INSTALL INSTRUCTIONS FOR 76-1014

PRINT

BEFORE YOU START

Please read the entire installation instruction before proceeding. Ensure you have all the necessary tools to complete the installation. Ensure all parts are present. If you are missing any of the components, call our customer support at (909)947-0015. Do not work on your vehicle while the engine is hot. Make sure the engine is turned off and the vehicle is in Park or the Parking Brake is set. Cleanliness cannot be overemphasized when handling or replacing diesel fuel system components.

Install Video Can Be Found Here.

Note: This intake elbow kit may not fit with the following aftermarket parts installed: Intercooler or Intercooler Pipe, Custom Hood, Intake Manifold

Post Installation Testing

After your installation is complete, engage parking brake and start your engine. It will take a little longer to initially start since the fuel pump will need time to refill the fuel rail and fuel lines. After the engine starts, listen for any abnormal noises. If an air leak is detected, re-inspect hoses and bolted connections as they may need to be tightened and/or re-torqued to the correct value. Check for any fuel leaks and tighten and re-torque any leaking fuel lines. Take a short test drive of your vehicle and listen for any abnormal noises. Check again for any fuel leaks. Tighten and/or re-torque any loose connections. S&B FILTERS instructs that you keep your OE intake parts in the event it is required in the future. In order to maintain your warranty,

REQUIRED TOOLS

Tools Required:

- 8mm, 10mm, 13mm, 17mm, 24mm Socket and Wrench
- 10mm, 11mm, 24mm Deep Socket and Wrench
- 6” or 10” Wobble Socket Extension
- 5/32” Ignition Wrench
- 8mm Open/Box Combination Wrench
- 13mm Open/Box Combination Wrench
- 14mm Open Wrench
- 19mm Open/Box Combination Wrench
- 1” Open Wrench or Adjustable Open Wrench
- 19mm Flare Nut Crowfoot Socket or 19mm High Pressure Fuel Line Socket
- 24mm Open or Flare Nut Offset Wrench
- 6mm Hex Bit Socket, ¼” Drive
- 3” Socket Extensions, ¼” Drive
- 6” Wobble Socket Extension, ¼” Drive
- 1-¾” Socket Extension, ⅜” Drive
- 3” Socket Extension, ⅜” Drive
- 10” Socket Extension, ⅜” Drive
- ⅜” to ¼” Step Down Socket
- Universal Joint Adapter, ¼” Drive
- Universal Joint Adapter, ⅜” Drive
- T15 Torx Bit/Driver
- Panel Popper
- Flat Blade Screwdriver
- Flush Cutter
- Torque Wrench, ¼” Dri
- Torque Wrench, ⅜” D
- Snap-Blade Knife
- Telescoping Magnetic Pickup Tool
- Plastic Razor or Plastic Scraper
- Heat Gun
- 90 degree hook/pick

periodically check the items listed in the Maintenance section. Failure to do so may void your warranty.

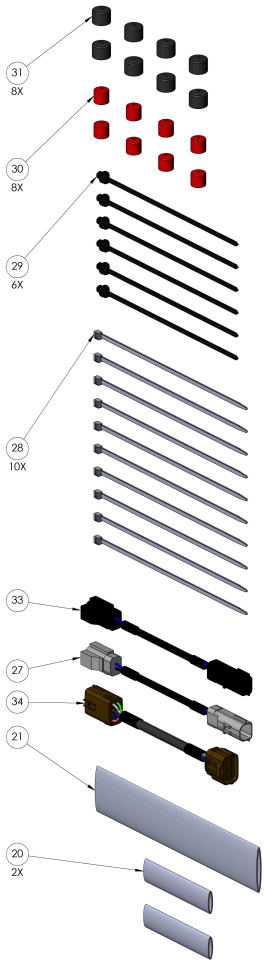
Maintenance

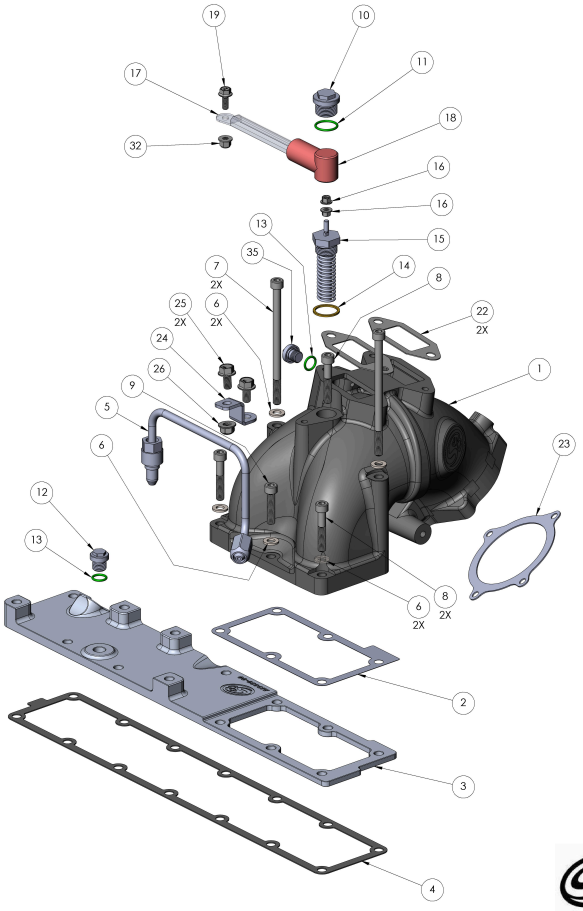
Periodically (during each engine oil change) Check the Following:

- Intake Air Heater electrical connection nuts (Item 16) making sure they are secure and tight.
- All electrical connections and wire harnesses moved during the installation of the intake and make sure they are secure and away from any hot or moving components.
- Check for any signs of abrasion or wear and tear on the electrical harnesses moved or near the Intake Elbow and repair/replace as necessary.

