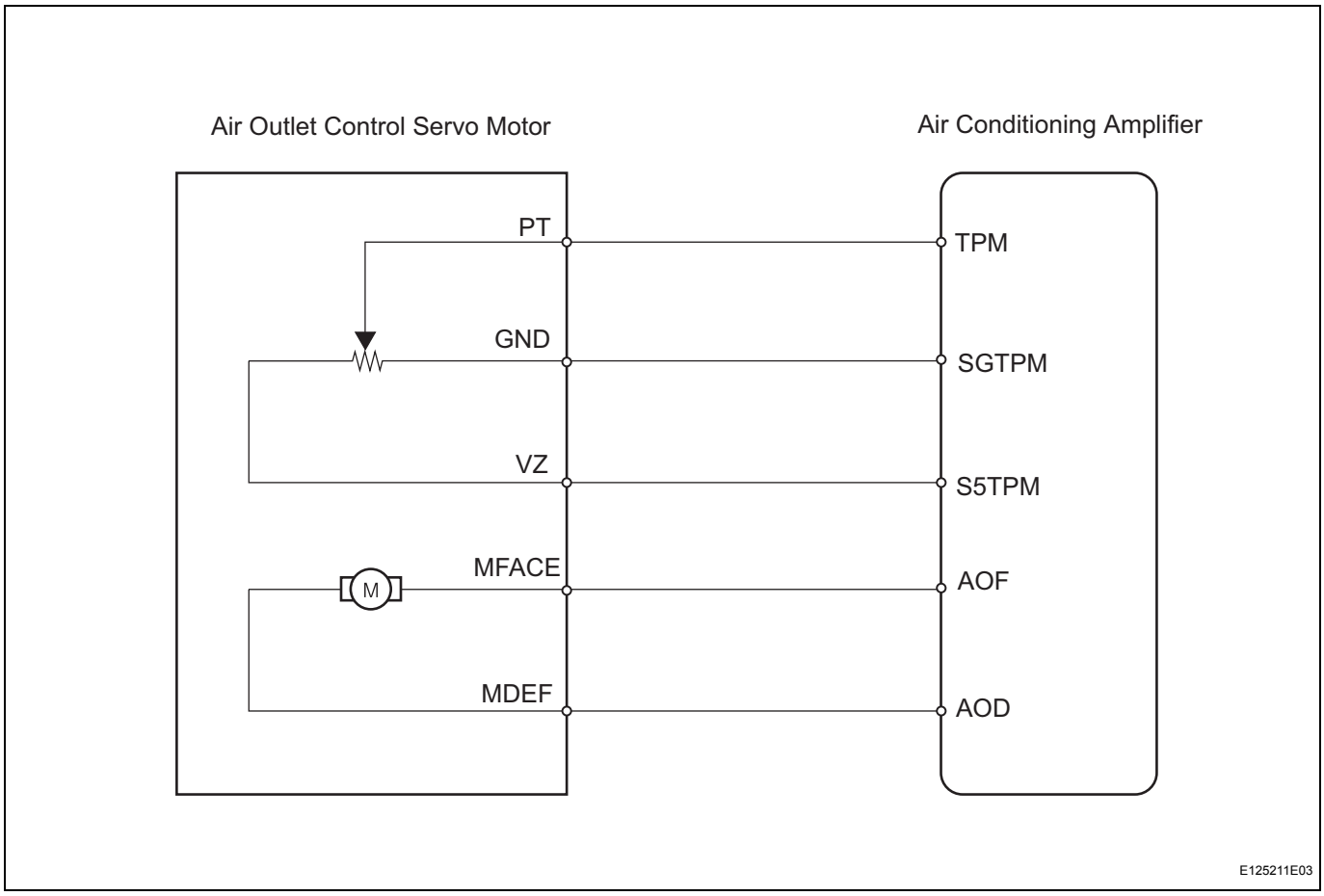
DTC	B1443	Air Outlet Damper Control Servo Motor Circuit

DESCRIPTION

This circuit turns the servo motor and changes each damper position by receiving the signals from the air conditioning amplifier.
The air outlet damper servo switches the air outlet by rotating the motor (normal, reverse) with electrical power from the air conditioning amplifier.
When the AUTO switch is on, the air conditioning amplifier changes the mode between "FACE", "BI-LEVEL" and "FOOT" according to the temperature setting.

