

2002 MY EVAP Leak Monitor (P0440, P0442, P0456)

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MONITOR STRATEGY

Required sensors/Components	Main	Vapor pressure sensor
	Sub	EVAP VSV, CCV, VSV for bypass valve, ECT sensor, IAT sensor, Vehicle speed sensor, MAF sensor
Frequency of operation	Once per driving cycle	
Duration	Within 60 sec.	
MIL operation	2 driving cycles	
Sequence of operation	None	

TYPICAL ENABLING CONDITIONS

Item	Specification	
	Minimum	Maximum
The monitor will run whenever the following DTCs are not present	See page In-39	
Altitude	–	2,400 m (7,870 ft.)
Battery voltage	11 V	–
(a) IAT at engine start	10°C (50°F)	35°C (95°F)
(b) ECT at engine start	10°C (50°F)	35°C (95°F)
Difference between (a) and (b)	–	7°C (45°F)
IAT	10°C (50°F)	–
Time after engine start	–	50 min.
Vehicle speed	–	130 km/h (80 mph)
Time that vehicle speed is fixed at 64 km/h (40 mph) or more	15 sec.	–
Time that vehicle speed is fixed at less than 64 km/h (40 mph)	60 sec.	–
Fuel level	–	90 %
Fuel slosh	No slosh	
Change value of fuel tank pressure	Little	
Time after vehicle stop	110 sec.	–
Time after vehicle start	20 sec.	–
Number of vacuum introduction	–	8 times

TYPICAL MALFUNCTION THRESHOLDS

Delta P (–15) indicates the change amount of the fuel tank pressure for 5 sec. after the fuel tank pressure is –15 mmHg (–2.00 kPa)

Delta P (–20) indicates the change amount of the fuel tank pressure for 5 sec. after the fuel tank pressure is –20 mmHg (–2.67 kPa)

Engine Family	Detection Criteria	Threshold
0.020"/0.040" leak:		
1NZ–FE	Delta P (–15) Delta P (–20)	2.0 mmHg (0.27 kPa) or more
2UZ–FE Sequoia	Delta P (–15) Delta P (–20)	1.2 mmHg (0.16 kPa) or more
0.020" leak:		
• 1AZ–FE • 2AZ–FE • 2JZ–GE • 1MZ–FE Avalon, Camry, ES300 and Solara • 2RZ–FE and 3RZ–FE • 3UZ–FE • 5VZ–FE Tacoma and 4Runner • 1ZZ–FE and 2ZZ–GE	Delta P (–15) Delta P (–20)	0.5 mmHg (0.07 kPa) or more
1MZ–FE Sienna	Delta P (–15) Delta P (–20)	0.4 mmHg (0.05 kPa) or more
1MZ–FE RX300 and Highlander	Delta P (–15) Delta P (–20)	0.4 mmHg (0.05 kPa) or more 0.5 mmHg (0.07 kPa) or more
0.040" leak:		
• 1AZ–FE • 1ZZ–FE and 2ZZ–GE	Delta P (–15) Delta P (–20)	1.8 mmHg (0.24 kPa) or more
• 2AZ–FE • 2JZ–GE • 1MZ–FE Avalon, Camry, ES300, Highlander, RX300 and Solara • 2RZ–FE and 3RZ–FE • 3UZ–FE • 5VZ–FE Tacoma and 4Runner	Delta P (–15) Delta P (–20)	1.5 mmHg (0.20 kPa) or more
1MZ–FE Sienna	Delta P (–15) Delta P (–20)	1.2 mmHg (0.16 kPa) or more

OBD MONITOR DRIVE PATTERNS

See page [In-13](#)

MODE 06 DATA (MONITOR RESULT)

- Checking monitor status (See page [In-43](#))
- Detecting Mode 06 data (See page [In-44](#))