

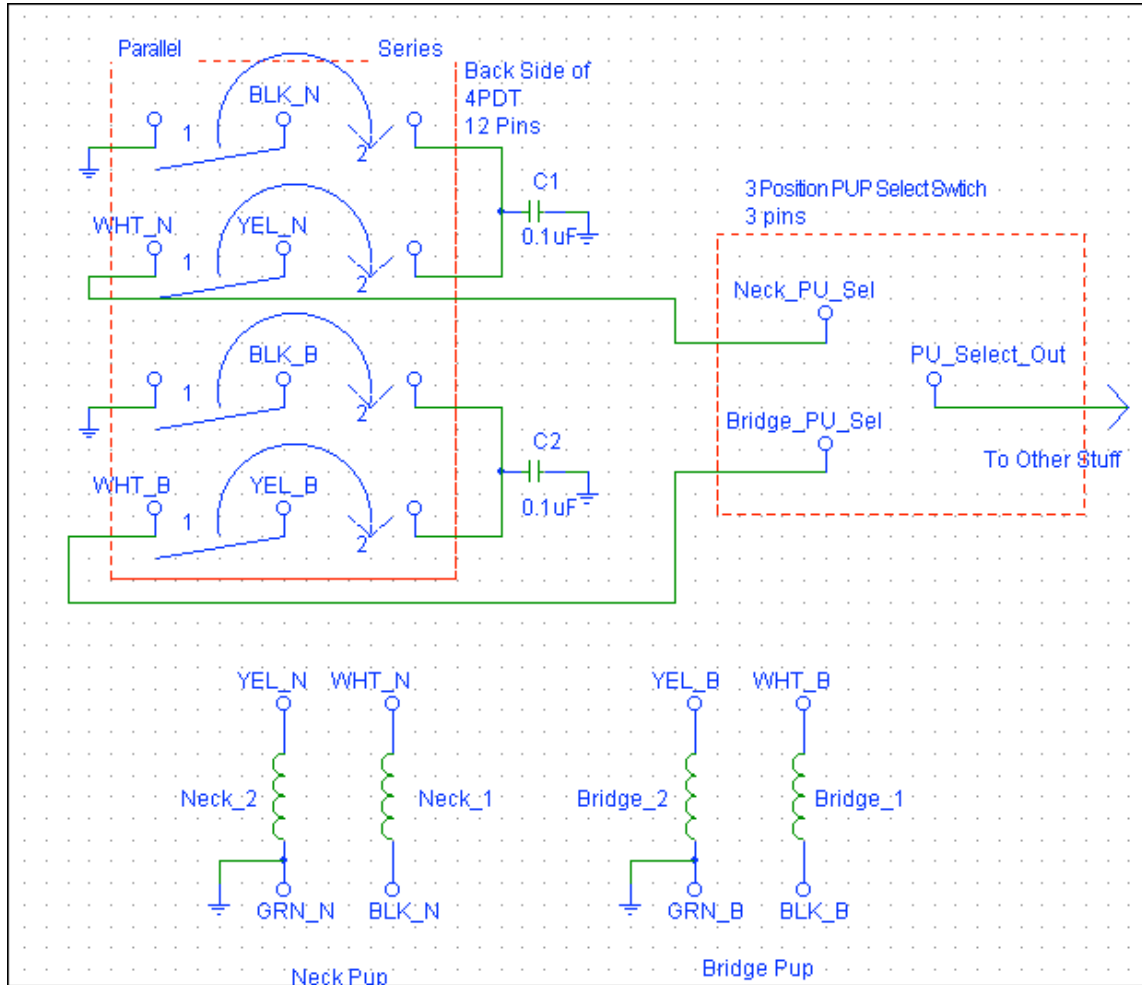
G&L L2K Wiring Mods

This document details how to change the arrangement of the four coils provided on a L2K so that they humbuck with both pups (pickups) on in series mod and also provides details for achieving single coil operation.

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1. Stock Wiring

L2K stock wiring should look like this. This details the pup connections leading up to the pup select switch. The G&L website provide a complete schematic of the pup wiring thru the pup select switch thru the bass / treble cuts thru the preamp. I have not included all this extra stuff because my mods here do not change anything down stream of the pup select switch.



