

Riffraff Diesel Billet FPR Cap 1999-2003 7.3L INSTALL INSTRUCTIONS



IMPORTANT: Before starting installation, please be sure that all items which were supplied with the kit are accounted for.

TABLE OF CONTENTS

SECTION A | Installation with Fuel Bowl Out of Engine Bay 1
SECTION B | Installation with Fuel Bowl In Engine Bay 4

INSTRUCTIONS

SECTION A | (RECOMMENDED) Installation with Fuel Bowl Out of Engine Bay

SAFETY NOTE: THE SAFEST WAY TO INSTALL THE NEW FPR CAP IS TO REMOVE THE FUEL BOWL FROM THE ENGINE BAY BECAUSE IT IS VERY EASY TO MISALIGN THE SPRING IN THE HOUSING AND HAVE IT CATCH ON ONE OF THE 3 (THREE) REINFORCING BARS. IF THIS HAPPENS, THE REGULATOR WILL NOT OPEN UNTIL THERE IS AN EXCESS OF 100 PSI IN THE FUEL BOWL. THIS CAN CAUSE THE FUEL DRAIN VALVE TO LEAK. IF YOUR POWERSTROKE IS EQUIPPED WITH A FUEL PRESSURE GAUGE, THIS WILL BECOME IMMEDIATELY APPARENT WHEN FILLING THE FUEL BOWL WITH THE ELECTRIC PUMP.

SAFETY NOTE: DISCONNECT THE NEGATIVE TERMINALS ON BOTH BATTERIES TO PREVENT SHORTING TOOLS OR THE FUEL BOWL AGAINST ONE OF THE RELAYS THAT IS ALWAYS HOT.

- 1A** Begin by removing the engine cover and expose the fuel bowl. Attach a piece of 3/8" hose to the drain tube that is routed over the front of the engine and route it to an appropriate container.
- 2A** Drain the fuel bowl by opening the drain valve located at the rear of the bowl (yellow handle).
- 3A** Disconnect the electrical harness located on the side of the fuel bowl.

Parts Recommended:

Riffraff Diesel Complete Fuel Bowl Seal Kit w/ Fluorosilicone Drain O-rings:
Part# GZ-7-003

Tools Recommended:

4mm Allen Key

Disclaimer of Warranties and Liabilities: Riffraff Diesel disclaims any responsibility/liability for improper, incorrect, or inexperienced installation of products by the consumer or paid installer resulting in damage or loss. Buyer affirms by purchase of this product that it is fit for intended use and accepts all liability.

Buyer affirms products purchased are engineered to increase automotive performance and are used at buyer's own risk and accepts full responsibility.

IMPORTANT: If you remove the fuel bowl, the compression sleeves used to seal the hard lines to the fuel bowl are not reusable. Install new compression sleeves on all hard line fittings.

- 4A** Remove the two (2) hard lines on the passenger's side that feed the fuel rails on the cylinder heads.
- 5A** Remove the fuel return line from the factory Fuel Regulator cap (FPR) on the upper side of the fuel bowl on the drivers side.
- 6A** Remove the fuel pump hard line that is just below the FPR.
- 7A** The fuel bowl is ready to remove from the engine bay by loosening the two bolts that pass through the HPOP reservoir. It is not necessary to fully remove these bolts from the reservoir housing. **(fig. 1, fig. 2)**
- 8A** With a #25 torx screwdriver or bit, remove the two (2) bolts from the FPR cap evenly. If you remove one completely and then the other, the pressure from the spring can put undue strain on the bolt ear of the remaining bolt. Pull the cap straight off the spring and remove it from the brass regulator piston seat.

Inspect the rubber seat on the brass piston for any cracks or damage to the seat. **(fig. 3)**

- 9A** Pull the factory FPR straight off of the spring. **(fig. 4)**
- 10A** Remove the spring from the pressure seat. The springs that come with the new FPR are:
 - Silver: 58-61 Psi
 - Gold: 62-65 Psi
 - Black: 67-70 Psi
- 11A** Install the new spring in the pressure seat and center the replacement cap directly over and centered on the spring.
- 12A** Tighten the new, longer FPR bolts evenly and do not allow the cap to twist sideways when attempting to start threading the new bolts to the fuel bowl.
- 13A** Clean the remnants of the compression sleeves from the brass hard line compression nuts and install new sleeves on all four (4) lines.



