

HEADLIGHT CLEANER SWITCH CIRCUIT

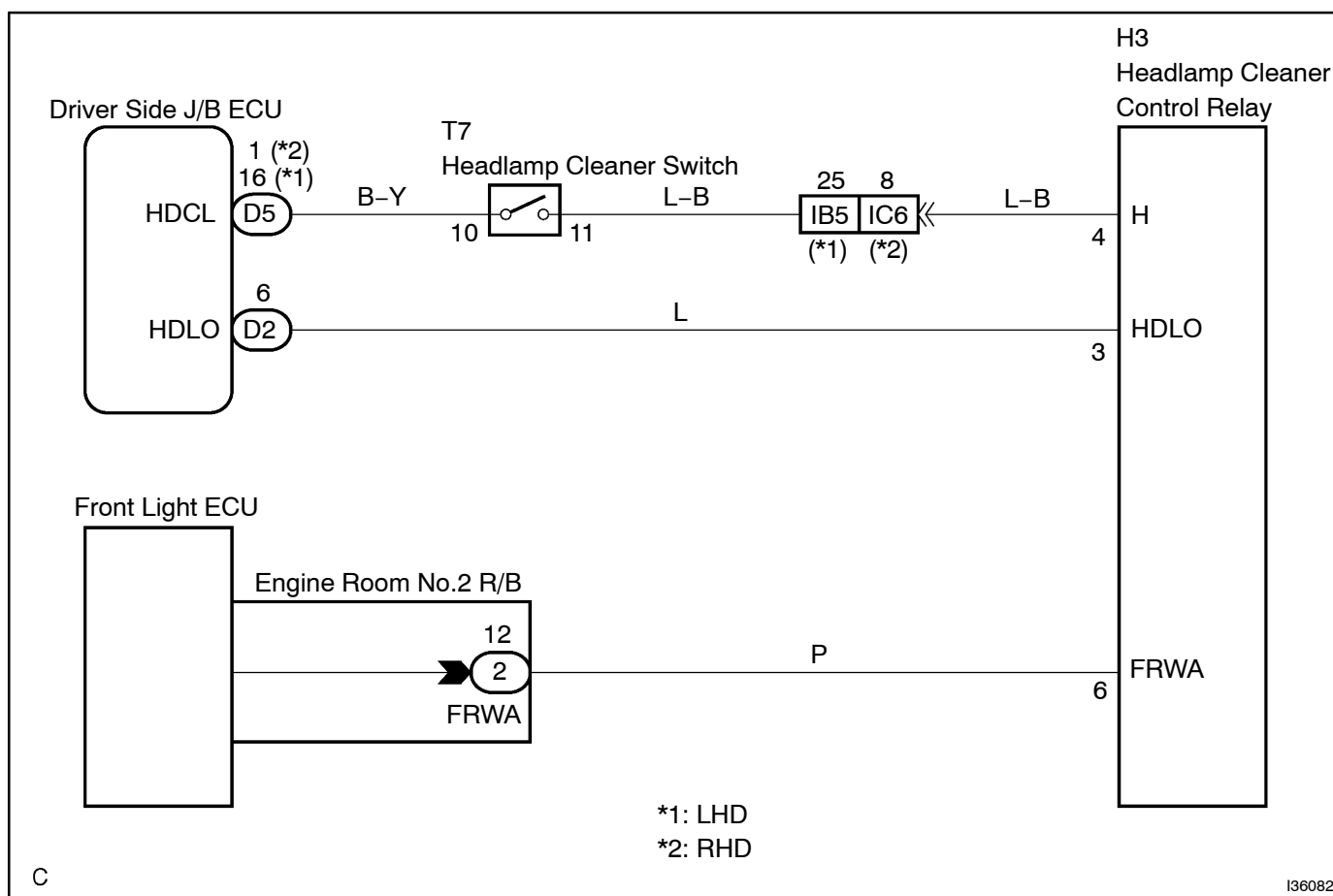
CIRCUIT DESCRIPTION

This circuit detects the conditions of the headlamp cleaner switch.

Headlamp cleaner control relay receives the following signals:

- Headlamp cleaner switch signal
- Headlamp operating signal
- Daytime running light operating signal
- Front washer motor operating signal

WIRING DIAGRAM



INSPECTION PROCEDURE

1	INSPECT DRIVER SIDE JUNCTION BLOCK(HEADLAMP CLEANER SWITCH SIGNAL)
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(a) Measure the voltage according to the value(s) in the table below.

