

## FIAT POWERTRAIN TECHNOLOGIES AT THE BOLOGNA MOTOR SHOW 2006 INTERNATIONAL AUTOMOBILE EXHIBITION

### Race technologies for everyday reliability

Present at the Bologna Motor Show for the first time, Fiat Powertrain Technologies (FPT) is exhibiting four products that are outstanding as regards performance, low fuel consumption and low emissions. Selected from a range that goes from 1 to 40 litres capacity, from 4 to 12 cylinders, and from 20 to 1800 hp, these engines represent the huge variety of types available: the S-2000, developed by FPT Racing, which won the Italian and European Rally Championships and the International Rally Challenge on the Grande Punto; the NEF 400, a new unit on the leading edge of inboard marine engines; the now famous 1.3 Multijet, ready with the Panda to accept the challenge of the Lisbon Dakar 2007; the NEF RACING, benchmark in the engine sector for medium vehicle road use, it too about to contend with African deserts.

### S-2000 ENGINE – FIAT GRANDE PUNTO RALLY

Naturally aspirated two litre engine, four cylinders in line, 16 valves, capable of delivering a power output of 270 hp at 8000 rpm, torque of 250 Nm at 6750 rpm: these are the main features of the engine that marked the Fiat Group's return to racing. Derived from a production engine, the S-2000 has been thoroughly modified to transform it into a concentrate of technology and performance. The exceptional features of this engine blended perfectly into the Grande Punto Rally Super2000, enabling Fiat to obtain three important victories in 2006: the Italian and European Rally Championships and the International Rally Challenge.

The engine fitted in the Fiat Grande Punto Rally was entirely developed by FPT Racing, that sector of Fiat Powertrain Technologies wholly given over to the design, experimentation, development and production of:

- Racing powertrains
- Performance kits for petrol and diesel engines
- Special power units for limited series vehicles

### NEF 400 ENGINE – MARINE APPLICATIONS

Innovative technological solutions, high performance, low acoustic and polluting emissions, compactness, lightness, reliability and low operating and maintenance costs: these are the key features of the futuristic NEF 400, a state-of-the-art engine for marine applications. This engine's supreme technical and performance qualities have been achieved as a result of modern technologies like:

- the Common Rail injection system
- electronic operation by means of the EDC (Electronic Diesel Control)
- an advanced architecture which makes for structural strength and drastic cuts in noisiness and vibrations

The NEF 400 respects all recent and future regulations in the marine sector in terms of emissions: IMO-MARPOL, 2003/44/EC, 2004/26/EC, EPA, CCNR. The optimised design of mechanical components combined with the common rail injection system and electronic management are ideal as far as the environment is concerned, while at the same time highlighting performance and reliability.

Finally, the performance and reliability of the NEF 400 have been confirmed by its participation in the European "Powerboat PI-Classe Super Sport" Championship reserved for standard production boats and engines.

### 1.3 MULTIJET ENGINE – FIAT PANDA DAKAR

Winner of the "Diesel Engine of the Year Award 2005" in its category, this is the smallest 4 cylinder Common Rail on the market.

Compact and technologically sophisticated, its performance is outstanding, at the very top of its category: a weight/output ratio of 1.27 kg/hp, specific power output of 81 hp/l, electronically controlled variable geometry turbine (VGT), a cooled and electronically controlled EGR system for the recirculation of exhaust gases, latest generation common rail injection system.

The 1.3 Multijet was tested for 250,000 km in the very severest environmental conditions; its extreme sturdiness means that only minimal maintenance is required and oil change intervals have been extended from 20,000 to 30,000 km. Exceptional in everyday use, this engine fears no test and is ready to show off its qualities of sturdiness and reliability participating, with the Fiat Panda, in the Lisbon Dakar 2007. The version on display, prepared by the FPT Racing team, attains the exceptional output of 105 hp at 4500 rpm.

## NEF RACING ENGINE – IVECO/ITALDESIGN TRUCK

NEF RACING offers the best performance in its category in terms of torque and power output.

It is a 6 cylinder in line power plant managed entirely by an electronic control unit that guarantees full monitoring of operations together with a protection system for extreme usage conditions.

The engine delivers 300 kW (400 hp) of power at 3000 rpm and a torque of 1200 Nm at 1600 rpm.

The technology adopted for its realisation in terms of architecture and extreme compactness also makes maintenance operations easier. Its reliability, tested at great length in the most demanding of conditions, makes it particularly suitable for the Lisbon Dakar 2007 where it will be mounted on the Iveco/Italdesign truck of the P&T Racing Team.

## FIAT POWERTRAIN TECHNOLOGIES

Two and a half million engines and two million transmissions produced every year; sales of about 5.5 billion euros, about 19 thousand employees, 16 plants and 10 R&D centres in 8 different countries: these are the numbers that describe Fiat Powertrain Technologies, the Sector born in March 2005 which brings together all the engine-related activities of Fiat Auto (Fiat Powertrain), Iveco (Iveco Motors), Centro Ricerche Fiat and Elasis.

With such numbers, FPT is one of the most significant enterprises in the powertrain sector at world level.

In FPT about 3000 highly specialised engineers devote their time to the development and engineering of innovative technologies: more than 40 patents filed every year confirm the quality and soundness of this commitment.

Thanks to an enormous range of products and technologies, FPT is able to meet the most diversified of market demands, guaranteeing high performance, reliability and efficiency for its customers.

## FPT: L'INGEGNO E' MOTORE

### FPT: POWERED BY IDEAS

## PRODUCT RANGE

### Passenger & Commercial Vehicles

Gasoline	from	40 kW(54HP) @ 5000 rpm	to	136 kW(185HP) @ 5500 rpm
Diesel	from	52 kW(70HP) @ 4000 rpm	to	147 kW(200HP) @ 4000 rpm
Alternative Fuels	from	38 kW(52HP) @ 5000 rpm	to	68 kW(92HP) @ 5750 rpm

### Industrial & Marine applications

	from	14,7 kW(20HP)	to	1325 kW(1800HP)
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### Transmissions

	from	145 Nm	to	950 Nm
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### Contacts

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