

## Figuring out an unknown COLOR CODE

In a bundle of four colored wires and ONE bare wire, the bare wire is 99.9% sure to be the ground/shield. It goes to ground on the back of a pot, no matter what else you determine. Here's how I figure out the rest of the leads - get out yer multimeter.

Set the range to 20k ohms.

Touch a probe to one of the leads and hold it there.

Test the other probe on each of the leads.

ONE and only one should give you a reading in the 3k to 7k range - both others should be open (no reading). Those two leads belong to ONE coil. Write down the colors.

The other two leads belong to the second coil - you can confirm this by checking their impedance, should be very close if not exactly the same as the other pair, in the 3k to 7k range.

To figure out which leads go to which coil, try this:

Switch yer multimeter to volts, touch the probes to a pair of leads. Now, TAP on the polepieces with something metal. Typically, you'll get a reading from both sets of pole pices, but one set will be WAY higher - that's the coil that the leads go to. Make a chart - write it down!

Now, as far as PHASING the two coils, I don't really know a better way to do this than to use yer ears. Coils in series read the SAME on a mulitmeter, in-phase or out-of-phase. It's a crap shoot.

Pick your most likely candidate from each coil (say, a dark/cold color from one and the light/hot color from the other), and twist the ends together. This will be the SERIES PAIR - the connection that puts the two coils in series. Run the other two leads to the hot and ground, and plug 'er in. Coils IN PHASE will sound like a normal humbucker, out of phase coils will sound whimpy and thin. If it's out of phase, swap ONE of the colors that you have tied together for the series pair - NOT BOTH. In other words, change the phase of ONE of the coils by swapping its series pair lead for its output lead. Once you have it sounding like a full-voiced humbucker, you have mastered its color code!

Now it's time to figure out the phasing with the other pickups it the guitar. Again, your best tool is your ear. Install the pup, and play the it with another pup - notch 2 or 4 on yer Strat's 5-way, or the middle throw of a 3-way. Pickups IN PHASE will have a sweet quack or cluck; out of phase pickups will sound whimpy, thin, and terminally twangy. If it's out of phase, simply reverse the hot and ground colored leads of your new humbucker, but LEAVE the bare lead from the bundle grounded on the back of the pot.

Once you figure out how to wire it IN PHASE with the other pickup, you can decide how you want to use this pup. If it's always gonna be played as a humbucker, solder the two coil leads you have twisted together, insulate them with a little wrap of electrical tape or heatshrink tubing, and yer done. If you want to get into coil-shunts or series/parallel

mods, refer to my other documents – and keep the color code chart that you made for this pickup handy!