



**4X4 ENGINEERING**

# SS86HF

SAFARI V-SPEC SNORKEL

To Suit:

Lexus LX470 & Toyota 100 Series Landcruiser with  
1FZ-FE, 2UZFE, 1HZ, HD-FTE Engines



24/11/09

## Parts List

ITEM	PART NO	DESCRIPTION	QTY
1	375-133-600	BODY - SNORKEL (SS86HF)	1
2	000-135-800	3 1/2" AIR RAM ASSEMBLY	1
3	375-032-600	BRACKET - UPPER MOUNTING	1
4	000-002-100	BOLT - HEX - 6mm x 1.0 x 14mm (SEMS)	2
5	000-951-300	SCREW - S/T - 4.2mm x 16mm	3
6	000-960	INSERT - PLASTIC	3
7	000-110	STUD - S/S - 8mm x 1.25 x 25mm	5
8	000-311-300	WASHER - BODY - S/S - 8mm x 30mm	5
9	000-205-300	NUT - NYLOC - S/S - 8mm x 1.25mm	5
10	000-958	POP RIVET - 4.0mm x 12mm	3
11	000-310-100	WASHER - BODY - 6mm x 16mm	2
12	375-024-600	HOSE - AIR ENTRY	1
13	000-1911	CLAMP - HOSE - 100/120mm	1
14	000-910	CLAMP - HOSE - 90/110mm	1
15	000-914/B	CLAMP - AIR RAM - No. 56 (BLACK)	1
16	375-017-600	TEMPLATE	1



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## Installation Guide

Fitment to:

- Right Hand Side

Fitting Time:

- 150min

Special Tools:

- 114mm hole saw
- step drill
- pop-rivet gun
- touch-up paint
- masking tape
- Sikaflex 227 Adhesive Sealant
- Loctite 243 Threadlocker

**Prior to commencing the installation, it is the installer's responsibility to verify that all components and particularly the template (Item 16) are correct.**

- 1** Remove the following in accordance with the factory service manual.
- RHS Mud Flap
  - RHS Inner Guard Liner
  - Air Cleaner Assembly
  - RHS Guard Mounted Indicator Lamp

**2**

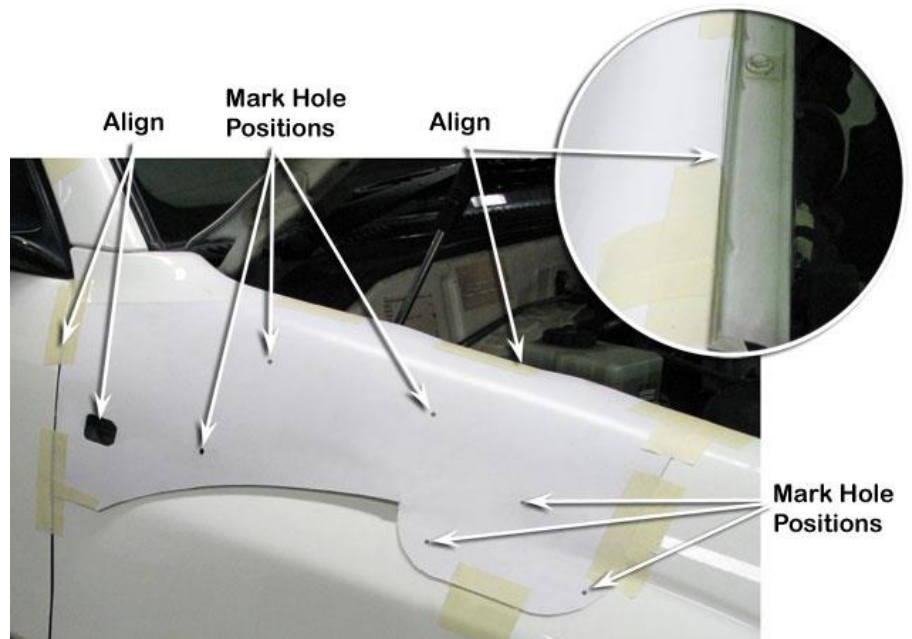
Remove and discard the air entry duct and air entry flange.



