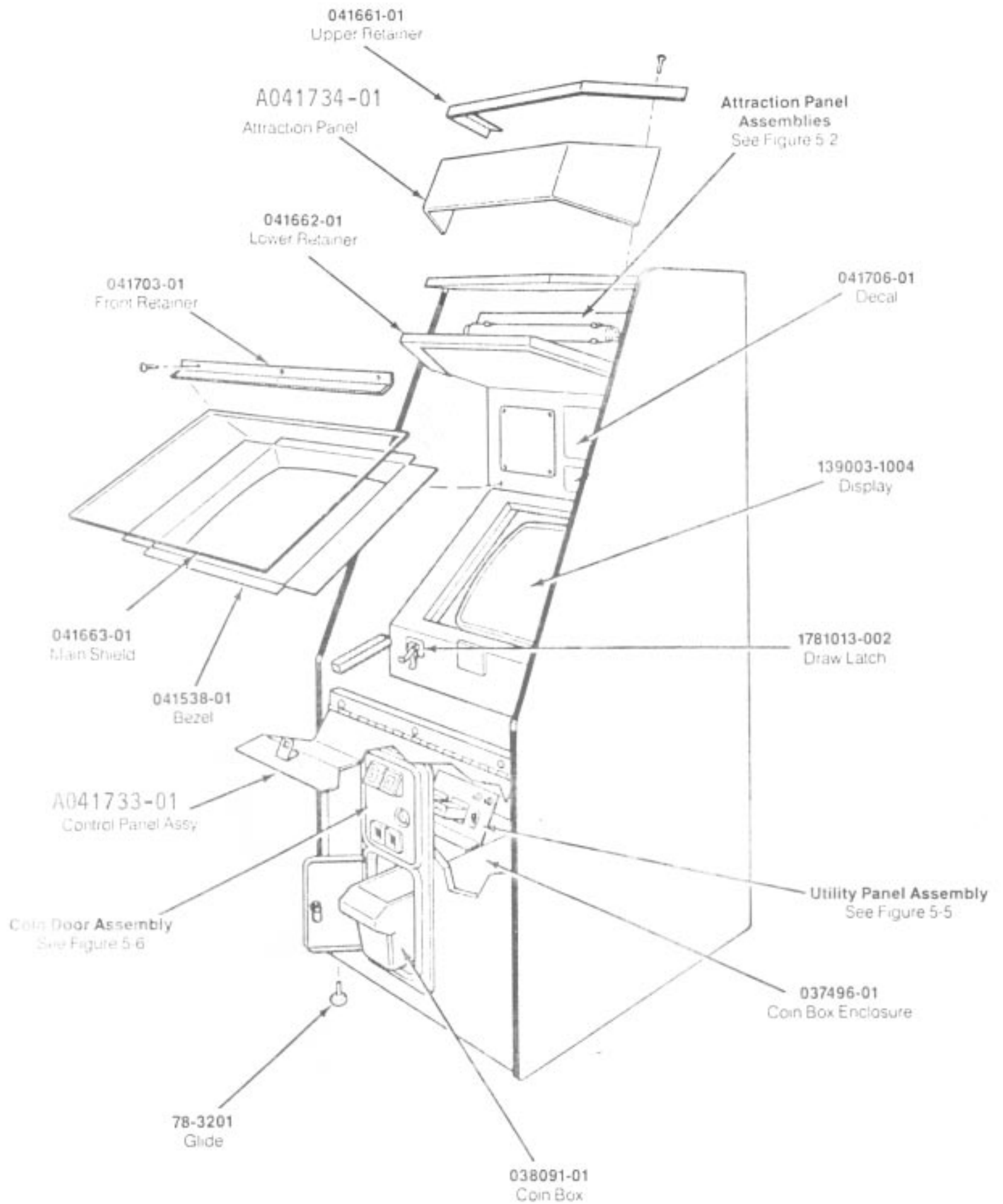
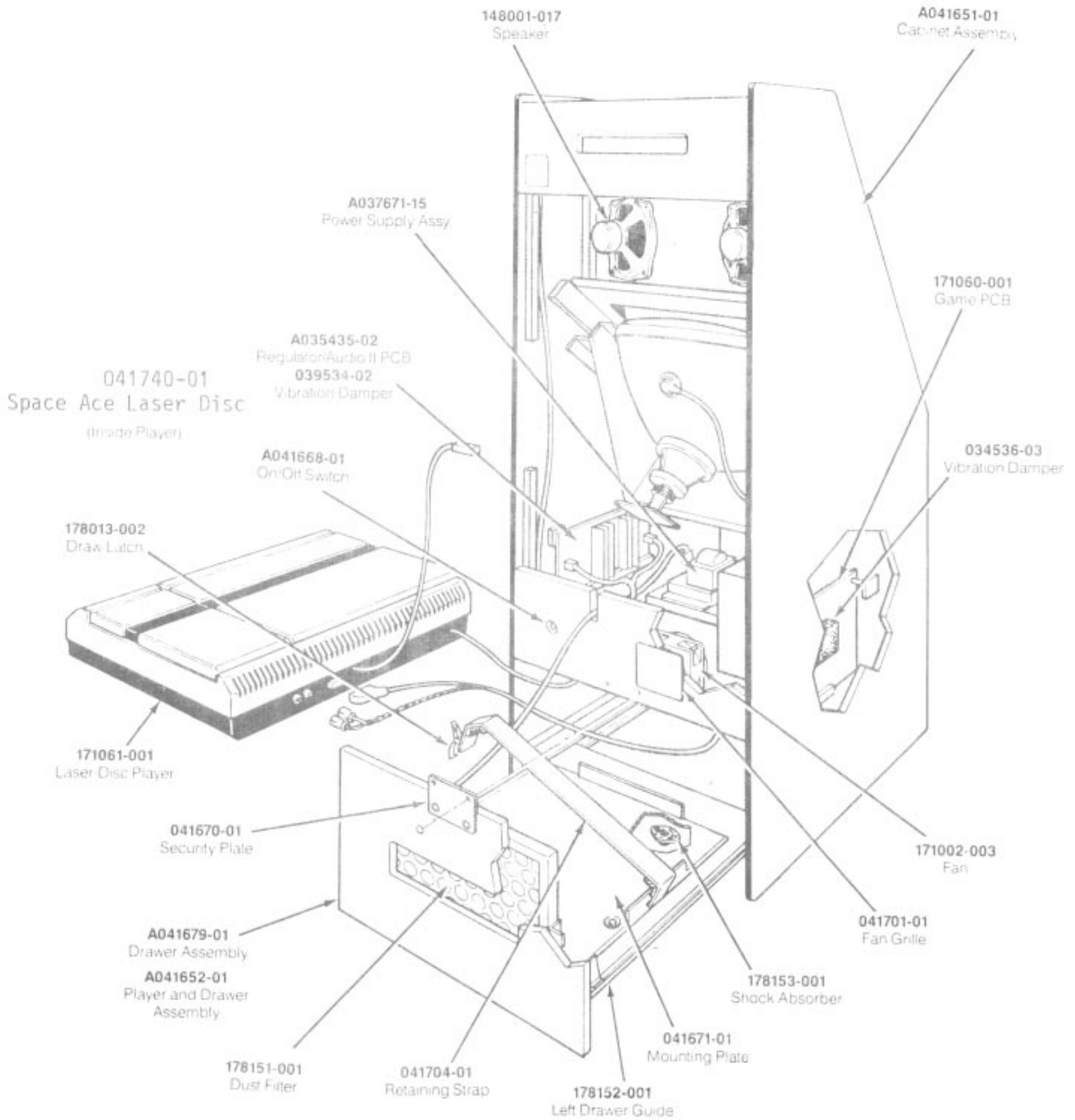


