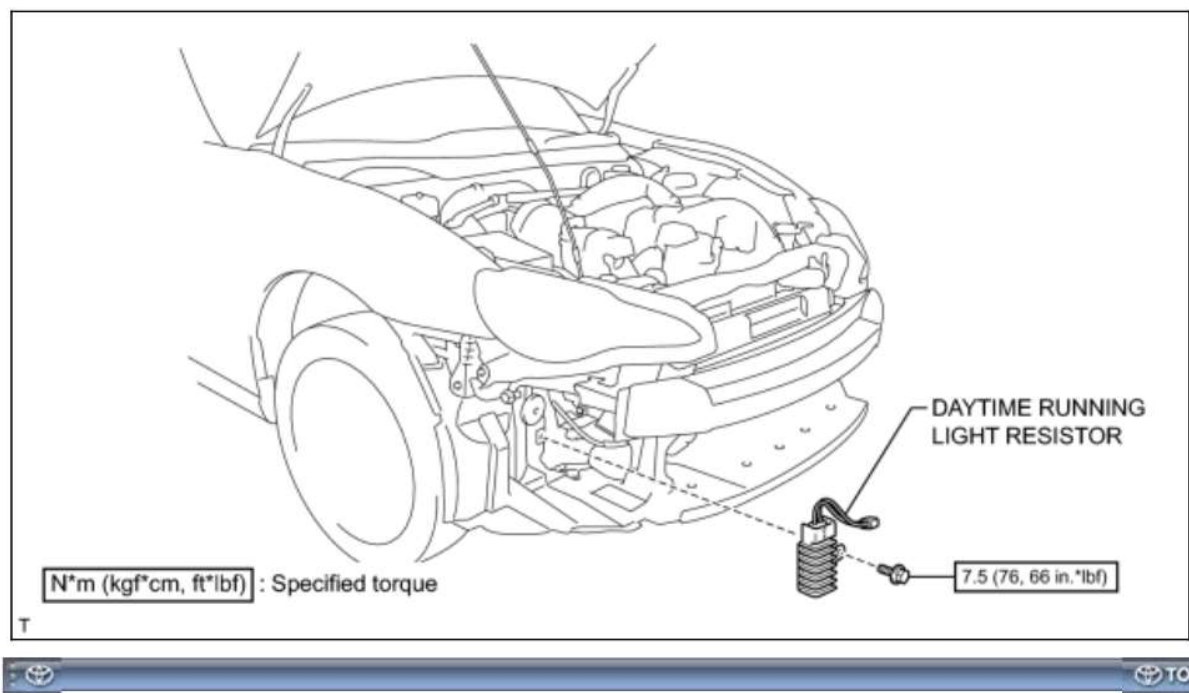


Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003EJR00DX
Title: LIGHTING (EXT): DAYTIME RUNNING LIGHT RESISTOR: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



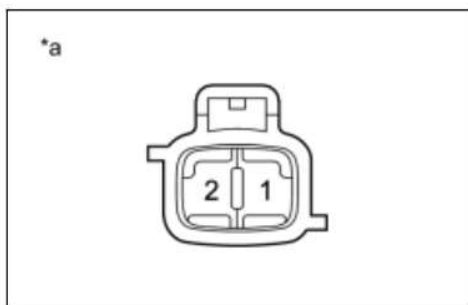
Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003QJN003X
Title: LIGHTING (EXT): DAYTIME RUNNING LIGHT RESISTOR: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT DAYTIME RUNNING LIGHT RESISTOR

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

Standard Resistance:



TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 - 2	Headlight swivel main switch off	0.80 to 0.86 kΩ

Text in Illustration

*a	Component without harness connected (Daytime Running Light Resistor)
----	---



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003EJP00DX
Title: LIGHTING (EXT): DAYTIME RUNNING LIGHT RESISTOR: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL DAYTIME RUNNING LIGHT RESISTOR

- (a) Connect the connector.
- (b) Install the daytime running light resistor with the bolt.

Torque: 7.5 N·m (77 kgf·cm, 66in·lbf)

2. INSTALL FRONT BUMPER COVER

INFO

  TOYOTA

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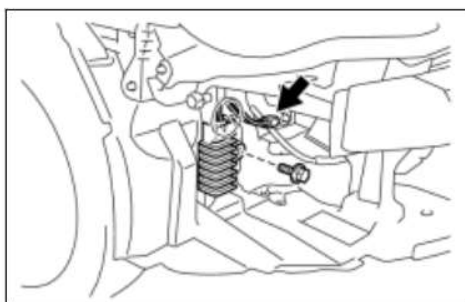
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003EJS00DX
Title: LIGHTING (EXT): DAYTIME RUNNING LIGHT RESISTOR: REMOVAL (2013 FR-S)		

REMOVAL

1. REMOVE FRONT BUMPER COVER

INFO

2. REMOVE DAYTIME RUNNING LIGHT RESISTOR



(a) Disconnect the connector.

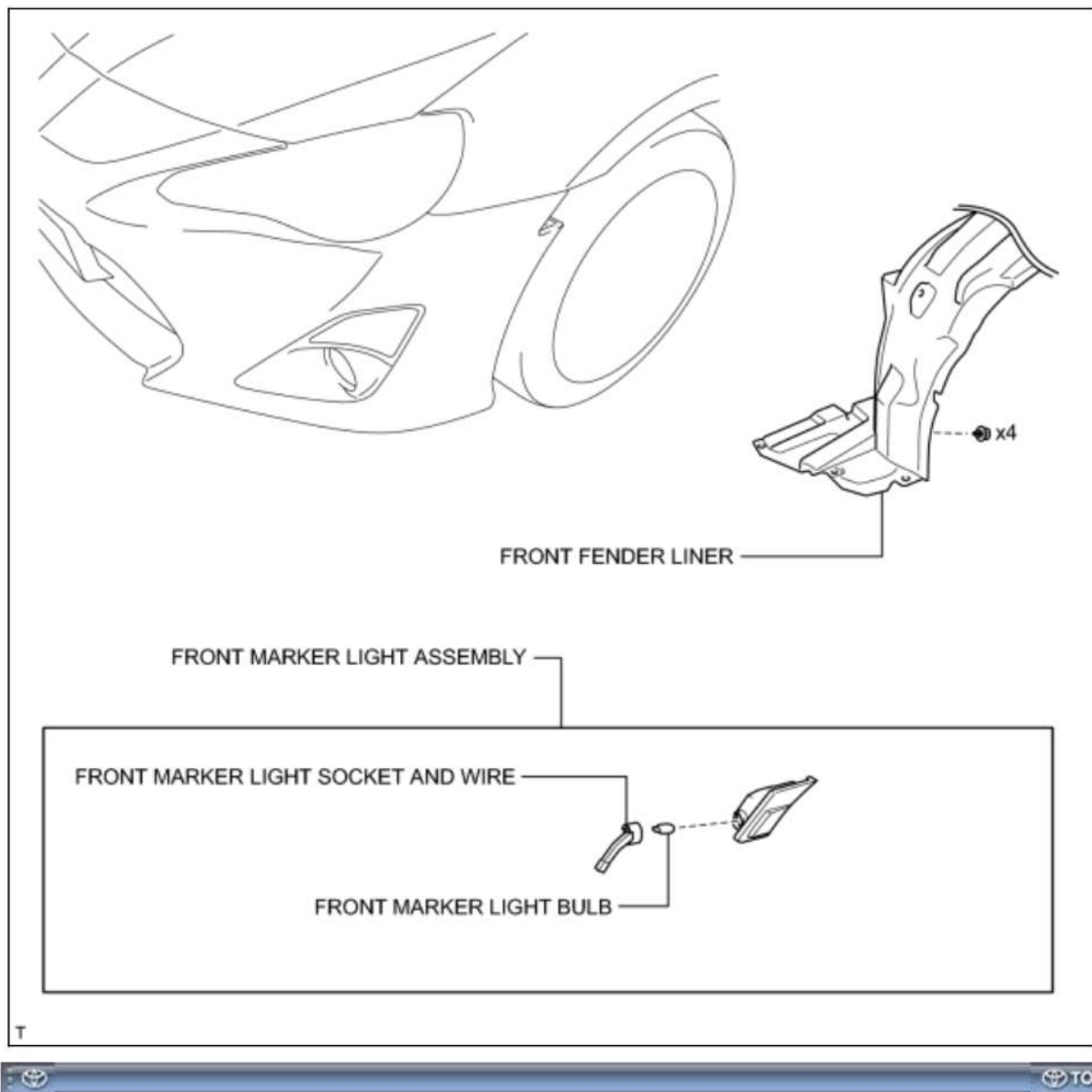
(b) Remove the bolt and daytime running light resistor.



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVI011X
Title: LIGHTING (EXT): FRONT SIDE MARKER LIGHT ASSEMBLY: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



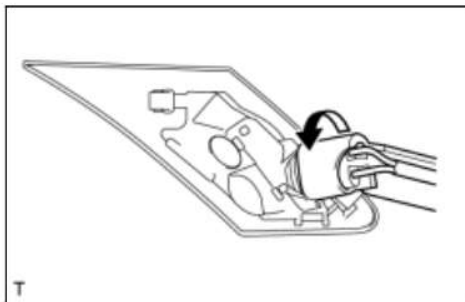
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003N8Y01EX
Title: LIGHTING (EXT): FRONT SIDE MARKER LIGHT ASSEMBLY: DISASSEMBLY (2013 FR-S)		

DISASSEMBLY

HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

1. REMOVE FRONT MARKER LIGHT SOCKET AND WIRE



- (a) Turn the front marker light socket and wire with the front marker light bulb in the direction indicated by the arrow shown in the illustration to remove them as a unit.

2. REMOVE FRONT MARKER LIGHT BULB

- (a) Remove the front marker light bulb from the front marker light socket and wire.



Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002WM0032X
Title: LIGHTING (EXT): FRONT SIDE MARKER LIGHT ASSEMBLY: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT SIDE MARKER LIGHT ASSEMBLY

- (a) Apply battery voltage to the connector and check the side marker light assembly.

OK:



CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1	Side marker light assembly comes on.
Battery negative (-) → 2	

Text in illustration

*a	Component without harness connected (Side Marker Light Assembly)
----	---

If the result is not specified, replace the side marker light bulb or the side marker light assembly.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVJ01VX
Title: LIGHTING (EXT): FRONT SIDE MARKER LIGHT ASSEMBLY: INSTALLATION (2013 FR-S)		

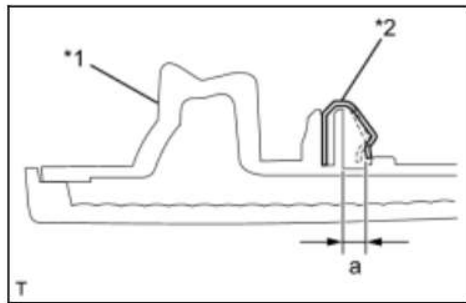
INSTALLATION

HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

1. INSTALL FRONT MARKER LIGHT ASSEMBLY

- Connect the connector.
- Engage the claw to install the front marker light assembly.
- Check that the side front marker light assembly is installed securely.



HINT:

If the front marker light assembly is not installed securely, widen and adjust the claw.

Standard:

AREA	SPECIFIED CONDITION
a	3.0 mm (0.118 in.)

Text in Illustration

*1	Front Marker Light Assembly
*2	Claw

2. INSTALL FRONT FENDER LINER

- Install the fender liner with the 4 clips.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003N8Z01EX
Title: LIGHTING (EXT): FRONT SIDE MARKER LIGHT ASSEMBLY: REASSEMBLY (2013 FR-S)		

REASSEMBLY

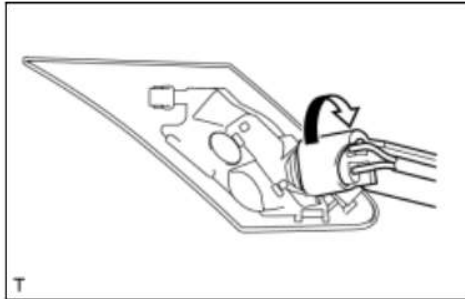
HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

1. INSTALL FRONT MARKER LIGHT BULB

(a) Install the front marker light bulb to the front marker light socket and wire.

2. INSTALL FRONT MARKER LIGHT SOCKET AND WIRE



(a) Turn the front marker light socket and wire with the front marker light bulb in the direction indicated by the arrow shown in the illustration and install them as a unit.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVK01VX
Title: LIGHTING (EXT): FRONT SIDE MARKER LIGHT ASSEMBLY: REMOVAL (2013 FR-S)		

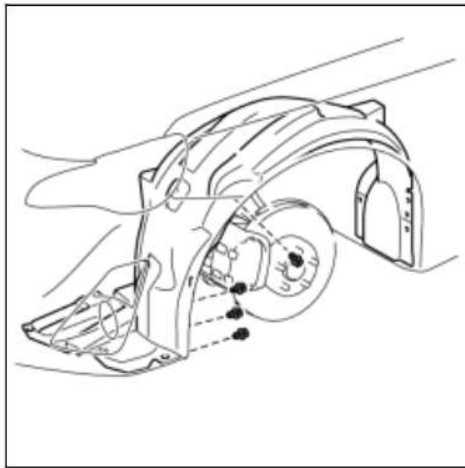
REMOVAL

HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

1. SEPARATE FRONT FENDER LINER

(a) Steer the front tire right most.



(b) Remove the 4 clips and partially remove the front fender liner.

2. REMOVE FRONT MARKER LIGHT ASSEMBLY

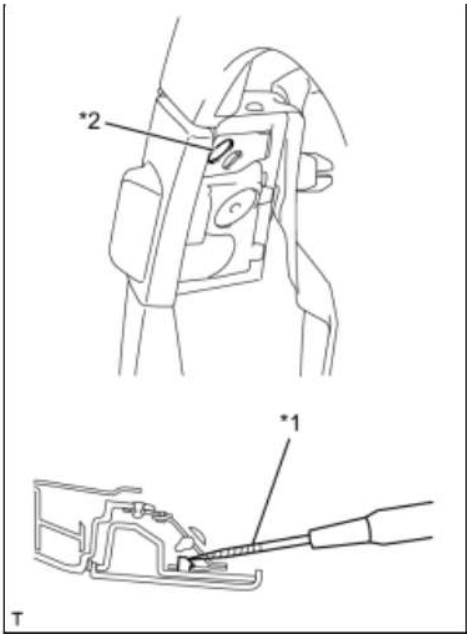
(a) Using a screwdriver wrapped with protective tape, disengage the claw from service hole.

Text in Illustration

*1	Protective Tape
*2	Service Hole

HINT:

Insert screwdriver on the level.



(b) Disconnect the connector to remove the front marker light assembly.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVK01VX
Title: LIGHTING (EXT): FRONT SIDE MARKER LIGHT ASSEMBLY: REMOVAL (2013 FR-S)		

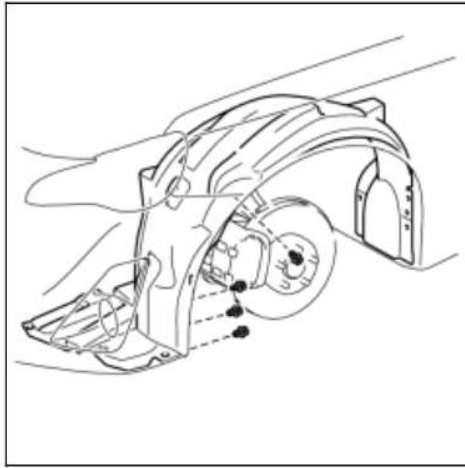
REMOVAL

HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

1. SEPARATE FRONT FENDER LINER

(a) Steer the front tire right most.



(b) Remove the 4 clips and partially remove the front fender liner.

2. REMOVE FRONT MARKER LIGHT ASSEMBLY

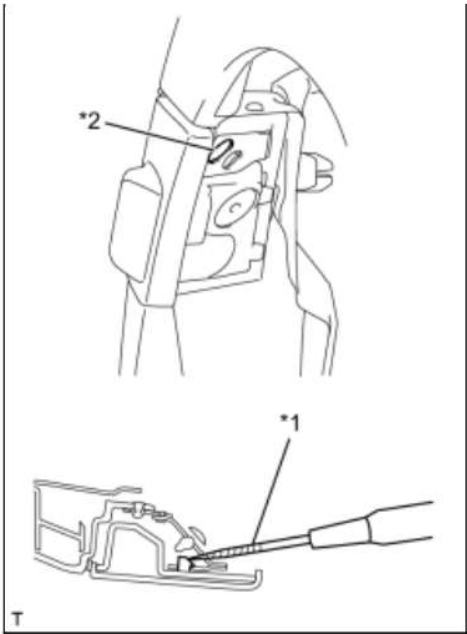
(a) Using a screwdriver wrapped with protective tape, disengage the claw from service hole.

Text in Illustration

*1	Protective Tape
*2	Service Hole

HINT:

Insert screwdriver on the level.



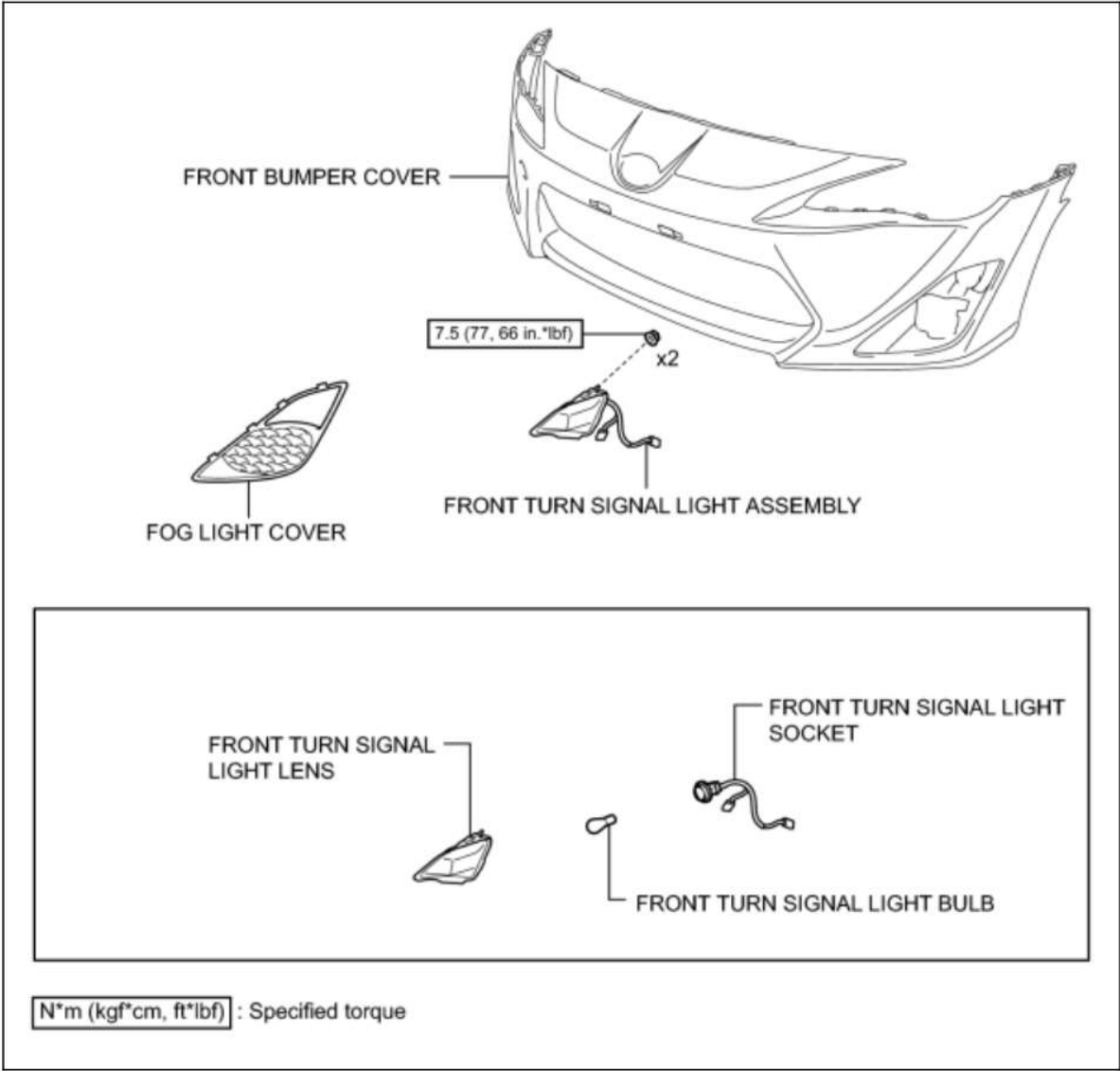
(b) Disconnect the connector to remove the front marker light assembly.



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000042O900FX
Title: LIGHTING (EXT): FRONT TURN SIGNAL LIGHT ASSEMBLY: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



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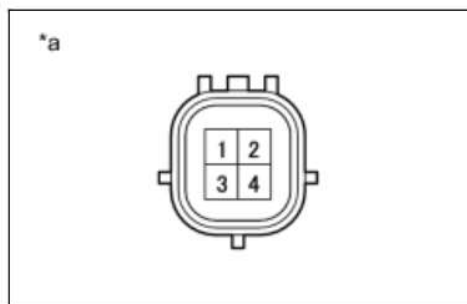
Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002XVR01AX
Title: LIGHTING (EXT): FRONT TURN SIGNAL LIGHT ASSEMBLY: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT FRONT TURN SIGNAL LIGHT SOCKET

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

Standard:



CONDITION	SPECIFIED CONDITION
Battery positive (+) → 2 Battery negative (-) → 4	Clearance light comes on
Battery positive (+) → 1 Battery negative (-) → 4	Turn signal light comes on

Text in Illustration

*a	Component without harness connected (Front Turn Signal Light Socket)
----	---

If the result is not as specified, replace the bulb or the front turn signal light socket.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM00000420800HX
Title: LIGHTING (EXT): FRONT TURN SIGNAL LIGHT ASSEMBLY: INSTALLATION (2013 FR-S)		

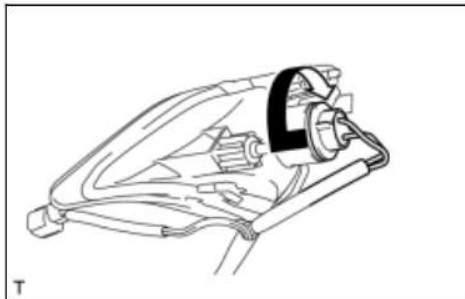
INSTALLATION

HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

1. INSTALL FRONT TURN SIGNAL LIGHT BULB

- (a) Install the front turn signal light bulb to the front turn signal light socket.



- (b) Turn the front turn signal light socket with the front turn signal light bulb in the direction indicated by the arrow shown in the illustration and install them as a unit.

2. INSTALL FRONT TURN SIGNAL LIGHT ASSEMBLY

- (a) Engage the 2 claws to install the front turn signal light assembly.
(b) Install the 2 nuts.

Torque: 7.5 N·m (77 kgf·cm, 66in·lbf)

- (c) Connect the fog light connector.

3. INSTALL FOG LIGHT COVER INFO

4. INSTALL FRONT BUMPER COVER

INFO



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM00000420A00HX
Title: LIGHTING (EXT): FRONT TURN SIGNAL LIGHT ASSEMBLY: REMOVAL (2013 FR-S)		

REMOVAL

HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

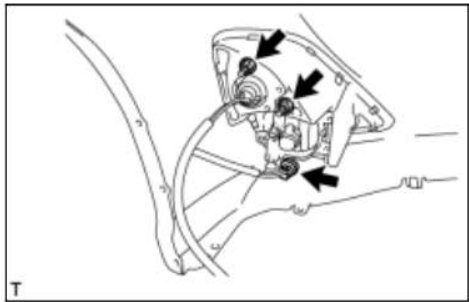
1. REMOVE FRONT BUMPER COVER

INFO

2. REMOVE FOG LIGHT COVER

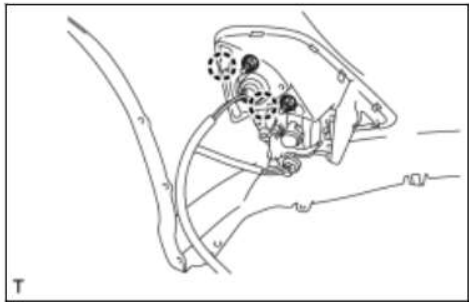
INFO

3. REMOVE FRONT TURN SIGNAL LIGHT ASSEMBLY



(a) Disconnect the fog light connector.

(b) Remove the 2 nuts.



(c) Disengage the 2 claws to remove the front turn signal light assembly.

4. REMOVE FRONT TURN SIGNAL LIGHT BULB

(a) Turn the front turn signal light socket with front turn signal light bulb in the direction indicated by the arrow



shown in the illustration, and remove them as a unit.

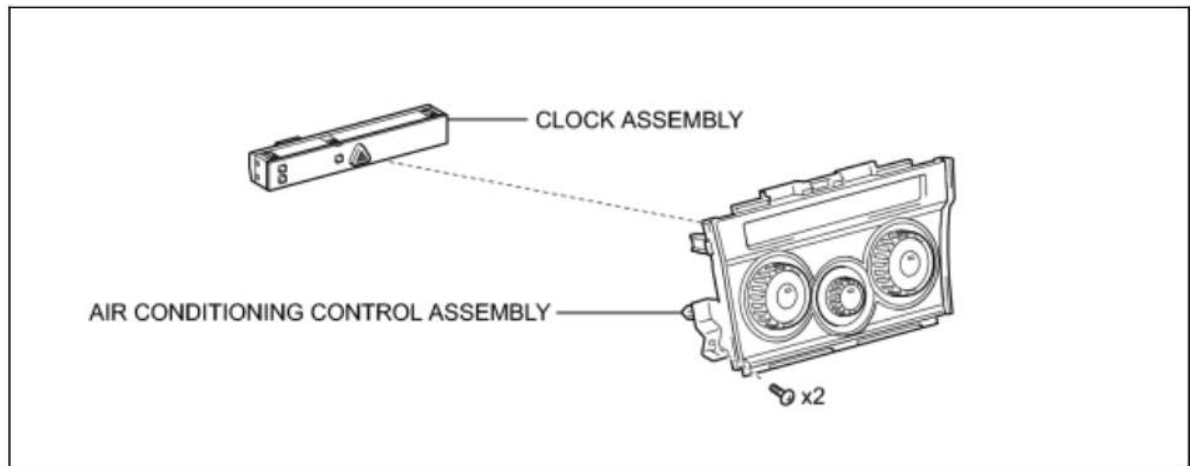
- (b) Remove the front turn signal light bulb from the front turn signal light socket and wire.



