



INSTALLATION GUIDE

TOYOTA RAV4 05-19 ON

PN: NBT138SY | NB6T138SY

CRUISER MODELS



**NUDGE BAR - SERIES 2 NUDGE BAR
VEHICLE FRONTAL PROTECTION SYSTEM (VFPS)
FOR AIR BAG & ADR COMPLIANT VEHICLES**

INDEX

PAGE 3

Installation Kit

PAGE 4

Stage 1 - Vehicle Testing And Preparation

Stage 2 - Bumper Removal

Stage 3 - Bumper Support Removal

PAGE 5

Stage 4 - Install Steel Mounting Brackets

Stage 5 - Lower And Side Air Dams

Stage 6 - Stabilizer Mounts

PAGE 6

Stage 7 - Air Dams And Bumper Support Installation

Stage 8 - Polystyrene Infill Re-Fitment

Stage 9 - Sensor Wiring

PAGE 7

Stage 10 - Camera Remove And Refitting

Stage 11 - Camera Remove And Refitting

Stage 12 - Bumper Lower Grille Trim

PAGE 8

Stage 13 - Bumper Re-Fitment

Stage 14 - Protection Bar Fitment

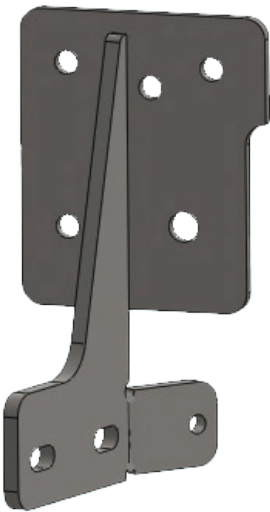
Stage 15 - Connections And Checks

PAGE 9

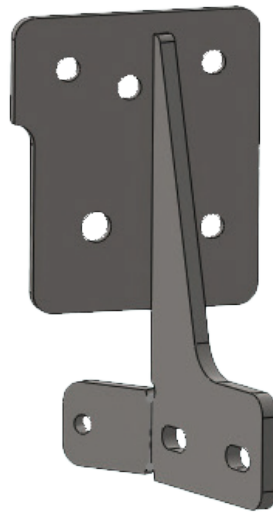
Final Checks

INSTALLATION KIT

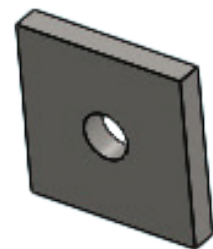
1 - Pair Steel Mounting Brackets	6 - M8 X 1.25 Nyloc Nuts
1 - Pair Steel Stabilizer Mounts	2 - M6 X 20mm Bolts
4 - 40 X 40 X 6mm Steel Flat Washer	4 - M6 Flat Washers
2 - 40 X 70 X 6mm Steel Flat Washer	2 - M6 Nyloc Nuts
4 - M10 X 1.5 X 40mm Bolts	1 - Quick Click Kit (IC19TOR4SP1H)
6 - M10 X 1.5 X 35mm Bolts	1 - 200mm Length Five Core Wire
20 - M10 Flat Washers	10 - Solder Joiners
10 - M10 Spring Washers	1 - 250mm Length 10mm Convolved Tubing
10 - M10 X 1.5 Nuts	4 - 200mm Zip Ties
6 - M8 X1.25 X 30mm Bolts	4 - 300mm Zip Ties
12 - M8 Flat Washers	



Left Hand Mount

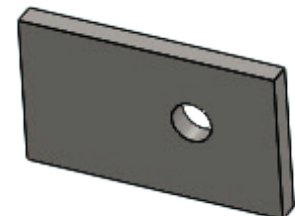


Right Hand Mount

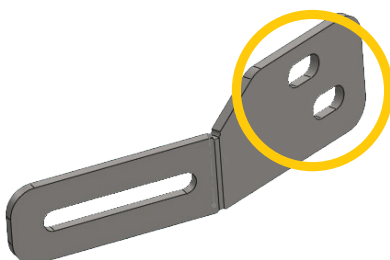


40 x 40 x 13mm Washer
(P/C Black)
IN BOLT KIT

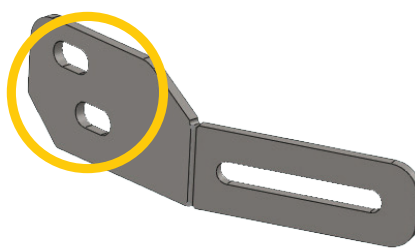
NOTE: Holes are different on each side.
Must be bent correct direction



