



4X4 ENGINEERING

SS410HF SAFARI V-SPEC SNORKEL

Toyota FJ Cruiser 1GRFE 4.0Litre-V6



24/11/09

ITEM	DESCRIPTION	QTY	PART NO
1	BODY - SNORKEL (SS410HF)	1	340-133-000
2	3 1/2" AIR RAM ASSEMBLY	1	000-135-800
3	BRACKET - UPPER MOUNTING	1	340-032-000
4	BOLT - HEX - 6mm x 1.0 x 14mm (SEMS)	3	000-002-100
5	SCREW - S/T 4.2mm x 16mm	3	000-951-300
6	INSERT - PLASTIC	3	000-960
7	STUD - S/S - 8mm x 1.25 x 25mm - O/L	8	000-110
8	WASHER - BODY - 8mm x 30mm	8	000-311-300
9	NUT - NYLOC - 8mm x 1.25mm	8	000-205-300
10	HOSE - AIR ENTRY	1	340-024-000
11	CLAMP - HOSE - 80/100mm	1	000-909
12	CLAMP - HOSE - 90/110mm	1	000-910
13	HOSE CLAMP - SIZE 56 (BLACK)	1	000-914/B
14	TEMPLATE	1	340-017-000



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Installation Guide

1

Fitment to:

- Right Hand Side

Fitting Time:

- 120min

Special Tools:

- 105mm hole saw
- step drill
- hack saw/air body saw
- loctite (thread lock)

Prior to commencing the installation, it is the installer's responsibility to verify that all components and particularly the template (Item 14) are correct.

2

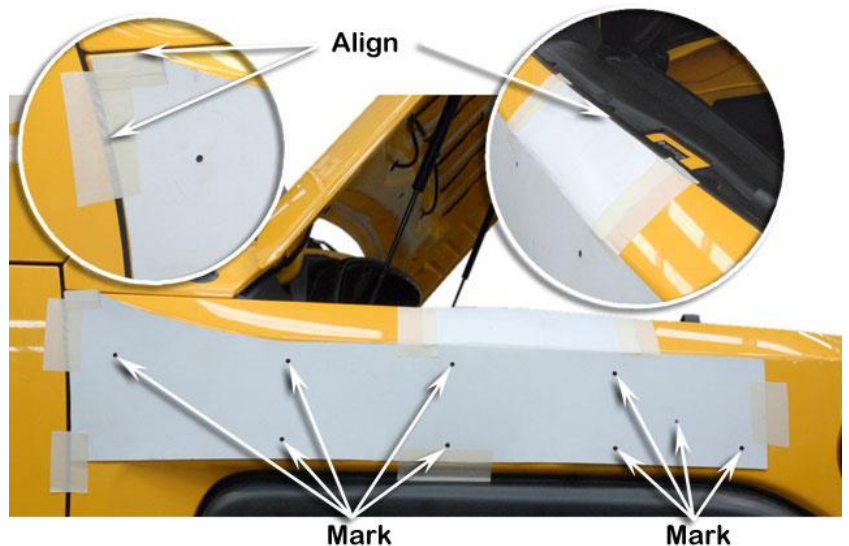
Remove the RHS inner fender liner and the engine air intake duct from engine bay in accordance with the factory service manual.

Remove and discard the air intake duct from inner fender.



3

Tape the template (Item 14) to the rear and upper edges of the right hand fender. With the template correctly positioned on the fender use a felt tip pen to mark all hole positions, then remove the template.

