



RAV4

Accessory Part No: PZQ2942130/135
JANUARY 2019 PRODUCTION ONWARDS
Fitting Time: 75 minutes

Nudge Bar Fitting Instructions

– General Notes

- Read through the fitting instructions before installation of accessory.
- Always install the accessory following the fitting instructions. Failure to do so may cause damage to the vehicle or the accessory.

– Fitting Time



75 minutes

– General User Information

IMPORTANT! A genuine driving lamp and harness is not available for this nudge bar. Fitting of a non-genuine driving lamp will void warranty, may cause Toyota Safety Sense to malfunction & incorrect air bag operation. ⚠

- Do not attach the nudge bar to the vehicle using anchorages not intended for this purpose (e.g. engine mounting bolts).
- Do not use any other mounting location/method other than described in these fitting instructions.
- Do not use this product for any vehicle make or model other than those specified by the nudge bar manufacturer.
- Do not repair or modify the structure of the nudge bar and/or it's mounting bracket in any way. Repair or modification can result in non compliance with ADR 69/00 Frontal Impact Requirements and may effect proper operation of the air bag system resulting in serious injury.
- Do not remove the compliance plaque or label from the nudge bar.
- Please read these fitting instructions carefully before installation, paying special attention to all notices and caution notes (identified with ⚠). Failure to do so may result in damage to parts or injury to installer or customer.
- A Torque wrench must be used where specified and correct sequence must be followed.

– Safety Notes

- Check that all work practices comply with safety standards.
- Appropriate clothing and safety equipment to be used during installation.

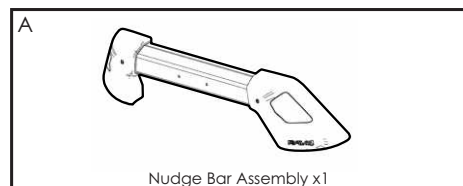


– Nudge Bar Notes

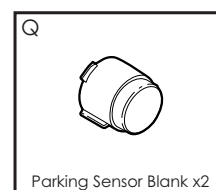
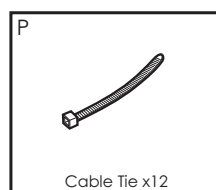
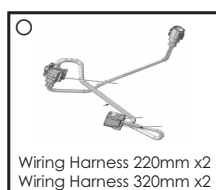
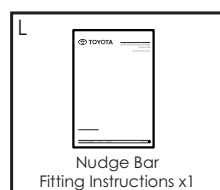
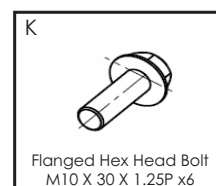
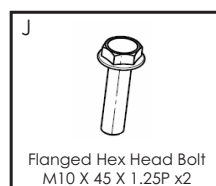
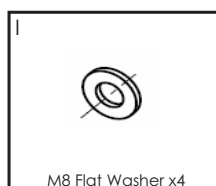
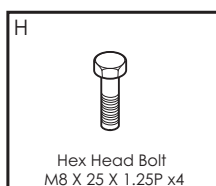
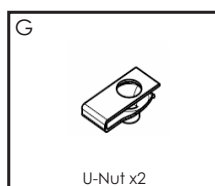
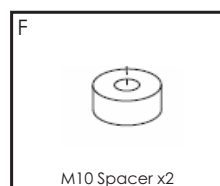
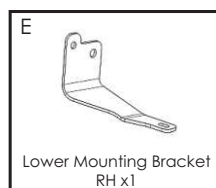
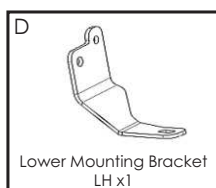
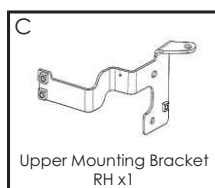
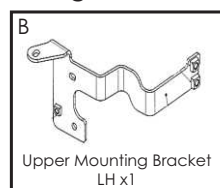
- This accessory is an airbag compliable accessory
- Non recommended use of the nudge bar (e.g. ladder rack support or fishing rod holder) may cause damage to the accessory or vehicle and may impair the operation of the airbag system.
- Nudge bar fixings must be checked and re-tightened to the specified torque during every service.
- Daily exposure to pollution in the air, road grime and corrosive environments such as sea side roads can affect the appearance and finish of the accessory. Regularly wash the accessory using a reputable automotive wash detergent, rinse with fresh water and chamois to dry.
- Occasionally:
 - Polish metal surfaces with Autosol® or similar product (polished Nudgebar only).
- Protect plastic parts with Nulon Ezi-Glide® silicon spray or equivalent.