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000015XI01GX
Title: LIGHTING (EXT): HAZARD WARNING SWITCH: COMPONENTS (2013 FR-S)		

COMPONENTS

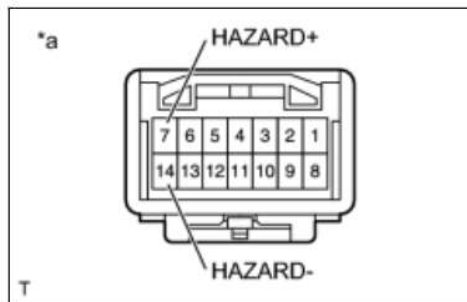
ILLUSTRATION



Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003QJV012X
Title: LIGHTING (EXT): HAZARD WARNING SWITCH: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT CLOCK ASSEMBLY



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

Standard Resistance:

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
7 (HAZARD+) - 14 (HAZARD-)	Hazard warning signal switch off	10 k Ω or higher
7 (HAZARD+) - 14 (HAZARD-)	Hazard warning signal switch on	Below 1 Ω

(b) Apply battery voltage to the connector and check the LED illumination condition.

OK:

CONDITION	SPECIFIED CONDITION
Battery positive (+) → 9 Battery negative (-) → 13	LED illuminates

Text in Illustration

*a	Component without harness connected (Clock Assembly)
----	---



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000014MX01SX
Title: LIGHTING (EXT): HAZARD WARNING SWITCH: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL CLOCK ASSEMBLY

(a) Engage the 4 claws to install the clock assembly.

2. INSTALL AIR CONDITIONING PANEL ASSEMBLY

INFO

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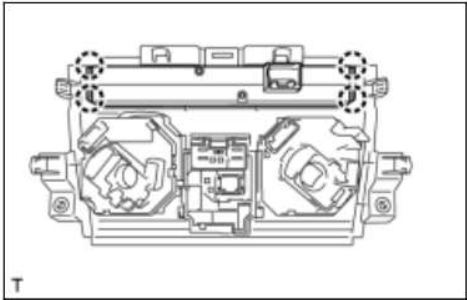
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000014MY01RX
Title: LIGHTING (EXT): HAZARD WARNING SWITCH: REMOVAL (2013 FR-S)		

REMOVAL

1. REMOVE AIR CONDITIONING PANEL ASSEMBLY

INFO

2. REMOVE CLOCK ASSEMBLY



(a) Disengage the 4 claws to remove the clock assembly.

Last Modified: 3-27-2012	6.4 N	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000011MI07KX
Title: LIGHTING (EXT): HEADLIGHT ASSEMBLY: ADJUSTMENT (2013 FR-S)		

ADJUSTMENT

HINT:

It is possible that a bulb is incorrectly installed, affecting headlight aim. Bulb installation should be considered prior to performing the adjustment procedure.

1. PREPARE VEHICLE FOR HEADLIGHT AIM ADJUSTMENT

(a) Prepare the vehicle:

- Ensure there is no damage or deformation to the body around the headlights.
- Fill the fuel tank.
- Make sure that the oil is filled to the specified level.
- Make sure that the coolant is filled to the specified level.
- Inflate the tires to the appropriate pressure.
- Unload the trunk and vehicle, ensuring that the spare tire, tools and jack are in their original positions.
- Sit a person of average weight (68 kg, 150 lb) in the driver's seat.

2. PREPARE FOR HEADLIGHT AIMING (Using a headlight aim test machine)

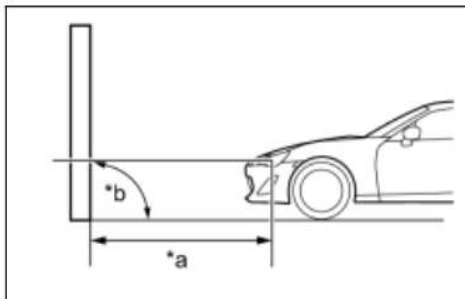
(a) Adjust the headlight aim in accordance with the headlight aim test machine instructions.

3. PREPARE FOR HEADLIGHT AIMING (Using a screen)

(a) Prepare the vehicle:

Text in illustration

*a	7.62 or 3 m (25 or 9.84 ft.)
*b	90°

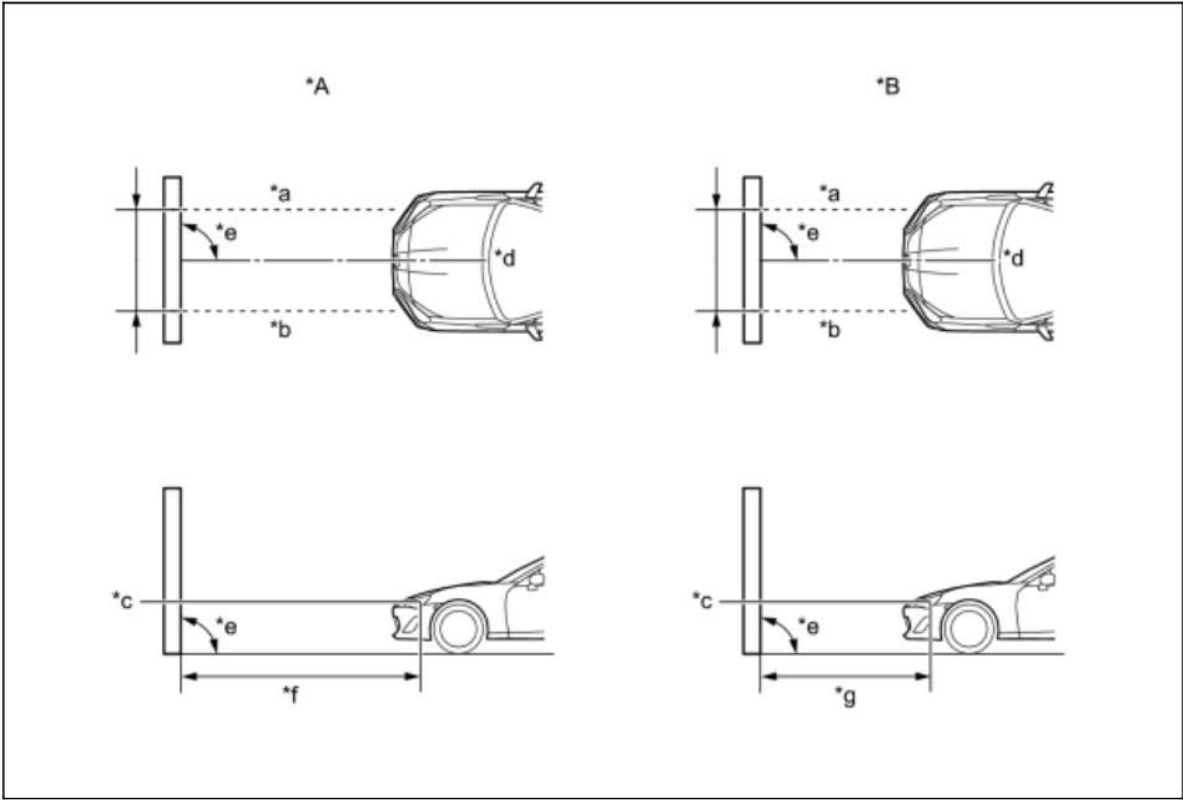


- Place the vehicle in a location that is dark enough to clearly observe the cutoff line. The cutoff line is a distinct line, below which light from the headlights can be observed and above which it cannot.
- Place the vehicle at a 90° angle to the wall.
- Create a 7.62 m (25 ft.) distance between the vehicle (headlight bulb center) and the wall.
- Make sure that the vehicle is on a level surface.
- Position the front wheels straight ahead.
- Bounce the vehicle up and down to settle the suspension.

NOTICE:

A distance of 7.62 m (25 ft.) between the vehicle (headlight bulb center) and the wall is necessary for proper aim adjustment. If sufficient space is not

- (b) Prepare a piece of thick white paper (approximately 2 m (6.6 ft.) (height) x 4 m (13.1 ft.) (width)) to use as a screen.
- (c) Draw a vertical line down the center of the screen (V line).
- (d) Set the screen as shown in the illustration.



Text in illustration

*A	Aligning distance 7.62 m (25 ft.)	*B	Aligning distance 3 m (9.84 ft.)
*a	V RH Line	*b	V LH Line
*c	H Line	*d	V Line
*e	90°	*f	7.62 m (25 ft.)
*g	3 m (9.84 ft.)	-	-

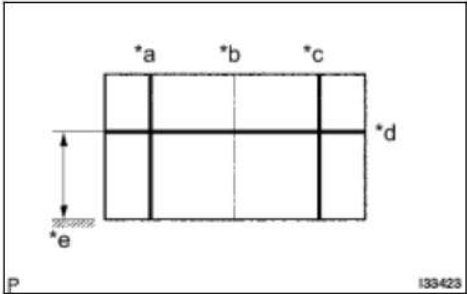
HINT:

- Stand the screen perpendicular to the ground.
- Align the V line on the screen with the center of the vehicle.

(e) Draw base lines (H, V LH, and V RH lines) on the screen as shown in the illustration.

HINT:

- The base lines differ for "low beam inspection" and "high beam inspection".
- Mark the headlight bulb center marks on the screen. If the center mark cannot be observed on the headlight, use the center of the headlight bulb or the manufacturer's name marked on the headlight as the center mark.



- (1) H Line (Headlight height):
- Draw a horizontal line across the screen so that it passes through the center marks. The H line should be at the same height as the headlight bulb center marks of the low beam headlights.
- (2) V LH Line, V RH Line (Center mark position of left-hand (LH) and right-hand (RH) headlights):
- Draw 2 vertical lines so that they intersect the H line at each center mark (aligned with the center of the low beam headlight bulbs).

Text in illustration

*a	V LH Line
*b	V Line
*c	V RH Line
*d	H Line
*e	Ground

4. INSPECT HEADLIGHT AIMING

- (a) Cover the headlight or disconnect the connector of the headlight on the opposite side to prevent light from the headlight that is not being inspected from affecting the headlight aiming inspection.

NOTICE:

Do not keep the headlight covered for more than 3 minutes. The headlight lens is made of synthetic resin, which may melt or be damaged due to excessive heat.

HINT:

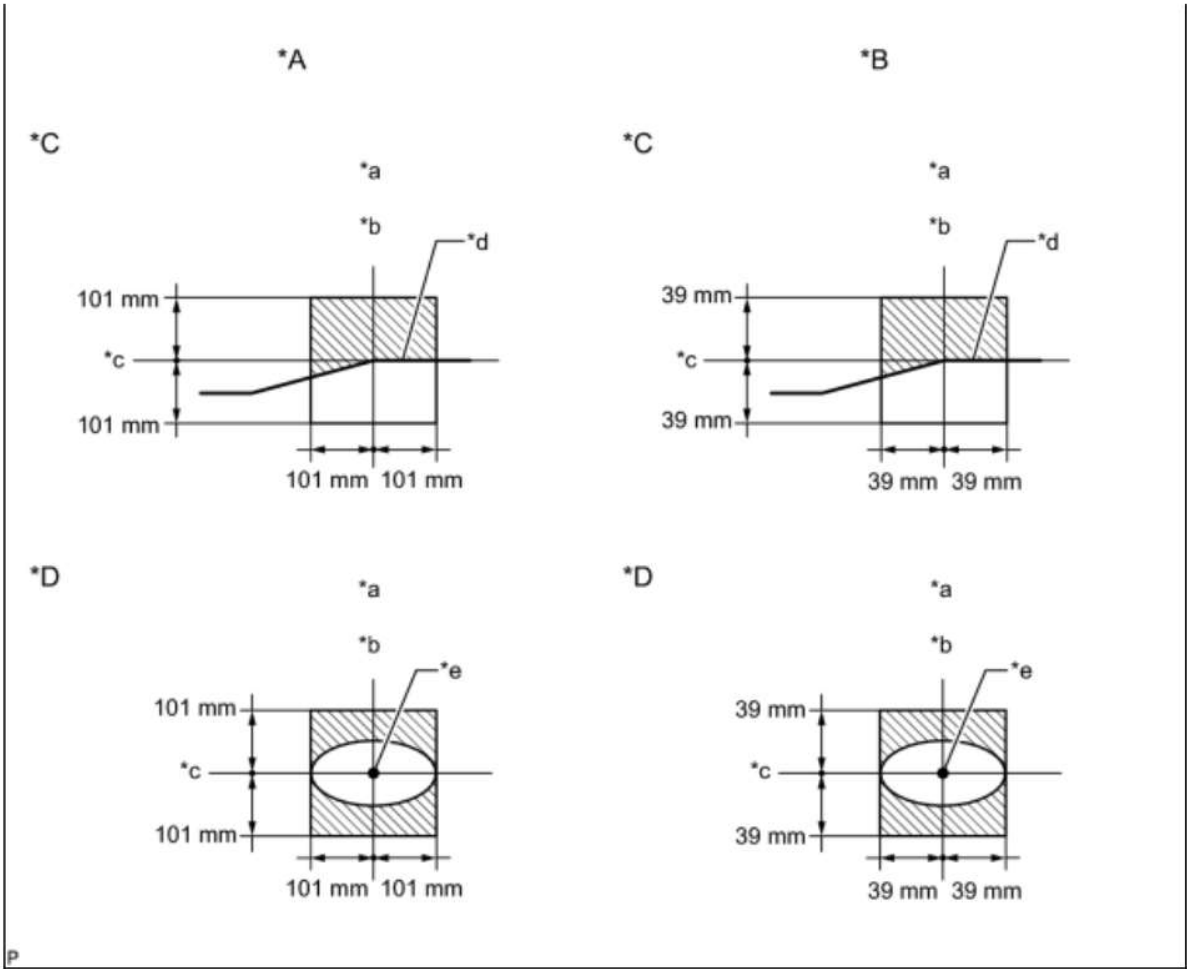
When checking the aim of the high beam, cover the low beam or disconnect the connector.

- (b) Start the engine.
- (c) Turn on the headlights and check the aiming of each beam.

HINT:

Preferred position for the low beam: Matches preferred cutoff line shown in the illustration

Preferred position for the high beam: Matches center of intensity shown in the illustration



Text in illustration

*A	Aligning distance 7.62 m (25 ft.)	*B	Aligning distance 3 m (9.84 ft.)
*C	Low Beam	*D	High Beam
*a	V LH Line	*b	V RH Line
*c	H Line	*d	Preferred Cutoff Line
*e	Center of Intensity	-	-

HINT:

- Since the low beam light and the high beam light are a unit, if the aim on the low beam is correct, the high beam should also be correct. However, check both beams just to make sure.
- If the alignment distance is 7.62 m (25 ft.):

The low beam cutoff line should be within 101 mm (3.97 in.) above or below the H line as well as 101 mm (3.97 in.) left or right of the V line (SAE J599).
- If the alignment distance is 3 m (9.84 ft.):

The low beam cutoff line should be within 39 mm (1.56 in.) above or below the H line as well as 39 mm (1.56 in.) left or right of the H line (SAE J599).
- If the alignment distance is 7.62 m (25 ft.):

The high beam center of intensity should be within 101 mm (3.97 in.) above or below the H line as well as 101 mm (3.97 in.) left or right of the V LH or V RH line (SAE J599).
- If the alignment distance is 3 m (9.84 ft.):

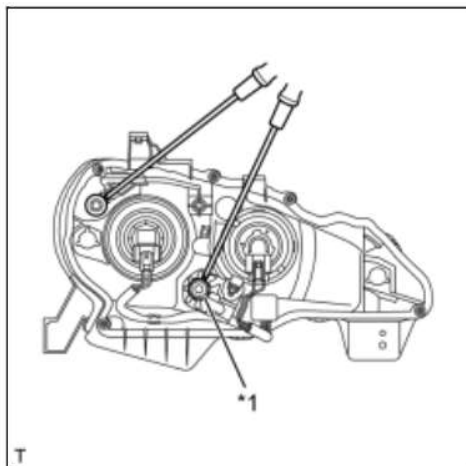
The high beam center of intensity should be within 39 mm (1.56 in.) above or below the H line as well as 39 mm (1.56 in.) left or right of the V LH or V RH line (SAE J599).

5. ADJUST HEADLIGHT AIMING

(a) Remove any covers necessary to access the headlight adjusters.

(b) Adjust the aim vertically:

Adjust the aim of each headlight to the specified range by turning each aiming screw with a screwdriver.



Text in Illustration

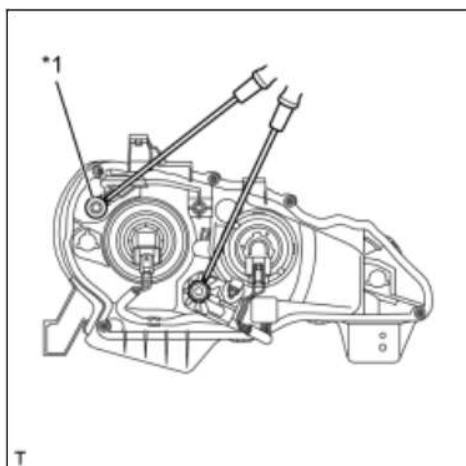
*1	Aiming Screw A
----	----------------

NOTICE:

- The high beam light and low beam light aim move in the diagonal direction when aiming screw A is turned. Remember the turning direction and the number of turns of aiming screw A to correct the horizontal position in the next step.
- The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

(c) Turn aiming screw B the same number of turns and in the same direction as aiming screw A.

Text in Illustration



*1	Aiming Screw B
----	----------------

NOTICE:

The final turn of the aiming screw should be made in the clockwise direction. If the screw is tightened excessively, loosen it and then retighten it, so that the final turn of the screw is in the clockwise direction.

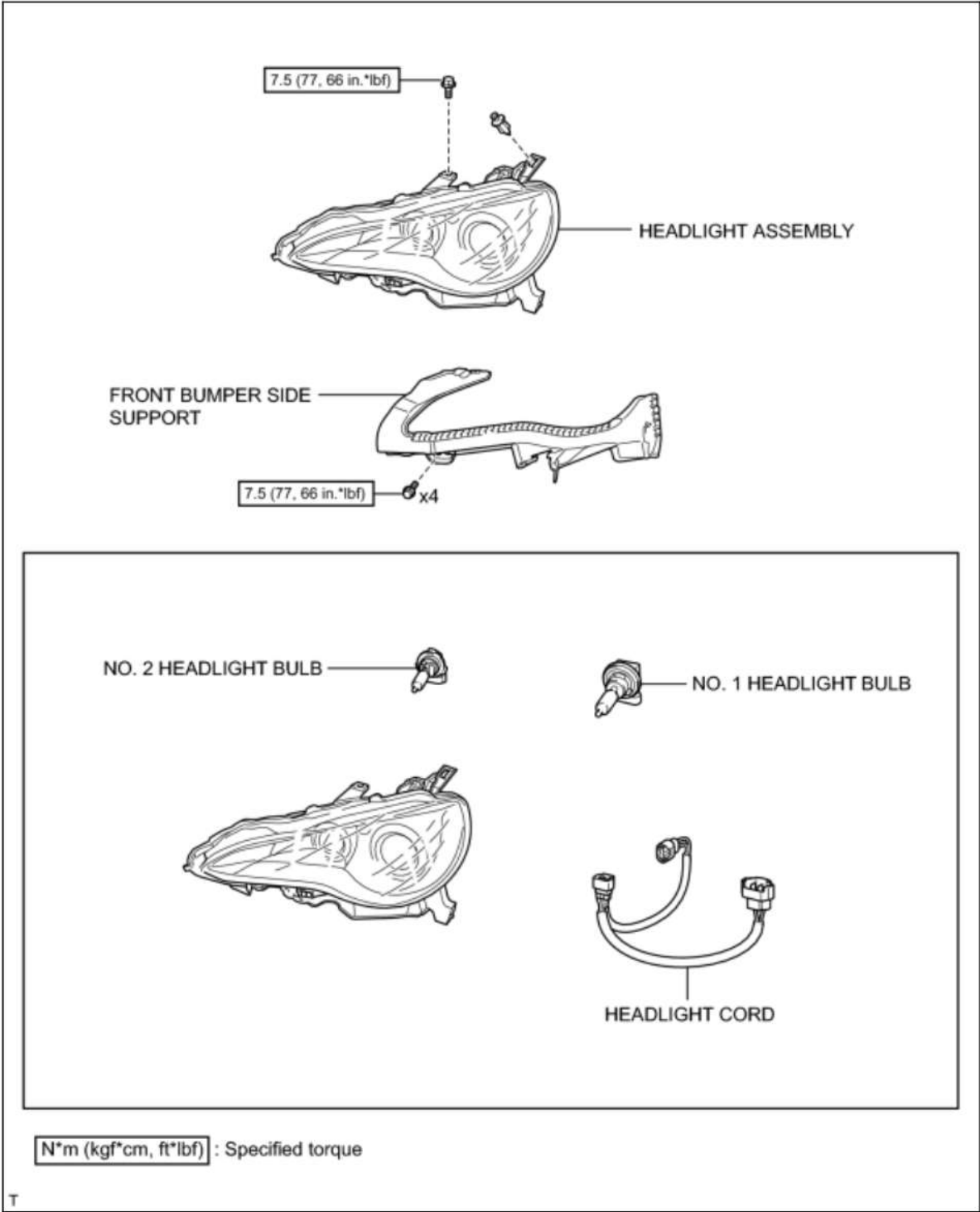
HINT:

- The low beam light and the high beam light are a unit. Adjusting the aim on the low beam to the correct position should also result in the high beam adjustment being correct.
- If it is not possible to correctly adjust headlight aim, check bulb, headlight unit, and headlight unit reflector installation.

Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001QBR02FX
Title: LIGHTING (EXT): HEADLIGHT ASSEMBLY: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



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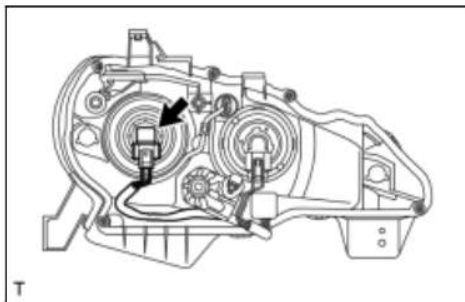
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001QBT02WX
Title: LIGHTING (EXT): HEADLIGHT ASSEMBLY: DISASSEMBLY (2013 FR-S)		

DISASSEMBLY

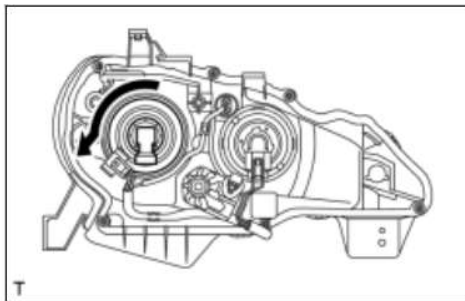
HINT:

- Use the same procedure for RH and LH sides.
- The procedure listed below is for LH side.

1. REMOVE NO. 1 HEADLIGHT BULB



(a) Disconnect the connector.

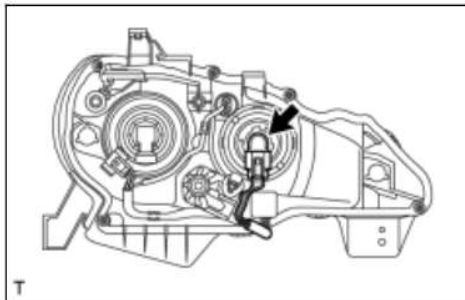


(b) Turn the No. 1 headlight bulb in the direction indicated by the arrow shown in the illustration, and remove it.

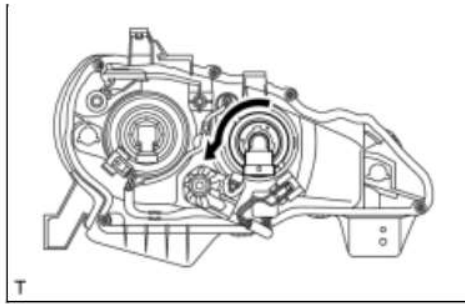
NOTICE:

Do not touch the bulb glass.

2. REMOVE NO. 2 HEADLIGHT BULB



(a) Disconnect the connector.

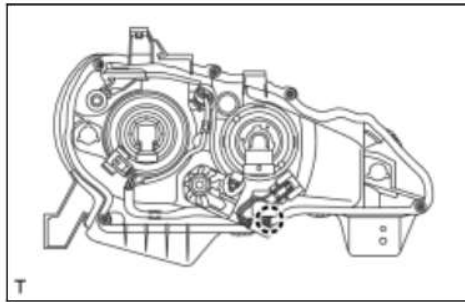


- (b) Turn the No. 2 headlight bulb in the direction indicated by the arrow shown in the illustration, and remove it.

NOTICE:

Do not touch the bulb glass.

3. REMOVE HEADLIGHT CORD



- (a) Disengage the claw to remove the headlight cord.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001QBQ03LX
Title: LIGHTING (EXT): HEADLIGHT ASSEMBLY: INSTALLATION (2013 FR-S)		

INSTALLATION

HINT:

- Use the same procedure for RH and LH sides.
- The procedure listed below is for LH side.

1. INSTALL HEADLIGHT ASSEMBLY

- Engage the clamp.
- Install the headlight assembly with the bolt.
Torque: 7.5 N·m (77 kgf·cm, 66in·lbf)
- Install the clip.
- Connect each connector.

2. INSTALL FRONT BUMPER SIDE SUPPORT

- Install the front bumper side support LH with the 3 bolts B.
Torque: 7.5 N·m (77 kgf·cm, 66in·lbf)
- Install the bolt A.
Torque: 7.5 N·m (77 kgf·cm, 66in·lbf)
- Engage the 2 clamps to connect the wire harness.

3. INSTALL FRONT BUMPER COVER

INFO

4. PREPARE VEHICLE FOR HEADLIGHT AIM ADJUSTMENT

INFO

5. PREPARE FOR HEADLIGHT AIMING (Using a headlight aim test machine)

INFO

6. PREPARE FOR HEADLIGHT AIMING (Using a screen)

INFO

7. INSPECT HEADLIGHT AIMING

INFO

8. ADJUST HEADLIGHT AIMING

INFO



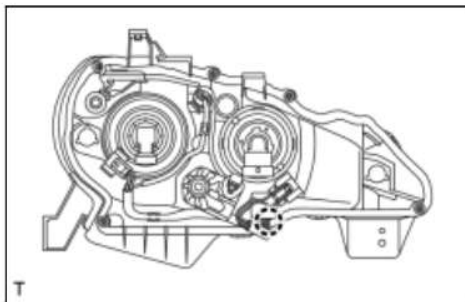
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001QBU02WX
Title: LIGHTING (EXT): HEADLIGHT ASSEMBLY: REASSEMBLY (2013 FR-S)		

REASSEMBLY

HINT:

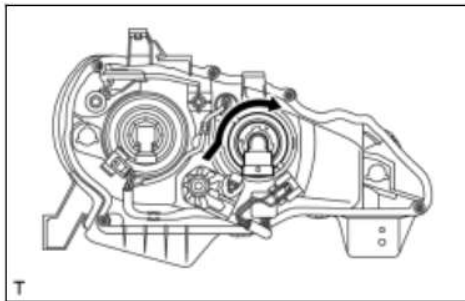
- Use the same procedure for RH and LH sides.
- The procedure listed below is for LH side.

1. INSTALL HEADLIGHT CORD



(a) Engage the claw to install the headlight cord.

