

FPT Industrial To Launch New R22 And Showcase Agricultural Solutions At Agritechnica

Turin, November 2013

Pioneer in powertrain technology, FPT Industrial will showcase its agricultural solutions at Agritechnica on 12-16 November 2013 in Hanover, Germany, including its new R22 engine.

FPT Industrial's off-road line-up spans five engine families, from 2.2-litres to 20.1-litres with power outputs from 33 kW to 606 kW. The latest addition, the R22 will be launched at Agritechnica. It has been developed with long-term partner VM Motori S.p.A. and furthers FPT Industrial's customer offering as it enters the low-displacement agricultural and construction sector.

Providing 33 to 52 kW and up to 250 Nm of torque, the compact and efficient three-cylinder, 2.2-litre engine meets Tier 4B / Stage IIIB emission regulations. Suitable for machinery with a gross weight of 1.6 to 3.1 tonnes, the R22 includes technology such as Common Rail fuel injection and a turbocharger with aftercooler and Waste Gate. Exact customer requirements are met with FPT Industrial's personalisation options, while it also delivers service intervals of up to 600 hours.

Further examples of the company's diverse Tier 4B / Stage IV product range will be on show through the class-leading 4.5-litre N45 and 6.7-litre N67, offering up to 129 kW and 230 kW respectively. The Cursor 13 will also be on display. Producing between 316 kW and 515 kW, it has been developed to deliver high specific power outputs while keeping fuel consumption and running costs low in heavy duty applications, such as tractors and combines.

To comply with Tier 4B / Stage IV, the NEF and Cursor Series engines are equipped with FPT Industrial's innovative High Efficiency SCR (HI-eSCR) technology, which has NOx conversion efficiency higher than 95% and will also be on display at Agritechnica.

HI-eSCR represents the latest breakthrough in Selective Catalytic Reduction (SCR), which was pioneered by FPT Industrial at its Research & Development Centre in Arbon, Switzerland. Initially addressing Tier 4A diesel engine emission regulations introduced in 2011, SCR technology has been proven in over 350,000 units and continues FPT Industrial's tradition of innovation, dating back to 1903.

For further information about FPT Industrial, visit Stand 01H113 at Agritechnica 2013, or visit www.fptindustrial.com

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PRESS RELEASE

The R22 engine

Developed with long-time partner VM Motori S.p.A. at its Cento plant in Italy to FPT Industrial's standards, the R22 marks FPT's entry to the low displacement off-road sector.

Main R22 features and benefits:

- Most compact engine of its segment
- Single-side service
- Service intervals of up to 600 hours
- Meets Tier 4B / Stage IIIB emission regulations
- Suitable for machinery with a gross weight of 1.6 to 3.1 tonnes
- The use of hydraulic tappets and an 'Antiphone' insulated sheet metal front cover minimises engine noise, improving the end user's working environment
- A wide scope of customisation possibilities including fan, alternator and transmission interface options, different starter motor and power take-off positions

R22 specifications

Architecture:	In-line, three-cylinder engine
Injection:	Common Rail, up to 1,600 bar
Intake:	Waste Gate
Valves per cylinder:	Two
Engine displacement:	2,227 cm ³
Unitary cylinder displacement:	0.742 cm ³
Bore per stroke:	94 x 107 mm
Stroke/bore ratio:	1.14
Compression ratio:	17.5:1
Power Range:	45 to 71 hp / 33 to 52 Kw
Torque Range:	160 to 250 Nm
Dry weight:	210 kg
Service Interval:	600 h
Dimensions (l/w/h):	519 mm / 524 mm / 723 mm

F5 Series (3.2 – 3.4 litres)

Featuring a customer-orientated design, the F5 Series stands out for low operating costs and easy maintenance thanks to single-side service, and is available in both a 3.2 and 3.4 litre versions.

