

**banks**

with Installation Instructions  
**Owner's Manual**

# **Banks Ram-Air® Intake System**

**2004-2014 Nissan Titan 5.6L**  
**2004-2008 Nissan Armada 5.6L**  
**2004-2008 Infiniti QX56 5.6L**

THIS MANUAL IS FOR USE WITH KIT 41820

Gale Banks Engineering  
546 Duggan Avenue • Azusa, CA 91702  
(626) 969-9600 • Fax (626) 334-1743

Product Information & Sales: (888) 635-4565  
Customer Support: (888) 839-5600  
Installation Support: (888) 839-2700

**bankspower.com**

# General Installation Practices

Dear Customer,

If you have any questions concerning the installation of your Banks Ram-Air System, please call our Technical Service Hotline at (888) 839-2700 between 7:00 am and 5:00 pm (PT). If you have any questions relating to shipping or billing, please contact our Customer Service Department at (888) 839-5600.

Thank you.

1. For ease of installation of your Banks Ram-air intake system, familiarize yourself with the procedure by reading the entire manual before starting work. This manual contains 16 pages of copy, illustrations and parts listing. If any pages are missing from this manual please call Gale Banks Engineering immediately for a replacement.
2. The exploded view of the Ram-Air assembly (pages 4-5) provides only general guidance. Refer to each step and section diagram in this manual for proper instruction.
3. Throughout this manual, the left side of the vehicle refers to the driver's side, and the right-side to the passenger's side.
4. Disconnect the ground cable from the battery before beginning work. If there are two batteries, disconnect both.
5. Route and tie wires and hoses a minimum of 6 inches away from exhaust heat, moving parts and sharp edges. Clearance of 8 inches or more is recommended where possible.
6. During installation, keep the work area clean. If foreign debris

is transferred to any Banks system component, clean it thoroughly before installing.

**7.** When raising the vehicle, support it on properly weight-rated safety stands, ramps or a commercial hoist. Follow the manufacturer's safety precautions. Take care to balance the vehicle to prevent it from slipping or falling. When using ramps, be sure the front wheels are centered squarely on the topsides; put the transmission in park; set the parking brake; and place blocks behind the rear wheels.

**CAUTION! Do not use floor jacks to support the vehicle while working under it. Do not raise the vehicle onto concrete blocks, masonry or any other item not intended specifically for this use.**

**Notification: The Banks Ram-Air Filter comes pre-oiled and no oiling is necessary for initial installation. Service the filter as specified in the Filter Maintenance Section of this manual.**

## Tools Required:

- 10 mm socket wrench
- Standard & Phillips head screwdriver
- Standard pliers
- 5/16 in nut driver
- Clean shop towels or rags

## Table of Contents

<b>Section 1</b> .....	<b>4</b>
General Assembly	
<b>Section 2</b> .....	<b>6</b>
Ram-Air Installation	
<b>Section 3</b> .....	<b>14</b>
Filter Maintenance	

# Also Available from Banks Power



## **Banks Monster® Exhaust (P/N 48123), (P/N 48123-B)\***

- 3" straight-through polished-stainless Monster muffler; Stainless 3" constant-diameter Monster Y-pipe and tailpipe; choice of black or polished-stainless 5" double-wall tailpipe tip with rolled edge.

## **Banks AutoMind Programmer (P/N 66119)**

- Clear and view OBDII Diagnostic Trouble Codes (DTC).
- Loaded with dyno-proven tuning files
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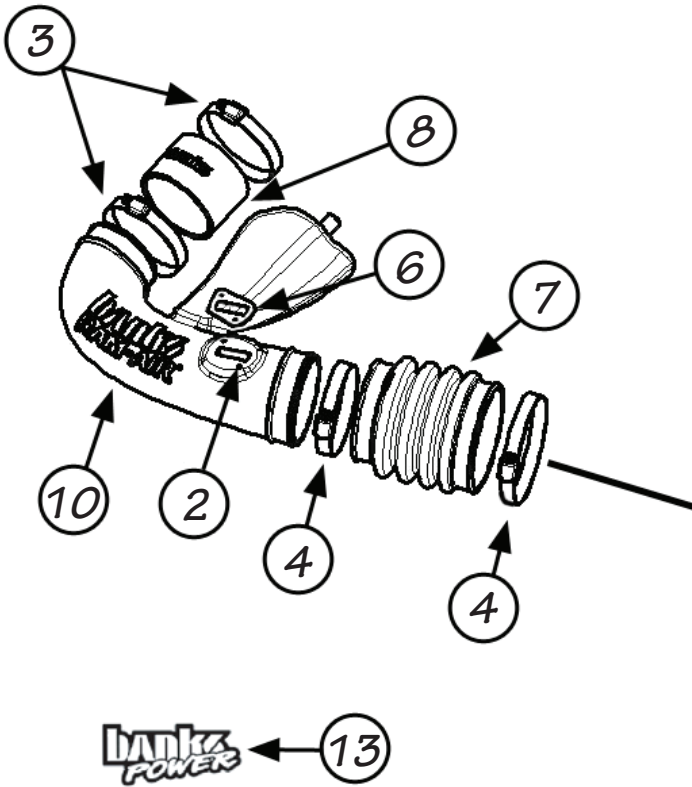
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or Visit us online @ [www.bankspower.com](http://www.bankspower.com)