Vehicle Fitment 2007.5-2018 6.7L Cummins Diesel, Ram, 2500/3500

Device Name: Intake Elbow





76-1014

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	AL1494-00	6.7L Cummins Intake Elbow, Machined
2	1	AI3561-00	Gasket, Intake Manifold to Elbow, 6.7L Cummins
3	1	AI3489-00	Grid Heater Delete Plate, 6.7L Cummins
4	1	AI3560-00	Gasket, Intake Manifold Cover, 6.7L Cummins
5	1	AI3515-00	Fuel Line, Injector #1, High Clearance, 6.7L Cummins, 2007-2018
6	5	AI1740-00	Washer, M8, 16mm OD, 18-8 SS
7	2	AI3568-00	Screw, Socket Head, M8x1.25 x 130mm Long, DIN 912, 18-8 SS, A2-70
8	3	AI3569-00	Screw, Socket Head, M8x1.25 x 45mm Long, DIN 912, 18-8 SS, A2-70
9	1	AI3570-00	Screw, Socket Head, M8x1.25 x 35mm Long, DIN 912, 18-8 SS, A2-70
10	1	AI3564-00	Plug, M22 x 1.5mm
11	1	AI3565-00	O-Ring, Viton, for M22 Plug
12	1	AI3566-00	Plug, M14 x 1.5mm
13	2	AI3567-00	O-Ring, Viton, for M12 and M14 Plug
14	1	AI3558-00	Gasket, Intake Air Heater, Brass
15	1	AI3557-00	Intake Air Heater
16	2	AI3622-00	Locknut, Flange, Distorted Thread, M5 x 0.8mm, DIN 6927, Class 8, Zn Pltd
17	1	AI2007-00	Positive Battery Cable Extension, 2AWG, 5" long, Red, 1/4" Ring Terminals
18	1	AI3625-00	Terminal Insulator, 2-2/0 GA, PVC, Red, UL V2

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
19	1	AI2014-00	Screw, Hex Flange, M6 x 16, DIN 6921, Class 8.8, Zn Pltd
20	2	AI2019-01	1" ID heat shrink, Red, 4.0"
21	1	AI2107-02	Fabric Heat Shrink, Black, 10" Long
22	2	AI3562-00	Gasket, EGR Valve, 6.7L Cummins
23	1	AI3563-00	Gasket, Connection, Throttle Body to Intake Elbow, 6.7L Cummins
24	1	AI3559-00	Bracket, Oil Dipstick, 6.7L Cummins
25	2	AI3623-00	Screw, Hex Head, Flange, M8 x 1.25 x 16 mm, DIN 6921, Class 8.8, Zn Pltd
26	1	AI3624-00	Locknut, Flange, Distorted Thread, M8 x 1.25, DIN 6927, Class 8, Zn Pltd
27	1	AI3497-00	EGR Temp Sensor Ext Harness, 6.7L Cummins, Grey Connector
28	10	AI1750-00	Cable Tie, 9" Long
29	6	AI2154-00	Push In Mount Cable Tie
30	8	AI3662-00	Cap, Flexible Vinyl, 1/2" ID x 1/2" Deep, Red
31	8	AI3661-00	Cap, Flexible Vinyl, 5/8" ID x 1/2" Deep, Black
32	1	AI2015-00	Flange Locknut, Nylon Insert, M6 x 1, DIN 6926, Class 8, Zn Pltd
33	1	AI3519-00	EGR Temp Sensor Ext Harness, 6.7L Cummins, Black Connector
34	1	AI3880-00	EGR Valve Extension Harness, 6.7L Cummins, 2007-2018
35	1	AI3757-00	Plug, M12 x 1.25mm

76-1014

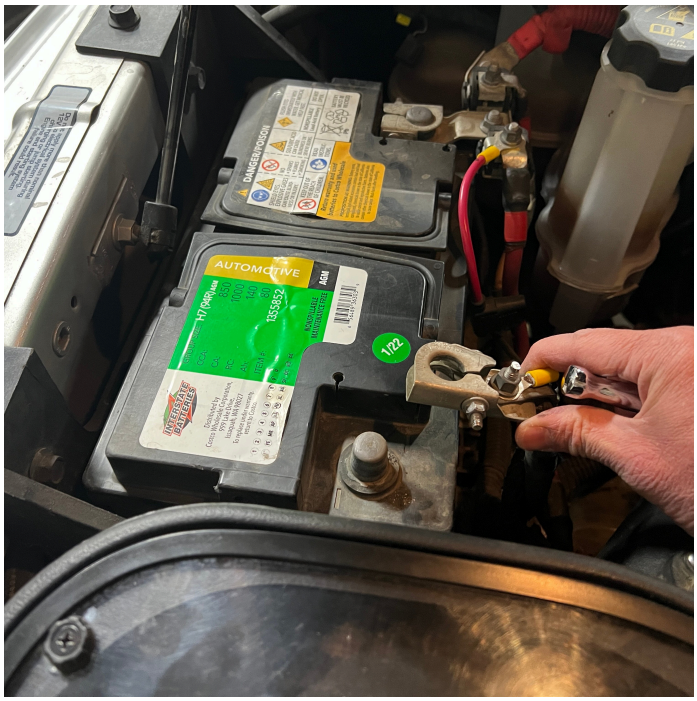
STEP 1A

With the ignition switched off and the parking brake set, disconnect the negative battery cables on both batteries. Disconnect the negative battery cable on the passenger side battery. Isolate the cable n the battery by covering it with a rubber glove

or other electrical insulating material.