Standard:

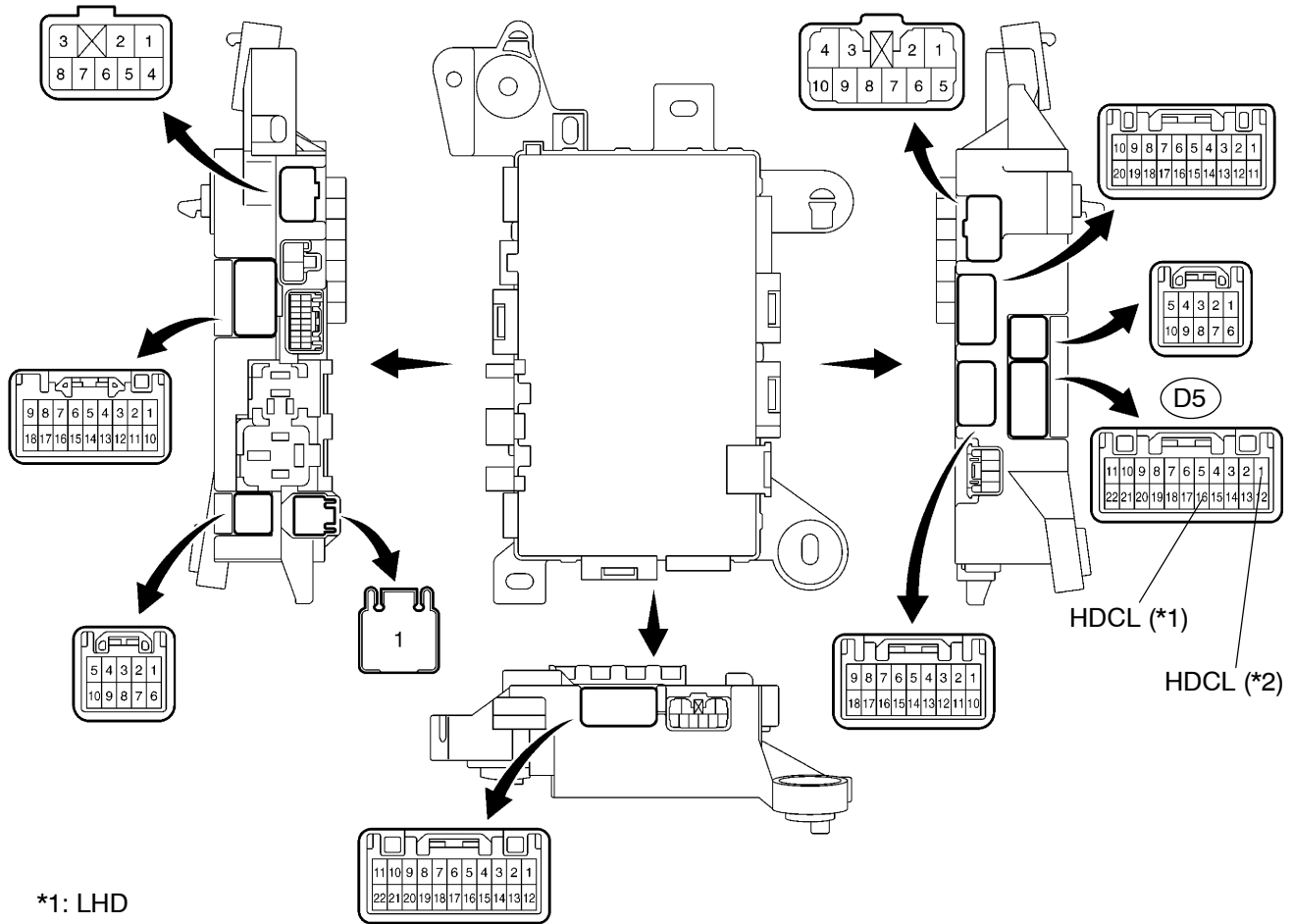
LHD:

Tester connection	Condition	Specified condition
D5-16 – Body ground	Headlamp cleaner switch OFF	Below 1 V
D5-16 – Body ground	Light control switch OFF and headlamp cleaner switch ON	10 to 14 V
D5-16 – Body ground	Light control switch in HEAD position and headlamp cleaner switch ON position	Below 1 V

RHD:

Tester connection	Condition	Specified condition
D5-1 – Body ground	Headlamp cleaner switch OFF	Below 1 V
D5-1 – Body ground	Light control switch OFF and headlamp cleaner switch ON	10 to 14 V
D5-1 – Body ground	Light control switch in HEAD position and headlamp cleaner switch ON position	Below 1 V

Driver Side Junction Block Connector Front View:



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HINT:

This illustration is for RHD model. The RHD and LHD models are symmetrical.

