

XX-Fuel Kit # 10223 Professional Installation is recommended

Installation Instructions and Safety Warnings

2010-2012 Dodge Ram Diesel High Mount 2 Micron Dual Filter System

Please read this entire manual and the XX-Fuel, LLC Liability Release BEFORE beginning installation. If a page from these instructions is missing, do not install this product until you have a complete document. If you do not have all the proper tools for the installation, do not have a safe, well lit work area, or simply do not feel comfortable and confident installing this product yourself, PLEASE HIRE A QUALIFIED MECHANIC FOR THIS INSTALLATION.

Please keep these instructions with the vehicle this product is installed on. Do not use power tools of any kind to install this product. Use of any power tools is not necessary to install this product and may create sparks, and/or generate enough heat or flame to ignite fuel vapors. Please obey these warnings throughout the entire installation process and anytime maintenance is performed on the fuel system. Keep a properly rated fire extinguisher within reach anytime you are working around combustible or flammable gasses or liquids. FAILURE TO READ AND COMPLY WITH ALL SAFETY WARNINGS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT, DAMAGE TO THE VEHICLE, INJURY OR DEATH TO THE INSTALLER OR VEHICLE OCCUPANTS. THE INSTALLER ASSUMES ALL LIABILITY FOR DAMAGE, LOSS, INJURY OR DEATH RESULTING FROM FAILURE TO STRICTLY FOLLOW THESE INSTRUCTIONS AND SAFETY WARNINGS.

You can e-mail us anytime at: TechnicalSupport@XX-Fuel.com or call us between the hours of 8AM and 5PM Pacific Time at: 1(208)665-0020. Although we give our current customers priority we cannot guarantee immediate availability for technical support.

This Kit includes:

- 1 XX-Fuel Pre-Assembled Mounting Bracket with two Filter Heads #20001, eight 3/8"x1" Button Head Bolts #21026, one Filter Head Connector #21014, and two Pre-Installed #6 J.I.C. Adapters #21016
- 1 XX-Fuel 8 Micron Fuel Filter/Water Separator #20008
- 1 XX-Fuel 2 Micron Fuel Filter #20002
- 2 3/8" Fuel Line Compression fittings #21020
- 2 M12 X 80 Grade 10.9 Hex Bolt DIN 933 #21034
- 8 7/16" USS Pattern A490 Hardened Flat Washers #21032
- 2 M12 X 1.75 Grade 10.9 Jam Nut Plated DIN 934 #21035
- 2 M12 X 1.75 Nylon Lock Nut Plated DIN 985 #21028
- 4 3/8" 90 degree Push Lock-#6 J.I.C Fitting #21019
- 3 3/8" Fuel Line per foot #21006
- 4.5 Flexible Fuel Line Armor Wrap per foot #21056

IMPORTANT NOTE: While working on any part of your fuel system or its components, it is vitally important that you keep any dirt, debris, or dust from contaminating the inside of your fuel system components.

Step One: Wear proper protective clothing, including proper eye, face, and hand protection. You will be working around diesel fuel that may splash or spray. Exposure to diesel fuel is hazardous and can cause injury or death. Park your truck in a safe, ventilated, well lit and level work area. Turn off the engine. Firmly set your parking brake and chock your wheels to prevent vehicle movement during installation. Pull the hood release. Remove keys from the ignition and close all doors. Open the hood and disconnect the Ground Wire (Negative/Black) to ALL batteries.

Step Two: If you have a replaceable element style filter, you may discard the old element. If your OEM Fuel filter canister and element is one sealed unit, it is recommended to replace the stock fuel filter canister with a new OEM canister (not included in kit) to insure there is no fuel flow restriction. Cummins/Fleetguard Part#FS43257.

Step Three: Remove the two driver's seat rear mounting bolts as pictured below. These are the bolts that fasten the driver's seat to the cab floor.

