

EVAPORATIVE EMISSION CONTROL (EVAP) SYSTEM

CONTENTS

General Description	C3-1	Visual Check of Canister	C3-2
Purpose	C3-1	On-Vehicle Service	C3-2
Evaporative System	C3-1	Fuel Vapor Canister	C3-2
Operation	C3-1	EVAP Purge Solenoid	C3-2
Results of Incorrect Operation	C3-2	Canister Hoses	C3-2
Diagnosis	C3-2	Parts Information	C3-2
EVAP Purge Solenoid	C3-2		

GENERAL DESCRIPTION

PURPOSE

The basic Evaporative Emission Control (EVAP) system used on all vehicles is the charcoal canister storage method. This method transfers fuel vapor from the fuel tank to an activated carbon (charcoal) storage device (canister) to hold the vapors when the vehicle is not operating. When the engine is running, the fuel vapor is purged from the carbon element by intake air flow and consumed in the normal combustion process.

EVAPORATIVE SYSTEM

Gasoline vapors from the fuel tank flow into the tube labeled tank (Figure C3-1). These vapors are absorbed into the carbon. The canister is purged by PCM control when the engine has been running for a specified amount of time. Air is drawn in through the bottom of the canister and mixed with the vapor and then is drawn into the intake manifold.

OPERATION

The PCM operates a normally closed solenoid valve, which controls vacuum to the purge valve in the charcoal canister.

The PCM controls the PWM signal to the solenoid valve when all conditions for allowing purge are met. It is possible for the EVAP system to be purging at idle, in "Closed Loop," at cruising speeds and in "Open Loop."

The PCM pulses "ON" the solenoid to allow purge when:

- The engine is fully warmed up.
- The engine has been running a specified amount of time.
- The IAT reading is above 9.5°C (50°F).

