



HIGHORDER PICKUPS - DO IT FOR THE TONE

Thank you for purchasing a HighOrder pickup. I hope you are pleased with it, and will use it for many years to come. I started building pickups out of necessity to avoid paying high custom shop prices. For some folks, any old pickup will do; but for others, finding the perfect pickup is a lifelong search for the Holy Grail. Since I'm the latter type of person, I understand the frustration and difficulties involved in finding that "perfect pickup."

Every pickup I build is hand guided and assembled with utmost care as if it were for my own personal use. Hand guiding means the traverse of the wire is done by hand as a coil is built, not by a machine. Some folks call it hand winding, but it's unlikely that any builder "hand winds" pickups, which implies wrapping each turn without electro-mechanical assistance. The result of hand guiding is something called "scatter winding." High-speed machine wound coils often leave something to be desired in terms of tonal complexity or harmonic richness. Most feel that this is due to their extremely uniform shape and distance between turns and layers of wire. Scatter winding results in random layering, as well as slight variations in tension throughout the coil. This negates some of the unpleasant effects of machine winding, providing tonal complexity that is more pleasing to the ear and rarely harsh or "brittle." Hand guiding is the way it was done in the early days of pickup manufacturing.

As an independent builder, I'm limited in the materials available for fabricating pickups. Standard bobbin colors available at this time are black, white, or zebra (black with white or ivory) with either 50mm or 53mm spacing (no 53mm pure white). Exotic designs will require a great deal more effort, and may add to the cost and turnaround time for orders. Magnet choices include AlNiCo 2, 3, 4, and 5 or C5 ceramic, and I also carry 50mm nickel covers. Wire choices are either 42, 42.5, or 43 gauge with Single Poly Nylon (SPN) insulation. Humbuckers can be wound up to about 10k DC resistance using 42 SPN. After that, the bobbins become overloaded and 42.5 or 43 SPN must be used. Currently, my main focus is on humbuckers. I can also build P-90s on request. I strive for quick turnaround on every order by keeping an ample supply of parts on hand.

If your pickup arrives in non-working condition, or breaks under normal use, e-mail me and we can discuss repair or replacement. My goal is that you be happy with your purchase. Sometimes, magnets can vary quite a bit in strength. If your pickup sounds weak or "off," fixing it may be as simple as dropping in a new magnet. Of course, if it malfunctions due to your latest Hendrix/Zippo lighter fluid demo I probably won't replace it or fix it without charge. I can be contacted via e-mail at:

jeff@highorderpickups.com

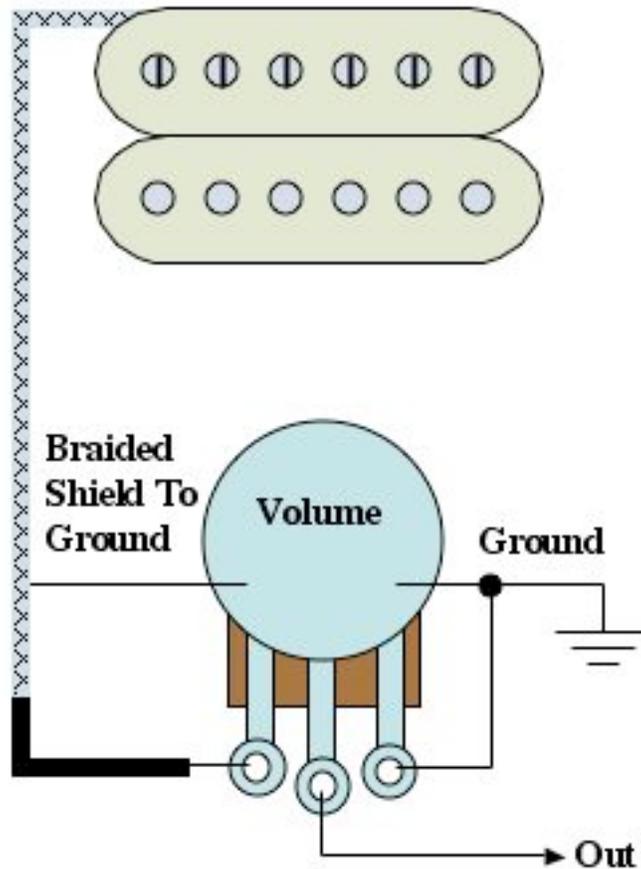
I hope you enjoy your pickup(s). Please contact me and let me know what you think. If you have custom specifications that you would like a pickup built to, let me know and we'll work out the details. Pass the word if you find my product worthy. Thank you. God bless.

Jeff Gay (a.k.a. HighOrder)

Installing your single-conductor/braided-shield HighOrder humbucker.

