

is your relationship with your guitar on the ropes?

are you constantly fighting with it to put out great tone? or maybe you're just not getting any. you know, your instrument should love you as much as you love it. if things between the two of you aren't working out, then it's time for a new pickup.

what's a pickup?

Technically, pickups are transducers that "pick up" string vibrations and translate them into an electrical current which then comes out of your amp as a tasty jazz run, a chunky power chord, or an in-yer-face death metal riff.

why change pickups?

Simply put: Are you totally satisfied with your instrument's tone? Look – 99% of all guitars are built from the same basic stuff: wood, strings, hardware, and pickups. Each of these components plays an important role in formulating the tone and determining how your instrument will sound. But check this out – if you've got an instrument that looks right and feels right, but doesn't *sound right to you*, then the pickups in that instrument are not the right pickups for *you*. Seymour Duncan/Basslines manufactures hundreds of pickup models for all kinds of instruments with the single-minded goal of helping *you* find your tone. *Your* tone.

ok, this is about me. so, how do I choose the right pickups?

First off, determine your tone needs. Do you need more output? Are you looking for a thicker tone? Is your tone lacking bottom end? Are you in search of more sustain or better dynamics? Answering these questions is the first step in choosing the right pickup for you.

Next, you need to read about the pickups. Think about how the various models presented in our website will work for you. If you'd like to actually hear the electric guitar pickups, grab yourself a copy of *The Journey is the Destination*, our three-volume CD series that highlights most of our electric guitar pickups under scientific conditions. *The Journey is the Destination* is available from any Seymour Duncan/Basslines dealer or factory direct. Or, if you've got a computer with really good speakers, listen to it – for free – on our *Soundbytes* section.

We strongly advise you check out the great tools we have on our website, like the *Tone Wizard™* who will help you start off on your pickup quest. You'll also find a bunch of cool wiring diagrams and detailed drawings of pickup dimensions – very important, since sometimes guitar manufacturers change their pickup route cavities without us knowing about it. And you'll find a User Group Forum with the nicest, most knowledgeable, most tone-minded folks on the 'net. There are also FAQs, Q&A with Seymour, artist interviews, dealer listings, newsletters, the Wall of Fame and lots of cool features.

what makes one pickup sound different from another?


Basically, a passive pickup is composed of two things: a magnet and a coil of insulated copper wire. The magnet works to magnetize the strings creating something called a flux field. When the strings vibrate, the movement of this flux field creates an alternating current within the pickup coils. This alternating current then travels from the pickup to the amplifier. When you crank your amp, you hear the combination of the pickup and the amplifier interpreting the vibration of the strings. When you're thinking about how a pickup will sound, there are a few variables that determine the way it will transduce the string vibrations.

coil

A pickup coil is merely a long strand of insulated copper wire, wound thousands of times around a bobbin (or coil form) that has magnetic pole pieces at its core or a bar magnet at its base. We use several types of insulation and several gauges of wire to give you the right tone. The different sizes and shapes of the bobbins have an impact of determining how the pickup will transduce the string vibration. For instance, a narrow coil that's close to the pole pieces like a Fender® single coil results in extended treble response. A P-90, on the other hand, is shorter and fatter, yielding a more midrange-intensive tone.

number of turns

The number of turns of copper wire wound around the bobbin greatly affects the performance of the pickup and the overall tone of your guitar. A pickup with lots and lots of turns will have high output, but this output will come at the expense of dynamics and high end. A pickup with way too many turns will actually lose output due to resistive losses caused by excessive impedance. On the other hand, an under-wound pickup will come across sounding thin and weak. Getting the right number of turns for a great-sounding pickup is as much art as it is science.

pickup	d.c. resistance	resonant peak
 SSL-2	low	high
 SSL-3	high	low

d.c. resistance and resonant peak

The gauge of wire and the number of turns on the coil each play a part in defining the d.c. resistance. D. C. resistance is resistance to the flow of direct current. Generally, the more turns of wire, the higher the D.C. resistance, the higher the output and the lower the treble response. For single coils, the d.c. resistance generally ranges from around 6.5k for a vintage tone, to 15k for a high output tone. For humbuckers, the range is around 7.5k to around 16.5k. Though it may seem that this is the clear-cut way to determine what kind of pickup is best for you, remember this is only one of several variables that aid in determining the tone or voice of a pickup.

Resistance to the flow of alternating current is called impedance and it changes with frequency. The frequency where a pickup's impedance reaches its highest level is called the resonant peak. Generally speaking, the higher in frequency the resonant peak, the clearer and brighter the pickup's tone.

The relationship between d.c. resistance and resonant peak is a great way to understand the voice and tone of a Seymour Duncan or Basslines pickup. For example, if you check out the tone chart you can see that an SSL-2 Vintage Flat for Strat® has a significantly higher resonant peak (9.0 KHz) than, say, a similar pickup like an SSL-3 Hot for Strat® (4.4 KHz).

Based on these numbers, you can easily see that the Vintage has a much brighter tone and the Hot has a much fatter tone. Or, if you see that the Vintage (6.6k) has a much lower d.c. resistance than the Hot (16.4k), you will understand that the Vintage has less output and more brightness compared with the Hot.

Notice the inverse relationship between d.c. resistance and resonant peak. Generally speaking, the higher in frequency the resonant peak, the clearer and brighter the pickup's tone.

