

# TECH TIPS

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. Each winner's NAPA jobber will also receive a \$100.00 prize.

In addition to the \$100.00 monthly prizes, NAPA Echlin will award an all expense paid trip for two to the 1992 Indy 500 to the Tech Tip winner who submits the best tip for 1991. The runner-up will receive a check for \$2500.00, also courtesy of NAPA Echlin.

So tear out those Tech Tip cards and start mailing us your Tech Tips. We'll print the best ones each month. Everyone will benefit from the shared information, whether you win or not.

## BOLT LOCATION MEMORY AID

**Keeping track of proper bolt locations can be difficult when removing a timing cover, water pump, or other engine component that uses many bolts. The bolt head sizes are often the same, but several different bolt lengths may be used.**

To avoid confusion and wasted time, punch holes in a large piece of cardboard, following the same bolt pattern as the part being removed. If you have a new gasket, use it as a pattern for the hole locations in the cardboard. As you remove each bolt, place it in its proper spot in the cardboard. Reverse your tracks when you're ready to reinstall the part.

David Anderson  
Citywest Automotive  
Chaska, Minnesota

## SUBARU AIR CONDITIONING OPERATION

**Owners of late model Subarus equipped with air conditioning may complain that their air conditioning runs all the time or the air flow through the dash vents doesn't match what they have selected. Before you condemn the air conditioning control head, check for proper vacuum supply to the head.**

The vacuum supply port at the intake manifold runner may be restricted or completely clogged with fuel varnish residue. Remove the vacuum hose, then clean the port with a small pick or wire. Flush the port with carburetor cleaner, reattach the hose, start the engine, then check the control head operation.

Ron Blake  
Precision Auto Repair  
Longmont, Colorado

## VOLVO CAMSHAFT BEARINGS

**When replacing a timing belt or adjusting the valves on a Volvo four-cylinder (B23) engine, be sure to check the condition of the middle camshaft bearing. High engine temperature in this area can cause the cylinder head's oil passage to clog, limiting the amount of lubrication that makes it to the camshaft. We learned the hard way on a 1984 Volvo 240 GL. The middle bearing seized the cam shortly after a timing belt replacement, breaking the new belt.**

You'll need to remove the cam to clean the deposits out of the oil passage. Use a wire brush and carbon dissolver to clear the passage.

Stephen Boechel  
Boechel Automotive  
Oceanside, California

## LOCATING LEAKING FUEL INJECTORS

**The following low cost technique for locating leaking fuel injectors has worked well for me:**

- Remove all of the spark plugs, then operate the fuel pump to pressurize the fuel system.
- Insert the rubber hose end of a stethoscope into each of the spark plug holes (remove the steel probe first).
- Listen carefully for the sound of escaping fuel.
- If you hear a noise and aren't sure about its source, relieve the fuel pressure, then check again to see if the noise continues or is gone.

Carl Casteel, Jr.  
ProCare  
Volant, Pennsylvania

## MERCEDES-BENZ DOOR LOCKS

**Finding a leak in a Mercedes-Benz vacuum-operated door lock -system can be time-consuming and frustrating. Pressurizing the system with regulated shop air won't work because the system contains check valves. Listening for leaks is nearly impossible over the noise of the engine, and the system usually leaks down too quickly to check it after the engine is shut off.**

Our shop has developed the following procedure to help solve these troubleshooting problems:

- Plug the cone-shaped adapter from a vacuum gauge set into the cut off end of the hose.
- Attach the other end of the hose to the low side of an A/C gauge set.
- Attach the gauge set's center hose to an A/C evacuation pump.
- Plug the hose's cone-shaped adapter into the vehicle's vacuum door lock system.



- Turn on the evacuation pump, then use the gauge set to adjust the vacuum supply to about 12 inches of vacuum (higher vacuum can mask a small leak).
- Check the individual legs of the vacuum system by pinching the rubber unions and junctions while watching for a change in the vacuum gauge reading.
- You may be able to find the leak by ear, but a stethoscope or electronic vacuum leak detector may be necessary for smaller leaks.
- Always check the system for leaks in the locked and unlocked positions, they are two separate circuits.

Chip Keen  
Hansville Repair  
Hansville, Washington

## LEAKING DIFFERENTIAL VENT

**Some Dodge Colt Vista 4WD wagons may discharge lube oil out of the rear differential vent.**

**To cure this problem:**

- Remove the vent cap assembly.
- Tap out the vent hole to fit a common hose nipple.
- Install the hose nipple, then attach 24 inches of fuel/trans hose to the nipple.
- Now install the vent cap assembly to the end of the hose.
- Route the hose above the differential and into the left rear frame through a hole in the frame.
- Secure the vent hose with tie wraps.

I also add the Chrysler differential friction modifier. Make sure the differential fluid level is 1/2 inch below the filler hole. This modification has worked well for me with no comebacks.

Ken Overby  
Ken's Transmission Repair  
Blaine, Minnesota

## VOLVO NEUTRAL SAFETY SWITCH

**A misadjusted or defective neutral safety switch may cause noisy starter engagement on four-cylinder Volvos equipped with automatic transmissions.** During cranking, movement of the engine can cause the gear selector-mounted neutral safety switch to make and break the circuit to the starter solenoid. This causes the starter to grind as the starter drive jumps in and out of engagement with the flywheel teeth.

Adjust or replace the neutral safety switch to correct the problem.

Bill Rogers  
The Auto Clinic  
Mansfield, Ohio