*\*Black tip*

# Section 1

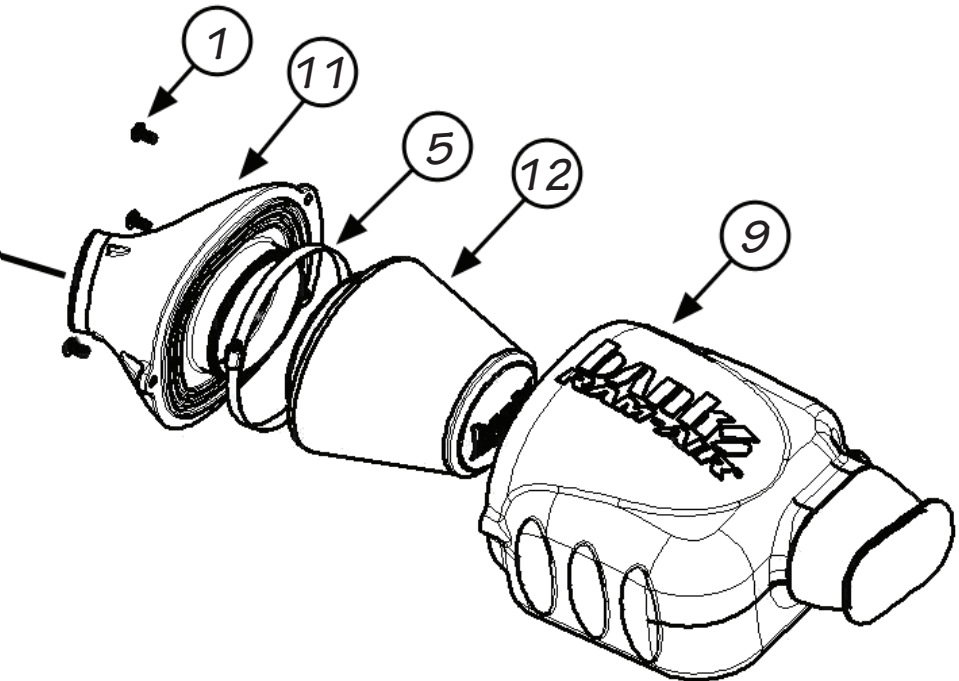
GENERAL ASSEMBLY

Figure 1



### Bill of Materials

P/N	Item	Description	QTY
91226	1	Machine Screw, #4 Truss HD, Phillips, 5/16"-18x3/4"	3
91719	2	Machine Screw, Truss HD, Phillips, 6-32x1/2"	2
92857	3	Hose Clamp, #56 w/Liner	2
92864	4	Hose Clamp, #64	2
92904	5	Hose Clamp #104	1
93067	6	Gasket, MAF Sensor, R/A System	1
94304	7	Hose, Bellows, Ram-Air Systems	1
94308	8	Hose, Throttle Body, Ram-Air	1
41821	9	Housing, Ram-Air Filter	1
41822	10	Intake Tube, Ram-Air System	1
41823	11	Cover, Ram-Air Housing	1
41828	12	Air Filter, Ram-Air System	1
96009	13	Urocal, Banks Power, Small	2



## Section 2

### RAM-AIR INSTALLATION

Use the Bill of Materials Chart and the General Assembly Drawing to reference component nomenclature and location. Use caution when working in the engine compartment. Make sure the engine has been OFF for several hours and cool.

You are about to install the Banks Ram-Air Intake System. Read and follow all steps before working on the vehicle. Some components from the stock air intake system will remain in service. Take care when removing stock air intake components to not damage them.

- 1.** Remove the screws holding the engine cover in place. Use the 10mm socket wrench. See **Figure 2**. Set engine cover and screws aside, they will be reinstalled.
- 2.** Remove the engine cover by pulling up from the back, where the two rubber grommets are attached to the cover.

