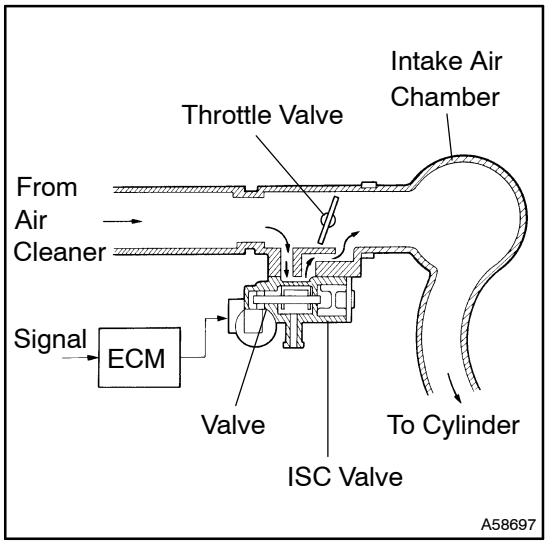
DTC P0511/33 IDLE AIR CONTROL CIRCUIT

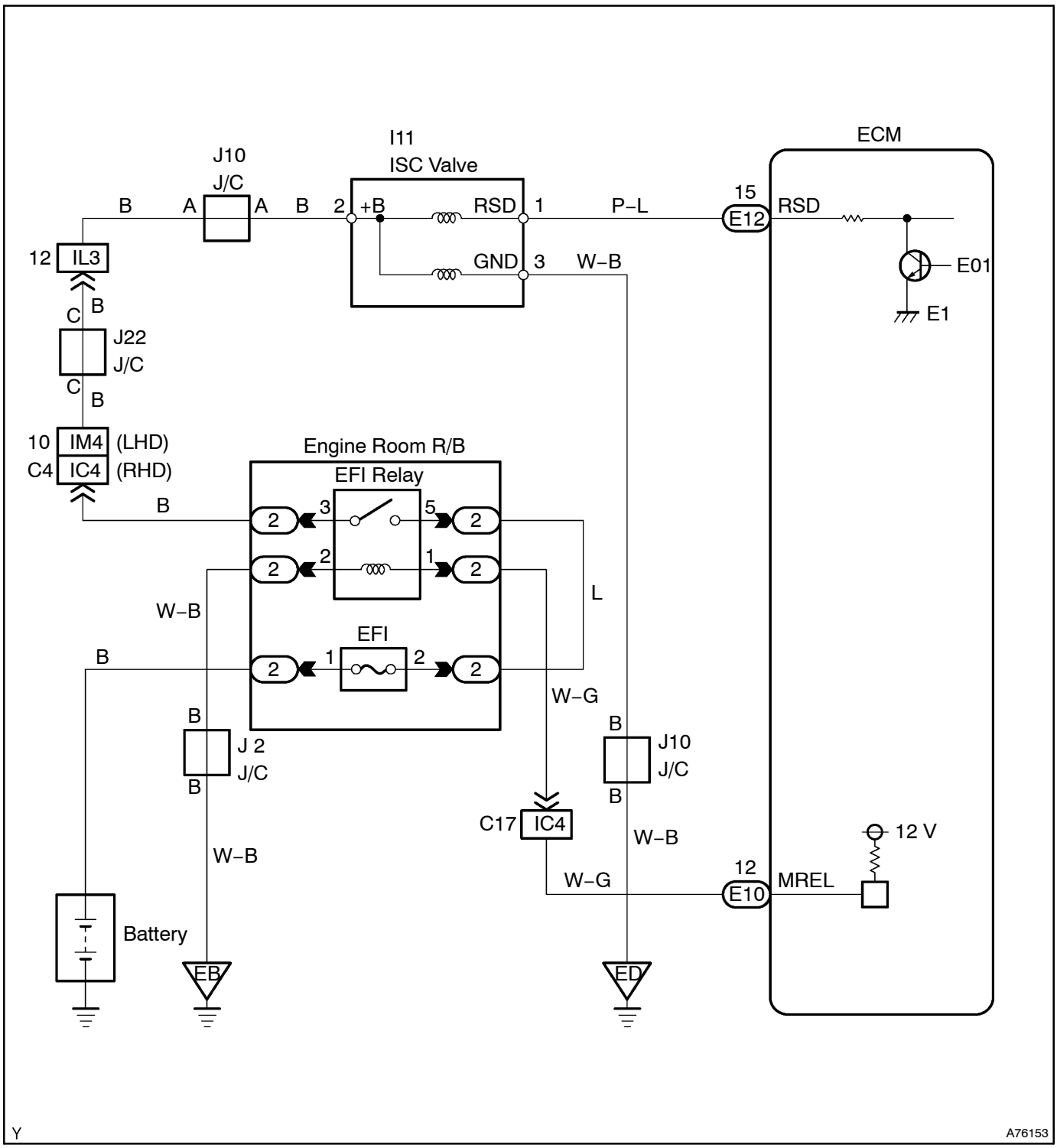
CIRCUIT DESCRIPTION



The rotary solenoid type ISC valve is located under the throttle body and intake air bypassing the throttle valve is directed to the ISC valve through the passage.
In this way the intake air volume bypassing the throttle valve is regulated, controlling the engine speed.
The ECM operates the ISC valve only to perform idle–up and provide feedback for the target idling speed.

DTC No.	DTC Detecting Condition	Trouble Area
P0511/33	Idle speed continues to very greatly from target speed	• Open or short in ISC valve circuit • IAC valve is stuck or closed • Open or short in A/C switch circuit • Air induction system • ISC valve • ECM

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Read freed frame data using hand–held tester, as 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.

When using hand–held tester:

1	WHEN USING HAND–HELD TESTER

NO → Go to step 1

YES

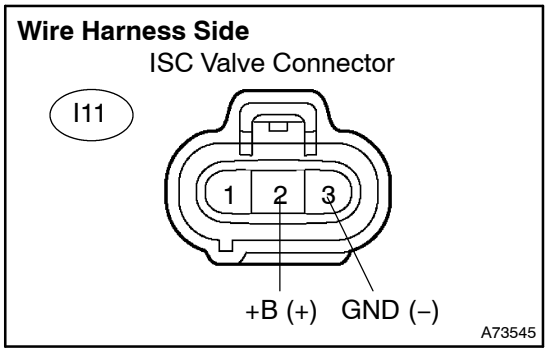
2	PERFORM ACTIVE TEST BY HAND–HELD TESTER (IAC DUTY RATIO)

(a) Connect the hand–held tester to the DLC3.
