CLQAK & DAGGER ™*

Installation Instructions for Defender †

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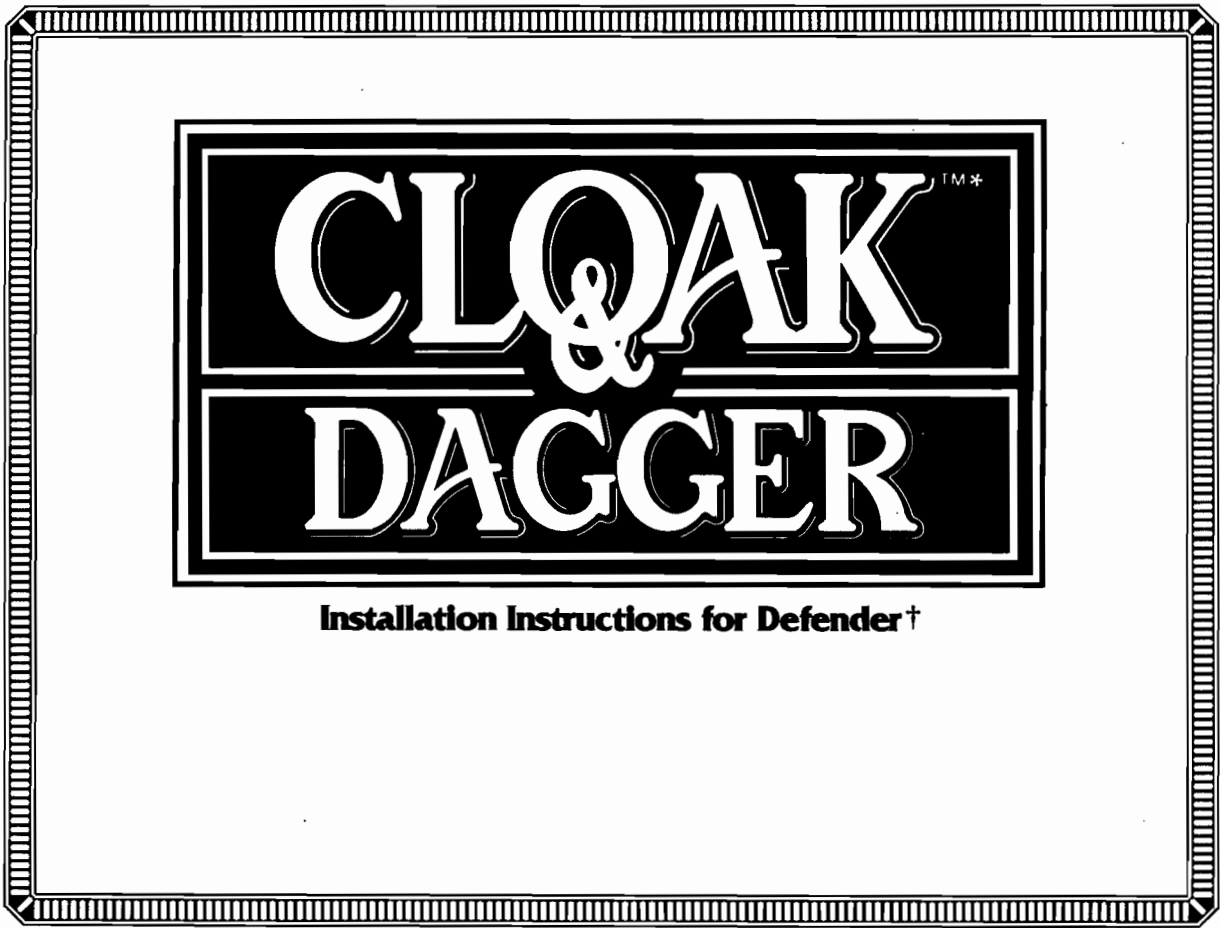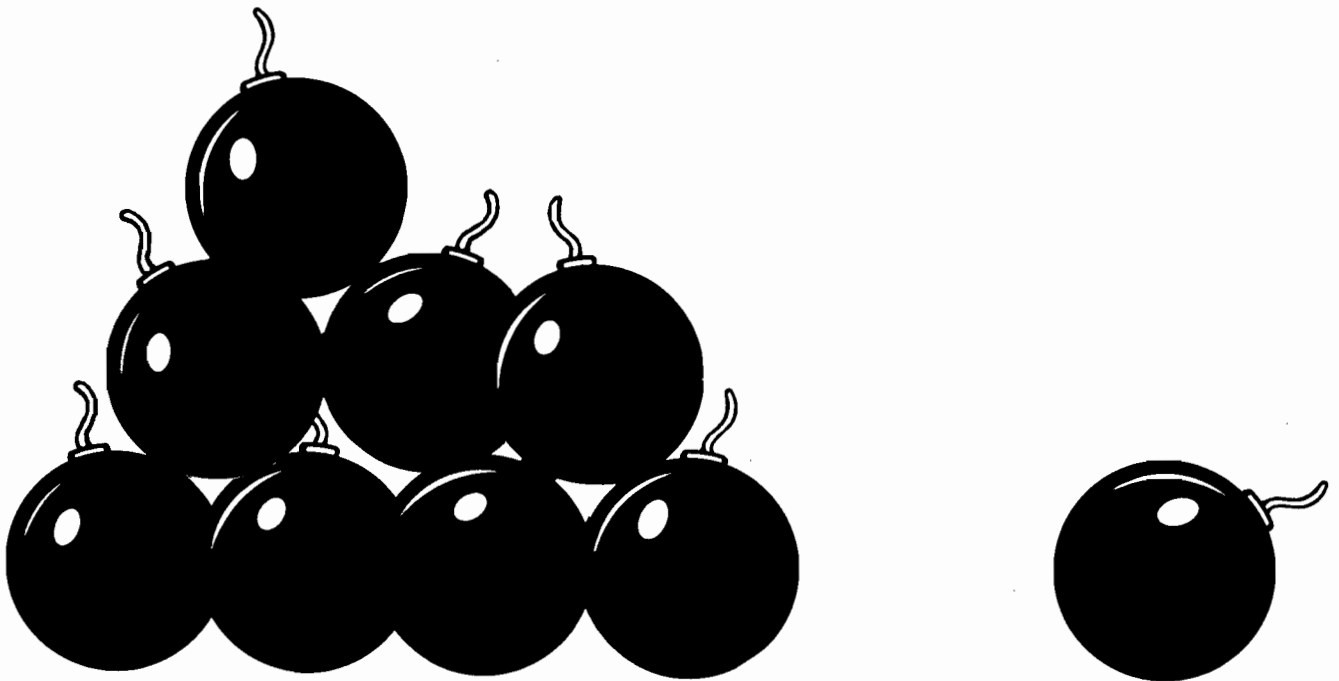toll-free **(800) 538-1611**