- 14A** When re-installing the fuel bowl in the bay, place the bowl in position and only start one of the two (2) main mounting bolts to allow movement of the fuel bowl.
- 15A** Using new compression sleeves, hand tighten the fuel return line to the new FPR cap, the two fuel rail feed lines on the passenger's side of the fuel bowl and the main fuel pump line to the lower driver's side. **(fig. 6)**
- 16A** Start threading the second main mounting bolt to the fuel bowl and tighten both bolts to 18 lb-ft.
- 17A** Tighten the brass compression nuts until the nut just touches the brass fitting. Tighten the new FPR two (2) or three (3) turns once you feel the compression sleeve begin to compress. Don't worry, you won't break this one.

IMPORTANT: IF REPLACING THE CAP DUE TO BREAKAGE OF THE FACTORY CAP AND YOU CUT AND RE-FLARED THE RETURN LINE, THE FLARE MUST BE SMALL ENOUGH SO THE FLARE FITS INSIDE THE THREADED NIPPLE ON THE REGULATOR CAP. IF THE FLARE IS TOO LARGE, THE COMPRESSION SLEEVE WILL NOT SEAL THE LINE TO THE HOUSING.



SECTION B | Installation with Fuel Bowl In Engine Bay

SAFETY NOTE: IT IS VERY EASY TO MISALIGN THE SPRING IN THE HOUSING AND HAVE IT CATCH ON ONE OF THE REINFORCING BARS INSIDE THE FPR INSTALLING THE FPR WITH THE FUEL BOWL IN THE ENGINE BAY. IF THIS HAPPENS THE REGULATOR WILL NOT OPEN UNTIL THERE IS AN EXCESS OF 100 PSI IN THE FUEL BOWL WHICH WILL CAUSE FUEL LEAKAGE OF THE FUEL DRAIN VALVE AND OTHER AREAS.

- 1B** Begin by removing the engine cover and expose the fuel bowl. Attach a piece of 3/8" hose to the drain tube that is routed over the front of the engine and route it to an appropriate container.
- 2B** Drain about 1/2 qt of fuel from the fuel bowl by opening the drain valve located at the rear of the bowl (yellow handle).

3B With a #25 torx screwdriver or bit, remove the two (2) bolts from the FPR cap evenly. If you remove one completely and then the other, the pressure from the spring can put undue strain on the bolt ear of the remaining bolt. Pull the cap straight off the spring and remove it from the brass regulator piston seat.

4B Pull the factory FPR straight off of the spring.

5B Remove the spring from the pressure seat and inspect the rubber seat on the brass piston for any cracks or damage to the seat. The springs that come with the new FPR are:

- Silver: 58-61 Psi
- Gold: 62-65 Psi
- Black: 67-70 Psi

6B Install the new spring in the pressure seat and center the replacement cap directly over and centered on the spring. **DO NOT ALLOW IT TO CATCH ON THE INTERNAL RIBS!**

WARNING: IT IS VERY EASY TO MISALIGN THE SPRING IN THE HOUSING AND HAVE IT CATCH ON ONE OF THE THREE (3) REINFORCING BARS INSIDE THE FPR INSTALLING THE FPR WITH THE FUEL BOWL IN THE ENGINE BAY. IF THIS HAPPENS THE REGULATOR WILL NOT OPEN UNTIL THERE IS AN EXCESS OF 100 PSI IN THE FUEL BOWL WHICH WILL CAUSE FUEL LEAKAGE OF THE FUEL DRAIN VALVE AND OTHER AREAS.

7B Tighten the new, longer FPR bolts evenly and do not allow the cap to twist sideways when attempting to start threading the new bolts to the fuel bowl.

8B Clean the remnants of the compression sleeve from the brass hard line compression nut install a new sleeves on the return line.

9B Hand tighten the fuel return line to the new FPR cap using a new compression sleeve.

10B Thread both mounting bolts into the fuel bowl and tighten to 18 lb.

11B Tighten the new FPR two or three turns once you feel the compression sleeve begin to compress. Don't worry, you won't break this one.