Note: Failure to disconnect the battery for 2 hours may cause the CEL to illuminate upon completion of the installation and subsequent operation. DO NOT SKIP THIS STEP!

Tools Required: 8mm Socket/Wrench



STEP 1B

Disconnect the negative battery cable on the driver side battery. Isolate the cable terminal from the battery by covering it with a rubber glove or other electrical insulating material.

Note: Failure to disconnect the battery for 2 hours may cause the CEL to illuminate upon completion of the installation and subsequent operation. DO NOT SKIP THIS STEP!

Tools Required: 10mm Socket/Wrench

STEP 2

Remove the bolts securing the engine cover.
Tools Required: 8mm Socket/Wrench

STEP 3

Remove the engine oil dipstick and then remove the engine cover.

STEP 4

Replace the engine oil dipstick.

STEP 5A

Disconnect the wire harness connector from the EGR temperature sensor located on the EGR crossover tube. If you have a 2007.5 to 2009 year model, your EGR temperature sensor may be located on the intake elbow as shown in Step 5B. To disconnect the harness connector, first slide to release the red locking tab, then depress the retaining tab and remove the connector from the sensor.

STEP 5B

If you have a 2007.5 to 2009 year model, disconnect the harness from the EGR temperature sensor located on the back of the intake elbow. To disconnect the harness connector, first slide to release the red locking tab, then depress the retaining tab to remove the connector from the sensor.

STEP 6

Remove the nut and T-bolt from the driver side V-band clamp on the EGR crossover tube.
Tools Required: 11mm Deep Socket/Wrench

STEP 7

Remove the nut and T-bolt from the passenger side V-band clamp on the EGR crossover tube.
Tools Required: 11mm Deep Socket/Wrench

STEP 8

Remove the coolant hose bracket bolt and move the coolant hose away from the engine and downward to allow more room to work in Step 9.
Tools Required: 10mm Socket/Wrench

STEP 9

Remove the bolt holding down the EGR crossover tube bracket.
Tools Required: 8mm Socket/Wrench, 6” extension, ¼” Drive Universal Joint.

STEP 10

Carefully open and move both V-band clamps away from the EGR crossover tube flanges being careful not to let the gaskets fall from either end of the EGR crossover tube.

STEP 11

Place your hands underneath both flanges of the EGR crossover tube to make sure the gaskets don’t fall and carefully remove the crossover tube from the engine.

STEP 11 CONTINUED

STEP 12

Note that the passenger side flange on the EGR crossover tube has a flat sealing surface and a flat metal gasket. Keep the gasket for re-use later.

STEP 13

Note that the driver side flange on the EGR crossover tube has a conical sealing surface and a composite gasket. Keep the gasket for re-use later.

STEP 14

Remove the P-clamp from the EGR crossover tube.

STEP 15

Remove the wire harness retainers from the intake throttle shield and threaded stud.
Tools Required: Panel Popper

STEP 15 (CONTINUED)

STEP 16

Remove the wire harness retainer from the engine oil dipstick bracket threaded stud.
Tools Required: Panel Popper

STEP 17

Disconnect the wire harness connector from the EGR valve by depressing the retaining tab and removing the connector.

STEP 18

Remove the intake throttle shield threaded stud and bolt and then remove the heat shield.
Tools Required: 10mm Deep Socket/Wrench, 13mm Socket/Wrench, 6” socket extension

STEP 18 (CONTINUED)

STEP 18 (CONTINUED)

STEP 19

Loosen the Charge Air Cooler (CAC) hose clamp attached to the intake throttle.
Tools Required: 11mm Deep Socket/Wrench, 6” socket extension

STEP 20

Remove the bolt securing the engine oil dipstick tube.
Tools Required: 10mm Socket/Wrench, 6” socket extension

STEP 21

Disconnect the wire harness connector from the TMAP sensor by depressing the retaining tab and removing the connector.

STEP 22

Remove the wire harness retainer from the threaded stud on the back side of the intake elbow.
Tools Required: Panel Popper

STEP 23

Remove the (6) bolts holding the intake elbow to the intake

Tools Required: 10mm Socket/Wrench, 10” Wobble Socket Extension, U-joint Adapter

STEP 23 (CONTINUED)

STEP 24

Remove the intake elbow from the intake manifold and twist ose from the CAC

hose. Do not attempt to completely remove the elbow from the engine bay until the harness in the following step, Step 25, has been disconnected.

STEP 25

Carefully rotate the intake elbow to reveal the throttle wire harness connector. Disconnect the throttle wire harness connector. To disconnect the wire harness connector, first slide to release the red locking tab, then depress the retaining tab and remove the connector from the intake throttle.

STEP 26

Remove the intake elbow from the engine bay. Mask the opening to the intake manifold and the CAC hose to prevent anything from falling in either location.