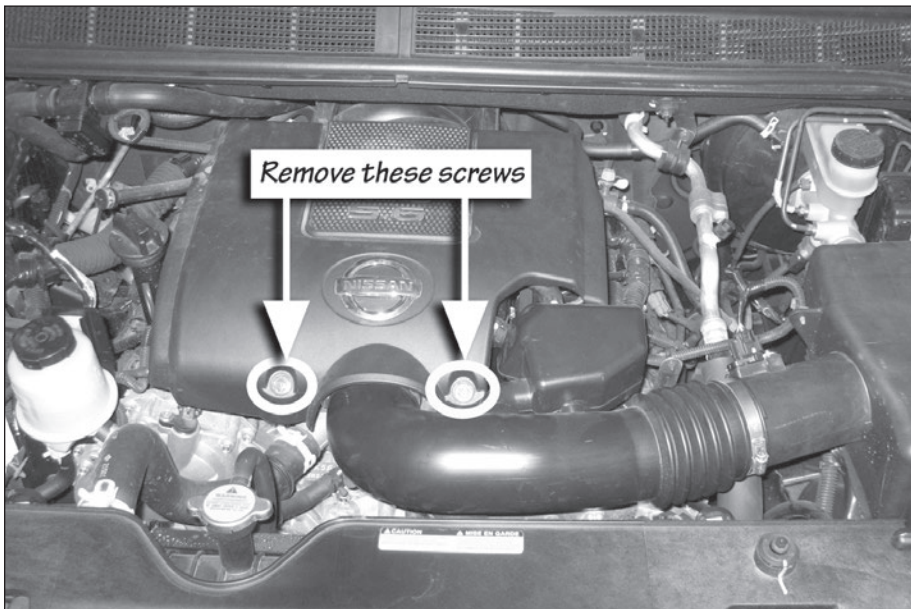
- 3.** Disconnect the Mass Airflow sensor (MAF) located on the air filter housing by squeezing the tab on the connector with your thumb and pulling away from the sensor. Set the connector aside. See **Figure 3**.

- 4.** Remove the two PCV vent hose connections located on the stock tube resonator. See **Figure 4**. Remove the PCV vent hoses from the stock airtube resonator, by pulling them out.

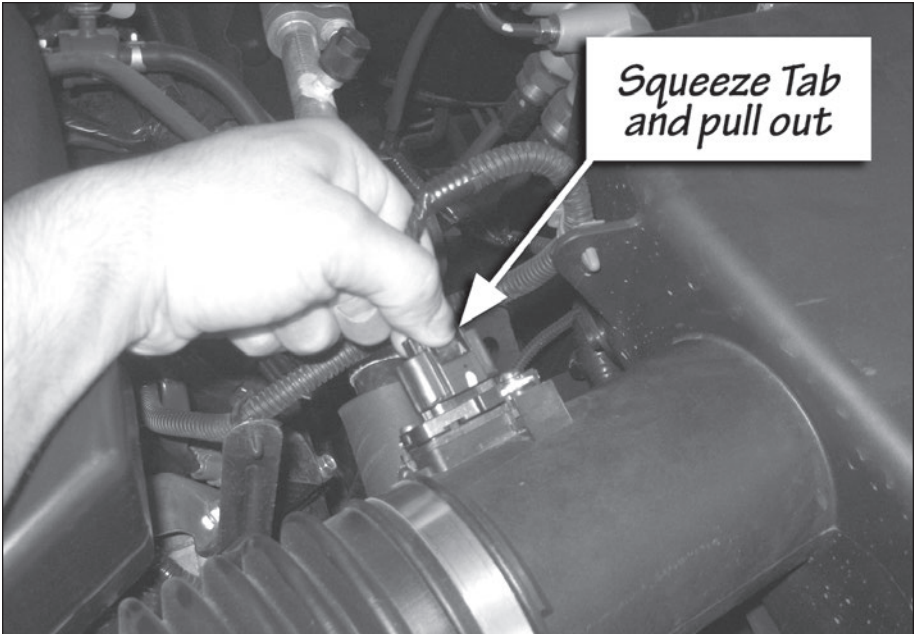
- 5.** Remove the stock intake hose by using the 5/16 nutdriver to loosen both the hose clamp connecting it to the air filter housing and the hose clamp connecting it to the throttle body. Then remove the intake hose one end at a time.

- 6.** Remove the top of the air filter housing by releasing the two tabs holding it down and lifting it out. See **Figure 5**.

