

# PUNCHOUT 4 Game Selector INSTALL GUIDE



Each Punchout Dual Selector includes the following items:

1. Punchout 4 Game Selector PWB
2. 3 power cables 12", 14" & 16"
3. 40 conductor ribbon daisy chain cable
4. Mounting feet and screws

Some of the recommend tools for the install are pictured below.



***IMPORTANT INFORMATION PLEASE READ & UNDERSTAND FULLY***

The Punchout 4 game selector kit is designed for Punchout Dual monitor arcade cabinets. Up to 4 adapters can be added at any time by simply plugging them into the power and ribbon cables.

You can cycle through the four boards by holding down the Game Select button then pressing the Player 1 A button. To add credits if your board does not support freeplay hold down Game Select then joystick UP or DOWN.

The selector board controls power switching and communicates with each adapter board on power up. It is necessary for the selector to know what types & how many adapters are plugged in. Since the ribbon cable is common to all adapter boards the power cables determine the order that each game board is powered on.

An example of this is if you had only two adapters installed and they were plugged into The Game1 and Game2 connectors, on power up Game1 would be powered first. When you cycled to the next game Game2 would be powered. Since the selector (knows) that there were no adapters plugged into Game3 & Game4 connectors, when you cycle to the next game it goes back to Game1.

Another example of this is if you plug your two adapters into Game2 and Game4 connectors on the selector board. On power up Game3 would be powered first. When you cycled to the next game Game4 would be powered. Again since the selector “knows” that there were no adapters plugged into Game1 & Game2 connectors, when you cycle to the next game it goes back to Game3.

If the selector did not “know” which adapters were plugged in then when you cycled to the next game and there was no adapter installed you would just get a blank screen until you cycled to one of the four connectors that had an adapter connected.

## **INSTALLING THE 4 GAME SELECTOR**

The 4 game selector is an intelligent controller for up to four adapters as mentioned previously. The power switching utilizes power MOSFET's for quiet and reliable operation and does not have mechanical wear issues like relays. There are four 10pin minifit connectors for power distribution to each adapter board. Power status LED's for +5v, +12v & -5v power rails are provided, but for Punchout only the +5v LED will be lit. A single 40pin ribbon cable header labeled NBUS40 handles all the control and video signal distribution to each of the adapters.



For controls expansion there are two 10 pin headers labeled Player1 & Player2 if extra buttons or joysticks are needed or if you cabinet does not have a control panel harness.

#### PLAYER1 CONNECTOR

1. PLAYER1 START
2. JOYSTICK UP
3. JOYSTICK DOWN
4. JOYSTICK LEFT
5. JOYSTICK RIGHT
6. BUTTON 1
7. BUTTON 2
8. BUTTON 3
9. BUTTON 4
10. GROUND

