SS189HF SAFARI V-SPEC SNORKEL

Toyota Land Cruiser Prado 150 Series
GRJ150R 4.0L V6 Dual VVT-i Petrol (1GR-FE Engine)



20/7/2010

Parts List

ITEM	PART NO.	DESCRIPTION	QTY
1	365-133-000	BODY - SNORKEL (SS188HF)	1
2	000-135-800	3 ½" AIR RAM ASSEMBLY	1
3	365-032-000	BRACKET - UPPER MOUNTING	1
4	000-002-100	BOLT - HEX - 6mm x 1.0 x 14mm (SEMS)	2
5	000-951	SCREW - S/T - 4.2mm x 13mm - S/S	3
6	000-960	INSERT - PLASTIC	3
7	000-110	STUD - 8mm x 1.25 x 25mm - S/S	5
8	000-376	WASHER - RUBBER - 8.5mm x 33mm	5
9	000-311-300	WASHER - BODY - 8mm x 30mm - S/S	5
10	000-205-300	NUT - NYLOC - 8mm x 1.25mm - S/S	5
11	365-024-200	HOSE - AIR ENTRY	1
12	000-1911	CLAMP - HOSE - 100/120mm	1
13	000-1913	CLAMP - HOSE - 120/140mm	1
14	000-914/B	CLAMP - HOSE - SIZE 56 (BLACK)	1
15	365-016-000	GASKET - FOAM BODY (SELF ADHESIVE)	1
16	365-017-000	TEMPLATE - GUARD PANEL	1

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GRJ150R 4.0L V6 Dual VVT-i Petrol (1GR-FE Engine)

Installation Guide

Fitment to:

- Right Hand Side

Fitting Time:

- 150min

Special Tools:

- 89mm hole saw
- Body saw (reciprocating)
- Step drill
- Masking Tape
- Loctite 243 (thread lock)
- Touch-up paint
- Prep-wash

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:

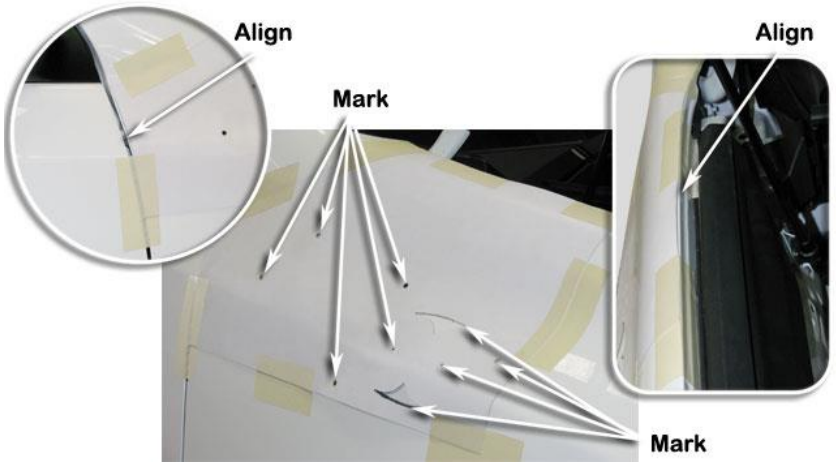
- RHS guard liner
- RHS mud flap
- Air cleaner assembly

2 Remove and discard the air intake duct.



3 Align the guard panel template (Item 16) with the upper and rear edges of the RHS guard panel. Tape the template to the guard panel with masking tape.

Mark the hole positions and the upper and lower snorkel body outlet hole sections with a felt tip pen and remove the template.



