



LML CP3 Conversion Kit

For 2011-2016 Duramax

**FITMENT: 2011-2016 GMC SIERRA
AND CHEVROLET SILVERADO
2500/3500 W/LML DURAMAX**

P/N's: UDD-CP3CK

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Item Description	QTY
CP3 to Engine Block Adapter w/O-Ring	1
High Pressure Injection Line	1
Billet Wye Fitting 1/2" x 1/2" x 5/16"	1
Billet Double Quick Connect Coupler	1
90° Quick Connect to 1/2"	1
Fuel Rail Nut	1
Fuel Rail Plug	1
9 th Injector Dosing Plug	1
1/2" CP3 Feed Fitting w/ Sealing Washer	1
3/8" CP3 Return Fitting w/ Sealing Washer	1
Molded Fuel Return Hose	1
1/2" Fuel Hose	36"
5/16" Fuel Hose	5"
FCA Extension Harness	1
Fuel Temp Sensor Bracket	1
M8 Bolts (Pump to Adapter)	3
12-22mm Hose Clamp	4
10-16mm Hose Clamp	2
13-15mm Hose Clamp	2
CP3 Injection Pump (Only included in Bundle Kits)	1



*Custom EFI live or EZLynk tuning **must be used** to calibrate the ECM for use of a CP3 in the LML motor. Some trucks may run ok without a revision, but fuel surge is common without getting a tuning revision VIA EFI Live or EZLynk.

REMOVAL OF THE CP4 INJECTION PUMP

- 1.** Disconnect both batteries, drain coolant system and remove air cleaner.
 - a.** Do not use impact tools on the battery terminals.
 - b.** Coolant is best drained from the lower radiator hose. Place a large bucket underneath the vehicle to drain the coolant into.
 - c.** Air cleaner can be removed by first loosening the hose clamps and then gently pulling off the duct. The box itself can be removed by lifting upward. Be careful not to damage the A/C line during removal.
- 2.** Remove airbox and coolant surge tank bracket. Next, disconnect black plastic cold side charge air cooler (CAC) tube from throttle body.
 - a.** With a screwdriver, push the lock ring counterclockwise. As the locking ring is rotated, the CAC pipe itself can be gently pulled out and off.
 - b.** Remove CAC pipe from the turbocharger.
- 3.** Disconnect chassis fuel lines from quick connect fittings at rear of engine using a quick connect removal collar tool. Use 3/8" and 1/2" fuel disconnect tools to perform this.
- 4.** Remove the four (4) cooling fan shroud bolts.
 - a.** For 2015 vehicles, it is not necessary to remove the fan shroud, gently adjust the shroud towards the radiator to provide access to the cooling fan center.
 - b.** For 2014 and earlier vehicles, the fan shroud is two piece and can be more easily removed.
 - c.** Unbolt cooling fan mount from front of engine by loosening three 15mm bolts and two stud nuts.
 - d.** Remove the fan from the drive pulley using a fan removal tool. Perform this before removing the belt.
- 5.** Release tension of the accessory drive belt by rotating tensioner using a 1/2" drive socket wrench. The intake manifold cover (embossed with 6.6L Turbo Diesel) can be removed by loosening the two 10mm bolts affixing it to the intake pipe. Remove the alternator bracket.
- 6.** Unbolt and move aside A/C compressor. The refrigerant does not need to be evacuated. The alternator(s) can be removed and put aside.

7. Remove intake manifold tube. First loosen the two 13mm bolts affixing the pipe to the intake manifold near the MAP sensor. Next, loosen the oil dipstick tube bracket bolts and the hidden 10mm bolt affixing the intake air heater ground bracket to the intake pipe.
8. Remove the turbocharger air inlet horn
9. Proceed with removal of EGR.
10. Once the EGR is out of the way, proceed with removal of the Y-Bridge.
11. Remove fuel lines and disconnect 9th injector.
12. Remove stock CP4 pump.

