



4X4 ENGINEERING

SS77HFZ

SAFARI V-SPEC SNORKEL

Toyota Land Cruiser 70 series (Wide Nose)

Suits: 4.2L 6cyl Diesel (1HZ engine)

Replaces Factory Toyota Raised Air Intake (Genuine Snorkel)



15/02/2011

Parts List

ITEM	PART NO	DESCRIPTION	QTY
1	330-133-700	BODY - SNORKEL (SS76HF)	1
2	000-135-800	3.5" AIR RAM ASSEMBLY	1
3	330-032-700	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 - S/S	3
6	000-960	INSERT - PLASTIC	3
7	000-110	STUD - 8mm x 1.25 x 25mm - S/S	5
8	000-311-300	WASHER - BODY - 8mm x 30mm - S/S	5
9	000-205-300	NUT - NYLOC - 8mm x 1.25mm - S/S	5
10	330-435-000	RUBBER PAD	1
11	330-704-000	PLATE - BLANK-OFF	1
12	000-376	WASHER - RUBBER - 8.5mm x 33mm	1
13	330-024-600	HOSE - AIR ENTRY	1
14	330-217-600	TEMPLATE - AIR CLEANER HOUSING	1
15	330-025-600	PLATE - HOSE SUPPORT	1
16	330-025-650	DEFLECTOR - AIR	1
17	000-958-150	POP RIVET - 4mm x 13mm	9
18	000-093-400	BOLT - B/H CAP SCREW - 4mm x 16mm - S/S	3
19	000-093-300	BOLT - B/H CAP SCREW - 4mm x 12mm - S/S	1
20	000-300-350	WASHER - BODY - 4mm x 12mm - S/S	8
21	000-223-300	NUT - NYLOC 4mm x 0.7mm - S/S	4
22	000-958-300	POP RIVET - 5mm x 12mm	2
23	000-909	CLAMP - HOSE - 80/100mm	1
24	000-914/B	CLAMP - HOSE - SIZE 56 (BLACK)	1
25	330-017-700	TEMPLATE - GUARD PANEL	1

Installation Guide

Fitment to:

- Right Hand Side

Fitting Time:

- 180 min

Special Tools:

- 86mm Hole saw
- Body Saw (Reciprocating)
- Step Drill
- Loctite 243 (Thread Lock)
- Pop Rivet Gun
- 6mm Spot Weld Drill / 6.5mm Drill Bit
- Masking Tape
- Touch-up Paint
- Black Spray Paint (Satin Black)
- Prep-wash
- 4mm & 5mm Drill Bits
- Sikaflex 227 Adhesive Sealant

Prior to commencing the installation, it is the installer's responsibility to verify that all components and particularly the guard panel template (Item 25) are correct.

1 Remove the following in accordance with the factory service manual:

- Air Cleaner Assembly

2

Remove and discard the Factory Toyota Raised Air Intake components (shown).

The following hardware must be retained, two A-pillar bracket mounting bolt assemblies and the rear mounting bolt assembly as shown.



The two factory mounting nut assemblies shown, which are spot welded to the inside of the guard panel must be removed.

Drill a pilot hole in the centre of each spot weld retaining the mounting nut assemblies to the guard panel, use a 6.5mm drill bit to drill out the spot welds.

Use a small pry bar or flat blade screwdriver to break the spot welds from the guard panel and remove the mounting nut assemblies.