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CLOAK & DAGGER ™*

Installation Instructions for Defender†

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CLOAK & DAGGER™* Installation Instructions for Defender**

INTRODUCTION

The following information includes the necessary installation instructions for changing the Defender™ game into a CLOAK & DAGGER™ game. The modifications include changing the cabinet graphics, the control panel, the attraction shield, the display shield, the game printed-circuit boards, and harness assembly. A CLOAK & DAGGER Schematic Package is provided for the game circuitry. If you have a schematic set that was originally provided for your game, save the power supply, sound printed-circuit board, and monitor schematics.

KIT PARTS INVENTORY

Check the contents of the CLOAK & DAGGER Retrofit Kit (A041462-01) before proceeding with the retrofit procedure. The parts included in this retrofit kit are listed in Table 1.

Table 1   Retrofit Kit Contents for Defender
A041462-01

Part No.	Quantity	Description
A037701-01	1	Electromagnetic Interference (EMI) Cage and Guides Assembly—includes
037700-02	1	EMI Cage
178047-032	4	PCB Guide
A040733-01	1	EMI Shield and Dual PCB Assembly—includes
A039431-01	1	CLOAK & DAGGER Interconnect PCB
A039938-21	1	CLOAK & DAGGER Slave PCB
A039942-21	1	CLOAK & DAGGER Master PCB
A040404-01	1	EMI Shield PCB
72-1604F	4	#6-36 x 1/4-Inch Cross-Recessed Steel Screw
034536-02	1	0.50-Inch Thick Foam Pad
034536-03	1	1.12-Inch Thick Foam Pad

—continued on next page—

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Table 1   Retrofit Kit Contents for Defender (continued)

Part No.	Quantity	Description
A041463-01	1	Control Panel Assembly--includes
A041465-01	1	Control Panel and Decal Assembly
A040729-01	1	Control Harness Assembly
171021-001	2	8-Position Joystick Assembly
A041509-01	1	Retrofit Main Harness and Component Assembly
A041402-01	1	Main Harness
119006-103	1	10 kΩ Dual Potentiometer
SP-242	1	CLOAK & DAGGER Schematic Package
ST-242-01	1	CLOAK & DAGGER Chart with Self-Test Procedure and Option Switch Settings
TM-242	1	CLOAK & DAGGER Operators Manual
72-1816F	4	#8-32 x 1-Inch Long Cross-Recessed, Pan-Head Machine Screw (used to mount wood panel to cabinet wall)
75-048S	4	#8 Split-Lock Washer (used to mount wood panel to cabinet wall)
75-018S	4	#8 Flat Washer (used to mount wood panel to cabinet wall)
038086-01	1	Shock Warning Label
038158-03	1	Product ID Label
039450-01	1	FCC Compliance Label
041471-01	1	Left Side-Panel Decal
041471-02	1	Right Side-Panel Decal
041472-01	1	Coin-Mechanism Panel Decal
041473-01	1	Display Shield
041474-01	1	Attraction Shield
041476-02	1	Attraction Shield Semi-Rigid Film
041477-02	1	Wood Mounting Panel for EMI Shield Assembly
175004-708	2	#8 Flat Fiber Washer (used to mount EMI cage to wood panel)
176015-112	3	#10 x 3/4-Inch Long Cross-Recessed, Pan-Head Screw (one used to mount EMI cage to wood panel; two used on control panel)

NOTE

The Master, Slave, and Interconnect Printed-Circuit Boards are already installed in the EMI Cage of the retrofit kit.