CP3 Pump Prep for Installation

1. Remove the green fuel temperature sensor from the OLD injection pump.
2. Hold the OLD injection pump by the drive gear in a vice with soft jaws.
3. Remove nut and gear from shaft.
4. Clean all mating surfaces.
5. Install the CP3 to engine block adapter to the new injection pump with the 3 bolts supplied in the kit. Be sure to lubricate the flange O-ring with engine oil prior to installation or an oil leak could occur. Torque the bolts to **20 ft-lb**.
6. Install the gear and torque the gear nut to **75 ft-lb**. DO NOT OVERTORQUE.
7. Remove the original Bosch CP3 feed and return fittings from the pump and install the new high flow CP3 feed and return fittings onto the CP3 pump.

IMPORTANT NOTE: The CP4 nut is longer than the CP3 nut, however, it will not interfere with the front cover. It will also provide the same amount of thread engagement. The shaft of the CP3 will be below the nut surface – THIS IS OK.

CP3 Pump Installation

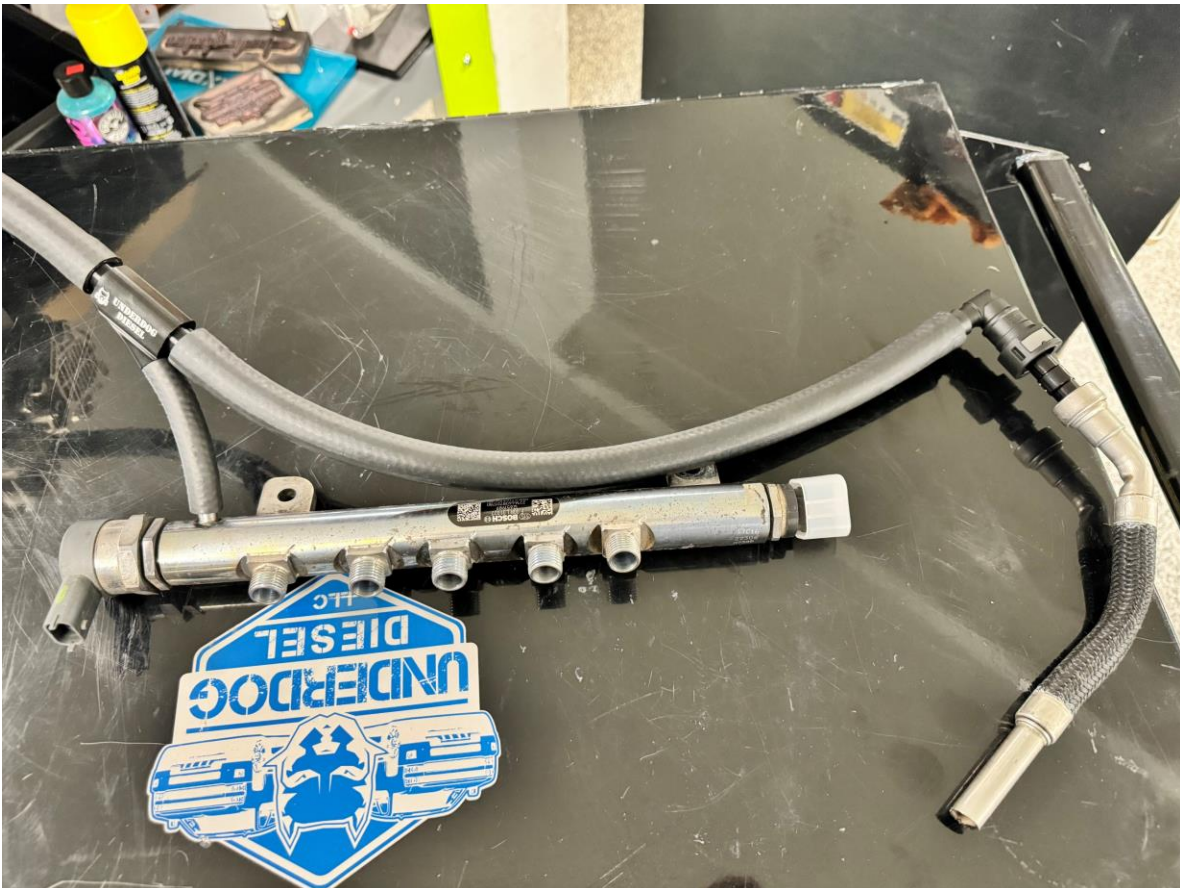
1. Lubricate the O-rings on the new injection pump adapter with engine oil and install onto the cylinder block. Note the CP3 pump does not need to be timed to the camshaft. Torque the four bolts to **18 ft-lb**. Do not draw the pump into the block using the attachment bolts or they may strip out of the aluminum mounting plate, it must be pushed into position.