Figure 5-1 Cabinet-Mounted Assemblies  
A041650-01 A



**Figure 5-1 Cabinet-Mounted Assemblies, continued**  
**A041650-01 A**

Cabinet Mounted Assemblies  
A041650-01 A

Part No.	Description
A041651-01	Cabinet Assembly
A041652-01	Player and Drawer Assembly--includes:
A041679-01	Drawer Assembly
178152-001	Left Sliding Drawer Guide
178152-002	Right Sliding Drawer Guide (not shown)
041671-01	Player Mounting Plate
041704-01	Disc Player Retaining Strap
171061-101	Video Disc Player--22VP932/00 (includes video cable)
178013-002	Draw Latch
041740-01	Space Ace - Laser Disc
178151-001	Dust Filter
178153-001	Shock Absorber (three required -- acceptable substitute is part no. 178153-002)
A041655-01	Main Harness (not shown)
A041666-01	On/Off Harness (not shown)
A041667-01	Strain Relief Power Cord Assembly (not shown)
A041668-01	On/Off Switch
A041669-01	Rear Door Assembly (not shown)
A041700-01	Display Video Harness (not shown)
78-6900402	1/4-Inch by 1/8-Inch Foam Tape (not shown)
009992-01	On/Off Switch Cover (not shown)
034536-03	Foam Vibration Damper
037496-01	Coin Box Enclosure
038091-01	Coin Box
039534-02	1/2-Inch Thick Foam Vibration Damper
041538-01	Cardboard Bezel
041660-01	Upper Attraction Panel
041661-01	Upper Retainer
041662-01	Lower Retainer
041663-01	Main Shield
041670-01	Drawer Security Plate
041671-01	Mounting Plate
041672-01	Display Bracket (not shown)
041673-01	Power Base Support Bracket (not shown)
041674-01	Filter Retainer Bracket (not shown)
041693-01	Display Panel (not shown)
041694-01	Support Cleat (not shown)

Cabinet Mounted Assemblies  
A041650-01 A

Part No.	Description
041735-01	Side Panel Decal (not shown)
041701-01	Fan Grille
041702-01	Disc Player Spacer (not shown)
041703-01	Front Retainer
041736-01	Attraction Panel Decal
041704-01	Disc Player Retaining Strap
041706-01	Credit Line Decal
139003-1004	19-Inch Color Raster Display (Matsushita)
148001-017	Speaker
171002-003	Fan
178003-001	Fan Finger Guard (not shown)

The following are technical information supplements to this game:

TM-256	Dragon's Lair Operators Manual
TM-220	19-Inch Color Raster Display Manual (Matsushita)
SP-256	Dragon's Lair Schematic Package
041709-01	Disc Player Manual (English) (not shown)
041709-02	Disc Player Manual (German) (not shown)
TM-256-03	Space Ace Operators Manual