3

Align the template (Item 16) to the upper and rear edges of the right hand guard panel. Check alignment with the guard mounted indicator hole. Tape the template to the guard with masking tape.

Mark all of the hole positions with a felt tip pen and then remove the template.



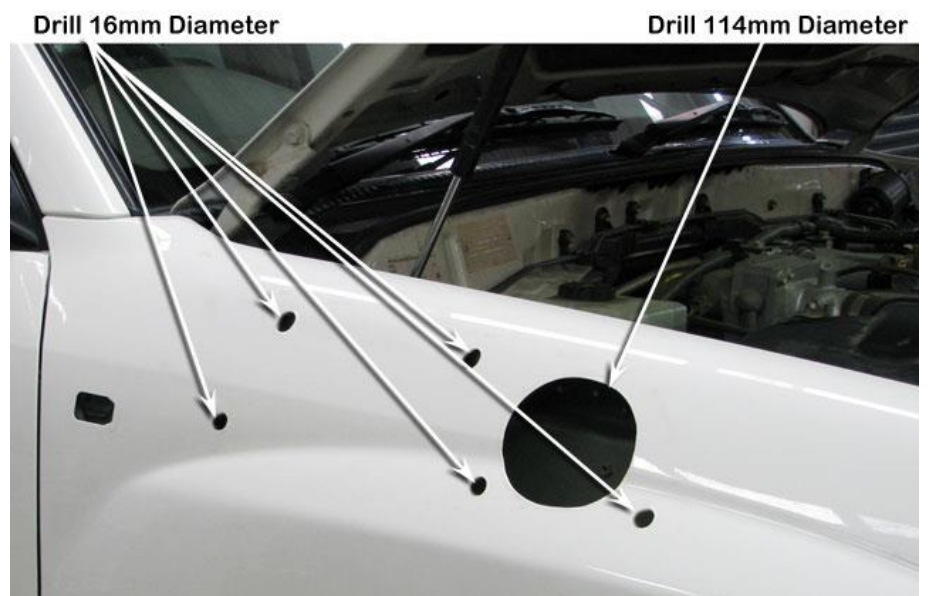
4

Drill a pilot hole for each of the marked positions.

Use the step-drill to drill the 5 mounting holes to 16mm diameter.

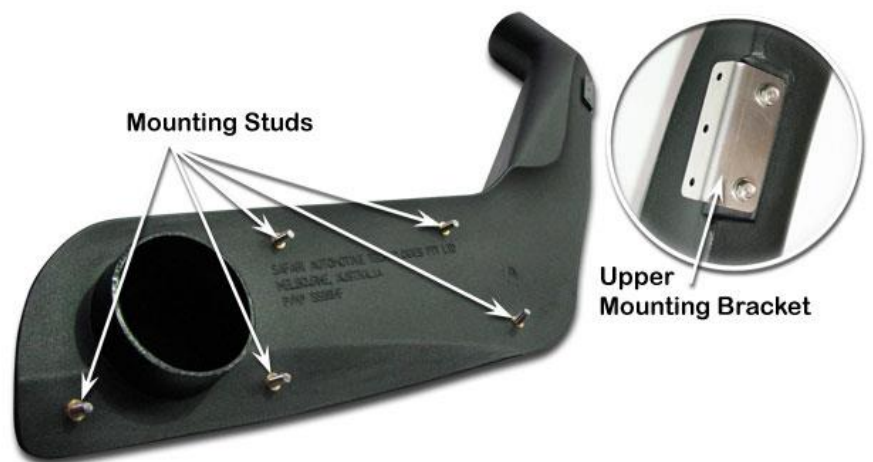
Drill the snorkel body outlet hole with the 114mm hole saw.

Deburr and paint holes to prevent rust.