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Go to step 4

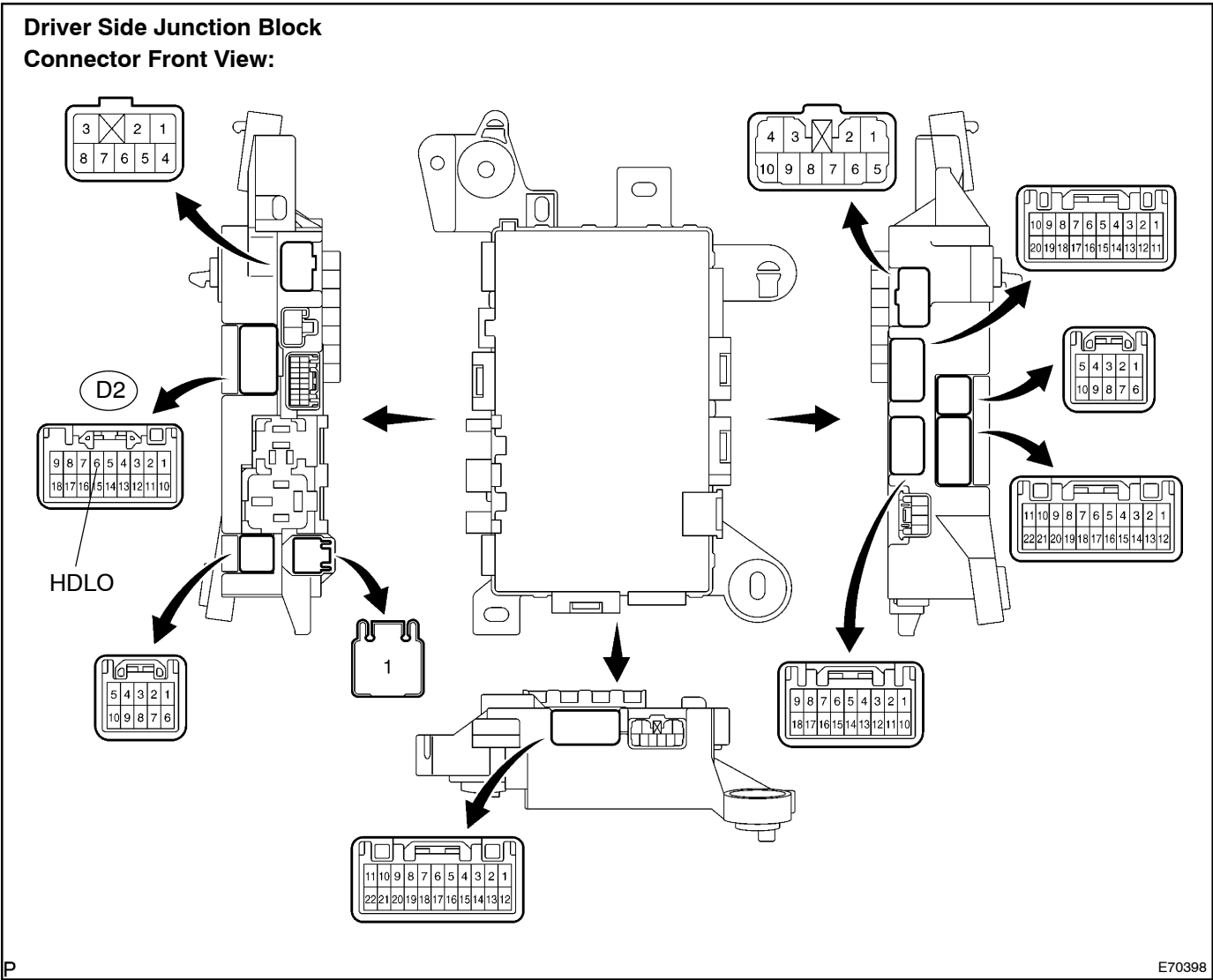
OK

2 INSPECT DRIVER SIDE JUNCTION BLOCK(HDLO SIGNAL)

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

Standard:

Tester connection	Condition	Specified condition
D2-6 – Body ground	Engine idling, parking brake released, light control switch OFF and shift in any position other than P position	10 to 14 V
D2-6 – Body ground	Light control switch in HEAD position	Below 1 V



HINT:

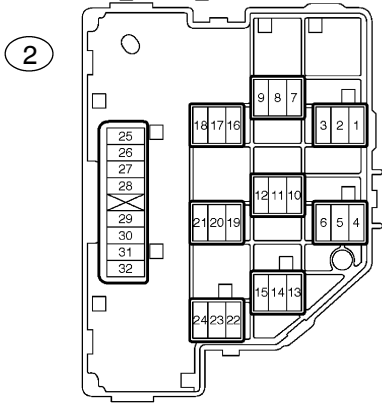
This illustration is for RHD model. The RHD and LHD models are symmetrical.

