

DTC**B1499/99****Multiplex Communication Circuit****DESCRIPTION**

DTC No.	DTC Detecting Condition	trouble Area
B1499/99	Open in multiplex communication circuit	• Multiplex communication system

1**CHECK DIAGNOSTIC TROUBLE CODE (DTC B1499/99)**

- (a) Clear the DTC (See page [AC-18](#)).
 (b) Read the DTC (See page [AC-18](#)).

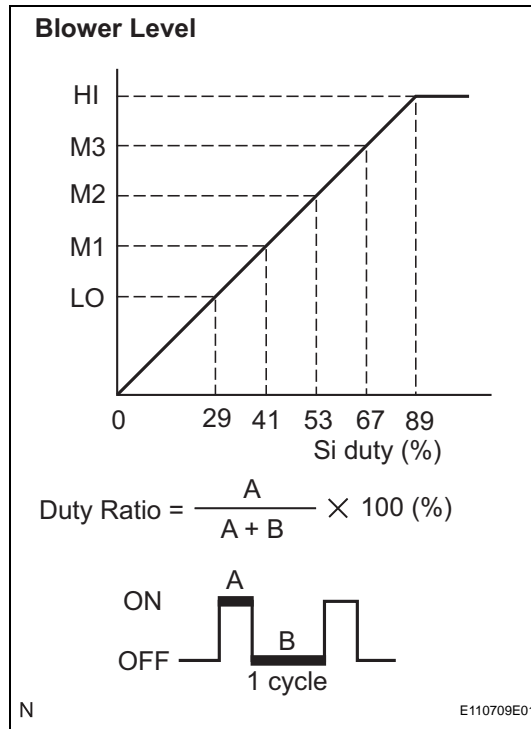
Result

Result	Proceed to
DTC (B1499/99) is not output	A
DTC (B1499/99) is output	B

B**GO TO MULTIPLEX COMMUNICATION SYSTEM****A****SYSTEM OK**

Blower Motor Circuit

DESCRIPTION



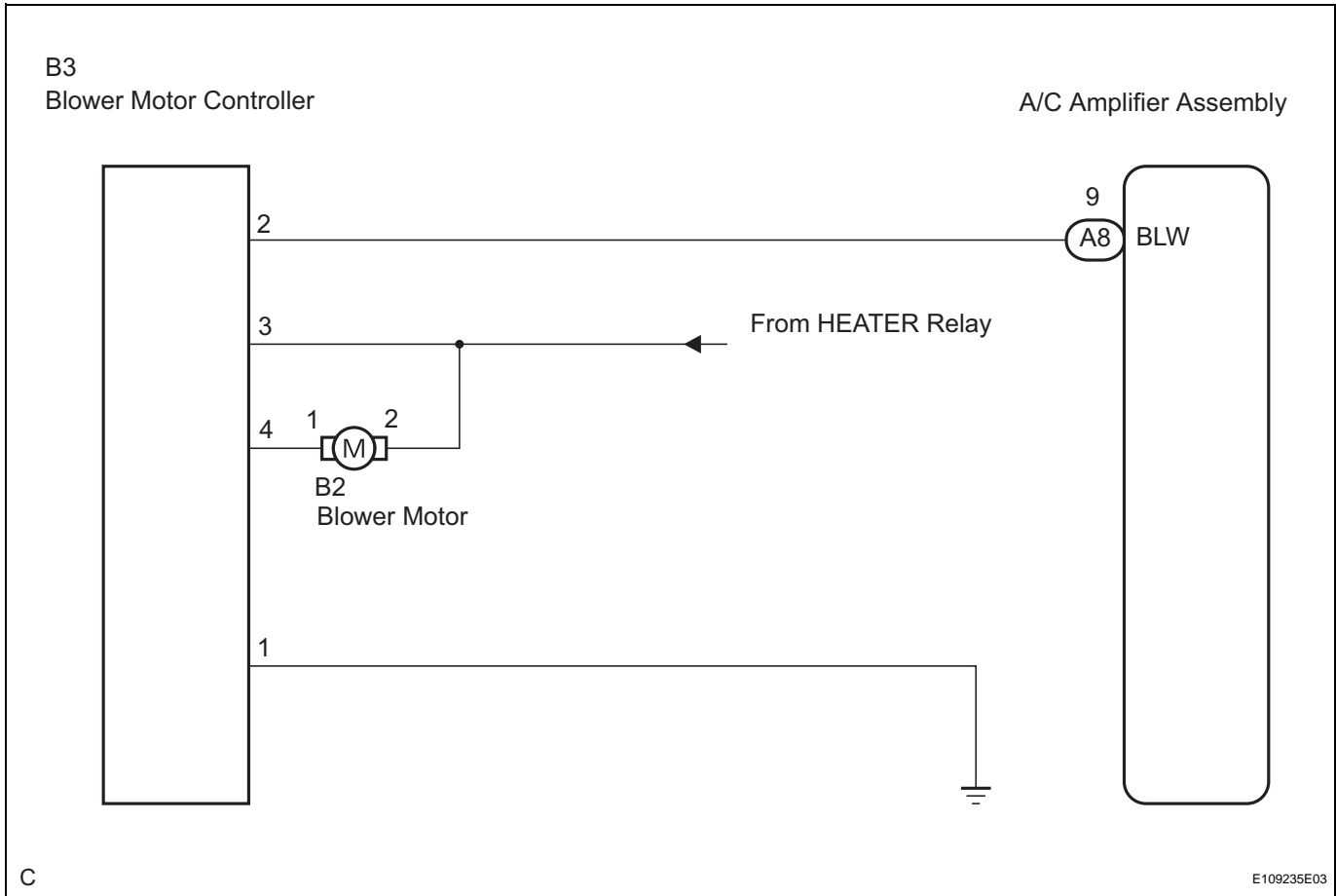
AC

The blower motor is operated by signals from the A/C amplifier assembly. Blower motor speed signals are transmitted by changes in the duty ratio.

Duty Ratio:

The duty ratio is the ratio of the period of continuity in one cycle. For example, A is the period of continuity in one cycle, and B is the period of non-continuity.

WIRING DIAGRAM



1 READ VALUE OF INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch ON 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.

DATA LIST / AIR CONDITIONER

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
BLOWER LEVEL	Blower motor speed level / min.: Level 0 max.: Level 31	Changes depending on blower level	-

