

## FPT INDUSTRIAL PRESENTS ITS F1 EURO VI STEP D DIESEL ENGINES AT IAA 2018 IN HANNOVER

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At IAA 2018 in Hannover, FPT Industrial demonstrates its leadership as a **multi-power solutions provider**, while strengthening its **commitment to the development of Diesel engine technology** in view of the introduction of the **Euro VI Step D Standard**. This new regulation will be applied to all new heavy duty commercial vehicles and buses registered from 1<sup>st</sup> September 2019. At IAA (Hannover, Hall 16 Booth A42), FPT Industrial exhibits a **Diesel-Hybrid Powertrain featuring the best-selling F1A Euro VI Step D engine and is RDE (Real Driving Emissions) ready**. For the first time this 2.3-liter engine is presented in a **configuration for heavy duty applications**, as well as the other F1 family's engine, the 3-liter **F1C**. It is compliant with Euro VI Step D Standard, with increased **best-in-class performance reaching up to 210 hp and up to 470 Nm of torque**.



PRESS RELEASE



*FPT Industrial F1A engine*

The **Diesel-Hybrid Powertrain** on display is composed of an **F1A Euro VI Step D engine** – now suitable for **heavy duty homologation** – with a power range between **136 hp** and **156 hp**. The engine, shown with this specific homologation configuration for the first time, is presented in a **parallel-hybrid configuration**, which enhances the already low emissions.

The other powertrain elements are the FPT Industrial **2835.6 manual transmission**, the **transfer box** and the **NDA rear axles**. To be compliant with the Euro VI Step D Standard FPT Industrial's F1 Series adopts an **external cooled EGR with SCR**, as the best solution on Light Commercial Vehicles (LCV) applications to minimize vehicle dimensions constraints.

The F1A engine, has a displacement of 2.3 liters and combines the **lowest emission rate in its category** (RDE ready) with the qualities of a regular Diesel engine. It features outstanding **durability** and **real-driving low NO<sub>x</sub> emissions** due to higher displacement than other manufacturers. It was **completely re-engineered** in 2016 and the developments focused on the reduction of friction, the optimization of the cooling system and the adoption of a variable displacement oil pump, which led to a **reduction** of both **fuel consumption** and **TCO**. Furthermore, with regards its LCV application, the F1A equips the IVECO Daily Blue Power, winner of the *International Van of the Year 2018*. To further improve fuel consumption and performance a **new electronic Variable Geometry Turbocharger** has been introduced.

FPT Industrial's F1 Series builds upon more than 35 years' experience in commercial vehicles. In the LCV sector, in particular, FPT Industrial is currently the **European market leader** with some 300,000 units produced per year. F1 Series engines deliver optimum efficiency and best-in-class performance, together with long service intervals. The F1 series meets all worldwide emission certifications (from Euro 3/III to Euro 6d/VI D, JP09, EPA17) and it's the first LCV engine ready for the 2020 **RDE regulation**. With the introduction of the Euro VI Step D Standard, the **F1C** 3-liter engine will also feature increased performance and **Heavy Duty homologation**, reaching **best-in-class performance, with up to 210 hp and up to 470 Nm of torque**. The F1 engines are available for both transversal and longitudinal installation, in diesel, CNG/LNG and hybrid versions.

#### **F1A DIESEL EURO VI STEP D HEAVY DUTY Specifications**

Architecture:	In-line 4-cylinder engine
Intake:	Electronic Variable Geometry Turbocharged with Aftercooler
Injection:	Common Rail 1600 bar
Valves per cylinder:	4
Displacement (l):	2.3
Bore (mm):	88
Stroke (mm):	94
Power range in hp (kW):	136-156 (100-114) at 3,600 rpm
Torque range in Nm	350-380 at 1,500 rpm

Service interval (km):	up to 50,000 (depending on mission)
Weight (in kg):	204
ATS:	High-Pressure EGR + ClosedCoupled DPF + SCR

## **FPT INDUSTRIAL DIESEL TECHNOLOGY FOR EURO VI STEP D STANDARD FOR NEF AND CURSOR SERIES**

Engines from the **NEF and Cursor** families (displacement range **from 4.5 to 12.9 liters**) will also be ready for the Euro VI Step D Standard. FPT Industrial is focusing its research and development activities in order to remain the innovation leader in the industrial powertrain field and a **reference provider** of the most cost-efficient powertrain solutions for Euro VI step D. The Brand aims to comply with the new emission limits ensuring minimal impact on vehicle architecture and the lowest possible increase in cost, an objective that, for its medium and high displacement range, will be achieved through **HI-eSCR technology**. The breakthrough patented technology, based on more than 25 years' experience and more than one million engines produced, allows our engines to meet Euro VI Step D standards without resorting to EGR (Exhaust Gas Recirculation), guaranteeing very high NO<sub>x</sub> conversion efficiency (over 95% versus 80-85% from competitors adopting EGR).

Based on FPT Industrial's state-of-the-art engine range, Euro VI step D maintains the same base engine hardware of Euro VI Step C, **allowing customers to retain their class leading features**, such as **minimized Total Cost of Ownership**. Key to the optimization of combustion efficiency is high mean effective cylinder pressure and high injector nozzle pressures. To achieve these aims, important changes to the crankcase and cylinder head design have already been made in Euro VI step C, resulting in an increase in structural rigidity and in swept volume.

The engines are fitted with the latest generation of multiple events **Common Rail fuel injection** equipment with peak nozzle pressures of up to 2,200 bar. An **Electronic Control Unit** manages both engine parameters and accurately controls the after-treatment system. The control unit has been designed to optimize packaging and to fully integrate all engine, SCR and DPF (Diesel Particulate Filter) functions. For Cursor Series engines using the **Variable Geometry Turbocharger**, electronic control is used to optimize load response at low engine speeds and to increase the effectiveness of the engine brake. In addition, all engines make use of the flap type engine brake valve in order to support the after-treatment thermal management and to guarantee engine brake performance.

For the very best in environmental performance, engines are equipped with closed circuit engine breathing systems. By means of the optimized combustion regime, engine-out particulate emissions are very low, meaning that forced/parked regeneration of the DPF is not required, an important aspect in terms of fuel consumption and periodic servicing.

Furthermore, since the engine only breathes clean filtered air, rather than recirculated exhaust gases, engine wear is minimized and oil change intervals remain extended, with service intervals of up to **150,000 km without an increased oil sump**. This also brings advantages in terms of operating costs and reduced down time for scheduled maintenance.

*FPT Industrial is a brand of CNH Industrial, dedicated to the design, production and sale of powertrains for on and off-road vehicles, marine and power generation applications. The company employs more than 8,000 people worldwide, in ten manufacturing plants and seven R&D Centres. The FPT Industrial sales network consists of 73 dealers and about 800 service centres in almost 100 countries. A wide product offering, including six engine ranges from 42 hp up to 1,006 hp, transmissions with maximum torque of 200 Nm up to 500 Nm, front and rear axles from 2 to 32 ton GAW (Gross Axle Weight). FPT Industrial offers the most complete Natural Gas engines line-up on the market for industrial applications, including engine ranges from 136 hp up to 460 hp. This extensive offer and a close focus on R&D activities make FPT Industrial a world leader in industrial powertrains. For further information, visit [www.fptindustrial.com](http://www.fptindustrial.com).*

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