

97738 MONSTER-RAM INTAKE SYSTEM FOR 2007.5-18 RAM CHASSIS CAB 6.7L

INSTALL INSTRUCTIONS
 Part #s 42804-R, 42804-N, 42806-R, 42806-N

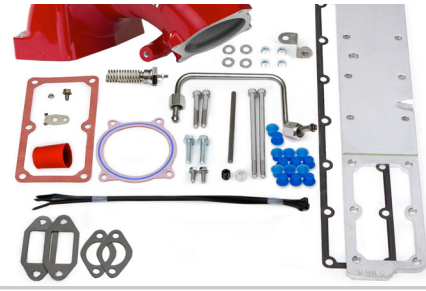


2007.5-2012 RAM Chassis Cab
 3500/4500/5500 6.7L Cummins
 2013-2018 RAM Chassis Cab
 3500/4500/5500 6.7L Cummins

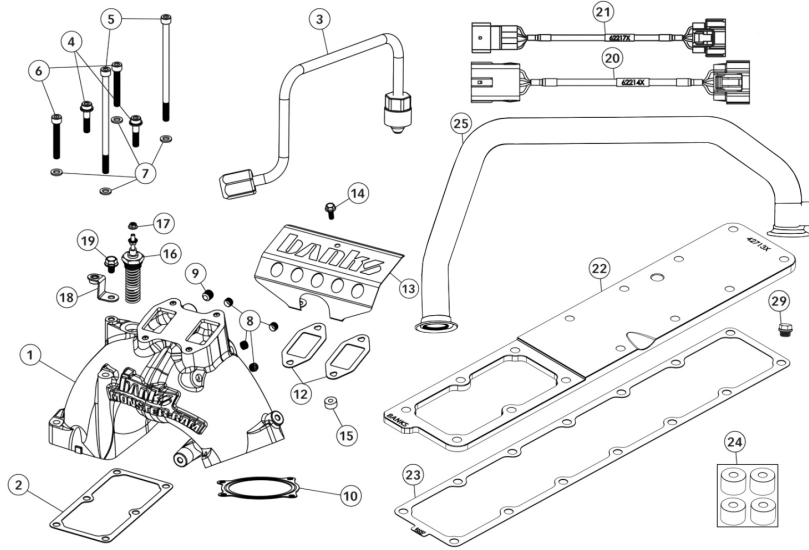
For Chassis Cab Trucks
 Small parts in kit will vary depending on Model Years
 (2007.5-12 vs 2013-18)

Does NOT fit Freightliner or Motorhome vehicles featuring the Cummins 6.7L Engine as emission, EGR systems, boost tubes, and intake elbow are unique to those vehicles.

Please read through the following instructions thoroughly before starting your installation. If you have any questions please visit our [Support Page](#).

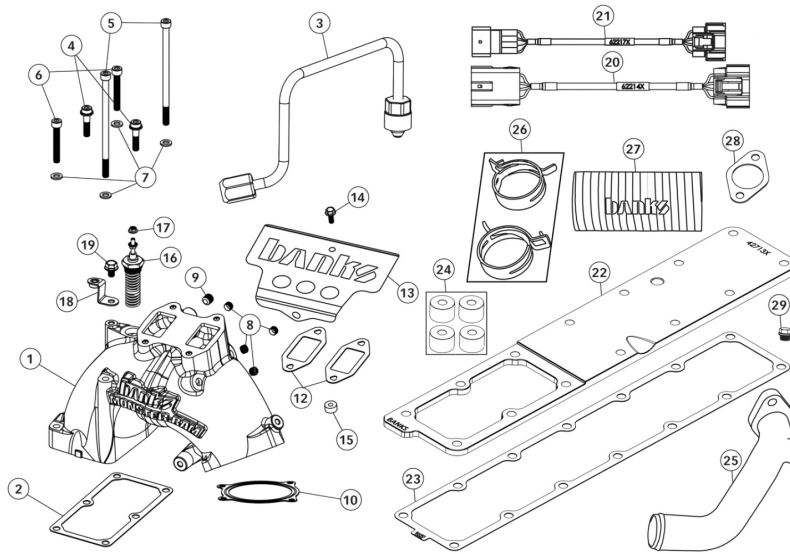


2007-12 Monster-Ram Chassis Cab Diagram



Item	Description	Part #	Qty.	Item	Description	Part #	Qty.
1	Monster-Ram Intake Manifold	42781	1	16	Heater Element	62213	1
2	Gasket, Intake Manifold	93063	1	17	Flange Nut, M5	91585	1
3	Fuel Line, #1 Injector	43209	1	18	Bracket, Dipstick	72305	1
4	Flanged Socket Head Cap Screw M8-1.25 x 35mm	91559	2	19	Flanged Hex Bolt, M8-1.25	91584	1
5	Socket Head Cap Screw, M8-1.25 x 150mm	91560	2	20	Harness Extension - EGR Valve	62214	1
6	Socket Head Cap Screw, M8-1.25 x 50mm	91561	2	21	Harness Extension - MAP Sensor	62217	2
7	Washer, M8	91697	4	22	High Flow Billet Heater Plate	42713	1
8	Plug 1/8 NPT	13251	4	23	Gasket, Heater Plate	93062	1
9	Plug, M12-1.25 12mm	92351	1	24	Fuel Rail Spacers	42713-05	4
10	Gasket, Throttle Body	93004	1	25	EGR Crossover Tube	41102	1
-	<i>This Space is Intentionally Blank</i>	-	-				
12	Gasket, EGR	93006					
13	Heat Shield, EGR Valve	53402	1				
14	Bolt M6-1.00	91762	1				
15	Spacer, EGR Valve Heat Shield	24332	1				