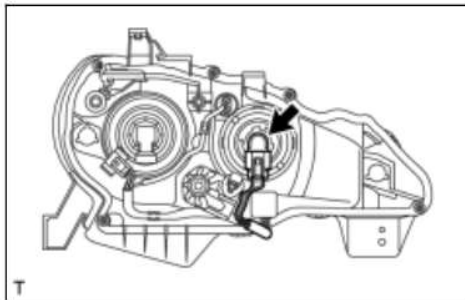
2. INSTALL NO. 2 HEADLIGHT BULB



(a) Turn the No. 2 headlight bulb in the direction indicated by the arrow shown in the illustration to install it.

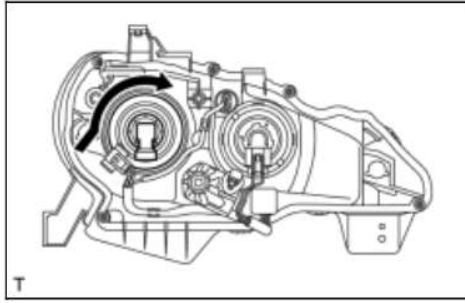
NOTICE:

Do not touch the bulb glass.



(b) Connect the connector.

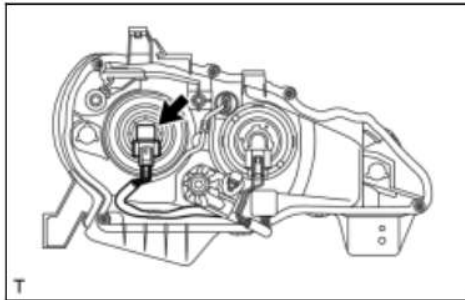
3. INSTALL NO. 1 HEADLIGHT BULB



- (a) Turn the No. 1 headlight bulb in the direction indicated by the arrow shown in the illustration to install it.

NOTICE:

Do not touch the bulb glass.



- (b) Connect the connector.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001QBS03IX
Title: LIGHTING (EXT): HEADLIGHT ASSEMBLY: REMOVAL (2013 FR-S)		

REMOVAL

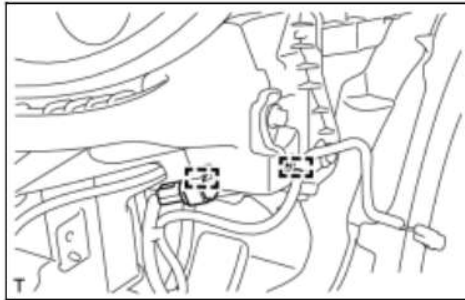
HINT:

- Use the same procedure for RH and LH sides.
- The procedure listed below is for LH side.

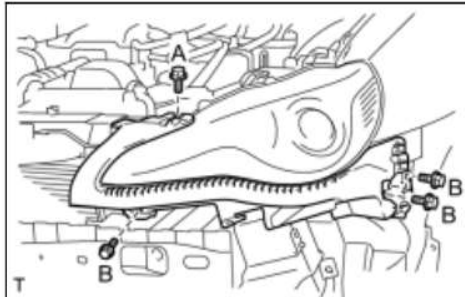
1. REMOVE FRONT BUMPER COVER

INFO

2. REMOVE FRONT BUMPER SIDE SUPPORT



(a) Disengage the 2 clamps to disconnect the wire harness.



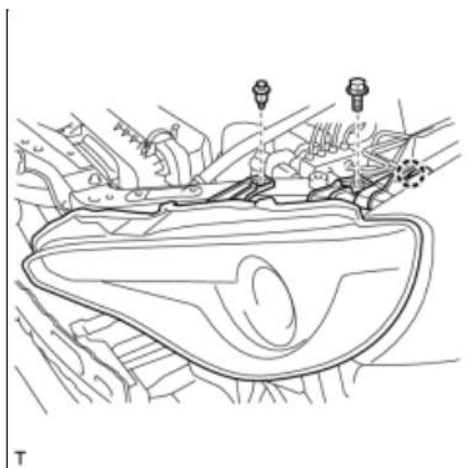
(b) Remove the bolt A.

(c) Remove the 3 bolts B and the front bumper side support.

3. REMOVE HEADLIGHT ASSEMBLY

(a) Disconnect each connector.

(b) Remove the clip.



(c) Remove the bolt.

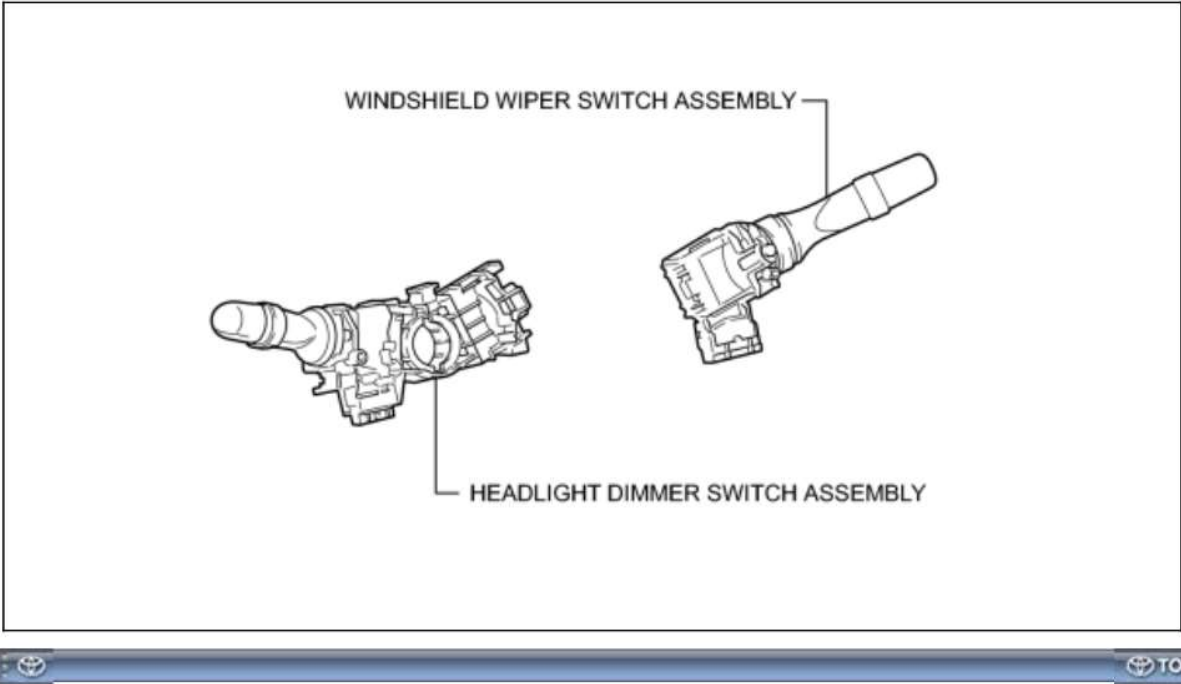
(d) Disengage the claw to remove the headlight assembly.



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MW101LX
Title: LIGHTING (EXT): HEADLIGHT DIMMER SWITCH: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM00000202H02DX
Title: LIGHTING (EXT): HEADLIGHT DIMMER SWITCH: INSPECTION (2013 FR-S)		

INSPECTION

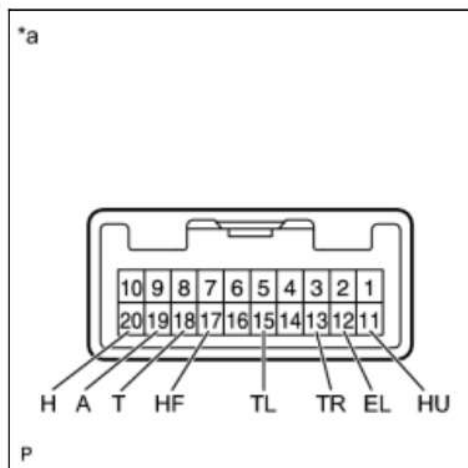
1. INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY

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

Standard Resistance:

Light Control Switch

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
19 (A) - 12 (EL)	Light control switch off	10 k Ω or higher
20 (H) - 12 (EL)		10 k Ω or higher
19 (A) - 12 (EL)		10 k Ω or higher
18 (T) - 12 (EL)	Light control switch in tail position	Below 1 Ω
18 (T) - 12 (EL)	Light control switch in head position	Below 1 Ω
20 (H) - 12 (EL)		Below 1 Ω



Dimmer Switch

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
11 (HU) - 12 (EL)	Dimmer switch in high position	Below 1 Ω
11 (HU) - 12 (EL)	Dimmer switch in high flasher position	Below 1 Ω
17 (HF) - 12 (EL)		Below 1 Ω

Turn Signal Switch

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
13 (TR) - 12 (EL)	Right turn	Below 1 Ω
13 (TR) - 12 (EL)	Neutral	10 k Ω or higher

15 (TL) - 12 (EL)		10 kΩ or higher
15 (TL) - 12 (EL)	Left turn	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Headlight Dimmer Switch Assembly)
----	---

If the result is not as specified, replace the headlight dimmer switch assembly.



Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM00000202H02DX
Title: LIGHTING (EXT): HEADLIGHT DIMMER SWITCH: INSPECTION (2013 FR-S)		

INSPECTION

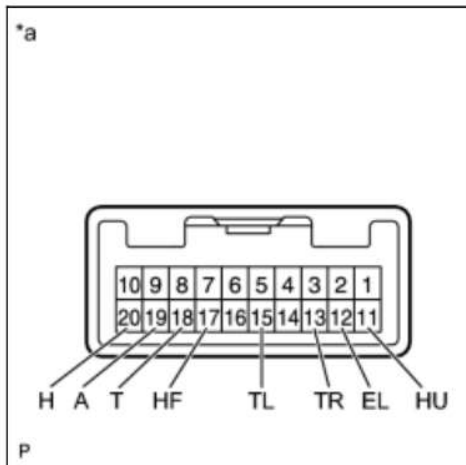
1. INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY

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

Standard Resistance:

Light Control Switch

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
19 (A) - 12 (EL)	Light control switch off	10 k Ω or higher
20 (H) - 12 (EL)		10 k Ω or higher
19 (A) - 12 (EL)		10 k Ω or higher
18 (T) - 12 (EL)	Light control switch in tail position	Below 1 Ω
18 (T) - 12 (EL)	Light control switch in head position	Below 1 Ω
20 (H) - 12 (EL)		Below 1 Ω



Dimmer Switch

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
11 (HU) - 12 (EL)	Dimmer switch in high position	Below 1 Ω
11 (HU) - 12 (EL)	Dimmer switch in high flasher position	Below 1 Ω
17 (HF) - 12 (EL)		Below 1 Ω

Turn Signal Switch

TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
13 (TR) - 12 (EL)	Right turn	Below 1 Ω
13 (TR) - 12 (EL)	Neutral	10 k Ω or higher

15 (TL) - 12 (EL)		10 kΩ or higher
15 (TL) - 12 (EL)	Left turn	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Headlight Dimmer Switch Assembly)
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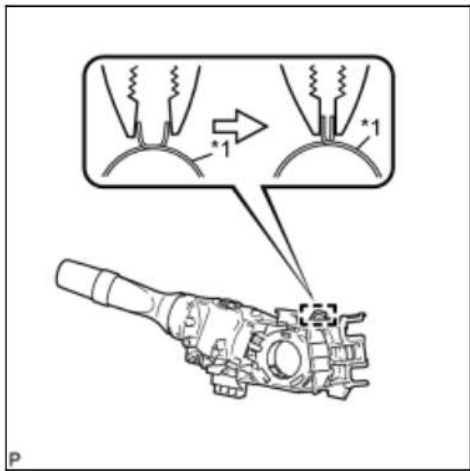
If the result is not as specified, replace the headlight dimmer switch assembly.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001QCP03AX
Title: LIGHTING (EXT): HEADLIGHT DIMMER SWITCH: INSTALLATION (2013 FR-S)		

INSTALLATION

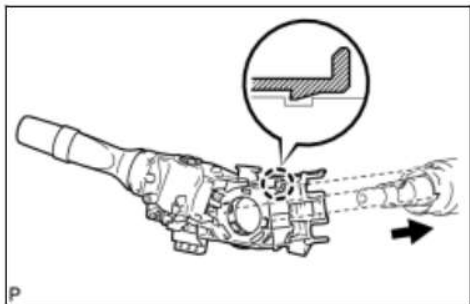
1. INSTALL HEADLIGHT DIMMER SWITCH ASSEMBLY



(a) Using pliers, expand the clamp as shown in the illustration.

Text in Illustration

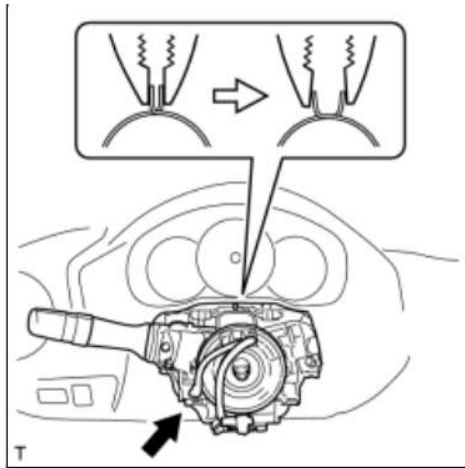
*1	Clamp
----	-------



(b) While holding the clamp expanded, install the headlight dimmer switch assembly as shown in the illustration.

(c) Engage the claw.

(d) Release the clamp to install the headlight dimmer switch assembly.



(e) Connect the connector.

2. INSTALL WINDSHIELD WIPER SWITCH ASSEMBLY INFO

3. INSTALL SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY

INFO

Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001QCR03AX
Title: LIGHTING (EXT): HEADLIGHT DIMMER SWITCH: REMOVAL (2013 FR-S)		

REMOVAL

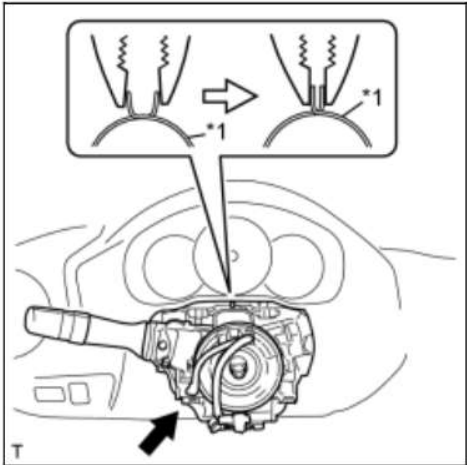
1. REMOVE SPIRAL CABLE WITH SENSOR SUB-ASSEMBLY

INFO

2. REMOVE WINDSHIELD WIPER SWITCH ASSEMBLY

INFO

3. REMOVE HEADLIGHT DIMMER SWITCH ASSEMBLY

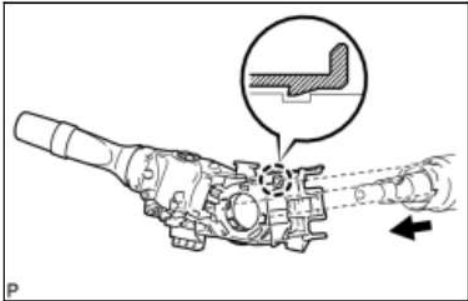


(a) Disconnect the connector.

(b) Using pliers, expand the clamp as shown in the illustration.

Text in Illustration

*1	Clamp
----	-------

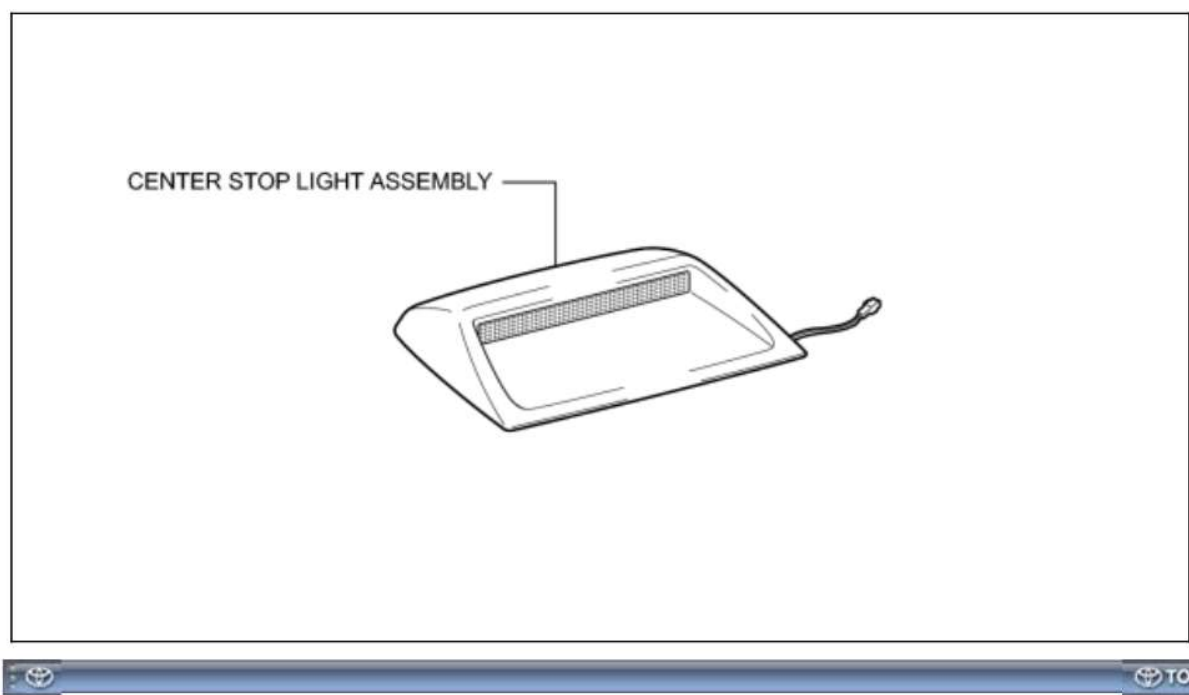


(c) While holding the clamp expanded, disengage the claw and remove the headlight dimmer switch assembly as shown in the illustration.

Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVY01LX
Title: LIGHTING (EXT): HIGH MOUNTED STOP LIGHT ASSEMBLY: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



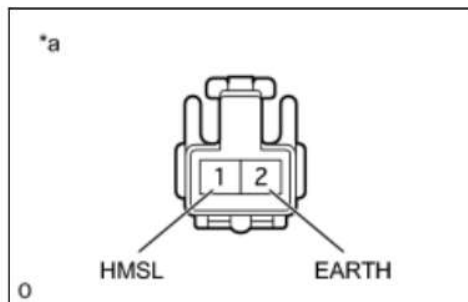
Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001UX703KX
Title: LIGHTING (EXT): HIGH MOUNTED STOP LIGHT ASSEMBLY: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT CENTER STOP LIGHT ASSEMBLY

- (a) Apply battery voltage to the connector and check the center stop light comes on.

OK:



CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 (HMSL)	Center stop light comes on
Battery negative (-) → 2 (EARTH)	

Text in Illustration

*a	Component without harness connected (Center Stop Light Assembly)
----	---

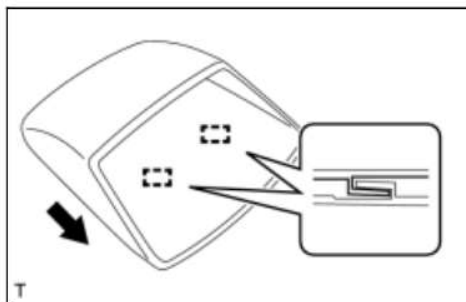
If the result is not as specified, replace the center stop light assembly.



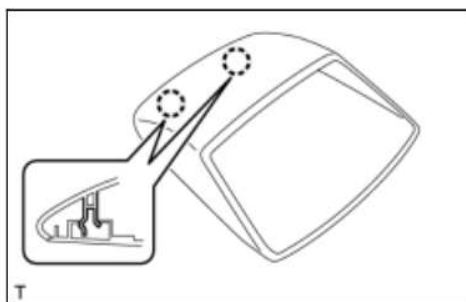
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002PLM022X
Title: LIGHTING (EXT): HIGH MOUNTED STOP LIGHT ASSEMBLY: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL CENTER STOP LIGHT ASSEMBLY



- (a) Slide the center stop light assembly directions shown by the arrows in the illustration to engage the 2 guides.



- (b) Engage the 2 claws to install the center stop light assembly.

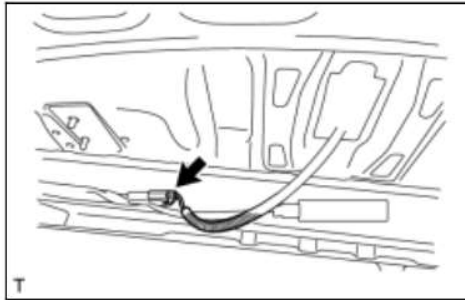
- (c) Connect the connector.



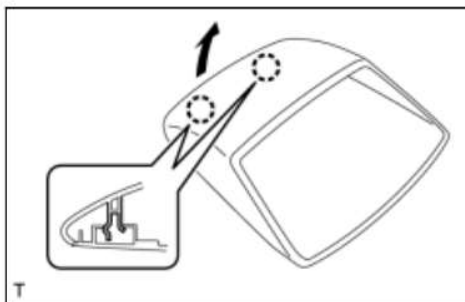
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002PLO01VX
Title: LIGHTING (EXT): HIGH MOUNTED STOP LIGHT ASSEMBLY: REMOVAL (2013 FR-S)		

REMOVAL

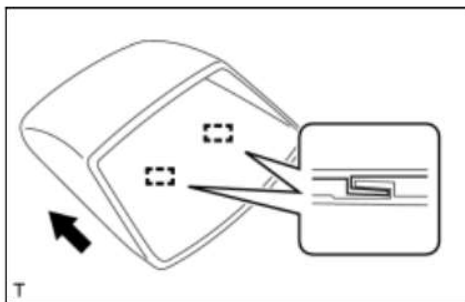
1. REMOVE CENTER STOP LIGHT ASSEMBLY



(a) Disconnect the connector.



(b) Pull the center stop light assembly directions shown by the arrow in the illustration to disengage the 2 claws.



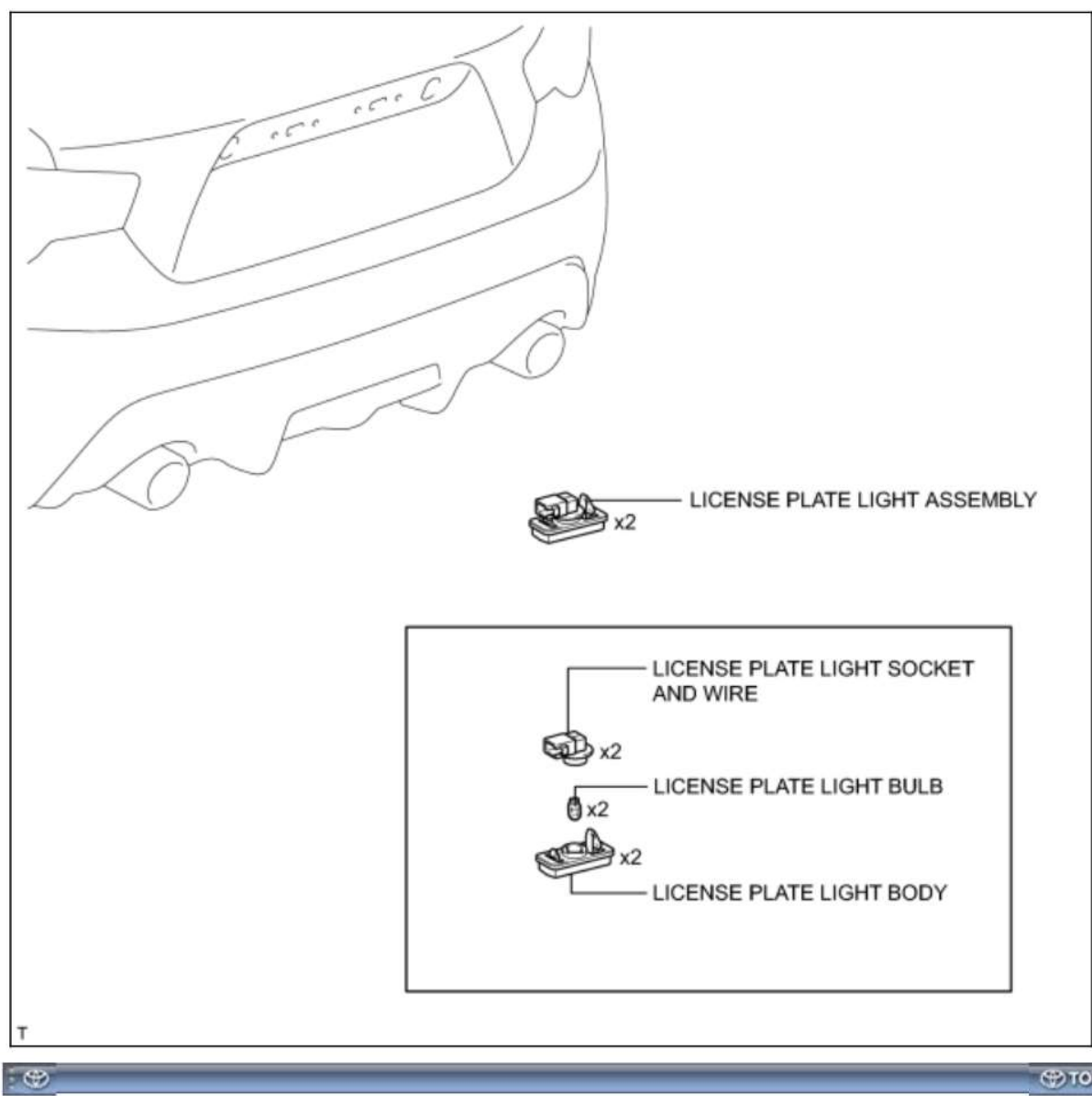
(c) Slide the center stop light assembly directions shown by the arrow in the illustration to disengage the 2 guides and remove it.



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003B3400FX
Title: LIGHTING (EXT): LICENSE PLATE LIGHT ASSEMBLY: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



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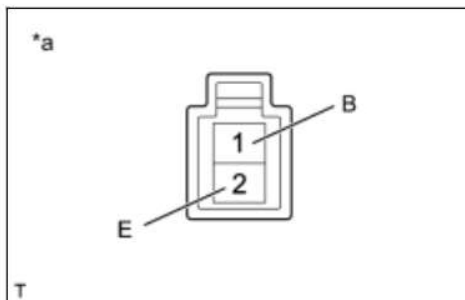
Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003FVZ007X
Title: LIGHTING (EXT): LICENSE PLATE LIGHT ASSEMBLY: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT LICENSE PLATE LIGHT ASSEMBLY

(a) Apply battery voltage to the connector and check the light comes on.

OK:



CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 (B) Battery negative (-) → 2 (E)	License plate light comes on.

Text in illustration

*a	Component without harness connected (License Plate Light Assembly)
----	---

If the result is not specified, replace the license plate light bulb or the license plate light assembly.