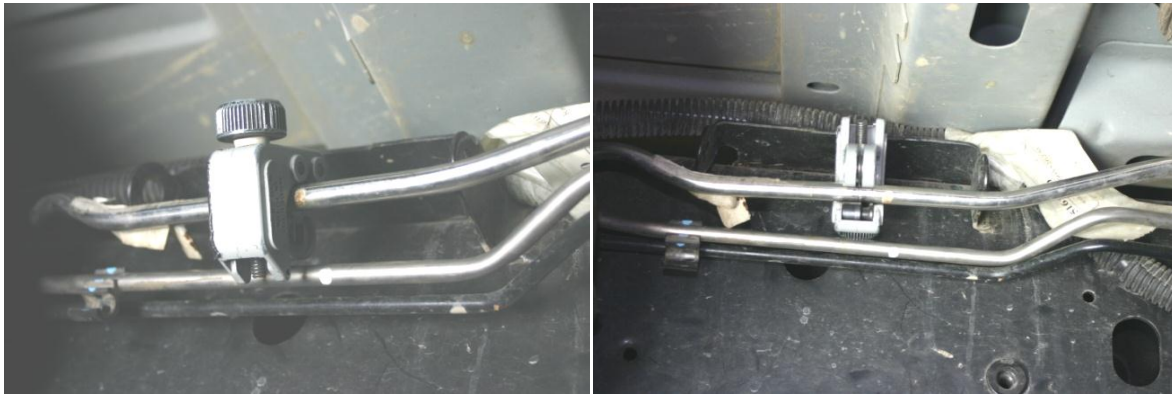


Step Four: Install two 7/16" USS Pattern A490 Hardened Flat Washers #21032 on each M12 X 80 Grade 10.9 Hex Bolt DIN 933 #21034 as pictured left.



Step Five: As pictured near left: Fasten the Seat frame to the cab using the far left pictured Bolt and washer combination. Torque new Seat bolts to 30 ft. lbs.

Step Six: Make sure and clean the fuel line you are about to cut with solvent or brake cleaner prior to cutting. **DO NOT CUT A DIRTY FUEL LINE.** Prepare to cut the fuel line on the truck Note: You can always cut more off, but you cannot add length on. Please keep this in mind before proceeding. Stop here and preview the rest of the pictures of the installation to gain a clear understanding of how your installation should look. Locate the metal mounting tab on your truck's frame as pictured on the next page. The tab is located on the driver's side inside frame rail of the truck forward of the fuel tank. Unclip the two stainless steel fuel lines right below the metal mounting tab. Next, place a suitable container under the frame's mounting tab to catch fuel that will drain when the fuel line is cut. Carefully separate the lines so you can effectively operate your tubing cutter for the next segment of the installation. **DO NOT CUT THE FUEL LINE USING A SAW OF ANY KIND!** Next, Using only a small tubing cutter, cut only the one largest of the three fuel lines. Carefully follow the directions that came with your tubing cutter so you do not damage your fuel line. **DO NOT POSITION YOURSELF DIRECTLY UNDER YOUR TUBING CUTTER. FUEL WILL DRAIN WHEN THE TUBING CUTTER BREACHES THE FUEL LINE.** Allow fuel to drain from the line completely before proceeding to the next step on the installation. For additional reference, the fuel supply line has an outside diameter or 3/8".



Fuel Line Cut Location

Step Seven: You will be making a second cut in the same fuel line approximately 5” forward of the mounting tab pictured. We say approximately, because your cab, transmission and 2X4/4X4 configuration will determine your access point for your cut and fitting placement. Pictured below is the tubing cutter placed about 1.5” behind the rear of the transfer case on a 4X4, Automatic Transmission, ShortBed, QuadCab truck. This is good placement and will allow sufficient access to install the fitting and flexible fuel line. It is not recommended to make your cut where it will be difficult or impossible to get wrenches to. You can always cut more off, but you cannot add length on. Stop here and preview the rest of the pictures of the installation to gain a clear understanding of how your installation should look, then take into consideration your vehicle before proceeding. Next, place a suitable container under the same fuel line to catch fuel that will drain when the fuel line is cut. Carefully remove the fuel line from the fuel line clip mounted on the frame. Separate the lines so you can effectively operate your tubing cutter for the next segment of the installation. Make your second cut heeding the same precautions outlined in step six. Allow fuel to drain from the line completely before proceeding to the next step on the installation.





