Wiring a Switch for a Cooler Engine

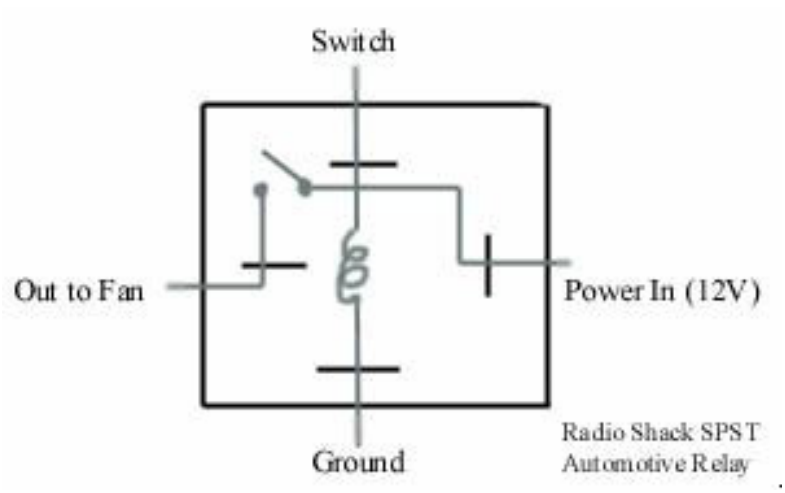
Parts Needed:

- One Switch - your choice of style
- About 20 feet of heavy wire - 10-12 gauge (You should have about 8 feet left over)
- One 30 amp Automotive Relay: SPST - a use for Radio Shack
- One 30 amp fuse and in-line fuse holder - Also Radio Shack
- Misc solderless connectors (or soldering iron) and electrical tape
- Black flexi-tube - the 3/4" size

  You will also need somewhere to mount your switch, stuff to drill the hole for the switch, and possibly a multimeter if you feel like being really safe.

Lets Begin:

First you'll need to locate everything you're gonna be splicing, cutting, and working with. The Cooling fan is right next to the radiator. It has two wires going to it, in my case Black and Lt. Blue. The Haynes Saturn Manual said it would be a Pnk/Blk wire. Black wire with pink stripe? Anyway, this blue wire connects the fan to the Cooling Fan Relay in the underhood relay box. It then goes through a 30 amp fuse and then to the power source. The way I approached this fan switch modification was with the mindset that I didn't wanna mess around with stuff in the fusebox. If I accidentally blow anything up with this modification, everything's gonna be away from the fusebox where I can get at it. This was simply so I could feel secure. I'm sure there are ways to do this without any extra fuses or relays (maybe not relays), but this was the path I chose.



This is my wiring layout. The Radio Shack relay comes with a nice diagram, I just felt like making a little picture. When I flip the switch, power will go through the relay and to the cooling fan and output in the fuse box relay. This is ok, as I don't plan on turning on the switch if the cooling fan is already on. Since it's off, power isn't getting through the factory relay to blow any fuses. This is a little hard to explain, please read on.

- Step 1:

Disconnect the negative cable of the battery. We're gonna be working near in the fuse box after all.

- Step 2:

Open up the underhood fusebox on the drivers side. There's a nice big bolt at the top of it that connects to the

battery. Connect your 30 amp fuse and in-line fuse holder to this bolt. You'll then need to connect about six feet (a bit much) of heavy-gauge wire to the end of the fuse holder so it can run into the cabin.

- Step 3:

The Blue wire running to the fan is pretty long, giving you a few choices of where to cut and splice into it. This is a welcome change after some of the ridiculously short wires I've cut and spliced in the past. I spliced into it at about 6" after where the factory flexi-tubing starts to cover it. There's a nice empty space there and it was easier to get to than right at the fan or under the fusebox. Remember, I'm trying to stay out of the delicate wiring under the fusebox, also my splice is completely hidden by the flexi-tubing. Cut and splice now, chosing wherever is most comfortable for you. I ran the wire under the battery, toward the inline fuse that was just installed so I could tie (twist tie) them together and stick some flexi-tube over them. About ten feet of wire is a safe length.

- Step 4:

It's time to run the wires into the cabin. On the drivers side, right where the steering column comes through the firewall is a large group of twisted wires going into a rubber seal and through the firewall. This is where we're gonna go. You can either cut a slit or boar a hole through the gasket, but the hole will require some RTV to seal it. A slit will just close itself. Run the wires through now and toward the target switch location.

- Step 5:

This is the cutting a hole and mounting a switch step. I have an aftermarket Sony head unit with about an inch of bare, black plastic above and below it. I've been using these bare areas for mounting switches. I also have been mounting relays near the removable drivers-side kick panel. I tie them to the long vertical connecting rod to keep them from bouncing around. This is just the nice way that things have turned out on my Saturn, it'll probably be slightly different for everyone.

- Step 6:

You gotta get power to the switch somehow, and we're not using the 30-amp-fused-wire that we just stuck through the firewall. The Cigar Lighter has power ALL the time. This would be an orange wire going into the middle of the metal "heating" element, not the green wire going to the ring-light assembly. This (the wire colouring) is according to both my car and the Haynes manual. Cut and splice into this to get power to the switch. The point of going with the orange wire is so we can run the fan whenever we like, whether the engine is running or not. Also run some wire from the switch output to wherever you pan on sticking the relay. While you're at it, wire up a ground wire for the relay also. You can just attach a wire to one of the big, black bolts holding the vertical connecting rod in place (behind the drivers side kick panel).

- Step 7:

Connect everything to your relay and attach the relay to something. Not that it'll wander away or something, it's just good to not have little metal contacts bouncing against your car body. Everything should now be wired up correctly, so connect your battery and try out the switch. Mine worked on the first try, something I'm very happy about. Now close up your fusebox, put your console back together, and you're done! Cool air coming at your engine whenever you want it!!!

If you have/had any problems, just send mail to midnite@lobo.net and I'll try to give you a hand.