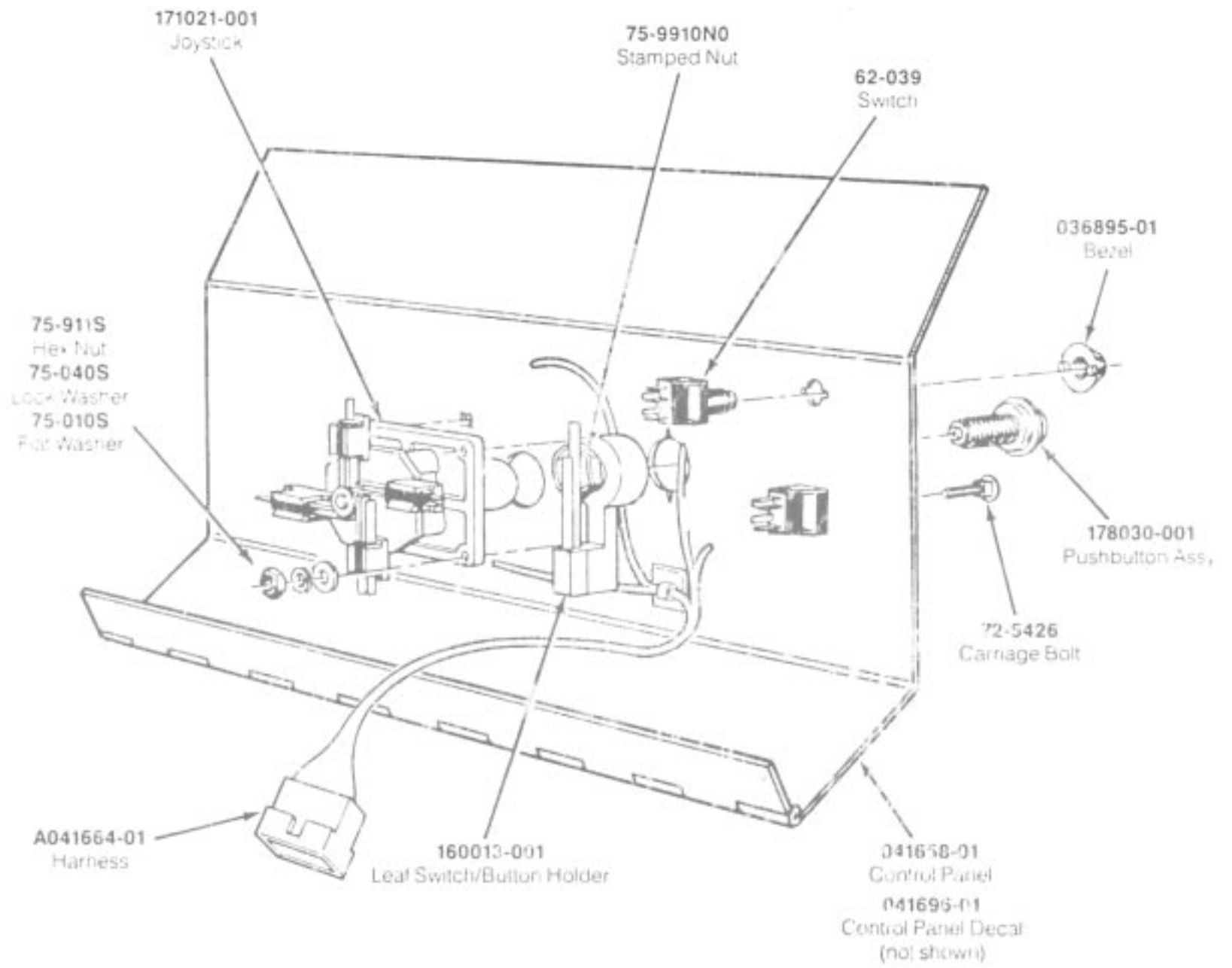


Figure 5-3 Control Panel Assembly

A041733-01

Control Panel Assembly  
Parts List

Part No.	Description
A01733-01	Control Panel and Graphics Assembly--includes:
041658-01	Control Panel
041737-01	Control Panel Decal
A041664-01	Control Harness
62-039	Switch
72-5426	#10 x 3/4-Inch Carriage Bolt
75-9910N0	Stamped Nut
036895-01	Bezel
160013-001	Switch
171021-001	Joystick
178030-001	White Pushbutton Assembly

**8-Position Joystick Assembly  
171021-001**

Part No.	Description
73-3003	Retaining Ring
82-AL616	#6 x 1-Inch Cross-Recessed Pan-Head Type BT Tapping Steel Screw
99-080025	Leaf Switch
99-080026	2-Inch Black Plastic Washer
99-080028	Metal Shaft
99-080029	Nylon Washer
99-080030	Spring
99-080031	Bellows
99-080032	Flat Steel Washer
99-080033	Plastic Guard/Actuator
99-080036	Top Plate
99-080037	Switch Mounting Plate
99-080038	Nylon Switch Actuator
171021-001	Joystick Assembly