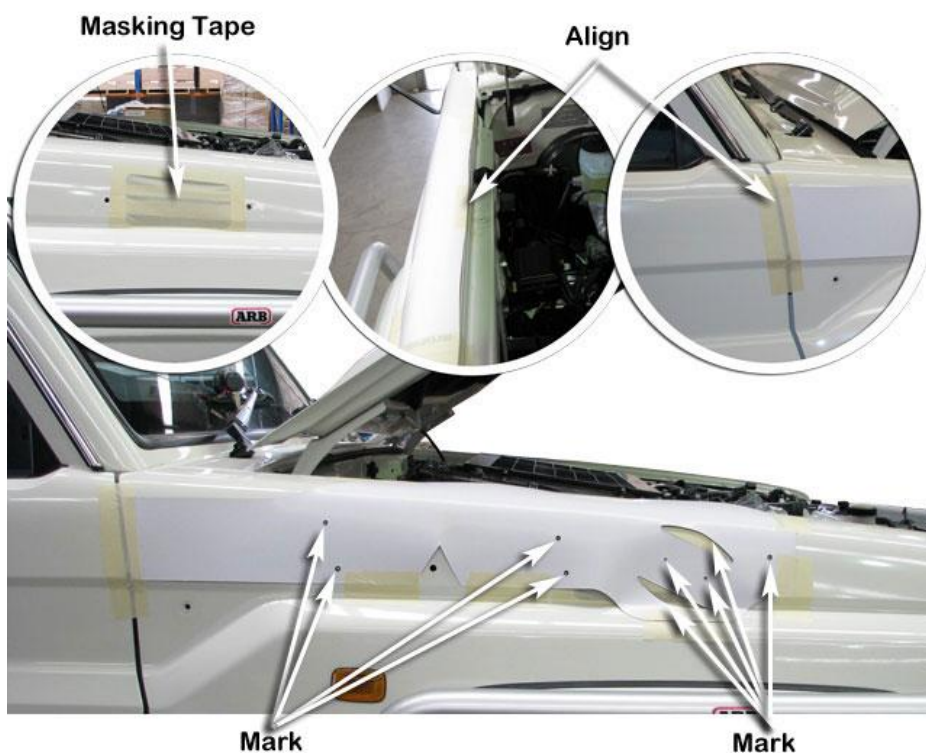


Cover the main hole in the guard panel with masking tape.

Align the guard panel template (item 25) to rear and upper edges of the right hand guard panel.

Tape the template to the guard panel with masking tape, mark all five mounting hole positions the two hole saw centres and the upper and lower cut out sections with a felt tip pen.

Remove the template.



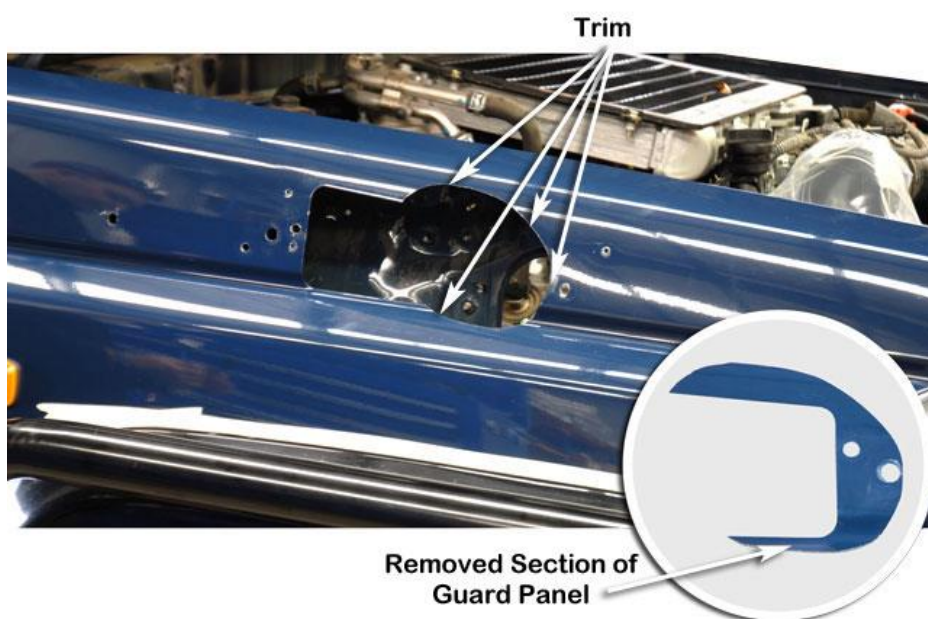
5

Align the 86mm hole saw centrally over each of the marked hole saw centre positions, mark around the outside of the hole saw with a felt tip pen as shown.



6

Use the body saw to trim away the marked section of guard panel.