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OK

3 INSPECT MULTIPLEX NETWORK BODY ECU (ENGINE ROOM NO.2 R/B) (FRONT WASHER SIGNAL)

Engine Room No.2 R/B
Connector Front View:



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

Standard:

Tester connection	Condition	Specified condition
2-12 - Body ground	Front washer switch OFF	10 to 14 V
2-12 - Body ground	Front washer switch ON	Below 1 V

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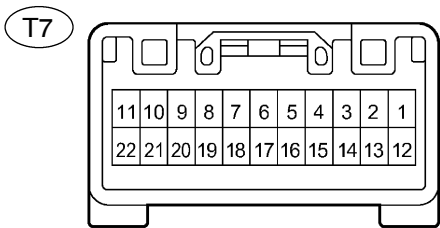
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OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE
(SEE PAGE 05-1582)

4 INSPECT TRACTION CONTROL SWITCH (HEADLAMP CLEANER SWITCH)

Connector Front View:



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- (a) Disconnect the connector from the traction control switch.
(b) Inspect the headlamp cleaner switch continuity.
(1) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
T7-10 - T7-11	Headlamp cleaner switch not pushed	10 kΩ or higher
T7-10 - T7-11	Headlamp cleaner switch pushed	Below 1 Ω

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REPLACE TRACTION CONTROL SWITCH

OK

5 INSPECT HEADLAMP CLEANER CONTROL RELAY

- (a) Disconnect the D5 connector from the driver side junction block.
- (b) Connect the connector to the traction control switch.
- (c) Measure the voltage according to the value(s) in the table below.

