

**“A NOVELTY AND A LOT OF CERTAINTIES:  
IVECO MOTORS, THE BRAND OF FIAT POWERTRAIN TECHNOLOGIES,  
PRESENTS ITS NEW F5 LIGHT RANGE AND A SELECTION OF ITS  
INNOVATIVE ENVIRONMENT-FRIENDLY ENGINES AT EIMA 2006”.**

*Three families of engines specifically for the agricultural sector, six cutting-edge products, and an important novelty: FPT is present at the Bologna Fair with its Iveco Motors brand and a display that sums up the technological excellence of its agricultural engines.*

**FPT (Fiat Powertrain Technologies)**, the Fiat Group's engine division that specialises in the research, development and manufacture of powertrains for automotive, industrial, agricultural, marine and power generation applications, is present once again with its own **Iveco Motors** stand at **EIMA International 2006** (Bologna, November 15<sup>th</sup>–19<sup>th</sup>, 2006) in **Pavilion 31 – Stand A17**.

For Iveco Motors and FPT, the Bologna agricultural, gardening and agribusiness machinery fair is an opportunity to present not only its broad range of engines for agricultural applications, but also a long awaited novelty: the **F5** light engines.

The six engines on show stand for the renewal that has been taking place during the last five years in all the areas of the Group's *Industrial&Marine* sector, in which agricultural engines account for a significant part.

Divided into five product families and five power ranges, this sector produces engines that are on the cutting edge for their technological content, low running costs, high performance and low consumption, achieved as a result of constant research and development. In particular, the engines destined specifically to the agricultural sector feature advanced mechanical and electronic injection systems (with injector-pump or Common Rail systems).

#### **THE NEW F5 ENGINES. AHEAD OF THE MARKET AND OF ENVIRONMENTAL STANDARDS**

After the preview organised at *Intermat* in Paris in April, at EIMA 2006 FPT now presents the new family of light engines known as **F5**, which slots in between the four existing families (*SOFIM*, *NEF*, *CURSOR* and *VECTOR*).

The new FPT engines have 4 cylinders in line with 2 valves per cylinder, driven by a geared front timing system and supplied by a “conventional” mechanical system for the low and medium power range, and an electronic Common Rail system for higher performance versions.

Designed and developed entirely from scratch, the F5 engines have a total capacity of 3.2 litres, delivering up to 65 kW (88 Hp) in the 2300–2500 rpm range, and torque up to 340 Nm at 1400 rpm with the mechanical injection system, and as much as 74 kW (100 Hp) and torque of 380 Nm with the Common Rail electronic injection system.

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The engines with mechanical injection will be available on the market in Autumn 2007, in time to comply with the Stage 3 emissions standards (**Stage IIIA – EPA Tier 3**) which will come into force from January 1, 2008 for the 37 to 74 kW power range. The Common Rail versions will be launched early in 2009.

FPT is determined to offer engines that do not need specific external devices to meet the Stage III standards (cooled EGR, variable geometry turbo, etc.) throughout the range and on every version, that makes the F5 family particularly innovative and competitive.

Respect for emissions limits is guaranteed by the internal EGR system, which consists of synchronising exhaust valve opening during the active intake stage. This allows part of the exhaust gases to be recirculated internally, mixed with the clean air for a new combustion phase.

The F5 will have both structural and non-structural versions, to meet the most diverse application requirements, not only in the agricultural field (tractors and small-medium agricultural machinery), but also in industry, particularly in the construction sector.

The new range is represented at EIMA 2006 by a structural version of the **F32 MRT** engine.

### **F32 MRT**

#### MAIN TECHNICAL FEATURES:

Power – 65 kW (88 Hp) @ 2300 rpm

Displacement – 3.2 litres

4 cylinders in line

Turbo aftercooler

Mechanical injection

Structural version

Stage IIIA – Tier 3



### **NEF AND CURSOR: BRILLIANT, ENVIRONMENT-FRIENDLY AND ON THE CUTTING EDGE**

The NEF medium range for agricultural applications on the market already complies with *Stage IIIA – Tier 3* standards even with the mechanical injection engines: this is an important competitive advantage which makes the engines in this family particularly innovative and in line with the demands of the market.

There are three models from the NEF range on the stand, underlining its great flexibility and modularity: the N45 MRT, N67 ENT and N67 MNT A 800.

The first two are particularly suitable for medium-large tractors and special harvesting machinery, while the third is displayed in the typical configuration for pumping set applications.

