Ford Raptor 6.2L – Installation Instructions

Thank you for your purchase, we appreciate your business.

Do not attempt this installation if proper safety equipment isn't available to you. Seek the assistance of a professional installer. Read and understand all directions before starting any of the instruction process.

A lift is highly recommended in the installation process of these components. If a vehicle lift is not accessible to you, a jack and four jack stands may be substituted. It is recommended to refer to your owner's manual before raising and supporting any vehicle. Also you will need a safe way to raise and support the engine. We at Kooks recommend the use of an engine cradle. A basic understanding of general hand tools and vehicle mechanics is also recommended.

Always disconnect the negative battery terminal before beginning this type of work on any vehicle. An 8mm socket or wrench will allow you to do so, on this vehicle.

STOCK MANIFOLD AND CATALYTIC CONVERTER REMOVAL PROCESS

To aid in the overall speed of disassembly, the following steps will be performed from the topside of the vehicles engine compartment before moving to the underside.

STEP 1 – Remove the air box and radiator overflow (Remove as one unit).
Disconnect the mass airflow sensor (MAS).
There is a red safety pin located on the bottom side of the connector. Pulling this pin out will release the connector allowing you to disconnect the sensor.
Loosen the hose clamp closest to the intake manifold holding the air intake hose.
Unclip the top half of the air box and remove along with the filter element.
Remove bolts holding lower air box housing and coolant overflow.
Disconnect coolant overflow line from radiator (located just below radiator cap) and remove air box housing. (Be sure to catch any spilled coolant.)

STEP 2 – Remove all 15mm exhaust manifold lock nuts visible form the topside of the engine Compartment.
-Passenger exhaust manifold lock nuts are visible but may be easier to reach after engine has been raised.

The remaining removal steps will be from underneath the vehicle

STEP 3 – Raise and support the vehicle (Refer to owners manual on specified jacking points).

STEP 4 – Remove front skid plates.
-Place out of the way. (This will create greater access to the underside of the engine.)

STEP 5 – Remove starter (Be sure negative battery terminal has been disconnected.)
-Remove red plastic cap from back of starter solenoid.
-Remove (13mm nut) positive cable and (10mm nut) jumping wire.
*Note position and location of each to insure proper future reinstallation.
-Remove 3-13mm bolts and starter.

STEP 6 – Remove the 4 – 02 sensors using a 7/8" wrench or specialty socket.
Note The position of each 02 sensor should be marked on the outside of each O2 before removal to ensure the proper reinstallation of each in the correct location.

STEP 7 – Remove factory catalytic converters and Y-pipe.
-Remove driver's side catalytic converter.
-Lock nuts and band clamp – Catalytic converter will slide out.
-Remove driver's side catalytic converter lock nuts and 2 bolt flange lock nuts located on rear of Y-pipe.
-Loosen band clamp located just forward of muffler.
-Remove short extension pipe on back of Y-pipe.
-Y-pipe should pry free of exhaust manifold and slide forward out of hangers.

STEP 8 – Raise and support engine.

-Remove two 22mm engine mount bolts.

*__Note*__ Bolts may be removed before supporting engine.

-Raise engine approximately 1 ½”

-It is recommended by Kooks to use an engine cradle for safety and ease of installation.

-If and engine cradle is not accessible a jack with a soft contact point can be substituted.

***Note* DO NOT SUPPORT ENGINE ON OIL PAN**

STEP 9 – Remove exhaust manifolds.

-Remove remaining 15mm lock nuts not previously removed from top side of engine compartment.

-Remove all exhaust manifold studs, as they will be replaced with supplied hardware.

__Note__ If correct inverted torx socket or stud removal tool is not available, a ¼ socket may be substituted.

-Clean cylinder head to ensure proper seal of new Kooks headers and gaskets.

<u>KOOKS HEADERS INSTALL</u>

***Note* Before beginning install, drivers side headers must be installed first.**

STEP 10 – Install driver’s side header.

-For ease of assembly, a front and rear hole in the header flange have been slotted

-To utilize this you may wish to start two of the supplied 10mm – 1.25x2.5 mm flange bolts into the cylinder head.

-Header gasket must be installed at this time as well.

-Driver’s side header may now be installed and hung from these bolts.

Note All header flange bolts should be started before tightening any of the bolts.
(Refer to the service manual for tightening sequence and torque spec)

STEP 11 – Install passenger side header.
-Install the same manner as the driver's side.
(Note if you are running a 17/8" header, the Oil Dip-Stick tube needs to be re-routed. Do this by having the header attached to the head loosely. We recommend having two people maneuver the tube to make it fit.)

STEP 12 – Reinstall starter and connect starter wires.
- Be sure to note previous location of positive cable and jumper wire

STEP 13 – Lower engine back to original location and reinstall engine mount bolts.

STEP 14 – Install Kooks connection pipe and Y-Pipe.
-Be sure to align exhaust before tightening

STEP 15A – Passenger Side Rear O2 Sensor.
-Disconnect wiring harness clips from transmission
-Add O2 extension harness. (You may need to remove plastic locator tabs from connector end.)
-Re-route O2 harness

Note This kit is sent with (3) Different O2 extensions to cover all years of this truck. Only (1) extension is required on 2010 trucks and (2) on 2011 + trucks. (The extra may be discarded.)

STEP 15B – Drivers side Rear O2 Sensor
-Disconnect wiring harness clip from transmission.
-Add O2 extension harness. (You may need to remove plastic locator tabs from connector end.)
-Re-route O2 harness over the top of the transmission.

STEP 16 – Reinstall skid plates.

STEP 17 – Reinstall air box in the reverse order as step 1.
-Be sure to reconnect the radiator overflow hose.

STEP 18 – Reconnect the positive and negative battery terminals in that order.

STEP 1 – Start Engine and check for any Exhaust Leaks.
– Allow Vehicle to complete one heat cycle (Heat to temp and allow for cooling).
– Re-torque Header Bolts and Header Hardware