C57	100 $\mu$ F, 25 V Radial-Lead Electrolytic Capacitor	123003-107
C58, C59	470 $\mu$ F, 25 V Electrolytic Capacitor	24-250477
C60	1 $\mu$ F, $\pm$ 20%, 50 V Ceramic Disc Capacitor	122002-104
C61	0.005 $\mu$ F, 50 V Capacitor	122015-472
C62	0.1 $\mu$ F, 100 V Film Capacitor	126000-104
C63	10 $\mu$ F, 25 V Electrolytic Capacitor	24-250106
C64	100 $\mu$ F, 25 V Radial-Lead Electrolytic Capacitor	123003-107
C65	10 $\mu$ F, 25 V Electrolytic Capacitor	24-250106
C66	1 $\mu$ F, $\pm$ 20%, 50 V Ceramic Disc Capacitor	122002-104
C67	470 $\mu$ F, 25 V Electrolytic Capacitor	24-250477
C68, C69	1 $\mu$ F, $\pm$ 20%, 50 V Ceramic Disc Capacitor	122002-104
C70	470 $\mu$ F, 25 V Electrolytic Capacitor	24-250477
C71	0.005 $\mu$ F, 50 V Capacitor	122015-472
C72-C93	1 $\mu$ F, $\pm$ 20%, 50 V Ceramic Disc Capacitor	122002-104
C95-C111	1 $\mu$ F, $\pm$ 20%, 50 V Ceramic Disc Capacitor	122002-104
C112	10 $\mu$ F, 25 V Electrolytic Capacitor	24-250106
C113	0.01 $\mu$ F, 100 V Film Capacitor	125000-103
C114	0.005 $\mu$ F, 50 V Capacitor	122015-472
C116-C119	1 $\mu$ F, $\pm$ 20%, 50 V Ceramic Disc Capacitor	122002-104

## Diodes

CR1, CR2	Type-1N914 Diode	31-1N914
CR3-CR7	Type-1N4003 ENCPL	99-201001
CR8	Type-1N914 Diode	31-1N914
CR9	Type-1N4003 ENCPL	99-201001
CR10	Type-1N914 Diode	31-1N914
CR11	Type-IN5225 Diode	99-201002
CR12	Type-1N914 Diode	31-1N914
CR13	Type-IN5233 6 V Diode	99-201003
DS1, DS2	Type-TIL312 Diode	38-MAN71A

## Inductors

L1, L2	11 $\mu$ H Adj. Choke	99-201008
L3	11 $\mu$ H C.T. Bifalar Adj.	99-201010
L4	46 $\mu$ H Adj. Choke	99-201609
L5	1 $\mu$ H Choke	141006-09

## Integrated Circuits

U1, U2	Type-74LS393 Integrated Circuit	37-74LS393
U3	Type-74LS04 Integrated Circuit	37-74LS04
U4	Type-74LS74 Integrated Circuit	37-LS74
U5	Type-74LS32 Integrated Circuit	37-74LS32

U6	20 x 8 PAL Integrated Circuit (Vertical)	99-201019
U7	20 x 8 PAL Integrated Circuit (Horizontal)	99-201018
U8	Type-74LS138 Integrated Circuit	137177-001
U9	Type-74LS90 Integrated Circuit	37-74LS90
U10	Type-74LS393 Integrated Circuit	37-74LS393
U11	Type-74LS00 Integrated Circuit	37-74LS00
U12	Type-74LS08 Integrated Circuit	37-74LS08
U13	Type-CA2002 Integrated Circuit	137151-002
U14	CTCZ8430A Integrated Circuit	99-201014
U15	Type-74LS74 Integrated Circuit	37-LS74
U16	Type-74LS393 Integrated Circuit	37-74LS393
U17	Type-74LS02 Integrated Circuit	37-74LS02
U18	Type-74F04 Integrated Circuit	99-201017
U19	Type-74LS244 Integrated Circuit	37-74LS244
U20-22	Type-74LS393 Integrated Circuit	37-74LS393
U23	Type-74LS32 Integrated Circuit	37-74LS32
U24	Type-74LS00 Integrated Circuit	37-74LS00
U25	Type-74LS08 Integrated Circuit	37-74LS08
U26	Type-CA2002 Integrated Circuit	137151-002
U27	Type-Z8470 DART Integrated Circuit	99-201016
U28	Type-74LS245 Integrated Circuit	37-74LS245
U29	Type-Z80A (4 MHz) Microprocessor	137194-001
U30, U31	Type-74LS244 Integrated Circuit	37-74LS244
U32	Type-AM9128 Integrated Circuit	137348-003
U33	Type-2764 Integrated Circuit	041741-01
U34	Type-74LS165 Integrated Circuit	37-74LS165
U35	Type-74LS373 Integrated Circuit	37-74LS373
U36, U37	Type-74LS244 Integrated Circuit	37-74LS244
U38	Type-AM9128 Integrated Circuit	137348-003
U39-U41	Type-74LS244 Integrated Circuit	37-74LS244
U42	Type-74LS245 Integrated Circuit	37-74LS245
U43	Type-74LS373 Integrated Circuit	37-74LS373
U44	MC14016B Integrated Circuit	37-4016
U45	Type-2764 Integrated Circuit	041742-01
U46	Type-2764 Integrated Circuit	041743-01
U47	Type-2764 Integrated Circuit	041744-01
U48	Type-2764 Integrated Circuit	041745-01
U49	Type-2764 Integrated Circuit	041746-01
U50-U53	Type-74LS244 Integrated Circuit	37-74LS244
U54	Type-74LS273 Integrated Circuit	37-74LS273
U57, U58	Type-74LS273 Integrated Circuit	37-74LS273
U59	Type-74LS138 Integrated Circuit	137177-001
U60	Type-74F04 Integrated Circuit	99-201017
U61	TDA3562A Integrated Circuit	99-201015



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- (b) Such products are returned prepaid to Seller's plant; and
- (c) Seller's examination of said products discloses to Seller's satisfaction that such alleged defects existed and were not caused by accident, misuse, neglect, alteration, improper repair, installation, or improper testing.