Step Eight: Locate the Fuel Line Compression Fittings #21020 as pictured left. Notice the orientation of the ferrule inside the fitting. Place the Compression fittings on the fuel line you cut in steps four and five. Make sure the fuel line bottoms out in the body of the fitting prior to securing the fitting. Next, using the proper size wrenches, hold the body of the fitting steady while turning the fitting's jam nut until finger tight. Then tighten an additional $1\frac{1}{4}$ turns. Next, back off the jam nut and inspect the ferrule making sure there is a positive "bite" into the fuel line. Re-tighten the jam nut until it stops with light pressure, then tighten an additional $\frac{1}{4}$ turn. **DO NOT OVERTIGHTEN**, as this may damage the fuel line and/or the fitting. If your fitting leaks after installation, only tighten in $\frac{1}{8}$ th turn increments until leak stops.

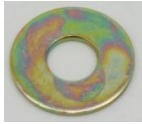




Step Nine: The XX-Fuel Mounting Bracket mounts on the underside of the truck cab and is bolted in place at the driver's side rear seat bolts you replaced in steps three, four, and five. From under the cab, thread one M12 X 1.75 Jam Nut #21035 on each of the two driver's rear seat bolts you replaced. These will serve as jam nuts so the XX-Fuel mounting bracket does not bow when tightened. Next, place one



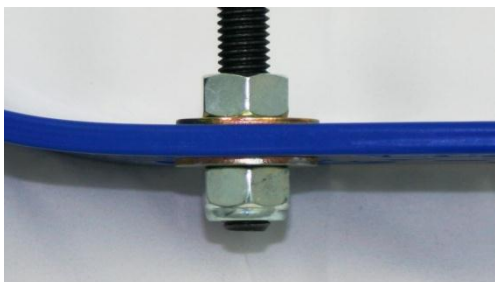
each 7/16" Flat Washers #21032 on top of the XX-Fuel Mounting Bracket mounting holes. Position the XX-Fuel Mounting Bracket in place by carefully sliding the XX-Fuel Bracket in between the truck cab and frame. The XX-Fuel Bracket mounting holes should be over the Driver's side rear seat bolts at this time. Make sure the 7/16" Flat Washers #21032 are in between the XX-Fuel Bracket and the jam nuts before bolting in place. Next, place one 7/16" Flat Washers #21032 and one M12 X 1.75



Nylon Lock Nut Plated DIN 985 #21028 on the Bolts and tighten to 25 ft. lbs. **IMPORTANT NOTE:** If the bolts are not fully engaged in the nylon locknut, you will need to raise the height of the jam nut. Observe the photo below for minimum required penetration of the mounting bolt into the locknut.



Observe the photo below for minimum required penetration of the mounting bolt into the locknut.



Step Ten: It is now time to build your fuel lines. **IMPORTANT NOTE:** After installing your flexible fuel line, make sure you do not have any kinks in your fuel line, and that your fuel line does not make contact with any sharp surfaces on your truck, or hangs too low, as this may lead to a dangerous situation. To build your filtration system's flexible fuel line, locate the four 3/8" 90deg. Push Lock-#6 JIC Fittings #21019. Install one fitting on the front facing side (output side) Filter head and one on the front Fuel Line Compression fittings #21020 you installed on the fuel line that goes forward to the engine. **FINGER TIGHTEN ONLY!** Next, install one fitting on the rear facing side (input side) Filter head and one on the rear Fuel Line Compression fittings #21020 you installed on the fuel line that goes rearward to the fuel tank. **FINGER TIGHTEN ONLY!** Next, measure the inside distance in between the yellow cups of the two fittings. This measurement is how much 3/8" Fuel Line #21006 to cut. **IMPORTANT:** Use the following installation pictures for reference when deciding how much fuel line to cut. Your fuel line must not be so tight when installed that it stresses the fuel line or pulls on other components, and it shouldn't be so loose as to interfere with driveline components or creates a snag hazard. Using only a sharp razor knife, cut your first length of 3/8" Fuel Line #21006. Remove the 3/8" 90deg. Push Lock-#6 JIC Fittings #21019 to prepare for fuel line installation.