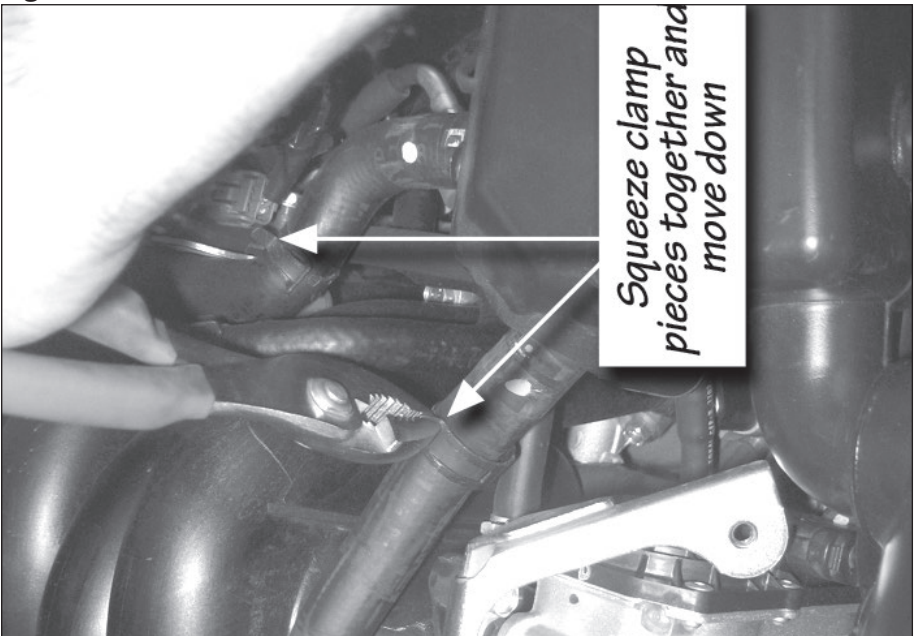
**Figure 2- Removal of Engine Cover Screws**



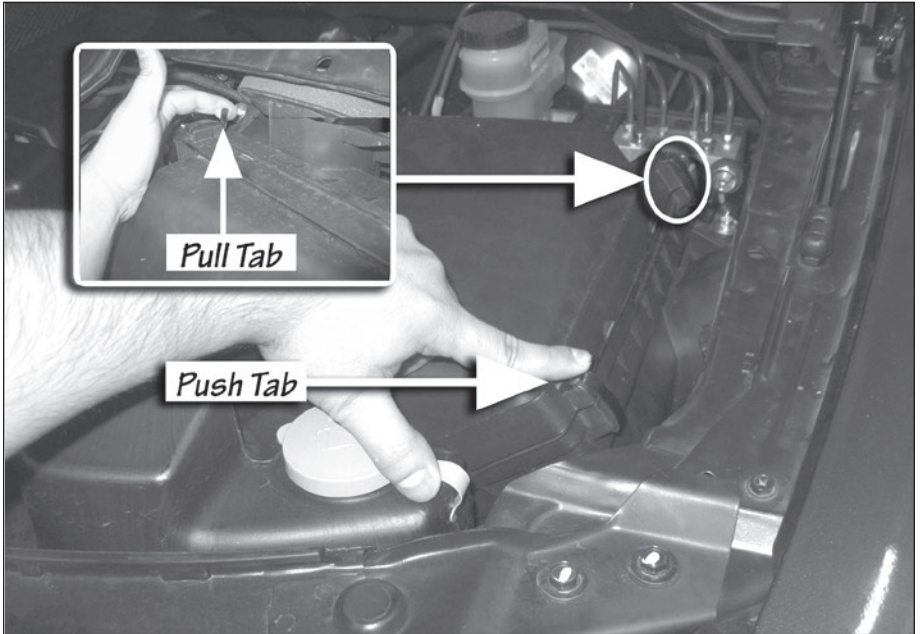
**Figure 3- Disconnecting MAF Sensor Connector**



**Figure 4- Removal of PCV Vent Hose Connections**



**Figure 5- Removal of Air Filter Housing (Top)**



**7.** Remove the MAF sensor and the stock MAF sensor gasket located on the air filter housing by using the phillips screwdriver and set the sensor aside.

*Note: Take care when handling the MAF sensor.*

**8.** Locate the supplied MAF sensor gasket from your Banks kit and install the gasket on the MAF sensor.

*Note: Make sure to remove the stock gasket from the MAF sensor before installing the Banks gasket. Make sure the supplied MAF sensor gasket is aligned as shown in **Figure 6**.*

**10.** Using the supplied screws, lightly tighten the MAF sensor to the Banks Ram-Air intake tube.

**11.** Remove the stock air filter element from the stock air filter housing.

**12.** Remove the bottom of the stock air filter housing by removing the two screws shown in **Figure 7**. Pull the housing straight up from the corner that is closest to the driver side head light.

