



## IAA HANNOVER 2006

### Fiat Powertrain Technologies

Created in March 2005, Fiat Powertrain Technologies is the sector that groups together all the Fiat Group activities regarding research, design, manufacturing and marketing of powertrains.

With its 19,000 employees, 17 plants, 8 research centers, a worldwide presence and an annual production of approx 2.5 million engines and 2 million transmissions, FPT is one of the most significant leaders in the engines and transmissions sector throughout the world.

Around 3000 highly specialized technicians dedicate their activities to the development and engineering of innovative technologies; the 40 patents granted each year confirm the quality and competence of these activities.

With its extremely wide range of products and technologies, FPT is able to meet the most different market demands, guaranteeing to its customers high performance, reliability and efficiency.

FPT provides powertrains for every type of application:

*vehicle* applications: passenger vehicles and light, medium, heavy commercial vehicles and buses

*industrial* applications: earth movers, stationary applications, farming machinery

*marine* applications: - pleasure and professional boat applications

*power generation*: energy generation units for cogeneration

PRODUCT RANGE	from	to
Passenger & Commercial Vehicles	Gasoline: 40 kW (54HP) @ 5000 rpm Diesel: 52 kW (70HP) @ 4000 rpm	Gasoline: 136 kW (185HP) @ 5500 rpm Diesel: 147 kW (200HP) @ 4000 rpm
Passenger & Commercial Vehicles Alternative fuels	38 kW (52HP) @ 5000 rpm	68 kW (92HP) @ 5750 rpm
Industrial & Marine applications	Diesel: 14,7 kW (20HP)	Diesel: 1325 kW (1800HP)
Transmissions	145 Nm	950 Nm

### FPT presence at the Hannover Motor Show

#### ENGINES EXHIBITED:

- ☛ SDE Multijet 1.3L
- ☛ F5
- ☛ NEF 400 marine
- ☛ CURSOR 13 industrial
- ☛ Mobile ground power unit 2HE

#### SDE Multijet 1.3L

The **SDE** (Small Diesel Engine), with its 1.248 liter displacement and last generation Common Rail direct multi-injection, has particularly small dimensions that make it suitable not only for B segment motor cars, but also for segment A city cars.

The usage of this engine is also important on light commercial vehicles: in particular, the SDE Multijet 1.3 L. is fitted in the Fiat Doblò Cargo and the Fiat Strada, as well as the Fiat Idea, Grande Punto, Punto and Panda commercial vehicles .

Compact and technologically sophisticated, the SDE engine uses the "Multijet" technology developed by the Fiat Research Center. "Multijet" uses the electronic control to divide the main injection into minor multiple injections, to obtain a more homogenous combustion, less emissions and more output.

In 2005, a jury of 56 among the most influential journalists in the automotive sector voted the SDE 1.3 Multijet engine the "Engine of Year 2005" in the 1 to 1.4 liters category.

The SDE Multijet 1.3L engine delivers a power of 70Hp (52kW) to 90Hp (66kW) and torques from 180 to 200Nm, and today it is also installed on Opel and Suzuki vehicles.

## **F5**

The **new F5 series** is a family of new 4-cylinder engines with 2 valves per cylinder, with geared distribution and supplied by a mechanical injection system for low and medium powers and with electronic common rail for high powers. The new F5 series will be available in structural and non structural version to be adapted to the different applications, from agricultural to industrial.

The F5 engine has a 3.2L displacement and delivers power up to 88 Hp (65 kW) with the mechanical injection system, and up to 100 Hp (74 kW) with Common Rail.

The mechanical injection versions of the new F5 series will be available on the market in autumn 2007.

The Common Rail versions are foreseen for summer 2008.

## **NEF 400 marine**

Our range of marine engines for pleasure and professional applications has powertrains equipped with high quality marine components that guarantee high performance with restricted dimensions and weight, lower emissions and low noise level, available with advanced injection systems, either mechanical or with electronic control.

Among the more striking models, **NEF 400** stands out for its silentness, brilliancy, fluidity and absolute absence of smoke, as well as for its performance.

The NEF 400 is a Common Rail engine with six 5.9L cylinders in line, and power up to 400 Hp (294 kW) @ 3000 rpm.

## **CURSOR 13 industrial**

The industrial engines range covers all the application requirements of the sector, also due to the wide choice of accessories (radiator, air cleaner, etc). For Off-Road applications, our engines are in conformity with the current Tier3 standards.

The Cursor engines range, for industrial applications in Tier3 version, covers a wide power range, reaching 510 Hp (375 kW) and a torque of 2150 Nm @ 1400 rpm with the **Cursor 13**. The Cursor 13 is a 12.9 L, 6 cylinders-in-line engine with electronic injection (Electronic Unit Injector). To meet the specific Tier3 standards of the industrial sector, the internal EGR system (Exhaust Gas Recirculation) has been adopted.

With this system the exhaust valves opening is synchronized during the intake active stage: the effect obtained is the internal recirculation of part of the exhaust gas that is mixed with clean air for a subsequent combustion stage, damping the NOx emissions at exhaust, in compliance with the Tier standards.

## **Mobile ground power unit 2HE**

The FPT engines are also used for various power generation applications, as on-board power units for sea vessels, soundproofing units, units supplied with natural gas for cogeneration systems, fire-fighting systems and many other uses.

In the range of power generation products, a special application is the 100 kVA, 400 Hz mobile ground power unit for airport use: this is a power plant assembled on a two-axle steel trailer, with four 18x7 wheels and a braking system.

The unit has been designed to operate within a temperature range between -20° and 40°, and relative humidity up to 90%.

The complete range of engines for power generation covers a power range from 40 to 740 kW.

In the 2HE Fècamp Plant in France, also energetic systems are manufactured (sound-proofed power units, power units for special applications, mobile ground power units), energy power packs up to 5 MW and electro-technical systems (low voltage panels, special shelters, charging benches, etc.).