

**banks**

with Installation Instructions  
**Owner's Manual**

**Banks Ram-Air®  
Intake System**

**1997-2006 Jeep 4.0L**

THIS MANUAL IS FOR USE WITH KITS 41816

**banks**

# 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. If you have any questions relating to shipping or billing, please contact our Customer Service Department at.

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 12 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 Ram-Air Filter Cleaning Instructions Section of this manual.**

## Tools Required:

- 3/8" drive ratchets with metric sockets
- Standard and Phillips head screwdrivers
- Standard and needle-nose pliers
- Clean shop towels or rags
- 5/16 nut driver

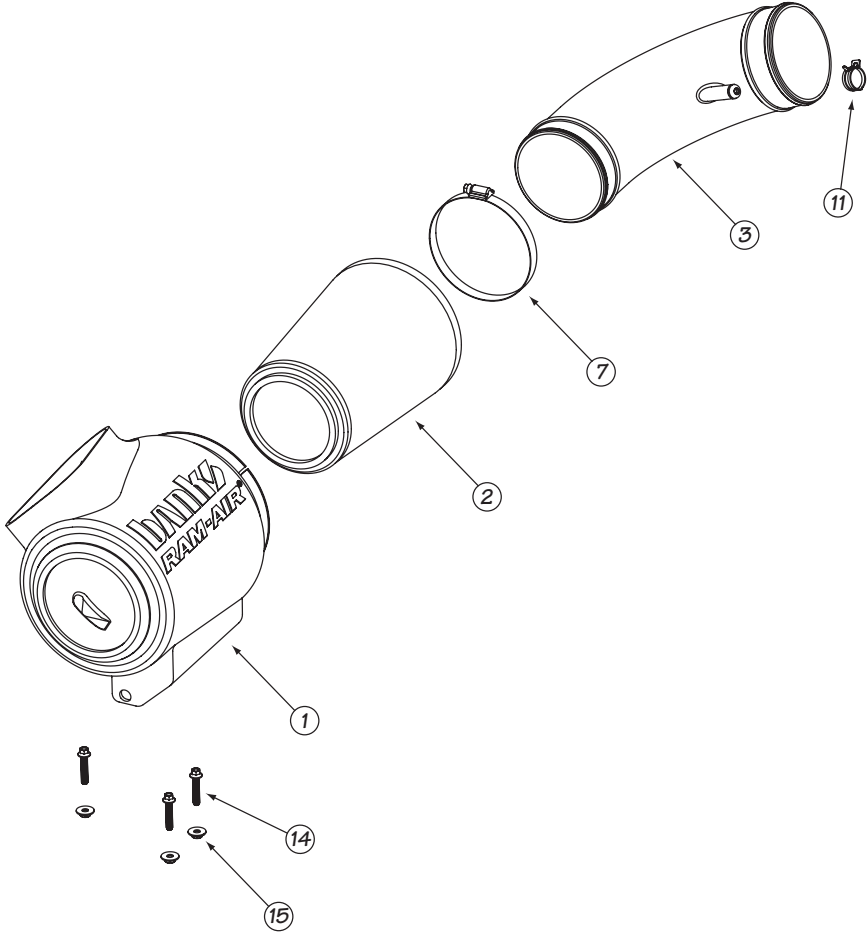
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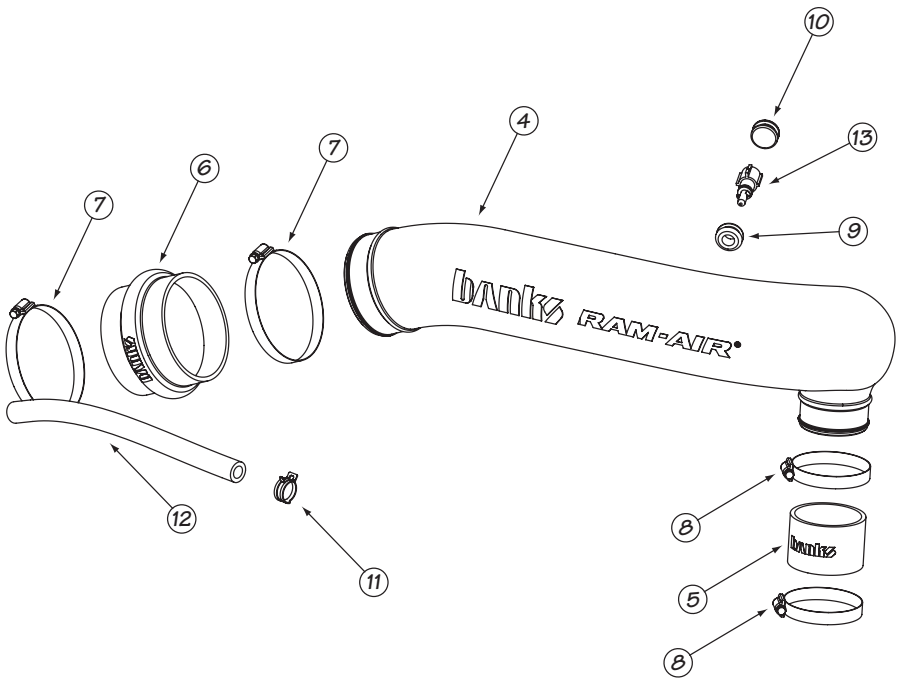
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# Section 1