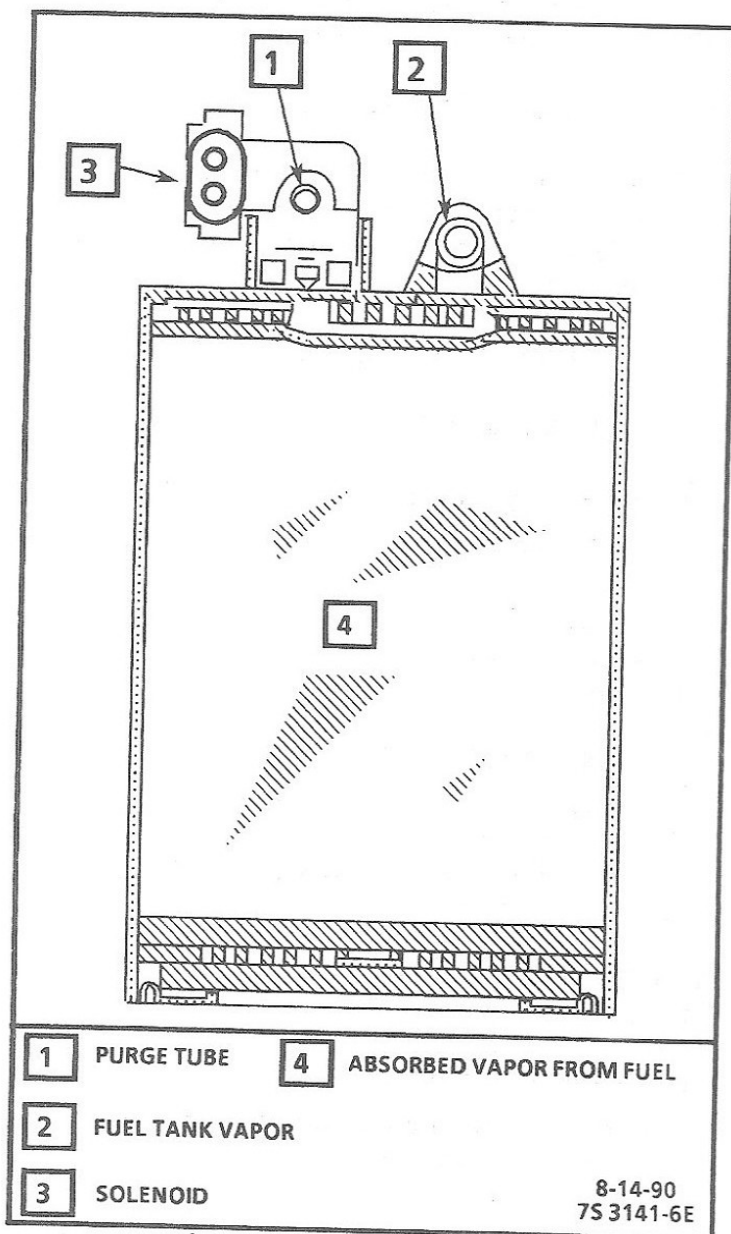


Figure C3-1 - Vapor Canister

RESULTS OF INCORRECT OPERATION

- Poor idle, stalling and poor driveability can be caused by:
 - Inoperative purge solenoid.
 - Damaged canister.
 - Hoses split, cracked and/or not connected properly.

DIAGNOSIS

EVAP PURGE SOLENOID

The EVAP purge solenoid operation is covered in CHART C-3 at the end of this section.

VISUAL CHECK OF CANISTER

- Properly mounted solenoid, O-ring in place.
- Cracked or damaged, replace canister.
- Fuel leaking from the canister, replace canister and check hoses and hose routings.

ON-VEHICLE SERVICE

FUEL VAPOR CANISTER

←→ Remove or Disconnect

1. Hoses from canister. Mark hoses to install on new canister.
2. Electrical connector.
3. Hold down strap.
4. Canister.

→← Install or Connect

1. Canister.
2. Hold down strap.
3. Hoses. Make sure connections are correct.
4. Electrical connector.

EVAP PURGE SOLENOID

Figure C3-2

←→ Remove or Disconnect

1. Electrical connector and hoses from solenoid.
2. Solenoid from canister.

→← Install or Connect

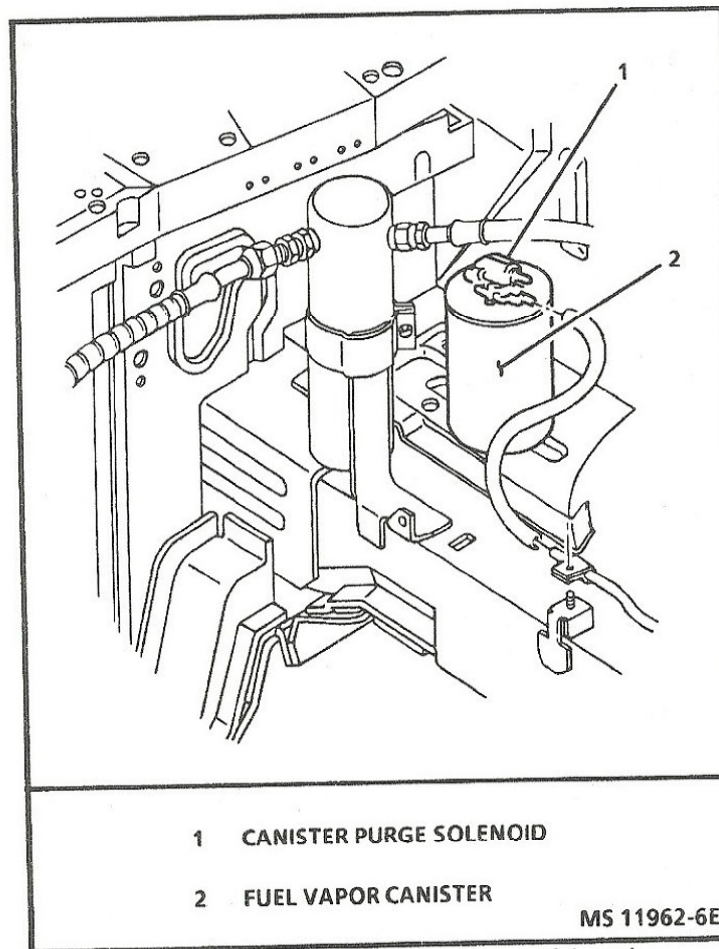
1. Solenoid.
2. Hoses and electrical connector on solenoid.

CANISTER HOSES

Refer to "Vehicle Emission Control Information" label for routing of canister hoses. When replacing hoses, use 6148M or its equivalent.

