2001 MY VSV for Vapor Pressure Sensor Monitor (P0446)

To return to monitor description, see page Ev–24.

MONITOR STRATEGY

Related DTCs	P0446	• VSV for vapor pressure sensor malfunction • Purge line leak
Required sensors/Components	Main	Vapor pressure sensor
	Sub	EVAP VSV, VSV for vapor pressure sensor, IAT senor, ECT sensor and MAF sensor (or MAP sensor)
Frequency of operation	Once per driving cycle	
Duration	Within 20 sec.	Purge line leak
	Within 10 sec.	VSV for vapor pressure sensor malfunction
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	
IAT	–10˚C (14˚F)	–
(a) ECT at engine start	10˚C (50˚F)	35˚C (95˚F)
(b) IAT at engine start	10˚C (50˚F)	35˚C (95˚F)
Difference between (a) and (b)	–	7˚C (45˚F)
Time after engine start	300 sec.	–
Intake air amount (MAF sensor equipped)	–	0.6 g/rev.
Intake manifold vacuum (MAP sensor equipped)	–	–200 mmHg (–26.7 kPa)
EVAP VSV duty signal	20 %	–
“Run” (7 km/h [4 mph] or more) and “stop” (3 km/h [2 mph] or less)	Once	

TYPICAL MALFUNCTION THRESHOLDS

Engine Family	Detection Criteria	Threshold
Case 1: Purge line leak		
• 2RZ–FE • 3RZ–FE	Increase of canister pressure at 0.5 – 1.5 sec. after purge cut	3.5 mmHg (0.47 kPa) or more
	Canister pressure at 0.5 sec. after purge cut	• –6 mmHg (–0.8 kPa) or more • Less than –26 mmHg (–3.5 kPa)
	Canister pressure at 5.5 – 9 sec. after purge cut	• Between –3 mmHg (–0.4 kPa) and 3 mmHg (0.4 kPa) • Less than –26 mmHg (–3.5 kPa)
	Increase of canister pressure at 5.5 – 9 sec. after purge cut	Less than 1 mmHg (0.13 kPa)

• 2UZ–FE • 5VZ–FE	Increase of canister pressure at 0.5 – 1.5 sec. after purge cut	3 mmHg (0.4 kPa) or more
	Canister pressure at 0.5 sec. after purge cut	• –5.5 mmHg (–0.73 kPa) or more • Less than –26 mmHg (–3.5 kPa)
	Canister pressure at 7 to 12 sec. after purge cut	• Between –3 mmHg (–0.4 kPa) and 3 mmHg (0.4 kPa) • Less than –26 mmHg (–3.5 kPa)
	Increase of canister pressure at 7 to 12 sec. after purge cut	Less than 1 mmHg (0.13 kPa)
Case 2: VSV for vapor pressure sensor malfunction		
• 2RZ–FE • 3RZ–FE	Difference between canister pressure and fuel tank pressure at engine start	Less than 0.73 mmHg (0.10 kPa)
	Difference between canister pressure and fuel tank pressure at engine start before/after purge start with (a) or (b) below	Less than 2 mmHg (0.27 kPa)
	(a) Pulsation in fuel tank pressure	2.75 mmHg (0.37 kPa) or more
	(b) Pulsation in canister pressure	Less than 0.825 mmHg (0.11 kPa)
3S–FE	Difference between canister pressure and fuel tank pressure at engine start	Less than 0.73 mmHg (0.10 kPa)
	Difference between canister pressure and fuel tank pressure at engine start before/after purge start with (a) or (b) below	Less than 2.93 mmHg (0.39 kPa)
	(a) Pulsation in fuel tank pressure	2.57 mmHg (0.34 kPa) or more
	(b) Pulsation in canister pressure	Less than 1.1 mmHg (0.15 kPa)
1UZ–FE GS400	Difference between canister pressure and fuel tank pressure at engine start	Less than 0.73 mmHg (0.10 kPa)
	Difference between canister pressure and fuel tank pressure at engine start before/after purge start with (a) or (b) below	Less than 2.93 mmHg (0.39 kPa)
	(a) Pulsation in fuel tank pressure	10 mmHg (1.33 kPa) or more
	(b) Pulsation in canister pressure	Less than 1.1 mmHg (0.15 kPa)
2UZ–FE	Difference between canister pressure and fuel tank pressure at engine start	Less than 0.73 mmHg (0.10 kPa)
	Difference between canister pressure and fuel tank pressure at engine start before/after purge start with (a) or (b) below	Less than 2.93 mmHg (0.39 kPa)
	(a) Pulsation in fuel tank pressure	1.95 mmHg (0.26 kPa) or more
	(b) Pulsation in canister pressure	Less than 0.82 mmHg (0.11 kPa)
5VZ–FE	Difference between canister pressure and fuel tank pressure at engine start	Less than 0.73 mmHg (0.10 kPa)
	Difference between canister pressure and fuel tank pressure at engine start before/after purge start with (a) or (b) below	Less than 2 mmHg (0.27 kPa)
	(a) Pulsation in fuel tank pressure	5.5 mmHg (0.73 kPa) or more
	(b) Pulsation in canister pressure	Less than 0.2 mmHg (0.03 kPa)

OBD MONITOR DRIVE PATTERNS

See page In–13

MODE 06 DATA (MONITOR RESULT)

(a) Checking monitor status (See page In–43)
(b) Detecting Mode 06 data (See page In–44)