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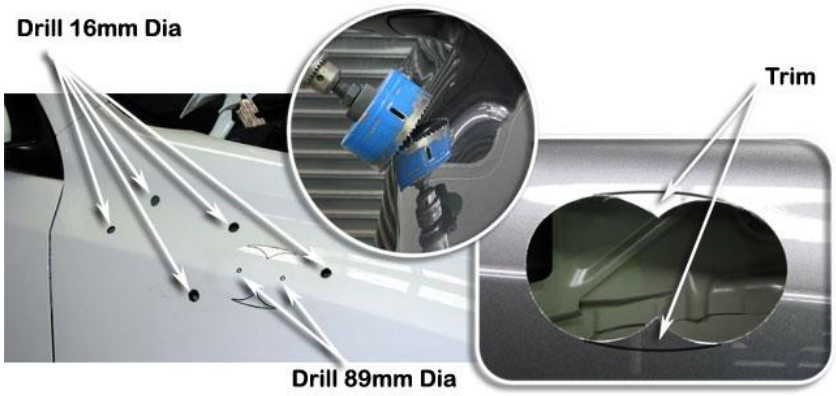
4 Drill a pilot hole for each of the marked hole positions.

Use a 89mm diameter hole saw to drill the snorkel body outlet hole positions. Ensure that the hole saw is square to the guard panel whilst drilling.

Use a body saw to trim away the marked sections of the guard panel between the two 89mm diameter holes.

Use a step drill to drill the five mounting holes to 16mm diameter.

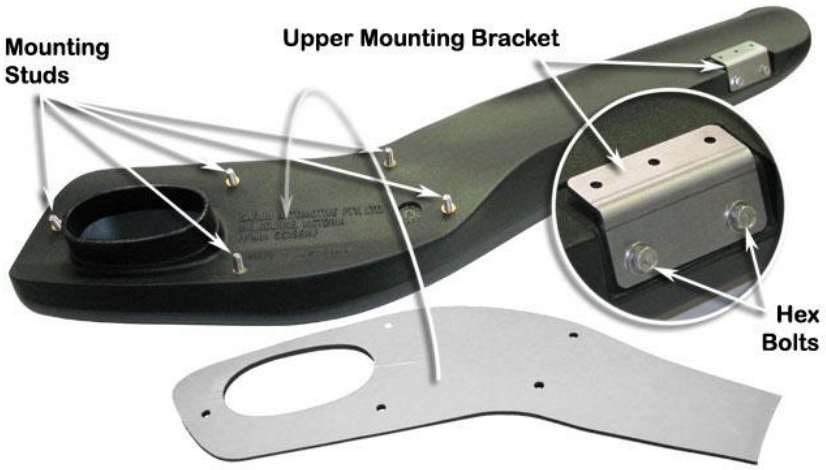
Deburr and paint all holes to prevent rust.



5 Install the upper mounting bracket (Item 3) to the snorkel body (Item 1) with hex bolts (Item 4).

Apply Loctite 243 to each of the stainless steel mounting studs (Item 7) and install the studs finger tight into the snorkel body (Item 1) mounting inserts.

Remove the adhesive backing paper from the foam body gasket (Item 15). Carefully align the foam body gasket to the back of the snorkel body (Item 1), When correctly positioned, apply firm pressure all over the foam body gasket to secure to the snorkel body.

