

TOYOTA

RAV4

2016-

FOG LIGHT (Halogen/LED)

Part Number: TRA-316/TRA-816



Kit Contents

Item #	Quantity Reqd.	Description
1	2	Light Housings
2	2	Light Bezels
3	1	Wire Harness Bag*
4	1	Connector Bag**
5	1	In-Dash Switch
6	1	Fog Light Operation Guide

Wire Harness Bag Contents*

Item #	Quantity Reqd.	Description
1	1	Under-Hood Wire Harness
2	1	In-Dash Switch Wire Harness
3	1	Under-Hood Relay (4 connector)
4	1	Switch Relay (5 connector)
5	25	8" Wire Ties

Connector Bag Contents**

Item #	Quantity Reqd.	Description
1	4	4 Phillip head screws
2	2	Black T-Taps
3	2	Connectors (LED Only)

Conflicts

Models WITH Factory Installed Fog Lights Models WITH LED Headlights
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General Applicability

Models: LE

Recommended Tools

Safety Tools	
Safety Glasses	
Installation Tools	
10mm Wrench	
12mm Wrench	
Torque Wrench	
Phillips Screw Driver	
Pliers	
Side Cutters	
Electrical Tape	
Fish-Wire Tool	
Special Chemicals	
Spray Bottle w/ Soapy Water	

Mandatory

Legend

	STOP: Damage to the vehicle may occur. Do not proceed until process has been complied with.
	OPERATOR SAFETY: Use caution to avoid risk of injury
	CRITICAL PROCESS: Proceed with caution to ensure a quality installation.
	TOOLS & EQUIPMENT: This calls out the specific tools and equipment required for this process
	REVISION MARK: This mark highlights a change in installation with respect to previous issue.
	SAFETY TORQUE: This mark indicates that torque is related to safety

Care must be taken when installing this accessory to ensure damage does not occur to the vehicle. The installation of this accessory should follow these approved guidelines to ensure a quality installation.

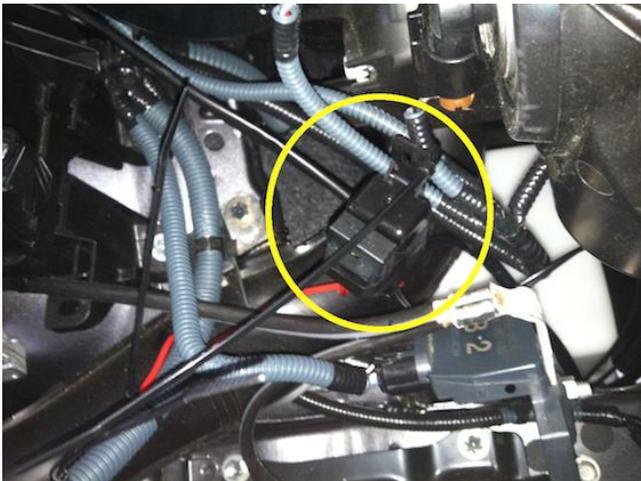
Preparation



Remove negative battery cable.

Installation

1. Connect the under-hood relay to the under-hood harness.
2. Secure the under-hood relay and fuse assembly to the driver's side factory headlamp harness. Secure top and bottom with wire ties (picture 1).



Picture 1

3. Attach the ring terminal connector (black wires) of the under-hood wire harness to the 10mm factory ground bolt located next to the battery (picture 2). Secure the under-hood wire harness with wire ties as needed.



Picture 2

4. Attach the ring terminal connector (red wire) to the positive battery terminal, routing it through the terminal cover (picture 3).



Picture 3

- Run the under-hood wire harness along the driver side from the battery towards the bulkhead of the vehicle. Secure with wire ties as needed (picture 4).



Picture 4

- Locate the large factory wire harness grommet on the driver's side of the bulkhead (picture 5). Attach the gray and red bullet connectors to the fish-wire tool using electrical tape. Spray soapy water on the grommet and fish-wire tool, then push the fish-wire tool through the grommet. **Note:** Extra caution should be taken not to damage the connectors of the under-hood wire harness or the factory harness (picture 5A).