PARTS INFORMATION

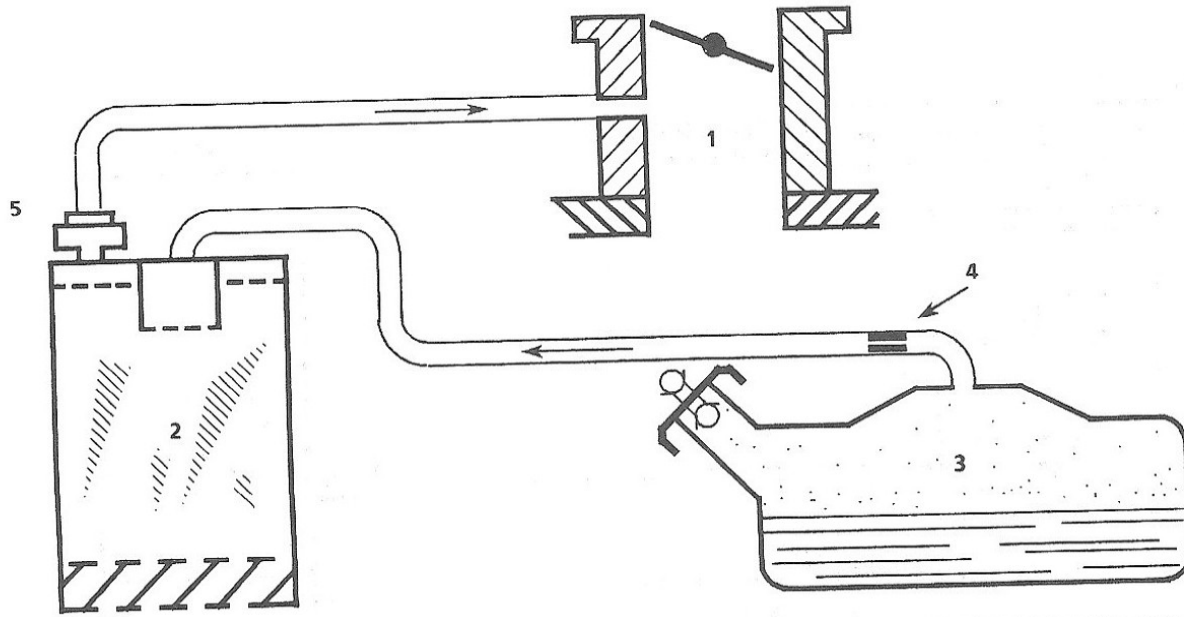
PART NAME	GROUP
Canister, Fuel Vapor	3.130
Solenoid, EVAP Canister Purge	3.140



1 CANISTER PURGE SOLENOID
2 FUEL VAPOR CANISTER

MS 11962-6E

Figure C3-2 - EVAP Purge Solenoid and Fuel Vapor Canister



- 1 THROTTLE BODY
- 2 VAPOR CANISTER
- 3 FUEL TANK
- 4 VAPOR RESTRICTION
- 5 SOLENOID ASSEMBLY PURGE "ON" / "OFF"