TOOLS REQUIRED

The tools listed in Table 2 (or their equivalents) are required to perform a complete retrofit.

Table 2 Tools Required

Quantity	Description	Purpose
1	Phillips-head screwdriver	Remove and install retainers, attraction shield, display shield, and harness
1	Squeegee	Install decal graphics
1	X-ACTO™ blade or suitable substitute	Install decal graphics

RETROFIT INSTRUCTIONS

```
┌─────────────────── NOTE ───────────────────┐
│                                             │
│  These procedures must be performed by      │
│  qualified service personnel. All interior  │
│  and exterior surfaces should be clean and  │
│  free of foreign material before starting   │
│  this retrofit procedure.                   │
│                                             │
└─────────────────────────────────────────────┘
```

The following procedures are arranged in a sequence recommended for performing the retrofit modification. The parts of your game that are affected by the retrofit (see Figure 1) are removed first. Then, the CLOAK & DAGGER kit parts are installed.

```
┌────── ⚠ ────── WARNING ────── ⚠ ──────┐
│  Unplug the game before performing the  │
│  following procedures.                  │
└─────────────────────────────────────────┘
```

Upper Attraction
Retainer

Attraction Shield

Display Shield Retainer

Lower Attraction Retainer
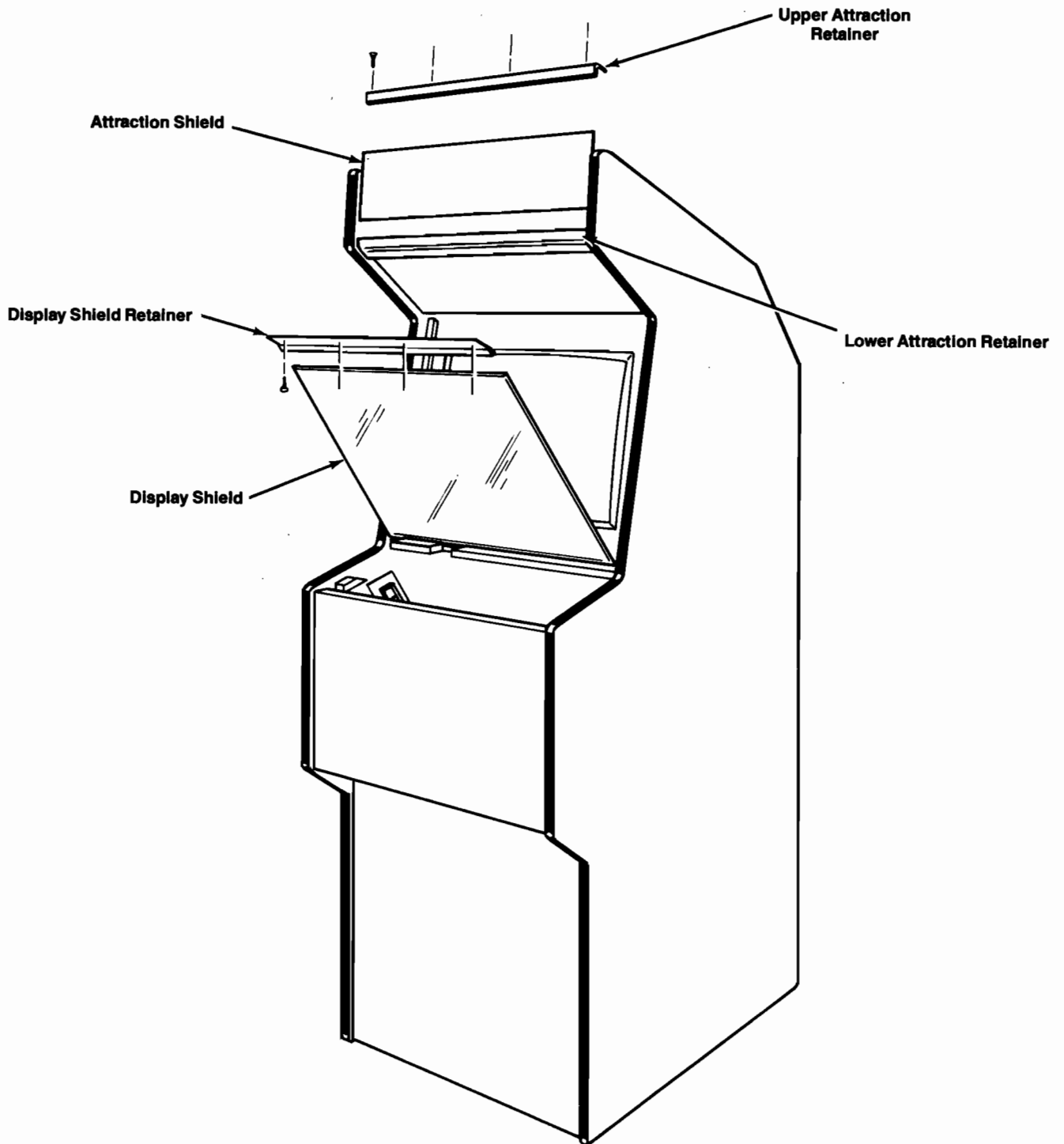
Display Shield

