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2003-2007 Common Rail Injector Removal and Install Instructions

Tools Needed:

- Vise
- T15 Torx
- 13mm Wrench
- 22mm wrench
- 15mm wrench
- 19mm Wrench
- 10mm socket
- 8mm socket
- 11mm socket
- 15mm socket
- 24mm socket
- Torque Wrench
- Assorted extensions and ratchets

Caution: This system is pressurized, and will cause severe injury. Under no circumstances should the high pressure fuel lines be loosened to bleed. The system is self bleeding. You can be maimed or killed.

WARNING: When sending core nozzles back please make sure to package each nozzle separately. The needles in each nozzle are not interchangeable. If your nozzles have been mixed up, you will not receive any core credit for those nozzles.

1: Disconnect Negative Battery cables.



2: Remove 10mm bolts that hold intake, dipstick, and wiring.



3: Remove 11mm Intercooler boot clamp.

4: Remove 10mm bolts on plastic valve cover, cover.

5: Remove 10mm bolts holding upper valve cover.



6: Remove all wiring from valve cover, including 8mm injector wires.



7: Remove 10mm bolts holding riser box.



8: Remove 10mm bolts holding exhaust rocker arms, these are in the middle of the rocker, and sometimes covered in oil. Make sure to keep track of which cylinder these came from.



9: Remove exhaust rocker cross overs. Keep these in order as well.



10: Disconnect fuel rail supply line.



11: Disconnect fuel return line from pressure limiting valve, and bend gently out of the way.



12: Disconnect 19mm high pressure lines from injector connector tubes.



13: Loosen 13mm bolts on back of head that hold bracket just behind last injector line.



14: Remove 13mm bolt from rear fuel line holder. (04.5 and up only)



15: Remove 10mm fuel line hold down.



16: Remove 10mm bolts holding fuel rail.



17: Remove fuel rail assembly.

18: Remove map sensor from intake with T15 torx.



19: Remove 15mm rear engine lift bracket bolts and bracket.



20: Remove 24mm nuts holding high pressure connector tubes.



21: Remove connector tubes.



22: Remove 8mm injector hold down bolts.



23: Carefully pry injectors out of injector bore.



24: Use Supplied injector hold tool to secure injector in a vise. The tool fits between the two loose collars on the injector.



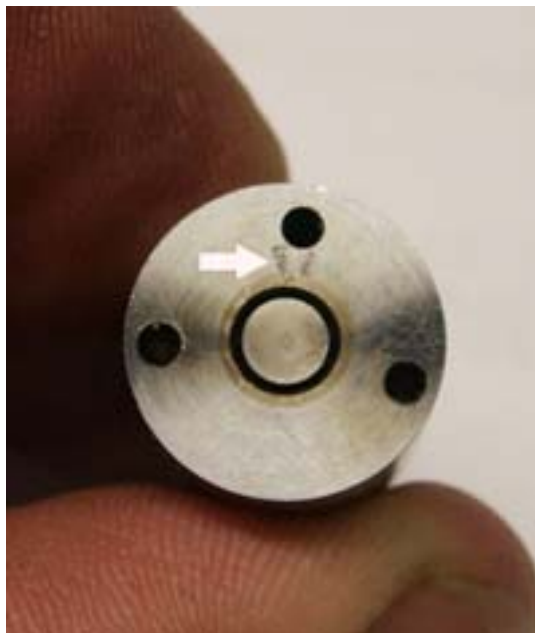
25: Remove Copper washer from old injector nozzle with pliers taking care not to damage the nozzle.

26: Remove nozzle cone with a 15mm wrench.

27: Make sure your nozzle part #'s are correct. If your truck is an 03 or early 04 you need a nozzle ending with the number 1058. 1058's fit any common rail that does not have a 600 or a 610 rating for torque. You will find that rating on the drivers side of the black plastic valve cover. If your truck is a late 04-07 any nozzle ending with 1309 or 1659 will work. 04-07 will be rated @ 600 or 610ft lbs.



28: Inspect nozzle for cracks. The whit arrow above shows a nozzle that was crazked by elevated rail pressure from a downloader, chip or module. If you have a cracked nozzle, you must buy a new injector since it will be cracked as well.





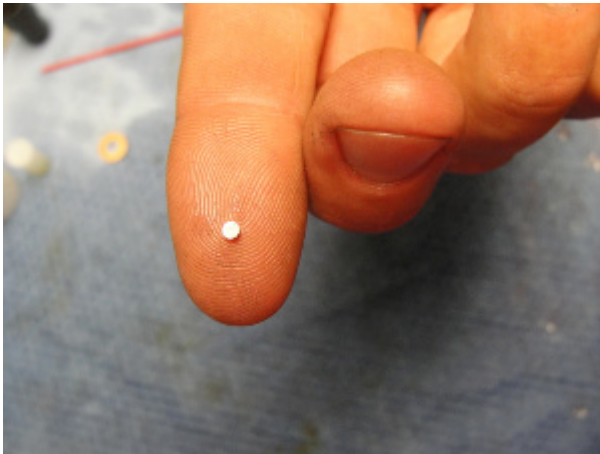
Here you can see the difference between the newer style nozzle and the older style nozzle. Take note of what you have when removing your parts.



