

## About 7.3 Power Stroke Diesel

The 7.3L Power Stroke diesel was introduced halfway through the 1994 model year in Ford Econoline vans and Ford Heavy Duty pickups. It effectively replaced the 7.3 IDI turbo of which it shared nothing with other than displacement size.

The Power Stroke is an electronically controlled, direct injection engine with a 4.11 in (104 mm) bore and 4.18 in (106 mm) stroke creating a displacement of 444 cu in (7.3 L). It has a 17.5:1 compression ratio, and has a dry weight of approximately 920 lb (420 kg). This engine produced up to 250 hp (190 kW) and 505 lb·ft (685 N·m) of torque in automatic-transmission trucks during the last years of production, and 275 hp (205 kW) and 520 lb·ft (705 N·m) of torque in manual-transmission trucks.

The 1994.5 to 1996/97 DI Power stroke had "single shot" HEUI (hydraulically actuated electronic unit injection) fuel injectors and ran a high pressure oil pump (HPOP) to create the necessary oil pressure to fire the fuel injectors. This generation of Powerstroke utilized a (HPOP) with a 15° swash plate angle. 1994.5-1997 trucks used a cam driven fuel pump, whereas the 1999-2003 trucks used a frame rail mounted electric fuel pump. The California trucks in 1996 and 1997 had split shot fuel injectors; other trucks didn't get split shot injectors until 1999. Single shot injectors only inject one charge of fuel per cycle, whereas the split shot injector releases a preliminary light load before the main charge to initiate combustion in a more damped manner. This controlled injection helps reduce the sharp combustion 'knock'.

It utilizes a single turbocharger with a turbine housing size of 1.15 A/R. In 1999, an air to air intercooler was added to cool the charged air from the turbo for increased air density. The cooler, denser air would increase the horsepower potential of the engine, while also reducing exhaust gas temperatures (EGT). Eventually, the turbine housing was changed to a .84 A/R housing and a wastegate was added. With larger injectors, the HPOP output was increased by utilizing a 17° swash plate angle to meet the requirements of the new, higher flowing injectors.

The 7.3 L DI Power Stroke was in production until the second quarter of model year 2003 when it was replaced by the 6.0L because of its inability to meet newer emission requirements. Due to its popularity, nearly 2 million 7.3s were produced from International's Indianapolis plant.

*-Re-posted courtesy of Wikipedia*