

## ACTIVE PICKUPS AND CONTROLS INDICATED IN ORANGE (RED INDICATES SERIES PAIR)

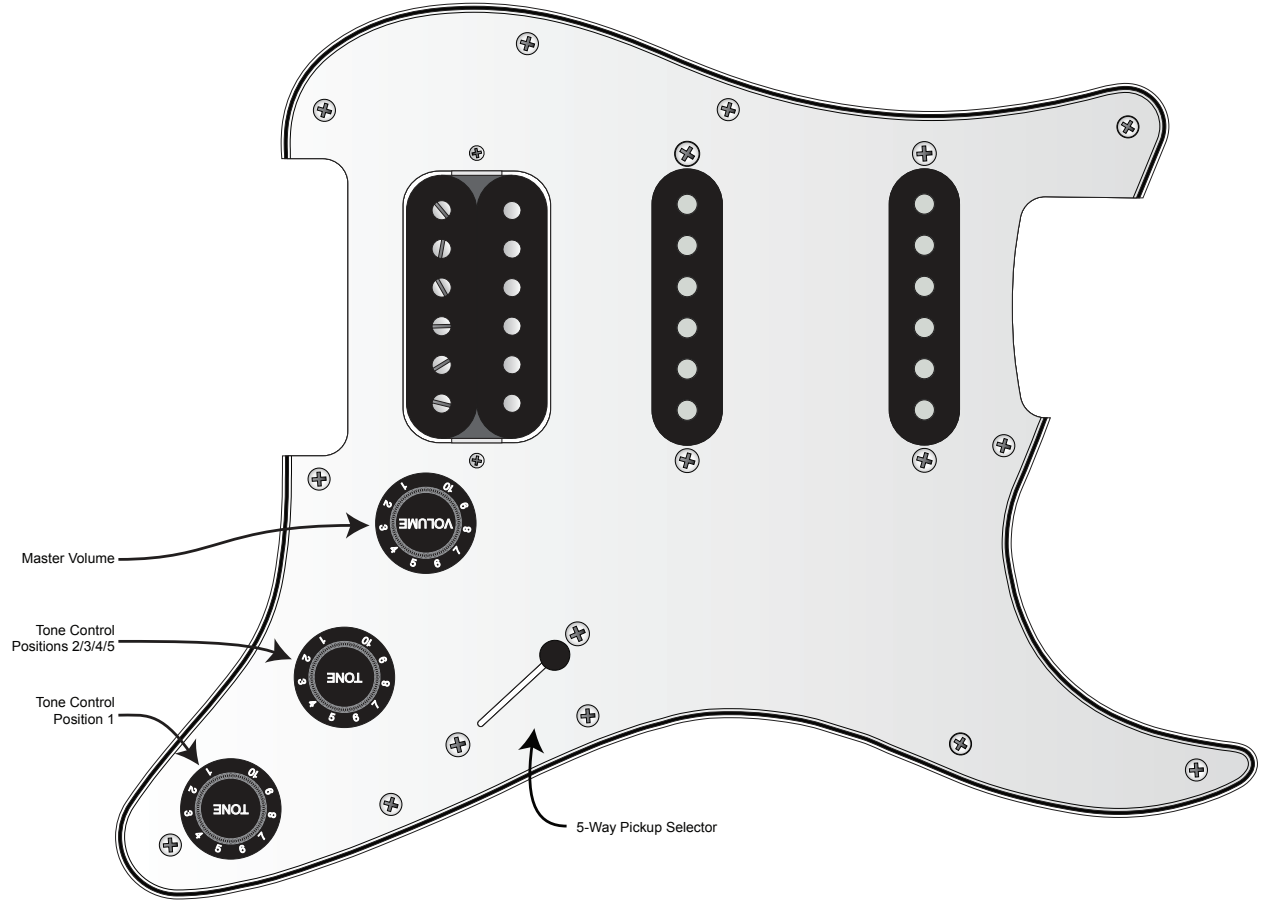
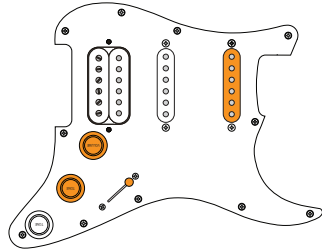
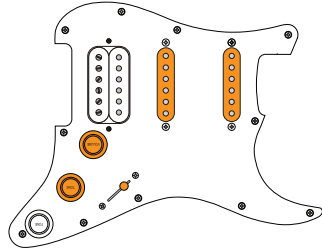
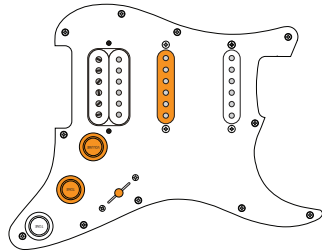
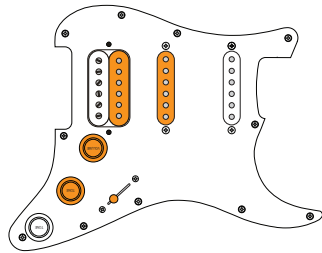
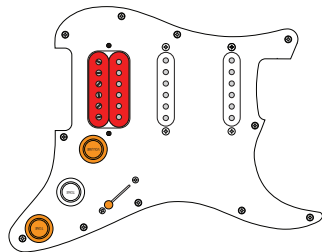
POSITION 1