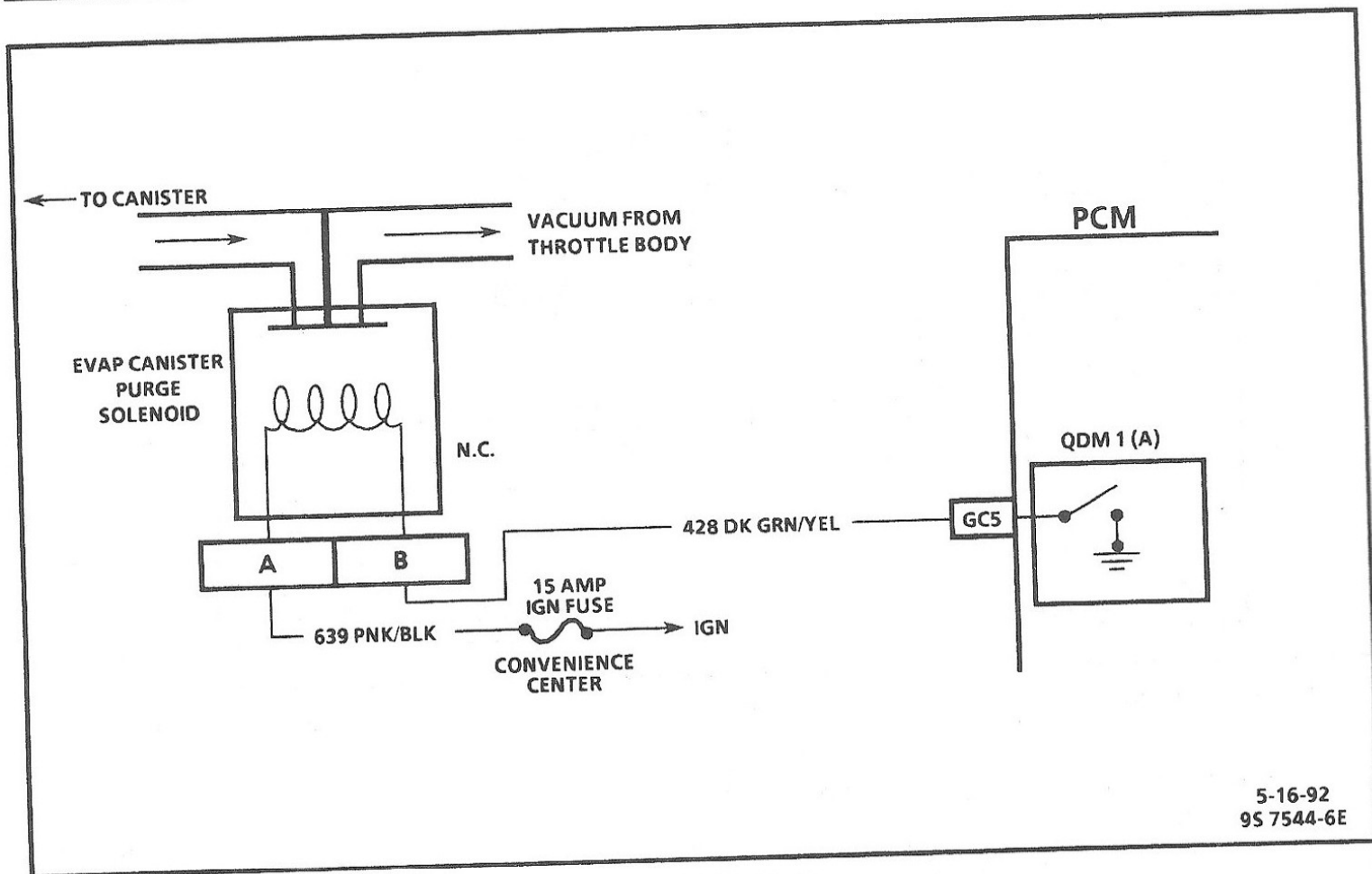
8-14-90
*6S 2996-6E

Figure C3-3 - Evaporative Emissions Control (EVAP) System Schematic

pdfMachine - is a pdf writer that produces quality PDF files with ease!

Get yours now!

"Thank you very much! I can use Acrobat Distiller or the Acrobat PDFWriter but I consider your product a lot easier to use and much preferable to Adobe's" A.Sarras - USA



5-16-92
9S 7544-6E

CHART C-3 EVAP CANISTER PURGE VALVE CHECK 3800 (VIN L) (SFI)

Circuit Description:

EVAP canister purge is controlled by a solenoid that allows vacuum to purge the canister when energized. The PCM supplies a Pulse Width Modulated (PWM) ground to energize the solenoid (purge "ON").

If the diagnostic request terminal is grounded with the engine stopped or the following is met with the engine running, the EVAP canister purge solenoid is energized (purge "ON").

- Engine run time after start more than 20 seconds on a warm engine or 2.5 minutes on a cold engine.
- Engine coolant temperature above 60°C (158°F).
- Intake Air Temperature (IAT) is above 9.5°C (50°F).

Test Description: Number(s) below refer to circled number(s) on the diagnostic chart.

1. Checks to see if the solenoid is opened or closed. The solenoid is normally de-energized in this step, so it should be closed.
2. Completes functional check. This should normally energize the solenoid and allow the vacuum to drop (purge "ON").

Diagnostic Aids:

- Inspect the canister for cracks or fuel saturation.
- Inspect fuel vapor lines from the fuel tank for leaks, being disconnected or sharp bends blocking the flow of vapors.

