

How To Change Out A Humbucking Bar Magnet

(Gibson Type Scenario)

By John Spina



This is a Seymour Duncan 59 Neck Pickup that I want to exchange an A3 bar magnet with an A5. I want chimier highs, overall tighter pickup response and tighter lows, less mid. This pickup has a nickel cover which has to be removed for access to the bar magnet.

This was all done on my Les Paul.

Purpose of this modification

- 1) Replacement of a bad or non-working bar magnet
- 2) Change the polarity or the magnet orientation within the pickup
- 3) Change tone and feel of the pickup and how it reacts in your guitar...

Different magnets produce different tones and output....Magnet explanations after the mod below..

Tools Needed: Different small sized Jewelers type screw drivers

(Phillips and Slotted)

Magnet Polarity Tester (Available through Stew Mac)
Soldering Gun, High heat soldering iron
Solder
Dremel Tool with thin cutting wheel
Safety Goggles
Masking Tape
Clamping devices (Home Depot)
Wax melted within a container
Towels, Rags, etc. to protect your guitar's finish
Needle Nose Pliers or Hemostats



Step 1 Notice the magnet orientation of whatever pickup you will be doing this mod to. In a Les Paul, SG, Flying V, 335 etc. type guitar, the neck pickup screws face towards the headstock and the bridge bobbin screws face the bridge.

IMPORTANT INFO! The screw sides of the Humbucker are "S" magnet polarity while the slug sided bobbins or the side of the pickup under the cover is "N" polarity

You need to know this for proper replacement and polarity of the pickup while replacing or removing a magnet



Step 2 Loosen the strings slack enough to be able to remove the stop tailpiece on your Gibson style guitar. On a Strat, I loosen all strings and put a 2x4 block of wood between the strings and the finger board and then I carefully lift the pickguard up and away from the body and strings.



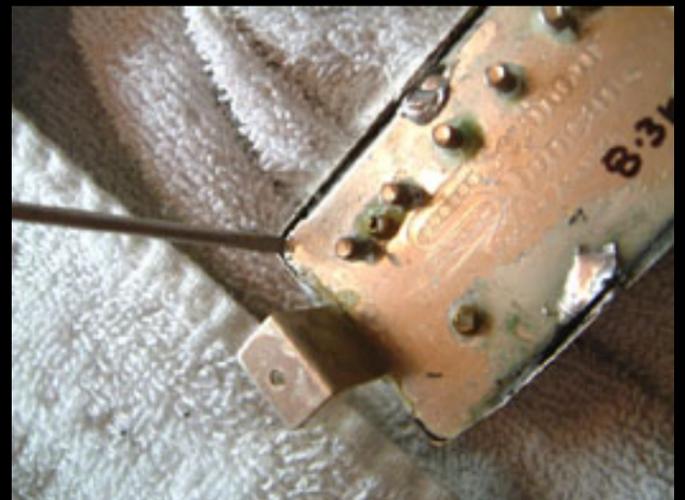
Step 3 Place towels or rags etc. all around the top of your guitar so when you lift the pickup out to work on it, you don't mar your finish. Remove only the screws that mount the Humbucker ring to the body. Carefully lift the pickup up and out and lay it face down onto a towel.



Step 4 Remove the 2 screws that mount the ring to the pickup. Notice the orientation of the cover and lay it off to the side and away from danger. Leave the pickup face down and the bottom plate facing up.



