

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.

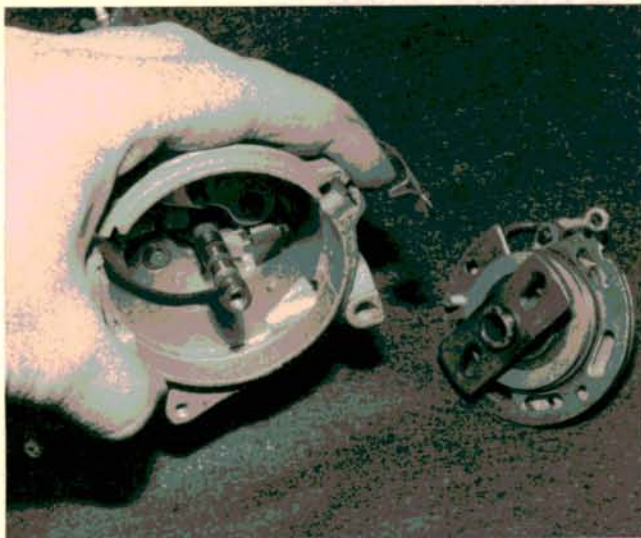
In addition to the \$100.00 monthly prizes, NAPA Echlin will award an all expense paid trip for two to the 1992 Indy 500 to the Tech Tip winner who submits the best tip for 1991. The runner-up will receive a check for \$2500.00, also courtesy of NAPA Echlin.

INTERMITTENT ENGINE MISS

A loose timing belt may be responsible for an intermittent ignition miss on engines equipped with electronic ignition. Engines equipped with Hall effect ignition units seem less affected by this problem.

Most of the loose timing belt vibration takes place at its greatest distance between two pulleys (the cam and crankshaft pulleys). This causes the camshaft to vibrate as it rotates, which in turn causes the distributor shaft to vibrate as it rotates. The distributor reluctor vibrates as it passes the distributor pickup coil or transducer, rather than passing by smoothly.

This vibrating reluctor motion can "fake out" the distributor module, so the module may intermittently fail to open the coil primary circuit. When this happens, one or more spark plugs fail to get any spark. The vibrating reluctor may show up as a dwell variation if you check the primary ignition circuit with an oscilloscope.



Many fuel injected cars also rely on a coil primary signal to decide when to open their port fuel injectors. If the module skips a beat because of a loose timing belt, the injectors won't be opened either. An intermittent loss of spark and fuel may feel like someone is turning the ignition key off and on.

If the distributor has a centrifugal advance, you'll probably see red dust inside the distributor cap. The dust is caused by the centrifugal advance weights chattering against the distributor advance plate. You may even be able to hear the weights rattling when the engine is running.

Retension or replace the timing belt as necessary. Tear down the distributor and replace any worn parts. Don't forget to check the centrifugal advance springs for wear.

Jon Woods
Woods Foreign Repair and Service
San Diego, California

OWNER INTERROGATION

A few minutes spent questioning the customer about previous repairs to his car can save you a lot of wasted time. You may not be the first technician (or non-technician) who has tried to repair the customer's problem.

Question the owner carefully about any previous repair work he or others may have attempted. Be polite but insistent in your questioning and learn to interpret the customer's answers.

You'll know where to start if you get an answer like "Dad did try to adjust the TPS, but he put it all back."

This may lead you to a loose wiring harness connector, disconnected vacuum hose, or worse. Once you have corrected the owner's blooper, you can concentrate on repairing the original problem.

Dave Anderson
Dave's Garage
Mungo Junction, Ohio

SAVE THE ENVIRONMENT

Nitrogen gas provides a safe, environmentally friendly alternative to R-12 for A/C system leak detection. Nitrogen is an inert gas, and as an added benefit, it will absorb much of the moisture that may be present in the system.

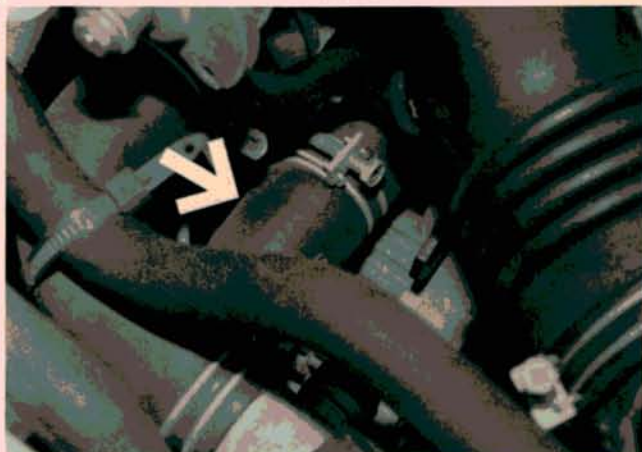
To test for leaks, pressurize the system with nitrogen instead of freon. The nitrogen will mix with any R-12 that remains in the system, so an electronic leak detector can still be used to find the leak. After pressurizing the system to 250 PSI, I have found many leaks by simply wetting the A/C system connections with a soapy solution.

We can look forward to tighter controls on the sale and use of R-12. Nitrogen offers a safe, economical alternative for leak detection.

Robert Bowers
A-Town Garage
Allentown, Pennsylvania

TWO FROM ONE

A corroded or loose alternator wiring harness connector may cause a low or no charge condition on 1984-87 Nissan 200 SX models. After repairing this connector, make sure the discharged battery is fully recharged using a battery charger before returning the car to the customer.



If the customer doesn't want to wait for a full battery recharge, explain that the alternator may self-destruct when it tries to bring the nearly dead battery back to full charge. After letting one of our 200 SX customers leave with a discharged battery, the alternator lasted another two days before cashing it in. Alternators on other makes and models are just as vulnerable. Fair warning.

KNOCK SENSORS

A knock sensor can't tell the difference between spark knock and a noisy rod or main bearing, a loose accessory bracket, exhaust rattle, tappet noise, or any other audible frequency. If the knock sensor is signalling the ECU to retard the timing excessively, make sure the sensor is really hearing spark knock before wasting your time on diagnosis.

Don McIntire
McIntire Garage
Whiteland, Indiana

EGR PASSAGE CLEANOUT

A length of emergency brake cable can be pressed into service as an EGR passage cleanout tool. Cut a ten inch section of the inner cable from an old emergency brake cable, then clamp one end in your air drill chuck. Remove the EGR valve, then work the flexible cable into the opening in the intake manifold to break up those stubborn carbon deposits.

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Bud's Brake and Wheel
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