5

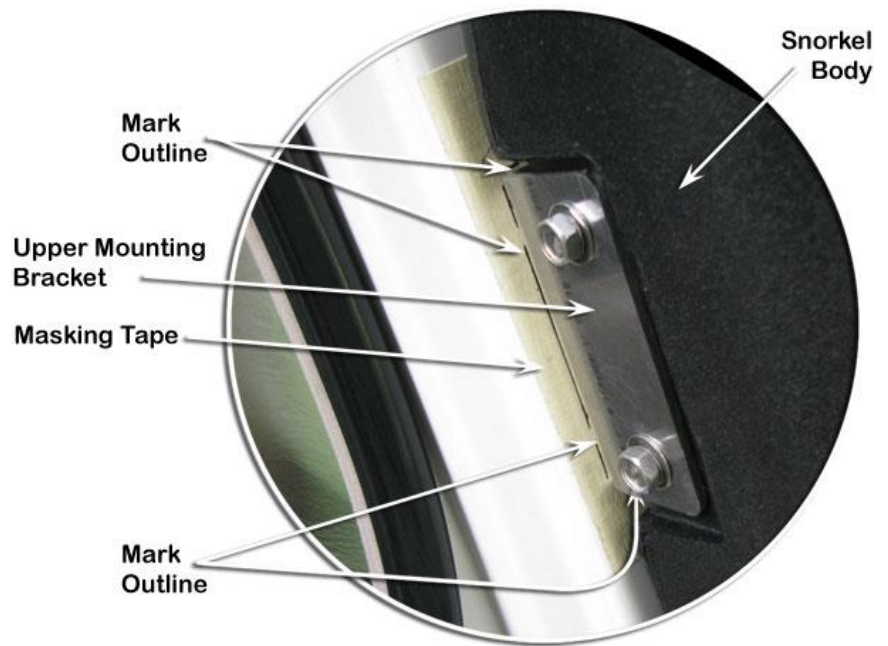
Install the upper mounting bracket (Item 3) to the snorkel body (Item 1) with hex bolts (Item 4). Apply Loctite to each of the mounting studs (Item 7) and install into the snorkel body mounting inserts.





6

Place a strip of masking tape along the A-Pillar and install the snorkel body (Item 1) to the guard panel. When the snorkel body is correctly positioned, mark the outline of the upper mounting bracket (Item 3) onto the masking tape as shown.



7 Remove the snorkel body (Item 1) from the vehicle and remove the upper mounting bracket (Item 3) from the snorkel body.

Position the upper mounting bracket onto the previously marked bracket outline on the A-Pillar and mark the 3 mounting hole positions with a felt tip pen.

Check the hole positions from a straight edge as shown - approx. 18-20mm to the centre of the upper hole and approx. 20-22mm to the centre of the lower hole.

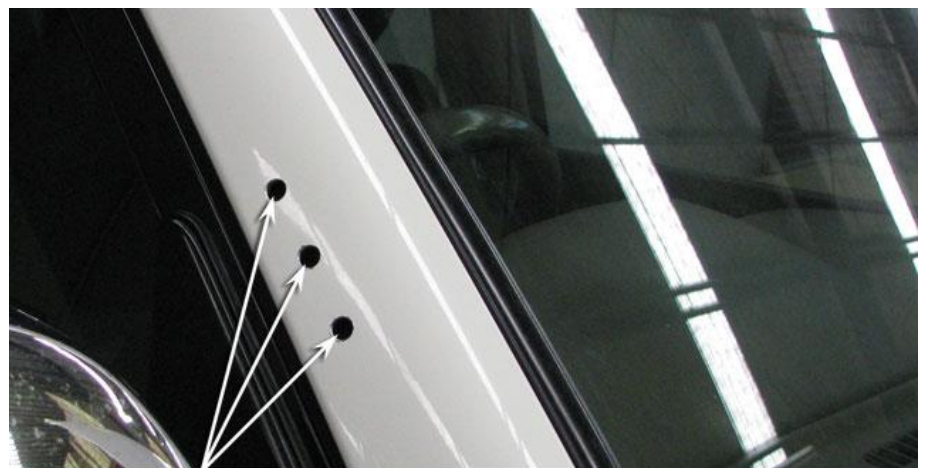


8

Drill a pilot hole for each of the 3 marked hole positions on the A-Pillar.

