

FPT INDUSTRIAL AT METS 2013

Turin, November 2013

FPT Industrial is presenting at METS 2013 its range of engines for pleasure and professional boats, equipped with propulsion, control and monitoring systems, for both Tier 2 and Tier 3 regulations.

In the nautical sector, FPT Industrial manufactures diesel engines for commercial applications (18 models from 15 to 650 hp) and for pleasure boats (21 models from 20 to 825 hp), which can be coupled to shaft line stern drives, ZF POD Drive and sail drive, which have new control and monitoring systems. Within the market, the most recent engines are 'best in class' thanks to their unbeatable technical features and compact layout, which saves space and enables installation of high power engines even in fairly small engine rooms.

At METS 2013, FPT Industrial is exhibiting the combination engine-POD N67 500 PD for pleasure boats and the C13 500 engine for heavy duty applications. The electronic command and Deluxe touch-screen monitor are also on display.

These units employ the best technologies, such as Common Rail electronic injection, four-valve cylinders, turbocharger systems and aftercooler.

Pleasure range – Exhibited product: N67 500 PD of NEF series (3.9 – 6.7 litres)

The NEF series is the most representative of FPT Industrial in the marine leisure sector due to its many variants of four and six-cylinder, aspirated and supercharged engines with variable capacities, providing 85-570 hp. Available with both mechanical and electronic Common Rail, the engines are characterised by their high performance, compact design and low environmental impact, making them ideal engines for cabin cruisers and yachts of up to 12 metres.

The combination of the innovative N67 500 engine and the ZF POD Drive propulsion system allows the NEF series to widen its range of applications, providing best in class benefits. Compared to the most competitive engines with POD Drive, the N67 500 PD has:

- Best power/weight ratio (0.55 hp/kg)
- Highest specific rated torque (175 Nm/litre)
- Highest specific maximum torque (228 Nm/litre)
- Best power-to-volume ratio (0.77 hp/cubic decimetre)

Compared to traditional shaft line propulsion systems, the compact and lightweight ZF POD Drive system achieves greater efficiency in terms of both performance and consumption, better cruising speeds, a reduction of fuel consumption by up to 15%, a reduction of emissions by up to 30% and contained maintenance costs.

Thanks to the SmartCommand control system and the adoption of the Joystick Maneuvering System (JMS), the ZF POD Drive also ensures significant improvements, not only in terms of acceleration and stability in turns, but also in terms of manoeuvrability and trim angle.

Improved navigating comfort is guaranteed through reduced noise and vibration, which is achieved thanks to the installation of elastic damping units and the underwater expelling of gases through the propeller hubs.

Careful design ensures the safety of the system, with the detachment of specific parts possible in the event of a collision with submerged bodies (while maintaining overall hull integrity) and the protection of keel and propellers from accidental contact with floating debris.

Thanks to the Joystick in the easy-to-use JMS device, the docking and directional manoeuvres of the boat are much easier and can be performed with a simple movement of the wrist.

The unit is extremely versatile with two different configurations according specific customer needs:

- 'deadrise mounting' with POD Drives perpendicular to the hull - extremely practical because it does not entail any changes to the hull geometry and ensures greater efficiencies at maximum speed
- 'vertical mounting' with a tunnel in the hull and the POD Drive installed vertically - capable of ensuring considerable stability in turning and added protection in the event of contact with submerged bodies

In addition to the 500 hp version shown at METS 2013 (N67 500 PD), the NEF series with POD comprises two other versions, the N60 400 PD (400 hp) and the N67 450 PD (450 hp), which extend the range of engines for pleasure boats from 30 to 48 feet.

The collaboration between FPT Industrial and ZF offers integrated support from both company networks, categorised by their professionalism, promptness of action, capillarity and worldwide presence, and through a single contact are able to offer a service focused on customer satisfaction.

Commercial range – Exhibited product: C13 500 Cursor series (8.7 – 12.9 litres)

For boats up to 18 metres, Cursor series engines provide high power thanks to (depending on variations) Common Rail electronic injection (C90) and the EUI system with injector pump (C13). All Cursor series engines have six in-line cylinder architecture and are equipped with a turbocharger and aftercooler.

Since its launch, the C13 500 has been a benchmark in the commercial sector for its technology and benefits: as well as fuel consumption, maintenance costs and reduced emissions it has always been considered an engine with very low environmental impact.

To achieve drastic reductions in noise and vibration, optimisation of refilling and combustion in the expansion chambers and maximisation of thermal and mechanical efficiency, technical solutions have been adopted. These include six in-line cylinder architecture with soleplate and crankcase, steel drive shaft with integral counterweights, skew-cut steel connecting rods, single-piece aluminium pistons with high turbulence combustion chamber, monolithic cylinder head with four valves per cylinder and a rear distribution system with overhead camshaft.

The injection system consists of a pump with selective control. The high operating pressures (up to 1,400 bar) and the electronic control for each injector ensure optimal management of both the dosage and timing of fuel input, resulting in maximum efficiency and significant reduction of consumption.

The Engine Control Unit (ECU), the real electronic brain of the engine, performs certain essential functions such as optimal management of fuel injection in any operating condition, protection of the engine from over-revving, overheating and excessive smoke, diagnosis of the status of electronic components and mechanical organs, the logging of possible faults and the safety programme for 'reach home at minimum speed' in the event of malfunctions.

New production processes, with assembly technology using numerical control, consistently help reduce vibration and lubricant consumption. Further advantages come from the significant reduction in time and costs of operation and maintenance, thanks to lower oil consumption, as well as longer oil replacement intervals than the average for the leading competitors.

The engine has been approved by R.I.Na. for continuous service and meets the major European and international standards on emissions: IMO MARPOL, 2003/44/EC, 2004/26/EC, CCNR.

A continuous power of 500 hp at 2,000 rpm and torque of 2,514 Nm at 1,300 rpm with a displacement of only 12.9 litres, as well as cutting-edge engineering solutions, are important qualities that create a benchmark for the entire commercial sector and put the C13 500 among the best products available in the market in terms of technology and performance in its power range.

Digital Deluxe touch screen for engine control

The digital graphic panel installed by FPT Industrial for the entire marine range represents a technical milestone in motor control and supports, through optional customisations, extensive interfacing and display of the main parameters and the equipment on board.

This modern screen, which allows simultaneous management of two engines, uses the best available technology and has distinctive features, such as:

- Travel-specific data, consumption, percentage of power used, maintenance intervals
- 64 ports of analogue and digital interface for monitoring the engines and other on-board equipment to allow full customisation of the product
- Large memory capacity for the recording of data relating to engines and cruise
- Diagnostic, calibration and alarm thresholds management
- Data transmission for remotely monitoring via optional satellite devices

Electronic remote control

Characterised by an innovative design and quality materials (AISI 316 Stainless steel), compared to the previous version, the new FPT Industrial electronic remote control will be supplemented with two new optional features:

- Trim angle adjustment using buttons on the engine control handle
- Management of trolling function, a very useful feature for sports fishermen and/or for navigation at low speed

Other features that have led to the success of the previous version will remain unchanged, including: modularity, Can-Bus technology, drive by wire, high number of engine/gearbox combinations with reduced number of components, maximal ease of installation 'plug & play', simple initial configuration and the possibility of mounting remote control up to 60 metres from the base station.

***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.*