DTC No.	Detection Condition	Trouble Area
B1443	Air outlet damper position sensor valve does not change even if air conditioning amplifier operated air outlet damper control servo motor.	• Air outlet control servo motor • Wire harness between air outlet control servo motor and air conditioning amplifier • Air conditioning amplifier

WIRING DIAGRAM



INSPECTION PROCEDURE

1	READ VALUE OF INTELLIGENT TESTER (A/O DAMP POS, TARG)

(a) Connect the intelligent tester (with CAN VIM) to DLC3.
(b) Turn the power switch ON (IG) and push the intelligent tester main switch ON.

AC

(c) Select the item below in the DATA LIST, and read the display on the intelligent tester.

Air conditioning amplifier

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
A/O DAMP POS	Air outlet damper position / min.: -14% max.: 113.5%	Damper is at "FACE": -10.0% Damper is at "FACE/FOOT": 12.0% Damper is at "FOOT" (Manual): 33.5% or 69.0% Damper is at "FOOT" (Auto): 49.0% or 69.0% Damper is at "FACE/DEF": 69.0% or 95.0%	Open in the circuit: 50.0%
A/O DAMP TARG	Air outlet damper target position / min.: -14% max.: 113.5%	Damper is at "FACE": -10.0% Damper is at "FACE/FOOT": 12.0% Damper is at "FOOT" (Manual): 33.5% or 69.0% Damper is at "FOOT" (Auto): 49.0% or 69.0% Damper is at "FACE/DEF": 69.0% or 95.0%	Open in the circuit: 50.0%

OK:

When the target position is at the "FACE" (-10.0%), the actual opening angle is 19.0% or less.

Result

Result	Proceed to
NG	A
OK (Checking from the PROBLEM SYMPTOMS TABLE)	B
OK (Checking from the DTC)	C

B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

C → **REPLACE AIR CONDITIONING AMPLIFIER**

A

2 READ VALUE OF INTELLIGENT TESTER (A/O DAMP POS, TARG)

(a) Connect the intelligent tester (with CAN VIM) to DLC3.
(b) Turn the power switch ON (IG) and push the intelligent tester main switch ON.
(c) Select the item below in the DATA LIST, and read the display on the intelligent tester.

Air conditioning amplifier

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
A/O DAMP POS	Air outlet damper position / min.: -14% max.: 113.5%	Damper is at "FACE/FOOT": 12.0% Damper is at "FOOT" (Manual): 33.5% or 69.0% Damper is at "FOOT" (Auto): 49.0% or 69.0% Damper is at "FACE/DEF": 69.0% or 95.0% Damper is at "DEF": 110.0%	Open in the circuit: 50.0%

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
A/O DAMP TARG	Air outlet damper target position / min.: -14% max.: 113.5%	Damper is at "FACE/FOOT": 12.0% Damper is at "FOOT" (Manual): 33.5% or 69.0% Damper is at "FOOT" (Auto): 49.0% or 69.0% Damper is at "FACE/DEF": 69.0% or 95.0% Damper is at "DEF": 110.0%	Open in the circuit: 50.0%

OK:

When the target position is at the "DEF" (110.0%), the actual opening angle is 81.0% or more.