— Parts Supplied —

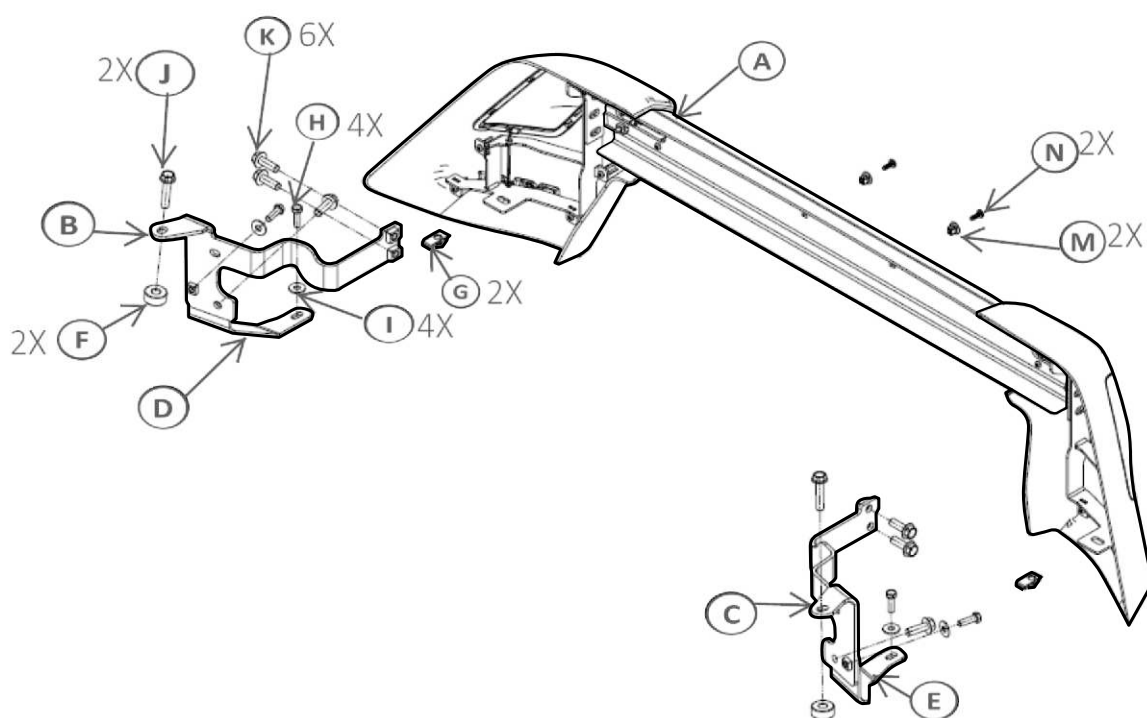
Main Carton





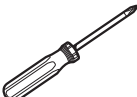
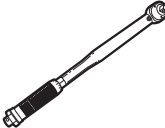
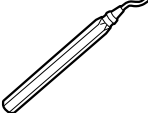
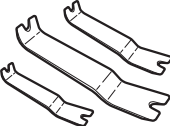

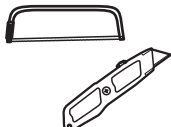


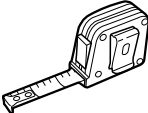


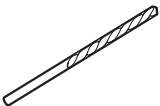







Fitting Kit



Layout Diagram



– Tools and Materials Required

					
Ratchet	Socket - 10mm, 12mm, 13mm, 14mm	Phillips Head Screwdriver	Torque Wrench	De-burring Tool	Trim Removal Tools
					
Pen / Scribe	Hacksaw / Industrial Knife	Marker Pen	Steel Ruler	Tape Measure	Bumper Stand
					
Drill	Drill Bit - Ø10mm	Ring Spanner - 10mm	Scissors	Tape	Work Gloves
					
Spike / Bradle	Spanner 10, 12, 13, 14mm	Short Socket Extension Bar			

— Step 1

Important



Always refer to the vehicle's Workshop Manual when removing vehicle components.

Disconnect Battery Earth before working on the vehicle

Hybrid:

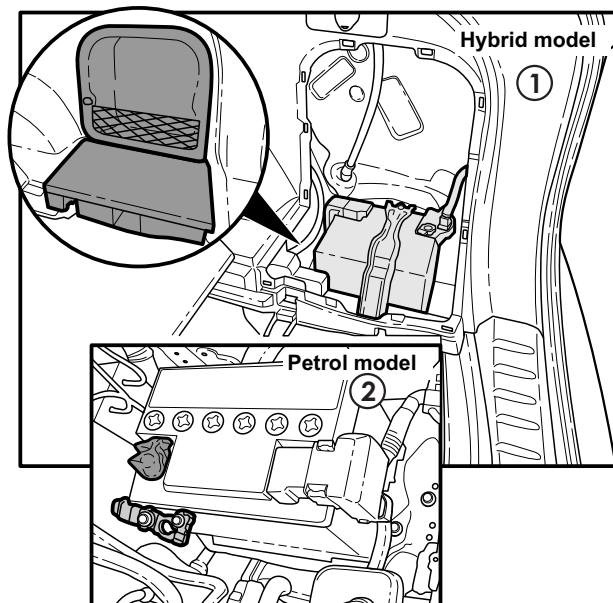
Locate the battery in boot compartment (1).

Disconnect the 12V battery earth terminal and tape up

Petrol:

Locate the battery in Engine compartment (2).

Disconnect the earth terminal and tape up



Tools Required:

10mm spanner

Tape

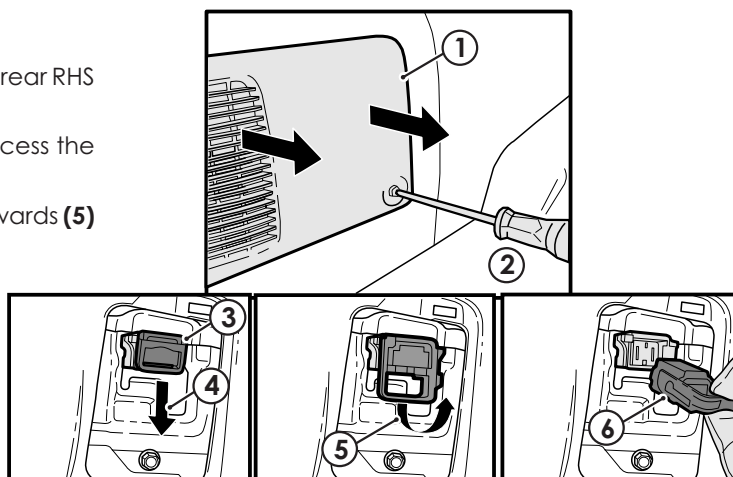
— Step 2

For Hybrid vehicles only:

- Locate hybrid isolation compartment located under the rear RHS seat.
- Remove the cover (1) by removing the scrivet (2) to access the Hybrid Battery Isolator (3).
- Pull the tab on the red plug down (4) and then rotate upwards (5) and pull out (6).

