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# DUAL HIGH PRESSURE FUEL KIT

GM 6.6L LML DURAMAX

INSTALLATION INSTRUCTIONS

## TROUBLESHOOTING:

Please read and understand all installation instructions before proceeding with the installation. If you have questions during the installation of this product, please email H&S Motorsports support at [tech@hs-motorsports.com](mailto:tech@hs-motorsports.com) or call 888-852-7022.

## Included parts:

- 1 - New Bosch CP3 Pump
- 1 - HSM Pulley
- 1 - Serpentine Belt
- 1 - Pump Bracket/Hardware
- 1 - Injection Pump Harness
- 1 - High Pressure Fuel Line/ Fittings
- 1 - HSM Fuel Filter Conversion Kit/ Fittings

**Note:** Custom tuning must be used in conjunction with this product. More information can be found at [www.hs-motorsports.com/calibrations](http://www.hs-motorsports.com/calibrations). This kit requires an aftermarket low pressure fuel delivery system (lift pump). This kit may not work with some factory parts installed.

## STEP 1

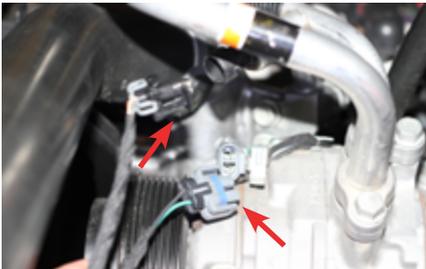


Disconnect the negative terminal from both batteries, remove the air box and intake tube assembly, and remove the factory serpentine belt.

## STEP 2



Locate and unplug the 3 A/C compressor clutch and pressure switch harnesses as shown. Remove the A/C compressor mounting bolts and carefully lift the A/C compressor from the factory mounting bracket and set aside.



## STEP 3



Locate the supplied dual idler bracket components and hardware as shown. Assemble the supplied idler pulleys, bracket, and hardware into the factory A/C compressor bracket. Be sure to install the 3/8" flat washer between the dual idler bracket and factory A/C bracket as shown. Tighten all hardware to 45 ft-lbs.



## STEP 4



Gather the supplied CP3 pump, main CP3 pump bracket, and hardware shown. Install the three longer 5/16" bolts into the front of the pump with the lower bolt going into the coupling nut. Install the shorter 5/16" bolt and lock washer into back of coupling nut at rear of pump. Tighten the lower bolts before torquing all hardware to 25 ft-lbs.



## STEP 5



Install the supplied CP3 pulley, lock washer and nut onto the CP3 pump. Torque the nut to 77 ft-lbs.

**Note:** *The pump will want to spin as you tighten the nut. Use the old serpentine belt to help hold the pulley.*

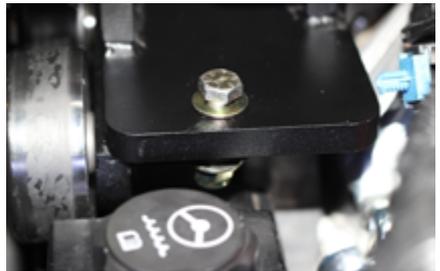


## STEP 6



**2011-2013 models:** Loosely install the CP3 pump assembly onto the vehicle using the supplied M10x1.5x30mm bolts in the factory bolt locations and the 3/8" x 16x1.5 bolt into the pump/idler bracket support. Starting with the M10 bolts first, torque all hardware to 45 ft-lbs. Carefully install the 3 supplied 1/2" aluminum spacers onto the factory A/C compressor bracket as shown. Slide the supplied A/C compressor mounting bolts through the A/C compressor and carefully lower the A/C compressor onto the spacers (bolts will go through the spacers). Torque these bolts to 45 ft-lbs.

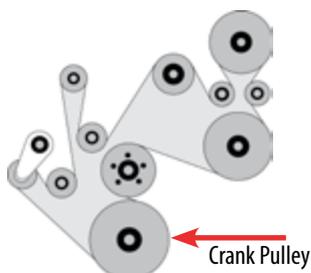
**2014-2015 models:** Same as 2011-2013 models, but the A/C compressor will install on top of the CP3 pump bracket at the rear bolt hole location with the supplied hardware.



## STEP 7



Install the supplied serpentine belt and route as shown.



## STEP 8



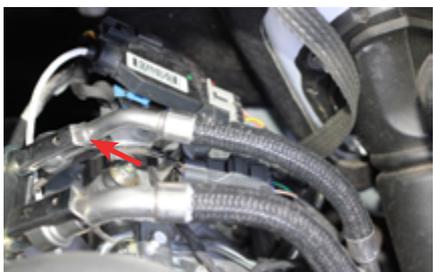
Route the 3 A/C compressor harnesses through the underside of the CP3 pump and re-connect them to the compressor. Drain 2-3 gallons from the coolant system (optional for less mess) and disconnect the upper radiator hose from the radiator. Trim approximately 1 inch from the end of the radiator hose and reinstall. Verify that there is adequate clearance between the radiator hose and CP3 pulley and keep in mind that the hose will expand a bit.



## STEP 9



Disconnect the factory fuel return line with the provided quick disconnect tool.



## STEP 10



Loosen the intercooler pipe t-bolt clamp on the turbo and rotate/move the intercooler pipe to help gain access to the driver side valve cover area.

## STEP 11



Remove the wiring harness bracket from the driver side valve cover by removing the clip and bolt as shown. Secure the harness to nearby components using a zip-tie.