*Note: When removing the air filter housing from the grommet, there will be slight resistance.*

**For 4WD Vehicles Only:**

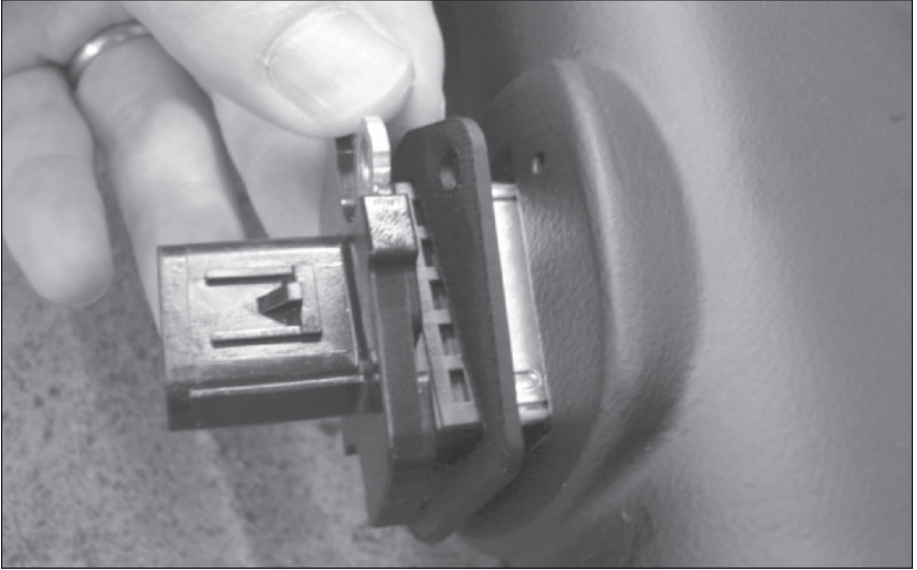
*Remove the front differential breather hose from the air intake housing (See **Figure 8**) and secure it.*

**13.** Remove a screw and washer that was detached from the grommet in **step 12** and install them in the hole that held screw #2 from **Figure 7** in place.

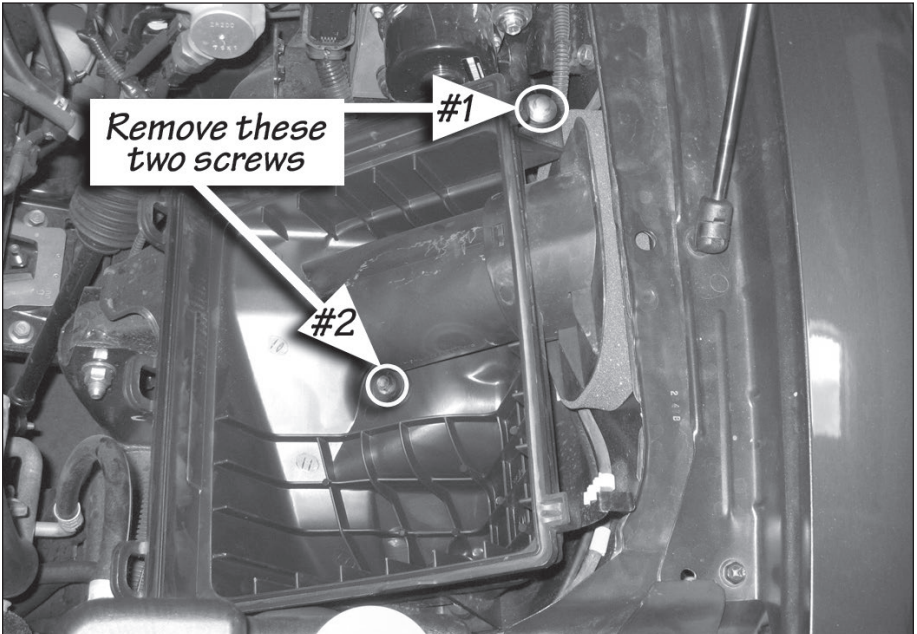
**14.** Locate the supplied filter hose clamp and install onto the Banks filter.



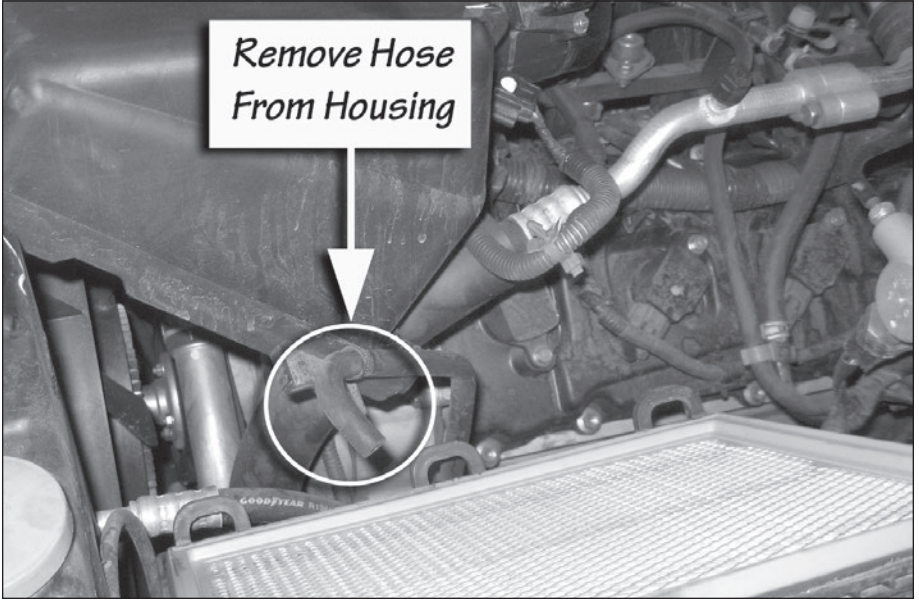
**Figure 6- Installation of Banks MAF Sensor Gasket**



