

INSTALLATION INSTRUCTIONS

SUBJECT: CP3K, POWERFLO 750 CP3, and POWERFLO 1000 CP3

FPE-2021-51
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FITMENT: 2003-2007 RAM 2500/3500 with 5.9L Cummins turbo diesel

KIT P/N: FPE-CUMM-CP3K-5.9, FPE-CUMM-CP3-10MM-5.9, FPE-CUMM-CP3-12MM-5.9

ESTIMATED INSTALLATION TIME: 2-3 Hours

KIT CONTENTS:

Item	Description	Qty
1	Cummins CP3 Pump	1
1	CP3 feed fitting with sealing washer	1
1	CP3 return fitting with sealing washer	1
1	High pressure pump to rail line	1
1	CP3 fuel feed hose	1
1	Worm gear clamps	2



IMPORTANT NOTICES:

For California customers: An E.O. identification label is required for Smog Check inspection. The E.O. identification label included with the kit **MUST** be placed in the engine compartment so that smog check technicians can verify the E.O. number.

CAUTIONS AND WARNINGS:

- Cleanliness is absolutely critical when servicing or replacing high pressure fuel system components. Always clean the area and connections thoroughly prior to disassembly. Always cover or cap any open lines or connection after disassembly to prevent contaminants from entering the system.
- User assumes sole responsibility for the safe & proper use of the vehicle at all times.
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STOCK 5.9L CP3 shown at right with Feed “F” and Return “R” lines marked. The high-pressure line from the pump to the rail will be removed and discarded along with the feed line and approximately 6” of hose when installing the new 6.7L CP3.



A fully installed 6.7L CP3 is shown at right.

Install the NEW high-pressure line provided with the CP3 along with the NEW fuel feed hose and feed fitting that will be routed from the CP3 to the fuel standpipe. The original return fuel line will be re-used.



INSTALLATION INSTRUCTIONS

REMOVAL PROCEDURE:

STEP 1: Disconnect the vehicle batteries.

STEP 2: Remove the intake manifold air intake tube and the rubber connector hose that is located directly above the CP3 injection pump.

STEP 3: Loosen and remove the accessory drive belt. To improve accessibility, you may also want to remove the cooling fan shroud and cooling fan assembly, however this is not required.

STEP 4: Thoroughly clean the rear of the injection pump and attachments for all fuel line connections including the CP3 feed and return connections. Once clean, use compressed air to blow any residual dirt from the area.

STEP 5: Disconnect the quick-connect fitting on the CP3 fuel feed connector.

STEP 6: Disconnect the high-pressure fuel line at the pump and at the rail, remove the fuel line.

STEP 7: Remove the banjo bolt for the low-pressure fuel line.

STEP 8: Disconnect the Fuel Control Actuator (FCA) electrical connector at the rear of the CP3 pump.

STEP 9: Remove the CP3 nut cover located on the front engine cover with a 3/8" drive ratchet.

STEP 10: Remove the CP3 pump drive gear mounting nut and washer. Using a gear drive puller (C3428B or L4407A or equivalent), remove the fuel pump drive gear. The pump gear will remain inside the front cover housing.

STEP 11: Remove the three injection pump mounting nuts from the rear of the pump and remove the pump from the engine.

INSTALLATION INSTRUCTIONS

INSTALLATION PROCEDURE:

STEP 1: Clean and inspect the mounting surface on the injection pump mounting flange at on the gear housing.

STEP 2: If not already installed on the new pump snout, ensure a new O-ring is installed and lubricate it with clean engine oil.

STEP 3: Align the injection pump shaft with the rear cover and install the pump from the rear of the front cover. Install the 3 pump mounting nuts and tighten them finger tight only. DO NOT tighten the nuts fully until the gear is installed.

STEP 4: Install the pump gear in the following sequence:

- (1) Install the gear onto the pump shaft.
- (2) Install injection pump shaft washer and nut to pump shaft. Tighten nut finger tight only.
- (3) Do preliminary (light) tightening of injection pump shaft nut.
- (4) Tighten 3 injection pump mounting nuts to 24 N·m (18 ft. lbs.).
- (5) Do a final tightening of pump shaft nut to 105 N·m (72 ft. lbs.).

STEP 5: Re-install the drive gear access cover using a 3/8" inch drive ratchet. The cover threads into the timing gear cover.

STEP 6: Install fuel line (injection pump-to-overflow valve). Tighten bolts to 24 N·m (17 ft. lbs.) torque.

STEP 7: Install fuel line (injection pump-to-fuel rail). Tighten to 24 N·m (17 ft. lbs.) torque.

STEP 8: Install fuel line (injection pump-to-fuel filter housing). Tighten to 24 N·m (17 ft. lbs.) torque.

STEP 9: Connect Fuel Control Actuator (FCA) electrical connector.

STEP 10: Install the intake manifold air intake tube (above injection pump) and tighten the clamps.

STEP 11: Install accessory drive belt.

STEP 12: If removed, re-install the cooling fan shroud.

STEP 13: If removed, re-install the cooling fan assembly.

STEP 14: Re-connect the battery cables.