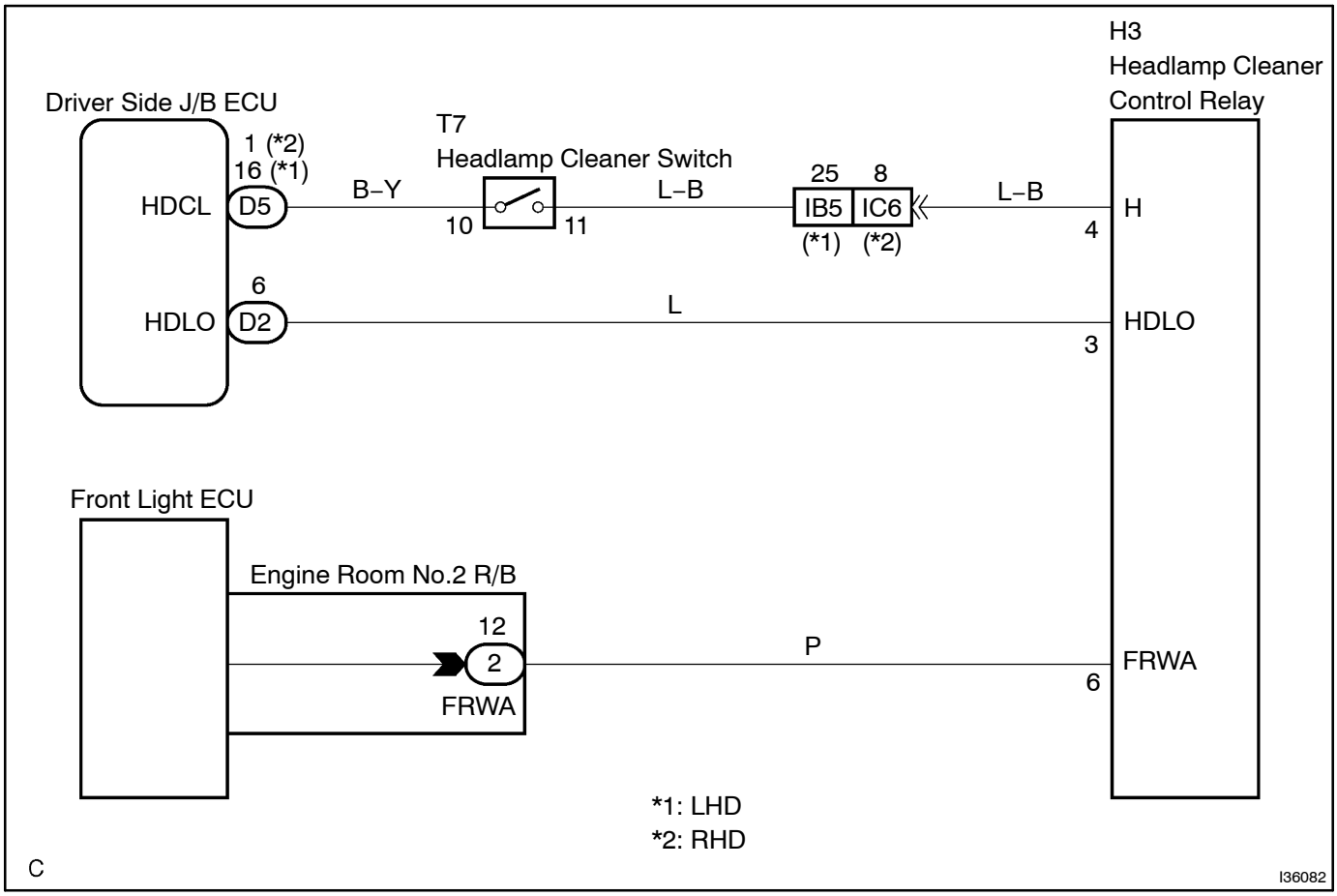
HEADLIGHT CLEANER SWITCH CIRCUIT

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)**