40 x 68 x 10.5mm Washer
(P/C Black)
IN BOLT KIT



Left Hand Steel Stabilizer Mount
(NBT134_G4M) - P/C BLACK



Right Hand Steel Stabilizer Mount
(NBT134_F4M) - P/C BLACK

TOYOTA RAV4 05-19 ON

STAGE 1 - VEHICLE PREPARATION

Test drive vehicle to ensure all driver assists are correctly working and to gauge effectiveness.

Park on a flat level surface.

Apply parking brake and lift bonnet.

Unwrap ECB Protection Bar and disconnect mounts.
Discard bolts.



STAGE 2 - BUMPER REMOVAL

On top of bumper remove four (4) x 10mm head bolts, five (5) x push pull clips. Remove plastic trim.

From underside of vehicle remove six (6) x 10mm head bolts.

On inner guards remove one (1) Phillips head screw and two (2) x push pull clips (per side). Carefully unclip wheel arch mold from inside while pulling outwards.

Disconnect wiring from bumper reinforcement.

Remove one (1) x clip in rear wing per side. Pull out on rear wing to unclip from guard and unplug wiring on passenger side.

Remove bumper

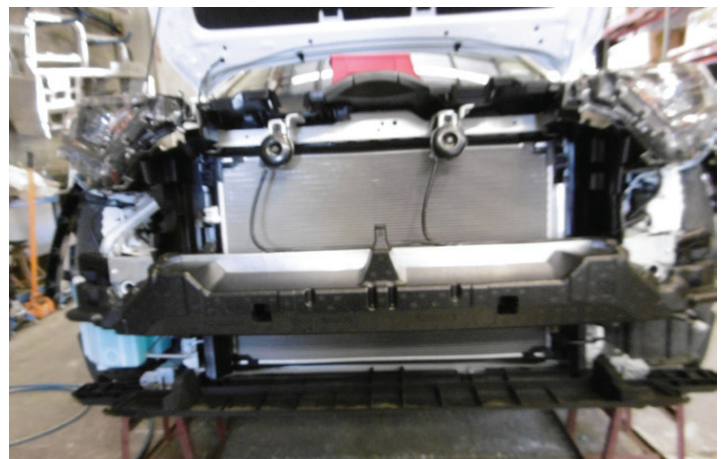


STAGE 3 - BUMPER SUPPORT REMOVAL

Remove polystyrene infill from bumper reinforcement.
Retain for re-fitment.

Disconnect wiring from bumper reinforcement.

Remove bumper reinforcement by removing three (3) x 14mm head bolts per side. Retain for re-fitment.



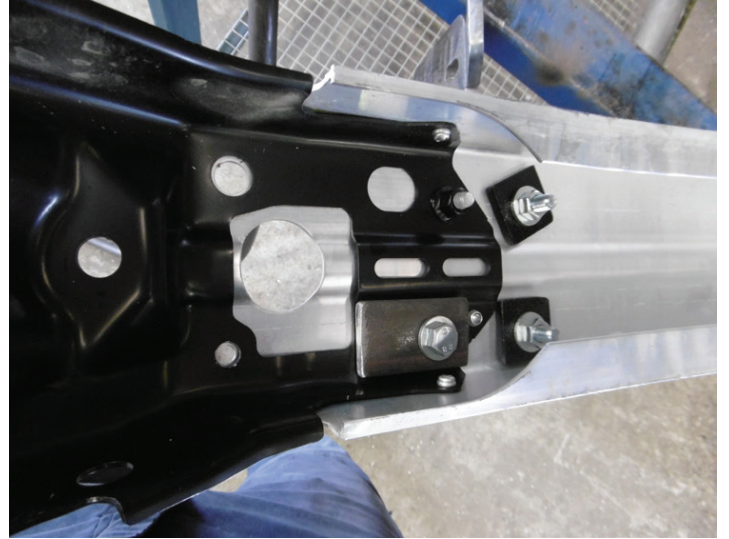
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STAGE 4 - INSTALL STEEL MOUNTING BRACKETS

Working on one side at a time, install steel mounting bracket (supplied) onto bumper support with original bolt in outer lower hole.