Figure 1 Attraction Shield and Display Shield Replacement

Remove Part of the Harness Assembly

```
┌──────────────────────── CAUTION ─────────────────────────┐
│                                                           │
│   DO NOT REMOVE the game harness wiring to the            │
│   following items:                                        │
│                                                           │
│   ● Power Supply Transformer Connectors (see              │
│     Figure 4)                                             │
│   ● Fluorescent Tube                                      │
│   ● Speaker                                               │
│   ● Safety Interconnect Switch at Rear of                 │
│     Cabinet                                               │
│   ● On/Off Switch                                         │
│   ● Monitor AC                                            │
│                                                           │
└───────────────────────────────────────────────────────────┘
```

1.   Unlock and remove the rear access panel.

2.   Unplug the coin-door connector.

3.   Remove the coin-door interlock switch with a Phillips-head screwdriver.

4.   Unplug the control-panel connectors.

5.   Unplug the sound PCB connectors. Remove and discard the microprocessor and ROM socketed integrated circuits on the sound PCB.

6.   Unplug the speaker connector.

7.   Unplug two of the three power-supply base connectors. BE SURE TO LEAVE THE TRANSFORMER CONNECTOR IN PLACE (see Figure 4).

8.   Remove the volume control from the U-shaped bracket that is located on the side of the cabinet next to the sound PCB. SAVE THE BRACKET AND SCREWS FOR THE CLOAK & DAGGER VOLUME CONTROL INSTALLATION.

9.   Unplug the signal connector on the monitor PCB.

10.   Unplug the connectors from the game printed-circuit boards.

11.   Remove the white nylon harness screw-down clamps that secure the loosened harness wires. BE SURE TO SAVE THESE CLAMPS AND SCREWS FOR INSTALLING THE CLOAK & DAGGER HARNESS.

12.   Discard the removed harness.

Remove the Game Printed-Circuit Boards

Use the Phillips-head screwdriver to remove the screws that secure the three game printed-circuit boards to the cabinet (see Figure 2).

Remove the Control Panel

1.   Reach inside the game cabinet and release the two spring-draw latches on the sides of the cabinet to the rear of the control panel.

2.   From the front of the game cabinet, remove the control panel from the game cabinet.

Remove the Attraction Shield

Use the Phillips-head screwdriver to remove the hardware that fastens the upper attraction shield retainer to the cabinet (see Figure 1). Remove the retainer and the attraction shield. BE SURE TO KEEP THE HARDWARE AND RETAINER FOR REASSEMBLY.

Remove the Display Shield

Use the Phillips-head screwdriver to remove the hardware that fastens the plastic retainer to the top of the game display shield (see Figure 1). Remove the retainer and display shield by pulling out on the retainer. BE SURE TO KEEP THE HARDWARE AND RETAINER FOR REASSEMBLY.

Install the Display Shield

1.   Slide the top of the CLOAK & DAGGER display shield into the groove of the display shield plastic retainer (see Figure 1).

2.   Slide the display shield (with plastic retainer attached) into the groove in the wood at the bottom of the monitor screen.

3.   Hold the retainer tight against the game cabinet and securely attach the top retainer to the game cabinet with the mounting hardware.

Install the Control Panel

1.   Position the CLOAK & DAGGER control panel on the game cabinet (see Figure 3).

2.   From the back of the game, fasten the two spring-draw latches at the sides of the cabinet and install the #10 x 3/4-inch pan-head screws to secure the control panel to the cabinet.