Tools Required:

Phillips head screw driver



— Step 3

Partially detach Fender Flare

- Remove 1 self tapping screw (1) and 3 clips (2) from the LH fender flare as shown.

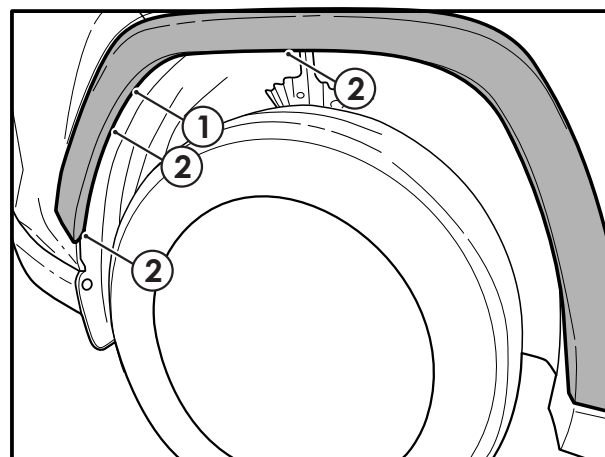
Note: screw length is short compared to undercover screw length.

Repeat for RHS.

Tools Required:

10mm Socket

Clip Removal Tool



— Step 4

Fender Flare continued:

- Carefully fold the fender flare upper and lower clip tab (1) outwards.
- Unclip the fender flare so that it is free from the bumper cover and front of the fender by detaching 5 clips (2). Ensure that the top clip into round hole is retained to the flare.
- Lightly wedge the fender flare out and tape in location to prevent the fender flare from damaging the bumper in future steps.

Important



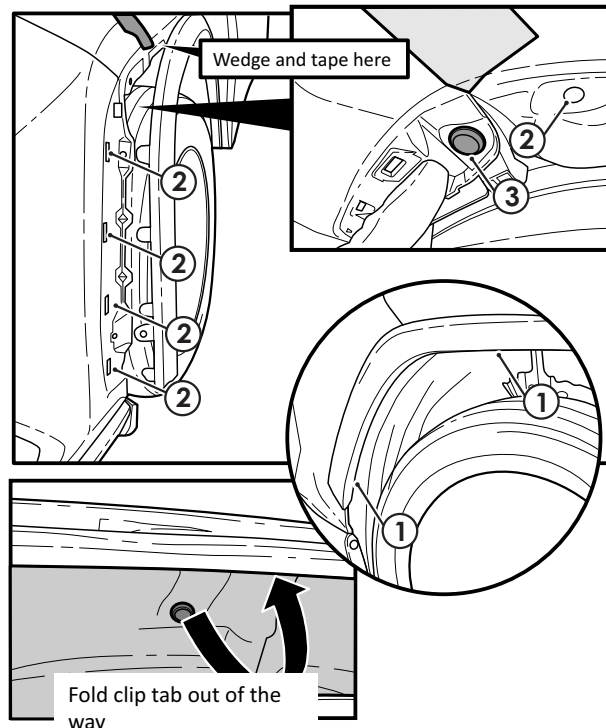
Be careful not to over bend the fender flare causing damage.

- Remove one clip (3) holding the bumper to the fender. Retain for re-fitment.
- Repeat for RHS.

Tools Required:



Clip Removal Tool



— Step 5

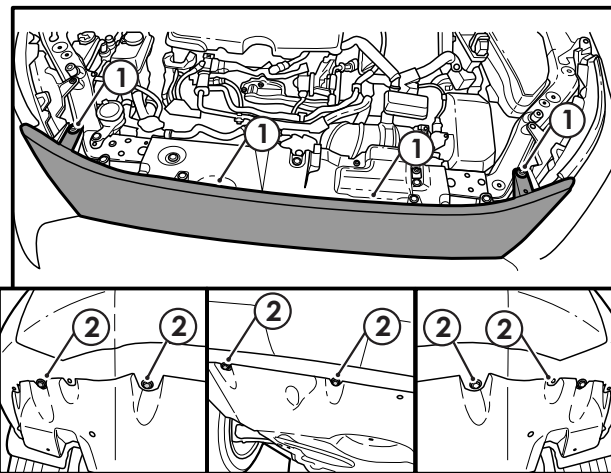
Bumper Removal:

- Remove 4 X M6 bolts (1) from the upper bumper cover to radiator support panel.
- Remove 6 X screws (2) from the lower bumper cover to under shield. Retain for re-fitment noting screw length (long).

Tools Required:



10mm socket



— Step 6

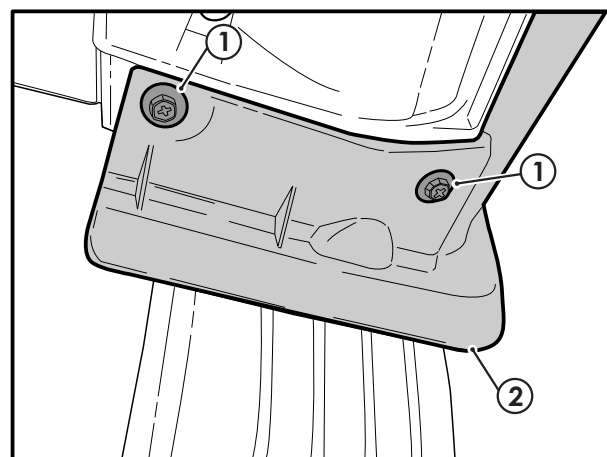
Bumper Removal continued:

- Remove 2 X screws (1) from the spat (2) to the fender liner. Note length (long) and retain for re-fitment.
- Rotate spat outboard out of the way
- Repeat for LHS.