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Telex 28165  
Fax 061 47764

CONVERSION OF CINEMATRONICS'  
DRAGON'S LAIR<sub>TM</sub> TO SPACE ACE<sub>TM</sub>

The following procedure describes the conversion of  
Cinematronics' DRAGON'S LAIR<sub>TM</sub> to SPACE ACE<sub>TM</sub>.

Tools Required:           Box Head Screwdriver  
                              1/8" Drill  
                              Drill Motor or Hand Chuck

Parts Included:

<u>Qty</u>	<u>Description</u>
1	SPACE ACE <sub>TM</sub> Video Disc
2	Side Decals
1	Marquee Plexi
1	Control Panel
1	Annunciator Circuit Panel Assembly
1	Annunciator 16-Pin Ribbon Cable
1	Adapter Harness
1	Control Panel, Adapter Harness
1 set of 5	SPACE ACE <sub>TM</sub> ROM Set
2	#8 Screws <sub>TM</sub>
1	Manual

Procedure

1. Replace marquee.
  - a. Remove the screws holding the top marquee retainer (fig 1-A).
  - b. Remove the top marquee retainer (fig 1-B).
  - c. Loosen the screws holding the bottom marquee retainer (fig 1-C).
  - d. Remove the old marquee plexi (fig 1-D).
  - e. Insert the bottom edge of the new marquee plexi into the bottom retainer.
  - f. Replace the top marquee retainer and screws (figs 1-A & 1-B).
  - g. Tighten the screws holding the bottom marquee retainer taking care to align the new marquee plexi properly (fig 1-C).

2. Install side art.

Note: A piece of side art has been included for each side of the cabinet. These decals are identical. There is no left or right. The new artwork is larger than the DRAGON'S LAIR<sup>TM</sup> side art and can be applied over the existing decals. For best results, we recommend removal of existing decal before application of new decal.

3. Remove control panel.

- a. Remove four control panel retaining bolts by removing wing nuts inside the cabinet (fig 1-E).
- b. Remove the control panel and disconnect the wiring harness.

4. Install ROMS.

- a. Open back door and set aside.
- b. Disconnect harness and ribbon cables from main circuit panel assembly being sure to note proper orientation (fig 2-A).
- c. Remove the main circuit panel retaining screw (fig 2-B).
- d. Remove the main circuit panel.
- e. Remove old ROMS (fig 2-C).
- f. Insert new ROMS in appropriate sockets using caution to ensure the notch or Pin 1 on each ROM faces the capacitor (fig 3).
- g. Adjust dip switch settings as required (table 1).
- h. Reinstall the circuit panel assembly.
- i. Insert the circuit panel retaining screw taking care to reattach the ground wire (fig 2-B).

NOTE: Do not reconnect the harnessing at this time.

5. Install video disc.

- a. Power up the game and depress the COVER OPEN switch on the disc player. The cover should open as soon as the disc player is in the reject position.
- b. Install the new SPACE ACE<sup>TM</sup> disc in the player ensuring that the data side (mirrored side) is oriented correctly. The correct orientation is:

For PR 7280 (Brown Player):	Data Side - UP
For LD-V1000 (Black Player):	Data Side - DOWN



6. Install annunciator board.
  - a. Place the annunciator board assembly (fig 2-D) above the circuit plate assembly as shown in figure 2.
  - b. Mark the mounting holes (fig 2-E). Drill shallow pilot holes for the mounting screws utilizing a 1/8" drill.
  - c. Mount the annunciator board using the two #8 wood screws provided.
7. Install harnessing.
  - a. Install short 16-pin ribbon cable from the main logic PCBA to the annunciator PCBA (fig 2-F).
  - b. Reconnect the 24-pin dip ribbon cable connector to the main logic oriented as it was previously.
  - c. Connect the 16-pin ribbon cable previously connected to the main logic PCBA at J3 to the annunciator PCBA at J2 (fig 2-G).
  - d. Connect the 36-pin plug of the adapter harness (fig 4) to the main logic at J4.
  - e. Connect the 36-pin receptacle of the adapter harness (fig 4) to the existing harness.
  - f. Connect the 3-pin plug of the adapter harness to J4 of the annunciator PCBA.
  - g. Route the 9-wire control panel adapter harness from J3 of the annunciator PCBA to the front of the game. Try to follow the main harness routing.
8. Install SPACE ACE<sub>TM</sub> control panel.
  - a. Position the new control panel in the front of the game. Connect the old control panel and control panel adapter harnesses. (These connectors are keyed to prevent mis-installation.)
  - b. Reinstall bolts and wing nuts (fig 1-E).