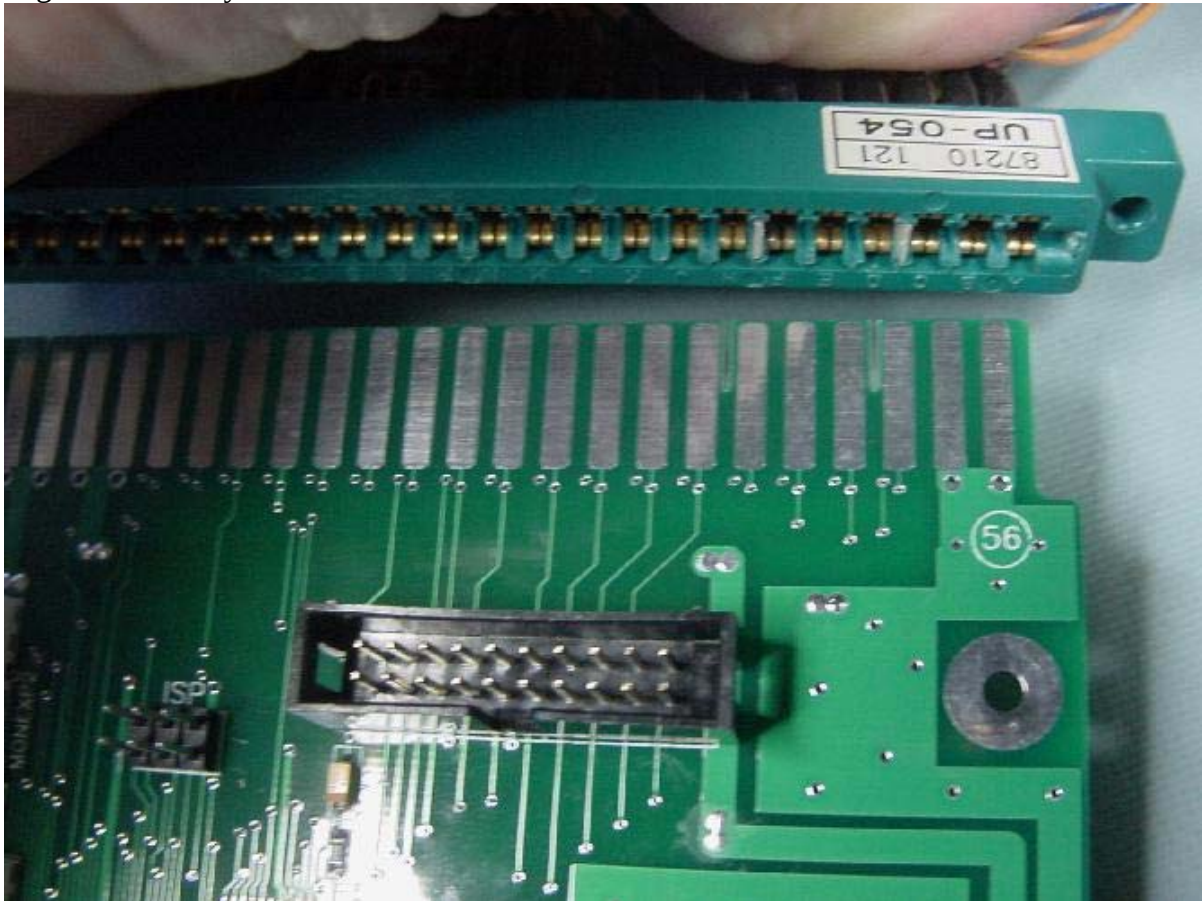
#### PLAYER2 CONNECTOR

1. PLAYER2 START
2. JOYSTICK UP
3. JOYSTICK DOWN
4. JOYSTICK LEFT
5. JOYSTICK RIGHT
6. BUTTON 1
7. BUTTON 2
8. BUTTON 3
9. BUTTON 4
10. GROUND

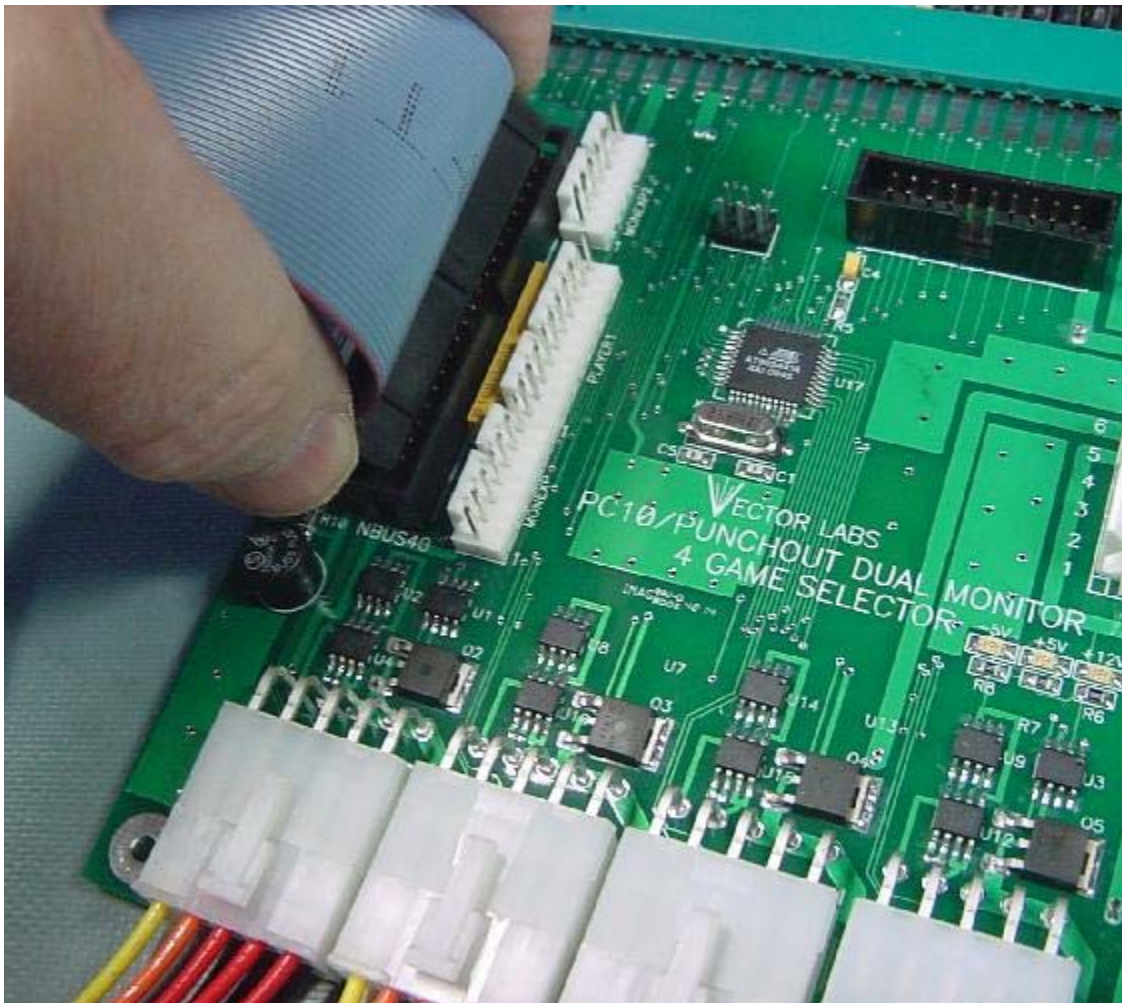
There is also two 7pin monitor expansion headers, this is for an optional board that has video inversion for those that want to use a standard Wells Gardner, Electrohome or other non inverted video monitor in the Nintendo cabinet. DO NOT plug either of the cabinet monitor cables into the 7pin monitor expansion headers. It WILL damage the monitors. The 20 pin black box header on lower left corner is not used on Punchout.