**Figure 7- Removal of Air Filter Housing (Bottom)**



**Figure 8- Removal of the Front Differential Breather Hose**



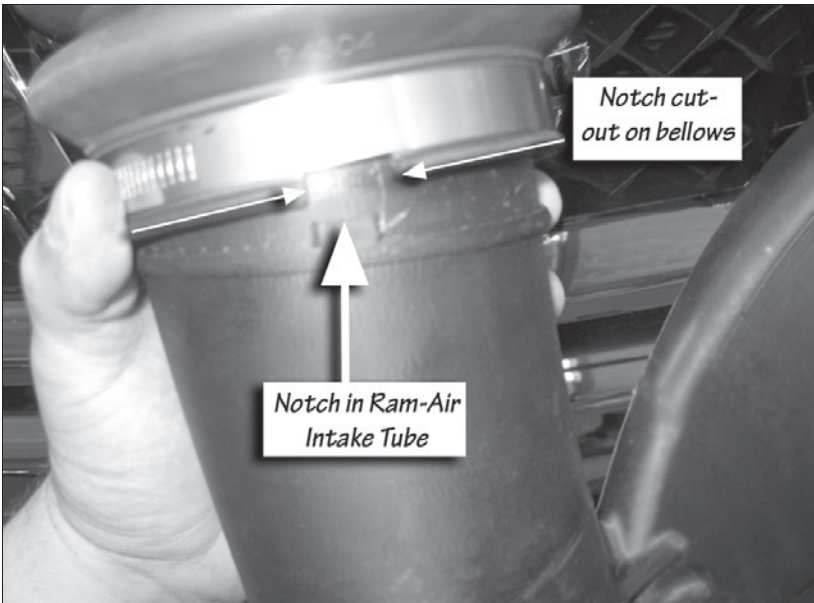
**Figure 9- Securing Banks Ram Air Filter Cover to Banks Air Filter**



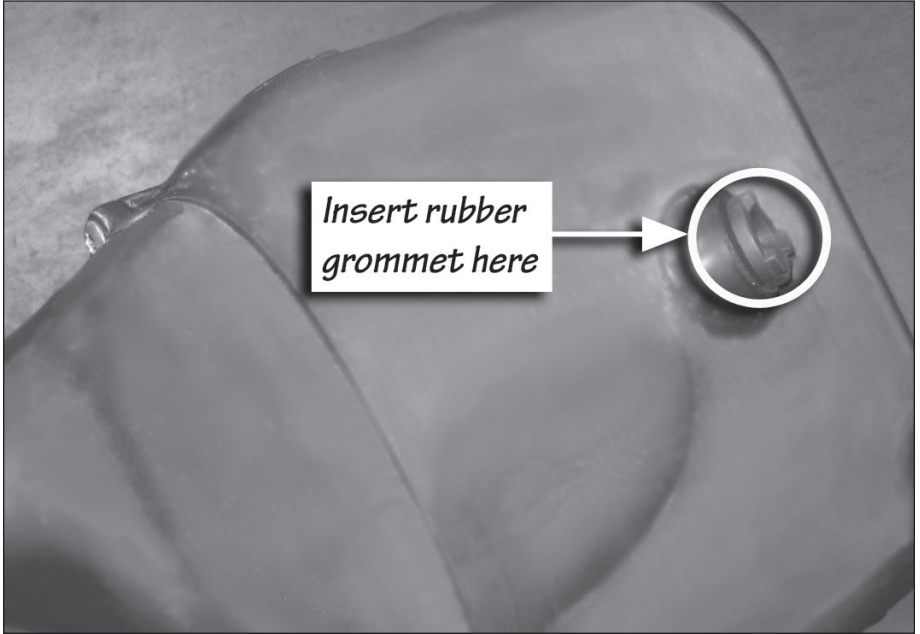
**Figure 10- Inserting Banks Air Filter Cover into Banks Air Filter Housing**



