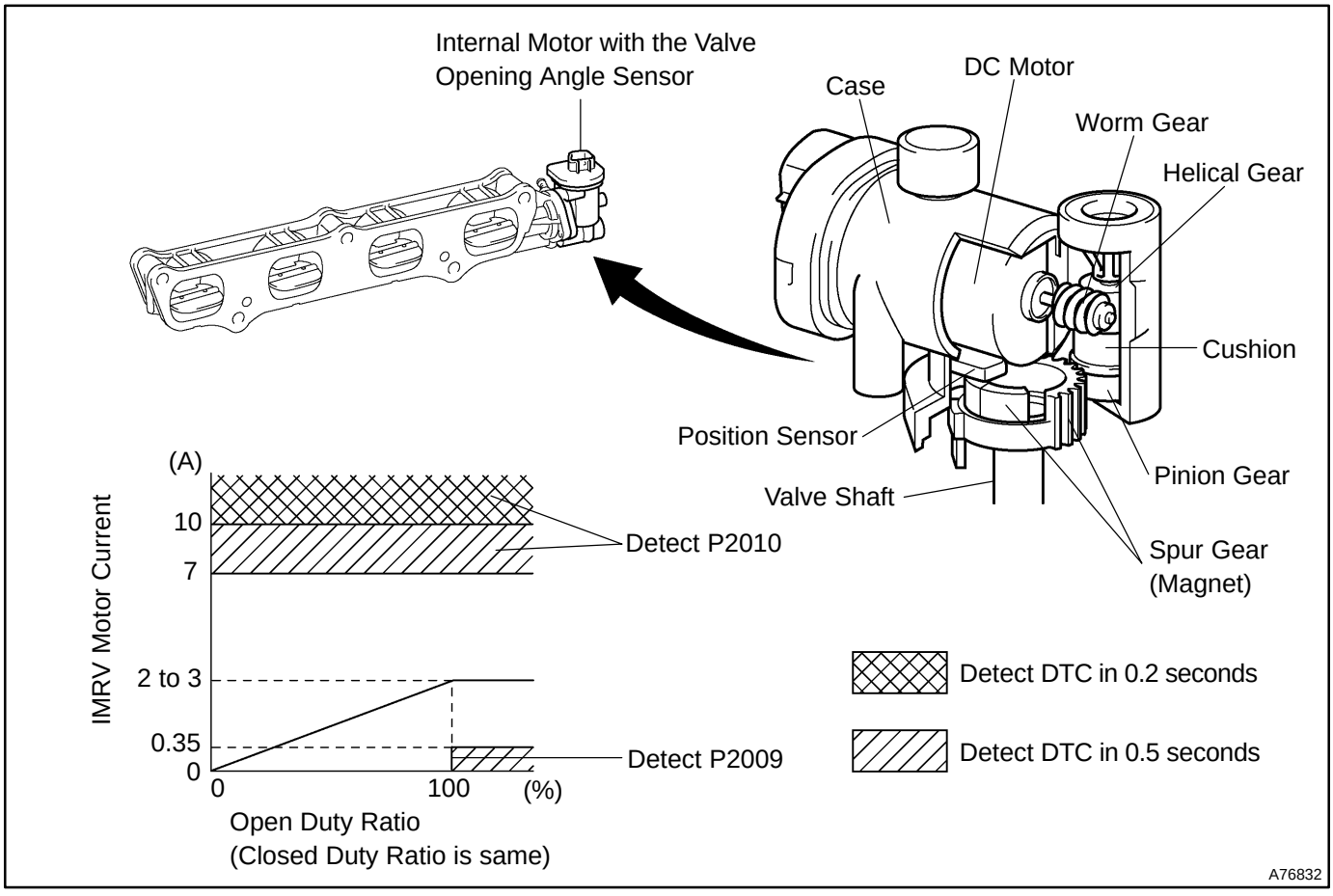
DTC	P2009	INTAKE MANIFOLD RUNNER CONTROL CIRCUIT LOW (BANK 1)

DTC	P2010	INTAKE MANIFOLD RUNNER CONTROL CIRCUIT HIGH (BANK 1)

HINT:
These DTCs have been added to meet the requirement for Partial Zero Emission Vehicle (PZEV) (see page 05−350).