## GENERAL ASSEMBLY

Figure 1





Item #	Description	Qty.
1	HOUSING, RAM-AIR	1
2	AIR FILTER ELEMENT, RAM-AIR SYSTEM	1
3	INTAKE TUBE, FILTER (SHORT)	1
4	INTAKE TUBE, THROTTLE BODY (LONG)	1
5	HOSE, 2-5/8" DIA. X 2"	1
6	HUMP HOSE, 4" DIA. X 3"	1
7	HOSE CLAMP, #72	3
8	HOSE CLAMP, #40	2
9	GROMMET	1
10	PLUG GROMMET	1
11	SPRING BAND CLAMP	2
12	HOSE, 1/2" DIA. X 13"	1
13	STOCK INTAKE AIR TEMPERATURE SENSOR	*
14	STOCK SCREW, M6 X 30	*
15	STOCK NUT, M6	*

\* These are stock components that will be reused with the Banks Ram-Air System.

## 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.

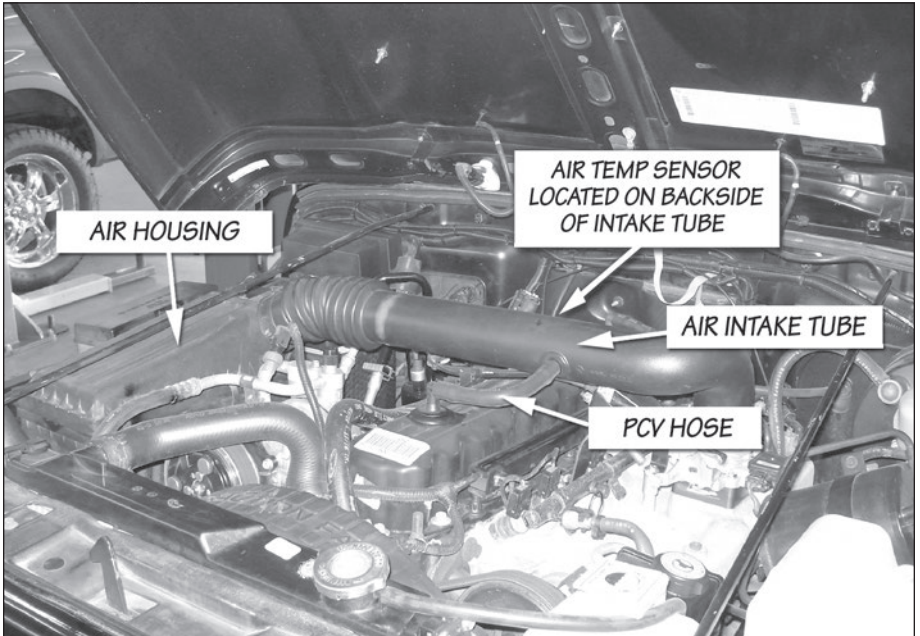
You are about to install the Banks Ram-Air Intake System. Read and follow all steps before working on the vehicle. Some components from the stock air intake system will remain in service. Take care when removing stock air intake components to not damage them.

**1.** Disconnect the Air Intake Temperature (AIT) Sensor located on the backside of the intake tube and set aside. See **Figure 2**.

