



Winning Tech Tip entries have been selected by the editors of *Import Service* as well as the technical staff at NAPA Echlin. Winning entrants will each receive \$100.00 from NAPA Echlin and a special NAPA Echlin jacket.

A cash prize of \$2500.00 will be awarded at the end of the year to the entrant who submits the best 1992 Tech Tip. The first runner-up will receive \$1000.00 worth of NAPA Echlin products.

So tear out those Tech Tip cards and start mailing your Tech Tips. We'll print the best ones each month. Everyone will benefit from the shared information.

TURBOCHARGER PARTS CLEANING

Commercial oven cleaners do a very good job of removing the carbon buildup from delicate turbocharger housings and rotors during turbocharger overhauls. I originally learned this cleaning technique at a maintenance school for gas turbine helicopter engines and have found that it also works well on automotive turbochargers. Oven cleaner will not damage the delicate turbocharger parts and removes the deposits without scraping.

Protect your hands and eyes, then apply the oven cleaner to the turbocharger parts. Let the parts soak for an hour or two. Brushing the parts with a soft bristle brush during the soaking period may be necessary to loosen very heavy deposits. Rinse the turbo parts with water to remove the oven cleaner and deposits, then dry the parts with compressed air and a safety blow gun.

Leslie Rice
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TOYOTA WIRING HARNESS REPAIR

A corroded crimp connector inside the engine wiring harness may cause one or more of the injectors to stop firing on Toyota four cylinder truck models equipped with multipoint fuel injection. You can quickly determine whether the injectors are still firing by listening for a clicking noise from each injector using a diagnostic stethoscope.

If one of the injectors isn't firing, a corroded engine wiring connection is the probable cause. Open the wiring harness on the right side of the engine in the area where the wiring harness curves away from the engine and runs toward the firewall. Look for two bare metal crimp connectors that join two of the harness wires to the four injector wires.

Once you've located the damaged crimp connectors, remove the corroded wire and crimp connectors, then solder the wires together for a permanent, corrosion resistant connection. Protect the solder joints with shrink wrap tubing or electrical tape, then close and rewrap the engine wiring harness.

Harvey Carr
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VOLVO DIESEL NO-START

Worn or sticking alternator voltage regulator brushes may cause a no-start condition on late model Volvo diesel models. When diagnosing this problem, the glow plug system may appear to function normally. The wait light will light, and the glow plug module and module will also check out. However, there will be no power to the glow plugs, causing

the no-start. Running a jumper wire from the battery positive terminal to the glow plug buss bar will light the glow plugs and the engine will start.

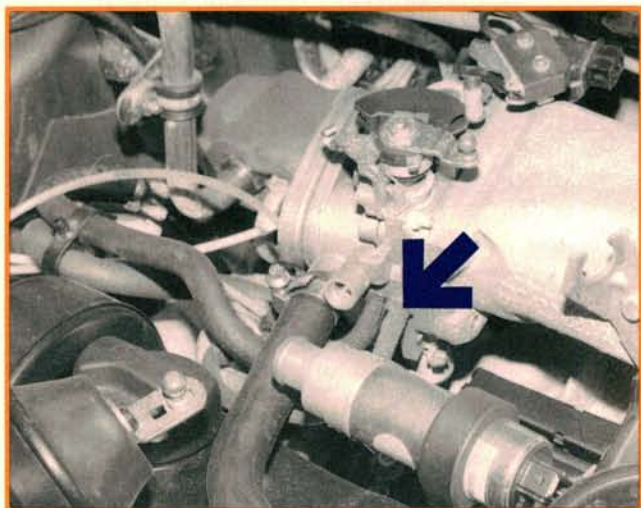
The glow plug buss bar's voltage source passes through the voltage regulator. A worn voltage regulator brush causes a voltage drop, so the glow plugs don't receive enough juice to light the diesel engine.

To quickly check the voltage regulator brushes, use a jumper lead to the buss bar to light the glow plugs and get the engine started. Then check the alternator charging rate. Worn voltage regulator brushes will also cause low or no alternator charging and the alternator low charge warning light may also be on.

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DIGIFANT FLOODING

A leaking fuel pressure regulator may cause flooding in number 1 and 2 cylinders on Volkswagen models equipped with Digifant fuel systems. I repaired a Jetta with this problem. The car kept running, even after the fuel rail wiring harness connector was disconnected.

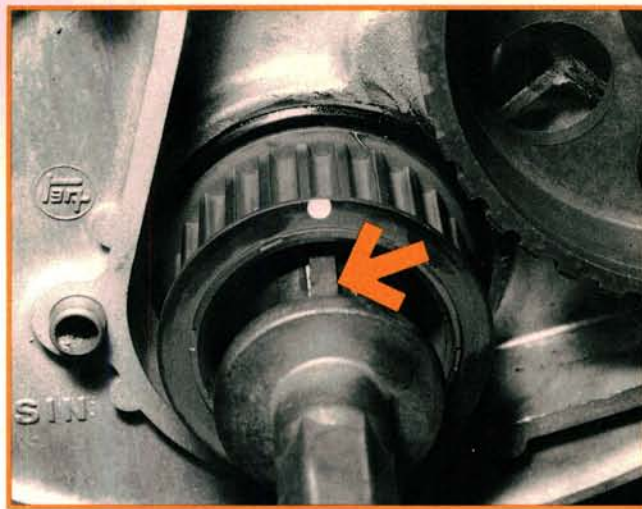


Don't assume that stuck fuel injectors are causing the problem. Remove the fuel pressure regulator vacuum line and check for fuel in the line. The vacuum line is attached to a vacuum port that's very near to the number 1 and 2 intake runners. Engine vacuum and fuel pressure force the fuel through the vacuum line from the leaking pressure regulator to the vacuum port. The extra fuel leaks into the intake manifold and causes number 1 and 2 cylinders to flood.

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CRESSIDA CRANKSHAFT TIMING GEARS

A severe power loss on 1982 and later Toyota Supras and Cressidas equipped with 5M-GE engines may be caused by a sheared crankshaft timing sprocket key. The valve timing may or may not appear to be correct because the broken key allows the crankshaft timing sprocket to rotate on the crankshaft without disturbing the timing belt.



If you suspect that the crankshaft sprocket key has broken, the only way to check it is to remove the crankshaft timing sprocket. The sprocket may seem to fit tightly on the crank, and may lead you to believe that the key is okay. Remove the sprocket, then replace both crankshaft keys and the crankshaft seal.

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WHEEL CYLINDER REPLACEMENT

When replacing rear wheel cylinders on rear drum brake cars, it's not always necessary to disassemble the brake hardware and remove the brake shoes first. Instead, remove the brake drum only on the side you are working on. Then pull the parking brake on all the way.

With the brake drum removed, applying the parking brake will push the shoes far enough away from the wheel cylinder to allow for wheel cylinder removal. It may be necessary to squeeze the wheel cylinder pistons together to make enough room to clear the brake shoe tabs. Install the new wheel cylinder, release the parking brake, then reinstall the brake drum. Repeat the procedure to replace the wheel cylinder on the other side, bleed the brake system, and you're done.

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