2013-18 Monster-Ram Chassis Cab Diagram



Item	Description	Part #	Qty.	Item	Description	Part #	Qty.
1	Monster-Ram Intake Manifold	42781	1	16	Heater Element	62213	1
2	Gasket, Intake Manifold	93063	1	17	Flange Nut, M5	91585	1
3	Fuel Line, #1 Injector	43209	1	18	Bracket, Dipstick	72305	1
4	Flanged Socket Head Cap Screw M8-1.25 x 35mm	91559	2	19	Flanged Hex Bolt, M8-1.25	91584	1
5	Socket Head Cap Screw, M8-1.25 x 150mm	91560	2	20	Harness Extension - EGR Valve	62214	1
6	Socket Head Cap Screw, M8-1.25 x 50mm	91561	2	21	Harness Extension - MAP Sensor	62217	1
7	Washer, M8	91697	4	22	High Flow Billet Heater Plate	42713	1
8	Plug 1/8 NPT	13251	4	23	Gasket, Heater Plate	93062	1
9	Plug, M12-1.25 12mm	92351	1	24	Fuel Rail Spacers	42713-05	4
10	Gasket, Throttle Body	93004	1	25	Driver Side EGR Crossover Tube	41100	1
-	<i>This Space is Intentionally Blank</i>	-	-	26	EGR House Clamps	92854	2
12	Gasket, EGR	93006	2	27	EGR Center Hose	94519	1
13	Heat Shield, EGR Valve	53402	1	28	EGR Gasket	93007	1
14	Bolt M6-1.00	91762	1	29	Hex Head Plug	62248	1
15	Spacer, EGR Valve Heat Shield	24332	1				

In effort to make sure you have the right kit for your model year. Visually check which fuel line is included in your kit before starting installation.



CAUTION

Banks supplied fuel line is designed for single use.
Use caution when installing and torque the line to the recommended torque spec.

RECOMMENDED TOOLS

Metal panel popper tool
Telescoping magnet
Rubber mallet

Torque wrench
Socket wrench
Socket wrench extensions
Wobble sockets or universal joint adapter
8mm socket
10mm socket
11mm deep wall socket
13mm deep wall socket

8mm open end wrench
10mm open end wrench
13mm open end wrench
17mm open end wrench
19mm open end wrench
1" or 26mm open end wrench
19mm crow's foot

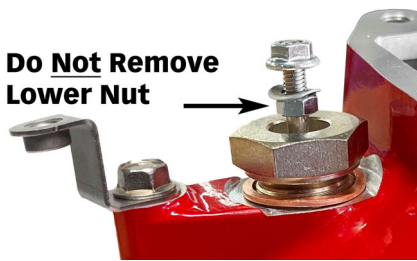
T-30 Torx bit

Aero Tac LV, 3M Super 77 or other spray adhesive

Chassis Cab Owners

Take note, this install guide is based on the existing RAM 2500/3500 Pickup Truck models. While the engine and general install procedure are the same, specifics of sensor placement and emission system locations vary on RAM 3500/4500/5500 Chassis Cab Trucks.

Details regarding these changes are shown with matching photos, diagrams and specific install steps in this manual.

Important!**Do Not Remove Lower Nut****IMPORTANT!**

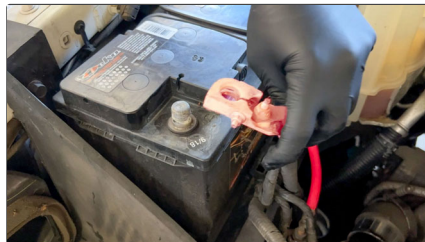
Coil heater preparation: Remove the top hex nut from the threaded post. You will replace the nut with the supplied flange nut as shown. The lower nut **must not be removed** from the heater coil. The lower nut must remain 1/8" above the coil heater body.

Take care when installing OEM heater wire ring terminal, it must be sandwiched between the upper and lower nut. If the lower nut is too low, the ring terminal could contact the body of the coil and will short out.

When tightening the nut, it is very important to use a 10mm wrench or socket on the top nut and an 8mm open-end wrench on the bottom nut to prevent the threaded post from rotating. If the threaded post rotates, it can break the ceramic insulation it's surrounded by.

If the OEM heater wire touches other metal components, an open short will occur.

Copper washer: All kits now ship with a copper crush washer. Place this washer between the coil heater before screwing it into the Monster-Ram.

OEM Harness and Sensor Removal**1. Disconnect Batteries**

Place a rag around each of the negative battery cable ends; this will prevent them from touching the battery again and arcing during the install as you work.

**2. Remove Engine Cover**

Remove engine beauty cover. Use an 8mm deep socket to remove the four bolts holding the cover down.

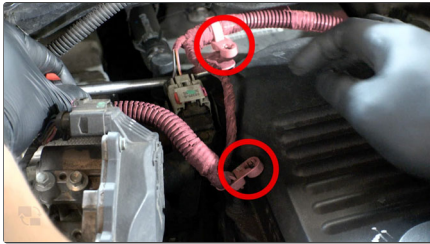
**3. Remove Dipstick**

The dipstick needs to be removed for the cover to come off.

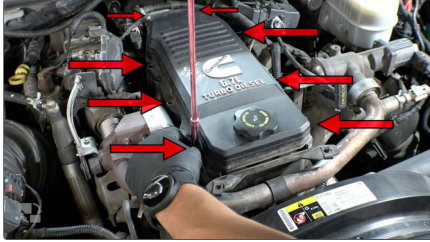
**4. Remove Engine cover, Reinsert Dipstick****5. Remove Cable Tie Downs**

Use a panel popper tool or pliers

Note: The 2 bolts with studs extending up past the head are to be located on the left rear of the cover.



6. Remove Cable Tie Downs



7. Remove Engine Cover Bolts
There are 8 bolts holding on the cover. A wobble extension and placing the socket on the bolts first helps.



8. Remove Oil Fill Cap



9. Place Rag Over Filler Neck



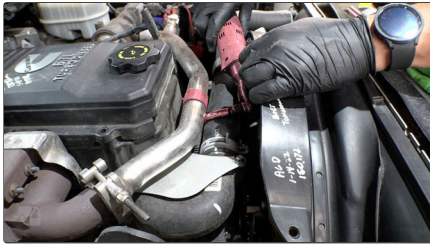
10. Remove Bolts Holding Cross Over Tube Bracket
This bracket will not be reused.



11. Remove Rag, Set Down Cover



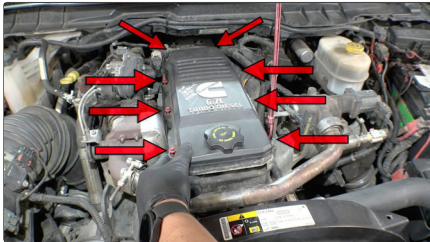
12. Install Oil Filler Cap



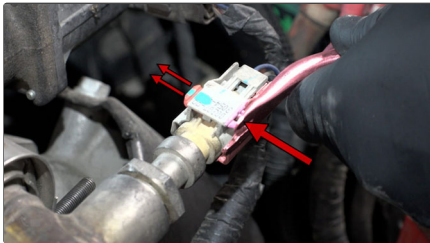
13. Remove Bolt Under Center of EGR Crossover Tube



14. Remove and Dispose EGR Tube P-Clamp



15. Reinstall 8 Engine Cover Bolts – Studs in Rear Passenger Side



16. Unlock Temp Sensor Plug From EGR Crossover

Use a flat-blade screwdriver or pry tool to push the slide-lock.