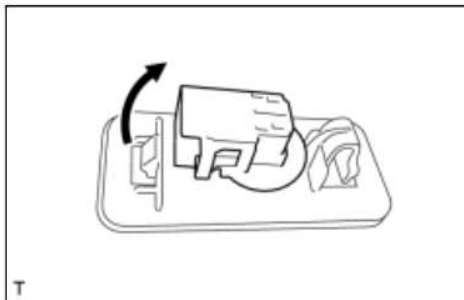


Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003B3200GX
Title: LIGHTING (EXT): LICENSE PLATE LIGHT ASSEMBLY: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL LICENSE PLATE LIGHT BULB

- (a) Install the license plate light bulb to the license plate light socket and wire.



- (b) Turn the license plate light socket and wire with the license plate light bulb in the direction indicated by the arrow shown in the illustration and install them as a unit.

HINT:

Use the same procedure as for the other side.

2. INSTALL LICENSE PLATE LIGHT ASSEMBLY

- (a) Engage the 2 claws to install the license plate light assembly.
(b) Connect the connector.

HINT:

Use the same procedure as for the other side.

3. INSTALL LUGGAGE COMPARTMENT DOOR OUTSIDE GARNISH SUB-ASSEMBLY

INFO



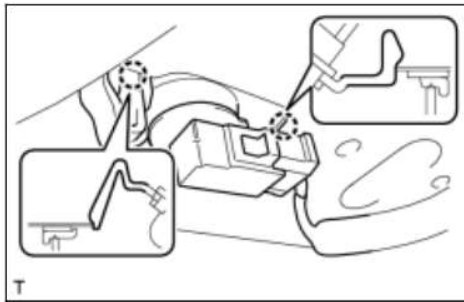
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003B3500GX
Title: LIGHTING (EXT): LICENSE PLATE LIGHT ASSEMBLY: REMOVAL (2013 FR-S)		

REMOVAL

1. REMOVE LUGGAGE COMPARTMENT DOOR OUTSIDE GARNISH SUB-ASSEMBLY

INFO

2. REMOVE LICENSE PLATE LIGHT ASSEMBLY



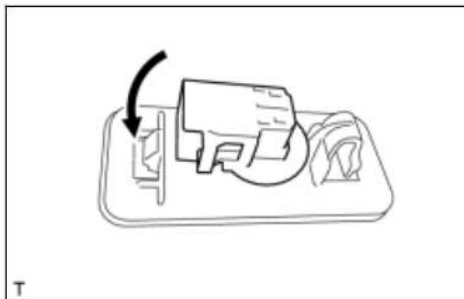
(a) Disconnect the connector.

(b) Disengage the 2 claws to remove the license plate light assembly.

HINT:

Use the same procedure as for the other side.

3. REMOVE LICENSE PLATE LIGHT BULB



(a) Turn the license plate light socket and wire with the license plate light bulb in the direction indicated by the arrow shown in the illustration to remove them as a unit.

(b) Remove the license plate light bulb from the license plate light socket and wire.

HINT:

Use the same procedure as for the other side.



TOYOTA

Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000004NUM00RX
Title: LIGHTING (EXT): LIGHTING SYSTEM: CUSTOMIZE PARAMETERS (2013 FR-S)		

CUSTOMIZE PARAMETERS

1. CUSTOMIZE LIGHTING SYSTEM (EXT)

HINT:

The following items can be customized.

NOTICE:

- When the customer requests a change in a function, first make sure that the function can be customized.
- Be sure to make a note of the current settings before customizing.
- When troubleshooting a function, first make sure that the function is set to the default setting.

(a) Customizing with the Techstream

- (1) Connect the Techstream to the DLC3.
- (2) Turn the ignition switch to ON.
- (3) Turn the Techstream on.
- (4) Enter the following menus: Body Electrical / Main Body / Utility / Customize / Light Control.
- (5) Select the setting by referring to the table below.

Light Control

DISPLAY	DEFAULT	CONTENT	SETTING	RELEVANT ECU
Response Time	Normal	Changes the delay timing of lighting the taillights when going into a tunnel when the light control switch is in the AUTO position.	Normal or Long	Main Body ECU (Network Gateway ECU)
Light Auto OFF Delay	30 s	Keeps the headlights on for a certain period of time after turning the ignition switch off and closing all doors with the low beam headlights on.	OFF, 30 s, 60 s or 90 s	
DRL Function	ON	ON/OFF of the DRL function	ON or OFF	
Follow Me Home Lighting Time	30 s	Changes the low beam headlight lighting time when ignition switch is off and dimmer switch is pulled to flash headlights once.	30 s, 60 s, 90s, or 120s	

HINT:

Items for which there are no settings do not appear on the Techstream, or do not operate.



Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PKV0AVX
Title: LIGHTING (EXT): LIGHTING SYSTEM: DATA LIST / ACTIVE TEST (2013 FR-S)		

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the Techstream to read the Data List allows the values or states of switches, sensors, actuator and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTICE:

In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Main Body / Data List.
- Read the Data List according to the display on the Techstream.

Main Body

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
IG SW	Ignition switch ON signal / ON or OFF	ON: Ignition switch ON OFF: Ignition switch off	-
ACC SW	Ignition switch ACC signal / ON or OFF	ON: Ignition switch ACC OFF: Ignition switch off	-
Dimmer SW	Dimmer switch high position signal / ON or OFF	ON: Dimmer switch in high or high flash position OFF: Dimmer switch in low position	-
Passing Light SW	Dimmer switch high flash position (pass) signal / ON or OFF	ON: Dimmer switch in high flash position OFF: Dimmer switch not in high flash position	-
Lighting 1	Light control switch tail position signal / ON or OFF	ON: Light control switch in tail or head position OFF: Light control switch in neither tail nor head position	-
Lighting 2	Light control switch head position signal / ON or	ON: Light control switch in head position OFF: Light control	-

	OFF	switch not in head position	
Lighting Hi	Light control switch head (Hi) position signal / ON or OFF	ON: Headlight high beam on OFF: Normal	-
Rear Fog Light SW	Rear fog light switch signal / ON or OFF	ON: Rear fog light switch on OFF: Rear fog light switch off	-
Front Fog Light SW	Front fog light switch signal / ON or OFF	ON: Front fog light switch on OFF: Front fog light switch off	-
Rear Fog Lamp Output	Rear fog light output / ON or OFF	ON: Rear fog light on OFF: Rear fog light off	-
Rear Fog Lamp Monitor	Rear fog light output / ON or OFF	ON: Rear fog light on OFF: Rear fog light off	-
Front Fog Light Output	Front fog light output / ON or OFF	ON: Front fog light on OFF: Front fog light off	-
Auto Light SW	Light control switch AUTO position signal / ON or OFF	ON: Light control switch in AUTO position OFF: Light control switch not in AUTO position	-
Head Light SW (Head)	Light control switch head position signal / ON or OFF	ON: Light control switch in head position OFF: Light control switch not in head position	-
Head Light SW (Tail)	Light control switch tail position signal / ON or OFF	ON: Light control switch in tail or head position OFF: Light control switch in neither tail nor head position	-
D Door Courtesy SW	Driver side door courtesy light switch signal / ON or OFF	ON: Driver side door open OFF: Driver side door closed	-
Response Time	Delay timing of lighting the taillights when the automatic light control sensor detects brightness change / Normal or Long	Customize setting displayed	-
Illumination Rate Info	Illumination rate information / 0.00 ms. to 2162.65 ms.	Value is output according to ambient light levels	-
Sensitivity	Sensitivity of the automatic light control system / Light2, Light1, Normal, Dark1 or Dark2	Customize setting displayed	-

DRL Function	DRL function / ON or OFF	Customize setting displayed	-
DRL Cancel SW	DRL cancel switch / ON or OFF	ON: DRL cancel OFF: Normal	-
DRL Output	DRL output / ON or OFF	ON: DRL output OFF: Normal	-
Light Auto OFF Delay	Light auto OFF delay / Off, 30 s, 60 s or 90 s	Customize setting displayed	-
Follow Me Home Lighting Time	Changes the lighting time of the follow me home system / 30 s, 60 s, 90s, or 120s	Customize setting displayed	-

HINT:

Items for which there are no settings do not appear on the Techstream, or do not operate.

2. ACTIVE TEST**HINT:**

Using the Techstream to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Main Body / Active Test.
- Perform the Active Test according to the display on the Techstream.

Main Body

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Daytime Running Light	Daytime running lights	ON/OFF	-
Taillight Relay	Taillight relay	ON/OFF	-
Headlight Relay	Headlight relay	ON/OFF	-
Headlight Hi	Headlight (high beam headlights)	ON/OFF	-
Front Fog Light Relay	Front fog light relay	ON/OFF	-
Rear Fog Light Relay	Rear fog light relay	ON/OFF	-

HINT:

Items for which there are no settings do not appear on the Techstream, or do not operate.



Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PKS08HX
Title: LIGHTING (EXT): LIGHTING SYSTEM: DIAGNOSIS SYSTEM (2013 FR-S)		

DIAGNOSIS SYSTEM

1. DESCRIPTION

- (a) Lighting system data and the Diagnostic Trouble Codes (DTCs) can be read from the Data Link Connector 3 (DLC3) of the vehicle. When the system seems to be malfunctioning, use the Techstream to check for malfunctions and to repair it.

2. CHECK DLC3

- (a) Check the DLC3  .

3. INSPECT BATTERY VOLTAGE

- (a) Measure the battery voltage with the ignition switch off.

Standard Voltage:

11 to 14 V

If the voltage is below 11 V, recharge or replace the battery.



Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PKT06BX
Title: LIGHTING (EXT): LIGHTING SYSTEM: DTC CHECK / CLEAR (2013 FR-S)		

DTC CHECK / CLEAR

1. CHECK DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Main Body / Trouble Codes.
- (e) Check for DTCs.

2. CLEAR DTC

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Main Body / Trouble Codes.
- (e) Clear the DTCs.



Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000011M307RX
Title: LIGHTING (EXT): LIGHTING SYSTEM: Headlight Dimmer Switch Circuit (2013 FR-S)		

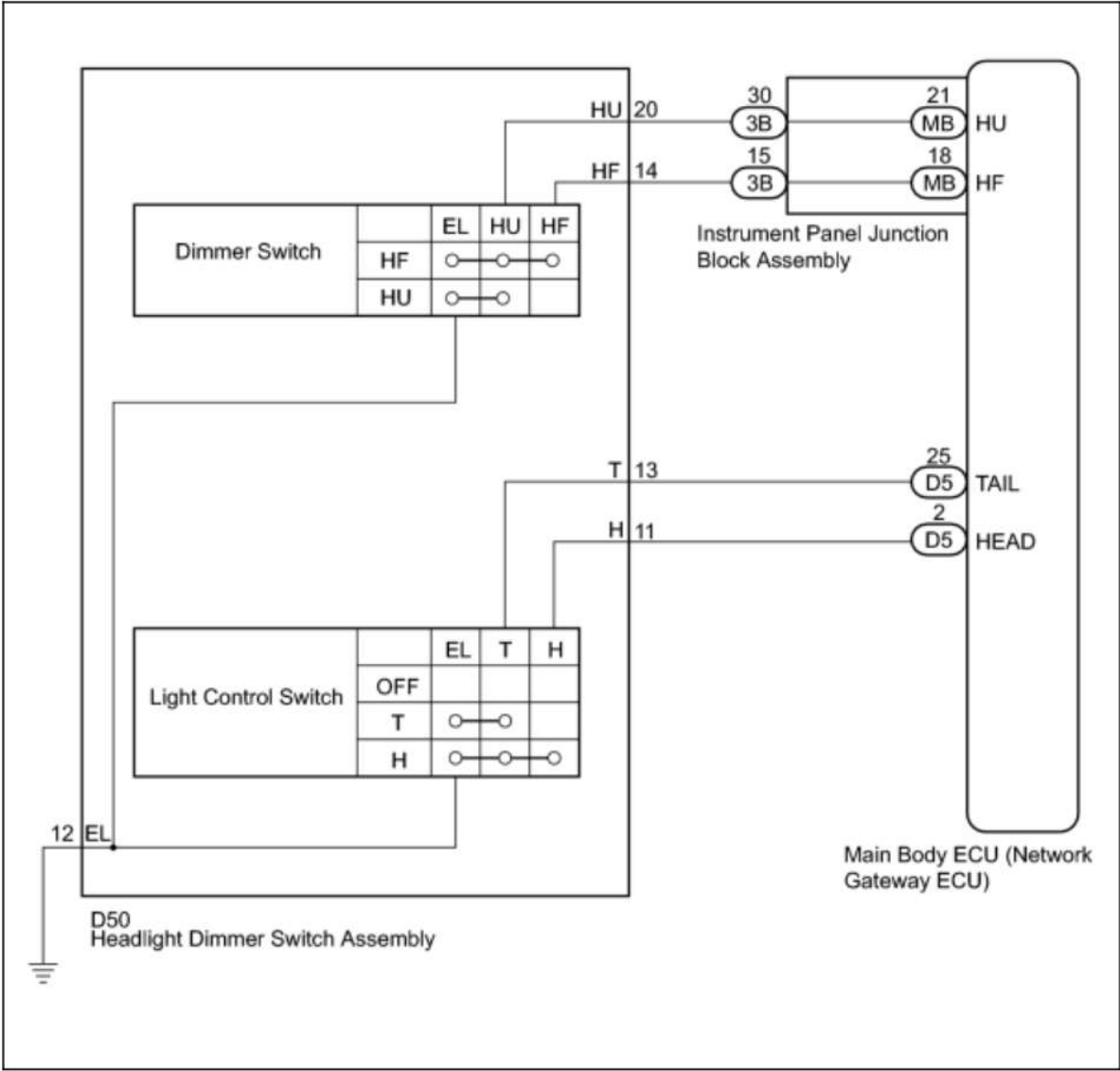
Headlight Dimmer Switch Circuit

DESCRIPTION

The main body ECU (network gateway ECU) receives the following switch information:

- Light control switch is in off, tail or head position
- Headlight dimmer switch is in high, low or high flash position

WIRING DIAGRAM



INSPECTION PROCEDURE

PROCEDURE

1. READ VALUE USING TECHSTREAM (HEADLIGHT DIMMER SWITCH ASSEMBLY)

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Main Body / Data List.
- (e) Read the display on the Techstream.

Main Body

TESTER DISPLAY	MEASUREMENT ITEM/RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Dimmer SW	Dimmer switch high position signal / ON or OFF	ON: Dimmer switch in high or high flash position OFF: Dimmer switch in low position	-
Passing Light SW	Dimmer switch high flash position (pass) signal / ON or OFF	ON: Dimmer switch in high flash position OFF: Dimmer switch not in high flash position	-
Head Light SW (Head)	Light control switch head position signal / ON or OFF	ON: Light control switch in head position OFF: Light control switch not in head position	-
Head Light SW (Tail)	Light control switch tail position signal / ON or OFF	ON: Light control switch in tail or head position OFF: Light control switch in neither tail nor head position	-
Lighting Hi	Light control switch head (Hi) position signal / ON or OFF	ON: Headlight high beam on OFF: Normal	-

OK:

The display is as specified in the normal condition column.

Result :

RESULT	PROCEED TO
OK	A
NG (Dimmer switch)	B
NG (Light control switch)	C

B INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY

C ► **INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY**

A ► **REPLACE MAIN BODY ECU (NETWORK GATEWAY ECU)**

2. INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY

(a) Remove the headlight dimmer switch assembly  .

(b) Inspect the headlight dimmer switch assembly  .

NG ► **REPLACE HEADLIGHT DIMMER SWITCH ASSEMBLY**

OK



3. CHECK HARNESS AND CONNECTOR (HEADLIGHT DIMMER SWITCH ASSEMBLY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY, BODY GROUND)

(a) Disconnect the 3B instrument panel junction block assembly connector.

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

Standard Resistance (Check for Open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D50-17 (HF) - 3B-15	Always	Below 1 Ω
D50-11 (HU) - 3B-30	Always	Below 1 Ω
D50-12 (EL) - Body ground	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D50-17 (HF) - Body ground	Always	10 k Ω or higher
D50-11 (HU) - Body ground	Always	10 k Ω or higher

NG ► **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK ► **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

4. INSPECT HEADLIGHT DIMMER SWITCH ASSEMBLY

- (a) Remove the headlight dimmer switch assembly  .
- (b) Inspect the headlight dimmer switch assembly  .

NG  **REPLACE HEADLIGHT DIMMER SWITCH ASSEMBLY**

OK



5. CHECK HARNESS AND CONNECTOR (HEADLIGHT DIMMER SWITCH ASSEMBLY - MAIN BODY ECU (NETWORK GATEWAY ECU), BODY GROUND)

- (a) Disconnect the D5 main body ECU (network gateway ECU) connector.
- (b) Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D50-20 (H) - D5-2 (HEAD)	Always	Below 1 Ω
D50-18 (T) - D5-25 (TAIL)	Always	Below 1 Ω
D50-12 (EL) - Body ground	Always	Below 1 Ω
D50-3 (LFG) - Body ground	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D50-20 (H) - Body ground	Always	10 k Ω or higher
D50-18 (T) - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK  **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE**

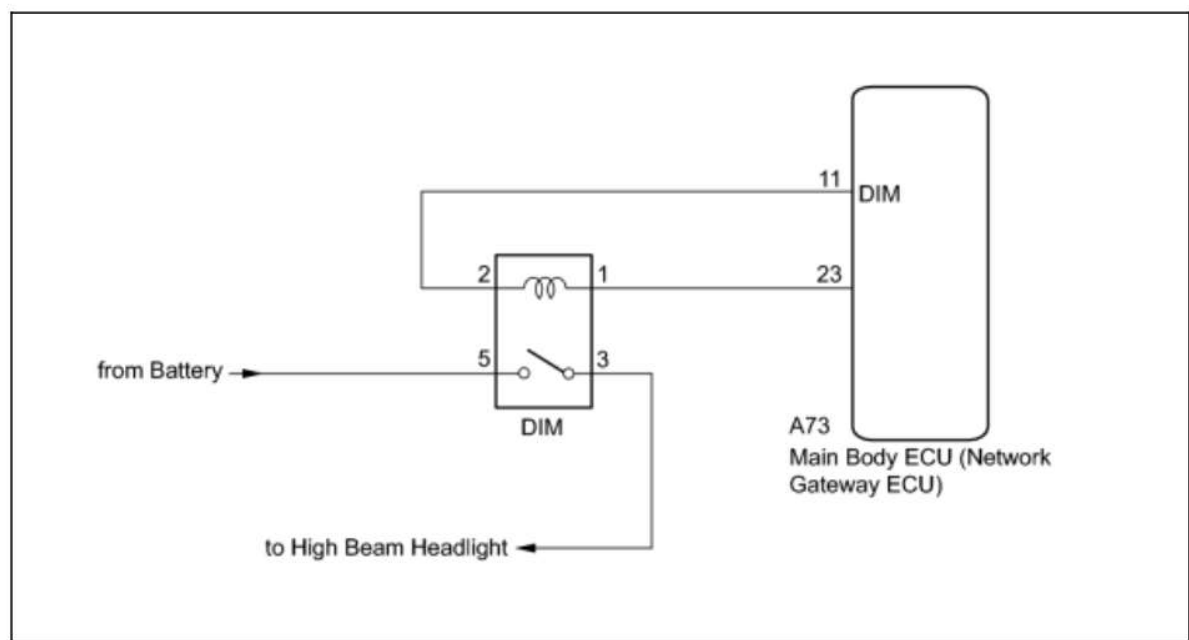
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001A7L070X
Title: LIGHTING (EXT): LIGHTING SYSTEM: High Beam Headlight Circuit (2013 FR-S)		

High Beam Headlight Circuit

DESCRIPTION

The main body ECU (network gateway ECU) receives headlight dimmer switch information signals, and illuminates the high beam headlight.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Inspect the fuses and bulbs for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. PERFORM ACTIVE TEST USING TECHSTREAM (HEAD LIGHT HI)

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.

(d) Enter the following menus: Body Electrical / Main Body / Active Test

(e) Check that the relay operates.

Main Body

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Head Light Hi	Headlight dimmer relay	ON/OFF	-

OK:

Relay operates (high beam headlights illuminate).

Result:

RESULT	PROCEED TO
NG	A
OK	B

B ▶ REPLACE MAIN BODY ECU (NETWORK GATEWAY ECU)

A



2.	INSPECT DIM RELAY
-----------	--------------------------

(a) Remove the DIM relay from the engine room relay block.

(b) Inspect the DIM relay .

NG ▶ REPLACE DIM RELAY

OK

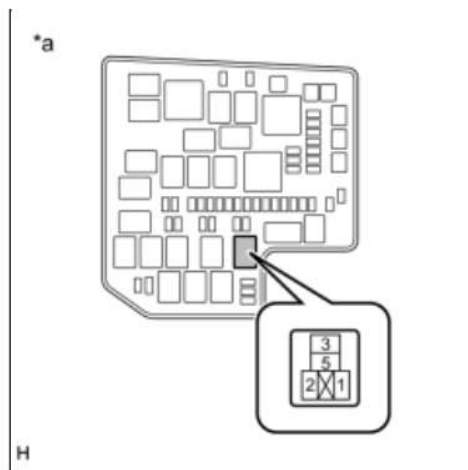


3.	CHECK HARNESS AND CONNECTOR (BATTERY - DIM RELAY)
-----------	--

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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED
-------------------	-----------	-----------



		CONDITION
Relay terminal 5 - Body ground	Always	11 to 14 V

Text in Illustration

*a	Engine Room Relay Block (DIM Relay Terminal)
----	--

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

4. CHECK HARNESS AND CONNECTOR (DIM RELAY - MAIN BODY ECU (NETWORK GATEWAY ECU))

- (a) Disconnect the A73 main body ECU (network gateway ECU) connector.
 (b) Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
Relay terminal 2 - A73-11 (DIM)	Always	Below 1 Ω
Relay terminal 1 - A73-23	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A73-11 (DIM) - Body ground	Always	10 k Ω or higher
A73-23 - Body ground	Always	10 k Ω or higher

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK ▶ PROCEED TO NEXT SUSPECTED AREA
SHOWN IN PROBLEM SYMPTOMS TABLE**



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Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PKJ0E5X
Title: LIGHTING (EXT): LIGHTING SYSTEM: HOW TO PROCEED WITH TROUBLESHOOTING (2013 FR-S)		

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the lighting system.
- *: Use the Techstream.

1. VEHICLE BROUGHT TO WORKSHOP

NEXT



2. CUSTOMER PROBLEM ANALYSIS CHECK AND SYMPTOM CHECK

NEXT



3. INSPECT BATTERY VOLTAGE

(a) Measure the battery voltage with the ignition switch off.

Standard Voltage:

11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

NEXT



4. CHECK FOR DTC*

(a) Check for DTCs .

Result:

RESULT	PROCEED TO
DTC is not output.	A

DTC is output.	B
----------------	---

B ▶ Go to step 7

A
▼

5.	PROBLEM SYMPTOMS TABLE
-----------	-------------------------------

(a) Refer to Problem Symptoms Table [INFO](#) .

Result:

RESULT	PROCEED TO
Fault is not listed in Problem Symptoms Table.	A
Fault is listed in Problem Symptoms Table.	B

B ▶ Go to step 7

A
▼

6.	OVERALL ANALYSIS AND TROUBLESHOOTING*
-----------	--

(a) Data List / Active Test [INFO](#)

(b) Terminals of ECU [INFO](#)

NEXT
▼

7.	ADJUST, REPAIR OR REPLACE
-----------	----------------------------------

NEXT
▼

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8.

CONFIRMATION TEST

NEXT ▶ END



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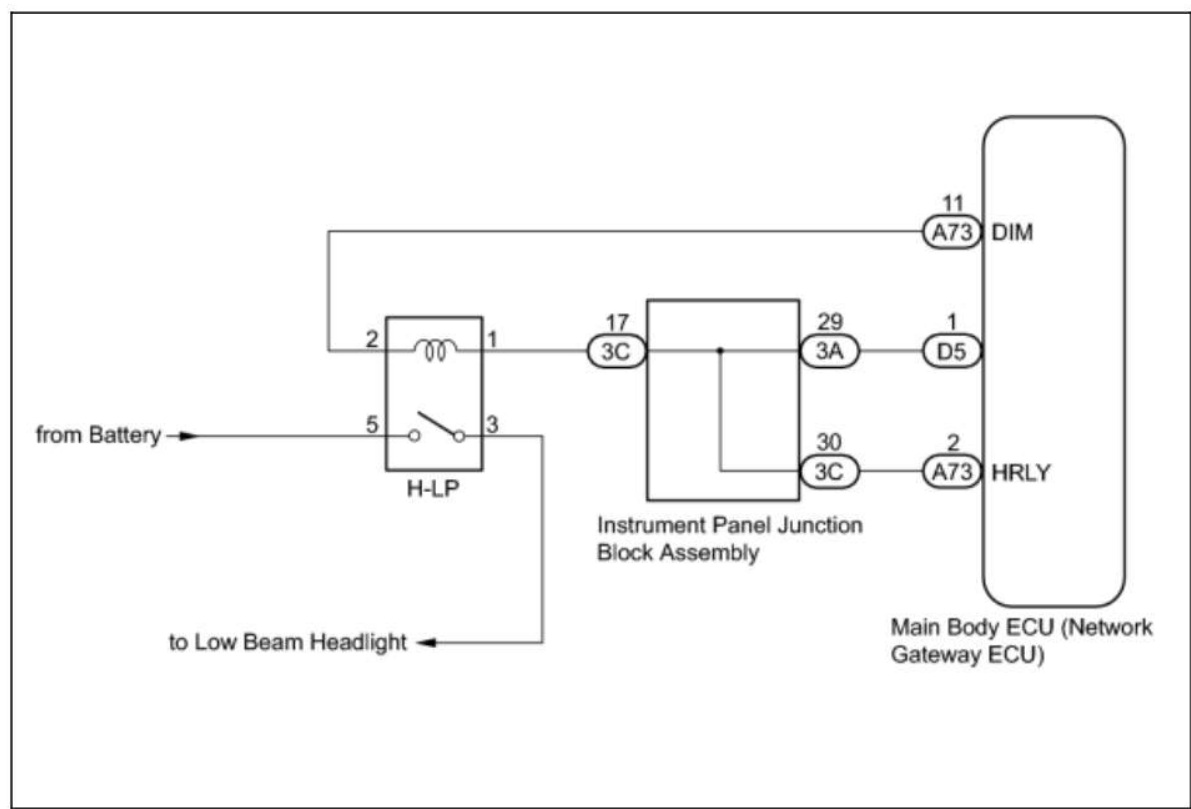
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000ZBM070X
Title: LIGHTING (EXT): LIGHTING SYSTEM: Low Beam Headlight Circuit (2013 FR-S)		

Low Beam Headlight Circuit

DESCRIPTION

The main body ECU (network gateway ECU) receives headlight dimmer switch assembly information signals, and illuminates the low beam headlight.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Inspect the fuses and bulbs for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	PERFORM ACTIVE TEST USING TECHSTREAM (H-LP RELAY)
----	---

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Main Body / Active Test
- (e) Check that the relay operates.

Main Body

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Headlight Relay	Low beam headlight relay	ON/OFF	-

OK:

Headlight relay operates (low beam headlights illuminate).