NOTE

Remove ROM & microprocessor integrated circuits

Sound Printed-
Circuit Board

Volume Control
& Bracket

Game Printed-
Circuit Board

Game Printed-
Circuit Board
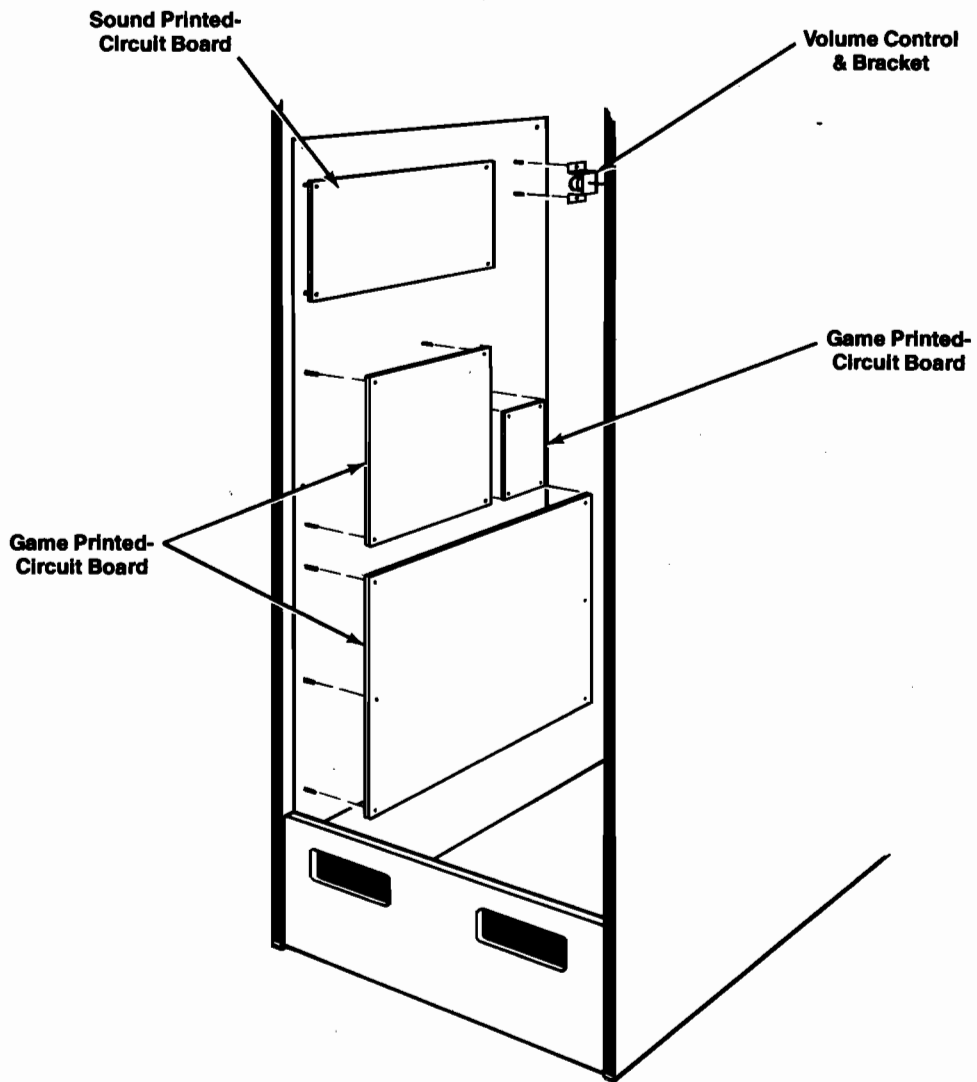
Figure 2 Printed-Circuit Boards and Volume Control Removal