Picture 5: View from engine compartment



Picture 5A: View from inside the vehicle

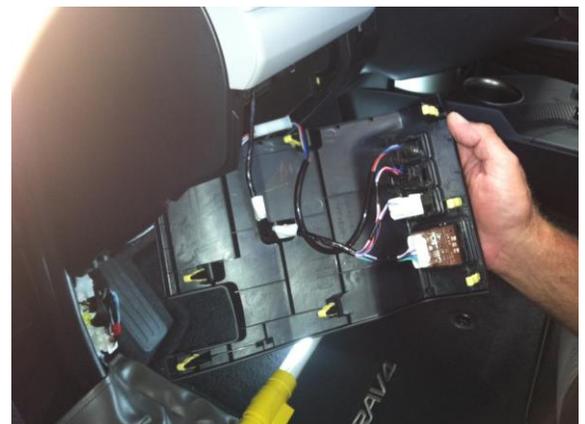
Vehicle Disassembly - Interior

- Remove the driver's side lower dash panel: remove two lower screws and retain (pic. 6).



Picture 6

- Remove driver's side upper panel (pic. 7).

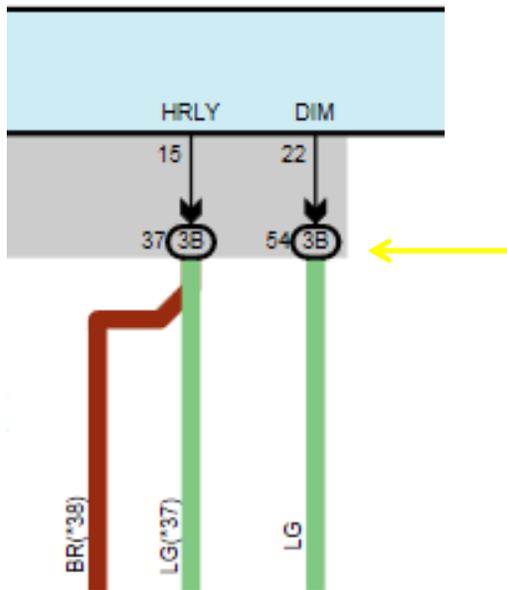


Picture 7

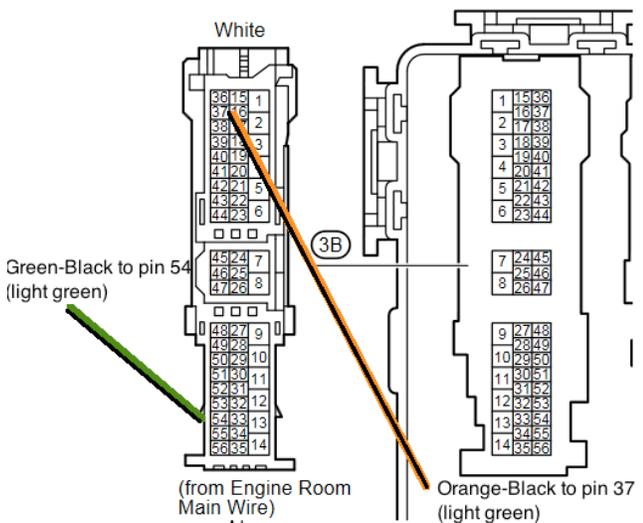
- Locate the red and gray wires that were pushed through the bulkhead grommet in step 6. Connect those bullet connectors to

the supplied In-Dash Switch Wire Harness bullet connectors.