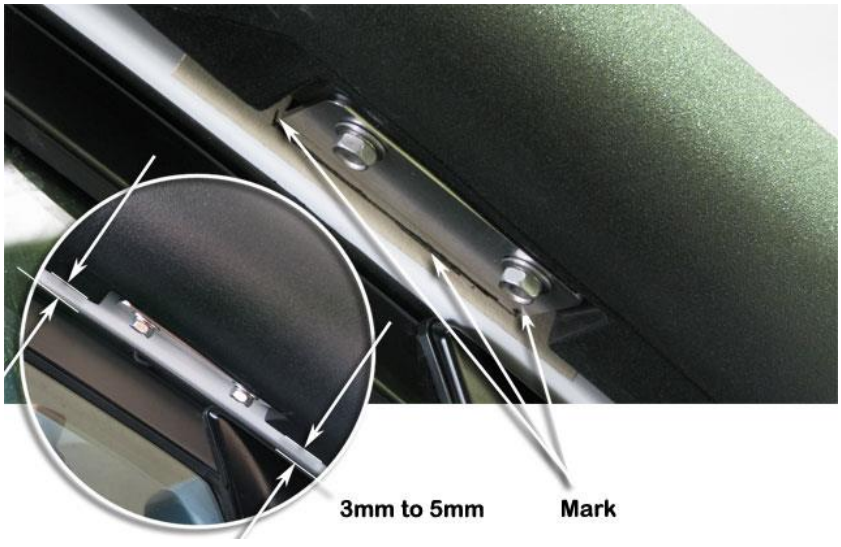


6 Place a strip of masking tape along the A-pillar panel.

Carefully install the snorkel body (Item 1) to the guard panel.

Position the snorkel body forward from the rear edge of the A-pillar by approximately 3mm - 5mm as shown.

With the snorkel body correctly positioned, mark the outline of the upper mounting bracket (Item 3) onto the masking tape as shown.



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

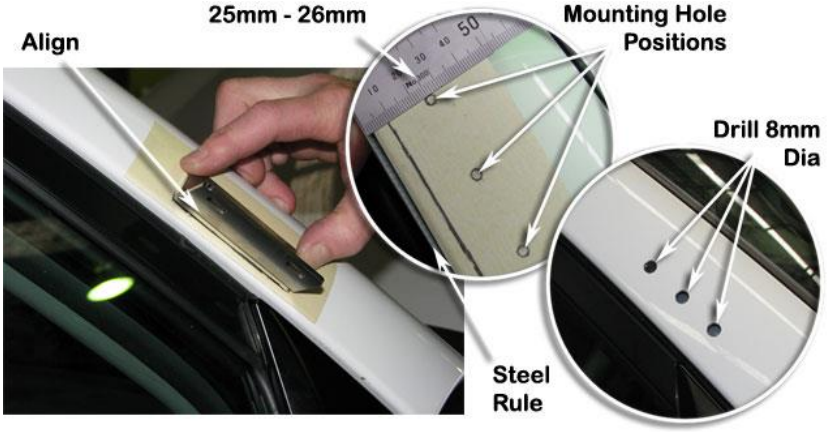
Position the upper mounting bracket (Item 3) onto the A-pillar and align the bracket with the marked bracket outline. Mark the three mounting hole positions with a felt tip pen.

Check the position of the three marked mounting hole positions on the A-pillar by placing a steel rule at the rear face of the A-pillar panel and measure to the centre of each hole with a second steel rule as shown.

If necessary, repeat Step 6 to ensure that 25mm - 26mm is achieved.

Drill a pilot hole at each of the three marked hole positions. Drill each hole position to 8mm diameter with a step drill or 8mm drill bit.

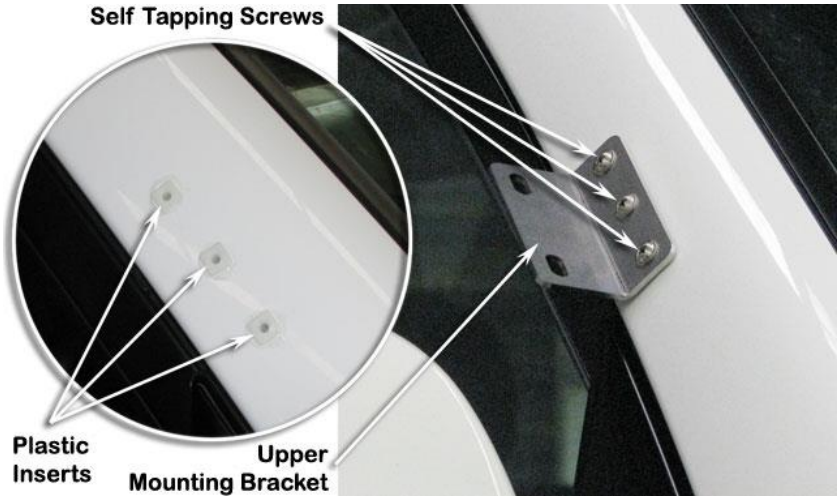
Deburr and paint holes to prevent rust.