STEP 26 (CONTINUED)

STEP 26 (CONTINUED)

STEP 27

Locate the wire harness bulkhead by the driver side firewall and remove the wire harness retainer.
Tools Required: Panel Popper

STEP 27 (CONTINUED)

STEP 28

Rotate the latch to unlock and then separate the harness bulkhead.

STEP 29

Disconnect the wire harness connector from the crankcase
nsor 1 located

behind the crankcase breather cover on the driver side. To disconnect the harness connector, first slide to release the red locking tab, then depress the retaining tab and remove the connector from the sensor.

STEP 30

Disconnect the wire harness connector from the crankcase pressure sensor 2 located on the passenger side of the crankcase breather cover. To disconnect the harness connector, first slide to release the red locking tab, then depress the retaining tab and remove the connector from the sensor.

STEP 30 (CONTINUED)

STEP 31

Remove the wire harness retainer from the threaded stud located in front of the crankcase pressure sensor.
Tools Required: Panel Popper

STEP 32

Disconnect both fuel injector wire harness connectors ne driver side of the

crankcase breather cover. To disconnect the harness connector, depress the retaining tab and remove the connector vertically upward. You can use a flat blade screwdriver to depress the retaining tab as you remove the connector.
Tools required: Flat Blade Screwdriver

STEP 32 (CONTINUED)

STEP 33

Remove both CCV oil drain hoses located on the driver side .case breather

cover. Carefully use a Panel Popper to push the end of the drain hose away from the hose barb.
Tools Required: Panel Popper

STEP 34

Gently lift up and carefully remove the foam fuel rail silencer.

STEP 35

Caution: Cleanliness cannot be overemphasized when handling ystem components.

Always clean any fuel system component before disassembly. Before removing each diesel fuel line, clean them to remove any dirt and contaminants.

STEP 36

Caution: When loosening or tightening the injector fuel line fitting, the connector nut must not be allowed to rotate. Damage to both fuel line and connector nut could result and cause a fuel leak. Make a line on both the connector nut and cylinder head to help you verify that the connector nut does not rotate.

Loosen the cylinder #1 fuel injector line fitting at the cylinder head. Use a back up wrench to keep the connector nut from rotating when you loosen the fuel line fitting.
Tools Required: 19mm Open/Box Combination Wrench or 19mm Flare Nut Crowfoot Socket/Wrench or 19mm High Pressure Fuel Line Socket/Wrench, and 24mm Open or Flare Nut Offset Wrench

STEP 38

Loosen the #1 fuel injector line fitting at the fuel rail.
Tools Required: 19mm Open/Box Combination Wrench or 19mm Flare Nut Crowfoot Socket/Wrench or 19mm High Pressure Fuel Line Socket/Wrench

STEP 39

Remove the fuel injector line #1 and set it aside keeping it clean. Use shop towels to prevent or minimize fuel dripping down the side of the engine. Keep the fuel injector system clean by covering the fuel injector fitting at the cylinder head with the smaller diameter red colored Cap (Item 30).

STEP 40

Keep the fuel injector system clean by covering the fuel injector fitting at the fuel rail with the larger diameter black colored Cap (Item 31).

STEP 41

Repeat Steps 35 to 40 for each remaining fuel injector line, , fuel injector #2,

then #3, then #4, then #5, and finally #6. Make sure you note the injector number on each fuel injector line so that you do not mix them up during re-installation.

Note: To help gain access to the fuel injector #6 fitting at the cylinder head, disconnect the wire harness connector from the fuel rail pressure sensor. To disconnect the harness connector, first slide the yellow locking clip in the direction shown, second depress the retaining tab and third remove the connector from the sensor.

STEP 41 (CONTINUED)

STEP 42

Loosen the fuel rail feed line fitting at the fuel rail and at the supply connection. Remove the fuel rail feed line and set it aside keeping it clean. Use a shop towel to minimize spilling fuel.
Tools Required: 19mm Open/Box Combination Wrench or 19mm Flare Nut Crowfoot Socket/Wrench or 19mm High Pressure Fuel Line Socket/Wrench

STEP 43

Keep the fuel injector system clean by covering the fuel rail feed fitting at the fuel rail with the larger diameter black colored Cap (Item 31) and the supply connection fitting with the smaller diameter red colored Cap (Item 30).

STEP 43 (CONTINUED)

STEP 44

Start to remove the electrical wire harnesses from around the fuel rail. First undo the clip holding the harness to the oil dipstick tube. Push the opposing interlocking tabs away from each other to release the clip.

STEP 45

Disconnect the wire harness retainers from the fuel rail mounting studs. Pull off the retainers from the threaded studs.
Tools Required: Panel Popper

STEP 46

Disconnect the wire harness connector from the manifold temperature sensor located near the back end of the fuel rail. To disconnect the harness connector, first slide the red locking clip, then depress the retaining tab and remove the connector from the sensor.

STEP 47

Disconnect the wire harness connector from the EGR bypass valve located by the passenger side of the cylinder head. To disconnect the harness connector, first slide the red locking clip, then depress the retaining tab and remove the connector from the bypass valve.

STEP 48

Disconnect the wire harness connector from the exhaust pressure sensor located next to the EGR bypass valve. To disconnect the harness connector, first slide the locking clip, then depress the retaining tab and remove the connector from the sensor.

STEP 49

Carefully drape the entire harness from Steps 29 to 32 and Steps 44 to 48 over the driver side fender to give full access to the fuel rail.