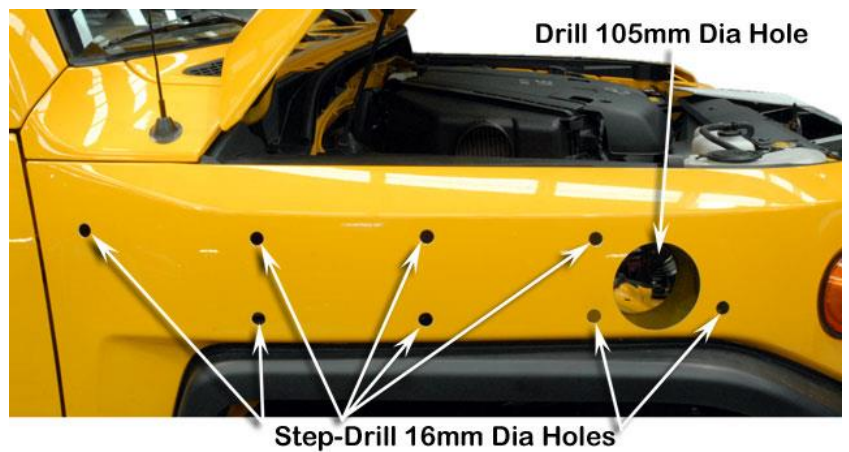


4 Drill a pilot hole for each marked hole position.

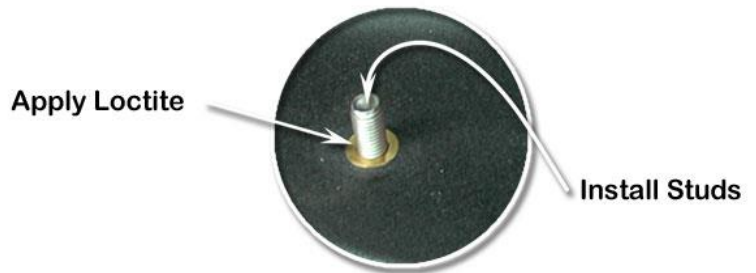
Using a 105mm hole saw, drill the snorkel body outlet hole.

Using a step drill, drill the eight mounting hole positions to 16mm.

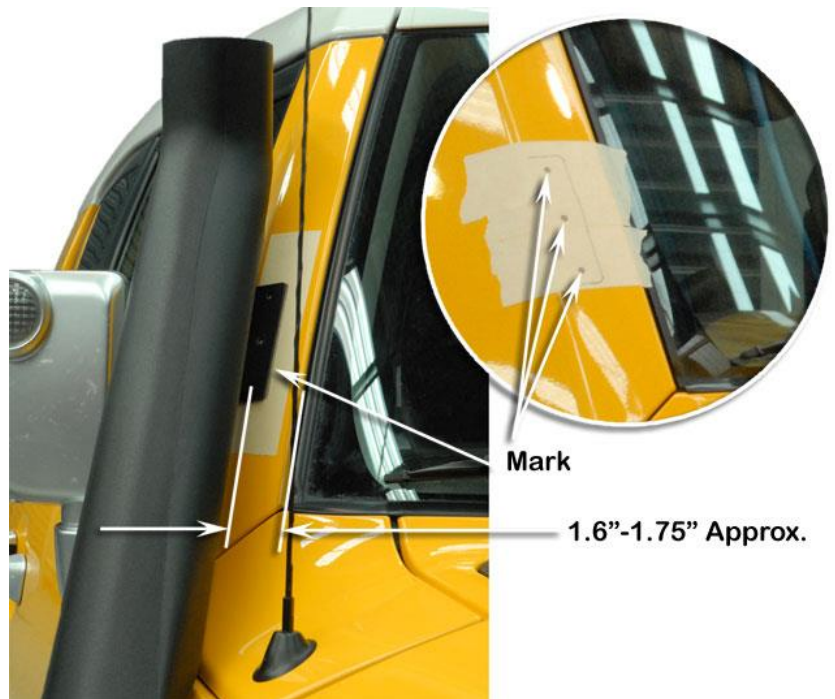
Deburr and paint holes to prevent rust.



5 Apply loctite to all eight studs (Item 7) and install the studs into the snorkel body mounting inserts (Item 1).



6 Place masking tape along the a-pillar panel where required and fasten the upper mounting bracket (Item 3) to the snorkel body (Item 1) with three bolts (Item 4). Carefully install the snorkel body onto the fender. With the snorkel body correctly positioned, mark the three upper mounting bracket hole positions on the 'A' Pillar trim. N.B: The mounting holes should be approx. 1.6" - 1.75" to the edge of the 'A' pillar trim.



7 Remove the snorkel body from the fender. Remove the upper mounting bracket from the snorkel body.

8 Drill a pilot hole for each marked hole position on the 'A' pillar, then drill to 8mm (deburr and paint holes to prevent rust).