Using mounting bracket as a guide drill inner holes to 10mm. Attach mount with two (2) x M10 x 1.5 x 35mm bolts, flat washer, 40 x 40mm washer plate (supplied) to rear of bumper support and flat washer, spring washer and nut per side (supplied).

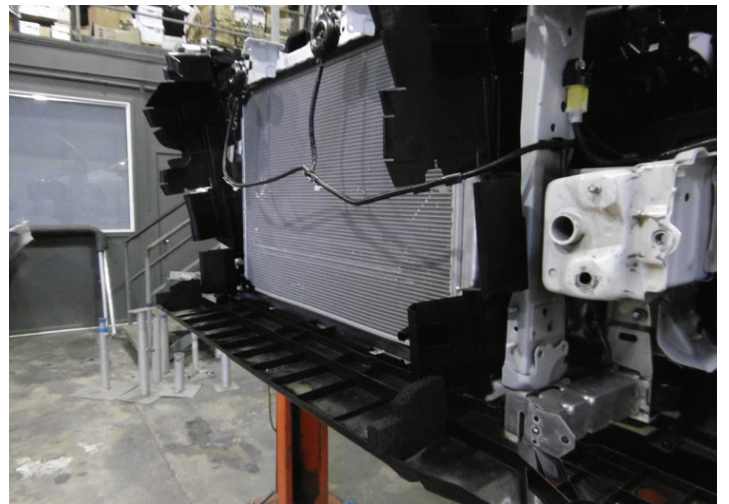
Install one (1) x M10 x 1.5 x 35mm bolt, flat washer and 40 x 70mm washer plate (supplied) in top outer hole from rear and secure with flat washer, spring washer and nut per side (supplied).



STAGE 5 - LOWER AND SIDE AIR DAMS

Remove lower air dam for access to rear bolt in steel mount when installing Protection Bar.

Remove side air dam beside radiators.



STAGE 6 - STABILIZER MOUNTS

Fit steel stabilizer mount (supplied) onto radiator support using one (1) x M8 x 1.25 x 30mm bolt, flat washer and Nyloc nut per side (supplied).

FINGER TIGHT ONLY.

Using mount as a guide, drill lower hole to 8mm.

BLOW FILINGS CLEAR AND TREAT ALL EXPOSED METAL WITH A RUST INHIBITOR.

Install one (1) x M8 x 1.25 x 30mm bolt, flat washer and Nyloc nut (per side) (supplied).

FINGER TIGHT ONLY.



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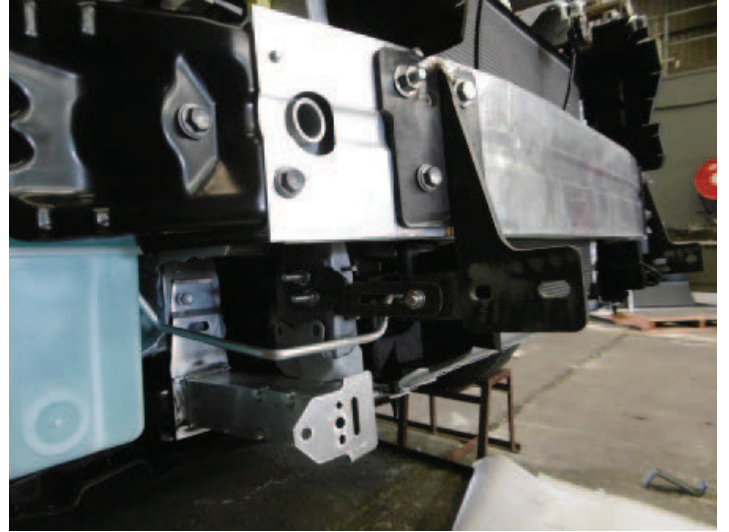
STAGE 7 - AIR DAMS AND BUMPER SUPPORT

Refit side air dams.