STEP 50

Remove the grid heater cable nut and the heater cable from the stud.
Tools Required: 10mm Socket/Wrench

STEP 51

Remove the fuel return line banjo bolt and carefully remove washers from both

sides of the banjo fitting. If the seal on the sealing washers is damaged, replace with new sealing washers before re-installation.
Tools Required: 17mm Socket/Wrench

STEP 51 (CONTINUED)

STEP 51 (CONTINUED)

STEP 52

Remove the bolts and threaded studs that hold down the fuel rail. Note the locations of the bolts vs the threaded studs for re-installation of the fuel rail.
Tools Required: 10mm Deep Socket/Wrench

STEP 53

Carefully remove the fuel rail from the engine bay and set it aside somewhere clean.

STEP 54

Remove the bolts and threaded stud that hold down the intake manifold cover. Note the locations of the bolts vs the threaded stud for re-installation.
Tools Required: 10mm Deep Socket/Wrench

STEP 55

Carefully remove the intake manifold cover from the engine bay.

STEP 56

Carefully remove the intake manifold cover gasket from the intake manifold. Clean the gasket surface surface area on the intake manifold.

STEP 57

Clean the inside of the intake manifold plenum with a vacuum to remove any debris.

STEP 58

Remove the temperature sensor from the stock manifold cover and thread the sensor into the same port on the Grid Heater Delete Plate (Item 3). For 2007-2012 model years, the sensor will be located on the port closest to the cylinder head. For 2013-2018 model years, the sensor will be located on the port that is angled towards the drivers side as shown in the picture. Tighten the sensor until the sealing washer on the sensor is seated tightly against the Grid Heater Delete Plate.
Tools Required: 1” Open Wrench or Adjustable Wrench

STEP 59

Place the new included Intake Manifold Cover Gasket (Item 4) [illegible] intake manifold plenum. Place the gasket tab

closer to the firewall with the lettering on the tab facing upwards.

STEP 60

Place the Grid Heater Delete Plate (Item 3) on to the Gasket (Item 4) and line up all the holes. Partially thread in the manifold cover bolts removed in Step 54 as well as the bolts of the intake manifold removed in Step 23, to help line up all the holes between the Gasket and Grid Heater Delete Plate.

STEP 61

Torque the manifold cover bolts (removed in Step 54) to 18 lb-ft
Tools Required: 10mm Deep Socket, Torque Wrench

STEP 62

Remove the bolts (used to align the Gasket in Step 60) located on the intake elbow mounting surface.

STEP 63

Cover the intake elbow opening with some tape to keep the intake manifold plenum clean.

STEP 64

Place the O-ring (Item 13) into the groove of the M14 Plug (Item 12).

STEP 65

Thread the M14 Plug with O-ring on to the remaining open tep 58) of the Grid Heater Delete Plate (Item 3).

Torque the M14 Plug to 89 lb-in.

Tools Required: 12mm Socket, Torque Wrench

STEP 66

Clean the mounting tabs of the stock fuel rail of any dirt or debris.

STEP 67

Place the fuel rail mounting feet on to the mounting pads of the Delete Plate and line up the holes. Make sure the

oil dip stick bracket is also over the fuel rail mounting feet as shown in the photo.

STEP 68

Re-install the bolts and threaded studs (removed in Step 52) that hold down the fuel rail. Place the threaded studs on the drivers side fuel rail mounting feet. Torque the fuel rail bolts and threaded studs to 18 lb-ft.
Tools Required: 10mm Deep Socket, Torque Wrench

STEP 69

Re-torque all (6) fuel connector nuts to 41 lb-ft. This is recommended by Dodge whenever the fuel lines have been removed.

Tools Required: 24mm Socket or Deep Socket, Torque Wrench

STEP 70

Using a 90 degree hook/pick, carefully remove the vinyl Caps (Item 30 and Item 31) at the #6 cylinder head and fuel rail port. Hand tighten the #6 fuel injector line fittings at the cylinder head and at the fuel rail. Torque the fitting at the cylinder head to 30 lb-ft. Afterwards, torque the fitting at the fuel rail to 30 lb-ft.
Tools Required: 90 degree hook/pick, 19mm High Pressure Fuel Line Socket or 19mm Flare Nut Crowfoot Socket, 1-¾” Socket Extension, 3” Socket Extension, Torque Wrench.

STEP 71

Connect the wire harness connector to the fuel rail pressure sensor. To connect the harness connector, first slide the connector fully on to the sensor until the retaining tab “clicks” into place. Then slide the yellow locking clip in the direction shown until it locks into position.

STEP 72

Repeat Step 70 for each remaining fuel injector line, starting with fuel injector #5, then #4, then #3, then #2. Make sure you note the injector number on each fuel injector line so that you do not mix them up during re-installation. Remember to hand tighten both ends of the fuel injector line first, then torque the fitting at the cylinder head to 30 lb-ft, then torque the fitting at the fuel rail to 30 lb-ft. Make sure the fuel lines are not touching each other with a minimum clearance of 1.25mm.

Tools Required: 90 degree hook/pick, 19mm High Pressure Fuel Line Socket or 19mm Flare Nut Crowfoot Socket, 1-¾”

Socket Extension, 3” Socket Extension, Torque Wrench.

STEP 73

Using a 90 degree hook/pick, carefully remove the vinyl Caps (Item 30 and Item 31) at the fuel supply connection and fuel rail port. Hand tighten the fuel supply line fittings at the supply connection and at the fuel rail. Torque the fitting at the supply to 30 lb-ft. Afterwards, torque the fitting at the fuel rail to 30 lb-ft.