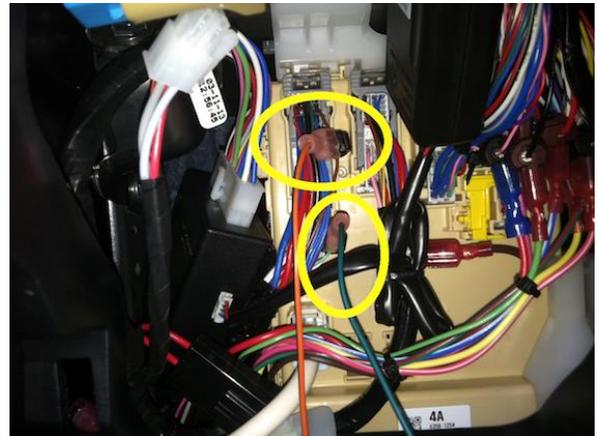
- At connector 3B, pin 54, light green wire, install a black T-tap. Then connect the **green/black** wire from the in-dash switch harness to the black t-tap. Connector 3B is located at the main junction block (pictures 8, 9 and 10).



Picture 8: Headlight DIM circuit. Connector 3B, pin 54 (light green wire)

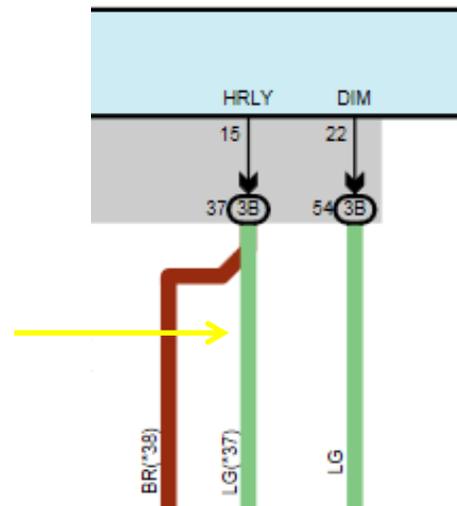


Picture 9



Picture 10

- At connector 3B, pin 37, light green wire, install a black T-tap. Then connect the **orange/black** wire from the in-dash switch harness to the black t-tap (pictures 9, 10 and 11).



Picture 11: Headlight relay circuit wire. Connector 3B, pin 37 (light-green wire)

- Remove the switch knockout located in the dash, to the left of the steering wheel.
- Route the in-dash switch connector (green) through the knockout. Then plug the connector into the switch and insert the switch into dash panel (picture 12).

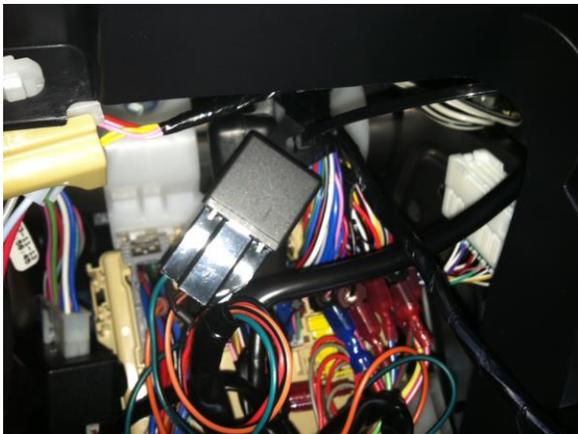


Picture 12

14. Connect the switch relay to the harness. Secure the switch relay and excess wire harness to the factory harness using zip ties as needed (pictures 13 and 14).



Picture 13



Picture 14

15. Reinstall all interior panels and connectors.

ENGINE COMPARTMENT

16. Route the under-hood wire harness to the right side of the vehicle along the top of the radiator housing, then drop it behind the headlamp compartment area. Secure with wire ties as needed.
17. Remove lower splash panels from beneath the vehicle (picture 15).



Picture 15

18. On the left side of the vehicle, drop the under-hood wire harness to reach the left fog lamp compartment.
19. Repeat step 18 on the right side of the vehicle.
20. From behind the bumper, remove the fog light cover plates by removing the push pin (**retain pin**) and releasing the 5 tabs that secure the cover plate to the bumper. Remove the cover plate by pushing it towards the rear of the vehicle and discard (picture 16).