17. Remove Temp Sensor clip by Pinching It



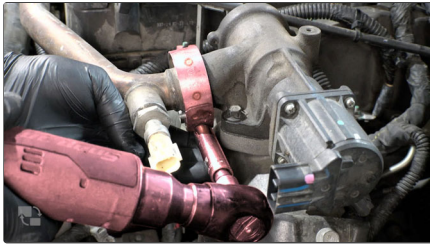
18. Remove EGR Valve Plug

Press the locking tab, press the plug forward to release tension, then pull back to remove.



19. Remove EGR harness cable tie

A) EGR Tube Removal (2007.5-2012) for
2013-2018 See EGR Removal "B"



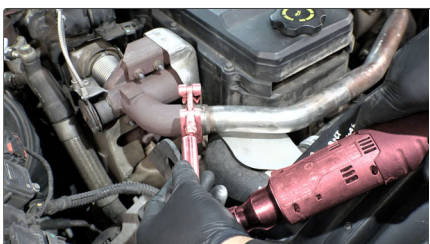
**20A. Loosen EGR Clamp
Driver's Side**

This will ease access later, use a small flat blade to release the clip.



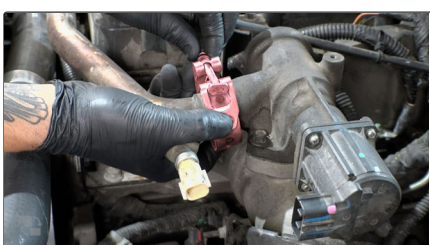
**21A. Flip EGR Clamp Upside
Down for Easy Access Later**

Do not remove the clamp yet.



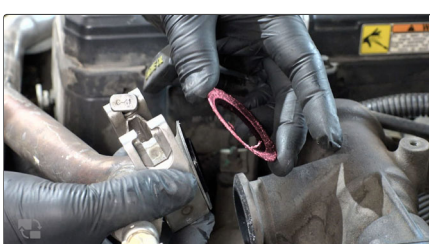
**22A. Loosen EGR Clamp
Passenger Side**

Do not remove this clamp yet (A gasket will slip out and fall if you do)



**23A. Release Driver side EGR
Clamp**

Keep a hand under the clamp incase the gasket comes loose.



**24A. Release Clamp & Remove
Gasket**

Catch the gasket and put aside for later, this will be used again.



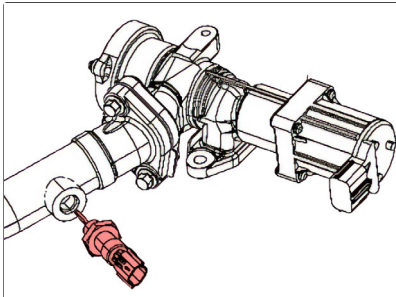
**25A. Release Passenger Side
EGR Clamp**

Apply pressure to keep the gasket in place and keep your hand under the passenger side clamp to prevent the flat EGR gasket from falling into the engine bay.

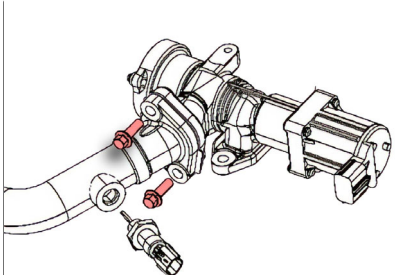


**26A. Catch EGR Gasket From
Falling**

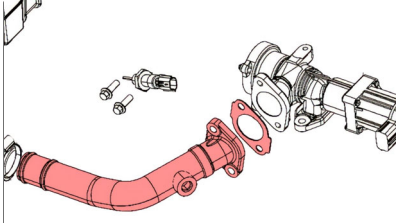
B) EGR Tube Removal (2013-2018)



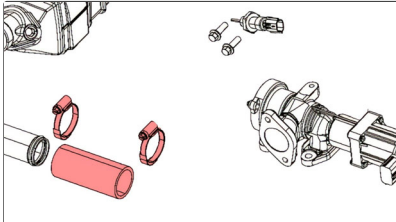
20B. Remove Screw in EGR Temp Sensor From EGR Crossover Tube.
This sensor will be reused later with the Banks Driver Side Crossover Tube.



21B. Loosen and remove EGR Tube bolts on Driver's Side

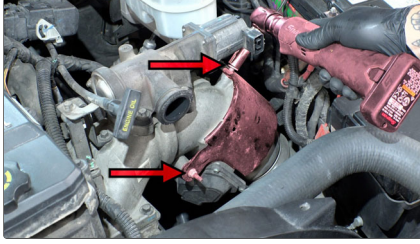


The OEM gasket and tube will not be used with the Monster-Ram. A new 2 Bolt Gasket is provided.
Put the two bolts for the EGR Valve and Temp sensor aside; they will be reused.

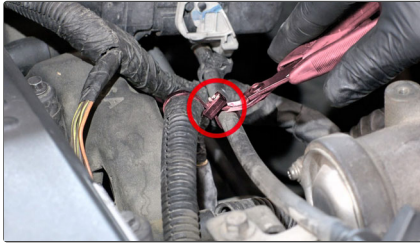


22B. Remove Center EGR Hose
A New Banks Silicone Hose and Clamps are provided for use later in the installation.

Intake Elbow Removal



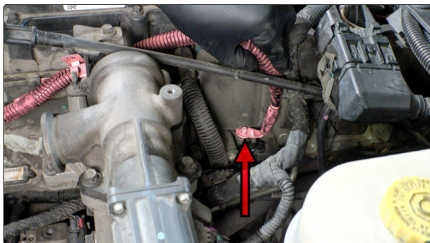
23. Remove Throttle Heat Shield



24. Cut Dipstick Tube Zip Ties
Free up the thick 12V wire for the grid heater.



25. Remove 12V Harness P-Clamp



26. Remove Heater cable from Terminal

Relocate the wire out of the way once the free.