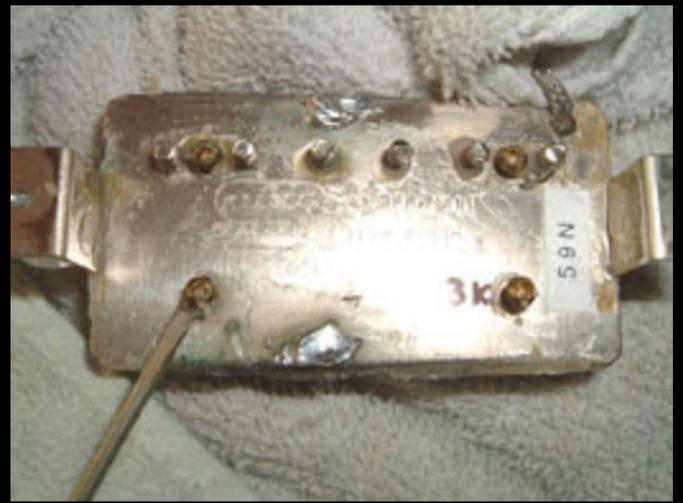
Step 5 Take a Dremel tool with a thin cutting wheel on it and cut through the solder on both sides of the bottom plate to have the ability to remove the cover shortly Try to cut the solder right between the cover and the base plate.



Step 6 Sometimes you can get lucky and grab hold of the cover and one side of the mounting legs of the pickup and pull the cover off. You can use a hair dryer and heat up the wax or. Take a real small screwdriver and very carefully lift up on one corner working a gap to where you can pull the cover up. Be careful not to dig the screwdriver to deep towards the bobbin or you'll screw your pickup up for good! ;o) Lift the cover off and lay it out of harm's way now.



Step 7 Loosen only, the 4 very small sized Philips screws on the bottom plate of the pickup



Place a screwdriver under both bobbins on one side and then the other, and very carefully lift up on the bobbins to break the wax seal around the bar magnet.

The bar magnet sits between the base plate and both bobbins and right in the center (As mentioned above "N" magnet polarity faces towards the slug sided bobbins in a normal magnet installation and if you aren't doing the Peter Green mod) ;0)

Step 8 Lift up on the bobbin tape on both sides of the pickup. You need to lift the tape at the point where the bottom of the bobbins are to access the magnet.

Step 9 Carefully take a screwdriver and on the side that you see wires at one end of the bobbin pair, push the bar magnet out from under and between the bobbins being careful not to cut through wires.



Once the magnet starts coming out the opposite end, grab it with needle nose pliers or your fingers (see below)



Step 10 Slide the new magnet back into the pickup with "N" facing the slug bobbins. The thin edge of the magnet is checked for polarity via the Magnet Polarity Tester I recommended above. This is an invaluable tool and saves your ass every time!



Step 11 Tighten the 4 little screws on the base plate.

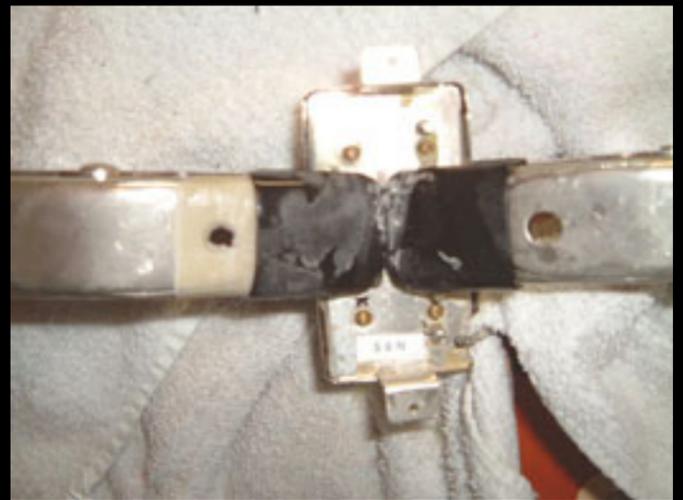
Step 12 Place a piece of masking tape on top of the slug bobbin side of the pickup. This helps get rid of microphonics from metal to metal touching and also air gap problems between the cover and the top of the slugs.

Step 13 Heat up some wax and dip the cover in the wax. Remove the cover, when the wax turns a milky color and isn't runny like water, it's ready to be placed back on top of your pickup.



Step 14 Press the cover on as far as you can first with your fingers, feeling for the cover bottoming out onto the pickup top.

Step 15 Clamp the cover onto the pickup and resolder the 2 spots you Dremel tooled earlier. Some guys like to leave the cover unsoldered. I like to resolder the cover so it has no chance of popping up on me. Takes 2 minutes to resolder the cover.