Tools Required: 90 degree hook/pick, 19mm High Pressure Fuel Line Socket or 19mm Flare Nut Crowfoot Socket, Torque Wrench.

STEP 74

Using a 90 degree hook/pick, carefully remove the vinyl Caps (Item 30 and Item 31) at the #1 [illegible]d and fuel rail port. Hand tighten the S&B Fuel

Injector #1 Line (Item 5) fittings at the cylinder head and at the fuel rail. Torque the fitting at the cylinder head to 30 lb-ft. Afterwards, torque the fitting at the fuel rail to 30 lb-ft. Make sure the fuel lines are not touching each other with a minimum clearance of 1.25mm.
Tools Required: 90 degree hook/pick, 19mm High Pressure Fuel Line Socket or 19mm Flare Nut Crowfoot Socket, Torque Wrench.

STEP 75

Install the sealing washers on both sides of the fuel return line banjo fitting and hand tighten the banjo bolt.

STEP 76

Torque the fuel return line banjo bolt to 18 lb-ft.
Tools Required: 17mm Socket, Torque Wrench

STEP 77

Attach the wire harness retainers to the fuel rail threaded studs. Then connect the wire harness connector to the manifold temperature sensor. To connect the harness connector, first slide the connector fully on to the sensor until the retaining tab “clicks” into place. Then slide the red locking clip in the direction shown until it locks into position.

STEP 78

Remove the threaded stud from the stock intake elbow and install it on to the S&B Intake Elbow (Item 1). Torque the threaded stud to 89 lb-in.
Tools Required: 10mm Deep Socket, Torque Wrench

STEP 79

Loosen and then remove the (4) bolts holding the EGR valve to the stock intake elbow. Separate the EGR from the stock intake elbow. Keep the (4) bolts for re-installation of the EGR valve.
Tools Required: 10mm Socket/Wrench with 3” Socket Extension or 10mm Deep Socket/Wrench

STEP 80

Clean the gasket surfaces of the EGR valve making sure to remove all of the old gasket material.
Tools Required: Plastic Razor or Plastic Scraper

STEP 81

Loosen and then remove the (4) bolts holding the throttle valve to the stock intake elbow. Keep the bolts for re-installation of the throttle valve. Separate the throttle valve from the stock intake elbow.
Tools Required: 8mm Socket/Wrench with 3” Socket Extension or 8mm Deep Socket/Wrench

STEP 82

Clean the gasket surface of the throttle valve making sure to remove all of the old gasket material.
Tools Required: Plastic Razor or Plastic Scraper

STEP 83

Place the Gasket (Item 23) on to the S&B Intake Elbow (Item 1). Place the Gasket with the visible ring on the Intake Elbow side as shown.

STEP 84

Center the Gasket and the throttle valve to the opening of the S&B Intake Elbow and then [illegible] the (4) throttle

valve bolts (removed in Step 81). Torque the bolts to 89 lb-in.
Tools Required: 8mm Socket with 3” Socket Extension or 8mm Deep Socket, Torque Wrench

STEP 85

Remove the TMAP sensor screw and carefully remove the TMAP sensor from the stock intake Elbow. Clean the sensor of any loose debris and oil with a clean microfiber cloth.
Tools Required: T15 Torx Bit/Driver, Microfiber Cloth

STEP 86

Install the TMAP sensor into the S&B Intake Elbow and tighten the TMAP sensor screw.
Tools Required: T15 Torx Bit/Driver

STEP 87A

For 2007-2009 model years, remove the temperature sensor from the stock elbow and install it in the same location on the S&B Intake Elbow. Tighten the temperature sensor fitting firmly to seat and seal the fitting to the Intake Elbow.
Tools Required: 14mm Open Wrench

STEP 87B

For 2010-2018 model years, place the O-ring (Item 13) into the groove of the Plug (Item 35).

STEP 88

For 2010-2018 model years, thread the Plug with O-ring on to the open side port of the S&B Intake Elbow (Item 1). Torque the Plug to 89 lb-in.
Tools Required: 12mm Socket, Torque Wrench

STEP 89

Place the Oil Dipstick Bracket (Item 24) on top of the S&B
w with the rounded

leg centered over the M8 threaded hole as shown. Hand tighten the M8 Hex Flange Bolt (Item 25).
Tools Required: 13mm Socket/Wrench or 13mm Open/Box Wrench

STEP 90

Place the Gasket (Item 2) on top of the Grid Heater Delete Plate (Item 3). If your Gasket is metal, place the tab with the labeled arrow pointing towards the front of the vehicle as shown. If you have a non-metal Gasket, place the sticky side down on the Grid Heater Delete Plate, carefully lining up the holes and edges to the opening of the Grid Heater Delete Plate.

STEP 91

Bring the S&B Intake Elbow and place the throttle valve into the CAC hose as shown. Carefully rotate the intake Elbow into

position so that the bolt holes line up with the bolt holes in the Grid Heater Delete Plate.

STEP 92

If you installed a metal Gasket in Step 90, use the tab to grasp the Gasket and line up the holes of the gasket to the bolt holes of the Intake Elbow and Grid Heater Delete Plate. If you installed a non-metal Gasket, the sticky side should have kept the Gasket from moving and the bolt holes of the Gasket should still be aligned with the bolt holes of the Grid Heater Delete Plate.