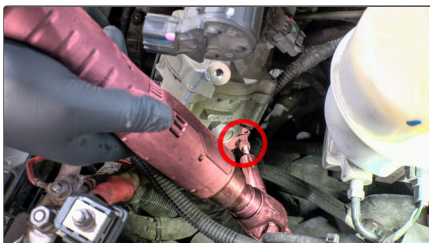


27. Remove Dipstick Tube Bracket



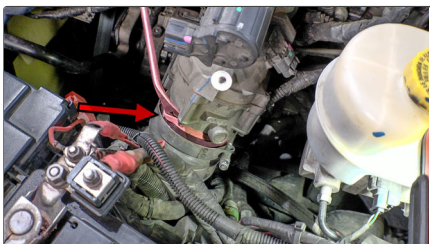
28. Bend Tube Up Slightly

The Monster-Ram is slightly taller than the factory Intake Elbow; you'll fine-tune this bend after the Monster-Ram is installed.



29. Loosen Boost Tube Clamp

This does not have to be fully removed, just release tension on the hose



30. Pry Boost Tube Hose Off Throttle Body

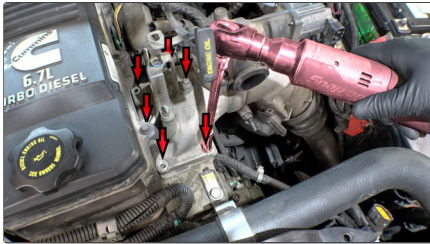
The hose may feel stuck or glued to the throttle body; carefully walk a panel popper tool around the tube to loosen its grip on the throttle body. This will make removal later on easier.



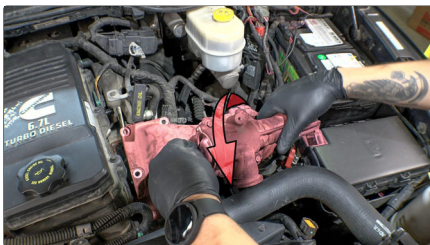
31. Remove Cable Tie Back of Elbow & Unplug MAP sensor



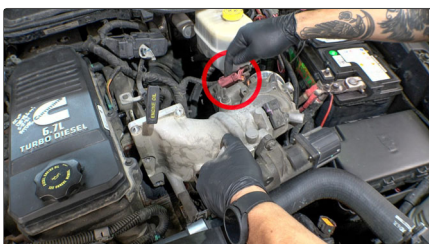
32. Remove Forward PCV Hose



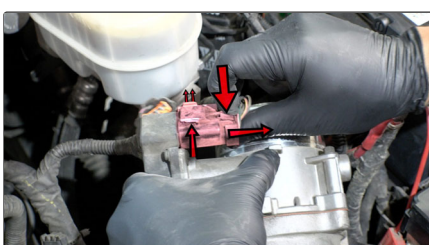
33. Remove 6 Bolts on Elbow



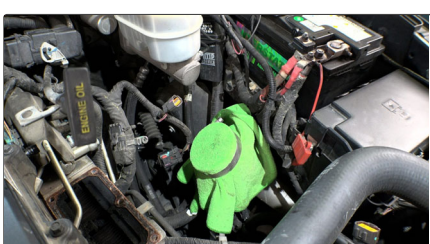
34. Lean Elbow Toward You & Dislodge Boost Tube



35. Remove Throttle Control Plug
Now that the elbow has been leaned forward, you can easily reach this plug.

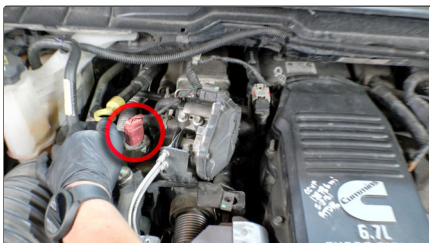


Slide tab over and depress the end to remove the plug.

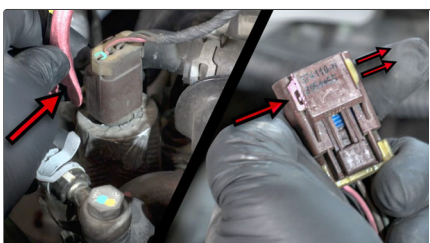


36. Place Rag & Clamp Over Boost Tube

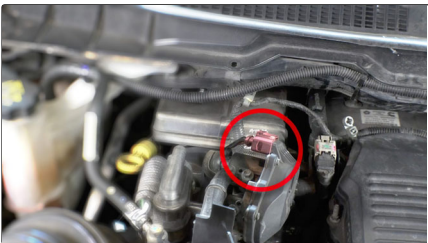
Factory Heater Plate Removal



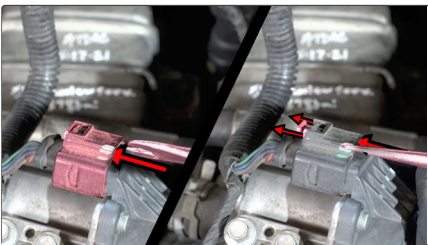
37. Disconnect First Passenger Side Plug



38. Slide the pink locking tab over, then pull to release



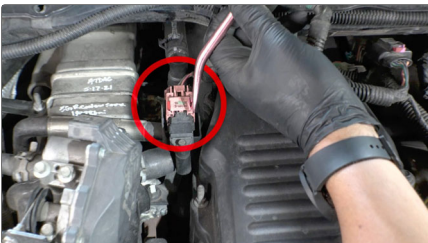
39. Disconnect Second Passenger Side Plug



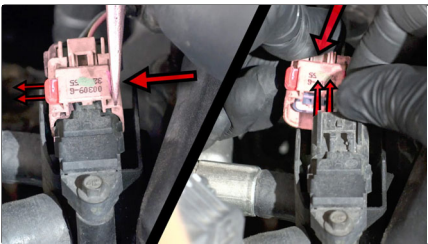
Slide Lock In



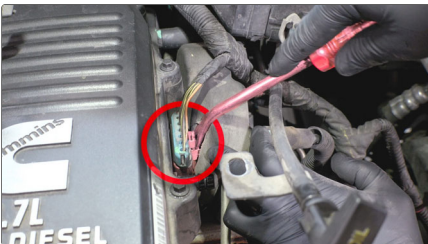
Depress button to release clip



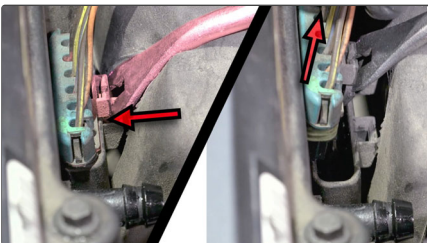
40. Disconnect Third Passenger Side Plug



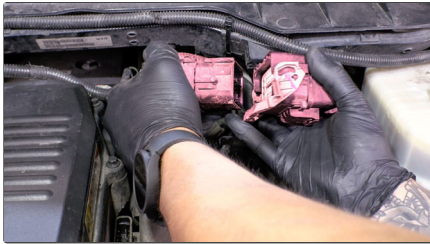
41. Disconnect Third Passenger Side Plug



42. Locate Flat Blue Driver Side Plug



43. Press in the clip with a flat tool, and pull up.



44. Disconnect Large Driver Side Engine Harness

Depress clip and fully rotate the white lock, then pull to disengage. May need some force due to dust, grime, etc.



