

LaserCon LDP Conversion Card

Instructions for Dragon's Lair & Space Ace

Version 7

Design and Firmware by Shaun D. Wood

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LaserCon is an adaptor card for the replacement of the original laser disc player installed from the factory to a newer, more reliable player. It is to be installed in an arcade version of Dragon's Lair or Space Ace, which was manufactured by Cinematronics for use in North America.

Supported Replacement Players:

Pioneer - LD-V8000 LD-V4400 LD-V4300D LD-V4200
LD-V2200 CLD-2600 CLD-2400

The V8000 and V4x00 series are preferred due to their improved search speed performance.

Parts List

LaserCon board, Main-board interface ribbon cable, Player interface serial cable,

Installation Instructions

1. Configure your new player:

All players must be configured for proper serial communication as follows:

**Baud Rate: 4800, No Parity, 1 stop bit, Data Length: 8 bits,
TxD terminator: <CR>.**

LD-V8000:

Connect the player to a TV or monitor.

Press and hold the "DISPLAY" button while powering-on the player. Press "SCAN FORWARD" to reach Page-5 "RS-232 SWITCH P-5"

Verify: Baud Rate: 4800, No Parity, 1 stop bit, Data Length: 8 bits

To make changes, press "STEP FORWARD" to highlight an item, then press "STEP REVERSE" to change the setting.

Press "SCAN FORWARD" to reach Page-6 "RS-232 SWITCH P-6"

Verify: TxD terminator: <CR>.

LD-V8000 - Optional Settings:

P-7: Memory Control

(The LD-V8000 player has the ability to hold and “freeze” the last displayed frame of video during a search operation. Thereby eliminating the blackout screen between scene searches. Some people prefer this mode, while others consider it a change from the “original” feel of the game.)

For “Original” blackout searches:

Video Memory Mode: CONTROL DISABLE

Auto Memory: OFF

For “Freeze frame” searches:

Video Memory Mode: CONTROL ENABLE

Auto Memory: ON

* Press “DISPLAY” to save your settings and exit.

LD-V4200:

Open the small cover on the front of the player. Set all switches-OFF (up).

LD-V4400:

Connect the player to a TV or monitor.

Press and hold the “DISPLAY” button while powering-on the player.

Press “SCAN FORWARD” to reach Page-3 “RS-232 SWITCH P-3”

Verify: Baud Rate: 4800, TxD terminator: <CR>.

To make changes, press “STEP FORWARD” to highlight an item, then press “STEP REVERSE” to change the setting.

* Press “DISPLAY” to save your settings and exit.

LD-V2200 & CLD-2400:

On the back of the player, set both dip-switches – OFF (up)

CLD-2600:

On the back of the player, set dip-switches 1 & 2 – OFF (up)

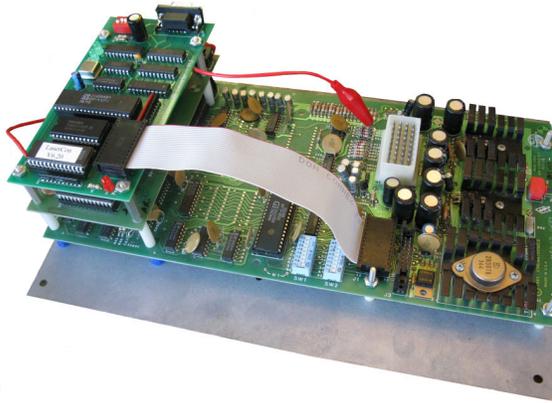
2. Install the LaserCon card:

Remove the four nuts and bolts holding the ROM board in place.

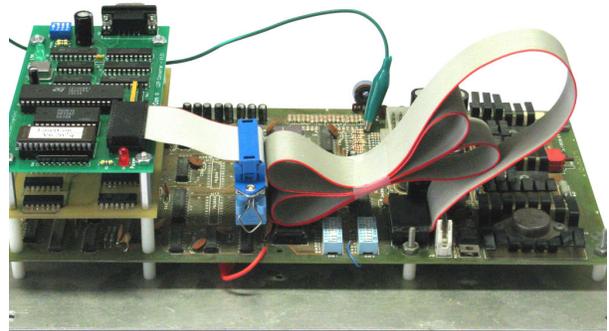
Install 4 new spacers and longer bolts.

Install the LaserCon card and secure with the 4 nuts previously removed.

Install the custom DL ribbon cable (or the V1000 adaptor and the original player ribbon) to LaserCon's "CN1" and to the main board's player connector.