STEP 93

Once all the bolt holes have been aligned, install the (2) M8x45mm Long Screws (Item 3) with M8 Washers (Item 6) to the corner locations closest to

the cylinder head. Apply blue thread locker to the ends of the screw threads before installation and hand tighten only.
Tools Required: 6mm Hex Bit Socket ¼” Drive, Socket Wrench ¼” Drive, 6” Wobble Socket Extension ¼” Drive

STEP 94

Re-confirm that all the remaining bolt holes are still aligned. Install the (2) M8x130mm Long Screws (Item 7) with M8 Washers (Item 6) to the remaining corner locations. Apply blue thread locker to the ends of the screw threads before installation and hand tighten only.
Tools Required: 6mm Hex Bit Socket ¼” Drive, Socket Wrench ¼” Drive, 6” Socket Extension ¼” Drive

STEP 95

Install the M8x45mm Long Screw (Item 8) without any washer into the mounting hole located inside the Intake Elbow. Apply blue thread locker to the ends of the screw threads before installation and use a telescoping magnetic pickup tool to lower the Screw into the Elbow and start threading it into the intake manifold. After you have started threading the M8 Screw, lift the telescoping magnet away and use the hex bit socket with extension to torque the M8 Screw to 18 lb-ft.
Tools Required: 6mm Hex Bit Socket ¼” Drive, 6” Socket Extension ¼” Drive, Telescoping Magnetic Pickup Tool, ⅜” to ¼” Step Down Socket, Torque Wrench

STEP 96

Install the short M8x35mm Long Screw (Item 9) with M8 Washer (Item 6) into the remaining mounting hole located closest to the cylinder head. Apply blue thread locker to the ends of the screw threads before installation. Torque the M8 Screw to 18 lb-ft.
Tools Required: 6mm Hex Bit Socket ¼” Drive, 6” Wobble Socket Extension ¼” Drive, ⅜”

to ¼” Step Down Socket, Torque Wrench

STEP 97

Torque the (2) M8x130mm Long Screws (Item 7) in the corner locations. Torque to 18 lb-ft.
Tools Required: 6mm Hex Bit Socket ¼” Drive, 6” Wobble Socket Extension ¼” Drive, ⅜” to ¼” Step Down Socket, Torque Wrench

STEP 98

Torque the (2) M8x45mm Long Screws (Item 8) in the corner locations closest to the cylinder head. Torque to 18 lb-ft.
Tools Required: 6mm Hex Bit Socket ¼” Drive, 6” Wobble Socket Extension ¼” Drive, Drive, ⅜” to ¼” Step Down Socket, Torque Wrench

STEP 99

Center the hole on the stock oil dipstick mounting tab with the hole on the Oil Dipstick Bracket (Item 24). Then place the M8 Hex Flange Bolt (Item 25) and M8 Flanged Locknut (Item 26) to hold the stock oil dipstick mounting tab to the Oil Dipstick Bracket.

STEP 100

Tighten the M8 Hex Flange Bolt (Item 25) and M8 Flanged Locknut (Item 26) to firmly secure the stock oil dipstick mounting tab to the Oil Dipstick Bracket. Torque to 18lb-ft.
Tools Required: 13mm Socket, Torque Wrench and 13mm Open/Box Wrench

STEP 101

Remove the M8 Hex Flange Bolt (Item 25) holding the Oil Dipstick Bracket (Item 24) to the Intake Elbow. Carefully move the Oil Dipstick Bracket and attached oil dipstick between the Intake Elbow and the cylinder head. This will provide room to install the Intake Air Heater (Item 15) into the Intake Elbow.
Tools Required: 13mm Open/Box Wrench

STEP 102

Examine the Intake Air Heater (Item 15). Determine if you have a Type A or a Type B Intake Air Heater. If your Intake Air Heater came with a single hex nut on the threaded stud, it is Type A, proceed to Step 103. If your Intake Air Heater came with two nuts with a wave spring washer in between, it is Type B, proceed to Step 104.

STEP 103A (FOR TYPE A INTAKE AIR HEATER ONLY)

If your Intake Air Heater is Type A, remove the single hex nut and discard. Then install the M5 Flanged Locknut (Item 16) onto the threaded stud of the Intake Air Heater with the flange facing downward towards the heater coil. Thread the nut only until it just passes the top of the threaded stud. This will make it easier to re-thread the Flanged Locknut in the correct orientation in Step 103B.

Tools Required: 8mm Open/Box Wrench

STEP 103B (FOR TYPE A INTAKE AIR HEATER ONLY)

Remove the M5 Flanged Locknut (Item 16) and then re-install it back on the threaded stud but this time with the flange facing upwards and away from the heater coil as shown. Carefully hand tight the Flanged Locknut being careful not to cross thread it.
Tools Required: 8mm Open/Box Wrench

STEP 103C (FOR TYPE A INTAKE AIR HEATER ONLY)

Use a 5/32” ignition wrench to hold the threaded stud from spinning or breaking loose from the main body of the heater. Then use an 8mm open wrench

to thread the M5 Flanged Locknut (Item 16) until it firmly bottoms out on the threaded stud as shown in the second photo. The Intake Air Heater is now ready to install. Please proceed to Step 105.

Tools Required: 5/32” Ignition Wrench, 8mm Open/Box Wrench

STEP 104 (FOR TYPE B INTAKE AIR HEATER ONLY)

If your Intake Air Heater is Type B, verify that the lower nut is bottomed out on the threaded stud. Leave the top nut and wave spring washer loose on the threaded stud. The Intake Air Heater is now ready to install. Please proceed to Step 105.