Note that there is a 4 pole double throw switch that connects the center posts (poles) either to the left side contacts in position 1 or the right side contacts in position 2. Position 1 is parallel where each pair of coils are connected in parallel. Position 2 is series where each pair of coils is connected in series with the yellow-green coil on bottom and the white-black coil on top.

The yellow-green coils are located closest to the neck and the white-black coils are located closest to the bridge.

In the parallel setting each pup has its two coils tied in parallel (yellow connected to white, green connect to black). When connected in this manner the magnetic signals add (musical stuff) and the noise signals cancel (noise). This is humbucking.

In series the grounded coil (yellow-green) is on the bottom and the ungrounded coil (white-black) is on the top. The yellow wire connects to the black wire with a 0.1uF to ground at that point of connection. Because of the capacitor the two coils for a given pup are not humbucking. The four coils working together are HUM ADDING because the same polarity of coil is in the bottom of each series string and the capacitors unbalance the humbucking nature. If the caps were not there, all of the series configurations (1 pup or 2 pups) would be humbucking.

2. Series Humbucking Modification #1

The stock G&L series setting is not humbucking for two reasons. The first reason is that capacitors C1 and C2 create an unbalancing of the two coil windings. The yellow-green windings get all their highs shunted to ground thru these caps and the white-black winding do not. If the capacitors are removed, then the yellow-green and white-black windings will form a balanced humbucking situation. The first mod is simply removing these two caps.

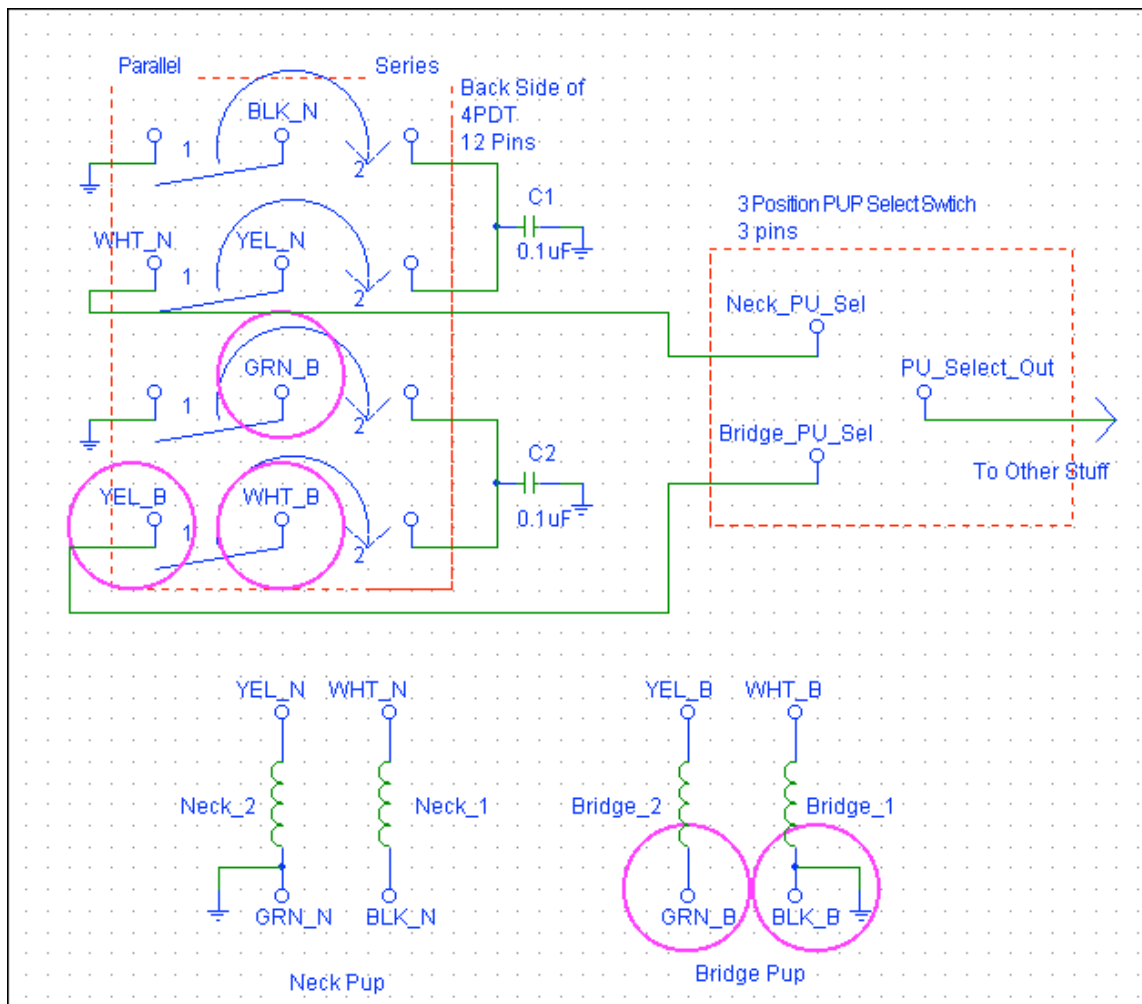
This will change the series setting a bit. The capacitors take away a lot of highs which result in an overall response that is very bottom heavy. When the caps are taken out, there will be a lot more highs in the series setting and it will not have the “bass boost” function as much as it will just give a 6 dB boost relative to the parallel setting and will roll off at a lower frequency. I have not tried this but I think it would be good.