Step Eleven: Install your 2 cut lengths of fuel line on the four 3/8" 90deg. Push Lock-#6 JIC Fittings #21019.



Installing the 3/8" 90deg. Push Lock-#6 JIC Fittings #21019 is challenging. **Do not attempt to dry fit the fittings on the fuel line!** You may want to dip the fuel line in fuel line lubricant prior to pressing the fittings in. If the proper lubricant is not available, you may use a lightly soapy water or diesel fuel to aid in lubricating the line. **DO NOT USE GREASE!**



IMPORTANT: Once pressed onto the fittings, the fuel line must extend beyond both of the barbs on each of the fittings. It is recommended to seat the fuel line against the yellow cup on the fittings. See the picture on the left for an example of properly assembled push lock fitting. Once past the first barb, the fuel line cannot be easily removed.

Step Twelve: Wrap the fuel line you made in step eleven with the Armor Wrap #21056 as pictured below.

NOTE: You will need approximately 1 ½ times the length of Armor Wrap for each length of fuel line.

Example: 3' of Armor Wrap to wrap 2' of Flexible Fuel Line. 9" of Armor Wrap to wrap 6" of Flexible Fuel Line.



Step Thirteen: Install the first flexible fuel line you just built on the forward section of the system as pictured below (finger tighten). Check for proper length and alignment. Next, using proper wrench sizes, hold the forward Fuel Line Compression Fitting to prevent movement and tighten the forward end of the flexible fuel line 3/8" 90deg. Push Lock-#6 JIC fitting #21019 until snug, then add an additional ¼ turn. Next, using proper wrench sizes, hold the Pre-Installed #6 J.I.C. Adapter #21016 on the filter head to prevent movement and tighten the rearward end of the output side flexible fuel line 3/8" 90deg. Push Lock-#6 JIC fitting #21019 until snug, then add an additional ¼ turn.



hold the Pre-Installed #6 J.I.C. Adapter #21016 on the filter head to prevent movement and tighten the rearward end of the output side flexible fuel line 3/8" 90deg. Push Lock-#6 JIC fitting #21019 until snug, then add an additional ¼ turn.

DO NOT OVERTIGHTEN!, as this may damage the fuel line and/or the fitting. If your fitting leaks after installation, only tighten in 1/8th turn increments until leak stops.

Step Fourteen: Install your second fuel line on the rearward facing Pre-Installed #6 J.I.C. Adapter #21016 on the rear filter head. Attach the other end of the flexible fuel line to the rearward Fuel Line Compression Fitting following the instructions and heeding the warnings given for installing the first length of fuel line. Use the left picture as an example.