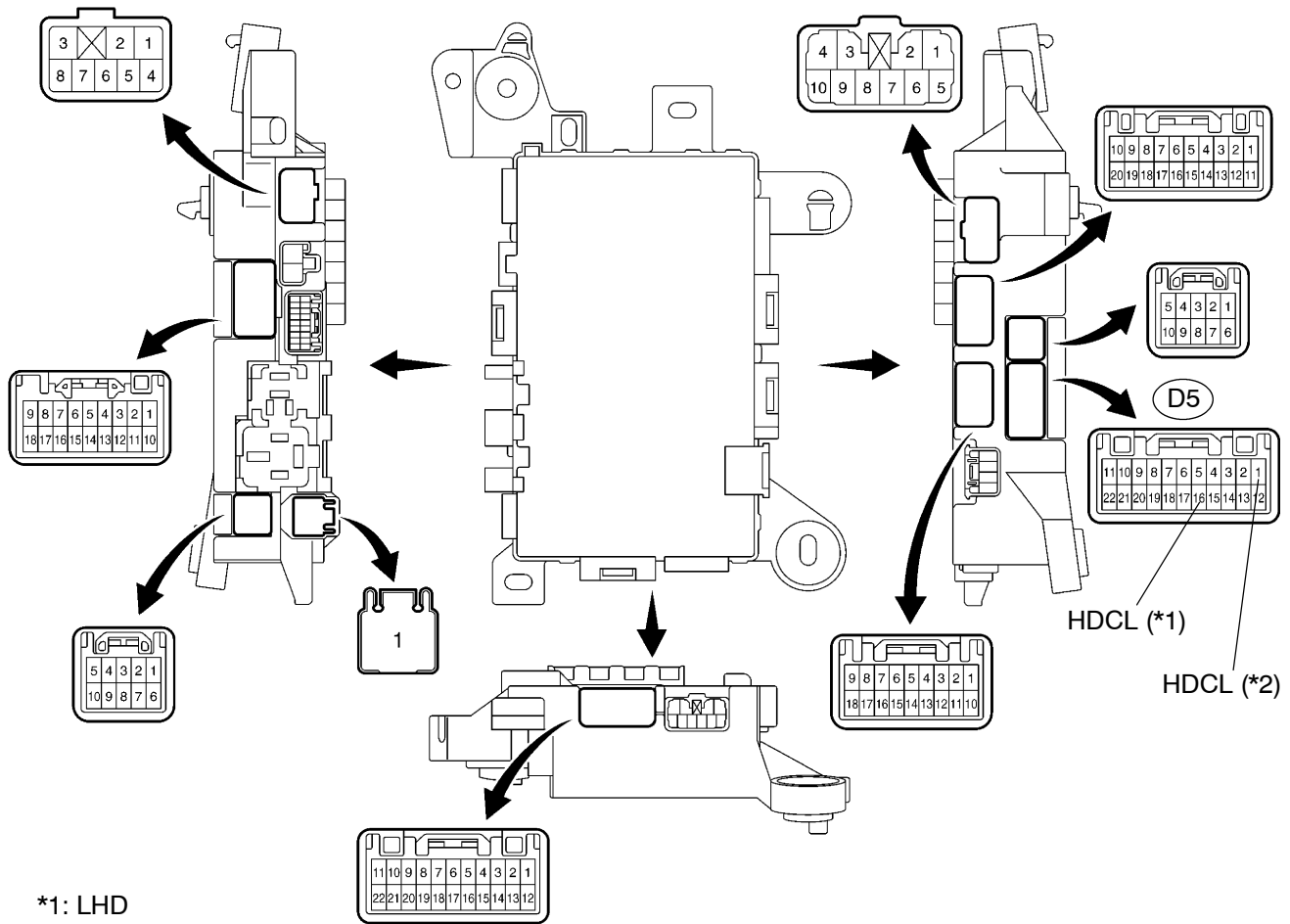
Standard:**LHD:**

Tester connection	Condition	Specified condition
D5-16 – Body ground	Headlamp cleaner switch not pushed	Below 1 V
D5-16 – Body ground	Ignition switch ON and headlamp cleaner switch pushed	10 to 14 V

RHD:

Tester connection	Condition	Specified condition
D5-1 – Body ground	Headlamp cleaner switch not pushed	Below 1 V
D5-1 – Body ground	Ignition switch ON and headlamp cleaner switch pushed	10 to 14 V

Driver Side Junction Block Connector Front View:



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HINT:

This illustration is for RHD model. The RHD and LHD models are symmetrical.

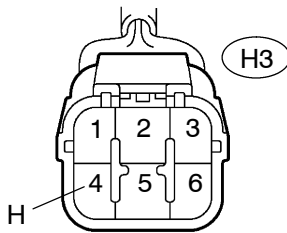
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Go to step 6

OK

REPLACE DRIVER SIDE JUNCTION BLOCK

6	CHECK HARNESS AND CONNECTOR(HEADLAMP CLEANER CONTROL RELAY – DRIVER SIDE JUNCTION BLOCK)
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**Headlamp Cleaner Control Relay
Wire Harness View:**


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- (a) Disconnect the connector from the headlamp cleaner control relay.
- (b) Measure the resistance according to the value(s) in the table below.