(b) Turn the ignition witch ON and push the hand–held tester main switch ON.
(c) Select the item ”DIAGNOSIS/ENHANCED OBD II/ACTIVE TEST/IAC DUTY RATIO”.
(d) Check the engine speed when the ISC valve is operated by the hand–held tester.
Engine speed:
Engine speed is increased and decreased in response to change of ISC duty ratio

OK → Go to step 7

NG

3	CHECK HARNESS AND CONNECTOR (ISC VALVE POWER SOURCE)



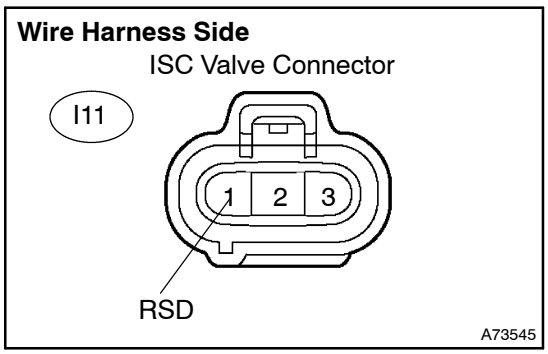
(a) Disconnect the I11 ISC valve connector.
(b) Turn the ignition switch ON.
(c) Measure the voltage between the wire harness side connector.
Voltage:

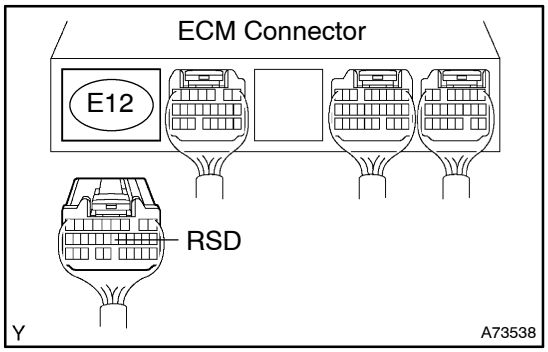
Symbols (Terminal No.)	Specified condition
+B (I11–2) ⇔ GND (I11–3)	9 – 14 V

NG → Go to step 10

OK

4	CHECK HARNESS AND CONNECTOR (ISC VALVE ⇔ ECM)





(a) Disconnect the I11 ISC valve connector.
(b) Disconnect the E12 ECM connector.
(c) Check the continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
RSD (I11–1) ⇔ RSD (E12–15)	Continuity

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
RSD (I11–1) or RSD (E12–15) ⇔ Other terminals and body ground	No continuity