Drill each hole to 8mm diameter.

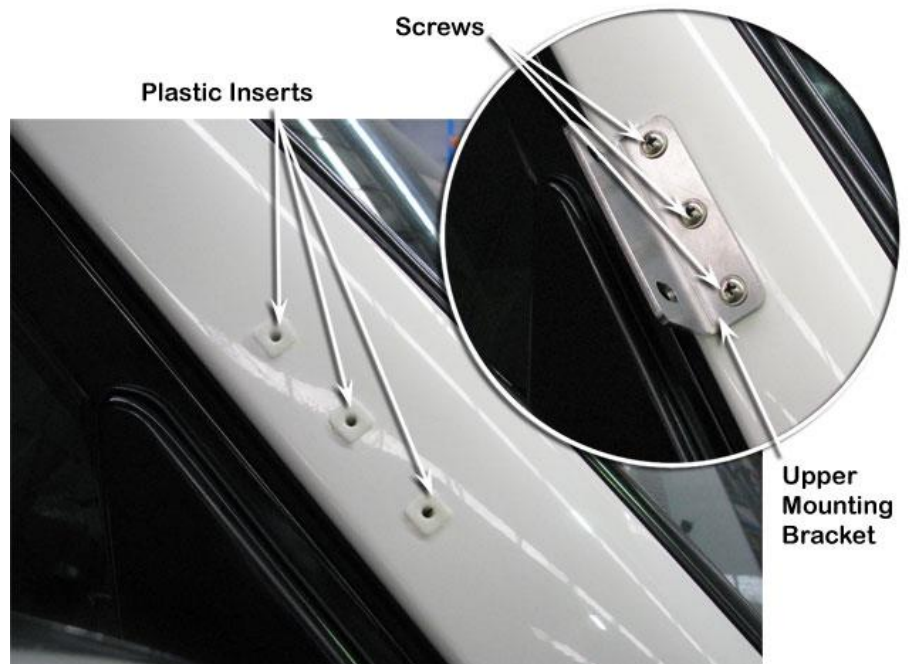
Deburr and paint holes to prevent rust.



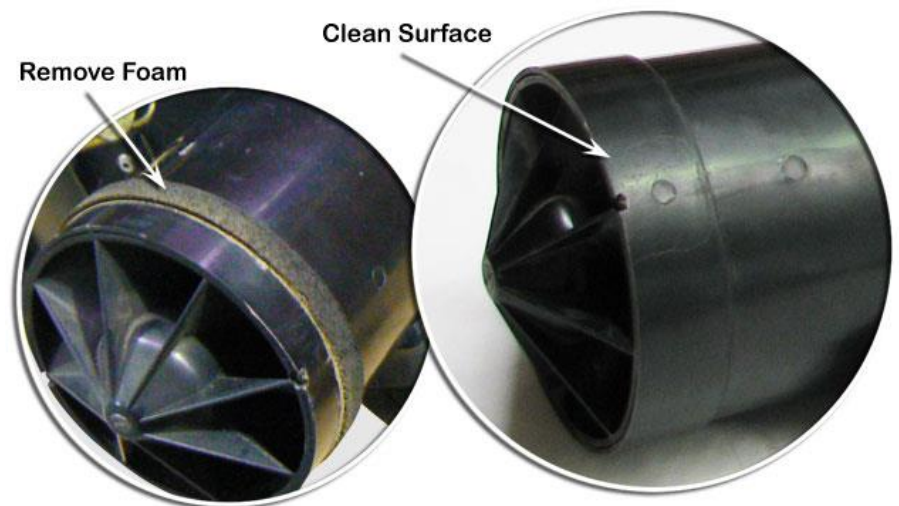
Drill, Deburr and Paint

Install the 3 plastic inserts (Item 6) into the upper mounting bracket holes in the A-Pillar.

Install the upper mounting bracket (Item 3) and secure into position with 3 self tapping screws (Item 5).