STEP 105

Install the Brass Gasket (Item 14) onto the Intake Air Heater (Item 15) as shown. Thread the Intake Air Heater with Gasket into the M22 port on the Intake Elbow and hand tighten.

STEP 106

Firmly tighten the Intake Air Heater to compress the Brass Gasket to seal the Intake Air Heater to the Intake Elbow.
Tools Required: 1” Open Wrench or Adjustable Open Wrench

STEP 107

Place the Oil Dipstick Bracket (Item 24) on top of the Intake Elbow centered over the M8 threaded hole. Install blue thread locker to the end of the M8 Hex Flange Bolt (Item 25) and then tighten the M8 Hex Flange Bolt to secure the Dipstick Bracket to the Intake

Elbow as shown. Torque to 18 lbf-ft.
Tools Required: 13mm Open/Box Wrench

STEP 108

Place both EGR Valve Gaskets (Item 22) onto the Intake Manifold as shown. Then carefully place the EGR valve over the Gaskets making sure that the EGR Valve mounting holes line up with the Gasket holes and the threaded ports of the Intake Elbow. Position the EGR Valve with the tube port pointing towards the front of the truck as shown.

STEP 109

Re-install the (4) stock M8 bolts (removed in Step 79) that hold the EGR Valve to the Intake Elbow. For now, only hand tighten.
Tools Required: 10mm Socket/Wrench with 3” Socket

Extension or 10mm Deep Socket/Wrench

STEP 110

Remove the (8) bolts/threaded stubs securing the breather cover. Make note of where bolts and threaded studs are used so they are not mixed up during re-installation.

Tools Required: 8mm Deep Socket/Wrench, 3” socket extension

STEP 111

Remove oil fill cap from the breather cover.

STEP 112

Carefully lift the breather cover to reveal the engine cover bracket. Remove the (2) bolts that hold the bracket to the cylinder head cover and remove the bracket.
Tools Required: 8mm Socket/Wrench

STEP 113

Re-install the (2) bolts that were holding the bracket to the cylinder head cover. Tighten them firmly to the head cover.
Tools Required: 8mm Socket/Wrench

STEP 114

Carefully lower the breather cover back down onto the cylinder head cover. Make sure the bolt holes on the breather cover line up with the threaded holes on the cylinder head cover. After the breather cover is properly aligned and sitting flush with the cylinder head cover, re-install the oil fill cap and tighten.

Re-install the (8) bolts/threaded studs that hold the breather cover. Make note of where bolts and threaded studs are used so they are not mixed up during re-installation. Torque the bolts/threaded studs to 89 lb-in. Tools Required: 8mm Deep Socket, 3” Socket Extension, Torque Wrench

STEP 116

Place the grid heater positive cable up between the cylinder head and oil dipstick as shown.

STEP 117

Re-install the EGR crossover tube, starting from the EGR cooler side (passenger side). The EGR cooler side has the flat metal gasket and the flat e EGR crossover

tube. Carefully line up the EGR crossover tube and flat metal gasket with the EGR cooler and hold them all together.

STEP 118

Carefully slide the V-band clamp over the flanges of the EGR cooler and EGR crossover tube. Install the T-bolt and nut to the V-band clamp once the clamp is properly seated in place. Position and orient the T-bolt and nut as shown and hand tighten only at this time.
Tools Required: 11mm Deep Socket/Wrench

STEP 119

Re-install the EGR crossover tube at the EGR valve side (drivers side). The EGR valve side has the cone shaped composite gasket and the cone shaped flange on the EGR crossover tube. Carefully line

up the EGR crossover tube and cone shaped composite gasket with the EGR valve and hold them all together.

STEP 120

Carefully slide the V-band clamp over the flanges of the EGR valve and EGR crossover tube. Install the T-bolt and nut to the V-band clamp once the clamp is properly seated in place. Position and orient the T-bolt and nut as shown and hand tighten only at this time.
Tools Required: 11mm Deep Socket/Wrench

STEP 121

Torque the T-bolt and nut on the EGR valve to 89 lb-in.
Tools Required: 11mm Deep Socket, Torque Wrench

STEP 122

Torque the T-bolt and nut on the EGR cooler to 89 lb-in.
Tools Required: 11mm Deep Socket, Torque Wrench

STEP 123

Torque the bolts holding the EGR valve in a criss-cross [illegible] lb-ft.

Tools Required: 10mm Deep Socket, 3” Socket Extension, Torque Wrench

STEP 124

Install the Charge Air Cooler (CAC) hose fully onto the throttle valve and then position the hose clamp as shown. Torque the hose clamp to 10 lb-ft.

Tools Required: 11mm Deep Socket, Torque Wrench

STEP 125

Re-install the intake throttle shield, threaded stud and bolt and hand tighten.
Tools Required: 10mm Deep Socket/Wrench, 13mm Socket/Wrench

STEP 126

Torque the intake throttle shield bolt to 89 lb-in.
Tools Required: 13mm Socket, Torque Wrench

STEP 127

Torque the intake throttle shield threaded stud to 89 inch lbs.
Tools required: 10mm Deep Socket, Torque Wrench

STEP 128

Re-attach the EGR valve and temperature sensor harness retaining clip to the threaded stud.

REQUIRED STEP

Click here for the second part of these install instructions.