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

Secure the upper mounting bracket (Item 3) to the A-pillar with three stainless steel self tapping screws (Item 5).



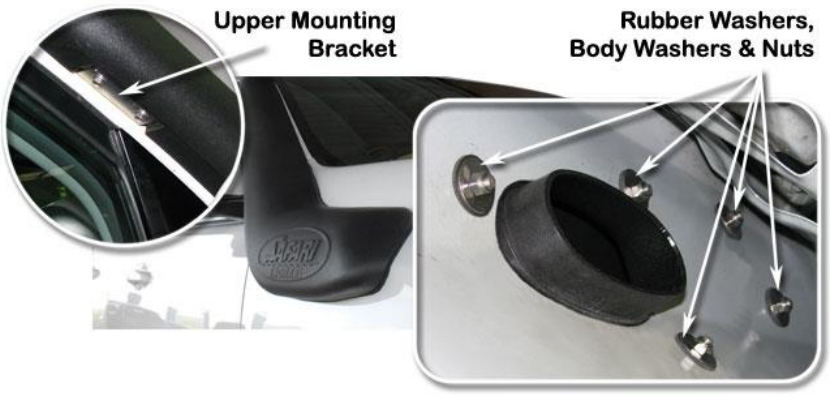
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9

Carefully install the snorkel body (Item 1) to the guard panel and align the snorkel body to the guard panel and upper mounting bracket.

When correctly aligned, fasten the snorkel body to the guard panel with rubber washers (Item 8), body washers (Item 9) and nyloc nuts (Item 10).

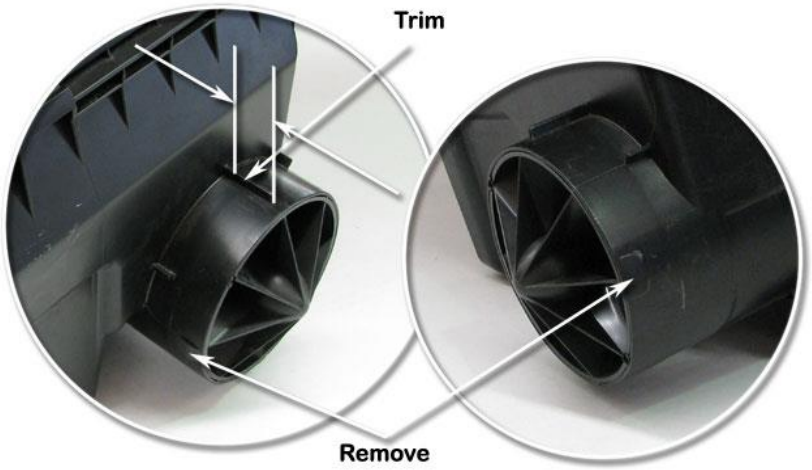
Fasten the snorkel body to the upper mounting bracket with hex bolts (Item 4).



10

Use a grinder or file to remove the two retaining tabs from the air cleaner inlet snout.

Use a sharp blade or file to trim the locating tab back to the shoulder shown.