7

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

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

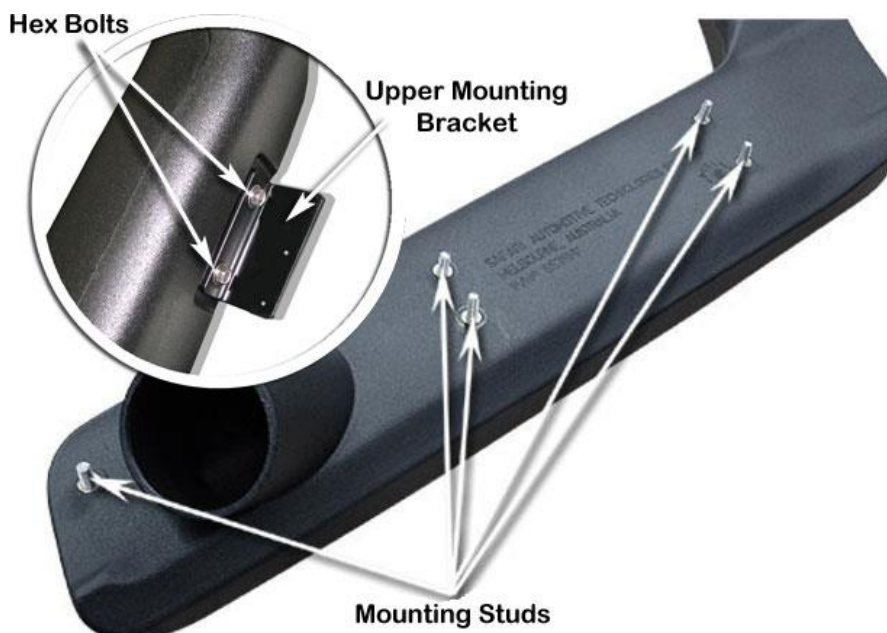
Deburr and paint all holes to prevent rust.



8

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.



9

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

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

With the snorkel body correctly positioned, mark the three upper mounting bracket hole positions onto the masking tape as shown.

Hint: if necessary push the top of the snorkel body towards the windscreen rubber, so that the edge of the upper mounting bracket has approximately 1mm gap to the windscreen rubber.



Mark Hole Positions

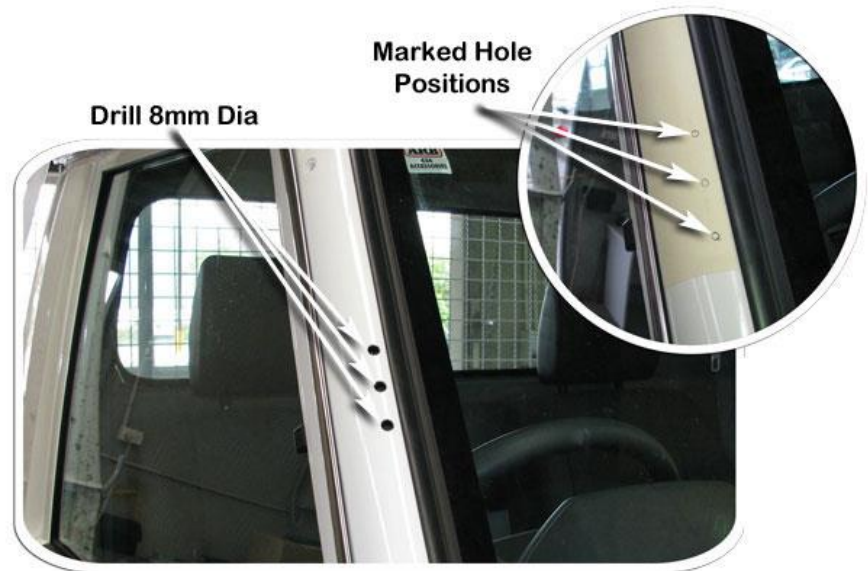
10

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

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.