CLOAK & DAGGER
Control Panel

Screw

Spring-Draw Latch

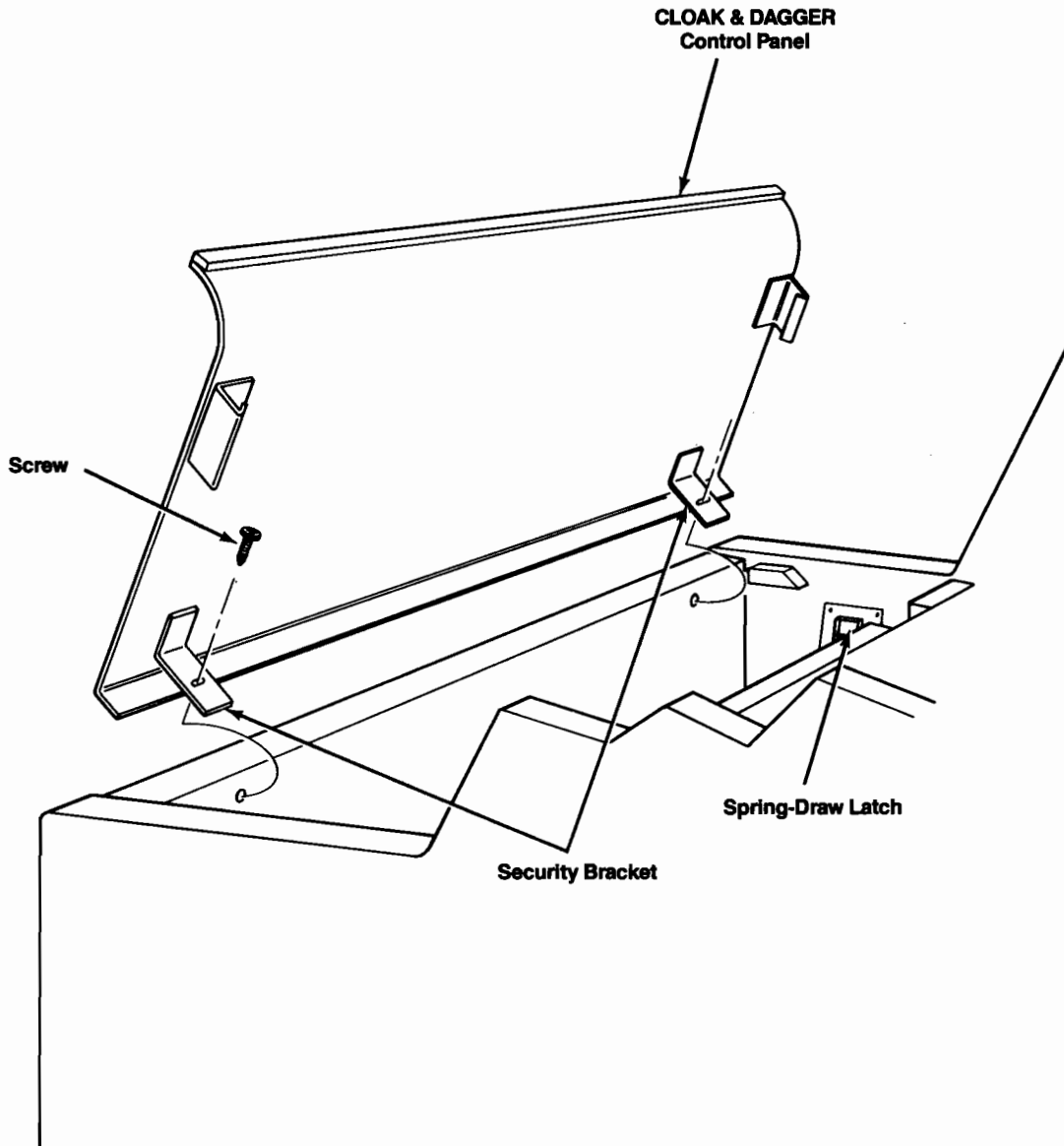Security Bracket

Figure 3   CLOAK & DAGGER Control Panel Installation

Install the Attraction Shield

1.   Slide the CLOAK & DAGGER attraction shield into the lower attraction
      retainer (see Figure 1).

2.   Slide the CLOAK & DAGGER attraction film behind the attraction shield.

3.   Hold the upper attraction shield retainer firmly against the top of the
      attraction shield and attach the upper retainer to the game cabinet
      with the mounting hardware.

Install the Wood Panel for the EMI Cage

Mount the wood panel included in the kit to the stand-offs on the cabinet wall
with the four #8-32 x 1-inch screws and #8 split-lock and flat washers (see
Figure 4).

Attach the EMI Cage to the Wood Mounting Panel

1.   Slide the EMI cage into the wooden cleats on the mounting panel

2.   Attach the EMI cage to the wood mounting panel with the #10 x 3/4-inch
      screw and the two #8 flat fiber washers (see Figure 4).

```
┌──────────────────────── NOTE ────────────────────────┐
│                                                       │
│   If you wish to change the option-switch             │
│   settings, do so at this time. Refer to the          │
│   CLOAK & DAGGER Operators Manual, TM-242, for        │
│   further option-switch setting information.          │
│                                                       │
└───────────────────────────────────────────────────────┘
```

Install the CLOAK and DAGGER Retrofit Main Harness (see Figure 4)

```
┌──────────────────────── NOTE ───────────────────────┐
│   All CLOAK & DAGGER retrofit harness connectors     │
│   are keyed to fit properly.                         │
└──────────────────────────────────────────────────────┘
```

1.   Install the volume control on the U-shaped bracket removed earlier. DO
      NOT attach the bracket to the cabinet wall at this time.

2.   Plug the two keyed-to-fit 44-pin edge connectors into the EMI Shield
      PCB on the end of the EMI cage. Attach the ground clip to the bottom of
      the EMI cage.

NOTE

Mounting panel comes drilled with more holes than necessary. Use only the indicated holes.

Volume Control & Bracket

Sound PCB

Metal Mounting Plate

Wood Mounting Panel

CLOAK & DAGGER Harness

EMI Cage

EMI Shield & Game PCB Assy.

DO NOT REMOVE THIS TRANSFORMER CONNECTOR/CABLE
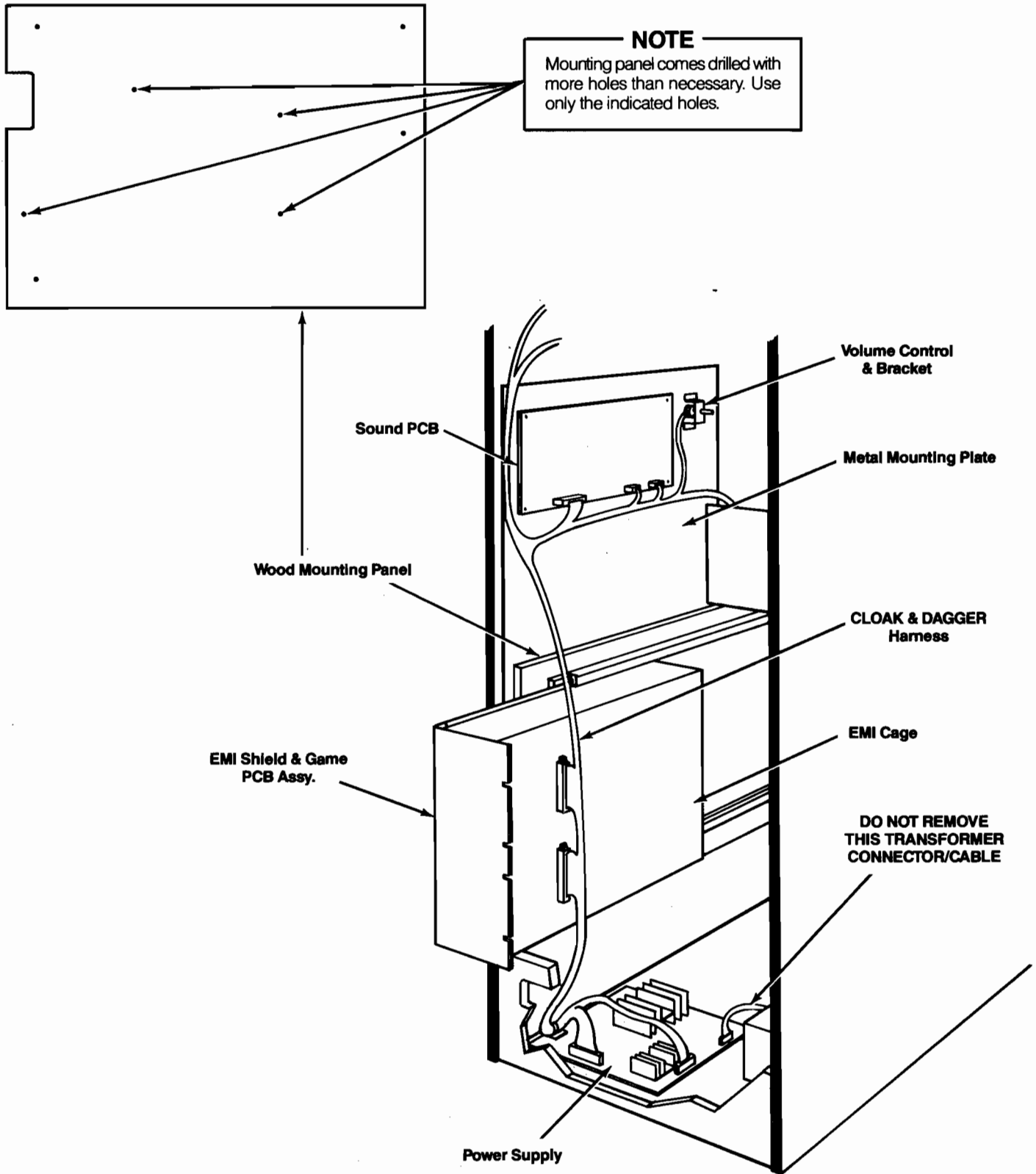
Power Supply