Result:

RESULT	PROCEED TO
NG	A
OK	B

B ► **REPLACE MAIN BODY ECU (NETWORK GATEWAY ECU)**

A

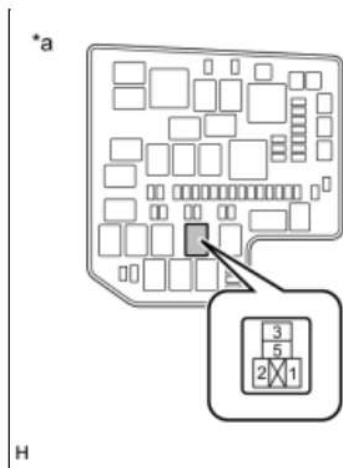
2.	INSPECT H-LP RELAY
-----------	---------------------------

- (a) Remove the H-LP relay from the engine room relay block.
- (b) Inspect the H-LP relay INFO.

NG ► **REPLACE H-LP RELAY**

OK

3.	CHECK HARNESS AND CONNECTOR (H-LP RELAY - BATTERY)
-----------	---



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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
Relay terminal 5 - Body ground	Always	11 to 14 V

Text in Illustration

*a	Engine Room Relay Block (H-LP Relay Terminal)
----	--

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



4.	CHECK HARNESS AND CONNECTOR (H-LP RELAY - MAIN BODY ECU (NETWORK GATEWAY ECU))
-----------	---

(a) Disconnect the A73 main body ECU (network gateway ECU) connector.

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

Standard Resistance (Check for Open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
Relay terminal 2 - A73-11 (DIM)	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
A73-11 (DIM) - Body ground	Always	10 k Ω or higher

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



5.**CHECK HARNESS AND CONNECTOR (H-LP RELAY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY)**

- (a) Disconnect the 3C instrument panel junction block assembly connector.
- (b) Measure the resistance according to the value(s) in the table below.
- Standard Resistance (Check for Open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
Relay terminal 1 - 3C-17	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3C-17 - Body ground	Always	10 k Ω or higher

NG  **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK**6.****CHECK HARNESS AND CONNECTOR (INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY - MAIN BODY ECU (NETWORK GATEWAY ECU))**

- (a) Disconnect the 3A and 3C instrument panel junction block assembly connector.
- (b) Disconnect the D5 and A73 main body ECU (network gateway ECU) connector.
- (c) Measure the resistance according to the value(s) in the table below.
- Standard Resistance (Check for Open):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3A-29 - D5-1	Always	Below 1 Ω
3C-30 - A73-2 (HRLY)	Always	Below 1 Ω

Standard Resistance (Check for Short):

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D5-1 - Body ground	Always	10 k Ω or higher

A73-2 (HRLY) - Body ground	Always	10 kΩ or higher
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NG

▶

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

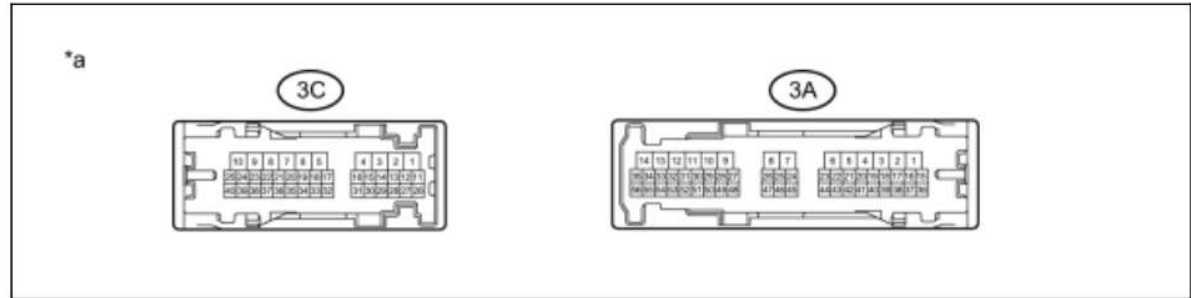
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7. INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

- (a) Remove the instrument panel junction block assembly

INFO

 .
- (b) Remove the main body ECU (network gateway ECU) from the instrument panel junction block assembly.
- (c) Measure the resistance according to the value(s) in the table below.



Text in Illustration

*a	Component without harness connected (Instrument Panel Junction Block Assembly)	-	-
----	---	---	---

Standard Resistance:		
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3C-17 - 3A-29	Always	Below 1 Ω
3C-17 - 3C-30	Always	Below 1 Ω

NG

▶

REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

OK

▶

PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE

Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM0000011R003FX
Title: LIGHTING (EXT): LIGHTING SYSTEM: OPERATION CHECK (2013 FR-S)		

OPERATION CHECK

1. DAYTIME RUNNING LIGHT SYSTEM OPERATION CHECK

- (a) Start the engine.
- (b) Shift lever is other than in P*1.
- (c) Release the parking brake.
- (d) Turn the light control switch to the off.
- (e) Ignition switch ON.
- (f) Check that the high beam headlights*2 and taillights come on (when the light control switch is in off, the taillights do not come on).

*1: for Automatic Transmission

*2: Brightness of the headlights is decreased.

2. INSPECT BATTERY SAVER

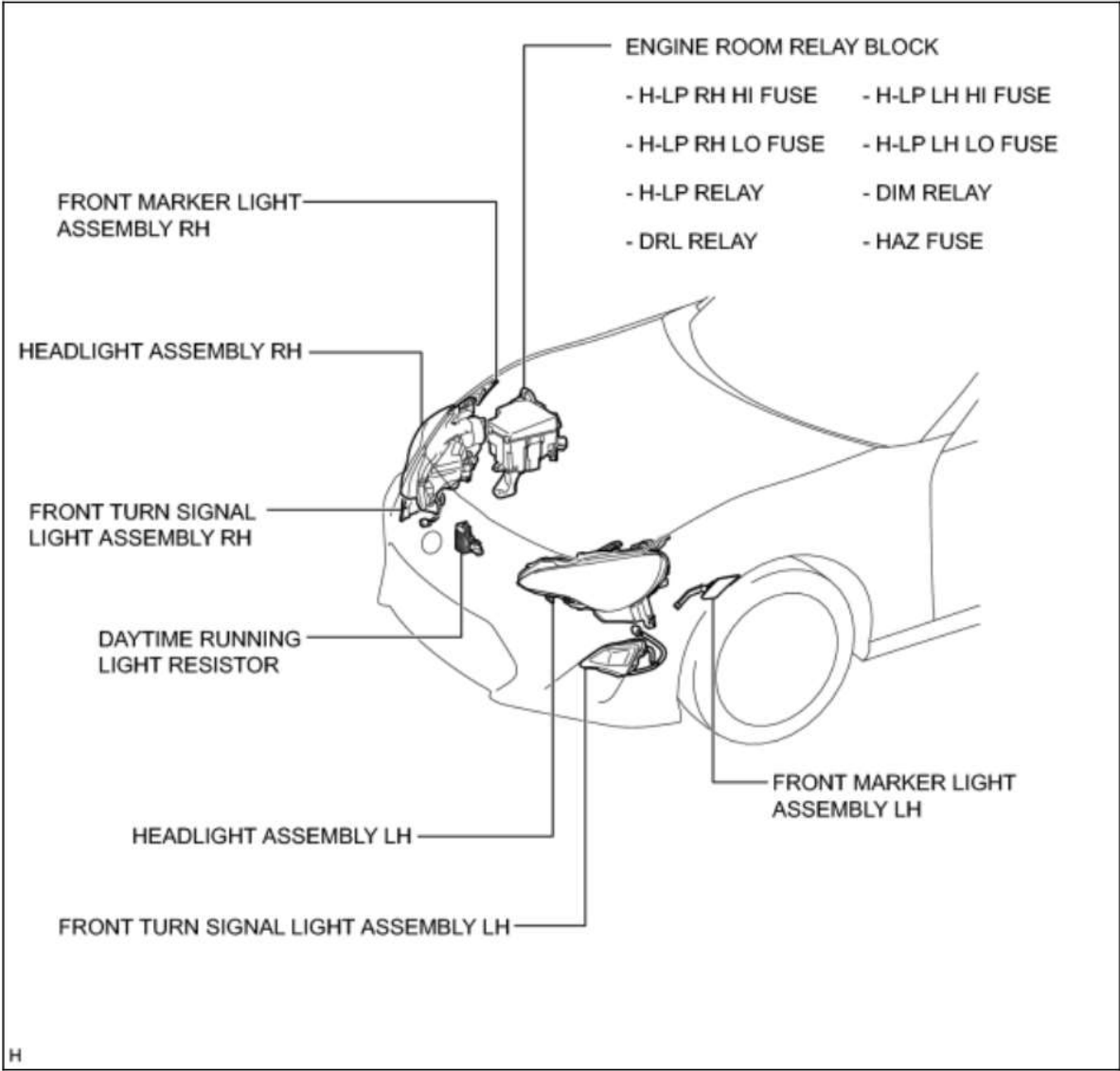
- (a) With the ignition switch off, turn the light control switch to HEAD to illuminate the headlights.
- (b) Check that the headlights and taillights turn off when the light control switch remain in the same condition for 20 minutes.



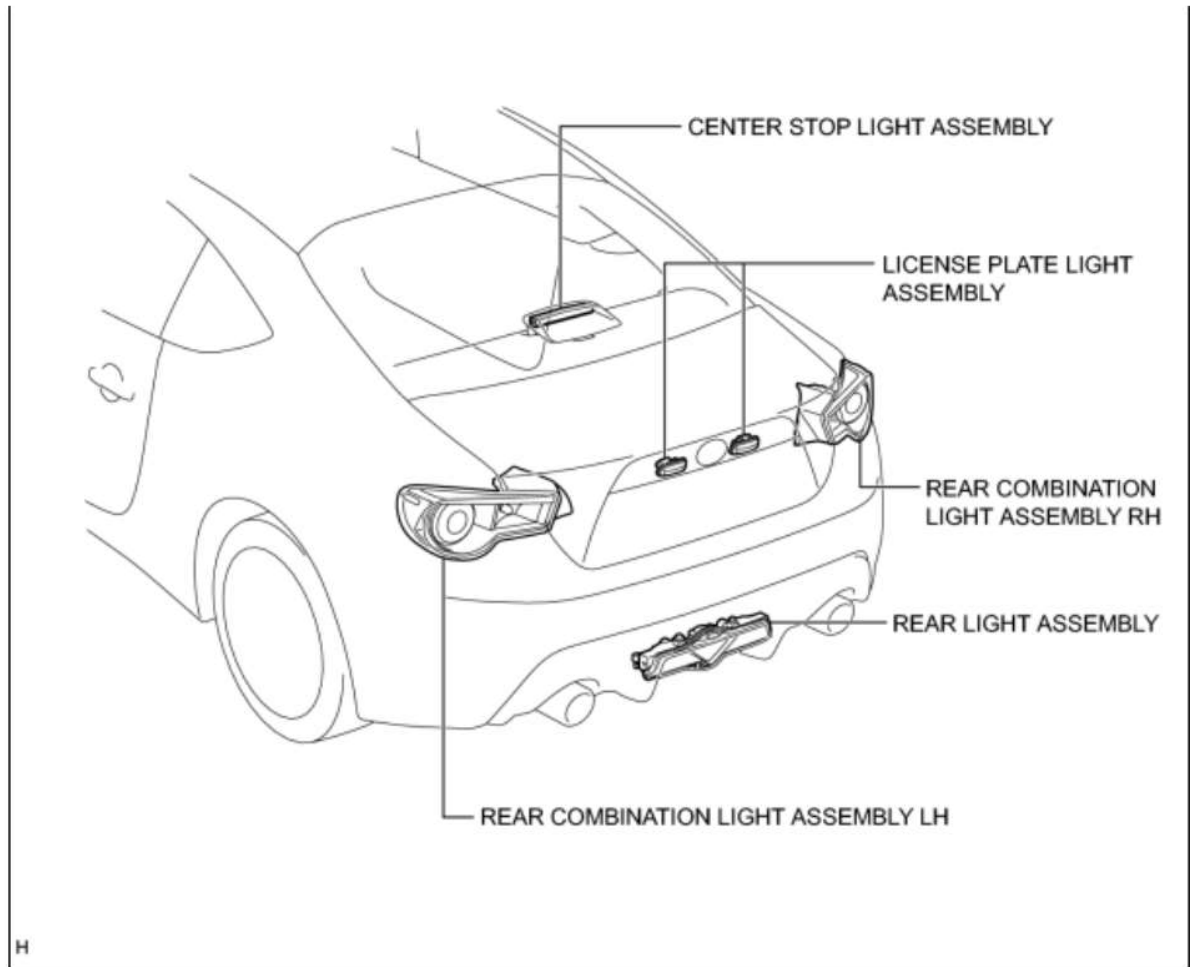
Last Modified: 3-27-2012	6.4 R	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PKL06CX
Title: LIGHTING (EXT): LIGHTING SYSTEM: PARTS LOCATION (2013 FR-S)		

PARTS LOCATION

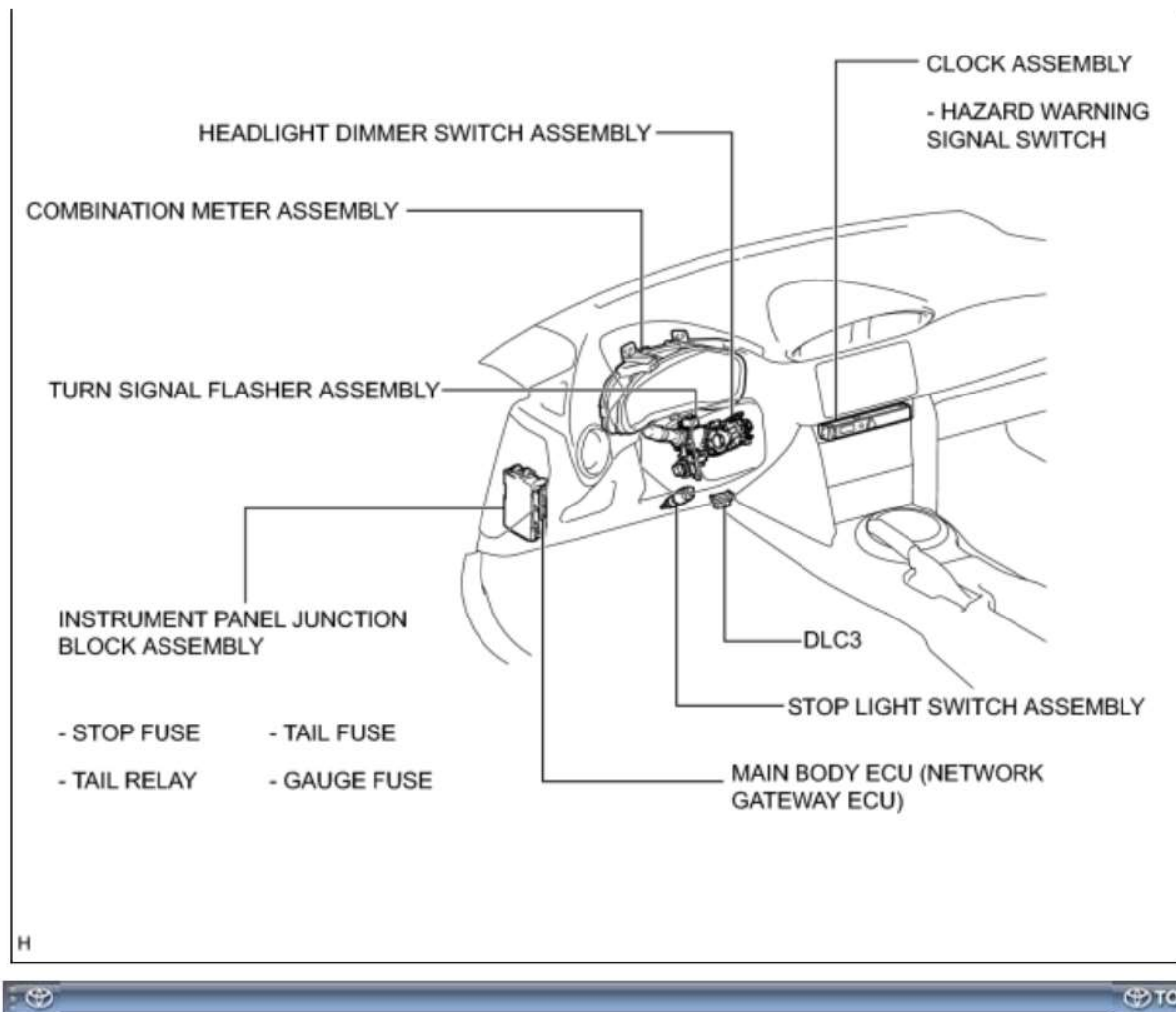
ILLUSTRATION



ILLUSTRATION



ILLUSTRATION



Last Modified: 3-27-2012	6.4 L	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002CDW04CX
Title: LIGHTING (EXT): LIGHTING SYSTEM: PRECAUTION (2013 FR-S)		

PRECAUTION

1. PRECAUTION FOR LIGHT BULB REPLACEMENT

- (a) When the headlights are illuminated, do not cover the headlights for 3 minutes or more.

NOTICE:

As the outer lens of the headlight is made of resin, the resulting heat created when covering the headlight for an extended period of time may deform the headlight.



Last Modified: 3-27-2012	6.4 T	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000002CE20BVX
Title: LIGHTING (EXT): LIGHTING SYSTEM: PROBLEM SYMPTOMS TABLE (2013 FR-S)		

PROBLEM SYMPTOMS TABLE

Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

Headlight

SYMPTOM	SUSPECTED AREA	SEE PAGE
Low beam headlights and high beam headlights do not illuminate.	MAIN fuse	-
	Headlight dimmer switch circuit	INFO
	Main body ECU (network gateway ECU)	-
	Harness or connector	-
Low beam headlight on one side does not illuminate.	H-LP LH LO fuse or H-LP RH LO fuse	-
	No. 1 headlight bulb	-
	Headlight unit	-
	Main body ECU (network gateway ECU)	-
	Harness or connector	-
Both left and right low beam headlights do not illuminate.	H-LP LH LO fuse and H-LP RH LO fuse	-
	Headlight dimmer switch circuit	INFO
	Low beam headlight circuit	INFO
	Harness or connector	-
High beam headlight on one side do not illuminate.	H-LP LH HI fuse or H-LP RH HI fuse	-
	No. 2 headlight bulb	-
	Headlight unit	-
	Main body ECU (network gateway ECU)	-
	Harness or connector	-
	H-LP LH HI fuse and H-LP RH HI fuse	-
	Headlight dimmer switch	

Both left and right high beam headlight do not illuminate.	circuit	INFO
	High beam headlight circuit	INFO
	Harness or connector	-
High beam headlights do not illuminate with "High Flash " function (passing function)	Headlight dimmer switch circuit	INFO
	Harness or connector	-

Taillight

SYMPTOM	SUSPECTED AREA	SEE PAGE
Both left and right tail lights do not illuminate (clearance lights and license plate lights included).	TAIL fuse	-
	Headlight dimmer switch circuit	INFO
	Taillight circuit	INFO
	Main body ECU (network gateway ECU)	-
	Harness or connector	-
Tail light on one side does not illuminate.	Rear combination light socket and wire sub-assembly	INFO
	Rear combination light lens and body	-
	Harness or connector	-

License Plate Light

SYMPTOM	SUSPECTED AREA	SEE PAGE
License plate lights do not illuminate (taillight is normal).	License plate light bulb	-
	License plate light assembly	INFO
	Harness or connector	-

Rear Light

SYMPTOM	SUSPECTED AREA	SEE PAGE
Rear light does not illuminate.	Back-up light switch assembly*1	INFO
	Park/neutral position switch assembly*2	INFO
	Harness or connector	-
Rear light on one side does not illuminate.	Buck-up light bulb	INFO
	Back-up light socket and wire sub-assembly	-
	Harness or connector	-

*1: w/ Manual Transmission

*2: w/ Automatic Transmission

Stop Light

SYMPTOM	SUSPECTED AREA	SEE PAGE
Stop light does not illuminate.	STOP fuse	-
	Stop light switch assembly	INFO
	Noise filter	INFO
	Harness or connector	-
Stop light on one side does not illuminate.	Rear combination light socket and wire sub-assembly	INFO
	Rear combination light lens and body	-
	Harness or connector	-

Center Stop Light

SYMPTOM	SUSPECTED AREA	SEE PAGE
Center stop light does not illuminate.	Center stop light assembly	INFO
	Harness or connector	-

Turn Signal Light

SYMPTOM	SUSPECTED AREA	SEE PAGE
Turn signal lights does not illuminate.	GAUGE fuse	-
	Turn signal flasher assembly	INFO
	Headlight dimmer switch circuit	INFO
	Harness or connector	-
Front turn signal light on one side does not illuminate.	Front turn signal light bulb	-
	Front turn signal light assembly	-
	Front turn signal light socket	INFO
	Harness or connector	-
Clearance lights do not illuminate (taillights are normal).	Front turn signal light bulb	-
	Front turn signal light assembly	-
	Front turn signal light socket	INFO
	Harness or connector	-
Front marker light on one side does not illuminate.	Front marker light bulb	-
	Front marker light assembly	-
	Front marker light socket and wire	-
	Harness or connector	-
	Rear turn signal light bulb	-

Rear turn signal light on one side does not illuminate.	Rear combination light lens and body	-
	Rear combination light socket and wire sub-assembly	INFO
	Harness or connector	-

Hazard Warning Light

SYMPTOM	SUSPECTED AREA	SEE PAGE
Hazard warning lights do not operate (turn signal lights are normal).	Turn signal flasher assembly	INFO
	Clock assembly	INFO
	Harness or connector	-

Battery Saving Control

SYMPTOM	SUSPECTED AREA	SEE PAGE
Light auto turn off system does not operate.	Door courtesy switch circuit	INFO
	IG signal circuit	INFO
	Main body ECU (network gateway ECU)	-

Daytime Running Light System

SYMPTOM	SUSPECTED AREA	SEE PAGE
Daytime running light system does not operate.	MPX-B fuse	-
	DRL relay	-
	Low beam headlight relay circuit	INFO
	Taillight relay circuit	INFO
	Main body ECU (network gateway ECU)	-
	Daytime Running Light Resister	-
	Harness or connector	-



Last Modified: 3-27-2012	6.4 D	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PKR06HX
Title: LIGHTING (EXT): LIGHTING SYSTEM: SYSTEM DESCRIPTION (2013 FR-S)		

SYSTEM DESCRIPTION

1. DAYTIME RUNNING LIGHT SYSTEM

(a) The daytime running light system is designed to automatically illuminate the high beam headlights*1, taillights, clearance lights and license plate lights during the daytime to make the vehicle more visible to other vehicles.

- This system is controlled by the main body ECU (network gateway ECU).
- This system is enabled when the following conditions are met:
 - Ignition switch is ON.
 - Shift lever is other than in P*2.
 - Parking brake switch is off.
 - Engine speed signal is input (engine running).
 - The light control switch is in off or the tail position (when the light control switch is in off, the taillights, clearance lights and license plate lights do not come on).
 - Ignition switch is ACC.
 - *1: Brightness of the headlights is decreased.
 - *2: for Automatic Transmission

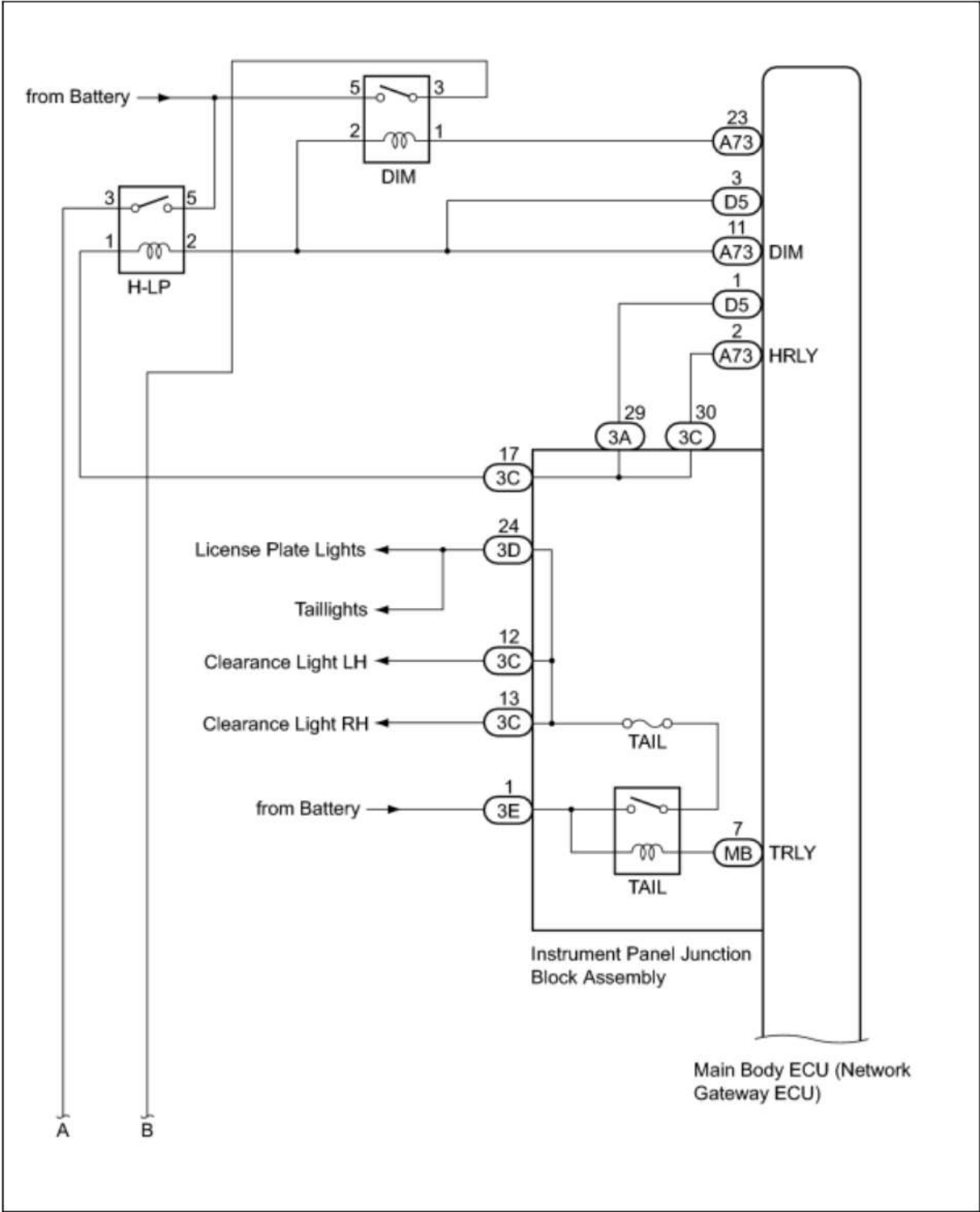


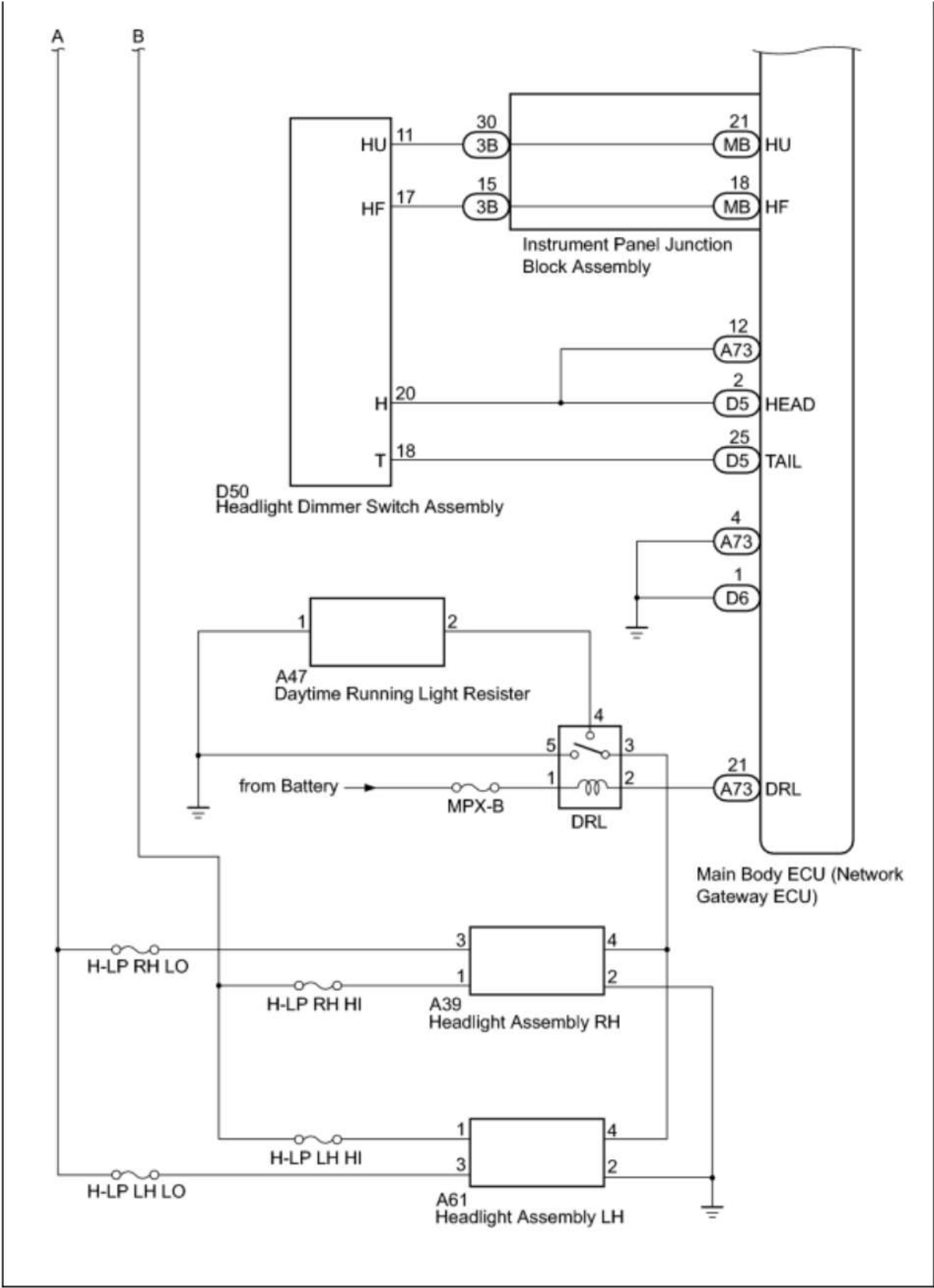
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Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PKU05UX
Title: LIGHTING (EXT): LIGHTING SYSTEM: SYSTEM DIAGRAM (2013 FR-S)		