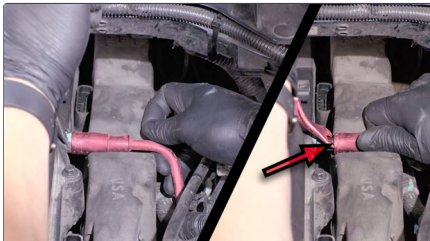
Release cable tie



45. Remove Rear Driver Side Plug



46. Remove Rear Driver Side Flat Blue Plug



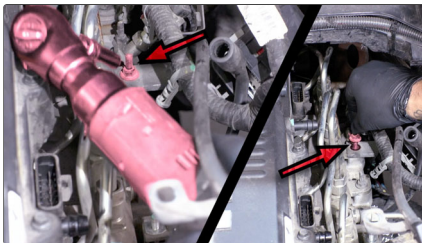
47. Remove Rear PCV Hose



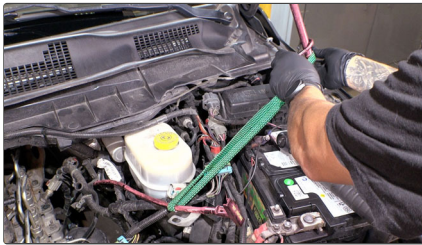
48. Remove Rubber Isolator



49. Remove Cable Ties from Driver Side Studs



50. Remove Dipstick Tube Stud

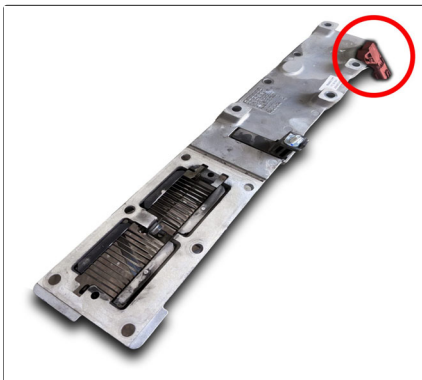


51. Bungee Cord The Dipstick Tube



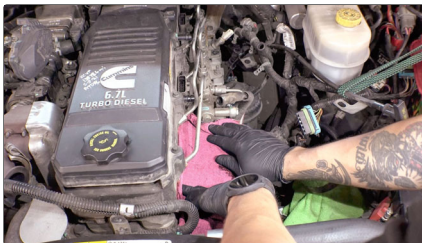
52. Remove Manifold Temp Sensor Plugs

Chassis Cab: Depending on the vehicle production date or GVWR, an EGR and/or MAP sensor may be mounted on the rear of the intake manifold plate.



Chassis-Cab: MAP Sensor

The Chassis-Cab MAP sensor is located on the rear of the intake manifold.
This sensor will be transferred to the MAP sensor provision on the Banks Monster-Ram later in your install.

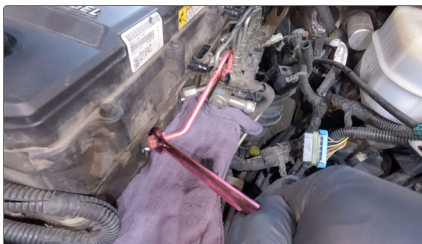


53. Place Rag Over Intake



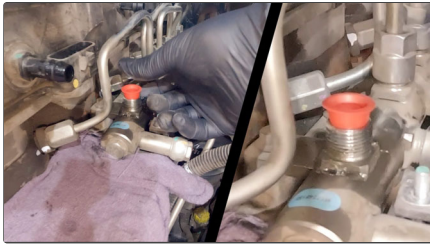
54. Paint Marker Line Across Threaded Insert & Cylinder Head

This will allow you to see if the threaded inserts in the head start to turn when loosening the fuel lines. You do not want the insert to spin loose, as this will cause a fuel leak.



55. Remove Fuel Lines

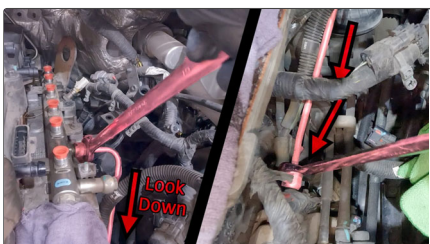
If the inserts in the head start to move, use an open ended wrench to hold them in place.



56. Install Dust Covers
Insert the covers, open end facing out. The caps should fit (inside) each blocked port.



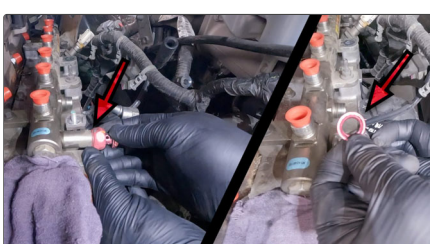
57. Loosen #6 Fuel Line & Rotate Out of Way
Do not fully remove the rear fuel rail. It is difficult to reach and only needs to be moved out of the way as shown.



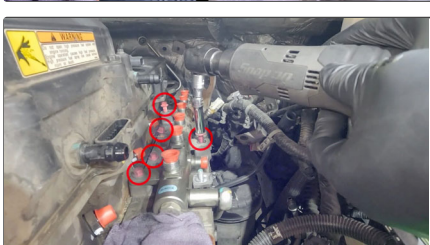
58. Loosen High Pressure Fuel Feed Line
Both the upper and lower ends.



59. Swivel Back High Pressure Fuel Feed Line



60. Remove Banjo Bolt
Take care not to lose the washer between the fuel rail & banjo bolt.



61. Remove Fuel Rail Bolts



61a. Place Rag At The Rear of Fuel Rail
There will still be fuel in the rail, and it'll leak out in the next step if you don't do this.