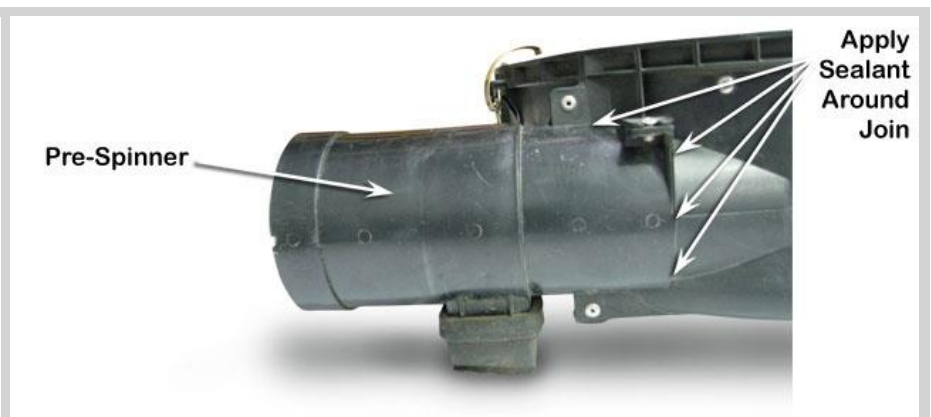


Remove the foam sealing strip from the pre-spinner inlet of the air cleaner housing. Use prep-wash to remove any sticky residue.



### Installer's Option: Sealing of the pre-spinner to the air cleaner housing.

**Option 1:** If the pre-spinner is to be sealed in position, apply sikaflex sealant around the outside surfaces where the pre-spinner joins to the air cleaner.

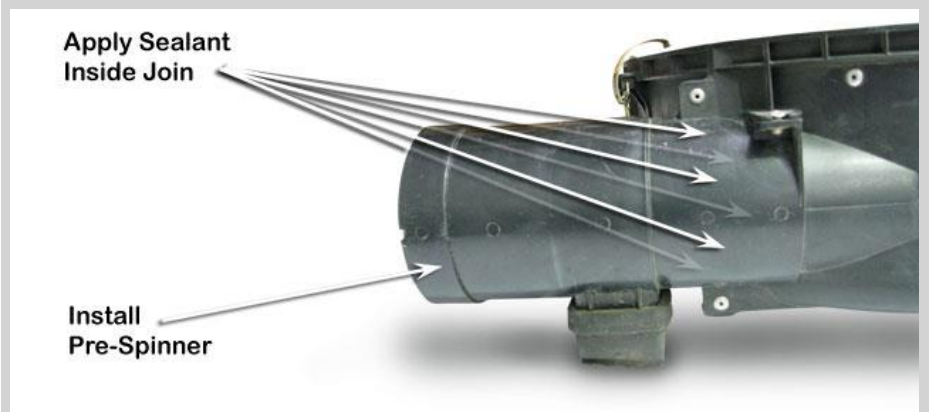
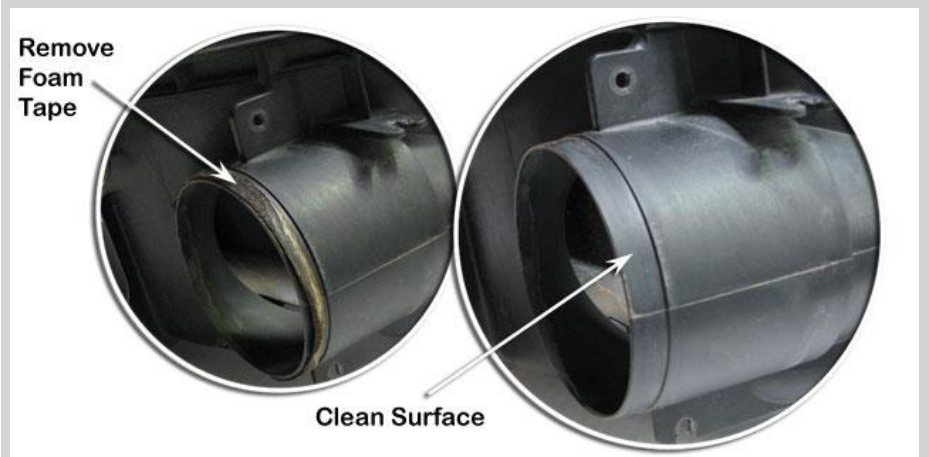
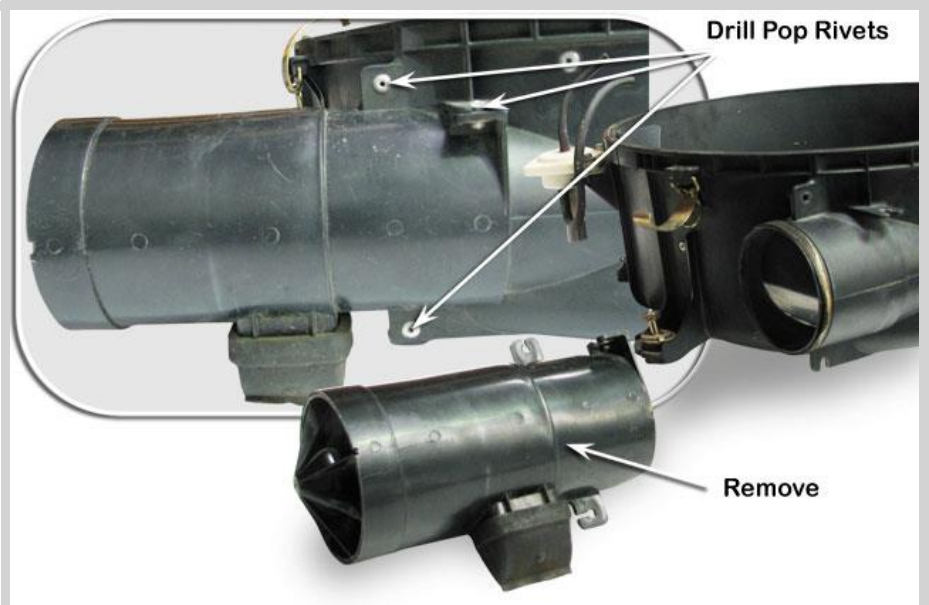