POSITION 2

POSITION 3

POSITION 4

POSITION 5

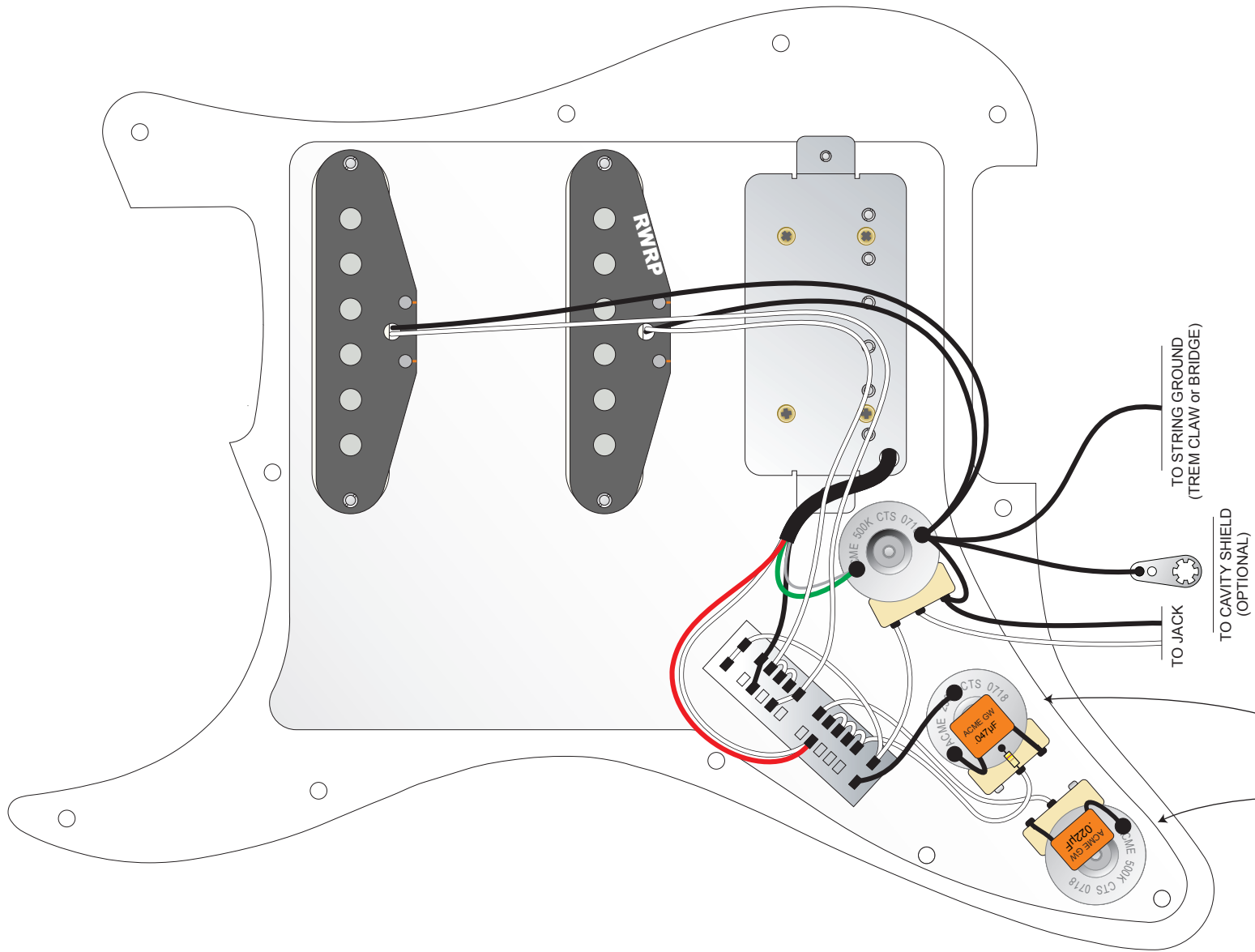


Where to start? HSS Strats pose a few head-scratchers, because there are a couple of challenges when you combine single-coils and humbuckers in Fender guitars: one is that you don't want to compromise hum-canceling; and the other is that you want to optimize the pot values.

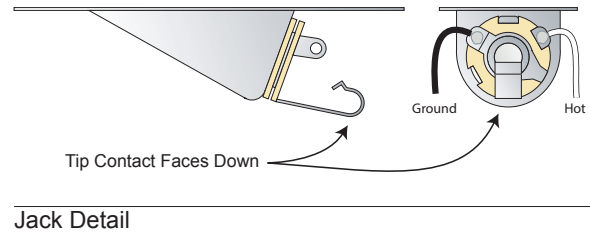
Most Strats use a middle pickup that is reverse-wound and reverse-polarity (RWRP) so that you get hum-canceling in positions 2 and 4. Add a humbucker into the bridge, and it's important that you split the humbucker in the 2 position, so that you combine only one of its coils with the middle pickup. This allows you to retain hum-canceling in this position (assuming the pickups are compatible - all ToneShapers HSS prewired assemblies will hum-cancel in this position), and it also most-closely approximates the tone of a Strat in the 2 position. You could add a switch of some type that would allow you to manually split the humbucker, but this would mean manipulating two switches. Most players prefer to let the 5-way switch perform this function automatically, so that position 1 is always the bridge humbucker, while position 2 is always the split humbucker combined with the middle. This is usually how we do it at ToneShapers.

What about pot values? Humbuckers are voiced with 500kΩ pots (the traditional Gibson value), while Strat pickups are voiced with 250kΩ pots (the traditional Fender value). A 500k volume pot will make the guitar a little brighter, so it's great with