62. Bungee Fuel Rail

Be sure that rag stays at the rear of the fuel rail, it will leak when you tilt it back.



63. Remove Factory Grid Heater



64. Clean Manifold Surface

Take care not to scratch the surface, and vacuum out any debris that fall into the manifold.

A rag with some solvent can clean up the finer material.

Be certain there is no rust buildup. Rust or an uneven surface will result in an air leak.



65. Spray Adhesive to Gasket (Banks Side)

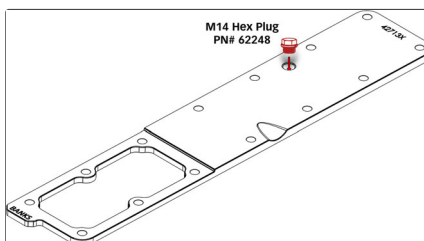


Side that says Banks, should be the side with the adhesive. Let it sit for about 3 min for the glue to tack up.



66. Align Gasket & Stick On

Line up all of the bolt holes, and stick the gasket to the flat side of the billet plate.



67. Note: M14 Plug (62248)

Chassis Cab: Depending on the vehicle production date or GWR a thermocouple temp sensor may be mounted on the Manifold Plate.

If your vehicle was equipped this way, transfer the sensor into the Banks Billet Plate.

If your vehicle was not equipped this way, Plug the Billet Plate with the M14 Plug.

Don't over-tighten into the billet plate as the aluminum is softer than the steel threads. It will bottom out so you'll know when to stop.

Installation of Monster-Ram

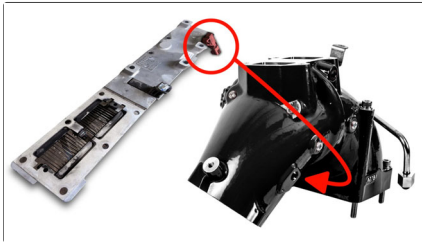


68. Remove EGR Valve



69. Remove Throttle Body

The throttle will be stuck onto the gasket, so use a rubber mallet to help tap it free from the elbow.



70. Remove & Transfer MAP Sensor

The Chassis-Cab MAP sensor is located on the rear of the intake manifold.
Transfer the MAP sensor from the rear of the intake manifold plate, to the back side of the Banks Monster-Ram.
You will use the MAP-Extension Harness included in your kit to re-connect the sensor.



71. Remove & Transfer Elbow Stud

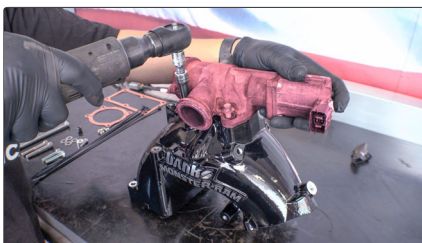


72. Clean EGR Gasket Surface

Take care not to nick the surface. Do the same for the throttle body gasket mating surface.



73. Place New EGR Gaskets On Monster-Ram



74. Fasten EGR Bolts

Apply a small amount of medium strength thread locker.



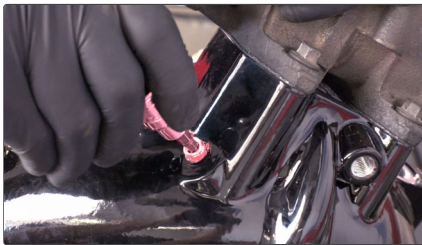
75. Align Throttle Body Gasket



76. Fasten Throttle Body to Monster-Ram

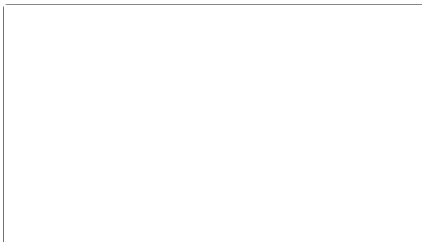


The 1/8" NPT ports shall only be used for installing sensors for measuring air temperature, pressure, or flow. Sensors installed to these ports shall have a fitting of 1/8" NPT and shall not be connected to the vehicle's electronic control units. In addition, factory sensors that come equipped on the vehicle shall not be disconnected and shall not be relocated to the ports. The ports, when not used, shall be closed off with the supplied plugs.



77. Install Sensor Plugs

Inspect the threaded holes, and be sure there is no powder coat in the holes.



78. Rear Temp Sensor.

Chassis Cab: Depending on the vehicle production date or GVWR your EGR temp sensor may be mounted on the rear of the Monster-Ram.

If your vehicle was not equipped this way. Plug the rear EGR port with the M12 Plug



79. Install MAP Sensor

Now is a good time to clean the sensor with some MAF/MAP cleaner spray.



80. Spray Gasket With Adhesive



81. Place Washers On The Hex Cap Screws, Then Apply Some Blue Threadlocker As You Install Them



82. Use a Stock Bolt to Hold Billet Plate in Place



83. Place Fuel Rail Standoffs



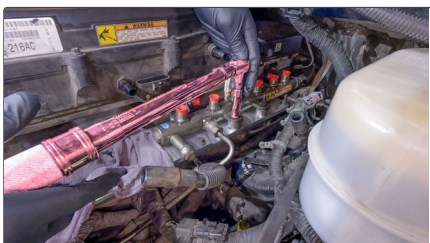
84. Release Bungee Cord. Place Fuel Rail & Studs in Place



85. Install Banjo Bolt & Washer



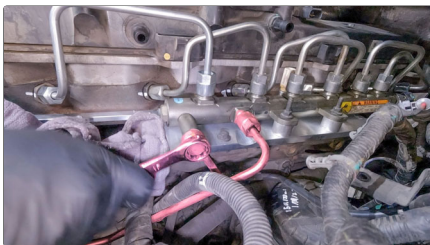
86. Tighten Fuel Rail



Torque Bolts to 18-20 ft/lbs



87. Tighten Fuel Lines to 30 ft/lbs

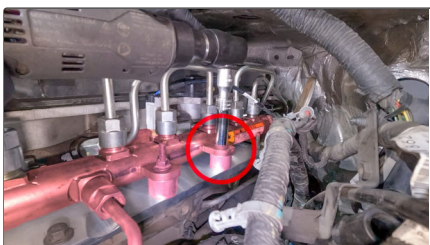


88. Tighten Fuel Supply Line Banjo Bolt Hand Tight & Fuel Feed Line To 30ft/lb



89. Connect Temp Sensor Extension Harness.

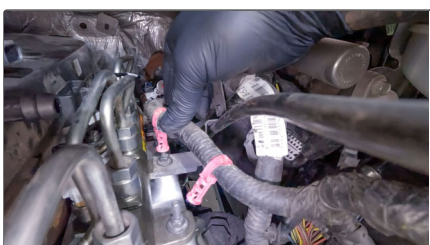
Be sure to lock the plug once connected.