9 Install the plastic inserts (Item 6) into the 'A' pillar trim.

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



10 Carefully install the snorkel body to the fender. Align the snorkel body to the upper mounting bracket and the fender panel. When correctly aligned, fasten the snorkel body to the fender panel with body washer (Item 8) and Nyloc nut (Item 9). Fasten the snorkel body to the upper mounting bracket with hex bolts (Item 4).

11 Using a hack saw or air body saw, cut the bead section from the front of the stock engine air intake duct as shown. Ensure that the maximum length of straight section is achieved.



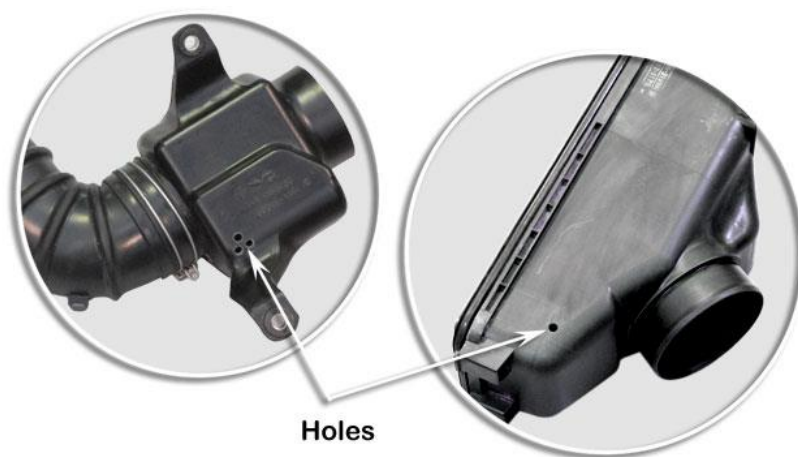
12 Loosely install the 90/110 stainless steel hose clamp (Item 12) over the snorkel body outlet.

Install the air entry hose (Item 10) to the snorkel body outlet.

Do not tighten the hose clamp yet.



13 The engine air intake duct and the air cleaner housing may have a number of drain holes as shown. It is up to the installer to determine whether the holes should all be totally sealed off to prevent any water from entering the air intake system when immersed to that depth of water.

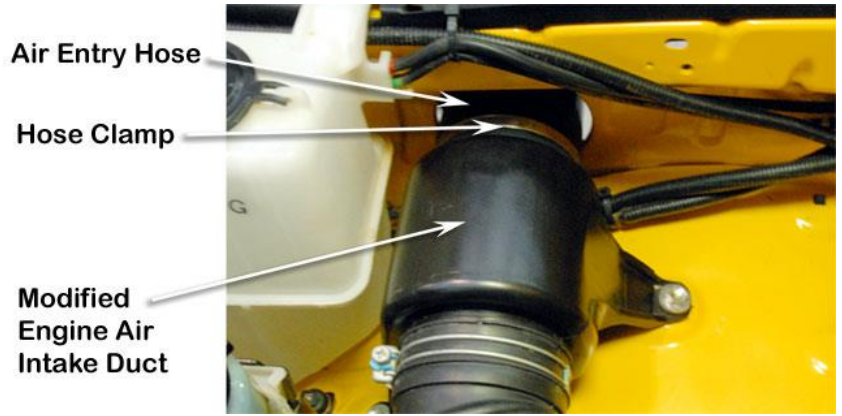


14 Loosely install the 80/100 stainless steel hose clamp (Item 11) over other end of the air entry hose (Item 10).



- 15** Install the modified engine air intake duct into the air entry hose (Item 10). Fasten the engine air intake duct using the stock fasteners.

Orientate the hose to achieve the best alignment and tighten the 90/110mm (Item 12) and 80/100mm (Item 11) hose clamps.



- 16** Install the stock air cleaner housing and reconnect the engine air intake duct to the air cleaner assembly.



- 17** Loosely install the black hose clamp (Item 13) to the base of the air ram (Item 2) and install the air ram (Item 2) to the top of the snorkel body (Item 1).

Align the air ram and tighten the black hose clamp (Item 13).



- 18** Install the RHS inner fender liner and any other items that may have been removed during the snorkel installation process.

- 19** **It is the installer's responsibility to ensure that all connections are watertight.**