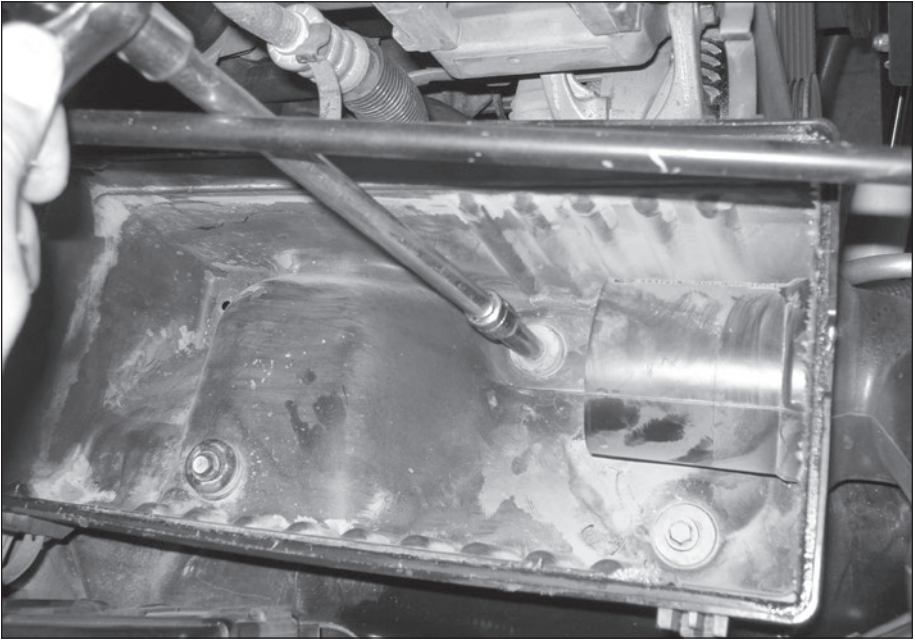
*Note: Some models do not come equipped with an AIT sensor. Continue to step 2.*

- 2.** Disconnect the PCV hose from the fitting on top of the valve cover and leave attached to the air intake tube.
- 3.** Loosen both air intake hose clamps and remove the air intake tube from the engine compartment.
- 4.** Unclip the air housing cover latches and remove the cover and air filter from the engine compartment and set aside.
- 5.** Remove the three screws accessible from the opening of the air housing and under the right wheel housing and set aside. Keep removed screws, washers and rubber bushing. Some components will be reused in a later step. See **Figure 3**.
- 6.** Remove the air housing from the engine compartment and set aside.

**Figure 2**



**Figure 3**



**7.** Install the Banks Air Housing into the engine compartment and align the screw holes to the fender panel. Depending on the model year of vehicle, not all screw holes will be utilized. *Note: Some models utilize two screw holes.* See **Figure 4**.

**8.** Locate the previously removed stock air housing fastening hardware. Discard the washer, rubber grommet and metal sleeve. Keep only the nut and bolt. Install the Banks Air Housing into position and fasten using stock nut and bolt. See **Figure 1**.

**9.** Install the Banks Air Filter into the housing. Make sure to install the filter emblem end flush into the recessed area of the Banks Air Housing. *Note: the filter may fit snug into the housing. Take care not to damage the filter when fitting into air housing.* See **Figure 5**.

**10.** Locate supplied hose clamp and fit loose on Banks air filter.

**11.** Locate the supplied short intake tube. Install the short intake tube onto the Banks air filter. Lightly tighten the hose clamp.

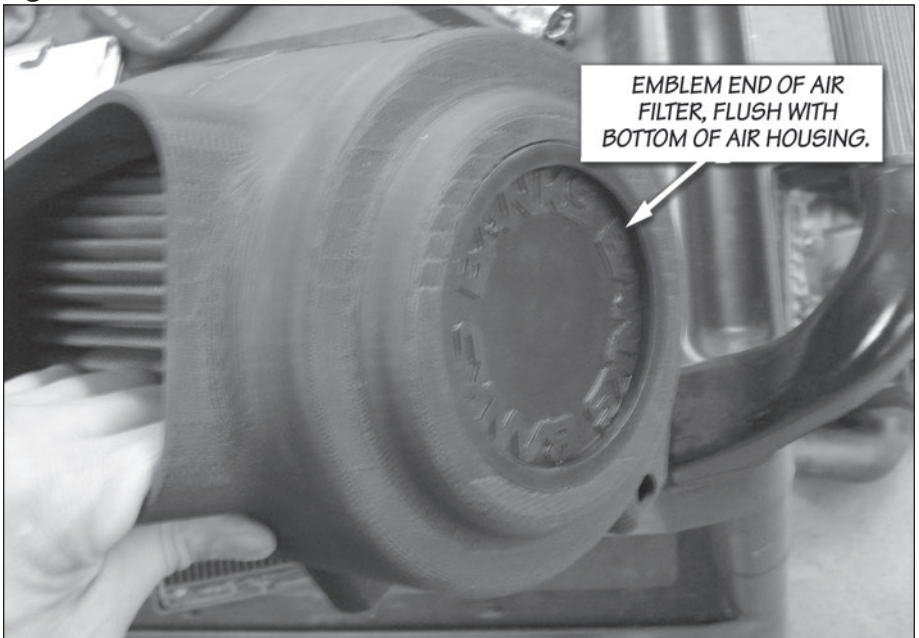
**12.** Locate the supplied long intake tube, 4" Dia. hump hose and hose clamps. Fit hose clamps over hump hose on both ends and slip onto long intake tube. Then fit the hump hose end of the long intake tube into the short intake tube attached to the Banks air filter. Lightly tighten the hose clamps.