Figure 4   CLOAK & DAGGER Harness and EMI Cage Installation

3.   Plug in the two keyed-to-fit power-supply base connectors. Secure the harness to the power-supply base with the white nylon adhesive-backed mount.

4.   Plug in the three keyed-to-fit connectors to the sound PCB located on the cabinet wall above the EMI cage. Attach the grounding clip to the metal mounting plate behind the sound PCB.

5.   Plug in the coin-door connector at the coin door.

6.   Plug in the two control-panel connectors.

7.   Plug in the speaker connector.

8.   Plug the monitor-signal connector into position on the chassis-mounted main PCB.

9.   Secure the CLOAK and DAGGER harness with the white nylon screw-on clamps removed earlier. Follow a routing similar to the original game harness. Attach the bracket/volume control to the cabinet wall.

Install the Self-Test Chart

1.   Staple the CLOAK & DAGGER self-test chart on the inside of the rear access panel.

2.   Install the rear access panel on the game cabinet.

Perform a Self Test

1.   Plug the game in.

2.   Turn on the game.

3.   Perform the self-test procedure as described in the CLOAK & DAGGER Operators Manual, TM-242.

4.   Ensure that the "EXIT" signs on both the right and left elevator doors are visible during normal game play by setting the width control to the narrowest width possible.

Apply the Labels

1.   Remove the protective backing from the product identification label, the FCC compliance label, and the shock warning label included in the CLOAK & DAGGER kit.

2.   Apply the three labels to the back of the game cabinet directly above the rear access panel.

Attach the Side-Panel Decals

```
┌───────────────────── NOTE ─────────────────────┐
│                                                 │
│  We recommend that the following procedure be   │
│  performed by two persons. One person may have  │
│  difficulty handling the cabinet and the large  │
│  decals.                                        │
│                                                 │
└─────────────────────────────────────────────────┘
```

1.   Mix a normal dishwashing solution of approximately three quarts of
      water and any liquid dishwashing detergent in a shallow pan.

2.   Tip the game cabinet sideways and gently lay it on a soft blanket.

3.   Thoroughly clean the side of the game cabinet to ensure the removal of
      all dust.

4.   Use a sponge to liberally apply the water and detergent solution over
      the entire side of the game cabinet.

5.   Grasp the top edge of the appropriate decal for the side of the game
      cabinet. Hold the decal up off the floor and peel away the protective
      backing.

6.   Gently lay the decal, sticky side down, in the center of the wet
      surface of the game cabinet (see Figure 5). Position the decal to
      ensure that the color graphics are centered on the side of the cabinet.

7.   With the decal down and in position, use the squeegee to remove all the
      excess water and detergent from beneath the decal by quickly working
      from the center to the outside edges. Hint: If any air bubbles form,
      puncture them with a pin or the tip of an X-ACTO™ blade. Rub gently
      with a soft cloth to disperse air.

8.   Insert a #11 X-ACTO™ blade or suitable substitute between the T-molding
      and cabinet wall and, following the contour of the cabinet, cut off the
      excess decal. Rub the cut edges with a soft cloth to smooth down any
      rough edges.