We list the D.C. resistance and resonant peak for almost all of our pickups. It's most informative to compare D.C. resistance and resonant peaks between similar pickups, that is, between single coils or between full-size humbuckers for example, and not across broad categories, like comparing a single coil to a full-size humbucker. Besides actually hearing the pickup, this is the best way to figure out what the pickup is going to sound like.



what makes one pickup sound different from another?

magnet

The magnet brings life to the pickup. We use two different magnet materials:

Alnico and ceramic. Alnico, an alloy which includes aluminum, nickel and cobalt ("AL-NI-CO"), tends to have lower string pull and creates a softer magnet field which improves sustain and helps smooth out the tone. We use two different strengths of Alnico magnets -- Alnico 2 and Alnico 5 -- to create two totally



Chamfering pole piece magnets

different tones. Alnico 2, which is slightly weaker than 5, tends to have a smoother, warmer, rounder tone with softer attack. Alnico 5 has a brighter, more dynamic tone with a tighter bottom end than 2.

Ceramic magnets are a blend of magnetic iron and rare earth materials like barium or strontium, which is formed into bars under high pressure and intense heat. If you are looking for power and extended range in your tone, ceramic is the way to go. Ceramic creates a magnet field more powerful than that of Alnico and is more resistant to environmental aging. We use ceramic magnets on some of our humbuckers (like the SH-13 Dimebucker), single coil sized humbuckers (like the JB Jr.), and bass pickups (like the active soapbars), because it produces a more aggressive tone with a punchier bass end and enhanced upper mids.

Understanding the relationship between d.c. resistance and resonant peak is a great way to discern the "voice" of a pickup. But of equal importance is understanding how the magnet of the pickup matches with the various types of tone woods used in guitars. Ask yourself this: is my guitar naturally bright sounding or warm sounding? Bright sounding guitars will have a tendency to have a pronounced high-end detail; and warm sounding guitars will have more emphasis in the lower-midrange. Certain woods, like mahogany and rosewood, will often create a warm sounding guitar. Other woods, like maple and ebony, will make a guitar bright sounding. What kind of wood is used on your guitar?

Here's the trick: you can balance a bright sounding guitar with a warm sounding pickup. And vice versa. Alnico 2 has a characteristic warm tone with soft attack. Generally, this means it usually works well with bright sounding guitars. Alnico 5 and ceramic generally have a brighter tone than Alnico 2, which make them well suited to warm sounding guitars. Keep in mind that these are general guidelines; and we make some broad-based suggestions for woods for each pickup in their catalog description. But some Alnico 2 pickups, like the APS-1 Alnico II Pro for Strat®, for instance, are actually bright sounding – not because of the magnet, but because of the low d.c. resistance and high resonant peak. See? It's all related.

ok, what makes Seymour Duncan and Basslines pickups so good?

it's the pickups

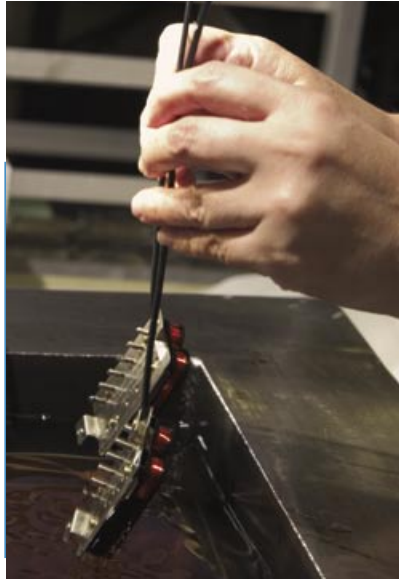
We have a 100%, no-compromise attitude about our product. From the hand assembly to the fanatical quality control, we have a passionate devotion to making sure our product is the best it can possibly be. That's why so many guitar manufacturers specify our pickups as original equipment on their instruments. That's why so many artists rely on Seymour Duncan and Basslines to give them their sound. And that's what makes you sound so good when you get Seymourized.

it's the people

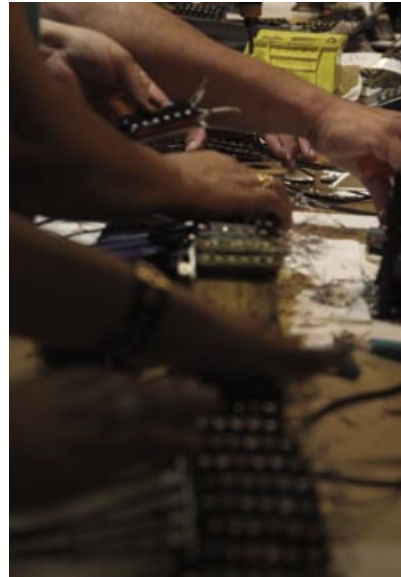
We're a company of guitar and bass players. We've been on stage. We've been in the studio. And we've spent countless hours practicing in our bedrooms. We know tone, and we know what it takes to give you the tone you're looking for.

it's pleasing you

Our devotion to our customers starts with our product development and extends to our network of authorized dealers and our 21-Day Real World Exchange Policy. It's all about taking care of you by helping you find Tone That Sets You Apart™. And helping you patch things up with that axe you know you love so much.



Vacuum wax potting



Each pickup is built by hand



Seymour jams with a member of our Internet forum at User Group Day 2005