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

OK

5	INSPECT ISC VALVE (See page 10–5)

NG → **REPLACE ISC VALVE (See page 01–36)**

OK

6	CHECK BLOCKAGE OF IAC VALVE AND PASSAGE TO BYPASS THROTTLE VALVE

NG → **REPAIR OR REPLACE ISC VALVE (See page 01–36)**

OK

CHECK AND REPLACE ECM (See page 01–36)

7	CHECK AIR INDUCTION SYSTEM

NG → **REPAIR OR REPLACE**

OK

8	CHECK CHECK BLOCKAGE OF IAC VALVE AND PASSAGE TO BYPASS THROTTLE VALVE

NG → REPAIR OR REPLACE ISC VALVE (See page 01–36)

OK

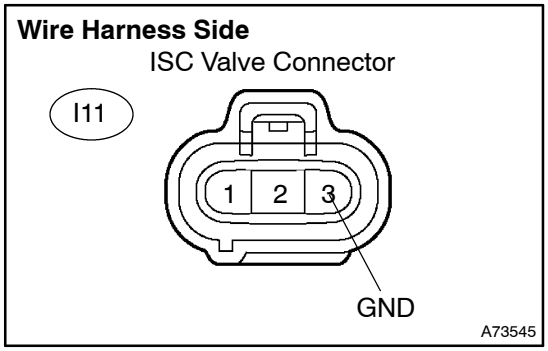
9	CHECK FOR A/C SIGNAL CIRCUIT

NG → REPAIR OR REPLACE

OK

CHECK FOR INTERMITTENT PROBLEMS (See page 05–86)

10	CHECK HARNESS AND CONNECTOR (GROUND)



(a) Disconnect the I11 ISC valve connector.
(b) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
GND (I11–3) ⇔ Body ground	Continuity

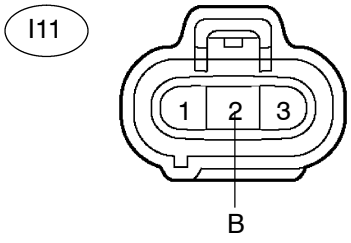
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

11	CHECK HARNESS AND CONNECTOR (ISC VALVE ⇔ EFI RELAY)

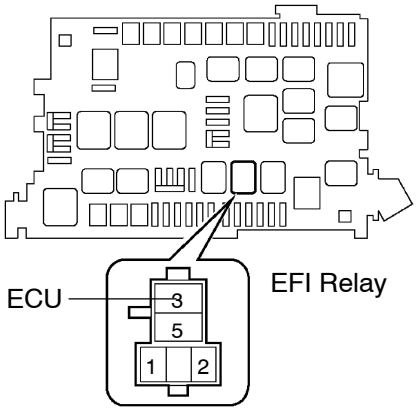
Wire Harness Side

ISC Valve Connector



A73545

Engine Room R/B



A73593

(a) Disconnect the I11 ISC valve connector.
(b) Remove the EFI relay.
(c) Check the continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
B (I11–2) ⇔ ECU (EFI relay terminal 3 of R/B)	Continuity

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
B (I11–2) or ECU (EFI relay terminal 3 of R/B) ⇔ Other terminals and body ground	No continuity

NOTICE:
Do not insert the tester hard in the procedure (c), or the holder may be damaged.

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

OK

CHECK FOR ECM POWER SOURCE CIRCUIT (See page 05–168)

When not using hand–held tester:

1	CHECK AIR INDUCTION SYSTEM

NG → **REPAIR OR REPLACE**

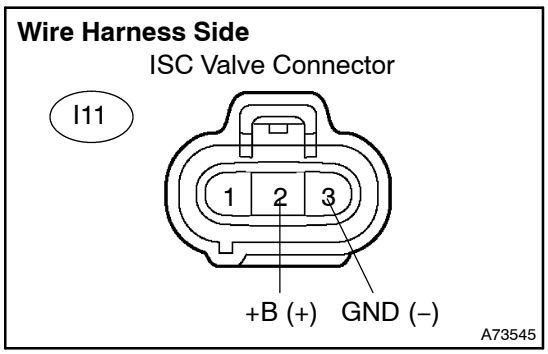
OK

2	CHECK FOR A/C SIGNAL CIRCUIT

NG → **REPAIR OR REPLACE**

OK

3 CHECK HARNESS AND CONNECTOR (ISC VALVE POWER SOURCE)



(a) Disconnect the I11 ISC valve connector.
(b) Turn the ignition switch ON.
(c) Measure the voltage between the wire harness side connector.

