

TECH TIPS

Here are the editors' choices for this month's **Tech Tips**. Each of these contributors will receive a case of Fast Orange hand cleaner compliments of **Loctite Corporation**.

Congratulations! Keep those tips coming. Everybody benefits when we share some of our hard earned experience. It makes everyone's job a lot easier.

FIRE AND ICE

Installing the outer CV joint in the front hubs on 1983-89 Subarus can be very difficult. The axle stub and bearing race are a press fit. I've found that cooling the CV joint by placing it in the freezer for five minutes and heating the bearings with a heat gun allows me to slide the two parts together easily.

Ronald Dickson
C and H Auto
Westerly, Rhode Island

TOYOTA SECOND GEAR CRUNCH

When diagnosing second gear shift problems on import vehicles (especially Toyota 5-speed transmissions), don't forget to check the condition of fluid in the clutch hydraulic cylinders. These cars may crunch going into second gear during hot weather after a long drive.

We've fixed any number of these cars by vacuum bleeding the clutch hydraulic circuit until all the old fluid is replaced with fresh, clean fluid. Cars that are four years old or older are prime candidates, since the clutch fluid absorbs moisture over this period of time. High underhood temperatures can vaporize this water. Since this vapor compresses, the clutch slave doesn't move far enough.

This condition can also cause difficulty shifting into reverse, although the complaint you'll hear will normally be about difficulty shifting into second gear.

James Halderman
Dayton, Ohio

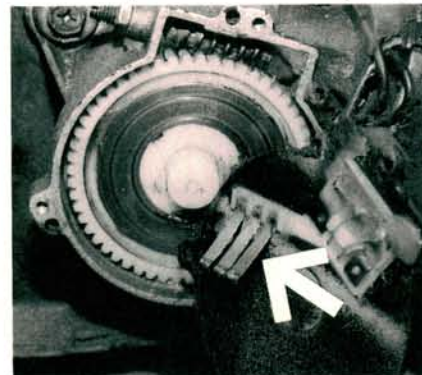
THREE TOYOTAS AND A SUBARU

Here are three Toyota tips:
• **Air stabilization valves on Toyota Cressidas sometimes decide to stick shut.** Crankcase fume



deposits can build up in the valves and make them sluggish or totally inoperative. Usually, the car idles just fine at shut down, but won't even try to idle after it's restarted. Instead of simply replacing the valve, I've had success with cleaning it. Remove the air hose from the valve and flood the inside of the valve with a good quality carb cleaner. It has taken a couple of flushings to clean some of the valves, but it has always worked.

• **Since the freezing weather hit us this winter, we've seen a number of wiper motors that won't work on the intermittent setting, or refuse to park.** This usually hap-



pens when the customer turns on the wipers with the wipers' blades frozen to the windshield.

Before spending a lot of time and money replacing the motor, remove the cover plate on the motor that holds the contacts for the park position. High current draw through the contacts may have heated one of the contact strips enough to distort it and bend it away from the strips on the gear. I have saved many of these motors by bending the contact strip back in place.

• **Before you try to do a wheel alignment on a Toyota van, take the time to check the vehicle ride height and make the necessary adjustments to the torsion bars.** Some of the earlier vans sagged more than one inch in the first year.

And a tip on Subaru hydraulic lifters:

Hydraulic lifter noise on high mileage Subarus may be caused by a weak oil pump. The first lifters to get noisy are the ones at the left rear, furthest from the pump. Check oil pressure. It may be reading zero on the dash gauge. If pressure is below minimum specifications, replace the pump.

You may not see anything radically wrong with the old pump, but the difference of a few pounds of oil pressure between the old and new pumps usually makes the difference between loud lifters and quiet ones.

Tom Bauer
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WORN HORN CONTACTS

Intermittent horn operation on Toyotas, or no horn at all, can result as the horn contact button wears over time and no longer touches the slip ring on the back of the steering wheel. I have fixed a number of these by cleaning the contact button and restoring the button to its original height with a drop of solder. Then I lube the contact surface and reinstall the steering wheel.

Gene Siegenthaler
Abbott Import Service
Farmington, Missouri

PLUGGED EXHAUST QUICK TEST

We see many cars towed to our shop with no-start or start-and-stall problems caused by a collapsed catalytic converter or other exhaust restriction. Rather than going through the trouble of disconnecting exhaust parts, we simply disconnect the EGR pipe from the EGR valve. If there is an exhaust restriction, this pressure relief is usually enough to get the car running and to let us know that we do indeed have a plugged exhaust.

Ed Schaplow
Allview Service
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TOYOTA TAPPET DANCING

Some Toyota engines, especially 20R and 22R engines may have a valve noise similar to the noise made by a cam follower with too much lash. If you've readjusted the valves several times, or maybe even replaced adjusting screws to eliminate the noise, but still hear that tapping, there's a chance that you are overtightening the valve cover cap nuts.



Overtightening these nuts can pull the valve cover down just far enough that the followers will come in contact with the valve cover. To diagnose such a sound, simply back off the nuts. If the noise goes away, you've found your

problem. Install a new gasket and torque the nuts to the factory specification and no more (10-15 Nm or 7.5-11 ft-lb).

Larry Tanzer
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VATTENPUMPAR CLARIFICATION

A few of our readers took exception to the Saab 99 water pump replacement procedure described in our January 1990 "Vattenpumpar" article, and let us know about it. They mailed us everything from a few well chosen words on a **Tech Tips** card to a five page typed letter.

What's the fuss, you ask? Well, we failed to mention that the water pump replacement methods illustrated in the article were quite different from those recommended in the Saab factory service manual. We'll attempt to clear up the misunderstanding, and give proper credit to the readers who brought it to our attention.

At least three different water pump designs, using either a coarse (8 cog) or fine (12 cog) pump driven gear, were installed in the Saab "B" engine during its production run. There's quite a bit of overlap in the production dates for different pump designs. Your best bet in some cases would be to remove the leaking pump first to see which one you've got.

Depending on the pump design, Saab specifies the use of either a slide hammer with left-handed thread adapter (8 cog) or a puller fixture (12 cog) to remove the pump. A third tool is recommended to lock the impeller during shaft nut reinstallation. In all cases, the intake manifold must be removed to make room for the tools.

Our host shop replaces "B" pumps without using the factory tools or removing the intake manifold. The techs who wrote to us suggest that the pump removal method shown (two lady slipper pry bars) may damage or weaken

the auxiliary shaft's teeth, causing an immediate or delayed failure.

After much discussion, our host shop stands behind their methods. They respect the auxiliary shaft's notoriously weak drive gear teeth and handle each step of this job with care and caution, as we stressed in the article. They don't feel that their methods place any more strain on the shaft gears than conventional procedures. The shop's owner, a former Saab dealership technician, recalls that the factory water pump tools saw very little use at the dealership during his years there.

It's never been our intention to publish questionable or unproven repair information. There are probably as many different ways to do a given repair job as there are technicians doing it. If a mistake was made, it was in not pointing out that the method shown was an alternative to the factory recommended repair procedure. It is a method that has been used with success and without damage by our host shop, however.

Our thanks to the following technicians for sharing their views:

Mike Allen
Mike Noury
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Newburyport, Massachusetts

Alex Fowler
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Port Townsend, Washington

Tom French
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Irving, Texas

Michael Korisky
Performance Imports
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Terry Sayther
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Jim Smart
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