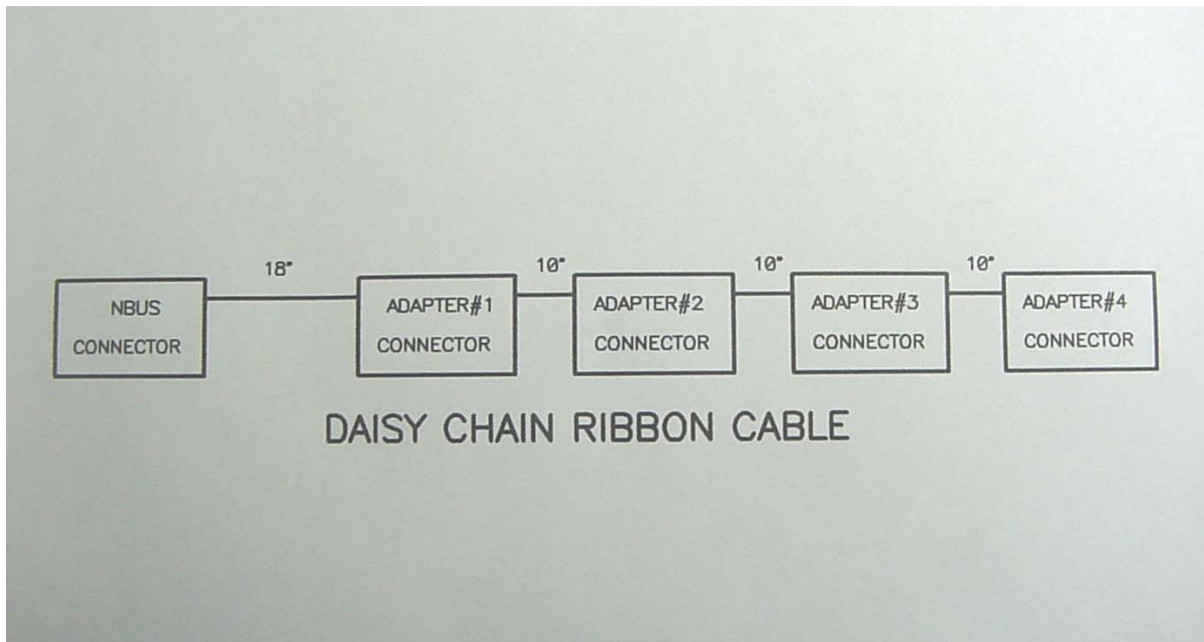
Attach cabinet harness card edge connectors to the selector, making sure to align the two “keys” into the slots on the board as shown below.



Attach “keyed” ribbon cable connector into NBUS40 header on selector board as shown.