3. Series Mode Humbucking Modification #2

Note: If you want to move towards a single coil solution that uses the outside coils, then perform the modification listed below to the NECK pup and not the BRIDGE pup. In other words swap the black for green and yellow for white on the NECK pup (top two switches).

The capacitors placed at the junction of the two coils in series mode (see above diagram) unbalances the humbucking nature of the two coils. You can remove the caps and the unbalance goes away. Series mode will be louder and may have more high end.

With the caps left in, when each pup is soloed there will be potential for hum to occur because of the unbalance. When both pups are on, they are hum adding and the hum should double if there is a source for hum. If the order of one of the series connected pups is switched then the arrangement will be hum canceling when BOTH are on in series mode. They will still hum with a pup soloed. In my experience a soloed series pup is not too bad for hum but two pups selected can be a nuisance. This mod will fix the two pups selected case. This mod should not effect tone in any discernable way.



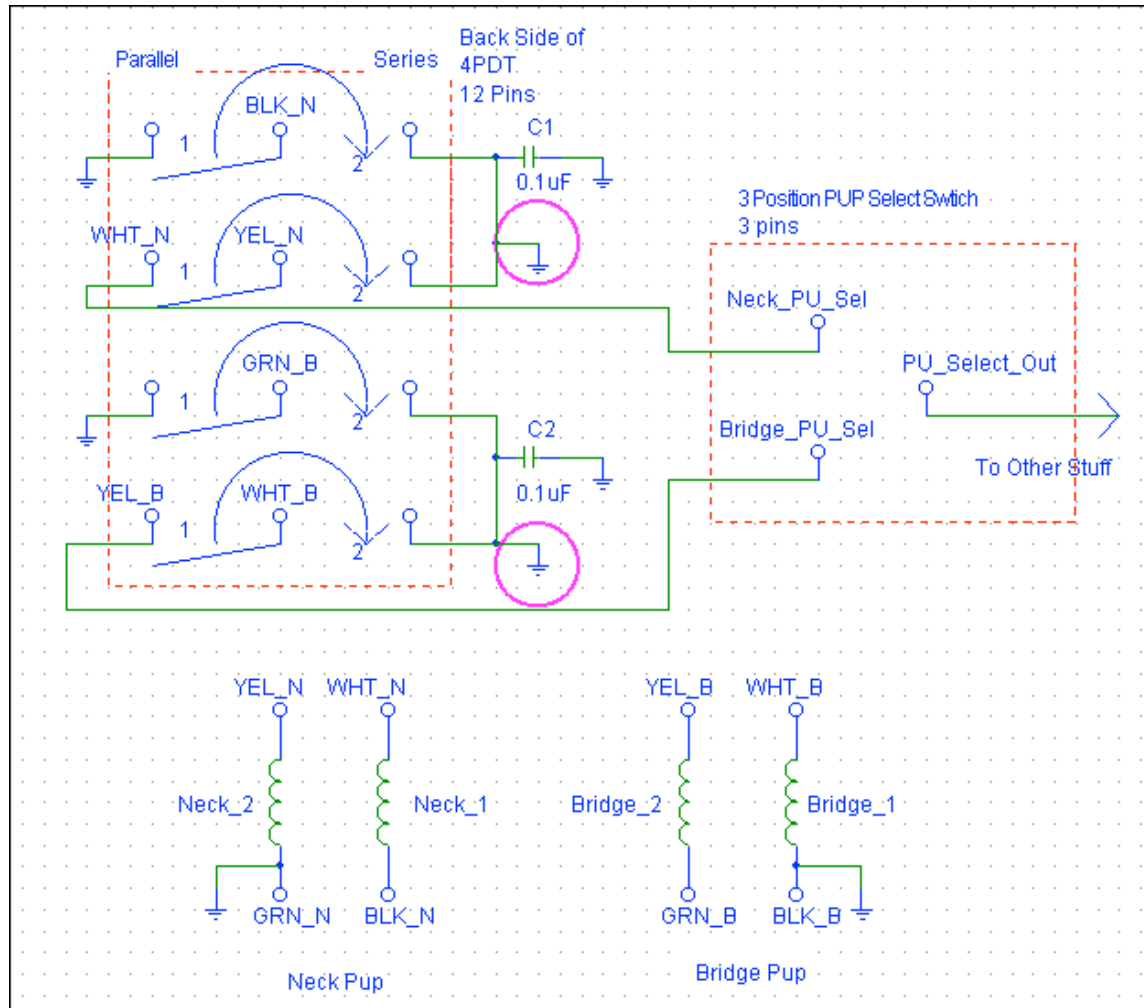
In the modification above, the black and green wires trade places on the BRIDGE pup only, and the yellow and white wires trade places on the BRIDGE pup only.

The coil in the bottom of the series string get heavily filtered by the green caps (no highs). The coil in the bottom of the series string is the one that is tied directly to ground. So there may be a change in the tone when switching the order of the coils in the series string. I suspect the change will be minor. My ears did not hear a difference but if you could A/B things there might be some?

4. Parallel-Single Coil Mod

This mod eliminates series mode and replaces it with a single coil mode. The single coils selected are the inside coils (i.e. the neck pup coil closest to the bridge and the bridge pup coil closest to the neck). This uses all the stock hardware provided with an L2K and is very easy to undo. BE SURE TO DO THE HUMBUCKING MOD listed above prior to doing this. If not, two pups on in single coil mode will hum like a son of a bitch.

In this mod, the inside coils are selected if wired per the figure. The ungrounded coils are the ones selected in single mode (formerly series). If you desire the outside coils (which I do), then perform the humbucking mod in the previous section by changing the NECK wiring instead of the BRIDGE wiring.