Tools Required:



10mm Socket

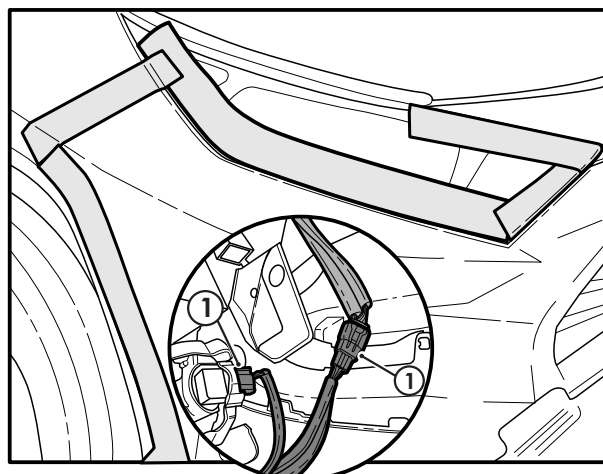


– Step 7

- Tape the headlight, fender and bumper cover to prevent damage from bumper removal.
- Unclip bumper cover from headlight and fender supporting with a person each side.
- Pull forward slightly and disconnect the wiring harness connector/s (1) on the LHS of the bumper.
- Remove and place on bumper stand ready for cutting.
- **Note: If the connector becomes detached from the bumper, re-clip in place for re-assembly.**

Tools Required: 

Bumper Stand



– Step 8

Cut bumper lower grille as per templates (refer to Bumper Lower Grille Template pages). Check 50mm scale markers before cutting out templates.

- Remove only the OE lower tow hook cover from the bumper cover and discard. Ensure the upper tow hook cover (1) is in place.
 - Apply tape along painted surface on lower bumper grille (2) to prevent damage from drilling and deburring.
 - Cut the template
 - Align the template to bumper lower grille (3).
 - Mark the holes on bumper lower grille using spike / bradle.
 - Drill holes
 - Cut the cut-outs (4).
 - Deburr
 - Repeat all steps for other side of vehicle

Tools Required: 

10mm drill / spade bit

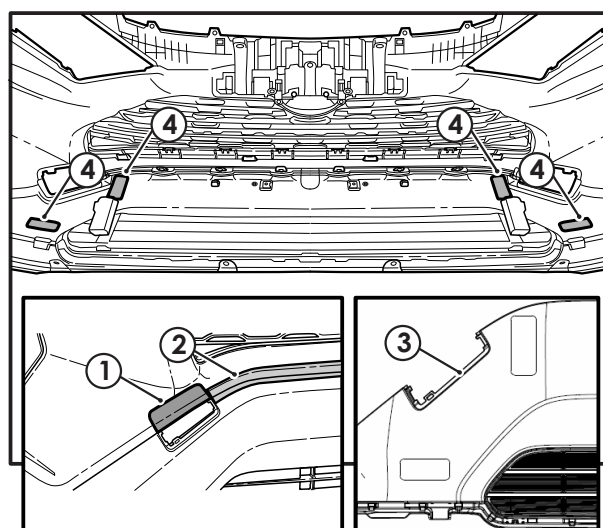
De-burring Tool

Tape

MultiTool Cutter

Steel ruler

Spike / Bradle



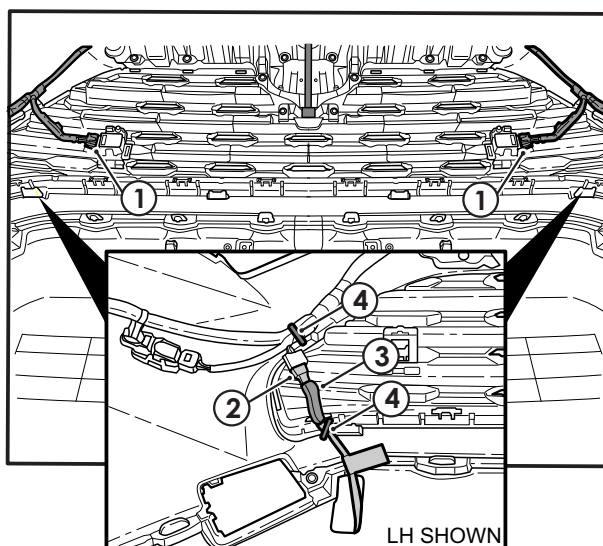
– Step 9

Parking sensor harness:

- Disconnect and remove the two parking sensors from grille and keep for fitment to the nudge bar (1).
- Connect the park sensor patch harness (shorter harness) (2) to OE connector and route harness as shown (3).
- Add 2 cable ties (4) as shown to tie the patch harness to the bumper. Cut back the cable tie ends.
- **Repeat all Steps for other side of the vehicle.**

Tools Required: 

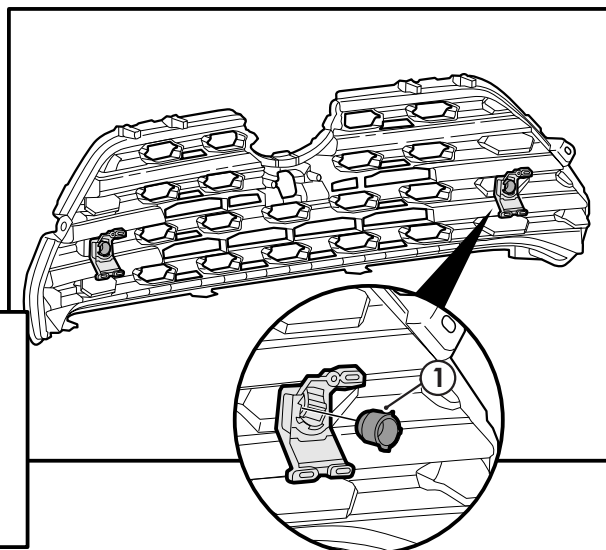
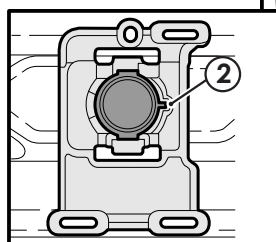
Side Cutters



