

Yet another way of wiring... The Brian May Wiring System

By Quentin Jacquemart with permission

Brian May - well known for his superb guitar work in Queen - has one of the most distinctive sound in the world.

Back to 1963, when he was 16, unsatisfied with the offers of big guitar manufacturers, and not able to buy one anyway, he decided to build, with the help of his father, his version of the dream guitar... now known as the Red Special (or The Old Lady). The work took 18 months and ended up with Brian's guitar which he's used since... and is still using as his main guitar today for both, live and studio. I'm not gonna expand on the built of the guitar and the special materials used for its construction because my point here is to explain the pickup wiring. However, many sites on the net tells you the story. Take a look, it's worth it!



Brian May playing the Red Special. (Freddie Mercury behind). Photo from QueenOnLine.com

The guitar was fitted with Burns Tri-Sonics single coil pickups and was wired in series rather than parallel (like on Fenders or Gibsons) with additional phases switches.

So now... what is a pickup wired in parallel?

If you wire pickups in parallel, that means the output signal of the pickup (whatever you played on your strings) is directly going into the input of the amp, traveling the shortest way possible.

And pickups in series?

Well, the output of a pickup is going into the input of the next one. That means the signal (the note) has to travel through the whole guitar before getting into the amp. Therefore, you lose some the treble frequencies (remember what you read in "Tones" from "Guitar Basics": the higher the note is, the higher the frequency will be. If you've got a high frequency, the electron flow created by the pickup(s) when you touch the strings will take a lot of energy to get out of your long cables (because cables are resistors). This is also valid for any guitar: if you use a 15 meters long jack you'll notice that the sound has less details than the same stuff with a 3 meters long jack).

Phases switches?

When pickups are in phase with each other, the sound coming out of the guitar is a strong signal (just like the sound of a Fender, a Gibson... and most of the guitars in the world). Now, if one pickup is out of phase, the common frequencies of the pickups will be canceled out (they won't get in the amp). It doesn't mean that if you play, let's say A, on the guitar and two, or three pickups are selected (and out of phase) you won't get any sound: two pickups don't receive exactly same frequencies, because of their physical position on the guitar. The bridge pickup gets more treble and is brighter, while the neck pickup gets less treble and sounds warmer (thought it might vary with the height setup of the pickups, but let's look at it generally).

The combination of those different switches (the Red Special has 3 on/off individual pickup switches and 3 phases reversals) offers the player lots of different tone. Counting up to 18 different tones (some people say 16 because switching either phase on or off of any pickups pickup selected will result in the same sounding, but for the reasons I explained before (physical position of pickups), the sound will not be exactly the same (especially for the amp feedback)). The sound can go from a violin-like sound (like in The Dark, from "Back To The Light") to a crying lead guitar (Bohemian Rhapsody, "A Night At The Opera") through the usual rhythm and lead sound used by Brian (like in Hammer To Fall, ...) to Telecaster twangy sound, ...

Again, lots of site repertories the sounds of the guitar... take a look if you're interested.

If you don't have any Queen record around you, the Old Lady is often said as being between a Strat and a Les Paul, soundly talking... when using the usual pickup combination (1; 2; 3; 1 & 2; 1 & 3; 2 & 3; 1 & 2 & 3). She's got the warmth of Gibsons, and the clarity of Fenders.