

DTC	B2412	HEADLIGHT SWIVEL MOTOR LH MALFUNCTION
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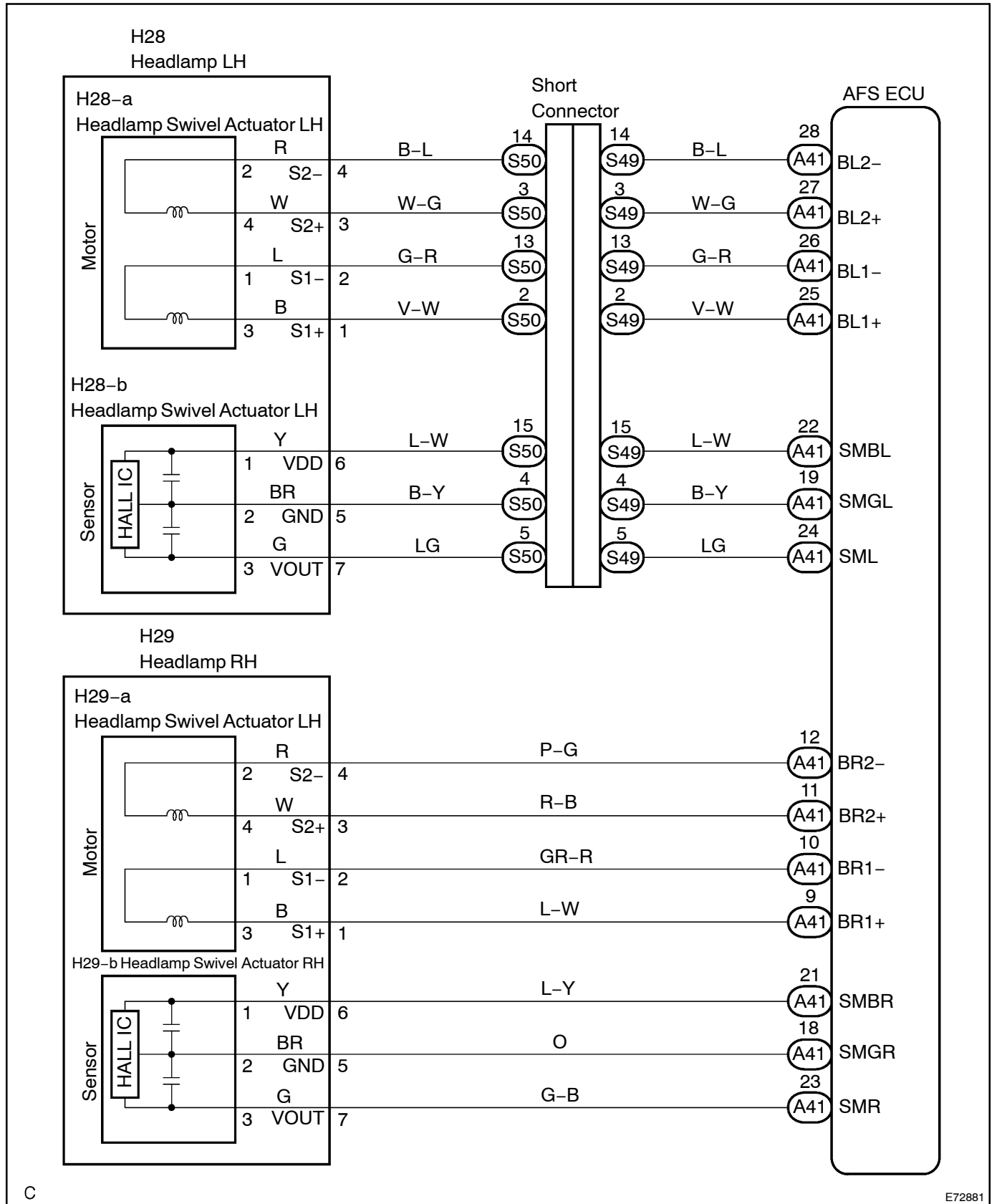
DTC	B2413	HEADLIGHT SWIVEL MOTOR RH MALFUNCTION
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CIRCUIT DESCRIPTION

The swivel motor receives the signal from the AFS ECU to operate and sends the signal regarding the direction of the headlamp and the condition of the headlamp swivel motor to the AFS ECU.

DTC No.	DTC Detecting Condition	Trouble Area
B2412	• Malfunction in headlamp swivel actuator LH • Open or short in headlamp swivel actuator LH circuit • Open or short in headlamp swivel actuator position sensor LH	• Headlamp swivel motor LH • Wire harness or connector • AFS ECU
B2413	• Malfunction in headlamp swivel actuator RH • Open or short in headlamp swivel actuator RH circuit • Open or short in headlamp swivel actuator position sensor RH	• Headlamp swivel motor RH • Wire harness or connector • AFS ECU

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

For vehicles without an electronic modulated air suspension: If there is a malfunction in the power source circuit inside the AFS ECU, DTC B2416 is also output. In this case, troubleshoot B2412/B2413 and then B2416 before replacing the AFS ECU.

1 PERFORM ACTIVE TEST ON INTELLIGENT TESTER II

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

AFS (AFS ECU):

Item	Test Details	Diagnostic Note
Drive Swivel Motor RH	Drive the swivel motor RIGHT/OFF	-
Drive Swivel Motor LH	Drive the swivel motor LEFT/OFF	-

OK: Swivel actuator operates.