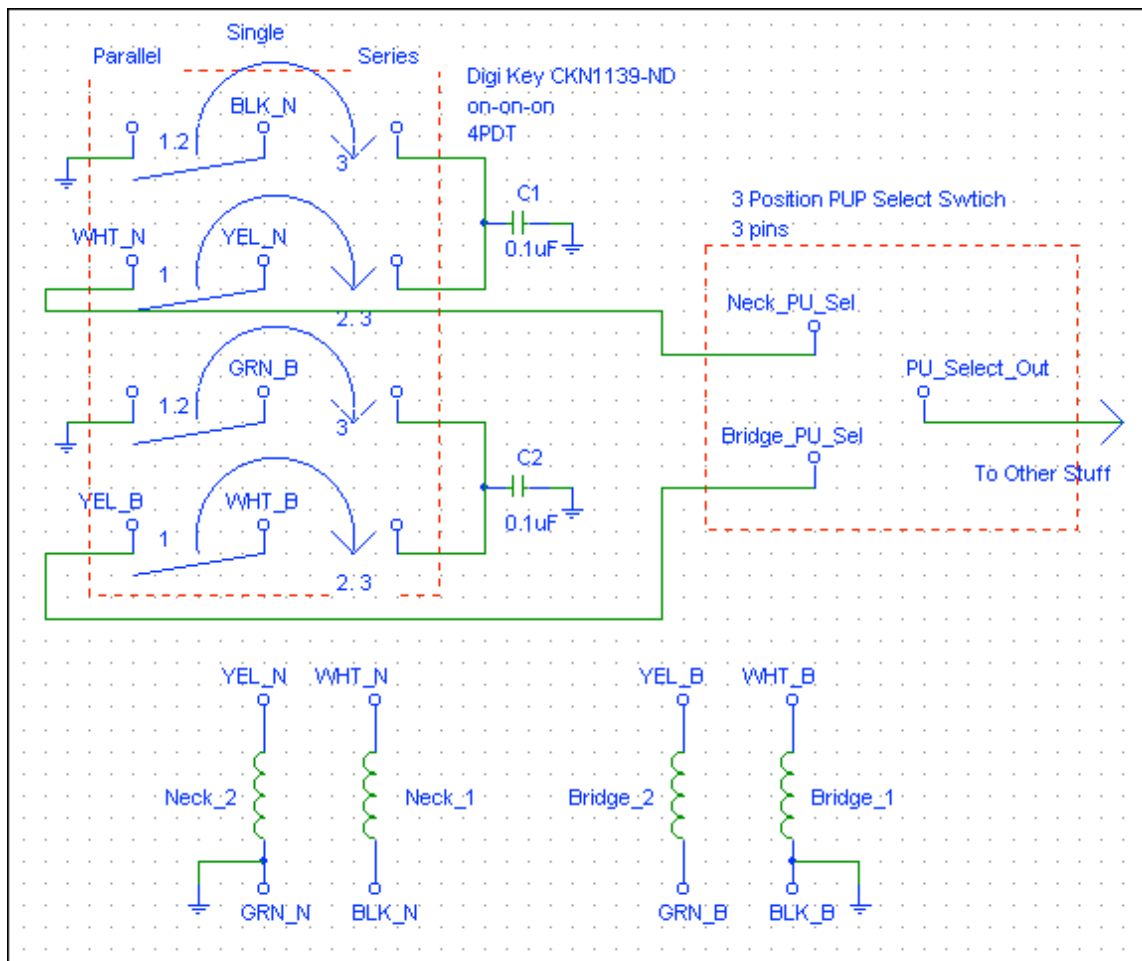


All this mod did was short out the two big caps used in series mode. Two ground wires can be placed and removed in a matter of seconds for one skilled in the art of soldering. You can do this without doing the humbucking mod first as I did the first time, but it will be hum adding with both pups on. Both pups on, single coil with the hum canceling mod is my favorite setting. You will get the bridge side coils if you short out the cap on the stock wiring.

5. Three Position Parallel – Single – Series Mod

Note: The modification drawn below selects the inner coils for single mode. If you want the outer coils then you need to wire the NECK pup like the BRIDGE pup is shown below and vice versa. The outer coils have more punch and bite when played together. The inner coils played together are real smooth. I think the inner coils are a little more useful soloing a pup. Can't decide, ditch series and move down to the next section. Single coils are clearer than parallel. But parallel is still useful when you don't want to be so clear.

This modification takes the humbucking mod listed previously and adds a 3 position four pole double throw switch in place of the series / parallel switch on a stock L2K. BE SURE TO VERIFY THAT THE SWITCH USED performs as specified below. In other words in position one (parallel) all of the poles (center posts) should be connected to the left side, in position two (single coil), two of the four poles change position to the right side, and in position three (series) all of the poles are connected to the right. MAKE SURE THAT IN SINGLE COIL MODE (middle position or position two), that everything matches the drawing below. The numbers 1,2, and 3 are used to indicate where each of the four poles are connected at the respective switch position. If this does not make sense, find someone that can help you figure it out. If things are done backwards, the single coil mode will not work.



6. Three Position Single Outsides – Parallel – Single Insides

This modification eliminates series mode and has a three position switch that goes single coil outsiders => parallel => single coil insides.