90. Remove Middle Right Stud For Dipstick Tube



Slide Dipstick Bracket Over & Reinstall Stud



91. Push Engine Harness Cable Ties Back Onto Studs



92. Put Rubber Isolator Back Into Place



93. Run Rear PCV Hose Under Dipstick Tube



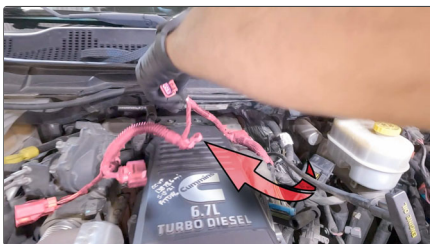
94. Connect Rear PCV Hose Back To Valve Cover



95. Connect Rear Flat Blue Injector Plug



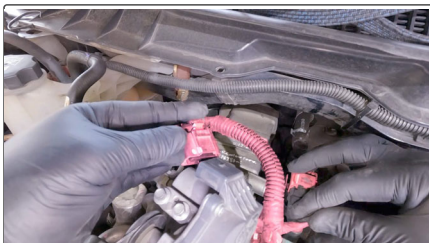
96. Connect Rear White Plug
Be sure to slide the pink lock back into position.

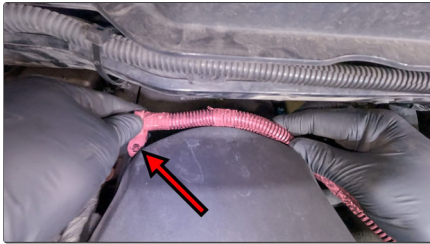


97. Route Engine Harness Under Dipstick & Around Valve Cover



97a. Plug In 3 Remaining Plugs

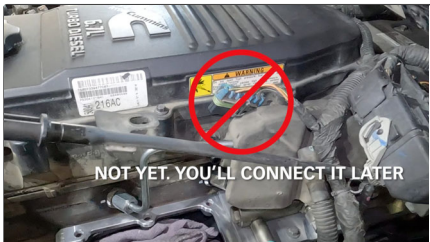




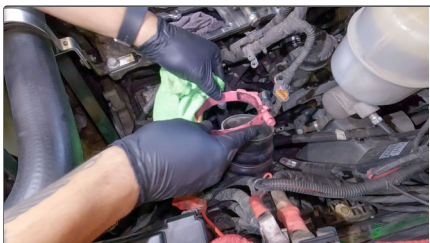
98. Push Cable Ties Onto Studs



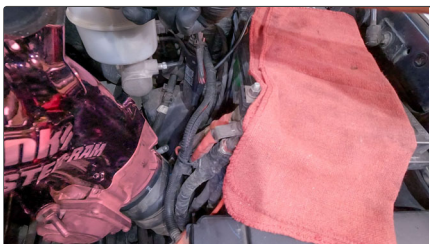
99. Reconnect Engine Harness Connector



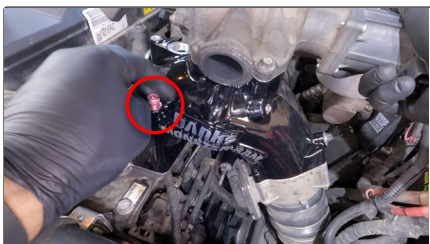
100. Do Not Connect Front Blue Injector Plug Yet



101. Remove Rag From Boost Tube, Put Clamp Back On



102. Insert Monster Ram Into Boost Tube



103. Put Long Bolt Into Front Corner by Hand

This will help hold the Monster-Ram in place. Then do the same for the long bolt on the backside. Followed by the two smaller bolts.

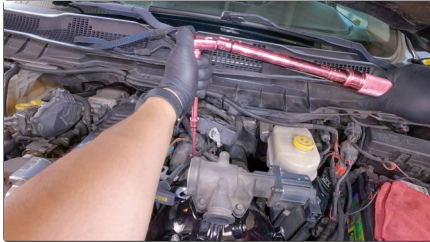


104. Use Telescoping Magnet to Start Bolts in the Middle of the Monster-Ram

This is useful for the small bolt in the middle where it is hard to reach., and **mandatory** for the one that goes through the top coil heater hole. Be sure to use Medium strength thread locker.



Use Hex Key Extension to Tighten Bolt



Tighten All 6 Bolts 18-20 ft/lbs

Start with the bolt that's inside the Monster-Ram, then work in a cross pattern to torque to spec.



105. Slide Copper Washer Onto Heater Coil

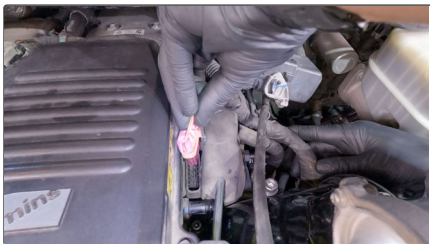


106. Tighten Coil Heater By Hand

Should be tight, but don't over do it.

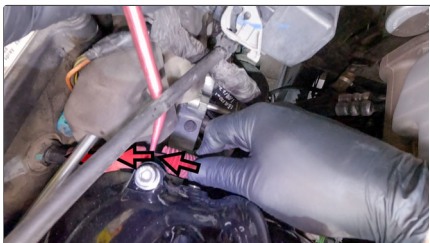


107. Install Dipstick Tube Bracket



108. Now Install Forward Flat Blue Injector Plug

Be sure it clicks.



109. Connect Forward PCV Hose to Valve Cover

This is a tight fit, but doable. Wiggle the rubber hose on the nipple a quarter inch, then use a pry tool as a lever to help slide it on.



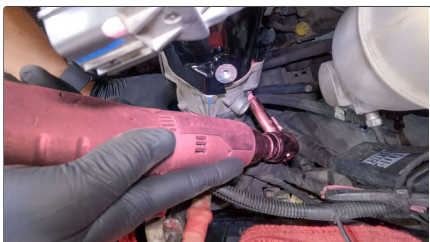
110. Plug In MAP Sensor (Rear of Monster-Ram)

Secure the slide lock back into position.