9.   When the wrinkles are removed and the decal is free of all excess water
      and detergent, gently turn the game cabinet over to the opposite side.
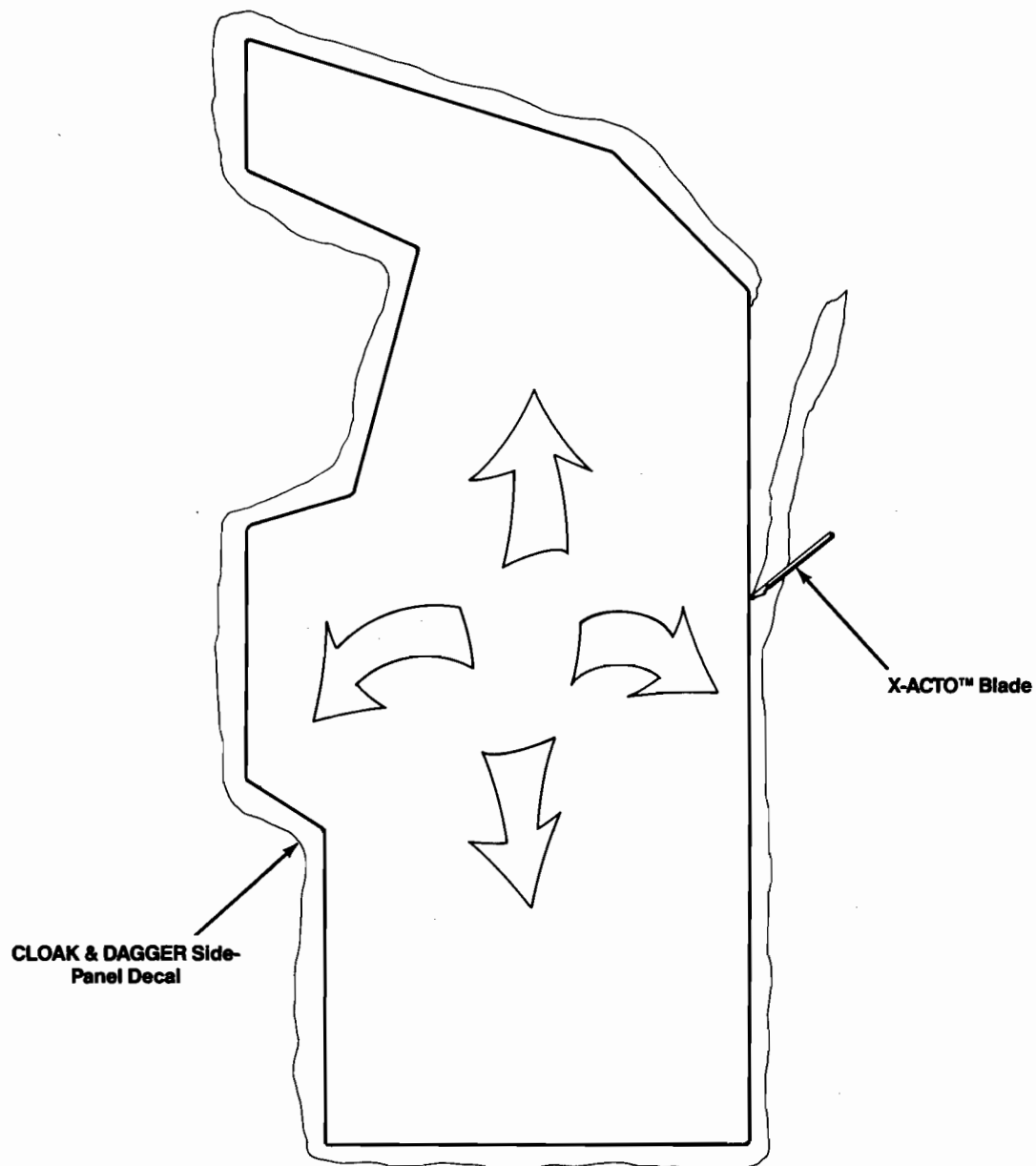   Be careful to avoid damaging the freshly applied decal.

X-ACTO™ Blade

CLOAK & DAGGER Side-
Panel Decal

Figure 5   CLOAK & DAGGER Decal Installation

10.   Repeat steps 2 through 9 for the remaining decal.

11.   Carefully raise the cabinet to the upright position.

12.   When both decals are firmly affixed, remove the protective covering.

13.   Use a lint-free cloth to wipe off any excess water and detergent from inside and outside of the cabinet. Allow time to dry before proceeding!

Attach the Coin-Mechanism Panel Decal

1.   Wet the cabinet surface surrounding the coin-door opening.

2.   Carefully position the lower edge of the decal across the bottom of the coin-mechanism area on the cabinet and gently smooth the decal into position with a sponge or squeegee.

Change Your Original Schematic Set to Reflect the CLOAK & DAGGER Retrofit

A CLOAK & DAGGER Schematic Package is provided for the game circuitry. If you have a schematic set that was originally provided for your game, save the power supply, sound printed-circuit board, and monitor schematics.

Kit Warranty

Seller warrants that its electronic parts supplied in this kit are free from defects in material and workmanship under normal use and service for a period of ninety (90) days from date of shipment. None of the Seller's other products or parts thereof are warranted.

If the electronic parts supplied in this kit fail to conform to this warranty, Seller's sole liability shall be, at its option, to repair, replace, or credit Buyer's account for such electronic parts which are returned to Seller during said warranty period, provided:

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(b) Such products are returned prepaid to Seller's plant; and

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