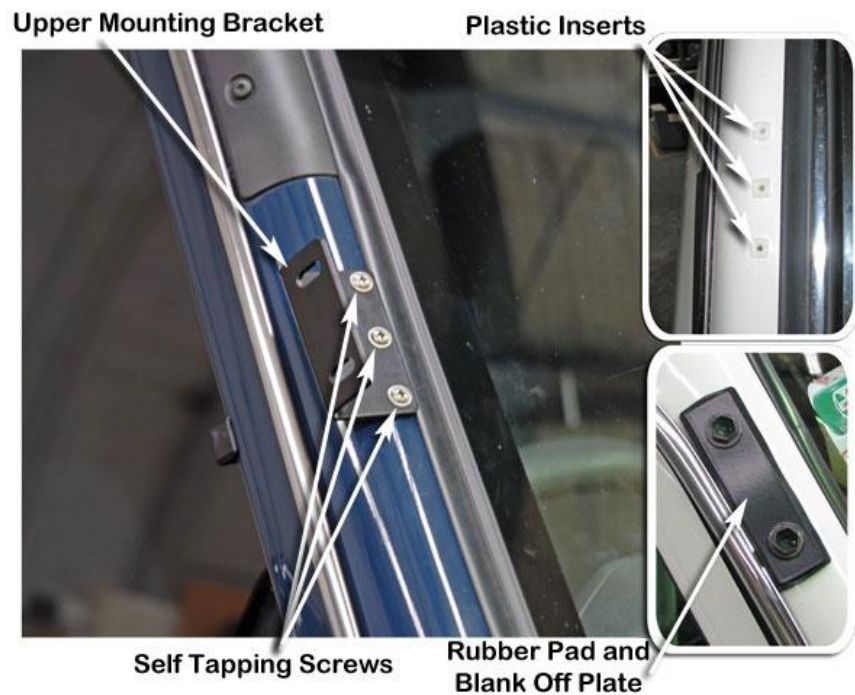


11

Install the plastic inserts (item 6) into the 8mm diameter 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).

Install the blank-off plate (item 11) and rubber pad (item 10) to the A-pillar, secure with standard Toyota bolt assemblies removed in step 2.



12

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 body washers (item 8) and nyloc nuts (item 9).

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

Install the rubber washer (item 12) to the standard Toyota bolt assembly removed in step 2 and fasten into the lower mount hole in the guard panel.

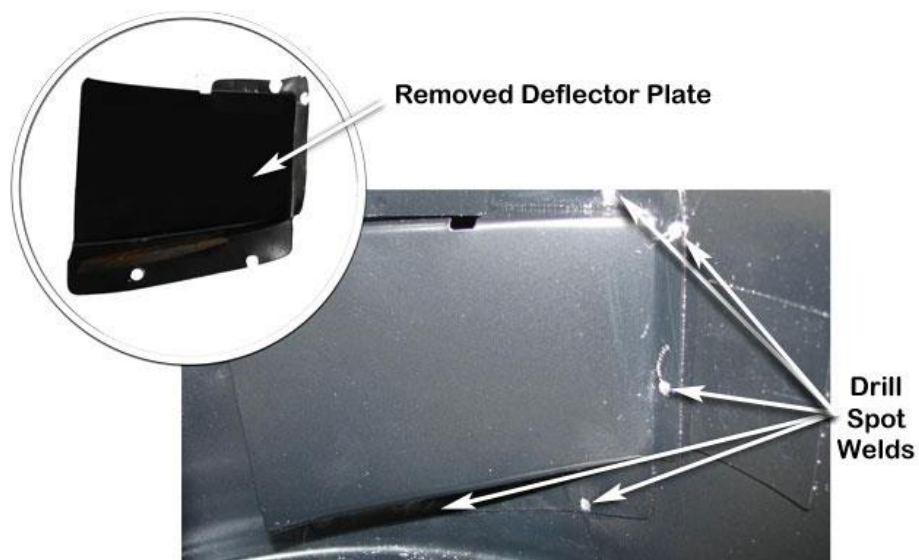


13

Use a spot weld drill to drill out the spot welds retaining the air deflector to the air cleaner housing. (*approximately 5 spot welds*)

Use a small pry bar or flat blade screwdriver to remove the deflector plate.

Discard the deflector plate.



Remove the seam sealer from around the air cleaner housing inlet snout with a hammer and small chisel or flat blade screw driver.

Centre punch all of the spot welds around the inlet snout. Using a 6.0mm spot weld drill, drill out all of the spot welds retaining the inlet snout to the air cleaner housing (if using a standard drill bit, drill a pilot hole through each spot weld then use a 6.5mm drill bit).
(approximately 10 spot welds in total)

Use a small pry bar or flat blade screwdriver to remove the inlet snout.

Discard the inlet snout.

Hint: removing the inlet snout with a body saw will allow easier access to all of the spot welds.