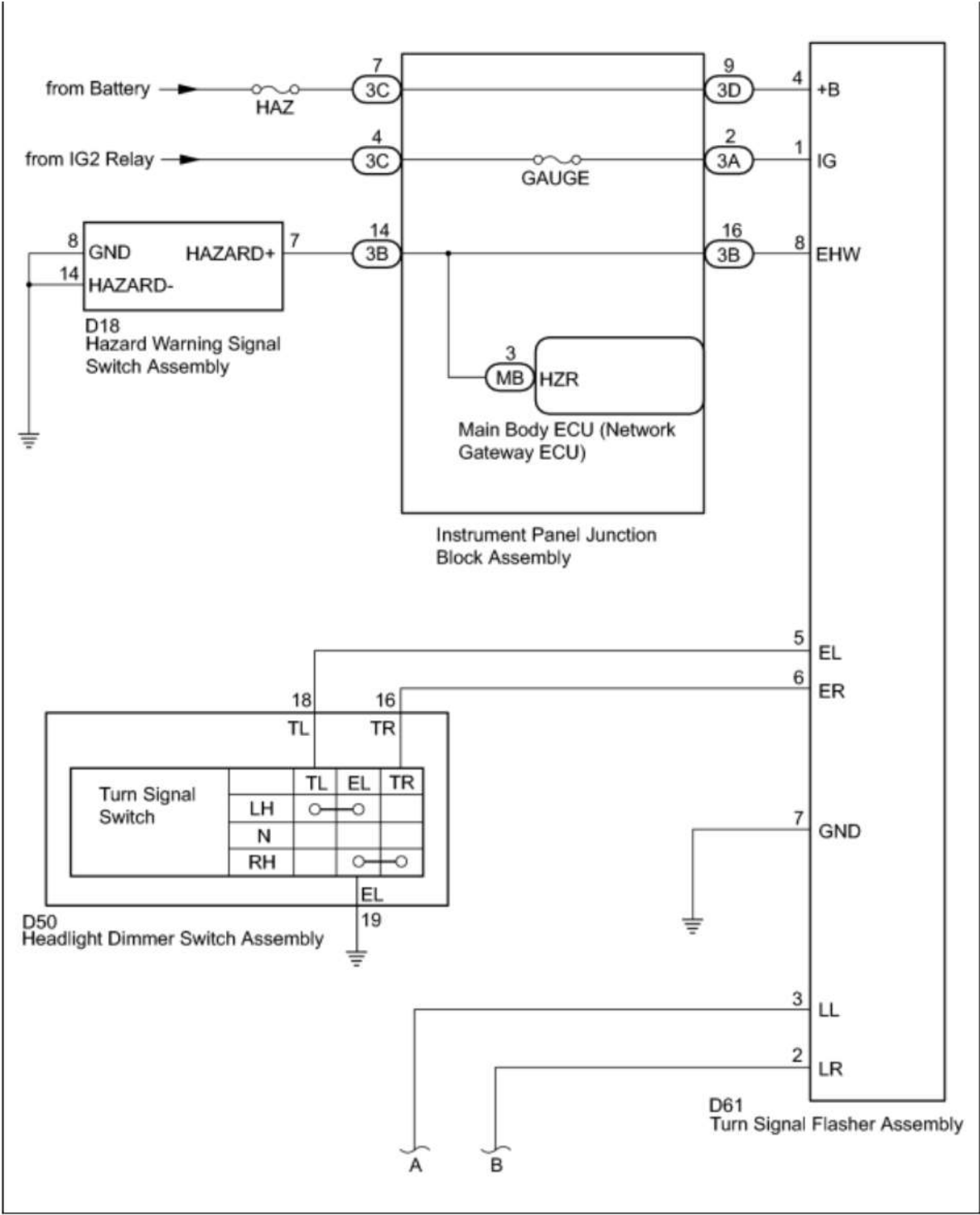
SYSTEM DIAGRAM

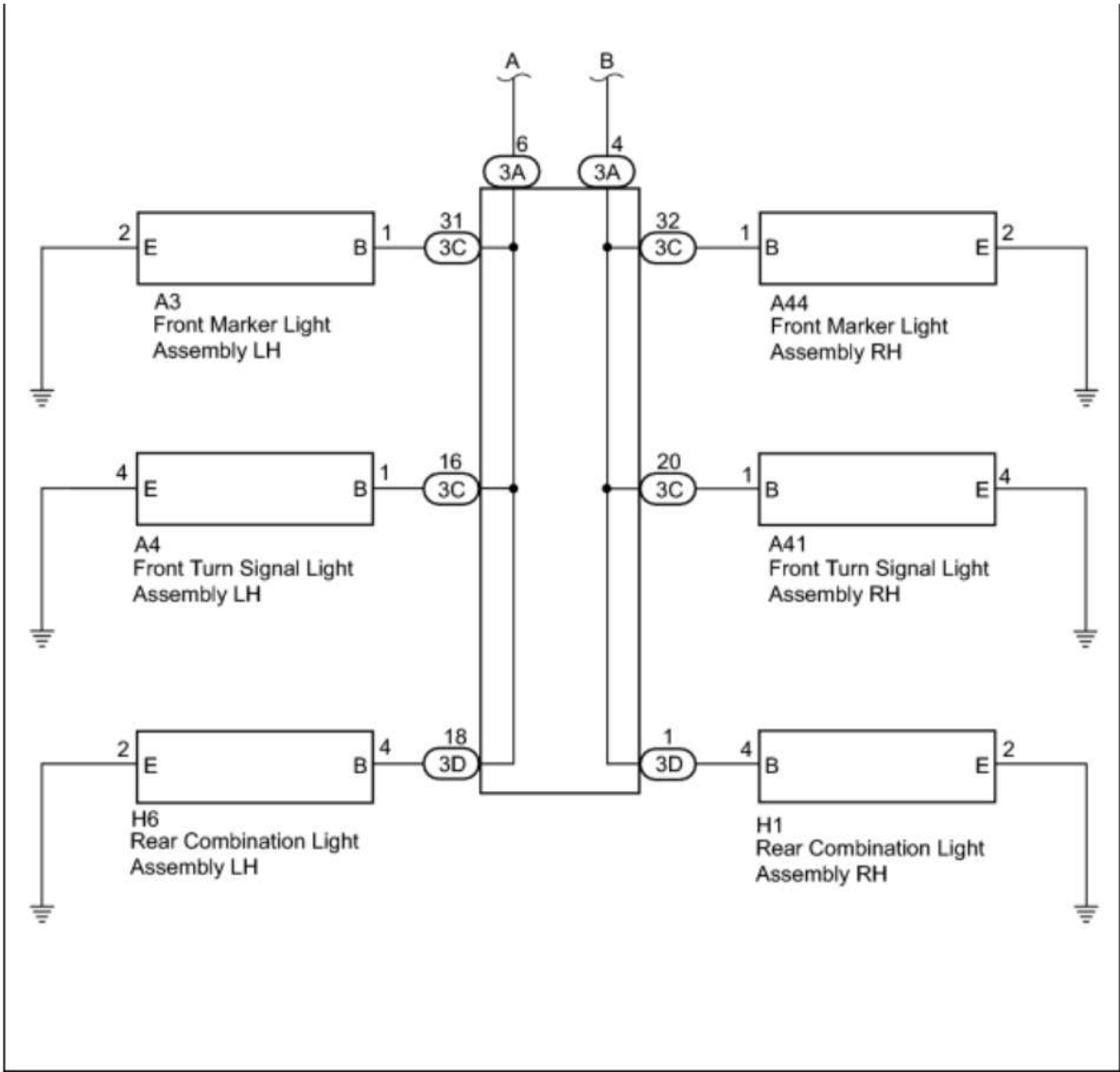
1. HEADLIGHT



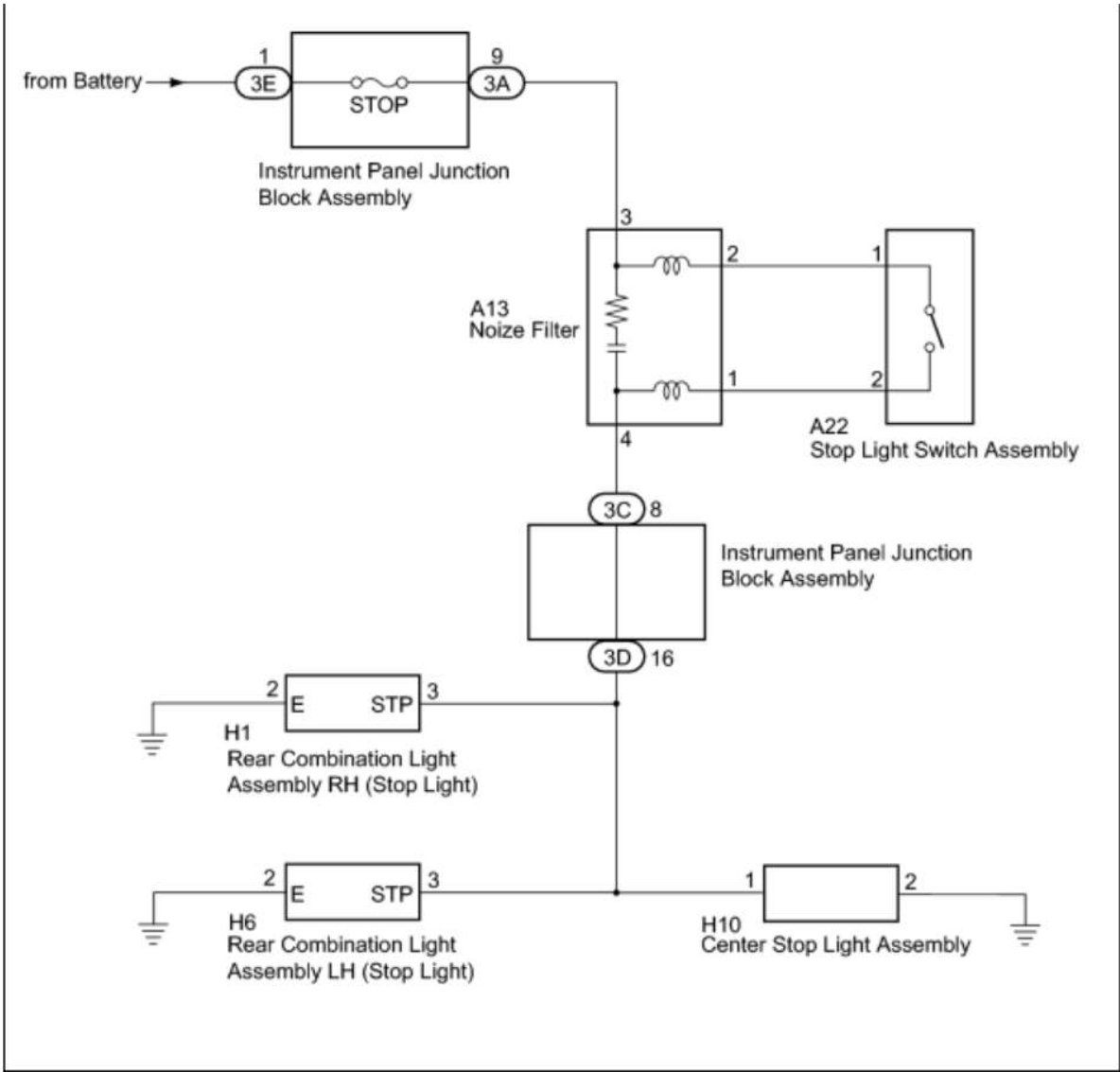


2. TURN SIGNAL LIGHT

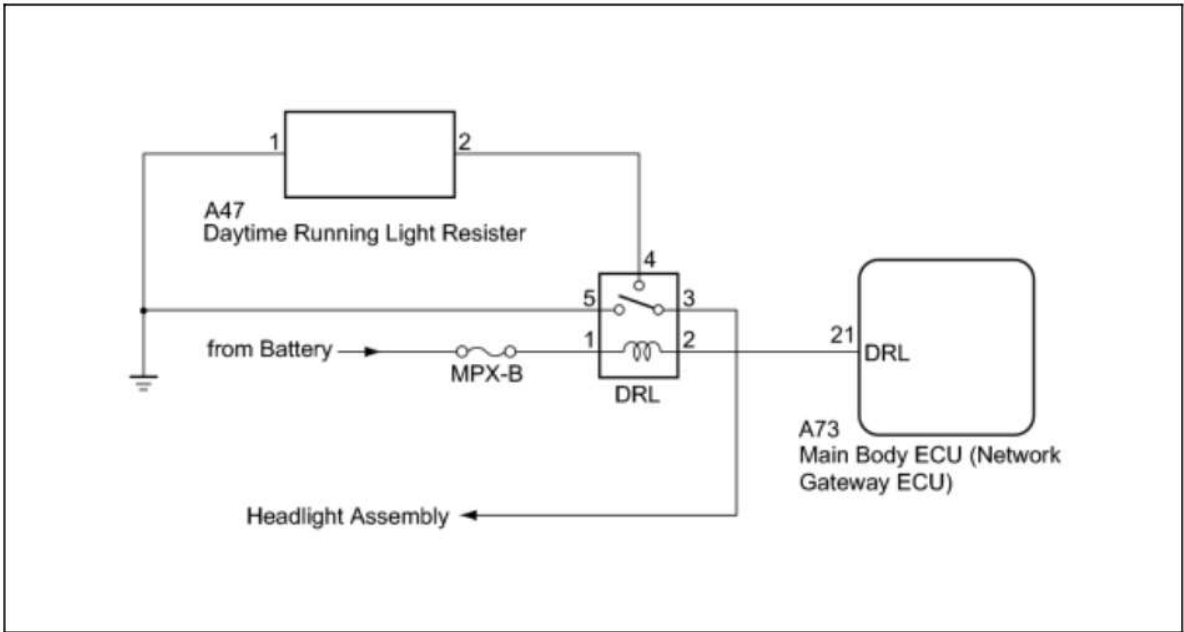




3. STOP LIGHT



4. DAYTIME RUNNING LIGHT SYSTEM





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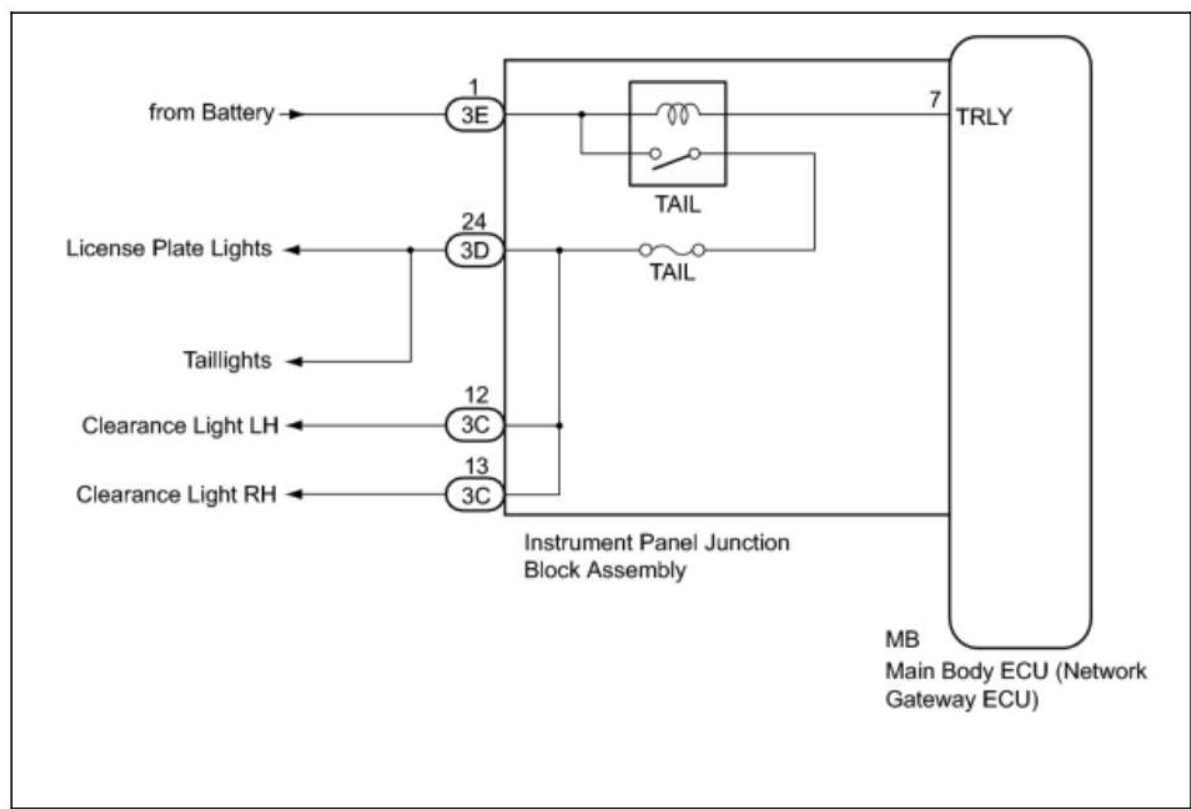
Last Modified: 3-27-2012	6.4 J	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001MEH08MX
Title: LIGHTING (EXT): LIGHTING SYSTEM: Taillight Relay Circuit (2013 FR-S)		

Taillight Relay Circuit

DESCRIPTION

The main body ECU (network gateway ECU) receives headlight dimmer switch assembly information signals, and illuminates the clearance lights, taillights and license plate lights.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Inspect the fuses and bulbs for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1.	PERFORM ACTIVE TEST USING TECHSTREAM (TAIL RELAY)
----	---

- (a) Connect the Techstream to the DLC3.
- (b) Turn the ignition switch to ON.
- (c) Turn the Techstream on.
- (d) Enter the following menus: Body Electrical / Main Body / Active Test
- (e) Check that the relay operates.

Main Body

TESTER DISPLAY	TEST PART	CONTROL RANGE	DIAGNOSTIC NOTE
Taillight Relay	Taillight relay	ON/OFF	-

OK:

Taillight relay operates (taillights illuminate).

Result:

RESULT	PROCEED TO
NG	A
OK	B

B ► **REPLACE MAIN BODY ECU (NETWORK GATEWAY ECU)**

A
▼

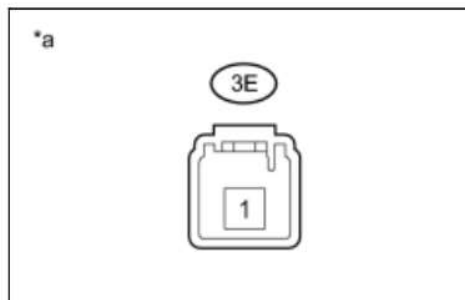
2.	CHECK HARNESS AND CONNECTOR (BATTERY - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY)
-----------	---

- (a) Disconnect the 3E instrument panel junction block assembly connector.

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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3E-1 - Body ground	Always	11 to 14 V

Text in Illustration

*a	Component without harness connected (Instrument Panel Junction Block Assembly)
----	--

REPAIR OR REPLACE HARNESS OR

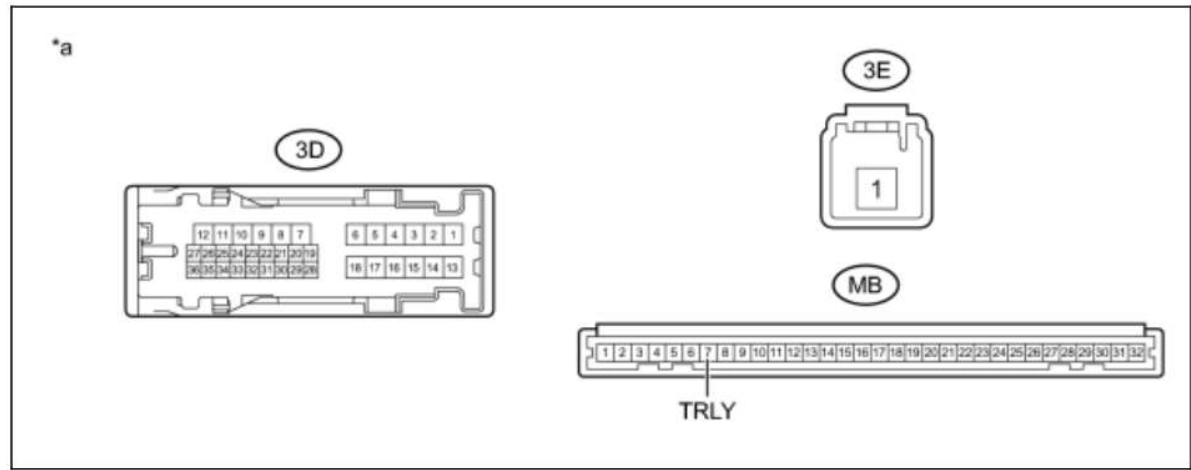
NG▶CONNECTOR

OK

▼

3. INSPECT INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

- (a) Remove the instrument panel junction block assembly INFO.
- (b) Remove the main body ECU (network gateway ECU) from the instrument panel junction block assembly.
- (c) Measure the voltage according to the value(s) in the table below.



Text in Illustration

*a	Component without harness connected (Instrument Panel Junction Block Assembly)	-	-
----	---	---	---

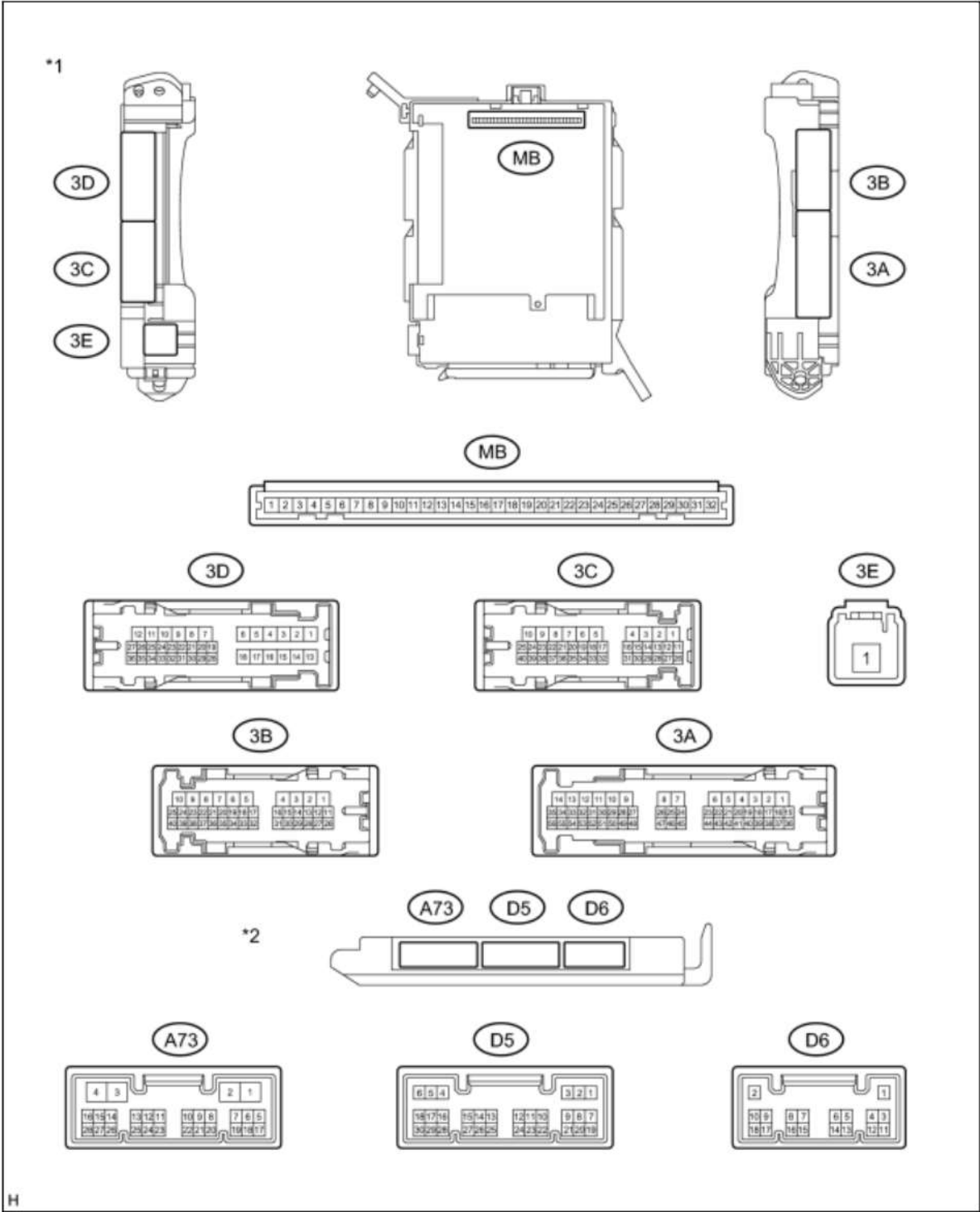
Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3C-12 - Battery negative (-) terminal	Connect a positive (+) lead from the battery → 3E-1 Connect a negative (-) lead from the battery → MB-7 (TRLY)	11 to 14 V
3C-13 - Battery negative (-) terminal	Connect a positive (+) lead from the battery → 3E-1 Connect a negative (-) lead from the battery → MB-7 (TRLY)	11 to 14 V

Last Modified: 3-27-2012	6.4 U	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000000PKM051X
Title: LIGHTING (EXT): LIGHTING SYSTEM: TERMINALS OF ECU (2013 FR-S)		

TERMINALS OF ECU

1. CHECK MAIN BODY ECU (NETWORK GATEWAY ECU)



Text in Illustration

*1	Instrument Panel Junction Block Assembly	*2	Main Body ECU (Network Gateway ECU)
----	--	----	-------------------------------------

- (a) Remove the main body ECU (network gateway ECU) from the instrument panel junction block assembly.
- (b) Disconnect the A73 and D6 main body ECU (network gateway ECU) connectors.
- (c) Measure the resistance and voltage according to the value(s) in the table below.