2/10/84

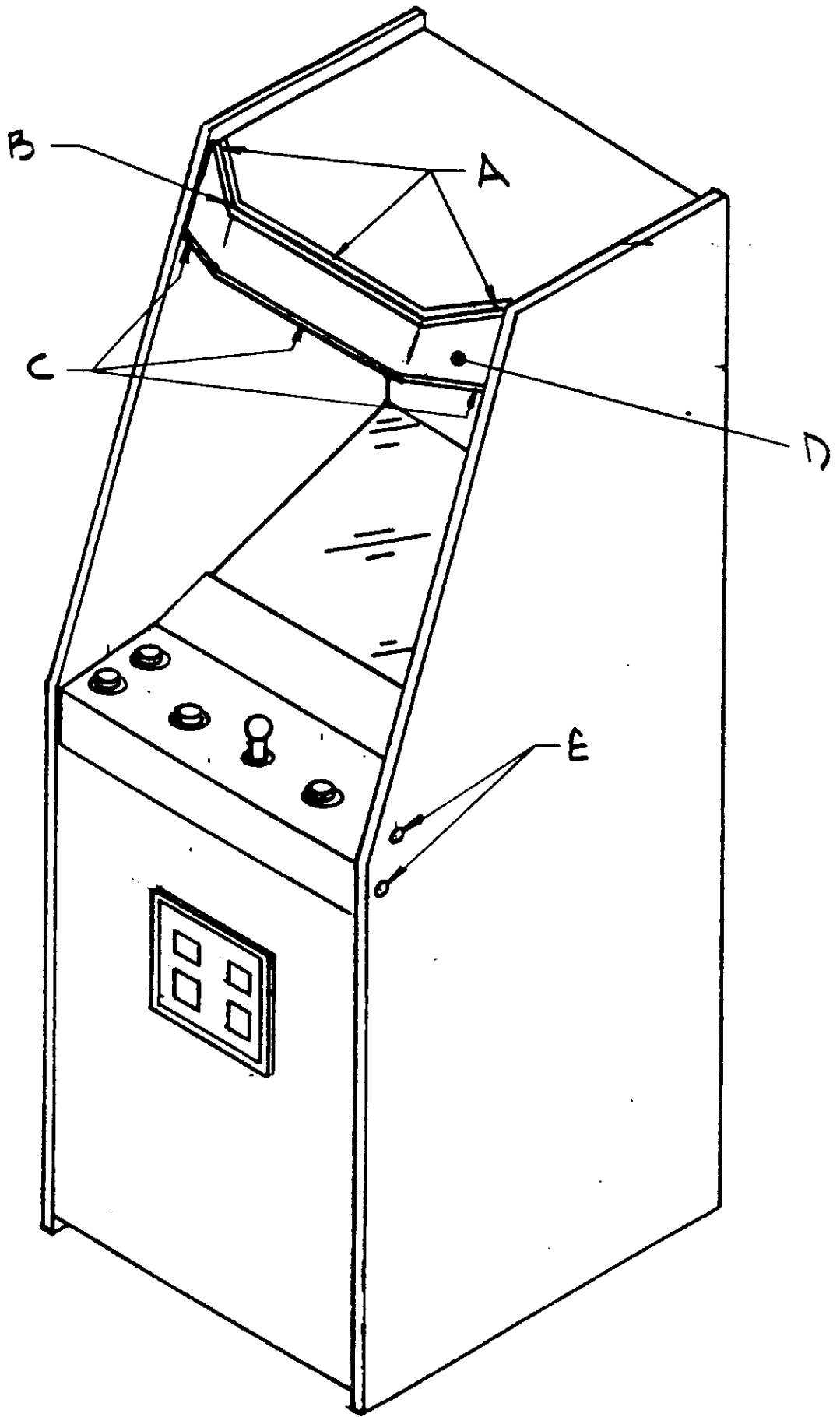


FIG 1

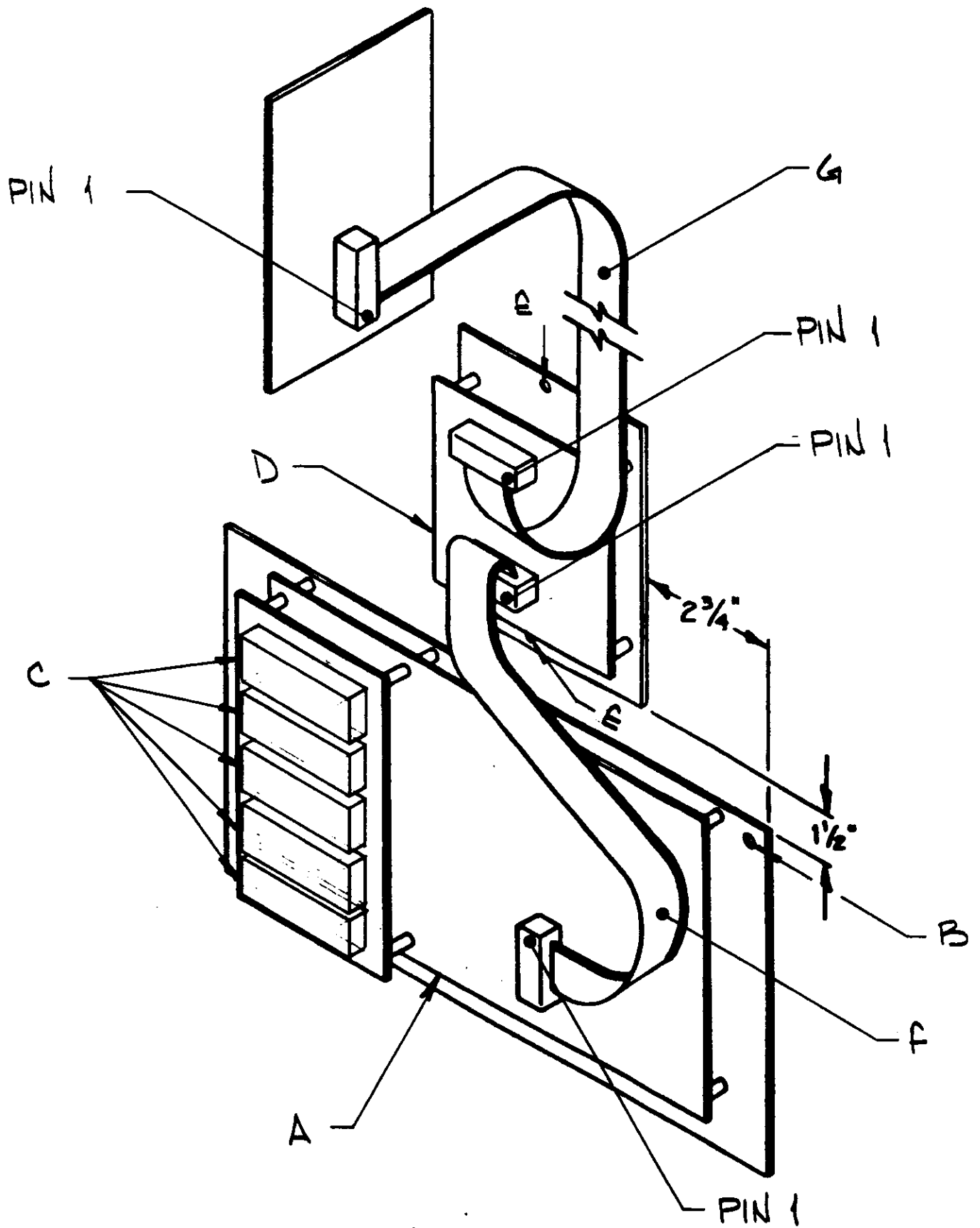


FIG 2

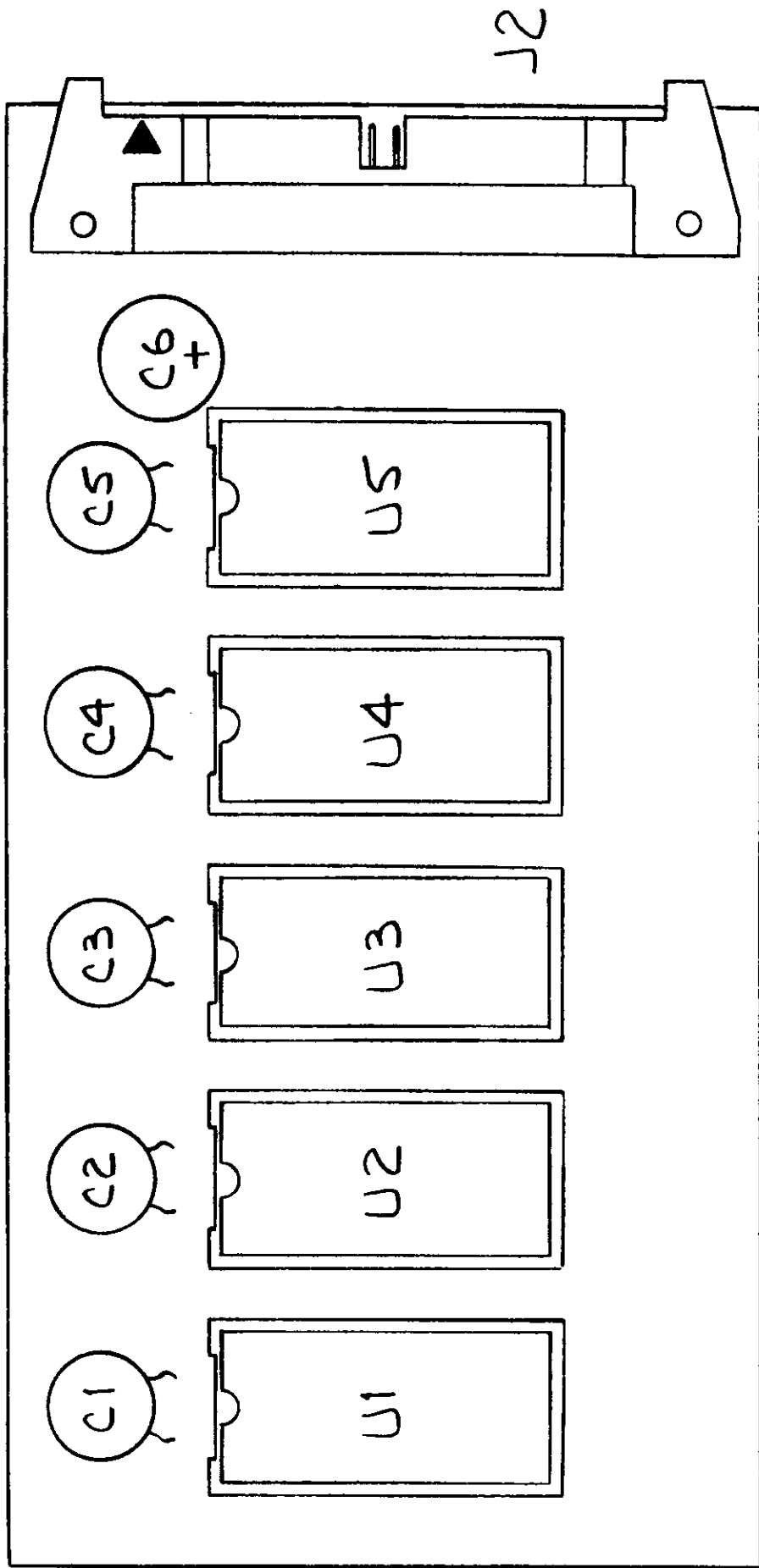


FIG 3

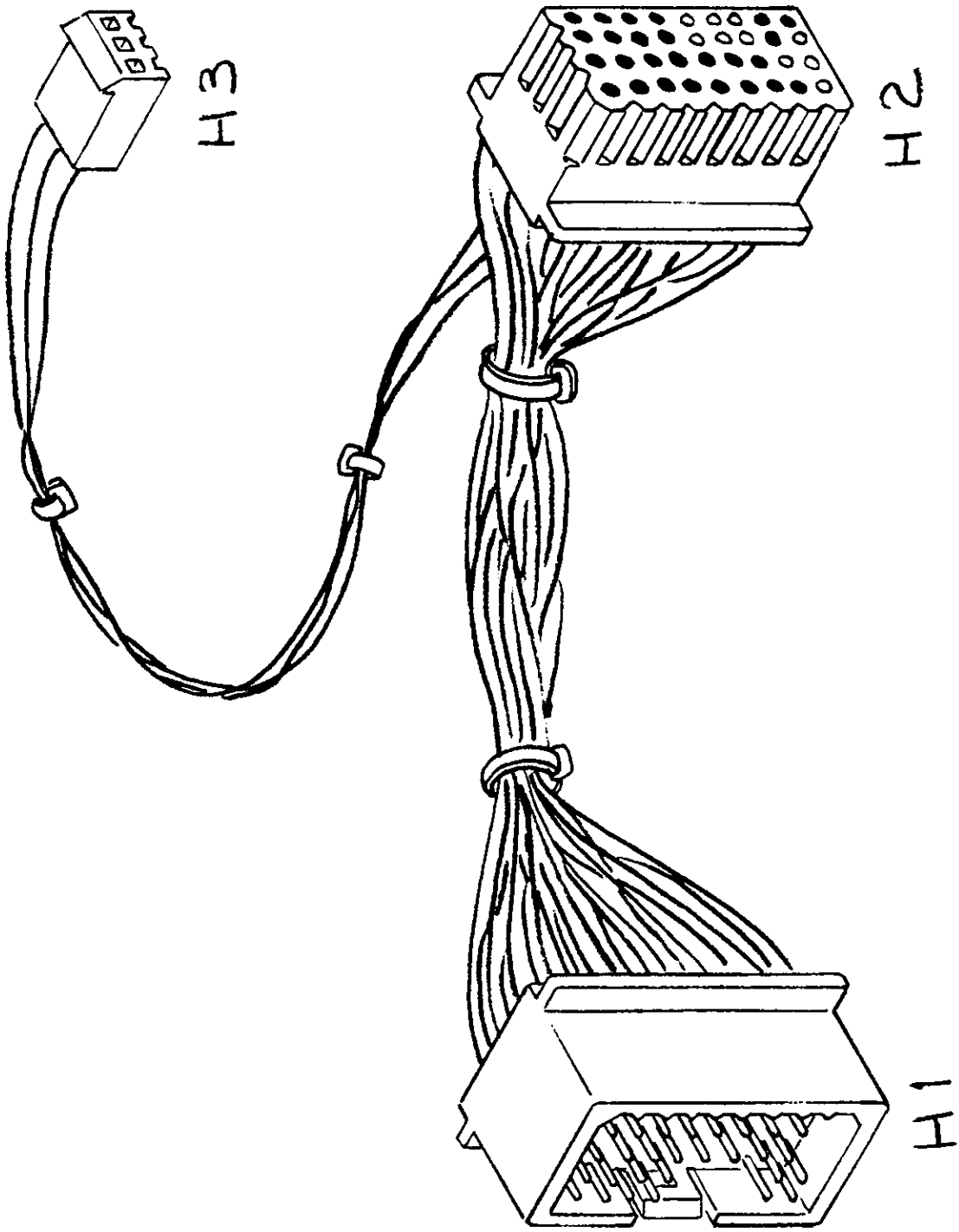