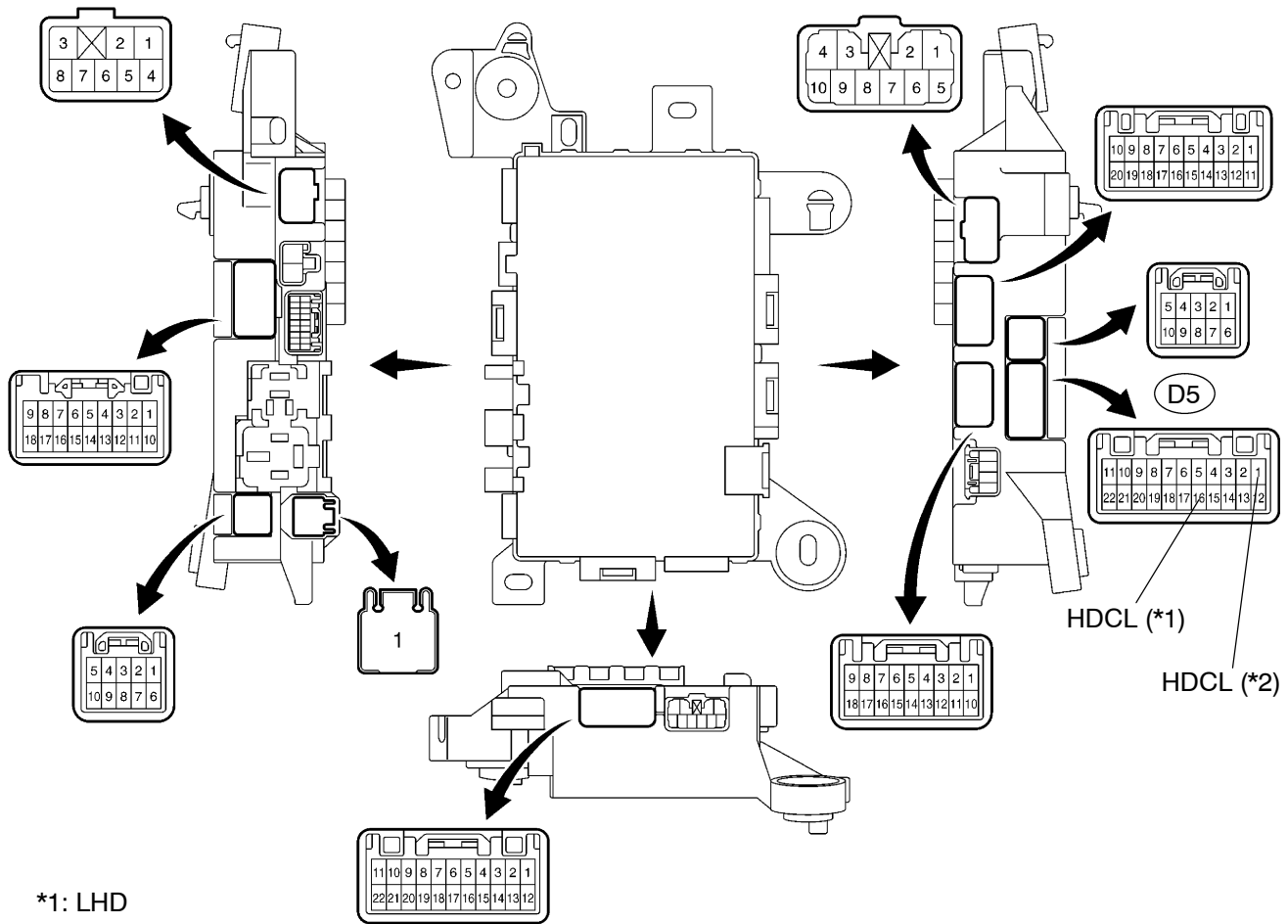
Standard:**LHD:**

Tester connection	Condition	Specified condition
H3-4 - D5-16	Headlamp cleaner switch not pushed	10 kΩ or higher
H3-4 - D5-16	Headlamp cleaner switch pushed	Below 1 Ω
H3-4 - Body ground	Always	10 kΩ or higher
D5-16 - Body ground	Always	10 kΩ or higher

RHD:

Tester connection	Condition	Specified condition
H3-4 - D5-1	Headlamp cleaner switch not pushed	10 kΩ or higher
H3-4 - D5-1	Headlamp cleaner switch pushed	Below 1 Ω
H3-4 - Body ground	Always	10 kΩ or higher
D5-1 - Body ground	Always	10 kΩ or higher

Driver Side Junction Block Connector Front View:



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HINT:

This illustration is for RHD model. The RHD and LHD models are symmetrical.

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REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