**Option 2:** The pre-spinner section can be removed from the air cleaner housing for more effective sealing. Drill the three retaining pop-rivets out with a 4mm drill bit, and then remove the pre-spinner. The three washers on the underside of the pop-rivets must be retained if this method of sealing is used. Remove the foam tape

Use prewash or similar solvent to clean all of the mating/sealing surfaces.

Apply sikaflex sealant to the internal sealing surface of the pre-spinner and the external sealing surface of the air cleaner housing. Slide the pre-spinner back into position and secure to the air cleaner housing with pop-rivets (Item 10) and the standard washers removed earlier. Clean up any excessive sealant to ensure a neat and water-tight join.



### Installer's Option:

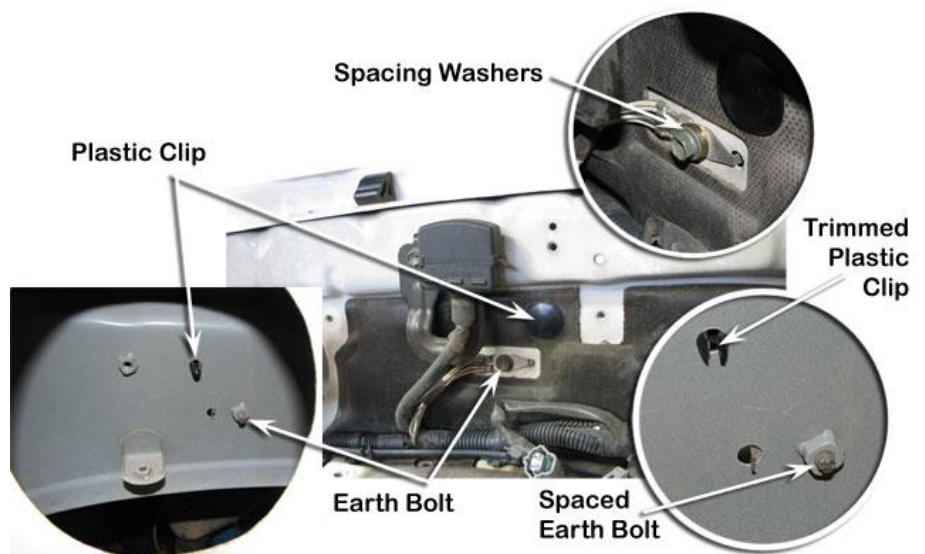
The pre-spinner and air cleaner housings contain drain valves that may permit water to enter the air intake. It is up to the installer to decide whether these drain valves should be sealed.