the humbucker, but can make the single coils a little over-bright. Conversely, a 250k pot can make the humbucker a little too dark or "wooly". With our HSS assemblies you don't have to compromise. We use a 500k volume pot so that the humbucker sounds right in position 1, but we add a resistor into the circuit in the other 4 positions, dropping the load to 250k, so that the other positions sound right. Hey, who wants to compromise where tone is concerned?

Finally, to make this wiring truly custom, we've used our ToneShaper narrow superswitch rather than the standard 5-way, so that we can customize the tone controls. The standard Strat switch assigns the tone controls to specific pickups, but the superswitch assigns them to specific switch positions, which allows for more granular control. We've assigned the lower tone control to position 1 only, and we've used Gibson-esque values for both the pot and the tone capacitor. This optimizes the tone controls for their respective positions: Gibson values for the "Gibson" position (1), and Fender values for the "Fender" positions (2/3/4/5). Sweet!



These two pots need to be grounded, either via the pickguard shielding, or via a separate wire that connects them to the volume pot. Black circles or squares in the diagram at left indicate a solder connection.



**ToneShaper**

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DRAWN George Ellison	DATE 10/16/12	TITLE <b>Stratocaster®</b> Auto-Split Humbucker (Duncan Color Codes Shown)
ASSY PN ST-HSS2	ADOC 232	PAGE 1 of 1
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