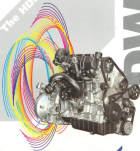


The HDI Generation



HDW10

PEUGEOT CITROËN
MOTORS

Diesel engines

Key objectives

The D61 was optimized in view of 100 generator engines, with a focus on achieving four objectives:

Reduced Fuel Consumption

Thanks to Cummins' full-time expertise technology used for the optimization of engine architecture—which have reduced engine weight by 40 kg and friction by 20% over the engine's fuel consumption is 20% less than previous generation engines.

Integrated On-board Filter

Quadruple 100% higher torque at low engine speed, 20% more power, increased efficiency, and less noise. Clearly, the D61 engine has undoubtedly new levels of performance than other engines.



Reduced Emissions

At the same level of full, CO emissions have been reduced by 20%, and levels of CO, unburned hydrocarbons (UHC) and particulate matter have been decreased respectively by 45, 50 and 60% compared to previous generation engines.

The D61 engine is remarkably quieter, over 20% of its operating noise. It produces practically zero smoke emissions and it maintains low emission levels with great stability over time.



The 801 generation: DW10 eng

- 1 Flow through the exhaust gas recirculation (EGR) pipe valve, which is mounted on the exhaust manifold, is regulated by the ECU via a solenoid valve.
- 2 The cylinder head cover made of synthetic material, also provides positive crankcase ventilation (PCV).
- 3 The aluminum alloy cylinder head cooling-edge construction was adapted to improve its geometry and to reduce the smooth, turbulent flow of coolant. Its passages were shaped to maximize the hydrodynamic mixture of air and fuel in the combustion chamber. The cylinder head houses valve seats and guides made of sintered steel.
- 4 An integral camshaft bearing (oil housing) ensures a tight fitting to the crank assembly.
- 5 The cast iron crankcase is cast with the main journal bearings.
- 6 In order to reduce friction, a roller and gear system guides the valves. There is also better cylinder wall engagement against the valve stems.
- 7 Improves air speed according to ECU commands. The high injection pressure and the reduced diameter (less than 300 microns) of the 5-hole injectors ensure an excellent mixture of fuel and air within the combustion chamber. The injection considerably reduces the engine's emissions.
- 8 Valve weight was halved compared to previous generations. Steel springs with the new lighter-weight valve stem springs can work with less effort, also reducing internal engine noise levels.
- 9 The 105-degree valve inclination reduces valve lift temperature. Moreover, a rigid ground system with slight venting by allowing the combustion chamber to warm up quickly at 25% idle speed (up to a max 0.5 second valve lift at 1800) purchasing maximum torque efficiency.





➊ Great attention was paid to the shape of the piston head to achieve a very high output combustion chamber.

High-weight requirements

Applying complex geometry to the cylinder walls results in lower weight ring losses, thereby reducing fuel cost at consumption.

➋ Common Rail fuel delivery system pressure inside the rail is regulated according to engine speed and load to prevent air traps in cylinders.

➌ Thanks to a new firing process, the weight of the connecting rods was reduced by 35%.

Their shape provides a better bearing surface for the pistons.

➍ The cast iron cylinder block is tilted vertically in its lower section, to provide increased rigidity to the walls. It is equipped with oil spray jets to cool the piston heads.

➎ Common Rail oil fuel pressure pumps. The pumps continuously deliver fuel to the rail.

➏ Steel crankshaft, with 3 main bearings.

➐ High output cooling fans. The fuel charge intake has been extended, due to its excellent quality, to 180,000 km under demanding conditions.

➑ Injectors are driven by a separate unit.

➒ The turbocharger can be controlled by the ECU via a solenoid valve that regulates turbo pressure according to load. The common-rail system air intake filter exchange simplifies the turbocharger system.



DW10

A new generation of direct injection



The DW10 ranges in size from 6000 cc of
100+HP power from 10000 cc, 1000
1000 displacement (1.8 to 2.2) liter class turbocharged
engines are available in 4 and 6 cylinder variants
with a cylinder of 80mm.

The new engine family's performance is 10000 cc, 1000
to 10000 cc, 1000 cc, 1000 cc, 1000 cc, 1000 cc,
1000 cc, 1000 cc, 1000 cc, 1000 cc, 1000 cc, 1000 cc.

Every component part of the DW10 engine was designed to be
more economical and efficient, to provide the highest and
most reliable performance under the most demanding
operating conditions.

In addition, the new engine
will be available in 4 and 6 cylinder variants
DW10 1.8 to 2.2 liter variants.



D W 3

Indirect injection Diesel engine



Displacement	1.807 cc
Bore x Stroke	80.2 x 88 mm
Fuel injection	Indirect
Number of valves	2
Engine timing	10° / 20°
Compression ratio	25.7:1
Engine bore cutting	Normally required
Maximum power*	55.3 kW (75 hp)
R speed	4500 rpm
Maximum torque*	124 Nm
R speed	2500 rpm
Dry weight	154 kg
Engine installation	4 cylinders in line
Combustion Chamber	Submerged Ricardo Chamber
Engine block	Cast iron
Cylinder head	Light alloy
Crankshaft	Cast iron
Camshaft	Overhead
Injection pump	Bosch VE1 Lucas DPC



* ISO 1585

Fig. 10.10.10



D W I O A T E D

Direct Injection Diesel engine



Displacement	3.007 cc
Bore x Stroke	85 x 88 mm
Configuration	Direct Injection Common Rail
Number of valves	2 per cylinder
Engine timing	100% DI*
Compression ratio	16.1:1
Engine breathing	Turbo intercooled
Maximum power†	80 kW (108 hp)
l/h (psi)	4.000 psi
Maximum torque†	250 Nm
l/h (psi)	3.750 psi
Dry weight	150 kg
Engine architecture	4 cylinders in line
Engine block	Cast iron
Cylinder head	Aluminum alloy
Coolant	Water
Oil	Oil-cooled



Figure 10.10

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DW10TD

Direct Injection Diesel Engine

Displacement	1.97 ltr
Bore x Stroke	81 x 95mm
Fuel Injection	Direct CR Common Rail
Number of valves	3 per cylinder
Engine coding	4100 or 417
Compression ratio	20.1:1
Engine bore/ing	76mm
Maximum power*	66 kW (90 hp)
R speed	4,000rpm
Maximum torque*	205 Nm
R speed	1,500rpm
Dry weight	200 kg
Engine architecture	4 cylinders in line
Engine block	Cast iron
Cylinder head	Aluminium
Crankshaft	Steel
Camshaft	Cast iron



197ccm

200kg