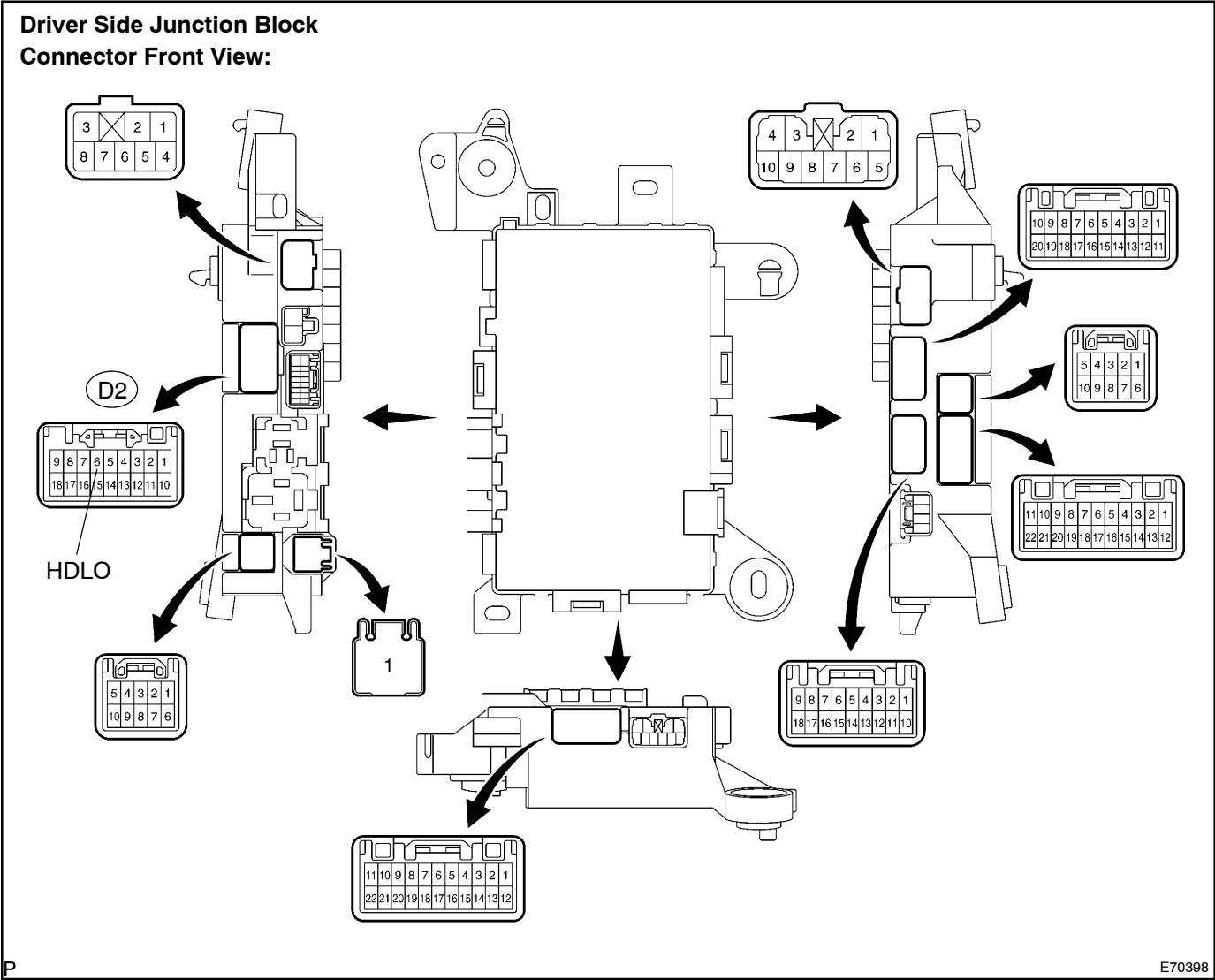
REPLACE DRIVER SIDE JUNCTION BLOCK

7 INSPECT HEADLAMP CLEANER CONTROL RELAY

- (a) Disconnect the D2 connector from the driver side junction block.
- (b) Measure the voltage according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
D2-6 – Body ground	Ignition switch OFF	Below 1 V
D2-6 – Body ground	Ignition switch ON	10 to 14 V



HINT:
This illustration is for RHD model. The RHD and LHD models are symmetrical.

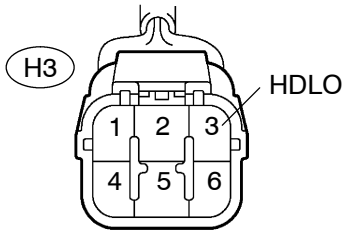
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OK

