

TECH TIPS

Here are the editor's choices for this month's **Tech Tips**. Each of these contributors will receive video training tapes on electrical testing and clutch installation, compliments of **Arrow Automotive Industries**.

Congratulations! Keep those tips coming. And don't wait for someone else to write in with a time saving tip. If you've been helped by one of these tips from a fellow technician, maybe it's time for you to return the favor. Grab a pen and write us today.

LIQUID PAPER AND VACUUM HOSES

Considering the maze of electrical wires and vacuum hoses used on modern cars, it's getting harder and harder to remember where those hoses and wires connect after a repair requiring their removal. I've found a simple solution that even works on spark plug wires.

I go to my local office supply and buy different colored bottles of correction fluid (liquid paper). Then I mark a ring around the appropriate vacuum hose with a corresponding mark on the component or connector where it's supposed to fit.

The bottles are not expensive and come with their own small applicator brushes inside the cap. The fluid dries very quickly and doesn't come off easily. When it's time to hook everything back where it belongs, I just match the colors and I'm done.

Dave Finkelstein
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TRICKLE CHARGER SHORT TRACKER

A small trickle charger in the 2-6 amp range with a built-in ammeter can be a handy tool for tracking short circuits, and it's easy to use. I disconnect the battery positive cable and connect the

trickle charger positive lead to the cable, the negative lead to the vehicle main ground.

Then I start pulling fuses, one at a time, and watch the meter on the charger. If the meter drops to zero when I pull a fuse, I know that current is running to ground somewhere in the circuit supplied by that particular fuse.

Once I've determined which circuit is shorted, I replace that fuse and start to disconnect harness and subharness connectors in that circuit until I isolate the short. The small capacity of the trickle charger won't burn anything up, and it is equipped with it's own circuit breaker.

(Editor's note: Be careful where you place the charger. Don't put it on or near the battery where it might throw a spark, or on any painted surfaces where heat from the charger could damage the painted finish.)

Eric Richeke
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REMOTE STARTER SWITCH HELPER

Getting to the starter solenoid to hook up your remote starter switch can be an all day job on some cars.



You can save time if the car you're working on is equipped with a cold start injector. Disconnect the harness connector at the thermo-time switch. (On this TCCS equipped Toyota Camry it's a brown connector, so don't confuse it with the

green coolant temperature sensor that lives right next door.)

Since the thermo-time switch is located in the coolant jacket, it's easy to reach on most cars.

With the connector unplugged, attach one lead of your remote starter switch to one of the harness connector terminals. Use a matching male terminal so you don't spread or damage the car harness connector terminals. One of the wires at the thermo-time switch connector goes to the starter. Bump the button on the remote switch. If the starter cranks you're all set.

The other wire at the time switch feeds the cold start injector. If the starter doesn't crank, but the cold start injector clicks each time you bump the button on the remote switch, simply reverse your leads to crank the engine.

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