— Step 9a —

Parking Sensor Blank:

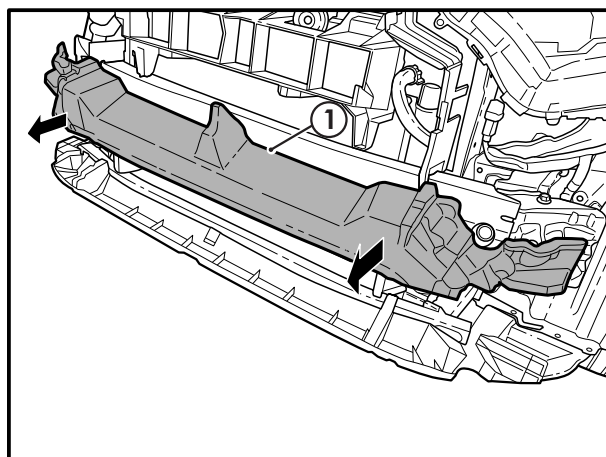
- Clip the park sensor blank **(1)** to the radiator grille where the park sensor was previously removed on both sides of the grille.
- Note: Align the rib **(2)** on the sensor blank to the slot in the retainer. Ensure both clips are engaged.



— Step 10 —

Remove impact absorber:

- Remove and discard the impact absorber **(1)**.



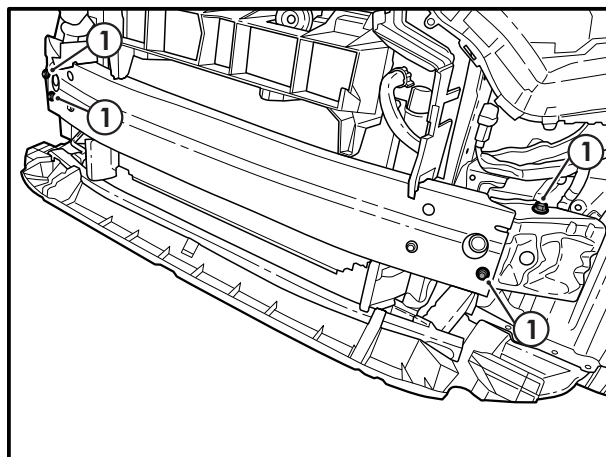
Tools Required: 

Trim Removal Tool

— Step 11 —

Prepare the bumper beam for the nudge bar:

- Remove and discard 2x M10 bolts **(1)** on each side.



Tools Required: 

14mm Socket

– Step 12

Install Nudge Bar brackets:

- Loosely install the upper nudge bar bracket (1) to the bumper beam top hole with 1 X M10x45 bolt (2) and M10 Spacer (3).
- Loosely install lower mounting bracket (4) over upper bracket hole using 1x M10x30 bolt (5), 1x M8 Bolt (6) and M8 Flat Washer (7) per side.

Note: Ensure the correct bracket is used for the lower mount.

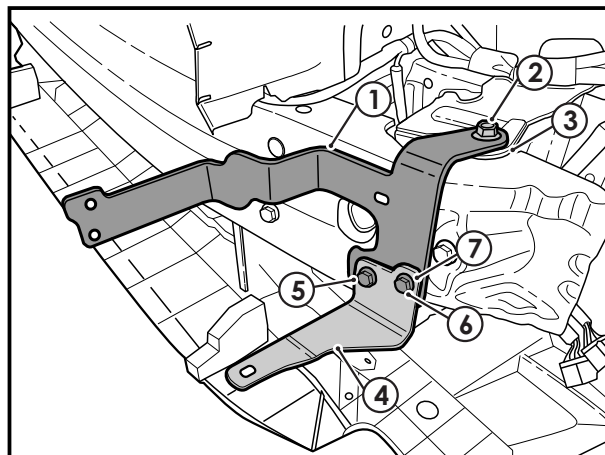
-  Torque the 2 X M10 bolts to 43Nm and 1x M8 to 20Nm.

Repeat for RHS.

Tools Required: 


13mm Socket

Torque Wrench



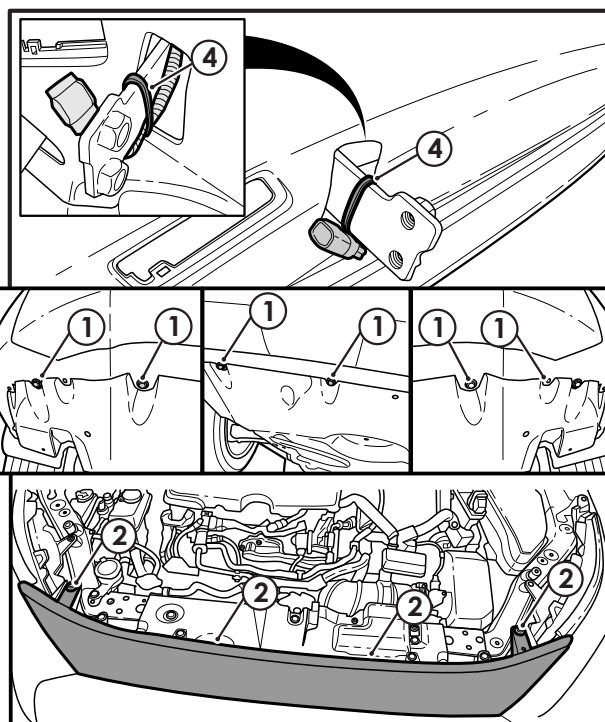
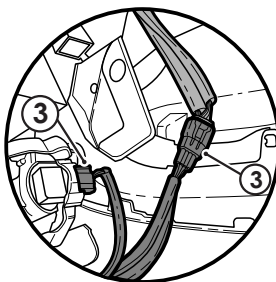
– Step 13

Re-install Bumper Cover:

- Re-install the bumper cover over the nudge bar brackets and reinstall all removed fasteners (1) and (2). Ensure the wire harness connector/s (3) on the LHS of the bumper is reconnected.
- After fitting the bumper cover back to the vehicle, the park sensor patch harness is cable tied (4) on the corrugated tube as shown (both sides). Cut excess cable tie end.
-  Torque self tapping screws (1) until tight and M6 screw (2) to 9Nm.