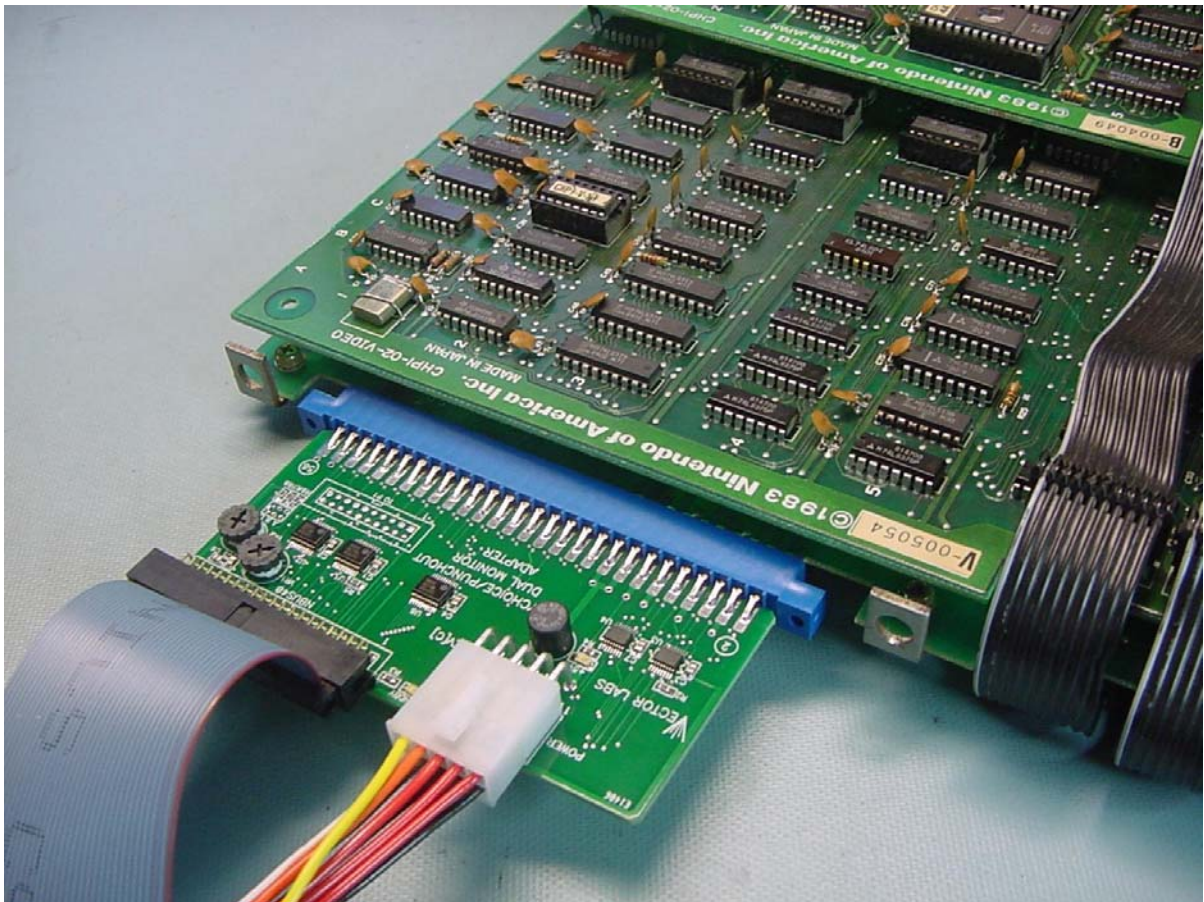


Take note of the supplied ribbon cable, there are five connectors on the cable. This 4' cable has connectors spaced as described below:



\*\*\*UPDATE\*\* A sixth connector has been added to the daisy chain ribbon cable. It is a 34pin connector, which was added so users can add a single monitor adapter card like Popeye or Mario Brothers.

Now attach NBUS40 ribbon cable onto the 40 pin header on the adapter board and one of the 3 power cables into the white header marked power as shown below, repeat until all adapters are connected.



Take note of the following features of the adapter:

1. Standby LED: This is illuminated at all times when the ribbon cable is connected to the adapter and the game is powered up. It verifies that the bus isolation circuitry is operating normally
2. Volume control(s): This sets the volume of the game PCB so that the user can trim all of the GAME PC boards to the same volume level.

3. Individual green LED's monitor the fuse integrity at each power input to the adapter board. In this example the power inputs are +5V only. There are no power requirements for Punchout that use +12v & -5V. The +5V LED will be illuminated when the board is activated by the selector board. If ANY of the LED's are not illuminated then its associated fuse has been blown due to an over current condition. The fuses are not resettable but can be unplugged and replaced.
4. Individual fuses for each power rail can be replaced when a critical over-current condition error has occurred.

