



3.4 EVAP Canister Closure Valve

3.4.1 Description

1. Diagnostic Trouble Codes:

EVAP canister closure valve malfunction: P0446
EVAP canister closure valve performance: P1447

2. Monitoring Procedure

EVAP Canister Closure Valve PWM Drive Hardware Test

The diagnostic test samples Close Valve Diag PWM Buff Status to determine whether a fault has occurred, and if so a counter Close Valve Diag PWM Fault Cntr is incremented up, to a limit of Close Valve Diag PWM Fault Limit. If no fault event occurs, then decrement Close Valve Diag PWM Fault Cntr down to a limit of zero. If the count reaches the limit Close Valve Diag PWM Fault Limit then an EVAP canister closure valve open or short circuit fault is present.

EVAP Canister Closure Valve Performance Test

The test compares the value of fuel tank pressure against a threshold, during normal purge operation. If the value of FUEL TANK PRESS VOLTS is less than CLOSE VALVE BLOCKED PRESS, then an appropriate fault counter is incremented up to a limit of close valve blocked diagnostic fault limit. Otherwise the fault counter is decremented down to a limit of zero. If the fault counter reaches the limit then an EVAP canister closure valve flow fault is present.

3. Primary Detection Parameter

EVAP Canister Closure Valve PWM Drive Hardware Test

Hardware fault status from EVAP canister closure valve drive ASIC which monitors line voltage before low side drive transistor.

EVAP Canister Closure Valve Performance Test

Fuel tank pressure - Measured in volts, the outcome of a potential divider calculation.

4. Fault Criteria Limits

EVAP Canister Closure Valve Diag PWM Fault Limit	50 samples
EVAP Canister Closure Valve Blocked Pressure	-3.5 kPa

5. Monitoring Conditions

The EVAP canister closure valve PWM drive hardware test occurs continuously.
The performance test will take place during normal purge operation.

6. Monitoring Time Length / Frequency of Checks

The frequency of the EVAP canister closure valve diagnostic is 10Hz.

7. Criteria for Storing a Diagnostic Trouble Code

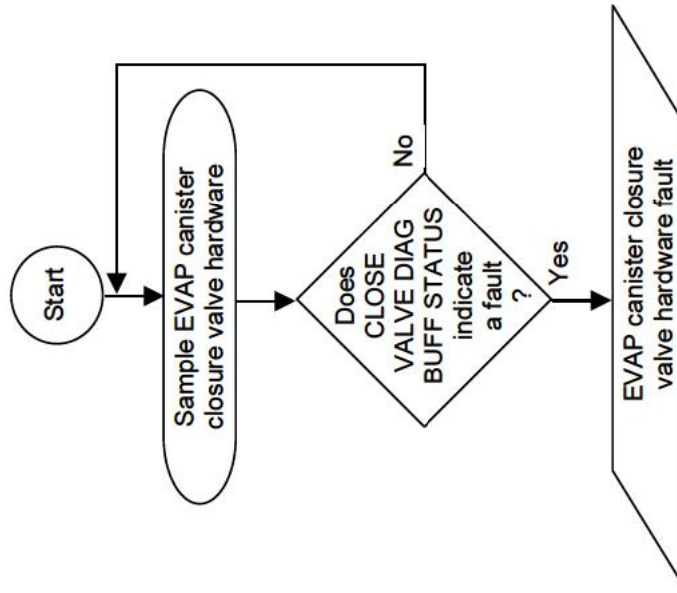
Two successive trips where the diagnostic routines indicate a failed valve or valve circuit.



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8. Criteria for Illuminating MIL
Two successive trips where the diagnostic routines indicate a failed valve or valve circuit.
 9. Criteria for Determining Out of Range Input Signals
The hardware sampling technique monitors non-linear signals; the criteria will be signal/no signal.

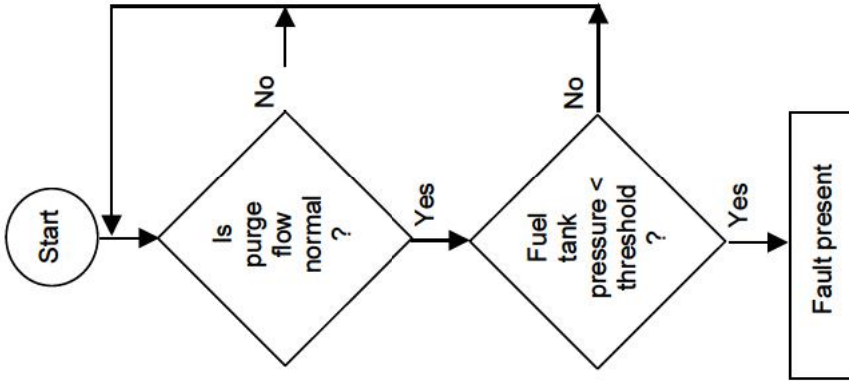


3.4.2 Monitor Structure – EVAP Canister Closure Valve PWM Drive Hardware Test





3.4.3 Monitor Structure - Performance Test





EVAP Canister Closure Valve

Component/ System	Fault Codes	Monitoring Strategy Description	Malfunction Criteria	Threshold value	Secondary Parameter	Enable Conditions	Time Required	MIL Illumination
EVAP CANISTER PURGE CLOSURE VALVE	P0446 P1447	Hardware drive test poor performance	EVAP Canister Purge Closure Valve P.W.M. Buff status Fuel tank pressure	fault/no fault -3.5KPa	ECU status normal purging	active engine running	50 samples	2 successive trips

If the above table does not include details of the following enabling conditions: - intake air and engine coolant temperature, vehicle speed range, and time after engine start-up then the state of these parameters has no influence upon the execution of the monitor.