Refit bumper reinforcement using original equipment.

Fix stabilizer mount to the outside of steel mount with one (1) x M8 x 1.25 x 30mm bolt, flat washer and Nyloc nut per side (supplied).

TIGHTEN ALL BOLTS.



STAGE 8 - POLYSTYRENE INFILL REFITMENT

Mark and trim polystyrene to fit over steel mounting brackets.

Zip tie onto reinforcement.



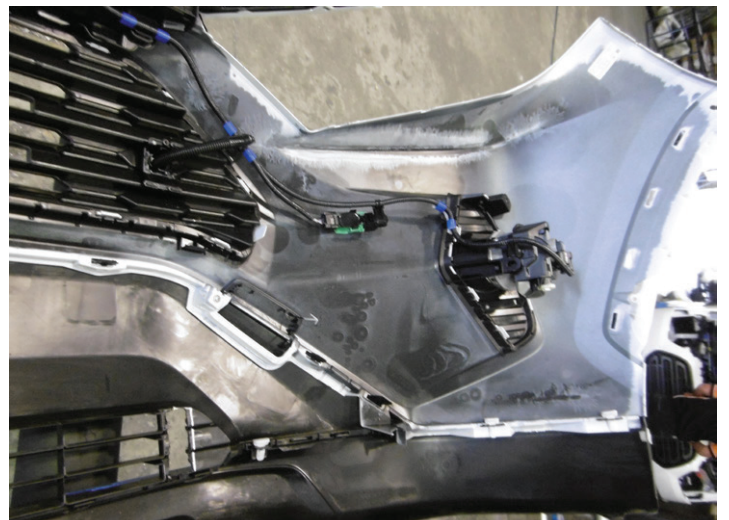
STAGE 9 - SENSOR WIRING

Remove the two (2) x centre parking sensors from plastic bumper.

Relocate parking sensors to rear of plastic housings in Protection Bar.

Using Quick click harness (supplied), feed harness through sensor holes in bumper cover and connect to original equipment wiring harness.

NOTE: holes in bumper may need to be enlarged to allow harness to feed through.



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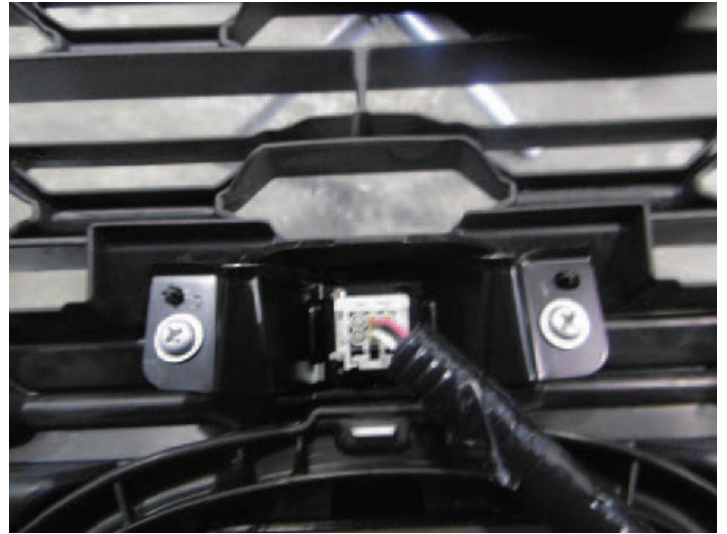
STAGE 10 - CAMERA REMOVE AND REFITTING

Remove camera from bumper, two (2) x PK screws.

Extend camera wiring harness 200mm using wire and solder joiners (supplied). Place wiring into convoluted tubing (supplied).

Place exposed wiring into 250mm convoluted tubing for protection.