OK:

The display is as specified in the normal condition.

NG →

Go to step 2

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2 PERFORM ACTIVE TEST BY INTELLIGENT TESTER

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch ON and push the intelligent tester main switch on.
- (c) Select the item below in the ACTIVE TEST and then check that the blower motor operates.

ACTIVE TEST / AIR CONDITIONER

Item	Test Details / Display (Range)	Diagnostic Note
BLOWER MOTOR	Blower motor / min.: Level 0 max.: Level 31	-

AC

OK:
Blower motor operates and blower level changes.

NG Go to step 3

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

3 PERFORM ACTUATOR CHECK

- (a) Set the actuator check mode (See page AC-11).
- (b) Press the blower switch to change to the step operation.
- (c) Check for air flow level by hand.

Display Code	Blower Level
0	0
1	1
2	17
3	17
4	17
5	17
6	17
7	17
8	17
9	31

OK:
Blower level changes in accordance with each display code.

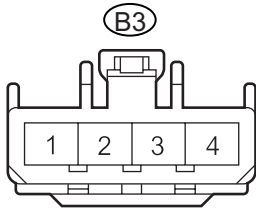
NG Go to step 4

OK

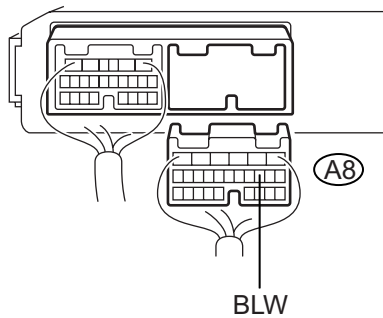
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

4 CHECK HARNESS AND CONNECTOR (BLOWER MOTOR CONTROLLER - A/C AMPLIFIER ASSEMBLY)

Blower Motor Controller Connector Front View:



A/C Amplifier Assembly Connector Wire Harness View:



H

E109229E02

- (a) Disconnect the connector from the A/C amplifier assembly and blower motor controller.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection (Symbols)	Condition	Specified condition
A8-9 (BLW) - B3-2	Always	Below 1 Ω
A8-9 (BLW) - Body ground	Always	10 kΩ or higher

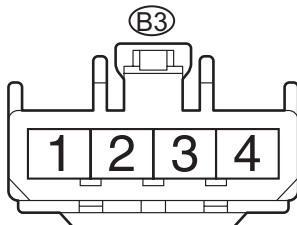
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REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

5 CHECK HARNESS AND CONNECTOR (BLOWER MOTOR CONTROLLER - BODY GROUND)

Blower Motor Controller Connector Front View:



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- (a) Measure the resistance according to the value(s) in the table below.

Standard resistance

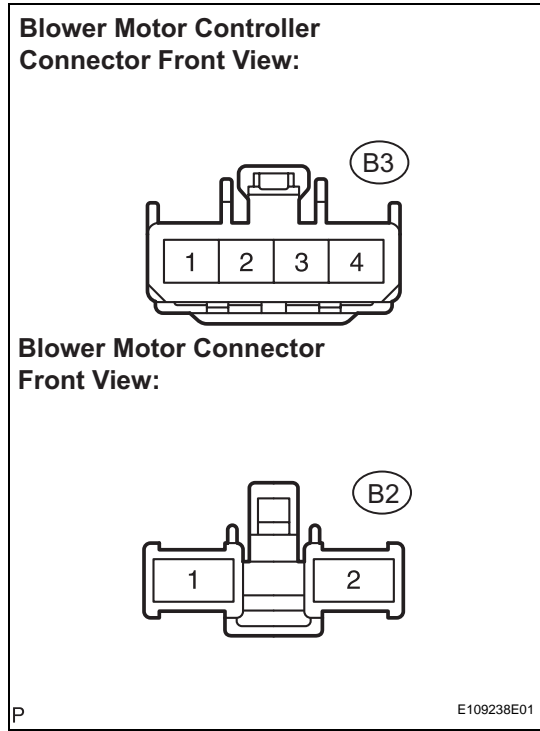
Tester connection	Condition	Specified condition
B3-1 - Body ground	Always	Below 1 Ω

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REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

6 CHECK HARNESS AND CONNECTOR (BLOWER MOTOR CONTROLLER - BLOWER MOTOR)



- (a) Disconnect the connector from the blower motor.
- (b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester connection	Condition	Specified condition
B2-2 - Body ground	Ignition switch ON Blower switch: ON	10 to 14 V
B3-3 - Body ground	Ignition switch ON Blower switch: ON	10 to 14 V
B2-2 - Body ground	Ignition switch ON Blower switch: OFF	Below 1 V
B3-3 - Body ground	Ignition switch ON Blower switch: OFF	Below 1 V

AC

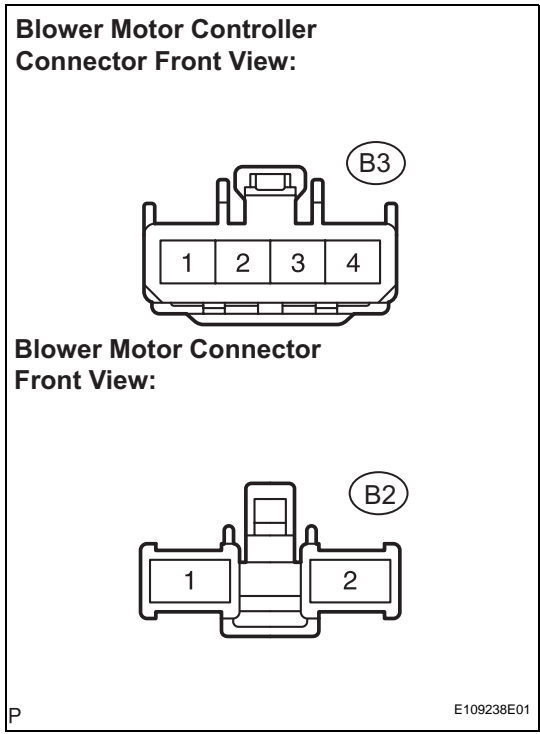
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REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

7 CHECK HARNESS AND CONNECTOR (BLOWER MOTOR CONTROLLER - BLOWER MOTOR)

AC



(a) Measure the resistance according to the value(s) in the table below.