Tools Required: 

10mm Socket



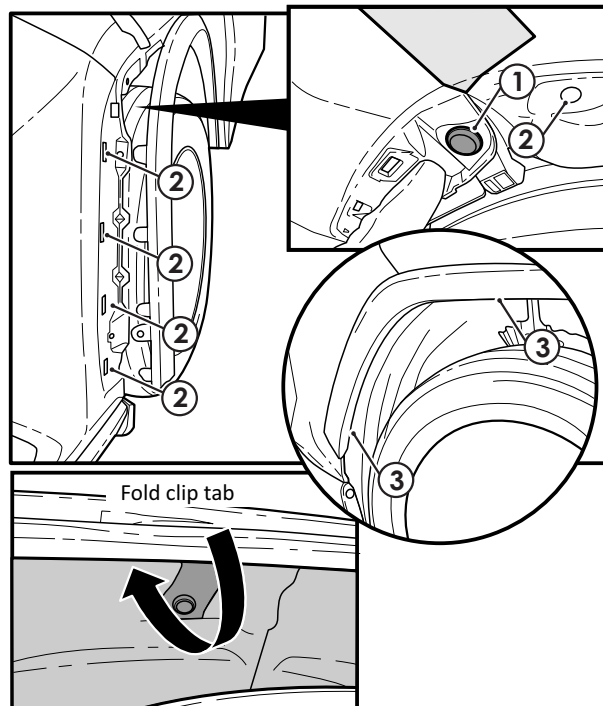
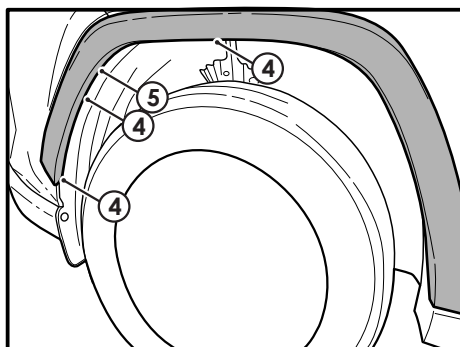
— Step 14 —

Re-Install Fender flare:

- Install the clip (1) holding the bumper cover to the fender.
- Re-clip 5 clips (2) to the fender flare to the bumper cover and fender.
- Fold the fender flare upper and lower clip tab (3) back into position.
- Re-insert the 3 clips (4) and 1 screw (5) to attach the fender flare to the fender liner and bumper cover.


Repeat for the RHS.

Tools Required: 
10mm socket

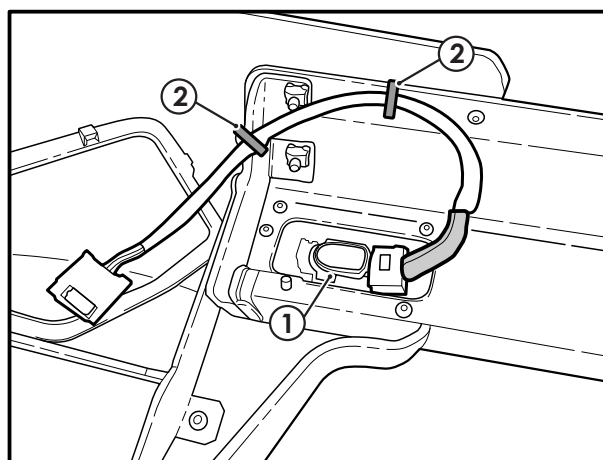


— Step 15 —

Install parking sensor:

- Install the parking sensor (1) that was removed from the bumper cover to the nudge bar.
- Connect the longer patch harness to the parking sensor.
- Cable tie into 2 locations (2) and trim the cable tie/s as required. Cut excess cable tie ends.
- Repeat for opposite side.
-  Do not pull on the Wiring Harness seals so that the connector remains water proof.

Tools Required: 
Side Cutters

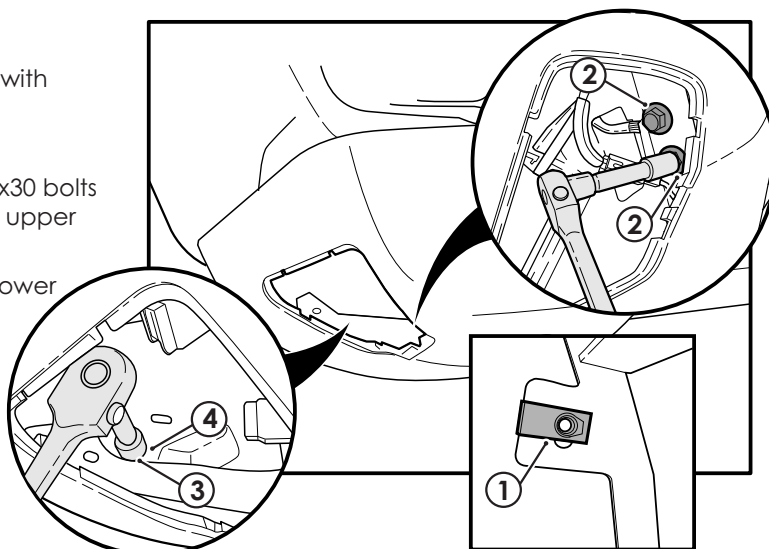


— Step 16 —


Install Nudge bar:

- Fit M8 U Nut (1) to over-ride support bracket per side with thread side down.
- Unclip Nudgebar Tow Hook Cover.
- Install the nudge bar over the brackets and fit 2x M10x30 bolts (finger tight) (2) per side to hold the nudge bar to the upper bracket.
- Install 1x M8 Bolt (3) and 1x M8 Flat Washer (4) to the lower bracket on both sides (finger tight).