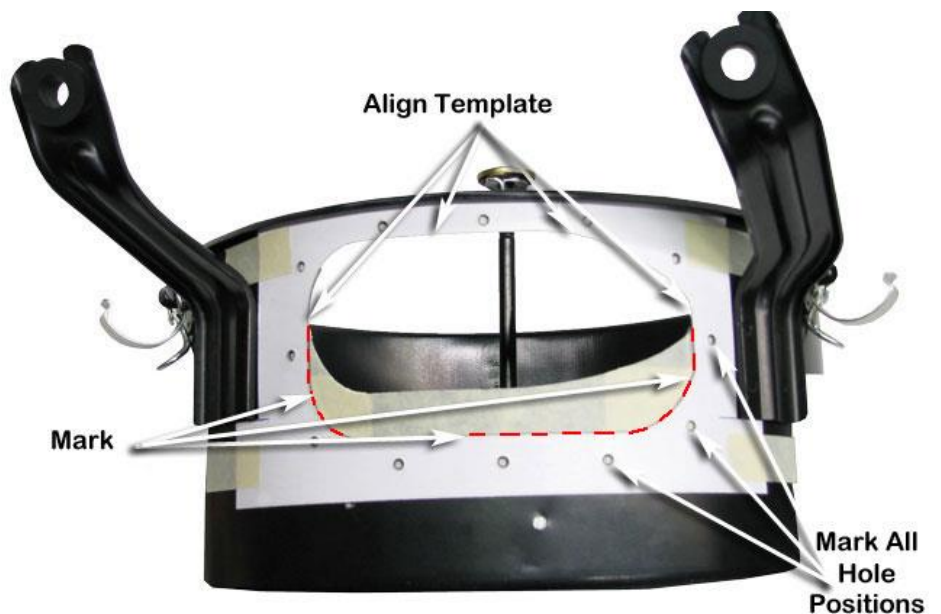


- 15 Clean-up the remainder of the seam seal from under the lip of the air cleaner housing to allow the air cleaner template (Item 14) to be positioned correctly under the lip.

Align the air cleaner housing template (item 14) to the standard air inlet hole of the air cleaner housing as shown.

Mark all twelve hole positions and the enlarged air inlet hole section.

Remove the template.



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

Drill each hole position to 4mm diameter.

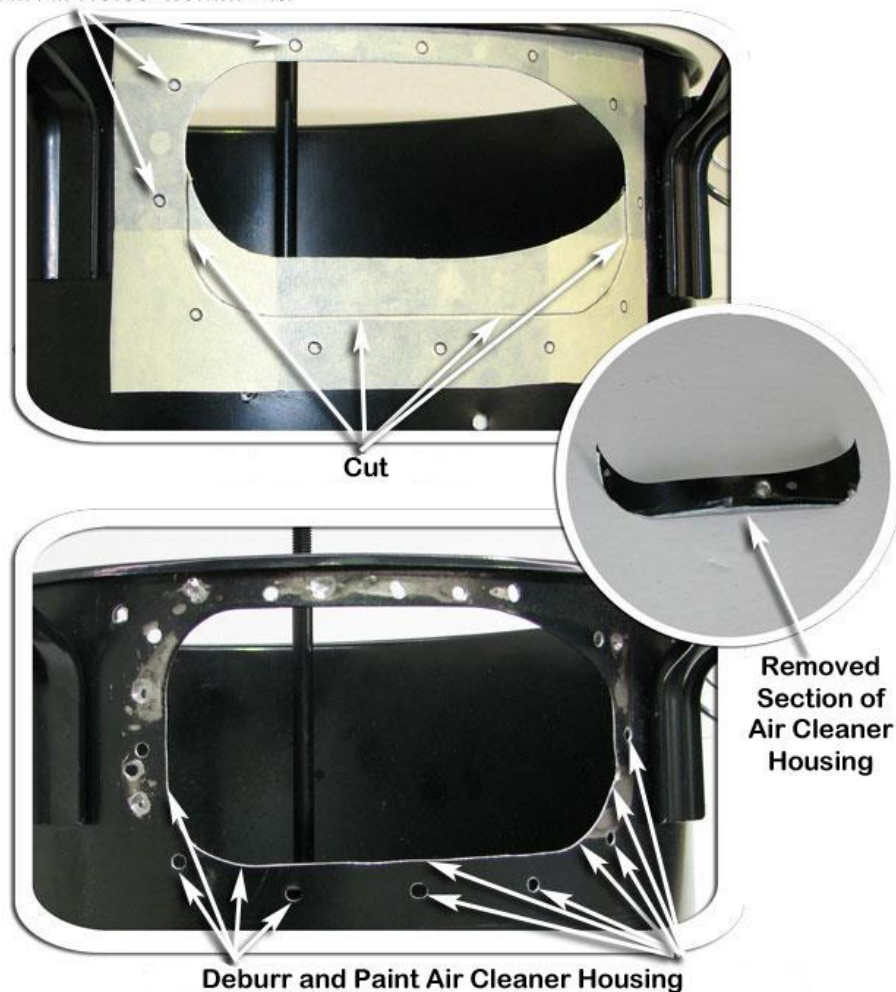
Use a body saw to remove the marked lower section of the air inlet hole as shown.