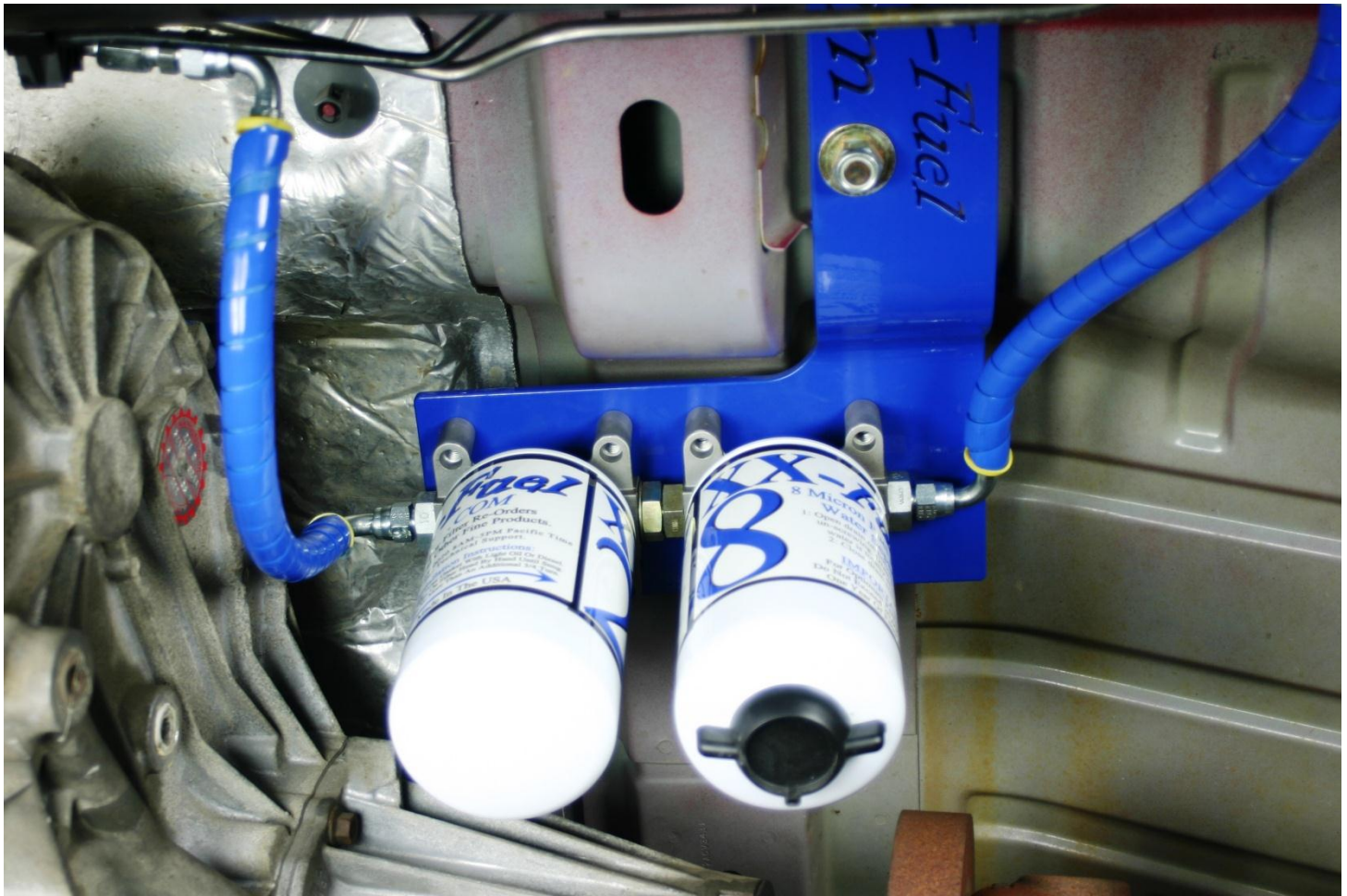


LongBed QuadCab or MegaCab Installation showing optional fuel line cut position

Step Fifteen: Check all nuts, bolts, and fittings for tightness. Make sure there is no dirt or foreign objects in the filter heads or fuel line prior to installing the fuel filters. Make sure fuel lines are not resting on any sharp surfaces.

Step Sixteen: Install Filters as pictured on the following page. Lubricate filter gasket using diesel fuel or light oil prior to installation. Hand tighten filter on filter head, then and additional $\frac{3}{4}$ turn. Take care not to dent or puncture filter during installation.





Step Seventeen: Re-connect both batteries, close hood, put key in ignition and turn to the “ON” position. DO NOT START TRUCK. It will take anywhere from two to three minutes to fill the filter bodies and pressurize the fuel system. While the system is pressurizing, check all fuel line connections, fuel filters and fuel line for leaks. Once pressurized, give the truck light throttle and start the truck. If the truck will not start, re-pressurize the system and attempt a re-start. Allow the truck to run for two to three minutes then turn off the truck and check again for leaks. Resolve any leaks prior to driving truck.

For maximum performance, please follow the filter change recommendations printed on our filters.

Visit www.XX-Fuel.com for more fine products.

A full color version of this document is available online at: www.XX-Fuel.com

Thank you for purchasing our premium Diesel Fuel Filtration System.

Please Complete Your Warranty Card right away and return it to us. **XX-Fuel, LLC**