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The NEF **N45 MRT** is an engine with mechanical injection, 4 cylinders in line, and two valves per cylinder. A structural version is displayed on the stand, i.e. ready to become an integral part of the tractor on which it is mounted.

### **N45 MRT**

#### MAIN TECHNICAL FEATURES:

Power – 93 kW (126 HP) @ 2200 rpm

Displacement – 4.5 litres

4 cylinders in line

Turbo aftercooler

Mechanical injection

Structural version

Stage IIIA – Tier 3



The NEF **N67 ENT** is an engine with 6 cylinders in line, and a fully electronic Common Rail injection system; a non-structural version is displayed on the stand.

It is one of the most powerful and sparkling engines in its segment, delivering 175 kW (238 Hp) at 2200 rpm and torque of 1020 Nm at 1500 rpm. These values are significantly higher than those of previous versions of the same model, which was developed in the context of Tier 2.

The Common Rail high-pressure injection system offers advantages in terms of both high working pressure (which guarantees extensive atomisation of the fuel with excellent efficiency and minimal emissions), and the electronic management of the injection process, which is independent of the engine speed. This also paves the way for a drastic reduction of acoustic and gaseous emissions, as well as optimised fuel metering and phasing in all operating conditions.

### **N67 ENT**

#### MAIN TECHNICAL FEATURES:

Power – 175 kW (238 Hp) @ 2200 rpm

Displacement – 6.7 litres

6 cylinders in line

Turbo aftercooler

Common Rail electronic injection

Non-structural version

Stage IIIA – Tier 3



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The third NEF engine on display is the **N67 MNT A 800**, an engine developed specifically for use with pumping sets and irrigation machinery, which is presented on the stand in its most comprehensive version, complete with air filter, exhaust system, fan, water radiator and aftercooler.

### **N67 MNT A800**

#### MAIN TECHNICAL FEATURES:

Power – 129 kW (175 Hp) @ 2200 rpm

Displacement – 6.7 litres

6 cylinders in line

Turbo aftercooler

Mechanical injection

Non-structural version

Stage IIIA – Tier 3



The CURSOR heavy range, which covers a broad power range (from 200 to 375 kW), is represented by two straight-six engines, with cylinder capacities of 9 and 13 litres. Both obviously meet Tier 3 requirements in full: the technological excellence of the CURSOR engines, which have always guaranteed very low harmful emissions, has meant that no design or manufacturing upheaval was necessary following the introduction of the latest, more restrictive international emissions standards.

Created specifically for industrial and agricultural applications (harvesting machinery and medium-large tractors in particular), the **C87 ENT** has 6 cylinders in line and a fully electronic Common Rail injection system.

The version displayed on the stand is a non-structural configuration.

### **C87 ENT**

#### MAIN TECHNICAL FEATURES:

Power – 260 kW (354 Hp) @ 2100 rpm

Displacement – 8.7 litres

6 cylinders in line

Turbo aftercooler

Common Rail electronic injection

Non-structural version

Stage IIIA – Tier 3



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The **C13 ENT** is the largest and most powerful engine in the CURSOR range for agricultural applications, the expression of FPT's cutting edge experience in engineering and engines.

Ideal for *harvesters*, *combines* and "master" tractors, the engine is extremely reliable, durable and elastic, features that are enhanced by high performance, low operating costs and low gassy and acoustic emissions. By exploiting the potential of modern electronic control technologies in full, on the more powerful CURSOR engines FPT engineers have achieved a new balance between performance and efficiency, which is evident in the very high torque and power output achieved.

In this case too, the engine is presented in a non-structural configuration.

### **C13 ENT**

#### MAIN TECHNICAL FEATURES:

Power – 375 kW (510 Hp) @ 2100 rpm

Displacement – 12.9 litres

6 cylinders in line

Turbo aftercooler

Electronic injection with injector-pump (E.U.I.)

Non-structural version

Stage IIIA – Tier 3



**FPT** specialises in the research, development, manufacturing and marketing of innovative, environment-friendly powertrains for automotive, industrial, marine and power generation applications. All the engines in the range guarantee maximum efficiency in terms of performance, versatility and reliability, and stand out in particular for their low consumption and respect for the strictest emissions standards. These are competitive advantages that have been achieved as a result of the constant research, experimentation and engineering guaranteed by **Powertrain Research & Technology**, the FPT Research entity which has grown out of the experience of **Centro Ricerche Fiat** and **Elasis**, international leaders in the field of technological innovation on engines.