

# TECH TIPS

Here are the editors' choices for this month's **Tech Tips**. Each of these contributors will receive *Chilton's 1989 Import Car Service Manual*.

Congratulations! Keep those tips coming!

## CLEANING COLD START INJECTORS

**Cold start injectors can get dirty and start to leak** on fuel injected systems. If the leak is caused by a trapped piece of dirt at the nozzle tip, you may be able to flush the injector and correct the problem. This can be done at the same time you're cleaning the other injectors with your favorite pressurized injector cleaner.

Simply attach an injector pulse tester to the cold start injector and repeatedly energize the injector solenoid until the pressurized cleaner in the system cleans the injector nozzle.

Hiram T. Hironaka  
El Camino College  
San Pedro, California

## SEIZED VW BEETLE STAR WHEEL BRAKE ADJUSTERS

Here's a handy tip for those of you who are still working on **Volkswagen Beetle brakes**. The star wheel adjusters for the brake shoes will often corrode and then seize in their holders. This makes proper brake adjustment impossible. Before you get out a hammer and chisel to beat them out, try this:

- Remove the slotted screws from the ends of the star wheels.
- Locate a bolt with the same thread dimensions as the internal threads on the star wheels. An upper engine to transmission mount bolt from a Beetle works well.
- If you use the transmission to engine bolt, measure and mark a one-inch wide area starting an inch away from the threaded end of the bolt.
- Grind away part of the shoulder on the bolt just behind the bolt threads. This will allow the adjuster to slide up the bolt shank.

- Thread your new tool into the star wheel. The head of the bolt will bottom out on the star wheel holder and force the star wheel out without damage.
- Clean up the star wheels with a wire wheel, lube them with anti-seize compound and you're off to the races.

Frank Yancey  
Yancey's VW Specialists  
Washington, Indiana

## NISSAN BLOWN BLOWER FUSES

Nissan Sentras, Stanzas, 310s, and 510s may intermittently **blow the blower motor fuse**. Don't just stick another fuse in and send the customer on his way, or he'll be back in a couple of days. The spade terminals in the blower motor harness connector corrode and cause a voltage drop. This creates heat which melts the plastic connector, allowing the terminals inside to short against each other. There is a replacement sub-harness available for Sentras. On other models, replace the damaged connector with insulated spade connectors.

John P. Walker  
Behm Motors  
Shiocton, Wisconsin

## BMW INOPERATIVE CHARGE LIGHT

If you see a **BMW 318 with no charge light in the dash**, the problem may be caused by the large multipoint connector that plugs into the side of the fuse box. A small plastic shielding cover above the connector can trap enough moisture to give you a bad connection. Remove the plug and clean the contacts, paying special attention to the connection for the blue wire in the multiple contact plug. Cleaning and greasing the contact has cured this problem on several of these cars.

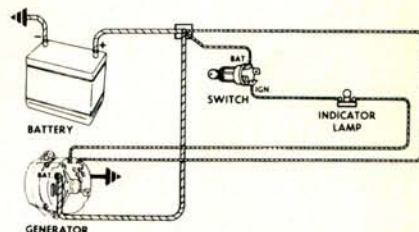
Dorelle Laffal  
Buddy Lawyer  
Quality Car Service  
Rockville, Maryland



## Troubleshooting The Charging System

Before we condemn the voltage regulator as the culprit, let's do a complete check on the charging system to make sure it is functioning properly. But first, here are some safe shop practices you can use before and during the system check.

Be sure the key is off before you disconnect the battery cable, voltage regulator or alternator. If this isn't done, a high voltage "spike" might destroy other electronic components--and an increase in charging output will almost certainly ruin a good alternator. The simplest way to check the alternator's output is to hold a metal blade near the unit. If there is no magnetic field, the alternator won't produce any current.



Check to see if there is a voltage drain. When everything is "off"--ignition, lamps and accessories--there should be no current draw. A small amount of current may still exist to maintain on-board computer memory or the clock. Remove one battery cable. Then connect a volt meter or ammeter in series between the post and cable. The meter reading will indicate that voltage is being drained from the battery. Now it's easy to see which circuit is drawing power from the battery. Just pull each fuse and watch the meter.

When replacing electronic components, watch out for the "bargain-priced" units. They may look the same--but there is a big difference. Cheaper units use a plastic printed circuit in place of a costlier ceramic circuit board. What you get is considerably shorter life. Quality electronic units are manufactured with a special high temperature plastic case to withstand underhood temperatures. Bargain units use a standard plastic that softens when heated, allowing it to ease out from under the mounting bolts.

Remember, quality NAPA Echlin products afford you longer life and the very best in performance.