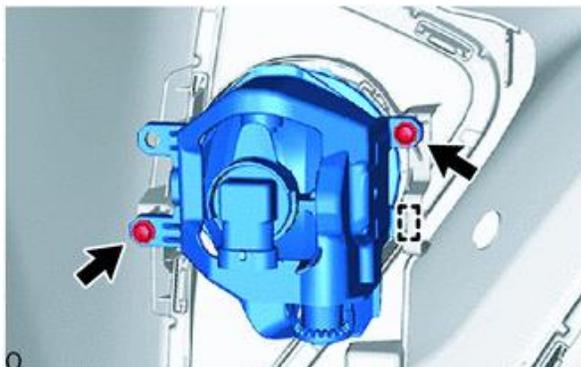


Picture 16

- 21. Mount the right side fog lamp housing onto the right side bezel using the Philip screws provided in the kit (pictures 17 and 18).
- 22. Repeat step 21 for the left side.



Picture 17



Picture 18

- 23. Install the right side fog light assembly into the right side of the bumper, by pushing the assembly from the rear of the bumper. Once the bezel snaps into place, secure from behind with the factory push pin.
- 24. Repeat step 23 for the left side.



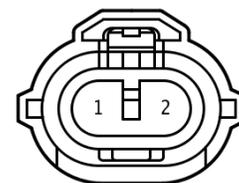
Use caution when installing the fog light assembly to prevent scratching the lens cover.

- 25. **For Halogen installations;** proceed to step 26.

For LED installations; The LED fog light wires may not be pushed into their connectors. If not, push the negative wire (black or black-white) into Pin 2 of the connector. Then, push the positive wire (red or red-white) into Pin 1 of the connector. See Picture 20 below.



LED Lights will NOT work if the polarity is reversed. Be sure the red positive wire of the harness matches the red positive wire of the light housing, and the black negative wire of the harness matches the black negative wire of the light housing.



Picture 20

26. Connect the fog light housings to the underhood wire harness connectors.
27. Secure excess wire harness with zip ties as needed.
28. Reinstall splash panels.
29. Reconnect negative battery terminal.
Torque terminal to 48 in-lbs.



Checklist – these points MUST be checked to ensure quality installation

Check System for Operation

1. Turn on headlamp low beams, then press fog light switch to “ON” position. Fog lights should be working. Fog lights will only work when the low beam headlamps are “ON”. Fog lights will NOT work when the high beam headlamps are “ON”.

Note: When high-beam flash is activated, the LED Fog Light will blink for a <1 sec period.

Fog Light Aiming

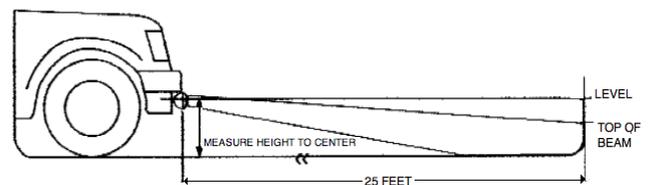


NOTE: Use only hand tools to adjust the fog light aiming screw. DO NOT use automatic tools, as they will damage the fog light

Traditional fog lights are usually mounted in the front bumper about 10-24 inches from the ground. There are two important issues to address when installing fog lights: the first is to minimize the amount of return glare into the driver’s eyes, and the other is to minimize the glare into oncoming eyes. Both of these issues must be accomplished while putting as much light as possible on the road.

These fog weather light aiming instructions are suggestions taken from common practice and the S.A.E. standard J583. Some modifications to these instructions may be necessary to minimize glare.

Visual aim is made with the top of the beam 4 inches below the lamp center at 25 feet with the lamp facing straight forward (see picture 22).



Picture 22

Check

Accessory Functions Checks

- Fog Lights function.....
- All Panels snapped into place.....
- Battery Terminal.....

Vehicle Function checks

- Check all vehicle functions

Look For:

- Inoperable fog light function
- Loose panels and switches
- Re-torque battery terminals to 48 in-lb

VEHICLE FUNCTION CHECK

AFTER ALL PANELS, COVERS AND COMPONENTS THAT WERE REMOVED HAVE BEEN REINSTALLED, TEST THOROUGHLY ALL MECHANICAL AND ELECTRICAL COMPONENTS DISCONNECTED AND/OR REMOVED FROM THE VEHICLE DURING THE INSTALLATION OF THIS ACCESSORY