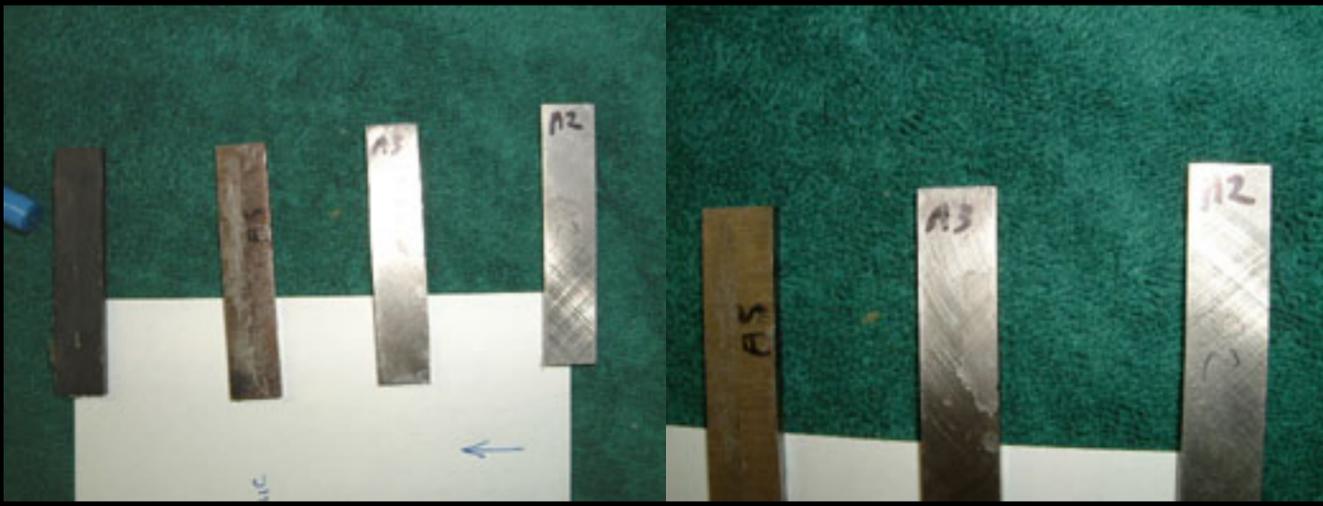


Step 16 Clean all the excess wax off of the cover and replace it back into the plastic ring. Put the ring and pickup assembly back into the guitar. Tighten all the screws into the body, restring, reset your pickup height.

YOU ARE DONE!



Briefing about the A2,A3,A5 and Ceramic magnets



Duncan uses color codes painted on the north thin sides of their bar magnets.

A2 is blue, A5 is black, Ceramic is red but also has a black or dark gray look to it and is easy to identify from the A2 and A5 magnets. Duncan only currently uses A2, A5 and Ceramic in his normal and non-special ordered pickups. A2 and A5 is next to impossible to tell apart from each other and would have to be measured for "gauss readings". Always mark your magnets before storing them so you know how to identify one from another, also mark "North" on the magnet for later use.

Going from A2 to Ceramic, A2 is the weakest in magnet strength and Ceramic is the strongest.

A2... Warm, Sweet, Smooth tones, Lows tend to be softer in feel, Lows aren't as tight as A5 and Ceramic, Generally will give your pickup more mid tones.

A3... Very similar to A2 and not A5, I feel like the mid tones are about the same and the overall vibe is like the A2 but shares more of the tightness of the A5, I'd put the A3 between the A2 and A5 but closer in it's function to the A2 really.

A5... Tight, Brighter tone than the A2, slightly more scooped in the mid tones compared to A2 and A3, Tight lows, Jangly, Chimy.

Ceramic... Tight, Powerful output, Very direct and to the point in it's sound, strong tone overall, I actually dislike the Ceramic magnet.

Good Luck, have some patience, but most of all be careful and have fun.