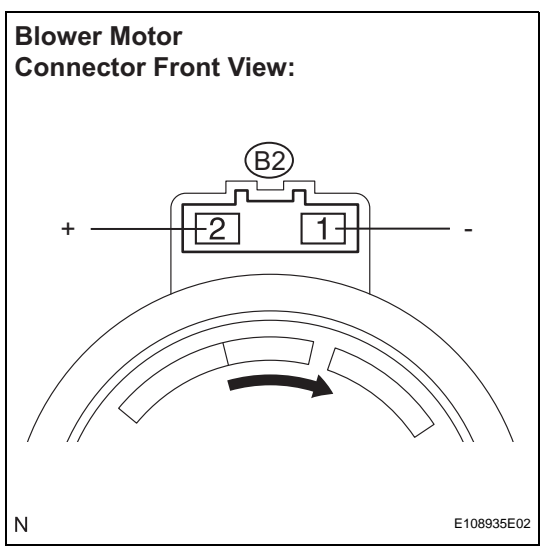
Standard resistance

Tester connection	Condition	Specified condition
B2-1 - B3-4	Always	Below 1 Ω
B2-1 - Body ground	Always	10 kΩ or higher

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

8 INSPECT COOLING UNIT MOTOR SUB-ASSEMBLY W/FAN



(a) Remove the cooling unit motor sub-assembly w/ fan.
 (b) Connect the negative (-) lead to terminal 1 of blower motor connector, and the positive (+) lead to terminal 2.

OK:

Blower motor operates smoothly.

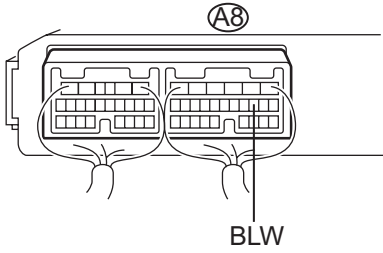
NG **REPLACE COOLING UNIT MOTOR SUB-ASSEMBLY W/FAN**

OK

9 INSPECT AIR CONDITIONING AMPLIFIER ASSEMBLY

(a) Reconnect the connector to the A/C amplifier assembly.

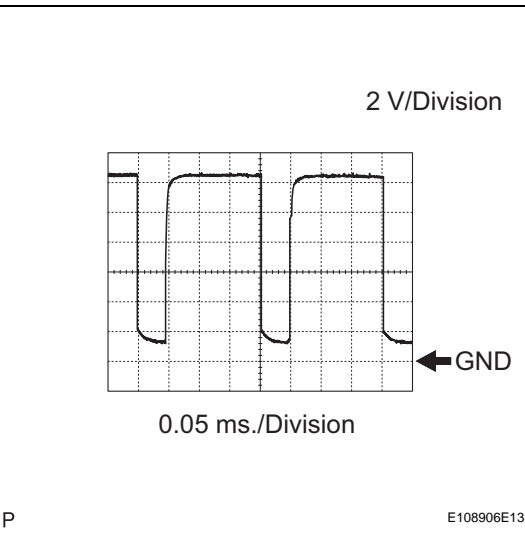
**A/C Amplifier Assembly
Connector Wire Harness View:**



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- (b) Remove the A/C amplifier assembly with the connectors still connected.
- (c) Turn the ignition switch ON.
- (d) Blower speed control switch is at "LO" position.



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- (e) Measure the waveform between terminal BLW (A8-9) of the A/C amplifier assembly and body ground.

OK:

Waveform appears as shown in the illustration.

HINT:

Waveform cycle varies with the blower level.

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REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY

OK

REPLACE BLOWER MOTOR CONTROLLER