111. Plug In Throttle Plug

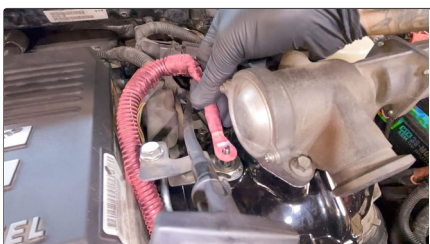
Secure the slide lock back into position.



112. Tighten Boost Tube Clamp



113. Remove & Discard 12v Heater Cable P-Clamp



114. Install 12V Heater Wire Locker To Coil Heater

Bend 12V Cable around as shown over the stud.



12V cable should be sandwiched in-between both nuts and the included lock washer



115. Tighten 12V Heater Nut

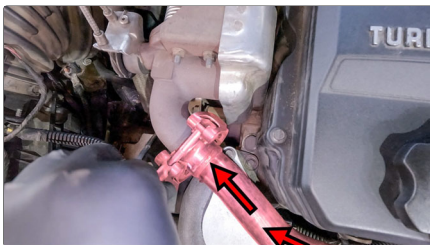
Be sure to use a wrench to hold the lower nut when tightening the top nut.

Failure to do this can cause the stud to break off, or cause the nuts to walk potentially touching the body of the truck.

2007.5-2012 EGR Re-installation



116A. Flat Washer Goes On Passenger Side of EGR Tube



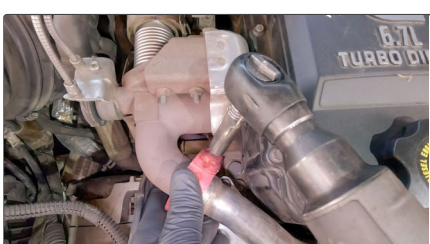
117A. Put Clamp Over Union & Hand Tighten



118A. Conical Gasket Goes On Driver Side of EGR Tube



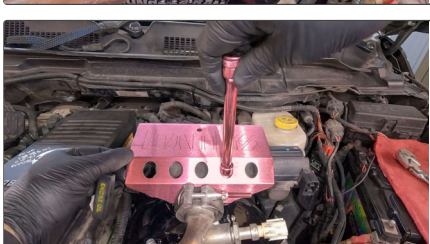
119A. Tighten Driver Side Clamp



120A. Tighten Passenger Side Clamp



121A. Loosen Front Bolts on EGR Valve

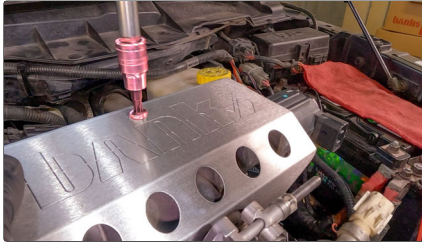


122A. Install EGR Heat Shield and Tighten Bolts



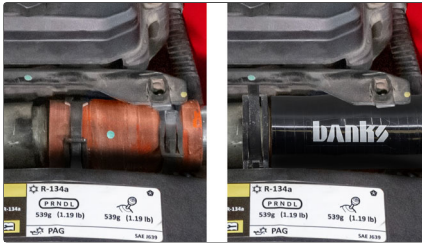
123A. Place Rear Heatshield Spacer & Screw

Use a drop of thread locker on the screw to prevent it from vibrating out.



124A. Tighten Torx Head Screw

2013-2018 EGR Re-installation



116B. Replace the OE Center EGR Hose with the Banks Silicone Hose.

Be sure to get one constant tension clamp on first before installing the Banks Silicone hose.

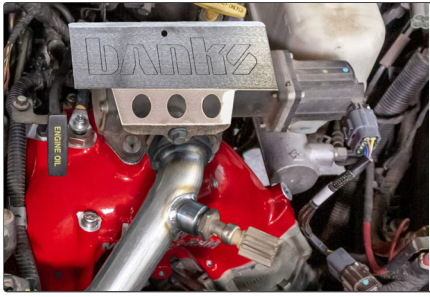


117B. Use the Banks supplied Constant Tension Clamps.



118B. Line up Banks EGR Tube with EGR Valve.

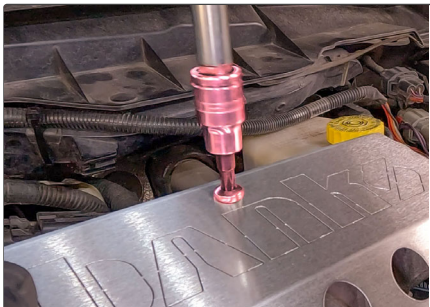
Plug in the EGR Valve to its harness as well.



119B. Bolt on EGR Tube with Banks EGR Cover
Thread back in the EGR temp sensor from the OEM Crossover pipe if you haven't done so yet.



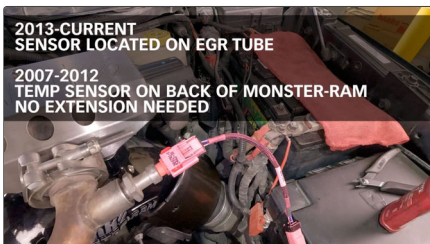
120B. Place Rear Heatshield Spacer & Screw
Use a drop of thread locker on the screw to prevent it from vibrating out.



121B. Tighten Torx Head Screw



122B. Install Throttle Heat Shield Bolt and Nuts



**2013-CURRENT
SENSOR LOCATED ON EGR TUBE**
**2007-2012
TEMP SENSOR ON BACK OF MONSTER-RAM
NO EXTENSION NEEDED**

123. Connect EGR Temp Sensor



123A. Connect EGR Extension & Harness



124. Connect EGR Temp Sensor to harness.

Final Checks



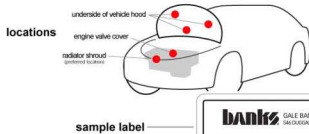
125. Reconnect Batteries



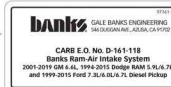
126. First Start May Take 1-2min of engine turnover.

This is normal. The fuel system, rail, and lines need to re-pressurize.

Vehicle CARB EO Label Placement



sample label



CARB EO Label

For smog check purposes, affix the CARB E.O. Label on a visible location under the hood. Banks recommends using the radiator shroud location.