The values are as follows:

+5v ---- 5.0-6.5A    +12v ---- 2.0A    -5v ---- 1.25A

THE INSTALL IS NOW COMPLETE!!

### **POWER SUPPLY CONSIDERATIONS**

The power supplies contained in classic arcade games in general are over 25years old some may have "drifted" out of spec on the +5v power rails. It may be necessary to replace these aging power supplies with something newer and more stable. We recommend that you perform the following test to ensure reliable & trouble free operation of your arcade game & 4 game selector. It will require an accurate digital voltmeter.

Power up your game and take note of which adapter has its green LED's lit. Take your volt meter and probe the two corner pins of one of the 20pin IC's on the game PCB as shown in the picture below.



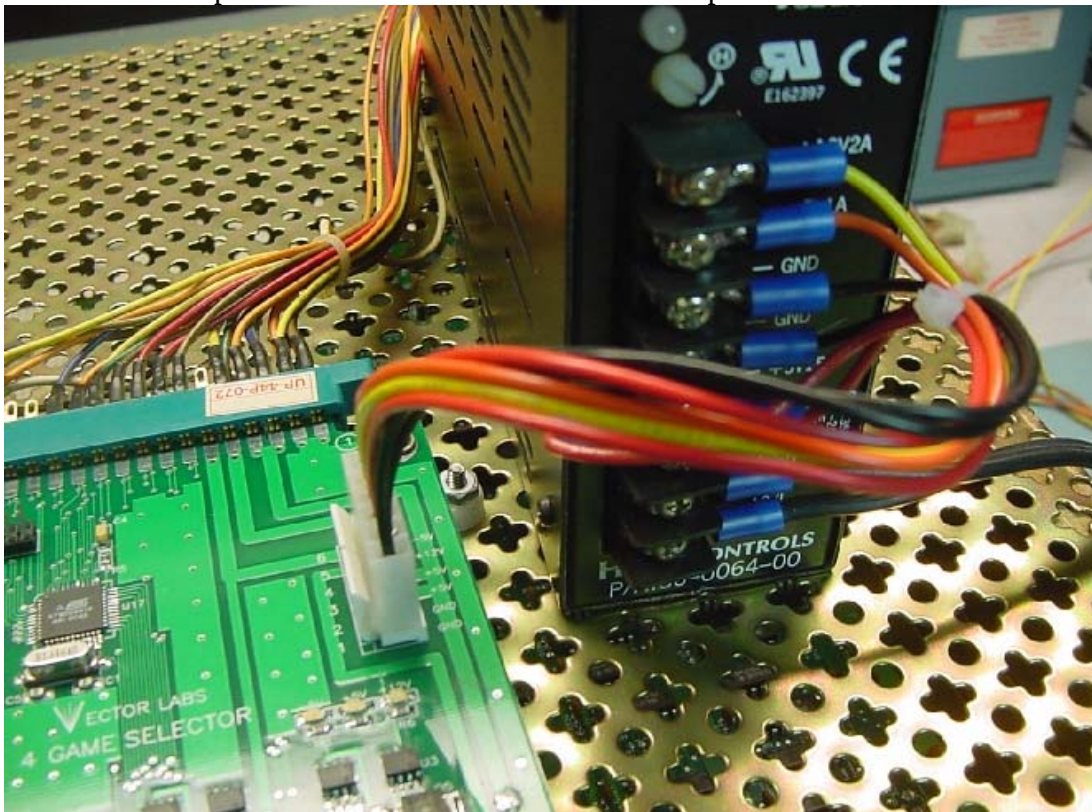
**THE VOLTAGE READING SHOULD BE NO LOWER THAT 4.75VDC.**

**If it is lower and you power supply does not have a way of adjusting the voltage to at least that minimum level then we strongly suggest you purchase a new switching power supply and install it like the one shown on the next page. TTL devices in these older arcade games require that the +5v line be in the range of 4.75v minimum to a maximum of 5.25v.**

**If you run your game PCB's at a voltage less that the spec WILL cause intermittent failures at best, to not running the game at all as a worst case.**



This type of supply has an adjustable +5v (white screwdriver adjustment on left). It can be wired into the 6 pin connector on the selector board as pictured below.



IF YOU HAVE AND PROBLEMS OR SUGGESTIONS ON HOW TO IMPROVE THIS  
INSTALL GUIDE PLEASE CONTACT [VECTOR-LABS@TX.RR.COM](mailto:VECTOR-LABS@TX.RR.COM)