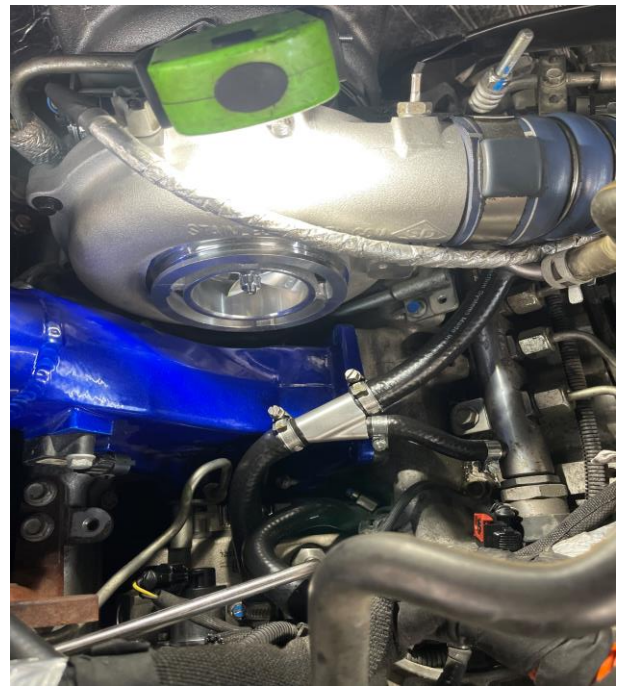
Fuel Line Routing

1. The included molded 3/8" hose is for the return. This hose connects to the vertical 3/8" fitting on the CP3 and connects to the 3/8" hard line that runs in the valley along the driver's side. Secure with the included clamps.
2. Our kit is unique in that the metal hard line that runs in the valley with the flare nut connection is removed, as this arises as a leak prone connection after a pump installation. Included in our kit, you will find the following components.
 - a. Double Ended Quick Disconnect
 - b. Quick Disconnect 90 deg fitting
 - c. Wye Fitting

These components allow us to alter the low-pressure fuel line routing. However, on 2011 Model Years, you'll find that the Quick Disconnect Parts are not used, and instead will use the provided hose clamp.

3. The following images lay out the components, orientation, and connections as such, and this routing is intended for use with an aftermarket lift pump with filters ONLY, as this routing bypasses the factory fuel filter. If you wish to retain the factory fuel filter, you can still do that with this kit, however, you will need to purchase the molded CP3 Fuel Feed hose (SKU: FPE-LML-HS-FEED), if you have not already done so.





We run the fuel in from the quick disconnect (12-16 MY) or fuel pipe with hose clamp (2011 MY), to the WYE fitting, which connects to the Drivers fuel rail return nipple and then runs either to the 1/2" feed fitting on the pump (for lift pump applications), or to the filter head connection on the passenger side if retaining the factory filter head.

Bypassing the factory filter head will not throw a code for WIF when that sensor is unplugged. The fuel vacuum sensor can also be removed, but it is best leave that plugged into the harness and just zip-tied.

If you have any more questions, feel free to reach out to sales@underdog-diesel.com

Thank you for your support and purchase!