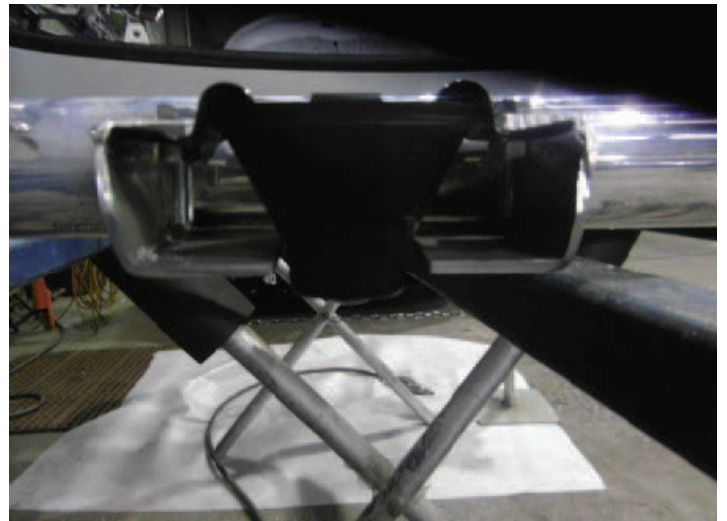
NOTE: Overheating of connectors will cause the plastic sheathe to melt, while under heating will not melt the solder enough to create a strong connection. Hold joint still until solder is solid for a good join.



STAGE 11 - CAMERA REMOVE AND REFITTING

Place camera into camera housing on Protection Bar.

Secure with two (2) x M6 bolts, flat washers and Nyloc nuts.

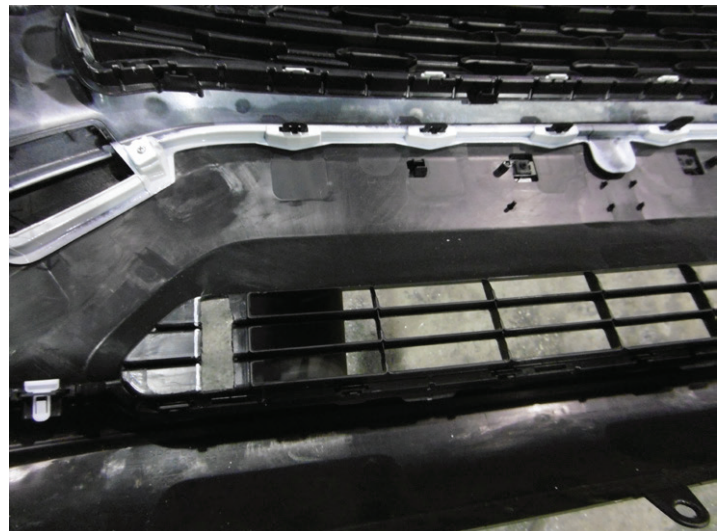


STAGE 12 - BUMPER LOWER GRILLE TRIM

Using measurement from steel mounting bracket, mark and trim lower grille for mounting to go through.

Ensure trim is as neat as possible as this will not be covered.

NOTE: Alloy goes to outside of mounting bracket.



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STAGE 13 - BUMPER RE-FITMENT

Refit bumper onto vehicle using original equipment as per reverse of stage 2.



STAGE 14 - PROTECTION BAR FITMENT

Fit Protection Bar onto steel mounting brackets using four (4) x M10 x 1.5 x 40mm bolt, flat washer, spring washer and nut (supplied).

Align and **tighten all bolts**.



STAGE 15 - CONNECTIONS AND CHECKS

Connect sensors and camera check for correct operation.

Refit lower air dam and under body guard.

Test drive vehicle to ensure all driver assists are working as per before fitment.



FINAL CHECKS

ENSURE NUMBER PLATE IS CLEARLY VISIBLE

Note: When fitting/refitting the licence plate to the vehicle, ensure there is no obstruction to licence plate vision in accordance with local authorities. If required relocate licence plate to an alternate location.

FURTHER VFPS NOTES

1. Do not attach VFPS to the vehicle using anchorages not intended for this purpose (e.g. engine mounting bolts)
2. Do not use this product for any vehicle make or model, other than those specified by the VFPS manufacturer
3. Do not remove the plaque or label from the VFPS
4. Do not modify the structure of the VFPS in any way
5. No accessory or fitment should project forward of the VFPS forward profile

IMPORTANT INFORMATION

Periodically check bolts and nuts for correct tightness, especially if traveling on rough roads.





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