Irrigation power units

As part of its line-up for agricultural applications, FPT offers also a series of power units, especially suited for use in irrigation pumps. The European Stage IIIA line-up is powered by three engine families (F5, NEF and Cursor) from 3.2 litres to 12.9-litres with power outputs from 55 kW to 375 kW. These engines are equipped with options specifically designed for Irrigation Pump applications in order to preserve reliability, easy access for maintainability and for reducing at maximum operating costs with the guarantee of a product assembled directly from the Engine Manufacturer.

The F32 power unit (Tier 3 / Stage IIIA) will be on display at Agritechnica. Featuring proven and reliable technology, the 3.2-litre F32 engine is ideal for continuous duty applications. Equipped with mechanical rotary injection pump, the F32 for power unit applications is available with power ratings from 55 kW to 65 kW. The power units equipped with F32, best sellers with the 55 kW version among whole FPT Industrial power units line-up, are best in class for oil interval change (up to 600 hours).

NEF Series engines (4.5 – 6.7 litres)

Setting the standard in its class, NEF engines offer high-performance, reliable, cost-effective and compact solutions to power a wide variety of agricultural and construction equipment applications.

Main NEF Series features and benefits:

- The 4.5-litre N45 offers performance from 53 kW to 129 kW
- The 6.7-litre N67 produces between 74 kW and 230 kW
- Engines emission compliant up to Tier 4B / Stage IV
- Tier 4B / Stage IV engines featured with FPT patented HI-eSCR
- Injection systems available: mechanical rotary injection pump and Common Rail
- Induction systems available: naturally aspirated, fixed or variable geometry turbocharging systems

Cursor Series engines (8.7 – 12.9 litres)

Engines in the Cursor Series have been developed to deliver high specific power outputs, rapid throttle response, low fuel consumption and low running costs in heavy duty applications.

Main Cursor Series features and benefits:

- The 8.7-litre Cursor 9 options range from 175 kW to 305 kW
- The 12.9-litre Cursor 13 produces between 290 kW and 500 kW

- Engines emission compliant up to Tier 4B / Stage IV
- Tier 4B / Stage IV engines featured with FPT patented HI-eSCR
- Injection systems available: electronic unit injectors and heavy duty Common Rail
- Induction systems available: fixed geometry, variable geometry and two stage series turbocharging systems
- Suitable for powering a wide variety of agricultural and construction equipment machines

FPT Industrial's HI-eSCR for off-road applications

With a focus on maximising combustion efficiency and reducing particulate matter production to meet regulations, the HI-eSCR solution avoids Exhaust Gas Recirculation (EGR) and thereby the need of DPF filter. This aftertreatment system enables engines to be compliant with Tier4B/Stage IV emission regulations achieving a NOx conversion efficiency of more than 95%.

Main HI-eSCR system components are:

- Supply Module
- AdBlue dosing module.
- Diesel Oxidation Catalyst (DOC)
- AdBlue mixer
- Selective Catalytic Reduction (SCR)
- Clean Up Catalyst (CUC)

Patents established during development include:

- 'Closed' loop control for precise AdBlue dosing
- Adaptive dosing system based on NOx and ammonia sensors
- Thermally insulated high-turbulence mixing
- Enhanced exhaust gas temperature control

The main advantages for customers can be summarized in:

- No EGR and no DPF result in higher fuel efficiency, lower operating costs and better packaging complexity
- long maintenance intervals (up to 600h, depending on the mission)
- Increased vehicle productivity due to better transient response
- No complex turbochargers solutions required to be in line with competitors' performance
- Lean technology improving durability and reliability
- No additional cooling system requirements, considering both radiator dimensions or fan drive

***FPT Industrial** is a company 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 approximately 8,000 people worldwide, in ten plants and six R&D Centres. The FPT Industrial sales network consists of 100 dealers and over 1,300 service centres in almost 100 countries. A wide product offering, including five engine ranges from 31 kW up to 740 kW and transmissions with maximum torque from 200 Nm up to 500 Nm, and a close focus on R&D activities make FPT Industrial a world leader in industrial powertrains. For further information, visit www.fptindustrial.com.*