Result:

OK (When checking from the PROBLEM SYMPTOMS TABLE)	A
OK (When checking from the DIAGNOSTIC TROUBLE CODE CHART)	B
NG	C

B

REPLACE AFS ECU (SEE PAGE 65-28 OR 65-29)

C

Go to step 2

A

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05-1369)

2 INSPECT HEADLAMP ASSY**Connector Front View:**

- (H28) Headlamp LH
(H29) Headlamp RH



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- (a) Disconnect the headlamp assy connector on the swivel motor side.
(b) Measure the resistance according to the value(s) in the table below.

Standard:**LH Side (B2412):**

Tester Connection	Condition	Specified Condition
H28-1 - H28-2	Always	6 to 8 Ω
H28-3 - H28-4	Always	6 to 8 Ω

RH Side (B2413):

Tester Connection	Condition	Specified Condition
H29-1 - H29-2	Always	6 to 8 Ω
H29-3 - H29-4	Always	6 to 8 Ω

HINT:

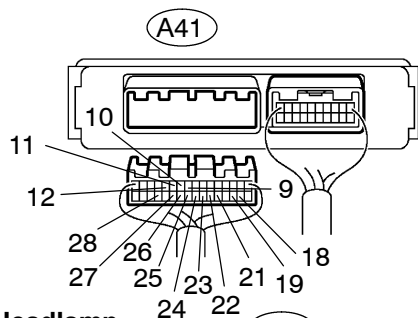
Measure the resistance after the headlamp has cooled.

NG**REPLACE HEADLAMP ASSY (SEE PAGE 65-9)****OK**

3 CHECK HARNESS AND CONNECTOR(AFS ECU - HEADLAMP)

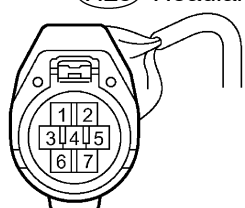
AFS ECU

Connector Front View:



Headlamp

Wire Harness View:



(H28) Headlamp LH

(H29) Headlamp RH

- (a) Disconnect the A41 connector from the AFS ECU and headlamp assy connector on the swivel motor side.
- (b) Measure the resistance according to the value(s) in the table below.

H

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Standard:

LH Side (B2412):

Tester Connection	Condition	Specified Condition
A41-19 - H28-5	Always	Below 1 Ω
A41-22 - H28-6	Always	Below 1 Ω
A41-24 - H28-7	Always	Below 1 Ω
A41-25 - H28-1	Always	Below 1 Ω
A41-26 - H28-2	Always	Below 1 Ω
A41-27 - H28-3	Always	Below 1 Ω
A41-28 - H28-4	Always	Below 1 Ω
A41-19 - Body ground	Always	10 k Ω or higher
A41-22 - Body ground	Always	10 k Ω or higher
A41-24 - Body ground	Always	10 k Ω or higher
A41-25 - Body ground	Always	10 k Ω or higher
A41-26 - Body ground	Always	10 k Ω or higher
A41-27 - Body ground	Always	10 k Ω or higher
A41-28 - Body ground	Always	10 k Ω or higher

RH Side (B2413):

Tester Connection	Condition	Specified Condition
A41-9 - H29-1	Always	Below 1 Ω
A41-10 - H29-2	Always	Below 1 Ω
A41-11 - H29-3	Always	Below 1 Ω
A41-12 - H29-4	Always	Below 1 Ω
A41-18 - H29-5	Always	Below 1 Ω
A41-21 - H29-6	Always	Below 1 Ω
A41-23 - H29-7	Always	Below 1 Ω
A41-9 - Body ground	Always	10 k Ω or higher
A41-10 - Body ground	Always	10 k Ω or higher
A41-11 - Body ground	Always	10 k Ω or higher
A41-12 - Body ground	Always	10 k Ω or higher
A41-18 - Body ground	Always	10 k Ω or higher
A41-21 - Body ground	Always	10 k Ω or higher
A41-23 - Body ground	Always	10 k Ω or higher

NG**REPAIR OR REPLACE HARNESS OR CONNECTOR****OK**

4 INSPECT AFS ECU**Wire Harness View:**

H28 Headlamp LH

H29 Headlamp RH



H

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- (a) Disconnect the headlamp assy connector on the swivel motor side.
- (b) Measure the voltage according to the value(s) in the table below.

Standard:**LH Side (B2412):**

Tester Connection	Condition	Specified Condition
H28-5 - H28-6	Ignition switch OFF → ON	Below 1 V → 4.5 to 5.5 V

RH Side (B2413):

Tester Connection	Condition	Specified Condition
H29-5 - H29-6	Ignition switch OFF → ON	Below 1 V → 4.5 to 5.5 V

Result:

OK	A
NG (When checking from the PROBLEM SYMPTOMS TABLE)	B
NG (When checking from the DIAGNOSTIC TROUBLE CODE CHART)	C

B

**PROCEED TO NEXT CIRCUIT INSPECTION
SHOWN IN PROBLEM SYMPTOMS TABLE
(SEE PAGE 05-1369)**

C

**REPLACE AFS ECU (SEE PAGE 65-28 OR
65-29)**

A**5 REPLACE HEADLAMP ASSY (SEE PAGE 65-9)**

OK: Return to normal operation.

NG

**REPLACE AFS ECU (SEE PAGE 65-28 OR
65-29)**

OK**END**