This is what an old style body and nozzle looks like when you remove the nozzle.



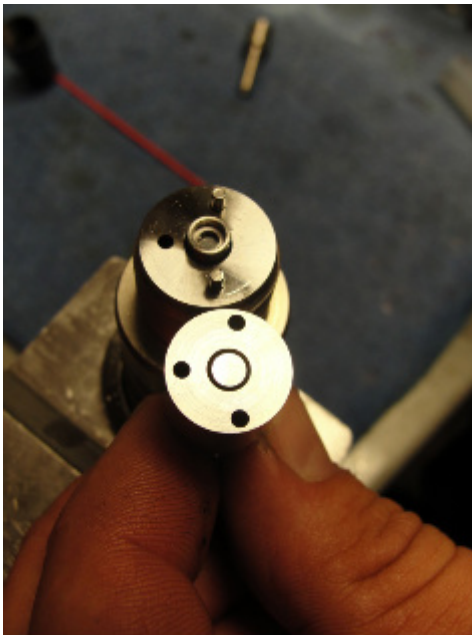
This is the new style nozzle and injector body. Here you can see the “collar” that fits up inside the updated nozzle assembly.



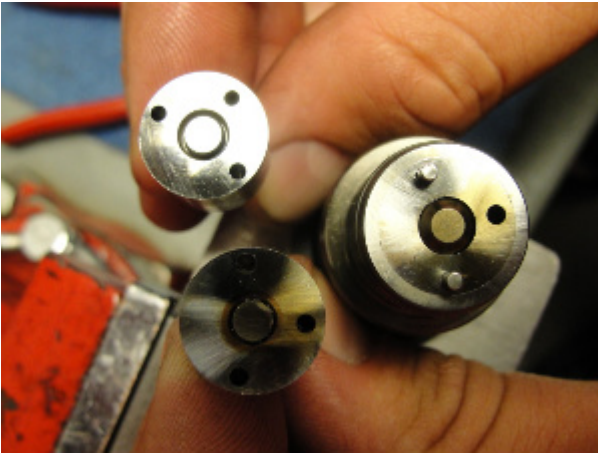
This “puck” fits up into the center of the raised collar on the injector body. ***THIS CAN NOT BE REMOVED, REPLACED, OR SWAPPED FROM BODY TO BODY. IT HAS TO BE KEPT WITH THE INJECTOR IT CAME WITH.***



Here you see where that puck lives. If the injector stays upright (electrical portion pointed down and nozzle pointed up) it will never fall out.



This combination will not work together in the truck. It could cause serious damage in fact.



This combination will work together.

Older bodys will accept new or old nozzles.

29: Taking care to clean all parts, replace new Extrude Honed Nozzles, and torque to 55ft lbs.

30: Replace copper nozzle washers, with new washers.

31: Reinstall injectors into injector bores, and make sure they click into place, also make sure the injector supply hole is oriented towards the connector tube.



32: Insert connector tubes into place, balls up. Make sure they click into place.



33: Replace connector tube nuts and finger tighten.

34: Replace injector hold down bolts, and finger tighten to equal lengths on either side of each injector.

35: Torque connector tube nuts to 37ft lbs.



36: Torque injector hold down nuts to 89in. lbs.



37: Reinstall engine lift bracket torque to 57ft lbs.

38: Install fuel rail assembly.

39: Connect high pressure injector supply lines, and finger tighten.



40: Connect high pressure supply line, and finger tighten.

41: Install fuel rail bolts, and injector supply line hold downs, and torque to 18ft lbs.

42: Torque high pressure injector supply lines to 22ft lbs.



43: Install fuel line hold down bracket at rear of fuel rail, and torque to 18ft lbs.

44: Tighten high pressure supply line to 22ft lbs.

45: Reconnect fuel return line with washers, and torque to 22ft lbs.

46: Reinstall map sensor.

47: Install exhaust valve cross overs, in same order they were removed.

48: Install exhaust valve rockers in the same order, and tighten to 27ft lbs. Make sure the pushrod is properly seated into the lifter.



49: Install riser box, and torque to 18ft lbs.

50: Install wiring onto injectors, and plug main harnesses in. Do not over tighten the nuts on top of injectors.

51: Reinstall safety bracket behind #6 injector. This is a bracket designed to keep the occupants safe from fuel in a crash. Do not discard.

52: Install upper valve cover, and torque to 18ft lbs.

53: Reinstall intake, and tighten to 18ft lbs.

54: Retighten intercooler boot.

55: Reinstall dip stick and wiring onto intake.

56: Reinstall valve cover, cover.



57: Reconnect negative battery cables, and start truck. There will be some smoke at startup that should go away within 30 seconds or so. If the truck does not start check connector tube torque. Under no circumstances should the high pressure fuel lines be loosened to bleed. The system is self bleeding. You can be maimed or killed.

58: Go drive your truck and enjoy the extra power.