

TECH TIPS

Here are the editors' choices for this month's **Tech Tips** prizes. Each winner will receive a gift certificate from **Coastal Test Equipment, Inc.** Gift certificates may be exchanged for a specially selected tool from Coastal's line of automotive diagnostic and repair tools.

Our congratulations to the winners, and our thanks to all of you who take time from your busy schedules to share your knowledge and experience.

VOLVO ACCELERATION

A faulty radiator cooling fan thermo switch can cause poor acceleration on 1985 and later Volvo 740s, equipped with B23 F or FT (turbo) engines. The thermo switch serves two purposes on these models. Not only does the thermo switch control cooling fan operation, it also sends a signal to the ignition system control unit.

If the ignition system control unit receives a signal from the thermo switch when engine speed is below 1750 RPM and the throttle switch is closed, the control unit will advance the ignition timing 13 degrees. This helps the engine return to normal operating temperature and also helps the alternator handle the extra electrical load. The control unit returns the ignition timing to its normal base setting when the thermo switch opens.

Engine performance will suffer if the ignition timing is adjusted while the thermo switch is closed and the radiator cooling fan is operating. The ignition control unit will retard the ignition timing 13 degrees as soon as the throttle switch is opened.

The control unit thinks that it's returning the timing to the normal base setting. But the timing will actually be retarded 13 degrees later than the correct base setting instead. This will cause very sluggish acceleration, although the engine may idle normally.

An inoperative radiator cooling fan, a thermo switch that has failed in the closed position, or a thermo switch that has been intentionally by-passed can also trick you into misadjusting the timing.

Mike Allen
Mike Noury
Internal Combustion
Newburyport, Massachusetts

VOLKSWAGEN OIL CONSUMPTION

A clogged valve cover screen may cause excessive oil consumption on Volkswagen Rabbits equipped with 1.7 liter engines. We have seen Rabbits that were burning as much as a quart of oil every 200 miles because of this problem. The excessive crankcase ventilation system blowby caused by the blocked screen might make you think the engine has bad piston rings

or other internal engine problems. (Editor's Note: This VW/Audi crankcase ventilation system dates back to the 1973 Audi Fox.)

The valve cover screen usually becomes clogged or partly blocked because of infrequent oil changes. The increase in air velocity through the restricted valve cover opening causes oil to be sucked into the ventilation system. An oil soaked air filter is usually a good indication of problems in this area. A plastic shield designed to prevent screen clogging was added to the valve cover on 1.8 liter Rabbit GTI engines and all 1985 and later Golf engines.

To correct the oil consumption problem, remove the valve cover, then clean the screen and passage. If the breather passage and screen are badly clogged, replace the valve cover. Installing the updated cover at this time prevents repeat problems. Remember to also replace the oil soaked air filter and clean any remaining oil from the crankcase ventilation system.

Tim Monn
The Little Bug Shop
Akron, Ohio

MYSTERIOUS VIBRATIONS

An improperly installed "B" timing belt on Mitsubishi 1.8, 2.0, and 2.4 liter engines can cause mysterious driveline vibrations on Mitsubishi or Chrysler imports equipped with these engines.

A customer with a four wheel drive Colt Vista wagon complained of a noise in the transaxle or drive axle area at idle. The noise also seemed to increase as road speed increased. At certain speeds, the rear differential even seemed to be making noise.

I put the car on a lift so that I could listen for the noise from under the car. At this point I also found that the rear drive shaft would vibrate when the engine was revved in neutral. The vibration covered the entire driveline.

I called the customer to ask whether any other work had been done on the car recently. He said that the timing belts had been replaced, then the noise and vibration started. I removed the timing belt covers and found that while the main, or "A" timing belt and pulleys were properly timed, the "B" belt pulleys were not. The mis-timed balance shaft driven by the "B" belt was adding vibration to the engine, rather than cancelling it out as intended.

After properly timing and tensioning the belt, all of the driveline noises and vibrations were gone. It took a little explaining before the customer understood how a timing belt had caused a noise in his transmission.

Ken Overby
Ken's Repair
Blaine, Minnesota