Trial fit the air entry hose (Item 13) to ensure that the enlarged air inlet hole opening is larger enough for the air entry hose to fit correctly. Remove the hose.

Deburr all holes and the enlarged air inlet hole.

Use prep-wash or a similar solvent to clean the air cleaner housing body. Prime all bare metal surfaces and spray the air cleaner housing with satin black spray paint.

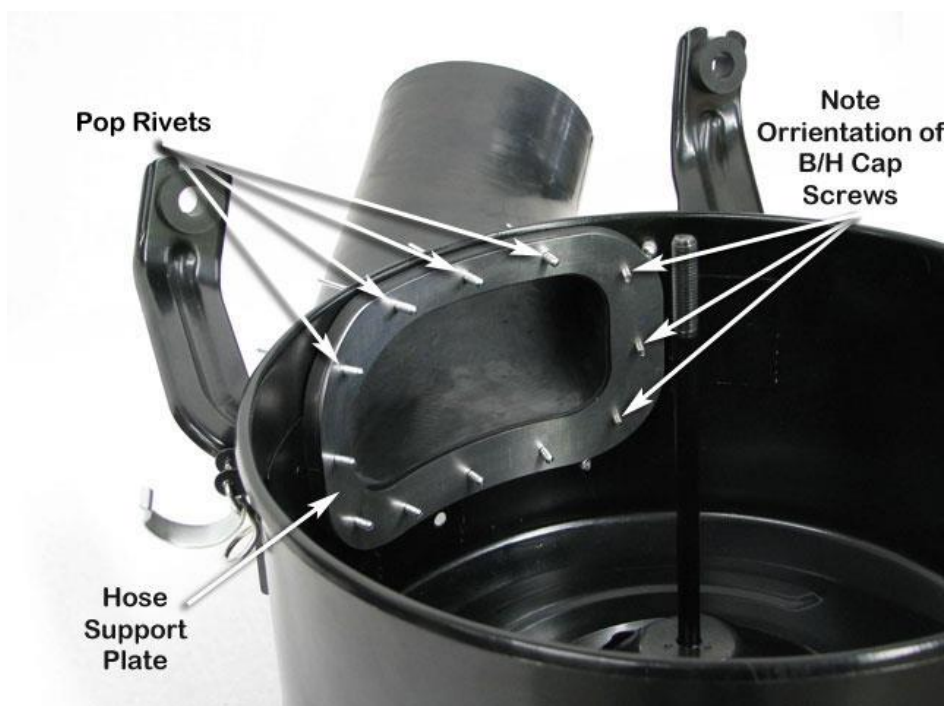
Drill All Holes 4.0mm Dia



Apply a light coating of adhesive sealant to the flange of the air entry hose (Item 13).

Install the air entry hose (Item 13) through the enlarged air inlet hole in the air cleaner housing. Position the hose support plate (Item 15) over the air entry hose flange.

Insert the nine pop rivets (Item 17), B/H cap screws (item 18) with body washers (item 20) into position. Note the position of the three B/H cap screws.



When all of the pop rivets and B/H cap screws are in place and the hose aligned correctly, work from the centre outwards and fasten the pop rivets with a pop rivet gun.

Clean-up any excess sealant if required to ensure a neat finish.

Install the air deflector (item 16) into position and mark the required hole position as shown.

