

Here's a question I get a lot:

"Will your custom rotary switches and all these goofy mods work as expected in my Strat, with its **RW/RP** out of phase middle pickup?"

Here's the deal: **the Strat middle RW/RP pickup PLAYS IN PHASE**, and simply gives you a noise-canceling pair of coils in throws #2 and #4. It is actually incorrect to say that the middle pup is out of phase - it is NOT.

RW/RP pickups, usually referred to as **Reverse-Wound/Reverse Phase**, are actually reverse wired (**RW**), referencing the start and finish of the coil - meaning that the energy from the coil flows in the opposite direction of the "regular" pickup's coil. So, we would say that those two coils are 180 degrees out of phase. However, the **RW/RP** pickup ALSO has its magnets installed in the opposite (**reverse**) polarity (**RP**) of the other pickup - as in, north is up (closest to the strings) and south is down (bottom of the pickup) through the coil, as opposed to north is down and south is up. So the magnets turn the phase of the energy created by actually passing something through the magnetic field another 180 degrees... **that's 360 degrees, back IN phase!**

SO, YES, the two coils, considered by themselves, are out of phase, but the magnets are ALSO out of phase – and the pickup, assembled, plays IN phase with its "regular" mate.

WHY? Pickup coils not only sense the movement of the strings, but also act like little antennas, picking up all sorts of random electronic signals. When you play a "regular" pickup and a RW/RP pickup at the same time, because the two coils are out of phase, one coil cancels out the radio-interference, hum, buzz and other electronic signals and noise that are picked up by the other coil. But, the fact that one pickup ALSO has its magnet reversed causes the energy/signal created by moving the strings through the magnetic field to be IN phase between the two pickups. AND, that's the whole point of the RW/RP mid pup, to get some noise-cancellation AND the "normal" in-phase tones.

ALL my personal Strats have RW/RP (mid-pup) sets in them, and all my rotary switches and schemes work just fine with a RW/RP mid pup. The switches and schemes work just the same as if all the pups were wound identically and had the same polarity, vintage style.

The one thing that IS mentionable is that, when using one of my rotaries in an axe with a RW/RP mid pup, when you are playing on a NOTCH that reverses the phase of the bridge pup (Chromie, V.2, V.3), the noise-cancelling positions change. For just that notch, the bridge+mid combo doesn't noise-cancel, but the bridge+neck combo does (the mid+neck combos still does, as well). It's hardly audible unless you have a freakish ear, but it is worth mentioning. It's an unavoidable side effect of all that tonal variation.