11

Remove the earth strap bolt located in the inner guard panel. Install 2 spacer washers (Item 11) to the bolt and then reinstall back into position.

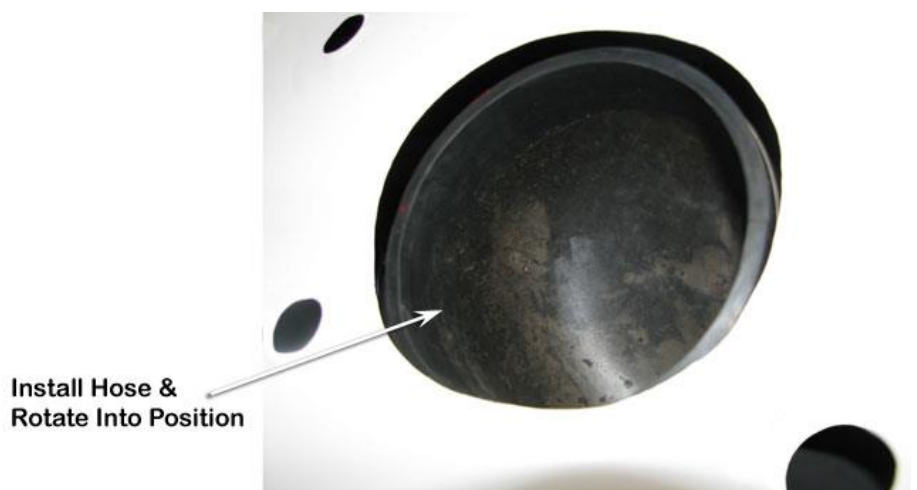
Shorten the length of the plastic clip located above the earth strap bolt in order to prevent damage to the air entry hose (Item 12).



12 Loosely install a 90/110mm stainless steel hose clamp (Item 14) over the pre-spinner and install the air cleaner base assembly back into the vehicle. Fasten with the original mounting hardware. Install the air cleaner element and air cleaner lid along with any other parts of the air cleaner system that may have been removed or disconnected.

13

Apply lubricant to the inside of the air entry hose (Item 12) and install the air entry hose onto the pre-spinner inlet snout of the air cleaner base assembly. Rotate the hose up into position and loosely install a 100/120mm hose clamp (Item 13) over the end of the air entry hose.



- 14** Apply a small amount of lubricant to the inside of the air entry hose and install the snorkel body to the guard panel whilst guiding the snorkel body outlet snout into the air entry hose.

When aligned correctly to the guard panel and the upper mounting bracket (Item 3), install body washers (Item 8) and secure with nyloc nuts (Item 9)

Secure the snorkel body (Item 1) to the upper mounting bracket (item 3) with 2 hex bolts (Item 4).

Align the air entry hose between the pre-spinner inlet snout and the snorkel body outlet snout and when correctly position, tighten the two hose clamps (Items 13 & 14) at either end of the air entry hose.



- 15** Loosely install the black hose clamp (Item 15) to the base of the air ram (Item 2) and install the air ram to the snorkel body (Item 1). Align the air ram and tighten the hose clamp (Item 15).



- 16** Install the guard panel mounted indicator, inner guard liner, mud flap (and any other items that may have been removed) in accordance with the factory service manual.

- 17 N.B: It is the installer's responsibility to ensure that all connections are watertight.**