TERMINAL NO.	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
A73-4 (GND) - Body ground	B-Y - Body ground	Ground	Always	Below 1 Ω
D6-1 (GND) - Body ground	B - Body ground	Ground	Always	Below 1 Ω
3C-4 - Body ground	None - Body ground	Ignition switch power supply	Ignition switch ON	11 to 14 V
			Ignition switch off	Below 1 V
3C-7 - Body ground	None - Body ground	Battery power supply	Always	11 to 14 V
3E-1 - Body ground	None - Body ground	Battery power supply	Always	11 to 14 V

If the result is not as specified, there may be a malfunction in the wire harness.

- (d) Reconnect the instrument panel junction block assembly and main body ECU (network gateway ECU) connectors.
- (e) Measure the voltage or check for pulses according to the value(s) in the table below.

TERMINAL NO. (SYMBOL)	WIRING COLOR	TERMINAL DESCRIPTION	CONDITION	SPECIFIED CONDITION
MB-21 (HU) - Body ground	None - Body ground	Dimmer switch high signal	Dimmer switch in high position	Below 1 V
			Dimmer switch in low position	11 to 14 V
MB-18 (HF) - Body ground	None - Body ground	Dimmer switch high flash signal	Dimmer switch in high flash position	Below 1 V
			Dimmer switch not in high flash position	11 to 14 V
D5-2 (HEAD) - Body ground	W - Body ground	Light control switch head signal	Light control switch in head position	Below 1 V
			Light control switch not in head position	11 to 14 V
D5-25 (TAIL) - Body ground	BE - Body ground	Light control switch tail signal	Light control switch in tail or head position	Below 1 V
			Light control switch in neither tail nor head position	11 to 14 V
A73-2 (HRLY) - Body ground	L - Body ground	Headlight relay drive output	Light control switch in head	Below 1 V

			Light control switch not in head	11 to 14 V
A73-11 (DIM) - Body ground	G - Body ground	Dimmer relay drive output	Dimmer switch in high or high flash position	Below 1 V
			Dimmer switch in low position	11 to 14 V

HINT:

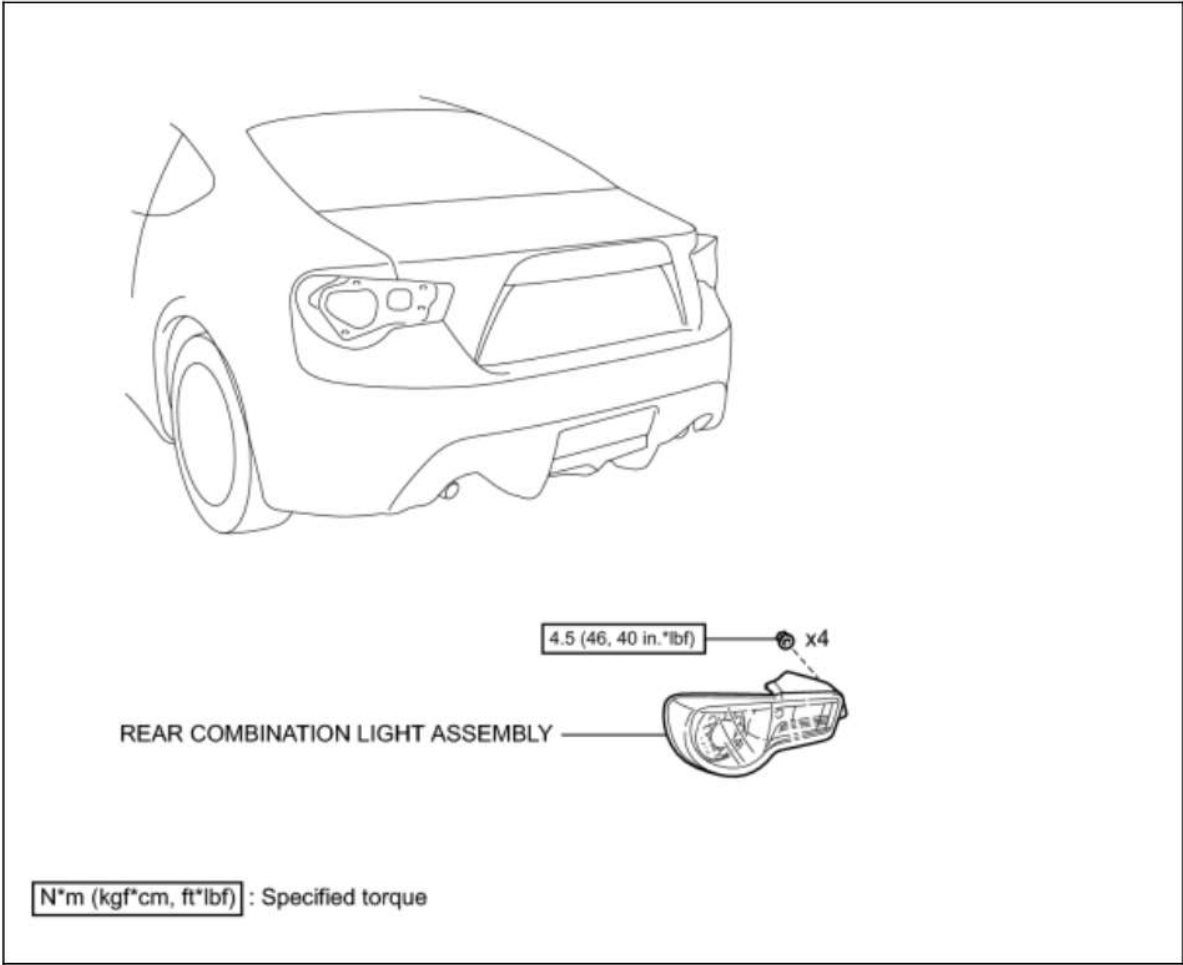
If the result is not as specified, the main body ECU (network gateway ECU) may have a malfunction.



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVM01SX
Title: LIGHTING (EXT): REAR COMBINATION LIGHT ASSEMBLY: COMPONENTS (2013 FR-S)		

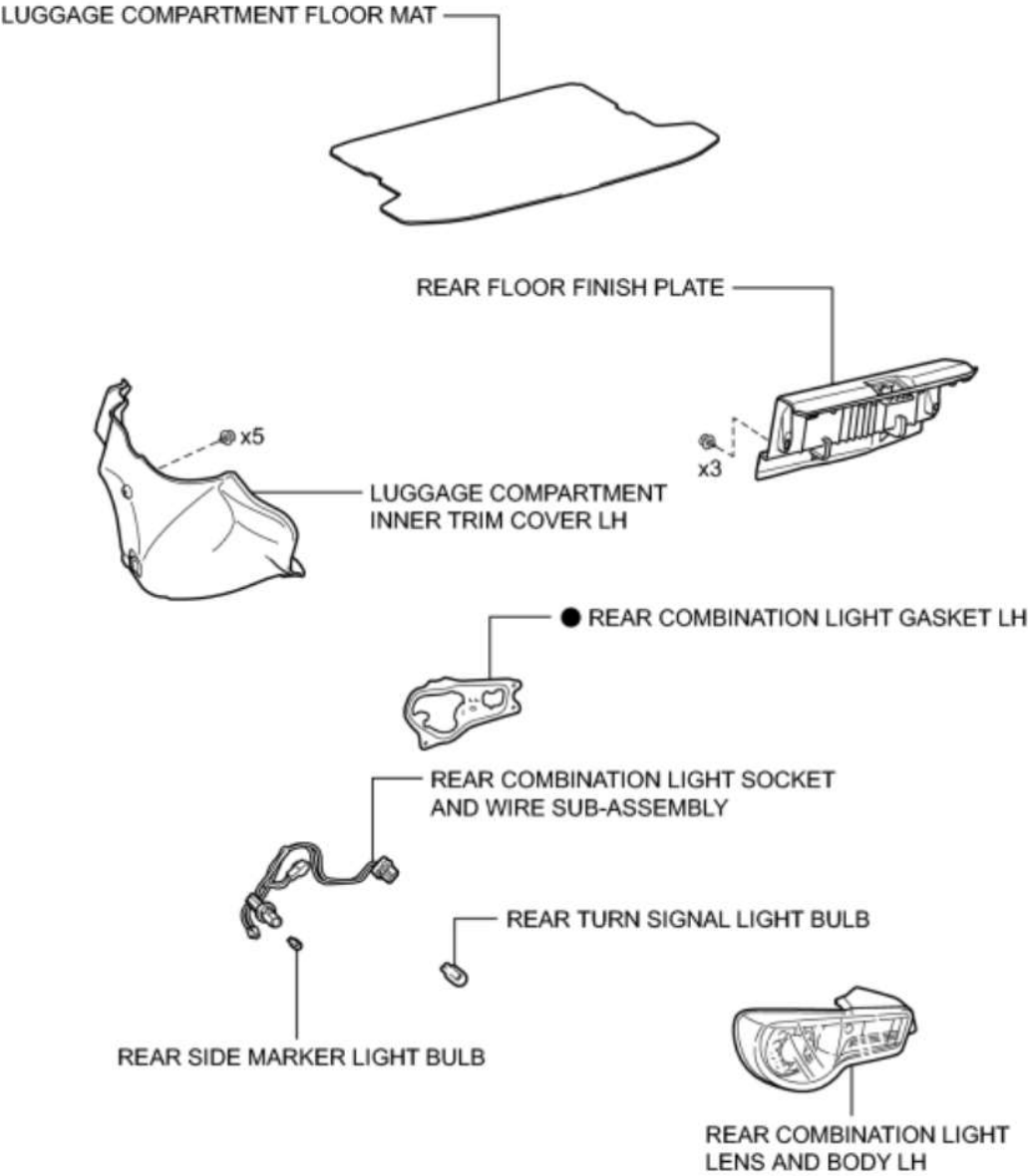
COMPONENTS

ILLUSTRATION



ILLUSTRATION

w/ Side Marker Light:



N*m (kgf*cm, ft*lbf) : Specified torque ● Non-reusable part

T

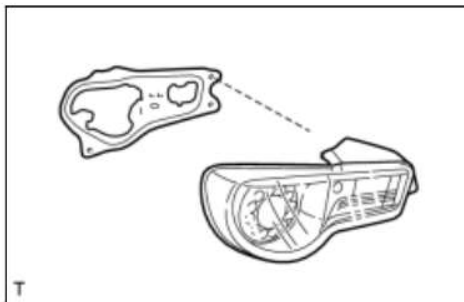
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003N8Y01CX
Title: LIGHTING (EXT): REAR COMBINATION LIGHT ASSEMBLY: DISASSEMBLY (2013 FR-S)		

DISASSEMBLY

HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

1. REMOVE REAR COMBINATION LIGHT GASKET LH

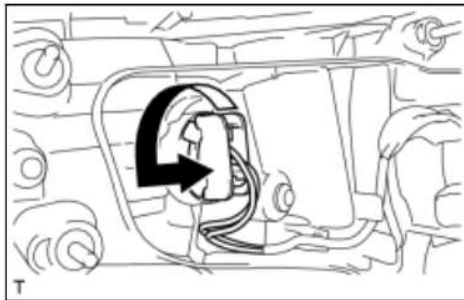


(a) Remove the rear combination light gasket LH.

HINT:

- Be sure to remove all the traces of the old rear combination light gasket from the body.
- Do not reuse the removed packing. Be sure to install a new rear combination light gasket to prevent water ingress.

2. REMOVE REAR TURN SIGNAL LIGHT BULB

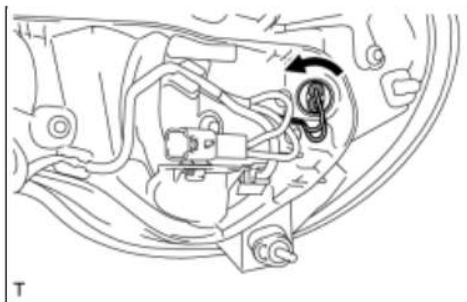


(a) Turn the rear combination light socket and wire sub-assembly with the rear turn signal light bulb in the direction indicated by the arrow shown in the illustration, and remove them as a unit.

(b) Remove the rear turn signal light bulb from the rear combination light socket and wire sub-assembly.

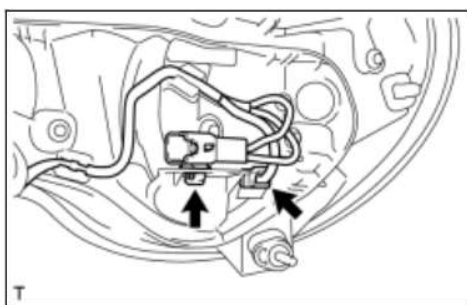
3. REMOVE REAR SIDE MARKER LIGHT BULB

(a) Turn the rear combination light socket and wire sub-assembly with the rear side marker light bulb in the direction indicated by the arrow shown in the illustration, and remove them as a unit.



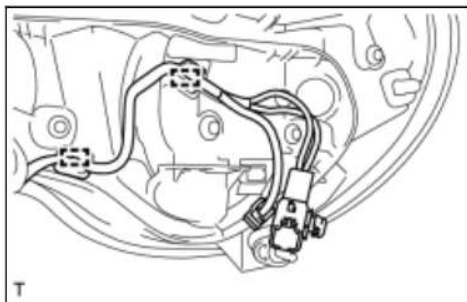
- (b) Remove the rear side marker light bulb from the rear combination light socket and wire sub-assembly.

4. REMOVE REAR COMBINATION LIGHT SOCKET AND WIRE SUB-ASSEMBLY



- (a) Disengage the clamp.

- (b) Disconnect the connector.



- (c) Disengage the 2 clamps to remove the rear combination light socket and wire sub-assembly.



Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM00000202E05ZX
Title: LIGHTING (EXT): REAR COMBINATION LIGHT ASSEMBLY: INSPECTION (2013 FR-S)		

INSPECTION

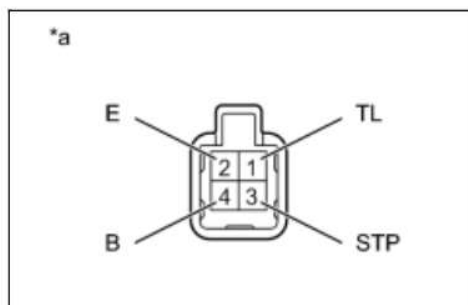
HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

1. INSPECT REAR COMBINATION LIGHT SOCKET AND WIRE SUB-ASSEMBLY

(a) Apply battery voltage to the connector and check the light comes on.

Standard Voltage:



CONDITION	SPECIFIED CONDITION
Battery positive (+) → 4 (B) Battery negative (-) → 2 (E)	Turn signal light comes on
Battery positive (+) → 3 (STP) Battery negative (-) → 2 (E)	Stop light comes on
Battery positive (+) → 1 (TL) Battery negative (-) → 2 (E)	Tail and Side marker light comes on

Text in Illustration

*a	Component without harness connected (Rear Combination Light Socket and Wire Sub-assembly)
----	--

If the result is not as specified, replace the bulb or the rear combination light socket and wire sub-assembly.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVL025X
Title: LIGHTING (EXT): REAR COMBINATION LIGHT ASSEMBLY: INSTALLATION (2013 FR-S)		

INSTALLATION

HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

1. INSTALL REAR COMBINATION LIGHT ASSEMBLY

- Engage the guide to temporarily install the rear combination light assembly.
- Install the rear combination light assembly with the 4 nuts.

Torque: 4.5 N·m (46 kgf·cm, 40in·lbf)

- Engage the 2 grommets to connect the rear combination light socket and wire sub-assembly.
- Connect the connector.

2. INSTALL LUGGAGE COMPARTMENT INNER TRIM COVER LH INFO

3. INSTALL REAR FLOOR FINISH PLATE

- Engage the 4 claws to install the rear floor finish plate.
- Install the 3 clips.

4. INSTALL LUGGAGE COMPARTMENT FLOOR MAT



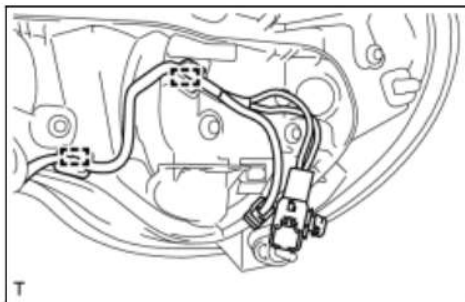
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003N8Z01CX
Title: LIGHTING (EXT): REAR COMBINATION LIGHT ASSEMBLY: REASSEMBLY (2013 FR-S)		

REASSEMBLY

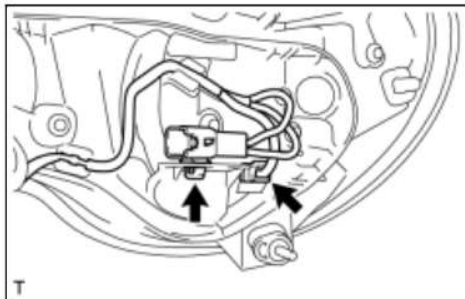
HINT:

- Use the same procedure for both the RH and LH sides.
- The procedure described below is for the LH side.

1. INSTALL REAR COMBINATION LIGHT SOCKET AND WIRE SUB-ASSEMBLY



- (a) Engage the 2 clamps to install the rear combination light socket and wire sub-assembly.

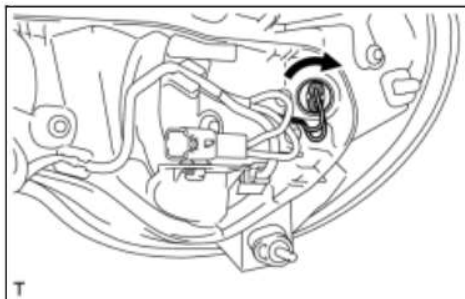


- (b) Connect the connector.

- (c) Engage the clamp.

2. INSTALL REAR SIDE MARKER LIGHT BULB

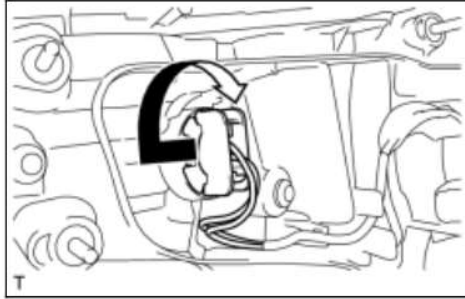
- (a) Install the side marker light bulb to the rear combination light socket and wire sub-assembly.



- (b) Turn the rear combination light socket and wire sub-assembly with the side marker light bulb in the direction indicated by the arrow shown in the illustration to install them as a unit.

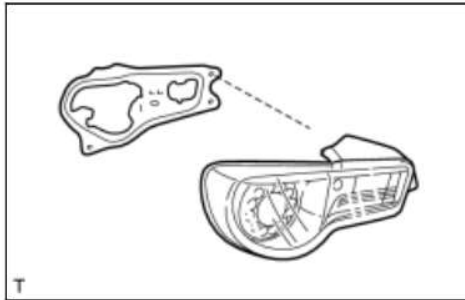
3. INSTALL REAR TURN SIGNAL LIGHT BULB

- (a) Install the rear turn signal light bulb to the rear combination light socket and wire sub-assembly.



- (b) Turn the rear combination light socket and wire sub-assembly with the rear turn signal light bulb in the direction indicated by the arrow shown in the illustration to install them as a unit.

4. INSTALL REAR COMBINATION LIGHT GASKET LH



- (a) Install a new rear combination light gasket LH.

HINT:

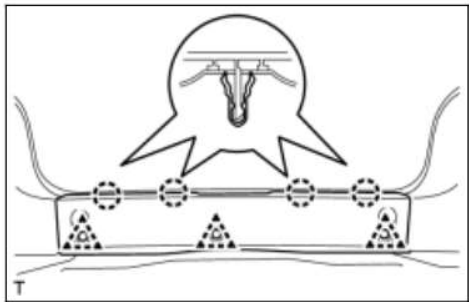
- Be sure to remove all the traces of the old rear combination light gasket from the body.
- Do not reuse the removed packing. Be sure to install a new rear combination light gasket to prevent water ingress.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVN023X
Title: LIGHTING (EXT): REAR COMBINATION LIGHT ASSEMBLY: REMOVAL (2013 FR-S)		

REMOVAL

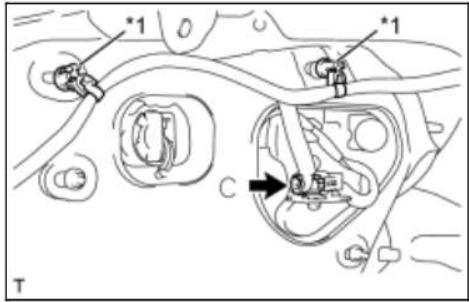
- 1. REMOVE LUGGAGE COMPARTMENT FLOOR MAT
- 2. REMOVE REAR FLOOR FINISH PLATE



(a) Using a clip remover, remove the 3 clips.

(b) Disengage the 4 claws to remove the rear floor finish plate.

- 3. REMOVE LUGGAGE COMPARTMENT INNER TRIM COVER LH INFO
- 4. REMOVE REAR COMBINATION LIGHT ASSEMBLY



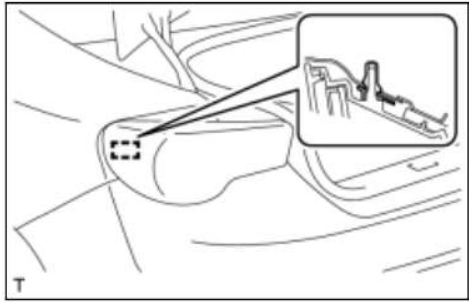
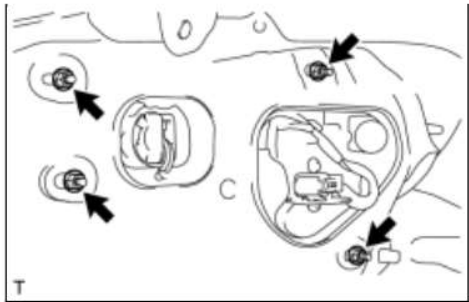
(a) Disconnect the connector.

(b) Disengage the 2 grommets and disconnect the wire harness.

Text in Illustration

*1	Grommet
----	---------

(c) Remove the 4 nuts.



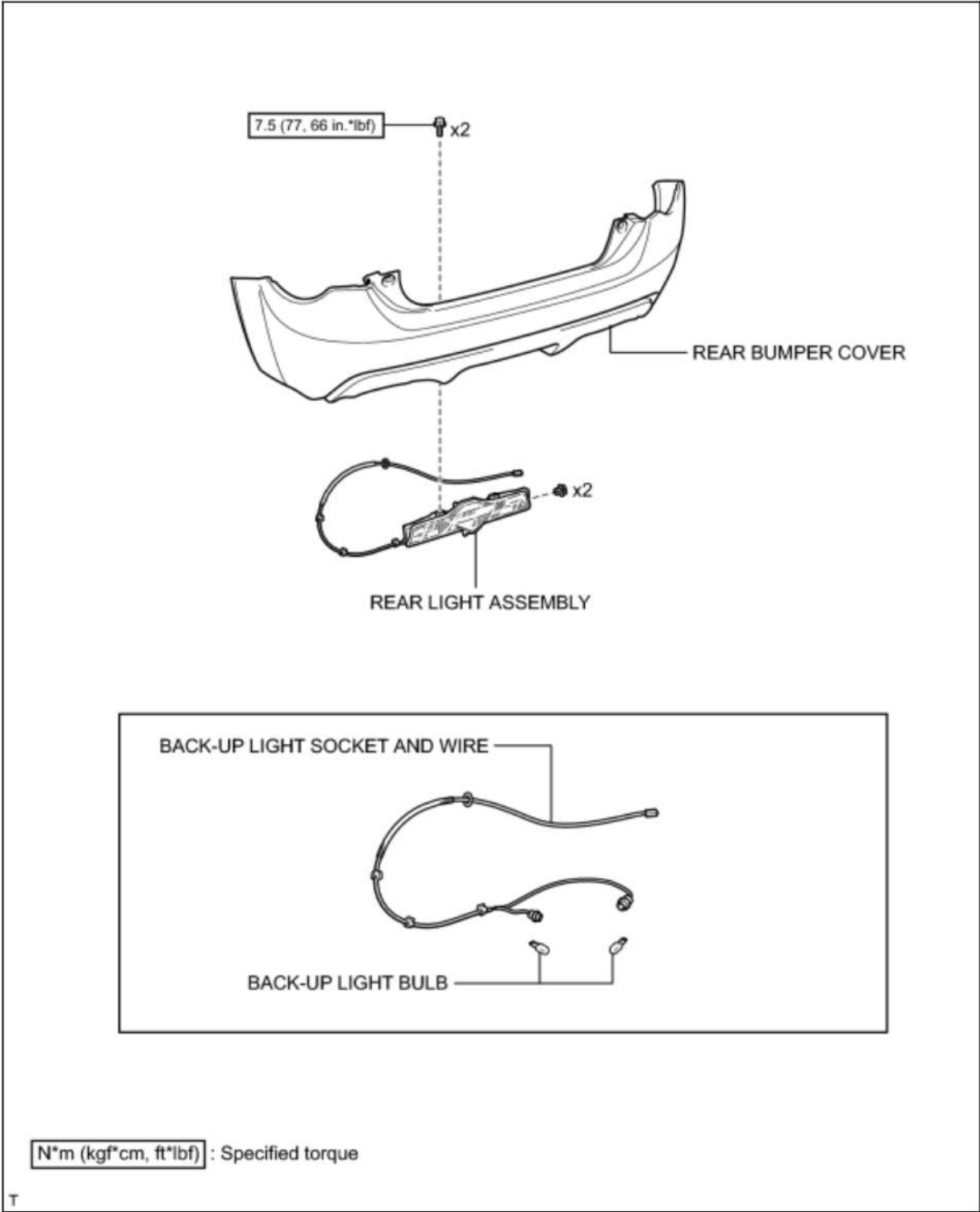
(d) Disengage the guide to remove the rear combination light assembly.