REPLACE DRIVER SIDE JUNCTION BLOCK

8 CHECK HARNESS AND CONNECTOR(HEADLAMP CLEANER CONTROL RELAY - DRIVER SIDE JUNCTION BLOCK)

**Headlamp Cleaner Control Relay
Wire Harness View:**



I36792

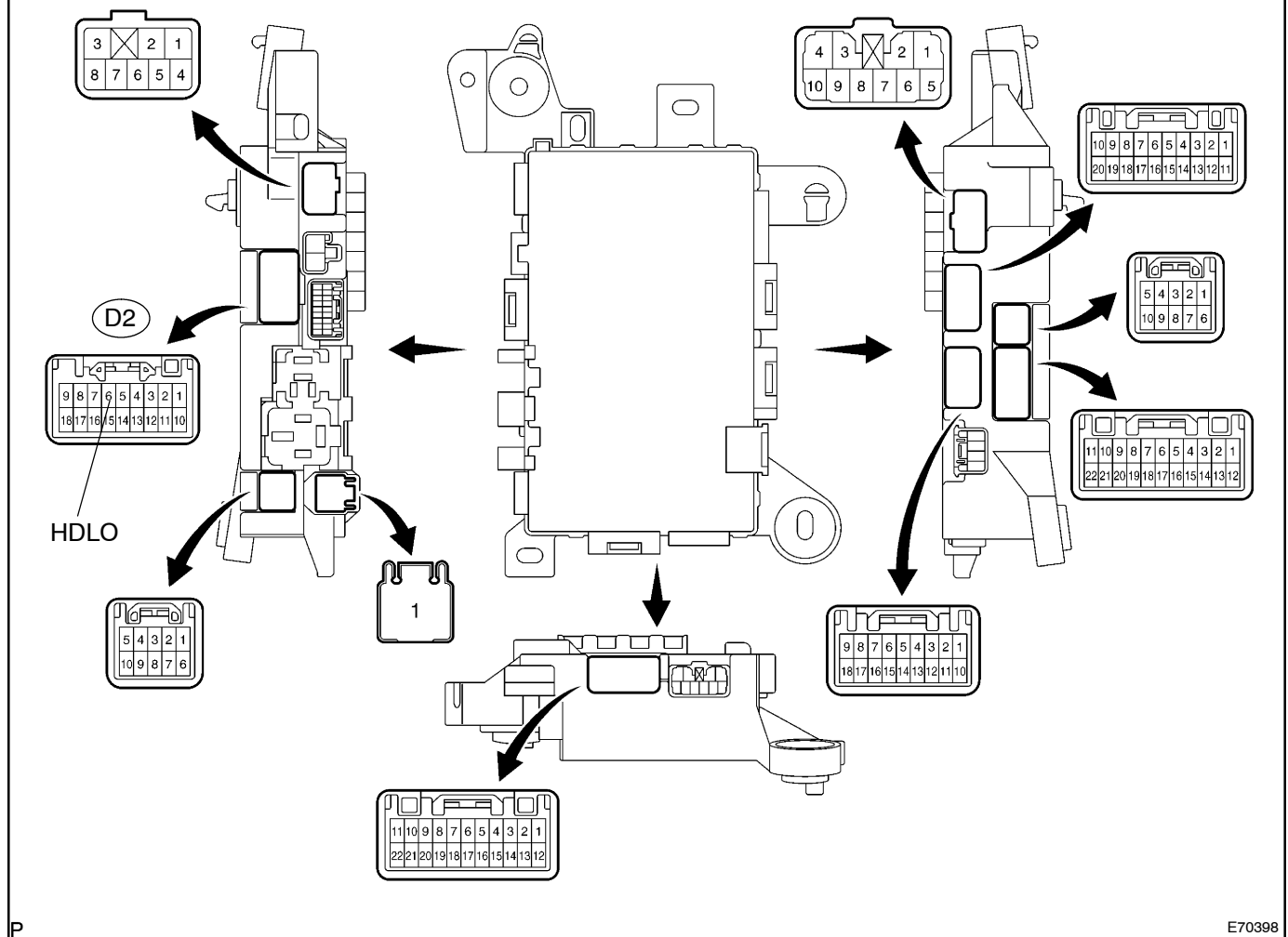
I37560

- (a) Disconnect the connector from the headlamp cleaner control relay.
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
H3-3 - D2-6	Always	Below 1 Ω
H3-3 - Body ground	Always	10 k Ω or higher

Driver Side Junction Block Connector Front View:



HINT:

This illustration is for RHD model. The RHD and LHD models are symmetrical.

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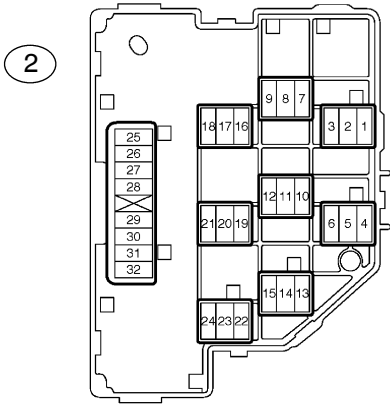
REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE DRIVER SIDE JUNCTION BLOCK

9 INSPECT HEADLAMP CLEANER CONTROL RELAY

Engine Room No.2 R/B
Connector Front View:



- (a) Disconnect the 2-12 connector from the engine room No.2 relay block.
- (b) Measure the voltage according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
2-12 - Body ground	Ignition switch OFF	Below 1 V
2-12 - Body ground	Ignition switch ON	10 to 14 V

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Go to step 10

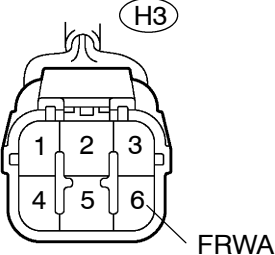
OK

REPLACE MULTIPLEX NETWORK BODY ECU (ENGINE ROOM NO.2 R/B)

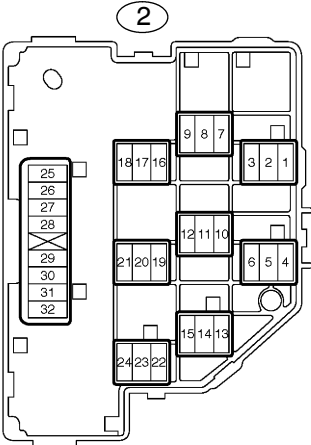
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CHECK HARNESS AND CONNECTOR(HEADLAMP CLEANER CONTROL RELAY – ENGINE ROOM NO.2 R/B)

Headlamp Clear Control Relay
Wire Harness View:



Engine Room No.2 R/B
Wire Harness View:



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- (a) Disconnect the connector from the headlamp cleaner control relay.
- (b) Measure the resistance according to the value(s) in table below.

Standard:

Tester connection	Condition	Specified condition
H3-6 – 2-12	Always	Below 1Ω
H3-6 – Body ground	Always	10 kΩ or higher

OK

REPLACE MULTIPLEX NETWORK BODY ECU

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REPAIR OR REPLACE HARNESS OR CONNECTOR