

eAir REPAIR

February 2010 edition



EVAP Leak with a Code P0441

1996 Buick Park Avenue

By: Steve Lind from Lind Auto Service, Inc.

Problem: EVAP Leak with a Code P0441

Solution: The flow chart did not help in this case because when the flow chart directs you to command the purge solenoid on, that equals 100% PWM. The vacuum switch would show open or purge (I forget which) at that PWM, but repair information states it is supposed to open even at a 25% PWM command. As I increased the PWM incrementally from 0% with the Tech 2, I noticed the switch would be steadily open only well over 50% PWM. Finding no other problem, I replaced the vacuum switch and checked to see what the new switch would do. Sure enough, the new one would show a steady open at 25% PWM or higher. I cleared the code, ran the monitor and no MIL!

Editor's note: This technician has an excellent habit of testing the vehicle after a repair. He has confirmed the repair and knows what a good component looks like on his testing equipment.

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When My Phone Rings

By: Dave Alder from Applus Technologies, Inc.



Your Grade Depends on Setting Monitors

This month I want to share with you a phone call I got from a shop with a vehicle that failed with a P0420 CAT code. The shop replaced one O2 sensor and the CAT. After the repair, the shop told the motorist to drive around to set the monitors. Keep in mind this vehicle had a CAT failure so the CAT monitor has to run.

The motorist drove the vehicle for about 500 miles (with expired plates) and brought the vehicle in to be tested. The motorist filled out the RDR for the shop since the shop did not do it. When the car rejected for the CAT monitor, I got a phone call.

The first point I would like to make is that repair shops should protect their grade in the Report Card by setting monitors as part of the repair process. This is better customer service, and nobody likes an irate come-back.

Second, "driving around" does not set monitors. The shop manager called me to complain that monitors would not set. I asked if the drive cycle was followed and I got the "it was driven 500 miles." The specific drive cycle needs to be followed, in this case twice. This particular vehicle needs two good trips to set the CAT monitor. After the shop drove the proper drive cycle twice, the CAT monitor ran without any other repairs. Instead of doing this while the vehicle was in for the initial CAT failure, the shop now has to deal with a fail in the Report Card and an unhappy customer. That is if we can still call the motorist a customer.

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Articles Needed for eAir Repair

Don't let me tell you how to run your shop, but I suggest that you run the monitors before giving the vehicle back to the motorist to avoid a lot of unpleasantness and a bad grade in the Report Card!

Using Air Team Appointment Only Testing Stations

The next call I want to share deals with repair shops using appointment only testing stations. I would like to suggest that you give the appointment only testing stations a try. This has several advantages. First, the test is by appointment only so there is no waiting. Second, if an appointment only testing station is close to your shop, there is less travel time. The reason I bring this up is that I got another call from a shop that was some distance from a centralized testing station and 300 feet from an appointment only testing station. I told him to call the appointment number (877) 927-7587 and to let me know how it worked out. The shop owner called me later in the day, and he thought it was great! The next time you need to get a vehicle tested or retested, give an appointment only testing station a try. I think you will be pleasantly surprised!

That's it for this month. Please call me at (847) 616-6064 if you have any questions. If you have a good question, it may appear in a future issue to share with fellow technicians and shop owners!

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2001 Honda Civic With EVAP Codes

By: Tony Barcham from Car X Auto Service

I recently worked on a 2001 Honda Civic with EVAP code P1456. The customer brought the vehicle to a dealer a couple times. The dealer changed the O2 sensor and the gas cap with no success. When the vehicle came to my shop, all monitors were ready except for EVAP. The MIL was commanded on and a P1457 was stored. The purge solenoid was tested for leaks and no problems were found.

I located TSB 08-016 with some possible solutions. I changed the EVAP solenoid valve by the canister according to the bulletin instructions. I cleared the codes and ran the drive cycle. As a result, all monitors were ready except EVAP, and this time the MIL was commanded on for a different code, P1456. I then smoked the system and found no leaks.

Following the enabling criteria, I used my scanner to check the purge solenoid by the engine. At the beginning of the drive cycle, the duty cycle was within normal range of 10 to 30%, but after a long drive, it rose to an abnormal 50 to 99%.

After replacing the purge solenoid and running the drive cycle, the duty cycle was in normal range of no more than 30%.

All monitors set to ready and no codes were present.

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February – June 2010 Seminar Schedule

"TENTATIVE DATES"

All seminars are from 6 pm – 10 pm on dates below.

They are sponsored by the Illinois EPA for the repair industry and they are free!

[2010 Complete Seminar Schedule](#)

OBD Code Repair Using Labsopes

This seminar is devoted to helping technicians develop a plan for successfully repairing OBD emission failures using labscope testing strategies. OBD testing will be reviewed and actual failure case studies will be looked at to help understand the test capabilities of scopes and probes. Using computerized information systems and code charts will be discussed to make diagnosing OBD code problems easier.