Tools Required: 
Socket



— Step 17 —

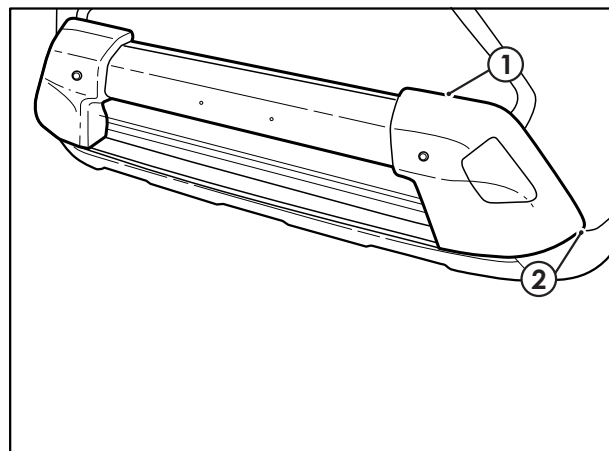
- Adjust the nudge bar to the vehicle ensuring the upper and lower gaps to bumper cover are tightly controlled. Gap **(1)**: 10 +/-2mm Gap **(2)**: 8 +/-2 mm.
- Once the position of the nudge bar is confirmed torque the 2x M8 and 4x M10 fasteners.
-  **Torque M8 fasteners to 20Nm and M10 fasteners to 43Nm.**

Tools Required:

13mm Socket

Torque wrench

Short extension



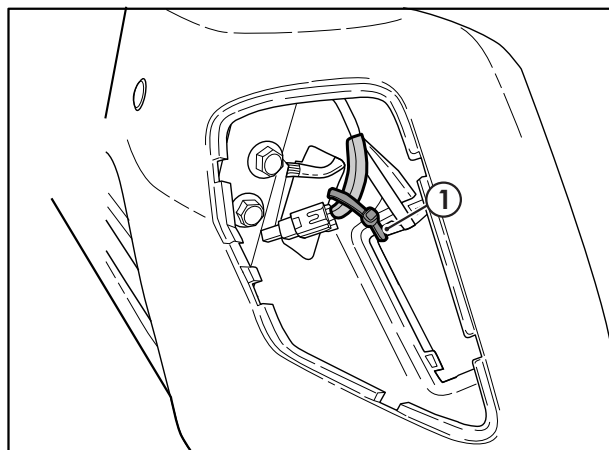
— Step 18 —

Connect Parking Sensor harness:

- Connect the park sensor patch harness and cable tie **(1)** as shown.
- Cut excess cable tie ends.

Tools Required:

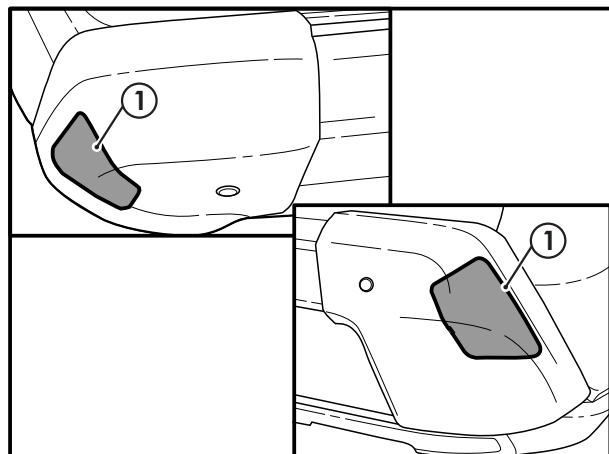
Side cutters



— Step 19 —

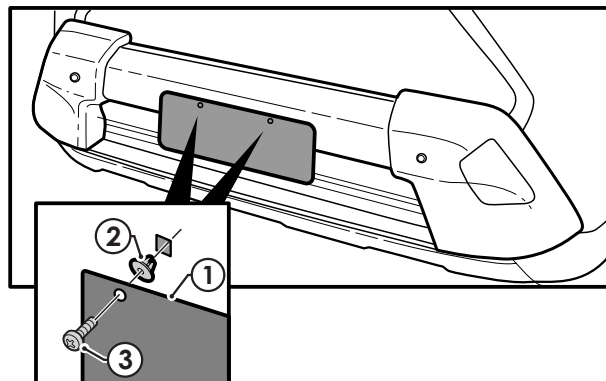
Install Tow hook cover to Nudge bar:

- Clip the tow hook cover **(1)** in on the LH and RH side of the nudge bar.



— Step 20

- Fit Licence Plate (1) to the Nudgebar using 2x self retaining grommet (2) and 2x self tapping screw (3).



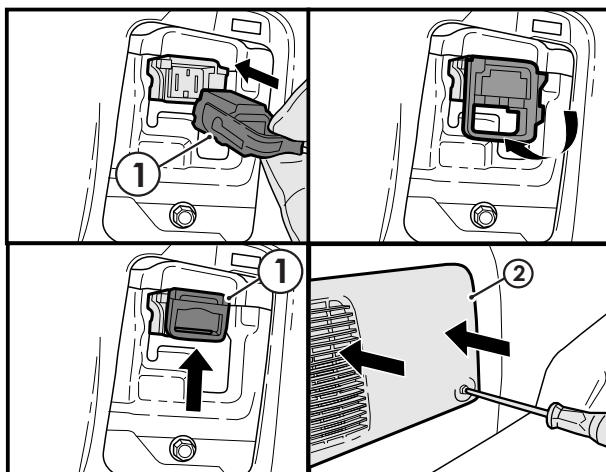
Tools Required: 

- Phillips head screw driver

— Step 21

Hybrid:

- Re-Install the hybrid batter isolator (1).
- Re-install cover on the RHS below back seat (2).