CIRCUIT DESCRIPTION

The Intake Manifold Runner Valve (IMRV) motor is driven by the ECM. The IMRV motor opens and closes the IMRV.
When the current of the IMRV motor deviates from the standard range, the ECM determines that there is a malfunction.
The related DTCs are P2004 and P2006 on page 05−463, and P2014, P2016 and P2017 on page 05−477.
NOTICE:
Do not disassemble the IMRV and the IMRV motor.



DTC No.	DTC Detection Condition	Trouble Area
P2009	Detecting open (in the motor or in the motor circuit) Condition (a) and (b) continue for 1 second: (a) IMRV motor output duty is 100 % (b) IMRV motor current is less than 0.35 A	• Open in IMRV motor circuit • IMRV motor • ECM
P2010	• Detecting excess current (in the motor or in the motor circuit) Condition (a) continues for 0.2 seconds: (a) IMRV motor current is 10 A or more • Condition (a) continues for 0.5 seconds: (a) IMRV motor current is 7 A or more	• Short in IMRV motor circuit • IMRV motor • ECM

HINT:

After repair is completed, you can use the hand−held tester to confirm the IACV POSITION (IMRV position sensor output voltage) while performing the IACV MOTOR (IMRV motor) of the ACTIVE TEST.

Reference (Normal condition):

IACV MOTOR operation	IACV POSITION
100 %	3.2 to 4.8 V
−100 %	0.2 to 1.0 V

MONITOR STRATEGY

Related DTCs	P2009: IMRC Actuator Range Check (Low Current) P2010: IMRC Actuator Range Check (High Current)
Required sensors/ components (Main)	IMRC Valve (Actuator)
Required sensors/ components (Related)	None
Frequency of operation	Continuous
Duration	1 second: IMRC Actuator Range Check (Low Current) 0.192 seconds: IMRC Actuator Range Check (High Current)
MIL operation	Immediate
Sequence operation	None

TYPICAL ENABLING CONDITIONS

The monitor will run whenever these DTCs are not present	See page 05−360
Battery voltage	8 V or more
Ignition switch	ON
Starter	OFF

TYPICAL MALFUNCTION THRESHOLDS

P2009:

IMRC actuator current	Less than 0.35 A

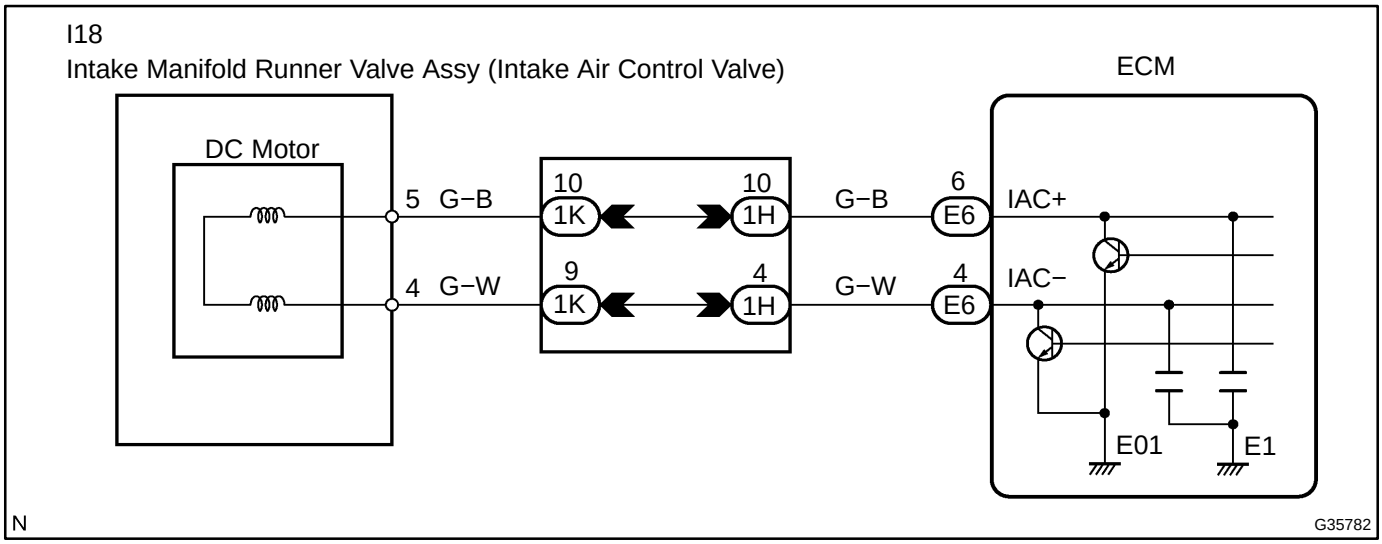
P2010:

IMRC actuator control IC current limiter port	Fail

COMPONENT OPERATING RANGE

IMRC actuator current	0.4 to 3 A

WIRING DIAGRAM

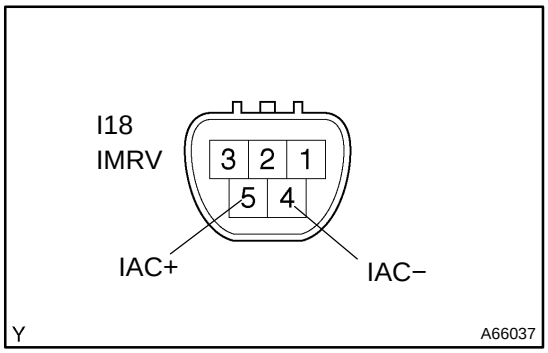


INSPECTION PROCEDURE

HINT:

Read freeze frame data using hand−held tester or the OBD II scan tool. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air−fuel ratio was lean or rich, etc. at the time of the malfunction.

1	INSPECT INTAKE MANIFOLD RUNNER VALVE ASSY (IMRV MOTOR RESISTANCE)



(a) Disconnect the I18 IMRV connector.

(b) Check the motor resistance between terminals I18−5 (IAC+) and I18−4 (IAC−).

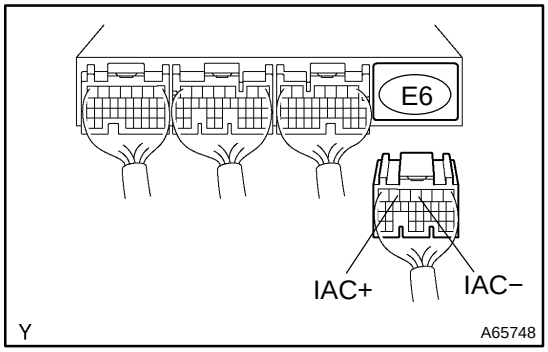
Standard:

Tester Connection	Condition	Specified Condition
I18−5 (IAC+) − I18−4 (IAC−)	20°C (68°F)	3 to 10 Ω

NG → **REPLACE INTAKE MANIFOLD RUNNER VALVE ASSY**

OK

2	CHECK WIRE HARNESS (ECM − IMRV)



(a) Disconnect the E6 ECM connector.

(b) Check the resistance between terminals of the E3 ECM connector.

Standard:

Tester Connection	Specified Condition
E6−6 (IAC+) − E6−4 (IAC−)	3 to 10 Ω

NG → **REPAIR OR REPLACE HARNESS AND CONNECTOR**

OK

3	READ OUTPUT DTC (DTC P2009 AND/OR P2010 ARE OUTPUT AGAIN)

(a) Clear the DTC (see page 05−379).
(b) Start the engine.
(c) Run the engine at more than 3,000 rpm.
(d) Turn the ignition switch OFF.

HINT:

As running the engine to 3,000 rpm the IMRV usually fully opened. If the ignition switch is turned OFF under this condition, the IMRV fully closed and then becomes half−opening angle.

(e) Read the DTC.

Result:

Display (DTC output)	Proceed to
P2009 and/or P2010 are output again	A
No DTC output	B

B → CHECK FOR INTERMITTENT PROBLEMS

A

REPLACE ECM (See page 10−9)