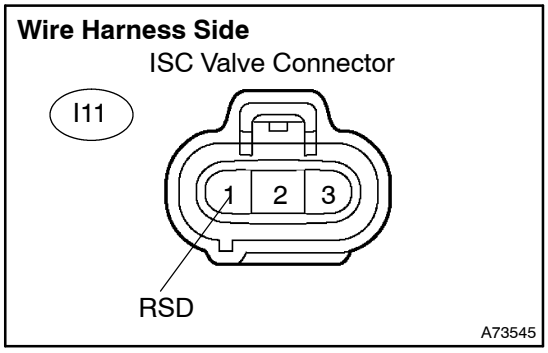
Voltage:

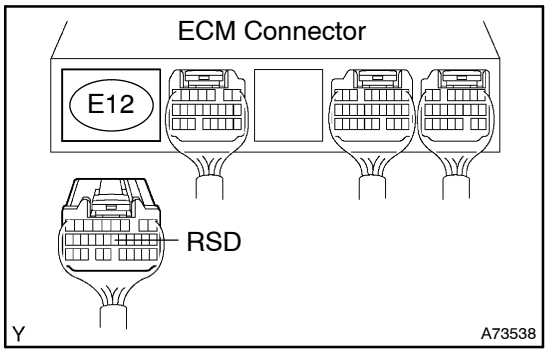
Symbols (Terminal No.)	Specified condition
+B (I11–2) ⇔ GND (I11–3)	9 – 14 V

NG → **Go to step 7**

OK

4 CHECK HARNESS AND CONNECTOR (ISC VALVE ⇔ ECM)





(a) Disconnect the I11 ISC valve connector.
(b) Disconnect the E12 ECM connector.
(c) Check the continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
RSD (I11–1) ⇔ RSD (E12–15)	Continuity

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
RSD (I11–1) or RSD (E12–15) ⇔ Other terminals and body ground	No continuity

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

OK

5 INSPECT ISC VALVE (See page 10–5)

NG → **REPLACE ISC VALVE (See page 01–36)**

OK

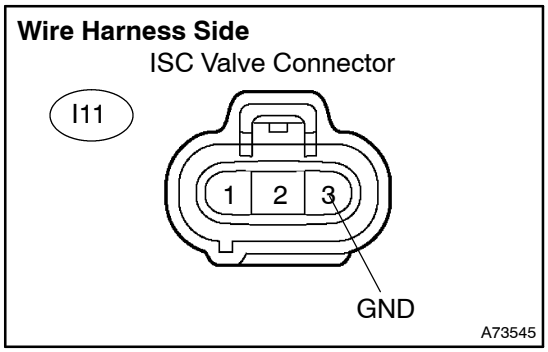
6	CHECK BLOCKAGE OF IAC VALVE AND PASSAGE TO BYPASS THROTTLE VALVE

NG → REPAIR OR REPLACE ISC VALVE (See page 01–36)

OK

CHECK AND REPLACE ECM (See page 01–36)

7	CHECK HARNESS AND CONNECTOR (GROUND)



(a) Disconnect the I11 ISC valve connector.
(b) Check the continuity between the wire harness side connector.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
GND (I11–3) ⇔ Body ground	Continuity

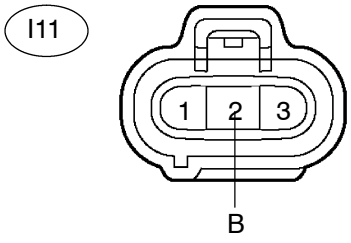
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

8 CHECK HARNESS AND CONNECTOR (ISC VALVE ⇔ EFI RELAY)

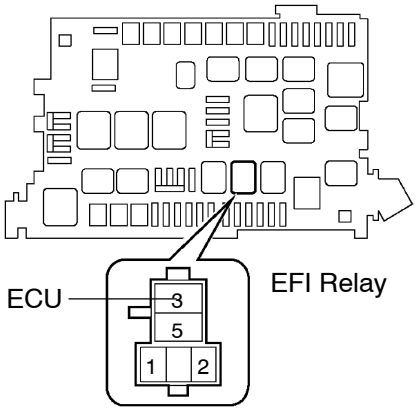
Wire Harness Side

ISC Valve Connector



A73545

Engine Room R/B



A73593

(a) Disconnect the I15 ISC valve connector.
(b) Remove the EFI relay.
(c) Check the continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
B (I11–2) ⇔ ECU (EFI relay terminal 3 of R/B)	Continuity

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
B (I11–2) or ECU (EFI relay terminal 3 of R/B) ⇔ Body ground	No continuity

NOTICE:

Do not insert the tester hard in the procedure (c), or the holder may be damaged.

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

OK

CHECK FOR ECM POWER SOURCE CIRCUIT (See page 05–168)