Result

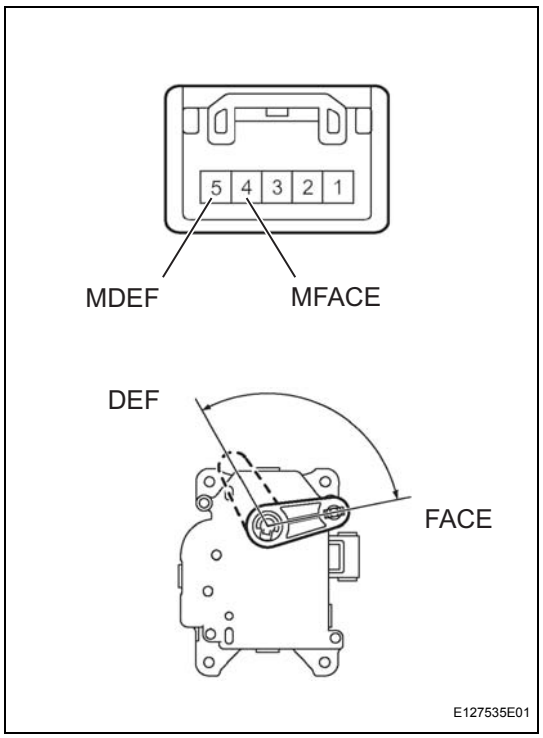
Result	Proceed to
NG	A
OK (Checking from the PROBLEM SYMPTOMS TABLE)	B
OK (Checking from the DTC)	C

B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

C → **REPLACE AIR CONDITIONING AMPLIFIER**

A

3 INSPECT AIR OUTLET CONTROL SERVO MOTOR



(a) Remove the air outlet control servo motor.
(b) Connect the battery's positive (+) lead to terminal 4 and negative (-) lead to terminal 5 then check that the lever turns to "FACE" position smoothly.
(c) Measure the resistance of the servo motor.
Standard resistance

Tester Connection	Condition	Specified Condition
A8-3 (PT) - A8-2 (GND)	FACE position	3.6 to 6.7 kΩ

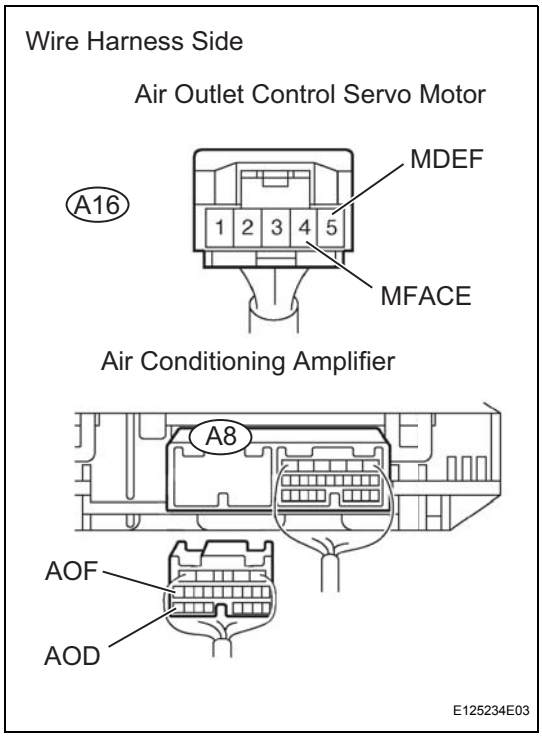
(d) Connect the battery's positive (+) lead to terminal 5 and negative (-) lead to terminal 4 then check that the lever turn to "DEF" position smoothly.
(e) Measure the resistance of the servo motor.
Standard resistance

Tester Connection	Condition	Specified Condition
A8-3 (PT) - A8-2 (GND)	DEF position	0.6 to 1.1 kΩ

NG → **REPLACE AIR OUTLET CONTROL SERVO MOTOR**

OK

4	CHECK WIRE HARNESS (AIR OUTLET CONTROL SERVO MOTOR - AIR CONDITIONING AMPLIFIER)



(a) Disconnect the A16 servo connector.
(b) Disconnect the A8 amplifier connector.
(c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
A8-16 (AOF) - A16-4 (MFACE)	Below 1 Ω
A8-24 (AOD) - A16-5 (MDEF)	Below 1 Ω
A8-16 (AOF) - Body ground	10 kΩ or higher
A8-24 (AOD) - Body ground	10 kΩ or higher

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

OK

REPLACE AIR CONDITIONING AMPLIFIER