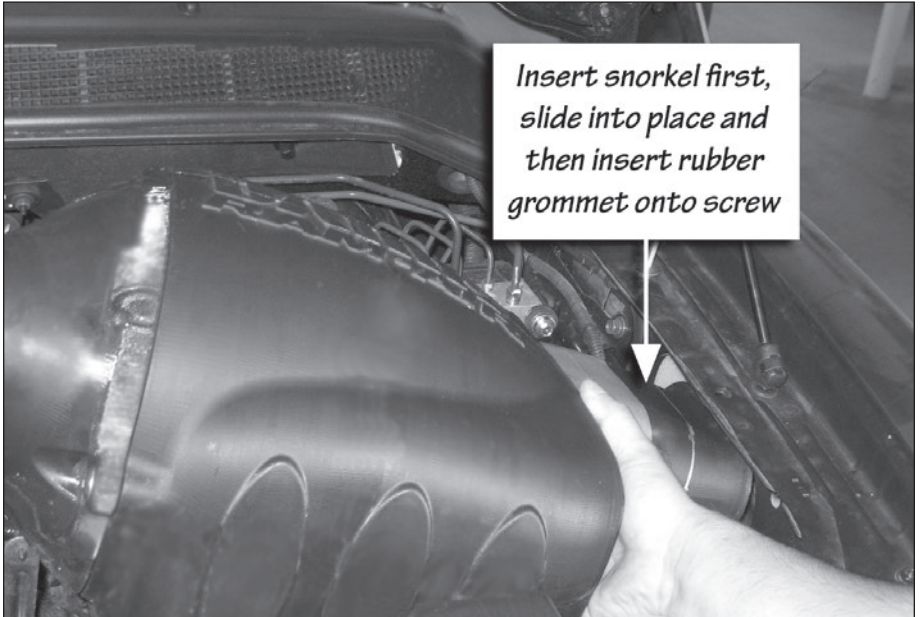
**Figure 11- Connecting Bellows to Banks Ram-Air Intake Tube**



**Figure 12- Rubber Grommet Inserted to Banks Ram-Air Filter Housing**



**Figure 13- Inserting Banks Ram-Air Filter Housing into Vehicle**



**15.** Locate the Banks filter cover. Install the Banks filter onto the Banks filter cover. Tighten Banks filter hose clamp. See **Figure 9**.

**16.** Insert Banks filter cover onto the Banks air housing. Locate supplied  $\frac{5}{16}$ -18 screws and fasten the cover to the housing. *Note: make sure the Banks cover is lined up correctly.* See **Figure 10**.

**17.** Install the supplied bellows hose clamps to the bellows.

**18.** Connect the bellows to the Banks Ram-Air intake tube. Make sure the clamp on the bellows is loose enough to allow the Banks Ram-Air intake tube to fit. Insert the bellows into it to the Banks Ram-Air intake tube.

*Note: Be sure to line up the notch on the Banks Ram-Air intake tube with the notch cut out on the bellows.* See **Figure 11**.

**19.** Remove a grommet from the stock air filter housing by pulling it off from the outside of the stock air filter housing. Install grommet to the bottom of the Banks air filter housing. See **Figure 12**.

*Note: Be sure to insert the grommet so that the larger side of the grommet is outside the Banks air filter housing and be sure that the grommet is securely in place.*

**20.** Install the Banks air filter housing into vehicle. Insert the Banks snorkel into the air intake opening first. See **Figure 13**.

**13.** Slide the Banks air filter housing into the vehicle and insert the grommet onto the Banks air filter housing screw that was installed in **Step 13**.

*Note: Be sure the grommet on the Banks Housing is securely attached to the Banks air filter housing screw that was installed in **Step 13**.*

**21.** Connect the other end of the bellows that is not attached to the Banks Ram-Air intake tube to the Banks air filter housing. Loosen hose clamp on the bellow enough to allow the air filter housing to slide in, then tighten hose clamp once Banks air filter housing is inserted.

**22.** Connect the Banks Ram-Air intake tube to the throttle body and tighten the two hose clamps that connect the Banks Ram-Air intake tube to the throttle body.

**23.** Reinstall the MAF connector to MAF sensor located on the Banks Ram-Air intake tube.

**24.** Install the PCV vent hose connections to the Banks Ram-Air intake tube. Secure the connections by using stock spring clamps.

**25.** Reinstall the engine cover by inserting the feet of the engine cover into the rubber grommets and pressing them in. Then locate the screws from step 1 and reinstall them using the 10mm socket wrench to secure the engine cover in place.

**26.** You have successfully completed the installation of the Banks Ram-Air Intake system. Make sure to go over all hose clamps for tightness and connectors for a sure fit. Make sure that the intake tube is not touching any engine components.

-END, SECTION 2-

# Section 3

## FILTER MAINTENANCE

### OILED AIR FILTER ONLY

**NOTICE:** The Banks Ram-Air Oiled Air Filter comes pre-oiled and no oiling is necessary for initial installation. Use Banks Ram-Air Filter Cleaning System (part#90094), available from Gale Banks Engineering to service the Air Filter. Follow the instructions included with the cleaning system to clean and re-oil your Bank Ram-Air Oiled Air Filter.