Tools Required: 

- Phillips head screw driver

— Step 22

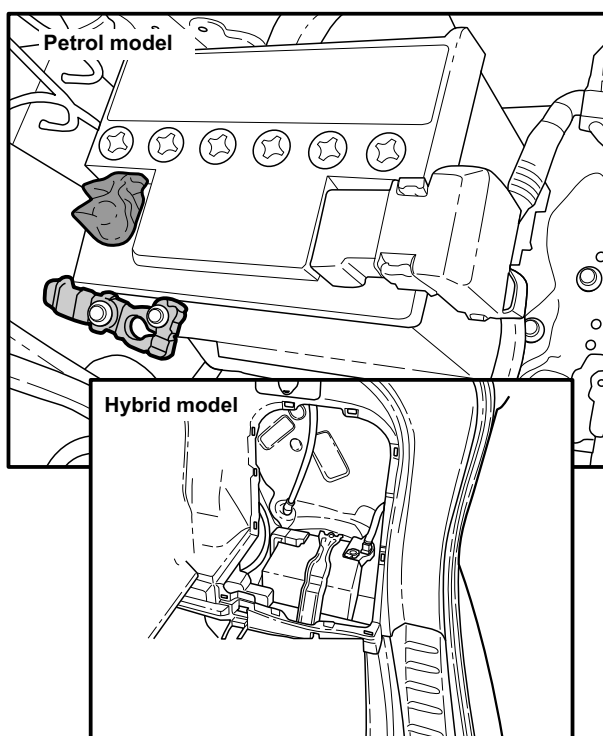
Connect Battery Earth:

Petrol / Hybrid

- Connect the earth terminal and reinstall any covers removed to access the battery.
- Earth terminal torque 2.9~7.8Nm 
- Confirm the operation of the park sensors, fog lamps, camera and radar.

Tools Required: 

- 10mm socket
- Torque wrench



— Radar Operation —

Important

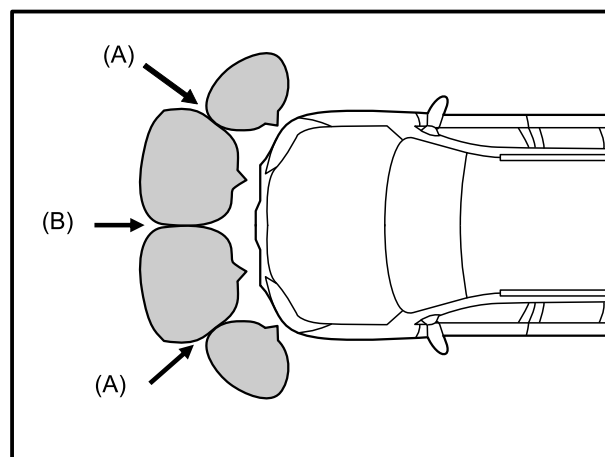


The Milli-Wave Radar must be re-calibrated as per the workshop manual procedure.

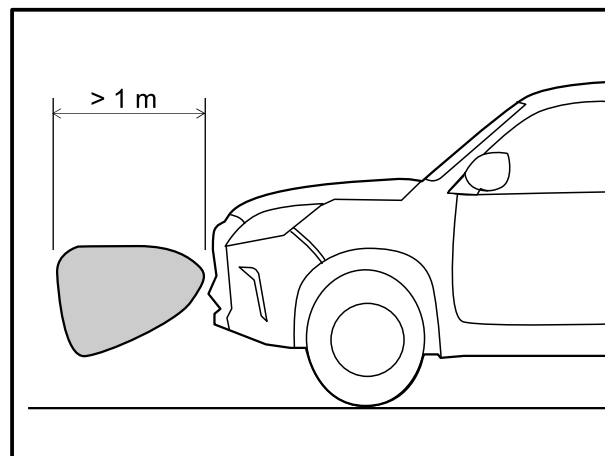
— Park Sensor Detection Range Test

Confirm the following after fitment of Nudgebar:

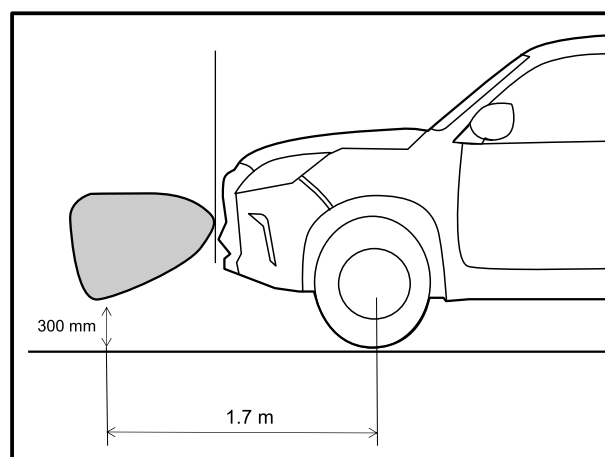
- Check that there is no gap in the sensor zone between each of the four front sensors with a $\varnothing 60\text{mm}$ object: Corner to centre **(A)** and centre to centre **(B)**.



- Using a wall, check that the sensor is detecting more than 1m in front of the vehicle.



- Confirm an object 300mm tall is not detected when placed 1.7m in front of the front wheel.



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