**13.** Locate the remaining hose and hose clamps. Fit hose clamps over hose on both ends and slip onto remaining intake opening. Slip the hose over the throttle body till flush with bottom. Lightly tighten the hose clamps.

**Figure 4**

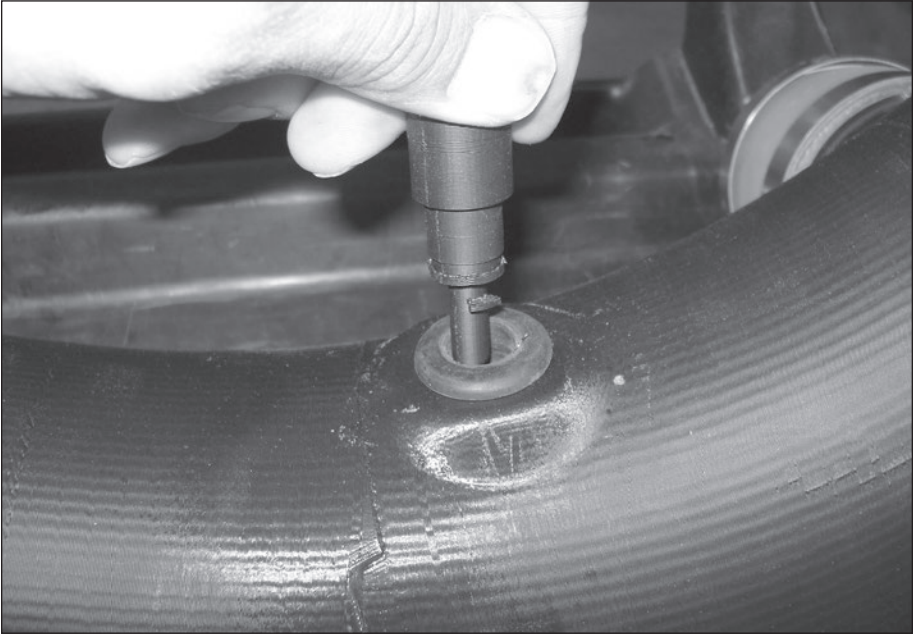


**Figure 5**





**Figure 6**



**14.** Locate the supplied rubber AIT grommet and install in the air intake tube. Install the AIT sensor flush into the grommet on the air intake tube. See **Figure 6**.

*Note: Use the supplied grommet plug if your vehicle does not utilize an AIT sensor.*

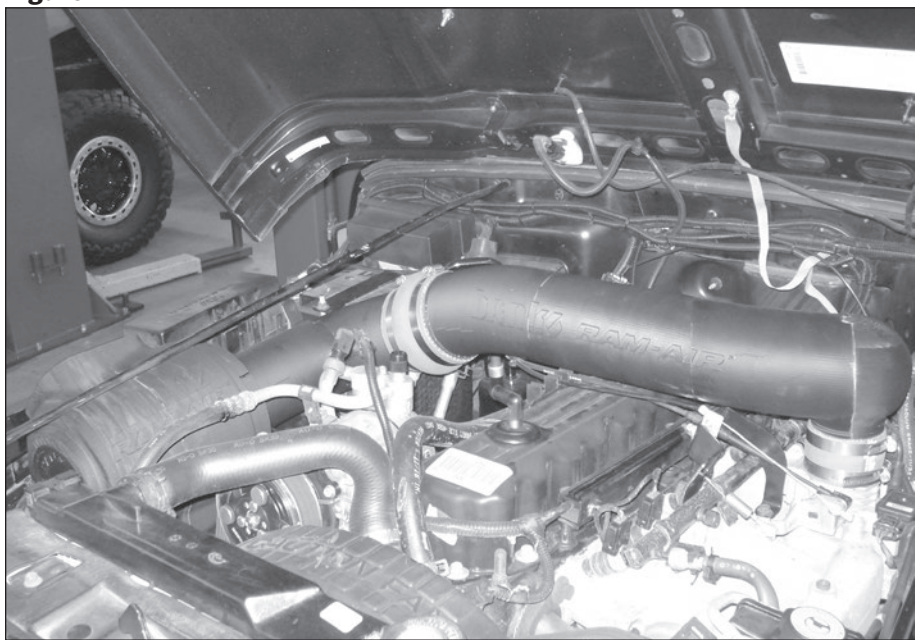
**15.** Locate the supplied PCV hose and spring band clamps. Fit spring band clamps over PCV hose on both ends. Install one end on the Banks short

intake tube and the other end to the PCV fitting on top of the valve cover.

**16.** Re-connect battery grounds. You have successfully completed the installation of the Banks Ram-Air Intake system. See **Figure 7**. 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-

**Figure 7**



# Section 3

## RAM-AIR FILTER CLEANING INSTRUCTIONS

### 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, reoil 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-