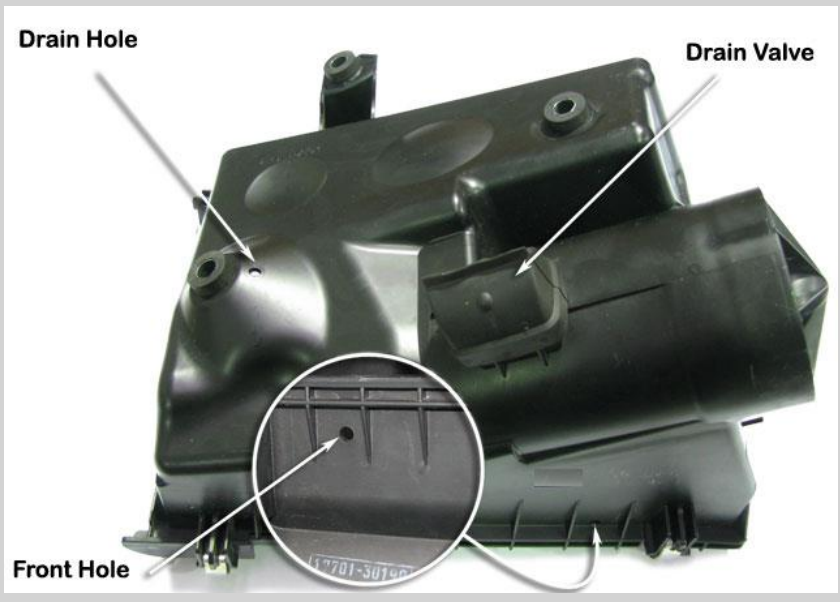


11

INSTALLER OPTION

The air cleaner housing base contains a drain valve, a drain hole and a hole at the front as shown. These can permit water to enter the air intake.

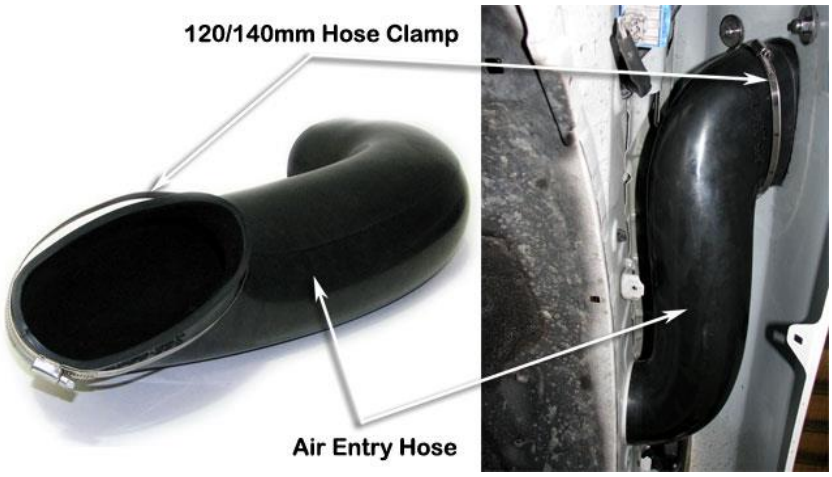
It is up to the installer to decide whether the drain valve, drain holes and front hole should be sealed.



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12 Form the 120/140mm hose clamp (Item 13) around the elliptical shape of the air entry hose (Item 11) as shown. Note orientation of hose clamp relative to the air entry hose.

Insert the round end of the air entry hose (Item 11) through the hole in the inner guard panel. Install the 120/140mm hose clamp (Item 13) loosely over the air entry hose and install the air entry hose over the snorkel body outlet snout.



13 Install the 100/120mm hose clamp (Item 12) loosely over the outlet end of the air entry hose (Item 11).

Install the air cleaner base into position whilst guiding the air cleaner base inlet snout into the air entry hose (Item 11).

Secure the air cleaner base with the original mounting hardware.

Align the air entry hose (Item 11) for best fit and tighten the hose clamps (Items 12 & 13) at each end of the air entry hose.

Install the air cleaner element, air cleaner lid and any plugs or components removed during the installation process.



14 Install the black hose clamp (Item 14) loosely over the base of the air ram assembly (Item 2). Install the air ram assembly onto the snorkel body.

Align the air ram assembly and tighten the black hose clamp (Item 14).



15 Install the guard liner, mud flap and any other items that may have been removed during the snorkel installation process.

NB It is the installer's responsibility to ensure that all connections are water tight.

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