Custom DL Cable

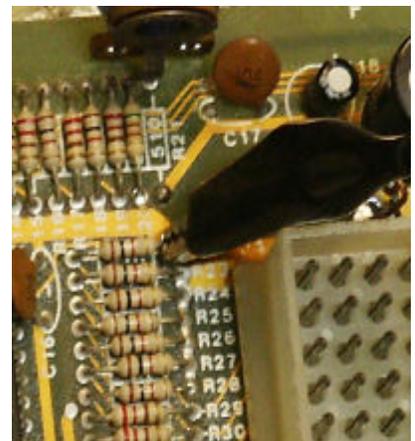
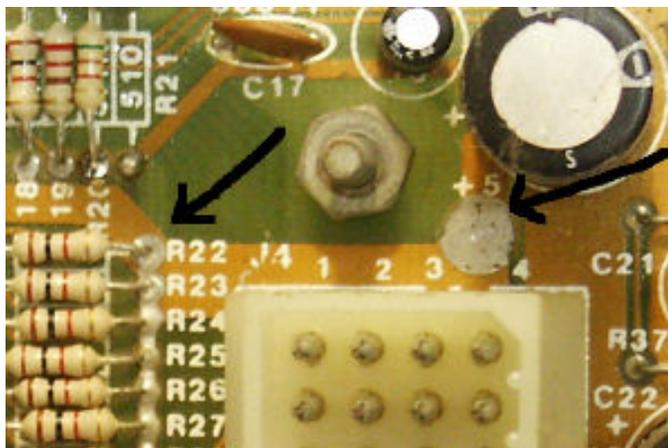


OR V1000 adaptor + original cable

Attach the alligator lead wire to +5Volts.

You can attach to any point supplying +5V power that you like. Options range from the power supply (pin-9) to the legs of the disc capacitors on the ROM board. My recommendation is to **attach to the leg of R22 and/or R23 on the side closest to the main harness connector**. Another option: Near the main harness connector you will find the +5 test point. Use a soldering iron to install a small piece of solid wire (the center conductor of Coax Cable works well) to the test point, and attach the alligator clip to that.

(Ground is supplied through the ribbon cable.)



Install the player into the game cabinet.

I will leave the means of supplying AC power to your player up to you. You can adapt the original supply wire to your new player, or run the wire separately to outside power. If you need help with this part, feel free to email me.

Connect the supplied serial cable from LaserCon's CN2 and to the player's 15-pin connector.

This is a custom cable. You **cannot** use any other serial cable. If you need to replace the cable for any reason, the pin connections are as follows...

	9-pin Female		15-pin Male	
GND	pin-1 -----	pin-11	GND	
TxD	Pin-2 -----	pin-10	RxD	
RxD	Pin-3 -----	pin-9	TxD	

3. Set Dipswitches:

#1: If your main board is set to control a PR-7820 player,

On LaserCon, set switch 1 2 3 4
OFF OFF OFF OFF

#2: If your main board is set to control a LD-V1000 player,

On LaserCon, set switch 1 2 3 4
OFF OFF ON ON

More Info:

Early editions of Dragon's Lair came with the Pioneer PR-7820 disc player and what we now refer to as a "Revision A" main board to control it. (Rev-A boards can be identified as having gold colored wire tracings on a green circuit board. Serial numbers are below 6000.) Most of these boards will have ROM versions A, B or C and you do not have to worry about switch B3. But, if the ROMs on your board are versions E, F, F2 or DLE, then you must set switch B3-ON (B3 is printed on the board, '4' will be printed on the switch).

Use setting #1 with this board.

Later editions of Dragon's Lair and all Space Ace's came with the LD-V1000 disc player and a "Revision-C" main board. (Rev-C boards can be identified as having green colored wire tracings on a green circuit board. Serial numbers are above 6000.) Almost all of these boards are configured to control an LD-V1000 player and switch B3 must be OFF. **Use setting #2 with this board.**

LaserCon Dip-switch settings (Ver. 7.0 firmware)

SW 1	SW 2	SW 3	SW 4	Original Player	Games	Baud Setting for new player
0	0	0	0	PR-7820	Dragon's Lair, Space Ace	4800
0	0	1	1	LD-V1000	Dragon's Lair, Space Ace (required if using MultiROM) Thayer's Quest, Interstellar	4800
0	1	0	1	LD-V1000	Dragon's Lair, Space Ace Thayer's Quest, Super Don Quixote Esh's Aurunmillia, Interstellar, Casino Strip, Astron Belt Cobra Command, Galaxy Ranger	9600
0	1	1	1	LD-V1000	1983 Space Ace using a 1991 disc	4800
1	0	0	0	PR-8210 LD-1100	Cliff Hanger, Cobra Command, MACH3, Goal to Go, Us vs Them, Quarter Horse	4800
1	0	1	0	22VP932	Dragon's Lair, Space Ace (Europe)	9600
1	1	0	0	22VP932	Space Ace with 1983NTSC disc (Europe)	9600
1	1	1	0	22VP932	Space Ace with 1991NTSC disc (Europe)	9600

Operation

Power on your machine. The red LED should light, indicating that the LaserCon board is properly powered.

After a one second delay, the “LDP” LED should light, indicating that LaserCon has established serial communication with the player.

After 15 seconds or less, the player will begin to spin-up. The “LDP” LED will go dark, indicating that the player is busy.

Once the player has achieved “PLAY” mode, the “CPU” LED will light. You may see the information screens and a portion of the attract sequence. Once you hear the third “chime” sound, the game will start and the attract will officially begin.

Once the game is up and running, The red light will remain lit, the green “LDP” light will blink during searches, and the “CPU” light will be dark only during freeze frames and frame searches. Enjoy!

Use at you own risk. By accepting this product, you also accept all responsibility for the use of this product.

If you need any help or have any questions, comments, or suggestions, please email me: shaun@wood1st.com.