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVP015X
Title: LIGHTING (EXT): REAR LIGHT ASSEMBLY: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION

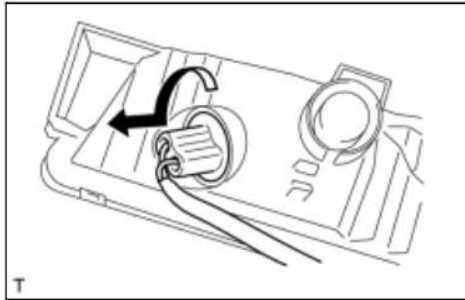


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Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003N9F015X
Title: LIGHTING (EXT): REAR LIGHT ASSEMBLY: DISASSEMBLY (2013 FR-S)		

DISASSEMBLY

1. REMOVE BACK-UP LIGHT BULB



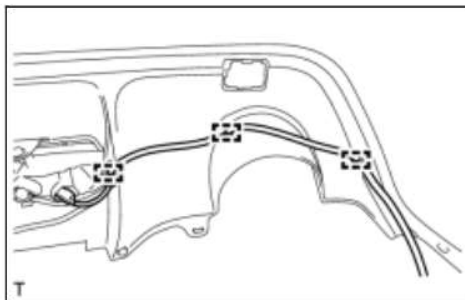
- (a) Turn the back-up light socket and wire with the back-up light bulb in the direction indicated by the arrow shown in the illustration and remove them as a unit.

- (b) Remove the back-up light bulb from the rear light socket and wire.

HINT:

Use the same procedure for the LH side and RH side.

2. REMOVE BACK-UP LIGHT SOCKET AND WIRE



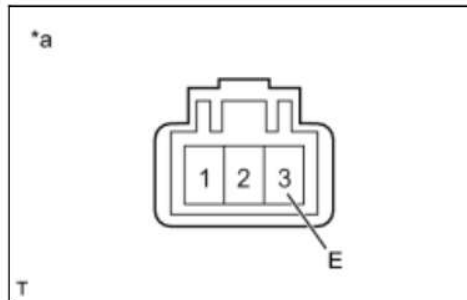
- (a) Disengage the 2 clamps to remove the back-up light socket and wire.



Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM00000202E060X
Title: LIGHTING (EXT): REAR LIGHT ASSEMBLY: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT BACK-UP LIGHT SOCKET AND WIRE



(a) Apply battery voltage to the connector and check the light comes on.

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

Standard Voltage:

CONDITION	SPECIFIED CONDITION
Battery positive (+) → 1 Battery negative (-) → 3 (E)	Back-up light comes on

Text in Illustration

*a	Component without harness connected (Back-Up Light Socket and Wire)
----	--

If the result is not as specified, replace the bulb or the back-up light socket and wire.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVO01DX
Title: LIGHTING (EXT): REAR LIGHT ASSEMBLY: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL REAR LIGHT ASSEMBLY

- (a) Engage the claw to install the rear light assembly.
- (b) Install the 2 bolts.

Torque: 7.5 N·m (77 kgf·cm, 66in·lbf)

- (c) Install the 2 clips.

2. INSTALL REAR BUMPER COVER

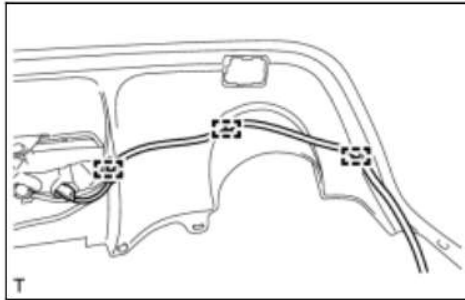
INFO



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003N9G015X
Title: LIGHTING (EXT): REAR LIGHT ASSEMBLY: REASSEMBLY (2013 FR-S)		

REASSEMBLY

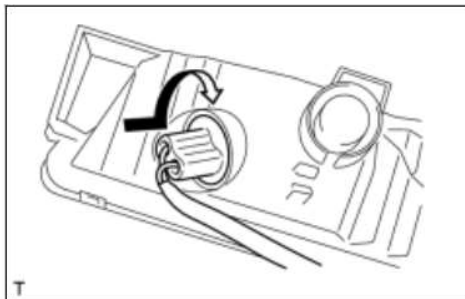
1. INSTALL BACK-UP LIGHT SOCKET AND WIRE



- (a) Engage the 2 clamps to install the back-up light socket and wire.

2. INSTALL BACK-UP LIGHT BULB

- (a) Install the back-up light bulb to the back-up light socket and wire.



- (b) Turn the back-up light socket and wire with the back-up light bulb in the direction indicated by the arrow shown in the illustration to install them as a unit.

HINT:

Use the same procedure for the LH side and RH side.



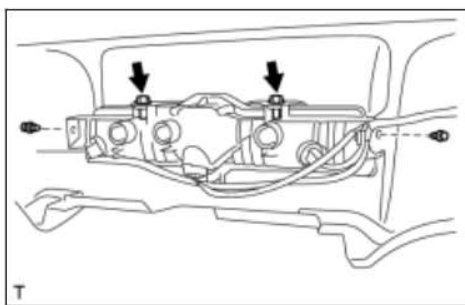
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MVQ01DX
Title: LIGHTING (EXT): REAR LIGHT ASSEMBLY: REMOVAL (2013 FR-S)		

REMOVAL

1. REMOVE REAR BUMPER COVER

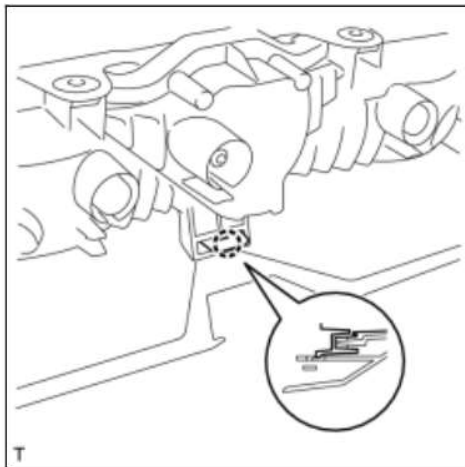
INFO

2. REMOVE REAR LIGHT ASSEMBLY



(a) Using a clip remover, remove the 2 clips.

(b) Remove the 2 bolts.



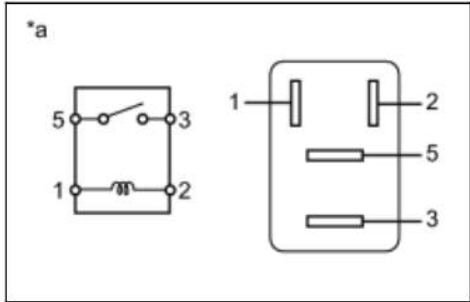
(c) Disengage the claw to remove the rear light assembly.



Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001UPP059X
Title: LIGHTING (EXT): RELAY: ON-VEHICLE INSPECTION (2013 FR-S)		

ON-VEHICLE INSPECTION

1. INSPECT H-LP RELAY



(a) Remove the H-LP relay from the engine room relay block.

(b) Measure the resistance according to the value(s) in the table below.
Standard Resistance:

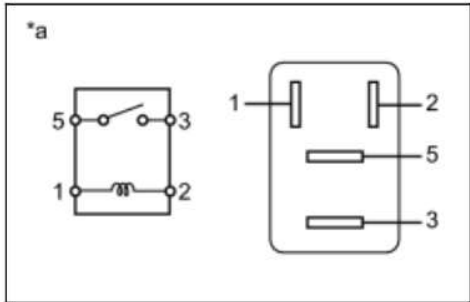
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 - 5	Voltage is not applied between terminals 1 and 2	10 kΩ or higher
3 - 5	Voltage is applied between terminals 1 and 2	Below 1 Ω

Text in Illustration

*a	Component without harness connected (H-LP Relay)
----	---

If the result is not as specified, replace the H-LP relay.

2. INSPECT DIM RELAY



(a) Remove the DIM relay from the engine room relay block.

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

Standard Resistance:

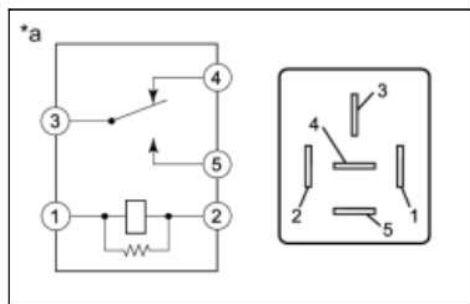
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 - 5	Voltage is not applied between terminals 1 and 2	10 k Ω or higher
3 - 5	Voltage is applied between terminals 1 and 2	Below 1 Ω

Text in Illustration

*a	Component without harness connected (DIM Relay)
----	--

If the result is not as specified, replace the DIM relay.

3. INSPECT DRL RELAY



(a) Remove the DRL relay from the engine room relay block.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
3 - 4	Battery voltage not applied	Below 1 Ω
3 - 4	Battery voltage applied to terminals 1 and 2	10 k Ω or higher
3 - 5	Battery voltage not applied	10 k Ω or higher
3 - 5	Battery voltage applied to terminals 1 and 2	Below 1 Ω

Text in Illustration

*a	Component without harness connected (DRL Relay)
----	--

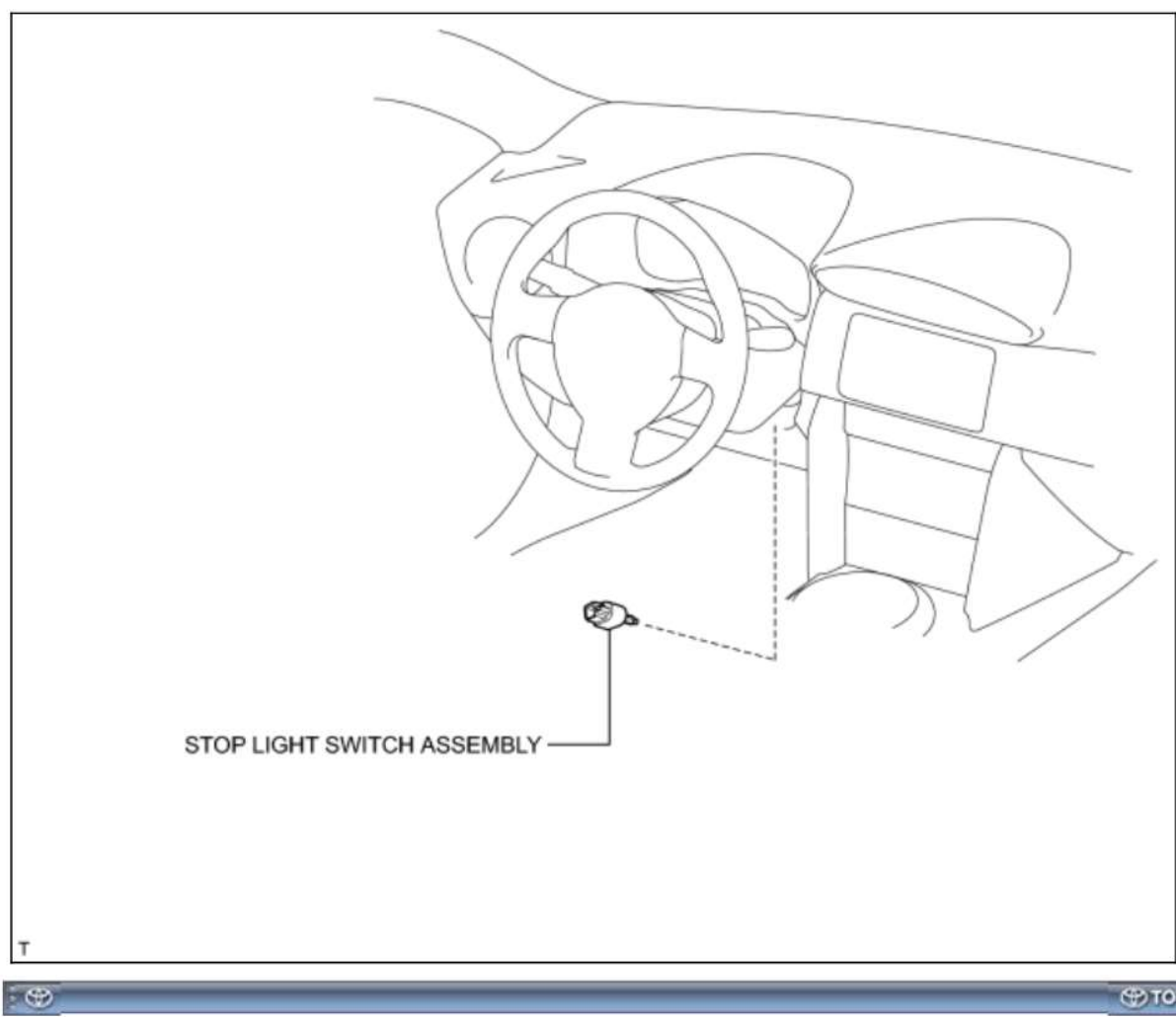
If the result is not as specified, replace the DRL relay.



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MWA01IX
Title: LIGHTING (EXT): STOP LIGHT SWITCH: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION



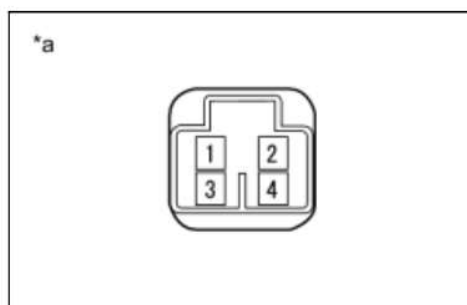
Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001UPN02JX
Title: LIGHTING (EXT): STOP LIGHT SWITCH: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT STOP LIGHT SWITCH ASSEMBLY

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

Standard Resistance:



TESTER CONNECTION	SWITCH CONDITION	SPECIFIED CONDITION
1 - 2	Pushed	10 k Ω or higher
	Not pushed	Below 1 Ω

Text in Illustration

*a	Component without harness connected (Stop Light Switch Assembly)
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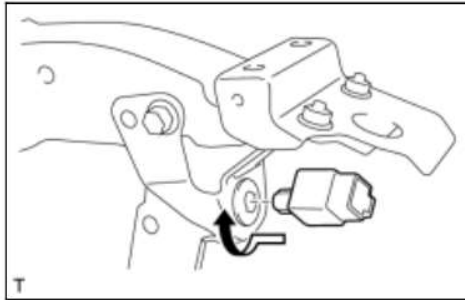
If the result is not as specified, replace the stop light switch assembly.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MW901XX
Title: LIGHTING (EXT): STOP LIGHT SWITCH: INSTALLATION (2013 FR-S)		

INSTALLATION

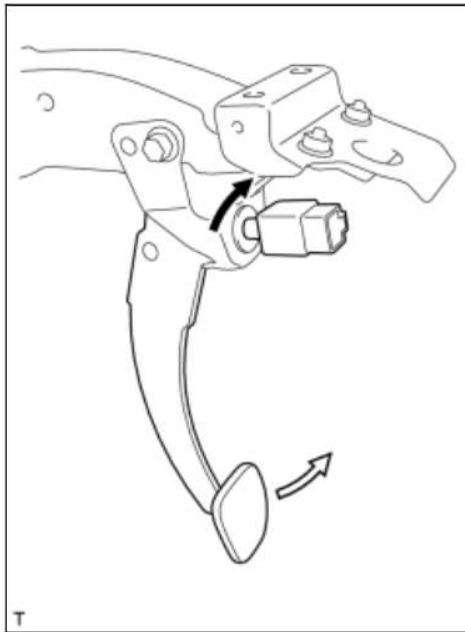
1. INSTALL STOP LIGHT SWITCH ASSEMBLY



- (a) Insert the stop light switch assembly until the threaded sleeve hits the pedal.

NOTICE:

When inserting the stop light switch assembly, support the pedal from behind so that the pedal is not pushed in.



- (b) Pull up the brake pedal.

- (c) Turn the stop light switch assembly in the direction indicated by the arrow in the illustration and install it.

NOTICE:

When inserting the stop light switch assembly, support the pedal from behind so that the pedal is not pushed in.

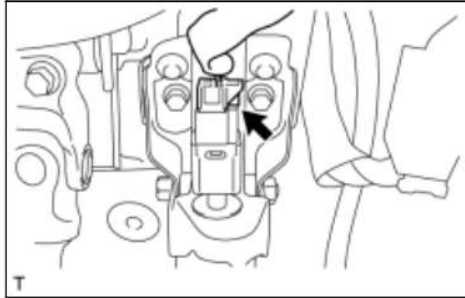
- (d) Connect the connector.



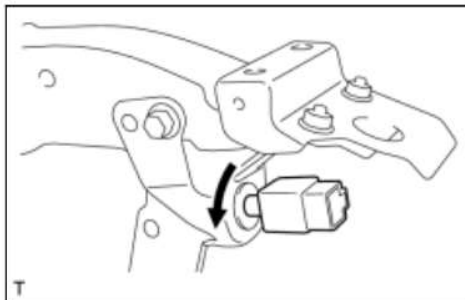
Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MWB01YX
Title: LIGHTING (EXT): STOP LIGHT SWITCH: REMOVAL (2013 FR-S)		

REMOVAL

1. REMOVE STOP LIGHT SWITCH ASSEMBLY



(a) Disconnect the connector.



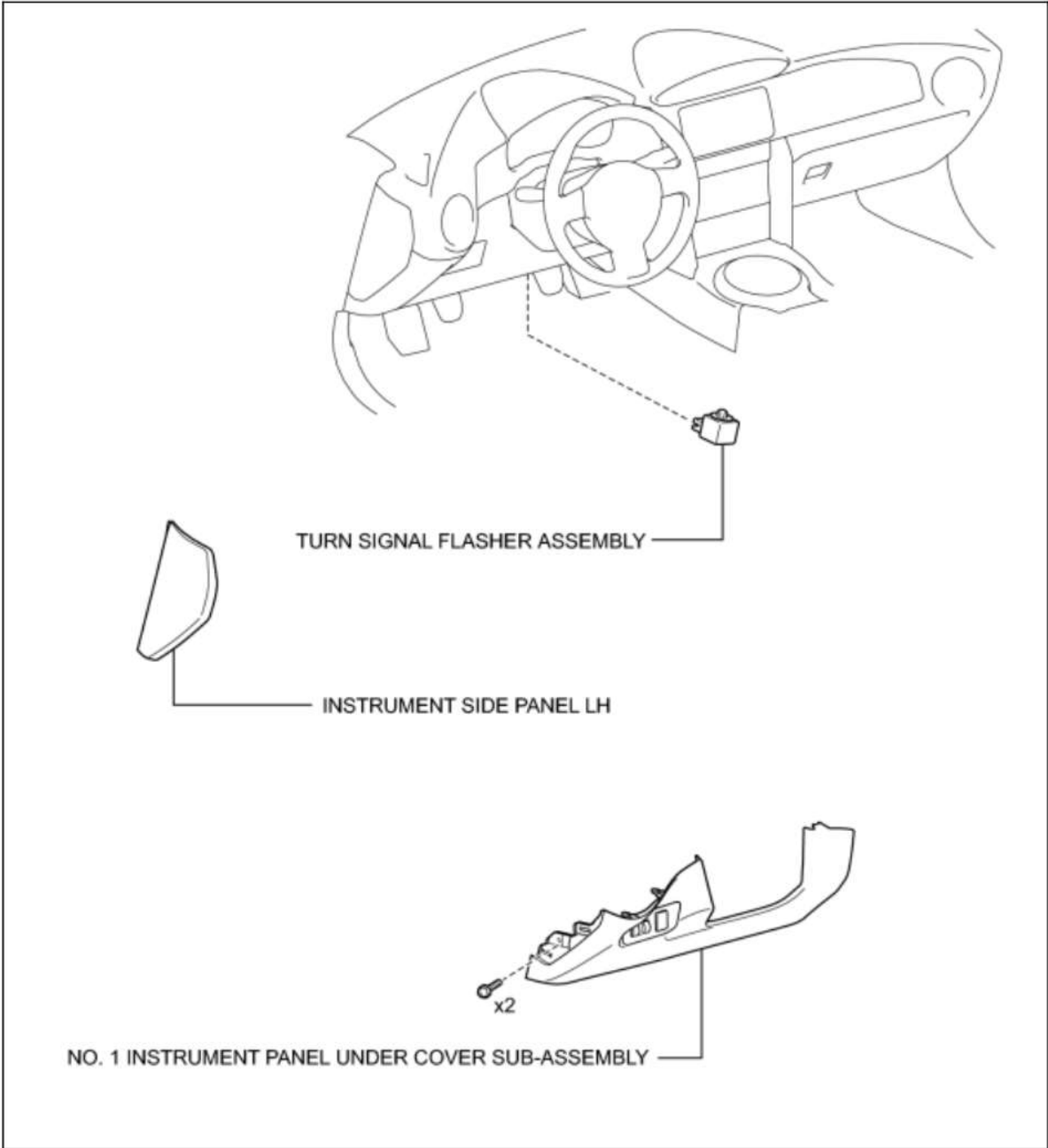
(b) Turn the stop light switch assembly counterclockwise and remove it.



Last Modified: 3-27-2012	6.4 K	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MWM016X
Title: LIGHTING (EXT): TURN SIGNAL FLASHER ASSEMBLY: COMPONENTS (2013 FR-S)		

COMPONENTS

ILLUSTRATION

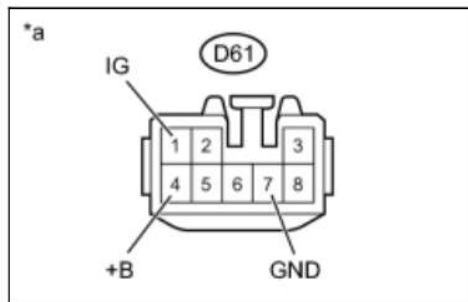


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Last Modified: 3-27-2012	6.4 G	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000001ZTV078X
Title: LIGHTING (EXT): TURN SIGNAL FLASHER ASSEMBLY: INSPECTION (2013 FR-S)		

INSPECTION

1. INSPECT TURN SIGNAL FLASHER ASSEMBLY



(a) Disconnect the D61 turn signal flasher assembly connector.

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

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D61-4 (+B) - Body ground	Ignition switch off	Below 1 V
	Ignition switch ON	11 to 14 V
D61-1 (IG) - Body ground	Always	11 to 14 V

Text in Illustration

*a	Front view of wire harness connector (to Turn Signal Flasher Assembly)
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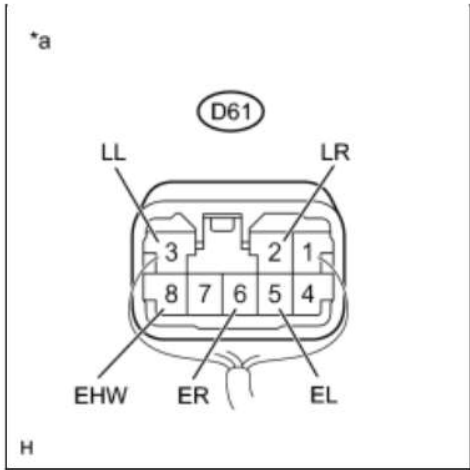
If the result is not as specified, repair or replace the wire harness or connector.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D61-7 (GND) - Body ground	Always	Below 1 Ω

If the result is not as specified, repair or replace the wire harness or connector.



(d) Reconnect the D61 turn signal flasher assembly connector.

(e) Measure the voltage according to the valve(s) in the table below.

Standard Voltage:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
D61-6 (ER) - Body ground	Turn signal switch in RH position OFF to ON	9 V or higher to below 1 V
D61-5 (EL) - Body ground	Turn signal switch in LH position OFF to ON	9 V or higher to below 1 V
D61-8 (EHW) - Body ground	Hazard warning switch OFF to ON	9 V or higher to below 1 V
D61-2 (LR) - Body ground	Turn signal switch in RH position OFF to ON	Below 1 V to 9 V (60 to 120 times per minute)
D61-3 (LL) - Body ground	Turn signal switch in LH position OFF to ON	Below 1 V to 9 V (60 to 120 times per minute)
D61-2 (LR) - Body ground	Hazard warning switch OFF to ON	Below 1 V to 9 V (60 to 120 times per minute)
D61-3 (LL) - Body ground	Hazard warning switch OFF to ON	Below 1 V to 9 V (60 to 120 times per minute)

Text in Illustration

*a	Component with harness connected (Turn Signal Flasher Assembly)
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If the result is not as specified, the turn signal flasher assembly may have a malfunction.



Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MWL01JX
Title: LIGHTING (EXT): TURN SIGNAL FLASHER ASSEMBLY: INSTALLATION (2013 FR-S)		

INSTALLATION

1. INSTALL TURN SIGNAL FLASHER ASSEMBLY

- (a) Connect the connector.
- (b) Engage the clamp to install the turn signal flasher assembly.

2. INSTALL NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY INFO

3. INSTALL INSTRUMENT SIDE PANEL LH INFO



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Last Modified: 3-27-2012	6.4 A	From: 201203
Model Year: 2013	Model: FR-S	Doc ID: RM000003MWN01JX
Title: LIGHTING (EXT): TURN SIGNAL FLASHER ASSEMBLY: REMOVAL (2013 FR-S)		

REMOVAL

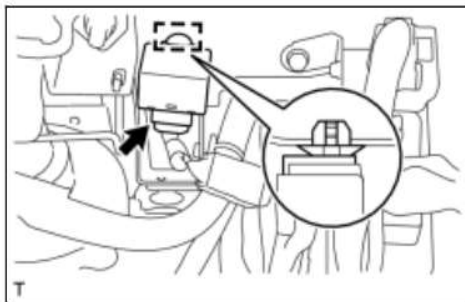
1. REMOVE INSTRUMENT SIDE PANEL LH

[INFO](#)

2. REMOVE NO. 1 INSTRUMENT PANEL UNDER COVER SUB-ASSEMBLY

[INFO](#)

3. REMOVE TURN SIGNAL FLASHER ASSEMBLY



(a) Using a clip remover, disengage the clamp.

(b) Disconnect the connector to remove the turn signal flasher assembly.