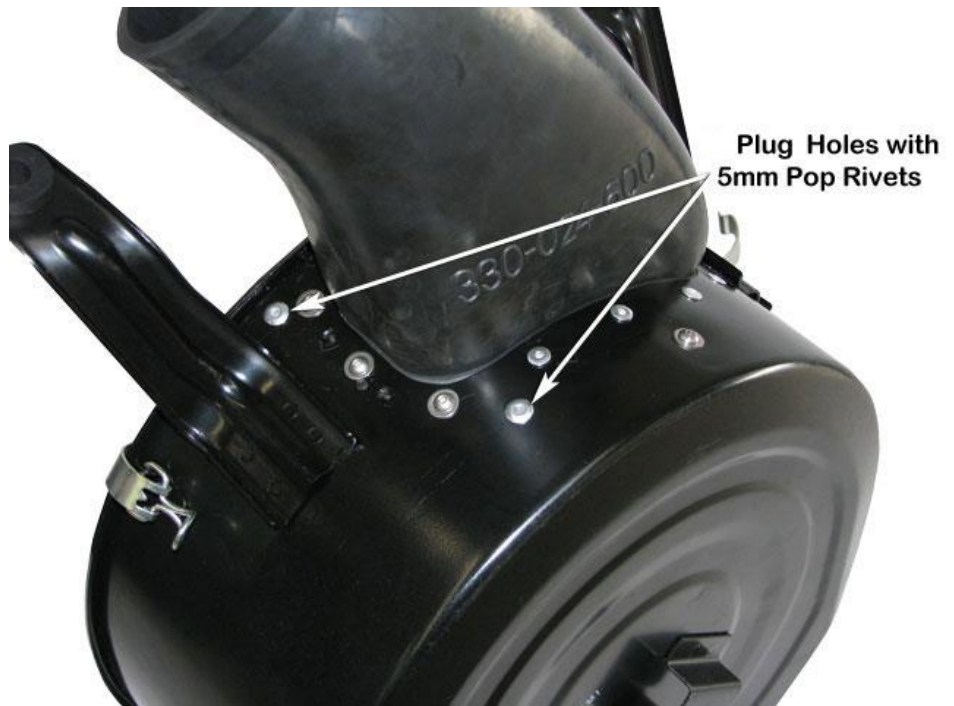
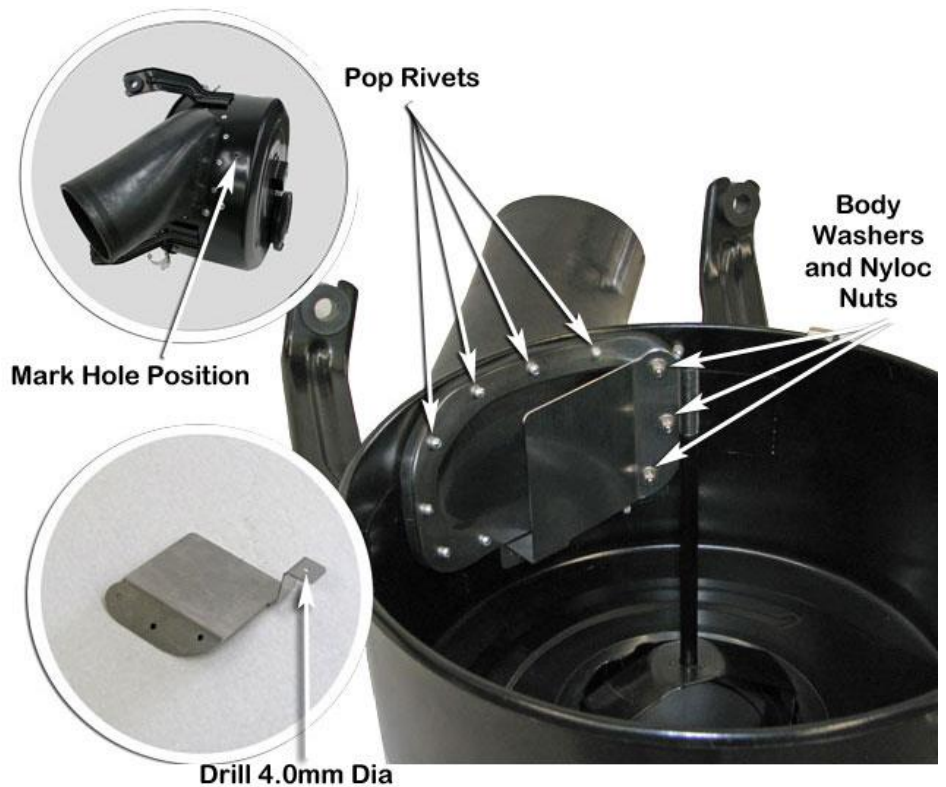
Remove the air deflector and drill a 4mm diameter hole at the marked position.