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

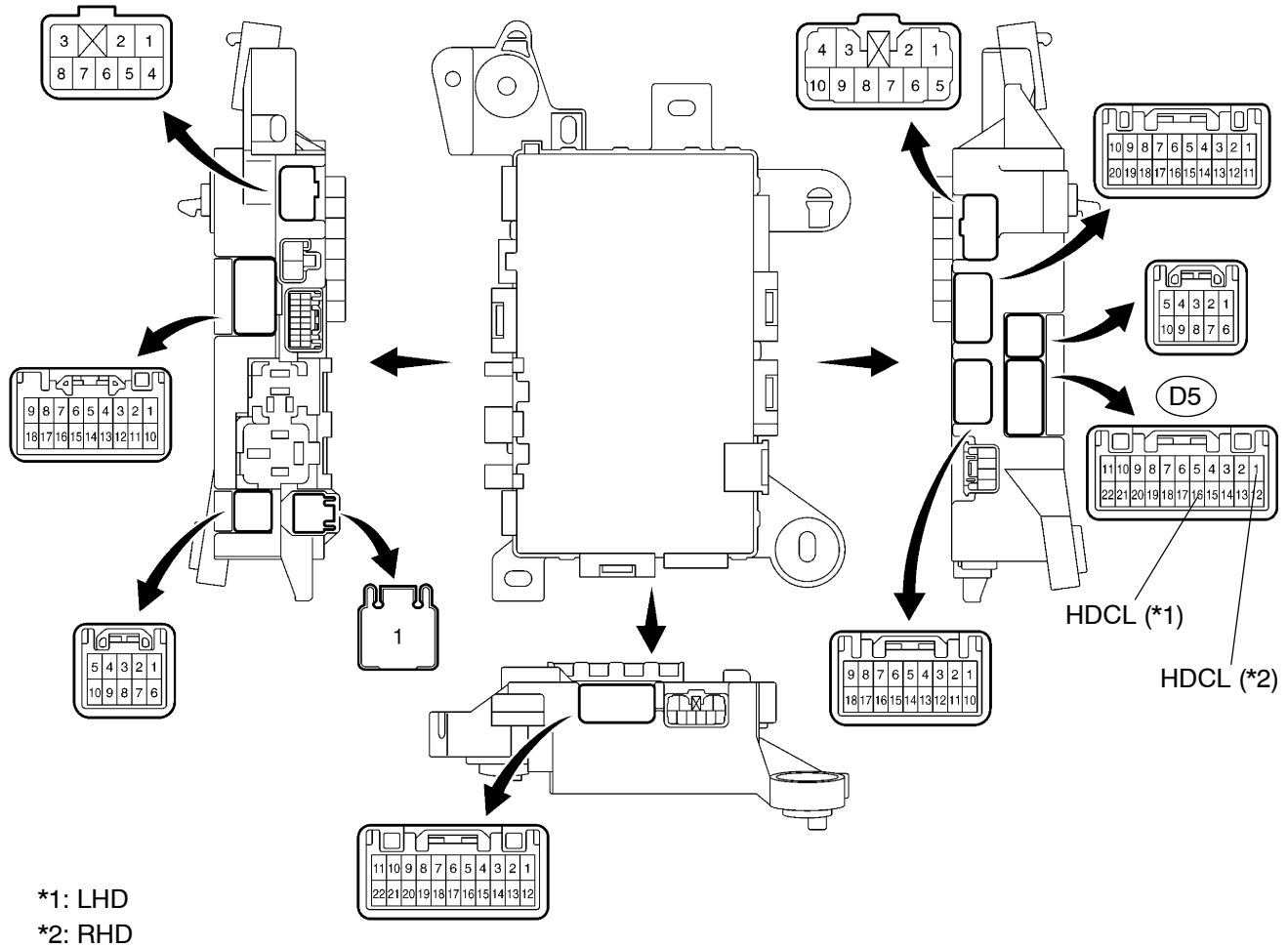
LHD:

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:



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

NG	**Go to step 4**

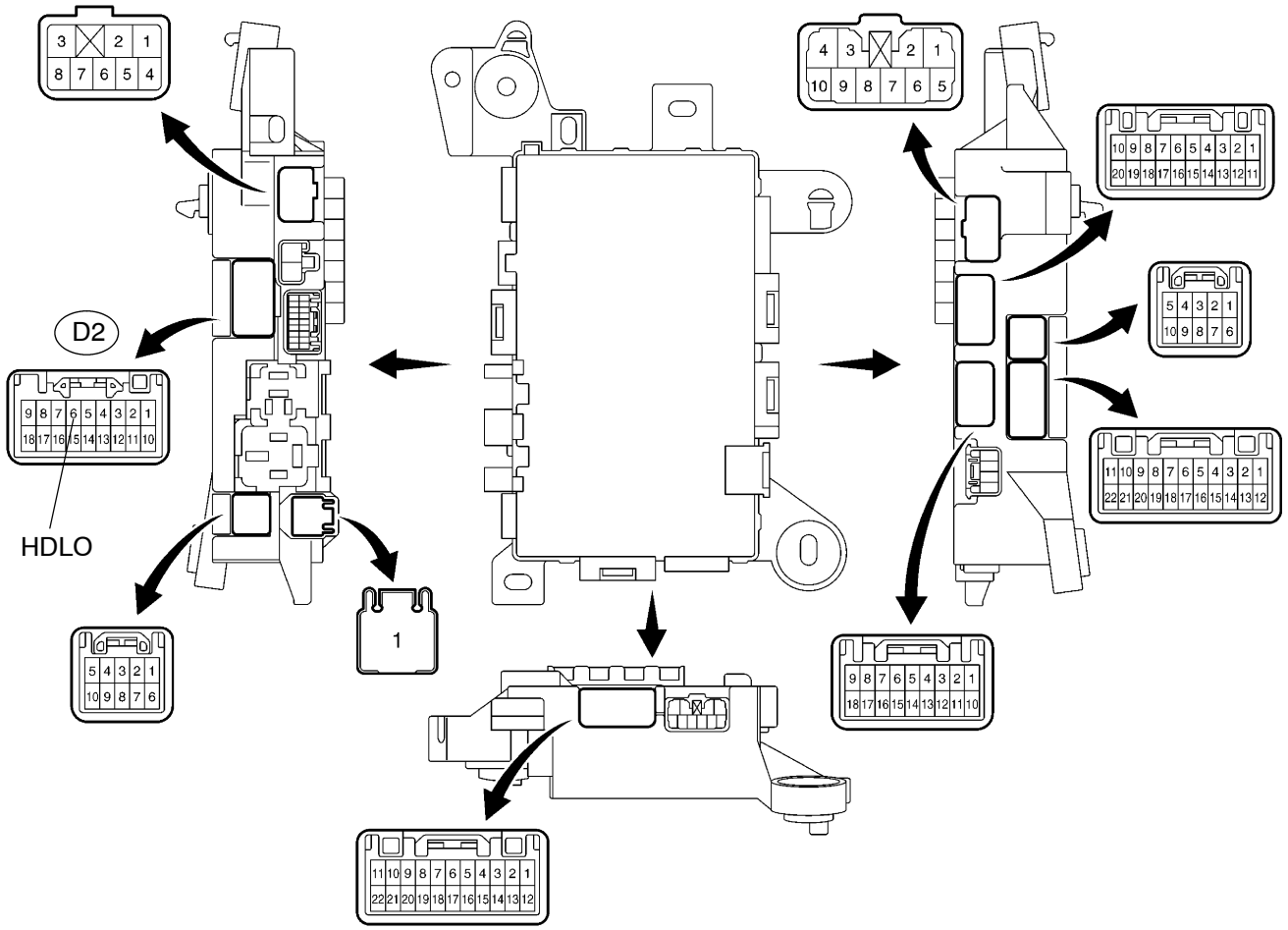
OK

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

Driver Side Junction Block
Connector Front View:



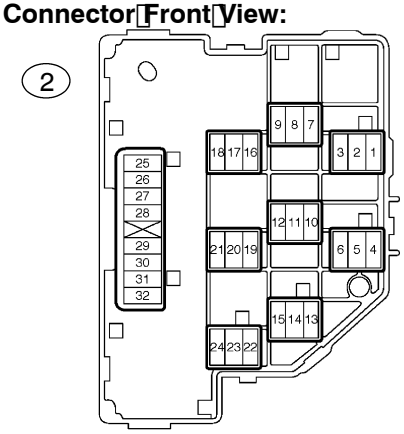
HINT:
This illustration is for RHD model. The RHD and LHD models are symmetrical.

NG → **Go to step 7**

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:



(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

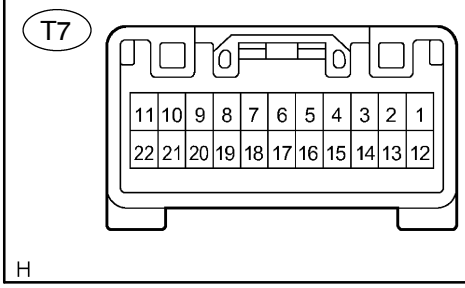
NG → Go to step 9

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:



(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

NG → 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:

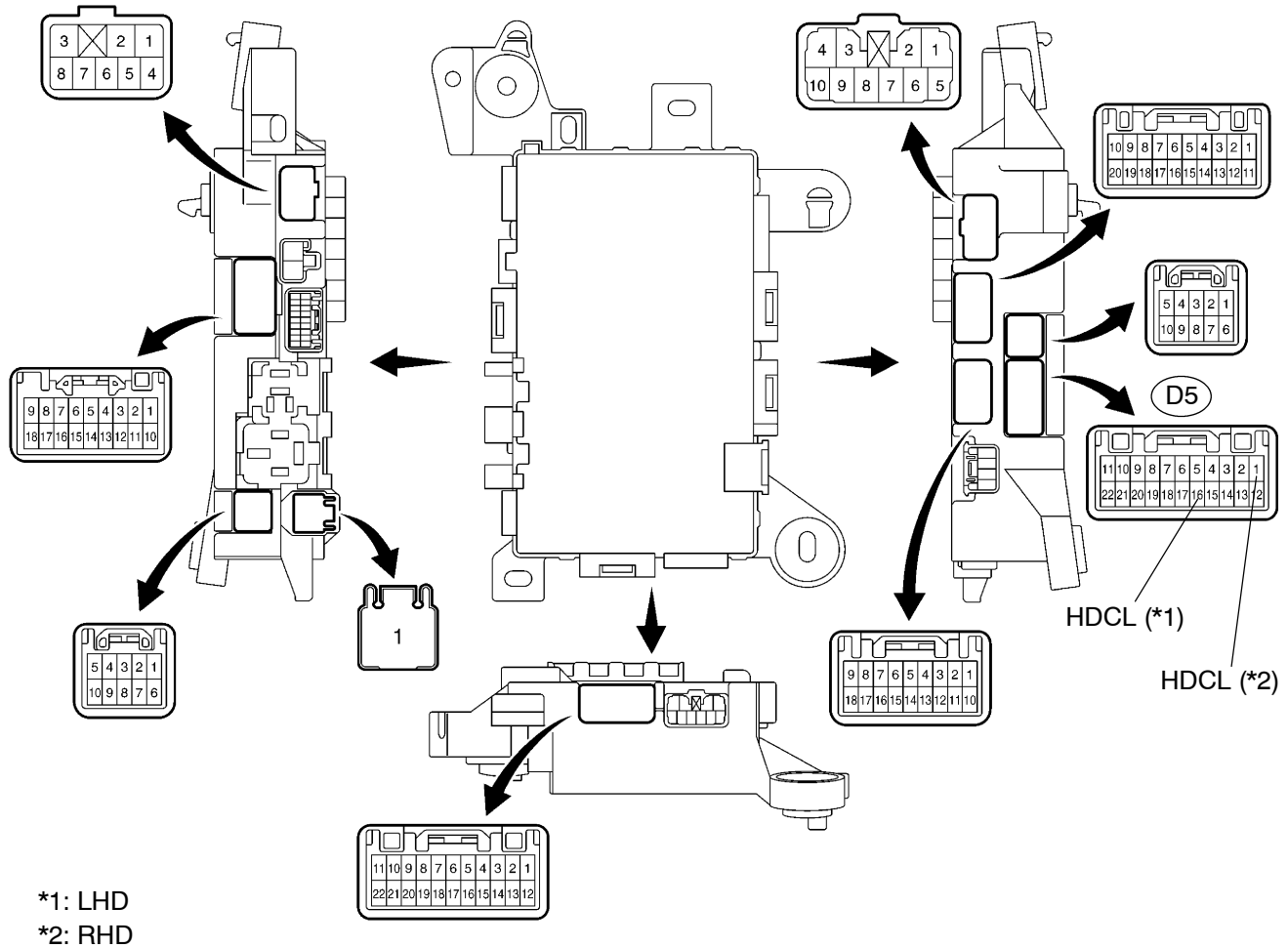
LHD:

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:



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

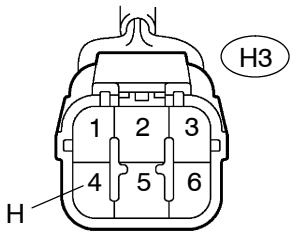
NG → **Go to step 6**

OK

REPLACE DRIVER SIDE JUNCTION BLOCK

6	**CHECK HARNESS AND CONNECTOR(HEADLAMP CLEANER CONTROL RELAY – DRIVER SIDE JUNCTION BLOCK)**

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:

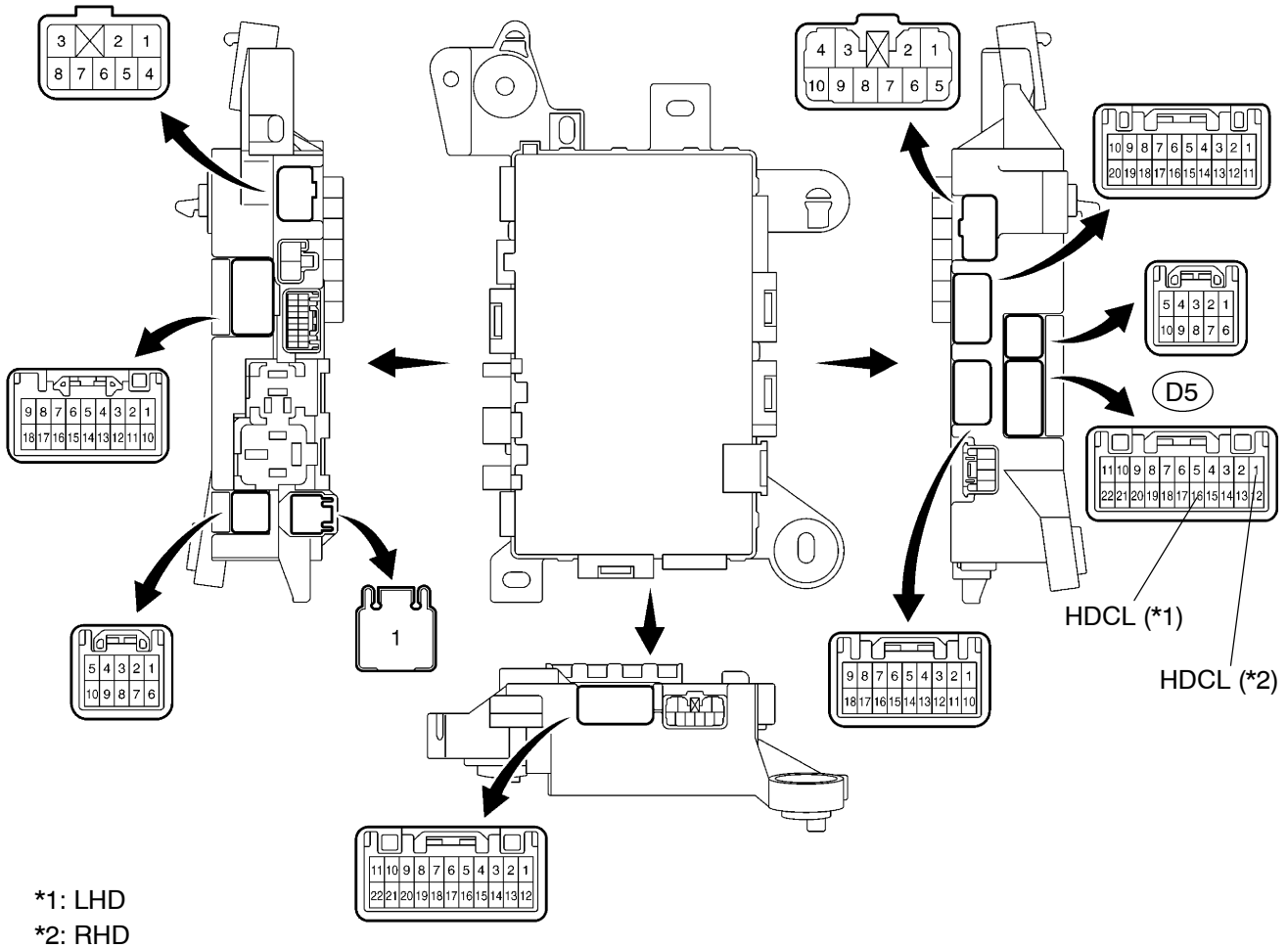
LHD:

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:



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

NG	**REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

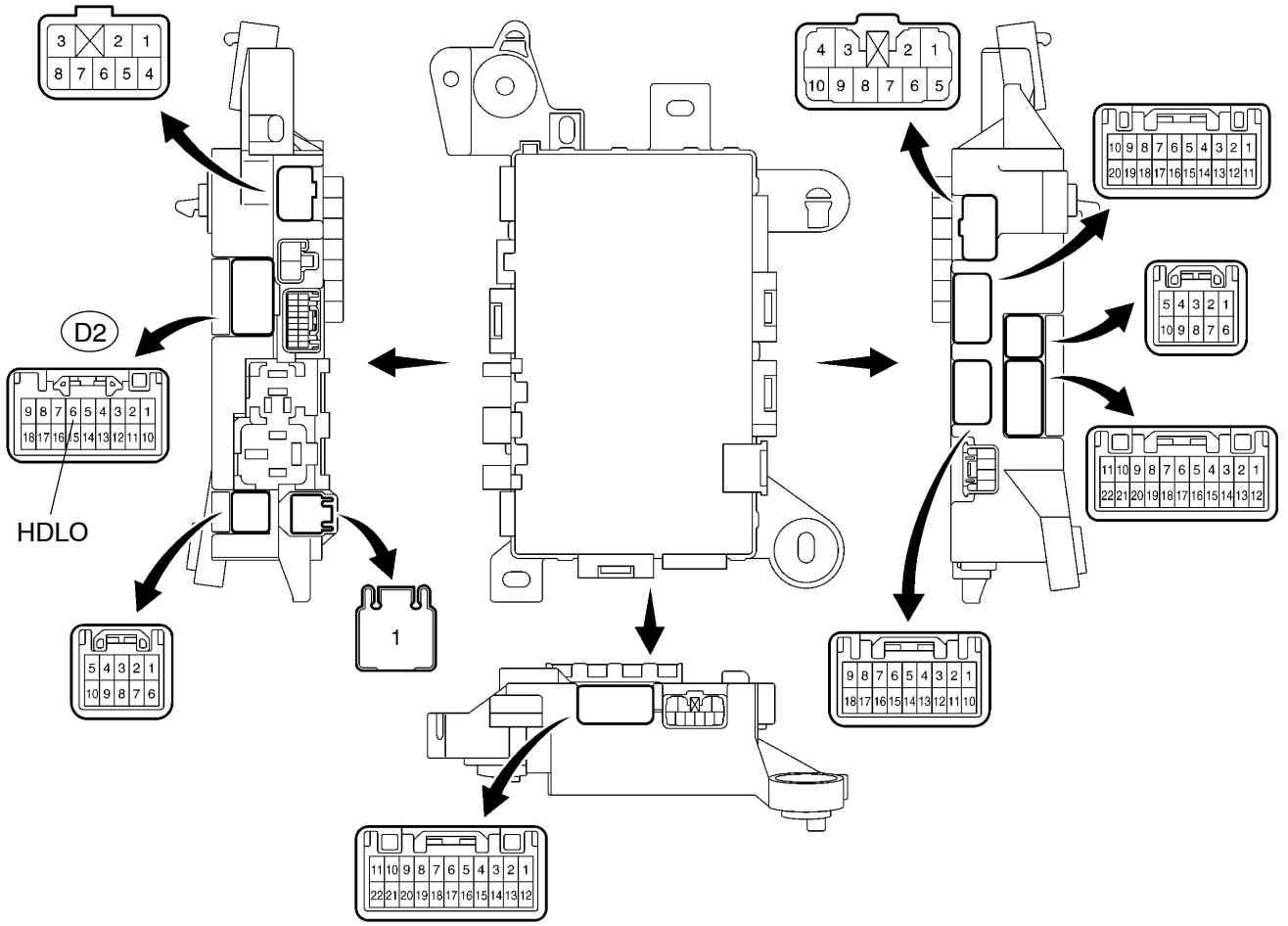
REPLACE DRIVER SIDE JUNCTION BLOCK

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

Driver Side Junction Block
Connector Front View:



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

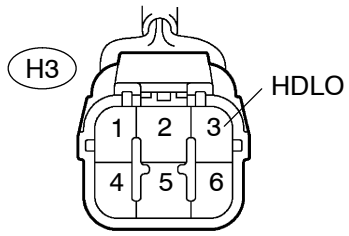
NG → **Go to step 8**

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:



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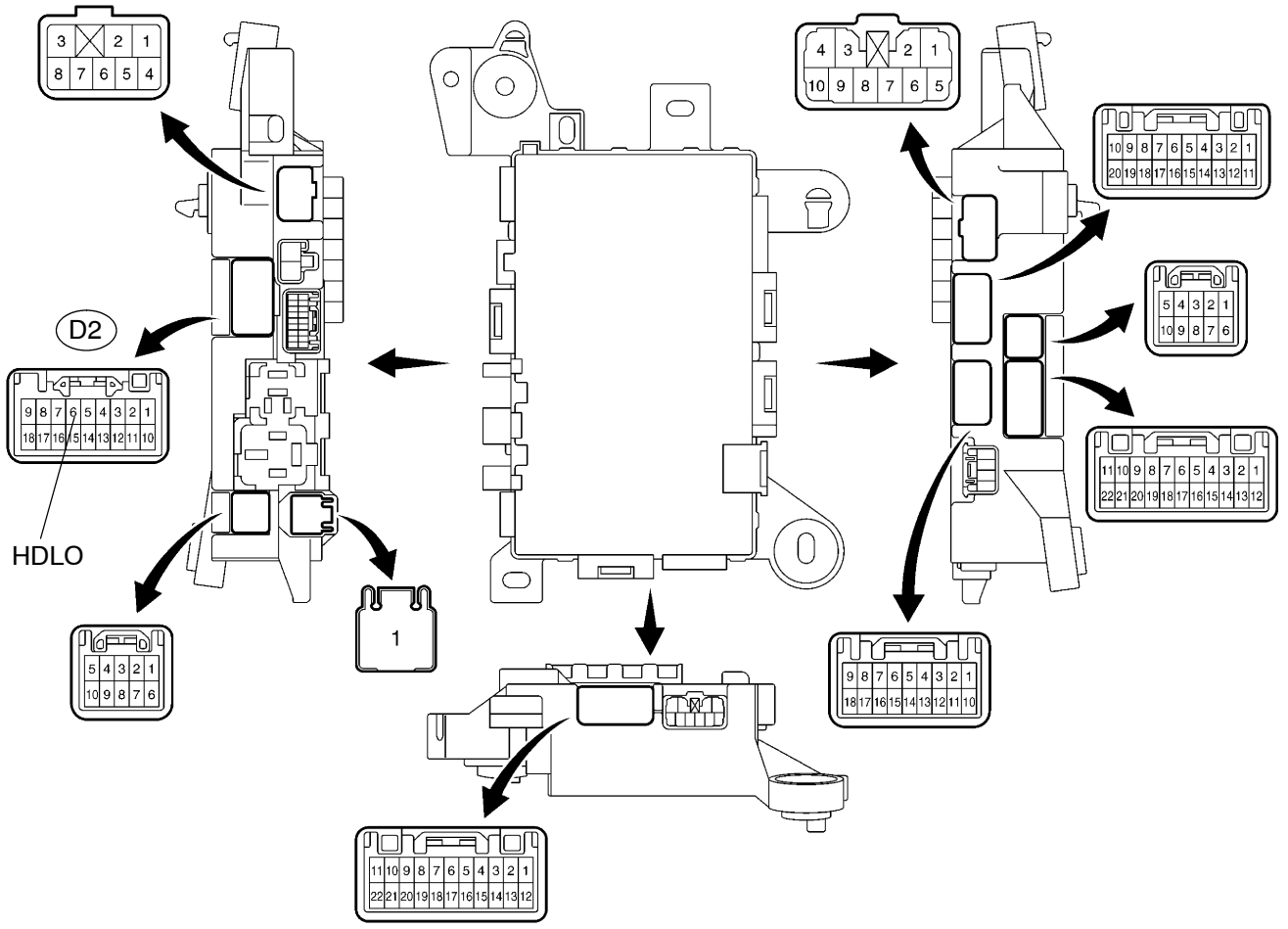
(a) Disconnect the connector from the headlamp cleaner control relay.
(b) Measure the resistance according to the value(s) in the table below.

Standard:

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

Driver Side Junction Block
Connector Front View:



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

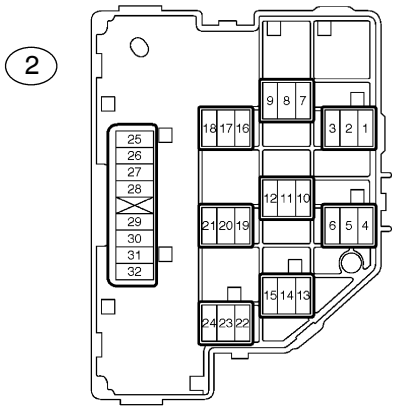
NG	**REPAIR OR REPLACE HARNESS OR CONNECTOR**

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

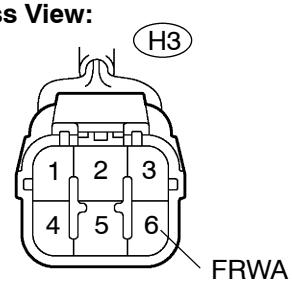
NG → **Go to step 10**

OK

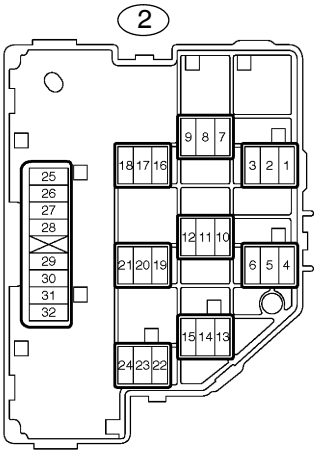
REPLACE MULTIPLEX NETWORK BODY ECU (ENGINE ROOM NO.2 R/B)

10	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

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

OK

REPLACE MULTIPLEX NETWORK BODY ECU