Your pickup comes with the wire dressed and ready for installation. Proper soldering methods will help ensure the best performance available from the pickup. The wire end and flying length of shield are tinned to facilitate soldering to a potentiometer (pot) and ground. You may find it neater to clip the section of shield off in order to pin the wire to directly to a pot. In this case, pre-tinning the shield area to be soldered will make the process easier (tinning is simply securing loose wires together with solder before making a final connection). Before soldering, apply enough flux to the point of contact to minimize the time required to make a good connection. Using flux will go a long way to helping you avoid what is known as a “cold solder joint.” Cold solder joints will ultimately fail, and may result in unusual performance along the way to failure.

Use the following as a guide for installing your pickup.



Tone and Setup

A lot of folks ask for pickups with a specific “brightness” or “darkness” or some other sort of tone. While variations in coil shape, wire size, and coil tension impact the resulting tone of a pickup, it’s only part of the equation. Often times, individuals fail to consider the effect that volume and tone pots and capacitors (caps) have on how their guitar “feels” or how bright/dark it seems to sound. The tone of your HighOrder pickup is harmonically rich and complex, and chances are if the tone you are seeking seems to be almost there but “not quite,” a simple change in components within the guitar is all that is required. For example, one typically finds 500 k pots in certain model Gibson™ guitars. In fact, there are only a few values that you’re likely to see in any guitar – 250 k, 500 k, 1 Meg, and 2 Meg on occasion. If your guitar bridge humbucker seems “too bright,” and you have 500 k volume and tone pots, try dropping the value of the volume pot to 250 k to reduce the amount high frequencies in the signal. The lower resistance value allows more of the signal in the higher frequency range to “bleed” to ground, resulting in a warmer or “darker” tone. Conversely, if your tone seems too dark to begin with try increasing the volume pot resistance from 500 k to 1 Meg. This allows more of the signal to reach the input of the amp, including those high frequency components lost to ground with a lower resistance pot. The result is a “brighter” overall tone. You don’t have to stop with just the volume pot, as similar experiments can be performed with the tone pots and capacitors. Changing the volume pot is quick and easy though, and a good place to start. A trick you can try with a volume pot is to solder a resistor across the pot to lower the overall value. Why would you want to do this? Let’s say a 500 k pot is too bright for you, and 250 k is too dark. Try soldering a 1 Meg resistor across the outside tabs of a 500 k pot. This gives you a 330 k pot, which might be just what you’re after. To do this, you need to know a little about how resistance in parallel works, but the concept is simple and information describing it is available from many places on the Internet.

Most of us (myself included) have naturally assumed over the years that a guitar is “ready to go” right off the rack at the music store. Nothing could be further from the truth. I’m not saying it never happens, it’s just never happened to me and probably not to you either. Often times, the action is set so low on guitars in music stores that they buzz like a beehive, and there’s too much neck relief in an effort to minimize the buzzing. Sure they’re easier to play that way, but the buzz and reduced sustain are a contributor to the amplified sound and doesn’t allow the character of the body and neck woods to be felt in the overall tone. Some folks like really high action, since it allows each note to ring clearly and contribute to the tone. The rest of us want the lowest action we can get but with a minimum of buzzing. Also contributing to the richness of tone (or lack thereof) is intonation. This basically determines how well your guitar will tune. Simple adjustments like neck relief, action, and intonation can turn your least favorite guitar into your “I can’t live without it” tone machine for only a couple hours of effort. Take the time to learn some basic setup procedures, and you’ll never regret it. Otherwise, take your guitar to a competent tech or luthier for a proper setup ever so often. Then, you can be sure that the sounds coming out of your guitar are the best it has to offer.

Pickup Polarity

Most HO humbuckers are wound clockwise (CW) and built with a north magnetic polarity at the adjustable pole pieces. From what I can tell, the larger percentages of “other” humbuckers are setup as south at the adjustable pole pieces and wound counterclockwise (CCW). There should be no impact on the tone of a south-polarized neck pickup used with a north-polarized bridge pickup or vice-versa. Also, the signal polarity is the same for a north/CW pickup as a south/CCW pickup so there shouldn’t be any phase issue with “most” pickups. If you notice an “out-of-phase” tone when using your HO pickup in combination with another type (the center position of the three-position pickup selector switch), try swapping the hot/ground wires. This may require insulating the braided shield on single conductor pickups with something like a piece of shrink tubing. You could also flip the magnet, reversing the magnetic polarity of the pickup. Flipping the magnet is really not hard to do (contact me for instructions if you need them). Another way to avoid potential problems is to have your pickup built with 4-conductor wire. This allows easy swapping of connections. Of course, you could also buy another North going HO pickup to match the existing one too!

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