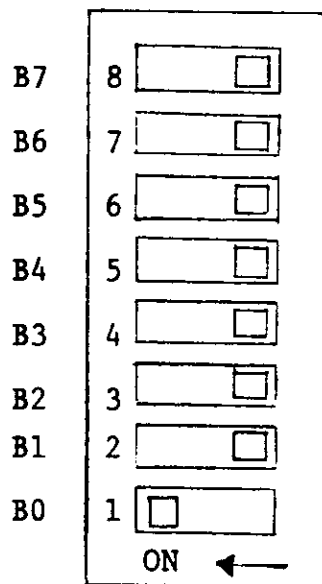


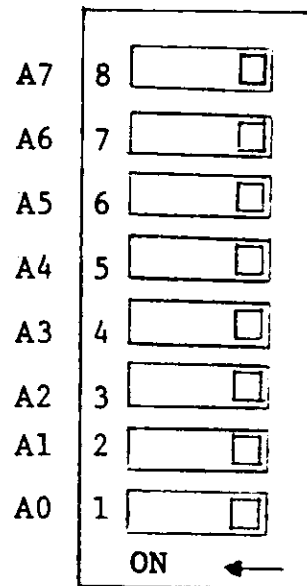
FIG 4

RECOMMENDED OPTION SWITCH SETTINGS FOR SPACE ACE. Tm

These are the standard settings. For special options, please see appendix "C" of the Space Ace Manual.



SW 1



SW 2

For games with the LD-V1000 (Black) players all switches should be off except for B0 of switch SW1.

For Games with PR7820 (Tan) players all switches should be off.