Install the air deflector (item 16) and secure with body washers (item 20) and nyloc nut (item 21), install the 4mm x 12mm B/H cap screw (item 19) and body washer (item 21) through the lower hole and secure the lower mount of the air deflector with body washer (item 20) and nyloc nut (item 21).

Drill the two un-plug holes in the air cleaner housing with a 5mm drill bit.

Install the two pop rivets (item 22) into the 5mm holes.

Use a pop rivet gun to secure the pop rivets into air cleaner housing to plug the two holes.



19 Installers responsibility:

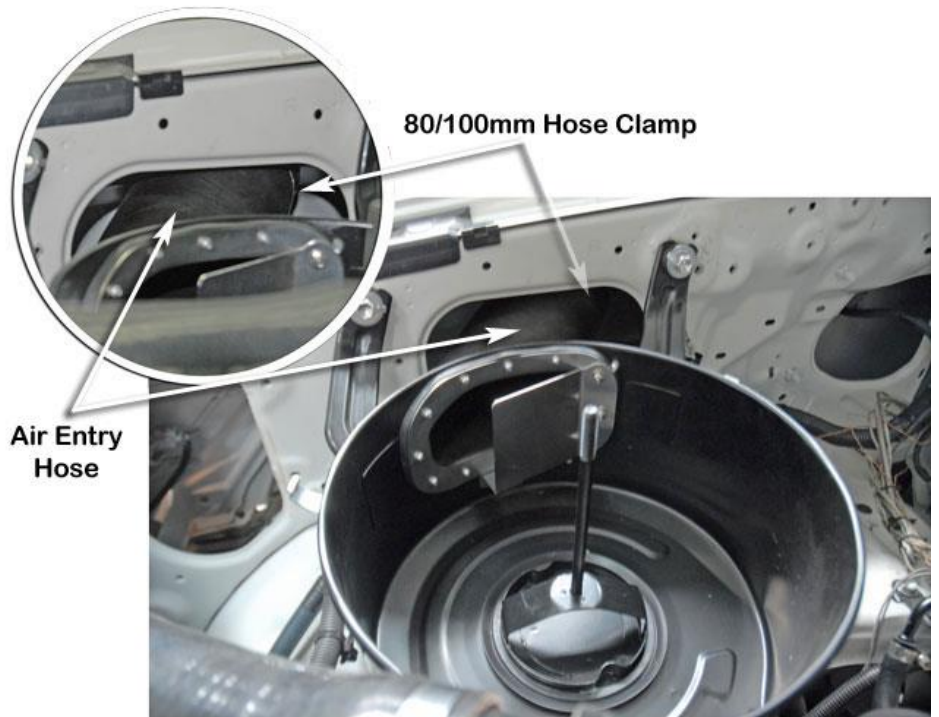
It is the installers responsibility to ensure that the drain flap at the base of the particle canister is in a *servicable* condition in order to prevent water from entering the air intake, if necessary replace the drain flap *or seal with adhesive sealant* (if not in a *servicable* condition).

20

Install the 80/100mm hose clamp (Item 23) loosely over the air entry hose (Item 13). Note hose clamp orientation.

Install the air cleaner base assembly whilst guiding the air entry hose over the snorkel body outlet snout.

Secure the air cleaner base with the original mounting hardware and tighten the 80/100mm hose clamp (Item 23).



21

Install the black hose clamp (Item 24) loosely to the base of the air ram assembly (Item 2).

Install the air ram assembly onto the snorkel body.

Align the air ram and tighten the black hose clamp (Item 24).



22 Install the standard air filter element, air cleaner lid and any other components that may have been removed during the snorkel installation process.

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