#### 1. PRE-CLEANING

Tap the element to dislodge any large embedded dirt, then gently brush with a soft bristle brush. *NOTE: If complete cleaning is not practical at this time, recoil the element and reinstall in your vehicle.*

#### 2. SPRAY-ON CLEANING

Spray air-filter cleaner liberally onto the entire element and let soak for 10 minutes.

#### 3. PAN CLEANING

Large air-filter elements can be rolled or soaked in a shallow pan of air-filter cleaner. Remove immediately and let soak for approximately 10 minutes.

**NOTICE:** NEVER use gasoline, steam, caustic solutions, strong detergents, high-pressure nozzles, or cleaning solvents to clean the filter element. All of these can cause harm to the filter media as well as SHRINK and HARDEN the rubber end caps.

#### 4. RINSING

Rinse off the element with low-pressure water. Tap water is okay. Always flush from the clean side to dirty side. This removes the dirt and does not drive it into the filter.

#### 5. DRYING

Always dry naturally. After rinsing, shake off all excess water and let the element dry naturally.

#### 6. AEROSOL OILING

After cleaning air filter always reoil before using. Spray air filter oil down into each pleat with one pass per pleat. Wait 10 minutes and re-oil any white spots still showing.

#### 7. OILING HINTS

Never use a Banks Ram-Air filter without oil (the filter will not stop the dirt without the oil). Use only air filter oil. Air-filter oil is a compound of mineral and animal oil blended with special polymers to form a very efficient tack barrier. Red dye is added to show just where you have applied the oil. Eventually the red color will fade but the oil will remain and filter the air. NEVER USE Automatic Transmission Fluid. NEVER USE Motor Oil. NEVER USE Diesel Fuel. NEVER USE WD40, LPS, or other light-weight oils.

#### 8. REINSTALL

Reinstall your Banks Ram-Air filter element with proper care. Make sure the element seats properly in the filter case. Install the cover making sure it's in the right position. Tighten all the nuts, bolts, screws or clips to factory specifications.

#### 9. DO NOT DISCARD

Affix the "Do Not Discard" sticker to the filter case (included with every Banks replacement element). Make sure you put the sticker in a highly visible place to alert your mechanic not to discard.

#### 10. PERFORMANCE HINTS

Service every 50-100,000 miles on street-driven applications. Service more often in offroad or heavy-dust

conditions. If an air-filter restriction gauge is installed, then change the element when the air-filter restriction reaches 18"-H.O.

**⚠ CAUTION:** **Extremely fine dust from agriculture or offroad use will pull the oil from the element. Frequent reoiling of the element's clean side might be required. Completely service when practicable. For extra protection use an air-filter sealing grease on rubber ends of the element. Service only with air-filter cleaner and air-filter oil.**

## DRY FILTER CLEANING

Clean every 50-100,000 miles on street-driven applications. Clean more often in offroad or heavy-dust conditions. If an air-filter restriction gauge is installed, then change the element when the air-filter restriction reaches 18"-H.O.

### 1. PRE-CLEANING

Carefully tap the air filter element to dislodge any large embedded dirt or debris.

### 2. CLEANING

Spray an appropriate DRY AIR-FILTER CLEANER SOLUTION liberally onto both sides of the entire filter element with the majority applied to the dirty side. Soak for 10 minutes. Do not allow the DRY AIR-FILTER CLEANER SOLUTION to dry on the air filter.

**NOTICE:** **NEVER use gasoline, steam, caustic solutions, strong detergents, high-pressure nozzles, or cleaning solvents to clean the filter element.** All of these can cause harm to the filter media as well as SHRINK and HARDEN the rubber end caps.

### 3. RINSING

Rinse the filter element with cool or warm (not hot) water from the clean side out in order to flush the dirt out of the filter. It may be necessary to use your fingers on the hose to apply light water pressure. Repeat steps 2 and 3, until the water flowing through the media is completely clear of any dirt and debris.

### 5. DRYING

After rinsing, gently shake off excessive water and allow to dry naturally. Re-install the filter onto the intake system, airbox or custom assembly once it is dry or just slightly damp. Follow all original installation instructions.

### 6. REINSTALL

Reinstall your Banks Ram-Air filter element with proper care. Make sure the element seats properly in the filter case. Install the cover making sure it's in the right position. Tighten all the nuts, bolts, screws or clips to factory specifications.

### 7. DO NOT DISCARD

Affix the "Do Not Discard" sticker to the filter case (included with every Banks replacement element). Make sure you put the sticker in a highly visible place to alert your mechanic not to discard.

### 8. PERFORMANCE HINTS

Service every 50-100,000 miles on street-driven applications. Service more often in offroad or heavy-dust conditions. If an air-filter restriction gauge is installed, then change the element when the air-filter restriction reaches 18"-H.O.

-END, SECTION 3-

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