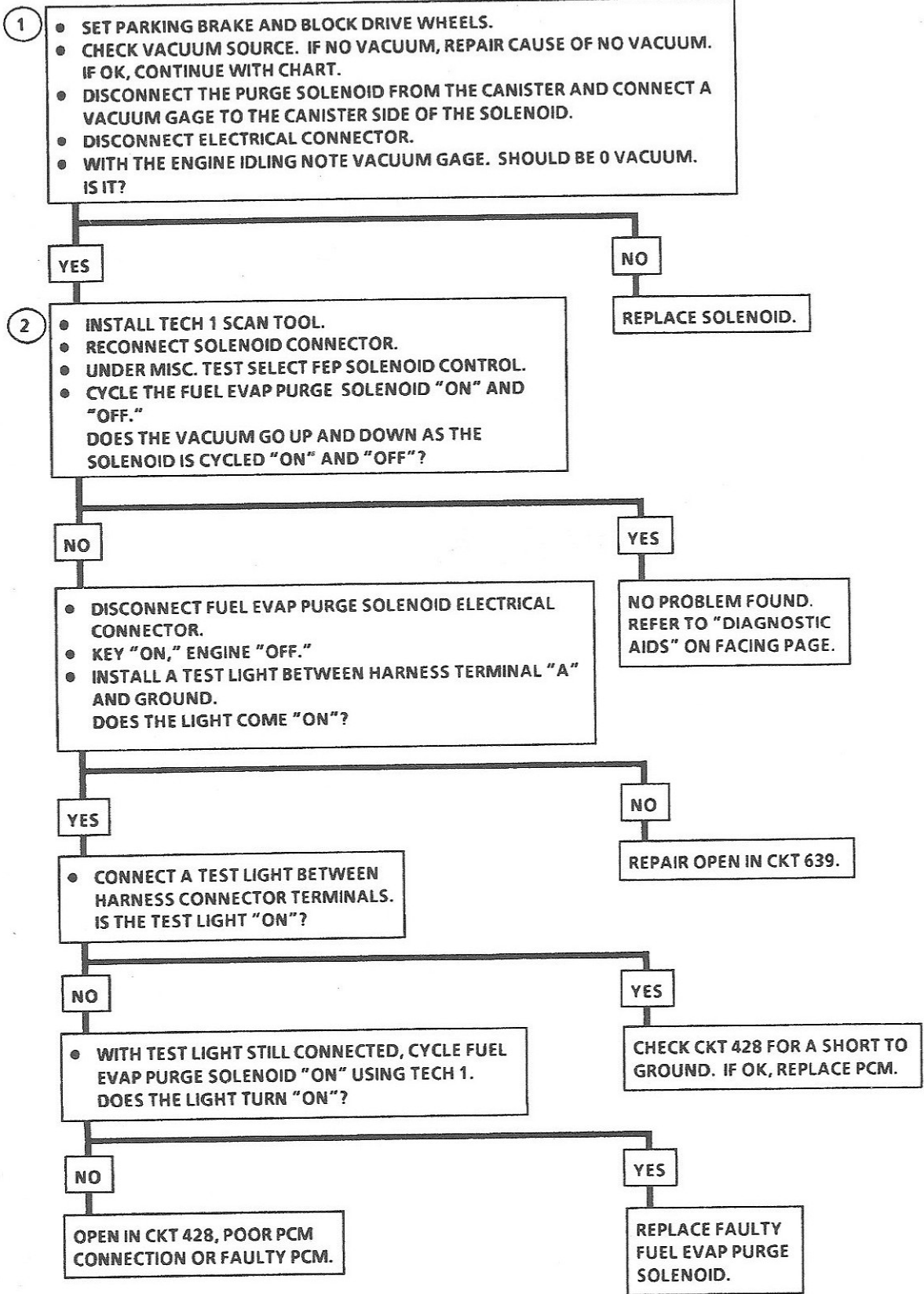
pdfMachine - is a pdf writer that produces quality PDF files with ease!

Get yours now!

"Thank you very much! I can use Acrobat Distiller or the Acrobat PDFWriter but I consider your product a lot easier to use and much preferable to Adobe's" A.Sarras - USA

CHART C-3

EVAP CANISTER PURGE VALVE CHECK 3800 (VIN L) (SFI)



"AFTER REPAIRS," CONFIRM "CLOSED LOOP" OPERATION AND NO MIL (SERVICE ENGINE SOON).

4-10-92
MS 8415-6E

pdfMachine - is a pdf writer that produces quality PDF files with ease!
Get yours now!

"Thank you very much! I can use Acrobat Distiller or the Acrobat PDFWriter but I consider your product a lot easier to use and much preferable to Adobe's" A.Sarras - USA