Presented by: [Scot Manna](#)

ID	Date	Location
M702	February 9, Tuesday	Moraine Valley Community College
M703	April 7, Wednesday	Oakton Community College

OBD Repairs Using Scan Tools

This seminar will show repair technicians the capabilities and enhanced functions of a variety of aftermarket and factory scan tools for system testing and OBD vehicle repair. Emphasis will be placed on bi-directional controls for testing and diagnosis found in many of the scan tools available today. Graphing, scan data analysis, and testing strategies will be discussed. The goal is to get the most from these tools and shorten diagnostic times. Actual vehicle case studies will be shown to illustrate these points.

Presented by: [Scot Manna](#)

ID	Date	Location
M802	February 10, Wednesday	Moraine Valley Community College
M803	April 8, Thursday	Oakton Community College

Communication Protocol Testing for OBD Failures

This seminar will review proper testing techniques for communication issues with the PCM and various modules as it relates to OBD failures. The communication topology that will be discussed will focus on GM, Ford, and Chrysler systems. This is a "must attend seminar" for serious OBD repair technicians.

Presented by: [Ken Zanders](#)

ID	Date	Location
Z501	February 2, Tuesday	Joliet Junior College
Z502	March 3, Wednesday	Technology Campus of DuPage
Z503	May 3, Monday	McHenry County College

Enhanced Toyota EVAP Systems (NEW)

Toyota enhanced EVAP systems are significantly different than the systems found on domestic vehicles. This seminar will explain the operation of the most common Toyota OBD EVAP systems, both early and later systems. The seminar will also cover the new Key Off Vacuum Pump system and will discuss in detail the system operation and most importantly the system testing. Testing techniques will include the use of a scan tool, manometers, smoke machine, and a lab scope. Scan tool bi-directional controls will be covered as well as manual test methods.

Presented by: [John Thornton](#)

ID	Date	Location
T301	February 4, Thursday	Technology Campus of DuPage
T302	March 25, Thursday	Lake County High School Tech Campus
T303	April 1, Thursday	Kennedy-King College
T401	May 6, Thursday	Prairie State College

Using Mode \$06 Data for OBD Diagnosis and Repair (NEW)

Monitors are the key to OBD emissions testing success. Mode \$06 displays the monitors' results beyond a simple pass or fail. Using Mode \$06 data can expedite some emissions repairs and can even make diagnosis of some readiness rejects possible. This class starts with a brief overview of Mode \$06 data and how to decipher its meanings. Time will be spent on the do's and don'ts including the grey areas of invalid data. Many actual vehicle case studies will be used to illustrate the practical applications of using Mode \$06 data for successful OBD diagnosis and repair. Different scan tools and information resources will also be discussed.

Presented by: [Scott Shotton](#)

ID	Date	Location
S901	February 16, Tuesday	Truman College
S902	March 9, Tuesday	Prairie State College
S903	April 20, Tuesday	Lake County High School Tech Campus
S904	May 25, Tuesday	Kennedy-King College

Diagnostic Techniques for OBD Failures

This seminar will focus on the use of OBD scan data, freeze frame, and failure records as a means to a successful OBD repair. The Illinois "Dashboard" website will also be included in the diagnostic process. The overall goal of this presentation is to emphasize efficiency in testing and repair techniques for OBD failures.

Presented by: [Ken Zanders](#)

ID	Date	Location
Z201	March 1, Monday	McHenry County College
Z202	April 5, Monday	Joliet Junior College
Z203	May 4, Tuesday	Moraine Valley Community College
Z204	June 9, Wednesday	Technology Campus of DuPage

Mass Airflow and Fuel Trim Diagnostics (NEW)

This seminar will help the driveability and emission technician make accurate decisions regarding diagnosing Mass Airflow sensor problems and fuel trim issues. A three-step procedure for testing Mass Airflow sensors will be illustrated. Fuel trim operation and strategies will be discussed as well as using fuel trim values to help diagnose driveability problems. Vehicle repair case studies will be used to enhance understanding.

Presented by: [Scot Manna](#)

ID	Date	Location
M601	March 22, Monday	Truman College
M602	April 28, Wednesday	State of Illinois Complex, Collinsville
M603	May 11, Tuesday	Oakton Community College
M604	June 17, Thursday	Kennedy-King College

Advanced Communication Protocol Testing for OBD Failures (NEW)

This seminar will take a more in-depth look into communication issues. Case studies will be reviewed with a strong emphasis on labscope and advanced techniques leading to repair. This class was designed for the serious emission and driveability specialists.

Presented by: [Ken Zanders](#)

ID	Date	Location
Z101	June 7, Monday	State of Illinois Complex, Collinsville

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Dashboard Tip of the Month

From: the Illinois EPA Repair Industry Outreach Team

Shop ID vs. User ID

The Shop ID is only used to identify your shop and starts with "RP" followed by a number. The User ID starts with "RT" followed by a number and is used to login to the Dashboard.

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Articles Needed for eAir Repair

From: the Illinois EPA Repair Industry Outreach Team

We are always looking for short articles of interest for eAir Repair. Many of you have gathered information for successful emissions repairs. It is time to share those tips with your fellow technicians. Please help us out by writing a brief story (a couple of paragraphs) about your success or fix.

Those tips can be e-mailed to epa.repair.outreach@illinois.gov.

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