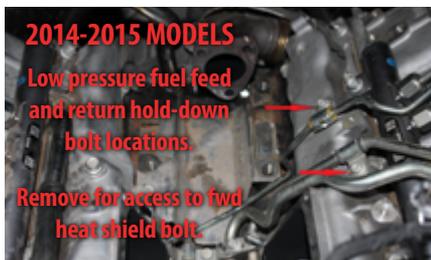


## STEP 12



Remove the three bolts the from factory heat shield around the fuel rail pressure sensor as shown. Remove the heat shield from the vehicle. The heat shield will NOT be re-installed.

**Note:** On some vehicles, it may be necessary remove the nearby low pressure fuel feed and return line hold-down bolts in order to gain access to all of the heat shield bolts. Be sure to re-install the fuel line hold-down bolts after heat shield removal and torque the hold-down bolts to 20 ft-lbs.



## STEP 13



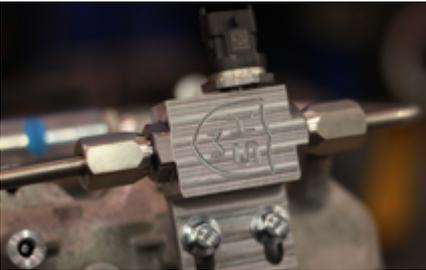
Remove the factory fuel rail pressure sensor from the back of the driver side fuel rail and install the supplied fuel rail feed fitting in its location. Torque the fitting to 70 ft-lbs.



## STEP 14



Put the supplied high pressure fuel distribution block into a vise and install the factory fuel rail pressure sensor into the sensor port on the block. Torque the sensor to 70 ft-lbs.



## STEP 15



Install the supplied high pressure fuel distribution block onto the rear of the driver side valve cover with the supplied M8x1.25x16mm flange bolts as shown. Leave these bolts finger-tight for now.



## STEP 16



Place a small amount of clean engine oil on each end of the supplied high pressure fuel lines and install the lines as shown. Once the proper fuel line and distribution block alignment has been achieved, tighten all fuel line nuts to approximately 40 ft-lbs before torquing the high pressure distribution block mounting bolts to 20 ft-lbs.

**Note:** *The use of oil on the fuel line ends will prevent galling and help the lines seal properly during installation.*



## STEP 17



Locate the factory CP4 pump wire harness. Disconnect the harness from the factory CP4 pump and install the supplied wiring harness as shown. Route the supplied harness away from hot/moving parts and connect the other end to the HSM CP3 pump.



## STEP 18



Remove the factory fuel filter and associated fuel lines. Gather the supplied components and assemble the fuel filter conversion as shown. Install the supplied filter conversion in the stock location using the supplied M8x1.25x30mm bolts as shown.

**Note:** *It may be necessary to remove the heater hose support bolt on top of the OEM fuel filter bracket in order to make room for the fuel filter lines.*



## STEP 19



Install the supplied fuel feed and return fittings with o-ring washers into the HSM CP3 pump. Install the two push-lock hose fittings (one straight, one 90 degree) on the rear of the CP3 pump and tighten the fittings as shown.

**Note:** *Push-lock fittings do not require hose clamps. Put a dab of clean engine oil on the hose barb end and firmly push hose onto barb until it is fully seated.*



## STEP 20



Install the low pressure fuel feed and return lines. Route the 3/8" hose from the 90 degree hose barb fitting on the rear of the fuel filter conversion kit to the straight push-lock fitting at the rear of the CP3 pump. Tighten clamp.

**Note:** The hose may need to be cut to length. Be sure to route the fuel lines away from heat and/or any places where the lines may rub and cause chafing. Routing may vary due to different fueling and turbo setups.

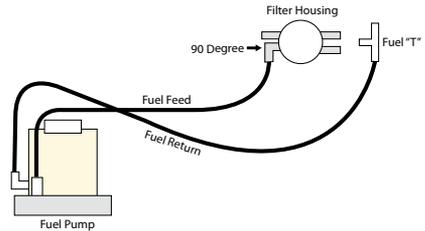


## STEP 21



Route the two supplied 1/2" lines to the factory fuel supply as shown. Tighten clamps.

**Note:** The lines will need to be cut to an approximate length of 7.5 inches to prevent kinking.



## STEP 22



Locate and disconnect the factory fuel return line as shown on driver side valve cover. The black factory heat shielding will need to be removed from the line.

**Note:** GM changed low pressure fuel lines late 2011, see pictures below for your configuration.

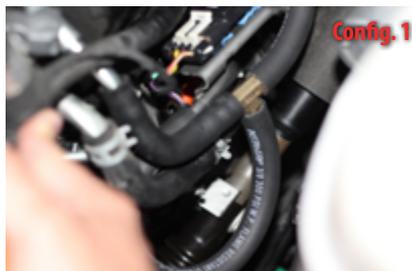


## STEP 23



Install the supplied fuel "T" fitting and plumb the return fuel system as shown. Route the HSM CP3 pump return line from the 90 degree push-lock on the top of the CP3 pump to one side of the "T". Use the supplied 3/8" hose to connect the "T" back to the factory return line. On "Config 2" fuel system equipped vehicles, you will need to use the supplied quick-connect fitting to connect the supplied fuel line to the factory return line.

**Note:** Route fuel lines away from heat or any places where lines will rub.



## STEP 24



Tighten all clamps and fittings. Turn ignition on and check for any leaks. If no leaks are present, re-install the intercooler pipe back onto turbo outlet and tighten clamp. If applicable, refill the coolant system with the factory recommended coolant and check the coolant level.

## STEP 25



Be sure to install proper dual pump control tuning before starting/running the vehicle. More information can be found at [www.hs-motorsports.com/calibrations](http://www.hs-motorsports.com/calibrations)



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